Infoprint 3000

IBM

Maintenance Information

Part Number: 01P6937

Fourth Edition (April 2000)

The following paragraph does not apply to any other country where such provisions are inconsistent with local law.

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION “AS IS” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

Changes are made periodically to this publication.

Requests for IBM publications should be made to your IBM representative or to the IBM branch office serving your locality. If you request publications from the address given below, your order will be delayed, because publications are not stocked there.

You can send comments by fax to 1-800-524-1519 (inside the U.S.) or 1-303-924-6873, by E-mail to `printpub@us.ibm.com`, or by mail to:

IBM Printing Systems Company
Information Development
Department H7FE Building 003G
PO Box 1900
Boulder CO USA 80301-9191

IBM may use or distribute whatever information you supply in any way it believes appropriate without incurring any obligation to you.

Visit our home page at: `http://www.ibm.com/printers`

© Copyright International Business Machines Corporation 1999, 2000. All rights reserved.
US Government Users Restricted Rights – Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

Contents

General Safety Guidelines 27
When A Safety Inspection Is Required 27
Other Safety Hazards 28
How to Perform the Safety Checks 29
  Preparation 29
  References 30

Safety Checks 31
Covers. 31
Line Cord 31
Primary Safety Grounds. 32
Fuses 32
Cables. 32
Printer Safety Grounds 33
Control Unit Safety Grounds 40
Printhead Interlock Switch & Safety Labels 41
Safety Labels 44
Hot Roll Over-Temperature Safety Interlock. 47
Unit Emergency Power Off Switch 48
Circuit Breaker (CP1) 48
End of Inspection 49

Chapter 1. Diagnosing Problems 50
MAPS 56
  MAP 0001: Introduction 56
  MAP 0002: Start of Call Procedure 66
  MAP 0003: End of Call Procedure 69
  MAP 0010: Symptom Start MAP 75
  MAP 0070: Printer Logic Cards 119

© Copyright IBM Corp. 1999, 2000

MAP 0104: Retractor Is Retracted During Print 126
MAP 0113: Tractor Motor Encoder Phase Error 129
MAP 0114: Tractor Motor Over Current 135
MAP 0115: Retractor Position Error 138
MAP 0116: Retractor Motor Over Current 142
MAP 0117: Forms Width Sensor 145
MAP 0118: Forms Width Sensor Fuse 148
MAP 0119: Upper Tractor Forms Jam 151
MAP 011E: Tractor Motor Initial Position Error 168
MAP 0121: Drum Rotation Error 172
MAP 0122: Drum Motor Over Current 177
MAP 0131: Tension Arm Down. 179
MAP 0132: Tension Arm Up 187
MAP 0133: Skew Error. 194
MAP 0134: Fuser Wrap 208
MAP 0135: Backup Roll Motor Thermal 222
MAP 0136: Backup Roll Position Error. 227
MAP 0137: Steering Motor Driver 233
MAP 013A: Backup Roll Drive Signal On 236
MAP 013B: Backup Roll Open Error 242
MAP 0141: Felt Oiler Belt Driver Error 247
MAP 0142: Oil Pump Driver Error 250
MAP 0143: Felt Oiler Belt Motor Always Driven 253
MAP 0144: Felt Oiler Belt Motor Never Driven. 256
MAP 0145: Oil Pump Always Driven 259
MAP 0146: Oil Pump Never Driven 262
MAP 0152: Scuff Roll Motor Thermal 265
MAP 0156: Backup Roll Lift Motor (M610) Position Error 268
MAP 0157: Backup Roll Lift Motor (M610) Over Current. 273
MAP 0161: Stacker Jams (Light Never Sensed) 277
MAP 0162: Pendulum Motor Over Current. 292

MAP 0163: Pendulum Initial Position Error 294
MAP 0164: Stacker Jams (Light Always Sensed) 299
MAP 0171: Stacker Table Motor Thermal 308
MAP 0172: Stacker Table Timeout 312
MAP 0174: Stacker Safety Switch On 323
MAP 0175: Stacker Table Motor Runs Too Long 329
MAP 0176: Stacker Forms Length Sensor 339
MAP 0177: Stacker Length Sensor Timeout 343
MAP 017A: Rear Finger Belt Motor Over Current 348
MAP 017B: Gate Finger Belt Motor Over Current 351
MAP 0211: Charge Corona Voltage Error 354
MAP 0212: Transfer Corona Voltage Error 361
MAP 0213: Preclean Corona Voltage Error 367
MAP 0221: Mirror Motor Operating Error 371
MAP 0222: Video Data Active 377
MAP 0223: Mirror Motor Drive Error 382
MAP 0224: Mirror Motor Start-Up Error 391
MAP 0225: Resolution Lens Initial Position Error 399
MAP 0226: Resolution Lens Motor Over Current 404
MAP 022A: PC Drum Cover Is Open 408
MAP 0231: Mag Brush Bias Error 412
MAP 0232: Conveyor Roll Rotation Error 417
MAP 0233: Mag Roll Motor Thermal 425
MAP 0234: Toner Overfeed Error 429
MAP 0235: Toner Underfeed Error 436
MAP 0236 Toner Feed Motor Over Current 447
MAP 0241: Primary Erase Lamp Never On 450
MAP 0243: Primary Erase Lamp Always On 455
MAP 0251: Cleaner Brush Rotation Error 460
MAP 0252: Cleaner Brush Motor Thermal 465
MAP 0253: Cleaner Housing Never Homes 471

MAP 0254: Cleaner Housing Motor Driver 475
MAP 0256: Cleaner Housing Always at Home 476
MAP 0264: Cyclone Blower Motor Thermal 480
MAP 0266: Cyclone Blower Rotation Error. 483
MAP 0281: Preheat Over Temperature 488
MAP 0282: Preheat A/B Under Temperature. 494
MAP 0284: Preheat C Under Temperature. 498
MAP 0286: Preheat Element ’A’ Lost Temperature 502
MAP 0287: Preheat Element ’B’ Lost Temperature 505
MAP 0288: Preheat Element ’C’ Lost Temperature 508
MAP 028A: Thermistor 1 Over Temperature 511
MAP 028B: Thermistor 2 Over Temperature 514
MAP 028C: Thermistor 3 Over Temperature 518
MAP 028D: Thermistor 1 Under Temperature 522
MAP 028E: Thermistor 2 Under Temperature 527
MAP 028F: Thermistor 3 Under Temperature 531
MAP 0291: Hot Roll Over Temperature 535
MAP 0294: Hot Roll Over Current 539
MAP 0295: Hot Roll Does Not Reach Operating Temperature 542
MAP 0296: Hot Roll Lamp 1 Relay Error 546
MAP 0297: Hot Roll Lamp 1 Filament Open 549
MAP 0298: Hot Roll Lamp 2 Relay Error 554
MAP 0299: Hot Roll Lamp 2 Filament Open 558
MAP 029C: Hot Roll Lamp 3 Filament Open. 562
MAP 029D: Hot Roll Lamp 3 Relay Error 566
MAP 029E: Hot Roll Lamp 4 Filament Open. 570
MAP 029F: Hot Roll Lamp 4 Relay Error 574
MAP 0321: Operator Alert Light Problem 578
MAP 0322: Operator Alert Alarm Problem 584
MAP 0323: Operator Alert Accessory Contacts Problem. 591
MAP 0330: Display/Touch Screen Start MAP 596

MAP 0500: Power Control – Simplex Printing System 602
MAP 0501: Power Control – Duplex Printing System 616
MAP 0511: Printer Power Error 634
MAP 0521: Form Length Fuse 667
MAP 0522: Laser Driver Fuse 670
MAP 0523: PR Sensor Fuse 675
MAP 0524: Fuser Sensor Fuse 679
MAP 0525: ST Sensor Fuse 682
MAP 0600: Printer Interface MAP 686
MAP 0782: Splicing Lever Sensor 693
MAP 0783: Transfer Station Open 698
MAP 0785: Toner Collector Full 702
MAP 0786: Add Toner 706
MAP 0787: Toner Collector Not Set 709
MAP 0788: Change Developer Mix 713
MAP 0789: Developer Drain Open 717
MAP 078A: End Of Forms Sensor 721
MAP 078B: Developer Running 726
MAP 0791: Change Fine Filter 730
MAP 0792: Fuser Oil Empty 737
MAP 0793: End Of Oiler Belt Reached 741
MAP 0794: Fuser Oiler Gate Open 746
MAP 0795: Set Forms Direction 751
MAP 0796: Stacker Full 756
MAP 0797: Stacker Gate Open 764
MAP 0798: Stacker Table Down 768
MAP 0799: Fine Filter Not Installed 776
MAP 079C: Toner Supply Low 780
MAP 0800: Pre/Postprocessing Interface Start MAP 783
MAP 0810: Coupled Pre/Processing Interfaces 786
MAP 0820: Intelligent Pre/Processing Interfaces 797

MAP 1000: Print Quality Start MAP . . . 807
MAP 1001: Repeating Spots or Marks . . . 824
MAP 1002: Random Spots or Marks . . . 832
MAP 1003: Light Streaks . . . 846
MAP 1004: Dark Streaks or Black Lines . . . 855
MAP 1005: Background or Dirty Prints . . . 864
MAP 1006: Black Prints . . . 880
MAP 1007: Blank Prints . . . 882
MAP 1008: Residual Images . . . 886
MAP 1009: Fuser Offset or Forms Sticking Together . . . 896
MAP 100A: Voids, Missing Print, or Poor Contrast . . . 915
MAP 1010: Poor Fusing . . . 923
MAP 1011: Registration or Skew . . . 930
MAP 1012: Altered Characters or Images . . . 935
MAP 1013: Characters Too Dark or Stroke Width Too Wide . . . 942
MAP 1014: Background Shadows (Bleeding) . . . 949
MAP 1015: Banding . . . 952
MAP 1018: Light Print . . . 956
MAP 1020: Poor Solid Area Fill or Images . . . 968
MAP 1021: Bar Code Problems . . . 976
MAP 1022: Label Problems . . . 982
MAP 2000: Controller Start MAP . . . 986
MAP A000: Host Attachment Detected Errors . . . 994
MAP B000: Printer Detected Errors . . . 1010
MAP C000: AFCCU Detected Errors . . . 1014
MAP D000: Mechanism Interface Card (MIC) Detected Errors . . . 1017
MAP D706: Beam Detect Missing . . . 1032
MAP D70B: Printhead Under Run . . . 1047

Chapter 2. Diagnostics . . . 1056
Using the Display/Touch Screen . . . 1059

Display/Touch Screen Main Window . . . 1060
Printer Status Window . . . 1062
Password . . . 1063
Service Actions . . . 1064
Logs . . . 1065
Print . . . 1069
Diagnostics - General . . . 1072
Attachment Diagnostics . . . 1073
Mechanism Diagnostics . . . 1080
Pre/Postprocessor Diagnostics . . . 1083
Pre/Postprocessing Interface Test Card . . . 1087
Print Quality Enhancement . . . 1093
Disk Operations . . . 1094
Traces . . . 1096
Configuring the Internal Control Unit Trace . . . 1098
Print Samples . . . 1100
Print Sample Terms . . . 1101
Printer Diagnostics . . . 1107
Diagnostic Function Switch Positions . . . 1110
Normal Print (Position 0) . . . 1111
Read From or Write to Memory (Position 2) . . . 1112
Read From or Write to Toner Control Program Memory (Position 2) . . . 1118
Exerciser Routines (Position 3) . . . 1119
Driver Routines . . . 1125
Sensor Routines . . . 1148
Adjustment Routines . . . 1176
Read Memory Address String (Position 5) . . . 1189
Write Memory Address (Position 5) . . . 1190
Modify Steering Servo (Position 5) . . . 1191
Modify Backup Roll Lift Motor Open/Close Timing (Position 5) . . . 1193
Clear Memory (Position 8) . . . 1195

Optical Sensor Margin Tests (Position 9) . . . 1196
Side 1/Side 2 Diagnostics . . . 1197
RS/6000 Controller Diagnositcs . . . 1200
Automatic Tests . . . 1200
Mechanism Interface Card (MIC) Isolation Wrap Test . . . 1204
Host Error Reporting . . . 1207
EREP Summary Report . . . 1208
EREP Detail Report . . . 1209
Interpretation of EREP Sense Bytes . . . 1211
E0XX Codes and SRC Cross-References . . . 1224
E1XX Error Codes to MAP Cross Reference . . . 1230
Hexadecimal-to-Decimal Conversion . . . 1234

Chapter 3. Wiring, Circuit & Block Diagrams . . . 1236
Wiring Diagrams . . . 1237
Wiring Diagrams - Introduction . . . 1240
AC Input / Output Tables . . . 1247
AC / DC Power Tables . . . 1248
AC Circuits . . . 1250
DC Circuits and Channel Attach Electronics . . . 1265
Circuit Diagrams . . . 1323
CD01 - Retractor Motor (M103) . . . 1327
CD02 - Printer Control Panel (SW761) . . . 1328
CD03 - Tractor Motor and Encoder (M105) . . . 1329
CD04 - Upper Tractor Jam Sensor . . . 1330
CD05 - Forms Width Hall Sensor . . . 1331
CD06 - Forms Width Sensor Circuit Breaker . . . 1332
CD07 - End Of Forms Sensor (S117) . . . 1333
CD08 - Transfer Station Open Sensor (S114) . . . 1334
CD09 - Tension Arm Encoder (S708) . . . 1335
CD10 - Skew Sensor (S707) . . . 1336

CD11 - Steering Motor (M705) 1337
CD12 - Drum Motor (M107) & Overcurrent Detection 1338
CD13 - Drum Rotation Sensor (S105) 1339
CD14 - Filter Pressure Switch (S102) 1340
CD15 - Fine Filter Switch (S106) 1341
CD16 - Developer Drain Lever Switch (S111) 1342
CD17 - Developer Run Switch (S109) 1343
CD18 - Scuff Roll Motor (M704) & Fuser Wrap Sensor (S617) 1344
CD19 - Oiler Belt Motor (M706) & Driver 1345
CD20 - Oil Pumps and Driver. 1346
CD21 - Oiler Belt End Switch (S711) 1347
CD22 - Oiler Gate Open Switch (S704) 1347
CD23 - Backup-Roll Motor (M701) & Thermal Sense. 1348
CD24 - Backup-Roll Motor (M701) - Open/Close Mechanism & Position Sensor (S712) 1349
CD25 - Hot Roll. 1350
CD26 - Backup Roll Lift Motor (M610) & Position Sensor (S624) 1351
CD27 - Hot Roll Temperature Control Sensor (S701). 1352
CD28 - Preheat Platen 1353
CD29 - Fuser Oil Empty Sensor (S702) 1354
CD30 - Hot Roll Over-temperature Sensor (S705) 1355
CD31 - Hot Roll Temperature Control Thermistors (S621 - S622 - S623) 1356
CD33 - Hot Roll Drive Motor (M703) and Overcurrent Detection 1357
CD34 - Hot Roll Lamp 1 1358
CD35 - Hot Roll Lamp 2 1359
CD36 - Hot Roll Lamp 3 1360
CD37 - Hot Roll Lamp 4 1361
CD38 - Erase Lamp (PL101) - Starter (ST101) & Sensor (S115). 1362
CD39 - Stacker Jam Sensor (S805/D803) 1363
CD40 - Pendulum Motor (M804) 1364
CD41 - Pendulum Motor (M804) Control 1365
CD42 - Pendulum Motor (M804) - Positioning 1366

CD43 - Finger Belt Motors (M801 & M802) . . . 1367
CD44 - Stacker Table Motor (M803) - Thermal Sense . . . 1368
CD45 - Stacker Height Sensors (S803/D801 & S804/D802) . . . 1369
CD46 - Stacker Gate Safety Switches (S801 & S802) . . . 1370
CD47 - Stacker Table Limit Switches (S807 & S808) . . . 1371
CD48 - Stacker Forms Length Hall Sensor . . . 1372
CD49 - Stacker Rear Finger Belt Motor (M801) . . . 1373
CD50 - Stacker Front Finger Belt Motor (M802) . . . 1374
CD51 - Stacker Gate Open Switch (S806) . . . 1375
CD52 - Stacker Control Panel (LP041) . . . 1376
CD53 - Forms Length Circuit Breaker . . . 1377
CD54 - Cyclone Blower Motor (M104) - Thermal Sense . . . 1378
CD55 - Cyclone Blower Motor (M104) & Rotation Sensor (S116) . . . 1379
CD56 - Cleaner Brush Motor (M108) & Rotation Sensor (S104) . . . 1380
CD57 - Cleaner Brush Motor (M108) - Thermal Sense . . . 1381
CD58 - Cleaner Housing Motor (M106) & Position Switch (S103) . . . 1382
CD59 - Scuff Roll Motor Drive (M704) . . . 1383
CD60 - Charge Corona . . . 1384
CD61 - Transfer Corona . . . 1385
CD62 - Preclean Corona . . . 1386
CD63 - Laser Driver Circuit Breaker . . . 1387
CD64 - Mirror Motor (M501) . . . 1388
CD65 - Printhead . . . 1389
CD66 - Beam Detect . . . 1390
CD67 - Video Data . . . 1391
CD68 - Resolution Switching Lens Motor Postion Sensor (S502) . . . 1392
CD69 - PC Drum Cover Interlock Switch (S118) . . . 1393
CD70 - Mag Brush Bias . . . 1394
CD71 - Mag Brush Motor (M101) & Conveyor Roll Rotation Sensor (S110) . . . 1395
CD72 - Mag Brush Motor (M101) - Thermal Sense . . . 1396
CD73 - Toner Control Sensor (S107) & Toner Feed Motor (M102) . . . 1397

CD74 - Toner Collector Switch (S101) . . . 1398
CD75 - Toner Empty Sensor (S108) . . . 1399
CD76 - Toner Feed Motor (M102) . . . 1400
CD77 - Operator Alert . . . 1401
CD78 - Printer Remote Power Circuit . . . 1402
CD79 - Printer 1 Remote Power Circuit . . . 1403
CD80 - (+5 V) Voltage Distribution . . . 1404
CD81 - (+5 V) Voltage Distribution . . . 1405
CD82 - (+5 V) Voltage Distribution . . . 1406
CD83 - (+5 V) Voltage Distribution . . . 1407
CD84 - (+/- 12V) Voltage Distribution . . . 1408
CD85 - (+24VE) Voltage Distribution . . . 1409
CD86 - (+24VF) Voltage Distribution . . . 1410
CD87 - (+24VH) Voltage Distribution . . . 1411
CD88 - (+5VM/+12VM/+100VM) Voltage Distribution (Mirror) . . . 1412
CD89 - (24VD) Power Supply (Fans) . . . 1413
CD90 - PR011 Sensor Circuit Breaker . . . 1414
CD91 - ST Sensor Circuit Breaker . . . 1415
CD92 - ST Sensor Circuit Breaker . . . 1416
CD93 - Splicing Station . . . 1416
Block Diagrams - Logic Flow . . . 1417
BD01 - 7025 Model F50 RS/6000 Controller . . . 1418
BD02 - 7043 Model 140-43P RS/6000 Controller . . . 1419
BD03 - Mechanism Interface Card (MIC) . . . 1420
BD04-1 - Channel A Attach . . . 1421
BD04-2 - Channel B Attach . . . 1422

Chapter 4. Locations . . . 1423
Developer - Rear View . . . 1425
Developer Front View . . . 1427
Developer Side View . . . 1428

PC Drum Front View 1429
Fuser End View 1431
Fuser Front View 1433
Fuser Rear View 1435
Fuser Right Side View 1437
Stacker Front View 1438
Stacker End View (1) 1439
Stacker End View (2) 1441
Stacker Rear View 1442
Transfer Station Front View 1443
Transfer Station Rear View 1445
Cleaner Mechanism Rear (1) 1446
Cleaner Mechanism Rear (2) 1448
HVPS Area Rear View 1449
Printer AC/DC Power Supply ASM - Front View 1450
Printer AC/DC Power Supply - Left Side View 1452
Logic Card Area 1453
Printhead 1454
Printer Interface 1456
Control Unit - Front View 1457
Control Unit - Left Side View 1458
Control Unit - Mechanical Interface Card (MIC) 1460
Control Unit - Print Quality Enhancement Card (PQE) 1461
Control Unit - Pre/Post Processing Cards 1462
Control Unit - Channel I/O Connection 1463
RS/6000 Controller 7025 Model F50 - Front & Back 1464
RS/6000 Controller 7025 Model F50 - Cards 1466
RS/6000 Controller 7025 Model F50 - Bays 1467
RS/6000 Controller 7043 Model 43P-140 Front & Back 1468
RS/6000 Controller 7043 Model 43P-140 Cards 1470
Card Details 1470

CPxxx Printer Control Cards 1471
DV061 Stepper Motor Driver Card 1472
DV071 Fuser/Stacker Driver Card 1473
DV081 Fuser/Stacker Driver Card 1474
DV101 AC Motor Driver Card 1475
FU041 Fuser Control Card 1476
LD272 Laser Diode Card 1477
PC561 Paper Path Control Card 1477
PR011 EP Process Card 1478

Chapter 5. Removals and Adjustments 1479
Air System 1479
Fine Filter 1480
Fine Filter Case 1481
Fine Filter Switch (S106) 1482
Toner Collector Assembly 1483
Toner Collector Switch (S101) 1485
Filter Pressure Switch (S102) 1487
Cyclone Blower Drive Belt 1488
Cyclone Blower Motor (M104) 1490
Cyclone Blower 1491
Cyclone Blower Rotation Sensor (S116) 1493
Cyclone Pressure Check 1495
Cleaner 1497
Cleaner Brush 1498
Cleaner Brush Drive Cone 1500
Cleaner Brush Driven Cone 1501
Cleaner Brush Motor (M108) and Drive Belt 1503
Cleaner Brush Rotation Sensor (S104) 1505
Cleaner Housing Motor (M106) and Switch (S103) 1507
Cleaner Housing Cleaning 1511

Cleaner Skirt . . . 1513
Control Unit . . . 1514
AC Control Box . . . 1515
DC Power Supply . . . 1517
Display/Touch Screen . . . 1519
Interface Card (IF491) . . . 1520
Mechanism Interface Card (MIC) . . . 1522
Mechanism Interface Card (MIC) Memory Cards . . . 1524
Operator Alert Assembly . . . 1526
Parallel Channel Tailgate . . . 1529
Power Control Panel . . . 1531
PQE Card . . . 1532
Pre/Postprocessing Interface Cards . . . 1534
Side 1/Side 2 Verification Control Card . . . 1535
RS/6000 Removal & Replacement Procedures . . . 1536
Coronas & High Voltage Power Supply . . . 1556
Charge Corona . . . 1557
Preclean Corona and Transfer Corona . . . 1559
Corona Cleaning Brushes . . . 1562
Charge Corona to PC Drum Clearance . . . 1564
High Voltage Power Supply . . . 1568
Transfer Corona Voltage . . . 1570
Mag Brush Bias Voltage . . . 1571
Preclean Corona Voltage . . . 1573
PC Drum Surface Voltage . . . 1574
Covers . . . 1581
External Covers . . . 1582
Service Covers . . . 1583
Developer . . . 1586
Developer Removal . . . 1587
Developer Installation & Checks . . . 1591

Developer Drain Lever Sensor (S111) . . . 1592
Developer Front Seal Assembly . . . 1593
Developer Rear Seal Removal . . . 1594
Developer Run Switch (S109) . . . 1595
Developer Seal Plate . . . 1596
Bias Contacts . . . 1597
Conveyor Roll and Lift Plate . . . 1599
Conveyor Roll Rotation Sensor (S110) . . . 1603
Idler Pulley A . . . 1605
Idler Pulley B . . . 1606
Mag Brush Belt . . . 1608
Mag Brush Motor (M101) . . . 1610
Mag Brush Rolls Removal . . . 1612
Mixing Paddle Belt . . . 1625
Scavenger Roll . . . 1626
Scavenger Roll Belt . . . 1629
Scavenger Roll Idler Pulley . . . 1630
Toner Control Adjustment . . . 1631
Toner Control Sensor (S107) . . . 1634
Toner Empty Sensor (S108) . . . 1635
Toner Feed Belt . . . 1637
Toner Feed Motor (M102) . . . 1639
Toner Feed Roller . . . 1641
Drum Drive and Photoconductor (PC) . . . 1644
Drum Motor (M107), Drive Belt, and Drum Rotation Sensor (S105) . . . 1645
PC Drum Removal . . . 1649
PC Drum Cleaning . . . 1654
PC Drum Cover Interlock Switch (S118) . . . 1656
Drum Ground . . . 1657
PC Drum & Developer Clearances/Gaps . . . 1658
Erase Lamp . . . 1661

Erase Lamp (PL101) . . . 1662
Erase Lamp Sensor (S115) . . . 1664
Erase Lamp Starter (ST101) . . . 1666
Fuser . . . 1667
Before You Begin . . . 1669
Backup Roll . . . 1670
Backup Roll Discharge Brush . . . 1672
Backup Roll Encoder (S712) . . . 1673
Backup Roll Lift Motor (M610) . . . 1675
Backup Roll Lift Motor Drive Belt . . . 1677
Backup Roll Lift Position Sensor (S624) . . . 1683
Backup Roll Motor (M701) . . . 1684
Fuser Control Card (DV071) . . . 1685
Fuser Exhaust Fans (B701 & B702) . . . 1687
Fuser Wrap Sensor (S617) . . . 1688
Hot Roll Drive Assembly Removal & Lubrication . . . 1690
Hot Roll and Collars . . . 1692
Hot Roll Drive Collar . . . 1695
Hot Roll Drive Motor (M703) . . . 1696
Hot Roll Front Hub . . . 1698
Hot Roll Lamps . . . 1700
Hot Roll Lamp End Cap . . . 1704
Hot Roll Lamp Receptacle Contacts . . . 1706
Hot Roll Thermistors (S621, S622, S623) . . . 1708
Hot Roll Temperature Control Sensor (S701) and Over-temperature Sensor (S705) . . . 1710
Oiler Belt End Switch (S711) . . . 1713
Oiler Belt Motor (M706) . . . 1715
Oiler Gate Interlock (S704) . . . 1717
Oil Pan . . . 1718
Oil Port Assembly . . . 1719
Oil Pumps (L701, L702, and L703) & Oil Empty Sensor (S702) . . . 1720

Paper Cooling Fans (B704 and B706) . . . 1725
Paper Cooling Fans (B705 and B707) . . . 1726
Preheat Platen . . . 1727
Preheat Platen Lift Plate Assembly . . . 1728
Scuff Pressure Rollers . . . 1730
Scuff Roll . . . 1734
Scuff Roll Drive Belt and Motor (M704) . . . 1736
Scuff Roll Release Cable . . . 1737
Skew Sensor (S707) . . . 1739
Solid State Relays (SR601, SR602 & SR603) . . . 1745
Steering Motor (M705) . . . 1747
Tension Arm Encoder Sensors (S708, S709 & S710) . . . 1750
Printer Power Supplies and Control Cards . . . 1752
Power Control Panel Switch Settings . . . 1753
Power On Procedure . . . 1754
Power Off Procedure . . . 1755
Power Supply Access . . . 1756
AC Power Supply . . . 1757
DC Power Supply . . . 1758
Printer DC Voltage Measurements and Adjustments . . . 1759
CP261/CP471 Card Replacement . . . 1760
CP261/CP471 EPROM Module Replacement . . . 1762
CP261/CP471 Memory Module - MB071 Replacement . . . 1763
Control Cards . . . 1764
Printhead . . . 1765
Safety . . . 1767
Printhead Components . . . 1771
Printhead Do’s and Don’ts . . . 1774
Printhead Access . . . 1775
Printhead Cleaning Procedure . . . 1777
Printhead Cover Switch (S502) . . . 1779

Laser Diode Card (LD272) & Fiber Module . . . 1781
Lens L2 . . . 1783
Lens L3 . . . 1785
Resolution Lens Motor (M502) . . . 1786
Resolution Lens Sensor (S503) . . . 1788
Cylinder Lens (CYL 1) . . . 1790
Mirror Motor (M501) . . . 1792
F-Theta Lens . . . 1795
Beam Detect Card (BD171) . . . 1796
Printhead Pressurizing Fan (B501) and Filter . . . 1798
Printhead Check and Adjustment . . . 1799
Print Sample Adjustments . . . 1816
Stacker . . . 1847
Forms Length Adjustment . . . 1848
Forms Length Screwshaft . . . 1850
Forms Length Select Card (FL031) . . . 1851
Forms Length Sensor Card (FL061) . . . 1855
Forms Length Stacker Wire . . . 1856
Forms Width Adjust . . . 1857
Front Forms Width Guide . . . 1858
Pendulum Motor (M804) and Drive Belt Assembly . . . 1859
Pendulum Position Sensor (S809) . . . 1861
Pendulum Static Brush . . . 1862
Rear Finger Belts . . . 1863
Rear Finger Belt Motor (M801) and Belt Drive . . . 1866
Stacker Blower (B703) . . . 1868
Stacker Control Panel Card (LP041) . . . 1869
Stacker Gate Finger Belts . . . 1870
Stacker Gate Finger Belt Motor (M802) and Drive Belt . . . 1872
Stacker Gate Open Switch (S806) . . . 1874
Stacker Gate Safety Switches (S801 and S802) . . . 1875

Stacker Height Sensors (Front – S804 or D802, Rear – S803 or D801) . . . 1877
Stacker Jam Sensor (D803 and S805) . . . 1879
Stacker Table Belts . . . 1880
Stacker Table Lower Limit Sensor (S808) . . . 1882
Stacker Table Motor (M803) . . . 1884
Stacker Table Upper Limit Sensor (S807) . . . 1886
Stacker Table Upper Position . . . 1888
Transfer Station . . . 1890
Chad Brushes . . . 1891
End-of-Forms Sensor (S117) and Lamp (D101) . . . 1893
Forms Width Sensor (PW111) . . . 1894
Printer Control Panel (SW761) . . . 1897
Retractor . . . 1898
Retractor Motor (M103) . . . 1903
Splicing Lever Sensor (S119) . . . 1905
Tractors . . . 1907
Tractor Belt . . . 1912
Tractor Wire . . . 1914
Tractor Jam Sensor . . . 1918
Tractor Motor (M105) and Drive Belt . . . 1919
Transfer Corona Shield . . . 1921
Transfer Station Discharge Brush . . . 1923
Transfer Station Sensor (S114) . . . 1924
Transfer Station Adjustments . . . 1926
Tractor Motor (M105) Detent Position . . . 1927
Retractor Motor Encoder Sensor (S113) . . . 1929
Retractor to PC Drum Gap . . . 1930
Path Modifier Assembly . . . 1933

Chapter 6. Parts Catalog . . . 1935
Printers Covered . . . 1937

How to Use this Parts Catalog 1938
Mechanism Locators 1939
Catalog 1945
Assembly 1: Printer Covers 1946
Assembly 2: No Assembly 02 for this Printer 1952
Assembly 3: Service Access Covers 1954
Assembly 4: Process Hardware 1958
Assembly 5: Process Hardware 1960
Assembly 6: Corona and Erase Lamp Hardware 1964
Assembly 7: Cleaner Hardware 1966
Assembly 8: Charge Corona Hardware 1972
Assembly 9: Photoconductor Drum Hardware 1974
Assembly 10: No Assembly 10 for this Printer 1978
Assembly 11: Input Hardware 1980
Assembly 12: Input Hardware 1984
Assembly 13: Developer Hardware 1990
Assembly 14: Developer Hardware 1998
Assembly 15: Developer Hardware 2000
Assembly 16: Developer Hardware 2006
Assembly 17: Printhead 2012
Assembly 18: No Assembly 18 for this Printer 2020
Assembly 19: No Assembly 19 for this Printer 2022
Assembly 20: No Assembly 20 for this Printer 2024
Assembly 21: Transfer Station 2026
Assembly 22: Transfer Station 2032
Assembly 23: Air System 2040
Assembly 24: Fuser Hardware 2046
Assembly 25: Preheat Platen, Back-up Roll Hardware 2052
Assembly 26: Oiler Hardware 2058
Assembly 27: Fuser Hardware - Hot Roll 2062
Assembly 28: Fuser Hardware - Tension Arm 2066

Assembly 29: Fuser Hardware - Scuff Roll 2070
Assembly 30: Fuser Hardware - Oil Pump & Fans 2072
Assembly 31: Fuser Hardware - Motors, Sensors & Fans 2074
Assembly 32: No Assembly 32 for this Printer 2082
Assembly 33: No Assembly 33 for this Printer 2084
Assembly 34: Stacker - Covers & Blower 2086
Assembly 35: Stacker - Sensors & Finger Belts 2090
Assembly 36: Stacker Table 2104
Assembly 37: Pendulum 2110
Assembly 38: Logic Cards 2114
Assembly 39: No Assembly 39 for this Printer 2120
Assembly 40: AC/DC Power Supply 400V 2122
Assembly 41: AC/DC Power Supply 200V 2124
Assembly 42: Control Unit Covers 2126
Assembly 43: Control Unit Covers and Display/Touch Screen 2128
Assembly 44: Control Unit Cards 2130
Assembly 45: Control Unit AC, DC Power Supply and Fans 2138
Assembly 46: Control Unit Power Control Asm, Attention Lamp 2140
Assembly 47: Control Unit, Controller, Type 7025 Model F50 2144
Assembly 48: Control Unit, Controller, Type 7043 Model 43P-140 2150
Assembly 49: Control Unit Cables 2156
Assembly 50: Buffer/Flipper (Duplex Printer) 2178
Assembly 51: Flipper for Urge Unit (H-Configuration) 2180
Assembly 52: Urge Units (Duplex Printer) 2182
Assembly 53: Kits and Their Quantities 2188
Assembly 54: Installation Kits 2209

Chapter 7. Preventive Maintenance 2211
Types of Preventive Maintenance 2212
  Operator Maintenance 2213
  Service Maintenance 2214

Service Tasks – PM Procedures 2220
Specially Tracked Parts 2232

Installation Procedures 2244
Introduction 2247
How to Use the Installation Procedures Sections 2248
Installation Responsibilities 2249
Space Requirements 2253
Temperature and Humidity Requirements 2258
Power Requirements 2259
Branch Circuit CB Turned Off Check 2261
Branch Circuit CB Turned On Check 2262
Verify the Shipment 2263
Installing a Simplex Printer or Duplex System Printer 2 2263
Check the Printer and Control Unit for Damage 2263
Remove the Packing Tape 2265
Remove the Input Bin 2267
Connect the AC Power Cord 2268
Level the Printer 2272
Check the DIP Switch Settings 2277
Check the Voltage Jumpers 2278
Install the Foam Light Shield in the Simplex Printer or the Duplex System Printer 2 2279
Install the Controller in the Control Unit 2281
Install the Display/Touch Screen on the Control Unit 2288
Install the Operator Alert Assembly on the Control Unit 2290
Change the Fuser Oil Filter Screen 2292
Attach the Control Unit Cables to the Printer 2293
Power On the Printer In Diagnostic Mode 2297
Check the Drum Gaps and Install the PC Drum 2301
Check the Toner Control Program 2307
Check the Printhead Alignment 2307

Installation of Side 1/Side 2 Verification . . . 2308
Attach the Control Unit Frame to the Printer . . . 2322
Continue the Installation Procedures . . . 2325
Installing a Duplex System Printer 1 . . . 2326
Installing Additional Duplex System Hardware . . . 2328
Install the Foam Light Shield in the Duplex System Printer 1 . . . 2329
Install the Buffer/Flipper Unit . . . 2331
Install the Urge Unit (Hinged-Top, Pearl White Unit Only) . . . 2337
Install the Urge Unit (Fixed-Top Black Unit Only) . . . 2340
Install the Remote Power Cable . . . 2341
Install the MIC SSA Cable . . . 2342
Configure and Test Printer/System Operations . . . 2343
Set the Power Switches and Power On the System . . . 2344
Install the Microcode . . . 2346
Special Features Passwords . . . 2346
Configuring the System . . . 2346
Verify Printer Operation . . . 2354
Print Sample Adjustments . . . 2357
Save the Configuration Settings . . . 2357
Test the Operator Alert Assembly . . . 2358
Install the Host Attachment Cables . . . 2359
Make the Printer System Ready for Use . . . 2365
Install Features . . . 2365
Complete the Installation . . . 2366
Install Labels . . . 2366
Discontinue Use . . . 2371
Relocate the Printer . . . 2376
Reinstall the Printer . . . 2377

Tools . . . 2378
Infoprint 3000 Tools . . . 2379

Branch Office Tools 2381
Features Tools 2381
Items from the CE Catalog 2382
Tool Usage Descriptions 2383

Search Index 2399

Part Number Index 2480

General Safety Guidelines

Attention: Do not connect an Infoprint 3000 printer to any 380-415 volt 50 Hz IT power distribution system (impedance grounded neutral system). Verify the power system by using the “Grounded Neutral Verification” on page 2262.

Use these safety inspection guidelines to help identify unsafe areas in an Infoprint 3000 printer. As the printer was being manufactured, many necessary safety items were installed to protect the owners, operators, and service personnel from injury. Only these items are included in the “Safety Checks” section of this inspection.

When A Safety Inspection Is Required

A Safety Inspection of the printer is required under the following circumstances:

- The printer has not been serviced under the IBM Maintenance Agreement and is being considered for an IBM Maintenance Agreement.
- The printer has been serviced by non-IBM service personnel and IBM service is now required.

If you find a discrepancy while you perform this inspection procedure, you must correct the discrepancy before any other service can be performed by the IBM service representative.

All repairs made as a result of this inspection procedure are billable to the customer.

© Copyright IBM Corp. 1999, 2000

Other Safety Hazards

When you perform the Safety Inspection, use good judgment to identify other safety hazards. Specifically remember the following conditions and the possible safety hazards of each:

- Electrical conditions, specifically primary power sources, that could cause serious injury or fatal electrical shock.
- Grounding conditions, such as frame grounds that are not installed correctly, that can cause an electrically-charged machine frame.
- Wiring conditions, such as damaged or frayed insulation on AC or DC cables.
- Explosive conditions, such as bulging capacitors, that can cause serious injury.
- Unsafe mechanical devices and hot surface conditions in the operator and service areas, such as those that are not protected by safety covers.
- Fire hazards, such as forms or consumables being stored too close to the printer

How to Perform the Safety Checks

Attention: All service representatives must complete the current level of the *Electrical Safety Student Guide (70750)* self-study course, prior to performing a safety inspection.

Preparation

Before you perform the Safety Checks:

1. Disable any enabled host attachments using the Display Touch Screen.
2. Perform the **Shutdown** procedure. See “Shutdown Procedure” on page 1072.
3. Switch the **Control Unit Local/Remote** switch on the power control panel to **Local**.
4. Press **Control Unit Power Off if in Local** switch on the power control panel.

   Note: On a duplex printing system, the above two steps refer to the control unit attached to Printer 2.
5. Switch the **Printer Local/Remote** switch on the control unit power control panel to **Local**. (For duplex printing systems, do this to both printers.)
6. **Disconnect the printer line cord.**
7. Open the control unit front cover.
8. Set the Power Switch on the front of the Controller to **Off**.

References

Refer to the following items while you perform the Safety Inspection:

- Current SMs and ECAs, with all the safety updates included
- Current machine history
- *Electrical Safety for IBM Customer Engineers, S229-8124*
- Minimum space requirements.

Safety Checks

Now, perform the Safety Checks ensuring that all of the safety requirements have been met.

Covers

1. Check all external covers for sharp edges, burrs, and damage.
2. Check all cover hinges to ensure that they are not loose or broken.
3. Verify that all service covers are in place, especially the printhead cover.

Line Cord

1. Open the right and left rear covers.
2. Remove the blower cover.
3. Check the line cord to ensure that it is correctly fastened to the frame with a cord clamp and that the insulation is not frayed.

© Copyright IBM Corp. 1999, 2000

Primary Safety Grounds

1. Open the control unit rear cover and open the printer rear doors. Remove the safety cover from the power supply.
2. Verify visually that the printer primary safety ground is connected. The safety ground for the printer is next to PSTB1.
3. Measure the resistance between the ground pin on the line cord and the printer primary safety ground. The resistance reading should be ≤ 0.1 ohm.
4. Verify visually that the control unit primary safety ground is connected. It is located below the interface connections between the control unit and the printer.
5. Measure the resistance between the ground pin on the line cord and the control unit primary safety ground. The resistance reading should be ≤ 0.1 ohm.

Fuses

1. Verify that all fuses are in place and are the correct rating. See “Wiring Diagrams - Introduction” on page 1240.

Cables

1. Check all cables visually for worn, pinched, or frayed areas. Install cable ties as necessary.

Printer Safety Grounds

- Verify visually that all grounds within the printer are correctly fastened. The ground connection on each end must have a star washer or a paint-free surface to guarantee a good ground connection. Some covers have to be removed to verify these connections.
- Visually inspect each ground wire for abrasion or cuts.
- Make all resistance measurements to the printer primary safety ground.
- Long lead lengths are required for some resistance measurements. Measure the lead resistance and subtract it from the measurements.

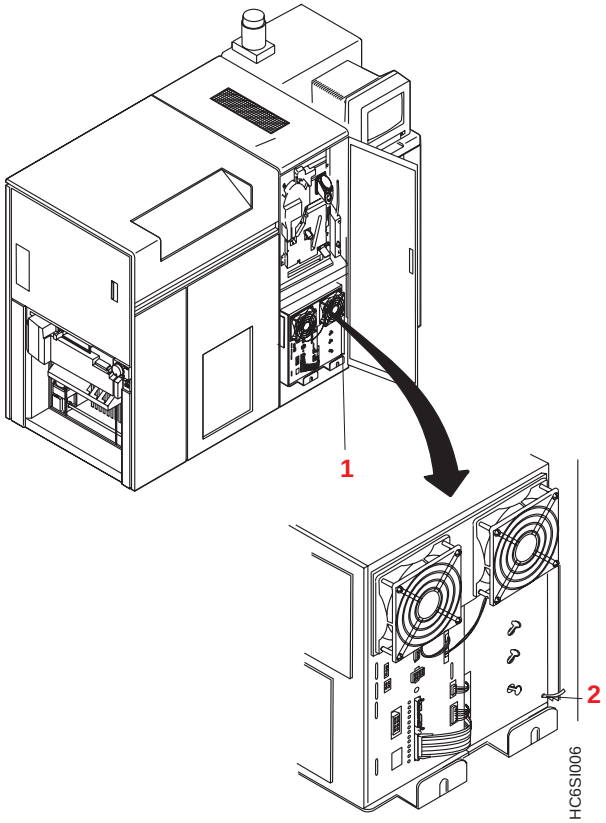
Cover Grounds

1. Verify visually that each hinged printer cover has safety grounds.
2. Reference one lead of the digital voltmeter to the printer primary safety ground point. All the cover safety grounds are referenced from this point.
3. Scratch through the paint on the inside of the following covers (in an area that will not be noticed), to check the resistance between the cover and the frame. All resistance readings should be ≤ 0.1 ohm.

- Left top cover
- Center top cover
- Left front cover
- Center front cover
- Right front cover
- Left rear cover
- Right rear cover

Table 1. Main Power Supply Grounds

Main Power Supply Grounds



All the resistance readings should be ≤ 0.1 ohm.

Power Supply Cover

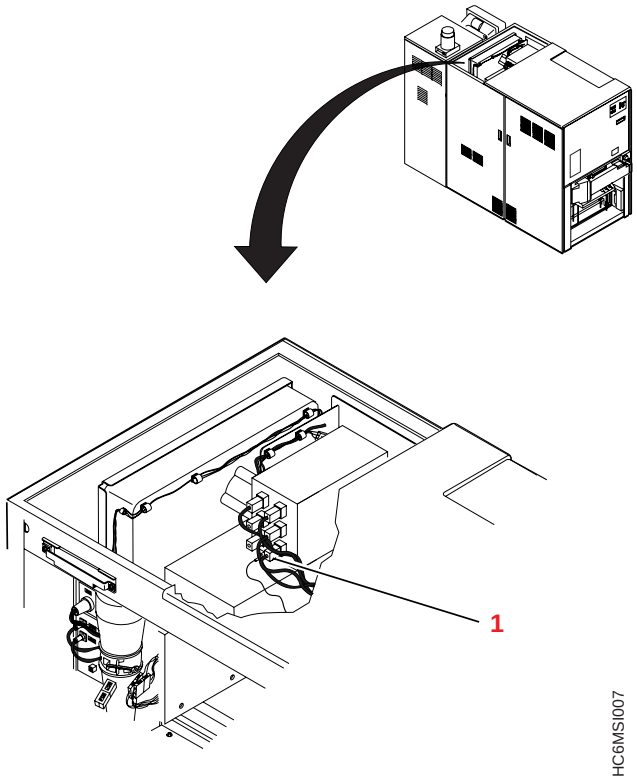
1. Remove the power supply cover.
2. At the inside bottom right corner of the cover, measure the resistance at the screw holding the green and yellow wire **(1)** and at the printer frame.

Power Supply Ground (ac)

3. At the bottom right side of the main power supply, measure the resistance at the screw holding the green and yellow wire **(2)** and at the printer frame.
4. Install the power supply cover.

Table 2. High Voltage Power Supply Grounds

High Voltage Power Supply Grounds



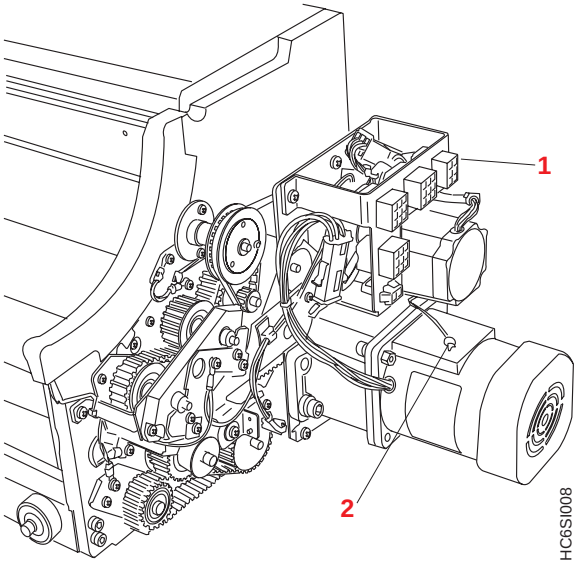
All the resistance readings should be ≤ 0.1 ohm.

High Voltage Supply

1. The ground wire and connector **(1)** are on the lower left side of the supply.
2. Disconnect the ground connector from the high voltage power supply.
3. Measure the resistance at the high voltage power supply ground terminal and at the printer frame.
4. Reconnect the ground connector.

Table 3. Developer Grounds

Developer Grounds



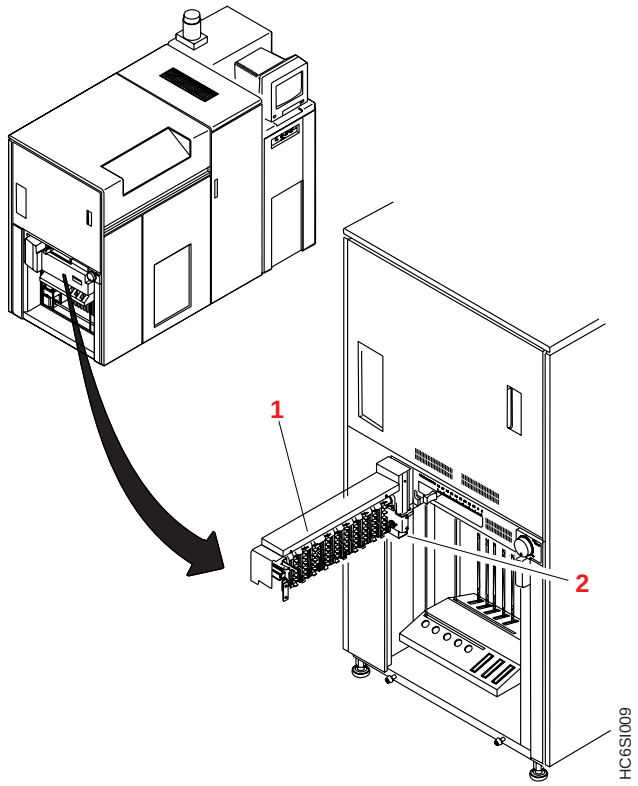
All the resistance readings should be ≤ 0.1 ohm.

Developer Grounds

1. Remove the side cover from the back of the developer unit.
2. Disconnect connector PJ117 **(1)**.
3. Measure the resistance from pin number 6 to the printer frame.
4. Reconnect connector PJ117.
5. Measure the resistance from the developer motor ground terminal **(2)**, and the printer frame.
6. Replace the developer unit side cover.

Table 4. Stacker Gate Ground

Stacker Gate Ground



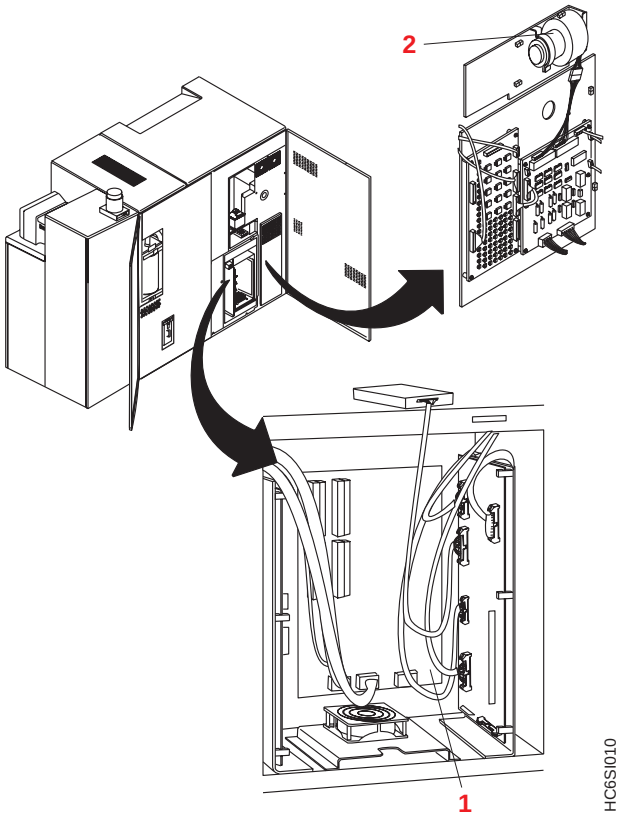
All the resistance readings should be ≤ 0.1 ohm.

Stacker Gate Ground

1. Open the stacker gate **(1)**. Check the safety ground around the hinge point **(2)**.
2. Measure the resistance at any bare metal point on the stacker gate and at the printer frame ground.
3. Close the stacker gate.

Table 5. Printer Left Side Grounds

Printer Left Side Grounds



All the resistance readings should be ≤ 0.1 ohm.

1. Remove the rear left and right covers.
2. Verify that the ground strap is connected between the fuser unit and the printer.
3. Verify that the ground strap is connected between the printing unit subframe and the printer.

Stacker Cooling Blower (B703)

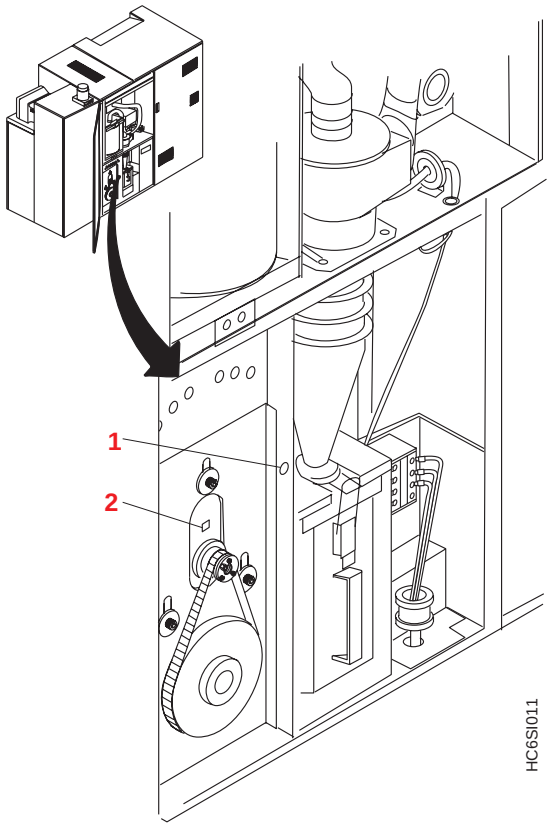
4. Verify that there is a safety ground wire between the stacker cooling blower **(2)** and the printer frame.
5. Verify that there are star washers installed at both ends of the safety ground wire.

Printer Logic Card Area

6. Remove the cover over the logic card area. Verify that the ground wires are attached to the frame ground **(1)**. Ensure that the star washers are installed.
7. Measure the resistance at the logic cards and at the ground terminals attached to the lower left corner of the cards.

Table 6. Cyclone Blower Motor Ground

Cyclone Blower Motor Ground



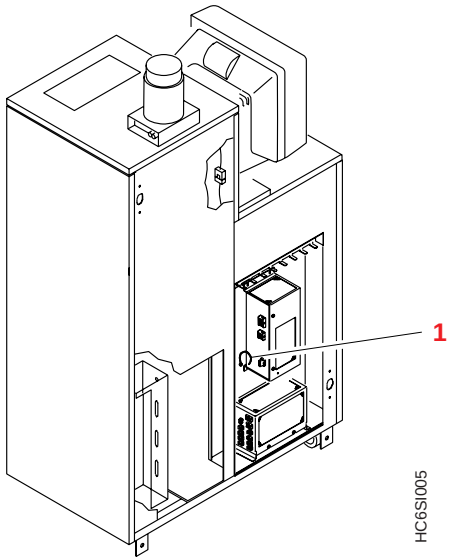
All the resistance readings should be ≤ 0.1 ohm.

Cyclone Blower Motor (M104) Ground

1. Remove the left rear cover.
2. Measure the resistance from ground wire **(1)** to the blower motor **(2)**.
3. Replace the cover.

Control Unit Safety Grounds

Table 7. Control Unit Grounds



- Verify visually that all grounds within the control unit are correctly fastened. The ground connection on each end must have a star washer or a paint-free surface to guarantee a good ground connection. Some covers have to be removed to verify these connections.
- Visually inspect each ground wire for abrasion or cuts.
- Make all resistance measurements to the control unit primary safety ground.

All the resistance readings should be ≤ 0.1 ohm.

Cover Grounds

1. Verify visually that the control unit front and rear covers have safety grounds and that each is connected to the frame, and star washers are in place.
2. Measure the resistance between the cover and the frame.

Power Supply Ground

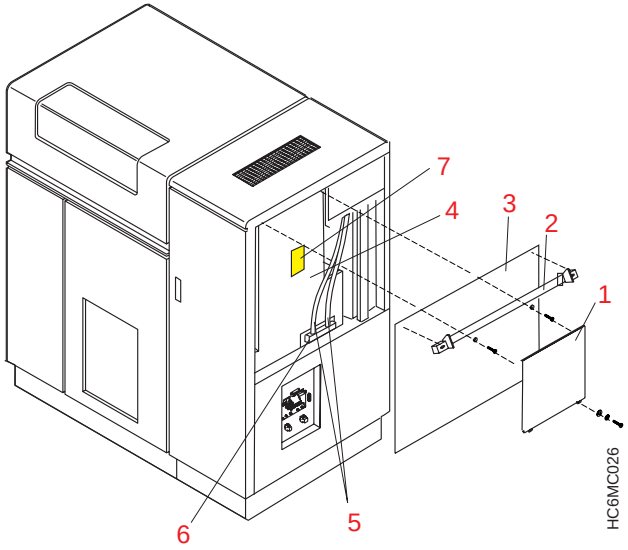
3. Disconnect the green and yellow safety wire from the power supply.
4. Measure the resistance from the wire-end and at the point of the disconnect to primary ground.
5. Reconnect the power supply safety wire, making sure that you replace the star washer.

AC Control Box Ground

6. Measure the resistance from the cover screw to primary ground.

Printhead Interlock Switch & Safety Labels

Table 8. Printhead Interlock Switch



Note: The laser power tool is required for use during this procedure.

(continued on next page)

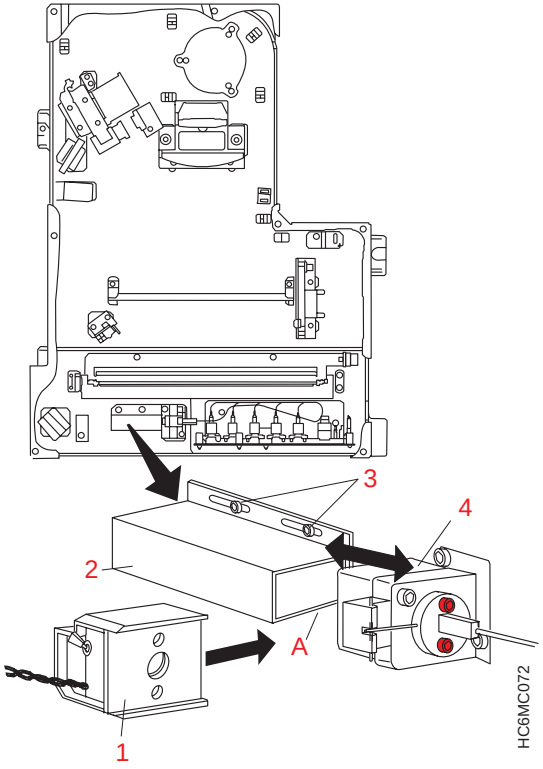
DANGER

<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.

Interlock Switch

1. At the rear of the control unit, disconnect the two ground straps that connect the control unit and the printer.
2. Without unplugging any other cables, move the control unit away from the printer to provide access to the right end of the printer.
   Note: The printer interface extension cable assembly (P/N 24L3238) may be used to allow the control unit to be moved farther away from the printer.
3. Set the diagnostic function switch to position 3.
4. Remove the printer right end cover **(1)** and its mounting bracket **(2)**.
5. Remove the service right end cover **(3)**.
6. Remove the cooling duct **(6)**.
7. Remove the seven screws in the printhead cover **(4)** and lift the cover off.

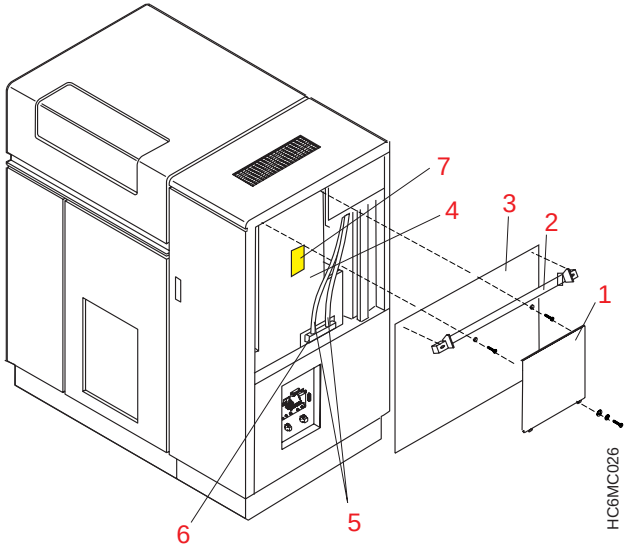
Table 8. Printhead Interlock Switch (continued)



(continued on next page)

8. Set the switch on the laser power tool **(1)** to **HIGH**.
9. Install the laser power tool after the fiber module assembly **(4)** in the printhead.
10. **Reconnect the printer line cord.**
11. Power on the printer by pressing the **Printer Power On** switch on the power control panel.
12. Run diagnostic routine C0.
13. With the printhead cover off, measure the total power of the five beams.
14. Verify that the printhead power with all beams on is less than 25 mV.
15. If the power reading is not less than 25 mV, there is a fault with either the interlock switch or the Laser Diode Card (LD272).
    - For replacement procedures for the printhead cover interlock go to “Printhead Cover Switch (S502)” on page 1779.
    - For replacement procedures for the laser diode card go to “Laser Diode Card (LD272) & Fiber Module” on page 1781.
16. If the power reading is correct, remove the power tool and reinstall the printhead cover.

Table 8. Printhead Interlock Switch (continued)

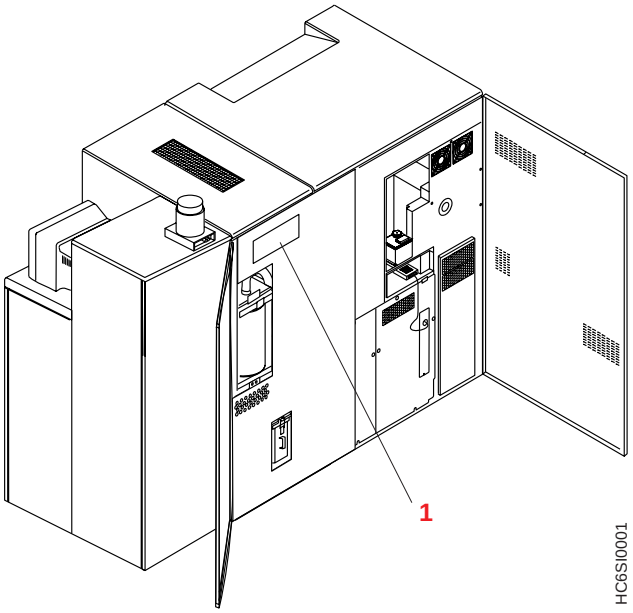


17. Verify that the safety labels are in place.
    - **(7)** Caution! Laser radiation when open. Avoid exposure to beam.
18. If the printer interface cable assembly was used during this procedure: shutdown the printer, reconnect all the interface connectors.
19. Reconnect the ground cables at the rear of the control unit.
20. Reattach the control unit to the printer.
21. Set the diagnostic function switch to position 0 and toggle the reset switch on the CPxxx Card.

Safety Labels

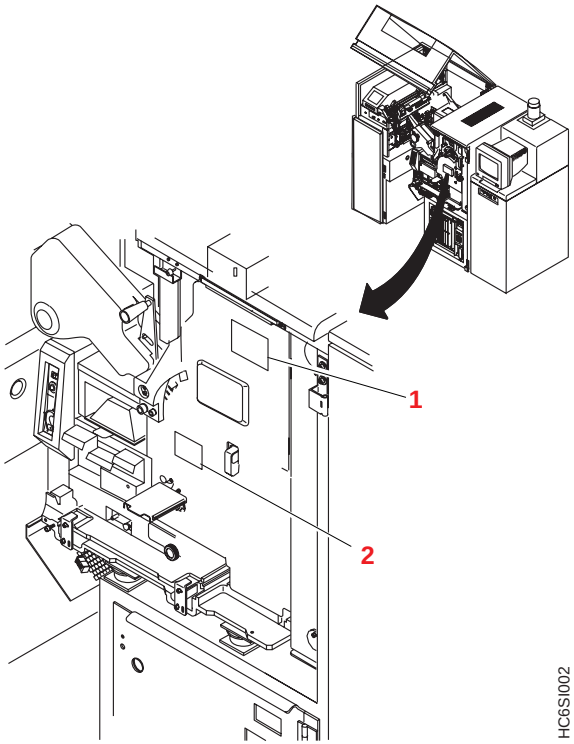
Verify that all safety labels are in place and are readable.

Table 9. Safety Labels (Rear)



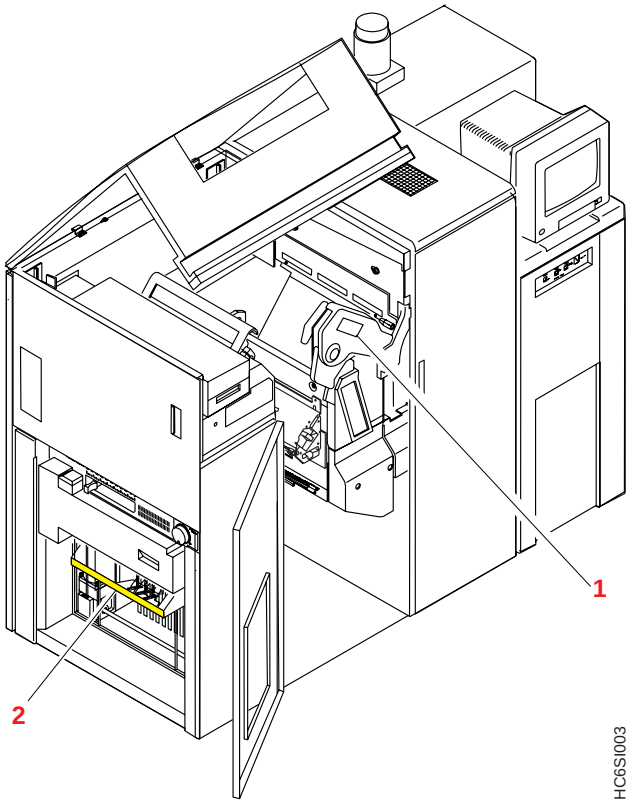
- **(1)** Caution! Laser radiation when open. Avoid exposure to beam.

Table 10. Safety Labels (Process Area)



- **(1)** Caution! Laser radiation when open. Avoid exposure to beam.
- **(2)** Hazardous Area! Trained personnel only. Follow service instructions.

Table 11. Safety Labels (Front View)



- **(1)** Hazardous Area! Fast moving paper.
- **(2)** Caution! Paper weight in the stacker can exceed 20 kg.

Hot Roll Over-Temperature Safety Interlock

Check the hot roll over-temperature safety interlock (S705) as follows: (See Fuser End View for locations.)

1. Remove the fuser front cover.
2. Verify that the fuser lamp is on.
3. Disconnect connector PJ645.
4. Verify that the fuser lamp goes off.
5. Press the **Printer Power Off if in Local** switch on the power control panel.
6. Reconnect connector PJ645.
7. Replace the fuser front cover.
8. Power on the printer by pressing the **Printer Power On** switch on the power control panel. Ensure that power comes up.
9. Press the **Printer Power Off if in Local** switch on the power control panel.
10. Set the **Printer Local/Remote** switch on the control unit power control panel to **Remote**.
11. Set the Power Switch on the front of the Controller to On.

Unit Emergency Power Off Switch

Test the **Unit Emergency Power Off** switch on the power control panel by doing the following:

1. Move the Unit Emergency switch to the **Power Off** position.
2. Press the **Control Unit Power On** switch and ensure that the printer and the control unit do not power up.
3. Move the Unit Emergency Switch to the **Power Enable** position.
4. Press the **Control Unit Power On** switch and ensure that power does come up on both the printer and the control unit.
5. Perform a **Shutdown** procedure from the Display/Touch Screen .
6. Press the **Control Unit Power Off if in Local** switch on the power control panel.

Circuit Breaker (CP1)

1. Open the control unit front cover.
2. Turn off the machine circuit breaker CP1 located on the ac control box (access is from the front of the control unit).
3. Press the **Control Unit Power On** switch and ensure that the printer and control unit do not power up.
4. Turn on circuit breaker CP1 located on the ac control box.
5. Power on the printer system (printer and control unit) by pressing the **Control Unit Power On** switch on the power control panel. Ensure that power comes up.

End of Inspection

1. If the customer is using the remote power feature, set the **Control Unit Local/Remote** switch to **Remote**.
2. Enable the host attachments.
3. Close the control unit covers.
4. Install all the covers on the printer.
5. Perform the normal end-of-call procedures. See MAP 0003: End of Call Procedure.

Chapter 1. Diagnosing Problems

MAPS 56
MAP 0001: Introduction 56
Problem Description 57
References 57
Fix Verification 58
Quick Checks 58
Possible Failing Parts or Adjustments 58
Connector Checks 59
Continuity Measurement 59
Intermittent Failures 59
MAP Did Not Fix 59
Open Circuits 59
Parts Replacement 60
Power Off 61
Power-On Reset 62
Service Condition 63
Short Circuits 63
Symptoms That Change 64
Voltage Measurement 65
Voltage Ranges 65
MAP 0002: Start of Call Procedure 66
MAP 0003: End of Call Procedure 69
Problem Still Exists 70
Problem Is Fixed 71
Returning the Printer to the Customer 73
MAP 0010: Symptom Start MAP 75
Entry 75
System Reference Codes 78

© Copyright IBM Corp. 1999, 2000

Messages That Cannot Be Cleared or Occur Too Often 90
Display, Indicator, Switch, or Pushbutton Problems 92
Forms Feeding Problems 100
Maintenance Panel Error Codes 102
Host Attachment Problems 104
Visually Detected Problems 106
Print Speed (Start/Stop) Problem 110
Print Application or Forms Problems 112
Printer Will Not Run 113
Other Failures 114
Supplies Life Too Short. 115
Image Missing or PEMs (Bars) Near Edge. 116
Power Problem. 117
MAP 0070: Printer Logic Cards 119
Logic Card Replacement. 119
Logic Unit Errors 121
MAP 0104: Retractor Is Retracted During Print 126
MAP 0113: Tractor Motor Encoder Phase Error 129
MAP 0114: Tractor Motor Over Current 135
MAP 0115: Retractor Position Error 138
MAP 0116: Retractor Motor Over Current 142
MAP 0117: Forms Width Sensor. 145
MAP 0118: Forms Width Sensor Fuse. 148
MAP 0119: Upper Tractor Forms Jam 151
MAP 011E: Tractor Motor Initial Position Error. 168
MAP 0121: Drum Rotation Error 172
MAP 0122: Drum Motor Over Current 177
MAP 0131: Tension Arm Down. 179
MAP 0132: Tension Arm Up 187
MAP 0133: Skew Error. 194
MAP 0134: Fuser Wrap 208

MAP 0135: Backup Roll Motor Thermal 222
MAP 0136: Backup Roll Position Error 227
MAP 0137: Steering Motor Driver 233
MAP 013A: Backup Roll Drive Signal On 236
MAP 013B: Backup Roll Open Error 242
MAP 0141: Felt Oiler Belt Driver Error 247
MAP 0142: Oil Pump Driver Error 250
MAP 0143: Felt Oiler Belt Motor Always Driven 253
MAP 0144: Felt Oiler Belt Motor Never Driven 256
MAP 0145: Oil Pump Always Driven 259
MAP 0146: Oil Pump Never Driven 262
MAP 0152: Scuff Roll Motor Thermal 265
MAP 0156: Backup Roll Lift Motor (M610) Position Error 268
MAP 0157: Backup Roll Lift Motor (M610) Over Current 273
MAP 0161: Stacker Jams (Light Never Sensed) 277
MAP 0162: Pendulum Motor Over Current 292
MAP 0163: Pendulum Initial Position Error 294
MAP 0164: Stacker Jams (Light Always Sensed) 299
MAP 0171: Stacker Table Motor Thermal 308
MAP 0172: Stacker Table Timeout 312
MAP 0174: Stacker Safety Switch On 323
MAP 0175: Stacker Table Motor Runs Too Long 329
MAP 0176: Stacker Forms Length Sensor 339
MAP 0177: Stacker Length Sensor Timeout 343
MAP 017A: Rear Finger Belt Motor Over Current 348
MAP 017B: Gate Finger Belt Motor Over Current 351
MAP 0211: Charge Corona Voltage Error 354
MAP 0212: Transfer Corona Voltage Error 361
MAP 0213: Preclean Corona Voltage Error 367
MAP 0221: Mirror Motor Operating Error 371
MAP 0222: Video Data Active 377

MAP 0223: Mirror Motor Drive Error 382
MAP 0224: Mirror Motor Start-Up Error 391
MAP 0225: Resolution Lens Initial Position Error 399
MAP 0226: Resolution Lens Motor Over Current 404
MAP 022A: PC Drum Cover Is Open 408
MAP 0231: Mag Brush Bias Error 412
MAP 0232: Conveyor Roll Rotation Error 417
MAP 0233: Mag Roll Motor Thermal 425
MAP 0234: Toner Overfeed Error 429
MAP 0235: Toner Underfeed Error 436
MAP 0236 Toner Feed Motor Over Current 447
MAP 0241: Primary Erase Lamp Never On 450
MAP 0243: Primary Erase Lamp Always On 455
MAP 0251: Cleaner Brush Rotation Error 460
MAP 0252: Cleaner Brush Motor Thermal 465
MAP 0253: Cleaner Housing Never Homes 471
MAP 0254: Cleaner Housing Motor Driver 475
MAP 0256: Cleaner Housing Always at Home 476
MAP 0264: Cyclone Blower Motor Thermal 480
MAP 0266: Cyclone Blower Rotation Error. 483
MAP 0281: Preheat Over Temperature 488
MAP 0282: Preheat A/B Under Temperature 494
MAP 0284: Preheat C Under Temperature 498
MAP 0286: Preheat Element ’A’ Lost Temperature 502
MAP 0287: Preheat Element ’B’ Lost Temperature 505
MAP 0288: Preheat Element ’C’ Lost Temperature 508
MAP 028A: Thermistor 1 Over Temperature 511
MAP 028B: Thermistor 2 Over Temperature 514
MAP 028C: Thermistor 3 Over Temperature 518
MAP 028D: Thermistor 1 Under Temperature 522
MAP 028E: Thermistor 2 Under Temperature 527

MAP 028F: Thermistor 3 Under Temperature 531
MAP 0291: Hot Roll Over Temperature 535
MAP 0294: Hot Roll Over Current 539
MAP 0295: Hot Roll Does Not Reach Operating Temperature 542
MAP 0296: Hot Roll Lamp 1 Relay Error 546
MAP 0297: Hot Roll Lamp 1 Filament Open 549
MAP 0298: Hot Roll Lamp 2 Relay Error 554
MAP 0299: Hot Roll Lamp 2 Filament Open 558
MAP 029C: Hot Roll Lamp 3 Filament Open 562
MAP 029D: Hot Roll Lamp 3 Relay Error 566
MAP 029E: Hot Roll Lamp 4 Filament Open 570
MAP 029F: Hot Roll Lamp 4 Relay Error 574
MAP 0321: Operator Alert Light Problem 578
MAP 0322: Operator Alert Alarm Problem 584
MAP 0323: Operator Alert Accessory Contacts Problem 591
MAP 0330: Display/Touch Screen Start MAP 596
MAP 0500: Power Control – Simplex Printing System 602
MAP 0501: Power Control – Duplex Printing System 616
MAP 0511: Printer Power Error 634
MAP 0521: Form Length Fuse 667
MAP 0522: Laser Driver Fuse 670
MAP 0523: PR Sensor Fuse 675
MAP 0524: Fuser Sensor Fuse 679
MAP 0525: ST Sensor Fuse 682
MAP 0600: Printer Interface MAP 686
MAP 0782: Splicing Lever Sensor 693
MAP 0783: Transfer Station Open 698
MAP 0785: Toner Collector Full 702
MAP 0786: Add Toner 706
MAP 0787: Toner Collector Not Set 709
MAP 0788: Change Developer Mix 713

MAP 0789: Developer Drain Open 717
MAP 078A: End Of Forms Sensor 721
MAP 078B: Developer Running 726
MAP 0791: Change Fine Filter 730
MAP 0792: Fuser Oil Empty 737
MAP 0793: End Of Oiler Belt Reached 741
MAP 0794: Fuser Oiler Gate Open 746
MAP 0795: Set Forms Direction 751
MAP 0796: Stacker Full 756
MAP 0797: Stacker Gate Open 764
MAP 0798: Stacker Table Down 768
MAP 0799: Fine Filter Not Installed 776
MAP 079C: Toner Supply Low 780
MAP 0800: Pre/Postprocessing Interface Start MAP 783
MAP 0810: Coupled Pre/Processing Interfaces 786
MAP 0820: Intelligent Pre/Processing Interfaces 797
MAP 1000: Print Quality Start MAP 807
How to Use 807
Guided Maintenance (MAPs) 807
Print Quality Checklist 807
Recommendations 807
Print Quality Checklist 820
MAP 1001: Repeating Spots or Marks 824
MAP 1002: Random Spots or Marks 832
MAP 1003: Light Streaks 846
MAP 1004: Dark Streaks or Black Lines 855
MAP 1005: Background or Dirty Prints 864
MAP 1006: Black Prints 880
MAP 1007: Blank Prints 882
MAP 1008: Residual Images 886
MAP 1009: Fuser Offset or Forms Sticking Together 896

MAP 100A: Voids, Missing Print, or Poor Contrast 915
MAP 1010: Poor Fusing 923
MAP 1011: Registration or Skew 930
MAP 1012: Altered Characters or Images 935
MAP 1013: Characters Too Dark or Stroke Width Too Wide 942
MAP 1014: Background Shadows (Bleeding) 949
MAP 1015: Banding 952
MAP 1018: Light Print 956
MAP 1020: Poor Solid Area Fill or Images 968
MAP 1021: Bar Code Problems 976
MAP 1022: Label Problems 982
MAP 2000: Controller Start MAP 986
MAP A000: Host Attachment Detected Errors 994
MAP B000: Printer Detected Errors 1010
MAP C000: AFCCU Detected Errors 1014
MAP D000: Mechanism Interface Card (MIC) Detected Errors 1017
MAP D706: Beam Detect Missing 1032
MAP D70B: Printhead Under Run 1047

MAPS

MAP 0001: Introduction

Use this MAP for help in using all of the other MAPs. Find the item for which you need more information and go to the directed page.

For information on:	Go to page:
Connector Checks	59
Continuity Measurement	59
Fix Verification	58

For information on:	Go to page:
Intermittent Failures	59
MAP Did Not Fix	59
Open Circuits	59
Parts Replacement	60
Possible Failing Parts	58
Power Off	61
Power-On Reset	62
Problem Description	57
Quick Checks	58
References	57
Service Condition	63
Short Circuits	63
Symptoms That Change	64
System Reference Code Definitions	78
Voltage Measurement	65
Voltage Ranges	65

Problem Description

This field in the MAPs describes the system reference codes and what the MAP will fix.

References

This field in the MAPs directs you to other sections in the maintenance library that will be helpful as you answer the MAP questions.

Fix Verification

This field in the MAPs provides a quick check for problems fixed only in that MAP. There may be other problems. Use MAP 0003: End of Call Procedure for a complete verification procedure.

Quick Checks

This field in the fix MAPs lists common causes of problems that can be checked without tools, often by the operator. Many of these items are in the *Operator's Guide*. If possible, discuss these with the customer on the telephone before you make a service call.

It is important that you perform these checks before entering the MAP questions. The MAP assumes that the QUICK CHECKS have been performed, so the questions will not be asked again.

Possible Failing Parts or Adjustments

This field in the MAPs is a list of parts or adjustments that may be causing the problem that is to be fixed by the MAP. See Parts Replacement for the procedure to replace these parts.

Connector Checks

When a MAP step asks you to check a connector, the following steps are recommended:

1. Turn off the power and unplug the power cord if necessary.
2. Check the connector for correct fit between the pin and socket housings.
3. To measure continuity through a connector, place a meter probe on both sides of the connector.
4. If the failure remains, check both the pin and the socket housings for:
   a. Contamination such as corrosion or other foreign materials
   b. Bent or damaged pins
   c. Pushed pins

Continuity Measurement

A circuit with good continuity will measure zero ohms or the indicated resistance.

Intermittent Failures

An intermittent failure is one that cannot always be recreated. The MAP questions cannot be used unless the failure is present, so you must install new parts to make a repair.

Perform the following steps. When you have completed a step, go on to the next one.

1. Try to cause the failure with the steps in MAP 0002: Start of Call Procedure. If a failure occurs, go to MAP 0010: Symptom Start MAP.
2. If no failure occurs, read the summary log from the last setting of the book mark. Look for occurrences of the reported problem that caused the service call. Go to MAP 0010: Symptom Start MAP, find the correct fix MAP, and fix the problem with the steps listed below:
   a. Perform any QUICK CHECKS in the MAP.
   b. See the list of POSSIBLE FAILING PARTS in the MAP.
   c. See Parts Replacement for the procedure to replace parts from a list.

MAP Did Not Fix

If the MAP did not fix the problem, the symptom may have changed. See Symptoms That Change.

Open Circuits

An open circuit measures infinity.

When the MAPs indicate that the machine may have an open circuit, they may refer you to the wiring diagrams or circuit diagrams. Perform the following steps:

1. Turn off the power and unplug the power cord if directed to do so.
2. Locate the circuit in the wiring diagrams or circuit diagrams.
3. Perform connector checks at the end points given in the MAP. See Connector Checks. If you do not find a problem, disconnect the connectors at the end points and check for continuity through the cable.
4. If you find an open circuit, choose a connector in the middle of the circuit, and check for continuity through the two cable halves. Continue to divide the circuit until you find the open circuit.
5. Repair the open circuit or install new parts as needed.
6. Be aware that back circuits may affect the meter readings. Disconnect any circuits that may affect the readings.

Parts Replacement

When the MAPs provide a list of parts to check or replace, the parts are listed in order of probable failure. Start at the top of the list and check or replace the parts one at a time. Run a verification test after each replacement to determine if the problem is fixed. If the problem is not fixed, remove the new part and reinstall the original part. Then continue through the list, one part at a time, until the problem is corrected.

Power Off

For safety reasons, be aware that pressing Power Off leaves certain voltages present in the machine, usually on the input side of the primary relays and the power control switches. If the MAPs do not specify otherwise, it is safe to work on the machine after pressing Power Off.

When the MAPs say to power off the printer, use the Power Off If In Local pushbutton for the failing printer. If the printer does not power off, ensure that the Local/Remote switch is in the local position.

When the MAPs say to power off the AFCCU, be sure to perform a shutdown procedure first. Powering off the AFCCU without doing a shutdown procedure first can permanently damage the data on the disk drive. If the shutdown procedure is not possible, for example, when there is a microcode abort, press the Reset pushbutton on the front of the RISC Controller and then immediately press the Power Off switch for the control unit. Do not power off the RISC Controller when numbers are being displayed on its LED display, except during the first ten seconds after you press its reset pushbutton.

The safest condition is to disconnect the line cord or remove power from the outlet with a circuit breaker. You may also switch off the primary circuit breakers in both the control unit and the printer, or the Emergency Power-Off Switch, except when you are working on a power control problem. Be alert and use the documentation when you work on the power distribution.

Be aware of the following items. Do not use this list as a procedure. See MAP 0002: Start of Call Procedure for the complete power-off procedures for both the normal and the failure conditions.

- Always ask the customer's permission before you power off the printer.
- Always try to disable the channels so that the error log and trace data will be saved.
- The printer portion only may be powered down after the channels have been disabled.
- To power off the AFCCU control unit, perform the shutdown procedure.
- During normal operation, power off the control unit only when the message `SHUTDOWN IS COMPLETE` is displayed.
- It is possible to use the Power Off If In Local pushbutton only when the LOCAL/REMOTE Switch is in the LOCAL position.

Power-On Reset

Power-on reset (POR) is a procedure used to reset the machine to a known condition.

The following steps are required for a Power-on Reset (POR):

1. Perform the **Shutdown** procedure on the Display/Touch Screen .
2. Wait for a `Shutdown Complete` message on the Display/Touch Screen .
3. Power off the entire Infoprint 3000 Printing System.
4. Power on the Infoprint 3000 Printing System.

It is important to power off the Infoprint 3000 before you press Power-On, for the following reasons:

- The printer does not run its initialization tests unless it has been powered off.
- The control unit memory remains loaded unless it has been powered off; this causes unreliable results when the initialization tests are run.

Service Condition

The service condition is a condition of the machine such that you can use the MAPs and safely perform maintenance operations.

Do not use this list as a procedure. See MAP 0002: Start of Call Procedure for the complete procedures for placing the machine in the service condition.

- To prevent the machine from suddenly printing, disable the host attachments.
- To prevent the host from suddenly powering on the machine, always place the control unit LOCAL/REMOTE switch in the LOCAL position.
- To diagnose a problem using the MAP questions, ensure that the failure is present in the disabled state. For example:
  - You run a print quality sample and find a defect.
  - An SRC is displayed during a diagnostic test.

Short Circuits

When the MAPs indicate that a machine may have a short circuit, they refer you to the wiring diagrams or the circuit diagrams. Perform the following steps:

1. Turn off the power and unplug the power cord if you are directed to do so.
2. Locate the circuit in the wiring diagrams or circuit diagrams.
3. If the circuit has several connectors, select a connector near the middle of the circuit. Disconnect the connector and measure to a ground point on both sides of the connector to find the side with the short circuit (zero ohms).
4. Continue this procedure until you isolate the short circuit.
5. Repair or install new parts as needed. Examine the wiring for loose connections or damaged insulation. On circuit boards, check for burned or discolored lands or components. The burned part may not be where the short has occurred. Thoroughly check the entire circuit before you power-on the printer so that the new parts will not be damaged.

Symptoms That Change

Perform exactly the same steps each time when you are recreating the problem. Work in the service condition if possible, and power off each time before you press Power On. Make a note of what you did and the results at each step.

If you have just installed parts, be aware of possible problems with:

- A defective part. Use precautions to avoid static discharge when you handle circuit boards.
- Incorrect installation. Ensure that parts are mounted correctly, all connectors are firmly connected, and all adjustments have been performed. Several of the printer logic cards have adjustments and/or jumpers. Connectors are usually keyed, but two identical connectors could be crossed, or else a polarizing key could be missing. Connectors usually have identifying marks on the housings and the sockets. Check the wiring diagrams for the correct connections.
- EC levels. The recently-installed part may require that other parts or a microcode diskette be changed.
- Short circuits. If a short circuit is present, it may have damaged the new part you just installed. See Short Circuits.

If the symptoms change and you have not replaced parts, be aware of possible problems with:

- Arcing. Check the coronas and high-potential areas in the developer.
- Over-temperature condition. Check the fans, particularly near the logic cards.
- Voltage regulation. Check voltages to the logic cards.

Voltage Measurement

Measure all voltages indicated as **V dc** to green-wire ground with all connectors connected, unless the MAP instructs you differently.

When a **line voltage** measurement is required, the voltage on U.S. machines should be between 180 V ac and 220 V ac three-phase. World Trade voltages differ by country.

Voltage Ranges

In general, the MAPs are asking if there is or if there is not a voltage. The voltage is mentioned only so that you can set your meter correctly. Use the following guidelines when the MAPs ask for a single voltage number, not a range:

- Over-voltage. Be aware that you may be on the wrong test point. Do not answer No to a question because the voltage you measured was too high. If the MAPs fail, try them again, and answer Yes to the question. Over-voltages are significant only in the areas of PC drum charging, logic cards, and where the voltage can be adjusted. Look at the **Yes** and **No** columns to see where the MAP is leading.
- Under-voltage. Be aware that you may be on the wrong test point. Under-voltage is usually critical only in measuring the output of a transistor-type sensor receiver. For example, the receiver of a phototransistor or a Hall effect sensor.
- 0 V dc. In general, answer Yes to any voltage that is 0 ±1 V dc. The MAPs are checking for an open circuit, a low logic level, or a failed driver.

Voltage readings will be approximate because of the power supply and component tolerances. Some of the voltages may vary as much as 15%.

MAP 0002: Start of Call Procedure

Perform the following steps when you make a service call.

MAP 0002 BEGINS

Table 12. Start of Call Procedure

Step	What to do:	How to do it:
Step 1.	• Inform the customer that you want to perform maintenance on the printer.	Discuss the following: • Ask for the symptoms of any problems the machine may be having. • Ask that the printer be varied off-line. • You will need to power the machine off and on several times. Ask the customer to make the necessary arrangements. • Ask to be informed when the printer has been successfully varied off-line, and when you may begin maintenance.

Table 12. Start of Call Procedure (continued)

Step	What to do:	How to do it:
Step 2.	• Place the printer in the service condition. The printer will be in the service condition after you have completed all of the items in the next column.	• If the machine is in a failure condition, note what is on the Display/Touch Screen and Maintenance Panel. • Do not proceed until all printing has stopped. Ensure that the machine has been varied off-line. The customer must inform you when this has happened, because there is no change in the Display/Touch Screen or indicators. Be aware that the machine may have more than one host attachment and that all of them must be varied off-line. • Press the STOP button on the **Printer Status** window or on the Display/Touch Screen . • Disable the host attachment by selecting the **Enable/Disable Attachments** procedure from the **Options** pull-down menu. Wait for the status change to appear on the Display/Touch Screen . • Select the **Shutdown/Restart** procedure from the **Operate** pull-down menu on the Display/Touch Screen . • Select the **Shutdown** push button on the **Shutdown/Restart** window. Wait for a `Shutdown Complete` message to appear on the Display/Touch Screen . • Set the Local/Remote Switch for the Control Unit Power in the Local position; make note of the original position. • Press the Control Unit **Power Off If In Local** push-button. • Press the Control Unit **Power On** push-button. • Wait for a failure condition to occur.
Step 3.	Determine if there was a failure during the power-on sequence.	If a **Printer Status** window is not displayed on the Display/Touch Screen , a failure has been detected. Go to MAP 0330: Display/Touch Screen Start MAP. See RS/6000 Controller Diagnositcs for the normal sequence of messages that appear on the RISC Controller display.

Table 12. Start of Call Procedure (continued)

Step	What to do:	How to do it:
Step 4.	If there was no power-on sequence failure, use diagnostics to create the failure again.	If a **Printer Status** window is displayed on the Display/Touch Screen , no power-on sequence failure has been detected. However, a Printer Error may have occurred. If a **Printer Error** window is displayed on the Display/Touch Screen , go to Step 5. It is possible that a failure will occur while you run the following tests: • Load forms. The MAPs assume that you do this first. • Run **Print Samples** or **Print Pack** (1070) to obtain some print samples. • Run **Print Logs** (1070) to print an error log. • Loop any test or perform any customer operation that is needed to recreate the failure.
Step 5.	Use the MAPs.	• Use any problem that occurred in Step 2 to enter MAP 0010: Symptom Start MAP. When you have finished, or if you are unable to repair the problem, go to MAP 0003: End of Call Procedure. • If no problem occurred, see Intermittent Failures. When you have finished, or if you are unable to repair the problem, go to MAP 0003: End of Call Procedure.

MAP 0003: End of Call Procedure

You are here because you used the MAPs to correct a problem.

Table 13. MAP 0003

Step	Questions/Actions	Yes	No
Step 1.	**Were you able to recreate the problem?**	Go to Step 3.	Go to Step 2.
Step 2.	You may choose to attempt to fix the problem or to do nothing and make a return call if the problem occurs again. If you are not sure, answer **Yes** to the next question. **Do you want to try to fix the intermittent problem?**	Go to Intermittent Failures.	Go to Returning the Printer to the Customer.
Step 3.	**Is there still a problem with the printer?**	Go to Problem Still Exists.	Go to Problem Is Fixed.

Problem Still Exists

If the problem still exists, perform the following steps:

Table 14. Problem Still Exists

Step	What to do:	How to do it:
Step 1.	If the same symptom is occurring, recheck the MAPs.	a. Ensure that you installed parts correctly. Leaving a connector disconnected or an adjustment undone can cause the same symptom as the failing part. Check other hardware causes in Symptoms That Change. b. Try the MAP again with a different answer to any question that was unclear the first time. c. Go to MAP 0010: Symptom Start MAP to see if there may be another MAP for this symptom.
Step 2.	If the symptom is changing, you cannot use MAPs.	See Symptoms That Change.
Step 3.	Contact your next level of support.	
Step 4.	When you have fixed the problem, go to Problem Is Fixed.	

Problem Is Fixed

Table 15. Fix Verification

Step	What to do:	How to do it:
Step 1.	Use this procedure to verify the correct operation of the printer if you have not already done so.	• Verify that the host attachments are disabled by viewing the **Printer Status** window. If necessary, disable the attachments by selecting the **Enable/Disable Attachments** procedure from the **Options** pull-down menu. Wait for the status change to appear on the Display/Touch Screen . • Select the **Shutdown/Restart** procedure from the **Operate** pull-down menu on the Display/Touch Screen . Wait for a `Shutdown Complete` message to appear on the Display/Touch Screen . • Set the Local/Remote Switch for the Control Unit Power in the Local position. • Press the Control Unit **Power Off If In Local** pushbutton. • Press the Control Unit **Power On** pushbutton. • Wait for a failure condition to occur. – If a **Printer Error** window appears on the Display/Touch Screen , a failure has been detected. Use the MAPs. – If a **Printer Status** window appears on the Display/Touch Screen , no **Printer Error** window appears; no failure has been detected. Run the **Print Samples** or the **Print Pack** to obtain some print samples, followed by **Print Logs** for a copy of the error log. It is possible that a failure will occur while you run these tests. – If no **Printer Status** window appears, a failure has been detected. See Chapter 2. Diagnostics for the normal sequence of messages that appear on the RISC Controller display.
Step 2.	Check for print quality problems.	Look closely at the print sample for defects.
(continued on next page)		

Table 15. Fix Verification (continued)

Step	What to do:	How to do it:
Step 3.	Use any test or customer operation that is needed to verify the fix.	See Chapter 2. Diagnostics and the *Operator's Guide*.
Step 4.	Go to MAP 0010: Symptom Start MAP if you found any problems.	
Step 5.	Go to Returning the Printer to the Customer.	

Returning the Printer to the Customer

Table 16. Returning the Machine to the Customer

Step	What to do:	How to do it:
Step 1.	Check the error log for possible future failures.	• Use Chapter 2. Diagnostics after you read the error log to determine if there are enough failures to justify a repair. • If a repair is required, locate the appropriate MAP in SRC - MAP Locations. • See the list of POSSIBLE FAILING PARTS in the fix MAP. • See Parts Replacement, for the procedure to replace parts from a list.
Step 2.	Perform or schedule any needed preventive maintenance activity.	Check the PM Log to determine if any PM items are due. See Service Tasks – PM Procedures for the list of PM items and their schedules.
Step 3.	Record the usage count.	Use the mechanical usage counter at the rear of the printer. The usage count in the error log may be incorrect.
Step 4.	If you completed a PM, reset or clear the PM log counters.	See PM Log.
Step 5.	Install all covers that you removed.	
Step 6.	Return the Local/Remote switches to their positions at the beginning of the call.	
Step 7.	Enable the attachments that were disabled at the beginning of the call.	
Step 8.	Notify the customer that servicing is complete, and that the printer should be varied online.	
Step 9.	Ask the customer to run a print job. Wait to see if it runs successfully.	

Table 16. Returning the Machine to the Customer (continued)

Step	What to do:	How to do it:
Step 10.	Perform the necessary administrative details.	

MAP 0010: Symptom Start MAP

Entry

Use MAP 0002: Start of Call Procedure before you enter this MAP.

Use this step to isolate a failure. The symptoms are listed in the order of their importance. Be aware that sometimes more than one symptom may be present.

Start at the top and use the entries in the order they are given so that you are guided to the correct MAP.

Table 17. Entry Table for MAP 0010

If the failure is indicated by:	**Go to:**
System Reference Codes SRCs are displayed on the Display/Touch Screen , logged, or reported by the customer.	System Reference Codes
Printer Not Available	Generate an SRC Step 3
Displayed Message This is an intervention message that cannot be corrected or that occurs too often.	Messages That Cannot Be Cleared or Occur Too Often
Sleeping This message is displayed on the Display/Touch Screen and the printer will not respond.	Generate an SRC Step 3
Hard Program Check Message • Contact your next level of support to determine if you have a known problem, if a trace is needed, and if so, how and where to send the trace. • Create the problem again; then deactivate the traces. • Contact your next level of support.	
Controller Display Number	MAP 2000: Controller Start MAP
Print Quality Defect	MAP 1000: Print Quality Start MAP
Power Problem	Power Problem

Table 17. Entry Table for MAP 0010 (continued)

If the failure is indicated by:	**Go to:**
Blank Display/Touch Screen	MAP 0330: Display/Touch Screen Start MAP
Display, Indicator, Switch, Button, or Alarm Problem	Display, Indicator, Switch, or Pushbutton Problems
Maintenance Panel Error Code	Maintenance Panel Error Codes
Forms Feeding or Stacking Problem No SRC is displayed.	Forms Feeding Problems
Preprocessing and Postprocessing Related Problems	Forms Feeding Problems
Host Attachment Problem	Step Host Attachment Problems
Supplies Life Too Short	Supplies Life Too Short
Message Displayed Too Long (Hanging) Ensure that you understand printer operations, refer to *Operator's Guide*. This could be a possible microcode problem. • Contact your next level of support to determine if you have a known problem, if a trace is needed, and if so, how and where to send the trace. • Create the problem again; then deactivate the traces. • Contact your next level of support.	
Intermittent Failure	Intermittent Failures
Symptoms That Change	Symptoms That Change
Printer Will Not Run No error is posted.	Printer Will Not Run

Table 17. Entry Table for MAP 0010 (continued)

If the failure is indicated by:	**Go to:**
Suspected Microcode Problem • Contact your next level of support to determine if you have a known problem, if a trace is needed, and if so, how and where to send the trace. • Create the problem again; then deactivate the traces. • Contact your next level of support.	
Print Speed (Start/Stop) Problem	Print Speed (Start/Stop) Problem
Image Missing or PEMs (Bars) Near Edge	Image Missing or PEMs (Bars) Near Edge
Visually Detected Problem	Visually Detected Problems
System Management Services (SMS) Screen (Icon) Appears on the Display/Touch Screen	RS/6000 Controller Diagnositcs
Print Application or Forms Problem	Print Application or Forms Problems
Any Other Failure No MAP is available.	Other Failures

System Reference Codes

This step lists the System Reference Code (SRC) sources in the order of importance. Start at the top and perform the action indicated for the first condition you have.

Table 18. MAP 010 - System Reference Codes Sources

Source of the SRC	**Go to:**
Displayed on the Display/Touch Screen	SRC - MAP Locations
Reported by the customer with no failure currently displayed	Generate an SRC
Logged in the error log with no failure currently displayed	Generate an SRC Step 2
Logged in an EREP Report with no failure currently displayed	Generate an SRC
Any other source Not a System Reference Code. Return to Entry and continue through the table from the location you stopped at, until you find another possibility.	

SRC - MAP Locations: Table 19 provides a cross reference between the SRCs and the MAPs.

Table 19. MAP 010 - SRC — MAP Locations

SRC	Go to:
0600 through 0656	MAP 0600: Printer Interface MAP
0666	Generate an SRC Step 3
0841 through 0847	MAP 0800: Pre/Postprocessing Interface Start MAP
A001 through AFFF This may be a microcode problem. Contact your next level of support before you replace any components.	MAP A000: Host Attachment Detected Errors
B001 through BFFF This may be a microcode problem. Contact your next level of support before you replace any components.	MAP B000: Printer Detected Errors
C0001 through CFFF This may be a microcode problem. Contact your next level of support before you replace any components.	MAP C000: AFCCU Detected Errors
D706	MAP D706: Beam Detect Missing
D70B	MAP D70B: Printhead Under Run
D70F	MAP D70B: Printhead Under Run
D001 through DFFF This may be a microcode problem. Contact your next level of support before you replace any components.	MAP D000: Mechanism Interface Card (MIC) Detected Errors
Any other code **Note:** If you do not find a MAP that matched the SRC in System Reference Codes, check the information in *RPQs and Features*.	System Reference Codes

System Reference Codes: This list defines the system reference codes (SRCs) that appear on the Display/Touch Screen . It does not include the service codes that appear on the RISC Controller display in the control unit.

SRC Code	Description	MAP Link (page #)	E0XX Code
0104	Retractor Position error.	126	E08A
0113	Tractor motor encoder phase error.	129	E084
0114	Tractor motor overcurrent.	135	E0d8
0115	Retractor seek error.	138	E08b
0116	Retractor motor overcurrent.	142	E0d9
0117	Forms width sensor.	145	E0CE
0118	Forms width sensor fuse.	148	E05A
0119	Forms jam at upper tractor.	151	E07b
011E	Tractor motor initial position error.	168	E086
0121	Drum rotation error.	172	E030
0122	Drum motor overcurrent.	177	E0dA
0131	Tension arm down.	179	E078
0132	Tension arm up.	187	E077
0133	Skew error.	194	E07d
0134	Fuser wrap.	208	E07E
0135	Backup roll motor thermal.	222	E0d1
0136	Backup roll closed error.	227	E098
0137	Steering motor driver.	233	E094
013A	Backup roll driver signal on.	236	E096
013B	Backup roll not open.	242	E097
0141	Felt oiler belt driver error.	247	E08F

SRC Code	Description	MAP Link (page #)	E0XX Code
0142	Oil pump driver error.	250	E099
0143	Felt oiler belt motor always driven.	253	E090
0144	Felt oiler belt motor never driven.	256	E091
0145	Oil pump always driven.	259	E09A
0146	Oil pump never driven.	262	E09b
0152	Scuff roll motor driver error.	265	E0C7
0156	Backup roll lift motor (M610) position error.	268	E0EE
0157	Backup roll lift motor (M610) overcurrent.	273	E0d5
0161	Stacker jam (light never sensed).	277	E080
0162	Pendulum motor overcurrent.	292	E0dd
0163	Pendulum position error.	294	E0C5
0164	Stacker jam (light always sensed).	299	E081
0171	Stacker table motor thermal.	308	E0C9
0172	Stacker table timeout.	312	E0CA
0174	Stacker safety switch on.	323	E015
0175	Stacker table motor runs too long.	329	E0Cb
0176	Stacker forms length Sensor.	339	E0CF
0177	Stacker length motor timeout.	343	E02d
017A	Rear finger belt motor overcurrent.	348	E0F6
017B	Front finger belt motor overcurrent.	351	E0F7
0211	Charge corona voltage error.	354	E038
0212	Transfer corona voltage error.	361	E039
0213	Preclean corona voltage error.	367	E036

SRC Code	Description	MAP Link (page #)	E0XX Code
0221	Mirror (M501) operating error.	371	E048
0222	Video data active.	377	E04d
0223	Mirror motor (M501) drive off.	382	E04A
0224	Mirror motor (M501) start-up error.	391	E04b
0225	Resolution lens initial position error.	399	E054
0226	Resolution lens motor (M502) overcurrent.	404	E055
022A	PC drum cover is open (laser interlock).	408	E035
0231	Mag brush bias error.	412	E037
0232	Conveyor roll rotation error.	417	E03b
0233	Mag roll motor thermal.	425	E03E
0234	Toner over-feed error.	429	E03C
0235	Toner under-feed error.	436	E03d
0236	Toner feed motor overcurrent.	447	E03F
0241	Primary erase lamp never on.	450	E0d3
0243	Primary erase lamp always on.	455	E0d4
0251	Cleaning brush rotation error.	460	E040
0252	Cleaner brush motor thermal.	465	E046
0253	Cleaner housing position error.	471	E044
0254	Cleaning housing motor driver.	475	E0db
0256	Cleaner Housing always at home.	476	E043
0264	Cyclone blower motor thermal.	480	E045
0266	Cyclone blower rotation error.	483	E041
0281	Preheat overtemperature.	488	E0Ab

SRC Code	Description	MAP Link (page #)	E0XX Code
0282	Preheat A/B undertemperature.	494	E0AE
0284	Preheat platen not ready.	498	E0AF
0286	Preheat element A lost temperature.	502	E0b8
0287	Preheat element B lost temperature.	505	E0b4
0288	Preheat element C lost temperature.	508	E0b2
028A	Thermistor 1 over temperature	511	E0bA
028B	Thermistor 2 over temperature	514	E0bb
028C	Thermistor 3 over temperature	518	E0bC
028D	Thermistor 1 under temperature	524	E0A8
028E	Thermistor 2 under temperature	527	E0A9
028F	Thermistor 3 under temperature	531	E0AA
0291	Hot roll over-temperature.	535	E0A3
0294	Hot roll overcurrent.	539	E0dC
0295	Hot roll undertemperature.	542	E0A6
0296	Hot roll lamp 1 driver error.	546	E09E
0297	Hot roll lamp 1 filament open.	549	E09F
0298	Hot roll lamp 2 driver error.	554	E0A0
0299	Hot roll lamp 2 filament open.	558	E0A1
029C	Hot roll lamp 3 filament open.	562	E0C0
029D	Hot roll lamp 3 driver error.	566	E0C1
029E	Hot roll lamp 4 filament open.	570	E0bE
029F	Hot roll lamp 4 driver error.	574	E0bF
0511	Printer power problem.	634	

SRC Code	Description	MAP Link (page #)	E0XX Code
0521	Form length fuse.	667	E059
0522	Laser driver fuse.	670	E0F9
0523	PR sensor fuse.	675	E0FA
0524	Fuser sensor fuse.	679	E0Fb
0525	ST sensor fuse.	682	E0FC
0611	Printer interface test has failed.	686	
0621	Parity error returned by printer in response to a command.	686	
0622	Invalid command code or sequence returned by printer in response to a command.	686	
0623	System card REQUEST signal on too long.	686	
0624	Command not accepted by the system card.	686	
0625	No response to a system card request.	686	
0626	Unstable general status sent by printer.	686	
0631	Cancel received at PRINT=0.	686	E05B
0632	ACT is received during COOL.	686	E05C
0632	CHK RESET received at PRINT=1.	686	E05d
0632	DORMANT received at PRINT/WAIT=1.	686	E05E
0633	CPF/CNP received when COOL/WAIT|DORM=1.	686	E05f
0633	CNP received without PH DRV.	686	E060
0634	CPF and CNP both on.	686	E074
0634	CPF or CNP on too long.	686	E075
0635	WAIT is on too long while issuing CPF or CNPF.	686	
0651	WAIT condition from printer remained on too long.	686	

SRC Code	Description	MAP Link (page #)	E0XX Code
0652	PRINT condition from printer remained on too long.	686	
0653	DACP condition from printer remained on too long.	686	
0654	DORMANT condition from printer failed to turn off.	686	
0655	General status rejected.	686	
0656	Invalid sense from printer.	686	
0666	No error from printer and there is a call, check, or operator check condition.	686	
0782	Splice lever down.	693	E011
0783	Transfer Station Open.	698	E010
0785	Change Toner Collector.	702	E005
0786	Add Toner.	706	E006
0787	Check Toner Collector.	709	E00E
0788	Change Developer Mix.	713	E007
0789	Developer Drain Open.	717	E00F
078A	End of Forms.	721	E001
078B	Developer Running.	726	E01F
0791	Change Fine Filter.	730	E00C
0792	Add Fuser Oil.	737	E00A
0793	Change Oiler Belt.	741	E009
0794	Oiler Gate Open.	746	E01E
0795	Set Forms Direction.	751	E02C
0796	Stacker Full.	756	E004
0797	Stacker Gate Open.	764	E01C

SRC Code	Description	MAP Link (page #)	E0XX Code
0798	Stacker Table Down.	768	E016
0799	Check Fine Filter.	776	E018
0841	Postprocessor Not Ready	783	E0F3
0842	Postprocessor STOP line active	783	E0F4
Axxx	Host Attachment detected errors.	994	
Bxxx	Printer detected errors.	1010	
C000	Display/Touch Screen errors.	1014	
Dxxx	Mechanism Interface Card (MIC) and PQE detected and Printhead errors.	1017	

Generate an SRC: At this point you should IML the printer and run a print to generate an SRC.

Table 20. Map 010 - Generate an SRC

Step	Questions/Actions	Yes	No
Step 1.	If you have not already done so, perform the following steps: • Use the precautions in MAP 0002: Start of Call Procedure and place the printer in Service mode. • Print the error log. **Did a failure occur?**	The failure appears to be solid. Use this symptom and go to SRC - MAP Locations.	There may be an intermittent problem. Do the following: • Use PM Log to determine if there are failures that should be repaired. • Locate the MAP in SRC - MAP Locations. • Perform any QUICK CHECKS in that MAP. • Check the list of POSSIBLE FAILING PARTS. – Perform any adjustments listed. – See Parts Replacement for the procedure to replace parts.

Table 20. Map 010 - Generate an SRC (continued)

Step	Questions/Actions	Yes	No
Step 2.	**Have you just printed the error log?**	Because the log printed successfully, there is no solid problem with the printer. There may be an intermittent problem. Do the following: • Use PM Log to determine if there are failures that should be repaired. • Locate the MAP in SRC - MAP Locations. • Perform any QUICK CHECKS in that MAP. • Check the list of POSSIBLE FAILING PARTS OR ADJUSTMENTS. – Perform any adjustments listed. – See Parts Replacement for the procedure to replace parts.	The error log may no longer be valid. You need to verify printer operation and print a current log. Return to Step 1.
Step 3.	PRINTER NOT AVAILABLE, SLEEPING, or PRINTER INTERFACE ERROR (SRC 0666) is displayed. **Is the Diagnostic function Switch set to 0 (zero)?**	Go to Step 4.	The printer is in a diagnostic mode. • Set the Diagnostic Function switch to **0** (zero) and raise the Reset switch.

Table 20. Map 010 - Generate an SRC (continued)

Step	Questions/Actions	Yes	No
Step 4.	When no error is present, the Maintenance Panel displays **00–00**. **Is 00–00 displayed on the Maintenance Panel?**	The printer has powered up normally, but the has not been sensed by the control unit. There is no communication between the printer and the control unit. Go to MAP 0600: Printer Interface MAP.	Go to Step 5.
Step 5.	**Is the Maintenance Panel blank?**	The printer has dropped power. Go to MAP 0500: Power Control – Simplex Printing System for simplex printers. Go to MAP 0501: Power Control – Duplex Printing System for duplex printing systems.	An error is present in the printer. Go to Forms Feeding Problems.

Messages That Cannot Be Cleared or Occur Too Often

This step lists the messages in alphabetic order. If the messages on the printer do not appear in English, use the **Language** window under **Options** to select English.

Refer to the *Operator's Guide* for normal operator actions. If the problem remains, go to the MAP indicated in the message you have.

Table 21. MAP 010 - Messages That Cannot Be Cleared or Occur Too Often

Message	**Go to:**
Add Fuser Oil	MAP 0792: Fuser Oil Empty
Add Toner	MAP 0786: Add Toner
Change Developer Mix	MAP 0788: Change Developer Mix
Change Fine Filter	MAP 0791: Change Fine Filter
Change Oiler Belt	MAP 0793: End Of Oiler Belt Reached
Change Toner Collector	MAP 0785: Toner Collector Full
Check Fine Filter	MAP 0799: Fine Filter Not Installed
Check Tension Arm	MAP 0131: Tension Arm Down
Check Toner Collector	MAP 0787: Toner Collector Not Set
Developer Drain Open	MAP 0789: Developer Drain Open
Developer Running	MAP 078B: Developer Running
End of Forms	MAP 078A: End Of Forms Sensor
End of Forms on Preprocessor	MAP 0800: Pre/Postprocessing Interface Start MAP
Forms Length Mismatch	MAP D000: Mechanism Interface Card (MIC) Detected Errors
Forms Width Mismatch	MAP D000: Mechanism Interface Card (MIC) Detected Errors

Table 21. MAP 010 - Messages That Cannot Be Cleared or Occur Too Often (continued)

Message	**Go to:**
Fuser Wrap	MAP 0134: Fuser Wrap
Oiler Gate Open	MAP 0794: Fuser Oiler Gate Open
Pre/Postprocessor Message	MAP 0800: Pre/Postprocessing Interface Start MAP
Set Forms Direction	MAP 0795: Set Forms Direction
Skew Error	MAP 0133: Skew Error
Stacker Jam (Light Never Sensed)	MAP 0161: Stacker Jams (Light Never Sensed)
Stacker Full	MAP 0796: Stacker Full
Stacker Gate Open	MAP 0797: Stacker Gate Open
Stacker Safety Switch On	MAP 0174: Stacker Safety Switch On
Stacker Table Down	MAP 0798: Stacker Table Down
Tension Arm Down	MAP 0131: Tension Arm Down
Tension Arm Up	MAP 0132: Tension Arm Up
Toner Supply Low	MAP 079C: Toner Supply Low
Transfer Station Open	MAP 0783: Transfer Station Open
Upper Tractor Forms Jam	MAP 0119: Upper Tractor Forms Jam
Any Other Message Not covered in this step. Return to MAP 0010: Symptom Start MAP and continue down the list from the place where you left until you find another possibility.	

Display, Indicator, Switch, or Pushbutton Problems

Do not use this section for suspected power problems. Power problems are addressed in Power Problem.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Locations Link	Parts Link	Removals & Adjustments Link
CPxxx Card	1453	2114	1760
DV061 Card	1453	2114	1764
FU041 Card	1442	2118	1764
High Voltage Power Supply	1449	1964	1568
Usage Meter L031	1453	2118	
LP041 Card	1441	2072	1869
Maintenance Panel MP021	1453	2116	
PC561 Card	1453	2116	1764
PR011 Card	1446	2118	1764
SW761 Card	1429	1982	1897

Table 22. MAP 010 - Display, Indicator, Switch, or Pushbutton Problems

Problem	**Go to:**
Accessory contacts on Operator Alert Assembly: not operating	MAP 0323: Operator Alert Accessory Contacts Problem
Alarm tone on Operator Alert Assembly: always on, never on, or there is a volume problem	MAP 0322: Operator Alert Alarm Problem
Attention light on Operator Alert Assembly: always on, never on, or there is a flash rate problem	MAP 0321: Operator Alert Light Problem
Display/Touch Screen : brightness, touch response, focus, color, etc.	MAP 0330: Display/Touch Screen Start MAP
Contrast Control: LEDs off or do not change	Do the following, one step at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Install the new parts listed below, one at a time, until the problem is corrected: – Printer Control Panel (SW761) – PC561 Card • Repair an open circuit between one of the following pairs: – PJ184–7 and PJ339–7 (contrast up) – PJ184–8 and PJ339–8 (contrast down) @
Contrast Control: no change to print quality	Do the following, one step at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Repair an open circuit between PJ184 and PJ337. • Install the new parts listed below, one at a time, until the problem is corrected: – PR011 Card – High Voltage Power Supply – Printer Control Panel (SW761) @

Table 22. MAP 010 - Display, Indicator, Switch, or Pushbutton Problems (continued)

Problem	**Go to:**
Controller Display: number displayed	MAP 2000: Controller Start MAP
Developer Run Switch: no response	MAP 078B: Developer Running
Diagnostic Function Switch: no response	Raise the Reset Switch (toggle) on the CPxxx Card or power off and power on the printer to start the function. No MAP is available. • Install a new CPxxx Card if the problem continues. @
Fine Filter Switch: no message displayed	MAP 0799: Fine Filter Not Installed
Forms Feed Buttons: no response	Do the following, one step at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Install the new parts listed below, one at a time, until the problem is corrected: – Printer Control Panel (SW761) – PC561 Card • Repair an open circuit between one of the following pairs: – PJ184–3 and PJ339–3 (reverse) – PJ184–4 and PJ339–4 (forward) @
Forms Length Display: blank, altered, or incorrect length indicated	MAP 0176: Stacker Forms Length Sensor

Table 22. MAP 010 - Display, Indicator, Switch, or Pushbutton Problems (continued)

Problem	**Go to:**
Forms Select LEDs: off	Do the following, one step at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Install the new parts listed below, one at a time, until the problem is corrected: – Stacker Control Panel (LP041) – FU041 Card @ • Repair an open circuit between the following pairs: – PJ751–29 and PJ634–29 (A setting) – PJ751–30 and PJ634–30 (B setting) – PJ751–31 and PJ634–31 (C setting)
Forms Select Key: no response	Do the following, one step at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Install the new parts listed below, one at a time, until the problem is corrected: – Printer Control Panel (SW761) – PC561 Card @ • Repair an open circuit between PJ751–8 and PJ634–8.
Forms Set Switch (folding direction): improper response	MAP 0795: Set Forms Direction

Table 22. MAP 010 - Display, Indicator, Switch, or Pushbutton Problems (continued)

Problem	**Go to:**
Maintenance Panel: display or key pad problem	Do the following, one step at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Install the new parts listed below, one at a time, until the problem is corrected: – Maintenance Panel (MP021) – CPxxx Card • Repair an open circuit between one of the following pairs: – PJ328–1 and PJ303–1 – PJ448–34 and PJ328–1 – PJ448–32 and PJ328–3 – PJ448–30 and PJ328–5 – PJ448–28 and PJ328–7 – PJ448–26 and PJ328–9 – PJ448–24 and PJ328–11 – PJ448–22 and PJ328–13 – PJ448–20 and PJ328–15 – PJ448–18 and PJ328–17 – PJ448–16 and PJ328–19 – PJ448–14 and PJ328–21 – PJ448–12 and PJ328–23 – PJ448–10 and PJ328–25 – PJ448–8 and PJ328–27 – PJ448–6 and PJ328–29 – PJ448–4 and PJ328–31 – PJ448–2 and PJ328–33 @
Pressure Roll Release Lever: will not release	No MAP. See Scuff Roll Release Cable.
Power Control Panel on Control Unit: improper response to switches or pushbuttons	MAP 0500: Power Control – Simplex Printing System MAP 0501: Power Control – Duplex Printing System

Table 22. MAP 010 - Display, Indicator, Switch, or Pushbutton Problems (continued)

Problem	**Go to:**
Remote/Local Switch: no response	MAP 0500: Power Control – Simplex Printing System MAP 0501: Power Control – Duplex Printing System
Reset Switch on the CPxxx Card: no response	No MAP. • Install a new CPxxx Card. @
Splicing Station: has no vacuum when the splicing station lever is in the Splice position.	• If the SPLICE LEVER DOWN message is not displayed, go to MAP 0782: Splicing Lever Sensor. • Check the splicing station air hose for leaks. • Check the splicing station hose connectors for correct connection.
Stacker Safety Switch: no response	MAP 0174: Stacker Safety Switch On
Stacker Table Up, Stop, or Down Switch: no response	MAP 0798: Stacker Table Down

Table 22. MAP 010 - Display, Indicator, Switch, or Pushbutton Problems (continued)

Problem	**Go to:**
Stacker Forms Length Display: blank or altered	Do the following, one step at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Install the new parts listed below, one at a time, until the problem is corrected: – Forms Width Display (LP041) – FU041 Card • Repair an open circuit between one of the following pairs: – PJ751–13 and PJ634–13 – PJ751–14 and PJ634–14 – PJ751–15 and PJ634–15 – PJ751–16 and PJ634–16 – PJ751–17 and PJ634–17 – PJ751–18 and PJ634–18 – PJ751–19 and PJ634–19 – PJ751–20 and PJ634–20 – PJ751–21 and PJ634–21 – PJ751–22 and PJ634–22 – PJ751–23 and PJ634–23 – PJ751–24 and PJ634–24 – PJ751–25 and PJ634–25 – PJ751–26 and PJ634–26 – PJ751–27 and PJ634–27 @
Toner Collector Not Seated: no message displayed	MAP 0787: Toner Collector Not Set
Display/Touch Screen : no response	MAP 0330: Display/Touch Screen Start MAP

Table 22. MAP 010 - Display, Indicator, Switch, or Pushbutton Problems (continued)

Problem	**Go to:**
Usage Meter: does not advance	Do the following, one step at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Install the new parts listed below, one at a time, until the problem is corrected: – Usage Meter (L301) – DV061 Card • Repair an open circuit between one of the following pairs: – PJ318–1 and PJ323–15 – PJ318–2 and PJ323–16 @
Volume Control for Alarm Tone on Operator Alert Assembly: no response	MAP 0322: Operator Alert Alarm Problem
Any Other Device	No MAP. Perform the following steps: • Use the Search Index to find the wiring diagrams that shows the device. • Use Wiring Diagrams to inspect the wiring. • Install a new device for the one that is having the problem; then install any other devices to which it is wired.

Forms Feeding Problems

Table 23 lists the forms feed problems in order of importance. Start at the top of the list and go to the MAP that is indicated for the first condition you have.

Table 23. MAP 010 - Forms Feeding Problems

Problem	**Go to:**
Stacker: misfolds or stacks loosely	MAP 0161: Stacker Jams (Light Never Sensed)
Pin feed holes in forms: distorted	No MAP. • Check the Transfer Station adjustment, especially the Upper and Lower Tractor Timing Adjustments.
End of Forms: not detected or stopping in the wrong place	MAP 078A: End Of Forms Sensor
Fuser: wraps or forms jams in the fuser	MAP 0134: Fuser Wrap
Perforations: stop at the wrong place	• Perform the Upper and Lower Tractor Timing Adjustments
Stacker Table: always down when it should not be	• Ensure that the “Stacker Enabled” configuration item in **Configure Printer** is set to **Yes** and that all pre/postprocessor ports are disabled when boxed paper is used.
Stacker Table: always up when using a pre/postprocessing interface	• Ensure that the pre/postprocessor port is enabled and configured as a postprocessor. • MAP 0800: Pre/Postprocessing Interface Start MAP.
Forms: flow onto the floor and the Stacker Table is up	Do the following, one step at a time, until the problem is corrected: • Ensure that several sheets of forms are in the stacker before you feed forms. You may find it useful to increase the NPRO length. See **Configuring the System** in the *Operator’s Guide*. • Ensure that the Stacker Gate Finger Belts are installed so that the fingers are in a random order.
Stacker Control Panel pushbuttons: no response	Display, Indicator, Switch, or Pushbutton Problems
Forms Feed pushbuttons: no response	Display, Indicator, Switch, or Pushbutton Problems
Forms Set Switch: does not work	Display, Indicator, Switch, or Pushbutton Problems

Table 23. MAP 010 - Forms Feeding Problems (continued)

Problem	**Go to:**
Tractors: constantly running forward soon after an IML	The Forward Forms Feed Key circuit (S5) is always on. No MAP. See WD53 - Switches & Sensors (PC561 Card).
Tractors: constantly running backward soon after an IML	The Reverse Forms Feed Key circuit (S6) is always on. No MAP. See WD53 - Switches & Sensors (PC561 Card).
Preprocessing/postprocessing: related problem	MAP 0800: Pre/Postprocessing Interface Start MAP
Preprocessing equipment: causing a false End of Forms condition	MAP 0800: Pre/Postprocessing Interface Start MAP
NPRO: length incorrect	See **Configuring the System** in the *Operator's Guide*.
Any Other Problem	• Check the Maintenance Panel to see if any error codes are displayed. If you find any, enter this MAP again. • Any other problem is not covered by this step. Return to MAP 0010: Symptom Start MAP and continue down the table from the place where you left until you find another possibility.

Maintenance Panel Error Codes

The following table lists the codes in ascending order. Go to the MAP indicated for the error code you have.

Table 24. MAP 010 - Maintenance Panel Error Codes

Code	Go to:
E0XX **Important** E0XX Codes and SRC Cross-References provides a cross-reference between the E0XX codes that appear on the Maintenance Panel and the System Reference Code (SRC) that appears on the Display/Touch Screen . Use E0XX Codes and SRC Cross-References when an E0XX code appears on the Maintenance Panel, when no SRC is displayed, or when you were sent here from another MAP. This may occur when there is an error following a power-on procedure, and the Control Unit is still initializing. Some printer errors prevent the control unit microcode from completing the power-on sequence. The printer may power up with **Printer Not Available** or **Sleeping** or, **no SRC** is displayed on the Display/Touch Screen . In general, you can go directly to the MAP with the same number as the SRC. If you do not find a MAP with that number, go to SRC - MAP Locations to find the correct MAP for that SRC. **Note:** The Maintenance Panel displays of **b** and **6** look similar. Do not confuse them with each other.	XX may be any number. An error occurred while the printer was in a normal operational mode. Go to E0XX Codes and SRC Cross-References. Go to the MAP listed for the error code.
E1XX	XX may be any number. Go to E1XX Error Codes to MAP Cross Reference. An error occurred while the printer was running a test routine.

Table 24. MAP 010 - Maintenance Panel Error Codes (continued)

Code	**Go to:**
.. XX	XX may be any number. Go to MAP 0070: Printer Logic Cards.
Any message displayed too long: not covered in this step. To ensure that you understand printer operations, refer to the *Operator's Guide*. This could be a possible microcode problem. • Contact your next level of support to determine if you have a known problem. • If a trace is needed, activate a trace. • Create the problem again; then deactivate the traces. • Contact your next level of support.	
Any Other Code	The printer is probably in a diagnostic mode. This MAP does not support entry from this mode in all cases. You should create the error again while printing is in process. Use this method: • Set the Diagnostic Function Switch to **0** (zero). Toggle the Reset Switch on the CPxxx Card. • Use MAP 0002: Start of Call Procedure to correctly create the error again for use in MAPs.

Host Attachment Problems

Table 25. MAP 010 - Host Attachments

Step	Questions/Actions	Yes	No
Step 1.	Try to determine if the other devices on the attachment or channel are also having this problem. If only the printer has this problem, continue with this procedure. • Print the Configuration Data. • Ensure that the address and other parameters are correct. **Are the attachment configuration items correct?**	Go to Step 2.	• Correct the configuration items as necessary.
Step 2.	• Run the appropriate attachment wrap test. **Was a System Reference Code displayed?**	Locate the MAP in SRC - MAP Locations.	Go to Step 3.
Step 3.	• Reconnect the cables to the printer. • Install the wrap connectors at the other end of the cables that are directly attached to the printer. • Run the appropriate wrap test. **Was a System Reference Code displayed?**	The problem is in the cables directly attached to the printer.	This is not a printer problem. • Print the long form of the error log. It may be useful to your next level of support. Go to Step 4.

Table 25. MAP 010 - Host Attachments (continued)

Step	Questions/Actions	Yes	No
Step 4.	Do the following, one at a time, until the problem is corrected: • Contact your next level of support to determine if you have a known problem, if a trace is needed, and if so, how and where to send the trace. • Create the problem again; then deactivate the traces. • Contact your next level of support.		

Visually Detected Problems

The following table lists in alphabetic order the problems that you can detect visually.

Use this table only if there are no errors displayed on the Display/Touch Screen or Maintenance Panel.

Perform the actions indicated for the first condition that you have.

Table 26. MAP 010 - Visually Detected Problems

Problem	**Go to:**
Fan: not running	No MAP. See the Wiring Diagrams.
Mechanical problem: parts loose or binding	No MAP. See the Chapter 5. Removals and Adjustments
Fuser oil: on machine or floor	Oil on Printer or Floor, Step 1.
Toner Collector bag: overfull	**Note:** The operator may have removed and reinstalled a partially full collector bag. If there is a print quality problem in addition to the collector bag being too full, use the appropriate MAP to fix the problem. Several different print quality problems could cause the collector bag to fill too soon. Do the following, one step at a time, until the problem is corrected: • Clean all the coronas. (See Coronas & High Voltage Power Supply.) • Check and adjust the following as necessary: – Transfer Corona voltage – Charge Corona voltage – Retractor to Drum clearance (See PC Drum & Developer Clearances/Gaps.) • Install a new PC Drum. (See PC Drum Removal.)

Table 26. MAP 010 - Visually Detected Problems (continued)

Problem	**Go to:**
Toner: contamination inside the printer or on the covers	Do the following, one step at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Check the developer air system. – Ensure that the large air hose at the rear of the printer is attached to the fitting near the top rear of the developer casting. – If the hose is not attached, clean the inside of the end of the hose and the outside of the fitting. – Apply RTV to the outside of the fitting and push the end of the hose firmly onto the fitting. – Ensure the other end of the hose is attached to the cyclone air system. – Check for loose fittings and cracks or breaks in the hose. • Ensure the drum pin is fully seated into the hole of the PC drum support (See PC Drum Removal). • Ensure the front developer seal is mounted correctly and not damaged. • Ensure the rear developer seal is mounted correctly and not damaged. • Consider that the toner may have been spilled when it was added. If necessary, ensure that the operator knows the correct procedure for adding toner.
Any Other Problem	Look for the problem description in Display, Indicator, Switch, or Pushbutton Problems. If the problem is not described, go to MAP 0010: Symptom Start MAP and find another possibility.

Table 27. MAP 010 - Visually Detected Problems — Fuser Oil on Printer or Floor

Step	Questions/Actions	Yes	No
Step 1.	**Is the printer idle for long periods of time (up to several days with little or no printing)?**	Go to Step 2.	Go to Step 3.
Step 2.	The fuser oiling rate during idle periods is too high for low print usage. Do the following: • 1) Set printer memory address FF0C to the current value plus 10 more initially. The standby oiling rate will decrease when this value is increased (Read From or Write to Memory (Position 2)). • 2) SHUTDOWN AND POWER OFF THE PRINTER. • 3) Check for loose fittings and cracks or breaks in the Fuser Oil Tank Assembly and tubing. Repair or replace as necessary. • 4) Clean the machine and floor with isopropyl alcohol as necessary. Allow the alcohol to dry and the vapors to disperse before you power on the machine to avoid a fire hazard in the fuser area. • 5) Remove the Oiler Belt and manually advance it to a dry spot. • 6) Reinstall the Oiler Belt. • 7) Order and install an Oil Pan to catch excess oil. • 8) Check the print quality for the next month for fuser offsetting or a residual image on the prints. This can be caused by the Hot Roll having too little oil. If this happens, reduce the value in address **FF0C** (minutes between oil feeds) within the range of the value set in Item 1 to the default value. • 9) If the oil problem appears again in the future, set address **FF0C** to a higher value (the maximum is 99). Watch for the offsetting problem described above.		

Table 27. MAP 010 - Visually Detected Problems — Fuser Oil on Printer or Floor (continued)

Step	Questions/Actions	Yes	No
Step 3.	Do the following, one step at a time, until the problem is corrected: • Ensure that printer memory address FF0C is set to the default value. The standby oiling rate will decrease when this value is increased (Read From or Write to Memory (Position 2)). Remove the Oiler Belt and advance it to a dry spot if it has become excessively oiled. • SHUTDOWN AND POWER OFF THE PRINTER. • Check for loose fittings and cracks or breaks in the Fuser Oil Tank Assembly and tubing. Repair or replace as necessary. • Clean the machine and floor with isopropyl alcohol as necessary. Allow the alcohol to dry and the vapors to disperse before you power on the machine to avoid a fire hazard in the fuser area. • Consider that the oil may have been spilled when it was added. If necessary, ensure that the operator knows the correct procedure for adding fuser oil. • Order and install an Oil Pan to catch excess oil. • If the problem appears again in the future, answer **Yes** to Step 1.		

Print Speed (Start/Stop) Problem

The ability of the Infoprint 3000 to print at the full-rated speed is called “performance”. For more information on performance, see “Preparing the Processing Environment” in the *Infoprint 3000 Introduction and Planning Guide*.

Table 28. MAP 010 - Print Speed (Start/Stop) Problem

Actual performance in this installation is affected by such conditions as: • Configuration of the printer • Number of characters per page • Number of imbedded control commands • Number of fonts and images per page • Speed of the computer system • Amount of available system storage • Priority of tasks assigned in the system • Control program used to drive the printer • Channel priority • Channel activity • Non-IBM equipment that may not fully support the Infoprint 3000.	Do the following: • If a parallel channel adapter is installed, check the configuration for the channel transfer rate being used. The best performance is obtained when Data Streaming (4.5 MB per second), is selected. However, be aware that not all channels support data-streaming mode. Also, data chaining with data-streaming mode can cause an overrun condition. The system engineer (SE) should know the correct transfer rate to use. • Check the error log for any AXXX-type errors, where XXX can be any hexadecimal number. This would indicate a host attachment problem. • Ensure that the latest level microcode is installed. • If the customer needs to use large form sizes (lengths greater than 17 in.), you can install and enable RPQ 8B3929 for 25-in. forms or RPQ 8B3930 for 28-in forms. Make the customer aware that when large forms are in use, there is a possibility of lowered performance on more complex jobs that can result in printer back-hitching. To minimize the impact on performance, recommend the purchase of additional memory when either of these RPQs is required. Also, these RPQs should be disabled when large forms are no longer being run to improve printer operation. • Ask the SE to research known software problems. Also, the SE should discuss efficient coding methods with the application programmer. • Ask the marketing representative to discuss additional memory with the customer. • Collect a sample of the print application and contact your next level of support.

Print Application or Forms Problems

No MAP is available. You are here because the printer runs normally with plain white forms, but the customer is dissatisfied with the print quality on one application, for example:

- Bar codes
- Labels
- Printing near the perforation
- Fusing quality
- Forms sticking together in the stacker
- Black-fill areas
- Character formation

See the following documents for suggestions on designing successful forms and applications. These documents also have procedures for testing forms, and what to do if the testing fails:

- *Forms Design Guide*
- *Introduction and Planning Guide*

Printer Will Not Run

Arcing coronas can cause the printer to stop or to fail without posting any errors.

Hint

The preclean corona and the transfer corona can be exchanged with each other. Installing the arcing corona in a new location may cause an SRC to be displayed.

Clean all corona assemblies and carefully inspect them for any signs of corrosion or arcing. Clean or replace any corona wires that appear contaminated. If you are in doubt about the condition of a corona assembly, replace or swap the complete corona assembly. (See Coronas & High Voltage Power Supply.)

Other Failures

No MAP is available. Use the following to be sure that you understand the correct operation, and for service checks and recovery procedures:

- *Operator's Guide*
- Removals & Adjustments - 1479
- Wiring Diagrams - 1237

Supplies Life Too Short

Table 29 lists problems that can cause the customer to complain about short supplies life.

Table 29. Supplies Life Too Short

Supplies	Action
Oiler Belt	• For microcode levels lower than 9.7: Ensure that the printer memory address **FF21** is set to **08** (the default value). The speed of the oiler belt increases when this value decreases (Read From or Write to Memory (Position 2)). • For microcode levels 9.7 and higher: Ensure that the configuration item **oil belt** is set to 50 (the default value). The speed of the oiler belt increases when this value increases. Individual forms may be defined to use a different oil belt speed than the default set in Configure Printer. Using **Define Forms**, check the oil belt values for the most commonly used forms. (See the Operator's Guide.)
Fuser Oil	• For microcode levels lower than 9.7: Ensure that the printer memory address **FF20** is set to **64.** The oil feed rate increases when this value decreases (Read From or Write to Memory (Position 2)). • For microcode levels 9.7 and higher: Ensure that the configuration item **oil rate** is set to 50 (the default value). The oil feed rate increases when this value increases. Individual forms may be defined to use a different oil feed rate than the default set in Configure Printer. Using **Define Forms**, check the oil feed rate values for the most commonly used forms. (See the Operator's Guide.)
Fine Filter	• Check the cyclone air system for clogs and disconnected hoses (Air System).

Image Missing or PEMs (Bars) Near Edge

Whole characters, lines, or complete images are missing at the top, bottom, left, or right edges. A black bar (PEM) may be printed where text or an image is closest to the edge.

The problem is most likely caused by the application attempting to print outside of the printable area and being truncated.

If portions of characters or image are missing in a distinct process direction line, there may be an obstruction in the printhead, developer, or coronas. This problem will occur on all customer applications and test masters. Ensure that the laser is properly adjusted.

If there is not a print quality problem, do the following:

- Ensure that the width and length values entered for this form exactly match the outer dimensions of the form. The customer may have these values saved with a form ID which may need to be corrected.
- Perform the registration adjustments. Attempt to set the mechanical adjustments perfectly so that:
  - The horizontal registration are perfect when the operator horizontal adjustment value is set to 0 and the scan factory adjust value is set to the default value.
  - The vertical registration are perfect when the operator vertical adjustment value is set to 0 and the process factory adjust value is set to the default value.

Power Problem

You suspect there is a power problem. Do not reset any circuit breaker or press any Power On or Power Off keys unless the MAP specifically tells you to do so. There are three primary indicators of power, LEDs on:

- Display/Touch Screen
- Stacker Forms Width Display
- RISC Controller

Note: Make sure the Power On pushbutton on the Display/Touch Screen is on.

Observe which LEDs are off and go the MAP or Step indicated.

Table 30. Power Indicators Off

Number of Indicators Off	Display/ Touch Screen LED	Stacker Forms Length LED	RISC Controller LED	Go to:	
				Simplex	Duplex
3	Off	Off	Off	MAP 0500: Power Control – Simplex Printing System	MAP 0501: Power Control – Duplex Printing System
2	Off		Off		
2	Off		Off		
1	Off				
1		Off			
1			Off		
1	Off			MAP 0330: Display/Touch Screen Start MAP	MAP 0330: Display/Touch Screen Start MAP
1		Off		End of Forms LED	End of Forms LED
(continued on next page)					
1			Off	MAP 2000: Controller Start MAP	MAP 2000: Controller Start MAP
0				Not a power problem	Not a power problem

End of Forms LED:

Table 31. End of Forms LED

Step	Questions/Actions	Yes	No
Step 1.	**Is the End of Forms LED in the input area off also?**	Go to MAP 0500: Power Control – Simplex Printing System for simplex printers. Go to MAP 0501: Power Control – Duplex Printing System for duplex printer printing systems.	This is not a power problem. The problem is with the display. Go to Display, Indicator, Switch, or Pushbutton Problems.

MAP 0070: Printer Logic Cards

This MAP fixes power-on sequence problems affecting the Printer Logic Cards. The Display/Touch Screen Printer Status window displays `Printer not available` or SRC 0666, “Printer Interface Error”.

Logic Card Replacement

Before you install new parts ensure that the logic cables listed in Power-On Sequence Error Codes are seated properly.

Table 32. MAP 0070

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit’s Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		

Table 32. MAP 0070 (continued)

Step	Questions/Actions	Yes	No
Step 1.	A solid failure is one that occurs every time diagnostics are run. Logic Unit diagnostics run when the printer is powered on and before 0000 appears on the Maintenance Panel. See Chapter 2. Diagnostics for additional diagnostics that can loop the power-on sequence tests and that test the Printer/Control Unit interface. **Is the failure solid?**	Do the following: • Go to Logic Unit Errors and look for the error indicated on the Maintenance Panel. • Check all the listed cables for damage and correct plugging. • Power on the printer to see if you have fixed the condition. If the problem is still present, continue. • Install the FRUs listed for the error, one at a time, in the order listed. • Verify the fix after you replace each FRU. • Reinstall any FRU that did not fix the problem.	• Go to Logic Unit Errors and look for the error indicated on the Maintenance Panel. • Install the FRUs listed for the error together in one step.

Logic Unit Errors

IMPORTANT: (*) The CPxxx Card requires adjustment before installation.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Locations Link	Parts Link	Removals & Adjustments Link
CPxxx Card (*)	1453	2114	1760
Battery on CPxxx Card	1471	2116	1760
FU041 Card	1442	2118	1764
IF491 (Printer Interface) Card	1456	2118	1520
MB071	1471	2116	1763
MIC	1460	2124	1522
PC561 Card	1453	2116	1764
Cable (PJ325 to PJ631)			
Interface Cable (PJJ6 to PJ202)			
Interface Cable (PJ401 to PJ201)			

Table 33. Power-On Sequence Error Codes

Maintenance Panel Display	**Possible Failing FRUs** @	**Error Description**
..11	• CPxxx Card (*) • FU041 Card • PC561 Card • Interface Cable PJJ6 to PJ202 • Signal Interface Cable (PJ401 to PJ201) • Mechanism Interface Card (MIC) • Printer Interface Card (IF491)	Address bus parity error. Static discharge can cause this error.
..12	• CPxxx Card (*) • FU041 Card • PC561 Card • Interface Cable PJJ6 to PJ202 • Signal Interface Cable (PJ401 to PJ201) • Mechanism Interface Card (MIC) • Printer Interface Card (IF491)	Data bus parity error. Static discharge can cause this error.
..13	See comment in the next column. • CPxxx Card (*) • Battery on the CPxxx Card • MB071 Card	ROM/RAM data parity error. Static discharge can cause this error by destroying the contents of the NVS Memory. This may be caused when changing the Diagnostic Function Switch position on the CPxxx Card. Before you install a new CPxxx Card, clear the memory on the old card and then rewrite the correct values. If this does not fix the problem, install a new battery or a new card (Read From or Write to Memory (Position 2)).
..15	• CPxxx Card (*)	Program loop error.
..1D	• CPxxx Card (*) • MB071 Card	RAM READ/WRITE error.
..30	• CPxxx Card (*)	Bus error on the CPxxx Card.

Table 33. Power-On Sequence Error Codes (continued)

Maintenance Panel Display	**Possible Failing FRUs @**	**Error Description**
..31	• FU041 Card • CPxxx Card (*) • Cable (PJ325 to PJ631)	Bus error on the FU041 Card.
..32	• PC561 Card • CPxxx Card (*) • Cable (PJ326 to PJ335)	Bus error on the PC561 Card.
..40	• CPxxx Card (*)	CPxxx Card time-out 0 error.
..41	• CPxxx Card (*)	CPxxx Card time-out 1 error.
..42	• CPxxx Card (*)	CPxxx Card time-out 2 error.
..43	• CPxxx Card (*)	CPxxx Card time-out 3 error (PF REV).
..44	• CPxxx Card (*)	CPxxx Card time-out 4 error (PF FWD).
..45	• CPxxx Card (*)	CPxxx Card time-out 5 error (PF DRV).
..46	• CPxxx Card (*)	CPxxx Card time-out 6 error.
..47	• CPxxx Card (*)	CPxxx Card time-out 7 error (HL ON).
..48	• CPxxx Card (*)	CPxxx Card time-out 8 error (HL OFF).
..49	• CPxxx Card (*)	CPxxx Card time-out 9 error (HL DRV).
..4A	• CPxxx Card (*)	CPxxx Card time-out A error.
..4B	• CPxxx Card (*)	CPxxx Card time-out B error (TF DRV).
..4C	• CPxxx Card (*)	CPxxx Card time-out C error.
..4D	• CPxxx Card (*)	CPxxx Card time-out D error.
..4E	• CPxxx Card (*)	CPxxx Card time-out E error.

Table 33. Power-On Sequence Error Codes (continued)

Maintenance Panel Display	**Possible Failing FRUs @**	**Error Description**
..58	• PC561 Card	PC561 Card time-out 0 error.
..59	• PC561 Card	PC561 Card time-out 1 error.
..5A	• PC561 Card	PC561 Card time-out 2 error.
..60	• FU041 Card	FU041 Card time-out 0 error (BLT 2).
..61	• FU041 Card	FU041 Card time-out 1 error (BLT 1).
..62	• FU041 Card	FU041 Card time-out 2 error (BRL DRV).
..63	• FU041 Card	FU041 Card time-out 3 error (OIL).
..64	• FU041 Card	FU041 Card time-out 4 error (SF DRV).
..65	• FU041 Card	FU041 Card time-out 5 error (SF TURN).
..66	• FU041 Card	FU041 Card time-out 6 error (STR CNT).
..67	• FU041 Card	FU041 Card time-out 7 error (STR FNS).
..68	• FU041 Card	FU041 Card time-out 8 error (STR DRV).
..69	• FU041 Card	FU041 Card time-out 9 error (SF FNS).
..6A	• FU041 Card	FU041 Card time-out A error (R/L BLT DRV).
..6B	• FU041 Card	FU041 Card time-out B error (BR).
..A0	• CPxxx Card (*)	Drum Drive has failed.
..A1	• CPxxx Card (*)	Scuff Roll Drive has failed.
..A2	• CPxxx Card (*)	Slave GR has failed.
..A8	• CPxxx Card (*)	Slave does not start.

Table 33. Power-On Sequence Error Codes (continued)

Maintenance Panel Display	**Possible Failing FRUs** @	**Error Description**
..A9	• CPxxx Card (*)	Slave RAM READ/WRITE error.
..AA	• CPxxx Card (*)	Main processor does not accept data from slave correctly.
..AC	• CPxxx Card (*)	Bus error between main and slave processors.
..AF	• CPxxx Card (*)	Slave bus ad TM check time-out error.

MAP 0104: Retractor Is Retracted During Print

Symptom Explanation	Conditions That Could Cause This Symptom
The Retractor Motor Encoder (S113) indicates a position error even though the Retractor Motor (M103) may be operating correctly.	• There is a failure in the Retractor Motor Encoder (S133) or its sensing circuitry. • The PC561 Card is defective. • The Retractor Motor Encoder (S113) is out of adjustment.
The Retractor Motor (M103) does not rotate or does not rotate smoothly.	• The DV061 Card is defective. • The CPxxx Card is defective. • There is a failure in the Retractor Motor (M103) (electrical or binding) or its drive circuitry.

REFERENCES

- Removals & Adjustments - Transfer Station
- Circuit Diagrams - CD01 - Retractor Motor (M103)
- Wiring Diagrams - WD31 - Retractor Motor (M103)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Print the Print Pack (1069). An error is indicated by an SRC 104 on the Display/Touch Screen or by **E08A** on the Maintenance Panel.

QUICK CHECKS

- None

SERVICE CHECKS

- Check for a binding Retractor mechanism with this procedure:
  1. SHUTDOWN AND POWER OFF THE PRINTER.
  2. Access the Retractor Motor (M103) by removing the motor cover.
  3. Turn the motor drive shaft by hand. The mechanism should move freely.

The following checks can be used to verify the problem, but they cannot be used to isolate the failing part. This is because the same checking circuits are used in the diagnostic mode as in the print mode.

- Run Driver Routine 11. This routine moves the Retractor between the extended and retracted positions. The possible errors are:
  - E18A – same as SRC 104 or E08A on the Maintenance Panel.
  - E18b – same as SRC 115 or E08b on the Maintenance Panel.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Retractor Motor (M103)	50%	1443	2032	1903
Retractor Motor Encoder (S113)	20%	1443	2032	1903
DV061 Card	10%	1453	2114	1764
PC561 Card	10%	1453	2116	1764
CPxxx Card	05%	1453	2114	1760
Retractor mechanism binding (SERVICE CHECKS)	05%	1443	2032	1903

MAP 0104 BEGINS

Table 34. MAP 0104

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	Do the following, one step at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • The coupling on the Retractor Motor (M103) may be loose. • Check for a binding Retractor mechanism. • Do the following, one step at a time, until the problem is corrected: – Install a new Retractor Motor (M103) assembly (including the Retractor Motor Encoder (S113)). – Install a new DV061 Card. – Install a new PC561 Card. – Install a new CPxxx Card. – Repair an open circuit between PJ337 and PJ137. @		

MAP 0113: Tractor Motor Encoder Phase Error

Symptom Explanation	Conditions That Could Cause This Symptom
A phase of the Tractor Motor Encoder (S112) is incorrect. This usually indicates that the tractors have slowed down due to a bind or drag or they are not operating smoothly.	• The forms have jammed and stalled the tractors. In this case, the tractors stalled before the forms could tear. If a jam has occurred, go to MAP 0119: Upper Tractor Forms Jam. • The urge unit is powered off or is not turning. • There is excessive drag on the forms which has stalled the tractors. This is caused by preprocessor equipment or the forms catching on the box or input area. • The motor or tractor drive mechanism is binding. • The encoder sensing circuit has failed. • The CPxxx Card is defective. • The DV061 Card is defective. • The Tractor Motor (M105) is defective. • The PC561 Card is defective.

REFERENCES

- Removals & Adjustments - Transfer Station
- Circuit Diagrams - CD03 - Tractor Motor and Encoder (M105)
- Wiring Diagrams - WD32 - Tractor Motor (M105)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Print the **alternate** print sample (1069).
  An error is indicated by an SRC 113 on the Display/Touch Screen or by **E084** on the Maintenance Panel.

QUICK CHECKS

- This problem may be caused by the forms. Check for any of the following forms problem conditions:
  1. The urge unit is not powered on, or is not turning.
  2. Jamming in the premeasure gap due to an irregularity (piece of wood pulp, metal, or pile of chads), especially if the forms are heavy.
  3. Preprocessor equipment causing excessive drag. Common causes are turn bars and rollers (urge units) between the tractors and the roll feed unit.
  4. Heavy forms
  5. Stiff forms
  6. Damp forms
  7. Binding on the box
  8. Binding on the static brush or splicing station

SERVICE CHECKS

- Run Sensor Routine 91. An error is indicated by **E1EC** on the Maintenance Panel.
- Run Driver Routine 10. An error is indicated by **E186** on the Maintenance Panel.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Tractor Motor (M105)	95%	1445	2028	1919
DV061 Card	02%	1453	2114	1764
PC561 Card	01%	1453	2116	1764
CPxxx Card	01%	1453	2114	1760
Tractor Motor Encoder (S112)	01%	1445	2028 (included in motor)	1919
Forms jam	---			
Excessive drag caused by preprocessor equipment	---			
Forms or forms installation	---			

MAP 0113 BEGINS

Table 35. MAP 0113

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Perform the QUICK CHECKS. If you find no problems, continue. The forms may have jammed, or they may have stopped for no apparent reason. **Have the forms stopped without being jammed?**	Go to Step 2.	A jam has occurred which has stalled the tractors before a tear was detected by the Upper Tractor Jam Sensor. • Go to MAP 0119: Upper Tractor Forms Jam.

Table 35. MAP 0113 (continued)

Step	Questions/Actions	Yes	No
Step 2.	A roll feed or other preprocessor equipment may be stalling the tractors. **Does the problem occur using boxed forms (either in or out of the box)?**	Go to Step 3.	The problem only occurs when preprocessor equipment is being used. Ask the customer to ensure that the preprocessor equipment is adjusted correctly. Some items to check are: • The adjustments should be made with the widest, heaviest form that will be used. • If possible, ensure that the forms are slack before feeding into the tractors. No tension is permissible above the weight of the forms.

Table 35. MAP 0113 (continued)

Step	Questions/Actions	Yes	No
Step 3.	Do the following, one at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Turn the Tractor Drive Shaft by hand and check for a binding condition. If this is difficult, you may also turn the Tractor Drive Pulleys. **Is the Tractor drive mechanism binding?**	• Check for binding in the Tractor Motor (M105), Tractors, bearings, and other parts of the tractor drive mechanism. Repair if necessary.	Do the following, one step at a time, until the problem is corrected: • Check connectors PJ138, PJ139, PJ153, and PJ337 for correct contact. • Install the new parts listed below, one at a time, until the problem is corrected: – CPxxx Card – PC561 Card – DV061 Card – Tractor Motor (M105) (including the Tractor Motor Encoder (S112)) • Repair an open circuit between – PJ138 and PJ309 – PJ302 and PJ329 – PJ139–3 and PJ337–29 – PJ139–1 and PJ337–30 – PJ139–2 and PJ337–31 @

MAP 0114: Tractor Motor Over Current

Symptom Explanation	Conditions That Could Cause This Symptom
The Tractor Motor (M105) is drawing too much current.	• The motor or tractor drive mechanism is binding. • The current sensing circuit has failed. • The DV061 Card is defective. • The CPxxx Card is defective. • The Tractor Motor (M105) is defective.

REFERENCES

- Removals & Adjustments - Transfer Station
- Circuit Diagrams - CD03 - Tractor Motor and Encoder (M105)
- Wiring Diagrams - WD32 - Tractor Motor (M105)

FIX VERIFICATION

- Print the Print Pack (1069).
  An error is indicated by an SRC 114 on the Display/Touch Screen or by **E0d8** on the Maintenance Panel.

QUICK CHECKS

- This problem may be caused by the forms. Check for any of the following forms problem conditions:
  1. Heavy
  2. Stiff
  3. Damp
  4. Binding on the box
  5. Binding on the static brush or splicing station
  6. Preprocessor equipment causing excessive drag on the forms.

SERVICE CHECKS

- None

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Tractor Motor (M105)	97%	1445	2028	1919
DV061 Card	02%	1453	2114	1764
CPxxx Card	01%	1453	2114	1760
Forms or forms installation	---	- -	- -	- -
Binding in the tractors, bearings, or other parts of the tractor drive	---	- -	2032	- -

MAP 0114 BEGINS

Table 36. MAP 0114

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		

Table 36. MAP 0114 (continued)

Step	Questions/Actions	Yes	No
Step 1.	If you found no problems using the QUICK CHECKS, continue with the questions. Do the following, one at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Turn the Tractor Drive Shafts by hand and check for a binding condition. If this is difficult, you may also turn the Tractor Drive Pulleys. **Is the Tractor drive binding?**	• Check for binding in the Tractor Motor (M105), tractors, bearings, and other parts of the tractor drive mechanism. Repair if necessary.	Do the following, one step at a time, until the problem is corrected: • Install the new parts listed below, one at a time, until the problem is corrected: – Tractor Motor (M105) (including the Tractor Motor Encoder (S112)) – DV061 Card – CPxxx Card • Check for a short circuit to ground at the following: – PJ309–1 – PJ309–2 – PJ138–1 – PJ138–2 – PJ302–7 – PJ329–7 Repair if necessary. @

MAP 0115: Retractor Position Error

Symptom Explanation	Conditions That Could Cause This Symptom
The home position of the Retractor Motor Encoder (S113) could not be detected.	• There is a failure in the Retractor Motor Encoder (S113) or its sensing circuitry. • The PC561 Card is defective. • The Retractor Motor Encoder (S113) is out of adjustment.
The Retractor Motor (M103) does not rotate or does not rotate smoothly.	• There is a failure in the Retractor Motor (M103) or its drive circuitry. • The DV061 Card is defective. • The Retractor mechanism is binding or is locked.

REFERENCES

- Removals & Adjustments - Transfer Station
- Circuit Diagrams - CD01 - Retractor Motor (M103)
- Wiring Diagrams - WD31 - Retractor Motor (M103)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Power off and power on the printer.
  An error is indicated by an SRC 115 on the Display/Touch Screen or by **E08b** on the Maintenance Panel.

QUICK CHECKS

- None

SERVICE CHECKS

- Check for a binding Retractor mechanism with this procedure:
  1. SHUTDOWN AND POWER OFF THE PRINTER.
  2. Manually turn the Retractor Motor (M103) drive shaft. The mechanism should move freely.

The following checks can be used to verify the problem, but they cannot be used to isolate the failing part. This is because the same checking circuits are used in the diagnostic mode as in the print mode.

- Run Driver Routine 11. This routine moves the Retractor between the extended and retracted positions. The possible errors are:
  - E18A – same as SRC 104 or E08A on the Maintenance Panel.
  - E18b – same as SRC 115 or E08b on the Maintenance Panel.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Retractor Motor (M103)	50%	1443	2032	1903
Retractor Motor Encoder (S113)	20%	1443	2032	1929
DV061 Card	10%	1453	2114	1764
PC561 Card	10%	1453	2116	1764
CPxxx Card	05%	1453	2114	1760
Retractor mechanism binding	05%	1443	2032	1903
Connector disconnected	---	- -	- -	- -

MAP 0115 BEGINS

Table 37. MAP 0115

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	CAUTION: **<5> High-voltage is present. Use care while working in this area.**		

Table 37. MAP 0115 (continued)

Step	Questions/Actions	Yes	No
Step 1.	Do the following, one step at a time, until the problem is corrected: • Check the following connectors for correct contact: – PJ136 – PJ119 – PJ137 – PJ153 – PJ329 – PJ302 – PJ337 • Check for a binding Retractor mechanism (SERVICE CHECKS). • Install the new parts listed below, one at a time, until the problem is corrected: – Retractor Motor (M103) assembly (including the Retractor Motor Encoder (S113)) – DV061 Card – PC561 Card – CPxxx Card • Repair an open circuit between one of the following pairs: – PJ136–1 and PJ322–1 – PJ136–2 and PJ322–2 – PJ137–3 and PJ337–32 – PJ137–1 and PJ337–33 – PJ137–2 and PJ337–34 – PJ329–22 and PJ302–22 – PJ329–23 and PJ302–23 @		

MAP 0116: Retractor Motor Over Current

Symptom Explanation	Conditions That Could Cause This Symptom
Breaker CB4 on the DV061 Card is tripped.	• The DV061 Card is defective. • The Retractor Motor (M103) is defective. • The Retractor Motor (M103) or drive mechanism is binding.
Breaker CB4 on the DV061 Card is not tripped.	• The DV061 Card is defective. • The CPxxx Card is defective.

REFERENCES

- Removals & Adjustments - Transfer Station
- Circuit Diagrams - CD01 - Retractor Motor (M103)
- Wiring Diagrams - WD31 - Retractor Motor (M103)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Print the Print Pack.
  An error is indicated by an SRC 116 on the Display/Touch Screen or by **E0d9** on the Maintenance Panel.

QUICK CHECKS

- Reset CB4 on the DV061 Card.

SERVICE CHECKS

- Check for a binding Retractor mechanism with this procedure:
  1. SHUTDOWN AND POWER OFF THE PRINTER.
  2. Reset CB4 on the DV061 Card.
  3. Access the Retractor Motor (M103) by removing the cover on the back of the Transfer Station.
  4. Turn the motor drive shaft by hand. The mechanism should move freely.

The following checks can be used to verify the problem, but they cannot be used to isolate the failing part. This is because the same checking circuits are used in the diagnostic mode as in the print mode.

- Run Driver Routine 11. This routine moves the Retractors between the extended and retracted positions. The possible errors are:
  - E18A – same as SRC 104 or E08A on the Maintenance Panel.
  - E18b – same as SRC 115 or E08b on the Maintenance Panel.

  Note: The above errors have a meaning different from SRC 116, which is fixed in this MAP.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Retractor Motor (M103) assembly	97%	1443	2032	1903
DV061 Card	01%	1453	2114	1764
CPxxx Card	01%	1453	2114	1760
Binding in the driven parts of the retractor mechanism	---	- -	- -	- -

MAP 0116 BEGINS

Table 38. MAP 0116

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	Do the following, one at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Turn the Retractor Motor (M103) shaft by hand and check for a binding condition. **Is the Retractor mechanism binding?**	• Remove the Retractor Motor (M103) and locate the bind. Repair as necessary.	Do the following, one step at a time, until the problem is corrected: • Install the new parts listed below, one at a time, until the problem is corrected: – Retractor Motor (M103) Assembly (including the Retractor Motor Encoder (S113)) – DV061 Card – CPxxx Card • Check for a short circuit between one of the following pairs: – PJ136–1 and PJ322–1 – PJ136–2 and PJ322–2 @

MAP 0117: Forms Width Sensor

Symptom Explanation	Conditions That Could Cause This Symptom
No output from the Forms Width Hall sensors.	• Adjustment of the gap between the Hall sensors and the magnet on the forms tractor. • The Forms Width Sensor Board (PW111) is defective. • The PC561 Card is defective.
Output from three or more of the Forms Width Hall sensors.	• The Forms Width Sensor Board (PW111) is defective. • The PC561 Card is defective.

REFERENCES

- Removals & Adjustments - Transfer Station
- Circuit Diagrams - CD05 - Forms Width Hall Sensor
- Wiring Diagrams - WD55 - Forms Path Sensors - PW111 & PC561 Cards
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Sensor Routine 65. The Maintenance Panel indicates the forms width setting in inches.
- Slide the rear tractor to move the forms width from 8 or 9 inches to 18 inches and back to 8 or 9 inches. The forms width is indicated on the Maintenance Panel.

QUICK CHECKS

- None

SERVICE CHECKS

- Run Sensor Routine 65. The Maintenance Panel indicates the output of the Forms Width Hall sensors in inches.
- Move the rear tractor to change the output of the Hall sensors.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Magnet-to-sensor gap adjustment	50%	1443	2036	1894
Forms Width Sensor Board (PW111)	30%	1443	2036	1894
PC561 Card	20%	1453	2116	1764

MAP 0117 BEGINS

Table 39. MAP 0117

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Visually examine the magnets on the rear tractor assembly for any indication of mechanical problems. Look for loose, broken, or missing parts. • Ensure that the magnet-to-sensor gap is adjusted correctly. **Is there a mechanical or adjustment problem with the Forms Width Sensor mechanism?**	• Adjust, repair or replace as necessary.	There are no test points or diagnostic routines that will isolate among the possible failing parts. Do the following, one step at a time, until the problem is corrected: • Ensure that connectors PJ140, PJ155, and PJ338 are connected correctly. • Install a new Forms Width Sensor Board (PW111). • Install a new PC561 Card. @

MAP 0118: Forms Width Sensor Fuse

Symptom Explanation	Conditions That Could Cause This Symptom
The Forms Width Sensor Circuit Breaker (CB2) has tripped.	• CB2 on the PC561 Card has tripped. • The Forms Width Sensor Board (PW111) is defective. • The PC561 Card is defective. • The Upper Tractor Jam Sensor is defective.
The Forms Width Sensor Circuit Breaker (CB2) has not tripped.	• The PC561 Card is defective.

REFERENCES

- Removals & Adjustments - Transfer Station
- Circuit Diagrams - CD06 - Forms Width Sensor Circuit Breaker
- Wiring Diagrams - WD55 - Forms Path Sensors - PW111 & PC561 Cards

FIX VERIFICATION

- Power on the printer. An error is indicated by **E05A** on the Maintenance Panel.

QUICK CHECKS

- Visually check CB2 on the PC561 Card to see if it has tripped.

SERVICE CHECKS

- Reset CB2.
- POR the printer to see if the error occurs again.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
CB2 on the PC561 Card tripped due to a short or it is defective	50%	1453	2116	1764
Forms Width Sensor Board (PW111)	30%	1443	2036	1894
PC561 Card	15%	1453	2116	1764
Upper Tractor Jam Sensor	05%	1443	2034	1918

MAP 0118 BEGINS

Table 40. MAP 0118

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	**Did error E05A occur during the Service Check?**	Go to Step 2.	The problem is intermittent. Go to MAP 0001: Introduction.

Table 40. MAP 0118 (continued)

Step	Questions/Actions	Yes	No
Step 2.	• SHUTDOWN AND POWER OFF THE PRINTER. • Measure the resistance between PJ338–1 and ground. The Forms Width Sensor Circuit Breaker (CB2) is on the PC561 Card. **Is the resistance less than 100 ohms?**	Go to Step 3.	• Reset CB2 and test. If the error happens again, install a new PC561 Card. @
Step 3.	• Disconnect PJ338. • Measure the resistance between P338–1 (PC561 Card side) and ground. **Is the resistance less than 100 ohms?**	• Reset CB2 and test. If the error happens again, install a new PC561 Card. @	Do the following, one step at a time, until the resistance between J338-1 (connector side) and ground is greater than 100 ohms: • Isolate a short/low resistance to ground between the following pairs of connectors and repair: – PJ338-1 and PJ301-1 – PJ141-3 and PJ301-3 • Install a new Upper Tractor Jam Sensor. • Install a new PW111 Card. @

MAP 0119: Upper Tractor Forms Jam

Symptom Explanation	Conditions That Could Cause This Symptom
The Upper Tractor Jam Sensor has not sensed the passing of the pin feed holes for over 60 milliseconds (2 inches).	• Constant light (reflected from forms) or darkness (torn forms). • The forms are torn or wrinkled. • The forms have lifted off the tractor pins. This problem has several causes, which are described in this MAP. • The Transfer Station may be out of adjustment. (See POSSIBLE FAILING PARTS OR ADJUSTMENTS.) • The sensor or tractor cover is covered with paper dust, chads, or adhesive. • The Jam sensor voltage is not between 1.7 V and 2.2 V. • The forms are not flat and tight over the sensor. • The detection circuitry has failed. • The Upper Tractor Jam Sensor has failed. • The PC561 Card is defective. • See QUICK CHECKS for other causes.

REFERENCES

- Removals & Adjustments - Transfer Station
- Circuit Diagrams - CD04 - Upper Tractor Jam Sensor
- Wiring Diagrams - WD55 - Forms Path Sensors - PW111 & PC561 Cards
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Print the **alternate** print sample (1069).

  An error is indicated by `UPPER TRACTOR FORMS JAM 119` on the Display/Touch Screen or by E07b on the Maintenance Panel.
- Run Sensor Routine 62. When the sensor is covered, **on62** appears on the Maintenance Panel, and the buzzer sounds.

  When the sensor is uncovered, **oF62** appears on the Maintenance Panel, and the buzzer does not sound.

QUICK CHECKS

Note: If end of forms (EOF) was reached, and an EOF error was not displayed, go to MAP 078A: End Of Forms Sensor.

Important:

To reset this error, advance the forms or clear them from the machine. Then press **Check Reset** or **Ready**, and reset Forms Set.

If the forms or holes are torn, jammed, or lifted off of the tractor pins, do the following:

1. Check for clinging chads or other forms irregularities that cause the forms to be torn in the pre-measure gap. Check the torn forms to see if the tear began at a pin feed hole, indicating that the jam was caused by a chad. This usually causes a tear pattern.
2. There may be too much resistance in the input area, sometimes caused by roll feed equipment, if the damage is on the leading edge of the hole. Check the preprocessor to ensure that it is not causing too much resistance or drag on the forms. If this is a duplex system, check the Urge Unit and the Buffer/Flipper Unit also, to ensure they are not causing too much resistance or drag on the forms.
3. Ensure that the forms are installed correctly on the tractor pins. Adjust the position of the rear tractor as necessary to ensure that the forms are tight between the tractors.
4. Watch the forms during printing to see if there is looseness at the front or rear of the Transfer Station. This problem causes the forms to lift off the Tractor pins or to rise above the sensor. This usually causes a crease along the holes. Use the MAP to determine the cause.

5. If this error occurs only with one form, especially a form that has never run successfully, check for the following:
   - If the tear begins along a perforation, look closely at the points where the perforation meets the edges of the form. The perforation should have ties at the end. If there are cuts at the end, the form may catch at the Lower Forms Guide in the pre-measure gap.

     Also, tears beginning along a perforation may indicate weak perforation strength in that form. See “Perforation Strength” in the Forms Design Reference.
   - The form may be heavy or stiff and may not lie flat over the sensor.
   - The spacing of the pin feed holes may be imperfect. See the Forms Design Reference for ways to check the hole spacing. This problem can cause the forms to lift out of the tractors.

     Form problems cannot be fixed by machine repair. The customer must work with the forms supplier to select a different form for their needs.
6. Ensure that the forms are positioned correctly in the input area. If the stack is too far to the rear or at an angle, the perforations can tear during feeding as the forms are twisted.
7. Check the condition of the forms in the input area for tears or damage before they reach the Transfer Station. This condition indicates a problem in forms quality or handling. For example, the forms box may have been punctured or otherwise damaged, which resulted in defects in the perforated edge of the forms.
8. The forms may not be feeding freely from the box. If there is any resistance to pulling the forms from the box, remove the forms from the box.
9. Roll feed equipment may be stalling the Tractors. Check the error log for 113 or other errors that indicate that the Tractor Motor (M105) is having speed errors.
10. If this is a duplex system, ensure that the Urge Unit and Buffer/Flipper Unit are aligned correctly and operating properly. They may be causing too much resistance or drag on the forms.
11. The forms may not be feeding freely over the chad brushes on the Input Guide and Splicing Table.
12. If the jam message cannot be cleared, check CB2 on the PC561 Card and reset if necessary.

If the forms are not torn (the forms have stopped for no apparent reason):

Note: Intermittent false jams may be the result of more than one of these factors.

1. Ensure that the forms are installed so that they are tight and flat over the sensor.
2. Ensure that the Upper Tractor Jam Sensor and the black area on the underside of the Upper Tractor Cover are free of scratches, dust, chads, and adhesive.
3. Clean the Upper Tractor Jam Sensor. Use a pencil eraser if necessary.
4. There may be stray room light falling on the sensor. This is usually caused by bright, overhead, incandescent lighting. Close the printer top cover.
5. If this error occurs only with one form, especially a form that has never run successfully, check for the following:
   - Printing or dark colors between the pin feed holes on the back of the form. This will appear to the logic, as a torn form.
   - If the form is heavy or stiff, it may not lie flat over the sensor.
   - Poor reflectivity of infrared light. This sometimes occurs with recycled or colored forms.
   - Hole spacing precision. Check if there is damage to the edges of the holes caused by the pins. This indicates that the hole spacing may be varying.

   Form problems cannot be fixed by machine repair. The customer must work with the forms supplier to select a different form for their needs.
6. The Diagnostic Function Switch may have been left in position **9**, which would reduce the tolerance of the circuit, and worsen any of the above problems. Set the Diagnostic Function Switch to position **0**.
7. Roll feed equipment may be stalling the Tractors. Check the error log for 113 or other errors that indicate that the Tractor Motor (M105) is having speed errors.
8. If this is a duplex system, ensure that the Urge Unit and Buffer/Flipper Unit are aligned correctly and operating properly. They may be causing too much resistance or drag on the forms.
9. If the problem occurs on the last sheet of the input forms, the printer has failed to detect End of Forms. (Ensure that a tall forms box is not blocking the EOF sensor.) EOF problems are fixed in MAP 078A: End Of Forms Sensor.

10. Watch the forms during printing to determine if they lift off the sensor. Use this MAP to determine the cause.
11. If the jam message cannot be cleared, check CB2 on the PC561 Card and reset if necessary.

SERVICE CHECKS

- Run Sensor Routine 62. When the sensor is covered, **on62** appears on the Maintenance Panel, and the buzzer sounds.

  When the sensor is uncovered, **oF62** appears on the Maintenance Panel, and the buzzer does not sound.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Tractor Jam Sensor	80%	1443	2034	1918
Forms Width Sensor Board (PW111)	15%	1443	2036	1894
PC561 Card	05%	1453	2116	1764
Forms or forms installation	---	- -	- -	- -
Transfer Station adjustments affecting the forms tension: • Tractor alignment (1907) • Path Modifier position (1933) • Retractor detent (1929) • Retractor to PC Drum gap (1658)	---			

Notes:

1. The QUICK CHECKS are very important in this MAP.
2. The Transfer Station forms tension adjustments can cause the forms to lift off of the Tractor pins. Watch for any looseness, waviness, or wrinkling in the forms when stopped or running.

MAP 0119 BEGINS

Important

To reset this error, clear the forms from the machine. Then press **Check Reset** or **Ready** and reset the Forms Set.

Table 41. MAP 0119

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		

Table 41. MAP 0119 (continued)

Step	Questions/Actions	Yes	No
Step 1.	**If you found no problems using the QUICK CHECKS, continue with the questions.** This MAP requires that the error be present in order to use the following questions. It is important to use the forms with which the error occurs, and to watch the operator attempt to cause the problem. You may use the procedure in FIX VERIFICATION. **Can you cause the error to happen?**	Go to Step 2.	• Ask the operator to do the following the next time a jam occurs: – Trace the Lower Tractor Covers on the forms. This will help you later determine the position of the jam. – Save the jammed forms for you to analyze. You may need about 3 sheets on either side of the jam. • Ensure that all of the QUICK CHECKS have been done. • Check the adjustments listed in POSSIBLE FAILING PARTS OR ADJUSTMENTS. • Replace the parts listed in POSSIBLE FAILING PARTS OR ADJUSTMENTS. @

Table 41. MAP 0119 (continued)

Step	Questions/Actions	Yes	No
Step 2.	If the problem occurs on the last sheet of the input forms, the printer has failed to detect End of Forms. (Ensure that a tall forms box is not blocking the EOF sensor.) EOF problems are fixed in MAP 078A: End Of Forms Sensor. The perforations, carrier strip, or pin feed holes may be torn. **Are the forms torn or damaged in any way when they stop?**	Go to Step 3.	Go to Step 4.
Step 3.	When forms have lifted off of the Upper Tractor pins, there is often a crease along the holes before the jam. • If you are not sure, answer No to this question. **Does it appear that the problem may be caused by the forms lifting off of the Upper Tractor pins?**	Go to Step 7.	Go to Step 8.

Table 41. MAP 0119 (continued)

Step	Questions/Actions	Yes	No
Step 4.	Intermittent false jams may be the result of several factors. For example, poor infrared reflectivity, paper dust on the sensor and tractor cover, and lifting of the form at the sensor can occur at the same time. Continue with the following questions, even if you feel that there is an obvious forms feeding problem. The jam sensor may have failed in the on or off state. Do the following, one at a time, until the problem is corrected: • Remove the forms from the upper tractors. • Run Sensor Routine 62 using plain white paper. • Cover and uncover the sensor with plain white paper. **Is on62 displayed on the Maintenance Panel with the sensor covered and is oF62 displayed with sensor uncovered?**	Go to Step 5.	• Clean the Tractor Jam Sensor. Use a pencil eraser if necessary. • Check connectors PJ301 and PJ141 for correct contact. Do the following, one step at a time, until the problem is corrected: • Install a new Tractor Jam Sensor. • Install a new Forms Width Sensor Board (PW111). @

Table 41. MAP 0119 (continued)

Step	Questions/Actions	Yes	No
Step 5.	The forms may not successfully reflect infrared light. **Is the form made of recycled paper, or does it have any dark colors or printing on the back (sensor side)?**	This form may not run on the Infoprint 3000. Run Sensor Routine 62 to test this, or any other form, with this procedure: • Raise the tractor cover and move the carrier strip over the sensor. • If both on and off states are detected, the form should run. Watch for printing on the back, however, that periodically spans several holes. The operating margin is reduced with this form. Stray light, forms lifting at the sensor due to various tension adjustments, and paper dust could cause intermittent problems. Go to Step 7.	Go to Step 6.

Table 41. MAP 0119 (continued)

Step	Questions/Actions	Yes	No
Step 6.	The Tractors may not be driving. • Run Driver Routine 10. **Did the Tractors run correctly during the test?**	Check for any of the following problems: • Tractor pins binding on the Tractor Cover channel. • Roll feed equipment stalling the Tractors. Check the error log for 113 or other errors that indicate that the Tractor Motor (M105) is having speed errors. Go to Step 7.	• Inspect the Tractor Drive Belt, pulleys, clamping rings, and bearings, and correct as needed. Check for Tractor pins binding on the Tractor Cover channel. • Especially check the tension of the Tractor Drive Belt, and check that the Tractor Drive Pulleys are tightly clamped to the Tractor Drive Shafts (Tractors).

Table 41. MAP 0119 (continued)

Step	Questions/Actions	Yes	No
Step 7.	The forms may be rising over the sensor, and possibly lifting off of the tractor pins. Extreme cases cause a crease along the holes. False jams can be caused when a tension problem causes a wave or bubble in the forms just past the Upper Front Tractor Cover. Investigate the following possible causes of the lifting forms: • Perform the Check procedures in Transfer Station for each of the following items, and adjust if necessary: – Tractor Alignment – Tension Arm Position – Retractor Detent – Retractor to PC Drum Gap – Path Modifier Position • The tractors may be too close together, causing wrinkling. Instruct the operators on how to correctly set the tension by moving the Rear Tractor. • Skew or steering problems. In this case, a wave or bubble will be seen in the forms when they are running. Check the error log for 133 errors. Go to MAP 0133: Skew Error for the causes of skew. • Ensure that the preprocessor is aligned correctly. If this is a duplex system, ensure that the Urge Unit and Buffer/Flipper Unit are aligned correctly and operating properly. They may be causing too much resistance or drag on the forms. • Stiff, heavy forms or strong perforations. • Broken tractor pins. (continued on next page)		

Table 41. MAP 0119 (continued)

Step	Questions/Actions	Yes	No
Step 7, (cont'd)	• Wrinkled forms. • Front Tractor Cover gap (too wide). • Play in the Tractor Pin Feed Belt If the problem continues, perform the following steps: • Clean the Upper Tractor Jam Sensor. Use a pencil eraser if necessary. • Check for oversized or irregularly spaced pin feed holes. • Ensure that the Diagnostic Function Switch is not in position **9**. • Check for a loose or incorrect Upper Tractor Jam Sensor mounting. • Roll feed equipment may be stalling the Tractors. Check the error log for 113 or other errors that indicate that the Tractor Motor (M105) is having speed errors. • Recheck all of the items in QUICK CHECKS. • Install a new Upper Tractor Jam Sensor. If the problem is still not fixed, do the following, one step at a time, until the problem is corrected: • Repair an open or short circuit between one of the following pairs: – PJ140–1 and PJ338–1 – PJ140–2 and PJ338–2 – PJ140–14 and PJ338–14 – PJ140–15 and PJ338–15 • Install the new parts listed below, one at a time, until the problem is corrected: – PC561 Card – Forms Width Sensor Board (PW111) @		

Table 41. MAP 0119 (continued)

Step	Questions/Actions	Yes	No
	DANGER **<5> High-voltage is present. Use care while working in this area.**		

Table 41. MAP 0119 (continued)

Step	Questions/Actions	Yes	No
Step 8.	This step assumes that the tear began before the upper Tractors. This problem could be caused by the forms. This problem is often caused by a chad that is pushed out by the Lower Tractor pins. The double thickness then jams and is torn by the Lower Forms Guide in the pre-measure gap. The tear usually begins at a hole, and causes a tear pattern. Piles of chads in the middle of the form can cause a tear pattern that looks like an inverted **V**. From the jam sample, check if the tear began at a perforation. The tear begins along a perforation instead of at a hole. Look closely at the points where the folding perforation meets the edges of the form. The perforation should have ties at the end. If there are cuts at the end, the form may catch at the Lower Forms Guide in the pre-measure gap. Also, tears beginning along a perforation may indicate weak perforation strength in that form. See “Perforation Strength” in the Forms Design Reference. • Check for damaged holes. Be aware that the problem could be caused by the following adjustments: – Path Modifier Position – Retractor Motor Detent Position Adjustment Other possible forms problems are: – Cut-out portions of the form – Labels – Surface irregularities – Tractor pins binding on the Tractor Cover channel – Roll feed equipment stalling the Tractors (continued on next page)		

Table 41. MAP 0119 (continued)

Step	Questions/Actions	Yes	No
Step 8 (cont'd)	• Check the error log for 113 or other errors that indicate that the Tractor Motor (M105) is having speed errors. • If this is a duplex system, ensure that the Urge Unit and Buffer/Flipper Unit are aligned correctly and operating properly. They may be causing too much resistance or drag on the forms. • The pre-measure gap is maintained by a shim plate at the end of the shaft. Ensure that the shims are in place. • If the problem remains, return to Step 7.		

MAP 011E: Tractor Motor Initial Position Error

Symptom Explanation	Conditions That Could Cause This Symptom
The Tractor Motor (M105) cannot seek to its home position at initialization.	• There is a failure in the Tractor Motor Encoder (S112) or its wiring. • The Tractor Motor Encoder (S112) is out of adjustment. • There is a failure in the PC561 Card. • The CPxxx Card is defective. • The DV061 Card is defective. • The Tractor Motor (M105) is defective. • The Tractor Motor (M105) drive mechanism is defective.

REFERENCES

- Removals & Adjustments - Transfer Station
- Circuit Diagrams - CD03 - Tractor Motor and Encoder (M105)
- Wiring Diagrams - WD32 - Tractor Motor (M105)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Power on the printer.

An error is indicated by an SRC 11E on the Display/Touch Screen or **E086** on the Maintenance Panel.

QUICK CHECKS

- Check to see that the preprocessor is aligned correctly. If this is a duplex system, ensure that the Urge Unit and Buffer/Flipper Unit are aligned correctly and operating properly. They may be causing too much resistance or drag on the forms.

SERVICE CHECKS

- Run Driver Routine 10. An error is indicated by **E186** on the Maintenance Panel.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
PC561 Card	50%	1453	2116	1764
CPxxx Card	30%	1453	2114	1760
Tractor Motor (M105)	10%	1445	2028	1919
DV061 Card	10%	1453	2114	1764

MAP 011E BEGINS

Table 42. MAP 011E

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		

Table 42. MAP 011E (continued)

Step	Questions/Actions	Yes	No
Step 1.	Do the following: • SHUTDOWN AND POWER OFF THE PRINTER. • Turn the Tractor Drive Shaft by hand and check for a binding condition. If this is difficult, turn the Tractor Drive Pulleys. **Is the Tractor drive mechanism binding?**	Check for binding in the Tractor Motor (M105), the Tractors, the Tractor Drive Shaft Bearings, and other parts of the Tractor drive mechanism.	Do the following, one step at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Check connectors PJ138, PJ139, PJ153, and PJ337 for correct contact. • Install the new parts listed below, one at a time, until the problem is corrected: – CPxxx Card – DV061 Card – Tractor Motor (M105) (including the Tractor Motor Encoder (S112)) • Repair an open circuit between: – PJ139 and PJ337 – PJ138–1 and PJ309–1 – PJ138–2 and PJ309–2 @

MAP 0121: Drum Rotation Error

Symptom Explanation	Conditions That Could Cause This Symptom
The drum rotation sensor (S105) that is adjacent to the bearing on the output shaft of the Drum Drive Motor (M107) detects that the PC Drum is rotating at an out-of-specification speed: either too slow, too fast, or variable.	• The Drum Drive Motor (M107) is defective. • The drum driver circuit is defective. • The Drum Motor Drive Belt is defective or out of adjustment. • The PC Drum is interfering with or dragging on something in its path. • The Drum Rotation Sensor (S105) is out of adjustment or is defective. • The Developer or Transfer Station Retractor is not adjusted correctly.

REFERENCES

- Removals & Adjustments - Drum Drive and Photoconductor (PC)
- Circuit Diagrams - CD13 - Drum Rotation Sensor (S105)
- Wiring Diagrams - WD34 - Drum Motor (M107)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- After you have corrected the 0121 error, inspect the drum surface for damage such as scratched.
- Print the **primary** print sample (1069) to see if the error occurs again.

QUICK CHECKS

- Ensure that the PC drum in installed correctly.

SERVICE CHECKS

- Run Sensor Routine 56. This routine checks the function of the Drum Rotation Sensor (S105).

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Drum Rotation Sensor (S105)	35%	1445	1976	1645
Drum Drive Motor (M107)	20%	1445	1974	1645
PR011 Card	10%	1446	2118	1764
Developer Gap Adjustments	10%	- -	- -	1659
Retractor	10%	1443	2032	1898
DV061 Card	05%	1453	2114	1764
CPxxx Card	05%	1453	2114	1760
PC561 Card	05%	1453	2116	1764

MAP 0121 BEGINS

Table 43. MAP 0121

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		

Table 43. MAP 0121 (continued)

Step	Questions/Actions	Yes	No
Step 1.	• Remove the center rear and drum covers. • Observe the drum drive while you run Run Driver Routine 08. **Did the Drum Drive Belt move smoothly?**(Disregard any maintenance panel errors that may have occurred.)	Go to Step 2.	Go to Step 5.
Step 2.	**Is the Drum Rotation Sensor magnet installed on the drum drive pulley?**	Go to Step 3.	• Install a new Drum Drive Pulley. @
Step 3.	• Check the Drum Rotation Sensor gap. **Is the gap correct?** @	Go to Step 4.	• Adjust the gap between the Drum Rotation Sensor and the magnet. @

Table 43. MAP 0121 (continued)

Step	Questions/Actions	Yes	No
Step 4.	• Measure the voltage at connector PJ147–2 while you manually rotate the drum drive pulley. **Did the voltage vary from +5 V to less than 1 V when the magnet moves under the sensor?**	Do the following, one step at a time, until the problem is corrected: • Install a new PR011 Card. • Install a new PC561 Card. • Repair an open circuit between PJ102–32 and PJ336–32. @	Do the following, one step at a time, until the problem is corrected: • Install a new Drum Rotation Sensor (S105). • Repair an open circuit between one of the following pairs: – PJ147–1 and PJ104–19 – PJ147–2 and PJ104–20 – PJ147–3 and PJ104–21 – PJ329–17 and PJ302–17 – PJ329–18 and PJ302–18 • Install a new PR011 Card. • Install a new PC561 Card. @

Table 43. MAP 0121 (continued)

Step	Questions/Actions	Yes	No
Step 5.	**Did the Drum Drive Motor shaft turn?**	Do the following, one step at a time, until the problem is corrected: • Check the Drum Drive Belt for correct adjustment. • Repair a bind in the drum drive mechanism. An incorrect drum gap can also cause binding. • Install a new Drum Drive Belt. @	Do the following, one step at a time, until the problem is corrected: • Install a new Drum Drive Motor (M107) • Install a new DV061 Card. • Install a new CPxxx Card. • Repair an open circuit between one of the following pairs: – PJ321–1 and PJ126–1 – PJ321–2 and PJ126–2 – PJ321–3 and PJ126–3 – PJ321–4 and PJ126–4 – PJ321–5 and PJ126–5 – PJ321–6 and PJ126–6 – PJ302–16 and PJ329–16 – PJ302–17 and PJ329–17 – PJ302–18 and PJ329–18 – PJ302–19 and PJ329–19 – PJ302–20 and PJ329–20 @

MAP 0122: Drum Motor Over Current

Symptom Explanation	Conditions That Could Cause This Symptom
The drum drive current as detected by the driver card is beyond error limits.	• The drum drive current as detected by the driver card is beyond error limits. • The drum motor driver circuit is defective. • The Drum Motor (M107) is defective.

REFERENCES

- Removals & Adjustments - Drum Drive and Photoconductor (PC)
- Circuit Diagrams - CD12 - Drum Motor (M107) & Overcurrent Detection
- Wiring Diagrams - WD34 - Drum Motor (M107)

FIX VERIFICATION

- Print the **primary** print sample (1069) to see if the error occurs during printing.

QUICK CHECKS

- None

SERVICE CHECKS

- None

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
DV061 Card	80%	1453	2114	1764
CPxxx Card	10%	1453	2114	1760
Drum Motor (M107)	10%	1445	1974	1645

MAP 0122 BEGINS

Table 44. MAP 0122

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	Print **primary** print sample (1069) for up to a full box of paper to see if the error occurs during printing. **Did an SRC 122 occur?**	Install the new parts listed below, one at a time, until the problem is corrected: • 1) DV061 Card • 2) CPxxx Card • 3) Drum Motor (M107) @	The problem is intermittent. Go to MAP 0001: Introduction.

MAP 0131: Tension Arm Down

Symptom Explanation	Conditions That Could Cause This Symptom
The Tension Arm is in the down position.	• The Hot Roll is running too rapidly. • The Tractors are running too slowly.
The Tension Arm lower limit is displayed even though the arm is at the normal position.	• The Tension Arm Encoder 1 (S708), 2 (S709), or 3 (S710) has failed. • The Tension Arm or the encoder position is not adjusted correctly. • The Skew Sensor (S707) or its circuitry has failed. • The forms have preprinted marks between the tractor holes. • The DV071 Card is defective. • The FU041 Card is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD03 - Tractor Motor and Encoder (M105)
- Circuit Diagrams - CD09 - Tension Arm Encoder (S708)
- Wiring Diagrams - WD56 - Forms Path Sensors (DV071 & FU041 Cards)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Print the Print Pack (1070). An error is indicated by a SRC 131 on the Display/Touch Screen or by **E078** on the Maintenance Panel.

QUICK CHECKS

Important

To reset this error, clear the forms from the machine or advance the forms.

Then press **Check Reset** or **Ready** and reset Forms Set.

This error is stored in the printer NVS memory, and **cannot be cleared by only powering off**.

- Check the back side of the forms for dark markings between the pin feed holes at the front edge. This dark coloration can cause a false reading by the Skew Sensor (S707).

SERVICE CHECKS

- Run Sensor Routine 64 to display the Tension Arm positions.
- Run Sensor Routine 6E to determine if the Skew Sensor (S707) is working correctly.
- Run Sensor Routine 91 to check the Tractor Motor Encoder (S112).
- Run Driver Routine 10 to run the Tractor Motor (M105). An error is indicated by **E186** in the Maintenance Panel Display. Otherwise, the paper advances a few feet and stops.
- Run Sensor Routine 72 to check the Backup Roll Position Sensor (S712).
- Run Driver Routine 27 to run the Hot Roll Motor (M703) with the Backup Roll loaded.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Tension Arm Encoder 1 (S708)	20%	1435	2066	1750
Tension Arm Encoder 2 (S709)	20%	1435	2066	1750
Tension Arm Encoder 3 (S710)	20%	1435	2066	1750
DV071 Card	10%	1437	2048	1764
FU041 Card	10%	1442	2118	1764
Skew Sensor (S707)	10%	1431	2056	1739
Miscellaneous causes	07%	- -	- -	- -
Tractor Motor (M105)	01%	1445	2028	1919
Tension arm encoder sensors	01%	1435	2066	1750
Tractor drive pulley	01%	1445	2028	1919

MAP 0131 BEGINS

Important

To reset this error, clear the forms from the machine or advance the forms.

Then press **Check Reset** or **Ready** and reset Forms Set.

This error is stored in the printer NVS memory, and **cannot be cleared by only powering off**.

If you found no problem using the QUICK CHECKS, continue with the MAP.

Table 45. MAP 0131

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Run Sensor Routine 6E. Fully cover and uncover the Skew Sensor (S707) with plain white paper while you watch the Maintenance Panel. **Is the sensor operating correctly?**	Go to Step 2.	Go to Step 4.
Step 2.	• Run Sensor Routine 91 to check the Tractor Motor Encoder (S112). **Is the encoder operating correctly?**	Go to Step 3.	There may be a problem with the Tractor Motor (M105). Go to MAP 0113: Tractor Motor Encoder Phase Error.

Table 45. MAP 0131 (continued)

Step	Questions/Actions	Yes	No
Step 3.	• Remove the forms. • Run Sensor Routine 64 to display the Tension Arm positions. • Slowly push the Tension Arm down and verify that each of the displays appear. **Did all of the displays appear?**	Go to Step 5.	• Adjust the tension arm encoder sensors. • Repair an open circuit between: (encoder signals) – PJ609-16 and PJ637-16 – PJ609-17 and PJ637-17 – PJ609-18 and PJ637-18 – PJ704-8 and PJ617-14 • Repair an open circuit between: (skew sensor signals) – PJ704-3 and PJ617-10 – PJ704-2 and PJ617-11 – PJ704-5 and PJ617-12 – PJ704-7 and PJ617-13 – PJ704-8 and PJ617-14 @
	DANGER **<5> High-voltage is present. Use care while working in this area.**		

Table 45. MAP 0131 (continued)

Step	Questions/Actions	Yes	No
Step 4.	Do the following, one step at a time, until the problem is corrected: • Clean the Skew Sensor (S707). Use a pencil eraser if necessary. • Check connectors PJ704, PJ705, and PJ617 for correct contact. • Install a new Skew Sensor (S707). • Repair an open circuit between: – PJ704-1 and PJ617-9 – PJ704-3 and PJ617-10 – PJ704-2 and PJ617-11 – PJ704-5 and PJ617-12 – PJ704-7 and PJ617-13 – PJ704-8 and PJ617-14 • Install new parts: – DV071 Card – FU041 Card • Repair an open circuit between: – PJ609-27 and PJ637-27 – PJ609-28 and PJ637-28 – PJ609-29 and PJ637-29 – PJ609-30 and PJ637-30 @		
Step 5.	• Run Driver Routine 10 to check the Tractor Motor (M105). **Did Ex86 appear on the Maintenance Panel?**	There is a problem with the Tractor Motor (M105). Go to MAP 0113: Tractor Motor Encoder Phase Error.	Go to Step 6.

Table 45. MAP 0131 (continued)

Step	Questions/Actions	Yes	No
Step 6.	• Run Driver Routine 27 to check the Hot Roll Motor (M703). **Is F- 27 (successful end) displayed at the end of the test?**	Go to Step 7.	The Hot Roll may be turning too fast. Go to appropriate MAP: • Ex96 – MAP 013A: Backup Roll Drive Signal On • Ex97 – MAP 013B: Backup Roll Open Error • Ex98 – MAP 0136: Backup Roll Position Error • Ex1E – MAP 0794: Fuser Oiler Gate Open • ExEE – MAP 0156: Backup Roll Lift Motor (M610) Position Error
Step 7.	A loose or broken tractor drive pulley may be causing this problem. • Print the Print Pack (1070). **Does the print registration move towards the top of the page?**	The tractor drive pulley is slipping or broken. • Adjust or replace the tractor drive pulley. @	The tractor drive pulley is not slipping. Go to Step 8.

Table 45. MAP 0131 (continued)

Step	Questions/Actions	Yes	No
Step 8.	A steering problem may cause this error. • Ask the operator if the forms are skewed when this error occurs. You may observe it yourself, or check the error log for 133 errors. If you are not sure, answer No. **Do the forms seem to be skewing when this error occurs?**	Go to MAP 0133: Skew Error.	The problem may be an open circuit between: • PJ329–4 and PJ302–4 • PJ329–6 and PJ302–6 Check these and repair as necessary to restore continuity between CPxxx and DV061. @

MAP 0132: Tension Arm Up

Symptom Explanation	Conditions That Could Cause This Symptom
The Tension Arm upper limit is displayed even though the arm is at the normal position.	• The DV071 Card is defective. • The FU041 Card is defective.
The Tension Arm is up.	• A Tension Arm Encoder is defective. • There is a forms problem.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD09 - Tension Arm Encoder (S708)
- Wiring Diagrams - WD56 - Forms Path Sensors (DV071 & FU041 Cards)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Print the Print Pack (1070). An error is indicated by an SRC 132 on the Display/Touch Screen or by **E077** on the Maintenance Panel.

QUICK CHECKS

- Check if the forms have broken.
- A double-sheet may have been fed past the transfer station which then separated, causing the forms to become slack. Check if the forms in the box tend to stick together. Also check the printed output for any blank pages which would indicate that the forms were folded during transfer.
- If the forms are jamming in the fuser on Printer 2 of a duplex system, the jam can work its way back to the Preheat Platen and cause slack in the forms. This will allow the Tension Arm to raise, causing a 132 error. Go to MAP 0134: Fuser Wrap to diagnose the fuser jam problem.
- The problem may be caused by slipping at the Hot Roll. This can be caused by forms that have absorbed moisture or are smooth or coated.

- If running slick-surfaced labels, reduce the oil feed rate.
- Exposed adhesive backing on the forms can cause the forms to drag, especially at the Preheat Platen.
- Check the Hot Roll area for noises that might indicate a bearing problem.

SERVICE CHECKS

- Run Sensor Routine 64 to display the Tension Arm positions.
- Run Driver Routine 10 to run the Tractor Motor (M105). An error is indicated by **E186** on the Maintenance Panel.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Tension Arm Encoder 1 (S708)	20%	1435	2066	1750
Tension Arm Encoder 2 (S709)	20%	1435	2066	1750
Tension Arm Encoder 3 (S710)	20%	1435	2066	1750
DV071 Card	18%	1437	2048	1764
FU041 Card	15%	1442	2118	1764
Hot roll plastic collar	02%		2046	1692
Hot roll bearings	01%		2062	1690
Backup roll	01%	1433	2056	1670
Scuff roll	01%	1433	2070	1734

MAP 0132 BEGINS

Table 46. MAP 0132

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	**If you found no problems using the QUICK CHECKS, continue with the questions.** If the forms jam in the hot roll area, the jam may back up onto the Preheat Platen and cause slack in the forms. This causes the Tension Arm to raise, causing a 132 error. **Are the forms jamming in the fuser on Printer 2 of a duplex system?**	Go to MAP 0134: Fuser Wrap to diagnose the forms jam in the fuser.	Go to Step 2.
Step 2.	• Remove the forms. • Run Sensor Routine 64 to display the Tension Arm positions. • Slowly push the Tension Arm down, and check that each of the above displays appear. **Did all of the displays appear?**	Go to Step 3.	Go to Step 8.

Table 46. MAP 0132 (continued)

Step	Questions/Actions	Yes	No
Step 3.	• Run Driver Routine 10. **Did Ex86 appear on the Maintenance Panel?**	There is a problem with the Tractor Motor (M105). Go to MAP 0113: Tractor Motor Encoder Phase Error or MAP 011E: Tractor Motor Initial Position Error.	Go to Step 4.
Step 4.	• Run Driver Routine 27. **Was Ex96, Ex97, Ex98, Ex1E, or ExEE displayed on the Maintenance Panel?**	The Hot Roll may be turning too slowly. Go to the appropriate MAP: • E196 – MAP 013A: Backup Roll Drive Signal On • E197 – MAP 013B: Backup Roll Open Error • E198 – MAP 0136: Backup Roll Position Error • E11E – MAP 0794: Fuser Oiler Gate Open • E1EE – MAP 0156: Backup Roll Lift Motor (M610) Position Error	Go to Step 5.
	CAUTION: **<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.**		

Table 46. MAP 0132 (continued)

Step	Questions/Actions	Yes	No
Step 5.	• Remove the Hot Roll. • Inspect the plastic collars for breaks, cracks, or excessive wear. **Are the plastic collars at the ends of the Hot Roll in good condition?**	Go to Step 6.	• Install a new Hot Roll Plastic Collar. @
Step 6.	• Inspect the bearings at the front and rear of the Hot Roll. Check for unusually hard or discolored grease, or any indications of a binding bearing. **Are the Hot Roll bearings in good condition?**	Go to Step 7.	• Grease or replace the bearings as necessary. @

Table 46. MAP 0132 (continued)

Step	Questions/Actions	Yes	No
Step 7.	• See the QUICK CHECKS about possible problems with forms dragging because of moisture, adhesive, or vacuum. • Clean any adhesive from the machine, if necessary, particularly at the Preheat Platen. • Try to run plain, white, dry paper forms. Run several hundred feet of forms, if necessary, to clean and stabilize the machine. **Do the forms run without error using plain paper?**	The problem appears to be caused by the forms. Ask the customer to discuss the problem with the forms supplier.	The forms appear to be slipping in the fuser. Do the following, one step at a time, until the problem is corrected: • Check for poor fusing or smeared print after fusing. This would indicate that there is not enough pressure provided by the Backup Roll. If so, install a new Backup Roll. • Especially if the problem occurs while feeding the forms with the Forms Feed key (that is, the Backup Roll is not loaded), the forms could be slipping at the Scuff Rolls. If so, install new Scuff Rolls. @
	DANGER **<5> High-voltage is present. Use care while working in this area.**		

Table 46. MAP 0132 (continued)

Step	Questions/Actions	Yes	No
Step 8.	Do the following, one step at a time, until the problem is corrected: • Adjust the Tension Arm encoders. • Check the following connectors for correct contact: – PJ708 – PJ709 – PJ710 – PJ609 – PJ637 – PJ616 • Install the new parts listed below, one at a time, until the problem is corrected: – Tension Arm Encoder 1 (S708) – Tension Arm Encoder 2 (S709) – Tension Arm Encoder 3 (S710) – DV071 Card – FU041 Card • Repair an open circuit between one of the following pairs: – PJ609–16 and PJ637–16 – PJ609–17 and PJ637–17 – PJ609–18 and PJ637–18 @		

MAP 0133: Skew Error

Symptom Explanation	Conditions That Could Cause This Symptom
The forms are not feeding straight through the fuser.	• Room light is falling on the Skew Sensor (S707). • The printer is not level. • The Backup Roll or Hot Roll are worn. • The Skew Sensor (S707) is dirty or has failed. • There is a problem with the steering mechanism. • There is a forms problem. • The Tension Arm is not adjusted correctly. • The Stacker Scuff Rolls are binding • The Preheat temperature is too high. • The DV071 Card is defective. • The FU041 Card is defective. • The Hot Roll Motor circuitry is failing.
The Steering Motor (M705) does not move.	• There is a bind in the steering mechanism or a defective Steering Motor (M705). • The DV071 Card is defective. • The FU041 Card is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD10 - Skew Sensor (S707)
- Circuit Diagrams - CD11 - Steering Motor (M705)
- Wiring Diagrams - WD40 - Steering Motor (M705)
- How to Run Diagnostics - 1119
- Preventive Maintenance - 2218

FIX VERIFICATION

- Print the Print Pack (1070).

  An error is indicated by SKEW ERROR 133 on the Display/Touch Screen or by **E07D** on the Maintenance Panel.

QUICK CHECKS

Important

To reset this error, press **Check Reset** or **Ready** and reset Forms Set.

This error is stored in the printer NVS memory, and **cannot be cleared by only powering off**.

1. If the machine has recently been installed or moved, ensure that it has been leveled. If you are certain that it has been, or if the fuser is too hot to check, continue with the remaining checks.
2. Ensure that the Skew Sensor (S707) is not exposed to room light.
3. If the printer is starting and stopping often, the forms can become skewed because it takes about six feet for the steering to stabilize.

   This problem can occur on certain complex print jobs. The forms path may stop on every page while waiting for the Control Unit to prepare the next page. Go to MAP 0010: Symptom Start MAP for the procedure to follow for a start/stop, or performance, problem.
4. Clean the Skew Sensor (S707). Use a pencil eraser if necessary.
5. Reinstall the forms. They may not have been installed straight.
6. Some forms have a tendency to skew, which is a result of the process by which they were formed. This paper property cannot be measured in the field. The problem can become worse with the higher temperature on the Preheat Platen. Try lowering the Preheat Platen temperature by 10° for this form by using the Define Forms menu. Run forms for 10 minutes to cool the Preheat Platen.
7. Check if the problem only occurs with one form:
   - Check the back side of the forms for dark markings between the pin feed holes at the front edge. This dark coloration can cause a false reading by the Skew Sensor (S707).

- The forms may have a curved edge. Take the forms from the box and fluff them so that they assume their natural stacking position. If the stack is leaning, twisting, or has a raised corner, they may have a problem. Also, perform the Perforation Accuracy Test. See the chapter entitled “General Guidelines for Selecting Forms” in the, *Forms Design Reference for: Continuous Forms Advanced Function Printers,* for details on this and other tests of the form.
- Unusual forms that are thicker or smoother on one half may cause this problem.
- The surface roughness is often different on the two sides of the form. If possible, try printing on the other side of the form.

8. You can disable the steering system by setting the MASWB Switch on the CPxxx to position **5**. Ensure that the switch was not left in this position.
9. There may be some problem with the Scuff Rollers or the Scuff Pressure rollers.

   Check for missing, worn or binding rollers. Observe the paper motion at the Scuff Rollers. If the paper motion is not smooth or if the paper bubbles above the Scuff Rollers, the Scuff Rollers are not working correctly.

   If you have recently installed the pendulum assembly, check that the upper paper guide is not binding on the Scuff Rollers.

SERVICE CHECKS

- Run Sensor Routine 6E to determine if the Skew Sensor (S707) is working correctly.
- Run Driver Routine 23 to run the Steering Motor (M705) in both directions.
- When performing mechanical adjustments, you will want to know if the parts are correctly aligned. In other words, you will want to see if the forms track correctly without the assistance of the steering system.

  This procedure is described in the Adjustment procedure under Skew Sensor (S707).

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Backup Roll	30%	1433	2056	1670
Hot Roll Collars	30%	1431	2046	1692
Hot Roll	10%	1431	2062	1692
Skew Sensor (S707)	09%	1431	2056	1739
Printer out of level	05%	- -	- -	2272
Steering Motor (M705)	03%	1437	2054	1747
DV071 Card	03%	1437	2048	1764
Loose or binding steering mechanism	03%	- -	- -	1747
Scuff Rolls	03%	1433	2070	1734
FU041 Card	02%	1442	2118	1764
Preheat Platen contamination	01%	1431	2056	1727
Tension Arm Leveling	01%	- -	- -	2355

MAP 0133 BEGINS

Note: On new installations, ensure that the printer has been leveled. If the problem develops later, check for contamination in the Preheat Platen.

A 133 error can indicate more than one problem, for example, a forms problem and a worn Backup Roll (or a forms problem, dirty sensor, and so on).

If the machine is wearing out Hot Rolls or Backup Rolls before their normal PM interval, the problem may be with the forms, the Hot Roll Collar, a slight twist in the frame, or the fuser casting not being parallel to the Transfer Station. See page 2355 to set the fuser casting to the transfer station.

Important

To reset this error, press **Check Reset** or **Ready** and reset Forms Set.

This error is stored in the printer NVS memory, and **cannot be cleared by only powering off**.

Table 47. MAP 0133

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		

Table 47. MAP 0133 (continued)

Step	Questions/Actions	Yes	No
Step 1.	If you found no problems using the QUICK CHECKS, continue with the questions. Room light falling on the Skew Sensor (S707) can cause this problem. **Are all the machine covers in place and closed?**	Go to Step 2.	• Close all the covers. If the problem continues, go to Step 2.
Step 2.	The Backup Roll or Hot Roll may be due for replacement. • Select **Logs** and then **PM Log** on the Service Actions menu. **Is PM due for the Hot Roll or Backup Roll?**	• Replace the indicated PM parts and verify the fix. • Check the usage counts of these parts in the PM log. They should have been replaced before this error occurred. You can modify the PM log to give yourself an earlier warning of an upcoming PM if this PM was late.	Go to Step 3.
	CAUTION: **<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.**		

Table 47. MAP 0133 (continued)

Step	Questions/Actions	Yes	No
Step 3.	• SHUTDOWN AND POWER OFF THE PRINTER. Even if these rolls are not due for PM, it is possible that one has had an early failure. It is also possible that one of the rolls has reached the end of its normal life, but there is no PM prompt because the PM counters were accidentally reset to zero or the wrong value for these items. This can happen if the logs are not transferred to the new diskette when new microcode is installed. • Without touching any hot parts, visually examine the Backup Roll and Hot Roll for obvious defects, for example, cracks, wrong installation, or deep wear marks in their surfaces. **Do the Backup Roll and Hot Roll appear to be in good condition?**	Go to Step 4.	The defective roll seems to have failed before the normal end of its life. Do the following: • Remove the Hot Roll when it is cool and check if the plastic collars on the ends are broken. This condition may have caused the early failure of the defective roll. • Excessive wear marks that align with the edges of the form may indicate that the steering system was applying excessive pressure on one side to overcome another problem in the machine. After you install new parts, restart this MAP from the beginning to identify any other problems. • Install new parts as necessary. @

Table 47. MAP 0133 (continued)

Step	Questions/Actions	Yes	No
Step 4.	• Run Sensor Routine 6E. Fully cover and uncover the Skew Sensor (S707) with plain white paper while you watch the Maintenance Panel. **Hint** There are two sensors in this assembly - a right and a left skew. **Does the sensor operate correctly?**	Go to Step 6.	Go to Step 5.
	DANGER **<5> High-voltage is present. Use care while working in this area.**		

Table 47. MAP 0133 (continued)

Step	Questions/Actions	Yes	No
Step 5.	Do the following, one step at a time, until the problem is corrected: • Clean the Skew Sensor (S707). Use a pencil eraser if necessary. • Check connectors PJ704, PJ705, and PJ617 for correct contact. • Install a new Skew Sensor (S707). • Install a new DV071 Card. • Repair an open circuit between one of the following pairs: – PJ704–1 and PJ617–9 – PJ704–3 and PJ617–10 – PJ704–2 and PJ617–11 – PJ704–5 and PJ617–12 – PJ704–7 and PJ617–13 – PJ704–8 and PJ617–14 • Install a new FU041 card. • Repair an open circuit between one of the following pairs: – PJ69–27 and PJ637–27 – PJ69–28 and PJ637–28 – PJ69–29 and PJ637–29 – PJ69–30 and PJ637–30 @		

Table 47. MAP 0133 (continued)

Step	Questions/Actions	Yes	No
Step 6.	The Skew Sensor (S707) is working correctly. Be aware that there may be more than one problem. For example, a problem form or adjustment may be causing an early failure of a Backup Roll. If the customer runs mostly one size of form, the wear pattern in the Backup Roll can cause steering problems when a wider form is run. In extreme cases, colors, coatings, or moisture may cause a problem if they transfer to the Backup Roll or Hot Roll, or are causing a slip condition. **Does the problem occur on more than one form?**	Go to Step 7.	Go to Step 16.
Step 7.	The Tension Arm may be twisted. This may cause a difference in tension between the front and rear edges of the form. This tension difference will prevent the correct tracking of the form. • Perform the Tension Arm Level Check. @ **Is the Tension Arm level?**	Go to Step 8.	• Level the Tension Arm. @
Step 8.	There may be a problem with the steering mechanism. • Remove the steering pulley cover and inspect the steering cables. **Are the steering cables loose?**	Adjust or repair the Steering Cables. @	Go to Step 9.

Table 47. MAP 0133 (continued)

Step	Questions/Actions	Yes	No
Step 9.	The Steering Motor (M705) or its control circuitry may be defective. • Run Driver Routine 23. Watch the Steering Pulley during the test. The Steering Motor (M705) will be driven in both directions and return to its original position. **Note:** Watch the cables or use a mirror. You are checking for any motion, and for possible slipping of the pulley. Do not place your fingers on the outside of the pulley. They could be pinched between the cables and the rotating pulley. **Did the Steering Pulley move correctly during Driver Routine 23?**	Go to Step 10.	Go to Step 17.
	CAUTION: **<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.**		
Step 10.	• Go to Level the Printer. **Are the Tractor Guide Shaft and Hot Roll level?**	Go to Step 11.	Do the following: • Detach the Control Unit. • Level the printer. • Reattach the Control Unit. • Check the level and adjust it again if necessary.

Table 47. MAP 0133 (continued)

Step	Questions/Actions	Yes	No
Step 11.	**Important** Before you remove the Hot Roll in this step, be aware that you must install new plastic collars after you have removed the Hot Roll. Reused plastic collars may break. • Remove the Hot Roll when it is cool and check for broken plastic collars. **Are the Hot Roll Plastic Collars in good condition?**	Go to Step 12.	• Install new Hot Roll Plastic Collars. @
Step 12.	Check for continuity between: • PJ302–8 and PJ329–8 • PJ302–9 and PJ329–9 • PJ302–10 and PJ329–10 • PJ302–11 and PJ329–11 • PJ302–12 and PJ329–12 • PJ302–13 and PJ329–13 **Is there an open circuit?**	• Repair the open circuit.	Go to Step 13.
Step 13.	No obvious problem has been found. • Install new Hot Roll Plastic Collars before you reinstall the Hot Roll. • Install the Hot Roll. • Install a new Backup Roll. @ **Does the problem still occur?**	Go to Step 14.	• Check the usage count of this part in the PM log. It should have been replaced before this error occurred. You can change the end-of-life limit value for this part.

Table 47. MAP 0133 (continued)

Step	Questions/Actions	Yes	No
Step 14.	• Install a new Hot Roll. @ **Does the problem still occur?**	Go to Step 15.	• Check the usage count of this part in the PM log. It should have been replaced before this error occurred. You can change the end-of-life limit value for this part.
Step 15.	It is possible to move the plate that supports the Skew Sensor (S707). The purpose is to move the sensor under the forms when the forms cannot be made to travel over the red line. • Perform the Adjustment procedure under Skew Sensor (S707). **Does the problem still occur?**	Carefully review the items in the QUICK CHECKS.	The problem was caused by the skew sensor adjustment.
Step 16.	The failing form may be the problem. Some heavily preprinted forms have a tendency to skew. This problem can become worse with the higher settings on the Preheat Control. Try printing with the lowest possible Preheat Control setting. The forms may have a curved edge. Take the forms from the box and fluff them so that they assume their natural stacking position. If the stack is leaning, twisting, or has a raised corner, they may have a problem. Also, perform the Perforation Accuracy Test. See the chapter entitled “General Guidelines for Selecting Forms” in the Forms Design Reference Guide for details on this and other tests of the form. The surface roughness is often different on the two sides of the form. If possible, try printing on the other side of the form. The form may be causing this problem if it is thicker or smoother on one side than the other. For example, there may be labels on half of the form towards the front or rear of the machine. • Contact your support network to analyze the failing form, if it is an unusual form. • To check for other machine problems, return to Step 6 and answer Yes.		

Table 47. MAP 0133 (continued)

Step	Questions/Actions	Yes	No
Step 17.	Do the following, one step at a time, until the problem is corrected: • Check the Steering Pulley for slippage on the shaft. • Check the steering mechanism for binds. • Check the following connectors for correct contact: – PJ626 – PJ712 • Install the new parts listed below, one at a time, until the problem is corrected: – Steering Motor (M705) – DV071 Card – FU041 Card • Repair an open circuit between on of the following pairs: – PJ712–1 and PJ626–1 – PJ712–2 and PJ626–2 – PJ712–3 and PJ626–5 – PJ712–4 and PJ626–6 – PJ712–5 and PJ626–7 – PJ712–6 and PJ626–8 @		

MAP 0134: Fuser Wrap

Symptom Explanation	Conditions That Could Cause This Symptom
SRC 134 (FUSER WRAP) indicates that the forms have begun to wrap around the fuser roll. The switch is normally closed. A wrap condition causes the switch to open.	• There is a failure in the Scuff Roll Motor (M704), its drive circuits, or the Scuff Roll mechanism. • There is a failure in the Fuser Wrap Sensor (S617) or its sensing circuits. • Various operator causes described below under QUICK CHECKS. • Forms problems described under QUICK CHECKS.
Forms jam in the hot roll area on Printer 2 of a duplex system.	• Light weight forms with heavy print density or large areas of solid area fill may stick to the hot roll if the oil feed rate is too low or if the oiling system has failed.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD18 - Scuff Roll Motor (M704) & Fuser Wrap Sensor (S617)
- Circuit Diagrams - CD20 - Oil Pumps and Driver
- Wiring Diagrams - WD48 - Fuser & Stacker Sensors (DV071 & FU041)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Print the Print Pack (1070).

  An error is indicated by an SRC 134 on the Display/Touch Screen , **E07E** on the Maintenance Panel, or by a forms jam in the fuser area.

QUICK CHECKS

Important

To reset this error, clear the forms from the machine.

Then press **Check Reset** or **Ready**.

- If there is also a stacker jam, the forms may have been pushed back into the sensor. Correct the stacker jam, and ensure that the folding direction of the forms is set correctly in the stacker and with the FORMS SET switch.
- Lightweight or slightly damp forms can cause wraps.
- Check for damaged or worn scuff rolls.
- If labels are printed on this machine, exposed adhesive on the backing or adhesive that has been deposited on the Backup Roll can cause wraps. Inspect the forms and clean the Backup Roll.
- If the forms are wrapping around the hot roll, the fuser oil feed rate may be too low, or the oil system may have failed.

SERVICE CHECKS

- Run Sensor Routine 70 to test the Fuser Wrap Sensor (S617).
- Run Driver Routine 29. This routine drives the Scuff Roll Motor (M704) for 5 seconds. You must watch for rotation, as no errors are displayed.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Fuser Wrap Sensor (S617)	45%	1431	2068	1688
Scuff Roll Motor (M704)	25%	1433	2074	1736
Belts and couplings	08%	1433	2074	1736
Low fuser oil feed rate	04%	See Operator's Guide		
Oil pump assembly	04%	1435	2072	1719
DV071 Card	02%	1437	2048	1764
FU041 Card	02%	1442	2118	1764
Scuff rolls	02%	1433	2070	1734
Scuff pressure rollers	02%	1433	2070	1730
DV081	02%	1442	2118	1764
Pendulum	01%	1439	2110	1859
Pendulum drive belt	01%	1441	2110	1859
CPxxx	---	1453	2114	1760
Open circuit in wiring	---	- -	- -	- -
Short circuit in wiring	---	- -	- -	- -

MAP 0134 BEGINS

Important

To reset this error, clear the forms from the machine. You cannot reset this error until you have opened the oiler belt gate.

Then press **Check Reset** or **Ready**.

Note: If a large number of 133 Skew Errors are also occurring and you can not repair the problem using this MAP, go to MAP 0133: Skew Error.

Table 48. MAP 0134

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	If you found no problems using the QUICK CHECKS, continue with the questions. • Clear the fuser area of any jammed forms. • Inspect the Scuff Roll Drive Belt to determine if it is broken, stretched, or loose. It is easily visible behind the front fuser cover. **Is the Scuff Roll Drive Belt tight and in good condition?**	Go to Step 2.	• Tighten or install a new Scuff Roll Drive Belt, as necessary. @

Table 48. MAP 0134 (continued)

Step	Questions/Actions	Yes	No
Step 2.	There may be a problem with the Scuff Roll Motor (M704). The belt that you just checked is mounted on the Scuff Roll Drive Pulleys. • Run Driver Routine 29. **Do the Scuff Roll Drive Pulleys turn during the test?**	Go to Step 3.	Go to Step 8.
	CAUTION: **<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.**		
Step 3.	There may be some problem with the Scuff Rollers or the Scuff Pressure Rollers, causing them to slip. • Open the Scuff Pressure Roller mounting rack, using the blue handle. • Check the Scuff Rolls and Scuff Pressure Rollers for missing, worn, or binding rollers. Also check for excess fuser oil on the surface of the rollers. • If you have recently installed a Pendulum Assembly, check that its upper paper guide is not binding on the Scuff Rollers. **Are the Scuff Pressure Rollers and Scuff Rollers turning freely and in good condition?**	Go to Step 4.	• Repair or install new rollers as necessary. @

Table 48. MAP 0134 (continued)

Step	Questions/Actions	Yes	No
Step 4.	A loosely attached or bent vane on the Pendulum can cause this problem. If a vane is not firmly mounted to its shaft, the two halves of the pendulum will be too close together. This will prevent the forms from passing through the Pendulum. **Is the Pendulum in good condition?**	Go to Step 5.	• Repair the Pendulum as necessary. @
Step 5.	**Is the Pendulum Drive Belt tight and in good condition?**	Go to Step 6.	• Tighten or install a new Pendulum Drive Belt as necessary. @
Step 6.	It is possible that the Scuff Roll is not providing enough tension. Perform the following checks. Use this procedure to check the Scuff Roll tension: • Load the forms. • Ensure that all attachments are disabled. • Hold the Tension Arm down. • Press the Stacker Table Up button. (The stacker must be enabled and the diagnostic function switch must NOT be in position 3.) • Release the Tension Arm. • If the Tension Arm rises, the Scuff Rolls are not providing enough tension. **Are the Scuff Rolls providing enough tension?**	Go to Step 7.	• The Scuff Roll Release Cable may be too tight, preventing the Scuff Pressure Rollers from contacting the Scuff Rolls. • The Pressure Roll release lever may be contacting a bracket, preventing it from returning to the closed position. • The Scuff Rolls may have fuser oil on them, causing the forms to slip.

Table 48. MAP 0134 (continued)

Step	Questions/Actions	Yes	No
Step 7.	Fuser jams and hot roll wraps can be caused by a dry oiler belt or oiler wick roll. **Do you think that the problem could be caused by a low oiling rate?**	Go to Step 13.	Go to Step 10.
Step 8.	There may be a problem with the Scuff Roll Motor (M704) or its associated circuitry. • Measure the voltage between PJ714–1 and machine ground and between PJ714–2 and machine ground. **Is the voltage +40 V dc in both cases?**	Go to Step 9.	Do the following, one step at a time, until you measure +40 V dc between PJ629–1 and machine ground and between PJ629–2 and machine ground: • Repair an open circuit between: – PJ714–1 and PJ629–1 – PJ714–2 and PJ629–2 • Install a new DV071 Card. • Install a new FU041. @
Step 9.	The problem may be in the motor windings. • Disconnect connector PJ714. • Measure the resistance between the following pairs of pins: – P714–1 and P714–3 – P714–1 and P714–4 – P714–2 and P714–5 – P714–2 and P714–6 **Is the resistance between each pair of pins 1 to 2 ohms?**	There is a problem with the drive circuit. Do the following, one step at a time, until the problem is corrected: • Install a new DV071 Card. • Install a new FU041 Card. • Repair an open circuit between connectors PJ608 and PJ633. @	• Install a new Scuff Roll Motor (M704). @

Table 48. MAP 0134 (continued)

Step	Questions/Actions	Yes	No
Step 10.	Fuser wraps can occur when a post processing device is attached and is not set correctly to take up the paper from the machine, either at start up or while running. **Does the post processing device accelerate fast enough and run fast enough to take up the paper from the machine, so there is no paper backing up?**	Go to Step 11.	• Have the operator set up the post processing device to take up the paper properly.
	CAUTION: **<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.**		
Step 11.	The wrap sensor may be defective or binding. • Check that no forms are jammed in the Fuser Wrap Sensor (S617). • Check the condition of the actuator. Check for a defective spring at the switch. • Run Sensor Routine 70. **Is oF70 displayed on the Maintenance Panel during the test?**	Do the following, one step at a time, until the problem is corrected: • Install a new CPxxx Card. • The problem may be an intermittent failing switch. – If this problem occurs again, install a new Fuser Wrap Sensor (S617). @	Go to Step 12.

Table 48. MAP 0134 (continued)

Step	Questions/Actions	Yes	No
Step 12.	**on70** is displayed. This means that there is a false reading from the sensors. Either the switch or the circuit is bad. • SHUTDOWN AND POWER OFF THE PRINTER. • Locate the PJ617 connector on the DV071 Card. • Disconnect connector PJ617 from the board. Check continuity on the free connector half, and not on the board. **Is there continuity between pins P617–28 and P617-29?**	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between: – PJ325 and PJ631 – PJ609 and PJ637 • Install a new DV071 Card. • Install a new CPxxx Card. • Install a new FU041 Card. @	Do the following, one step at a time, until the problem is corrected: • Install a new Fuser Wrap Sensor (S617). • Repair an open circuit between: – PJ617-28 and PJ640-1 – PJ617-29 and PJ640-4 @
Step 13.	A dry oiler belt can cause fuser jams and hot roll wraps. • Inspect the oiler belt and hot roll area for oil. **Is the oiler belt dry?**	Go to Step 14.	Go to Step 15.

Table 48. MAP 0134 (continued)

Step	Questions/Actions	Yes	No
Step 14.	• Check the oil pump assembly oil level. **Is the oil pump assembly empty?**	Go to MAP 0792: Fuser Oil Empty to repair a “Fuser Oil Empty” condition that was not detected.	Do the following, one step at a time, until the problem is corrected: • Check connector PJ745 for correct contact. • Install a new DV081 Card. • Repair any shorts or opens from the oil pumps to PJ480. • Install a new FU041 Card. @ After you correct the problem, do the following: • Remove the oiler belt. • Advance the belt to a clean area. • Reinstall the belt. • Run Driver Routine 2B for 10 loops to feed oil.
Step 15.	• Remove the oiler belt and check to see if oil is being fed through all the oil holes when you run Driver Routines 2A, 2B, and 2C. **Do all of the pumps work?**	Go to Step 18.	Go to Step 16.

Table 48. MAP 0134 (continued)

Step	Questions/Actions	Yes	No
Step 16.	• Check for a loose or broken wire from PJ745 to the pump that did not work. **Is the wiring OK?**	Go to Step 17.	• Repair the wiring problem. • After you correct the problem, do the following: – Remove the oiler belt. – Advance the belt to a clean area. – Reinstall the belt. – Run Driver Routine 2B for 10 loops to feed oil.

Table 48. MAP 0134 (continued)

Step	Questions/Actions	Yes	No
Step 17.	To help determine whether the pump/plumbing is defective or the driver circuit is defective, apply the drive circuit from a working pump to the pump that did not work. • Connect the wires from a working pump to the one that did not work. Run the driver routine for the pump that did work and check to see if oil is now fed. Remember to use the continuous feed option. **Is oil being fed now?**	• Reconnect the pump wires to their correct pump. Do the following, one at a time, until the oil feeds correctly when you run the oil pump driver routines: • Install a new DV081 Card. • Install a new FU041 Card. • Correct any wiring problem in the oil pump driver circuit. @ After you correct the problem, do the following: • Remove the oiler belt. • Advance the belt to a clean area. • Reinstall the belt. • Run Driver Routine 2B for 10 loops to feed oil.	• Reconnect the pump wires to their correct pump. Do the following, one step at a time, until the problem is corrected: • Repair any leaks in the oil supply system. • Install a new oil pump assembly. • Repair any blockages in the oil supply mechanism. @ After you correct the problem, do the following: • Remove the oiler belt. • Advance the belt to a clean area. • Reinstall the belt. • Run Driver Routine 2B for 10 loops to feed oil.

Table 48. MAP 0134 (continued)

Step	Questions/Actions	Yes	No
Step 18.	Fuser jams and hot roll wraps can be caused by start/stop printing with a combination of light weight forms, heavy print coverage, and/or low fuser oil feed rate. • **For microcode levels lower than 9.7:** The Forms Select switch controls the oil feed rate for different weight forms. Setting **B** provides twice as much oil as setting **A**. • **For microcode levels 9.7 and higher:** The Oil feed rate is controlled using the configuration item **oil rate** or by setting the oil rate for a specific form using **Define Forms**.(See the Operator's Guide.) **Is the Forms Select switch on the Stacker Control Card (LP031) set on A for microcode levels lower than 9.7 or the oil rate for the current form set to 50 for microcode levels 9.7 and higher?**	• **For microcode levels lower than 9.7:** Set the Forms Select switch on the Stacker Control Panel to **B**. This doubles the oil feed rate. • **For microcode levels 9.7 and higher:** Set the Oil Rate to **75** for the problem form. This doubles the oil feed rate. It may take several hundred feet of forms printing for the increased oil feed rate to have an effect on the fuser operation. • If the forms continue to jam in the fuser after you increase the oil feed rate, contact your next level of support.	• **For microcode levels lower than 9.7:** If the Forms Select switch is set on **B** , the oil feed rate is already set at the maximum that the operator controls allow. The oil feed rate can be increased by changing the value in printer memory location **FF20**. The normal value for FF20 is **64**. Changing it to **48** increases the oil feed rate by one third. Changing it to **32** doubles the oil feed rate. Use Writing to Memory to change the oil feed rate in printer memory location FF20. • **For microcode levels 9.7 or higher:** see the next page. (continued on next page)

Table 48. MAP 0134 (continued)

Step	Questions/Actions	Yes	No
Step 18, (cont'd)			• **For microcode levels 9.7 or higher:** If the oil rate is set to **50**, for the problem form, increase the oil rate using the following guide lines. A value of **62** increases the oil feed rate by about one third more than the default value of 50. A value of **75** provides twice as much oil as the default value of 50. It may take several hundred feet of forms printing for the increased oil feed rate to have an effect on the fuser operation. • If the forms continue to jam in the fuser after you increase the oil feed rate, contact your next level of support.

MAP 0135: Backup Roll Motor Thermal

Symptom Explanation	Conditions That Could Cause This Symptom
There is a problem with the Backup Roll Motor (M701), causing an over-temperature condition.	• The Backup Roll Motor (M701) is defective. • A mechanical bind in the Backup Roll mechanism causing an overload of the Backup Roll Motor (M701). • The Backup Roll Motor (M701) Gear Head is defective. • The DV081 Driver Board is defective.
An Backup Roll Motor (M701) over-temperature condition is detected, but the motor is not overheated.	• The thermal sensor in the Backup Roll Motor (M701), or the sensor wiring, is defective. • The DV081 Driver Board is defective. • The +24VE circuit is open.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD23 - Backup-Roll Motor (M701) & Thermal Sense
- Wiring Diagrams - WD15 - AC Motors M701, M703, M803
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Driver Routine 25. This routine operates the Backup Roll Motor (M701) and checks the operation of the motor and open/close mechanism. An error is indicated by **Exd1** on the Maintenance Panel.
- Run the **alternate** print sample (1070). An error is indicated by an SRC 135 on the Display/Touch Screen or by **E0d1** on the Maintenance Panel.
- Switch machine power off and on to run the power-on diagnostics. An error is indicated by an SRC 135 on the Display/Touch Screen or by **E0d1** on the Maintenance Panel.

QUICK CHECKS

- Determine if the Backup Roll Motor (M701) is actually hot or if the over-temperature error is false.

SERVICE CHECKS

- Run Driver Routine 25. This routine operates the Backup Roll Motor (M701) and checks the operation of the motor and open/close mechanism.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Backup Roll Motor (M701)	70%	1435	2048	1684
Backup Roll open/close mechanism	15%	1670	2052	1684
Backup Roll Motor (M701) Gear Head	10%	1435	2048	1684
DV081 Card	03%	1442	2118	1764
FU041 Card	02%	1442	2118	1764

MAP 0135 BEGINS

Table 49. MAP 0135

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	To correct this problem, you need to determine if the Backup Roll Motor (M701) is actually overheating or if the errors are false. If the Backup Roll Motor (M701) does actually overheat, the internal thermal-protect switch opens. This disables the motor drive circuit, and the motor cools. When the motor cools, the internal thermal-protect switch closes. If the Backup Roll Motor (M701) does not overheat, but the thermal error still occurs, there is a failure in the thermal sensing circuit. Use caution when you try to determine if the motor is actually overheating. The Backup Roll Motor (M701) may be hot enough to burn your fingers if you touch it. • Run the machine long enough to recreate the failure. **Is the Backup Roll Motor (M701) overheating?**	Go to Step 2.	Go to Step 3.

Table 49. MAP 0135 (continued)

Step	Questions/Actions	Yes	No
Step 2.	There is a problem with the Backup Roll Open/Close mechanism, or the Backup Roll Motor (M701), causing it to overheat. • Manually raise and lower the Backup Roll to check for binds. **Is there any binding in the Backup Roll Open/Close mechanism?**	Adjust, repair, or replace as necessary.	Do the following, one step at a time, until the problem is corrected: • Install a new Backup Roll Motor (M701) and Capacitor (C701). • Install a new Backup Roll Motor (M701) Gear Head. • Install a new DV081 Card. @
Step 3.	The thermal errors are false, caused by a failure in the thermal sensing circuit. • Measure the voltage at PJ646-1. **Is the voltage +24 V dc?**	Go to Step 4.	Go to Step 5.
Step 4.	• SHUTDOWN AND POWER OFF THE PRINTER. • Disconnect connector PJ646. • Measure the resistance between P646-1 and P646-2 (the motor side of the connector). **Is there continuity between P646-1 and P646-2?**	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between one of the following pairs of connectors: – PJ646–2 and PJ623–4 – PJ605–15 and PJ636–15 • Install a new DV081 Card. • Install a new FU041 Card. @	• Install a new Backup Roll Motor (M701). @

Table 49. MAP 0135 (continued)

Step	Questions/Actions	Yes	No
Step 5.	• Measure the voltage at PJ623–3 on the DV081 Card. **Is the voltage +24 V dc?**	• SHUTDOWN AND POWER OFF THE PRINTER. • Repair an open circuit between PJ646–1 and PJ623–3.	• Install a new DV081 Card. @

MAP 0136: Backup Roll Position Error

Symptom Explanation	Conditions That Could Cause This Symptom
The Backup Roll fails to close correctly.	• The Backup Roll Motor (M701) and Capacitor (C701) assembly is defective. • The Backup Roll Open/Close mechanism has a mechanical failure. • The Backup Roll Motor (M701) Gear Head is defective. • The DV081 Board is defective. • The FU041 Card is defective.
The Backup Roll closes correctly, but the Backup Roll Position Sensor (S712) does not sense that it has closed.	• The Backup Roll Encoder is defective. • The Backup Roll Position Sensor (S712), or the Encoder wiring, is defective. • The DV071 Card is defective. • The FU041 Card is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD24 - Backup-Roll Motor (M701) - Open/Close Mechanism & Position Sensor (S712)
- Wiring Diagrams - WD15 - AC Motors M701, M703, M803
- Wiring Diagrams - WD52 - Backup Roll Encoder (DV071 & FU041 Cards)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Driver Routine 25. An error is indicated by **Ex98** on the Maintenance Panel.
- Run the **alternate** print sample (1069). An error is indicated by an SRC 136 on the Display/Touch Screen or by **E098** on the Maintenance Panel.

- Switch machine power off and on to run the power-on diagnostics. An error is indicated by an SRC 136 on the Display/Touch Screen or by **E098** on the Maintenance Panel.

QUICK CHECKS

- None

SERVICE CHECKS

- Run Driver Routine 25. This routine operates the Backup Roll Motor (M701) and checks the operation of the motor and drive system.
- Run Sensor Routine 71. This routine tests the Backup Roll Open/Close sensor portion of the Backup Roll Position Sensor (S712).
- Run Sensor Routine 72. This routine tests the Backup Roll rotation sensor portion of the Backup Roll Position Sensor (S712).

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Backup Roll Motor (M701)	50%	1435	2048	1684
Backup Roll Position Sensor (S712)	20%	1433	2056	1673
Backup Roll open/close mechanism	10%	1670	2052	1684
Backup Roll Motor (M701) Gear Head	10%	1435	2048	1684
DV081 Card	05%	1442	2118	1764
DV071 Card	03%	1437	2048	1685
FU041 Card	02%	1442	2118	1764
Printer ac Power Supply	---	1450	2122, 2124	1757

MAP 0136 BEGINS

Table 50. MAP 0136

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Observe the Backup Roll load cams and shaft while you run Drive Routine 25 several times. For normal operation, the cam shaft should rotate ½ revolution to the Backup Roll closed position; stop for 2 seconds and sound the buzzer; then rotate another ½ revolution to the open position and sound the buzzer again. If the motor circuit has failed, or if the cam shaft is bound up, the cam shaft may not rotate at all. If the Backup Roll Open/Close mechanism is binding, the cam shaft may start to rotate, but fail to complete the rotation because of the bind. If the Backup Roll Position Sensor (S712) circuit has failed, the cam shaft may rotate continuously for one or more complete revolutions before it stops. • Repeat Drive Routine 25 several times, if necessary. **Does the cam shaft ever rotate ½ revolution or more?**	Go to Step 2.	Go to Step 3.

Table 50. MAP 0136 (continued)

Step	Questions/Actions	Yes	No
Step 2.	There is a problem with the Backup Roll Position Sensor (S712) or its logic circuit. Or there may be a mechanical problem with the Backup Roll Encoder mechanism. • Remove the cover over the Backup Roll Encoder mechanism. • Check the condition of the Encoder disks. **Are the Encoder disks causing the problem?**	• Adjust, repair, or replace as necessary. @	• Check for an open circuit in the following connectors: – PJ702 – PJ617 – PJ609 – PJ637 • If that is not the problem, install the new parts listed below, one at a time, until the problem is corrected: – Backup Roll Position Sensor (S712) – DV071 Card – FU041 Card @
Step 3.	The Backup Roll Open/Close mechanism is binding, or the Backup Roll Motor (M701) is failing to drive. • Manually raise and lower the Backup Roll Open/Close mechanism. **Does the Backup Roll Open/Close mechanism move without binding?**	Go to Step 4.	• Adjust, repair, or replace as necessary. @

Table 50. MAP 0136 (continued)

Step	Questions/Actions	Yes	No
Step 4.	• Remove the Backup Roll Motor (M701) and the gear box. • Rotate the gears in the gear box and check for binds or stripped gears. **Are the gears binding or stripped?**	• Install a new Gear Box. @	The Backup Roll Motor (M701) or its drive circuit has failed. • Check for an open circuit between: – Backup Roll Motor (M701) connector PJ652 and DV081 Card connector PJ603 – PJ603–8 and PJ452–3 – PJ603–3 and PJ452–2 – PJ636–13 and PJ605–13 Check PJ452–3 for a loose wire or connector. If that is not the problem, install the new parts listed below, one at a time, until the problem is corrected: • Backup Roll Motor (M701) and Capacitor (C701) assembly • DV081 Card • Printer ac power supply @

MAP 0137: Steering Motor Driver

Symptom Explanation	Conditions That Could Cause This Symptom
The circuit breaker CB4 on the DV071 Card has tripped.	• The DV071 Card is defective. • The Steering Motor (M705) is defective.
The circuit breaker CB4 on the DV071 Card has not tripped.	• The DV071 Card is defective. • FU041 Card is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD11 - Steering Motor (M705)
- Wiring Diagrams - WD40 - Steering Motor (M705)

FIX VERIFICATION

- Print the **primary** print sample (1069) to see if the error occurs during printing. An error is indicated by **E094** on the Maintenance Panel.

QUICK CHECKS

- Visually check circuit breaker CB4 on the DV071 Card to see if it has tripped.

SERVICE CHECKS

- POR the printer to see if the error occurs again.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
DV071 Card	75%	1437	2048	1764
FU041 Card	15%	1442	2118	1764
Steering Motor (M705)	10%	1437	2054	1747

MAP 0137 BEGINS

Table 51. MAP 0137

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• SHUTDOWN AND POWER OFF THE PRINTER. The circuit breaker CB4 is on the DV071 Card. **Is CB4 tripped?**	Go to Step 2.	Install the new parts listed below, one at a time, until the problem is corrected: • DV071 Card • FU041 Card @
Step 2.	• Measure the resistance between the following points and ground: – PJ626–1 (or PJ712–1) – PJ626–2 (or PJ712–2) **Is the resistance less than 100 ohms in each case?**	Do the following, one at a time, until the resistance exceeds 100 ohms: • Repair the short to ground. • Install a new Steering Motor (M705). • Install a new DV071 Card. @	The problem is intermittent. Go to MAP 0001: Introduction.

MAP 013A: Backup Roll Drive Signal On

Symptom Explanation	Conditions That Could Cause This Symptom
The Backup Roll fails to close correctly.	• The Backup Roll Motor (M701) and Capacitor (C701) assembly is defective. • The Backup Roll Open/Close mechanism has a mechanical failure. • The Backup Roll Motor (M701) Gear Head is defective. • The DV081 Card is defective. • The FU041 Card is defective.
The Backup Roll closes correctly, but the Backup Roll Position Sensor (S712) does not sense that it has closed.	• The Backup Roll Encoder is defective. • The Backup Roll Position Sensor (S712), or the Encoder wiring, is defective. • The FU041 Card is defective. • The DV071 Card is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD24 - Backup-Roll Motor (M701) - Open/Close Mechanism & Position Sensor (S712)
- Wiring Diagrams - WD15 - AC Motors M701, M703, M803
- Wiring Diagrams - 1296
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Driver Routine 25. An error is indicated by **E196** on the Maintenance Panel.
- Run the **alternate** print sample (1069). An error is indicated by an SRC 13A on the Display/Touch Screen or by **E096** on the Maintenance Panel.
- Switch machine power off and on to run the power-on diagnostics. An error is indicated by an SRC 13A on the Display/Touch Screen or by **E096** on the Maintenance Panel.

QUICK CHECKS

- None

SERVICE CHECKS

- Run Driver Routine 25. This routine operates the Backup Roll Motor (M701) and checks the operation of the motor and drive system.
- Run Sensor Routine 71. This routine tests the Backup Roll Open/Close sensor portion of the Backup Roll Position Sensor (S712).

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Backup Roll Motor (M701)	50%	1435	2048	1684
Backup Roll Position Sensor (S712)	20%	1433	2056	1673
Backup Roll Open/Close mechanism	10%	1670	2052	1684
Backup Roll Motor (M701) Gear Head	10%	1435	2048	1684
DV081 Card	05%	1442	2118	1764
DV071 Card	03%	1437	2048	1685
FU041 Card	02%	1442	2118	1764

MAP 013A BEGINS

Table 52. MAP 013A

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		

Table 52. MAP 013A (continued)

Step	Questions/Actions	Yes	No
Step 1.	• Observe the Backup Roll load cams and shaft while you run Driver Routine 25 several times. For normal operation, the cam shaft should rotate ½ revolution to the Backup Roll closed position, stop for 2 seconds and sound the buzzer, then rotate another ½ revolution to the open position and sound the buzzer again. If the motor circuit has failed, or if the cam shaft is bound up, the cam shaft will not rotate at all. If the Backup Roll Open/Close mechanism is binding, the cam shaft may start to rotate, but fail to complete the rotation because of the bind. If the Backup Roll Position Sensor (S712) circuit has failed, the cam shaft may rotate continuously for one or more complete revolutions before it stops. • Repeat Driver Routine 25 several times, if necessary. **Does the cam shaft ever rotate ½ revolution or more?**	Go to Step 2.	Go to Step 3.

Table 52. MAP 013A (continued)

Step	Questions/Actions	Yes	No
Step 2.	There is a problem with the Backup Roll Position Sensor (S712) or its logic circuit. Or there may be a mechanical problem with the Backup Roll Encoder mechanism. • Remove the cover over the Backup Roll Encoder mechanism. • Check the condition of the Encoder disks. **Are the Encoder disks causing the problem?**	Adjust, repair, or replace as necessary.	• Check for an open circuit in connectors PJ702, PJ617, PJ609, or PJ637. If that is not the problem, install the new parts listed below, one at a time, until the problem is corrected: • Backup Roll Position Sensor (S712) • DV071 Card • FU041 Card @
Step 3.	The Backup Roll Open/Close mechanism is binding, or the Backup Roll Motor (M701) is failing to drive. • Manually raise and lower the Backup Roll Open/Close mechanism. **Note:** The springs on the mechanism are strong, but you should be able to raise it away from the cams with a reasonable amount of force. **Does the Backup Roll Open/Close mechanism move without binding?**	Go to Step 4.	• Adjust, repair, or replace as necessary. @

Table 52. MAP 013A (continued)

Step	Questions/Actions	Yes	No
Step 4.	• Remove the Backup Roll Motor (M701) and the gear box. • Rotate the gears in the gear box and check for binds or stripped gears. **Are the gears binding or stripped?**	• Install a new Gear Box. @	The Backup Roll Motor (M701) or its drive circuit has failed. • Check for an open circuit between Backup Roll Motor (M701) connector PJ652 and DV081 Card connector PJ603. If that is not the problem, install the new parts listed below, one at a time, until the problem is corrected: • Backup Roll Motor (M701) and Capacitor (C701) assembly • DV081 Card @

MAP 013B: Backup Roll Open Error

Symptom Explanation	Conditions That Could Cause This Symptom
The Backup Roll fails to open correctly.	• The Backup Roll Motor (M701) and Capacitor (C701) assembly is defective. • The Backup Roll Open/Close mechanism has a mechanical failure. • The Backup Roll Motor (M701) Gear Head is defective. • The DV081 Card is defective.
The Backup Roll opens correctly, but the Backup Roll Position Sensor (S712) does not sense that it has opened.	• The Backup Roll Encoder is defective. • The Backup Roll Position Sensor (S712), or the Encoder wiring, is defective. • The DV071 Card is defective. • The FU041 Card is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD24 - Backup-Roll Motor (M701) - Open/Close Mechanism & Position Sensor (S712)
- Wiring Diagrams - WD52 - Backup Roll Encoder (DV071 & FU041 Cards)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Driver Routine 25. An error is indicated by **E197** on the Maintenance Panel.
- Run the **alternate** print sample (1069). An error is indicated by an SRC 13B on the Display/Touch Screen or by **E097** on the Maintenance Panel.
- Switch machine power off and on to run the power-on diagnostics. An error is indicated by an SRC 13B on the Display/Touch Screen or by **E097** on the Maintenance Panel.

QUICK CHECKS

- None

SERVICE CHECKS

- Run Driver Routine 25. This routine operates the Backup Roll Motor (M701) and checks the operation of the motor and drive system.
- Run Sensor Routine 71. This routine tests the Backup Roll Open/Close sensor portion of the Backup Roll Position Sensor (S712).

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Backup Roll Motor (M701)	50%	1435	2048	1684
Backup Roll Position Sensor (S712)	20%	1433	2056	1673
Backup Roll Open/Close mechanism	10%	1670	2052	1684
Backup Roll Motor (M701) Gear Head	10%	1435	2048	1684
DV081 Card	05%	1442	2118	1764
DV071 Card	03%	1437	2048	1685
FU041 Card	02%	1442	2118	1764

MAP 013B BEGINS

Table 53. MAP 013B

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Observe the Backup Roll load cams and shaft while you run Driver Routine 25 several times. For normal operation, the cam shaft should rotate ½ revolution to the Backup Roll closed position, stop for 2 seconds and sound the buzzer, then rotate another ½ revolution to the open position and sound the buzzer again. If the motor circuit has failed, or the cam shaft is bound up, the cam shaft may not rotate at all. If the Backup Roll Open/Close mechanism is binding, the cam shaft may start to rotate, but fail to complete the rotation because of the bind. If the Backup Roll Position Sensor (S712) circuit has failed, the cam shaft may rotate continuously for one or more complete revolutions before it stops. • Repeat Driver Routine 25 several times, if necessary. **Does the cam shaft ever rotate ½ revolution or more?**	Go to Step 2.	Go to Step 3.

Table 53. MAP 013B (continued)

Step	Questions/Actions	Yes	No
Step 2.	There is a problem with the Backup Roll Position Sensor (S712) or its logic circuit. Or there may be a mechanical problem with the Backup Roll Encoder mechanism. • Remove the cover over the Backup Roll Encoder mechanism. • Check the condition of the Encoder disks. **Are the Encoder disks causing the problem?**	Adjust, repair, or replace as necessary. @	• Check for an open circuit in connectors PJ702, PJ617, PJ609, or PJ637. If that is not the problem, install the new parts listed below, one at a time, until the problem is corrected: • Backup Roll Position Sensor (S712) • DV071 Card • FU041 Card @
Step 3.	The Backup Roll Open/Close mechanism is binding, or the Backup Roll Motor (M701) is failing to drive. • Manually raise and lower the Backup Roll Open/Close mechanism. **Note:** The springs on the mechanism are strong, but you should be able to raise it away from the cams with a reasonable amount of force. **Does the Backup Roll Open/Close mechanism move without binding?**	Go to Step 4.	• Adjust, repair, or replace as necessary. @

Table 53. MAP 013B (continued)

Step	Questions/Actions	Yes	No
Step 4.	• Remove the Backup Roll Motor (M701) and the gear box. • Rotate the gears in the gear box and check for binds or stripped gears. **Are the gears binding or stripped?**	• Install a new Gear Box. @	The Backup Roll Motor (M701) or its drive circuit has failed. • Check for an open circuit between Backup Roll Motor (M701) connector PJ652 and DV081 Board connector PJ603. If that is not the problem, install the new parts listed below, one at a time, until the problem is corrected: • Backup Roll Motor (M701) and Capacitor (C701) assembly. • DV081 Board • FU041 Card @

MAP 0141: Felt Oiler Belt Driver Error

Symptom Explanation	Conditions That Could Cause This Symptom
The Felt Oiler motor drive signal is on continuously. The motor is locked and fails to run.	• The Oiler-Belt Motor drive circuitry is defective. • The Oiler-Belt Motor (M706) is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD19 - Oiler Belt Motor (M706) & Driver
- Wiring Diagrams - WD41 - Oiler Belt Motor (M706)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Driver Routine 28. An error is indicated by **Ex8F** on the Maintenance Panel.
- Run Alternate Print Sample. An error is indicated by a SRC 141 in the Display/Touch Screen or by **E08F** on the Maintenance Panel.
- Switch machine power OFF then ON to run the power-on diagnostics. An error is indicated by **..83** on the Maintenance Panel. The oiler belt motor stays on.

QUICK CHECKS

- None

SERVICE CHECKS

- Run Driver Routine 28. This routine operates the Oiler-Belt Motor for 200 steps (one revolution of the motor shaft) and checks the operation of the motor and drive system.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
DV081 Card	60%	1442	2118	1764
FU041 Card	30%	1442	2118	1764
Oiler Belt Motor (M706)	10%	1431	2058	1715

MAP 0141 BEGINS

Table 54. MAP 0141

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Switch machine power OFF then ON to run the power-on diagnostics. **Did you get an ..83 error on the Maintenance Panel?**	Go to Step 2.	Go to Step 3.

Table 54. MAP 0141 (continued)

Step	Questions/Actions	Yes	No
Step 2.	There is a possible short circuit in the Oiler Belt Motor which will cause an over current condition in the DV081 Card. • SHUTDOWN AND POWER OFF THE PRINTER. • Disconnect the Oiler Belt Motor connector PJ723. • Measure the resistance between P723-1 and 2, P723-1 and 3, P723-1 and 4, P723-1 and 5 (the motor side of the connector). **Were any of the resistance readings below 5 ohms?**	• Install a new Oiler Belt Motor (M706) and DV081 Card. @	Do the following, one step at a time, until the problem is corrected: • 1) Check for an open connector PJ723 or PJ621. • 2) Install a new DV081 Card. • 3) Install a new FU041 Card. @
Step 3.	• Run Driver Routine 28. An error is indicated by **Ex8F** on the Maintenance Panel. **Did you get an Ex8F error on the Maintenance Panel?**	• SHUTDOWN AND POWER OFF THE PRINTER. Do the following one step at a time, until the problem is corrected: • 1) Check for an open connector PJ723, PJ636, PJ605 or PJ621. • 2) Install a new DV081 Card. • 3) Install a new FU041 Card. @	The problem is intermittent. Possible failing parts are as follows: • The DV081 Card • The FU041 Card @

MAP 0142: Oil Pump Driver Error

Symptom Explanation	Conditions That Could Cause This Symptom
One of the Oil Pump drive signals is on continuously.	• The Oil Pump drive circuitry is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD20 - Oil Pumps and Driver
- Wiring Diagrams - WD45 - Oil Pumps L701, L702 & L703
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Driver Routine 2A, 2B, and 2C. An error is indicated by Ex99 on the Maintenance Panel.
- Run the **alternate** print sample (1069). An error is indicated by a SRC 142 on the Display/Touch Screen or by **E099** on the Maintenance Panel.
- Switch machine power OFF then ON to run the power on diagnostics. An error is indicated by **..89**, **..8A**, or **..8B** on the Maintenance Panel.

QUICK CHECKS

- None

SERVICE CHECKS

- Run Driver Routine 2A, 2B, and 2C. These routines operate the Oil Pumps and cause them to feed oil to the Oiler Belt and Oiler Wick Roll.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
DV081 Card	55%	1442	2118	1764
FU041 Card	35%	1442	2118	1764
Oil Pump Assembly	10%	1435	2072	1720

MAP 0142 BEGINS

Table 55. MAP 0142

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Switch machine power OFF then ON to run the power on diagnostics. **Did you get an ..89, ..8A, or ..8B error on the Maintenance Panel?**	Go to Step 2.	Go to Step 3.

Table 55. MAP 0142 (continued)

Step	Questions/Actions	Yes	No
Step 2.	There is a possibility of a short circuit in one of the Oil Pumps, which will cause an over current condition in the DV081 Card. • SHUTDOWN AND POWER OFF THE PRINTER. • Disconnect the Oil Pump connector PJ745. • Measure the resistance between P745-1 and 2, P745-3 and 4, and P745-5 and 6, (the pump side of the connector). **Were any of the resistance readings below 5 ohms?**	One of the Oil Pumps is shorted, and the DV081 Card is defective. Install a new Oil Pump Assembly and DV081 Card. @	Do the following, one step at a time, until the problem is corrected: • 1) Check for an open connector: – PJ745 – PJ622 • 2) Install a new DV081 Card. • 3) Install a new FU041 Card. @
Step 3.	• Run Driver Routine 2A, 2B, and 2C. An error is indicated by **Ex99** on the Maintenance Panel. **Did you get an Ex99 error on the Maintenance Panel?**	• SHUTDOWN AND POWER OFF THE PRINTER. Do the following, one step at a time, until the problem is corrected: • 1) Check for an open connector: – PJ745 – PJ622 – PJ605 – PJ636 • 2) Install a new DV081 Card. • 3) Install a new FU041 Card. @	The problem is intermittent. Possible failing parts are: • DV081 Card • FU041 Card @

MAP 0143: Felt Oiler Belt Motor Always Driven

Symptom Explanation	Conditions That Could Cause This Symptom
The Felt Oiler motor drive signal is on continuously. The motor is locked and fails to run.	• The Oiler Belt Motor drive circuitry is defective. • The Oiler Belt Motor (M706) is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD19 - Oiler Belt Motor (M706) & Driver
- Wiring Diagrams - WD41 - Oiler Belt Motor (M706)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Driver Routine 28. An error is indicated by Ex8F on the Maintenance Panel.
- Run the **alternate** print sample (1069). An error is indicated by a SRC 143 on the Display/Touch Screen or by **E090** on the Maintenance Panel.
- Switch machine power OFF then ON to run the power on diagnostics. An error is indicated by **..83** on the Maintenance Panel.

QUICK CHECKS

- None

SERVICE CHECKS

- Run Driver Routine 28. This routine operates the Oiler Belt Motor for 200 steps (one revolution of the motor shaft) and checks the operation of the motor and drive system.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
DV081 Card	60%	1442	2118	1764
FU041	30%	1442	2118	1764
Oiler Belt Motor (M706)	10%	1431	2058	1715

MAP 0143 BEGINS

Table 56. MAP 0143

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Switch machine power OFF then ON to run the power-on diagnostics. **Did you get an ..83 error on the Maintenance Panel?**	Go to Step 2.	Go to Step 3.

Table 56. MAP 0143 (continued)

Step	Questions/Actions	Yes	No
Step 2.	There is a possibility of a short circuit in the Oiler Belt Motor, which causes an over current condition in the DV081 Card. • SHUTDOWN AND POWER OFF THE PRINTER. • Disconnect Oiler Belt Motor connector PJ723. • Measure the resistance between: – P723–1 and P723–2 – P723–1 and P723–3 – P723–1 and P723–4 – P723–1 and P723–5 (the motor side of the connector) **Were any of the resistance readings below 50 ohms?**	The Oiler Belt Motor is shorted and the DV081 Card is defective. • Install a new Oiler Belt Motor (M706) and DV081 Card. @	Do the following, one step at a time, until the problem is corrected: • 1) Check for an open connector PJ723 or PJ621. • 2) Install a new DV081 Card. • 3) Install a new FU041 Card. @
Step 3.	• Run Driver Routine 28. An error is indicated by **Ex90** on the Maintenance Panel. **Did you get an Ex90 error on the Maintenance Panel?**	• SHUTDOWN AND POWER OFF THE PRINTER. Do the following, one step at a time, until the problem is corrected: • 1) Check for an open connector PJ723 or PJ621. • 2) Install a new DV081 Card. • 3) Install a new FU041 Card. @	The problem is intermittent. Possible failing parts are: • DV081 Card • FU041 Card @

MAP 0144: Felt Oiler Belt Motor Never Driven

Symptom Explanation	Conditions That Could Cause This Symptom
The Felt Oiler belt motor drive signal does not switch ON.	• The FU041 Card is defective. • The DV081 Card is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD19 - Oiler Belt Motor (M706) & Driver
- Wiring Diagrams - WD41 - Oiler Belt Motor (M706)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Driver Routine 28. An error is indicated by Ex91 on the Maintenance Panel.
- Run Alternate Print Sample. An error is indicated by an SRC 144 on the Display/Touch Screen or by **E091** on the Maintenance Panel.
- Switch machine power OFF then ON to run the power on diagnostics. An error is indicated by **..90**, **..91**, **..92**, or **..93** on the Maintenance Panel.

QUICK CHECKS

- None

SERVICE CHECKS

- Run Driver Routine 28. This routine operates the Oiler belt motor for 200 steps (one revolution of the motor shaft) and checks the operation of the motor and drive system.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
DV081 Card	55%	1442	2118	1764
FU041 Card	35%	1442	2118	1764
Oiler Belt Motor (M706)	10%	1431	2058	1715

MAP 0144 BEGINS

Table 57. MAP 0144

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Switch machine power OFF then ON to run the power on diagnostics. **Did you get a ..90, ..91, ..92, or ..93 error on the Maintenance Panel?**	Go to Step 2.	Go to Step 3.

Table 57. MAP 0144 (continued)

Step	Questions/Actions	Yes	No
Step 2.	There is a possibility of a short circuit in the Oiler belt motor , which will cause an over current condition in the DV081 Card. • SHUTDOWN AND POWER OFF THE PRINTER. • Disconnect the Oiler Belt Motor connector PJ723. • Measure the resistance between – P723–1 and P723–2 – P723–1 and P723–3 – P723–1 and P723–4 – P723–1 and P723–5 (the motor side of the connector) **Were any of the resistance readings below 5 ohms?**	The Oiler belt motor is shorted and the DV081 Card is defective. • Install a new Oiler belt motor (M706) and DV081 Card. @	Do the following, one step at a time, until the problem is corrected: • 1) Check for an open connector PJ723 or PJ621. • 2) Install a new DV081 Card. • 3) Install a new FU041 Card. @
Step 3.	• Run Driver Routine 28. An error is indicated by **Ex91** on the Maintenance Panel. **Did you get an Ex91 error on the Maintenance Panel?**	• SHUTDOWN AND POWER OFF THE PRINTER. Do the following, one step at a time, until the problem is corrected: • 1) Check for an open connector PJ723 or PJ621. • 2) Install a new DV081 Card. • 3) Install a new FU041 Card. @	The problem is intermittent. Possible failing parts are: • DV081 Card • FU041 Card @

MAP 0145: Oil Pump Always Driven

Symptom Explanation	Conditions That Could Cause This Symptom
The Oil Pump drive signal is on continuously.	• The FU041 Card is defective. • The DV081 Card is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD20 - Oil Pumps and Driver
- Wiring Diagrams - WD45 - Oil Pumps L701, L702 & L703
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Driver Routine 2A, 2B, and 2C. An error is indicated by **Ex9A** on the Maintenance Panel.
- Run Alternate Print Sample. An error is indicated by an SRC 145 in the Display/Touch Screen or by **E09A** on the Maintenance Panel.
- Switch machine power OFF then ON to run the power-on diagnostics. An error is indicated by **..89**, **..8A**, or **..8b** on the Maintenance Panel.

QUICK CHECKS

- None

SERVICE CHECKS

- Run Driver Routine 2A, 2B, and 2C. These routines operate the Oil Pumps and check the operation of the drive system.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
DV081 Card	65%	1442	2118	1764
FU041 Card	35%	1442	2118	1764

MAP 0145 BEGINS

Table 58. MAP 0145

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Switch machine power OFF then ON to run the power on diagnostics. **Did you get an ..89, ..8A, or ..8b error on the Maintenance Panel.**	Do the following, one step at a time, until the problem is corrected: • 1) Check for an open connector PJ745 or PJ622. • 2) Install a new DV081 Card. • 3) Install a new FU041 Card. @	Go to Step 2.

Table 58. MAP 0145 (continued)

Step	Questions/Actions	Yes	No
Step 2.	• Run Driver Routine 2A, 2B, and 2C. An error is indicated by **Ex9A** on the Maintenance Panel. **Did you get an Ex9A error on the Maintenance Panel?**	• SHUTDOWN AND POWER OFF THE PRINTER. Do the following, one step at a time, until the problem is corrected: • 1) Check for an open connector PJ745 or PJ622. • 2) Install a new DV081 Card. • 3) Install a new FU041 Card. @	The problem is intermittent. Possible failing parts are: • DV081 Card • FU041 Card @

MAP 0146: Oil Pump Never Driven

Symptom Explanation	Conditions That Could Cause This Symptom
The Oil Pump drive signal does not turn ON.	• The FU041 Card is defective. • The DV081 Card is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD20 - Oil Pumps and Driver
- Wiring Diagrams - WD45 - Oil Pumps L701, L702 & L703
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Driver Routine 2A, 2B, and 2C. An error is indicated by **Ex9b** on the Maintenance Panel.
- Run Alternate Print Sample. An error is indicated by a SRC 146 on the Display/Touch Screen or by **E09b** on the Maintenance Panel.
- Switch machine power OFF then ON to run the power-on diagnostics. An error is indicated by **..89**, **..8A**, or **..8b** on the Maintenance Panel.

QUICK CHECKS

- None

SERVICE CHECKS

- Run Driver Routine 2A, 2B, and 2C. These routines operate the Oil Pumps and check the operation of the drive system.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
DV081 Card	65%	1442	2118	1764
FU041	35%	1442	2118	1764

MAP 0146 BEGINS

Table 59. MAP 0146

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Switch machine power OFF then ON to run the power-on diagnostics. **Did you get an ..89, ..8A, or ..8b error on the Maintenance Panel?**	Do the following, one step at a time, until the problem is corrected: • 1) Check for an open connector PJ745 or PJ622. • 2) Install a new DV081 Card. • 3) Install a new FU041 Card. @	Go to Step 2.

Table 59. MAP 0146 (continued)

Step	Questions/Actions	Yes	No
Step 2.	• Run Driver Routine 2A, 2B, and 2C. An error is indicated by **Ex9b** on the Maintenance Panel. **Did you get an Ex9b error on the Maintenance Panel?**	• SHUTDOWN AND POWER OFF THE PRINTER. Do the following, one step at a time, until the problem is corrected: • 1) Check for an open connector PJ745 or PJ622. • 2) Install a new DV081 Card. • 3) Install a new FU041 Card. @	The problem is intermittent. Possible failing parts are: • DV081 Card • FU041 Card @

MAP 0152: Scuff Roll Motor Thermal

Symptom Explanation	Conditions That Could Cause This Symptom
An SRC 152 (E0C7) results from an overload on the Scuff Roll Motor (M704).	• The Scuff Roll Motor (M704) is defective. • The Scuff Roll Drive may be binding. • The DV071 Card is defective. • The FU041 Card is defective.
The Scuff Roll Motor circuit breaker (CB1) on the DV071 Card has not tripped.	• The DV071 Card is defective. • The FU041 Card is defective

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD18 - Scuff Roll Motor (M704) & Fuser Wrap Sensor (S617)
- Wiring Diagrams - WD39 - Motors M704, M801, M802
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Switch printer power off then on to run the power-on diagnostics. An error is indicated by an SRC 152 on the Display/Touch Screen or by **E0C7** on the Maintenance Panel.

QUICK CHECKS

- Determine if the Scuff Roll Motor (M704) is actually running.

SERVICE CHECKS

- Reset CB1 on the DV071 Card.
- Run Driver Routine 29. This routine operates the Scuff Roll Motor (M704) to check the operation of the motor and drive system.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Scuff Roll Motor (M704)	70%	1433	2074	1736
Scuff Roll drive mechanism	25%	1433	2074	1736
DV071 Card	03%	1437	2048	1685
FU041 Card	01%	1442	2118	1764
Scuff Roller Pressure Check	01%	- -	- -	1732

MAP 0152 BEGINS

Table 60. MAP 0152

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		

Table 60. MAP 0152 (continued)

Step	Questions/Actions	Yes	No
Step 1.	• Shutdown and power off the printer. • Measure the resistance between the following points on the Scuff Roll Motor (M704): – J714–1and J714–3 – J714–1and J714–4 – J714–2and J714–5 – J714–2and J714–6 **Is the resistance between 1 and 2 ohms for each pair?**	Go to Step 2.	• Install a new Scuff Roll Motor (M704). @
Step 2.	**Are there any binds in the Scuff Roll drive mechanism?**	• Replace the defective parts. • Make any necessary adjustments. @	Go to Step 3.
Step 3.	• Check the tension on the scuff pressure roller. **Is the tension correct?** @	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between: – PJ714 and PJ629 – PJ608 and PJ633 • Install a new DV071 Card. • Install a new FU041 Card. @	• Adjust the scuff roll tension. @

MAP 0156: Backup Roll Lift Motor (M610) Position Error

Symptom Explanation	Conditions That Could Cause This Symptom
The position of the Backup Roll Lift Motor (M610) is incorrect and the motor does not move.	• The Backup Roll Lift Motor (M610) is defective. • The DV071 Card is defective. • The FU041 Card is defective. • The backup roll lift mechanism is binding. (Look for interference between the backup roll lift shaft and the Steering Motor.)
The position of the Backup Roll Lift Motor (M610) cannot be determined but the motor does move.	• The Backup Roll Lift Position Sensor (S624) is defective. • The Backup Roll Lift Motor (M610) Belt is defective. • The backup roll lift mechanism is binding. (Look for interference between the backup roll lift shaft and the Steering Motor.) • The DV071 Card is defective. • The FU041 Card is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD26 - Backup Roll Lift Motor (M610) & Position Sensor (S624)
- Wiring Diagrams - WD37 - Backup Roll Lift Motor (M610) & Sensor (S624)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Sensor Routine 9C. This routine checks the status of the Backup Roll Lift Position Sensor (S624).
- Run Driver Routine 4D. This routine checks the operation of the Backup Roll Lift Motor (M610).
- Print the Print Pack (1070). An error is indicated by an SRC 156 on the Display/Touch Screen or by **E0EE** on the Maintenance Panel.

QUICK CHECKS

- Check the Backup Roll Lift Motor timing.

SERVICE CHECKS

- Run Sensor Routine 9C. This routine checks the status of the Backup Roll Lift Position Sensor (S624).
- Run Driver Routine 4D. This routine operates the Backup Roll Lift Motor (M610) to check the operation of the motor and drive system.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Backup Roll Lift Motor (M610) belt	30%	1437	2052	1677
Backup Roll Lift Motor (M610)	20%	1437	2054	1675
Backup Roll Lift Position Sensor (S624)	20%	1437	2050	1683
Binding backup roll lift mechanism	15%	1437	2050	1675
DV071 Card	10%	1437	2048	1685
FU041 Card	04%	1442	2118	1764
Backup Roll Lift Motor Timing	01%	- -	- -	1193

MAP 0156 BEGINS

Table 61. MAP 0156

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Perform the QUICK CHECKS. • Run Driver Routine 4D. **Do the Backup Roll Lift Motor and drive mechanism rotate smoothly?**(Disregard any maintenance panel errors.)	Go to Step 2.	Go to Step 4.
Step 2.	• Run Sensor Routine 9C. **Does the Backup Roll Lift Position sensor operate correctly?**	Do the following, one step at a time, until the problem is corrected: • Install a new FU041 Card. • Install a new DV071 Card. @	Go to Step 3.

Table 61. MAP 0156 (continued)

Step	Questions/Actions	Yes	No
Step 3.	• Check PJ6020–3 +5 V. **Is +5 V present?**	Do the following, one step at a time, until the problem is corrected: • Check the Backup Roll Lift Position Sensor for correct adjustment. • Repair an open circuit between the following wires: – PJ6020–3 and PJ6019–3 – PJ617–26 and PJ6019–2 – PJ617–27 and PJ6019–1 – PJ609–25 and PJ637–25 • Install a new Backup Roll Lift Position Sensor. @	• SHUTDOWN AND POWER OFF THE PRINTER. Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between PJ6020–3 and PJ617–25. • Install a new DV071 Card. @
Step 4.	• SHUTDOWN AND POWER OFF THE PRINTER. • Check the Backup Roll Lift mechanism for binding or broken parts, including the belt. **Is the Backup Roll Lift mechanism defective?**	• Repair the defective part if possible. If it cannot be fixed, install a new part. @	Go to Step 5.

Table 61. MAP 0156 (continued)

Step	Questions/Actions	Yes	No
Step 5.	• Disconnect connectors, PJ609, PJ608, and PJ628 from the DV071 Card. • Check for continuity between: – PJ609–10 and PJ637–10 – PJ609–25 and PJ637–25 – PJ608– 7and PJ633–7 – PJ608–8 and PJ633–8 – PJ608–15 and PJ633–15 – PJ608–16 and PJ633–16 – PJ608–20 and PJ633–20 – PJ628–1 and PJ6018–1 – PJ628–2 and PJ6018–2 – PJ628–3 and PJ6018–3 – PJ628–4 and PJ6018–4 – PJ628–5 and PJ6018–5 – PJ628–6 and PJ6018–6 **Is there continuity for each wire?**	Do the following, one step at a time, until the problem is corrected: • Install a new Backup Roll Lift Motor (M610). • Install a new DV071 Card. • Install a new FU041 Card. @	• Repair the open circuit. @

MAP 0157: Backup Roll Lift Motor (M610) Over Current

Symptom Explanation	Conditions That Could Cause This Symptom
The Backup Roll Lift Motor (M610) is drawing too much current.	• The Backup Roll Lift Motor (M610) is defective. • The motor drive circuit has failed. • The current sensing circuit has failed. • The Backup Roll Lift mechanism is binding (possibly between the Backup Roll Lift sift and the Steering Motor).

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD26 - Backup Roll Lift Motor (M610) & Position Sensor (S624)
- Wiring Diagrams - WD37 - Backup Roll Lift Motor (M610) & Sensor (S624)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Driver Routine 4D. This routine checks the operation of the Backup Roll Lift Motor (M610). An error is indicated by **ExD5** on the Maintenance Panel.
- Print the Print Pack (1070). An error is indicated by an SRC 157 on the Display/Touch Screen or by **E0D5** on the Maintenance Panel.

QUICK CHECKS

- None

SERVICE CHECKS

- Run Driver Routine 4D. This routine operates the Backup Roll Lift Motor (M610) to check the operation of the motor and drive system.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Backup Roll Lift Motor (M610)	55%	1437	2054	1675
Binding Backup Roll Lift mechanism	20%	1437	2050	1675
DV071 Card	10%	1437	2048	1764
FU041 Card	10%	1442	2118	1764
CPxxx Card	05%	1453	2114	1760

MAP 0157 BEGINS

Table 62. MAP 0157

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	A Backup Roll Lift Motor (M610) drive over current will trip circuit breaker CB2 on the DV071 Card. **Is CB2 tripped?**	Go to Step 2.	Go to Step 4.

Table 62. MAP 0157 (continued)

Step	Questions/Actions	Yes	No
Step 2.	There may be a problem with the Backup Roll Lift Motor (M610) or its circuitry. • SHUTDOWN AND POWER OFF THE PRINTER. • Reset CB2 on the DV071 Card. • Power on the printer. • Measure the voltage between: – PJ628–1 and machine ground – PJ628–2 and machine ground **Is the voltage +40 V dc in both cases?**	Go to Step 3.	• SHUTDOWN AND POWER OFF THE PRINTER. Do the following, one step at time, until you measure +40 V dc between PJ628–1 and machine ground and PJ628–2 and machine ground: • Repair a short circuit to ground in the following connectors: – PJ6018 – PJ628 • Install a new DV071 Card. • Install a new FU041 Card. • Install a new CPxxx Card. @
	DANGER **<5> High-voltage is present. Use care while working in this area.High-voltage is present. Use care while working in this area.**		

Table 62. MAP 0157 (continued)

Step	Questions/Actions	Yes	No
Step 3.	The problem may be in the motor windings. • SHUTDOWN AND POWER OFF THE PRINTER. • Disconnect connector PJ6018. • Power on the printer. • Measure the voltage between the following pairs on the motor side of the connector: – P6018–1 and P6018–3 – P6018–1 and P6018–4 – P6018–2 and P6018–5 – P6018–2 and P6018–6 **Is the resistance about 2 ohms in each pair?**	Go to Step 4.	• Install a new Backup Roll Lift Motor (M610). @
Step 4.	There may be a problem in the drive mechanism. • Check for binds in the drive mechanism. **Note:** The mechanism is stiff, but it should move slightly. **Is the Backup Roll Lift mechanism binding?**	• Replace the defective parts and make the appropriate adjustments. @	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between PJ606–10 and PJ601–3. • Install a new DV071 Card. • Install a new FU041 Card. @

MAP 0161: Stacker Jams (Light Never Sensed)

Symptom Explanation	Conditions That Could Cause This Symptom
Forms jam in the stacker.	• Forms Set switch setting is wrong. • Forms are not folding correctly. • Forms Width guide is set wrong. • Forms Length setting is wrong. • Finger belts are broken, loose, or worn. • Stacker Table is not lowering correctly. • Stacker Height LEDs and Sensors are dirty, out of adjustment, or defective. • Forms are out of specification. • Finger belt motor drive belt is broken or loose. • Pin feed holes are torn. • The DV071 Card is defective. • The DV081 Card is defective. • The FU041 Card is defective. • Finger belt motor, capacitor, or gear box is defective. • Pendulum Motor (M804) is defective
False stacker-jam errors occur.	• The Stacker Jam Sensor Lamp, or Receiver is dirty. • The Stacker Jam Sensor is out of adjustment. • The Stacker Jam LED (D803) is defective. • The Stacker Jam Sensor (S805) is defective. • The Stacker Jam Sensor circuit has an open connector or broken wire. • The DV071 Card is defective. • The DV081 Card is defective. • The FU041 Card is defective.

REFERENCES

- Removals & Adjustments - Stacker
- Circuit Diagrams - CD39 - Stacker Jam Sensor (S805/D803)
- Circuit Diagrams - CD43 - Finger Belt Motors (M801 & M802)
- Wiring Diagrams - WD49 - Stacker Sensors (DV071 Card)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Sensor Routine 75. This routine checks the status of the Stacker Jam Sensor.
- Run Driver Routine 1B. This routine checks the operation of the Stacker Table Motor.
- Run Driver Routine 1C. This routine checks the operation of the Stacker Finger Belts.
- Run the **alternate** print sample (1069). An error is indicated by `STACKER JAM 161` on the Display/Touch Screen or by **E080** on the Maintenance Panel.

QUICK CHECKS

Note: The Stacker Jam error cannot be reset unless the stacker table down switch is pressed or the stacker gate is opened.

- Ensure that the forms set switch is set correctly.
- Ensure that the forms are folding in the correct direction.
- Check for dust or chads on the Stacker Jam LED and receiver.
- Ensure that all of the upper Stacker Height LEDs and Photosensors are clean and operating correctly.
- Ensure that the forms width guide is set correctly.
- Ensure that the forms length setting is correct.
- Check for broken, loose, or worn Stacker Finger Belts.
- Run the Stacker Table up and down several times. Check for binds, broken belts, and so on. If you get a Stacker Table SRC 172 or 175, go to that MAP and correct the Stacker Table problem.
- Check for torn pin feed holes, which can cause the forms to stack incorrectly.
- Clear the forms jam and retry.
- Try a different type or weight of forms.

Hint

If your customer is having difficulty getting box paper to refold in the stacker of the second printer in a duplex system, the problem may be stiff perforations. Refer to the Forms Design Reference and also contact your marketing representative for assistance.

SERVICE CHECKS

- Run Sensor Routine 75. This routine checks the status of the Stacker Jam Sensor.
- Run Driver Routine 1B. This routine checks the operation of the Stacker Table Motor.
- Run Driver Routine 1C. This routine checks the operation of the Stacker Finger Belts.
- Run Sensor Routine 8D. This routine checks the status of the Rear Stacker Height Sensor.
- Run Sensor Routine 8E. This routine checks the status of the Front Stacker Height Sensor.
- Run Driver Routine 18. This routine checks the operation of the Pendulum mechanism.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Operator control switches set wrong	15%	- -	- -	- -
Forms folding incorrectly	10%	- -	- -	- -
Stacker Jam Sensor (S805) dirty	10%	1438	2094	1879
Stacker Jam Sensor (S805) adjustment	10%	1438	2094	1879
Finger belts broken, loose, or worn	10%	1441	2098, 2100	1870, 1863
Stacker-height LEDs (D801 & D802) and photosensors (S803 & S804) dirty, out of adjustment, or defective.	05%	1439, 1441	2092, 2102	1877
Forms out of specifications	05%	- -	- -	- -
Gate Finger Belt Motor drive belt	05%	1439	2098	1872
Rear Finger Belt Motor drive belt	05%	1439	2100	1866
Torn pin feed holes	04%	- -	- -	- -
Gate Finger Belt Motor (M802)	04%	1439	2096	1872
Rear Finger Belt Motor (M801)	04%	1439	2100	1866
Stacker Jam LED (D803)	03%	1439	2092	1879
Stacker Jam Sensor (S805)	03%	1438	2094	1879
DV071 Card	02%	1437	2048	1764
DV081 Card	02%	1442	2118	1764
FU041 Card	02%	1442	2118	1764
Pendulum Motor (M804)	01%	1441	2110	1859
Broken Stacker Table drive belts	- - -		2106	1880
Obstruction in the path of the Stacker Table	- - -	1439	2104	

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Bind in the Stacker Table drive mechanism	- - -	1439	2104	

MAP 0161 Begins

Table 63. MAP 0161

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	If you found no problems using the QUICK CHECKS, continue with the questions. If the Stacker Table will not lower correctly, the forms will stack high enough to operate the Stacker Jam Sensor. If the Stacker Table does not lower when you press the Stacker Table Down pushbutton, the error symptom may change to a SRC 172 or 175 after a delay of approximately 30 seconds. • Press the Stacker Table Down pushbutton. **Does the Stacker Table lower correctly?**	Go to Step 2.	Go to Step 9.
Step 2.	If the Stacker Height Sensors fail, the Stacker Table may step down faster than normal. This results in a loose stack of forms that can cause stacker jams, or the forms may flow out onto the floor. • Run Sensor Routine 8D. This routine checks the status of the Rear Stacker Height Sensor. **Does the Rear Stacker Height Sensor test correctly with Sensor Routine 8D?**	Go to Step 3.	Go to MAP 0172: Stacker Table Timeout, Step 1.

Table 63. MAP 0161 (continued)

Step	Questions/Actions	Yes	No
Step 3.	• Run Sensor Routine 8E. This routine checks the status of the Front Stacker Height Sensor. **Does the Front Stacker Height Sensor test correctly with Sensor Routine 8E?**	Go to Step 4.	Go to MAP 0172: Stacker Table Timeout, Step 1.
Step 4.	• Run Sensor Routine 75. This routine checks the status of the Stacker Jam Sensor. **Does the Stacker Jam Sensor test correctly with Sensor Routine 75?**	Go to Step 5.	The problem is false stacker jams. Go to Step 13.
Step 5.	• Carefully check the condition of the Stacker Finger Belts. Look for worn fingers and broken or missing belts. Ensure that the belts are installed so that the fingers are staggered, rather than aligned. **Are the Stacker Finger Belts okay?**	Go to Step 6.	• Adjust, repair, or replace as necessary. @
Step 6.	• Run Driver Routine 1C to operate the Stacker Finger Belts. **Do the Stacker Gate Finger Belts and Rear Finger Belts both rotate when Driver Routine 1C is run?**	Go to Step 7.	Go to Step 11.
Step 7.	One of the V-belts that drives the Stacker Finger Belts may be slipping. • Check the tension of the Gate Finger Belt Motor drive belt and the Rear Finger Belt Motor drive belt. **Are both belt tensions correct?**	Go to Step 8.	• Adjust, repair, or replace as necessary. @

Table 63. MAP 0161 (continued)

Step	Questions/Actions	Yes	No
Step 8.	The timing of the pendulum swing may be wrong. • Run the **primary** print sample (1069) and observe the pendulum motion as the forms enter the stacker. Watch very carefully for: – Pendulum motion – Misfolds – Stacker table descending too quickly, especially with lightweight forms **Note:** This condition can also be caused by air flow in the stacker. See also Step 23. **Is the pendulum timing in synchronization with the perforations so that the forms are folding correctly?**	Go to Step 22.	Go to Step 23.
Step 9.	**Does the Stacker Table go UP when you press the Down pushbutton?**	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between PJ636–12 and PJ605–12. • Install a new DV081 Card. • Install a new FU041 Card. @	Go to Step 10.

Table 63. MAP 0161 (continued)

Step	Questions/Actions	Yes	No
Step 10.	Wait approximately 30 seconds after you press the Down pushbutton. **Does the error symptom change to an SRC 172 or 175?**	If you get a SRC 172 or 175, go to that MAP and repair the Stacker Table problem.	• Check for: – Broken Stacker Table drive belts – Obstructions in the path of the Stacker Table – Binds in the Stacker Table drive mechanism • Check continuity between PJ636-12 and PJ605-12.
Step 11.	**Do the Stacker Gate Finger Belts rotate when you run Driver Routine 1C?**	Do the following, one step at a time, until the problem is corrected: • Check for a loose or broken Rear Finger Belt Motor Drive Belt. • Repair an open circuit between one of the following pairs of connectors: – PJ806 to PJ625 – all pins – PJ636 to PJ605 – pins 35 through 40 • Check for a binding or stripped gear box on the Rear Finger Belt Motor (M801). • Install a new Rear Finger Belt Motor (M801). @	Go to Step 12.

Table 63. MAP 0161 (continued)

Step	Questions/Actions	Yes	No
Step 12.	**Do the Rear Finger Belts rotate when you run Driver Routine 1C?**	Do the following, one step at a time, until the problem is corrected: • Check for a loose or broken Gate Finger Belt Motor drive belt. • Repair an open circuit between one of the following pairs of connectors: – PJ807 to PJ624 – all pins – PJ630 and PJ605 – pins 29 through 33 • Check for a binding or stripped gear box on the Gate Finger Belt Motor. • Install a new Gate Finger Belt Motor (M802). @	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between one of the following pairs of connectors: – PJ715-1 and PJ602-5 – PJ715-2 and PJ602-7 – PJ717-1 and PJ602-5 – PJ717-2 and PJ602-7 – PJ604-9 and PJ480-30 • Install a new DV081 Card. • Install a new FU041 Card. • Install a new DV061 Card. @

Table 63. MAP 0161 (continued)

Step	Questions/Actions	Yes	No
Step 13.	**Note:** The voltage measurements in the following steps are all to be measured when Sensor Routine 75 is active. If the printer is in Diagnostic Mode and Sensor Routine 75 is not active, the voltage at the Stacker Jam LED ($\overline{D803}$) is lower than normal. This causes the voltage measurements in the following steps to be too low. • Clear all forms from the Stacker and reset any error conditions. • Clean the lamp and receiver on the Stacker Jam Sensor assembly. • Run Sensor Routine 75. • With no forms in the Stacker and with Sensor Routine 75 active, measure the voltage between TP-5 and TP-G on the DV071 Card. The voltage should be + 4.7 V dc or higher, when the sensor is adjusted correctly. **Is the voltage greater than +4.7 V dc?**	Go to Step 24.	Go to Step 14.
Step 14.	**Is the voltage greater than +1.0 V dc and less than +4.7 V dc?**	Go to Step 15.	Go to Step 16.

Table 63. MAP 0161 (continued)

Step	Questions/Actions	Yes	No
Step 15.	• Clean the lamp and receiver on the Stacker Jam Sensor assembly. Also check for loose mirrors on the Jam Sensor assembly. • With no forms in the Stacker and with Sensor Routine 75 active, measure the voltage between TP-5 and TP-G on the DV071 Card. The voltage should be +4.7 V dc or higher, when the sensor is adjusted correctly. @ **Is the voltage greater than +4.7 V dc?**	Cleaning the Jam Sensor fixed the problem.	• Perform the Stacker Jam Sensor (D803 and S805) adjustment. @
Step 16.	The voltage must be less than +1.0 V dc. **Is Stacker Jam LED emitting red light?**	Go to Step 17.	Go to Step 20.
Step 17.	• Place a small piece of white paper over the end of the Stacker Jam Sensor so you can see the beam of red light from the LED. **Is the beam of light adjusted so it shines on the Stacker Jam Sensor ?**	Go to Step 18.	• Perform the Stacker Jam Sensor (D803 and S805) adjustment. @
Step 18.	• With Sensor Routine 75 still active, measure the voltage between PJ816-1 and frame ground. **Is the voltage greater than +4.7 V dc?**	Go to Step 19.	• Check for an open circuit between PJ816-1 and PJ618-7. If that is not the problem, do the following: • Install a new DV071 Card. @

Table 63. MAP 0161 (continued)

Step	Questions/Actions	Yes	No
Step 19.	• With Sensor Routine 75 still active, measure the voltage between PJ816-2 and frame ground. **Is the voltage greater than +1.0 V dc?**	• Check for an open circuit between PJ816-2 and PJ618-7. If that is not the problem, do the following: • Install a new DV071 Card. • Install a new FU041 Card. @	• Install a new Stacker Jam Sensor (S805). @
Step 20.	• With Sensor Routine 75 still active, measure the voltage at PJ815-1. **Is the voltage greater than +4.7 V dc?**	Go to Step 21.	• Check for an open circuit between PJ815-1 and PJ618-5. If that is not the problem, do the following: • Install a new DV071 Card. @
Step 21.	• With Sensor Routine 75 still active, measure the voltage at PJ815-2. **Is the voltage greater than +4.7 V dc?**	• Check for an open circuit between PJ815-2 and PJ618-6. If that is not the problem, do the following: • Install a new DV071 Card. • Install a new FU041 Card. @	• Install a new Stacker Jam LED (D803). @

Table 63. MAP 0161 (continued)

Step	Questions/Actions	Yes	No
Step 22.	Do the following, one step at a time, until the problem is corrected: • Check for bent forms guides in the Stacker. • Run Driver Routine 1B to check for any problem with the Stacker table mechanism. • If the forms stack is rising at the corners or leaning, try a different type of forms. • Repeat the QUICK CHECKS. • Do the SERVICE CHECKS.		
Step 23.	Do the following, one step at a time, until the problem is corrected: • Run Driver Routine 18 to check for any problems with the Pendulum mechanism. Check for any loose, broken, or bent parts, especially the drive belt and motor coupling. • Ensure that the Pendulum Position Sensor (S809) is working correctly. • Check the error log for any of the following SRCs. There may be intermittent or related failures with the Pendulum drive. Install new parts from the MAP for the SRC found, beginning with the Pendulum Motor (M804). – MAP 0162: Pendulum Motor Over Current – MAP 0163: Pendulum Initial Position Error		
Step 24.	If the forms are not jamming and the sensor voltage measurement is okay, do the following, one step at a time, until the problem is corrected. • Check for bent forms guides in the Stacker. • Check for continuity between PJ609-21 and PJ637-21. • Run Driver Routine 1B to check for any problem with the Stacker table mechanism. • If the forms stack is rising at the corners or leaning, try a different type of form. • Repeat the QUICK CHECKS. • Do the SERVICE CHECKS.		

MAP 0162: Pendulum Motor Over Current

Symptom Explanation	Conditions That Could Cause This Symptom
The pendulum drive current as detected by the DV071 Card is beyond error limits.	• The pendulum motor driver circuit is defective. • The over current detection circuit is defective. • The Pendulum Motor (M804) is defective.

REFERENCES

- Removals & Adjustments - Stacker
- Circuit Diagrams - CD40 - Pendulum Motor (M804)
- Circuit Diagrams - CD41 - Pendulum Motor (M804) Control
- Wiring Diagrams - WD42 - Pendulum Motor M804 & Sensor S809

FIX VERIFICATION

- Print the **primary** print sample (1069) to see if the error occurs during printing.

QUICK CHECKS

- None

SERVICE CHECKS

- None

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
DV071 Card	60%	1437	2048	1764
Pendulum Motor (M804)	30%	1441	2110	1859
FU041 Card	10%	1442	2118	1764

MAP 0162 Begins

Table 64. MAP 0162

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Print the **primary** print sample (1069) for up to a full box of paper to see if the error occurs during printing. **Did an SRC 0162 occur?**	Install the new parts listed below, one at a time, until the problem is corrected: • DV071 Card • Pendulum Motor • FU041 Card @	The problem is intermittent. Go to MAP 0001: Introduction.

MAP 0163: Pendulum Initial Position Error

Symptom Explanation	Conditions That Could Cause This Symptom
Initial position of the Pendulum cannot be determined and the Pendulum does not move.	• Broken or loose Pendulum drive belt. • Loose Pendulum drive clamping ring. • Defective Pendulum Motor (M804). • Defective DV071 Card. • Defective FU041 Card.
Initial position of the Pendulum cannot be determined but the Pendulum does move.	• Defective Pendulum Position Sensor (S809). • Defective DV071 Card. • Defective FU041 Card.
The Pendulum Motor cannot be manually rotated.	• Bind in the Pendulum mechanism.

REFERENCES

- Removals & Adjustments - Stacker
- Circuit Diagrams - CD42 - Pendulum Motor (M804) - Positioning
- Wiring Diagrams - WD42 - Pendulum Motor M804 & Sensor S809
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Driver Routine 18. This routine checks the Pendulum Motor and the Pendulum Position Sensor.
- Run the **alternate** print sample (1069). An error is indicated by an SRC 163 on the Display/Touch Screen or by **E0C5** on the Maintenance Panel.

QUICK CHECKS

- Ensure that the Pendulum drive belt is not loose or broken.
- Manually move the Pendulum in both directions to check for binds.

SERVICE CHECKS

- Run Driver Routine 18 and 19. These routines check the Pendulum Motor and the Pendulum Position Sensor.
- Run Sensor Routine 7D. This routine checks the Pendulum Position Sensor.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Broken or loose Pendulum drive belt	25%	1441	2110	1859
Loose Pendulum drive clamping ring	20%	1441	2110	1859
Bind in the Pendulum mechanism	15%	1441	2110	1859
Pendulum Motor (M804)	15%	1441	2110	1859
Pendulum Position Sensor (S809)	10%	1439	2112	1868
DV071 Card	08%	1437	2048	1764
FU041	07%	1442	2118	1764

MAP 0163 Begins

Table 65. MAP 0163

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Clear the stacker and pendulum area of all forms so you can visually check the pendulum operation in the following MAP steps. • Manually move the pendulum in both directions. If everything is operating correctly, you should feel a smooth, steady drag or resistance. **Note:** The pendulum may seem to bind at the extreme end of each swing. This is normal and is caused by the linkage between the motor and the pendulum. • Do not try to force the pendulum if it binds. • If the pendulum binds at the end of a swing, rotate the belt and pulley manually, or move the linkage to release the pendulum. It may be necessary to remove the Fuser Front Cover to see the motor drive pulley and the top of the belt. • Visually check the condition of the pendulum, belt, pulleys, and linkage. **Is the mechanical operation of the pendulum mechanism correct?**	Go to Step 2.	• Repair or replace the failing pendulum mechanism, as necessary. @

Table 65. MAP 0163 (continued)

Step	Questions/Actions	Yes	No
Step 2.	• Manually position the pendulum so it is vertical (in the middle of a swing). • Observe the pendulum movement while you run Driver Routine 19. This routine should operate the pendulum for 5 seconds. **Did the pendulum move at all during this test?**	Go to Step 3.	Go to Step 4.
Step 3.	• Run Sensor Routine 7D to test the Pendulum Position Sensor (S809). The “Home” position of the pendulum is at the center of the swing when the pendulum is vertical. • Manually rotate the Pendulum Motor drive pulley and belt to move the pendulum through a complete cycle. **Does the display switch from ‘oF7d’ to ‘on7d’ when you move the pendulum through the ‘Home’ position?**	Do the following, one step at a time, until the problem is corrected: • Check connectors PJ633 and PJ608 for proper connection. • Install a new DV071 Card. • Install a new FU041 Card. @	There is a problem with the Pendulum Position Sensor or its circuit. Do the following, one step at a time, until the problem is corrected: • Check connectors PJ617, PJ753 and PJ754 for correct connection. • Check for an open between PJ637-26 and PJ609-26. • Install a new Pendulum Position Sensor (S809) • Install a new DV071 Card. • Install a new FU041 Card. @

Table 65. MAP 0163 (continued)

Step	Questions/Actions	Yes	No
Step 4.	There is a problem with the Pendulum Motor, or its drive circuit. • Check the following connectors: – PJ627 – PJ752 – PJ606 – PJ304 – PJ633 – PJ608 If they are correctly connected, continue. Do the following, one step at a time, until the problem is corrected: • Install the new parts listed below, one at a time, until the problem is corrected: – Pendulum Motor (M804) – DV071 Card – FU041 Card @		

MAP 0164: Stacker Jams (Light Always Sensed)

Symptom Explanation	Conditions That Could Cause This Symptom
Forms jam in the stacker.	• The Forms Set switch setting is wrong. • The Forms are not folding correctly. • The Forms Width guide is set wrong. • The Forms Length setting is wrong. • The Forms are out of specifications. • The Pin feed holes are torn. • The Finger belts are broken, loose, or worn. • The Finger belt motor drive belt is broken or loose. • The Finger belt motor, capacitor, or gear box is defective. • The DV071/DV081 Card is defective. • The FU041 Card is defective.
False Stacker Jam errors occur.	• The Stacker Jam Sensor (S805) is defective. • The DV071 Card is defective. • The FU041 is defective.

REFERENCES

- Removals & Adjustments - Stacker
- Circuit Diagrams - WD39 - Motors M704, M801, M802
- Circuit Diagrams - CD43 - Finger Belt Motors (M801 & M802)
- Wiring Diagrams - WD49 - Stacker Sensors (DV071 Card)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Sensor Routine 75. This routine checks the status of the Stacker Jam Sensor.
- Run the **alternate** print sample (1069). An error is indicated by an SRC 164 on the Display/Touch Screen or by **E081** on the Maintenance Panel.

QUICK CHECKS

Note: The Stacker Jam error cannot be reset unless the stacker table down switch is pressed or the stacker gate is opened.

- Ensure that the forms set switch is set correctly.
- Ensure that the forms are folding in the correct direction.
- Ensure that the forms width guide is set correctly.
- Ensure that the forms length setting is correct.
- Check for torn pin feed holes causing the forms to stack wrong.
- Clear the forms jam and retry.
- Try a different type or weight of forms.

SERVICE CHECKS

- Run Sensor Routine 75. This routine checks the status of the Stacker Jam Sensor.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Operator control switches set wrong	22%	- -	- -	- -
Stacker Jam Sensor (S805)	14%	1438	2094	1879
Forms folding incorrectly	10%	- -	- -	- -
Finger belts broken, loose, or worn	10%	1441	2098, 2100	1870, 1863
Forms out of specifications	05%	- -	- -	- -
Gate Finger Belt Motor (M802) drive belt	05%	1439	2098	1872
Rear Finger Belt Motor (M801) drive belt	05%	1439	2100	1866
Torn pin feed holes	05%	- -	- -	- -
DV071 Card	05%	1437	2048	1764
DV081 Card	04%	1442	2118	1764
FU041 Card	04%	1442	2118	1764
Gate Finger Belt Motor (M802)	04%	1439	2098	1872
Rear Finger Belt Motor (M801)	04%	1439	2100	1866
Pendulum Position Sensor (S809)	01%	1439	2112	1861

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Stacker Cooling Blower (B703)	01%	1442	2086	1868
DV061 Card	01%	1453	2114	1764

MAP 0164 Begins

Table 66. MAP 0164

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	If you found no problems using the QUICK CHECKS, continue with the questions. • Clear the stacker jam, reset the error, and run the **primary** print sample (1069) to recreate the failure. • If you are getting STACKER JAM 161 errors also, go to MAP 0161: Stacker Jams (Light Never Sensed) to diagnose the problem. **Are the forms actually jammed when the failure occurs?**	Go to Step 2.	The problem is false stacker jams. Go to Step 6.

Table 66. MAP 0164 (continued)

Step	Questions/Actions	Yes	No
Step 2.	• Carefully check the condition of the Stacker Finger Belts. Look for worn fingers and broken or missing belts. Ensure that the belts are installed so that the fingers are staggered, rather than aligned. **Are the Stacker Finger Belts okay?**	Go to Step 3.	• Adjust, repair, or replace as necessary. @
Step 3.	• Run Driver Routine 1C to operate the Stacker Finger Belts. **Do the Stacker Gate Finger Belts and Rear Finger Belts both rotate when you run Driver Routine 1C?**	Go to Step 4.	Go to Step 7.
Step 4.	One of the V-belts that drives the Stacker Finger Belts may be slipping. Check the tension of the drive belts. **Is the tension of both belts correct?**	Go to Step 5.	• Adjust, repair, or replace as necessary. @

Table 66. MAP 0164 (continued)

Step	Questions/Actions	Yes	No
Step 5.	The timing of the Pendulum swing may be wrong. • Run the **primary** print sample (1069) and observe the pendulum motion as the forms enter the stacker. **Is the pendulum timing synchronized with the perforations so that the forms are folding correctly?**	Do the following, one step at a time, until the problem is corrected: • Check for bent forms guides in the Stacker. • Run Driver Routine 1B to check for any problem with the Stacker table mechanism. • Check the direction and amount of air flow from the Stacker Cooling Blower (B703) to ensure that it is not blowing the top part of the forms stack up high enough to be blocking the Jam sensor. • If the forms stack is rising at the corners or leaning, try a different type of form. • Repeat the QUICK CHECKS.	• Perform the Pendulum Position Sensor (S804) check. @

Table 66. MAP 0164 (continued)

Step	Questions/Actions	Yes	No
Step 6.	• Run Sensor Routine 75. This routine checks the status of the Stacker Jam Sensor (S805) **Does the Stacker Jam Sensor (S805) test correctly when you run Sensor Routine 75?**	If the forms are not jamming and the sensor test is okay, do the following, one step at a time, until the problem is corrected: • Check for bent forms guides in the Stacker. • Run Driver Routine 1B to check for any problem with the Stacker table mechanism. • Check the direction and amount of air flow from the Stacker Cooling Blower to ensure that it is not blowing the top part of the forms stack up high enough to be blocking the Jam sensor. • If the forms stack is rising at the corners or leaning, try a different type of forms. • Repeat the QUICK CHECKS. • If you are getting `STACKER JAM 161` errors also, go to MAP 0161: Stacker Jams (Light Never Sensed) to diagnose the problem.	Do the following, one step at a time, until the problem is corrected: • Install a new Stacker Jam Sensor (S805). • Install a new DV071 Card. • Install a new FU041 Card @

Table 66. MAP 0164 (continued)

Step	Questions/Actions	Yes	No
Step 7.	**Do the Stacker Gate Finger Belts rotate when you run Driver Routine 1C?**	Do the following, one step at a time, until the problem is corrected: • Check for a loose or broken Rear Finger Belt Motor Drive Belt. • Check for a binding or stripped gear box on the Rear Finger Belt Motor. • Check all the wires in the following connectors for an open circuit and repair as necessary: – PJ625 and PJ805 – PJ805 and PJ806 • Install a new Rear Finger Belt Motor (M801). @	Go to Step 8.

Table 66. MAP 0164 (continued)

Step	Questions/Actions	Yes	No
Step 8.	**Do the Rear Finger Belts rotate when you run Driver Routine 1C?**	Do the following, one step at a time, until the problem is corrected: • Check for a loose or broken Gate Finger Belt Motor Drive Belt. • Check for a binding or stripped gear box on the Gate Finger Belt Motor. • Check all the wires in the following connectors for an open circuit and repair as necessary: – PJ624 and PJ805 – PJ805 and PJ807 • Install a new Gate Finger Belt Motor (M802). @	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between one of the following pairs of connectors: – PJ715-1 and PJ602-5 – PJ715-2 and PJ602-7 – PJ717-1 and PJ602-5 – PJ717-2 and PJ602-7 – PJ602-3 and PJ306-7 – PJ601-6 and PJ306-7 • Install a new DV081. • Install a new FU041. • Install a new DV061. @

MAP 0171: Stacker Table Motor Thermal

Symptom Explanation	Conditions That Could Cause This Symptom
There is a problem with the Stacker Table Motor (M803) that is causing an over temperature condition.	• The Stacker Table Motor (M803) is defective. • A mechanical bind in the Stacker Table mechanism is causing an overload of the Stacker Table Motor (M803). • The Stacker Table Motor (M803) Gear Head is defective. • The DV081 Card is defective. • The FU041 Card is defective.
A Stacker Table Motor (M803) over temperature condition is detected, but the motor is not overheated.	• The thermal sensor in the Stacker Table Motor (M803), or the sensor wiring, is defective. • The DV081 Card is defective. • The FU041 Card is defective.

REFERENCES

- Removals & Adjustments - Stacker
- Circuit Diagrams - CD44 - Stacker Table Motor (M803) - Thermal Sense
- Wiring Diagrams - WD15 - AC Motors M701, M703, M803
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Driver Routine 1B. An error is indicated by **ExC9** on the Maintenance Panel.
- Run **alternate** print sample (1069). An error is indicated by an SRC 171 on the Display/Touch Screen or by **E0C9** on the Maintenance Panel.
- Switch machine power off and on to run the power-on diagnostics. An error is indicated by an SRC 171 on the Display/Touch Screen .

QUICK CHECKS

- Determine if the Stacker Table Motor (M803) is actually hot or if the over temperature error is false.

SERVICE CHECKS

- Run Driver Routine 1B. This routine operates the Stacker Table Motor (M803) and checks the operation of the motor and drive system.
- Operate the Stacker Table Motor (M803) from the Stacker Operator switch panel.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Stacker Table Motor (M803)	70%	1441	2104	1884
Stacker Table mechanism	15%	1441	2104	1884
Stacker Table Motor (M803) Gear Head	10%	1441	2104	1884
DV081 Card	03%	1442	2118	1764
FU041 Card	02%	1442	2118	1764

MAP 0171 BEGINS

Table 67. MAP 0171

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	This step determines if the Stacker Table Motor (M803) is actually overheating or if the errors are false. You can operate the Stacker Table Motor (M803) by pressing the UP and DOWN pushbuttons on the Stacker Control Panel. • Run the machine long enough to create the failure again. **Is the Stacker Table Motor (M803) overheating?**	There is a problem with the Stacker Table Motor (M803), causing it to overheat. Do the following, one step at a time, until the problem is corrected: • Check for a bind in the Stacker Table mechanism. • Install a new Stacker Table Motor (M803). • Install a new Stacker Table Motor (M803) Gear Head. • Install a new DV081 Card. • Install a new FU041 Card. @	Go to Step 2.

Table 67. MAP 0171 (continued)

Step	Questions/Actions	Yes	No
Step 2.	The thermal errors are false; they are caused by a failure in the thermal-sensing circuit. • SHUTDOWN AND POWER OFF THE PRINTER. • Disconnect connector PJ623. • Measure the resistance between PJ623-1 and PJ623-2 (the motor side of the connector). **Is there continuity between P623-1 and P623-2?**	Do the following, one step at a time, until the problem is corrected: • Check for an open between: – PJ804–1 and PJ623–2 – PJ804–2 and PJ623–1 – PJ605–14 and PJ636–14 • Install a new DV081 Card. • Install a new FU041 Card. @	• Check for an open between: – PJ804–1 and PJ623–2 – PJ804–2 and PJ623–1 • Install a new Stacker Table Motor (M803). @

MAP 0172: Stacker Table Timeout

Symptom Explanation	Conditions That Could Cause This Symptom
The Rear Stacker Height Sensor (S803) is covered continuously for two minutes while printing.	• Rear Stacker Height LED (D801) and Rear Stacker Height Sensor (S803) need adjusting, are dirty or are defective. • The DV071 Card is defective. • The FU041 Card is defective.
The Stacker Table lowers faster than normal, with loose stacking and no Error Code.	• Adjustment of Front Stacker Height LED (D802) and Front Stacker Height Sensor (D804) • Front Stacker Height LED (D802) or Front Stacker Height Sensor (D804) are dirty or defective. • The DV071 Card is defective. • The FU041 Card is defective. • The clamp of the motor drive shaft gear head is defective.

REFERENCES

- Removals & Adjustments - Stacker
- Circuit Diagrams - CD45 - Stacker Height Sensors (S803/D801 & S804/D802)
- Wiring Diagrams - WD48 - Fuser & Stacker Sensors (DV071 & FU041)
- Wiring Diagrams - WD49 - Stacker Sensors (DV071 Card)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Sensor Routine 8D. This routine checks the Rear Stacker Height Sensor (S803) and the Rear Stacker Height LED (D801) operation.
- Run Sensor Routine 8E. This routine checks the Front Stacker Height Sensor (D804) and the Front Stacker Height LED (D802) operation.

- Run the **alternate** print sample (1069) for 300 cycles. An error is indicated by an SRC 172 message on the Display/Touch Screen or by **E0CA** on the Maintenance Panel.

QUICK CHECKS

- Ensure that Rear Stacker Height LED (D801) is shining onto the Rear Stacker Height Sensor (S803).
- Ensure that Front Stacker Height LED (D802) is shining onto the Front Stacker Height Sensor (S804).
- Ensure that all of the upper stacker LEDs and Photosensors are clean.

SERVICE CHECKS

- Run Sensor Routine 8D. This routine checks the Rear Stacker Height Sensor (S803) and Rear Stacker Height LED (D801) operation.
- Run Sensor Routine 8E. This routine checks the Front Stacker Height Sensor (S804) and Front Stacker Height LED (D802) operation.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Adjustment of Rear Stacker Height LED (D801) and Rear Stacker Height Sensor (S803)	25%	1439	- -	1877
Cleaning of Rear Stacker Height LED (D801) and Rear Stacker Height Sensor (S803)	25%	1439	- -	1877
Rear Stacker Height LED (D801)	15%	1439	2092	1877
Rear Stacker Height Sensor (S803)	10%	1439	2094	1877
Adjustment of Front Stacker Height LED (D802) and Front Stacker Height Sensor (S804)	05%	1439	- -	1877
Cleaning of Front Stacker Height LED (D802) and Front Stacker Height Sensor (S804)	05%	1439	- -	1877
Front Stacker Height LED (D802)	05%	1439	2092	1877
Front Stacker Height Sensor (S804)	05%	1439	2092	1877
DV071 Card	03%	1437	2048	1685
FU041 Card	02%	1442	2118	1764

MAP 0172 BEGINS

Table 68. MAP 0172

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		

Table 68. MAP 0172 (continued)

Step	Questions/Actions	Yes	No
Step 1.	Lowering of the Stacker Table during printing is controlled by the Rear and Front Stacker Height Sensors (S804 and S803). When both sensors are covered, the table is lowered; if one of the sensors fails for any reason, the table lowering is controlled by the remaining operational sensor. If both sensors fail, the table lowering is controlled by the printer microcode, which causes the table to lower faster than normal. This results in a loose stack of forms, which in turn may cause stacker jams. The Rear Stacker Height Sensor (S803) has error detection that causes a SRC 172 error if it is covered continuously for two minutes during printing. The Front Stacker Height Sensor (S804) has no error detection. • Remove the forms from the Stacker, and lower the Stacker Table far enough to observe the Stacker Height LEDs and Sensors. • Clean the Stacker Height LEDs and Sensors. **Is the Rear Stacker Height LED (D801) on?**	Go to Step 2.	Go to Step 5.
Step 2.	**Is Front Stacker Height LED (D802) on?**	Go to Step 3.	Go to Step 6.

Table 68. MAP 0172 (continued)

Step	Questions/Actions	Yes	No
Step 3.	• Run Sensor Routine 8D to check Rear Stacker Height Sensor (S803). • Test the Rear Stacker Height Sensor (S803) by putting a small piece of paper in front of the sensor to block the light from the LED. **Does the Rear Stacker Height Sensor (S803) switch on and off correctly when the sensor is covered and uncovered with the paper?**	Go to Step 4.	Go to Step 13.
Step 4.	• Run Sensor Routine 8E to check the Front Stacker Height Sensor (S804). • Test the Front Stacker Height Sensor (S804) by putting a small piece of paper in front of the sensor to block the light from the LED. **Does the Front Stacker Height Sensor (S804) switch on and off correctly when the sensor is covered and uncovered with the paper?**	• Check the Stacker Table Motor (M803) and gear box for obstructions. • Check the Stacker Table clamps for proper operation. • If these actions do not resolve the problem, retrace your steps through this MAP. Refer to the QUICK CHECKS. Refer to the POSSIBLE FAILING PARTS OR ADJUSTMENTS. • If you are here again after you have retraced your steps, install a new FU041 Card. @	Go to Step 10.

Table 68. MAP 0172 (continued)

Step	Questions/Actions	Yes	No
Step 5.	**Is the Front Stacker Height LED (D802) on?**	Go to Step 8.	Do the following, one step at a time, until the problem is corrected: • Check for an open between: – PJ638 and PJ314 – PJ632 and PJ820 – PJ820 and PJ811 – PJ820 and PJ812 • Install a new FU041 Card. @
Step 6.	• Measure the voltage at PJ812–1. **Is the voltage +5.0 V dc?**	Go to Step 7.	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between PJ632–3 and PJ812–1. • Install a new FU041 Card. @
Step 7.	• Measure the voltage at PJ812–2. **Is the voltage greater than +2.5 V dc?**	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between PJ812–2 and PJ632–4. • Install a new FU041 Card. @	• Install a new Front Stacker Height LED (D802). @

Table 68. MAP 0172 (continued)

Step	Questions/Actions	Yes	No
Step 8.	• Measure the voltage at PJ811–1. **Is the voltage +5.0 V dc?**	Go to Step 9.	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between PJ632–1 and PJ811–1. • Install a new FU041 Card. @
Step 9.	• Measure the voltage at PJ811–2. **Is the voltage greater than +2.5 V dc?**	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between PJ811–2 and PJ632–2. • Install a new FU041 Card. @	• Install a new Rear Stacker Height LED (D801). @
Step 10.	**Is the Front Stacker Height LED (D802) aligned so the light shines on the Front Stacker Height Sensor (S804)?**	Go to Step 11.	• Align the Front Stacker Height LED (D802) so the light shines on the Front Stacker Height Sensor (S804).

Table 68. MAP 0172 (continued)

Step	Questions/Actions	Yes	No
Step 11.	• Run Sensor Routine 8E. • Measure the voltage between TP–4 and TP–G on the DV071 card while running the routine. **Is the voltage greater than +3 V dc while Sensor Routine 8E is running?**	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between PJ814–2 and PJ618–4. • Install a new DV071 Card. • Install a new FU041 Card. @	Go to Step 12.
Step 12.	• Measure the voltage at PJ814–1. **Is the voltage +5.0 V dc?**	• Install a new Front Stacker Height Sensor (S804). @	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between PJ814–1 and PJ618–3. • Install a new DV071 Card. @
Step 13.	**Is the Rear Stacker Height LED (D801) aligned so the light shines on the Rear Stacker Height Sensor (D803)?**	Go to Step 14.	• Align the Rear Stacker Height LED (D801) so the light shines on the Rear Stacker Height Sensor (D803).

Table 68. MAP 0172 (continued)

Step	Questions/Actions	Yes	No
Step 14.	• Run Sensor Routine 8D. • Measure the voltage between TP-3 and TP-G on the DV071 Card, while the routine is running. **Is the voltage greater than +3 V dc while Sensor Routine 8D is running?**	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between PJ813–2 and PJ618–2. • Install a new DV071 Card. • Install a new FU041 Card. @	Go to Step 15.
Step 15.	• Measure the voltage at PJ813–1. **Is the voltage +5.0 V dc?**	• Install a new Rear Stacker Height Sensor (S803). @	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between PJ813–1 and PJ618–1. • Install a new DV071 Card. @

MAP 0174: Stacker Safety Switch On

Symptom Explanation	Conditions That Could Cause This Symptom
The Stacker Gate Safety Switch (S801) or Stacker Gate Safety Switch (S802) is **ON** while the Stacker Table **UP** switch is depressed.	• Binding Stacker Gate Safety Switch Finger Bar • Adjustment of Stacker Gate Safety Switch (S801) and Stacker Gate Safety Switch (S802) • Shorted Stacker Gate Safety Switch (S801) • Shorted Stacker Gate Safety Switch (S802) • Defective FU041 Card
The Stacker Table does not stop when the Stacker Gate Safety Switch Finger Bar is operated.	• Binding Stacker Gate Safety Switch Finger Bar • Open connector PJ632, PJ819 or PJ820. • Adjustment of Stacker Gate Safety Switch (S801) and Stacker Gate Safety Switch (S802) • Open Stacker Gate Safety Switch (S801) • Open Stacker Gate Safety Switch (S802) • Defective FU041 Card

REFERENCES

- Removals & Adjustments - Stacker
- Circuit Diagrams - CD46 - Stacker Gate Safety Switches (S801 & S802)
- Wiring Diagrams - WD48 - Fuser & Stacker Sensors (DV071 & FU041)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Sensor Routine 76. This routine checks the operation of Stacker Gate Safety Switch (S801) and Stacker Gate Safety Switch (S802).
- Press the Stacker Table **UP** switch. An error is indicated by an SRC 174 on the Display/Touch Screen or by **E015** on the Maintenance Panel.

- To ensure that the Stacker Gate Safety Switch Finger Bar is operating correctly, force an error by pressing the Stacker Table **UP** switch while you manually operate the Stacker Gate Safety Switch Finger Bar. This should cause either an SRC 174 on the Display/Touch Screen or an **E015** on the Maintenance Panel, or both.

QUICK CHECKS

- Ensure that the Stacker Gate Safety Switch Finger Bar is not binding.

SERVICE CHECKS

- Run Sensor Routine 76. This routine checks the Stacker Gate Safety Switch (S801) and Stacker Gate Safety Switch (S802) operation.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Binding of the Stacker Gate Safety Switch Finger Bar	60%	1439	- -	1875
Adjustment of Stacker Gate Safety Switch (S801) and Stacker Gate Safety Switch (S802)	30%	1439	- -	1875
FU041 Card	04%	1442	2118	1764
Stacker Gate Safety Switch (S801)	03%	1439	2098	1875
Stacker Gate Safety Switch (S802)	03%	1439	2098	1875

MAP 0174 BEGINS

Table 69. MAP 0174

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		

Table 69. MAP 0174 (continued)

Step	Questions/Actions	Yes	No
Step 1.	The Stacker Gate Safety switch circuit uses the normally open contacts of the switches. The Stacker Gate Safety Switch (S801) and Stacker Gate Safety Switch (S802) are mechanically operated by the same Stacker Gate Safety Switch Finger Bar. If both of the switches fail in the open circuit condition, or if there is an open circuit in the wiring, no error is detected. If one of the switches fails in the short circuit condition, an SRC 174 is displayed every time the Stacker Table **UP** switch is pressed. • Manually operate the Stacker Gate Safety Switch Finger Bar and check for binds or obstructions. **Does the Stacker Gate Safety Switch Finger Bar operate correctly?**	Go to Step 2.	• Repair the Stacker Gate Safety Switch Finger Bar mechanical problem. @
Step 2.	• Reset any errors on the Display/Touch Screen . • Ensure that the Stacker Gate Safety Switch Finger Bar is in the normal **non**-operational position. • Press the Stacker Table **UP** switch. **Did you get an SRC 174?**	Go to Step 4.	Go to Step 3.

Table 69. MAP 0174 (continued)

Step	Questions/Actions	Yes	No
Step 3.	This step determines if the Stacker Gate Safety Switch Finger Bar causes an error when it is operated. • Reset any error on the Display/Touch Screen . • Hold the Stacker Gate Safety Switch Finger Bar in the operational position. • Press the Stacker Table **UP** switch. **Did you get an SRC 174?**	The problem is intermittent. • Review the QUICK CHECKS and the POSSIBLE FAILING PARTS OR ADJUSTMENTS. • Ensure that the following are adjusted correctly: – Stacker Gate Safety Switch (S801) – Stacker Gate Safety Switch (S802) – Stacker Gate Safety Switch Finger Bar • Check all connectors in the circuit for damage and correct seating. • Retrace your steps through the MAPs. • If you do not find the problems, go to MAP 0001: Introduction. @	The Stacker Gate Safety Switch Finger Bar is not providing the necessary safety protection Do the following, one step at a time, until the problem is corrected: • Check for an open circuit in connectors PJ819, PJ820, and PJ632. • Ensure that the following are adjusted correctly: – Stacker Gate Safety Switch (S801) – Stacker Gate Safety Switch (S802) – Stacker Gate Safety Switch Finger Bar • Install a new Stacker Gate Safety Switch (S801) and Stacker Gate Safety Switch (S802). • Install a new FU041 Card. @

Table 69. MAP 0174 (continued)

Step	Questions/Actions	Yes	No
Step 4.	• SHUTDOWN AND POWER OFF THE PRINTER. • Locate connector PJ819 at the hinge end of the Stacker Gate. • Disconnect connector PJ819. • Measure the resistance between PJ819–1 and PJ819–2 (the switch side of the connector). **Is there continuity between PJ819–1 and PJ819–2?**	Do the following, one step at a time, until the problem is corrected: • Install a new Stacker Gate Safety Switch (S801). • Install a new Stacker Gate Safety Switch (S802) @	Do the following, one step at a time, until the problem is corrected: • Ensure that the following are adjusted correctly: – Stacker Gate Safety Switch (S801) – Stacker Gate Safety Switch (S802) – Stacker Gate Safety Switch Finger Bar • Install a new FU041 Card. @

MAP 0175: Stacker Table Motor Runs Too Long

Symptom Explanation	Conditions That Could Cause This Symptom
The Stacker Table does not move when the Stacker Table **Up** or **Down** pushbuttons are depressed. The Stacker Table will move in only one direction.	• There is an obstruction in the Stacker Table path. • There is a mechanical problem with the Stacker Table mechanism or there is a broken belt or loose pulley. • The Stacker Table Motor (M803) is defective. • The Capacitor (C801) is defective. • The DV081 Card is defective. • The FU041 Card is defective.
The Stacker Table drives to the lower or upper limit, but the Stacker Table Motor (M803) continues to run.	• The Stacker Table Lower Limit Switch (S808) could be out of adjustment. • The Stacker Table Lower Limit Switch (S808) may have shorted. • The Stacker Table Upper Limit Switch (S807) could be out of adjustment. • The Stacker Table Upper Limit Switch (S807) may have shorted. • The DV071 Card is defective. • The FU041 Card is defective.
The Stacker Table moves when the Stacker Table **Up** or **Down** pushbuttons are depressed, but the SRC 175 error still occurs.	• There may be a bind or other mechanical problem with the Stacker Table, causing it to move slower than normal. • The Stacker Table Motor (M803) is defective. • The Gear Box on the Stacker Table Motor (M803) is defective.

REFERENCES

- Removals & Adjustments - Stacker
- Circuit Diagrams - CD44 - Stacker Table Motor (M803) - Thermal Sense
- Circuit Diagrams - CD47 - Stacker Table Limit Switches (S807 & S808)
- Wiring Diagrams - WD49 - Stacker Sensors (DV071 Card)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Driver Routine 1B. This routine checks the operation of the Stacker Table Motor (M803), the Stacker Table mechanism, and the Stacker Table Upper and Lower limit pushbuttons.
- Operate the Stacker Table from the Stacker Control Panel (LP041). An error is indicated by an SRC 175 message on the Display/Touch Screen or by **E0Cb** on the Maintenance Panel.

QUICK CHECKS

- Check the printer configuration to ensure that the stacker has not been disabled.
- Ensure that the Stacker Table path is free of any obstructions.
- Operate the Stacker Table from the Stacker Control Panel (LP041). Check the Stacker Table drive mechanism for any mechanical problems, such as broken or loose Stacker Table drive belts, binds in the gears and bearings, or bent forms guides obstructing the Stacker Table motion.

SERVICE CHECKS

- Run Driver Routine 1B. This routine checks the operation of the Stacker Table Motor (M803), the Stacker Table mechanism, and the Stacker Table Upper and Lower limit pushbuttons.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Obstruction in the path of the Stacker Table	40%	1439	2104	
Broken, loose or binding Stacker Table mechanism	25%	1439	2104	
Stacker Table Motor (M803) and Capacitor (C801) assembly	15%	1441	2104	1884
Stacker Table Lower Limit Switch (S808)	05%	1438	2108	1882
Stacker Table Upper Limit Switch (S807)	05%	1438	2108	1886
DV071 Card	04%	1437	2048	1685
DV081 Card	03%	1442	2118	1764
FU041 Card	03%	1442	2118	1764

MAP 0175 BEGINS

Table 70. MAP 0175

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	If you found no problems using the QUICK CHECKS, continue with the questions. The Stacker Table drive slips if it is obstructed while the Stacker Table is being lowered. It does not slip if it is obstructed while the Stacker Table is being raised. If the Stacker Table is obstructed while the motor is raising it, the drive belts slip on the drive pulleys and create a loud pounding noise. • Remove all of the paper from the stacker. • Carefully check the Stacker Table area and remove any obstructions from the Stacker Table path. • If the Stacker Table is at the bottom of the stacker, manually raise it to a point midway between the top and bottom. • Press the Stacker Table **Down** pushbutton. **Does the Stacker Table move down when you press the Stacker Table Down pushbutton?**	Go to Step 2.	Go to Step 5.

Table 70. MAP 0175 (continued)

Step	Questions/Actions	Yes	No
Step 2.	• Press the Stacker Table **Up** pushbutton. **Does the Stacker Table move up when you press the Stacker Table Up pushbutton?**	Go to Step 3.	Go to Step 7.
Step 3.	• Press the Stacker Table **Down** pushbutton and allow the Stacker Table to fully descend to the lower limit. • Press the Stacker Table **Up** pushbutton and allow the Stacker Table to fully raise to the upper limit. **Does the Stacker Table constantly drive against the upper or lower limit?**	Go to Step 4.	The Stacker Table must be moving too slowly, causing the SRC 175. Do the following, one step at a time, until the problem is corrected: • Check carefully for a bind in the Stacker Table mechanism. • Check for a bind in the Stacker Table Motor (M803) Gear Box. • Install a new Stacker Table Motor (M803) and Capacitor (C801) assembly. @

Table 70. MAP 0175 (continued)

Step	Questions/Actions	Yes	No
Step 4.	**Does the Stacker Table constantly drive against the lower limit?**	Do the following, one step at a time, until the problem is corrected: • Check the adjustment of the Stacker Table Lower Limit Switch (S808). • Repair an open circuit between one of the following pairs: – PJ818–1 and PJ618–26 – PJ818–2 and PJ618–27 • Install the new parts listed below, one at a time, until the problem is corrected: – Stacker Table Lower Limit Switch (S808) – DV071 Card – FU041 Card @	The Stacker Table must be driving constantly against the upper limit. Do the following, one step at a time, until the problem is corrected: • Check the adjustment of the Stacker Table Upper Limit Switch (S807). • Repair an open circuit between one of the following pairs: – PJ817–1 and PJ618–24 – PJ817–2 and PJ618–25 • Install the new parts listed below, one at a time, until the problem is corrected: – Stacker Table Upper Limit Switch (S807) – DV071 Card – FU041 Card @
Step 5.	**Is the Stacker Table at the top of the stacker?**	Go to Step 6.	Go to Step 8.

Table 70. MAP 0175 (continued)

Step	Questions/Actions	Yes	No
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
Step 6.	• Remove the stacker rear cover to access PJ603 on the DV081 Card for the following voltage measurements. • Measure the voltage between PJ603-7 and PJ603-16 while you press the Stacker Table **Down** pushbutton. **Is the voltage greater than 180 V ac?**	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between: – PJ803–1 and PJ603–7 – PJ803–3 and PJ603–16 • Check the Stacker Table drive mechanism for any mechanical problems, such as broken or loose Stacker Table drive belts, binds in the gears and bearings, or bent forms guides obstructing the Stacker Table motion. • Install a new Stacker Table Motor (M803) and Capacitor (C801) assembly. @	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between PJ605–11 and PJ636–11. • Install the new parts listed below, one at a time, until the problem is corrected: – DV081 Card – FU041 Card @

Table 70. MAP 0175 (continued)

Step	Questions/Actions	Yes	No
Step 7.	• Measure the voltage between PJ803–7 and PJ803–6 while you pressing the Stacker Table **Up** pushbutton. **Is the voltage greater than 180 V ac?**	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between PJ803–2 and PJ603–6. • Check the Stacker Table drive mechanism for any mechanical problems, such as broken or loose Stacker Table drive belts; binds in the gears and bearings; or bent forms guides obstructing the Stacker Table motion. • Install a new Stacker Table Motor (M803) and Capacitor (C801) assembly. @	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between PJ605–11 and PJ636–11. • Install the new parts listed below, one at a time, until the problem is corrected: – DV081 Card – FU041 Card @
Step 8.	• Press the Stacker Table **Up** pushbutton. **Does the Stacker Table move up when you press the Stacker Table Up pushbutton?**	Go to Step 9.	Go to Step 10.

Table 70. MAP 0175 (continued)

Step	Questions/Actions	Yes	No
Step 9.	• Measure the voltage between PJ603–7 and PJ603–16 while you press the Stacker Table **Down** pushbutton. **Is the voltage greater than 180 V ac?**	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between PJ803–3 and PJ603–16. • Check the Stacker Table drive mechanism for any mechanical problems, such as broken or loose Stacker Table drive belts, binds in the gears and bearings, or bent forms guides obstructing the Stacker Table motion. • Install a new Stacker Table Motor (M803) and Capacitor (C801) assembly. @	Do the following, one step at a time, until the problem is corrected: • Install the new parts listed below, one at a time, until the problem is corrected: – DV081 Card – FU041 Card @

Table 70. MAP 0175 (continued)

Step	Questions/Actions	Yes	No
Step 10.	• Measure the voltage between PJ603–7 and PJ603–16 while you press the Stacker Table **Down** pushbutton. **Is the voltage greater than 180 V ac?**	Do the following, one step at a time, until the problem is corrected: • Check the Stacker Table drive mechanism for any mechanical problems, such as broken or loose Stacker Table drive belts, binds in the gears and bearings, or bent forms guides obstructing the Stacker Table motion. • Install a new Stacker Table Motor (M803) and Capacitor (C801) assembly. @	• Repair an open circuit between one of the following pairs: – PJ636–11 and PJ605–11 – PJ636–12 and PJ605–12 • Install a new FU041 Card. • Install a new DV081 Card. @

MAP 0176: Stacker Forms Length Sensor

Symptom Explanation	Conditions That Could Cause This Symptom
There is no output from the Stacker Forms Length Hall sensors. Forms Length LEDs on the Stacker Control Panel (LP031) are blank.	• The stacker forms length was manually changed while the machine was powered off. • The gap between the magnets and the Hall sensors on the Forms Length Sensor Card (FL061) may need adjusting. • The select timing of the magnet gear on the Stacker Length Select Card (FL031) may need adjusting. • Broken stacker length belt or loose clamp. • The Forms Length Sensor Card (FL061) is defective. • The Stacker Length Select Card (FL031) is defective. • The DV071 Card is defective. • The FU041 Card is defective.
There is output from three or more of the Forms Length Hall sensors.	• The Forms Length Sensor Card (FL061) is defective. • The Stacker Length Select Card (FL031) is defective. • The DV071 is defective. • The FU041 is defective.

REFERENCES

- Removals & Adjustments - Stacker
- Circuit Diagrams - CD48 - Stacker Forms Length Hall Sensor
- Wiring Diagrams - WD51 - Stacker Switch Panel (Forms Length Cards)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Rotate the Forms Length Knob. Move the stacker length through its range of 7 to 14 inches. Observe the panel LED display for correct operation.

- Run Sensor Routine 74. The Maintenance Panel indicates the output of the Stacker Forms Length Hall sensors.
- Switch machine power off and on to run the power-on diagnostics. An error is indicated by an SRC 176 on the Display/Touch Screen or by **E0CF** on the Maintenance Panel.

QUICK CHECKS

- Check for a broken Stacker Forms Length wire.

SERVICE CHECKS

- Run Sensor Routine 74. The Maintenance Panel indicates the output of the Stacker Forms Length Hall sensors.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Timing adjustment of magnets to sensors	50%	- -	- -	1848
Broken stacker length wire	20%	- -	- -	1848
Forms Length Sensor Card (FL061)	10%	1438	2094	1855
Stacker Length Select Card (FL031)	10%	1438	2094	1851
DV071 Card	05%	1437	2048	1685
FU041 Card	05%	1442	2118	1764

MAP 0176 BEGINS

Table 71. MAP 0176

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Observe the Stacker Gate and watch for movement while you rotate the Forms Length Knob. **Did the Stacker Gate move?**	Go to Step 2.	Go to Step 4.
Step 2.	• Carefully check the timing adjustment between the magnets and the Hall sensors on the Forms Length Sensor Card (FL061) and the Stacker Length Select Card (FL031). **Is the adjustment correct?**	Go to Step 3.	• Perform the entire Forms Length Mechanism and Sensor Adjustment procedure. • Run Sensor Routine 74 to ensure that the adjustment is correct.

Table 71. MAP 0176 (continued)

Step	Questions/Actions	Yes	No
Step 3.	Check the following connectors for pushed pins or poor connections: • PJ618 on the DV071 Card • PJ831 on Stacker Length Select Card (FL031) • PJ830 on Forms Length Sensor Card (FL061) • PJ609 on the DV071 Card • PJ637 on the FU041 Card **Are the connectors properly connected?**	• Recreate the error. If the failure is still occurring, install the new parts listed below, one at a time, until the problem is corrected: • Install a new Forms Length Sensor Card (FL061). • Install a new Stacker Length Select Card (FL031). • Install a new DV071 Card. • Install a new FU041 Card. @	• Seat the connectors correctly.
Step 4.	• Open the left front cover. • Visually check the condition of the stacker length wires and screwshaft. Look for broken, loose, or worn parts. **Are the stacker length wires and screwshaft operating correctly?**	Do the following, one step at a time, until the problem is corrected: • Check the condition of the Forms Length Knob. Replace it if necessary. • Check for obstructions in the Forms Length mechanism. @	• Adjust, repair, or replace as necessary. • Run Sensor Routine 74 to ensure that the mechanism is operating correctly. @

MAP 0177: Stacker Length Sensor Timeout

Symptom Explanation	Conditions That Could Cause This Symptom
There is no output from the Stacker Forms Length Hall sensors. Forms Length LEDs on the Stacker Control Panel (LP041) are blank and an SRC 0177 is displayed.	• The stacker forms length was manually changed while the machine was powered off. • The gap between the magnets and the Hall sensors on the Forms Length Sensor Card (FL061) may need adjusting. • The magnet gear on the Stacker Length Select Card (FL031) may need rotary timing adjustment. • The Forms Length Sensor Card (FL061) is defective. • The Stacker Length Select Card (FL031) is defective. • The DV071 Card is defective. • The FU041 Card is defective.

REFERENCES

- Removals & Adjustments - Stacker
- Circuit Diagrams - CD48 - Stacker Forms Length Hall Sensor
- Wiring Diagrams - WD51 - Stacker Switch Panel (Forms Length Cards)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Rotate the Forms Length Knob. Move the stacker length through its range of 7 to 14 inches. Observe the Stacker Control Panel LED display for correct operation.
- Run Sensor Routine 74. The Maintenance Panel indicates the output of the Stacker Forms Length Hall sensors.
- POR the printer to run the power-on diagnostics. An error is indicated by an SRC 0177 on the Display/Touch Screen or by **E02d** on the Maintenance Panel.

QUICK CHECKS

- If the Stacker Length Select Card (FL031) has recently been replaced or adjusted, recheck the adjustment.
- Rotate the Forms Length Knob. Move the stacker length through its range of 7 to 14 inches. Observe the Stacker Control Panel LED display for correct operation.
- Verify that the machine is not in Service Diagnostic mode.

SERVICE CHECKS

- Run Sensor Routine 74. The Maintenance Panel indicates the output of the Stacker Forms Length Hall sensors.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Stacker Forms Length set incorrectly	50%	- -	- -	- -
Timing adjustment of magnets to sensors	15%	- -	- -	1848
Magnet to sensor gap adjustment	15%	- -	- -	1848
Broken Stacker Length wire	09%	- -		1856
Stacker Length Knob	02%	- -	2094	1851
DV071 Card	02%	1437	2048	1685
FU041 Card	02%	1442	2118	1764
Forms Length Sensor Card (FL061)	02%	1438	2094	1855
Stacker Length Select Card (FL031)	02%	1438	2094	1851

MAP 0177 BEGINS

Table 72. MAP 0177

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	The most common cause of this error is that the Forms Length Knob is set at a position between two settings. **Is the LED indicating whole inches on, but is the LED indicating fractions of an inch off?**	• Rotate the Forms Length Knob to the next available fraction and press **Check Reset**. If this does not clear the error, go to Step 2.	Go to Step 2.
Step 2.	• Check the adjustment of the Stacker Length Select Card (FL031). **Is the adjustment correct?**	Go to Step 3.	• Readjust as necessary. • Run Sensor Routine 74 to ensure that the mechanism is operating correctly.
Step 3.	• Visually check the adjustment of the gap between the magnets and the Hall sensors on the Forms Length Sensor Card (FL061). **Is the adjustment correct?**	Go to Step 4.	• Readjust as necessary. • Run Sensor Routine 74 to ensure that the mechanism is operating correctly.

Table 72. MAP 0177 (continued)

Step	Questions/Actions	Yes	No
Step 4.	• Carefully check the timing adjustment between the magnets and the Hall sensors on the Forms Length Sensor Card (FL061) and the Stacker Length Select Card (FL031). **Are the adjustments correct?**	Install the new parts listed below, one at a time, until the problem is corrected: • Forms Length Sensor Card (FL061) • Forms Length Select Card (FL031) • FU041 Card • DV071 Card @	• Readjust as necessary. • Run Sensor Routine 74 to ensure that the adjustments are correct.

MAP 017A: Rear Finger Belt Motor Over Current

Symptom Explanation	Conditions That Could Cause This Symptom
The Rear Finger Belt Motor (M801) current is beyond its limits as detected by the DV081 Card.	• The Rear Finger Belt Motor (M801) drive circuit is defective. • The over current detection circuit is defective. • The Rear Finger Belt Motor (M801) is defective.

REFERENCES

- Removals & Adjustments - Stacker
- Circuit Diagrams - CD49 - Stacker Rear Finger Belt Motor (M801)
- Wiring Diagrams - WD39 - Motors M704, M801, M802
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Print the **primary** print sample (1069) using boxed paper to see if the error occurs during printing.

QUICK CHECKS

- None

SERVICE CHECKS

- None

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Rear Finger Belt Motor (M801)	40%	1439	2098	1866
DV081 Card	40%	1442	2118	1764
FU041 Card	20%	1442	2118	1764

MAP 017A BEGINS

Table 73. MAP 017A

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Check Circuit Breaker CB2 on the DV081 Card. **Is CB2 tripped?**	Go to Step 2.	Go to Step 3.

Table 73. MAP 017A (continued)

Step	Questions/Actions	Yes	No
Step 2.	• Reset CB2 on the DV081 Card. • Recreate the error. **Were you able to recreate the error?**	Do the following, one step at a time, until the problem is corrected: • Check connectors PJ625, PJ805, and PJ806. • Install a new Rear Finger Belt Motor (M801). • Install a new DV081 Card. @	Circuit breaker CB2 could have been tripped accidentally. If you still believe there is a problem, retrace your steps through the MAP or go to MAP 0001: Introduction.
Step 3.	• Print the **primary** print sample (1069) for up to a full box of paper to see if the error occurs during printing. **Did an SRC 017A occur?**	Do the following, one step at a time, until the problem is corrected: • Check connectors PJ636–40 and PJ605–40. • Check connectors PJ625, PJ805, and PJ806. • Install a new Rear Finger Belt Motor (M801). • Install a new DV081 Card. • Install a new FU041 Card. @	The problem is intermittent. Go to MAP 0001: Introduction.

MAP 017B: Gate Finger Belt Motor Over Current

Symptom Explanation	Conditions That Could Cause This Symptom
The Gate Finger Belt Motor (M802) current is beyond its limits as detected by the DV081 Card.	• The Gate Finger Belt Motor (M802) drive circuit is defective. • The over current detection circuit is defective. • The Gate Finger Belt Motor (M802) is defective.

REFERENCES

- Removals & Adjustments - Stacker
- Circuit Diagrams - CD50 - Stacker Front Finger Belt Motor (M802)
- Wiring Diagrams - WD39 - Motors M704, M801, M802
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Print the **primary** print sample (1069) using boxed paper to see if the error occurs during printing.

QUICK CHECKS

- None

SERVICE CHECKS

- None

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Gate Finger Belt Motor (M802)	40%	1439	2096	1866
DV081 Card	40%	1442	2118	1764
FU041 Card	20%	1442	2118	1764

MAP 017B BEGINS

Table 74. MAP 017B

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Check Circuit Breaker CB1 on the DV081 Card. **Is CB1 tripped?**	Go to Step 2.	Go to Step 3.

Table 74. MAP 017B (continued)

Step	Questions/Actions	Yes	No
Step 2.	• Reset CB1 on the DV081 Card. • Recreate the error. **Were you able to recreate the error?**	Do the following, one step at a time, until the problem is corrected: • Check connectors PJ624, PJ805, and PJ807. • Install a new Gate Finger Belt Motor (M802). • Install a new DV081 Card. @	Circuit breaker CB1 does not trip without an over current. If you still believe there is a problem retrace your steps through the MAP or go to MAP 0001: Introduction.
Step 3.	• Print the **primary** print sample (1069) for up to a full box of paper to see if the error occurs during printing. **Did an SRC 017B occur?**	Do the following, one step at a time, until the problem is corrected: • Check connectors PJ636–34 and PJ605–34. • Check connectors PJ624, PJ805, and PJ807. • Install a new Gate Finger Belt Motor (M802). • Install a new DV081 Card. • Install a new FU041 Card. @	The problem is intermittent. Go to MAP 0001: Introduction.

MAP 0211: Charge Corona Voltage Error

Symptom Explanation	Conditions That Could Cause This Symptom
An out of range voltage condition was detected in the charge corona circuit	• The Charge Corona is not inserted properly or is dirty. • A Charge Corona Wire is broken. • The PC Drum is causing arcing. • The PC Drum grounding is defective. • The Charge Corona to PC drum gap is not correct. • The Charge Corona voltage adjustment is not correct. • One of the following cards is defective: PR011, PC561, CPxxx. • One of the following power supplies is defective: High Voltage Power Supply, Printer Power Supply.

REFERENCES

- Removals & Adjustments - Coronas & High Voltage Power Supply
- Circuit Diagrams - CD60 - Charge Corona
- Wiring Diagrams - WD24-1 - Printer DC Power Distribution
- Wiring Diagrams - WD26 - High Voltage to Coronas & Mag Brush Rolls
- Preventive Maintenance - 2211
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Print the **alternate** print sample (1069). See if the error occurs during printing.

QUICK CHECKS

1. Ensure that the Charge Corona assembly is seated properly.
2. Inspect the Charge Corona to ensure that the wires are not broken or damaged.
3. Ensure that the Charge Corona assembly is clean.
4. Ensure that the high-voltage connector is OK.

SERVICE CHECKS

1. Run Driver Routine 0C from the Maintenance Panel. An error is indicated by **Ex38** on the Maintenance Panel.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Dirty Charge Corona	20%	1429	- -	1558
Dirty Charge Corona Wire	20%	1429	- -	1558
PC Drum	20%	1429	1976	1649
Charge Corona Wire	20%	1429	1972	1557
High Voltage Power Supply	05%	1449	1964	1568
Charge Corona	03%	1429	1972	1557
HV Connector or Cable	02%	1449	1972	1568
PR011 Card	02%	1446	2118	1764
PC561 Card	02%	1453	2116	1764
Charge Corona gap	01%	- -	- -	1658
Drum Surface Voltage	01%	- -	- -	1574
PC Drum grounding	01%	- -	- -	1657
Printer Power Supply	01%	1450	2122	1757
CPxxx Card	01%	1453	2114	1760

MAP 0211 BEGINS

Table 75. MAP 0211

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
Step 1.	• Do the QUICK CHECKS. • If the 6 Mft PM is due, replace the Charge Corona Wires. • Run Driver Routine 0C from the Maintenance Panel. An error is indicated by **Ex38** on the Maintenance Panel. **Did an Ex38 occur?**	Go to Step 2.	Go to Step 3.

Table 75. MAP 0211 (continued)

Step	Questions/Actions	Yes	No
Step 2.	Do the following one at a time. Run Driver Routine 0C after each step and check for an **Ex38** error on the Maintenance Panel. • 1) Ensure that PJ115 and PJ116 are connected and that there are no pushed pins. • 2) Check the high-voltage cable CH1 for opens or shorts. Repair or replace as necessary. • 3) Check the area around the Charge Corona for anything that may be causing the corona to discharge. Correct any problems. • 4) Install new Charge Corona wires if not previously installed. @ **Does an Ex38 still occur?**	Go to Step 7.	The actions taken during this step corrected the problem.
Step 3.	• Print the **alternate** print sample (1069). Run the samples up to a full box of paper. **Did a 211 error occur?**	Go to Step 4.	If the problem persists as an intermittent error, go to MAP 0001: Introduction.

Table 75. MAP 0211 (continued)

Step	Questions/Actions	Yes	No
Step 4.	Check the PC drum for any deep scratches or irregularities anywhere on the surface or edges. This includes the hub area. Sometimes small metal shavings, burrs, or gouges on the edge of the drum or hubs can cause arcing. **Is the PC drum OK?**	Go to Step 5.	Repair or replace the PC drum or hubs. **Note:** Before you replace the PC drum, run the Print Pack (1070). After you replace the PC drum, do the following: • Perform the PC Drum Surface Voltage adjustment. • Run the Print Pack (1070) and compare the two print samples for background, solid area fill, and stroke width. @
Step 5.	• Ensure that the PC drum grounding is good and that the grounding brush moves freely. • Correct any problems found. • Print the **primary** print sample (1069). Run the sample for up to a full box of paper. @ **Did a 211 error occur?**	Go to Step 6.	The actions completed during this step corrected the problem.

Table 75. MAP 0211 (continued)

Step	Questions/Actions	Yes	No
Step 6.	• Check the drum surface voltage. **Is the drum surface voltage OK?**	Go to Step 7.	Correct the drum surface voltage. • 1) Adjust CH1 on the High Voltage Power Supply. • 2) Adjust the Charge Corona to drum gap. @
Step 7.	• Check for opens or shorts between the following connectors: – PJ116-1 to PJ457-1 – PJ102-12 to PJ336-12 – PJ102-17 to PJ336-17 – PJ115-10 to PJ103-10 – PJ115-11 to PJ103-11 – PJ115-16 to PJ103-16 – PJ115-21 to PJ103-21 **Is there an open or short?**	• Repair the problem.	Do the following one at a time. • Install a new Charge Corona. • Install a new High Voltage Power Supply. • Install a new PR011 Card. • Install a new CPxxx Card. • Install a new Printer Power Supply. @

MAP 0212: Transfer Corona Voltage Error

Symptom Explanation	Conditions That Could Cause This Symptom
An out-of-range voltage condition was detected in the transfer corona circuit.	• The Transfer Corona is not inserted properly or is dirty. • The Transfer Corona Wire is dirty or broken. • The transfer voltage is not adjusted correctly. • The forms have conductive material or large cutouts. • The Transfer Corona Shield is defective. • The High-Voltage Power Supply is defective. • The PR011 Card is defective. • The PC561 Card is defective. • The Path Modifier to frame ground resistor is defective.

REFERENCES

- Removals & Adjustments - Coronas & High Voltage Power Supply
- Circuit Diagrams - CD61 - Transfer Corona
- Wiring Diagrams - WD24-1 - Printer DC Power Distribution
- Wiring Diagrams - WD26 - High Voltage to Coronas & Mag Brush Rolls
- Preventive Maintenance - 2211
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Print the **primary** print sample (1069) to see if the error occurs during printing.

QUICK CHECKS

1. Ensure that the Transfer Corona is inserted completely.
2. Ensure that the Transfer Corona Wire is not broken.
3. Ensure that the Transfer Corona Assembly is clean.
4. Check the customer's forms that were running when the problem was reported. Forms with metallic labels, conductive material, or large cutouts, can cause 212 errors. Explain to the customer that if these forms are run, they will experience these errors.

SERVICE CHECKS

1. Run Driver Routine 0E from the Maintenance Panel. An error is indicated by **Ex39** on the Maintenance Panel.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Transfer Corona dirty	50%	1443	- -	1560
Broken Corona Wire	30%	1443	2026	1559
Transfer Corona Assembly	10%	1443	2026	1559
HV Connector or Cable	03%	1449		
Transfer Corona Shield	02%	1443		
High Voltage Power Supply	02%	1449	1964	1568
PR011 Card	01%	1446	2118	1764
PC561 Card	01%	1453	2116	1764
Path Modifier Resistor (located in transfer station)	01%			1933
Transfer voltage adjustment	---	- -	- -	1570
Forms	---	- -	- -	- -

MAP 0212 BEGINS

Table 76. MAP 0212

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
Step 1.	• Do the QUICK CHECKS. • If the 6 Mft PM is due, replace the Transfer Corona Wire. • Run Driver Routine 0E from the Maintenance Panel. An error is indicated by **Ex39** on the Maintenance Panel. **Did an Ex39 error occur?**	Go to Step 3.	Go to Step 2.
Step 2.	• Print the **primary** print samples for up to a full box of paper. **Did a 212 error occur?**	Go to Step 3.	If the problem persists as an intermittent error, go to MAP 0001: Introduction.

Table 76. MAP 0212 (continued)

Step	Questions/Actions	Yes	No
Step 3.	• Exchange the Preclean Corona and Transfer Corona assemblies. Clean the Preclean assembly, if necessary. • Print the **primary** print sample (1069). Print samples for up to a full box of paper. **Did a 212 error occur?**	Go to Step 4.	• Return the Preclean Corona assembly to its original position. • Repair or replace the Transfer Corona assembly. @
Step 4.	Return the Preclean Corona and Transfer Corona assemblies to their original positions. Do the following one at a time. Adjust or repair any problems found. 1. Inspect the Transfer Corona assembly, corona wire, Transfer Corona Shield that moves with the rear tractor, path modifier, and the high-voltage connector. 2. While printing or running Driver Routine 0E, measure the voltage at the transfer corona test point **CH3** on the High Voltage Power Supply. The voltage should be 1.0 ±0.02 V dc. 3. Check the high voltage cable, CH3, for opens or shorts. Repair or replace as necessary. 4. Measure the resistance from the Upper Retractor to frame ground. Resistance should be 1000 K ohm ±200 K ohm when the retractors have moved toward the drum. 5. Print the **primary** print sample (1069). Print samples for up to a full box of paper. **Did a 212 error occur?**	Do the following, one step at a time, until the problem is corrected: 1. Install a new High Voltage Power Supply. 2. Install a new PR011 Card. 3. Install a new PC561 Card. 4. Repair any wiring problems in the Transfer Corona circuit. Check for opens or shorts between the following connectors: • PJ115-13 to PJ103-13 • PJ115-18 to PJ103-18 • PJ115-21 to PJ103-21 • PJ102-14 to PJ336-14 • PJ102-19 to PJ336-19 @	The actions taken during this step corrected the problem.

MAP 0213: Preclean Corona Voltage Error

Symptom Explanation	Conditions That Could Cause This Symptom
An out-of-range voltage condition was detected in the preclean corona circuit.	• The High-Voltage Power Supply is defective. • The PR011 Card is defective. • The PC561 Card is defective. • The Preclean Corona Wire is dirty or broken. • The Preclean Corona Assembly is dirty. • The High Voltage Cable or Connector is defective.

REFERENCES

- Removals & Adjustments - Coronas & High Voltage Power Supply
- Circuit Diagrams - CD62 - Preclean Corona
- Wiring Diagrams - WD24-1 - Printer DC Power Distribution
- Wiring Diagrams - WD26 - High Voltage to Coronas & Mag Brush Rolls
- Preventive Maintenance - 2211
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Print the **primary** print sample (1069). See if the error occurs during printing.

QUICK CHECKS

1. Ensure that the Preclean Corona is inserted completely.
2. Ensure that the Preclean Corona Wire is not broken.
3. Ensure that the Preclean Corona Assembly is clean.

SERVICE CHECKS

1. Run Driver Routine 0D from the Maintenance Panel. An error is indicated by **Ex36** on the Maintenance Panel.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
High Voltage Power Supply	50%	1449	1964	1568
PR011 Card	29%	1446	2118	1764
Broken Corona Wire	10%	1429	1964	1559
HV Connector or Cable	05%	1449		1568
Preclean Corona Assembly	05%	1429	1964	1560
PC561 Card	01%	1453	2116	1764
Preclean voltage adjustment	---	- -	- -	1573

MAP 0213 BEGINS

Table 77. MAP 0213

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		

Table 77. MAP 0213 (continued)

Step	Questions/Actions	Yes	No
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
Step 1.	• Do the QUICK CHECKS. • If the 6 Mft PM is due, replace the Preclean Corona Wire. • Inspect the high voltage connector and correct any problems. • Run Driver Routine 0D from the Maintenance Panel. An error is indicated by **Ex36** on the Maintenance Panel. **Did an Ex36 error occur?**	Go to Step 3.	Go to Step 2.
Step 2.	• Print the **primary** print samples (1069) up to a full box of paper. **Did a 213 error occur?**	Go to Step 3.	If the problem persists as an intermittent error, go to MAP 0001: Introduction.
Step 3.	• Exchange the Transfer Corona and the Preclean Corona assemblies. • Clean the Transfer Corona assembly if necessary. • Print the **primary** print sample (1069). Print up to a full box of paper. **Did a 213 error occur?**	Go to Step 4.	• Return the Transfer Corona assembly to its original position. • Repair or replace the Preclean Corona assembly. @

Table 77. MAP 0213 (continued)

Step	Questions/Actions	Yes	No
Step 4.	1. Return the Transfer Corona and Preclean Corona assemblies to their original positions. 2. Check the high voltage cable CH4 for opens or shorts. Repair or replace as necessary. 3. Check the area around the preclean corona for anything that may be causing the corona to discharge. Correct any problems. 4. On the High Voltage Power Supply, measure the voltage at the preclean corona test point, **CH4**. Voltage should be 1.7 ±0.02 V ac. Adjust if necessary. 5. Print the **primary** print sample (1069). Print up to a full box of paper of samples. @ **Did a 213 error occur?**	Do the following, one step at a time, until the problem is corrected: 1. Install a new High Voltage Power Supply. 2. Install a new PR011 Card. 3. Install a new PC561 Card. 4. Repair any wiring problems in the Preclean Corona circuit. Check for opens or shorts between the following connectors: • PJ115-14 to PJ103-14 • PJ115-19 to PJ103-19 • PJ115-10 to PJ103-10 • PJ115-21 to PJ103-21 • PJ102-15 to PJ336-15 • PJ102-20 to PJ336-20 @	The actions taken during this step corrected the problem.

MAP 0221: Mirror Motor Operating Error

Symptom Explanation	Conditions That Could Cause This Symptom
There is an under speed error from the Mirror Motor (M501) after it has successfully reached operating speed. This check is made every 20 ms.	• There is a failure in the Mirror Motor (M501) or its drive circuitry. • There is a failure in the sensing circuitry.
There is an under speed error from the Mirror Motor (M501) at power on.	• There is a failure in the Mirror Motor (M501) or its drive circuitry. • There is a failure in the sensing circuitry. • The Mirror Motor Rotation Sensor (S501) requires adjustment.

REFERENCES

- Removals & Adjustments - Printhead
- Circuit Diagrams - CD64 - Mirror Motor (M501)
- Wiring Diagrams - WD35 - Mirror Motor (M501)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Print the all white print sample (1069).
  An error is indicated by an SRC 221 on the Display/Touch Screen or by **E048** on the Maintenance Panel.

QUICK CHECKS

- None

SERVICE CHECKS

- Run Driver Routine 01. This routine drives the Mirror Motor (M501) for one minute.

  Listen to the motor to check if it is running.

  The possible errors are **Ex48**, **Ex4A**, and **Ex4b**.
- Cover the Return Mirror with paper.
- Run Adjustment Routine C1. This routine drives the Mirror Motor constantly.

  This check allows you to verify that the mirror is turning, because the scanning beam can be seen on the Return Mirror in the printhead. It is useful when the environment is too noisy to hear the Mirror Motor running.

  – Press **ENTER** to turn the laser diodes off and on in order to see the scanning beam on the Return Mirror.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Mirror Motor (M501)	40%	1454	2012	1792
LD272 Card	30%	1454	2012	1781
DV101 Card	15%	1452	2118	1764
PR011 Card	10%	1446	2118	1764
PC561 Card	05%	1453	2116	1764
DC Power Supply	05%	1450	2122	1758

Notes:

1. There is an intermittent problem with the Mirror Motor, because it reaches operating speed and then slows down. For the MAPs to be useful, the problem must be solid. If the problem becomes solid, an SRC 223 (**E04A**) on the Maintenance Panel) or a SRC 224 (**E04b**) on the Maintenance Panel) is displayed.
2. The Mirror Motor is an expensive unit. Use this MAP to find other causes of this problem. Replace the parts in the order given.

MAP 0221 BEGINS

Table 78. MAP 0221

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
	DANGER **<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.**		

Table 78. MAP 0221 (continued)

Step	Questions/Actions	Yes	No
Step 1.	• Measure the voltage between TP (+100VM) and TP (0V) on the dc power supply. • Run Driver Routine 01. **Is +100 V dc present?**	Go to Step 2.	• Install a new dc power supply. @
Step 2.	• Perform the Mirror Motor Rotation Sensor adjustment. • Run Driver Routine 01. **Did an E148 error occur?**	Go to Step 3.	The sensor adjustment fixed the problem.
Step 3.	• SHUTDOWN AND POWER OFF THE PRINTER. • Reseat the following connectors: – PJ320 on the DV101 Card – PJ345 on the PC561 Card – PJ102 on the PR011 Card • Print the Print Pack (1070). **Does the problem still occur?**	Go to Step 4.	The problem was fixed by reseating the connectors.
Step 4.	Perform the following steps: • Correct any interventions at the printer so that only this error will be displayed following an IML (and not END OF FORMS, for example). • SHUTDOWN AND POWER OFF THE PRINTER. • Power on the printer. **Is E04b displayed in the Maintenance Panel?**	Go to MAP 0224: Mirror Motor Start-Up Error.	Go to Step 5.

Table 78. MAP 0221 (continued)

Step	Questions/Actions	Yes	No
Step 5.	**Did an E04A error occur?**	Go to MAP 0223: Mirror Motor Drive Error.	The problem is intermittent. • Repair an open circuit between PJ320-18 and PJ345-18. Install new parts as listed below, one at a time, until the problem is corrected: • DV101 Card • Mirror Motor (M501) • LD272 Card • PR011 Card • PC561 Card @

MAP 0222: Video Data Active

Symptom Explanation	Conditions That Could Cause This Symptom
The Video Data signal (CVD) from the control unit to the Printhead is at a continuously high level, which would produce an all-black print. This check is made in the time between when the Laser beam scan crosses the Beam Detect sensor and when it reaches the beginning of the printable area. The Laser should not be on at this time. On the forms, this area is the first half-inch inward from the front of the printer (surrounding the front tractor pin feed holes).	• An Image Generator or microcode problem is causing the Laser beam to be on when it should not be. • A failure in the sensing circuitry is causing Beam Detect to be on when it should not be.

REFERENCES

- Removals & Adjustments - Printhead
- Circuit Diagrams -
  - CD65 - Printhead
  - CD66 - Beam Detect
  - CD67 - Video Data
- Wiring Diagrams - WD27 - Laser Driver
- Wiring Diagrams - WD69 - PQE

FIX VERIFICATION

- Print the **all white** print sample (1069).
  An error is indicated by an SRC 222 on the Display/Touch Screen , or by **E04d** on the Maintenance Panel.

QUICK CHECKS

- None

SERVICE CHECKS

- None

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Microcode	- -	- -	- -	- -
Mechanism Interface Card (MIC)	40%	1460	2130	1522
PQE Card	20%	1461	2130	1532
LD272 Card	10%	1454	2012	1781
PR011 Card	10%	1446	2118	1764
BD171 Card	10%	1454	2016	1796
PC561 Card	10%	1453	2116	1764
Open or short in wiring	- -	- -	- -	- -

MAP 0222 BEGINS

Table 79. MAP 0222

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
	DANGER **<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.**		

Table 79. MAP 0222 (continued)

Step	Questions/Actions	Yes	No
Step 1.	• SHUTDOWN AND POWER OFF THE PRINTER. • Remove the Printhead cover. • Place paper over the Return Mirror to protect the PC Drum. • Power on the printer. Wait until the Printer Status screen is displayed on the Display/Touch Screen. **Hint** The scanning beam may be difficult to see in well lighted areas. You can better observe the beam at the return mirror if you hold something over the mirror to shade it. You may want to observe the beam as it exits the scanning mirror and before the F-theta lens. **Did you see a scanning beam on the paper?**	The Laser is sensed to be modulated on when it should not be, because the CVD or DBD signal is always active. Install new parts as listed below, one at a time, until the problem is corrected: • Mechanism Interface Card (MIC) • PQE Card • LD272 Card @	Go to Step 2.

Table 79. MAP 0222 (continued)

Step	Questions/Actions	Yes	No
Step 2.	The problem may occur only on certain print applications. If you are unsure about the following question, do the following: • Install the Inner Printhead Cover. • Print the Print Pack (1070). Look for any registration or magnification problems. • If you found no problems, try printing the customer's applications. **Do some print jobs run successfully, but others fail with an SRC 222?**	There appears to be an unusual microcode or Image Generator problem. Contact your next level of support.	Go to Step 3.
Step 3.	Check the following connectors: • PJ501 • PJ502 • PJ516 • PJ101 • BD (PQE Card) **Are all connectors properly connected?**	No print job runs successfully. There is a failure in the CVD-sensing circuitry. Do the following, one at a time, until the problem is corrected: • Install a new LD272 Card. • Install a new Beam Detect Card (BD171). • Install a new PR011 Card. • Fix an open or short circuit in the following pairs: – PJ102-39 and PJ336-39 – PJ516-25 and PJ101-25 • Install a new PC561 Card. @	• Reseat all connectors.

MAP 0223: Mirror Motor Drive Error

Symptom Explanation	Conditions That Could Cause This Symptom
The Mirror Motor (M501) failed to rotate six seconds after the drive signal was issued.	• There is a failure in the Mirror Motor (M501) or its drive circuitry. • There is a failure in the sensing circuitry.

REFERENCES

- Removals & Adjustments - Printhead
- Circuit Diagrams - CD64 - Mirror Motor (M501)
- Wiring Diagrams - WD35 - Mirror Motor (M501)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- SHUTDOWN AND POWER OFF THE PRINTER.
- Power on the printer.

  An error is indicated by an SRC 223 on the Display/Touch Screen or by **E04A** on the Maintenance Panel.

QUICK CHECKS

- None

SERVICE CHECKS

- Run Driver Routine 01. This routine drives the Mirror Motor for one minute.

  Listen to the motor to check if it is running.

  The possible errors are: **Ex48**, **Ex4A**, and **Ex4b**.
- Cover the Return Mirror with paper.
- Run Adjustment Routine C1. This routine drives the Mirror Motor constantly.

  This check allows you to verify that the mirror is turning, because you can see the scanning beam on the Return Mirror in the printhead. This is useful when the environment is too noisy to hear the Mirror Motor running.

  – Press **Enter** to turn the laser diodes off and on to see the scanning beam on the Return Mirror.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Mirror Motor (M501)	40%	1454	2012	1792
DV101 Card	25%	1452	2118	1764
LD272 Card	15%	1454	2012	1781
PR011 Card	10%	1446	2118	1764
PC561 Card	05%	1453	2116	1764
DC Power Supply	05%	1450	2122	1758
Open or Short circuit in wiring	---	- -	- -	- -

MAP 0223 BEGINS

Important

The Mirror Motor (M501) is an expensive unit. Use this MAP to find other causes of this problem. Replace the parts in the order given.

Table 80. MAP 0223

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		

Table 80. MAP 0223 (continued)

Step	Questions/Actions	Yes	No
	DANGER **<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.**		
Step 1.	• SHUTDOWN AND POWER OFF THE PRINTER. • Reseat the connectors on the following cards: – PC561 Card – PR011 Card • Print the Print Pack (1070). **Does the problem still occur?**	Go to Step 2.	The problem was fixed by reseating the connectors.

Table 80. MAP 0223 (continued)

Step	Questions/Actions	Yes	No
Step 2.	• SHUTDOWN AND POWER OFF THE PRINTER. • Remove the Printhead cover. • Place paper over the Return Mirror to protect the PC Drum. • Power the printer on. • Run Adjustment Routine C1. • Press **Enter** to turn the laser diodes off and on to see the scanning beam at the Return Mirror. **Hint** The scanning beam may be difficult to see in well lighted areas. You can observe the beam better at the return mirror if you hold something over the mirror to shade it. You may want to observe the beam as it exits the scanning mirror and before the F-theta lens. **Can you see a scanning beam on the paper?**(If an error occurs, answer NO.)	Go to Step 3.	Go to Step 6.

Table 80. MAP 0223 (continued)

Step	Questions/Actions	Yes	No
Step 3.	The Mirror Motor is rotating. Its speed may be incorrect, or the sensing circuitry may have failed. • Check LEDs D1 and D2 on the LD272 Card while routine C1 is running. **Are both LEDs D1 and D2 on the LD272 Card on while the scanning beam is on?**	Do the following, one at a time, until the problem is corrected: • Perform the Mirror Motor Rotation Sensor adjustment. • Repair an open circuit between one of the following pairs of connectors: – PJ516-27 and PJ101-27 – PJ516-29 and PJ101-29 – PJ102-35 and PJ336-35 • Install new parts as listed below, one at a time, until the problem is corrected: – PR011 Card – LD272 Card – PC561 Card @	Go to Step 4.
Step 4.	**Are connectors PJ208 and PJ516 on the LD272 card connected correctly?**	Go to Step 5.	• Reconnect connectors PJ208 and PJ516 as necessary.
Step 5.	• SHUTDOWN AND POWER OFF THE PRINTER. **Are connectors PJ219, PJ319, PJ315, and PJ320 on the DV101 Card connected correctly?**	Go to Step 6.	• Fully seat the connectors as necessary.

Table 80. MAP 0223 (continued)

Step	Questions/Actions	Yes	No
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
Step 6.	In the following questions, power should be present at P316 whenever the printer is powered on. Perform the following steps: • SHUTDOWN AND POWER OFF THE PRINTER. • Disconnect connector PJ316. • Set the Diagnostic Function Switch to position **3**. • Power on the printer. • Measure the voltage between J316-1 (+ lead) and J316-2. **Is the voltage +100 V dc between J316-1 and J316-2?**	Go to Step 7.	Do the following, one at a time, until the problem is corrected: • Repair an open circuit between one of the following pairs of connectors: – PJ316-1 and PJ458-1 – PJ316-2 and PJ458-4 • Install a new dc power supply. @

Table 80. MAP 0223 (continued)

Step	Questions/Actions	Yes	No
Step 7.	• Measure the voltage between J316–3 and J316–4. **Is the voltage +12 V dc?**	Go to Step 8.	Do the following, one at a time, until the problem is corrected: • Repair an open circuit between one of the following pairs of connectors: – PJ316-3 and PJ458-2 – PJ316-4 and PJ458-5 • Install a new dc power supply. @
Step 8.	• Measure the voltage between J316–5 and J316–6. **Is the voltage +5 V dc?**	Go to Step 9.	Do the following, one at a time, until the problem is corrected: • Repair an open circuit between one of the following pairs: – PJ316-5 and PJ458-3 – PJ316-6 and PJ458-6 • Install a new dc power supply. @

Table 80. MAP 0223 (continued)

Step	Questions/Actions	Yes	No
Step 9.	Do the following, one at a time, until the problem is corrected: • Repair an open circuit between one of the following pairs: – PJ345-18 and PJ320-18 – PJ345-19 and PJ320-19 – PJ345-20 and PJ320-20 – PJ345-21 and PJ320-21 – PJ345-22 and PJ320-22 – PJ345-23 and PJ320-23 – PJ219-1 and PJ319-1 – PJ219-2 and PJ319-2 – PJ219-3 and PJ319-3 • Install the new parts listed below, one at a time, until the problem is corrected: – DV101 Card – PC561 Card – Mirror Motor (M501) @		

MAP 0224: Mirror Motor Start-Up Error

Symptom Explanation	Conditions That Could Cause This Symptom
The Mirror Motor (M501) had an under speed condition 37 seconds after the drive signal was issued. The error was still present after three retries.	• There is a failure in the Mirror Motor or its drive circuitry. • There is a failure in the sensing circuitry.

REFERENCES

- Removals & Adjustments - Printhead
- Circuit Diagrams - CD64 - Mirror Motor (M501)
- Wiring Diagrams - WD35 - Mirror Motor (M501)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- SHUTDOWN AND POWER OFF THE PRINTER.
- Power on the printer.

  An error is indicated by an SRC 224 on the Display/Touch Screen or by **E04b** on the Maintenance Panel.

QUICK CHECKS

- None

SERVICE CHECKS

- Run Driver Routine 01. This routine drives the Mirror Motor for one minute.
  Listen to the motor to check if it is running.
  The possible errors are **Ex48**, **Ex4A**, and **Ex4b**.
- Cover the Return Mirror with paper.
- Run Adjustment Routine C1. This routine drives the Mirror Motor constantly.

This check allows you to verify that the mirror is turning, because you can see the scanning beam on the Return Mirror in the printhead. This is useful when the environment is too noisy to hear the Mirror Motor running.

- Press **Enter** to turn the laser diodes off and on in order to see the scanning beam on the Return Mirror.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Mirror Motor (M501)	40%	1454	2012	1792
DV101 Card	30%	1452	2118	1764
LD272 Card	10%	1454	2012	1781
PR011 Card	10%	1446	2118	1764
PC561 Card	05%	1453	2116	1764
DC Power Supply	05%	1450	2122	1758
Open or Short circuit in wiring	---	- -	- -	- -

MAP 0224 BEGINS

Important

The Mirror Motor (M501) is an expensive unit. Use this MAP to find other causes of this problem. Replace the parts in the order given.

Table 81. MAP 0224

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		

Table 81. MAP 0224 (continued)

Step	Questions/Actions	Yes	No
	DANGER **<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.**		
Step 1.	• SHUTDOWN AND POWER OFF THE PRINTER. • Reseat the following cards and connector: – PJ208 on the DV101 Card – PJ102 on the PR011 Card – PJ345 on the PC561 Card • Print the Print Pack (1070). **Does the problem still occur?**	Go to Step 2.	The problem was fixed by reseating the cards.

Table 81. MAP 0224 (continued)

Step	Questions/Actions	Yes	No
Step 2.	• SHUTDOWN AND POWER OFF THE PRINTER. • Remove the Printhead cover. • Power the printer on. • Place paper over the Return Mirror to protect the PC Drum. • Run Adjustment Routine C1. • Press **Enter** to turn the laser diodes off and on in order to see the scanning beam at the Return Mirror. **Can you see a scanning beam on the paper?**	Go to Step 3.	Go to Step 4.
Step 3.	The Mirror Motor is rotating. Its speed may be incorrect, or the sensing circuitry may have failed. • Check LEDs D1 and D2 on the LD272 Card while routine C1 is running. **Are both LEDs D1 and D2 on the LD272 Card on while the scanning beam is on?**	Do the following, one at a time, until the problem is corrected: • Repair an open circuit between one of the following pairs: – PJ516-27 and PJ101-27 – PJ516-28 and PJ101-28 – PJ516-29 and PJ101-29 – PJ516-30 and PJ101-30 – PJ102-35 and PJ336-35 – PJ102-36 and PJ336-36 • Install the new parts listed below, one at a time, until the problem is corrected: – PR011 Card – LD272 Card – PC561 Card @	Go to Step 4.

Table 81. MAP 0224 (continued)

Step	Questions/Actions	Yes	No
Step 4.	**Are connectors PJ219 and PJ319 connected correctly?**	Go to Step 5.	• SHUTDOWN AND POWER OFF THE PRINTER. • Fully seat the connectors as necessary.
Step 5.	In the following voltage checks, ensure that: • Run Adjustment Routine C1 (the Mirror Motor is always driven during this routine). • The ground lead on the voltmeter is connected to point PJ344-3. • Measure the voltage at PJ320–18 and PJ320–20. **Is the voltage approximately +5 V dc at both?**	Go to Step 6.	• Install a new PC561 Card. @
Step 6.	• Measure the voltage at PJ320–19 and PJ320–21. **Is the voltage less than +2.0 V dc (logic low level) at both?**	Go to Step 7.	• Install a new PC561 Card. @
	DANGER **<5> High-voltage is present. Use care while working in this area.**		

Table 81. MAP 0224 (continued)

Step	Questions/Actions	Yes	No
Step 7.	Measure the voltage between P316–1 (+ lead) and P316–2. **Is the voltage +100 V dc?**	Go to Step 8.	Do the following, one at a time, until the problem is corrected: • Repair an open circuit between one of the following pairs of connectors: – PJ316-1 and PJ458-1 – PJ316-2 and PJ458-4 • Install a new dc power supply. @
Step 8.	• Measure the voltage between PJ316–3 (+ lead) and PJ316–6 while the Adjustment Routine is running. **Is the voltage +12 V dc?**	Go to Step 9.	Do the following, one at a time, until the problem is corrected: • Repair an open circuit between one of the following pairs: – PJ316-3 and PJ458-2 – PJ316-4 and PJ458-5 • Install a new dc power supply. @

Table 81. MAP 0224 (continued)

Step	Questions/Actions	Yes	No
Step 9.	• Measure the voltage between PJ316–5 (+ lead) and PJ316–6 while the Adjustment Routing is running. **Is the voltage +5 V dc?**	Go to Step 10.	Do the following, one at a time, until the problem is corrected: • Repair an open circuit between one of the following pairs of connectors: – PJ316-5 and PJ458-3 – PJ316-6 and PJ458-6 • Install a new dc power supply. @
Step 10.	Do the following, one at a time, until the problem is corrected: • Repair an open circuit between one of the following pairs: – PJ345-18 and PJ320-18 – PJ345-19 and PJ320-19 – PJ345-20 and PJ320-20 – PJ345-21 and PJ320-21 – PJ345-22 and PJ320-22 – PJ345-23 and PJ320-23 – PJ219-1 and PJ319-1 – PJ219-2 and PJ319-2 – PJ219-3 and PJ319-3 • Install the new parts listed below, one at a time, until the problem is corrected: – DV101 Card – PC561 Card – Mirror Motor (M501) @		

MAP 0225: Resolution Lens Initial Position Error

Symptom Explanation	Conditions That Could Cause This Symptom
Initial position of the resolution switching lens cannot be determined and the resolution switching lens does not move.	• Defective Resolution Switching Lens Motor (M502) • Defective DV101 Card • Defective PC561 Card • Defective LD272 Card
Initial position of the resolution switching lens cannot be determined but the resolution switching lens does move.	• Defective Resolution Switching Lens Motor Position Sensor (S503) • Defective PC561 Card • Defective LD272 Card • The Resolution Switching Lens Motor Position Sensor plate is not adjusted correctly.
The resolution switching lens cannot be manually rotated.	• Bind in the resolution switching lens mechanism

REFERENCES

- Circuit Diagrams - CD68 - Resolution Switching Lens Motor Postion Sensor (S502)
- Wiring Diagrams - WD36 - Resolution Switching Lens Motor (M502)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Driver Routine 3F. This routine checks the Resolution Switching Lens Motor.
- Toggle the reset switch on the CPxxx Card. An error is indicated by an SRC 225 on the Display/Touch Screen or by **E054** on the Maintenance Panel.

QUICK CHECKS

- Manually move the resolution switching lens arm by rotating the cam to check for binds.

SERVICE CHECKS

- Run Driver Routine 3F. This routine checks the Resolution Switching Lens Motor (M502).
- Run Sensor Routine 9D. This routine checks the Resolution Switching Lens Motor Position Sensor (S503).

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Resolution Switching Lens Motor (M502)	25%	1454	2012	1786
Resolution Switching Lens Motor Position Sensor (S503)	20%	1454	2014	1788
Resolution Switching Lens Motor Position Sensor adjustment	15%	1454	2014	1788
Loose or binding resolution mechanism	10%	- -	- -	- -
DV101 Card	10%	1452	2118	1764
PC561 Card	05%	1453	2116	1764
PR011 Card	05%	1446	2118	1764
LD272 Card	05%	1454	2012	1781
DV061 Card	05%	1453	2114	1764

MAP 0225 BEGINS

Table 82. MAP 0225

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
	DANGER **<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.**		

Table 82. MAP 0225 (continued)

Step	Questions/Actions	Yes	No
Step 1.	• Observe the Resolution Switching Lens while you run Driver Routine 3F. **Did the lens move smoothly down and back up?**	Go to Step 5.	Go to Step 2.
Step 2.	• Manually move the Resolution Switching Lens by rotating the cam, and check for binds in the lens mechanism. **Is the mechanism binding?**	• Repair the bind in the Resolution Switching Lens mechanism.	Go to Step 3.
Step 3.	• Measure the voltage at PJ317-3. **Is the voltage +24 V dc?**	Go to Step 4.	Do the following, one at a time, until the problem is corrected: • Repair an open circuit between one of the following pairs: – PJ317-3 and PJ305-3 – PJ317-4 and PJ305-4 • Install a new DV061 Card. @

Table 82. MAP 0225 (continued)

Step	Questions/Actions	Yes	No
Step 4.	• Measure the voltage between PJ317-1 and PJ317-2. **Is the voltage +5 V dc?**	Do the following, one at a time, until the problem is corrected: • Install a new Resolution Switching Lens Motor (M502). • Install a new DV101 Card. • Install a new PC561 Card. @	Do the following, one at a time, until the problem is corrected: • Repair an open circuit between one of the following pairs: – PJ317-1 and PJ313-1 – PJ317-2 and PJ313-3 – PJ308 and PJ259 (all pins) • Install a new DV061 Card. @
Step 5.	• Measure the voltage at PJ258-2 while you manually rotate the resolution switching lens cam. **Did the voltage switch between 0 and +5 V dc?**	Do the following, one at a time, until the problem is corrected: • Adjust the Resolution Switching Lens Motor Position Sensor (S503). • Repair an open circuit between PJ258-2 and PJ260-2. • Install a new PR011 Card. • Install a new PC561 Card. • Install a new LD272 Card. @	Do the following, one at a time, until the problem is corrected: • Repair an open circuit between: – PJ258-1 and PJ260-1 – PJ258-2 and PJ260-2 – PJ102-41 and PJ336-41 • Install a new Resolution Switching Lens Motor Position Sensor (S503). • Install a new PR011 Card. • Install a new LD272 Card. • Install a new PC561 Card. @

MAP 0226: Resolution Lens Motor Over Current

Symptom Explanation	Conditions That Could Cause This Symptom
The Resolution Switching Lens Motor (M502) is drawing too much current.	• The Resolution Switching Lens Motor (M502) is defective. • The motor drive circuit has failed. • The current sensing circuit has failed. • Bind in the resolution switching lens mechanism.

REFERENCES

- Circuit Diagrams - CD68 - Resolution Switching Lens Motor Postion Sensor (S502)
- Wiring Diagrams - WD36 - Resolution Switching Lens Motor (M502)

FIX VERIFICATION

- Print the Print Pack (1070). An error is indicated by an SRC 0226 on the Display/Touch Screen or by **E055** on the Maintenance Panel.

QUICK CHECKS

- None

SERVICE CHECKS

- Reset CB1 on the DV101 Card. Power on the printer and see if SRC 0226 occurs.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Resolution Switching Lens Motor (M502)	30%	1454	2012	1786
DV101 Card	30%	1452	2118	1764
Loose or binding resolution mechanism	25%	- -	- -	- -
PC561 Card	10%	1453	2116	1764
DV061 Card	05%	1453	2114	1764

MAP 0226 BEGINS

Table 83. MAP 0226

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
	DANGER **<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.**		
Step 1.	• Check for a bind in the Resolution Switching Lens mechanism by manually rotating the cam. **Is the lens mechanism binding?**	Eliminate the source of the bind.	Go to Step 2.

Table 83. MAP 0226 (continued)

Step	Questions/Actions	Yes	No
Step 2.	• Check for continuity between PJ317-1 and PJ313-1. **Is there an open?**	• Repair the open.	Do the following, one at a time, until the problem is corrected: • Install a new Resolution Switching Lens Motor (M502). • Install a new DV101 Card. • Install a new PC561 Card. • Install a new DV061 Card. @

MAP 022A: PC Drum Cover Is Open

Symptom Explanation	Conditions That Could Cause This Symptom
The PC DRUM COVER IS OPEN message never displays.	• There is a failure in the PC Drum Cover interlock circuit. • There is a short circuit to ground in the PC Drum Cover Interlock Switch (S118) circuit. • There is a hardware failure in the PC Drum Cover Interlock Switch (S118). • The PR011 Card is defective. • The PC561 card is defective.
The PC DRUM COVER IS OPEN message is displayed when the drum cover is installed.	• The PC561 card is defective. • The PR011 Card is defective.

REFERENCES

- Removals & Adjustments - Drum Drive and Photoconductor (PC)
- Circuit Diagrams - CD69 - PC Drum Cover Interlock Switch (S118)
- Wiring Diagrams - WD54 - Switches & Sensors - PC561 & PR011 Cards

FIX VERIFICATION

- Power off and power on the printer.
  An error is indicated by an SRC 22A on the Display/Touch Screen or by **E035** on the Maintenance Panel.

QUICK CHECKS

- Ensure that the PC Drum cover is installed correctly.

SERVICE CHECKS

- None

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
PC Drum Cover Interlock Switch (S118)	90%	1429	1984	1656
PC561 Card		1453	2116	1764
PR011 Card	10%	1446	2118	1764
Short circuit in wiring	---	- -	- -	- -

MAP 022A BEGINS

Table 84. MAP 022A

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		

Table 84. MAP 022A (continued)

Step	Questions/Actions	Yes	No
	DANGER **<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.**		
Step 1.	• SHUTDOWN AND POWER OFF THE PRINTER. **Is the PC Drum cover correctly installed?**	Go to Step 2.	• Install the PC Drum cover to actuate the PC Drum Cover Interlock Switch (S118). @
Step 2.	**Is connector PJ104 correctly seated at the PR011 Card?**	Go to Step 3.	• Correctly seat connector PJ104.

Table 84. MAP 022A (continued)

Step	Questions/Actions	Yes	No
Step 3.	Do the following: • Remove the PC Drum cover. • Disconnect connector PJ156 on the PC Drum Cover Interlock Switch (S118). • Insert a thickness gauge in the PC Drum Cover Interlock Switch (S118). Ensure that the thickness gauge is attracted to a magnet. • Check continuity through the PC Drum Cover Interlock Switch (S118) by measuring across P156-1 and P156-2. **Is the circuit open (reading infinity)?**	Do the following, one step at a time, until the problem is corrected: • Adjust the position of the PC Drum Cover Interlock Switch (S118), if necessary, to operate with the PC Drum Cover in place. • Install a new PR011 Card. • Install a new PC561 Card. • Repair a short circuit to ground in the wiring network described by the following end points: – PJ156-1 – PJ104-12 @	• Install a new PC Drum Cover Interlock Switch (S118). @

MAP 0231: Mag Brush Bias Error

Symptom Explanation	Conditions That Could Cause This Symptom
An out-of-range voltage condition was detected in the Mag Brush Bias circuit.	• The PC Drum or hub is causing arcing. • The PC Drum grounding is defective. • The High-Voltage Power Supply is defective. • The PR011 Card is defective. • The PC561 Card is defective. • The developer mix has debris in it. • The developer has a mechanical problem.

REFERENCES

- Removals & Adjustments - Drum Drive and Photoconductor (PC)
- Removals & Adjustments - Coronas & High Voltage Power Supply
- Removals & Adjustments - Developer
- Circuit Diagrams - CD70 - Mag Brush Bias
- Wiring Diagrams - WD26 - High Voltage to Coronas & Mag Brush Rolls
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run the **primary** print sample (1069). Run the test for a full box of paper to see if the error occurs during printing.

QUICK CHECKS

- Ensure that the PC Drum is installed correctly.

SERVICE CHECKS

1. Perform a Mag Brush Bias check.
2. Perform a developer to PC drum gap adjustment.
3. Visually inspect the PC drum and hubs for irregularities that could cause arcing. Deep scratches in the PC drum can cause arcs. Sometimes small metal shavings, burrs, or gouges on the edge of the drum or hubs can cause arcs.
4. Ensure that the rear drum seal is installed correctly. The metal part of the seal should not touch any metal surface of the developer.
5. Ensure that the PC drum grounding is good and that the grounding brush moves freely.
6. Dump the developer mix and thoroughly clean the developer. Ensure that the doctor blade, scraper blade, and developer to PC drum gap adjustments are correct. Install new developer mix.
7. Inspect the entire developer mechanism for damage or possible shorts to the mag brush bias.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
PC Drum	55%	1429	1976	1649
High Voltage Power Supply	15%	1429	1964	1568
PR011 Card	15%	1446	2118	1764
High voltage connector or cable	11%	- -	1964	1568
Mag Brush gap	02%	- -	- -	1659
PC Drum grounding	02%	- -	- -	1657
PC561 Card	---	1453	2116	1764
Foreign object in developer mix	---	- -	- -	- -

MAP 0231 BEGINS

Table 85. MAP 0231

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		

Table 85. MAP 0231 (continued)

Step	Questions/Actions	Yes	No
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
Step 1.	• Ensure that the PC Drum is installed correctly. • Run Driver Routine 0F from the Maintenance Panel. An error is indicated by **E137** on the Maintenance Panel. **Did an E137 error occur?**	Go to Step 2.	Go to Step 3.
Step 2.	• Disconnect the High Voltage Bias cable at CH2 on the High Voltage Power Supply. • Move the cable at least 25 mm (1 in.) away from CH2 to prevent arcing. • Run Driver Routine 0F from the Maintenance Panel. **Did an E137 error occur?**	• Install the following, one at a time, until the problem is corrected: – High Voltage Power Supply – PR011 Card • Repair any wiring problems in the Mag Brush Bias circuit. @	There must be a short in the bias circuit beyond the High Voltage Power Supply. The short could be in the wiring from the High Voltage Power Supply to the developer or in the developer itself. • Isolate the short and repair it. @
Step 3.	• Run the **primary** print sample (1069). Run the test for up to a box of paper. **Did an SRC 231 occur?**	Go to Step 4.	The problem is intermittent. Go to MAP 0001: Introduction.

Table 85. MAP 0231 (continued)

Step	Questions/Actions	Yes	No
Step 4.	You can make print samples with the Mag Brush Bias disconnected for debug purposes. The print will be lighter and there will be high background, but no 231 errors should occur if there is nothing defective in the High Voltage Power Supply circuit. • Disconnect the High-Voltage Bias cable at CH2 on the High Voltage Power Supply. • Move the cable at least 25 mm (1 in.) away from CH2 to prevent arcing. • Run the **primary** print sample (1069). Run the test for up to a box of paper. **Did an SRC 231 occur?**	Install the new parts listed below, one at a time, until the problem is corrected: • High Voltage Power Supply • PR011 Card • PC561 Card @	• Reconnect the Mag Brush Bias cable at CH2. • Do the SERVICE CHECKS one at a time. Repair or replace as necessary until the problem is solved. @

MAP 0232: Conveyor Roll Rotation Error

Symptom Explanation	Conditions That Could Cause This Symptom
The Conveyor Roll does not rotate.	• The Mag Brush Belt is defective or loose. • The Developer Mixing Paddle Belt is defective or loose. • A mechanical bind is preventing the Conveyor Roll from turning. Possible binding components are: – Mag Brush Rolls – Conveyor Roll – Idler pulleys • The Mag Brush Motor (M101) is defective. • The drive pulley on the Mag Brush Motor (M101) is loose or slipping. • The magnets are loose inside the Conveyor Roll. • The DV101 Card is defective. • The PC561 Card is defective.
The Conveyor Roll rotates, but the Conveyor Roll Rotation Sensor (S110) does not detect the rotation.	• The Conveyor Roll Rotation Sensor (S110) is defective. • The PC561 Card is defective. • The CPxxx Card is defective.

REFERENCES

- Removals & Adjustments - Developer
- Removals & Adjustments - Air System
- Circuit Diagrams - CD71 - Mag Brush Motor (M101) & Conveyor Roll Rotation Sensor (S110)
- Wiring Diagrams - WD13 - AC Motors M101, M104 & M108
- Wiring Diagrams - WD54 - Switches & Sensors - PC561 & PR011 Cards
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Print the **primary** print sample (1069). See if the error occurs during printing.

QUICK CHECKS

- Check to see if the Mag Brush Belt or Developer Mixing PaddleBelt is loose or broken.

SERVICE CHECKS

- Run Driver Routine 09. This routine runs the Mag Brush Motor (M101) for 5 seconds.
- Run Sensor Routine 57. This routine tests the operation of the Conveyor Roll Rotation Sensor (S110).

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Mag Brush Belt	35%	1425	2004	1608
Mag Brush Motor (M101)	30%	1425	2004	1610
Developer Mixing Paddle Belt	10%	1425	2002	1625
Conveyor Roll Rotation Sensor (S110)	07%	1425	1994	1603
Mag Brush Rolls	07%	1425	2000	1612
Conveyor Roll	06%	1427	2000	1599
DV101 Card	03%	1452	2118	1764
PC561 Card	01%	1453	2116	1764
CPxxx Card	01%	1453	2114	1760

MAP 0232 BEGINS

Table 86. MAP 0232

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
Step 1.	• SHUTDOWN AND POWER OFF THE PRINTER. • NOTE: You may be able to see the mag brush operate by removing the small cover at the rear of the developer. If not, continue. • Remove the Find Filter Case. • Check the condition and operation of the Mag Brush Belt. **Is the Mag Brush Belt installed and operating correctly?**	Go to Step 2.	• Repair or replace the Mag Brush Belt. @

Table 86. MAP 0232 (continued)

Step	Questions/Actions	Yes	No
Step 2.	• SHUTDOWN AND POWER OFF THE PRINTER. • Check the condition and operation of the Developer Mixing Paddle Belt. **Is the Developer Mixing Paddle Belt installed and operating correctly?**	Go to Step 3.	• Repair or replace the Developer Mixing Paddle Belt. @
Step 3.	• Install the Maintenance Panel extension cable for the following tests. • Power on the printer. • Run Driver Routine 09. • Observe the Conveyor Roll during the test. **Does the Conveyor Roll rotate correctly for at least 2 seconds during the test?**	Go to Step 4.	Go to Step 6.
Step 4.	The Conveyor Roll is rotating correctly, but there is a problem with the sensing circuit. • Measure the voltage between PJ131–3 (positive lead) and PJ131–5 (negative lead). **Is the voltage greater than +4.5 V dc?**	Go to Step 5.	Do the following, one step at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Repair an open circuit between: – PJ131–3 and PJ337–17 – PJ131–5 and PJ337–19 • Install a new PC561 Card. @

Table 86. MAP 0232 (continued)

Step	Questions/Actions	Yes	No
Step 5.	• Measure the voltage between PJ131–4 (positive lead) and PJ131–5 (negative lead). • Manually rotate the Mag Brush drive belt to cause the magnet on the Conveyor Roll pulley to rotate past the Conveyor Roll Rotation Sensor (S110). **Does the voltage change between approximately +5.0 V dc and 0 V dc as the magnet passes the sensor?**	Do the following, one step at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Install the new parts listed below, one at a time, until the problem is corrected: – PC561 Card – CPxxx Card @	Do the following, one step at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Repair an open circuit between one of the following pairs of connectors: – PJ143–1 and PJ131–3 – PJ143–2 and PJ131–4 – PJ131–4 and PJ337–18 – PJ143–3 and PJ131–5 • Install a new Conveyor Roll Rotation Sensor (S110). • Install a new PC561 Card. @
Step 6.	• Check for loose or broken pulleys on the Mag Brush Motor (M101) and the Conveyor Roll. **Are the Mag Brush Motor (M101) and Conveyor Roll pulleys OK?**	Go to Step 7.	• Adjust, repair, or replace as necessary. @

Table 86. MAP 0232 (continued)

Step	Questions/Actions	Yes	No
Step 7.	• Check for binds in any component driven by the Mag Brush Belt that would prevent the Conveyor Roll from rotating. Possible binding components are: – Mag Brush Rolls – Conveyor Roll – Idler pulleys **Does the mechanism operate correctly without binding?**	Go to Step 8.	• Adjust, repair, or replace as necessary. @
Step 8.	The Mag Brush Motor (M101) is a three-phase ac motor. You will be asked to make three voltage measurements in each of the following steps to determine if the correct ac voltage is present. • Run Driver Routine 09 and measure the voltage between the following connectors while the routine is running: – PJ342–2 and PJ342–1 – PJ342–2 and PJ342–4 – PJ342–1 and PJ342–4 **Are all three voltage measurements greater than 180 V ac?**	Go to Step 9.	There is a 200 V ac distribution problem. • SHUTDOWN AND POWER OFF THE PRINTER. Repair an open circuit between one of the following pairs of connectors: • TB451–1 and PJ452–1 and PJ342–4 • TB451–2 and PJ452–2 and PJ342–2 • TB451–3 and PJ452–3 and PJ342–1 @

Table 86. MAP 0232 (continued)

Step	Questions/Actions	Yes	No
Step 9.	• Run Driver Routine 09 and measure the voltage between the following connectors while the routine is running: – PJ343–8 and PJ343–2 – PJ343–9 and PJ343–9 – PJ343–2 and PJ343–9 **Are all three voltage measurements greater than 180 V ac?**	Do the following, one step at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Repair an open circuit between one of the following pairs of connectors: – PJ343–8 and PJ117–3 – PJ117–3 and PJ106–3 – PJ343–8 and PJ117–2 – PJ117–2 and PJ106–2 – PJ343–2 and PJ117–1 – PJ117–1 and PJ106–1 • Install a new Mag Brush Motor (M101). @	Go to Step 10.
Step 10.	• Run Driver Routine 09 and measure the voltage at PJ320–12 while the routine is running. **Does the voltage switch from approximately +24 V dc to 0 V dc when the routine runs?**	• SHUTDOWN AND POWER OFF THE PRINTER. • Install a new DV101 Card. @	Do the following, one step at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Repair an open circuit between PJ320–12 and PJ345–12. • Install a new PC561 Card. @

MAP 0233: Mag Roll Motor Thermal

Symptom Explanation	Conditions That Could Cause This Symptom
There is a problem with the Mag Brush Motor (M101) that is causing an over temperature condition.	• The Mag Brush Motor (M101) is defective. • A mechanical bind in the Mag Roll mechanism is causing an overload of the Mag Brush Motor (M101). • The Mag Brush Motor (M101) Gear Head is defective.
A Mag Brush Motor (M101) over temperature condition is detected, but the motor is not overheated.	• The thermal sensor in the Mag Brush Motor (M101), or the sensor wiring, is defective. • The PC561 Card is defective. • The +24VE circuit is open. • The dc power supply is defective.

REFERENCES

- Removals & Adjustments - Developer
- Circuit Diagrams - CD72 - Mag Brush Motor (M101) - Thermal Sense
- Wiring Diagrams - WD13 - AC Motors M101, M104 & M108
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Driver Routine 09. This routine operates the Mag Brush Motor (M101) and checks the operation of the motor and drive system. An error is indicated by **E13E** on the Maintenance Panel.
- Print the **alternate** print sample (1069). An error is indicated by an SRC 233 on the Display/Touch Screen or by **E03E** on the Maintenance Panel.
- Switch machine power off and on to run the power-on diagnostics. An error is indicated by an SRC 233 on the Display/Touch Screen or by **E03E** on the Maintenance Panel.

QUICK CHECKS

- Determine if the Mag Brush Motor (M101) is actually hot, or if the over temperature error is false.

SERVICE CHECKS

- Run Driver Routine 09. This routine operates the Mag Brush Motor (M101) and checks the operation of the motor and drive system.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Mag Brush Motor (M101)	70%	1425	2004	1610
Mag Roll drive mechanism	15%	- -	2004	- -
Mag Brush Motor (M101) Gear Head	10%	1425	2004	1610
DC Power Supply	03%	1458	2138	1758
PC561 Card	01%	1453	2116	1764
PR011 Card	01%	1446	2118	1764
DV101 Card		1452	2118	1764

MAP 0233 BEGINS

Table 87. MAP 0233

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
Step 1.	This step determines if the Mag Brush Motor (M101) is actually overheating, or if the errors are false. • Run the machine long enough to create the failure again. **Is the Mag Brush Motor (M101) overheating?**	There is a problem with the Mag Brush Motor (M101) that is causing it to overheat. Do the following, one step at a time, until the problem is corrected: • Check for a bind in the Mag Roll drive mechanism. • Install a new Mag Brush Motor (M101). • Install a new Mag Brush Motor (M101) Gear Head. • Install a new DV101 Card. @	Go to Step 2.

Table 87. MAP 0233 (continued)

Step	Questions/Actions	Yes	No
Step 2.	The thermal errors are false, caused by a failure in the thermal sensing circuit. • Measure the voltage at PJ130–1. **Is the voltage +24 V dc?**	Go to Step 3.	Go to Step 4.
Step 3.	• SHUTDOWN AND POWER OFF THE PRINTER. • Disconnect connector PJ130. • Measure the resistance between J130–1 and J130–2 (the motor side of the connector). **Is there continuity between J130–1 and J130–2?**	• Install a new PC561 Card. @	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between: – PJ118–1 and PJ130–1 – PJ118–2 and PJ130–2 • Install a new Mag Brush Motor (M101). @
Step 4.	• Measure the voltage at PJ337–9. **Did the voltage measure +24 V dc?**	Do the following, one step at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Repair an open circuit between PJ130–1 and PJ337–10. • Install a new PC561 Card. @	Do the following, one step at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Repair an open circuit between PJ344–10 and PJ105–3. • Install a new PC561 Card. • Install a new PR011 Card. @

MAP 0234: Toner Overfeed Error

Symptom Explanation	Conditions That Could Cause This Symptom
The Toner concentration, as measured by the Toner Control Sensor (S107) is too high. The error is posted when the toner control voltage at TP1 is +0.8 V dc higher than the TP1 setpoint for **Toner P/N 1402828**, or TP1 is +0.6 V dc higher than the TP1 setpoint for **Toner P/N 1402717**. (See Toner Control Adjustment for the TP1 setpoint.)	• The CPxxx Card is defective. • The Toner Control Sensor (S107) is defective. • The DV061 Card is defective. • No Developer Mix is installed, or the wrong Developer Mix was installed. • The magnetic roll punch marks are installed upside down.

REFERENCES

- Removals & Adjustments - Developer
- Circuit Diagrams - CD73 - Toner Control Sensor (S107) & Toner Feed Motor (M102)
- Wiring Diagrams - WD30 - Toner Feed Motor (M102)

FIX VERIFICATION

- After you have fixed the cause of the 234 error, you must add new Developer Mix if TP1 on the CPxxx card is above 3.1 V dc for **Toner P/N 1402828**, or above 4.0 V dc for **Toner P/N 1402717**.
- Print the **primary** print sample (1069). See if the error occurs during printing. Monitor TP1 on the CPxxx Card to ensure that the toner control circuit is OK.

QUICK CHECKS

- Attempt to reduce the toner concentration by printing several all grey print samples. If the toner overfeed error has occurred in Printer 2 of a duplex system, it may be necessary to run print samples on Printer 2 while in dual simplex mode.
- Add new Developer Mix. If new Developer Mix does not fix the problem, continue with this MAP.

SERVICE CHECKS

- Measure the toner control voltage at TP1 on the CPxxx Card while the Developer is running. A voltage outside a range of the TP1 setpoint +0.8V dc for **Toner P/N 1402828** or +0.6 V dc for **Toner P/N 1402717** causes an error to be posted. (See Toner Control Adjustment for the TP1 setpoint.)

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Developer Mix	35%	- -	- -	- -
DV061 Card	30%	1453	2114	1764
CPxxx Card	20%	1453	2114	1760
Toner Control Sensor (S107)	12%	1428	1992	1634
Toner Feed Motor (M102)	02%	1425	2008	1639
Toner Feed Shaft Pulley	01%	1425	2006	1639

Hint

If the developer has just been worked on, ensure that the punch mark on the end of the mag brush roll shaft is at the top of the slot.

MAP 0234 BEGINS

Table 88. MAP 0234

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Print the **primary** print sample (1069). Run the test for up to a full box of paper. **Did an SRC 234 occur?**	Go to Step 2.	The problem is intermittent. Go to MAP 0001: Introduction.
Step 2.	• Measure the voltage between PJ113–1 and ground while the developer is running. **Was the voltage 24 V dc?**	Go to Step 3.	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between PJ113–1 and PJ323–1. • Install a new DV061 Card. @
Step 3.	• Measure the voltage at TP1 on the CPxxx Card while the developer is running. (See Toner Control Adjustment for the TP1 setpoint.) **Was the voltage greater than the TP1 setpoint of +0.6 V dc for *Toner P/N 1402828*, or +0.4 V dc for *Toner P/N 1402717*?**	Go to Step 4.	Go to Step 6.

Table 88. MAP 0234 (continued)

Step	Questions/Actions	Yes	No
Step 4.	• Check the toner feed shaft while the developer is running. You can see the end of this shaft from the front of the developer. It is to the right of the developer input chute. The shaft should not rotate; it should remain stationary. **Does the shaft remain stationary?**	Go to Step 5.	The toner feed motor is running when it should not. After you correct the toner feeding problem, add new developer mix. Otherwise, 234 errors will continue to appear because of the build up of the toner in the developer. Do the following, one step at a time, until the problem is corrected: • Install a new DV061 Card. • Install a new CPxxx Card. • Correct any wiring problem in the Toner Feed Motor (M102) circuit. @

Table 88. MAP 0234 (continued)

Step	Questions/Actions	Yes	No
Step 5.	• Dump the developer mix and install new, unused mix. • Perform the toner control adjustments on the CPxxx Card. (Do not reinstall the old developer mix in the printer after you complete the adjustment.) • If you are not able to adjust the CPxxx Card to specifications, do the following, one at a time, until you can make the adjustment: – Install a new CPxxx Card. – Repair any shorts to ground between PJ334–1 and PJ334–3. – Install a new Toner Control Sensor (S107). – Repair any damage or blockage of the Toner Control Sensor (S107) chute and mechanism. • Print the **primary** print sample (1069). Run up to a full box while you monitor the voltage at TP1. If the voltage reaches the TP1 setpoint +0.6 V dc, stop the print sample. @ **Did TP1 stay below the TP1 setpoint +0.6 V dc for *Toner P/N 1402828*, or +0.4 V dc for *Toner P/N 1402717*?**	The actions taken during this step corrected the problem.	Do the following, one step at a time, until the problem is corrected: • Install a new CPxxx Card if you have not already installed one. • Install a new DV061 Card. • A problem in the developer is allowing excess toner to reach the developer mix. Correct the mechanical problem in the developer. • Repair an open circuit between PJ329 and PJ302. @

Table 88. MAP 0234 (continued)

Step	Questions/Actions	Yes	No
Step 6.	• Dump the developer mix and install new, unused mix. • Perform the toner control adjustments on the CPxxx Card. (Do not reinstall the old developer mix in the printer after you complete the adjustment.) **Were you able to make the toner control adjustments?**	The actions taken during this step corrected the problem.	Go to Step 7.
Step 7.	• Disconnect PJ334 on the CPxxx Card. • Check for continuity between J334–1 and J334–3. **Is there approximately 30 ohms?**	• Install a new CPxxx Card. @	Do the following, one step at a time, until the problem is corrected: • Check for an open between PJ334 and the Toner Control Sensor (S107). • Install a new Toner Control Sensor (S107). @

MAP 0235: Toner Underfeed Error

Symptom Explanation	Conditions That Could Cause This Symptom
The Toner concentration as measured by the Toner Control Sensor (S107) is too low. This error is posted when the toner control voltage at TP1 is less than the TP1 setpoint of −0.7 V dc for **Toner P/N 1402828**, or −0.6 V dc for **Toner P/N 1402717**. (See Toner Control Adjustment for the TP1 setpoint.)	• The Toner Feed Scraper Blade is installed incorrectly, or is defective. • The Toner Feed Belt is defective. • The Toner Feed Motor (M102) is defective. • An “add toner” condition is not sensed because of a defective Toner Empty Sensor (S108) circuit. • The Toner Feed Motor (M102) gear head assembly is defective. • The toner feed mechanism is defective. • The toner is caking in the toner hopper. • The CPxxx Card is defective. • The DV061 Card is defective. • The Toner Control Sensor (S107) is defective. • The Developer Mix is insufficient. (Check for mix leaking into the drain hose.) • The wrong kind of Developer Mix was installed. • The conveyor roll is not correctly installed or is defective. • Mag Brush Rolls A and B are worn. • The magnetic roll punch marks are installed upside down.

REFERENCES

- Removals & Adjustments - Developer
- Circuit Diagrams - CD73 - Toner Control Sensor (S107) & Toner Feed Motor (M102)
- Wiring Diagrams - WD30 - Toner Feed Motor (M102)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Print the **primary** print sample (1069). See if the error occurs during printing.

  Note: Many of the failures identified with this MAP result in toner underfeed. To recover from a lack of toner condition after you make a repair, run Adjusting Routine C3 from the Maintenance Panel. It runs the developer and feed toner until the control voltage at TP1 reaches the correct value.

QUICK CHECKS

1. Incorrect phase rotation can cause a 235 error. Phase rotation can be checked by looking at the mag brush rotation. Mag brush A should rotate clockwise. Mag brush B should rotate counterclockwise.
2. Insufficient developer mix in the developer can cause a 235 error. Check the developer mix drain hose for mix that may have been accidentally drained or has leaked out. If you are not sure that the developer contains a full load of mix, dump the mix and refill with new mix.
3. If the print is extremely light or there is high background, dump the developer mix and install new mix.
4. If repairs were made on the developer immediately before this problem, ensure that the conveyor roll and mag brush rolls have been installed in the correct positions and that the angles are set correctly.

SERVICE CHECKS

- Measure the toner control voltage at TP1 on the CPxxx Card while you run the developer. A voltage 0.7 V dc less than the TP1 setpoint for **Toner P/N 1402828**, or 0.6 V dc less than the TP1 setpoint for **Toner P/N 1402717** causes a 235 error to be posted. (See Toner Control Adjustment for the TP1 setpoint.)
- Run Driver Routine 0A from the Maintenance Panel. Check to see if the toner feed mechanism operates.
- Run Adjustment Routine C3 from the Maintenance Panel to recover from a lack of toner condition. It runs the developer and feed toner until the control voltage at TP1 on the CPxxx Card reaches the correct value.
- Inspect the toner hopper to see if an **add toner** condition was sensed. You can run Sensor Routine 58 from the Maintenance Panel to check the operation of the sensor circuit.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Toner Feed Scraper Blade	45%			
Toner Feed Belt	10%	1425	2010	1637
Toner Empty Sensor (S108)	08%	1428	2008	1635
Toner Feed Motor (M102)	06%	1425	2010	1639
Toner Feed Motor (M102) Gear Head	06%		2010	1639
Mag Brush Roll A	05%	1425, 1427	2000	1612
Mag Brush Roll B	05%	1425, 1427	2000	1612
Toner Control Sensor (S107)	04%	1428	1992	1634
Toner Feed Mechanism	03%	1428	- -	1639
CPxxx Card	03%	1453	2114	1760
DV061 Card	03%	1453	2114	1764
Toner Feed Shaft Pulley	01%	1425		1641
Conveyor Roll	01%	1427	2000	1599
Developer Mix	---	- -	- -	- -
Toner caking	---	- -	- -	- -

MAP 0235 BEGINS

Note: Many of the failures identified with this MAP result in toner underfeed. To recover a toner underfeed error after you make a repair, run Adjusting Routine C3 from the Maintenance Panel. It runs the developer and feed toner until the control voltage at TP1 on the CPxxx Card reaches the correct value.

Table 89. MAP 0235

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.**		

Table 89. MAP 0235 (continued)

Step	Questions/Actions	Yes	No
Step 1.	• Do the QUICK CHECKS. • Print the **primary** print sample (1069). Run the test for 3000 pages. **Did an SRC 235 occur?**	Go to Step 2.	If you took corrective action during the QUICK CHECKS, this appears to have solved the problem. If you took no actions in the QUICK CHECKS, the problem is intermittent. Go to MAP 0001: Introduction.
Step 2.	• Check to see if the toner feed control shaft is turning while the developer runs. Press the “Developer Run” button on the front of the developer to run the developer for about a minute. The toner control shaft is located below and to the right of the scavenger roll. **Does the shaft turn?**	Go to Step 3.	Go to Step 7.
Step 3.	• Measure the voltage between TP1 and TPG on the CPxxx Card while the developer is running. (See Toner Control Adjustment for the TP1 setpoint.) **Was the voltage less than the TP1 setpoint of −0.5 V dc for Toner P/N 1402828, or −0.4 V dc for Toner P/N 1402717?**	Go to Step 4.	• Install a new CPxxx Card. @

Table 89. MAP 0235 (continued)

Step	Questions/Actions	Yes	No
Step 4.	**Was the voltage greater than 0.2 V dc?**	Go to Step 5.	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between PJ334 and the Toner Control Sensor (S107). • Install a new Toner Control Sensor (S107). • Install a new CPxxx Card. @
Step 5.	• Run Driver Routine 0A from the Maintenance Panel. • Check to see if the toner feed shaft rotates. The end of this shaft can be seen from the front of the developer and is located to the right of the developer input chute. Driver Routine 0A runs the toner feed motor for 5 seconds. **Did the shaft rotate at least one full rotation?**	Go to Step 6.	Go to Step 8.

Table 89. MAP 0235 (continued)

Step	Questions/Actions	Yes	No
Step 6.	• Run Adjustment Routine C3 from the Maintenance Panel. This runs the developer and feeds toner until the control voltage at TP1 reaches the correct value. • Monitor TP1 while Adjustment Routine C3 is running. If the voltage does not rise at least 0.2 V dc every minute, stop the routine and answer No to the next question. **Did C3 complete successfully?**	The routing found no trouble. Feeding toner corrected the temporary problem.	Go to Step 9.
	DANGER **<5> High-voltage is present. Use care while working in this area.**		

Table 89. MAP 0235 (continued)

Step	Questions/Actions	Yes	No
Step 7.	• Measure the voltage between PJ113–1 and ground while the developer is running. **Was the voltage more than 24 V dc?**	Do the following, one step at a time, until the problem is corrected: • Check the Toner Feed Belt. Adjust or replace it as necessary. • Correct any wiring problems from PJ113 to the Toner Feed Motor (M102). • The toner feed shaft that is driven by the Toner Feed Motor (M102) should turn with light to moderate force. If this mechanism is binding, repair or replace the binding component. Removing the Toner Feed Belt may aid in isolating the failing item. • Install a new Toner Feed Motor (M102). @	Do the following, one step at a time, until the problem is corrected: • Install a new DV061 Card. • Correct any wiring problems in the Toner Feed Motor (M102). • Install a new CPxxx Card. @
	DANGER **<5> High-voltage is present. Use care while working in this area.**		

Table 89. MAP 0235 (continued)

Step	Questions/Actions	Yes	No
Step 8.	• Measure the voltage between PJ113–1 and ground while you run Driver Routine 0A. **Was the voltage +24 V dc?**	Do the following, one step at a time, until the problem is corrected: • Check the Toner Feed Belt. Adjust or replace it as necessary. • Correct any wiring problems from PJ113 to the Toner Feed Motor (M102). • The toner feed mechanism should turn with moderate to heavy force. If the mechanism (including the gearhead and pulley) is binding, repair or replace the failing component. Removing the Toner Feed Belt may aid in isolating the binding item. • Install a new Toner Feed Motor (M102). @	Do the following, one step at a time, until the problem is corrected: • Install a new Driver Card (DV061). • Correct any wiring problems in the toner feed circuit. @

Table 89. MAP 0235 (continued)

Step	Questions/Actions	Yes	No
Step 9.	The toner feed roll is turning, but no increase in toner concentration is being sensed. • Pull the developer out on its rails and remove the toner hopper cover. • Check the toner hopper to see if an **add toner** condition was not sensed. **Was toner covering the toner feed shaft?**	Go to Step 10.	The Toner Empty Sensor (S108) circuit did not sense an "Add Toner" condition. Do the following, one step at a time, until the problem is corrected: • If toner is caking on the Toner Empty Sensor (S108), repair, replace, or adjust the sensor or the paddle in the toner hopper. • Install a new Toner Empty Beat Plate. • Install a new Toner Empty Sensor (S108). • Install a new CPxxx Card. • Correct any wiring problems between the Toner Empty Sensor (S108) and the CPxxx Card. • Correct any wiring problems between the CPxxx Card and the 12 V dc supply. @

Table 89. MAP 0235 (continued)

Step	Questions/Actions	Yes	No
Step 10.	• Dump the developer mix and install new, unused mix. • Perform the Toner Control adjustments on the CPxxx Card. Do not reinstall the old developer mix in the printer after the adjustment is complete. If it is impossible to adjust to the correct values on the CPxxx Card, do the following, one at a time, until you can make the adjustment: – Remove the mag brushes and conveyor roll. – Verify that toner is getting into the mix by turning the toner feed roll manually. If the toner that is being dumped into the mix does not appear to be enough, check the following parts for wear and correct adjustment: - Toner Feed Shaft - Toner Feed Plate - Toner Feed Scraper – Install a new Mag Brush Roll A and B. – Install a new CPxxx Card. – Repair any shorts to ground in the circuit from PJ132 to PJ334. – Install a new Toner Control Sensor (S107). – Repair any damage or blockage of the Toner Control Sensor (S107) chute and mechanism. – Clean out the developer mix, correct any problems found. Install and adjust all items that could affect the mix flow. – If you find no problem, install a new conveyor roll. @		

MAP 0236 Toner Feed Motor Over Current

Symptom Explanation	Conditions That Could Cause This Symptom
The Driver Card (DV061) has detected that the Toner Feed Motor (M102) is drawing too much current.	• The Toner Feed Motor driver circuit is defective. • The over current detection circuit is defective. • The Toner Feed Motor (M102) is defective. • There are binds in the toner feed shaft, drive train or gear box.

REFERENCES

- Removals & Adjustments - Developer
- Circuit Diagrams - CD73 - Toner Control Sensor (S107) & Toner Feed Motor (M102)
- Wiring Diagrams - WD30 - Toner Feed Motor (M102)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run the **primary** print sample (1069) to see if the error occurs during printing.

QUICK CHECKS

- None

SERVICE CHECKS

- Run Driver Routine 04.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Toner Feed Motor (M102)	65%	1425	2010	1639
DV061 Card	20%	1453	2114	1764
CPxxx Card	10%	1453	2114	1760
DC Power Supply	5%	1450	2122	1758

MAP 0236 BEGINS

Table 90. MAP 0236

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Reset CB2 on the DV061 Card. • Run Driver Routine 0A while you visually inspect the toner feed drive. **Does the belt appear to be driving the toner feed roll smoothly?**	Go to Step 2.	• Check the belt adjustment and correct it if it is out of adjustment. • Repair any binds in the toner feed roll and other parts driven by the belt.

Table 90. MAP 0236 (continued)

Step	Questions/Actions	Yes	No
Step 2.	• Measure the voltage at PJ113–1 and at PJ113–2. **Is the voltage 23.5 V dc at both pins?**	Go to Step 3.	Do the following, one step at a time, until the problem is corrected: • Repair a short circuit in the wiring between: – PJ121–3 and PJ323–1 – PJ121–6 and PJ323–2 • Install a new DV061 Card. • Install a new Toner Feed Motor (M102). • Install a new DC Power Supply. @
Step 3.	• Run Driver Routine 0A again. **Did an SRC 236 occur?**	Do the following, one step at a time, until the problem is corrected: • Repair a short circuit in the wiring between PJ329–30 and PJ302–30. • Install a new DV061 Card. • Install a new CPxxx Card. @	The problem is intermittent. Go to MAP 0001: Introduction.

MAP 0241: Primary Erase Lamp Never On

Symptom Explanation	Conditions That Could Cause This Symptom
The Erase Lamp detection circuit did not detect the erase lamp after the “ER LMP1 ON” signal was sent to the lamp starter.	• The Erase Lamp (PL101) is defective. • The Erase Lamp Starter (ST101) is defective. • The Erase Lamp Sensor (S115) is defective. • The PR011 Card is defective. • The Power Supply is defective. • There is an open in the 24 V dc to the Lamp Starter. • There is an open in the lamp sensor circuit.

REFERENCES

- Removals & Adjustments - Erase Lamp
- Circuit Diagrams - CD38 - Erase Lamp (PL101) - Starter (ST101) & Sensor (S115)
- Wiring Diagrams - WD25 - Erase Lamp (PL101) and Usage Meter
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Print the **primary** print sample (1069). See if the error occurs during printing.

QUICK CHECKS

- None

SERVICE CHECKS

- Run Driver Routine 0B from the Maintenance Panel. An error is indicated by **E1D3** on the Maintenance Panel.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Primary Erase Lamp (PL101)	80%	1429	1964	1662
Primary Erase Lamp Starter (ST101)	16%	1446	1964	1666
PR011 Card	01%	1446	2118	1764
Primary Erase Lamp Sensor (S115)	01%	1443	1964	1664
DC Power Supply	01%	1450	1964	1758

MAP 0241 BEGINS

Table 91. MAP 0241

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Run Driver Routine 0B from the Maintenance Panel. An error is indicated by E1D3 on the Maintenance Panel. **Did an E1D3 error occur?**	Go to Step 2.	The problem is intermittent. • Install a new Erase Lamp (PL101). If the problem remains intermittent, install the following, one at a time, until the problem is corrected: • Primary Erase Lamp Starter (ST101) • Primary Erase Lamp Sensor(S115) • Power Supply • PR011 Card @

Table 91. MAP 0241 (continued)

Step	Questions/Actions	Yes	No
Step 2.	• Remove the erase lamp cover to gain access to the Erase Lamp Sensor. • Run Sensor Routine 5C from the Maintenance Panel. • Shine a flashlight or high-intensity light on the Erase Lamp Sensor. For correct operation of the sensing circuit, the Maintenance Panel should change between on and off as the flashlight is directed off and on the sensor. **Does the sensor operate correctly?**	Go to Step 3.	Go to Step 4.
Step 3.	The 24 V dc supply to the lamp starter could be the problem. • Measure the voltage between P159-2 and P159-3. **Was the voltage greater than 20 V dc?**	Do the following, one at a time, until the problem is corrected: • Install a new Erase Lamp. • Install a new Erase Lamp Starter. • Install a new PR011 Card. • Repair any wiring problem in the erase lamp circuit from the PR011 Card to the lamp. @	• Repair an open circuit between: – PJ159–2 and PJ457–1 – PJ159–3 and PJ457–3 • Install a new dc power supply. @

Table 91. MAP 0241 (continued)

Step	Questions/Actions	Yes	No
Step 4.	The problem appears to be in the sensing circuit, because the Sensor Routine did not detect the flashlight. • Measure the voltage between P125-1 and P125-2 as you move a flashlight over the sensor. **Does the voltage change from approximately 5 V dc to less than 2.5 V dc when the sensor goes from dark to light?**	• SHUTDOWN AND POWER OFF THE PRINTER. • Install a new PR011 Card. @	Go to Step 5.
Step 5.	• Unplug the Primary Erase Lamp Sensor at PJ125 and measure the voltage between P125-1 and P125-2. **Is the voltage approximately 5 V dc?**	• Install a new Erase Lamp Sensor (S115). @	• SHUTDOWN AND POWER OFF THE PRINTER. • Do the following, one at a time, until the problem is corrected: – Install a new PR011 Card. – Repair the wiring from the PR011 Card to the erase Lamp Sensor. @

MAP 0243: Primary Erase Lamp Always On

Symptom Explanation	Conditions That Could Cause This Symptom
The Erase Lamp (PL101) detection circuit detects the erase lamp when no “ER LMP1 ON” signal is active.	• The Erase Lamp Starter (ST101) is defective. • The Erase Lamp Sensor (S115) is defective. • The PR011 Card is defective. • If printer covers are open, a bright light or flash of light near the printer can cause this error. • The “ER LMP1 ON” line is shorted to ground.

REFERENCES

- Removals & Adjustments - Erase Lamp
- Circuit Diagrams - CD38 - Erase Lamp (PL101) - Starter (ST101) & Sensor (S115)
- Wiring Diagrams - WD25 - Erase Lamp (PL101) and Usage Meter
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Print the **primary** print sample (1069). See if the error occurs during printing.

QUICK CHECKS

- If printer covers are open, a bright light or flash of light near the printer can cause this error. Eliminate or block the source of light.

SERVICE CHECKS

- Run Driver Routine 0B from the Maintenance Panel. An error is indicated by **E1D4** on the Maintenance Panel.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Erase Lamp Starter (ST101)	90%	1446	1964	1666
Erase Lamp Sensor (S115)	07%	1443	1964	1664
PR011 Card	02%	1446	2118	1764
Other	01%	- -	- -	- -

MAP 0243 BEGINS

Table 92. MAP 0243

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	Run Driver Routine 0B from the Maintenance Panel. An error is indicated by **ExD4** on the Maintenance Panel. **Did an ExD4 error occur?**	Go to Step 2.	The problem is intermittent. If printer covers are open, a bright light or flash of light near the printer can cause this error. Eliminate or block possible sources of bright or flashing lights around the printer. Inform the customer of the possibility of this machine check if there are bright or flashing lights while the printer covers are open.
Step 2.	**Is the Erase Lamp on all the time?**	Go to Step 3.	Go to Step 4.

Table 92. MAP 0243 (continued)

Step	Questions/Actions	Yes	No
Step 3.	• Replace the Erase Lamp Starter. • Run Driver Routine 0B to see if a different starter eliminates the problem. An error is indicated by **ExD4**. @ **Did an ExD4 error occur?**	The problem remains, even with a good lamp starter. The control card or wiring to the lamp starter are defective. • SHUTDOWN AND POWER OFF THE PRINTER. • Do the following, one at a time, until the problem is corrected: – Install a new PR011 Card. – Repair or replace the wiring from the PR011 Card to the Erase Lamp Starter. @	The Erase Lamp Starter was defective. The actions taken during this step corrected the problem.
Step 4.	The problem appears to be in the sensing circuit, because the lamp is off but is detected as being on. • Measure the voltage between P125-1 and P125-2 as you move a flashlight over the sensor. **Does the voltage change from approximately 5 V dc to less than 2.5 V dc when the sensor goes from dark to light?**	• SHUTDOWN AND POWER OFF THE PRINTER. • Install a new PR011 Card. @	Go to Step 5.

Table 92. MAP 0243 (continued)

Step	Questions/Actions	Yes	No
Step 5.	• Unplug the Erase Lamp Sensor at PJ125. • Measure the voltage between P125-1 and P125-2. **Is the voltage approximately 5 V dc?**	• SHUTDOWN AND POWER OFF THE PRINTER. • Install a new Erase Lamp Sensor (S115). @	• SHUTDOWN AND POWER OFF THE PRINTER. • Do the following, one at a time, until the problem is corrected: – Install a new PR011 Card. – Repair the cabling from the PR011 Card to the Erase Lamp Sensor (S115). @

MAP 0251: Cleaner Brush Rotation Error

Symptom Explanation	Conditions That Could Cause This Symptom
The Hall sensor on the drive hub of the Cleaner Brush does not detect brush rotation.	• The Cleaner Brush is missing or improperly installed. • The Cleaner Brush Drive Belt is defective or loose. • The DV101 Card is defective. • The Cleaner Brush Motor (M108) is defective. • The drive pulley on the Cleaner Brush Motor (M108) is slipping. Motor and pulley are replaced as one assembly. • The Power Supply is defective. • The Cleaner Brush Rotation Sensor (S104) is defective. • The PR011 Card is defective. • The PC561 Card is defective.

REFERENCES

- Removals & Adjustments - Cleaner
- Circuit Diagrams - CD56 - Cleaner Brush Motor (M108) & Rotation Sensor (S104)
- Wiring Diagrams - WD13 - AC Motors M101, M104 & M108
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Print the **primary** print sample (1069). See if the error occurs during printing.

QUICK CHECKS

- Check to see if the cleaner brush is installed correctly.

SERVICE CHECKS

- Run Driver Routine 04 from the Maintenance Panel. An error is indicated by a display of **Ex40** This routine also displays the brush speed if an error is not posted. Normal brush speed is 1100 ±150 rpm.
- Run Sensor Routine51.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Cleaner Brush Drive Belt	50%	1446	1968	1503
Cleaner Brush Motor (M108)	40%	1446	1968	1503
Cleaner Brush Hub	05%	1446	1966	1498
DV101 Card	01%	1452	2118	1764
Cleaner Brush Sensor (S104)	01%	1446	1968	1505
PR011 Card	01%	1446	2118	1764
PC561 Card	01%	1453	2116	1764
AC Power Supply	01%	1450	2122	1757
Cleaner Brush	---	1446	1966	1498

MAP 0251 BEGINS

Table 93. MAP 0251

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Check to see if the cleaner brush is installed correctly. • Run Driver Routine 04 from the Maintenance Panel. An error is indicated by **Ex40** on the Maintenance Panel. **Did an Ex40 error occur?**	Go to Step 3.	Go to Step 2.
Step 2.	• Run Driver Routine 05 from the Maintenance Panel. An error is indicated by **Ex40**. **Did an Ex40 error occur?**	Do the following, one at a time, until the problem is corrected: • Install a new DV101 Card. • Install a new PC561 Card. @	The problem is intermittent. Go to MAP 0001: Introduction.
Step 3.	• Check to see if the brush is turning while Driver Routine 04 is running. **Did the brush turn?**	Go to Step 4.	Go to Step 7.

Table 93. MAP 0251 (continued)

Step	Questions/Actions	Yes	No
Step 4.	• Remove the front cap of the cleaner station. The front cleaner brush hub should turn easily and the sensor magnet on the outside of the rear drive cone should rotate as the hub is turned. **Does the front hub turn easily?**	Go to Step 5.	• If the hub is binding or the magnet does not rotate when the hub is turned, repair or replace the hub. @
Step 5.	There must be a problem in the Cleaner Brush Rotation Sensor (S104) circuit. • Measure the voltage between PJ104-16 and PJ104-18 on the PR011 Card. **Was the voltage approximately +5 V dc?**	Go to Step 6.	• Install a new PR011 Card. @
Step 6.	• Measure the voltage between PJ101-17 and PJ104-18 as the magnet is rotated slowly clockwise past the Cleaner Brush Rotation Sensor (S104). **Is there a voltage change between approximately +5 V dc and 0 as the magnet goes past the sensor?**	Do the following, one at a time, until the problem is corrected: • Install a new PR011 Card. • Install a new PC561 Card. • Repair an open circuit between PJ102-59 and PJ336-31. @	Do the following, one at a time, until the problem is corrected: • Install a new Cleaner Brush Rotation Sensor (S104). • Correct any wiring problem from PJ104 to the Cleaner Brush Rotation Sensor. @
	DANGER **<5> High-voltage is present. Use care while working in this area.**		

Table 93. MAP 0251 (continued)

Step	Questions/Actions	Yes	No
Step 7.	• Measure the voltage between the pins listed below while Driver Routine 04 is running. – PJ120-1 to PJ120-2 – PJ120-1 to PJ120-3 **Was there more than 180 V ac on both measurements?**	Do the following, one at a time, until the problem is corrected: • Repair an open between PJ320-14 and PJ345-14 • Inspect the cleaner brush drive belt. Adjust or replace if necessary. • The drive hub and the front hub for the cleaner brush should both turn with light to moderate force. If they are binding, repair or replace the item that is binding. • Install a new Cleaner Brush Motor (M108). @	Do the following, one at a time, until the problem is corrected: • Install a new DV101 Card. • Install a new PC561 Card. • Correct any wiring problem in the Cleaner Brush Motor drive circuit. Check for opens between: – PJ120-1 to PJ343-3 – PJ120-2 to PJ343-18 – PJ120-3 to PJ343-19 – PJ342-4 to PJ452-1 – PJ342-2 to PJ452-2 – PJ342-1 to PJ452-3 – PJ320-13 to PJ345-13 • Install a new printer ac power supply. @

MAP 0252: Cleaner Brush Motor Thermal

Symptom Explanation	Conditions That Could Cause This Symptom
An over temperature condition is sensed in the Cleaner Brush Motor (M108).	• The Cleaner Brush Motor (M108) is defective. • The drive mechanism on the Cleaner Brush Motor (M108) is binding. • The PR011 Card is defective. • The DV101 Card is defective. • The DV061 Card is defective.

REFERENCES

- Removals & Adjustments - Cleaner
- Circuit Diagrams - CD57 - Cleaner Brush Motor (M108) - Thermal Sense
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Driver Routine 04 from the Maintenance Panel. An error is indicated by **ExE3** on the Maintenance Panel. This routine also displays the brush speed if an error is not posted.
- Print the **primary** print sample (1069) for a full box of paper.

QUICK CHECKS

- None

SERVICE CHECKS

- None

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Cleaner Brush Motor (M108)	50%	1446	1968	1503
Cleaner Brush Drive mechanism	46%	1446	1968	1503
PR011 Card	02%	1446	2118	1764
DV101 Card	01%	1452	2118	1764
DV061 Card	01%	1453	2114	1764
Cleaner Brush	---	1446	1966	1498

MAP 0252 BEGINS

Table 94. MAP 0252

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• SHUTDOWN AND POWER OFF THE PRINTER. Remove the rear cover to gain access to the cleaner brush motor. Locate connector PJ134. • If a 252 error occurs, measure the resistance at PJ134, quickly, before the motor cools down and resets the thermal. • Carefully check the Cleaner Brush Motor (M108) by touch to see if it is hot. If the motor is hot, wait a few minutes to let the motor cool down and give the thermal a chance to reset. • Power on the printer. **Was an E046 error posted in the Maintenance Panel?**	Go to Step 2.	Go to Step 3.

Table 94. MAP 0252 (continued)

Step	Questions/Actions	Yes	No
Step 2.	• SHUTDOWN AND POWER OFF THE PRINTER. • Disconnect PJ134. • Measure the resistance between P134-1 and P134-2. **Is the thermal open (greater than 10 ohms resistance)?**	• Install a new Cleaner Brush Motor (M108). @	Do the following, one at a time, until the problem is corrected: • Repair an open circuit between: – PJ134-1 and PJ104-25 – PJ134-2 and PJ104-26 • Install a new PR011 Card. @
Step 3.	• SHUTDOWN AND POWER OFF THE PRINTER. • Remove the PC Drum and store in a drum bag or box. • Cover the developer area with a piece of paper to prevent toner from the cleaner housing from falling into it. • Open the front cap on the cleaner station. • Turn the front hub. The front hub should turn easily with light force. **Does the front hub turn easily?**	Go to Step 4.	• Repair or replace the item that is binding the front hub. @

Table 94. MAP 0252 (continued)

Step	Questions/Actions	Yes	No
Step 4.	• Remove the cleaner brush. • Turn the rear hub. The rear cleaner brush hub in the cleaner housing should turn easily with light force. **Does the rear hub turn easily?**	Go to Step 5.	• Repair or replace the item that is binding the rear hub. Removing the cleaner motor belt may aid in isolating the binding item. • If the cleaner brush and housing are packed with toner, clean the housing thoroughly and install a new brush. @
Step 5.	It is normal for the cleaner housing to have loose toner covering most of its surfaces and for the cleaner brush to be loaded with toner. It is not normal for the cleaner brush and housing to be packed with toner to the extent that the brush cannot turn easily. **Is the condition of the cleaner brush and housing normal?**	Go to Step 6.	Do the following: • Thoroughly clean the cleaner housing and air passage. • Install a new cleaner brush. • Ensure that the cleaner housing home position is correct. • Ensure the cyclone blower air system is OK. • If a 252 error still occurs during FIX VERIFICATION, go to Step 7. @

Table 94. MAP 0252 (continued)

Step	Questions/Actions	Yes	No
Step 6.	• Reinstall the cleaner brush. • Reinstall the PC Drum. • Print the **primary** print sample (1069) for a full box. **Did a 252 error occur?**	Go to Step 7.	The problem is intermittent. Go to MAP 0001: Introduction.
Step 7.	• SHUTDOWN AND POWER OFF THE PRINTER. • Disconnect PJ134 to check the thermal line. • Measure the resistance between PJ134-1 and PJ134-2. **Is the resistance greater than 10 ohms?**	Do the following, one at a time, until the problem is corrected: • Install a new Cleaner Brush Motor (M108). • Install a new DV101 Card. • Install a new DV061 Card. • Correct any wiring problems in the Cleaner Brush Motor (M108) drive circuit. @	Do the following, one at a time, until the problem is corrected: • Correct any wiring problems from PJ134 to PJ104. • Install a new PR011 Card. @

MAP 0253: Cleaner Housing Never Homes

Symptom Explanation	Conditions That Could Cause This Symptom
The Home position of the Cleaner Housing is not detected.	• The Cleaner Housing Position Switch (S103) is defective. • The Cleaner Housing Position mechanism is defective. • The Cleaner Housing Motor (M106) is defective. • The PR011 Card is defective. • The DV101 Card is defective. • The PC561 Card is defective. • The Cleaner Housing Position Switch adjustment is not correct.

REFERENCES

- Removals & Adjustments - Cleaner
- Circuit Diagrams - CD58 - Cleaner Housing Motor (M106) & Position Switch (S103)
- Wiring Diagrams - WD33 - Cleaner Housing Motor (M106)
- Wiring Diagrams - WD54 - Switches & Sensors - PC561 & PR011 Cards
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Driver Routine 03 from the Maintenance Panel. An error is indicated by **Ex44** on the Maintenance Panel. Ensure that the cleaner housing is centered in the front cap hole when at home position.

QUICK CHECKS

- None

SERVICE CHECKS

- Run Driver Routine 03 from the Maintenance Panel. An error is indicated by **Ex44** on the Maintenance Panel.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Cleaner Housing Motor (M106)	50%	1446	1968	1507
Cleaner Housing Mechanism	35%	1446	1968	1507
Cleaner Position Switch (S103)	12%	1446	1968	1507
DV101 Card	01%	1452	2118	1764
PC561 Card	01%	1453	2116	1764
PR011 Card	01%	1446	2118	1764
S103 adjustment	---	1446	1968	1507

MAP 0253 BEGINS

Table 95. MAP 0253

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Run Driver Routine 03 from the Maintenance Panel. An error is indicated by **Ex44** on the Maintenance Panel. **Did an Ex44 error occur?**	Go to Step 2.	The problem is intermittent. Go to MAP 0001: Introduction.

Table 95. MAP 0253 (continued)

Step	Questions/Actions	Yes	No
Step 2.	• Open the front cap to the cleaner station. Driver Routine 03 moves the cleaner housing approximately 12 mm (0.5 in.) to one side and then the other, and stops with the cleaner housing centered in the middle of the front cap opening. The cleaner housing may move back and forth two to four times and still be considered to have normal motion. • Watch the cleaner housing while Driver Routine 03 is running. **Was the cleaner housing motion normal?**	Do the following, one at a time, until the problem is corrected: • Repair an open circuit between: – PJ104–14 and PJ146–1 – PJ104–15 and PJ146–2 – PJ102–30 and PJ336–30 • Check the Cleaner Housing Position Switch adjustment and correct any problem found. • Install a new Cleaner Housing Position Switch (S103). • Install a new PR011 Card. @	Do the following, one at a time, until the problem is corrected: • Remove the Cleaner Housing Motor (M106) and ensure that the cleaner housing mechanism moves back and forth without binding. Correct any problems found. • Repair an open circuit between: – PJ320–1 and PJ345–1 – PJ320–2 and PJ345–2 – PJ320–3 and PJ345–3 – PJ324 and PJ122 (all pins) • Install a new Cleaner Housing Motor (M106). • Install a new DV101 Card. • Install a new PC561 Card. @

MAP 0254: Cleaner Housing Motor Driver

Symptom Explanation	Conditions That Could Cause This Symptom
A hardware checker has detected that the driver for the cleaner housing motor is not solid.	• The DV101 Card is defective. • The PC561 Card is defective.

REFERENCES

- Removals & Adjustments - Cleaner
- Circuit Diagrams - CD58 - Cleaner Housing Motor (M106) & Position Switch (S103)

FIX VERIFICATION

- Run the **primary** print sample (1069). See if the error occurs during printing.

QUICK CHECKS

- Install the new parts listed under POSSIBLE FAILING PARTS OR ADJUSTMENTS, one at a time, until the problem is corrected.

SERVICE CHECKS

- None

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
DV101 Card	80%	1452	2118	1764
PC561 Card	20%	1453	2116	1764

MAP 0256: Cleaner Housing Always at Home

Symptom Explanation	Conditions That Could Cause This Symptom
The Home position of the Cleaner Housing is detected when the housing should be moving.	• The Cleaner Housing Position Switch (S103) is defective. • The Cleaner Housing Position mechanism is defective. • The Cleaner Housing Motor (M106) is defective. • The PR011 Card is defective. • The DV101 Card is defective. • The PC561 Card is defective. • The Cleaner Housing Position Switch adjustment is not correct.

REFERENCES

- Removals & Adjustments - Cleaner
- Circuit Diagrams - CD58 - Cleaner Housing Motor (M106) & Position Switch (S103)
- Wiring Diagrams - WD33 - Cleaner Housing Motor (M106)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Driver Routine 03 from the Maintenance Panel. An error is indicated by **E109**, **E143**, or **E144** on the Maintenance Panel. Ensure that the cleaner housing is centered in the front cap hole when at home position.

QUICK CHECKS

- None

SERVICE CHECKS

- Run Driver Routine 03 from the Maintenance Panel. An error is indicated by **E109**, **E143**, or **E144** on the Maintenance Panel.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Cleaner Housing Motor (M106)	50%	1446	1968	1507
Cleaner Housing Mechanism	35%	1446	1968	1507
Cleaner Position Switch (S103)	12%	1446	1968	1507
DV101 Card	01%	1452	2118	1764
PC561 Card	01%	1453	2116	1764
PR011 Card	01%	1446	2118	1764
S103 adjustment	---	1446	1968	1507

MAP 0256 BEGINS

Table 96. MAP 0256

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Shutdown the printer. When `Shutdown is complete` appears on the Display/Touch Screen , continue with the next step. • Run Driver Routine 03 from the Maintenance Panel. An error is indicated by **Ex09**, **Ex43**, or **Ex44**. **Did an Ex09, Ex43, or Ex44 error occur?**	Go to Step 2.	The problem is intermittent. Go to MAP 0001: Introduction.

Table 96. MAP 0256 (continued)

Step	Questions/Actions	Yes	No
Step 2.	• Open the front cap to the cleaner station. Driver Routine 03 moves the cleaner housing approximately 12 mm (0.5 in.) to one side and then the other, and stops with the cleaner housing centered in the middle of the front cap opening. The cleaner housing may move back and forth for two to four times and still be considered to have normal motion. • Watch the cleaner housing while Driver Routine **03** is running. **Was the cleaner housing motion normal?**	• Do the following, one at a time, until the problem is corrected: – Correct any wiring problems in the Cleaner Housing Position Switch circuit. – Check the Cleaner Housing Position Switch adjustment and correct any problem you find. – Install a new Cleaner Housing Position Switch. – Install a new PR011 Card. @	• Do the following, one at a time, until the problem is corrected: – Remove the Cleaner Housing Motor (M106) and ensure that the cleaner housing mechanism moves back and forth without binding. Correct any problems you find. – Install a new Cleaner Housing Motor (M106). – Install a new DV101 Card. – Install a new PC561 Card. – Correct any wiring problems in the Cleaner Housing Motor (M106) drive circuit. @

MAP 0264: Cyclone Blower Motor Thermal

Symptom Explanation	Conditions That Could Cause This Symptom
There is a problem with the Cyclone Blower Motor (M104) that is causing an over temperature condition.	• A restriction in the air flow to the Cyclone Blower is causing an overload of the Cyclone Blower Motor (M104). • A mechanical bind in the Cyclone Blower is causing an overload of the Cyclone Blower Motor. • The Cyclone Blower Motor is defective.
An Cyclone Blower Motor over temperature condition is detected, but the motor is not overheated.	• The thermal sensor in the Cyclone Blower Motor, or the sensor wiring is defective. • The PC561 Card is defective.

REFERENCES

- Removals & Adjustments - Air System
- Circuit Diagrams - CD54 - Cyclone Blower Motor (M104) - Thermal Sense
- Wiring Diagrams - WD13 - AC Motors M101, M104 & M108
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Driver Routine 02. An error is indicated by **Ex45** on the Maintenance Panel.
- Print the **alternate** print sample (1069). An error is indicated by an SRC 264 on the Display/Touch Screen or by **E045** on the Maintenance Panel.
- Switch machine power off and on to run the power-on diagnostics. An error is indicated by an SRC 264 on the Display/Touch Screen .

QUICK CHECKS

- Determine if the Cyclone Blower Motor (M104) is actually hot, or if the over temperature error is false.
- Check for restrictions in the air flow to the Cyclone Blower.

SERVICE CHECKS

- Run Driver Routine 02. This routine operates the Cyclone Blower Motor and checks the operation of the motor and drive system.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Restriction in air flow	50%	- -	- -	1491
Mechanical binding the Cyclone Blower	25%	- -	- -	1491
Cyclone Blower Motor (M104)	22%	1448	2040	1490
DV101 Card	02%	1452	2118	1764
PC561 Card	01%	1453	2116	1764

MAP 0264 BEGINS

Table 97. MAP 0264

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		

Table 97. MAP 0264 (continued)

Step	Questions/Actions	Yes	No
Step 1.	This step determines if the Cyclone Blower Motor (M104) is actually overheating, or if the errors are false. • Run the printer long enough to create the failure again. **Is the Cyclone Blower Motor (M104) overheating?**	There is a problem with the Cyclone Blower Motor (M104) that is causing it to overheat. Do the following, one step at a time, until the problem is corrected: • Check for a restriction in the air flow to the Cyclone Blower. • Check for a mechanical bind in the Cyclone Blower. • Install a new Cyclone Blower Motor (M104). • Install a new DV101 Card. • Install a new PC561 Card. @	Go to Step 2.
Step 2.	The thermal errors are false and are caused by a failure in the thermal-sensing circuit. • SHUTDOWN AND POWER OFF THE PRINTER. • Disconnect connector PJ124. • Measure the resistance between PJ124-1 and PJ124-2 (the motor side of the connector). **Is there continuity between P124-1 and P124-2?**	Do the following, one step at a time, until the problem is corrected: • Check for a loose connector PJ337 on the PC561 Card. • Install a new PC561 Card. • Repair an open circuit between: – PJ124–1 and PJ337–8 – PJ124–2 and PJ337–9 – PJ342–1 and PJ452–3 @	• Install a new Cyclone Blower Motor (M104). @

MAP 0266: Cyclone Blower Rotation Error

Symptom Explanation	Conditions That Could Cause This Symptom
The Cyclone Blower does not rotate.	• The Cyclone Blower Drive Belt is defective or loose. • A mechanical bind is preventing the Cyclone Blower from turning. • The Cyclone Blower Motor (M104) is defective. • The drive pulley on the Cyclone Blower Motor (M104) is loose or slipping. • The ac power supply is defective. • The PC561 Card is defective. • The DV101 Card is defective.
The Cyclone Blower rotates, but the Cyclone Blower Rotation Sensor (S116) does not detect the rotation.	• The Cyclone Blower Rotation Sensor (S116) is out of adjustment or is defective. • The PC561 Card is defective.

REFERENCES

- Removals & Adjustments - Air System
- Circuit Diagrams - CD55 - Cyclone Blower Motor (M104) & Rotation Sensor (S116)
- Wiring Diagrams - WD13 - AC Motors M101, M104 & M108
- Wiring Diagrams - WD47-2 - Process Sensors (S11x)
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Print the **primary** print sample (1069). See if the error occurs during printing.

QUICK CHECKS

- Check to see if the Cyclone Blower belt is loose or broken.

SERVICE CHECKS

- Run Driver Routine 02. This routine runs the Cyclone Blower Motor for 5 seconds.
- Run Sensor Routine 50. This routine tests the operation of the Cyclone Blower Rotation Sensor (S116).

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Cyclone Blower Drive Belt	35%	1448	2040	1488
Cyclone Blower Drive Pulleys	20%	1448		1488
Cyclone Blower Motor (M104)	20%	1448	2040	1490
Cyclone Blower Rotation Sensor (S116)	10%	1448	2040	1493
AC Power Supply	07%	1450	2122	1757
DV101 Card	04%	1452	2118	1764
PC561 Card	01%	1453	2116	1764

MAP 0266 BEGINS

Table 98. MAP 0266

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Check the condition and operation of the Cyclone Blower drive belt. **Is the belt installed and operating correctly?**	Go to Step 2.	• Repair or replace the Cyclone Blower drive belt. @
Step 2.	• Run Driver Routine 02. • Observe the Cyclone Blower during the test. **Does the Cyclone Blower rotate during the test?**	Go to Step 3.	Go to Step 4.
Step 3.	• Run Sensor Routine 50. **Does the cyclone blower rotation sensor work correctly?**	The Cyclone Blower is rotating correctly, but there is a problem with the sensing circuit. Do the following, one step at a time, until the problem is corrected: • Install a new Cyclone Blower Rotation Sensor (S116). • Install a new PC561 Card. @	Do the following, one step at a time, until the problem is corrected: • Check for an open circuit in PJ342 and PJ452. • Install a new Cyclone Blower Motor (M104). @

Table 98. MAP 0266 (continued)

Step	Questions/Actions	Yes	No
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
Step 4.	• Check connector PJ343 for proper connection. **Is the connector properly connected?**	Go to Step 5.	• Ensure that all connectors are properly connected.
	DANGER **<5> High-voltage is present. Use care while working in this area.**		

Table 98. MAP 0266 (continued)

Step	Questions/Actions	Yes	No
Step 5.	• Run Driver Routine 02 while you check for line voltage across each phase at PJ343 pins 1, 5, and 7. **Is the voltage correct?**	Do the following, one step at a time, until the problem is corrected: • Check for loose or broken pulleys on the Cyclone Blower Motor (M104) and the Cyclone Blower. • Check for binds in the Cyclone Blower that would prevent it from rotating. • Install a new Cyclone Blower Motor (M104). • Install a new DV101 Card. • Install a new PC561 Card. @	• Use the wiring diagrams (1261) to determine which of the following parts has failed: – Wiring between the Cyclone Blower Motor (M104) and the Power Supply – Power Supply – DV101 Card

MAP 0281: Preheat Over Temperature

Symptom Explanation	Conditions That Could Cause This Symptom
The Preheat Platen overheated.	• The Preheat Platen sense switch or thermistor is defective. • The Solid State Relay (SR601), Solid State Relay (SR602), or Solid State Relay (SR603) is defective. • There is an open circuit in the wiring. • The DV071 Card is defective. • The CPxxx Card is defective. • The FU041 Card is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD28 - Preheat Platen
- Wiring Diagrams - WD17 - AC Distribution To Preheat Platen
- Wiring Diagrams - WD58 - Fuser Sensors
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Driver Routine 30. This routine measure the time required for the preheater to reach operating temperature.
- Power off and power on the printer; wait 10 minutes. An error is indicated by an SRC 281 on the Display/Touch Screen or by **E0Ab** on the Maintenance Panel.

QUICK CHECKS

- None

SERVICE CHECKS

- Run Driver Routine 30. This routine measure the time required for the preheater to reach operating temperature.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Preheat Platen	25%	1431	2056	1727
Solid State Relay (SR601)	20%	1437	2074	1745
Solid State Relay (SR602)	20%	1437	2074	1745
Solid State Relay (SR603)	20%	1437	2074	1745
DV071 Card	05%	1437	2048	1764
CPxxx Card	05%	1453	2114	1760
FU041 Card	05%	1442	2118	1764

MAP 0281 BEGINS

Table 99. MAP 0281

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		

Table 99. MAP 0281 (continued)

Step	Questions/Actions	Yes	No
Step 1.	Perform the following steps: • SHUTDOWN AND POWER OFF THE PRINTER. • Disconnect connector PJ616. • Disconnect connector PJ719. • Check for continuity between the following pairs: – J616–19 and PJ715–1 – J616–20 and PJ715–2 – J719–1 and PJ334–7 – J719–2 and PJ334–8 – J719–3 and PJ334–9 – J719–4 and PJ334–10 – J719–5 and PJ334–11 – J719–6 and PJ334–12 **Is there continuity between each pair?**	Go to Step 2.	• Repair an open circuit between any of the pairs of points that did not have continuity.
Step 2.	• With connector PJ719 disconnected, check the resistance of thermistors THA, THB, and THC across the following pairs: – P719–1 and P719–2 – P719–3 and P719–4 – P719–5 and P719–6 **Is there approximately 30K ohms resistance across each pair?**	Go to Step 3.	• Install a new Preheat Platen. @

Table 99. MAP 0281 (continued)

Step	Questions/Actions	Yes	No
Step 3.	• Allow the Preheat Platen to cool to room temperature. • Disconnect connector PJ715. • Check for continuity between between J715–1 and J715–2. **Note:** The Over Temperature Sensor (S713) is closed (low resistance) when the Preheat Platen is cooled to room temperature. **Is the resistance between J715–1 and J715–2 less than 20 ohms (not an open circuit)?**	Go to Step 4.	The Over Temperature Sensor (S713) has failed. • Install a new Preheat Platen. @
Step 4.	An open circuit between PJ609–3 and PJ637–3 causes an **E0Ab** error. **Is there continuity between PJ609–3 and PJ637–3?**	Go to Step 5.	• Repair the open circuit. • Reconnect PJ616 and PJ719.
Step 5.	• Reconnect PJ616 and PJ719. • Power on the printer and allow it 10 minutes to warm up. The Preheat Over Temperature Switch (S713) opens when the Preheat Platen has exceeded its operating temperature. This occurs about 10 minutes after you power on the printer. • Measure the voltage between PJ616–19 and ground. **Is the voltage +24 V dc?**	Go to Step 6.	• Install the new parts listed below, one at a time, until the problem is corrected: – DV071 Card. – Solid State Relay (SR601) – Solid State Relay (SR602) – Solid State Relay (SR603) – FU041 Card – CPxxx Card @

Table 99. MAP 0281 (continued)

Step	Questions/Actions	Yes	No
Step 6.	• Measure the voltage between PJ616–20 and ground. **Is the voltage less than 1 volt?**	Install the new parts listed below, one at a time, until the problem is corrected: • Solid State Relay (SR601) • Solid State Relay (SR602) • Solid State Relay (SR603) • FU041 Card • CPxxx Card @	Install the new parts listed below, one at a time, until the problem is corrected: • DV071 Card • FU041 Card @

MAP 0282: Preheat A/B Under Temperature

Symptom Explanation	Conditions That Could Cause This Symptom
The Preheat Platen A/B failed to reach operating temperature in 15 minutes .	• The Preheat Platen A/B heating element or thermistor is defective. • The Solid State Relay (SR601) or Solid State Relay (SR602) is defective. • The DV071 Card is defective. • The FU041 Card is defective. • The Power Supply is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD28 - Preheat Platen
- Wiring Diagrams - WD17 - AC Distribution To Preheat Platen
- Wiring Diagrams - WD58 - Fuser Sensors
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Driver Routine 30. This routine measures the time required for the Preheaters to reach operating temperature.
- Print the **alternate** print sample (1069). An error is indicated by an SRC 282 on the Display/Touch Screen or by **E0AE** on the Maintenance Panel.

QUICK CHECKS

- None

SERVICE CHECKS

- Run Driver Routine 30. This routine measures the time required for the Preheaters to reach operating temperature.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Preheat Platen	50%	1431	2056	1727
Solid State Relay (SR601)	15%	1437	2074	1745
Solid State Relay (SR602)	15%	1437	2074	1745
DV071 Card	10%	1437	2048	1685
Power Supply	05%	1450	2122	1757
FU041 Card	05%	1442	2118	1764

MAP 0282 BEGINS

Table 100. MAP 0282

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• SHUTDOWN AND POWER OFF THE PRINTER. • Measure the resistance between: – PJ609-11 and PJ637-11 – PJ609-12 and PJ637-12 **Is there continuity in these connector pairs?**	Go to Step 2.	Repair an open circuit between one of the following pairs of connectors: • PJ609-11 and PJ637-11 • PJ609-12 and PJ637-12 @
Step 2.	• Disconnect connector PJ717. • Measure the resistance between the following pairs of connectors: – J717–1 and J717–2 – J717–3 and J717–4 **Is the resistance between these connectors between 50 and 70 ohms?**	Go to Step 3.	• Install a new Preheat Platen. @

Table 100. MAP 0282 (continued)

Step	Questions/Actions	Yes	No
Step 3.	• Reconnect connector PJ717. • Power on the printer. **DANGER** **<5> High-voltage is present. Use care while working in this area.** Measure the voltage between the following pairs: • SR601–2 and PJ717–2 • SR602–2 and PJ717–4 **Is the voltage 200 V ac?**	Go to Step 4.	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between the following pairs: – PJ485–1 and PJ717–2 – PJ485–2 and SR601–2 – PJ485–5 and PJ717–4 – PJ485–6 and SR602–2 • Install a new power supply. @
Step 4.	Measure the voltage between the following pairs: • SR601–3 and SR601–4 • SR602–3 and SR602–4 The voltage can fluctuate between 0 and 5 V dc several times in a minute. **Is the voltage 5 V dc?**	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between: – SR601–1 and PJ717–1 – SR602–1 and PJ717–3 • Install a new solid state relay (SR601). • Install a new solid state relay (SR602). @	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between: – SR601–4 and PJ616–12 – SR601–3 and PJ616–15 – SR602–4 and PJ616–13 – SR602–3 and PJ616–15 • Install a new DV071. • Install a new FU041. @

MAP 0284: Preheat C Under Temperature

Symptom Explanation	Conditions That Could Cause This Symptom
The Preheat Platen (C) failed to reach operating temperature in 15 minutes (5 minutes if Forms Control switch is set to C (Plastic).)	• The Preheat Platen (C) heating element or thermistor is defective. • The Solid State Relay (SR603) is defective. • The DV071 Card is defective. • The Power Supply is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD28 - Preheat Platen
- Wiring Diagrams - WD17 - AC Distribution To Preheat Platen
- Wiring Diagrams - WD58 - Fuser Sensors
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Driver Routine 30. This routine measures the time required for the Preheaters to reach operating temperature.
- Print the **alternate** print sample (1069). An error is indicated by an SRC 284 on the Display/Touch Screen or by **E0AF** on the Maintenance Panel.

QUICK CHECKS

- None

SERVICE CHECKS

- Run Driver Routine 30. This routine measures the time required for the Preheaters to reach operating temperature.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Preheat Platen	50%	1431	2056	1727
Solid State Relay (SR603)	20%	1437	2074	1745
DV071 Card	15%	1437	2048	1685
Power Supply	10%	1450	2122	1757
FU041 Card	05%	1442	2118	1764

MAP 0284 BEGINS

Table 101. MAP 0284

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• SHUTDOWN AND POWER OFF THE PRINTER. • Measure the resistance between PJ609-13 and PJ637-13. **Is there continuity between PJ609-13 and PJ637-13?**	Go to Step 2.	• Repair an open circuit between PJ609-13 and PJ637-13 @

Table 101. MAP 0284 (continued)

Step	Questions/Actions	Yes	No
Step 2.	• Disconnect connector PJ717. • Measure the resistance between J717–5 and J717–6. **Is the resistance between 50 and 70 ohms?**	Go to Step 3.	• Install a new Preheat Platen. @
Step 3.	• Reconnect connector PJ717. • Power on the printer. **DANGER** **<5> High-voltage is present. Use care while working in this area.** • Measure the voltage between SR603–2 and PJ717–6. **Is the voltage 200 V ac?**	Go to Step 4.	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between the following pairs of connectors: – PJ485–4 and SR603–2 – PJ485–3 and PJ717–6 • Install a new power supply. @

Table 101. MAP 0284 (continued)

Step	Questions/Actions	Yes	No
Step 4.	• Measure the voltage between SR603–3 and SR603–4. The voltage can fluctuate between 0 and 5V dc several times in a minute. **Is the voltage 5 V dc?**	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between SR603–1 and PJ717–5. • Install a new solid state relay (SR603). @	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between: – SR603–4 and PJ616–14 – SR603–3 and PJ616–15 • Install a new DV071. • Install a new FU041. @

MAP 0286: Preheat Element ’A’ Lost Temperature

Symptom Explanation	Conditions That Could Cause This Symptom
The Preheat Platen element ‘A’ lost temperature after having been warm.	• The Preheat Platen heating element or thermistor is defective. • The Solid State Relay (SR601) is defective. • PJ717–1 has an open circuit. • PJ717–2 has an open circuit. • PJ716–1 has an open circuit. • PJ716–2 has an open circuit. • The DV071 Card is defective. • The CPxxx Card is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD28 - Preheat Platen
- Wiring Diagrams - WD17 - AC Distribution To Preheat Platen
- Wiring Diagrams - WD58 - Fuser Sensors
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Driver Routine 30. This routine measures the time required for the Preheaters to reach operating temperature.
- Print the **alternate** print sample (1069). An error is indicated by an SRC 286 on the Display/Touch Screen or by **E0b8** on the Maintenance Panel.

QUICK CHECKS

- None

SERVICE CHECKS

- Run Driver Routine 30. This routine measures the time required for the Preheaters to reach operating temperature.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Preheat Platen	65%	1431	2056	1727
Solid State Relay (SR601)	20%	1437	2074	1745
DV071 Card	10%	1437	2048	1685
CPxxx Card	05%	1453	2114	1760

MAP 0286 BEGINS

Table 102. MAP 0286

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		

Table 102. MAP 0286 (continued)

Step	Questions/Actions	Yes	No
Step 1.	• Check for a loose connector at PJ616, PJ716, and PJ717. **Are all of the connectors correctly connected?**	• Repair an open circuit between – PJ334–7 and PJ719–1 – PJ334–8 and PJ719–2 • Replace the following, one at a time, until the problem is corrected: – Preheat Platen – Solid State Relay (SR601) – DV071 Card – CPxxx Card @	• Connect the open connector.

MAP 0287: Preheat Element ’B’ Lost Temperature

Symptom Explanation	Conditions That Could Cause This Symptom
The Preheat Platen element ‘B’ lost temperature after having been warm.	• The Preheat Platen heating element or thermistor is defective. • The Solid State Relay (SR602) is defective. • PJ717–3 has an open circuit. • PJ717–4 has an open circuit. • PJ716–5 has an open circuit. • PJ716–6 has an open circuit. • The DV071 Card is defective. • The CPxxx Card is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD28 - Preheat Platen
- Wiring Diagrams - WD17 - AC Distribution To Preheat Platen
- Wiring Diagrams - WD58 - Fuser Sensors
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Driver Routine 30. This routine measures the time required for the Preheaters to reach operating temperature.
- Print the **alternate** print sample (1069). An error is indicated by an SRC 286 on the Display/Touch Screen or by **E0b4** on the Maintenance Panel.

QUICK CHECKS

- None

SERVICE CHECKS

- Run Driver Routine 30. This routine measures the time required for the Preheaters to reach operating temperature.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Preheat Platen	65%	1431	2056	1727
Solid State Relay (SR602)	15%	1437	2074	1745
DV071 Card	10%	1437	2048	1685
CPxxx Card	05%	1453	2114	1760
Connector PJ717	02%	1435	- -	- -
Connector PJ716	02%	1435	- -	- -
Connector PJ616	01%	1473	- -	- -

MAP 0287 BEGINS

Table 103. MAP 0287

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
Step 1.	• Check for a loose connector at PJ616, PJ716, and PJ717. **Are all of the connectors correctly connected?**	• Repair an open circuit between: – PJ334–9 and PJ719–3 – PJ334–10 and PJ719–4 • Replace the following, one at a time, until the problem is corrected: – Preheat Platen – Solid State Relay (SR602) – DV071 Card – CPxxx Card @	• Connect the open connector.

MAP 0288: Preheat Element ’C’ Lost Temperature

Symptom Explanation	Conditions That Could Cause This Symptom
The Preheat Platen element ‘C’ lost temperature after having been warm.	• The Preheat Platen heating element or thermistor is defective. • The Solid State Relay (SR603) is defective. • PJ717–5 has an open circuit. • PJ717–6 has an open circuit. • PJ716–3 has an open circuit. • The DV071 Card is defective. • The CPxxx Card is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD28 - Preheat Platen
- Wiring Diagrams - WD17 - AC Distribution To Preheat Platen
- Wiring Diagrams - WD58 - Fuser Sensors
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Driver Routine 30. This routine measures the time required for the Preheaters to reach operating temperature.
- Print the **alternate** print sample (1069). An error is indicated by an SRC 286 on the Display/Touch Screen or by **E0b2** on the Maintenance Panel.

QUICK CHECKS

- None

SERVICE CHECKS

- Run Driver Routine 30. This routine measures the time required for the Preheaters to reach operating temperature.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Preheat Platen	65%	1431	2056	1727
Solid State Relay (SR603)	15%	1437	2074	1745
DV071 Card	10%	1437	2048	1685
CPxxx Card	05%	1453	2114	1760
Connector PJ717	02%	1435	- -	- -
Connector PJ716	02%	1435	- -	- -
Connector PJ616	01%	1473	- -	- -

MAP 0288 BEGINS

Table 104. MAP 0288

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
Step 1.	• Check for a loose connector at PJ616, PJ716, and PJ717. **Are all of the connectors correctly connected?**	• Repair an open circuit between: – PJ334–11 and PJ719–5 – PJ334–12 and PJ719–6 • Replace the following, one at a time, until the problem is corrected: – Preheat Platen – Solid State Relay (SR602) – DV071 Card – CPxxx Card @	• Connect the open connector.

MAP 028A: Thermistor 1 Over Temperature

Symptom Explanation	Conditions That Could Cause This Symptom
The Hot Roll Thermistor 1 temperature is too high (greater than 220°C).	• Thermistor (S621) has failed. • The CPxxx Card has failed. • The FU041 Card has failed.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD31 - Hot Roll Temperature Control Thermistors (S621 - S622 - S623)
- Wiring Diagrams - WD57 - Fuser Thermistors

FIX VERIFICATION

- POR the printer to see if the error occurs again during the power-on sequence.

QUICK CHECKS

- Visually inspect the hot roll temperature control sensor (S701) and the associated cabling.
- Visually inspect thermistors (S621, S622, S623) and the associated cabling if they are installed.
- Visually inspect the hot roll.
- Visually inspect the fuser filter and upper fuser fans (B701 and B702).

SERVICE CHECKS

- POR the printer. An error is indicated by a Maintenance Panel display of **E0bA**.

CAUTION:
<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

- Check the gap between the thermistor and the hot roll. See Hot Roll Thermistors (S621, S622, S623) for the correct thermistor gap.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Thermistor (S621)	40%	1431	2078	1708
CPxxx Card	40%	1453	2114	1760
FU041	15%	1442	2118	1764
Wiring	5%	---	---	---

MAP 028A BEGINS

Table 105. MAP 028A

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		

Table 105. MAP 028A (continued)

Step	Questions/Actions	Yes	No
	CAUTION: **<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.**		
Step 1.	• Perform the QUICK CHECKS and SERVICE CHECKS. **Did you find a problem?**	• Repair the problem and perform the FIX VERIFICATION.	Go to Step 2.
Step 2.	• Without disconnecting the connector, check the voltage at PJ6015–2. **Is the voltage above 0.1 Vdc?**	Go to Step 3.	Go to Step 4.
Step 3.	• Without disconnecting the connector, check the voltage at PJ6015–2. **Is the voltage below 4.5 Vdc?**	• Replace the following, one at a time, until the problem is corrected: – CPxxx card – FU041 card – Thermistor (S621) @	• Install a new thermistor (S621). @
Step 4.	• Without disconnecting the connector, check the voltage at PJ6015–1. **Is the voltage +5 Vdc?**	• Do the following, one at a time, until the problem is corrected: – Repair an open circuit between PJ6015 and the thermistor (S621). – Install a new thermistor (S621). @	• Do the following, one at a time, until the problem is corrected: – Repair an open circuit between: - PJ6015 and PJ334 - PJ310–9 and PJ461–9 – Install a new CPxxx card. @

MAP 028B: Thermistor 2 Over Temperature

Symptom Explanation	Conditions That Could Cause This Symptom
The Hot Roll Thermistor 2 temperature is too high.	• Thermistor (S622) has failed. • The CPxxx Card has failed. • The FU041 Card has failed.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD31 - Hot Roll Temperature Control Thermistors (S621 - S622 - S623)
- Wiring Diagrams - WD57 - Fuser Thermistors

FIX VERIFICATION

- POR the printer to see if the error occurs again during the power-on sequence.

QUICK CHECKS

- Visually inspect the hot roll temperature control sensor (S701) and the associated cabling.
- Visually inspect thermistors (S621, S622, S623) and the associated cabling if they are installed.
- Visually inspect the hot roll.
- Visually inspect the fuser filter and upper fuser fans (B701 and B702).

SERVICE CHECKS

- POR the printer. An error is indicated by a Maintenance Panel display of **E0bA**.

CAUTION:
<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

- Check the gap between the thermistor and the hot roll. See Hot Roll Thermistors (S621, S622, S623) for the correct thermistor gap.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Thermistor (S622)	40%	1431	2078	1708
CPxxx Card	40%	1453	2114	1760
FU041 Card	15%	1442	2118	1764
Wiring	5%	---	---	---

MAP 028B BEGINS

Table 106. MAP 028B

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	CAUTION: **<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.**		
Step 1.	• Perform the QUICK CHECKS and SERVICE CHECKS. **Did you find a problem?**	• Repair the problem and perform the FIX VERIFICATION.	Go to Step 2.
Step 2.	• Without disconnecting the connector, check the voltage at PJ6016–2. **Is the voltage above 0.1 Vdc?**	Go to Step 3.	Go to Step 4.
Step 3.	• Without disconnecting the connector, check the voltage at PJ6016–2. **Is the voltage below 4.5 Vdc?**	• Replace the following, one at a time, until the problem is corrected: – CPxxx card – FU041 card – Thermistor (S622) @	• Install a new thermistor (S622). @

Table 106. MAP 028B (continued)

Step	Questions/Actions	Yes	No
Step 4.	• Without disconnecting the connector, check the voltage at PJ6016–1. **Is the voltage +5 Vdc?**	• Do the following, one at a time, until the problem is corrected: – Repair an open circuit between PJ6016 and the thermistor (S622). – Install a new thermistor (S622). @	• Do the following, one at a time, until the problem is corrected: – Repair an open circuit between PJ6016 and PJ334. – Install a new CPxxx card. @

MAP 028C: Thermistor 3 Over Temperature

Symptom Explanation	Conditions That Could Cause This Symptom
The Hot Roll Thermistor 3 temperature is too high.	• Thermistor (S623) has failed. • The CPxxx card has failed. • The FU041Card has failed.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD31 - Hot Roll Temperature Control Thermistors (S621 - S622 - S623)
- Wiring Diagrams - WD57 - Fuser Thermistors

FIX VERIFICATION

- POR the printer to see if the error occurs again during the power-on sequence.

QUICK CHECKS

- Visually inspect the hot roll temperature control sensor (S701) and the associated cabling.
- Visually inspect thermistors (S621, S622, S623) and the associated cabling if they are installed.
- Visually inspect the hot roll.
- Visually inspect the fuser filter and upper fuser fans (B701 and B702).

SERVICE CHECKS

- POR the printer. An error is indicated by a Maintenance Panel display of **E0bA**.

CAUTION:
<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

- Check the gap between the thermistor and the hot roll. See Hot Roll Thermistors (S621, S622, S623) for the correct thermistor gap.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Thermistor (S623)	40%	1431	2078	1708
CPxxx Card	40%	1453	2114	1760
FU041 Card	15%	1442	2118	1764
Wiring	5%	---	---	---

MAP 028C BEGINS

Table 107. MAP 028C

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	CAUTION: **<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.**		
Step 1.	• Perform the QUICK CHECKS and SERVICE CHECKS. **Did you find a problem?**	• Repair the problem and perform the FIX VERIFICATION.	Go to Step 2.
Step 2.	• Without disconnecting the connector, check the voltage at PJ6017–2. **Is the voltage above 0.1 Vdc?**	Go to Step 3.	Go to Step 4.
Step 3.	• Without disconnecting the connector, check the voltage at PJ6017–2. **Is the voltage below 4.5 Vdc?**	• Replace the following, one at a time, until the problem is corrected: – CPxxx card – FU041 card – Thermistor (S623) @	• Install a new thermistor (S623). @

Table 107. MAP 028C (continued)

Step	Questions/Actions	Yes	No
Step 4.	• Without disconnecting the connector, check the voltage at PJ6017–1. **Is the voltage +5 Vdc?**	• Do the following, one at a time, until the problem is corrected: – Repair an open circuit between PJ6017 and the thermistor (S623). – Install a new thermistor (S623). @	• Do the following, one at a time, until the problem is corrected: – Repair an open circuit between PJ6017 and PJ334. – Install a new CPxxx card. @

MAP 028D: Thermistor 1 Under Temperature

Symptom Explanation	Conditions That Could Cause This Symptom
The Hot Roll Thermistor 1 temperature is too low (less than 150°C).	• Thermistor (S621) has failed. • CPxxx card has failed. • FU041 card is defective. • DV061 card is defective. • DV081 card has failed. • Hot Roll Lamp power control circuitry has failed. • +12 V is missing

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD31 - Hot Roll Temperature Control Thermistors (S621 - S622 - S623)
- Wiring Diagrams - WD57 - Fuser Thermistors

FIX VERIFICATION

- POR the printer.

QUICK CHECKS

- Visually inspect the hot roll temperature control sensor (S701) and the associated cabling.
- Visually inspect thermistors (S621, S622, S623) and the associated cabling if they are installed.
- Visually inspect the Hot Roll.
- Visually inspect the Fuser Filter and Upper Front and Rear Fuser Fans (B701 and B702).

SERVICE CHECKS

- POR the printer. An error is indicated by **E0bA** on the Maintenance Panel.

CAUTION:
<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

- Check the gap between the thermistor and the hot roll. See Hot Roll Thermistors (S621, S622, S623) for the correct thermistor gap.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Thermistor (S621)	35%	1431	2078	1708
CPxxx Card	20%	1453	2114	1760
FU041 Card	20%	1442	2118	1764
DV081 Card	10%	1442	2118	1764
DV061 Card	10%	1453	2114	1764
Power Supply	05%	1450	2122	1758

MAP 028D BEGINS

Table 108. MAP 028D

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	CAUTION: **<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.**		
Step 1.	• Perform the QUICK CHECKS and SERVICE CHECKS. **Did you find a problem?**	• Repair the problem and perform the FIX VERIFICATION.	Go to Step 2.
Step 2.	• Without disconnecting the connector, check the voltage at PJ6015–2. **Is the voltage above 0.1 Vdc?**	Go to Step 7.	Go to Step 3.
Step 3.	• Disconnect PJ310 and PJ461. • Check for continuity between J310–9 and J461–9. **Is there continuity?**	Go to Step 4.	Repair the open circuit.

Table 108. MAP 028D (continued)

Step	Questions/Actions	Yes	No
Step 4.	Check for continuity between: • PJ334–19 and PJ334–20 • PJ303–5 and PJ333–5 • PJ303–6 and PJ333–6 **Is there continuity?**	Go to Step 5.	Repair any open circuits.
Step 5.	• Power on the printer. • Measure the voltage at PJ461–9 on the power supply side of the connector. **Is the voltage +12 V dc?**	Go to Step 6.	• Install a new power supply. @
Step 6.	• Without disconnecting the connector, check the voltage at PJ6015–1. **Is the voltage +5 Vdc?**	Do the following, one at a time, until the problem is corrected: • Repair an open circuit between PJ6015 and the thermistor (S621). • Install a new thermistor (S621). @	Do the following, one at a time, until the problem is corrected: • Repair an open circuit between PJ6015 and PJ334. • Replace the following, one at a time, until the problem is corrected: – CPxxx Card – FU041 Card – DV061Card – DV081 Card @

Table 108. MAP 028D (continued)

Step	Questions/Actions	Yes	No
Step 7.	**Is the voltage below +4.5 Vdc at PJ6015–1?**	Replace the following, one at a time, until the problem is corrected: • CPxxx Card • FU041 Card • Thermistor (S621) @	• Install a new thermistor (S621). @

MAP 028E: Thermistor 2 Under Temperature

Symptom Explanation	Conditions That Could Cause This Symptom
The Hot Roll Thermistor 2 temperature is too low (less than 150°C).	• Thermistor (S622) has failed. • CPxxx card has failed. • FU041 card is defective. • DV081 card has failed. • Hot Roll Lamp power control circuitry has failed.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD31 - Hot Roll Temperature Control Thermistors (S621 - S622 - S623)
- Wiring Diagrams - WD57 - Fuser Thermistors

FIX VERIFICATION

- POR the printer.

QUICK CHECKS

- Visually inspect the hot roll temperature control sensor (S701) and the associated cabling.
- Visually inspect thermistors (S621, S622, S623) and the associated cabling if they are installed.
- Visually inspect the Hot Roll.
- Visually inspect the Fuser Filter and Upper Front and Rear Fuser Fans (B701 and B702).

SERVICE CHECKS

- POR the printer. An error is indicated by a Maintenance Panel display of **E0bA**.

CAUTION:
<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

- Check the gap between the thermistor and the hot roll. See Hot Roll Thermistors (S621, S622, S623) for the correct thermistor gap.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Thermistor (S622)	40%	1431	2078	1708
CPxxx Card	25%	1453	2114	1760
FU041 Card	20%	1442	2118	1764
DV081 Card	15%	1442	2118	1764

MAP 028E BEGINS

Table 109. MAP 028E

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	CAUTION: **<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.**		
Step 1.	• Perform the QUICK CHECKS and SERVICE CHECKS. **Did you find a problem?**	• Repair the problem and perform the FIX VERIFICATION.	Go to Step 2.
Step 2.	• Without disconnecting the connector, check the voltage at PJ6016– 2. **Is the voltage above 0.1 Vdc?**	Go to Step 3.	Go to Step 4.
Step 3.	• Without disconnecting the connector, check the voltage at PJ6016–2. **Is the voltage below 4.5 Vdc?**	• Replace the following, one at a time, until the problem is corrected: – CPxxx card – FU041 card – Thermistor (S622) – DV081 card @	• Install a new thermistor (S622). @

Table 109. MAP 028E (continued)

Step	Questions/Actions	Yes	No
Step 4.	• Without disconnecting the connector, check the voltage at PJ6016–1. **Is the voltage +5 Vdc?**	• Do the following, one at a time, until the problem is corrected: – Repair an open circuit between PJ6016 and the thermistor (S622). – Install a new thermistor (S622). @	• Do the following, one at a time, until the problem is corrected: – Repair an open circuit between PJ6016 and PJ334. – Install a new CPxxx card. @

MAP 028F: Thermistor 3 Under Temperature

Symptom Explanation	Conditions That Could Cause This Symptom
The Hot Roll Thermistor 3 temperature is too low (less than 150°C).	• Thermistor (S623) has failed. • CPxxx card has failed. • FU041 card is defective. • DV081 card has failed. • Hot Roll Lamp power control circuitry has failed.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD31 - Hot Roll Temperature Control Thermistors (S621 - S622 - S623)
- Wiring Diagrams - WD57 - Fuser Thermistors

FIX VERIFICATION

- POR the printer to see if the error occurs again during the power-on sequence.

QUICK CHECKS

- Visually inspect the hot roll temperature control sensor (S701) and the associated cabling.
- Visually inspect thermistors (S621, S622, S623) and the associated cabling if they are installed.
- Visually inspect the Hot Roll.
- Visually inspect the Fuser Filter and Upper Front and Rear Fuser Fans (B701 and B702).

SERVICE CHECKS

- POR the printer. An error is indicated by a Maintenance Panel display of **E0bA**.

CAUTION:
<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

- Check the gap between the thermistor and the hot roll. See Hot Roll Thermistors (S621, S622, S623) for the correct thermistor gap.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Thermistor (S623)	40%	1431	2078	1708
CPxxx Card	25%	1453	2114	1760
FU041 Card	20%	1442	2118	1764
DV081 Card	15%	1442	2118	1764

MAP 028F BEGINS

Table 110. MAP 028F

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	CAUTION: **<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.**		
Step 1.	• SHUTDOWN AND POWER OFF THE PRINTER. • Perform the QUICK CHECKS and SERVICE CHECKS. **Did you find a problem?**	• Repair the problem and perform the FIX VERIFICATION.	Go to Step 2.
Step 2.	• Without disconnecting the connector, check the voltage at PJ6017–2. **Is the voltage above 0.1 Vdc?**	Go to Step 3.	Go to Step 4.

Table 110. MAP 028F (continued)

Step	Questions/Actions	Yes	No
Step 3.	• Without disconnecting the connector, check the voltage at PJ6017–2. **Is the voltage below 4.5 Vdc?**	• Replace the following, one at a time, until the problem is corrected: – CPxxx card – FU041 card – Thermistor (S623) – DV081 card @	• Install a new thermistor (S623). @
Step 4.	• Without disconnecting the connector, check the voltage at PJ6017–1. **Is the voltage +5 Vdc?**	• Do the following, one at a time, until the problem is corrected: – Repair an open circuit between PJ6017 and the thermistor (S623). – Install a new thermistor (S623). @	• Do the following, one at a time, until the problem is corrected: – Repair an open circuit between PJ6017 and PJ334. – Install a new CPxxx card. @

MAP 0291: Hot Roll Over Temperature

Symptom Explanation	Conditions That Could Cause This Symptom
The Hot Roll temperature goes too high.	• The Hot Roll Temperature Control Sensor (S701) is defective. • The Hot Roll control circuit is defective. • The Hot Roll temperature-sensing circuitry is defective. • The Hot Roll Over-Temperature Sensor (S705) is defective. • The Error Detection circuitry is defective. • Hot Roll Temperature Sensor out of adjustment. • Hot Roll Over-Temperature Sensor out of adjustment. • The Hot Roll Ferrite Chips. • The Fuser Filter is clogged. • The Upper Rear Fuser Fans (B701, B702) are defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD27 - Hot Roll Temperature Control Sensor (S701)
- Circuit Diagrams - CD30 - Hot Roll Over-temperature Sensor (S705)
- Wiring Diagrams - WD16 - AC Distribution To Hot Roll Lamps
- Wiring Diagrams - WD58 - Fuser Sensors

FIX VERIFICATION

- POR the printer and see if the error occurs again during the Power On sequence.

QUICK CHECKS

- Visually inspect the Hot Roll Temperature Control Sensor (S701) and associated cabling.
- Visually inspect the Hot Roll Temperature Over-Temperature Sensor (S705) and associated cabling.
- Visually inspect the Hot Roll Thermistors (S621, S622, S623) and associated cabling if installed.
- Visually inspect the Hot Roll.
- Visually inspect the Fuser Filter and Fuser Exhaust Fans (B701, B702).

SERVICE CHECKS

- POR the printer. An error is indicated by **E0A3** on the Maintenance Panel.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Hot Roll Over-Temperature Control Sensor (S705)	30%	1431	2076	1710
Hot Roll Temperature Control Sensor (S701) adjustment	15%	1431	2076	1710
DV071 Card	10%	1437	2048	1764
Hot Roll Thermistors (S621, S622, S623)	10%	1431	2078	1708
Hot Roll	10%	1431	2062	1692
Fuser Filter	10%	1431	2072	
Fuser Exhaust Fans (B701, B702)	10%	1435	2072	1687
DV061 Card	05%	1453	2114	1764

MAP 0291 BEGINS

Table 111. MAP 0291

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	CAUTION: **<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.**		
Step 1.	• Perform the QUICK CHECKS and SERVICE CHECKS. • Check the gap between the following: – Hot Roll Over-Temperature Sensor (S705) and the hot roll – Hot Roll Over Temperature Control Sensor (S701) and the hot roll Ensure that these sensors are clean. **Are the sensor gaps correct?**	Go to Step 2.	Adjust and clean as necessary. @

Table 111. MAP 0291 (continued)

Step	Questions/Actions	Yes	No
Step 2.	• SHUTDOWN AND POWER OFF THE PRINTER. • Unplug PJ645. • Check continuity of the Hot Roll Over-Temperature Sensor (S705) by checking between P645-1 and P645-2 (sensor side of the connector). **Is there an open circuit?**	• Install a new Hot Roll Over-Temperature Sensor (S705). @	Go to Step 3.
Step 3.	• Check for continuity between the following points: – PJ645-1 to PJ617-1 – PJ645-2 to PJ617-2 **Is there an open circuit?**	Repair the open circuit.	Go to Step 4.
Step 4.	• Check for continuity between the following points: – PJ606-7 to PJ304-1 – PJ606-9 to PJ304-3 **Is there an open circuit?**	Repair the open circuit.	• Install the new parts listed below, one at a time, until the problem is corrected: – DV071 Card – DV061 Card @

MAP 0294: Hot Roll Over Current

Symptom Explanation	Conditions That Could Cause This Symptom
The hot roll drive current, as detected by the driver card, is beyond error limits.	• The hot roll driver circuit (DV061 Card) is defective. • The over current-detection circuit is defective. • The Hot Roll Motor (M703) is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD33 - Hot Roll Drive Motor (M703) and Overcurrent Detection
- Wiring Diagrams - WD38 - Hot Roll Drive Motor (M703)

FIX VERIFICATION

- Print the **primary** print sample (1069). See if the error occurs during printing.

QUICK CHECKS

- None

SERVICE CHECKS

- None

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
DV061 Card	40%	1453	2114	1764
Power Supply	40%	1450	2122	1757
Hot Roll Motor (M703)	15%	1435	2046	1696
CPxxx Card	05%	1453	2114	1760

MAP 0294 BEGINS

Table 112. MAP 0294

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Print the **primary** print sample (1069). Run test for up to a full box of paper to see if the error occurs during printing. **Did an SRC 294 occur?**	Go to Step 2.	The problem is intermittent. Go to MAP 0001: Introduction.
Step 2.	Check for binds in the drive. **Did you find any binds?**	Adjust, repair, and replace parts as necessary.	• Repair an open circuit between: PJ329–8 and PJ302–8. • Replace the following, one at a time, until the problem is corrected: – DV061 Card – Power Supply – Hot Roll Motor (M703) – CPxxx Card @

MAP 0295: Hot Roll Does Not Reach Operating Temperature

Symptom Explanation	Conditions That Could Cause This Symptom
The Hot Roll never reaches the required temperature.	• The Hot Roll temperature control circuit is defective. • The Hot Roll temperature sensing circuitry is defective. • A thermal ferrite chip in the Hot Roll is broken or has fallen out.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD27 - Hot Roll Temperature Control Sensor (S701)
- Wiring Diagrams - WD16 - AC Distribution To Hot Roll Lamps
- Wiring Diagrams - WD58 - Fuser Sensors

FIX VERIFICATION

- POR the printer to see if the Fuser ever reaches operating temperature and the printer will become READY.

QUICK CHECKS

- Visually inspect the Hot Roll Temperature Control Sensor (S701) and associated cabling.

SERVICE CHECKS

- POR the printer. An error is indicated by a Maintenance Panel display of **E0A6**.
- Check the gap between the sensor head and the hot roll.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
DV071 Card	50%	1437	2048	1764
FU041 Card	20%	1442	2118	1442
Hot Roll	20%	1431	2062	1692
Hot Roll Temperature Control Sensor (S701)	05%	1431	2076	1710
DV081 Card	05%	1442	2118	1764

MAP 0295 BEGINS

Table 113. MAP 0295

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	CAUTION: **<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.**		
Step 1.	• SHUTDOWN AND POWER OFF THE PRINTER. • Perform the QUICK CHECKS and SERVICE CHECKS. **Did you find a problem?**	• Repair the problem, and perform FIX VERIFICATION.	Go to Step 2.
Step 2.	**Is either of the thermal ferrite chips in the Hot Roll broken or missing?**	• Install a new Hot Roll. @	Go to Step 3.

Table 113. MAP 0295 (continued)

Step	Questions/Actions	Yes	No
Step 3.	• Disconnect PJ617, and check for continuity between the following pairs of points: – J617-3 and PJ682-1 – J617-4 and PJ682-2 – J617-5 and PJ682-4 – J617-6 and PJ682-5 – J617-7 and PJ682-6 **Is there continuity?**	Replace the following, one at a time, and perform the FIX VERIFICATION: • DV071 Card • FU041 Card • Hot Roll Temperature Control Sensor (S701) • DV081 Card @	Repair any open circuits in the wiring.

MAP 0296: Hot Roll Lamp 1 Relay Error

Symptom Explanation	Conditions That Could Cause This Symptom
The Hot Roll Lamp 1 Driver (in the Power Supply) does not turn on.	• The Power Supply is defective. • The Connectors and wiring may be defective. • The CPxxx Card is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD34 - Hot Roll Lamp 1
- Wiring Diagrams - WD16 - AC Distribution To Hot Roll Lamps
- How to Run Diagnostics - 1119

FIX VERIFICATION

- POR the printer.

QUICK CHECKS

- Visually inspect the wiring and connectors associated with the circuit.

SERVICE CHECKS

- POR the printer. An error is indicated by **E09E** on the Maintenance Panel.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Power supply	75%	1450	2122	1757
CPxxx Card	20%	1453	2114	1760
Connectors and wiring	05%	---	---	---

MAP 0296 BEGINS

Table 114. MAP 0296

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		

Table 114. MAP 0296 (continued)

Step	Questions/Actions	Yes	No
	DANGER **<6> When measuring resistance or verifying continuity, power-off the printer and unplug the power cord.**		
Step 1.	• SHUTDOWN AND POWER OFF THE PRINTER. • Ensure that connectors PJ451 and PJ464 on the Power Supply and connector PJ330 on the CPxxx Card are securely connected. • POR the printer. **Did an E09E error appear on the Maintenance Panel?**	SHUTDOWN AND POWER OFF THE PRINTER.Do the following, one at a time, until the problem is corrected: • Repair an open circuit between – J464–10 and J330–10 – J464–9 and J330–9 – PJ451–2 and PJ613–1. • Install a new Power Supply. • Install a new CPxxx Card. @	One of two conditions now exists: • You corrected the problem by reseating connectors. • The problem is intermittent. Go to MAP 0001: Introduction.

MAP 0297: Hot Roll Lamp 1 Filament Open

Symptom Explanation	Conditions That Could Cause This Symptom
Hot Roll Lamp 1 fails to turn on.	• The Lamp filaments are broken. • The Hot Roll Lamp Connectors are broken or unplugged. • The Lamp driver circuitry is defective. • The Error Detection circuitry is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD34 - Hot Roll Lamp 1
- Circuit Diagrams - CD25 - Hot Roll
- Wiring Diagrams - WD16 - AC Distribution To Hot Roll Lamps
- Wiring Diagrams - WD58 - Fuser Sensors

FIX VERIFICATION

- POR the printer to see if the error occurs again during the power-on sequence.

QUICK CHECKS

- Visually inspect the Hot Roll Lamp and Connectors.

SERVICE CHECKS

- POR the printer. An error is indicated by **E09F** on the Maintenance Panel.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Hot Roll Lamp 1	80%	1433	2062	1700
Hot Roll Lamp Connectors	10%	1433	2062	1700
Power Supply	05%	1450	2122	1757
DV081 Card	03%	1442	2118	1764
FU041 Card	01%	1442	2118	1764
CPxxx Card	01%	1453	2114	1760

MAP 0297 BEGINS

Table 115. MAP 0297

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	CAUTION: **<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.**		

Table 115. MAP 0297 (continued)

Step	Questions/Actions	Yes	No
	DANGER **<6> When measuring resistance or verifying continuity, power-off the printer and unplug the power cord.**		
Step 1.	• SHUTDOWN AND POWER OFF THE PRINTER. • Open the left front cover. • Open the fuser cover to gain access to the Hot Roll Lamps. • Remove Hot Roll Lamp 1. • Check for continuity between the two ends of Hot Roll Lamp 1. **Is there continuity through the lamp?**	Go to Step 2.	• Install a new Hot Roll Lamp 1. @
Step 2.	• Check for continuity between PJ612–1 and PJ451–1. **Is there continuity?**	Go to Step 3.	There is an open circuit between PJ612–1 and PJ451–1. • Repair as necessary.
	DANGER **<6> When measuring resistance or verifying continuity, power-off the printer and unplug the power cord.**		

Table 115. MAP 0297 (continued)

Step	Questions/Actions	Yes	No
Step 3.	• Check for continuity between PJ613–1 to PJ451–2. **Is there good continuity?**	Do the following, one step at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Check the lamp and receptacle contacts and ensure that they are aligned correctly. • Check connectors PJ605 and PJ636 to ensure that they are connected correctly. • Check for continuity between the following: – PJ451–2 and PJ604–8 – PJ604–1 and PJ470–1 – PJ605–1 and PJ636–1 – PJ631–83 and PJ325–83 – PJ466–6 check for a loose wire or connector. Repair if necessary. @ (continued on next page)	There is an open circuit between PJ613–1 and PJ451–2. • Repair as necessary. @

Table 115. MAP 0297 (continued)

Step	Questions/Actions	Yes	No
Step 3 (cont'd)		• Install the following, one at a time, if the cables were good: – Power supply – DV081 Board – FU041 Card – CPxxx Card @	

MAP 0298: Hot Roll Lamp 2 Relay Error

Symptom Explanation	Conditions That Could Cause This Symptom
The Hot Roll Lamp 2 Driver (in the Power Supply) does not turn on.	• The Power Supply is defective. • The Connectors and wiring may be defective. • The CPxxx Card is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD35 - Hot Roll Lamp 2
- Wiring Diagrams - WD01 - Printer AC Power Supply - (200 to 240V)
- Wiring Diagrams - WD03 - Printer AC Power Supply - (380/400/415V)
- Wiring Diagrams - WD16 - AC Distribution To Hot Roll Lamps

FIX VERIFICATION

- POR the printer.

QUICK CHECKS

- Visually inspect the wiring and connectors associated with the circuit.

SERVICE CHECKS

- POR the printer. An error is indicated by **E0A0** on the Maintenance Panel.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Power supply	75%	1450	2122	1757
CPxxx Card	20%	1453	2114	1760
Connectors and wiring	05%	---	---	---

MAP 0298 BEGINS

Table 116. MAP 0298

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
	DANGER **<6> When measuring resistance or verifying continuity, power-off the printer and unplug the power cord.**		

Table 116. MAP 0298 (continued)

Step	Questions/Actions	Yes	No
Step 1.	• SHUTDOWN AND POWER OFF THE PRINTER. • Ensure that connectors PJ451 and PJ464 on the Power Supply and connector PJ330 on the CPxxx Card are securely connected. • POR the printer. **Did an E09E error appear on the Maintenance Panel?**	SHUTDOWN AND POWER OFF THE PRINTER.Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between: – PJ464–11 and PJ330–11. – PJ451–4 and PJ613–2. • Install a new Power Supply. • Install a new CPxxx Card. @	One of two conditions now exists: • You corrected the problem by reseating connectors. • The problem is intermittent. Go to MAP 0001: Introduction.

MAP 0299: Hot Roll Lamp 2 Filament Open

Symptom Explanation	Conditions That Could Cause This Symptom
Hot Roll Lamp 2 fails to turn on.	• The Lamp filaments are broken. • The Hot Roll Lamp Connectors are broken or unplugged. • The Lamp driver circuitry is defective. • The Error Detection circuitry is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD25 - Hot Roll
- Circuit Diagrams - CD35 - Hot Roll Lamp 2
- Wiring Diagrams - WD16 - AC Distribution To Hot Roll Lamps
- Wiring Diagrams - WD58 - Fuser Sensors

FIX VERIFICATION

- POR the printer to see if the error occurs again during the power-on sequence.

QUICK CHECKS

- Visually inspect the Hot Roll Lamp and Connectors.

SERVICE CHECKS

- POR the printer. An error is indicated by **E0A1** on the Maintenance Panel.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Hot Roll Lamp 2	80%	1433	2062	1700
Hot Roll Lamp Connectors	10%	1433	2062	1700
Power Supply	05%	1450	2122	1757
DV081 Card	03%	1442	2118	1764
FU041 Card	01%	1442	2118	1764
CPxxx Card	01%	1453	2114	1760

MAP 0299 BEGINS

Table 117. MAP 0299

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	CAUTION: **<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.**		

Table 117. MAP 0299 (continued)

Step	Questions/Actions	Yes	No
	DANGER **<6> When measuring resistance or verifying continuity, power-off the printer and unplug the power cord.**		
Step 1.	• SHUTDOWN AND POWER OFF THE PRINTER. • Open the left front cover. • Open the fuser cover to gain access to the Hot Roll Lamps. • Remove Hot Rol Lamp 2. • Check for continuity between the ends of Hot Rol Lamp 2 **Is there continuity through the lamp?**	Go to Step 2.	• Install a new Hot Roll Lamp 2. @
Step 2.	• Check for continuity between PJ612–2 and PJ451–3. **Is there continuity?**	Go to Step 3.	There is an open circuit between PJ612–2 and PJ451–3. • Repair as necessary.
	DANGER **<6> When measuring resistance or verifying continuity, power-off the printer and unplug the power cord.**		

Table 117. MAP 0299 (continued)

Step	Questions/Actions	Yes	No
Step 3.	• Check for continuity between PJ613–2 to PJ451–4. **Is there continuity?**	Do the following, one step at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Check the lamp and receptacle contacts and ensure that they are aligned correctly. • Check connectors PJ605 and PJ636 to ensure that they are connected correctly. • Check for continuity between the following: – PJ451–4 and PJ604–10 – PJ604–3 and PJ470–2 – PJ605–3 and PJ636–3 – PJ631–85 and PJ325–85 Repair if necessary. • Install the following, one at a time, if the cables were good: – Power supply – DV081 Board – FU041 Card – CPxxx Card @	There is an open circuit between PJ613–1 and PJ451–2. • Repair as necessary. @

MAP 029C: Hot Roll Lamp 3 Filament Open

Symptom Explanation	Conditions That Could Cause This Symptom
Hot Roll Lamp 3 fails to turn on.	• The Lamp filaments are broken. • The Hot Roll Lamp Connectors are broken or unplugged. • The Lamp driver circuitry is defective. • The Error Detection circuitry is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD25 - Hot Roll
- Circuit Diagrams - CD36 - Hot Roll Lamp 3
- Wiring Diagrams - WD16 - AC Distribution To Hot Roll Lamps
- Wiring Diagrams - WD58 - Fuser Sensors

FIX VERIFICATION

- POR the printer to see if the error occurs again during the power-on sequence.

QUICK CHECKS

- Visually inspect the Hot Roll Lamp and Connectors.

SERVICE CHECKS

- POR the printer. An error is indicated by **E0C0** on the Maintenance Panel.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Hot Roll Lamp 3	80%	1433	2062	1700
Hot Roll Lamp Connectors	10%	1433	2062	1700
Power Supply	05%	1450	2122	1757
DV081 Card	03%	1442	2118	1764
FU041 Card	01%	1442	2118	1764
CPxxx Card	01%	1453	2114	1760

MAP 029C BEGINS

Table 118. MAP 029C

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	CAUTION: **<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.**		

Table 118. MAP 029C (continued)

Step	Questions/Actions	Yes	No
	DANGER **<6> When measuring resistance or verifying continuity, power-off the printer and unplug the power cord.**		
Step 1.	• SHUTDOWN AND POWER OFF THE PRINTER. • Open the left front cover. • Open the fuser cover to gain access to the Hot Roll Lamps. • Remove Hot Lamp 3. • Check for continuity between the ends of Hot Lamp 3. **Is there continuity through the lamp?**	Go to Step 2.	• Install a new Hot Roll Lamp 3. @
Step 2.	• Check for continuity between PJ612–2 and PJ451–3. **Is there continuity?**	Go to Step 3.	There is an open circuit between PJ612–2 and PJ451–3. • Repair as necessary.
	DANGER **<6> When measuring resistance or verifying continuity, power-off the printer and unplug the power cord.**		

Table 118. MAP 029C (continued)

Step	Questions/Actions	Yes	No
Step 3.	• Check for continuity between PJ613–3 to PJ451–6. **Does the circuit have good continuity?**	Do the following, one step at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Check the lamp and socket contacts and ensure that they are aligned correctly. • Check connectors PJ605 and PJ636 to ensure that they are connected correctly. • Check for continuity between the following: – PJ604–5 and PJ470–3 – PJ605–5 and PJ636–5 – PJ631–87 and PJ325–87 Repair if necessary. • Install the following, one at a time, if the cables were good: – Power supply – DV081 Board – FU041 Card – CPxxx Card @	There is an open circuit between PJ613–3 and PJ451–6. • Repair as necessary. @

MAP 029D: Hot Roll Lamp 3 Relay Error

Symptom Explanation	Conditions That Could Cause This Symptom
The Hot Roll Lamp 3 Driver (in the Power Supply) does not turn on.	• The Power Supply is defective. • The Connectors and wiring may be defective. • The CPxxx Card is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD36 - Hot Roll Lamp 3
- Wiring Diagrams - WD01 - Printer AC Power Supply - (200 to 240V)
- Wiring Diagrams - WD03 - Printer AC Power Supply - (380/400/415V)
- Wiring Diagrams - WD16 - AC Distribution To Hot Roll Lamps

FIX VERIFICATION

- POR the printer.

QUICK CHECKS

- Visually inspect the wiring and connectors associated with the circuit.

SERVICE CHECKS

- POR the printer. An error is indicated by **E0C1** on the Maintenance Panel.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Power supply	75%	1450	2122	1757
CPxxx Card	20%	1453	2114	1760
Connectors and wiring	05%	---	---	---

MAP 029D BEGINS

Table 119. MAP 029D

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
	DANGER **<6> When measuring resistance or verifying continuity, power-off the printer and unplug the power cord.**		

Table 119. MAP 029D (continued)

Step	Questions/Actions	Yes	No
Step 1.	• SHUTDOWN AND POWER OFF THE PRINTER. • Ensure that connectors PJ451 and PJ464 on the Power Supply and connector PJ330 on the CPxxx Card are securely connected. • POR the printer. **Did an E09E error appear on the Maintenance Panel?**	• SHUTDOWN AND POWER OFF THE PRINTER. • Do the following, one step at a time, until the problem is corrected: – Repair an open circuit between - PJ464-9 and J330–9. - PJ464-12 and J330–12. - PJ451–6 and PJ613–3. – Check PJ466–11 for a loose connector or wire. – Install a new Power Supply. – Install a new CPxxx Card. @	One of two conditions now exists: • You corrected the problem by reseating connectors. • The problem is intermittent. Go to MAP 0001: Introduction.

MAP 029E: Hot Roll Lamp 4 Filament Open

Symptom Explanation	Conditions That Could Cause This Symptom
Hot Roll Lamp 4 fails to turn on.	• The Lamp filaments are broken. • The Hot Roll Lamp Connectors are broken or unplugged. • The Lamp driver circuitry is defective. • The Error Detection circuitry is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD25 - Hot Roll
- Circuit Diagrams - CD37 - Hot Roll Lamp 4
- Wiring Diagrams - WD16 - AC Distribution To Hot Roll Lamps
- Wiring Diagrams - WD58 - Fuser Sensors

FIX VERIFICATION

- POR the printer to see if the error occurs again during the power-on sequence.

QUICK CHECKS

- Visually inspect the Hot Roll Lamp and Connectors.

SERVICE CHECKS

- POR the printer. An error is indicated by **E0bE** on the Maintenance Panel.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Hot Roll Lamp 4	80%	1433	2062	1700
Hot Roll Lamp Connectors	10%	1433	2062	1700
Power Supply	05%	1450	2122	1757
DV081 Card	03%	1442	2118	1764
FU041 Card	01%	1442	2118	1764
CPxxx Card	01%	1453	2114	1760

MAP 029E BEGINS

Table 120. MAP 029E

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	CAUTION: **<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.**		

Table 120. MAP 029E (continued)

Step	Questions/Actions	Yes	No
	DANGER **<6> When measuring resistance or verifying continuity, power-off the printer and unplug the power cord.**		
Step 1.	• SHUTDOWN AND POWER OFF THE PRINTER. • Open the left front cover. • Open the fuser cover to gain access to the Hot Roll Lamps. • Remove Hot Roll Lamp 4. • Check for continuity between the two ends of Hot Roll Lamp 4. **Is there continuity through the lamp?**	Go to Step 2.	• Install a new Hot Roll Lamp 4. • Check the lamp and socket contacts and ensure that they are aligned correctly. @
Step 2.	• Check for continuity between PJ612–3 and PJ451–7. **Is there continuity?**	Go to Step 3.	There is an open circuit between PJ612–3 and PJ451–7. • Repair as necessary.
	DANGER **<6> When measuring resistance or verifying continuity, power-off the printer and unplug the power cord.**		

Table 120. MAP 029E (continued)

Step	Questions/Actions	Yes	No
Step 3.	• Check for continuity between PJ613–4 to PJ451–8. **Is there continuity?**	Do the following, one step at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Check the lamp and socket contacts and ensure that they are aligned correctly. • Check connectors PJ605 and PJ636 to ensure that they are connected correctly. • Check for continuity between the following: – PJ451–7 and PJ612–3 – PJ604–7 and PJ470–4 – PJ605–7 and PJ636–7 – PJ631–89 and PJ325–89 Repair if necessary. • Install the following, one at a time, if the cables were good: – Power supply – DV081 Board – FU041 Card – CPxxx Card @	There is an open circuit between PJ613–4 and PJ451–8. • Repair as necessary. @

MAP 029F: Hot Roll Lamp 4 Relay Error

Symptom Explanation	Conditions That Could Cause This Symptom
The Hot Roll Lamp 4 Driver (in the Power Supply) does not turn on.	• The Power Supply is defective. • The Connectors and wiring may be defective. • The CPxxx Card is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD37 - Hot Roll Lamp 4
- Wiring Diagrams - WD01 - Printer AC Power Supply - (200 to 240V)
- Wiring Diagrams - WD03 - Printer AC Power Supply - (380/400/415V)
- Wiring Diagrams - WD16 - AC Distribution To Hot Roll Lamps

FIX VERIFICATION

- POR the printer.

QUICK CHECKS

- Visually inspect the wiring and connectors associated with the circuit.

SERVICE CHECKS

- POR the printer. An error is indicated by **E0bF** on the Maintenance Panel.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Power supply	75%	1450	2122	1757
CPxxx Card	20%	1453	2114	1760

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Connectors and wiring	05%	- - -	- - -	- - -

MAP 029F BEGINS

Table 121. MAP 029F

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
	DANGER **<6> When measuring resistance or verifying continuity, power-off the printer and unplug the power cord.**		

Table 121. MAP 029F (continued)

Step	Questions/Actions	Yes	No
Step 1.	• SHUTDOWN AND POWER OFF THE PRINTER. • Ensure that connectors PJ451 and PJ464 on the Power Supply and connector PJ330 on the CPxxx Card are connected correctly. • POR the printer. **Did an E09E error appear on the Maintenance Panel?**	SHUTDOWN AND POWER OFF THE PRINTER.Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between: – PJ464–13 and J330–13. – PJ451–8 and PJ613–4. • Check PJ466–12 for a loose connector or wire. • Install a new Power Supply. • Install a new CPxxx Card. @	One of two conditions now exists: • You corrected the problem by reseating connectors. • The problem is intermittent. Go to MAP 0001: Introduction.

MAP 0321: Operator Alert Light Problem

Symptom Explanation	Conditions That Could Cause This Symptom
The light on the Operator Alert is never on.	• The bulb is burned out. • The Operator Alert Circuit Board has failed. • There is an open circuit in the wiring. • The Mechanism Interface Card has failed.
The light on the Operator Alert does not flash.	• The Operator Alert Circuit Board DIP switch 1 is set to the **Off** position. • The potentiometer on the Operator Alert Circuit Board is turned down. • The Operator Alert Circuit Board has failed.
The light on the Operator Alert is always on.	• The Operator Alert Circuit Board has failed. • There is a short circuit in the wiring. • The Mechanism Interface Card has failed.

REFERENCES

- Removals & Adjustments - Operator Alert Assembly
- Circuit Diagrams - CD77 - Operator Alert
- Wiring Diagrams - WD68 - MIC to Operator Alert Assembly
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Operator Alert diagnostic test.

QUICK CHECKS

- None

SERVICE CHECKS

- Check the functions of the Operator Alert by running the Operator Alert diagnostic test.
- The light does not operate during any operation in which the channels are disabled, except during the Operator Alert diagnostic test.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Operator Alert Light Bulb	80%	1457	2142	1526
Mechanism Interface Card (MIC)	15%	1460	2130	1522
Operator Alert Circuit Board	05%	1457	2142	1526

MAP 0321 BEGINS

Table 122. MAP 0321

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	**Is the light never on?**	Go to Step 2.	Go to Step 9.

Table 122. MAP 0321 (continued)

Step	Questions/Actions	Yes	No
Step 2.	Do the following: • Squeeze the lens on the top of the Operator Alert to remove it. • Remove the light bulb. • Check the bulb for continuity. **Is there continuity through the light bulb?**	Go to Step 3.	• Install a new light bulb. @
Step 3.	Do the following, one at a time, until the problem is corrected: • Reinstall the light bulb. • Power on the printer. • Open the transfer station to cause an intervention. • Leave power on for this question. • Check for continuity through the accessory contacts on the Operator Alert assembly. **Is there continuity?**	Go to Step 4.	Go to Step 7.
Step 4.	Do the following, one at a time, until the problem is corrected: • Remove the Operator Alert sleeve. • Look into the sleeve and inspect the electrical connections to the lamp base. **Are the connectors firmly connected to the tabs on the lamp base?**	Go to Step 5.	• Connect the connectors to the lamp base.

Table 122. MAP 0321 (continued)

Step	Questions/Actions	Yes	No
Step 5.	• Ensure that the TRANSFER STATION OPEN message is still displayed. • Measure the voltage at the wire 7 contact on the lamp base. **Is the voltage +12 V dc?**	Do the following, one step at a time, until the problem is corrected: • Check for an open between ALCD1–9 and the contact on wire 7 on the lamp base. • Install a new Operator Alert Circuit Board. @	Go to Step 6.
Step 6.	• Measure the voltage at the wire 6 contact on the lamp base. **Is the voltage +12 V dc?**	• Repair an open circuit between the lamp base contacts.	• Repair an open circuit between the lamp base and the accessory contacts relay in wire 6.
Step 7.	• Ensure that the TRANSFER STATION OPEN message is still displayed. • Measure the voltage at ALP2–5. **Is the voltage less than +2.0 V dc?**	Go to Step 8.	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between ALJ2–5 and PJJ1–20. • Install a new Mechanism Interface Card (MIC). @

Table 122. MAP 0321 (continued)

Step	Questions/Actions	Yes	No
Step 8.	Check for the following voltages on ALP2: • +5 v dc at ALP2–4 • +12 V dc at ALP2–6 **Are the correct voltages present?**	• SHUTDOWN AND POWER OFF THE PRINTER. Do the following, one step at a time, until the problem is corrected: • Check for proper seating of the following: – ALCD1 – ALP2 to ALJ2 • Repair an open circuit between one of the following pairs: – ALCD1–7 and relay coil (wire 4) – ALCD1–3 and ALP2–6 – ALCD1–4 and ALP2–5 – ALCD1–5 and ALP2–4 • Install a new Operator Alert Circuit Board. @	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between one of the following pairs: – ALJ2–4 and PJJ1–17 – ALJ2–6 and PJJ1–19 • Install a new Mechanism Interface Card (MIC). @

Table 122. MAP 0321 (continued)

Step	Questions/Actions	Yes	No
Step 9.	**Does the light not flash correctly?**	• Remove the Operator Alert sleeve. Do the following, one step at a time, until the problem is corrected: • Ensure that DIP switch 1 on the Operator Alert Circuit Board is set in the On position. • Adjust the potentiometer on the Operator Alert Circuit Board. • Install a new Operator Alert Circuit Board. @	Go to Step 10.
Step 10.	The problem is that the light is always on. Do the following, one at a time, until the problem is corrected: • Cause the problem to occur. • Disconnect connector ALP2/ALJ2. • Measure the voltage at ALP2–5. **Is the voltage +0.2 V dc or less?**	Do the following, one step at a time, until the problem is corrected: • Repair an short circuit to ground between PJ1–20 and ALP2–5. • Install a new Mechanism Interface Card (MIC). @	Do the following, one step at a time, until the problem is corrected: • Repair an short circuit to ground between ALJ2–5 and ALCD2–4. • Install a new Operator Alert Circuit Board. @

MAP 0322: Operator Alert Alarm Problem

Symptom Explanation	Conditions That Could Cause This Symptom
The alarm tone on the Operator Alert is never on.	• The Operator Alert Circuit Board has failed. • The Operator Alert Volume Control potentiometer has failed. • The Operator Alert Speaker has failed. • The Operator Alert Volume Control potentiometer is turned down. • The Operator Alert Circuit Board DIP switch 2 is set to the off position. • The configuration data item for **Alarm suppression** is set to **Yes**. • The Mechanism Interface Card has failed. • There is an open circuit in the wiring.
The alarm tone on the Operator Alert is on when it should not be.	• The Operator Alert Circuit Board has failed. • The Mechanism Interface Card has failed. • There is a short circuit in the wiring.

REFERENCES

- Removals & Adjustments - Operator Alert Assembly
- Circuit Diagrams - CD77 - Operator Alert
- Wiring Diagrams - WD68 - MIC to Operator Alert Assembly
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run the Operator Alert diagnostic test.

QUICK CHECKS

- Ensure that the Operator Alert Volume Control potentiometer is not turned down.

SERVICE CHECKS

- Check the functions of the Operator Alert by running the Operator Alert diagnostic test.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Operator Alert Alarm Volume Control Potentiometer	40%	1458	2142	1526
Operator Alert Alarm Speaker	25%	1457	2142	1526
Operator Alert Circuit Board	25%	1457	2142	1526
Mechanism Interface Card (MIC)	10%	1460	2130	1522

MAP 0322 BEGINS

Table 123. MAP 0322

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	**Is the Operator Alert alarm tone never on or not on when it should be?**	Go to Step 3.	Go to Step 2.
Step 2.	**Is the Operator Alert alarm always on or on when it should not be?**	Do the following, one step at a time, until the problem is corrected: • Check for a short circuit to ground in wire 12 in the Operator Alert assembly. • Install a new Operator Alert Circuit Board. • Install a new Mechanism Interface Card (MIC). @	For this step it is assumed that the volume is constant, regardless of the position of the volume knob. Do the following, one step at a time, until the problem is corrected: • Ensure that the knob is not slipping on the Operator Alert Volume Control Potentiometer shaft. • Install a new Operator Alert Volume Control Potentiometer. @

Table 123. MAP 0322 (continued)

Step	Questions/Actions	Yes	No
Step 3.	• Run the Operator Alert diagnostic test. **Is the Operator Alert alarm tone on now?**	The alarm tone works correctly in diagnostic mode. The alarm is being suppressed by the microcode. • Check the **Alarm suppression** item in the configuration data. It should be set to **No** if the operator wants the alarm to be active.	Go to Step 4.
Step 4.	**Does the Operator Alert light turn on?**	Go to Step 5.	Go to MAP 0321: Operator Alert Light Problem.
Step 5.	The Operator Alert diagnostic test should still be active for this step. • Turn the Operator Alert alarm volume control fully clockwise. **Is the Operator Alert alarm tone on now?**	You can here the alarm tone. The actions taken during this step corrected the problem.	Go to Step 6.
Step 6.	Do the following, one at a time, until the problem is corrected: • Remove the Operator Alert sleeve. • Locate the DIP switches on the Operator Alert Circuit Board. DIP switch 2 must be set to the **On** position for the alarm to work. **Is DIP switch 2 set to the On position?**	Go to Step 7.	The alarm was switched off. • Set DIP switch 2 to **On**.

Table 123. MAP 0322 (continued)

Step	Questions/Actions	Yes	No
Step 7.	Do the following, one at a time, until the problem is corrected: • Run the Operator Alert Test. • Set the Operator Alert volume control knob at the center of its range. It is only important that it not be at either extreme end of its range. • Measure the voltage at the Operator Alert + (plus) terminal (wire 11). **Is the voltage 0 V dc?**	Go to Step 8.	Go to Step 10.
Step 8.	**Is wire 11 connected to the center terminal on the Operator Alert Volume Control Potentiometer?**	Go to Step 9.	• Install the wires on the potentiometer.

Table 123. MAP 0322 (continued)

Step	Questions/Actions	Yes	No
Step 9.	Do the following, one at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Remove the volume control potentiometer from the Operator Alert assembly by removing the knob and the nut, and sliding the potentiometer back with the wires still connected. • Note the positions of the wires on the potentiometer terminals. • Remove the wires from the terminals. • Check for continuity between the following pairs: – Terminals 3 and 1 – Terminals 3 and 2 **Is there continuity between the pairs?**	• Repair an open circuit between wire 8 or wire 11 in the Operator Alert assembly.	• Install a new Operator Alert Volume Control Potentiometer. @
Step 10.	• Ensure that the Operator Alert diagnostic test is still active. • Measure the voltage at the − (minus) terminal (wire 10). **Is the voltage less than 1 V dc?**	• Install a new Operator Alert Speaker. @	Go to Step 11.

Table 123. MAP 0322 (continued)

Step	Questions/Actions	Yes	No
Step 11.	• Measure the voltage at ALJ2–2. **Is the voltage +5 V dc?**	Do the following, one step at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Check for an open between ALCD1–10 and the − (minus) terminal in wire 12. • Install a new Operator Alert Circuit Board. @	• Install a new Mechanism Interface Card (MIC). @

MAP 0323: Operator Alert Accessory Contacts Problem

Symptom Explanation	Conditions That Could Cause This Symptom
The accessory contacts on the Operator Alert are never on.	• The Operator Alert accessory contacts fuse is open. • The Operator Alert accessory contacts relay has failed. • The Operator Alert Circuit Board has failed. • There is an open circuit in the wiring.
The accessory contacts on the Operator Alert are always on.	• The Operator Alert accessory contacts relay has failed. • The Operator Alert Circuit Board has failed. • There is a short circuit in the wiring.

REFERENCES

- Removals & Adjustments - Control Unit
- Circuit Diagrams - CD77 - Operator Alert
- Wiring Diagrams - WD68 - MIC to Operator Alert Assembly
- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run the Operator Alert diagnostic test.

QUICK CHECKS

- None

SERVICE CHECKS

- Check the functions of the Operator Alert by running the Operator Alert diagnostic test.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Operator Alert Accessory Contacts Fuse	60%	1458	2142	1526
Operator Alert Accessory Contacts Relay	30%	1458	2142	1526
Operator Alert Circuit Board	10%	1457	2142	1526

MAP 0323 BEGINS

Table 124. MAP 0323

Step	Questions/Actions	Yes	No
	CAUTION: **Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	This MAP fixes two conditions: • The accessory contacts are never on. • The accessory contacts are always on. **Is the device attached to the Operator Alert accessory contacts never on?**	Go to Step 2.	Go to Step 6.
Step 2.	• Run the Operator Alert diagnostic test. **Is the Operator Alert light on?**	Go to Step 3.	Go to MAP 0321: Operator Alert Light Problem.

Table 124. MAP 0323 (continued)

Step	Questions/Actions	Yes	No
Step 3.	Do not power off the printer for this step. You must pick the accessory relay. • Disconnect the accessory device from the accessory contacts. • Check for an open between the Operator Alert accessory contacts. **Is there an open circuit?**	Go to Step 4.	The accessory contacts are closing correctly. The problem is in the accessory device or the wiring connected to the accessory contacts.
Step 4.	Do the following, one at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Remove the Operator Alert sleeve from the base. • Check for loose wires on the Operator Alert Accessory Contacts Relay. • Remove the Accessory Contacts Fuse and measure for continuity. **Is there continuity through the fuse?**	Go to Step 5.	The accessory device has blown the fuse. • Ensure that the accessory circuit requires less than 5 amps.

Table 124. MAP 0323 (continued)

Step	Questions/Actions	Yes	No
Step 5.	Do the following, one at a time, until the problem is corrected: • Reinstall the fuse. • Power on the printer. • Run the Operator Alert diagnostic test. • Locate the coil contacts on the Operator Alert Accessory Contacts Relay. The contacts are arranged vertically on the left side of the relay. • Measure the voltage across the relay coil. **Is the voltage greater than +10 V dc?**	Do the following, one step at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Check for an open circuit through the Operator Alert Contacts Fuse Holder. • Check for an open circuit in the following wires: – Wire 9 – Wire 5 – Wire 13 • Install a new Operator Alert Accessory Contacts Relay. @	Do the following, one step at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Check for an open circuit in wire T4 on the Relay. • Install a new Operator Alert Circuit Board. @
Step 6.	The accessory contacts are always open. • Perform whatever actions that are required so that the CHANNELS DISABLED message is displayed. **Is the Operator Alert light off?**	Go to Step 7.	The Operator Alert light is also on. Go to MAP 0321: Operator Alert Light Problem.
Step 7.	Do not power off the printer for this step. • Disconnect the accessory device from the accessory contacts. • Check for continuity between the Operator Alert accessory contacts. **Is there continuity?**	Go to Step 8.	The Operator Alert assembly is operating correctly. The problem is in the accessory device or the wiring connected to the accessory contacts.

Table 124. MAP 0323 (continued)

Step	Questions/Actions	Yes	No
Step 8.	• SHUTDOWN AND POWER OFF THE PRINTER. • Check for an open between between the Operator Alert accessory contacts. **Is there an open circuit?**	Do the following, one step at a time, until the problem is corrected: • Install a new Operator Alert Circuit Board. • Check for a short circuit in wire T4 in the Operator Alert assembly. @	• Install a new Operator Alert Accessory Contacts Relay. @

MAP 0330: Display/Touch Screen Start MAP

REFERENCES

- Display/Touch Screen - User's Guide

MAP 0330 BEGINS

Table 125. Display/Touch Screen Problems

Step	Problem	Action
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**	
Step 1.	The Display/Touch Screen is blank.	Go to Step 2.
	The display illumination is dim.	Adjust the brightness control.
	Characters on the display are barely visible.	Adjust the contrast control.
	The display does not fill or overflows the Display/Touch Screen .	Adjust the height and width controls until the image fills the frame.
	The display is not centered in the Display/Touch Screen frame.	Adjust the horizontal and vertical centering controls until the image is centered.
	The Display/Touch Screen display is distorted.	Adjust the pincushion-barrel and keystone controls until the distortion is gone.
	The Display/Touch Screen colors are not satisfactory.	Adjust the red, green, and blue intensity controls.
	Characters on the Display/Touch Screen are out of focus.	Install a new Display/Touch Screen .

Table 125. Display/Touch Screen Problems (continued)

Step	Problem	Action
Step 1, (cont'd)	The Display/Touch Screen has only a full white raster.	Do the following, one step at a time, until the problem is corrected: • Check the cabling between the Display Adapter Card and the Display/Touch Screen . • Install a new Display Adapter Card. • Install a new Display/Touch Screen .
	The Display/Touch Screen does not respond to touch selections.	Do the following, one step at a time, until the problem is corrected: • Check the cabling between the Display Adapter Card and the Display/Touch Screen . • Reseat the Display Adapter Card. • Install a new Display Adapter Card. • Install a new Display/Touch Screen .

The Display/Touch Screen is normally blank for about 6 minutes during the initial power-on sequence. The approximate timing of the steps of the start-up process is shown in Table 126. Timing may vary on different systems, but you can use this table as a guide.

Table 126. Start-up Timing

Event or Indicator	**Time (seconds)**
Power on RISC Controller and printers	0
Transfer station audible reset	20
Blowers on	25
Erase lamps on	40
Printers cycle down	90
Display/Touch Screen goes white with LED progress indicator in lower right corner	350
Printer control panels active	395
Copyright notice appears on the Display/Touch Screen	420
Main window appears on the Display/Touch Screen with Printer Status windows	440

Table 127. Display/Touch Screen Problems

Step	Questions/Actions	Yes	No
	DANGER **<21> Use extreme caution when making adjustments with the Display/Touch Screen powered on. These adjustments should not be made unless someone else is present.** **The Display/Touch Screen must never be left unattended with the covers removed and the power on in a customer environment.** **To prevent electrical shock, power off the Display/Touch Screen and disconnect the power cord before changing any part.** **High voltages may remain on the anode of the CRT after the Display/Touch Screen is powered off. Discharge the anode in accordance with CRT safety instructions.** **CRTs are under vacuum. All persons working near an exposed CRT must wear safety glasses and long-sleeved clothing (or comparable protection).**		
Step 2.	**Is the Display/Touch Screen power-on indicator on or flashing?**	Go to Step 3.	Go to Step 9.
Step 3.	**Are the contrast and brightness controls set high enough?**	Go to Step 4.	• Set the contrast and brightness controls at midrange or higher.

Table 127. Display/Touch Screen Problems (continued)

Step	Questions/Actions	Yes	No
Step 4.	• Open the front cover of the Control Unit so you can access the RISC Controller. • If the green LED turns off within 5 seconds after the power-up procedure, answer this question No. **Is the RISC Controller power indicator green LED on?**	Go to Step 5.	There is a power problem with the RISC Controller. Go to MAP 2000: Controller Start MAP.
Step 5.	**Is there a number on the RISC Controller display?**	Go to Step 7.	Go to Step 6.
Step 6.	• Press the **Reset** pushbutton on the front of the RISC Controller (for Type 7025 Model F50, press the **Power** switch). **Do numbers appear and change on the RISC Controller display?**	• Wait 6 minutes for the RISC Controller to finish the power-on tests. At that time, **c32** appears on the display and then the display becomes blank. • If the problem continues, install a new Display Adapter Card or a new Display/Touch Screen .	Go to MAP 2000: Controller Start MAP.
Step 7.	• Watch the display for a full 6 minutes to see if the number changes. **Is the same number constantly displayed on the RISC Controller or is 888 flashing on the display?**	Go to MAP 2000: Controller Start MAP.	Go to Step 8.

Table 127. Display/Touch Screen Problems (continued)

Step	Questions/Actions	Yes	No
Step 8.	**Are there two or more numbers between 221 and 296 alternating on the display?**	Go to MAP 2000: Controller Start MAP.	The RISC Controller is still running the power-on routines. The display will clear when the routines are finished and characters will appear on the Display/Touch Screen .
Step 9.	**Is the RISC Controller power indicator LED on?**	Go to Step 10.	Go to MAP 0500: Power Control – Simplex Printing System.
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
Step 10.	• Disconnect the power cord at the Display/Touch Screen . • Measure the voltage between the terminals at the Display/Touch Screen end of the power cord. **Is the voltage 200 V ac?**	• Install a new Display/Touch Screen .	Go to Step 11.
Step 11.	• Disconnect the Display/Touch Screen power cord at the AC Control Box. • Measure the voltage between the terminals at the AC Control Box. **Is the voltage 200 V ac?**	• Install a new Display/Touch Screen power cord.	Go to MAP 0500: Power Control – Simplex Printing System.

MAP 0500: Power Control – Simplex Printing System

Symptom Explanation	Conditions That Could Cause This Symptom
There is a problem with the Printer or Control Unit power.	• A switch on the control unit is in the wrong position. • The control unit AC Control Box is defective. • The control unit AC Control Box CP1 is tripped. • The power control panel card is defective. • The UEPO Switch is defective. • The printer Circuit Breakerss CB451, CB452, or CB453 are defective or tripped. • The printer PR011 Card is defective. • The printer power supply unit is defective. • The printer power supply unit voltage jumpers are unplugged or jumpered incorrectly. • The control unit ac control box voltage jumper is unplugged.

Attention

If you are working on a power-up problem, unplug the RISC controller power cable. After the problem is fixed, reinstall the power cable and power the printer up normally.

The microcode on the controller hard drive could be damaged if you power off the controller while the microcode is loading.

REFERENCES

- Circuit Diagrams - CD78 - Printer Remote Power Circuit
- Wiring Diagrams -
  - WD01 - Printer AC Power Supply - (200 to 240V)
  - WD03 - Printer AC Power Supply - (380/400/415V)
  - WD05 - Low Voltage Power Supply, MIC, PQE & Fans
  - WD06 - Control Unit AC Power Control (Simplex)
  - WD08 - Control Unit AC Control Box (Simplex)
  - WD10 - AC Power Control (Simplex)
  - WD12 - Printer Power Supply - Power On/Off

FIX VERIFICATION

- POR the Printer.

QUICK CHECKS

DANGER

<5> High-voltage is present. Use care while working in this area.

DANGER

<12> During an electrical storm, do not handle channel cables, connectors, or power cords.

1. Ensure that the UEPO switch on the power control panel is in the ON position.
2. Ensure that the Local/Remote switches on the power control panel are in the correct positions.
   - Control Unit - Local
   - Printer - Remote
3. Check the ac control box in the control unit to:
   - Ensure that the service disconnect switch is in the Normal position.
   - Ensure that CP1 is in the ON position.
   - Ensure that the voltage jumper is correctly installed as follows:
     – JA02 - input line voltage 240 V ac
     – JA03 - input line voltage 220/230 V ac
     – JA04 - input line voltage 200/208 V ac
4. Check that the printer voltage jumpers are correctly installed on the printer low voltage power supply.
5. Reset Circuit Breakers CB451, CB452, and CB453 if tripped.

SERVICE CHECKS

- Check the customer power for correct voltage. See Power Requirements.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
A switch in the wrong position	50%	- -	- -	- -
A loose connector	41%	- -	- -	- -
Control Unit AC Control Box	01%	1457	2138	1515
Circuit Breaker CB451	01%	1450	2122, 2124	
Circuit Breaker CB452	01%	1450	2122, 2124	
Circuit Breaker CB453	01%	1450	2122, 2124	
PR011 Card	01%	1446	2118	1764
Power Control Panel Card	01%	1457	2140	1531
AC Power Supply	01%	1450	2122	1757
DC Power Supply	01%	1450	2122	1758
UEPO Switch	01%	1457	2140	

Power Requirements

60 Hz (±1.2 Hz) US, Canada (Requires a dedicated electrical outlet with 60 ampere service.)

Phase-to-Phase		Phase-to-Ground/Neutral	
Nominal Voltage	**Voltage Limits (±10%)**	**Nominal Voltage**	**Voltage Limits (±10%)**
208	187 to 229	120	108 to 132
220	187 to 229	127	114 to 140
230	207 to 252	133	147 to 120
240	216 to 264	140	154 to 126

50 Hz (±1.0 Hz) Europe, World Trade (Requires a dedicated electrical outlet.)

Phase-to-Phase		Phase-to-Ground/Neutral	
Nominal Voltage	**Voltage Limits (±10%)**	**Nominal Voltage**	**Voltage Limits (±10%)**
380	342 to 418	220	198 to 242
400	360 to 440	230	207 to 253
415	374 to 456	240	216 to 264

50/60 Hz (±1.0 Hz) Japan (Requires a dedicated electrical outlet with 60 ampere service.)

Phase-to-Phase		Phase-to-Ground/Neutral	
Nominal Voltage	**Voltage Limits (±10%)**	**Nominal Voltage**	**Voltage Limits (±10%)**
200	180 to 220	115	100 to 130

MAP 0500 Begins

Table 128. MAP 0500

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		

Table 128. MAP 0500 (continued)

Step	Questions/Actions	Yes	No
Step 1.	• Do the QUICK CHECKS. • Set the control unit power local/remote switch to Local. • Power off and then power on the printer. **Do you still have a power problem?**	Go to Step 2.	The QUICK CHECKS solved the problem. If your problem is powering-up from a local/remote switch configuration different than the normal setup used in the QUICK CHECKS, do the following one at a time until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Repair an open in the remote power cable to the host. • Repair an open from PJC03 on the tailgate to PJB01 on the power control panel. • Repair an open from PJC02 on the tailgate to PJB01 on the power control panel. • Repair an open from PJB02 on the power control panel to PJA08 on the ac control box. • Install a new power control panel card. • Install a new control unit AC Control Box. @

Table 128. MAP 0500 (continued)

Step	Questions/Actions	Yes	No
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
Step 2.	Do the following: • Open the printer left rear cover. • Remove the blower cover. • Measure the power cord voltage at TB101 (terminal block where the power cord attaches to the printer). See Power Requirements. **Are the phase to phase and phase to ground/neutral voltages correct?**	Go to Step 3.	Do the following: • Check the customer power. Have the customer correct his power problem if the voltage is not correct. • Check the power cord. Repair or replace it as necessary.
Step 3.	Do the following: • Open the printer right front cover. • Remove the input bin right side cover. • Check voltage jumpers PJ454, PJ455, and PJ456 that are located on the left side of the printer power supply. Ensure they are correctly plugged. **Are the jumpers correct?**	Go to Step 4.	Install the correct voltage jumpers.
Step 4.	**Is the "AC IN" Indicator lit on the printer dc power supply?**	Go to Step 6.	Go to Step 5.

Table 128. MAP 0500 (continued)

Step	Questions/Actions	Yes	No
Step 5.	**Is Circuit Breaker CB454, CB455, or CB456 tripping?**	• SHUTDOWN AND POWER OFF THE PRINTER. • Unplug the power cord. • Check for a short in the ac power distribution. • Install a new ac power supply. • Install a new dc power supply. @	Do the following, one step at a time until the problem is corrected: • Check the PJ466 connector. • Install a new dc power supply. • Install a new ac power supply. • Install a new PR011 Card. @
Step 6.	• Check the LED alarm indicators on the DC power supply. **Are all the Red LED alarm indicators off?**	Go to Step 7.	One or more of the alarm indicators is on. Go to MAP 0511: Printer Power Error.
Step 7.	**Is the "POWER" indicator lit on the DC power supply?**	Go to Step 8.	Go to Step 11.
Step 8.	**Are you in this MAP because the Display/Touch Screen is blank or you suspect a Controller problem?**	Go to Step 9.	• Check connectors: – PJ461 to PJ310 all pins – PJ462 to PJ205 all pins • Recheck your problem symptoms and return to MAP 0010: Symptom Start MAP.
Step 9.	• Measure the ac voltage between PJA05-1 and PJA05-3. (It may be easier to unplug PJA05 and measure voltage at the socket). **Is there at least 180 V ac?**	Go to Step 10.	• Install a new AC Control Box. @

Table 128. MAP 0500 (continued)

Step	Questions/Actions	Yes	No
Step 10.	• Measure the ac voltage between PJA06-1 and PJA06-3. **Is there at least 180 V ac?**	Go to MAP 2000: Controller Start MAP.	• Install a new ac control box. @
Step 11.	• Measure the dc voltage between PJA07-1 and PJA07-2 on the dc control box. **Is the voltage approximately 24 V dc?**	Go to Step 12.	Go to Step 14.
Step 12.	• Unplug PJ462 on the dc power supply. (Do not power off.) • Measure the dc voltage between P462-1 and P462-2. **Is the voltage approximately 24 V dc?**	Go to Step 13.	Repair an open between: • PJ462-1 to PJA07-1 • PJ462-2 to PJA07–2

Table 128. MAP 0500 (continued)

Step	Questions/Actions	Yes	No
Step 13.	• SHUTDOWN AND POWER OFF THE PRINTER. • Measure continuity between PJ462-6 and PJ462-8 **Is there continuity?**	Do the following, one step at a time until the problem is corrected: • Check the following connectors: – PJ462 pins 4-8 – PJ464 pins 5-6 – PJ466 pins 1-2 – PJ466 pins 15-16 – PJ320 pins 8-10 • Install a new dc power supply. • Install a new ac power supply. @	Do the following, one step at a time until the problem is corrected: • Repair an open between PJ462 and the EPO switch. – PJ462-6 to PJ205-6 – PJ462-8 to PJ205-8 – PJ205-6 to PJA07-3 – PJ205-8 to PJA07-4 – PJA08-7 to UEPO C-3 – PJA08-6 to UEPO C-2 • Install a new switch if the EPO switch is defective. • Install a new ac control box if the following are open: – JA07-3 to JA08-7 – JA07-4 to JA08-6 @
Step 14.	• Measure the dc voltage in the control unit between PJA08-9 and PJA07-2. **Is the voltage approximately 24 V dc?**	Go to Step 16.	Go to Step 15.
Step 15.	• Measure the dc voltage between PJA08-8 and PJA07-2. **Is the voltage approximately 24 V dc?**	Check continuity and repair as necessary: • PJA08-8 to UEPO A-2 • PJA08-9 to UEPO A-3 • UEPO A-2 and A-3. • If the UEPO switch is not working correctly, install a new UEPO Switch.	Go to Step 19.

Table 128. MAP 0500 (continued)

Step	Questions/Actions	Yes	No
Step 16.	• Measure the dc voltage in the control unit between PJA08-10 and PJA07-2. **Is the voltage approximately 24 V dc?**	Go to Step 18.	Go to Step 17.
Step 17.	**Is the control unit service disconnect switch in the Normal position?**	• Install a new ac control box. @	• Put the service disconnect switch in the Normal position.
Step 18.	• As you press and **hold** the control unit POWER ON switch, measure the voltage between connector PJA08-14 and PJA07-2 on the ac control box. **Is the voltage approximately 24 V dc?**	Do the following, one step at a time, until the problem is corrected: • Ensure that PJA08 on the ac control box and PJB02 on the power control panel are making good connection. • Install a new power control panel card. • Install a new ac control box. • Install a new cable from PJA08 to PJB02 and UEPO. @	Do the following, one step at a time, until the problem is corrected: • Check connectors/wiring and repair an open in: – PJA08-14 on the ac control box to PJB02-4 on the power control panel – PJA08-10 to PJB02-5 • Install a new power control panel card. @
Step 19.	• Check CP1 on the ac control box in the control unit. **Is CP1 ON?**	Go to Step 20.	Go to Step 21.

Table 128. MAP 0500 (continued)

Step	Questions/Actions	Yes	No
Step 20.	• Measure the ac voltage between connector PJA01-1 and PJA01-2. **Is the voltage approximately 180 to 260 V ac?**	Do the following, one step at a time, until the problem is corrected: • Ensure that the voltage jumper is installed correctly on the control unit ac control box: – PJA02 - 240 V ac – PJA03 - 220 V ac – PJA04 - 200 V ac • Install a new ac control box. @	There is an open between the printer power supply and connector PJA01-1 and PJA01-2 in the control unit ac control box. • SHUTDOWN AND POWER OFF THE PRINTER. • **Unplug the power cord if you make the next check.** • Check continuity between the following points and repair as necessary: – PJ453-5 on the printer power supply and PJ227-5 between the printer and control unit – PJ453-6 to PJ227-6 – PJ227-5 to PJA01-1 – PJ227-6 to PJA01-2
Step 21.	• Reset CP1 and power on the printer. **Does the printer power on?**	Resetting CP1 fixed the problem.	Go to Step 22.

Table 128. MAP 0500 (continued)

Step	Questions/Actions	Yes	No
Step 22.	**Does CP1 trip again?**	Do the following, one step at a time until the problem is corrected: • Install a new ac control box. • Repair a short connected to PJA07, PJA08, or PJA09. @	Restart at the beginning of the MAPs with the new symptom.

MAP 0501: Power Control – Duplex Printing System

Symptom Explanation	Conditions That Could Cause This Symptom
There is a problem with the Printer or Control Unit power.	• A switch on the control unit is in the wrong position. • The control unit AC Control Box is defective. • The control unit AC Control Box CP1 is tripped. • The power control panel is defective. • Printer Circuit Breakers CB451, CB452, or CB453 are defective or tripped. • The printer PR011 Card is defective. • The printer power supply unit is defective. • The printer power supply unit voltage jumpers are unplugged or jumpered incorrectly. • The control unit AC Control Box voltage jumper is unplugged.

Important

If you are working on a power-up problem, put the power switch on the front of the RISC controller to the OFF position. After the problem is fixed, put the power switch back to the ON position and power the printer up normally.

The microcode on the controller hard drive could be damaged if you power off the controller while the microcode is loading.

REFERENCES

- Circuit Diagrams - CD79 - Printer 1 Remote Power Circuit
- Wiring Diagrams -
  - WD01 - Printer AC Power Supply - (200 to 240V)
  - WD03 - Printer AC Power Supply - (380/400/415V)
  - WD05 - Low Voltage Power Supply, MIC, PQE & Fans
  - WD07 - Control Unit AC Power Control (Duplex)
  - WD09 - Control Unit AC Control Box (Duplex)
  - WD11 - AC Power Control (Duplex)
  - WD12 - Printer Power Supply - Power On/Off

FIX VERIFICATION

- Power-On Reset the Printer.

QUICK CHECKS

DANGER

<5> High-voltage is present. Use care while working in this area.

DANGER

<12> During an electrical storm, do not handle channel cables, connectors, or power cords.

1. Ensure that the UEPO switches on the power control panels are in the ON position.
2. Ensure that the Local/Remote switches on the power control panels are in the correct position.
   - Control Unit 2 - Local
   - Printer 2 - Remote
   - Control Unit 1 - Remote
   - Printer 1 - Remote
3. Check the AC Control Box in both control units to:
   - Ensure that the service disconnect switch is in the Normal position.
   - Ensure that CP1 is in the ON position.
   - Ensure that the voltage jumper. is correctly installed as follows:
     – JA02 - input line voltage 240 V ac
     – JA03 - input line voltage 220/230 V ac
     – JA04 - input line voltage 200/208 V ac
4. Check that the printer voltage jumpers are correctly installed on the low voltage power supply in both printers.
5. Reset Circuit Breakers CB451, CB452, and CB453 on both printers, if tripped.

SERVICE CHECKS

- Check the customer power for correct voltage (both printers). See Power Requirements.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
A switch in the wrong position	50%	- -	- -	- -
A loose connector	41%	- -	- -	- -
Control Unit AC Control Box	01%	1457	2138	1515
Circuit Breaker CB451	01%	1450	2122, 2124	
Circuit Breaker CB452	01%	1450	2122, 2124	
Circuit Breaker CB453	01%	1450	2122, 2124	
PR011 Card	01%	1446	2118	1764
Power Control Panel	01%	1457	2138	1531
AC Power Supply	01%	1450	2122	1757
DC Power Supply	01%	1450	2122	1758
UEPO Switch	01%	1457	2140	- -

MAP 0501 Begins

Table 129. MAP 0501

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		

Table 129. MAP 0501 (continued)

Step	Questions/Actions	Yes	No
Step 1.	• Do the QUICK CHECKS. • Set CU power local/remote switch to Local. • Power off and then power on. **Do you still have a power problem?**	Go to Step 2.	The QUICK CHECKS solved the problem. If your problem is powering-up from a local/remote switch configuration different than the normal setup used in the QUICK CHECKS, do the following one at a time until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Repair an open in the remote power cable to the host. • Repair an open from PJC03 on the tailgate to PJB01 on the power control panel. • Repair an open from PJC02 on the tailgate to PJB01 on the power control panel. • Repair an open from PJB02 on the power control panel to PJA08 on the AC Control Box. • Install a new power control panel. • Install a new control unit AC Control Box. @

Table 129. MAP 0501 (continued)

Step	Questions/Actions	Yes	No
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
Step 2.	Do the following for each printer: • Open the printer left rear cover. • Remove the blower cover. • Measure the power cord voltage at TB101 (the terminal block where the power cord attaches to the printer). See Power Requirements. **Are the phase to phase and phase to ground/neutral voltages correct?**	Go to Step 3.	Do the following: • Check the customer power. Have the customer correct his power problem if the voltage is not correct. • Check the main printer power cord. Repair or replace.
Step 3.	Do the following for each printer: • Open the printer right front cover. • Remove the input bin right side cover. • Check the voltage jumpers PJ454, PJ455, and PJ456 located on the left side of the printer power supply. Ensure they are correctly plugged. **Are the voltage jumpers correct?**	Go to Step 4.	Install the correct voltage jumpers.
Step 4.	**Is the "AC IN" Indicator lit on the DC Power Supply (check both printers)?**	Go to Step 6.	Go to Step 5.

Table 129. MAP 0501 (continued)

Step	Questions/Actions	Yes	No
Step 5.	**Is Circuit Breaker CB454, CB455, or CB456 tripping?**	• SHUTDOWN AND POWER OFF THE PRINTER. • Unplug the power cord. • Check for a short in the ac distribution wiring. • Install a new ac power supply. • Install a new dc power supply. @	Do the following, one step at a time until the problem is corrected: • Check the PJ466 connector. • Install a new dc power supply. • Install a new ac power supply. • Install a new PR011 Card. @
Step 6.	• Check the LED alarm indicators on the DC power supply. **Are all the red LED alarm indicators off (check both printers)?**	Go to Step 7.	One or more of the alarm indicators is on. Go to MAP 0511: Printer Power Error.
Step 7.	**Is the "POWER" indicator lit on the dc power supply (check both printers)?**	Go to Step 9.	Go to Step 8.
Step 8.	**Is the "POWER" indicator lit on Printer 2 (the printer with the RISC Controller in it)?**	Go to Step 24.	Go to Step 12.
Step 9.	**Are you in this MAP because the Display/Touch Screen is blank or you suspect a Controller problem?**	Go to Step 10.	• Check the following connectors: – PJ461 to PJ310 all pins – PJ462 to PJ205 all pins Recheck your problem symptoms and return to MAP 0010: Symptom Start MAP.

Table 129. MAP 0501 (continued)

Step	Questions/Actions	Yes	No
Step 10.	• Measure the ac voltage between PJA05-1 and PJA05-3. (It may be easier to unplug PJA05 and measure voltage at the socket). **Is there at least 180 V ac?**	Go to Step 11.	• Install a new AC Control Box. @
Step 11.	• Measure the ac voltage between PJA06-1 and PJA06-3. **Is there at least 180 V ac?**	Go to MAP 2000: Controller Start MAP.	• Install a new AC Control Box. @
Step 12.	• Measure the dc voltage between PJA07-1 and PJA07-2 on the AC Control Box in Printer 2. **Is the voltage approximately 24 V dc?**	Go to Step 13.	Go to Step 15.
Step 13.	• Unplug PJ462 on the DC power supply in Printer 2. (Do not power off.) • Measure the dc voltage between P462-1 and P462-2. **Is the voltage approximately 24 V dc?**	Go to Step 14.	Repair an open between: • PJ462-1 to PJA07-1 • PJ462-2 to PJA07-2

Table 129. MAP 0501 (continued)

Step	Questions/Actions	Yes	No
Step 14.	• SHUTDOWN AND POWER OFF THE PRINTER. • Measure continuity between PJ462-6 and PJ462-8. **Is there continuity?**	Do the following, one step at a time until the problem is corrected: • Check the following connectors: – PJ462 pins 4 and 8 – PJ464 pins 5 and 6 – PJ466 pins 1 and 2 – PJ466 pins 15 and 16 – PJ320 pins 8 and 10 • Install a new dc power supply. • Install a new ac power supply. @	Do the following, one at a time, until the problem is corrected: • Repair and open between PJ462 and the EPO switch. – PJ462-6 to PJ205-6 – PJ462-8 to PJ205-8 – PJ205-6 to PJA07-3 – PJ205-8 to PJA07-4 – PJA08-7 to UEPO C-3 – PJA08-6 to UEPO C-2 • Install a new switch if the EPO switch is defective. • Install a new AC Control Box if the following are open: – JA07-3 to JA08-7 – JA07-4 to JA08-6 @
Step 15.	• Measure the dc voltage in the control unit between PJA08-9 and PJA07-2. **Is the voltage approximately 24 V dc?**	Go to Step 17.	Go to Step 16.

Table 129. MAP 0501 (continued)

Step	Questions/Actions	Yes	No
Step 16.	• Measure the dc voltage between PJA08-8 and PJA07-2. **Is the voltage approximately 24 V dc?**	Check continuity and repair as necessary. • PJA08-8 to UEPO A-2 • PJA08-9 to UEPO A-3 • UEPO A-2 and A-3. • If the UEPO switch is not working correctly, install a new power control panel. @	Go to Step 20.
Step 17.	• Measure the dc voltage in the control unit between PJA08-10 and PJA07-2. **Is the voltage approximately 24 V dc?**	Go to Step 19.	Go to Step 18.
Step 18.	**Is the control unit service disconnect switch in the Normal position?**	• Install a new AC Control Box. @	• Put the service disconnect switch in the Normal position.

Table 129. MAP 0501 (continued)

Step	Questions/Actions	Yes	No
Step 19.	• As you press and **hold** the control unit POWER ON switch, measure the voltage between connector PJA08-14 and PJA07-2 on the AC Control Box. **Is the voltage approximately 24 V dc?**	Do the following, one at a time, until the problem is corrected: • Ensure that PJA08 on the AC Control Box and PJB02 on the power control panel are making good connection. • Install a new power control panel. • Install a new AC Control Box. • Install a new cable from PJA08 to PJB02 and the UEPO switch. @	Do the following, one at a time, until the problem is corrected: • Check connectors/wiring and repair an open in: – PJA08-14 on the AC Control Box to PJB02-4 on the power control panel – PJA08-10 to PJB02-5 • Install a new power control panel. @
Step 20.	• Check CP1 on the AC Control Box in the control unit. **Is CP1 ON?**	Go to Step 21.	Go to Step 22.

Table 129. MAP 0501 (continued)

Step	Questions/Actions	Yes	No
Step 21.	• Measure the ac voltage between connector PJA01-1 and PJA01-2. **Is the voltage approximately 180 to 260 V ac?**	Do the following, one at a time, until the problem is corrected: • Ensure that the voltage jumper is installed correctly on the control unit AC Control Box: – PJA02 - 240 V ac – PJA03 - 220 V ac – PJA04 - 200 V ac • Install a new AC Control Box. @	There is an open between the printer power supply and connector PJA01-1 and PJA01-2 in the control unit AC Control Box. • SHUTDOWN AND POWER OFF THE PRINTER. • **Unplug the power cord if next check is made.** • Check continuity between the following points and repair as necessary: – PJ453-5 on the printer power supply and PJ227-5 between the printer and control unit – PJ453-6 to PJ227-6 – PJ227-5 to PJA01-1 – PJ227-6 to PJA01-2
Step 22.	• Reset CP1 and power on the printer. **Did the printer power on?**	Resetting CP1 fixed the problem.	Go to Step 23.
Step 23.	**Did CP1 trip again?**	Do the following, one at a time, until the problem is corrected: • Install a new AC Control Box. • Repair a short connected to PJA07, PJA08, or PJA09. @	Restart at the beginning of the MAPs with the new symptom.

Table 129. MAP 0501 (continued)

Step	Questions/Actions	Yes	No
Step 24.	• Ensure PJC01 on the Printer 2 tailgate and PJC02 on the Printer 1 tailgate are making good connection. • Power off, then power on. **Do you still have a power problem?**	Go to Step 25.	Correcting the connection between the printers solved the problem.
Step 25.	• Measure the dc voltage between PJA07-1 and PJA07-2 on the AC Control Box in Printer 1. **Is the voltage approximately 24 V dc?**	Go to Step 26.	Go to Step 28.
Step 26.	• Unplug PJ462 on the DC power supply in Printer 1. (Do not power off.) • Measure the dc voltage between P462-1 and P462-2. **Is the voltage approximately 24 V dc?**	Go to Step 27.	Repair an open between: • PJ462-1 to PJA07-1 • PJ462-2 to PJA07-2

Table 129. MAP 0501 (continued)

Step	Questions/Actions	Yes	No
Step 27.	• SHUTDOWN AND POWER OFF THE PRINTER. • Measure continuity between PJ462-6 and PJ462-8 in Printer 1. **Is there continuity?**	• Install a new dc power supply. @	Do the following, one at a time, until the problem is corrected: • Repair an open between PJ462 and the UEPO switch: – PJ462-6 to PJ205-6 – PJ462-8 to PJ205-8 – PJ205-6 to PJA07-3 – PJ205-8 to PJA07-4 – PJA08-7 to UEPO C-3 – PJA08-6 to UEPO C-2 • Install a new switch if the UEPO switch is defective. • Install a new AC Control Box if the following are open: – JA07-3 to JA08-7 – JA07-4 to JA08-6 @
Step 28.	• Measure the dc voltage in the control unit between PJA08-9 and PJA07-2. **Is the voltage approximately 24 V dc?**	Go to Step 30.	Go to Step 29.
Step 29.	• Measure the dc voltage between PJA08-8 and PJA07-2. **Is the voltage approximately 24 V dc?**	Check continuity and repair as necessary. • PJA08-8 to UEPO A-2 • PJA08-9 to UEPO A-3 • UEPO A-2 and A-3. • If the UEPO switch is not working correctly, install a new UEPO switch.	Go to Step 34.

Table 129. MAP 0501 (continued)

Step	Questions/Actions	Yes	No
Step 30.	• Measure the dc voltage in the control unit between PJA08-10 and PJA07-2. **Is the voltage approximately 24 V dc?**	Go to Step 31.	• Install a new AC Control Box. @
Step 31.	• To determine if relay K2 is picked in the AC Control Box, measure for ac line voltage across PJA05-1 and PJA05-3. **Is the ac voltage approximately line voltage?**	• Install a new AC Control Box in Printer 1 control unit. • Install a new power control panel in Printer 1 control unit. • Install a new cable between the power control panel and the AC Control Box in Printer 1 control unit. @	Go to Step 32.
Step 32.	• Measure the dc voltage at the Printer 1 control unit tailgate connector PJC02-1 and PJA07-2. **Is the voltage approximately 24 V dc?**	Go to Step 33.	Check continuity and repair as necessary: • PJA08-10 to power control panel PJB02-5 • PJC02-1 to power control panel PJB01-3 • If cable continuity is good, install a new power control panel. @

Table 129. MAP 0501 (continued)

Step	Questions/Actions	Yes	No
Step 33.	• Disconnect the remote power cable at the Printer 1 tailgate. • Measure continuity between PJC02-1 and PJC02-6 on the Printer 2 side of cable. **Is there continuity?**	Install a new AC control box in Printer 2. @	• Check continuity: – PJC02-6 to PJB01-8 – PJA08-14 to PJB02-4 – AC control box in Printer 2 • Install a new AC control box in Printer 1. • Install a new printer control panel. @
Step 34.	• Check CP1 on the AC Control Box in the control unit. **Is CP1 ON?**	Go to Step 37.	Go to Step 35.
Step 35.	• Reset CP1 and power on the printer. **Did the printer power on?**	Resetting CP1 fixed the problem.	Go to Step 36.
Step 36.	**Did CP1 trip again?**	Do the following, one at a time, until the problem is corrected: • Install a new AC Control Box. • Repair a short connected to PJA07, PJA08, or PJA09. @	Restart at the beginning of the MAPs with the new symptom.

Table 129. MAP 0501 (continued)

Step	Questions/Actions	Yes	No
Step 37.	• Measure the ac voltage between connector PJA01-1 and PJA01-2. **Is the voltage approximately 180 to 260 V ac?**	Do the following, one at a time, until the problem is corrected: • Ensure that the voltage jumper is installed correctly on the control unit AC Control Box: – PJA02 - 240 V ac – PJA03 - 220 V ac – PJA04 - 200 V ac • Install a new AC Control Box. @	There is an open between the printer power supply and connector PJA01-1 and PJA01-2 in the control unit AC Control Box. • SHUTDOWN AND POWER OFF THE PRINTER. • **Unplug the power cord if you make the next check.** • Check continuity between the following points and repair as necessary: – PJ453-5 on the printer power supply and PJ227-5 between the printer and control unit – PJ453-6 to PJ227-6 – PJ227-5 to PJA01-1 – PJ227-6 to PJA01-2

MAP 0511: Printer Power Error

Symptom Explanation	Conditions That Could Cause This Symptom
The printer will not power on or one of the DC voltage alarm indicators is on.	• Printer in test mode during power on (thumbwheel on CPxxx not at 0. • The dc power supply or ac power supply has loose connections. • Circuit Breakers are tripped or defective. • The power sequence logic cards are defective. • The dc power supply or ac power supply is defective. • The loads/devices using the power supply voltages are defective. • The PR011 Card is defective.

SHUTDOWN

If the controller is still powered on when you enter this MAP, do a complete shutdown of the printer using the Display/Touch Screen . See the Operator's Guide for more information.

Important

If you are working on a power-up problem, move the power switch on the front of the RISC controller to the OFF position. After you fix the problem, move the power switch back to the ON position and power the printer up normally.

The microcode on the controller hard drive could be damaged if you power off the controller while the microcode is loading.

REFERENCES

- Circuit Diagrams -
  - CD80 - (+5 V) Voltage Distribution
  - CD81 - (+5 V) Voltage Distribution
  - CD82 - (+5 V) Voltage Distribution
  - CD83 - (+5 V) Voltage Distribution
  - CD84 - (+/- 12V) Voltage Distribution
  - CD85 - (+24VE) Voltage Distribution
  - CD86 - (+24VF) Voltage Distribution
  - CD87 - (+24VH) Voltage Distribution
  - CD88 - (+5VM/+12VM/+100VM) Voltage Distribution (Mirror)
- Wiring Diagrams -
  - WD01 - Printer AC Power Supply - (200 to 240V)
  - WD03 - Printer AC Power Supply - (380/400/415V)
  - WD05 - Low Voltage Power Supply, MIC, PQE & Fans
  - WD06 - Control Unit AC Power Control (Simplex)
  - WD07 - Control Unit AC Power Control (Duplex)
  - WD08 - Control Unit AC Control Box (Simplex)
  - WD09 - Control Unit AC Control Box (Duplex)
  - WD10 - AC Power Control (Simplex)
  - WD11 - AC Power Control (Duplex)
  - WD12 - Printer Power Supply - Power On/Off
  - WD24-1 - Printer DC Power Distribution
  - WD24-2 - Printer DC Power Distribution

FIX VERIFICATION

- POR the Printer.

QUICK CHECKS

1. If the print engine has power on and the Maintenance Panel displays **..11**, **..12**, or **..13**, check to see if the parity error LEDs are on for the following cards:
   - CPxxx Card
   - PC561 Card
   - FU041 Card

   If the parity error LED is on for any of the above cards, replace that FRU.
2. **Ensure that CB451 on the front of the printer ac power supply is turned OFF before you continue.** Visually inspect all circuit breakers, connectors, and cabling in the printer dc power supply. Reseat all connectors on the dc power supply and the ac power supply.

SERVICE CHECKS

- Power on the printer.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
DC power supply or AC power supply	78%	1450	2122	1758 or 1757
PR011 Card	20%	1446	2118	1764
Circuit Breaker CB451, CB452, or CB453	01%	1450	2122, 2124	
Shorted wiring	01%	- -	- -	- -
Fan	- -			
PC561 Card	- -	1453	2116	1764
Tractor Motor (M105)	- -	1445	2028	1919
Hot Roll Drive Motor (M703)	- -	1435	2046	1696
Drum Motor (M107)	- -	1445	1974	1645
Retractor Motor (M103)	- -	14431445	2032	1903
DV061 Card	- -	1453	2114	1764
DV071 Card	- -	1437	2048	1685
High Voltage Power Supply	- -	1449	1964	1568
Erase Lamp Starter (ST101)	- -	1446	1964	1666
Erase Lamp (PL101)	- -	1429	1964	1662

Printer Power Supply Problem Start Table

Note: The following table relates to the voltage error indicators on the dc power supply. Be sure to look at ALL indicators and match the lighted indicators to the following table to ensure that you go to the correct entry point.

Failure Type Indicated On Power Supply	Go To
+5V Alarm LED on	Go to Table 134
±12V Alarm LED on	Go to Table 133
+24VF Alarm LED on	Go to Table 130
+24VE Alarm LED on	Go to Table 131
+24VH Alarm LED on	Go to Table 137
TRNS TH Alarm LED on	Go to Table 135
SOFT TH Alarm LED on	Go to Table 136
MIRROR Alarm LED on	Go to Table 139
Drive Alarm LED on	Go to Table 132
Fan Alarm LED on	Go to Table 138
No red LEDs are lit. No Maintenance Panel Display.	Go to MAP 0500: Power Control – Simplex Printing System
No red LEDs are lit. Maintenance Panel contains valid display.	Go to the MAP associated with the Maintenance Panel code. See E0XX Codes and SRC Cross-References and System Reference Codes.

MAP 0511 For +24 VF Alarm Begins

Table 130. MAP 0511 For +24 VF Alarm

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		

Table 130. MAP 0511 For +24 VF Alarm (continued)

Step	Questions/Actions	Yes	No
Step 1.	• SHUTDOWN AND POWER OFF THE PRINTER. • Open the printer right front cover. • Turn off CB451 on the front of the ac power supply. **DANGER** **<5> High-voltage is present. Use care while working in this area.** • Check all connectors on the dc power supply to ensure that they are seated correctly. Check for pushed pins in connectors. • Power on the printer. **Does the error occur again?**	Go to Step 2.	Reseating the connectors solved the problem.

Table 130. MAP 0511 For +24 VF Alarm (continued)

Step	Questions/Actions	Yes	No
Step 2.	There may be a short in the wiring. Do the following: • The +24 VF dc voltage goes to the following cards after leaving the power supply: – PR011 Card – DV071 Card – Direct to fans B301 and B101 • SHUTDOWN AND POWER OFF THE PRINTER. • Remove the +24 VF dc wire from each of the above cards, one at a time, and then power on the printer to see if the +24 VF dc alarm LED comes on again. **Does the printer power on after any of the wires are removed?**	Go to Step 4.	Go to Step 3.
Step 3.	• Check each of the +24 VF wires you removed from the cards in 2 for a short to ground between the card and the +24 VF dc pins on the pin side of the power supply. **Did you find a short to ground?**	• Repair the short circuit as needed.	Install the following, one at a time, until the problem is fixed: • DV061 Card • dc power supply • ac power supply @

Table 130. MAP 0511 For +24 VF Alarm (continued)

Step	Questions/Actions	Yes	No
Step 4.	This card probably has a short in its wiring, so do the following: • SHUTDOWN AND POWER OFF THE PRINTER. • Remove the +24 VF dc wire from each fan on this card, one at a time, and then power on the printer to see if the +24 VF dc alarm LED comes on again. **Does the printer power on after any of these wires are removed?**	There is a short in the fan or wiring to the fan. Check the wiring for a short, or replace the fan.	There must be an internal short in this card. • Install a new card. @

MAP 0511 For +24 VE Alarm Begins

Table 131. MAP 0511 For +24 VE Alarm

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
Step 1.	There may be a short in the wiring. Do the following: • SHUTDOWN AND POWER OFF THE PRINTER. • Remove the rear center bottom printer cover. • Disconnect PJ306 from the DV061 Card. • Power on the printer with this connector disconnected. **Does the printer power on without the +24 VE alarm?**	There is a problem with the wiring or secondary cards. Go to Step 2.	There is a problem with the DV061 Card, the power supply, or wiring. Go to Step 4.

Table 131. MAP 0511 For +24 VE Alarm (continued)

Step	Questions/Actions	Yes	No
Step 2.	• SHUTDOWN AND POWER OFF THE PRINTER. • Reconnect PJ306. • Disconnect PJ344 on PC561. • Power on the printer. **Does the printer power on without the +24 VE alarm?**	• Install a new PC561 Card. @	Go to Step 3.
Step 3.	• SHUTDOWN AND POWER OFF THE PRINTER. • Reconnect PJ344. • Disconnect PJ601 on the DV061 Card. • Power on the printer. **Does the printer power on without the +24 VE alarm?**	• Install a new DV081 Card. @	• There is a short in the wiring. Repair the following connectors: – PJ306-1 to PJ344-8 – PJ306-6 to PJ601-1
Step 4.	• SHUTDOWN AND POWER OFF THE PRINTER. • Reconnect PJ306. • Disconnect PJ460 pin 2 from the power supply. • Power on the printer. **Does the printer power on without the +24 VE alarm?**	• Do the following, one at a time until the problem is corrected: – Check for a short between PJ311 to PJ460 pins 2 and 5. Repair if necessary. – Install a new DV061 Card. @	Do the following, one at a time until the problem is corrected: • Check CB454 and reset if necessary. • Install a new DC power supply. • Install a new AC power supply. @

MAP 0511 For Drive LED Alarm Begins

Table 132. MAP 0511 For Drive LED

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
Step 1.	• SHUTDOWN AND POWER OFF THE PRINTER. • Disconnect PJ460 on the dc power supply. • Power on the printer. **Does the printer power on without the Drive LED?**	The problem is a VD voltage circuit. Go to Step 2.	The problem is not external. Do the following, one step at a time, until the problem is corrected: • Repair an open in PJ466 pin 4. • Install a new dc power supply. • Install a new ac power supply. @

Table 132. MAP 0511 For Drive LED (continued)

Step	Questions/Actions	Yes	No
Step 2.	• SHUTDOWN AND POWER OFF THE PRINTER. • Reconnect PJ460. • Disconnect only pins 8 and 11 on PJ311 on the DV061 Card. • Power on the printer. **Does the printer power on without the Drive LED?**	The error is caused by +40 VD circuit. Go to Step 3.	The error is not caused by +40 VD circuit. Go to Step 7.
Step 3.	• SHUTDOWN AND POWER OFF THE PRINTER. • Reconnect PJ311, all pins. • Disconnect PJ304 on the DV061 Card. • Power on the printer. **Does the printer power on without the Drive LED?**	The error is caused by DV071 Card. Go to Step 5.	The error is caused by DV061 Card or attached devices. Go to Step 4.

Table 132. MAP 0511 For Drive LED (continued)

Step	Questions/Actions	Yes	No
Step 4.	Do not power on the printer with any of the following connectors disconnected: PJ309, PJ321, PJ322. The DV061 card will be damaged. +40 VD is used by four motors. • Tractor Motor (M105) • Hot Roll Drive Motor (M703) • Drum Motor (M107) • Retractor Motor (M103) Do the following, one step at a time, until the problem is corrected: • Check for shorts within the cabling – PJ309 to PJ701 – PJ309 to PJ138 – PJ321 to PJ126 – PJ322 to PJ136 • Install a new motor – Tractor Motor (M105) – Hot Roll Drive Motor (M703) – Drum Motor (M107) – Retractor Motor (M103) • Check cable PJ311 for shorts between pins 8-1 and 11-4. • Install a new DV061 Card. @		

Table 132. MAP 0511 For Drive LED (continued)

Step	Questions/Actions	Yes	No
Step 5.	+40 VD is used by two motors. Disconnect the following connectors, one at a time, and check the drive LED: • PJ628 • PJ629 **Did removal of any of these connectors cause the Drive LED to remain off?**	Do the following, one step at a time, until the problem is corrected: • Check for shorts within the cabling associated with the connector. • Install a new motor associated with the connector. @	Do the following, one step at a time, until the problem is corrected: • Check cable PJ606 for shorts between pins 1 and 2. • Install a new DV071 Card. @
Step 6.	• SHUTDOWN AND POWER OFF THE PRINTER. • Disconnect only pins 3 and 6 on PJ311 on the DV061 Card. • Power on the printer. **Does the printer power on without the Drive LED?**	Error caused by +24 VD system. Go to Step 7.	The error is caused by a cable problem between PJ460 to PJ311. • Repair the short on the cable.

Table 132. MAP 0511 For Drive LED (continued)

Step	Questions/Actions	Yes	No
Step 7.	• SHUTDOWN AND POWER OFF THE PRINTER. • Reconnect PJ311. • The +24 VD system is used by four components: – Toner feed motor PJ323 – DV071 Card PJ304 – DV101 Card PJ305 – DV081 Card PJ306 • Disconnect each connector, one at a time, to see if it fixes this problem. **Did disconnecting a connector stop the Drive LED from turning on?**	The error is caused by a circuit associated with connector. • Trace the wiring diagram to the component, checking for shorts in wiring. If you find no shorts, replace component.	• Install a new DV061 Card. @

MAP 0511 For ±12V Alarm Begins

Table 133. MAP 0511 For ±12V Alarm

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		

Table 133. MAP 0511 For ±12V Alarm (continued)

Step	Questions/Actions	Yes	No
Step 1.	• SHUTDOWN AND POWER OFF THE PRINTER. • Open the printer right front cover. • Turn off CB451 on the front of the ac power supply. **DANGER** **<5> High-voltage is present. Use care while working in this area.** • Check all connectors on the dc power supply to ensure that they are seated correctly. Check for pushed pins in connectors. • Power on the printer to see if the error is still present. **Does the error occur again?**	Go to Step 2.	Reseating the connectors solved the problem.

Table 133. MAP 0511 For ±12V Alarm (continued)

Step	Questions/Actions	Yes	No
Step 2.	There may be a short to ground in the ±12 V dc circuit. Do the following: • Check for a short circuit in the ±12 V dc network. The ±12 V dc voltage comes from the dc power supply and is distributed via the DV061 logic board to the following cards: – DV061 Card – CPxxx Card – PR011 Card – FU041 Card – PC561 Card • SHUTDOWN AND POWER OFF THE PRINTER. • Remove the ±12 V dc wire from each of the above cards, one at a time, and then power on the printer to see if the ±12 V Alarm LED comes on again. **Does the printer power on after any of the wires are removed?**	Go to Step 4.	Go to Step 3.
Step 3.	• Check each of the ±12 V dc wires removed from the cards in 2 for a short to ground between the card and the ±12 V dc pins on the pin side of the power supply. **Did you find a short to ground?**	• Repair the short circuit as needed.	Install the following one at a time until the problem is fixed: • dc power supply • ac power supply @

Table 133. MAP 0511 For ±12V Alarm (continued)

Step	Questions/Actions	Yes	No
Step 4.	This card probably has a short in its wiring. Do the following: • SHUTDOWN AND POWER OFF THE PRINTER. • Remove the ±12 V dc wire from each device on this card, one at a time, and then power on the printer to see if the ±12 V dc alarm comes on again. **Does the printer power on after any of these wires are removed?**	There is a short in the device or wiring to the device. • Check the wiring for a short, or replace the device.	There is an internal short in this card. • Install a new card. @

MAP 0511 For +5V Alarm Begins

Table 134. MAP 0511 For +5V Alarm

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		

Table 134. MAP 0511 For +5V Alarm (continued)

Step	Questions/Actions	Yes	No
Step 1.	• SHUTDOWN AND POWER OFF THE PRINTER. • Open the printer right front cover and remove the power supply cover. • Turn off CB451 on the front of the ac power supply. **DANGER** **<5> High-voltage is present. Use care while working in this area.** • Check all connectors on the dc power supply to ensure that they are seated correctly. Check for pushed pins in connectors. • Power on the printer. **Does the error occur again?**	Go to Step 2.	Reseating the connectors solved the problem.
Step 2.	• Remove wires PJ310-1 and PJ310-2. Do not allow wires to touch metal. • Power on the printer. **Does the error occur again?**	• Reinstall wires. Go to Step 3.	• Repair a short in one of the following: – PJ310-1 to PJ461-1 – PJ310-2 to PJ461-2 • Install a new dc power supply. • Install a new ac power supply. @

Table 134. MAP 0511 For +5V Alarm (continued)

Step	Questions/Actions	Yes	No
Step 3.	There may be a short to ground. Do the following: • The +5 V dc voltage goes to the following cards after leaving the power supply: – PC561 Card – DV071 Card – FU041 Card – CPxxx Card – DV081 Card – DV101 Card – PR011 Card • SHUTDOWN AND POWER OFF THE PRINTER. • Remove the +5 V dc wire from each of the above cards, one at a time, and then power on the printer to see if the +5 V dc Alarm LED comes on again. **Does the printer power on after any of the wires are removed?**	Go to Step 5.	Go to Step 4.
Step 4.	• Check each of the +5 V dc wires removed from the cards in2 for a short to ground between the card and the +5 V dc pins on the pin side of the power supply. **Did you find a short to ground?**	• Repair the short circuit as needed.	Do the following, one step at a time, until the problem is corrected: • DV061 Card • dc power supply • ac power supply @

Table 134. MAP 0511 For +5V Alarm (continued)

Step	Questions/Actions	Yes	No
Step 5.	This card probably has a short in its wiring. Do the following: • SHUTDOWN AND POWER OFF THE PRINTER. • Remove the +5 V dc wire from each device on this card, one at a time, and then power on the printer to see if the +5 V dc Alarm LED comes on again. **Does the printer power on after any of these wires are removed?**	There is a short in the device or wiring to the device. • Repair the short in the wiring to this device.	There is an internal short in this card. • Install a new card. @

MAP 0511 For TRNS TH Alarm Begins

Table 135. MAP 0511 For TRNS TH Alarm

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
Step 1.	This error is detected by the transformer thermal sensors inside the ac power supply. These sensors are connected via PJ469. • Check PJ454, PJ455, and PJ456 for the proper voltage settings. **Is this connector, especially pins 3 and 4, properly connected?**	Do the following, one at a time until the problem is corrected: • Install a new dc power supply. • Install a new ac power supply. @	• Repair or replace connector.

MAP 0511 For SOFT TH Alarm Begins

Table 136. MAP 0511 For SOFT TH Alarm

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
Step 1.	This error is detected by the soft start resistor thermal sensors inside the ac power supply. These sensors are connected via PJ469. **Is this connector, especially pins 1 and 2, properly connected?**	Do the following, one at a time until the problem is corrected: • Install a new dc power supply. • Install a new ac power supply. @	Repair or replace connector.

MAP 0511 For +24 VH Alarm Begins

Table 137. MAP 0511 For +24 VH Alarm

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
Step 1.	There may be a short to ground in the wiring. Do the following: • SHUTDOWN AND POWER OFF THE PRINTER. • Remove the right front printer cover. • Disconnect PJ457 from the dc power supply. • Power on the printer with the connector disconnected. **Does the printer power on without the +24 VH alarm?**	Go to Step 2.	Do the following, one step at a time, until the problem is corrected: • Install a new dc power supply. • Install a new ac power supply. @

Table 137. MAP 0511 For +24 VH Alarm (continued)

Step	Questions/Actions	Yes	No
Step 2.	The problem must be with wiring or with the two devices connected to this power supply: the Lamp Starter and the High Voltage Power Supply. • SHUTDOWN AND POWER OFF THE PRINTER. • Reconnect PJ457. • Disconnect PJ116 (HVPS). • Power on the printer. **Does the printer power on without the +24 VH alarm?**	• Install a new High Voltage Power Supply. @	Do the following, one step at a time, until the problem is corrected: • Check for a short within the +24 VH wiring cables. • Install a new Lamp Starter. • Install a new Erase Lamp. • Install a new PR011 Card. @

MAP 0511 For Fan Alarm Begins

Table 138. MAP 0511 For Fan Alarm

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
Step 1.	The fans mounted on the front of the ac and dc power supplies are not working. The fans are connected to the power supply directly with PJ467 and PJ468. **Are these connectors properly connected?**	• Install a new dc power supply. @	• Replace the connector.

MAP 0511 For MIRROR Alarm

Symptom Explanation	Conditions That Could Cause This Symptom
The MIRROR LED turns on.	• PJ466 pins 3 or 5 are disconnected on the dc power supply. • The dc power supply is defective. • The ac power supply is defective. • The Mirror Motor is defective. • The DV101 Card is defective.

FIX VERIFICATION

- POR the Printer.

QUICK CHECKS

1. Visually inspect PJ466 on the dc power supply. If the parity error LED is on for any of the above cards, replace that FRU.

SERVICE CHECKS

- POR the Printer.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
PJ466	95%	1450	- -	- -
DC Power Supply	2%	1450	2122	1758
AC Power Supply	01%	1450	2122	1757
Mirror Motor (M501)	01%	1454	2012	1792
DV101 Card	01%	1452	2118	1764

MAP 0511 For MIRROR Alarm Begins

Table 139. MAP 0511 For MIRROR Alarm

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
Step 1.	The Mirror Motor alarm indicates an error in the motor or voltage circuits. The circuits covered are: • +100 VM • +12 VM • +5 VM • SHUTDOWN AND POWER OFF THE PRINTER. • Disconnect PJ458 on the dc power supply. • Power on the printer. **Did disconnecting this connector stop the Mirror LED from turning on?**	The problem is in the VM circuitry or mirror motor. Go to Step 2.	Do the following, one step at a time, until the problem is corrected: • Check connector PJ466 pins 3 and 5 for an open. • Install a new dc power supply. • Install a new ac power supply. @

Table 139. MAP 0511 For MIRROR Alarm (continued)

Step	Questions/Actions	Yes	No
Step 2.	• SHUTDOWN AND POWER OFF THE PRINTER. • Reconnect PJ458. • Disconnect PJ319 on the DV101 Card. • Power on the printer. **Did disconnecting this connector stop the Mirror LED from turning on?**	The problem is in the mirror motor or circuitry. Go to Step 3.	The problem is in the circuitry. Go to Step 4.
Step 3.	• SHUTDOWN AND POWER OFF THE PRINTER. • Reconnect PJ319. • Disconnect PJ219 near the mirror motor. • Power on the printer. **Did disconnecting this connector stop the Mirror LED from turning on?**	• Install a new mirror motor. @	• Repair short circuit in the cable between PJ219 and PJ319.
Step 4.	• SHUTDOWN AND POWER OFF THE PRINTER. • Reconnect PJ319. • Disconnect PJ316 on the DV101 Card. • Power on the printer. **Did disconnecting this connector stop the Mirror LED from turning on?**	• Repair short circuit in the cable between PJ316 and PJ458.	• Install a new DV101 Card. @

MAP 0521: Form Length Fuse

Symptom Explanation	Conditions That Could Cause This Symptom
The Form Length Sensor Circuit Breaker (CB1) has tripped.	• CB1 on the FU041 Card has tripped. • The LP031 Card is defective. • The FU041 Card is defective.
CB1 has not tripped	• The FU041 Card is defective.

REFERENCES

- Circuit Diagrams - CD53 - Forms Length Circuit Breaker
- Wiring Diagrams - WD50 - Stacker Switch Panel (LP041 & FU041 Card)

FIX VERIFICATION

- Power on the printer.
- An error is indicated by **E059** on the Maintenance Panel.

QUICK CHECKS

- Visually check CB1 on the FU041 Card to see if it has tripped.

SERVICE CHECKS

- Reset CB1 on the FU041 Card.
- Power on the printer to see if the error occurs.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
CB1 tripped because of a short or it is defective.	50%			
FU041 Card	35%	1442	2118	1764
LP041 Card	15%	1441	2072	1869

MAP 0521 BEGINS

Table 140. MAP 0521

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Do the SERVICE CHECKS. **Did the E059 error occur during the service check?**	Go to Step 2.	The problem is intermittent. Go to MAP 0001: Introduction.
Step 2.	• SHUTDOWN AND POWER OFF THE PRINTER. The Form Length Circuit Breaker (CB1) is located on the FU041 Card. • Measure the resistance between PJ634-1 and ground. **Is the resistance less than 100 ohms?**	Go to Step 3.	• Reset CB1 and test. • If the error happens again, install a new FU041 Card. @

Table 140. MAP 0521 (continued)

Step	Questions/Actions	Yes	No
Step 3.	• Locate connector PJ751 on the LP041 Card. • Disconnect P751. • Measure the resistance between PJ634-1 and ground. **Is the resistance less than 100 ohms?**	Go to Step 4.	Do the following, one step at a time, until the resistance between J634-1 (connector side) and ground exceeds 100 ohms: • Repair a short circuit/low resistance to ground in the following connector pairs, and repair as necessary: – PJ634-1 and PJ751-1 – PJ634-2 and PJ751-2 – PJ634-3 and PJ751-3 • Install a new LP041 Card. @
Step 4.	• Reset CB1 and test. **Does the error occur again?**	Install a new FU041 Card.	The actions taken during this step corrected the problem. @

MAP 0522: Laser Driver Fuse

Symptom Explanation	Conditions That Could Cause This Symptom
The Laser Driver Circuit Breaker (CB2) has tripped.	• CB2 on the PR011 Card has tripped. • The Beam Detect Card (BD171) is defective. • The LD272 Card is defective. • The Resolution Lens Sensor (S503) is defective • The Mirror Motor Rotation Sensor (S501) is defective.
The Laser Drive Circuit Breaker (CB2) has not tripped.	• The PR011 Card is defective. • The PC561 Card is defective.

REFERENCES

- Circuit Diagrams - CD63 - Laser Driver Circuit Breaker
- Wiring Diagrams - WD27 - Laser Driver

FIX VERIFICATION

- Switch printer power off, then on to run the power-on diagnostics. An error is indicated by an SRC 0522 on the Display/Touch Screen or by **E059** on the Maintenance Panel.

QUICK CHECKS

- Visually check CB2 on the PR011 Card to see if it has tripped.

SERVICE CHECKS

- Reset CB2 on the PR011 Card.
- Power on the printer to see if the error occurs.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
CB2 tripped because of a short or it is defective.	35%			
PR011 Card	20%	1446	2118	1764
LD272 Card	10%	1454	2012	1781
Beam Detect Card (BD171)	10%	1454	2012	1796
Resolution Lens Position Sensor (S503)	10%	1454	2014	1788
Mirror Motor Rotation Sensor (S501)	10%	1454	2012	1792
PC561 Card	05%	1453	2116	1764
Forms Width Sensor Card (PW111)	---	1443	2036	1894

MAP 0522 BEGINS

Table 141. MAP 0522

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	**Did the E0F9 error occur during the Service Check?**	Go to Step 2.	The problem is intermittent. Go to MAP 0001: Introduction.
Step 2.	• SHUTDOWN AND POWER OFF THE PRINTER. • Measure the resistance between PJ107–5 and ground. The Laser Driver Circuit Breaker (CB2) is located at the bottom of the PR011 Card. **Is the resistance less than 100 ohms?**	Go to Step 3.	• Reset CB2 and test. • If the error happens again, install a new PR011 Card. @
Step 3.	• Locate connector PJ510 on the LD272 Card. • Disconnect P510. • Measure the resistance between PJ107–5 and ground **Is the resistance less than 100 ohms?**	Go to Step 4.	Do the following, one step at a time, until the problem is corrected: • Install a new Beam Detect Card. • Repair a short circuit to ground in the wiring with end points PJ510–7 and PJ502–17. @

Table 141. MAP 0522 (continued)

Step	Questions/Actions	Yes	No
Step 4.	• Locate connector PJ260 on the LD272 Card. • Disconnect P260. • Measure the resistance between PJ107–5 and ground. **Is the resistance less than 100 ohms?**	Go to Step 5.	Do the following, one step at a time, until the problem is corrected: • Install a new Resolution Lens Position Sensor (S503). • Repair a short circuit between PJ260–3 and PJ258–3. @
Step 5.	• Locate connector PJ208 on the LD272 Card. • Disconnect P208. • Measure the resistance between PJ107–5 and ground. **Is the resistance less than 100 ohms?**	Go to Step 6.	Do the following, one step at a time, until the problem is corrected: • Install a new Mirror Motor Rotation Sensor (S501). • Repair a short circuit between: – PJ208–1 and PJ514–1 – PJ208–3 and PJ514–3 @
Step 6.	• Locate connector PJ511 on the LD272 Card. • Disconnect P511. • Measure the resistance between PJ107–5 and ground. **Is the resistance less than 100 ohms?**	Go to Step 7.	• Install a new LD272 Card. @

Table 141. MAP 0522 (continued)

Step	Questions/Actions	Yes	No
Step 7.	• Disconnect PJ107 on the PR011 Card. • Measure the resistance between PJ141–1 and ground (on the LD272 Card side). **Is the resistance less than 100 ohms?**	• Reset CB2 and test. • If the error happens again, install a new PR011 Card. @	Do the following, one step at a time, until the problem is corrected: • Check for a short circuit to ground on the cable from PJ107 on the PR011 Card to PJ511 on the LD272 Card. • Install a new Forms Width Sensor Board (PW091). • Install a new PR011 Card. • Install a new PC561 Card. @

MAP 0523: PR Sensor Fuse

Symptom Explanation	Conditions That Could Cause This Symptom
The PR Sensor Circuit Breaker (CB1) has tripped.	• CB1 on the PR011 Card has tripped. • The PR011 Card is defective. • Any one of the components attached to the PR011 Card is defective.
CB1 has not tripped	• The PR011 Card is defective. • The PC561 Card is defective.

REFERENCES

- Circuit Diagrams - CD90 - PR011 Sensor Circuit Breaker
- Wiring Diagrams - WD54 - Switches & Sensors - PC561 & PR011 Cards

FIX VERIFICATION

- Power on the printer.
- An error is indicated by **E0FA** on the Maintenance Panel.

QUICK CHECKS

- Visually check CB1 on the PR011 Card to see if it has tripped.

SERVICE CHECKS

- Reset CB1 on the PR011 Card.
- Power on the printer to see if the error occurs.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
CB1 tripped because of a short or it is defective.	40%			
PR011 Card	30%	1446	2118	1764
High Voltage Power Supply	15%	1449	1964	1568
One or more of the five sensors	15%			

MAP 0523 BEGINS

Table 142. MAP 0523

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Do the SERVICE CHECKS. **Did an E0FA error occur during the service check?**	Go to Step 2.	The problem is intermittent. Go to MAP 0001: Introduction.

Table 142. MAP 0523 (continued)

Step	Questions/Actions	Yes	No
Step 2.	• SHUTDOWN AND POWER OFF THE PRINTER. The PR Sensor Circuit Breaker (CB1) is located on the PR011 Card. • Measure the resistance between PJ104-5 and ground. **Is the resistance less than 100 ohms?**	Go to Step 3.	• Reset CB1 and test. • If the error happens again, install a new PR011 Card. @
Step 3.	• Disconnect PJ102, PJ103, and PJ104. • Measure the resistance between PJ104-5 (PR011 side) and ground. **Is the resistance less than 100 ohms?**	Go to Step 5.	Go to Step 4.
Step 4.	• Measure the resistance on the sensor side of connector PJ104 between each of the following points and ground: – PJ104-5 – PJ104-9 – PJ104-16 – PJ104-19 – PJ104-22 • Measure the resistance between connector PJ336-55 (PC561 board side) and ground. • Measure the resistance between connector PJ103-10 (power supply side) and ground. **Is the resistance less than 100 ohms in any of the above measurements?**	• Isolate the short/low resistance to ground. • Repair the cabling or install new sensor(s) or a High Voltage Power Supply as appropriate. @	• Install a new PR011 Card. @

Table 142. MAP 0523 (continued)

Step	Questions/Actions	Yes	No
Step 5.	• Reset CB1 and test. **Does the error occur again?**	• Install a new PR011 Card. @	The actions taken during this step corrected the problem.

MAP 0524: Fuser Sensor Fuse

Symptom Explanation	Conditions That Could Cause This Symptom
The Fuser Sensor Circuit Breaker (CB1) has tripped.	• CB1 on the PC561 Card has tripped. • Any one of the components attached to the PC561 Card is defective.
CB1 has not tripped	• The PC561 Card is defective.

REFERENCES

- Circuit Diagrams - CD92 - ST Sensor Circuit Breaker
- Wiring Diagrams - WD47-2 - Process Sensors (S11x)
- Wiring Diagrams - WD54 - Switches & Sensors - PC561 & PR011 Cards

FIX VERIFICATION

- Power on the printer.
- An error is indicated by **E0FB** on the Maintenance Panel.

QUICK CHECKS

- Visually check CB1 on the PC561 Card to see if it has tripped.

SERVICE CHECKS

- Reset CB1 on the PC561 Card.
- Power on the printer to see if the error occurs.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
CB1 tripped because of a short or it is defective.	50%			
PC561 Card	40%	1453	2116	1764
One or more of the seven sensors	10%			

MAP 0524 BEGINS

Table 143. MAP 0524

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Do the SERVICE CHECKS. **Did an E0FB error occur during the service check?**	Go to Step 2.	The problem is intermittent. Go to MAP 0001: Introduction.

Table 143. MAP 0524 (continued)

Step	Questions/Actions	Yes	No
Step 2.	• SHUTDOWN AND POWER OFF THE PRINTER. The Fuser Sensor Circuit Breaker (CB1) is located on the PC561 Card. • Measure the resistance between PJ337-5 and ground. **Is the resistance less than 100 ohms?**	Go to Step 3.	• Reset CB1 and test. • If the error happens again, install a new PC561 Card. @
Step 3.	• Disconnect PJ337. • Measure the resistance between PJ337-5 (PC561 side) and ground. **Is the resistance less than 100 ohms?**	Go to Step 5.	Go to Step 4.
Step 4.	• Measure the resistance on the sensor side of connector PJ337 between each of the following points and ground: – PJ337-5 – PJ337-12 – PJ337-17 – PJ337-20 – PJ337-23 – PJ337-29 – PJ337-32 **Is the resistance less than 100 ohms in any of the above measurements?**	• Isolate the short/low resistance to ground. • Repair cabling or install new sensor(s) as appropriate.	• Install a new PC561 Card. @
Step 5.	• Reset CB1 and test. **Does the error occur again?**	• Install a new PC561 Card. @	The actions taken during this step corrected the problem.

MAP 0525: ST Sensor Fuse

Symptom Explanation	Conditions That Could Cause This Symptom
The ST Sensor Circuit Breaker (CB5) has tripped.	• CB5 on the DV071 Card has tripped. • The FL061 Card is defective. • The FL031 Card is defective. • Any one of the components attached to the DV071 Card is defective. • The FU041 Card is defective.
CB5 has not tripped.	• The DV071 Card is defective. • The FU041 Card is defective.

REFERENCES

- Circuit Diagrams - CD91 - ST Sensor Circuit Breaker
- Wiring Diagrams - WD51 - Stacker Switch Panel (Forms Length Cards)

FIX VERIFICATION

- Power on the printer.
- An error is indicated by **E0FC** on the Maintenance Panel.

QUICK CHECKS

- Visually check CB5 on the DV071 Card to see if it has tripped.

SERVICE CHECKS

- Reset CB5 on the PV071 Card.
- Power on the printer to see if the error occurs.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
CB5 tripped because of a short or it is defective.	30%			
DV071 Card	25%	1437	2048	1685
FL031 Card	10%	1438	2094	1851
FL061 Card	10%	1438	2094	1855
Tension Arm Encoder Sensors	10%	1435	2066	1750
One or more of the sensors, encoders, or relays	10%	1435	2066, 2074	1667
Upper Tractor Jam Sensor	5%	1443	2034	1918

MAP 0525 BEGINS

Table 144. MAP 0525

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		

Table 144. MAP 0525 (continued)

Step	Questions/Actions	Yes	No
Step 1.	• Do the SERVICE CHECKS. **Did an E0FC error occur during the service check?**	Go to Step 2.	The problem is intermittent. Go to MAP 0001: Introduction.
Step 2.	• SHUTDOWN AND POWER OFF THE PRINTER. The ST Sensor Circuit Breaker (CB5) is located on the DV071 Card. • Measure the resistance between PJ617-9 and ground. **Is the resistance less than 100 ohms?**	Go to Step 3.	• Reset CB5 and test. • If the error happens again, install a new DV071 Card. @
Step 3.	• Disconnect PJ616, PJ617, and PJ618. • Measure the resistance between PJ617-9 (DV071 side) and ground. **Is the resistance less than 100 ohms?**	Go to Step 5.	Go to Step 4.

Table 144. MAP 0525 (continued)

Step	Questions/Actions	Yes	No
Step 4.	• Measure the resistance on the sensor side of connector PJ617 between each of the following points and ground: – PJ617-9 – PJ617-17 – PJ617-21 – PJ617-25 – PJ617-30 • Measure the resistance on the encoder side of connector PJ616 between each of the following points and ground: – PJ616-1 – PJ616-4 – PJ616-7 – PJ616-15 • Measure the resistance on the sensor side of connector PJ618 between each of the following points and ground: – PJ618-1 – PJ618-3 – PJ618-7 – PJ618-30 – PJ618-31 – PJ618-43 **Is the resistance less than 100 ohms in any of the above measurements?**	• Isolate the short/low resistance to ground. • Repair cabling or install new parts(s) as appropriate. @	• Install a new DV071 Card. @
Step 5.	• Reset CB5 and test. **Does the error occur again?**	• Install a new DV071 Card. @	The actions taken during this step corrected the problem.

MAP 0600: Printer Interface MAP

Symptom Explanation	Conditions That Could Cause This Symptom
An error has occurred on the interface between the printer and the control unit.	• The CPxxx Card is defective • The Mechanism Interface Card (MIC) is defective. • The interface cables or connectors are defective. • Electrical noise can cause various 06XX errors. Sources of electrical noise are: – Coronas (especially the preclean) – Erase Lamps – Erase Lamp Starter – Drum Ground • The open/closed state of a switch is changing too rapidly for the code to report. Some switches that may have this problem are: – Stacker Gate Open Switch (S806) Adjust or install a new switch. – Ready (S1) and Stop (S2) on the Stacker Control Panel (LP041)

REFERENCES

- Wiring Diagrams - WD66 - MIC to Printer Control Cable (1 of 2)
- Wiring Diagrams - WD67 - MIC to Printer Control Cable (2 of 2)
- Wiring Diagrams - WD69 - PQE

FIX VERIFICATION

- Run the Printer Interface Test.

QUICK CHECKS

- If the SRC is 656, “Printer Interface Error”, look at the Maintenance Panel display.
  - If an E0xx error is displayed, go to MAP 0010: Symptom Start MAP and use the E0xx error code to find the correct MAP to use.
- If the SRC is 666, “Printer Interface Error”, look at the Maintenance Panel display.
  - If an E0xx error is displayed, go to MAP 0010: Symptom Start MAP and use the E0xx error code to find the correct MAP to use.
  - If an ..XX error is displayed, go to MAP 0070: Printer Logic Cards and use the ..XX error code to find the correct MAP to use.
- If the error occurs during an operator intervention, ensure that any switches associated with that operator action (for example, cover interlock switches) are adjusted and operating correctly.

  If you find no problem with a switch, suspect that a beam is missing from the Printhead or that there is a microcode problem. Consult your technical support to see if this is a known problem. You will be asked which level of microcode and EPROM is installed.
- Observe if the problem occurs just as the coronas are turned on. If so, suspect arcing.

Note: On some systems, connector PJ202 can be plugged upside down. The flat cable wires should come out of the bottom of the connector housing when the cable is plugged in correctly. If the flat cable is solid grey color with a red wire on one edge, ensure that the red wire is on the rear edge of the cable.

SERVICE CHECKS

- Check all beams in the Printhead.
- Check for electrical noise caused by the following units:
  - Coronas (especially the preclean)
  - Erase Lamps
  - Erase Lamp Starter
  - Drum Ground
- Ensure the Stacker Gate Open Switch (S806) is adjusted and operating correctly.
- Ensure the cover over the Stacker Control Panel (LP041) is not bent and contacting the Ready (S1) and Stop (S2) switches.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Electrical noise (arcing)	50%	- -	- -	- -
Interface cable from PJ202 to PJJ6	20%	- -	- -	- -
Mechanism Interface Card (MIC)	20%	1460	2124	1522
PC561 Card	08%	1453	2116	1764
Cable from PJ201 to PJ327	01%	- -	- -	- -
Printer Interface Card (IF491)	01%	1456	2118	1520

MAP 0600 BEGINS

Table 145. MAP 0600

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	**Is the error code a D70B?**	Go to MAP D70B: Printhead Under Run.	Go to Step 2.
Step 2.	**Note:** On some systems, connector PJ202 can be plugged upside down. The flat cable wires should come out of the bottom of the connector housing when the cable is plugged in correctly. If the flat cable is solid grey color with a red wire on one edge, ensure that the red wire is on the rear edge of the cable. • Run the Printer Interface Test. **Did the test end with an error?**	Go to Step 4.	Go to Step 3.

Table 145. MAP 0600 (continued)

Step	Questions/Actions	Yes	No
Step 3.	Do the following, one step at a time, until the problem is corrected: • If the error occurs during an operator intervention, ensure that any switches associated with that operator action (for example, cover interlock switches) are adjusted and operating correctly. If you find no problem with a switch, suspect microcode or EPROM. Consult your technical support to see if this is a known problem. You will be asked which level of microcode is installed. • Observe if the problem occurs just as the coronas are turned on. If so, suspect arcing. Check for electrical noise caused by the following units: – Coronas (especially the preclean) – Erase Lamps – Erase Lamp Starter – Drum Ground – Developer **Does the problem still occur?**	Go to Step 4.	One of the above actions fixed the problem.

Table 145. MAP 0600 (continued)

Step	Questions/Actions	Yes	No
Step 4.	• Run the MIC isolation wrap test. **Did the test complete without an error?**	• SHUTDOWN AND POWER OFF THE PRINTER. Do the following, one step at a time, until the problem is corrected: • Check the following cables for proper contact at their connectors and for any damage: – Interface cable from PJ202 to PJJ6 on the Mechanism Interface Card (MIC). – Cable PJ327 to PJ201 – Cable at PJ337, pins 8-11 and 17-19 – Cable between PJ460 and PJ311, pins 2 and 5 – Cable between PJ464 and PJ330, pins 1 and 2 • Check the following circuit breakers on the DV061 Card: – CB2, CB3, CB4 (continued on next page)	• Install a new Mechanism Interface Card (MIC). @

Table 145. MAP 0600 (continued)

Step	Questions/Actions	Yes	No
Step 4, (cont'd)		• Install the following new parts: – Interface cable PJ202 to PJJ6 on the Mechanism Interface Card (MIC). – Cable PJ327 to PJ201 – Printer Logic Card (CPxxx) – Printer Interface Card (IF491) @	

MAP 0782: Splicing Lever Sensor

Symptom Explanation	Conditions That Could Cause This Symptom
The Splicing Lever Sensor (S119) will not move.	• The Splicing Station Lever is binding.
The SPLICE LEVER DOWN message will not reset, even though the Splicing Station Lever is in the 'RUN' position.	• The Splicing Lever Sensor (S119) is defective. • The Splicing Lever Sensor (S119) is out of adjustment. • The PC561 Card is defective.
The SPLICE LEVER DOWN message does not appear, even though the Lever is in the 'SPLICE' position.	• The Splicing Lever Sensor (S119) is defective. • The Splicing Lever Sensor (S119) is out of adjustment. • The PC561 Card is defective.

REFERENCES

- Removals & Adjustments - Printhead
- Circuit Diagrams - CD93 - Splicing Station
- Wiring Diagrams - WD47-2 - Process Sensors (S11x)

- How to Run Diagnostics - 1119

FIX VERIFICATION

- Run Sensor Routine 68. The status of the Splicing Lever Sensor (S119) is indicated by the Maintenance Panel display.
- With the Splicing Station Lever in the ‘RUN’ position, print the **alternate** print sample to see if the error occurs during printing.

QUICK CHECKS

- Check for binds in the Splicing Station Lever and ensure it is in the correct position.
- Check SW7–1 on the CPxxx Card and ensure it is in the off position.

SERVICE CHECKS

- Run Sensor Routine 68. This routine checks the status of the Splicing Lever Sensor.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Binding or broken Splice Station Lever	40%	- -	- -	- -
Splicing Lever Sensor (S119)	35%	1443	1986	1905
Adjustment of Splicing Lever Sensor (S119)	20%	1443	1986	1905
PC561 Card	05%	1453	2116	1764

MAP 0782 BEGINS

Table 146. MAP 0782

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Open and close the Splicing Station Lever to check for binds or obstructions. **Does the Splicing Station Lever open and close correctly?**	Go to Step 2.	• Repair the Splicing Station Lever. @
Step 2.	• Run Sensor Routine 68. • Open and close the Splicing Station Lever while in Diagnostic mode to test the operation of the Splicing Lever Sensor. **Does the Splicing Lever Sensor operate correctly?**	The problem is intermittent. • Review the QUICK CHECKS and POSSIBLE FAILING PARTS OR ADJUSTMENTS. • Ensure that the Splicing Lever Sensor (S119) is adjusted correctly. • Check all connectors in the circuit for damage and correct seating. • If you find no problems, go to MAP 0001: Introduction.	Go to Step 3.

Table 146. MAP 0782 (continued)

Step	Questions/Actions	Yes	No
Step 3.	• Run Sensor Routine 68. • Open and close the Splicing Station Lever while in Diagnostic mode to test the operation of the Splicing Lever Sensor. **Is of68 always displayed on the Maintenance Panel during routine 68?**	Go to Step 4.	Go to Step 5.
Step 4.	There may be a short in the circuit. • SHUTDOWN AND POWER OFF THE PRINTER. • Ensure that the Splicing Lever Sensor (S119) is in the 'SPLICE' position. • Disconnect connector PJ337. • Check for continuity between J337-27 and J337-28 (the cable side of the connector). **Is there continuity between J337-27 and J337-28?**	Do the following, one step at a time, until the problem is corrected: • Install a new Splicing Lever Sensor (S119). • Repair a short circuit between the following pairs of connectors: – J337-27 and PJ161–1 – J337-28 and PJ161–2 @	• Install a new PC561 card. @
Step 5.	There may be an open in the wiring or sensor. • Ensure that the Splicing Lever Sensor (S119) is in the 'RUN' position. • Disconnect connector PJ337. • Check for continuity between J337-27 and J337-28 (the cable side of the connector). **Is there continuity between J337-27 and J337-28?**	• Install a new PC561 card. @	Do the following, one step at a time, until the problem is corrected: • Install a new Splicing Lever Sensor (S119). • Repair an open circuit between: – J337-27 and PJ161–1 – J337-28 and PJ161–2 @

MAP 0783: Transfer Station Open

Symptom Explanation	Conditions That Could Cause This Symptom
The Transfer Station will not close.	• The Transfer Station latch mechanism is broken or out of adjustment.
The TRANSFER STATION OPEN message will not reset, even though the Transfer Station mechanism is latched closed.	• The Transfer Station Open Sensor (S114) is defective. • The Transfer Station Open Sensor (S114) is out of adjustment. • The PC561 Card is defective. • The PR011 Card is defective.

REFERENCES

- Circuit Diagrams - CD08 - Transfer Station Open Sensor (S114)
- Wiring Diagrams - WD54 - Switches & Sensors - PC561 & PR011 Cards

FIX VERIFICATION

- Run Sensor Routine 60. The status of the Transfer Station Open Sensor (S114) is indicated by the Maintenance Panel display.
- Run the **alternate** print sample (1069) to see if the error occurs during printing.

QUICK CHECKS

- Check for obvious problems with the Transfer Station latch mechanism.
- Check for obvious problems with the Transfer Station Open Sensor (S114) and the magnet on the Transfer Station latch arm.

SERVICE CHECKS

- Run Sensor Routine 60. This routine checks the status of the Transfer Station Open Sensor (S114).

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Binding or broken Transfer Station latch mechanism	39%	- -	2028	- -
Transfer Station Open Sensor (S114)	30%	1445	2028	1924
Transfer Station Open Sensor (S114) adjustment	20%	1445	2028	1924
PC561 Card	05%	1453	2116	1764
PR011 Card	05%	1446	2118	1764
Transfer station operating arm magnet	01%	1445	2028	1924

MAP 0783 BEGINS

Table 147. MAP 0783

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		

Table 147. MAP 0783 (continued)

Step	Questions/Actions	Yes	No
	CAUTION: **<5> High-voltage is present. Use care while working in this area.**		
Step 1.	• Open and close the Transfer Station to check for binds or obstructions. **Does the Transfer Station open and close correctly?**	Go to Step 2.	• Repair the Transfer Station. @
Step 2.	• Check the magnet on the Transfer Station operating arm to ensure that it is not loose or missing. **Is the magnet mounted correctly?**	Go to Step 3.	• Repair or replace the magnet. @

Table 147. MAP 0783 (continued)

Step	Questions/Actions	Yes	No
Step 3.	• Run Sensor Routine 60. • Open and close the Transfer Station while in Diagnostic mode to test the operation of the Transfer Station Open Sensor (S114). The Maintenance Panel displays **OF60** when the Transfer Station is open and **ON60** when it is closed. **Does the Transfer Station Open Sensor (S114) operate correctly?**	The problem is intermittent. • Review the QUICK CHECKS and POSSIBLE FAILING PARTS OR ADJUSTMENTS lists. • Ensure that the Transfer Station Open Sensor (S114) is adjusted correctly. • Check all the connectors in the circuit for damage and correct seating. • Retrace your steps through the MAPs. • If you do not find the problem, go to MAP 0001: Introduction. @	Do the following, one step at a time, until the problem is corrected: • Adjust the Transfer Station Open Sensor (S114) again. • Check all the connectors in the circuit for damage and correct seating. • Install a new Transfer Station Open Sensor (S114). • Install a new PR011 Card. • Repair an open circuit between one of the following pairs: – PJ149–1 and PJ104–9 – PJ149–2 and PJ104–10 – PJ149–3 and PJ104–11 – PJ102–22 and PJ336–22 @

MAP 0785: Toner Collector Full

Symptom Explanation	Conditions That Could Cause This Symptom
The CHANGE TONER COLLECTOR message does not reset, even though the Toner Collector Bag has been exchanged and the toner collector box has been reinstalled correctly.	• The Toner Collector Switch (S101) is defective. • The Toner Collector Switch is out of adjustment. • The PC561 Card is defective.

REFERENCES

- Removals & Adjustments - Air System
- Circuit Diagrams - CD74 - Toner Collector Switch (S101)

FIX VERIFICATION

- Run Sensor Routine 53. The status of the Toner Collector Switch is indicated by the maintenance panel display.
- Run Alternate Print Sample to see if the error occurs during printing.

QUICK CHECKS

1. Visually check the installation of the Toner Collector Box to ensure that it is installed correctly.
2. Manually operate the Toner Collector Box latch mechanism. Check for problems with the Toner Collector switch mechanism.

SERVICE CHECKS

1. Run Sensor Routine 53. This routine checks the status of the Toner Collector Switch.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Toner Collector Box not installed correctly	50%	1448	- -	1483
Binding or broken Toner Collector switch mechanism	20%	1448	- -	1485
Toner Collector Switch (S101)	15%	1448	2042	1485
Adjustment of Toner Collector Switch	10%	1448	- -	1485
PC561 Card	5%	1453	2116	1764

MAP 0785 BEGINS

Table 148. MAP 0785

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		

Table 148. MAP 0785 (continued)

Step	Questions/Actions	Yes	No
Step 1.	**Note:** The microcode is reset every time the Toner Collector Box is removed. Always install an empty bag after the box is removed for any reason, to prevent the bag from filling up before the CHANGE TONER COLLECTOR message occurs. • Check the installation of the Toner Collector Box. **Are the Toner Collector Box and Bag installed correctly?**	Go to Step 2.	• Correctly install the Toner Collector Box and Bag. @
Step 2.	• Operate the Toner Collector Box latch mechanism to check for binds or broken parts. **Does the latch mechanism operate correctly?**	Go to Step 3.	• Correct the binding or broken latch problem.
Step 3.	• Run Sensor Routine 53 to test the Toner Collector Switch. • Operate the Toner Collector Box mechanism while in diagnostic mode to test the operation of the Toner Collector Switch. **Does the switch operate correctly?**	The problem is intermittent. • 1) Review the QUICK CHECKS and POSSIBLE FAILING PARTS OR ADJUSTMENTS. • 2) Ensure that the Toner Collector Switch is adjusted correctly. @ • 3) Check all the connectors in the circuit for damage and correct seating. • 4) Retrace your steps through the MAPs. • 5) If no problems are found, go to MAP 0001: Introduction.	Go to Step 4.

Table 148. MAP 0785 (continued)

Step	Questions/Actions	Yes	No
Step 4.	• SHUTDOWN AND POWER OFF THE PRINTER. • Ensure that the Toner Collector Box latch mechanism is in the operated position to indicate that the Toner Collector Box is installed. • Disconnect connector PJ145. • Measure the resistance between P145-1 and P145-2 (the switch side of the connector). **Is there continuity between P145-1 and P145-2?**	Do the following, one step at a time, until the problem is corrected: • 1) Check the adjustment of the Toner Collector Switch. • 2) Repair an open circuit between PJ145-1 and PJ337-1 or between PJ145-2 and PJ337-2. • 3) Install a new PC561 Card. @	• Install a new Toner Collector Switch (S101). @

MAP 0786: Add Toner

Symptom Explanation	Conditions That Could Cause This Symptom
The ADD TONER message repeats, even though the Toner Hopper has toner.	• The toner is sticking or caking in the Toner Hopper. • The Toner Empty Sensor (S108) is defective. • The PC561 Card is defective. • The Mag Brush Motor Gearbox is defective.

REFERENCES

- Removals & Adjustments - Developer
- Circuit Diagrams - CD75 - Toner Empty Sensor (S108)

FIX VERIFICATION

- Run Sensor Routine 58. The status of the Toner Empty Sensor is indicated by the maintenance panel display.
- Run at least 1200 feet for a complete fix verification.

QUICK CHECKS

- Check the level of toner in the hopper.
- Check for sticking or caking toner in the hopper.
- Check for problems with the Toner Empty sensor, such as out of adjustment.

SERVICE CHECKS

- Run Sensor Routine 58. This routine checks the status of the Toner Empty Sensor.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Toner sticking or caking in the hopper	65%	- -	- -	- -
Toner Empty Sensor (S108)	30%	1428	2008	1635
PC561 Card	05%	1453	2116	1764
Mag Brush Motor Gearhead	- -	- -	2004	- -

MAP 0786 BEGINS

Table 149. MAP 0786

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	Check the level of toner in the Toner Hopper. **Is the toner level above the Toner Empty Sensor?**	Go to Step 2.	• Check the sensor adjustment, and correct if out of adjustment. • Add toner to the Toner Hopper.

Table 149. MAP 0786 (continued)

Step	Questions/Actions	Yes	No
Step 2.	Check for sticking or caking toner in the Toner Hopper. **Is the toner sticking or caking?**	Loosen the sticking or caking toner.	Go to Step 3.
Step 3.	Run Sensor Routine 58 to test the Toner Empty Sensor. **With toner covering the sensor, does oF58 appear on the maintenance panel?**	The problem is intermittent. 1. Review the Quick Checks and POSSIBLE FAILING PARTS OR ADJUSTMENTS. 2. Check all the connectors in the circuit for damage and correct seating. 3. Retrace your steps through the MAPs. 4. 4) If no problems are found, go to MAP 0001: Introduction.	Do the following, one step at a time, until the problem is corrected: 1. Check all the connectors in the circuit for damage and correct seating. 2. Install a new Toner Empty Sensor (S108). 3. Install a new Mag Brush Motor Gearbox. 4. Install a new PC561 Card. @

MAP 0787: Toner Collector Not Set

Symptom Explanation	Conditions That Could Cause This Symptom
The CHECK TONER COLLECTOR message does not reset, even though the Toner Collector Bag has been exchanged and the toner collector box has been reinstalled correctly.	• The Toner Collector Switch (S101) is defective. • The Toner Collector Switch is out of adjustment. • The PC561 Card is defective.

REFERENCES

- Removals & Adjustments - Air System
- Circuit Diagrams - CD74 - Toner Collector Switch (S101)

FIX VERIFICATION

- Run Sensor Routine 53. The status of the Toner Collector Switch is indicated by the maintenance panel display.
- Run the **alternate** print sample (1069) to see if the error occurs during printing.

QUICK CHECKS

- Visually check the installation of the Toner Collector Box to ensure that it is installed correctly.
- Manually operate the Toner Collector Box latch mechanism. Check for problems with the Toner Collector switch mechanism.

SERVICE CHECKS

- Run Sensor Routine 53. This routine checks the status of the Toner Collector Switch.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Toner Collector Box not installed correctly	50%	1448	- -	1483
Binding or broken Toner Collector switch mechanism	20%	1448	- -	1485
Toner Collector Switch (S101)	15%	1448	2042	1485
Adjustment of Toner Collector Switch (S101)	10%	1448	- -	1485
PC561 Card	5%	1453	2116	1764

MAP 0787 BEGINS

Table 150. MAP 0787

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		

Table 150. MAP 0787 (continued)

Step	Questions/Actions	Yes	No
Step 1.	**Note:** The microcode is reset every time the Toner Collector Box is removed. Always install an empty bag after the box is removed for any reason, to prevent the bag from filling up before the CHANGE TONER COLLECTOR message occurs. • Check the installation of the Toner Collector Box. **Is the Toner Collector Box and Bag installed correctly?**	Go to Step 2.	• Correctly install the Toner Collector Box and Bag.
Step 2.	• Operate the Toner Collector Box latch mechanism to check for binds or broken parts. **Does the latch mechanism operate correctly?**	Go to Step 3.	• Correct the binding or broken latch problem.
Step 3.	• Run Sensor Routine 53 to test the Toner Collector Switch. • Operate the Toner Collector Box mechanism while in diagnostic mode to test the operation of the Toner Collector Switch. **Does the switch operate correctly?**	The problem is intermittent. • 1) Review the QUICK CHECKS and POSSIBLE FAILING PARTS OR ADJUSTMENTS. • 2) Ensure that the Toner Collector Switch is adjusted correctly. @ • 3) Check all the connectors in the circuit for damage and correct seating. • 4) Retrace your steps through the MAPs. • 5) If no problems are found, go to MAP 0001: Introduction.	Go to Step 4.

Table 150. MAP 0787 (continued)

Step	Questions/Actions	Yes	No
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
Step 4.	• SHUTDOWN AND POWER OFF THE PRINTER. • Ensure that the Toner Collector Box latch mechanism is in the operated position to indicate that the Toner Collector Box is installed. • Disconnect connector PJ145. • Measure the resistance between P145-1 and P145-2 (the switch side of the connector). **Is there continuity between P145-1 and P145-2?**	Do the following, one step at a time, until the problem is corrected: 1. Check the adjustment of the Toner Collector Switch (S101). 2. Repair an open circuit between PJ145-1 and PJ337-1 or between PJ145-2 and PJ337-2. 3. Install a new PC561 Card. @	• Install a new Toner Collector Switch. @

MAP 0788: Change Developer Mix

Symptom Explanation	Conditions That Could Cause This Symptom
CHANGE DEVELOPER MIX is displayed too soon or is always displayed. The logic must detect that the developer drain has been opened to reset the mix life counter (addresses **FF1E** and **FF1F**) in the printer memory. If it does not detect the change in the Developer Drain Lever Switch (S111), the logic cannot tell that the mix has been changed. The message is displayed because the mix life counter has exceeded its end-of-life value (addresses **FF08** and **FF09**) in the printer memory and cannot be cleared.	• If the Diagnostic Function Switch was set to **8** and the printer was powered on or reset, the NVS memory was cleared. You will see this message often because the end-of-life value (addresses **FF08** and **FF09**) have been set to zero. You must enter an end-of-life value. • There is a failure in the Developer Drain Lever Switch (S111) or its sensing circuitry. To fix this problem, go to MAP 0789: Developer Drain Open. • The Developer Drain Lever may have been opened and closed when the power was off; therefore, the logic never reset the counter. • Someone may have advanced the developer mix counter (addresses **FF1E** and **FF1F**) in the printer memory. • If you are checking mix life against the mechanical usage meter, you are in error. The mix life counter (addresses **FF1E** and **FF1F**) is actually based on the number of revolutions of the magnetic brush in the developer, which is then converted to feet. This pseudo-feet counter may be viewed in the error log. This counter will usually be different from the mechanical usage meter and will vary with the idle time between print jobs.
(continued on next page)	

Symptom Explanation	Conditions That Could Cause This Symptom
CHANGE DEVELOPER MIX is not displayed at all or is too late.	• Be aware that this message is displayed only when an end-of-forms condition has occurred. • The developer end-of-life counter (addresses **FF08)** and **FF09**) in the printer memory may have been set to a higher value. • The developer mix counter (addresses **FF1E** and **FF1F**) in the printer memory may have been set to a lower value. • The developer drain may have been opened during the life of the mix, which reset the developer mix counter (addresses **FF1E** and **FF1F**) in the printer memory to zero. • If you are checking mix life against the mechanical usage meter, you are in error. The mix life counter (addresses **FF1E** and **FF1F**) is actually based on the number of revolutions of the magnetic brush in the developer, which is then equated to feet. This pseudo-feet counter may be viewed in the error log. This counter will usually be different from the mechanical usage meter and will vary with the idle time between print jobs.

REFERENCES

- Circuit Diagrams - CD74 - Toner Collector Switch (S101)

FIX VERIFICATION

1. Write down the actual life of the developer mix.
2. Write into the developer mix life counter (addresses **FF1E** and **FF1F**) in the printer memory a number higher than the end-of-life value (addresses **(FF08** and **FF09**) in the printer memory.
3. Create an end-of-forms condition while printing.
4. CHANGE DEVELOPER MIX should be displayed. If another intervention message is displayed, correct it and press **Ready**. Continue until CHANGE DEVELOPER MIX is displayed.

QUICK CHECKS

- None

SERVICE CHECKS

- See MAP 0789: Developer Drain Open.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Developer Drain Lever Switch (S111)	90%	1427	1990	1592
PC561 Card	10%	1453	2116	1764
Operator error	---	- -	- -	- -
Open circuit in wiring	---	- -	- -	- -
Short circuit in wiring	---	- -	- -	- -

MAP 0788 BEGINS

Table 151. MAP 0788

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	Do the following, one step at a time, until the problem is corrected: • Read the NVS memory addresses for the developer mix count (**FF1F** and **FF1E**) and the end-of-life counter (addresses **(FF08** and **FF09**). Correct any values which are incorrect. • Run Sensor Routine 5A to verify that the Developer Drain Lever Switch (S111) is working correctly. If it is not working correctly, go to MAP 0789: Developer Drain Open. • At the top of this MAP, read and select the Symptom Explanation that describes your problem. • Correct the conditions described in Conditions That Could Cause This Symptom. @		

MAP 0789: Developer Drain Open

Symptom Explanation	Conditions That Could Cause This Symptom
DEVELOPER DRAIN OPEN is always displayed.	• There is a failure in the Developer Drain Lever Switch (S111) or its sensing circuitry.
DEVELOPER DRAIN OPEN is never displayed.	• There is a failure in the Developer Drain Lever Switch (S111) or its sensing circuitry.
CHANGE DEVELOPER MIX is always displayed. The logic must detect that the developer drain has been opened in order to reset the mix life counter (addresses **FF1E** and **FF1F**) in the printer memory. If it does not detect the change in the Developer Drain Lever Switch (S111), the logic cannot tell that the mix has been changed. The message is displayed because the mix life counter has exceeded its end-of-life value (addresses **FF08** and **FF09**) in the printer memory and cannot be cleared.	• There is a failure in the Developer Drain Lever Switch (S111) or its sensing circuitry.

REFERENCES

- Removals & Adjustments - Developer Drain Lever Sensor (S111)
- Circuit Diagrams - CD16 - Developer Drain Lever Switch (S111)
- Wiring Diagrams - WD54 - Switches & Sensors - PC561 & PR011 Cards

FIX VERIFICATION

- See SERVICE CHECKS to verify correct operation of the Developer Drain Lever Switch (S111).

  At print time, DEVELOPER DRAIN OPEN on the Display/Touch Screen is the same as **E00F** on the Maintenance Panel.

QUICK CHECKS

- Check that the Developer Drain Lever is in the fully closed position.

SERVICE CHECKS

- Run Sensor Routine 5A to test the Developer Drain Lever Switch (S111). The normal displays are:
  - **on5A** when the Developer Drain Lever is in the open position
  - **oF5A** when the Developer Drain Lever is in the closed position

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Developer Drain Lever Switch (S111)	90%	1427	1990	1592
PC561 Card	10%	1453	2116	1764
Mechanical problem preventing closure of the Developer Drain	---	- -	- -	- -
Open circuit in wiring	---	- -	- -	- -
Short circuit in wiring	---	- -	- -	- -

MAP 0789 BEGINS

Note: Be aware that the developer mix counter (addresses **FF1E** and **FF1F**) in the printer memory will be set to zero if the developer drain is opened with power on (DEVELOPER DRAIN OPEN will be displayed). If there is any uncertainty about the life of the mix, add new mix after you have corrected the problem.

Table 152. MAP 0789

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		

Table 152. MAP 0789 (continued)

Step	Questions/Actions	Yes	No
Step 1.	Do the following: • Measure the voltage between PJ131-6 (+ lead) and PJ131-8. **Is the voltage +5.0 V dc?**	Do the following, one step at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • If there is any resistance to the motion of the lever, attempt to free or repair the mechanism. • Repair an open circuit between one of the following pairs of connectors: – PJ144-1 and PJ131-6 – PJ144-2 and PJ131-7 – PJ144-3 and PJ131-8 – PJ131-7 and PJ337-21 • Install a new Developer Drain Lever Switch (S111). • Install a new PC561 Card. • Repair a short circuit to ground in the wiring network described by the following points: – PJ144-2 – PJ337-21 @	Do the following, one step at a time, until the problem is corrected: • SHUTDOWN AND POWER OFF THE PRINTER. • Repair an open circuit between: – PJ131-6 and PJ337-20 – PJ131-8 and PJ337-22 • Install a new PC561 Card. • Repair a short circuit to ground in the wiring between: – PJ144-1 – PJ337-20 • Install a new Developer Drain Lever Switch (S111). @

MAP 078A: End Of Forms Sensor

Symptom Explanation	Conditions That Could Cause This Symptom
The EOF Sensor (S117) detected the End of Forms (EOF).	• The input area has no forms. • The paper is torn or otherwise defective, allowing light to pass through. • The EOF Sensor (S117) is shorted. • The PC561 Card is defective.
The EOF Sensor (S117) fails to detect the End of Forms (EOF).	• The EOF LED (D101) is dirty. • The EOF LED (D101) is open. • The EOF Sensor (S117) is dirty. • The EOF Sensor (S117) is open. • The PC561 Card is defective.

REFERENCES

- Wiring Diagrams - WD47-2 - Process Sensors (S11x)

FIX VERIFICATION

- Run Sensor Routine 5D. The Maintenance Panel display and buzzer indicate the status of the EOF Sensor (S117).
- Print the **primary** print sample. An error is indicated by `END OF FORMS` on the Display/Touch Screen or by E001 on the Maintenance Panel.

QUICK CHECKS

- Check for torn, perforated, or reflective forms in the EOF sensor area.
- Clean the EOF LED (D101) and EOF Sensor (S117).
- Ensure that the LED is adjusted so that the light is shining on the receiver.

SERVICE CHECKS

- Run Sensor Routine 5D. With paper blocking the light, the Maintenance Panel indicates **of5d** and the buzzer is off. With light shining on the sensor, the Maintenance Panel indicates **on5d** and the buzzer is on.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Torn or defective paper	60%	- -	- -	- -
EOF LED (D101)	15%	1443	1980	1893
EOF Sensor (S117)	15%	1429	1980	1893
PC561 Card	10%	1453	2116	1764

MAP 078A BEGINS

Table 153. MAP 078A

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		

Table 153. MAP 078A (continued)

Step	Questions/Actions	Yes	No
Step 1.	If you found no problems using the QUICK CHECKS, continue with the questions. • Check the forms input area for missing, torn, perforated, reflective, or otherwise defective forms that could cause false `END OF FORMS` messages. **Are the forms OK?**	Go to Step 2.	• Correct the defective forms problem.
Step 2.	• Run Sensor Routine 5D. • Insert and remove paper in the path of the EOF Sensor (S117) to test its operation. **Does the EOF Sensor (S117) operate correctly?**	The problem is intermittent. • Review the QUICK CHECKS and POSSIBLE FAILING PARTS OR ADJUSTMENTS lists. • Check all connector in the circuit for damage and correct seating. • Ensure that no extra light sources are shining directly on the sensor and causing incorrect readings. • Retrace your steps through the MAPs. • If you found no problems, go to MAP 0001: Introduction.	Go to Step 3.
Step 3.	**Is the EOF LED (D101) light shining?**	Go to Step 5.	Go to Step 4.

Table 153. MAP 078A (continued)

Step	Questions/Actions	Yes	No
Step 4.	• Measure the voltage at PJ157–2. **Is the voltage +5.0 V dc?**	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between PJ157–2 and PJ337–26. • Install a new PC561 Card. @	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between PJ157–1 and PJ337–25. • Install a new EOF LED (D101). @
Step 5.	• Check the adjustment of the EOF LED (D101) and EOF Sensor (S117). **Is the EOF LED (D101) adjusted so the light is shining on the EOF Sensor (S117)?**	Go to Step 6.	• Adjust the EOF LED (D101) and EOF Sensor (S117) again, go to. @
Step 6.	• Measure the voltage at PJ151–2. **Is the voltage greater than +2.5 V dc at PJ151–2 with the light shining on the sensor?**	Go to Step 7.	Do the following, one step at a time, until the problem is corrected: • Clean EOF LED (D101) and EOF Sensor (S117). • Repair an open circuit between one of the following pairs: – PJ151–1 and PJ337–23 – PJ151–2 and PJ337–24 • Install a new EOF Sensor (S117). @

Table 153. MAP 078A (continued)

Step	Questions/Actions	Yes	No
Step 7.	• Load forms in the machine so the EOF Sensor (S117) is covered. • Run Sensor Routine 5D. • Measure the voltage at PJ151–2. **Is the voltage greater than +2.5 V dc at PJ151–2?**	The EOF Sensor (S117) must be shorted. • Install a new EOF Sensor (S117). @	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between PJ151–2 and PJ337–24. • Install a new PC561 Card. @

MAP 078B: Developer Running

Symptom Explanation	Conditions That Could Cause This Symptom
DEVELOPER RUNNING is never displayed, or there is no response to the Developer Run Switch (S109).	• The Developer Run Switch (S109) is always open. • The PC561 Card is defective.
DEVELOPER RUNNING is always displayed, even when the Developer Run Switch (S109) was not pushed.	• The Developer Run Switch (S109) is always closed. • The PC561 Card is defective.

REFERENCES

- Circuit Diagrams - CD17 - Developer Run Switch (S109)
- Wiring Diagrams - WD47-1 - Process Sensors (S10x)

FIX VERIFICATION

- See SERVICE CHECKS to verify correct operation of the Developer Run Switch (S109).
  DEVELOPER RUNNING on the Display/Touch Screen is the same as **E01F** on the Maintenance Panel.

QUICK CHECKS

- Ensure that the developer drain switch is fully closed.

SERVICE CHECKS

- Run Sensor Routine 5B to test the Developer Run Switch (S109). The normal displays are:
  - **on5B** when the Developer Run Switch (S109) is pressed and held
  - **oF5B** when the Developer Run Switch (S109) is released

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Developer Run Switch (S109)	90%	1427	1994	1595
PC561 Card	10%	1453	2116	1764
Open circuit in wiring	---	- -	- -	- -
Short circuit in wiring	---	- -	- -	- -

MAP 078B BEGINS

Table 154. MAP 078B

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	In the following questions, "always displayed" means that the message appears constantly or frequently without the Developer Run Switch (S109) (Switch A) being pressed. This MAP fixes two conditions: • `DEVELOPER RUNNING` is always displayed. • `DEVELOPER RUNNING` is never displayed (Switch A does not work). **Is `DEVELOPER RUNNING` always displayed?**	Go to Step 2.	Go to Step 3.

Table 154. MAP 078B (continued)

Step	Questions/Actions	Yes	No
Step 2.	DEVELOPER RUNNING is always displayed. Perform the following steps: • SHUTDOWN AND POWER OFF THE PRINTER. • Access the connectors on the rear of the developer. • Locate the PJ131 connector on the developer. • Disconnect connector P131 from the developer. • Check continuity through the developer half (J131) of the connector. The pins you will check connect to PJ112 inside the developer and then to the Developer Run Switch (S109). The circuit should be open when the Developer Run Switch (S109) is not pressed. **Is there an open circuit between pins J131-1 and J131-2?**	The Developer Run Switch (S109) is working correctly, so the problem must be in the PC561 Card or the wiring. Do the following, one step at a time, until the problem is corrected: • Install a new PC561 Card. • Repair a short circuit to ground in the wiring network described by the following end points: – PJ131-1 and PJ337-15 – PJ131-2 and PJ337-16 @	There is a problem with the Developer Run Switch (S109) or its circuit. • SHUTDOWN AND POWER OFF THE PRINTER. • Remove the developer. • Install a new Developer Run Switch (S109). @

Table 154. MAP 078B (continued)

Step	Questions/Actions	Yes	No
Step 3.	DEVELOPER RUNNING is never displayed. (Switch A does not work.) Perform the following steps: • SHUTDOWN AND POWER OFF THE PRINTER. • Access the connectors at the rear of the developer. • Locate the PJ131 connector on the developer. • Disconnect connector P131 from the developer. Check continuity through the developer half (J131) of the connector. The pins you will check connect to PJ112 inside the developer and then to the Developer Run Switch (S109). **Is there continuity between pins J131-1 and J131-2 when you press and hold the Developer Run Switch (S109)?**	The Developer Run Switch (S109) is working correctly, so the problem must be in the PC561 Card or the wiring. Do the following, one step at a time, until the problem is corrected: • Install a new PC561 Card. • Repair an open circuit between: – PJ337-15 and PJ131-1 – PJ337-16 and PJ131-2 @	There is a problem with the Developer Run Switch (S109) or its circuit. • SHUTDOWN AND POWER OFF THE PRINTER. • Remove the developer. Do the following, one step at a time, until the problem is corrected: • Check connector PJ112 for correct contact. • Install a new Developer Run Switch (S109). • Repair an open circuit between one of the following pairs of connectors: – PJ112-1 to PJ131-1 – PJ112-2 to PJ131-2 @

MAP 0791: Change Fine Filter

Symptom Explanation	Conditions That Could Cause This Symptom
The message CHANGE FINE FILTER is always displayed, or occurs too often. This message occurs when end-of-forms is reached, and it can be cleared by pressing CHECK RESET for up to 100 000 feet.	• The Filter Pressure Switch (S102) or its sensing circuitry is defective. • An operator error or a failure in the cleaning system has caused a plug or clog in the Cyclone. • A restriction or break in the air hoses.
The message CHANGE FINE FILTER is never displayed. You may also have been sent here because of heavy toner contamination of the cleaning system (brush, housing, others). The result is background on the prints and heavy contamination of the cleaner system with toner.	• A restriction or break in the air hoses. • A failure in the Filter Pressure Switch or its sensing circuitry. • An air leak at the Fine Filter case.

REFERENCES

- Removals & Adjustments - Air System
- Circuit Diagrams - CD14 - Filter Pressure Switch (S102)

FIX VERIFICATION

- Cut the forms in the input stack so that an end-of-forms condition will occur.

  An error is indicated by CHANGE FINE FILTER on the Display/Touch Screen or by **E00C** on the Maintenance Panel.

QUICK CHECKS

- If the print application consists of heavy printing and solid fill areas, this will cause higher filter usage.
- If the print is excessively light, there may be a transfer problem.
- Install a new Fine Filter and cause an end-of-forms condition to occur.
- Fine filter weight

SERVICE CHECKS

- Run Sensor Routine 55 to test the Filter Pressure Switch. The normal displays are:
  - **of55** when the pressure is nearly the same on both sides of the Filter Pressure Switch

    This is the case with a new or empty Fine Filter. The switch should be closed at this time.
  - **on55** when the pressure difference is large across the Filter Pressure Switch

    This is the case with a full Fine Filter. The switch should be open at this time.

    Because the blower does not run during this test, check for a switch that is failing because it is always on (open).
- Run Driver Routine 02.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Filter Pressure Switch (S102)	40%	1446	2042	1487
Broken, loose, disconnected, or restricted hose	40%	1446	- -	1487
PC561 Card	15%	1453	2116	1764
Cyclone Blower Motor (M104)	5%	1448	2040	1490
Open circuit in wiring	- -	- -	- -	- -
Short circuit in wiring	- -	- -	- -	- -
Fine Filter Gasket	%	- -	- -	- -
Cleaner Brush	%	- -	1966	1498

MAP 0791 BEGINS

Table 155. MAP 0791

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		

Table 155. MAP 0791 (continued)

Step	Questions/Actions	Yes	No
Step 1.	If you found no problems using the QUICK CHECKS, continue with the questions. **Are you here because `CHANGE FINE FILTER` is always displayed, or displayed too often?**	Go to Step 2.	Go to Step 5.
Step 2.	• The Filter Pressure Switch may have failed in the open condition. • Run Sensor Routine 55. **Is oF55 displayed?**	Go to Step 3.	Go to Step 4.

Table 155. MAP 0791 (continued)

Step	Questions/Actions	Yes	No
Step 3.	The switch is working correctly. Therefore, this step assumes that the customer is complaining about short Fine Filter life. • SHUTDOWN AND POWER OFF THE PRINTER. • Remove the Toner Collector Box and check for packed toner at the bottom of the Cyclone (where it meets the Toner Collector). **Important Note** Do not remove the Toner Collector Box, or operate its table lever, without replacing the toner collector bag. The logic will assume that a new bag has been installed if it senses a change in the Toner Collector Switch. The logic check is made only when the `CHANGE TONER COLLECTOR` message is displayed. If you reinstall a partially full bag, the bag can overfill and cause toner packing in the Cyclone. **Is there packed toner at the bottom of the Cyclone?**	It appears that the Toner Collector has overfilled at one time, which caused the toner packing.	No problem has been verified. Do the following, one step at a time, until the problem is corrected: • 1) Check all the hoses in the cleaner system for breaks, cracks, sharp bends, and poor connection. Repair as necessary. • 2) If the customer runs prints with a high toner coverage, the Fine Filter life will be reduced. You may need to contact your technical support to verify the toner coverage. • 3) It is possible that the Filter Pressure Switch switches too soon, that is, under little vacuum. This would be the case if the Fine Filter is light in weight when `CHANGE FINE FILTER` is displayed. Normally, the `CHANGE FINE FILTER` message is displayed when the Fine Filter weighs 1.2 Kg (2.8 lb). The Filter Pressure Switch is correctly indicating at this time.

Table 155. MAP 0791 (continued)

Step	Questions/Actions	Yes	No
Step 4.	• 1) SHUTDOWN AND POWER OFF THE PRINTER. • 2) Disconnect connector PJ337 from the PC561 Card. **Is there continuity between P337–3 and P337–4?**	• 1) Reconnect connector PJ337. • 2) Install a new PC561 Card. @	• 1) Install a new Filter Pressure Switch (S102). • 2) Repair an open circuit between PJ337-4 and PJ337-3 (wiring to the switch from the PC561 Card). @
Step 5.	You are here because `CHANGE FINE FILTER` is never displayed, or because the cleaner system is overloaded with toner. There may be air leakage around the Fine Filter. **Was the Fine Filter cover closed?**	Go to Step 6.	• Instruct the operators to always close the Fine Filter door. Go to Step 9.
Step 6.	• SHUTDOWN AND POWER OFF THE PRINTER. • Check all the hoses in the cleaner system for breaks, cracks, sharp bends, and poor connection. **Are the hoses in good condition?**	Go to Step 7.	• Repair the hoses. Go to Step 9.
Step 7.	• Remove the Fine Filter and examine the gasket on the inside at the upper left of the case. **Is the Fine Filter gasket in good condition?**	Go to Step 8.	• Repair or install a new Fine Filter gasket. @ Go to Step 9.

Table 155. MAP 0791 (continued)

Step	Questions/Actions	Yes	No
Step 8.	Ensure that the pulley is secure on the output shaft of the Cyclone Blower. • Run Driver Routine 02. **Use caution, as the vacuum is high in this area.** **Is there vacuum at the bottom of the Fine Filter case?**	• 1) Stop the routine and install the Fine Filter. No problem has been verified. It appears that the problem is in the Filter Pressure Switch or its circuitry. • 2) SHUTDOWN AND POWER OFF THE PRINTER. • 3) Do the following, one step at a time, until the problem is corrected: – 1. Install a new Filter Pressure Switch. – 2. Install a new PC561 Card. – 3. Repair a short circuit to ground in the wiring net described by the following end points: PJ337-11 and Filter Pressure Switch (S102) NC contact. @ Go to Step 9.	• Install a new Cyclone Blower. @ Go to Step 9.
Step 9.	Do the following to clean the cleaner system if necessary: • Clean the Air Chamber and the Cleaner Housing below it. • Install a new Cleaner Brush and reset the appropriate counter. • Clean the Cyclone of any packed toner.		

MAP 0792: Fuser Oil Empty

Symptom Explanation	Conditions That Could Cause This Symptom
The ADD FUSER OIL message occurs, even though there is still oil in the pump reservoir. Or, the ADD FUSER OIL message will not reset after oil has been added to the reservoir.	• The floating magnet ring on the Oil Empty Sensor (S702) is binding. • The Oil Empty Sensor is shorted. • The FU041 Card is defective.
The ADD FUSER OIL message does not occur, and the oil reservoir is empty.	• The floating magnet ring on the Oil Empty Sensor is binding. • There is an open circuit in PJ725 or PJ632. • The Oil Empty Sensor is open. • The FU041 Card is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD29 - Fuser Oil Empty Sensor (S702)
- Wiring Diagrams - WD48 - Fuser & Stacker Sensors (DV071 & FU041)

FIX VERIFICATION

- Run Sensor Routine 82 to test the Oil Empty Sensor. The normal displays are:
  - **oF82** when there is oil in the reservoir
  - **on82** when the reservoir is empty
- Run the **alternate** print sample and force an end-of-forms condition. An error is indicated by ADD FUSER OIL on the Display/Touch Screen or by **E00A** on the Maintenance Panel.

QUICK CHECKS

- Check the reservoir for the correct oil level.
- Check for a bind in the floating magnet ring on the Oil Empty Sensor.

SERVICE CHECKS

- Run Sensor Routine 82 to test the Oil Empty Sensor. The normal displays are:
  - **oF82** when there is oil in the reservoir
  - **on82** when the reservoir is empty

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Binding Oil Empty Sensor (S702)	50%	1435	2072	1720
Oil Empty Sensor (S702)	45%	1435	2072	1720
FU041 Card	05%	1442	2118	1764
Oil Pump Assembly	%	1435	2072	1720

Note: The ADD FUSER OIL message will be displayed at each End of Forms condition if the oil reservoir is empty. It can be reset by pressing CHECK RESET and READY.

MAP 0792 BEGINS

Table 156. MAP 0792

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	**Are you using this MAP because the `ADD FUSER OIL` message does not occur when the oil reservoir is empty?**	Go to Step 2.	Go to Step 5.
Step 2.	• Ensure that connector PJ725 is connected correctly. **Is connector PJ725 connected correctly?**	Go to Step 3.	• Repair the connector PJ725 as necessary.
Step 3.	• 1) Remove the three screws that hold the Oil Empty Sensor assembly in the Oil Pump assembly. • 2) Remove the Oil Empty Sensor assembly from the Oil Pump assembly. • 3) Check for binds in the floating magnet ring at the bottom of the switch shaft. **Does the floating magnet ring operate correctly without binding?**	Go to Step 4.	• Repair the binding magnet ring or replace the Oil Pump assembly if necessary. @

Table 156. MAP 0792 (continued)

Step	Questions/Actions	Yes	No
Step 4.	• 1) Disconnect connector PJ725. • 2) Measure the resistance between P725-2 and P725-3 (the switch side of the connector) while you slide the floating magnet ring up and down on the switch shaft. If the switch is operating correctly, the resistance reading will switch from an open circuit when the ring is up, to a short circuit when the ring is down. **Does the Oil Empty Sensor operate correctly?**	Do the following, one step at a time, until the problem is corrected: • 1) Repair an open circuit between PJ725-2 and PJ632-5 or between PJ725-3 and PJ632-6. • 2) Install a new FU041 Card. @	• Install a new Oil Pump Assembly. @
Step 5.	The `ADD FUSER OIL` message must be occurring early, or it cannot be reset. 1. Disconnect connector PJ725. This should simulate a full oil reservoir. 2. Run Sensor Routine 82. With PJ725 disconnected, **oF82** should appear on the Maintenance Panel. **Does oF82 appear on the Maintenance Panel?**	1. Check the Oil Empty Sensor for binds in the floating magnet ring at the bottom of the switch shaft. 2. Repair the binding magnet ring or install a new Oil Pump Assembly, whichever is necessary. @	• Install a new FU041 Card. @

MAP 0793: End Of Oiler Belt Reached

Symptom Explanation	Conditions That Could Cause This Symptom
The CHANGE OILER BELT message occurs, even though there is still Fuser Oiler Belt on the roll. Or, the CHANGE OILER BELT message does not reset after the Fuser Oiler Belt has been changed.	• The Oiler Belt End Switch (S711) is open. • The Oiler Belt End Switch (S711) is out of adjustment. • The DV071 Card is defective.
The CHANGE OILER BELT message does not occur when the Fuser Oiler Belt is at the end of the roll.	• The Oiler Belt End Switch (S711) is shorted. • The Oiler Belt End Switch (S711) is out of adjustment. • The DV071 Card is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD21 - Oiler Belt End Switch (S711)
- Wiring Diagrams - WD48 - Fuser & Stacker Sensors (DV071 & FU041)

FIX VERIFICATION

- Run Sensor Routine 81. The status of the Oiler Belt End Switch (S711) is indicated by the Maintenance Panel display. The normal displays are:
  - **oF81** when the Oiler Belt End Switch (S711) actuator is UP (normal operation)
  - **on81** when the Oiler Belt End Switch (S711) actuator is DOWN (end of belt condition)
- The CHANGE OILER BELT message will occur only after an end-of-forms condition. Run the **alternate** print sample (1069) and force an end-of-forms condition before the test is complete. An error is indicated by a CHANGE OILER BELT message on the Display/Touch Screen or by **E009** on the Maintenance Panel.

QUICK CHECKS

- Check the operation and installation of the Fuser Oiler Belt.
- Check the operation and adjustment of the Oiler Belt End Switch (S711).

SERVICE CHECKS

- Run Sensor Routine 81. This routine checks the status of the Oiler Belt End Switch (S711). The normal displays are:
  - **oF81** when the Oiler Belt End Switch (S711) actuator is straight up (normal operation)
  - **on81** when the Oiler Belt End Switch (S711) actuator is moved left (end of belt condition)

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Fuser Oiler Belt	60%	1431	2060	
Oiler Belt End Switch (S711) adjustment	25%	1431	2078	1713
Oiler Belt End Switch (S711)	10%	1431	2078	1713
DV071 Card	05%	1437	2048	1685

MAP 0793 BEGINS

Table 157. MAP 0793

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	**Note:** The CHANGE OILER BELT message is displayed at each End of Forms condition if the Fuser Oiler Belt is at the end of the roll. This MAP fixes the following conditions: • The CHANGE OILER BELT message occurs before the Fuser Oiler Belt reaches the end of the roll. • The CHANGE OILER BELT message will not reset after a new Fuser Oiler Belt has been installed. • The CHANGE OILER BELT message does not occur when the Fuser Oiler Belt reaches the end of the roll. • Check the operation and installation of the Fuser Oiler Belt. See "Changing the Oiler Belt" in the Operator's Guide for details. **Is the Fuser Oiler Belt installed correctly?**	Go to Step 2.	• Correct the installation of the Fuser Oiler Belt.

Table 157. MAP 0793 (continued)

Step	Questions/Actions	Yes	No
Step 2.	• Check the mechanical operation of the Oiler Belt End Switch (S711) and its actuator. **Are the Oiler Belt End Switch (S711), including the actuator and spring switch, operating correctly?**	Go to Step 3.	• Repair the switch actuator or install a new Oiler Belt End Switch (S711), as necessary. @
Step 3.	**Are you using this MAP because the `CHANGE OILER BELT` message does not occur when the Fuser Oiler Belt reaches the end of the roll?**	Go to Step 4.	Go to Step 6.
Step 4.	• Check carefully to ensure that the Fuser Oiler Belt is installed correctly. **Does the metal bar at the end of the Fuser Oiler Belt operate the actuator for the Oiler Belt End Switch (S711) when the Fuser Oiler Belt is at the end of the roll?**	Go to Step 5.	Do the following, one at a time, until the problem is corrected: • Install a new Fuser Oiler Belt. • Repair the actuator and adjust the Oiler Belt End Switch (S711). @
Step 5.	• Disconnect connector PJ711. This should simulate an “End of Fuser Oiler Belt” condition. • Run Sensor Routine 81. • With connector PJ711 disconnected, **on81** should appear on the Maintenance Panel. **Does on81 appear on the Maintenance Panel?**	Do the following one step at a time until the problem is corrected: • Adjust the Oiler Belt End Switch (S711). • Install a new Oiler Belt End Switch (S711). @	• Install a new DV071 Card. @

Table 157. MAP 0793 (continued)

Step	Questions/Actions	Yes	No
Step 6.	• SHUTDOWN AND POWER OFF THE PRINTER. • Ensure that the Oiler Belt End Switch (S711) is in the normal or non-operated condition. • Disconnect connector PJ711. • Measure the resistance between P711-1 and P711-2 (the switch side of the connector). **Is there continuity between P711-1 and P711-2?**	Do the following one step at a time until the problem is corrected: • Adjust the Oiler Belt End Switch (S711). • Repair an open circuit between PJ711-1 and PJ616-10 or between PJ711-2 and PJ616-11. • Install a new DV071 Card. @	Do the following one step at a time until the problem is corrected: • Check for a loose connector on the Oiler Belt End Switch (S711). • Adjust the Oiler Belt End Switch (S711). • Install a new Oiler Belt End Switch (S711). @

MAP 0794: Fuser Oiler Gate Open

Symptom Explanation	Conditions That Could Cause This Symptom
The OILER GATE OPEN message occurs, even though the Fuser Oiler Gate is closed.	• The Oiler Gate Open Switch (S704) has an open circuit. • The Oiler Gate Open Switch (S704) is out of adjustment. • The DV071 Card is defective. • The FU041 Card is defective.
The OILER GATE OPEN message does not occur when the Fuser Oiler Gate is open.	• The Oiler Gate Open Switch (S704) has a short circuit. • The DV071 Card is defective. • The FU041 Card is defective.

REFERENCES

- Removals & Adjustments - Fuser
- Circuit Diagrams - CD22 - Oiler Gate Open Switch (S704)
- Wiring Diagrams - WD48 - Fuser & Stacker Sensors (DV071 & FU041)

FIX VERIFICATION

- Run Sensor Routine 80. The status of the Oiler Gate Open Switch (S704) is indicated by the Maintenance Panel display.
- An error is indicated by OILER GATE OPEN on the Display/Touch Screen or by **E01E** on the Maintenance Panel.
- Switch machine power OFF then ON to run the power-on diagnostics. An error is indicated by **E01E** on the Maintenance Panel.

QUICK CHECKS

- Check the operation and adjustment of the Fuser Oiler Gate and Oiler Gate Open Switch (S704).

SERVICE CHECKS

- Run Sensor Routine 80. This routine checks the status of the Oiler Gate Open Switch (S704).

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Oiler Gate Open Switch (S704) adjustment	75%	1431	2090	1717
Oiler Gate Open Switch (S704)	20%	1431	2090	1717
DV071 Card	04%	1437	2048	1685
FU041 Card	01%	1442	2118	1764

MAP 0794 BEGINS

Table 158. MAP 0794

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	CAUTION: **<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.**		
Step 1.	• Open and close the Fuser Oiler Gate to check for binds or obstructions. **Does the Fuser Oiler Gate open and close correctly?**	Go to Step 2.	• Repair the Fuser Oiler Gate.

Table 158. MAP 0794 (continued)

Step	Questions/Actions	Yes	No
Step 2.	• Run Sensor Routine 80. • Open and close the Fuser Oiler Gate while in Diagnostic mode to test the operation of the Oiler Gate Open Switch (S704). **Does the Oiler Gate Open Switch (S704) operate correctly?**	The problem is intermittent. Go to MAP 0001: Introduction. • Review the QUICK CHECKS and POSSIBLE FAILING PARTS OR ADJUSTMENTS lists. • Ensure that the Oiler Gate Open Switch (S704) is adjusted correctly. • Check all connectors in the circuit for damage and correct seating. • Retrace your steps through the MAPs. If you found no problems, go to MAP 0001: Introduction.	Go to Step 3.

Table 158. MAP 0794 (continued)

Step	Questions/Actions	Yes	No
Step 3.	• SHUTDOWN AND POWER OFF THE PRINTER. • Ensure that the Fuser Oiler Gate is closed and latched. • Disconnect connector PJ617. • Measure the resistance between P617-15 and P617-16 (the switch side of the connector). **Is there continuity between P617-15 and P617-16?**	Go to Step 4.	Do the following one step at a time until the problem is corrected: • Check for an open circuit in the slip-on connectors on the Oiler Gate Open Switch (S704). • Check for an open between: – PJ617–15 and the Oiler Gate Open Switch – PJ617–16 and the Oiler Gate Open Switch • Install a new Oiler Gate Open Switch (S704). @
Step 4.	• Open the Fuser Oiler Gate. • Measure the resistance between P617-15 and P617-16 (the switch side of the connector). **Is there continuity between P617-15 and P617-16?**	The Oiler Gate Open Switch (S704) must be shorted. • Install a new Oiler Gate Open Switch (S704). @	Do the following one step at a time until the problem is corrected: • Install a new DV071 Card. • Install a new FU041 Card. @

MAP 0795: Set Forms Direction

Symptom Explanation	Conditions That Could Cause This Symptom
The message SET FORMS DIRECTION is always displayed.	• The Printer Control Panel (SW761) or its sensing circuitry is defective.
The message SET FORMS DIRECTION is never displayed.	• The Printer Control Panel (SW761) or its sensing circuitry is defective.

REFERENCES

- Circuit Diagrams - CD02 - Printer Control Panel (SW761)
- Wiring Diagrams - WD53 - Switches & Sensors (PC561 Card)

FIX VERIFICATION

- If SET FORMS DIRECTION is never displayed, do the following:
  - Load forms.
  - The indication is SET FORMS DIRECTION on the Display/Touch Screen or **E02C** on the Maintenance Panel.
- If SET FORMS DIRECTION is always displayed, do the following:
  - Power on the printer.
  - An error is indicated by SET FORMS DIRECTION on the Display/Touch Screen or by **E02C** on the Maintenance Panel.

QUICK CHECKS

- Be aware that the FORMS SET keys are disabled during startup.
- Be aware that this message will be displayed whenever one of the FORMS FEED keys is pressed.
- Press the correct FORMS SET key on the Printer Control Panel.

SERVICE CHECKS

- Run Sensor Routine 67 to test the Printer Control Panel (SW761). The normal displays are:
  - **on-5** when the left FORMS SET key is pressed
  - **on-6** when the right FORMS SET key is pressed

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Printer Control Panel (SW761)	90%	1429	1980	1897
PC561 Card	10%	1453	2116	1764
Open circuit in wiring	---	- -	- -	- -
Short circuit in wiring	---	- -	- -	- -

MAP 0795 BEGINS

Table 159. MAP 0795

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	This MAP fixes two conditions: • SET FORMS DIRECTION is always displayed (or a FORMS SET key does not work). • SET FORMS DIRECTION is never displayed. **Is SET FORMS DIRECTION always displayed (or a FORMS SET key does not work)?**	Go to Step 2.	Go to Step 4.
Step 2.	SET FORMS DIRECTION is always displayed (or a FORMS SET key does not work). The switch should be open when it is not pressed. A switch may be always open. Do the following: • SHUTDOWN AND POWER OFF THE PRINTER. • Disconnect connector PJ339 on the PC561 Card. **Is there continuity through the switch between points P339-6 and P339-1 when you press and hold the left (perforation up) FORMS SET key?**	Go to Step 3.	Do the following one step at a time until the problem is corrected: • Repair an open circuit between one of the following pairs of connectors: – PJ339-6 and PJ184-6 – PJ339-1 and PJ184-1 • Install a new Printer Control Panel (SW761). @

Table 159. MAP 0795 (continued)

Step	Questions/Actions	Yes	No
Step 3.	**Is there continuity through the switch between points P339-5 and P339-1 when you press and hold the right (perforation down) FORMS SET key?**	• Install a new PC561 Card. @	Do the following one step at a time until the problem is corrected: • Repair an open circuit between one of the following pairs of connectors: – PJ339-5 and PJ184-5 – PJ339-1 and PJ184-1 • Install a new Printer Control Panel (SW761). @
Step 4.	SET FORMS DIRECTION is never displayed. A key may be always on (switch always closed). Do the following: • SHUTDOWN AND POWER OFF THE PRINTER. • Disconnect connector PJ339 on the PC561 Card. The switch should be open when it is not pressed. **Is there an open circuit through the switch between points P339-6 and P339-1?**	Go to Step 5.	• Install a new Printer Control Panel (SW761). @

Table 159. MAP 0795 (continued)

Step	Questions/Actions	Yes	No
Step 5.	**Is there an open circuit through the switch between points P339-5 and P339-1?**	Do the following, one step at a time, until the problem is corrected: • Install a new PC561 Card. • Repair a short circuit to ground in the wiring network described by the following end points: – PJ339-6 and PJ184-6 – PJ339-5 and PJ184-5 @	• Install a new Printer Control Panel (SW761). @

MAP 0796: Stacker Full

Symptom Explanation	Conditions That Could Cause This Symptom
Stacker Full is detected even though the stacker is not full.	• The Stacker Table Lower Limit Switch (S808) is defective. • The DV071 Card is defective. • The FU041 Card is defective.
Stacker Full is detected with a loose stack of forms because the Stacker Table moved down too fast.	• Rear Stacker Height LED (D801) is defective. • Rear Stacker Height Sensor (S803) is defective. • Front Stacker Height LED (D802) is defective. • Front Stacker Height Sensor (S804) is defective.

REFERENCES

- Removals & Adjustments - Stacker
- Circuit Diagrams - CD45 - Stacker Height Sensors (S803/D801 & S804/D802)
- Circuit Diagrams - CD47 - Stacker Table Limit Switches (S807 & S808)
- Wiring Diagrams - WD49 - Stacker Sensors (DV071 Card)

FIX VERIFICATION

- Run Sensor Routine 7A. This routine checks the Stacker Table Lower Limit Switch (S808) and circuit.
- Run Sensor Routine 8D. This routine checks the Rear Stacker Height Sensor (S803) and circuit.
- Run Sensor Routine 8E. This routine checks the Front Stacker Height Sensor (S804) and circuit.
- Run the **alternate** print sample (1069). An error is indicated by the `STACKER FULL` message on the Display/Touch Screen or by **E004** on the Maintenance Panel.

QUICK CHECKS

- Ensure that the Rear Stacker Height LED (D801) and the Front Stacker Height LED (D802) are both shining onto the photosensors.
- Ensure that all of the stacker LEDs and photosensors are clean.
- Ensure that the stacker height adjustment is set correctly. If this adjustment is set too high, frequent stacker full messages may occur.

SERVICE CHECKS

- Run Sensor Routine 7A. This routine checks the Stacker Table Lower Limit Switch (S808) and circuit.
- Run Sensor Routine 8D. This routine checks the Rear Stacker Height Sensor (S803) and circuit.
- Run Sensor Routine 8E. This routine checks the Front Stacker Height Sensor (S804) and circuit.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Stacker Table Lower Limit Switch (S808)	70%	1438	2108	1882
DV071 Card	08%	1437	2048	1685
FU041 Card	07%	1442	2118	1764
Rear Stacker Height LED (D801)	05%	1441	2094	1877
Rear Stacker Height Sensor (S803)	05%	1441	2094	1877
Front Stacker Height LED (D802)	03%	1441	2094	1877
Front Stacker Height Sensor (S804)	02%	1441	2094	1877

MAP 0796 BEGINS

Table 160. MAP 0796

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	The Stacker Table Lower Limit Switch (S808) is normally closed until the Stacker Table reaches the lower limit. When the metal tab on the Stacker Table enters the gap of the switch, the switch circuit opens. • Remove all the paper from the stacker and raise the table high enough to ensure that the metal tab is not activating the Stacker Table Lower Limit Switch (S808). **Note:** The stacker table UP and DOWN switches do not operate when the printer is in diagnostic mode. (Diagnostic Function Switch position 3) • Run Sensor Routine 7A. If the table cannot be raised, answer YES to the following question. **Does of7a appear on the Maintenance Panel?**	Go to Step 2.	Go to Step 6.
Step 2.	• Remove the forms from the Stacker and lower the Stacker Table far enough to observe the Stacker Height Lamps. **Is Rear Stacker Height LED (D801) on?**	Go to Step 3.	Go to Step 7.

Table 160. MAP 0796 (continued)

Step	Questions/Actions	Yes	No
Step 3.	**Is Front Stacker Height LED (D802) on?**	Go to Step 4.	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between one of the following pairs: – PJ632–3 and PJ812–1 – PJ632–4 and PJ812–2 • Install a new Front Stacker Height LED (D802). @
Step 4.	• Run Sensor Routine 8D to check Rear Stacker Height Sensor (S803). • Use a piece of paper to block the light between Rear Stacker Height LED (D801) and Rear Stacker Height Sensor (S803). **Does the Rear Stacker Height Sensor (S803) switch on and off correctly?**	Go to Step 5.	Go to Step 10.
Step 5.	• Run Sensor Routine 8E to check the Front Stacker Height Sensor (S804). • Use a piece of paper to block the light between the Front Stacker Height LED (D802) and Front Stacker Height Sensor (S804). **Does the Front Stacker Height Sensor (S804) switch on and off correctly?**	You have not found a problem. • Retrace your steps through this MAP. • Refer to the QUICK CHECKS. • Refer to the POSSIBLE FAILING PARTS OR ADJUSTMENTS.	Go to Step 8.

Table 160. MAP 0796 (continued)

Step	Questions/Actions	Yes	No
Step 6.	• SHUTDOWN AND POWER OFF THE PRINTER. • Disconnect connector PJ818. • Measure the resistance between J818–1 and J818–2 (the switch side of the connector). **Is there continuity between J818–1 and J818–2?**	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between one of the following pairs: – PJ818–1 and PJ618–26 – PJ818–2 and PJ618–27 – PJ609–7 and PJ637–7 • Install a new DV071 Card. • Install a new FU041 Card. @	• Install a new Stacker Table Lower Limit Switch (S808). @
Step 7.	**Is Front Stacker Height LED (D802) on?**	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between one of the following pairs: – PJ632–1 and PJ811–1 – PJ632–2 and PJ811–2 • Install a new Rear Stacker Height LED (D801). @	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between one of the following pairs: – PJ632–3 and PJ812–1 – PJ632–4 and PJ812–2 – PJ632–1 and PJ811–1 – PJ632–2 and PJ811–2 • Install a new FU041 Card. @

Table 160. MAP 0796 (continued)

Step	Questions/Actions	Yes	No
Step 8.	**Is the optical axis aligned correctly?**	Go to Step 9.	• Align the Front Stacker Height LED (D802) so the light shines on the Front Stacker Height Sensor (S804).
Step 9.	• Ensure that the light from Front Stacker Height LED (D802) is shining on Front Stacker Height Sensor (S804). • Measure the voltage at PJ814–2. **Is the voltage greater than +3 V dc?**	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between PJ618–4 and PJ814–2. • Install a new DV071 Card. • Install a new FU041 Card. @	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between PJ618–3 and PJ814–1. • Install a new Front Stacker Height Sensor (S804). @
Step 10.	**Is the optical axis aligned correctly?**	Go to Step 11.	• Align the Rear Stacker Height LED (D801) so the light shines on the Rear Stacker Height Sensor (S803).

Table 160. MAP 0796 (continued)

Step	Questions/Actions	Yes	No
Step 11.	• Ensure that the light from Rear Stacker Height LED (D801) is shining on Rear Stacker Height Sensor (S803). • Measure the voltage at PJ813–2. **Is the voltage greater than +3 V dc?**	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between PJ618–2 and PJ813–2. • Install a new DV071 Card. • Install a new FU041 Card. @	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between PJ618–1 and PJ813–1. • Install a new Rear Stacker Height Sensor (S803). @

MAP 0797: Stacker Gate Open

Symptom Explanation	Conditions That Could Cause This Symptom
The STACKER GATE OPEN error occurs, even though the Stacker Gate is closed.	• The Stacker Gate Open Switch (S806) is defective. • The Stacker Gate Open Switch (S806) is out of adjustment. • The DV071 Card is defective. • The FU041 Card is defective.
The STACKER GATE OPEN error does not occur when the Stacker Gate is open.	• The Stacker Gate Open Switch (S806) is defective. • The DV071 Card is defective. • The FU041 Card is defective.

REFERENCES

- Circuit Diagrams - CD51 - Stacker Gate Open Switch (S806)
- Wiring Diagrams - WD49 - Stacker Sensors (DV071 Card)

FIX VERIFICATION

- Run Sensor Routine 77. The status of the Stacker Gate Open Switch (S806) is indicated by the Maintenance Panel.
- Run the **alternate** print sample. An error is indicated by STACKER GATE OPEN on the Display/Touch Screen or by **E01C** on the Maintenance Panel.
- Switch machine power off and on to run the power-on diagnostics. An error is indicated by STACKER GATE OPEN on the Display/Touch Screen or by **E01C** on the Maintenance Panel.

QUICK CHECKS

- Check the operation and adjustment of the Stacker Gate and the Stacker Gate Open Switch (S806).

SERVICE CHECKS

- Run Sensor Routine 77. This routine checks the status of the Stacker Gate Open Switch (S806).

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Stacker Gate Open Switch (S806)	90%	1439	2112	1874
DV071 Card	05%	1437	2048	1685
FU041 Card	05%	1442	2118	1764

MAP 0797 BEGINS

Table 161. MAP 0797

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Open and close the Stacker Gate to check for binds or obstructions. **Does the Stacker Gate open and close correctly?**	Go to Step 2.	• Repair the Stacker Gate.

Table 161. MAP 0797 (continued)

Step	Questions/Actions	Yes	No
Step 2.	• Run Sensor Routine 77. • Open and close the Stacker Gate while in diagnostic mode to test the operation of the Stacker Gate Open Switch (S806). **Does the Stacker Gate Open Switch (S806) operate correctly?**	The problem is intermittent. • Review the QUICK CHECKS and the POSSIBLE FAILING PARTS OR ADJUSTMENTS. • Ensure that the Stacker Gate Open Switch (S806) is adjusted correctly. @ • Check all the connectors in the circuit for damage and correct seating. • Retrace your steps through the MAPs. If you find no problems, go to MAP 0001: Introduction.	Go to Step 3.

Table 161. MAP 0797 (continued)

Step	Questions/Actions	Yes	No
Step 3.	• SHUTDOWN AND POWER OFF THE PRINTER. • Ensure that the Stacker Gate is closed and latched. • Disconnect connector PJ821. • Measure the resistance between P821–9 and P821–10 (the switch side of the connector). **Is there continuity between P821–9 and P821–10?**	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between one of the following pairs: – PJ821–9 and PJ618–28 – PJ821–10 and PJ618–29 – PJ609–5 and PJ637–5 • Readjust the Stacker Gate Open Switch (S806). • Install a new Stacker Gate Open Switch (S806). • Install a new DV071 Card. • Install a new FU041 Card. @	Do the following, one step at a time, until the problem is corrected: • Check for an open between: – PJ821–9 and the stacker gate open switch (S806) – PJ821–10 and the stacker gate open switch (S806) • Readjust the Stacker Gate Open Switch (S806). • Install a new Stacker Gate Open Switch (S806). @

MAP 0798: Stacker Table Down

Symptom Explanation	Conditions That Could Cause This Symptom
The Stacker Table does not raise, even though the Table Up switch is pressed.	• The “Stacker Enabled” configuration item is set to No or the post-processor is still enabled. • The Pre/postprocessor interface is failing. • The Table Up switch is open. • The Table STOP switch is shorted. • The Table Down switch is shorted. • The Stacker Control Panel (LP031) is defective. • The FU041 Card is defective. • The Stacker Table Upper Limit Switch (S807) is defective. • The Rear Stacker Height LED (D801) and Front Stacker Height LED (D802) are defective.
There is no response when the Stacker Table Up, Table STOP, or Table Down switches are pressed.	• The Table Up switch is open. • Table STOP switch is open. • The Table Down switch is open. • The Stacker Control Panel (LP031) is defective. • The FU041 Card is defective.
The Stacker Table moves down too fast, causing forms to stack loose or to flow onto the floor.	• The Stacker Height LEDs or Sensors are dirty. • The Rear Stacker Height LED (D801) is open. • The Front Stacker Height LED (D802) is open. • The Rear Stacker Height Sensor (S803) is open. • The Front Stacker Height Sensor (S804) is open. • The DV071 Card is defective. • The FU041 Card is defective.
The Stacker Table is all the way down, and the forms flow onto the floor with no error messages.	• The DV071 Card is defective. • The FU041 Card is defective.

REFERENCES

- Circuit Diagrams -
  - CD45 - Stacker Height Sensors (S803/D801 & S804/D802)
  - CD47 - Stacker Table Limit Switches (S807 & S808)
  - CD52 - Stacker Control Panel (LP041)
- Wiring Diagrams - WD49 - Stacker Sensors (DV071 Card)

FIX VERIFICATION

- Run Sensor Routine 7E. This routine checks the Stacker Control Panel (LP031) switches.
- Run Sensor Routine 78. This routine checks the Stacker Table Upper Limit Switch (S807) and circuit.
- Run Sensor Routine 8D. This routine checks the Rear Stacker Height Sensor (S803) and Rear Stacker Height LED (D801) operation.
- Run Sensor Routine 8E. This routine checks the Front Stacker Height Sensor (S804) and Front Stacker Height LED (D802) operation.
- Print the Print Pack. An error is indicated by `STACKER TABLE DOWN` on the Display/Touch Screen or by **E016** on the Maintenance Panel.

QUICK CHECKS

- Ensure that the Rear Stacker Height LED (D801) and the Front Stacker Height LED (D802) are both shining onto the photosensors.
- Ensure that all of the upper stacker LEDs and photosensors are clean.
- The stacker table will not move with the diagnostic function switch in position 3. Ensure that the diagnostic function switch is in postion 0.

SERVICE CHECKS

- Run Sensor Routine 7E. This routine checks the Stacker Control Panel (LP031) switches.
- Run Sensor Routine 78. This routine checks the Stacker Table Upper Limit Switch (S807) and circuit.
- Run Sensor Routine 8D. This routine checks operation of the Rear Stacker Height Sensor (S803) and Rear Stacker Height LED (D801).
- Run Sensor Routine 8E. This routine checks operation of the Front Stacker Height Sensor (S804) and Front Stacker Height LED (D802).

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Stacker Control Panel (LP041)	45%	1441	2072	1869
FU041 Card	15%	1442	2118	1764
Stacker Table Upper Limit Switch (S807)	10%	1438	2108	1886
DV071 Card	10%	1437	2048	1685
Rear Stacker Height LED (D801)	05%	1441	2092	1877
Front Stacker Height LED (D802)	05%	1441	2092	1877
Rear Stacker Height Sensor (S803)	05%	1439	2094	1877
Front Stacker Height Sensor (S804)	05%	1439	2092	1877

MAP 0798 BEGINS

Table 162. MAP 0798

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Run Sensor Routine 7E. • Test the Table Up switch. **Does the Table Up switch operate correctly?**	Go to Step 2.	Go to Step 6.
Step 2.	• Run Sensor Routine 7E. • Test the Table STOP switch. **Does the Table STOP switch operate correctly?**	Go to Step 3.	Do the following, one step at a time, until the problem is corrected: • Check connectors PJ751–9 and PJ634–9. • Install a new Stacker Control Panel (LP031). • Install a new FU041 Card. @

Table 162. MAP 0798 (continued)

Step	Questions/Actions	Yes	No
Step 3.	• Run Sensor Routine 7E. • Test the Table Down switch. **Does the Table Down switch operate correctly?**	Go to Step 4.	Do the following, one step at a time, until the problem is corrected: • Check connectors PJ751–10 and PJ634–10. • Install a new Stacker Control Panel (LP031). • Install a new FU041 Card. @
Step 4.	The Stacker Table Upper Limit Switch (S807) is normally closed until the Stacker Table reaches the upper limit. When the metal tab on the Stacker Table enters the gap of the switch, the switch circuit opens. • Remove all the paper from the stacker and ensure that the Stacker Table is low enough that the metal tab is not activating the Stacker Table Upper Limit Switch (S807). • Run Sensor Routine 78. **Does of78 appear on the Maintenance Panel?**	The problem may be caused by a failure of one of the Stacker Height LEDs or Sensors. Go to Step MAP 0172: Stacker Table Timeout step 1.	Go to Step 5.

Table 162. MAP 0798 (continued)

Step	Questions/Actions	Yes	No
Step 5.	• SHUTDOWN AND POWER OFF THE PRINTER. • Disconnect connector PJ817. • Measure the resistance between P817–1 and P817–2 (the switch side of the connector). **Is there continuity between P817–1 and P817–2?**	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between PJ817–1 and PJ618–24 or between PJ817–2 and PJ618–25. • Install a new DV071 Card. • Install a new FU041 Card. @	• Install a new Stacker Table Upper Limit Switch (S807). @
Step 6.	• Check the configuration value for the “Stacker Enabled” item under **Configure Printer**. **Is the “Stacker Enabled” configuration value set to Yes?**	Go to Step 7.	“Stacker Enabled” must be set to **Yes** to allow the stacker to work.
Step 7.	• Use the **Configure Pre/Postprocessor** procedure to check the Enabled field for all postprocessors. **Are all postprocessors disabled (Enabled field set to No)?**	Go to Step 8.	• Disable all postprocessors.

Table 162. MAP 0798 (continued)

Step	Questions/Actions	Yes	No
Step 8.	• Disconnect the pre/postprocessor interface connector (P229) from connector J229. • Set the Diagnostic Function Switch on the CPxxx Card to **0** (zero) and toggle the Reset switch to exit diagnostic mode. • Test the Table Up switch. **Does the Table Up switch operate correctly?**	There is a problem with the Pre/postprocessor interface. Go to MAP 0800: Pre/Postprocessing Interface Start MAP.	Do the following, one step at a time, until the problem is corrected: • Check connectors PJ751–8 and PJ634–8. • Install a new Stacker Control Panel (LP031). • Install a new FU041 Card. @

MAP 0799: Fine Filter Not Installed

Symptom Explanation	Conditions That Could Cause This Symptom
The Fine Filter is not installed or is not fully seated. The Fine Filter Switch (S106) is normally closed when the Fine Filter is installed.	• The Fine Filter Switch (S106) or sensing circuitry is defective.

REFERENCES

- Removals & Adjustments - Air System
- Wiring Diagrams - WD54 - Switches & Sensors - PC561 & PR011 Cards
- Circuit Diagrams - CD15 - Fine Filter Switch (S106)

FIX VERIFICATION

- Print the Print Pack (1070).

  An error is indicated by `CHECK FINE FILTER` on the Display/Touch Screen or by **E018** on the Maintenance Panel.

QUICK CHECKS

- Fully seat the Fine Filter.
- Ensure that the hoses connecting the fine filter switch and the vacuum system are correctly installed and have no leaks.

SERVICE CHECKS

- Run Sensor Routine 54 to test the Fine Filter Switch (S106).

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Fine Filter Switch (S106)	80%	1446	2044	1482
PR011 Card	10%	1446	2118	1764
PC561 Card	10%	1453	2116	1764
Open circuit	---	- -	- -	- -
Short circuit	---	- -	- -	- -

MAP 0799 BEGINS

Table 163. MAP 0799

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	This MAP fixes two conditions: • `CHECK FINE FILTER` is always displayed. • `CHECK FINE FILTER` is never displayed. **Is `CHECK FINE FILTER` always displayed?**	Go to Step 4.	Go to Step 2.

Table 163. MAP 0799 (continued)

Step	Questions/Actions	Yes	No
Step 2.	CHECK FINE FILTER is never displayed. Perform the following steps: • SHUTDOWN AND POWER OFF THE PRINTER. • Open the Fine Filter. • Locate the PJ148 connector under the cover of the Fine Filter Case. • Disconnect connector PJ148. Check continuity through the switch by answering the following question: **Is there 0.5 ohm between pins P148-2 and P148-3 when the Fine Filter is opened?**	• SHUTDOWN AND POWER OFF THE PRINTER. Do the following, one step at a time, until the problem is corrected: • Install a new PR011 Card. • Install a new PC561 Card. • Repair a short circuit to ground in the wiring network described by: – PJ148–1 and PJ104–22 – PJ148–3 and PJ104–24 • Repair an open circuit between PJ102–33 and PJ336–33. @	Do the following, one step at a time, until the problem is corrected: • Adjust the Fine Filter Switch (S106). Use the Maintenance Panel Extension Cable to run Run Sensor Routine 54, if necessary. • SHUTDOWN AND POWER OFF THE PRINTER. • Install a new Fine Filter Switch (S106). @
Step 3.	CHECK FINE FILTER is always displayed. • Measure the voltage at P148–1. **Is there 5 V dc at P148–1?**	Go to Step 4.	Go to Step 5.

Table 163. MAP 0799 (continued)

Step	Questions/Actions	Yes	No
Step 4.	The switch should be closed when the Fine Filter is installed. Perform the following steps: • SHUTDOWN AND POWER OFF THE PRINTER. • Locate the PJ148 connector under the cover of the Fine Filter Case. • Disconnect connector PJ148. With a steel shunt in the gap of the switch, check continuity through the switch by answering the following question: **Is there continuity between pins P148-2 and P148-3 with the Fine Filter closed?**	• SHUTDOWN AND POWER OFF THE PRINTER. Do the following, one step at a time, until the problem is corrected: • Install a new PR011 Card. • Repair an open circuit between between one of the following pairs of connectors: – PJ148-2 and PJ104-23 – PJ148-3 and PJ104-24 @	Do the following, one step at a time, until the problem is corrected: • Adjust the Fine Filter Switch (S106). Use the Maintenance Panel Extension Cable to run Sensor Routine54, if necessary. • SHUTDOWN AND POWER OFF THE PRINTER. • Install a new Fine Filter Switch (S106). @
Step 5.	• SHUTDOWN AND POWER OFF THE PRINTER. • Repair an open circuit between P148–1 and P104–22. • Run Sensor Routine 54. **Did a normal display result?**	The actions taken during this step corrected the problem.	Go to MAP 0523: PR Sensor Fuse.

MAP 079C: Toner Supply Low

Symptom Explanation	Conditions That Could Cause This Symptom
The TONER SUPPLY LOW message repeats, even though the Toner Hopper has toner.	• The toner is sticking or caking in the Toner Hopper. • The Toner Empty Sensor (S108) is defective. • The PC561 Card is defective. • The CPxxx Card is defective. • The MIC is defective.

REFERENCES

- Removals & Adjustments - Toner Empty Sensor (S108)
- Circuit Diagrams - CD75 - Toner Empty Sensor (S108)
- Wiring Diagrams - WD47-1 - Process Sensors (S10x) and WD78 - Enhanced Toner Loading to MIC

FIX VERIFICATION

- Run Sensor Routine 58. The status of the Toner Empty Sensor (S108) is indicated by the Maintenance Panel display.

  Run at least 1200 feet for a complete fix verification.

QUICK CHECKS

- Special Feature F4940 is enabled, but the Enhanced Toner Loading System hardware is not installed.

  The Enhanced Toner Loading System requires a CP471 Card with DIP switch SW-8 set to **OFF** the following cables: PJ348 to PJ251, and PJ251 to PJMJ12 and microcode level V9.8 or higher..
- Check the level of toner in the hopper.
- Check for sticking or caking toner in the hopper.
- Check for obvious problems with the Toner Empty sensor.

SERVICE CHECKS

- Run Sensor Routine 58. This routine checks the status of the Toner Empty Sensor (S108).

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Toner sticking or caking in the Toner Hopper	60%	- -	- -	- -
Toner Empty Sensor (S108)	30%	1428	2008	1635
PC561 Card	03%	1477	2116	1764
CP471 Card	02%	1471	2114	1760

MAP 079C BEGINS

Table 164. MAP 079C

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Check the level of toner in the Toner Hopper. **Is the toner level above the (S108)?**	Go to Step 2.	• Add toner to the Toner Hopper.
Step 2.	• Check for sticking or caking toner in the Toner Hopper. **Is the toner sticking or caking?**	• Loosen the sticking or caking toner.	Go to Step 3.

Table 164. MAP 079C (continued)

Step	Questions/Actions	Yes	No
Step 3.	• Run Sensor Routine 58 to test the Toner Empty Sensor (S108). **With toner covering the sensor, does the Maintenance Panel display read oF58?**	Go to Step 4	Do the following, one step at a time, until the problem is corrected: • Check all connectors in the circuit for damage and correct seating. • Install a new Toner Empty Sensor (S108). • Install a new PC561 Card.. @
Step 4.	• Run Toner Low driver routine 35 to test the toner low signal. **Did the voltage change?**	Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between: PJ251 and PJMJ12 • Install a new MIC.	• Repair an open circuit between PJ348 and PJ251. • Install a new CP471 Card.

MAP 0800: Pre/Postprocessing Interface Start MAP

Symptom Explanation	Conditions That Could Cause This Symptom
There is a problem communicating with Pre/Post Devices attached to the printer. One of the following System Reference Codes may be displayed: • SRC 0841 • SRC 0842 • SRC D204 • SRC D20A	• There is a problem with the pre/post device. • The pre/post port needs to be disabled and enabled. • The Mechanism Interface Card is defective. • The CPxxx Card is defective. • The cable between PJJ1 and PJ229 is defective.

REFERENCES

- Removals & Adjustments - Control Unit
- Wiring Diagrams - WD70 - MIC to Coupled Pre/Postprocessor Interface
- Wiring Diagrams - WD71 - MIC to Intelligent Postprocessor
- Wiring Diagrams - WD73 - Coupled Pre/Post Interface Wrap Plug A
- Wiring Diagrams - WD74 - Intelligent Postprocessor Int Wrap Plug B
- Wiring Diagrams - WD77-1 - Pre/Post Printer 1 of 2

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Locations Link	Parts Link	Removals & Adjustments Link
Pre/post Device	---	- -	- -
CPxxx Card	1453	2114	1760
MIC	1460	2124	1522
Cable from PJJ1 to PJ229	1462	2166	- -

MAP 0800 BEGINS

Table 165. MAP 0800

Step	Questions/Actions	Yes	No
Step 1.	**Is an 841 or 842 SRC displayed?**	Do the following one step at a time until the problem is corrected: • Ensure that connectors PJJ1 and PJ229 are connected correctly. • Install a new cable between PJJ1 and PJ229. • Install a new Mechanism Interface Card (MIC). • Install a new CPxxx Card. @	Go to Step 2.
Step 2.	**Is there a D20A or D204 SRC displayed?**	• Disable the pre/post port and then enable the port. If the problem is not fixed, go to Step 3.	Go to Step 3.

Table 165. MAP 0800 (continued)

Step	Questions/Actions	Yes	No
Step 3.	**Important** There are two types of pre/post processor interface cards: coupled (4710) and intelligent (4720).It is important to know which type of interface is being used by the Pre/Post Device to determine the correct wrap plug to use during diagnostics. **Note:** If you have attempted to connect to a Pre/Post Device or to run a wrap test incorrectly, there is a possibility that the interface card has been damaged. Most of the unwinder/folder combinations provided by RSI, Wallace, Hunkeler, Boewe, and others use the coupled interface. A data stream can only be passed to a Pre/Post Device by using the intelligent interface. If you are using a Troy MICR printer or a Beste Bunch color printer, you must use the intelligent interface. • Inspect the interface card. • Check the part number on the card with the parts catalog (2132) to determine which card is installed. **Is a Coupled Interface Card installed?**	It is assumed that this interface is the coupled type. If it is not, and you have already made the wrap plug connection, the 4710 interface card may be damaged. If it is, go to MAP 0810: Coupled Pre/Processing Interfaces.	It is assumed that this interface is the intelligent type. If it is not, and you have already made the wrap plug connection, the 4720 interface card may be damaged. If it is, go to MAP 0820: Intelligent Pre/Processing Interfaces.

MAP 0810: Coupled Pre/Processing Interfaces

Symptom Explanation	Conditions That Could Cause This Symptom
There is a problem communicating with Pre/Post Devices attached to the printer. One of the following System Reference Codes may be displayed: • SRC 0841 • SRC 0842 • SRC D096 • SRC D204 • SRC D20A	• There is a problem with the pre/post device. • The Mechanism Interface Card is defective. • The CPxxx Card is defective. • The Coupled Interface Card (4710) is defective. • The cable between the MIC and interface card is defective. • The cable between interface card and the tailgate is defective. • The Stacker Lower Limit Sensor (S808) is defective. • There is an obstruction beneath the Stacker Table.

REFERENCES

- Removals & Adjustments - Control Unit
- Wiring Diagrams - WD70 - MIC to Coupled Pre/Postprocessor Interface
- Wiring Diagrams - WD73 - Coupled Pre/Post Interface Wrap Plug A
- Wiring Diagrams - WD77-1 - Pre/Post Printer 1 of 2
- Pre/Post Diagnostics - 1083

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Locations Link	Parts Link	Removals & Adjustments Link
Pre/post Device	- -	- -	- -
CPxxx Card	1453	2114	1760
MIC	1460	2124	1522
Coupled Interface Card (4710)	1462	2132	1534
Cable between MIC and interface card	1462	2164	- -
Cable between interface card and tailgate	1462	2166	- -
Stacker Lower Limit Sensor (S808)	1438	2108	1882
Wiring	- -	- -	- -

MAP 0810 BEGINS

Table 166. MAP 0810

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Disconnect the Pre/Post Device at the connector at the rear of the Control Unit. • Connect the power leads on the Pre/post processing Interface Wrap Plug **marked A** to the power connector PT01 provided inside the Control Unit. • Install the Pre/post processing Interface Wrap Plug in the external connector. **Use the following table to identify the connector for the pre/post processing port being used.** **Port** **Connector** **1** P/P1 (P/P DEVICE 1 TG) **2** P/P2 (P/P DEVICE 2 TG) **3** P/P3 (P/P DEVICE 3 TG) • Run the coupled pre/post processing interface wrap test. (1083) **Did the test fail with an error displayed?**	Go to Step 2.	Go to Step 3.

Table 166. MAP 0810 (continued)

Step	Questions/Actions	Yes	No
Step 2.	**Is SRC D096 displayed?**	In addition to the SRC, sense data is displayed. During the pre/post processing interface wrap test, more than one error may be encounterd. The first error code encountered will appear in Byte 2. Go to Coupled Interface Diagnostic Data to interpret the meaning of the sense data returned and follow the actions based on the error.	A different error occurred during the pre/postprocessing interface wrap test. Go to MAP 0010: Symptom Start MAP.

Table 166. MAP 0810 (continued)

Step	Questions/Actions	Yes	No
Step 3.	The pre/post processing interface wrap test did not fail. The problem is in the Pre/Post Device, MIC, or the printer logic or cabling. • Install the pre/post processing interface test card (1087). • Set “DEVICE READY” to “YES” on the test card. When the test card is properly installed and the configuration item **Stacker Enable** is set to no in Configure Printer, the stacker table will descend to the bottom or remain down if it is already there. If it is not down, run a test print to cause the stacker table to descend. **Does the stacker table operate correctly?**	Go to Step 4.	• SHUTDOWN AND POWER OFF THE PRINTER. Do the following, one step at a time, until the problem is corrected: • Ensure that there are no obstructions in the path and beneath the stacker table • Repair an open circuit between one of the following pairs of connectors: – PJ229-7 and PJJ1-10 – PJ229-7 and PJ332-7 • Install a new Stacker Lower Limit Sensor (S808). • Install a new CPxxx Card. • Install a new MIC Card. @
Step 4.	• Perform all of the Coupled Interface Test Card checks. **Did the interface check OK?**	There is a problem with the Pre/Post Device.	Go to Step 5.

Table 166. MAP 0810 (continued)

Step	Questions/Actions	Yes	No
Step 5.	• Run the MIC isolation wrap test (1204). **Did the test fail?**	• Install a new MIC. @	• SHUTDOWN AND POWER OFF THE PRINTER. Do the following, one step at a time, until the problem is corrected: • Repair an open circuit between one of the following pairs of connectors: – PJ229 and PJJ1 – PJ229 and PJ332 • Install a new CPxxx Card. @

Table 166. MAP 0810 (continued)

Step	Questions/Actions	Yes	No
Step 6.	An error was detected while running a wrap test from the MIC through the Coupled Interface Card (4710). To see if the port on the MIC has failed, the test will be run again using a different port on the MIC as the only change. Use the following table to identify the connector for the pre/postprocessing port being used. **Port Connector** **1** PJJ11 (MIC P11) **2** PJJ9 (MIC P9) **3** PJJ7 (MIC P7) Do the following: • Disconnect the interface at the MIC at the connector shown above. • Plug the connector into another pre/post connector on the MIC from the choices shown above. • Run the coupled pre/post processing interface wrap test again (1083) on the port to which you are connected. **Did the test fail?**	Go to Step 7.	• Install a new MIC. @

Table 166. MAP 0810 (continued)

Step	Questions/Actions	Yes	No
Step 7.	The problem is in the Coupled Interface Card 4710, or the cable that connects it to the MIC. **Does this control unit have more than one Coupled Interface Card 4710?**	Go to Step 8.	• SHUTDOWN AND POWER OFF THE PRINTER. Install new parts as listed below, one at a time, until the problem is corrected: • Coupled Interface Card (4710) • Cable between the Coupled Interface Card and the MIC. @

Table 166. MAP 0810 (continued)

Step	Questions/Actions	Yes	No
Step 8.	To check for a problem with the cable, it will be installed into a second Coupled Interface Card (4710) and tested again. Use the following table to identify the connector for the pre/postprocessing port being used. **Port Connector** **1** PJF01 (P/P CARD 1 TOP) **2** PJF02 (P/P CARD 2 TOP) **3** PJF03 (P/P CARD 3 TOP) Do the following: • Locate another Coupled Interface Card (4710) in the control unit. Disconnect the cable from the Coupled Interface Card (4710) to the MIC, at the 4710 Card side. • Connect the cable from the failing port onto the Coupled Interface Card (4710) of the other port. Both ends of the cable have now been installed in the other port. • Move the Pre/post processing Interface Wrap Plug to the other port. • Run the pre/post processing interface wrap test (1083) on the other port. **Did the test run OK?**	• SHUTDOWN AND POWER OFF THE PRINTER. • Install a new Coupled Interface Card (4710). @	The cable that has been moved to the second port has a problem. • Install a new cable. @

Table 166. MAP 0810 (continued)

Step	Questions/Actions	Yes	No
Step 9.	An error occurred while running the pre/post processing interface wrap test. An internal cable will be eliminated by running the wrap test directly at the Coupled Interface Card 4710. Use the following table to identify the connector for the pre/post processing port being used. **Port Connector** **1** PJF04 (P/P CARD 1 BOT) **2** PJF05 (P/P CARD 2 BOT) **3** PJF06 (P/P CARD 3 BOT) Do the following: • Disconnect the cable at the connector shown above. • Install the Pre/postprocessing Interface Wrap Plug **marked A** at the Coupled Interface Card 4710. • Run the coupled pre/postprocessing interface wrap test (1083). **Did the test fail?**	• Install a new Coupled Interface Card 4710. @	• Install a new the cable from the pre/post processing interface external connector P/P to the Coupled Interface Card 4710. @

Table 167. Coupled Pre/Postprocessing Interface Diagnostic Error Codes

Sense Data Format		
Byte 0	**Byte 1**	**Byte 2 - 10**
10	Test Number 18 = Port 1 19 = Port 2 1A = Port 3	Error code, each 1 byte in length (up to 9 error codes may be displayed.)
Byte 2 of Sense Data		
Hex values	**Definition**	**Action**
01	The pre/post processing interface wrap test could not detect the presence of the Coupled Interface Card (4710) on this port. The remainder of the pre/post processing interface wrap test is not run.	Ensure that the Coupled Interface Card (4710) is connected correctly.
02 to 1B 1D to 20	Error occurred during wrap of Coupled Interface Card (4710) and the MIC.	Go to Step 6.
1C 24 to 35	Error occurred during wrap of Coupled Interface Card (4710), internal cabling, and the Coupled Interface Card.	Go to Step 9.
Other errors	An unexpected result was displayed.	Call your next level of support

MAP 0820: Intelligent Pre/Processing Interfaces

Symptom Explanation	Conditions That Could Cause This Symptom
There is a problem communicating with Pre/Post Devices attached to the printer. One of the following System Reference Codes may be displayed: • SRC 0841 • SRC 0842 • SRC D095 • SRC D204 • SRC D20A	• There is a problem with the pre/post device. • The Mechanism Interface Card is defective. • The CPxxx Card is defective. • The Intelligent Interface Card (4720) is defective. • The cable between the MIC and interface card is defective. • The cable between the interface card and tailgate is defective. • The Stacker Lower Limit Sensor (S808) is defective. • There is an obstruction beneath the Stacker Table.

REFERENCES

- Removals & Adjustments - Control Unit
- Wiring Diagrams - WD71 - MIC to Intelligent Postprocessor
- Wiring Diagrams - WD74 - Intelligent Postprocessor Int Wrap Plug B
- Wiring Diagrams - WD77-1 - Pre/Post Printer 1 of 2
- Pre/Post Diagnostics - 1083

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Locations Link	Parts Link	Removals & Adjustments Link
Pre/post Device	- -	- -	- -
CPxxx Card	1453	2114	1760
MIC	1460	2124	1522
Intelligent Interface Card (4720)	1462	2132	1534
Cable between MIC and interface card	1462	2164	- -
Cable between interface card and tailgate	1462	2166	- -
Stacker Lower Limit Sensor (S808)	1438	2108	1882
Wiring	- -	- -	- -

MAP 0820 BEGINS

Table 168. MAP 0820

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Disconnect the Pre/Post Device at the connector at the rear of the Control Unit. • Connect the power leads on the Pre/postprocessing Interface Wrap Plug **marked B** to the power connector PJT01 provided inside the Control Unit. • Install the Pre/postprocessing Interface Wrap Plug in the external connector. **Use the following table to identify the connector for the pre/postprocessing port being used.** **Port** **Connector** **1** P/P1 (P/P DEVICE 1 TG) **2** P/P2 (P/P DEVICE 2 TG) **3** P/P3 (P/P DEVICE 3 TG) • Run the Intelligent pre/post processing interface wrap test. (1083) **Did the test fail with an error displayed?**	Go to Step 2.	Go to Step 3.

Table 168. MAP 0820 (continued)

Step	Questions/Actions	Yes	No
Step 2.	**Is SRC D095 displayed?**	In addition to the SRC, sense data is displayed. During the pre/postprocessing interface wrap test, more than one error may be encounterd. The first error code encountered will appear in Byte 2. Go to Intelligent Interface Diagnostic Data to interpret the meaning of the sense data returned and follow the actions based on the error.	A different error occurred during the pre/postprocessing interface wrap test. Go to MAP 0010: Symptom Start MAP.

Table 168. MAP 0820 (continued)

Step	Questions/Actions	Yes	No
Step 3.	• Run the MIC isolation wrap test (1204). **Did the test fail?**	• Install a new MIC. @	• SHUTDOWN AND POWER OFF THE PRINTER. Do the following, one step at a time, until the problem is corrected: • Ensure that there are no obstructions in the path and beneath the stacker table. • Repair an open circuit between one of the following pairs of connectors: – PJ229 and PJJ1 – PJ229 and PJ332 • Install a new Stacker Lower Limit Sensor (S808). • Install a new CPxxx Card. • Correct a problem with the Pre/Post Device. • Install a new MIC Card. @

Table 168. MAP 0820 (continued)

Step	Questions/Actions	Yes	No
Step 4.	An error was detected while running a wrap test from the MIC through the Intelligent Interface Card (4720). To see if the port on the MIC has failed, the test will be run again using a different port on the MIC as the only change. **Use the following table to identify the connector for the pre/postprocessing port being used.** **Port Connector** **1** PJJ11 (MIC P11) **2** PJJ9 (MIC P9) **3** PJJ7 (MIC P7) Do the following: • Disconnect the interface at the MIC connector shown above. • Plug the connector into another pre/post connector on the MIC from the choices shown above. • Run the Intelligent pre/postprocessing interface wrap test again on the port to which you are connected (1083). **Did the test fail?**	Go to Step 5.	• Install a new MIC. @

Table 168. MAP 0820 (continued)

Step	Questions/Actions	Yes	No
Step 5.	The problem is in the Intelligent Interface Card (4720), or the cable that connects it to the MIC. **Does this control unit have more than one Intelligent Interface Card (4720)?**	Go to Step 6.	• SHUTDOWN AND POWER OFF THE PRINTER. Install new parts as listed below, one at a time, until the problem is corrected: • Intelligent Interface Card (4720) • Cable between the Intelligent Interface Card and the MIC @

Table 168. MAP 0820 (continued)

Step	Questions/Actions	Yes	No
Step 6.	To check for a problem with the cable, it will be installed into a second Intelligent Interface Card (4720) and tested again. Use the following table to identify the connector for the pre/post processing port being used. **Port Connector** **1** PJF01 (P/P CARD 1 TOP) **2** PJF02 (P/P CARD 2 TOP) **3** PJF03 (P/P CARD 3 TOP) Do the following: • Locate another Intelligent Interface Card (4720) in the control unit. Disconnect the cable from the Intelligent Interface Card to the MIC, at the 4720 Card side. • Connect the cable from the failing port onto the Intelligent Interface Card (4720) of the other port. Both ends of the cable have now been installed in the other port. • Move the Pre/post processing Interface Wrap Plug to the other port. • Run the pre/post processing interface wrap test on the other port (1083). **Did the test run OK?**	• SHUTDOWN AND POWER OFF THE PRINTER. • Install a new Intelligent Interface Card (4720). @	The cable that has been moved to the second port has a problem. • Install a new cable. @

Table 168. MAP 0820 (continued)

Step	Questions/Actions	Yes	No
Step 7.	An error occurred while running the pre/post processing interface wrap test. An internal cable will be eliminated by running the wrap test directly at the Intelligent Interface Card 4720. Use the following table to identify the connector for the pre/post processing port being used. **Port Connector** **1** PJF04 (P/P CARD 1 BOT) **2** PJF05 (P/P CARD 2 BOT) **3** PJF06 (P/P CARD 3 BOT) Do the following: • Disconnect the cable at the connector shown above. • Install the Pre/post processing Interface Wrap Plug **marked B** at the Intelligent Interface Card 4720. • Run the Intelligent pre/post processing interface wrap test. **Did the test fail?**	• Install a new Intelligent Interface Card 4720. @	• Install a new the cable from the pre/post processing interface external connector P/P to the Intelligent Interface Card 4720. @

Table 169. Intelligent Pre/Postprocessing Interface Diagnostic Error Codes

Sense Data Format		
Byte 0	**Byte 1**	**Byte 2 - 10**
10	Test Number 18 = Port 1 19 = Port 2 1A = Port 3	Error code, each 1 byte in length (up to 9 error codes may be displayed.)
Byte 2 of Sense Data		
Hex values	**Definition**	**Action**
01	The pre/post processing interface wrap test could not detect the presence of the Intelligent Interface Card (4720) on this port. The remainder of the pre/post processing interface wrap test is not run.	Ensure that the Intelligent Interface Card (4720) is connected correctly.
02 to 1B 1D to 20	Error occurred during wrap of Intelligent Interface Card (4720) and the MIC.	Go to Step 4.
1C 24 to 35	Error occurred during wrap of Intelligent Interface Card 4720, internal cabling, and the Intelligent Interface Card.	Go to Step 7.
Other errors	An unexpected result was displayed.	Call your next level of support

MAP 1000: Print Quality Start MAP

How to Use

You can use either guided maintenance (MAPs) or the Print Quality Checklist, but first try the MAPs. If you cannot fix the problem using MAPs, use the checklist to ensure that the printer is within specifications.

Guided Maintenance (MAPs)

When you have a print quality problem, make enough prints to clearly identify the type and pattern of the problem. Use one of the print samples generated by **Print Pack** diagnostics. If the print quality problem does not appear on any of the available patterns, have the customer submit the failing job, or look at a job supplied by the customer.

Use the defect samples provided in the Print Quality Samples to help identify the print quality problem and determine the MAP entry point. The print samples provide a visual guide to the problem. Look for a sample that is similar to the print quality defect found on the machine prints.

Go to the MAP number and entry point indicated in Print Quality Symptoms or in the print samples in Print Quality Samples (identified by Print Sample Group in Print Quality Symptoms). If the problem is not found in the MAP chosen, examine the prints from the machine again to determine if another MAP can be used. For example, the print may have marks, but MAP 1001: Repeating Spots or Marks does not find the problem. The problem may actually be a small amount of fuser offset.

Print Quality Checklist

Use Print Quality Checklist when:

- The MAPs did not work (two or more problems may be present).
- You want to do a complete print quality check.
- Your technical support has asked for the information.

You may want to print the checklist and use it to record the values for later reference.

Recommendations

- Schedule a time to do all items in the print quality checklist. You will then have a reference point in addition to valuable experience.

- When you have a problem, think about what can change from the reference point: contamination, aging supplies and PM items, shifting electrical and mechanical adjustments, and so on.
- Understand that one problem can cause another. An incorrect developer gap might cause background or streaks. Cleaning is not enough—you must find the source of the problem.

MAP 1000 Begins

Table 170. Print Quality Symptoms

If the failure is indicated by:	Print Sample Group	Take this action:
Scanner rejects bar codes		Go to MAP 1021: Bar Code Problems.
Print bloom A horizontal band of darker print across the page, ranging in thickness from 12 to 25 mm (0.5 to 1 in.) is normal. Every time printing stops, the print directly under the hot roll “blooms” and appears darker than the other parts of the page.	A5	Ensure that the backup roll lift motor (M610) and hardware is operating correctly, and check the timing. See Modify Backup Roll Lift Motor Open/Close Timing (Position 5). If the backup roll lift motor is operating correctly and bloom continues to be a problem for your customer, consult your marketing support. The way print jobs are sent to the printer can affect the number of pages that have bloom.

Table 170. Print Quality Symptoms (continued)

If the failure is indicated by:	Print Sample Group	Take this action:
Wrinkled prints	N/A	Do the following, one step at a time, until the problem is solved: 1. Check the paper in the box or on the roll to determine if the paper is defective. 2. Ensure that the preheat temperature is not set too high. This is a likely problem if wrinkling occurs only on the sheets that had stopped on the preheat platen. • If level v9.6 or lower microcode is installed in the printer, reduce the preheat platen temperature if necessary by doing the following. – If wrinkling due to high preheat platen temperature occurs on all types of forms, decrease the value of the *Preheat Platen Temperature* in **Configure Printer** by 5 degrees until the problem is fixed. – If wrinkling due to high preheat platen temperature only occurs on one type of forms, decrease the value of the *Preheat Platen Temperature* of that specific form by 5 degrees until the problem is fixed using the **Define Forms** window. (The value 0 means that the *Preheat Platen Temperature* value set in Configure Printer is used.) (Continued on next page)

Table 170. Print Quality Symptoms (continued)

If the failure is indicated by:	Print Sample Group	Take this action:
Wrinkled prints (continued)	N/A	• If level v9.7 or higher microcode is installed in the printer, reduce the preheat platen temperature if necessary by doing the following. – If wrinkling occurs on all types of forms, decrease the value of the *Preheat Platen Temperature* in **Configure Printer** in steps of 6 until the problem is fixed. – If wrinkling only occurs on one type of forms, decrease the value of the *Preheat Platen Temperature* of that specific form in steps of 6 until the problem is fixed using the **Define Forms** window. (The value 0 means that the *Preheat Platen Temperature* value set in Configure Printer is used.) 3. Perform the check procedure under Skew Sensor (S707). 4. Determine if the paper was stored incorrectly and now contains too much moisture. If the form is not tracking correctly with the steering disabled, use MAP 0133: Skew Error as if there were a skew problem. Check for problems with the hot roll bearings. Listen for noises and watch for eccentric rotation. Check whether the hot roll front collar and drive collar were replaced at the last 12 Mft Procedure.

Table 170. Print Quality Symptoms (continued)

If the failure is indicated by:	Print Sample Group	Take this action:
Oil on prints	N/A	Check the fuser oiling mechanism, including the tubes from the oil supply. Repair or replace as necessary. If there is no oiling mechanism failure, reduce the fuser oil rate during **idle** time by altering printer NVS memory location FF0C. See Read From or Write to Memory (Position 2). The factory value in location FF0C is 20. Increasing the value in FF0C will reduce the fuser oil rate during idle. Increasing FF0C too much can result in fuser offset, so try increasing the value in increments of 20 until the problem is fixed. Location FF0C is a decimal number with a maximum value of 99. Remove the oiler belt, manually advance it to a dry spot, and reinstall it. Use isopropyl alcohol on a lint-free cloth to clean the excess fuser oil from around the fuser and stacker. If oil is dripping from the printer, ensure the Oil Pan is installed correctly and instruct the operator in its use.

Table 170. Print Quality Symptoms (continued)

If the failure is indicated by:	Print Sample Group	Take this action:
Discolored paper	N/A	Some papers may become discolored if left in contact with the preheat platen for long periods with the printer powered on. Ensure that the preheat temperature is not set too high. • If level v9.6 or lower microcode is installed in the printer, reduce the preheat platen temperature if necessary by doing the following. – If discoloring due to high preheat platen temperature occurs on all types of forms, decrease the value of the *Preheat Platen Temperature* in **Configure Printer** by 5 degrees until the problem is fixed. – If discoloring due to high preheat platen temperature only occurs on one type of forms, decrease the value of the *Preheat Platen Temperature* of that specific form by 5 degrees until the problem is fixed using the **Define Forms** window. (The value 0 means that the *Preheat Platen Temperature* value set in Configure Printer is used.) • If level v9.7 or higher microcode is installed in the printer, reduce the preheat platen temperature if necessary by doing the following. – If discoloring occurs on all types of forms, decrease the value of the *Preheat Platen Temperature* in **Configure Printer** in steps of 6 until the problem is fixed. – If discoloring only occurs on one type of forms, decrease the value of the *Preheat Platen Temperature* of that specific form in steps of 6 until the problem is fixed using the **Define Forms** window. (The value 0 means that the *Preheat Platen Temperature* value set in Configure Printer is used.)

Table 170. Print Quality Symptoms (continued)

If the failure is indicated by:	Print Sample Group	Take this action:
Toner on perforation or a horizontal gray bar on the top of the first page or bottom of the last page	N/A	Check the following transfer station adjustments and adjust where necessary: 1. Retractor detent position 2. Retractor to PC 3. Path modifier position 4. Tractor timing. See Transfer Station for adjustment procedures.
Horizontal dark bar (repeating or random) caused by an undetected mag brush bias arc	D	Go to MAP 0231: Mag Brush Bias Error, and when the defect is visible, answer Yes to the question, “Did a machine check 231 occur?”
Repeating spots or marks	D	Go to MAP 1001: Repeating Spots or Marks.
Random spots or marks	D	Go to MAP 1002: Random Spots or Marks.
Light streaks in the print	E	Go to MAP 1003: Light Streaks.
Voids, missing print, or poor contrast	E	Go to MAP 100A: Voids, Missing Print, or Poor Contrast.
Light print	I	Go to MAP 1018: Light Print.
Light print - trailing edge only	I	Go to MAP 1018: Light Print.
Poor solid area fill	J	Go to MAP 1020: Poor Solid Area Fill or Images.
Dark streaks	F	Go to MAP 1004: Dark Streaks or Black Lines.
Background or dirty prints	C	Go to MAP 1005: Background or Dirty Prints.
Black prints	H	Go to MAP 1006: Black Prints.
Blank prints	B	Go to MAP 1007: Blank Prints.

Table 170. Print Quality Symptoms (continued)

If the failure is indicated by:	**Print Sample Group**	**Take this action:**
Residual image Image repeats one PC drum rotation (824 mm; 32.4 in.) after printing.	A	Go to MAP 1008: Residual Images.
Offset image Hot roll offset shows up after one hot roll rotation (314 mm; 12.4 in.). Certain forms, especially labels, remain hot in the stacker and either offset on facing pages or stick together.	A	Do not press, shear, strap, or wrap the output stack while it is hot. For help in evaluating the forms, call your next level support. Ensure that the preheat control is not set too high. • If level v9.6 or lower microcode is installed in the printer, reduce the preheat platen temperature if necessary by doing the following. – If offset image due to low preheat platen temperature occurs on all types of forms, increase the value of the *Preheat Platen Temperature* in **Configure Printer** by 5 degrees until the problem is fixed. – If offset image due to low preheat platen temperature only occurs on one type of forms, increase the value of the *Preheat Platen Temperature* of that specific form by 5 degrees until the problem is fixed using the **Define Forms** window. (The value 0 means that the *Preheat Platen Temperature* value set in Configure Printer is used.) (continued on next page)

Table 170. Print Quality Symptoms (continued)

If the failure is indicated by:	Print Sample Group	Take this action:
Offset image (continued)	A	• If level v9.7 or higher microcode is installed in the printer, reduce the preheat platen temperature if necessary by doing the following – If offset image occurs on all types of forms, decrease the value of the *Preheat Platen Temperature* in **Configure Printer** in steps of 6 until the problem is fixed. – If offset image only occurs on one type of forms, decrease the value of the *Preheat Platen Temperature* of that specific form in steps of 6 until the problem is fixed using the **Define Forms** window. (The value 0 means that the *Preheat Platen Temperature* value set in Configure Printer is used.) Go to MAP 1009: Fuser Offset or Forms Sticking Together.
Side one smear The image on side one (printed on Printer 1) is smeared toward the trailing edge of the print.	N/A	Go to MAP 1009: Fuser Offset or Forms Sticking Together.

Table 170. Print Quality Symptoms (continued)

If the failure is indicated by:	Print Sample Group	Take this action:
Poor fusing	A	Fusing problems over the entire page are usually caused by the forms. For help in evaluating the forms, call your next level support. Ensure that the preheat temperature is not set too low. • If level v9.6 or lower microcode is installed in the printer, reduce the preheat platen temperature if necessary by doing the following. – If poor fusing due to low preheat platen temperature occurs on all types of forms, increase the value of the *Preheat Platen Temperature* in **Configure Printer** by 5 degrees until the problem is fixed. – If poor fusing due to low preheat platen temperature only occurs on one type of forms, increase the value of the *Preheat Platen Temperature* of that specific form by 5 degrees until the problem is fixed using the **Define Forms** window. (The value 0 means that the *Preheat Platen Temperature* value set in Configure Printer is used.) (continued on next page)

Table 170. Print Quality Symptoms (continued)

If the failure is indicated by:	Print Sample Group	Take this action:
Poor fusing (continued)	A	• If level v9.7 or higher microcode is installed in the printer, reduce the preheat platen temperature if necessary by doing the following. – If poor fusing due to low preheat platen temperature occurs on all types of forms, increase the value of the *Preheat Platen Temperature* in **Configure Printer** in steps of 6 until the problem is fixed. – If poor fusing due to low preheat platen temperature only occurs on one type of forms, increase the value of the *Preheat Platen Temperature* of that specific form in steps of 6 until the problem is fixed using the **Define Forms** window. (The value 0 means that the *Preheat Platen Temperature* value set in Configure Printer is used.) Go to MAP 1010: Poor Fusing.
Line Length not correct (compressed)	N/A	Line length could be compressed on both ends. Go to MAP 1011: Registration or Skew.
Incorrect registration or skewed image	N/A	Go to MAP 1011: Registration or Skew.
Wavy printing	N/A	Do the following, one step at a time, until the problem is solved: 1. Correct any abnormal machine vibration. 2. Go to MAP 1012: Altered Characters or Images.
Altered characters or images	G	Go to MAP 1012: Altered Characters or Images.
Lines or bars extended in the scan direction	G	Go to MAP 1012: Altered Characters or Images.
Diagonal bands	G	Go to MAP 1012: Altered Characters or Images.
Image loss (voids) near perforations	N/A	Go to MAP 100A: Voids, Missing Print, or Poor Contrast.

Table 170. Print Quality Symptoms (continued)

If the failure is indicated by:	Print Sample Group	Take this action:
Image loss on last page of print when paper stops	N/A	Go to MAP 100A: Voids, Missing Print, or Poor Contrast.
Print too dark or lines too wide	N/A	Go to MAP 1013: Characters Too Dark or Stroke Width Too Wide.
Banding—light and dark bands in shaded areas in the scan direction. Observe the 5-pels on and 5-pels off checkerboard pattern on the alternate print sample.	G	Go to MAP 1015: Banding.
Kanji or small font characters filled in	N/A	This printer is not designed to print kanji fonts smaller than 24 pels x 24 pels. If the problem is occurring with larger kanji fonts, go to MAP 1013: Characters Too Dark or Stroke Width Too Wide.
Kanji or small fonts too light	N/A	Increase the contrast setting to correct light fonts. If there is a problem with small fonts when the developer mix life is less than 1000 Kft, go to MAP 1018: Light Print.
Background shadow on trailing edge of characters	C	Go to MAP 1014: Background Shadows (Bleeding).

Print Quality Checklist

Use this table as a checklist when troubleshooting a print quality problem.

Remember:

- Calibrate the drum clearance gauge before you make any measurement.
- To make the output of two printers look similar, measure the parameters in Print Quality Checklist for both printers. Start at the top of the table. The checks are grouped by the tool required and by order of importance.
- Abbreviations:

F = front	TF = top front	BF = bottom front
C = center	TR = top rear	BR = bottom rear
R = rear		

Table 171. Print Quality Checklist

Item	Tool	Tolerance Range	Your Value
Operator controls		Print contrast **4** is for normal text printing.	
Coronas		Coronas should be clean and in good condition.	
Too little mix		Check drain tube for spilled mix.	
Mag brush A angle		See Mag Brush Rolls Installation	
Mag brush B angle		See Mag Brush Rolls Installation	
Conveyor roll angle		0°	
Developer mix age	Read counter addresses FF1E, FF1F	**850 K** on the developer mix counter for Developer Mix **P/N 1402829**. **1 M** for Developer Mix **P/N 1402718**.	
PC drum age	PM log	Only for reference.	
PM procedures	PM log	±150 Kft of schedule.	
PC drum cleaning	Drum shaft extension	Use alcohol on a lint-free cloth to remove toner, adhesives, and fingerprints.	
Mag brush bias	Digital voltmeter	See for this procedure.	
Transfer corona	Digital voltmeter	1.0 ±0.02 V dc, CH3 test points See Transfer Corona Voltage for this procedure.	
Preclean corona	Digital voltmeter	1.7 ±0.02 V ac, CH4 test points See Preclean Corona Voltage for this procedure.	
Toner control adjustment on CPxxx Card	Digital voltmeter	See Toner Control Adjustment for the procedure.	
PC drum surface voltage	Electrostatic voltmeter	See PC Drum Surface Voltage for this procedure.	F C R

Table 171. Print Quality Checklist (continued)

Item	Tool	Tolerance Range	Your Value
Erase lamp filters		Clean the filters.	
Cleaner station		Clean the station.	
Mag brush A to doctor blade gap	Doctor/scraper gauge or feeler gauge	See PC Drum & Developer Clearances/Gaps for this procedure.	F R
Mag brush B to doctor blade gap	Doctor/scraper gauge or feeler gauge	See PC Drum & Developer Clearances/Gaps for this procedure.	F R
Developer to PC drum gap	Drum clearance gauge	See PC Drum & Developer Clearances/Gaps for this procedure.	F R
Retractor to PC drum gap	Drum clearance gauge	See PC Drum & Developer Clearances/Gaps. Best results occur if the front and rear gaps are the same.	F R F R
Path modifier	Tension gauge	See Path Modifier Assembly for this procedure.	
Lower tractor timing		See Tractors for this procedure.	
Charge corona to PC drum gap	Drum clearance gauge	Adjust the gap only if the PC drum surface voltage varies more than 60 V dc from front to rear with a new PC drum. Best results occur if the front and rear gaps are the same. See Charge Corona to PC Drum Clearance for this procedure.	TF TR BF BR
Preclean corona to PC drum gap	Drum gauge and small scale	9.0 to 11.0 mm See PC Drum & Developer Clearances/Gaps for this procedure.	F R

Table 171. Print Quality Checklist (continued)

Item	Tool	Tolerance Range	Your Value
Laser beam power	Laser power tool	• For mix **P/N 1402829**, the power of each beam must be 42.5 ± 2.5 mV at point A. – The difference between the highest and lowest voltage reading must be less than 2.5 mV. • For mix **P/N 1402718**, the power of each beam must be 30.0 ± 0.5 mV at point A. – The difference between the highest and lowest voltage reading must be less than 1.0 mV. See STEP 4: Beam Power Check for this procedure.	
Return mirror	Lint-free cloth	See Printhead Cleaning Procedure for this procedure.	
Pressure across cyclone	Vacuum gauge	90 to 140 mm water See Cyclone Pressure Check for this procedure.	

MAP 1001: Repeating Spots or Marks

Symptom Explanation	Conditions That Could Cause This Symptom
Use this MAP if the print quality problem is spots or marks that occur in repeating patterns. The marks may not appear on every page, but do appear at a fixed repeating distance when printing continuous pages. Group D of Print Quality Samples contains samples of spots and marks.	• The PC drum has been damaged. A new PC drum will probably need to be installed, but first correct the cause of the damage. Possible causes of PC drum damage are: – A PC drum spacing is not correct and the drum is being scratched. – The developer mix has debris in it. – A corona is arcing. – A paper jam damaged the drum. • A corona or mag brush is discharging at a fixed point of the drum. • The PC drum has toner or adhesive on it that can be removed with alcohol. • The hot roll is worn or defective. • The backup roll is dirty or damaged. • Something in the stacker or fuser is rubbing on the forms. • The PC drum has a pattern worn into it from printing the same pattern for over 1 Mft.

REFERENCES

- Print Quality Samples

FIX VERIFICATION

- Run the **primary** print sample (1069) for at least 30 prints to see if the repeating spots occur. If the defect the customer has noticed does not appear on prints made using primary print samples, print the other print samples to see if the spot/mark appears.

QUICK CHECKS

- Check the customer's unused forms to see if the spots or marks are present before printing.

SERVICE CHECKS

- None

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
PC drum damage	80%	1429	1976	1644
Hot roll	10%	1431	2046	1692
Backup roll	05%	1433	2048	1670
Corona or mag brush arcing	04%	1429, 1427	1964, 1972, 2004, 2026	1556, 1612
High voltage power supply	01%	1429	1964	1568
Scuff Roll	- -	1433	2070	1734
Scuff Pressure Rollers	- -	1433	2070	1730
Stacker Finger Belts	- -	1439	2096	1870, 1863
Pendulum	- -	1441	2110	1859

MAP 1001 Begins

Table 172. MAP 1001

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Run all white and primary print samples for at least 40 prints each, to see if the repeating spots occur. If the defect the customer has noticed does not appear on these prints, print the other test patterns to see if the spot/mark appear. Save this output as a reference point while you work on the problem. You may have more than one source of spots or marks, so check the print sample carefully for different patterns. • Do the QUICK CHECKS. If spots or marks on the printed output are not visible on unfused pages between the transfer station and the fuser, investigate the fuser area. **Are the spots or marks visible on the unfused pages between the transfer station and fuser?**	Go to Step 2.	Go to Step 6.

Table 172. MAP 1001 (continued)

Step	Questions/Actions	Yes	No
Step 2.	The PC drum circumference is 824 mm (32.45 inches). Spots or marks that are caused by PC drum damage repeat at that distance (every drum rotation) when continuous pages are printed. **Do the spots or marks repeat every drum rotation?**	Go to Step 3.	Go to MAP 1002: Random Spots or Marks, Step 12.
Step 3.	• Remove the PC drum and inspect it for damage. **Are there any scratches, chips, or physical damage on the surface of the PC drum?**	Go to Step 8.	Go to Step 4.

Table 172. MAP 1001 (continued)

Step	Questions/Actions	Yes	No
Step 4.	**Is there adhesive build up or fused-on toner on the surface of the PC drum?**	Go to Step 5.	• Install a new PC drum. • Reset the PM counter. @ **Hints** Before you replace the PC drum, run the Print Log (including Print Pack). Perform the PC Drum Surface Voltage. After you replace the PC drum, run the Print Log (including Print Pack) and compare the two print samples for background, solid area fill, and stroke width.

Table 172. MAP 1001 (continued)

Step	Questions/Actions	Yes	No
Step 5.	• Perform the PC Drum Cleaning procedure. • Check the print after you print a full box of paper. **Are there still spots or marks that repeat every drum rotation?**	• Install a new PC drum. • Reset the PM counter. @ **Hints** Before you replace the PC drum, run the Print Log (including Print Pack). Perform the PC Drum Surface Voltage. After you replace the PC drum, run the Print Log (including Print Pack) and compare the two print samples for background, solid area fill, and stroke width.	If the problem was adhesive buildup on the PC drum surface, running a box of paper about every ten boxes of labels will help keep the adhesive from building up. If the adhesive buildup is a continual problem, contact your marketing support to assist the customer with selecting a better label. If the problem was fused-on toner, check the following developer adjustments: • Mag Brush Rolls to Doctor Blade Gaps • Developer to PC Drum Gaps See PC Drum & Developer Clearances/Gaps and PC Drum & Developer Clearances/Gaps.
Step 6.	• Check the hot roll for damage or worn areas. **Is the hot roll OK?**	Go to Step 7.	• Install a new hot roll. • Reset the PM counter. @

Table 172. MAP 1001 (continued)

Step	Questions/Actions	Yes	No
Step 7.	• Check the fuser oiler belt for excessive buildup. It is normal for the belt to be coated with toner, paper dust, and chads. If there is so much toner and debris on the belt that it cannot keep the hot roll clean, there is excessive buildup. **Is there excessive buildup on the fuser oiler belt that could be causing the spots?**	Go to MAP 1002: Random Spots or Marks, step 5.	• Check the following items to isolate the source of spots and marks: – Backup Roll (1670) – Scuff Roll (1734) – Scuff Pressure Rollers (1730) – Stacker Finger Belts (1870 & 1863) – Pendulum (1859) – Anything in the stacker or fuser that contacts the paper. • Repair or replace as required. @

Table 172. MAP 1001 (continued)

Step	Questions/Actions	Yes	No
Step 8.	You need to install a new PC drum, but first do the following to prevent damaging the new drum. • If the forms are loose, check the Tractors Timing adjustment. • Check the PC Drum & Developer Clearances/Gaps and adjust any clearances that are not correct. • Ensure that there are no objects in the developer mix that can scratch the drum. • View or print the Error Log. If you find several occurrences of the same type of error, go to the MAP for that error and check any adjustments that may affect paper jams or arcing. • Install a new PC drum. • Reset the PM counter. See Using the PM Log. @ **Hints** Before you replace the PC drum, run the Print Log (including Print Pack). After you replace the PC drum, run the Print Log (including Print Pack) and compare the two print samples for background, solid area fill, and stroke width. If the print quality changed from good to bad after you changed the PC drum, you may need to adjust the PC Drum Surface Voltage.		

MAP 1002: Random Spots or Marks

Symptom Explanation	Conditions That Could Cause This Symptom
Use this MAP if the print quality problem is spots or marks that occur in a random manner. The marks may not appear on every page. Group D of Print Quality Samples contains samples of spots and marks. Check carefully to ensure that the spots are random and that there is no repeating pattern. If you find a repeating pattern, go to MAP 1001: Repeating Spots or Marks.	• Ensure that the preheat temperature is not set too low. This can cause toner to build up on the oiler belt, which can then become loosened and deposited on the forms by the hot roll. • The developer mix is contaminated or defective. • The toner is contaminated or defective. The developer mix will also have to be replaced. • The cleaner brush is defective. • The cleaner housing air system is clogged or defective. This includes leaks around the fine filter, the fine filter door being open, and a defective Cyclone Blower Motor (M104). • Excessive toner has built up in the developer. • A corona or mag brush roll is arcing. • The forms are defective. • The fuser oiler area has one or more of these problems: – The oiler belt is defective or has excessive buildup. – The Oiler Belt Motor (M706) is defective. – An oil pump is defective. – The DV081 Card is defective. – The FU041 Card is defective. • A bearing or seal in the developer is defective and is creating debris.

REFERENCES

- Removals & Adjustments - Fuser
- Removals & Adjustments - Cleaner
- Circuit Diagrams - CD19 - Oiler Belt Motor (M706) & Driver, CD20 - Oil Pumps and Driver
- Wiring Diagrams -
  - WD13 - AC Motors M101, M104 & M108
  - WD41 - Oiler Belt Motor (M706)
  - WD45 - Oil Pumps L701, L702 & L703
- Print Quality Samples

FIX VERIFICATION

- Run the **all white** and **primary** print samples (1069) for at least 100 pages each, and check the prints carefully for print defects. If the defects the customer has noticed do not appear on these print samples, print the other test patterns to see if the spot/marks appear.

QUICK CHECKS

1. Ensure that the preheat temperature is not set too low. See the Operator's Guide for more information on setting this value.
2. For EPROM Level K or lower, be aware that the forms select position A uses less oil than the B position. Some forms and print applications with heavy toner coverage may require more oil flow, even if the form is light in weight.
3. For EPROM Level L or higher and version 9.7 microcode, use **Define Forms** to increase the oil feed rate. See the Operator's Guide for more information on setting this value.
4. Check the customer's unused forms to see if the spots or marks are present before printing.
5. Clean all the corona assemblies.

SERVICE CHECKS

- None

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Preheat Temperature setting	---	- -	- -	- -
Forms Select setting/Oil feed rate	---	- -	- -	- -
Developer Mix	40%	- -	- -	- -
Oiler Belt Mechanism	40%	1431	- -	1715
Cleaner Brush	06%		1966	1498
Developer (bearing/seal)	05%	1425		1586
Oil Pump	01%	1435	2072	1720
DV081 Card	01%	1442	2118	1764
FU041 Card	01%	1442	2118	1764
Cyclone Blower	01%	1448	2040	1491
High Voltage Power Supply	01%	1429	1964	1568
Forms	---	- -	- -	- -
Toner	---	- -	- -	- -
Air system problem	---			1479
Developer (toner buildup)	---	- -	- -	- -
Oiler Belt Motor (M706)	%	1431	2058	1715

MAP 1002 Begins

Table 173. MAP 1002

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Run the **all white** and **primary** print samples (1069) for at least 100 prints each to see the frequency with which the defects occur. If the defect the customer has noticed does not appear on these print samples, print the other test patterns to see if the spot/mark appears. Save this output as a reference point while you work on the problem. You may have more than one source of spots or marks, so check the print sample carefully as you work on the problem. If any of the marks repeat at the same place every drum rotation, go to MAP 1001: Repeating Spots or Marks and fix the repeating marks first; then return to this MAP if any random marks remain. • Do the QUICK CHECKS. **Do you still have random spots or marks?**	Go to Step 2.	The actions taken during this step corrected the problem.

Table 173. MAP 1002 (continued)

Step	Questions/Actions	Yes	No
Step 2.	• Check the fuser oiler belt for excessive buildup. It is normal for the oiler belt to be coated with toner, paper dust, and chads. If there is so much toner and debris on the oiler belt roll that it cannot keep the hot roll clean, then there is excessive buildup. **Is there excessive buildup on the fuser oiler belt that could be causing the random spots?**	Go to Step 3.	Go to Step 9.
Step 3.	**Is there any oiler belt remaining on the supply roll?**	Go to Step 4.	The excessive oiler belt buildup is caused by an end-of-belt condition that is not being detected. • Check for any obvious problems, such as: – Incorrect installation of the belt – A broken tab on the end of the oiler belt – A binding or broken Oiler Belt End Switch (S711) • Repair or replace as needed. If you found no obvious problems, go to MAP 0793: End Of Oiler Belt Reached to repair an “end of oiler belt” condition that is not detected. @

Table 173. MAP 1002 (continued)

Step	Questions/Actions	Yes	No
Step 4.	• Locate the Oiler Belt Motor (M706) and remove the motor cover (Fuser). • Mark the end of the motor shaft with a pencil as a reference point to check for motor rotation. • Run Driver Routine 28 from the Maintenance Panel. **Did the motor shaft turn approximately one rotation when you ran Driver Routine 28?**	Go to Step 5.	Do the following, one step at a time, until the motor shaft turns when you run Driver Routine 28: • Check PJ723 for correct contact. • Remove the Oiler Belt Motor (M706) and ensure that the oiler belt mechanism is not binding. Repair or replace as necessary. • Install a new Oiler Belt Motor (M706). • Correct any open or short between PJ723 and PJ621. • Install a new DV081 Card. • Install a new FU041 Card. • After you correct the problem, do the following: – Remove the oiler belt. – Advance the belt to a clean area. – Reinstall the belt. – Run Driver Routine 28 from the Maintenance Panel for 10 loops to feed oil. @

Table 173. MAP 1002 (continued)

Step	Questions/Actions	Yes	No
Step 5.	• Remove the oiler belt and check to see if oil is being fed through all the oil holes when you run Driver Routines 2A, 2B, and 2C. • Use run option **E0** with loop count **FF** for continuous operation for routine 2A, then 2B, then 2C. Because the continuous loop option remains active only for one routine, you must enter **E0** and **FF** each time you run Driver Routines 2A, 2B, or 2C. **Does oil feed through the holes while the Driver Routines are run continuously?**	Go to Step 7.	Go to Step 6.
Step 6.	• Check the oil pump assembly oil level. **Is the oil pump assembly empty?**	Go to MAP 0792: Fuser Oil Empty to repair a “Fuser Oil Empty” condition that was not detected.	Go to Step 15.
Step 7.	Perform the following steps: • SHUTDOWN AND POWER OFF THE PRINTER. • Disconnect the connector from PJ334 on the CPxxx Card.. • Check for a short circuit to ground at each of the following points: – PJ719–1 – PJ719–3 – PJ719–5 **Is there a short?**	Use the wiring diagrams to repair a short circuit to ground.	Go to Step 8.

Table 173. MAP 1002 (continued)

Step	Questions/Actions	Yes	No
Step 8.	Perform the following steps: • Disconnect connector PJ719. • Check for continuity between the following pairs of points: – P334–7 and P334–8 – P334–8 and P334–9 – P334–9 and P334–10 – P334–10 and P334–11 – P334–11 and P334–12 **Is there a short between each of the pairs of points?**	• Use the wiring diagrams to repair a short circuit.	• Reconnect connectors PJ719 and PJ334. If there is no failing component and if excessive oiler belt/oiler wick roll buildup is a problem, do the following: • Emphasize operator cleaning for the oiler belt. See the Operator's Guide for details. • Contact your marketing support to assist the customer with selecting forms that produce less debris on the oiler belt. • The oiler belt speed and oil feed rate can be increased until the customer finds better forms. This may allow the customer to continue using these forms, but will increase the supplies usage. (continued on next page)

Table 173. MAP 1002 (continued)

Step	Questions/Actions	Yes	No
Step 8, (cont'd)			Contact your next level of support before you change the belt speed and oil feed rate. • **For CP261 EPROM 0016 level K or lower:** Changing the value in printer memory location FF20 to **32** and FF21 to **01** runs the oiler belt at its maximum rate and doubles the amount of oil fed. The normal value for FF20 is **64**, and for FF21 the normal value is **08** (1114). For details about reading and writing to memory, see Read From or Write to Memory (Position 2). • **For CPxxx EPROM 0037 any level or 0016 level K/C or higher:** Changing the oil rate setting to a value of **75** and the Oil Belt setting to **100** in **Define Forms** runs the oiler belt at its maximum rate and doubles the amount of oil fed. The normal value for both the oil rate and the oiler belt speed is **50**.

Table 173. MAP 1002 (continued)

Step	Questions/Actions	Yes	No
Step 9.	• Remove the PC drum. • Thoroughly clean all the process components around the PC drum. Give special attention to the developer. • Cover the developer with paper to prevent toner from the cleaner station falling into the developer. Remove the cleaner brush and clean the cleaner housing. **Was the cleaner housing or cleaner brush excessively loaded with toner?**	Go to Step 11.	Go to Step 10.
Step 10.	• Reinstall the PC drum. **Do you still see random spots or marks?**	Go to Step 11.	The actions taken during this step corrected the problem.
Step 11.	• Check the air system for problems. • Repair any air system problems and install a new cleaner brush. • Reset the PM counter. **Do you still see random spots or marks?**	Go to Step 12.	The actions taken during this step corrected the problem.

Table 173. MAP 1002 (continued)

Step	Questions/Actions	Yes	No
Step 12.	If the defects are occurring frequently, dumping the developer mix and installing new mix can be a quick check on whether the toner or something in the developer is contributing to the problem. If the defect goes away completely, the problem was the developer mix. If the frequency of the defect is dramatically reduced after you change the developer mix, and then the frequency begins to increase, investigate a toner or developer mechanism problem. • Dump the developer mix and install new mix. • Print up to 3 boxes of print samples. **Do you still see random spots or marks?**	Go to Step 13.	The actions taken during this step corrected the problem.
Step 13.	**Did the frequency of defects go to zero right after you installed new developer mix and then increase as you printed?**	Go to Step 14.	Go to MAP 1000: Print Quality Start MAP. Check, record, and adjust (as needed) all the items there.

Table 173. MAP 1002 (continued)

Step	Questions/Actions	Yes	No
Step 14.	Either the toner is defective or something in the developer mechanism is producing debris. Do the following, one at a time, until the problem is corrected: • Check all the bearings and seals in the developer. Repair or replace as necessary. • Check the following developer adjustments: – Developer to PC drum PC Drum & Developer Clearances/Gaps. – Mag Brush A to Doctor Blade . – Mag Brush B to Doctor Blade . • Remove all the toner and developer mix. • Clean the toner hopper and developer mix areas. • Install “known good” toner and developer mix. **Do you still see random spots or marks?**	Go to MAP 1000: Print Quality Start MAP. Check, record, and adjust (as needed) all the items there.	The actions taken during this step corrected the problem.

Table 173. MAP 1002 (continued)

Step	Questions/Actions	Yes	No
Step 15.	**Do any of the pumps work?**	Go to Step 16.	Do the following: • Check connector PJ745 for correct contact. • Install a new DV081 Card. • Repair any shorts or opens from the oil pumps to PJ622. • Install a new FU041 Card. @ • After you correct the problem, do the following: – Remove the oiler belt. – Advance the belt to a clean area. – Reinstall the belt. – Run Driver Routine 2B for 10 loops to feed oil.
Step 16.	• Check for a loose or broken wire from PJ745 to the pump that did not work. **Is the wiring OK?**	Go to Step 17.	• Repair the wiring problem. • After you correct the problem, do the following: – Remove the oiler belt. – Advance the belt to a clean area. – Reinstall the belt. – Run Driver Routine 2B for 10 loops to feed oil.

Table 173. MAP 1002 (continued)

Step	Questions/Actions	Yes	No
Step 17.	To help isolate whether the pump/plumbing is defective or the driver circuit is defective, the drive circuit from a working pump will be applied to the pump that did not work. • Connect the wires from a working pump to the one that did not work. • Run the driver routine for the pump that did work and check to see if oil is fed. Remember to use the continuous feed option. **Is oil being fed?**	• Reconnect the pump wires to their correct pump. Do the following, one at a time, until the oil feeds correctly when the oil pump driver routines are run. • Install a new DV081 Card. • Install a new FU041 Card. • Correct any wiring problem in the oil pump driver circuit. @ • After you correct the problem, do the following: – Remove the oiler belt. – Advance the belt to a clean area. – Reinstall the belt. – Run Driver Routine 2B for 10 loops to feed oil.	• Reconnect the pump wires to their correct pump. Do the following, one at a time, until the problem is corrected: • Repair any leaks in the oil supply system. • Install a new oil pump assembly. • Repair any blockages in the oil supply mechanism. @ • After you correct the problem, do the following: – Remove the oiler belt. – Advance the belt to a clean area. – Reinstall the belt. – Run Driver Routine 2B for 10 loops to feed oil.

MAP 1003: Light Streaks

Symptom Explanation	Conditions That Could Cause This Symptom
Use this MAP if the print quality problem is light streaks or missing print in narrow or wide bands. Group E in the Print Quality Samples contains samples of these problems. If the defect is similar to a sample other than one in GROUP E, go to the MAP indicated on that sample.	• A corona is dirty or has some paper debris in it. (The transfer corona is the most likely corona.) • The PC drum is filmed or has a light scratch on it. • Something is blocking part of the developer mix flow in the developer. • The scanning laser beam is being partially blocked or scattered by: – Dirty or defective return mirror – Dirty or defective F-theta lens – Dirty or defective mirror motor window – Debris or cables in the beam chute • The paper is defective. The paper problem could be a visible crease or a nonuniformity that is not visible.

REFERENCES

- Removals & Adjustments - Transfer Station
- Removals & Adjustments - Drum Drive and Photoconductor (PC)
- Removals & Adjustments - Coronas & High Voltage Power Supply
- Removals & Adjustments - Printhead
- Removals & Adjustments - Developer
- Print Quality Samples

FIX VERIFICATION

- Run the **primary** print sample (1069) for 100 pages.

QUICK CHECKS

1. Clean all corona assemblies.
2. Open the transfer station and check for debris in the transfer area (chads, small pieces of paper, and so on).
3. The preclean corona assembly is identical to the transfer corona and can be interchanged to isolate a problem with the transfer corona. Repair or replace the transfer corona if the light streak is eliminated by interchanging the transfer corona with the preclean corona.
4. Check to see if the defect occurs on different forms.

SERVICE CHECKS

- None

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Dirty Corona	30%	- -	- -	1558, 1560
Developer flow	30%	- -	- -	- -
PC Drum	20%	1429	1976	1644
Mag Roll A	15%	1425	2000	1612
Printhead problem	05%	1454	2012	1765
Forms	---	- -	- -	- -

MAP 1003 Begins

Table 174. MAP 1003

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Run the **primary** print sample (1069) for at least 30 prints. Use the print sample that shows the problem the best for reference. Save this output for a reference point as you work on the problem. You may have more than one source for this problem, so check print samples frequently as you work on the problem. • Do the QUICK CHECKS. **Do you still have light streaks?**	Go to Step 2.	The actions taken during this step corrected the problem.

Table 174. MAP 1003 (continued)

Step	Questions/Actions	Yes	No
Step 2.	If a piece of debris gets stuck between the doctor blade and the mag brush the flow of developer mix is restricted; this will cause a light streak. • SHUTDOWN AND POWER OFF THE PRINTER. • Remove the PC drum. • Power on the printer. • Push the Developer Run Button to start and stop the developer and check the developer mix flow over the mag brushes. If a piece of debris is restricting the flow, an indentation will be visible in the developer mix on the mag brushes, after the doctor blade. Normal mix flow over the mag brushes is uniform. **Is the flow over the mag brushes normal?**	Go to Step 4.	Go to Step 3.

Table 174. MAP 1003 (continued)

Step	Questions/Actions	Yes	No
Step 3.	• Loosen the doctor blade and open the gap between the doctor blade and the mag brushes. • Rotate the mag brushes by hand, to move up whatever is restricting the flow on to the mag brushes. • Remove any debris (chads, pieces of paper, toner clumps). • If you suspect that the developer mix has other debris, inspect the developer for any defective mechanism such as bearings, or seals that may be generating debris. Repair or replace as necessary. • Ensure the mag brush angles are correct. • Install new developer mix. • Reset the PM counter. • Run Primary Print Sample. **Do you still have light streaks?**	• SHUTDOWN AND POWER OFF THE PRINTER. • Remove the PC drum. Go to Step 4.	The actions taken during this step corrected the problem.

Table 174. MAP 1003 (continued)

Step	Questions/Actions	Yes	No
Step 4.	• Inspect the PC drum for wide scratches or a film on the surface in the area where the light streaks are occurring in the print. Wide scratches, a film of adhesive, or a film of toner on the PC drum can cause light streaks. Small, thin scratches on the drum surface are normal and will not cause light streaks. **Hint** The PC drum can be reversed to check if the streaks move when the PC is installed reversed. If the streaks move, the streaks are PC related. **Is the PC drum surface normal?**	Go to Step 6.	Go to Step 5.

Table 174. MAP 1003 (continued)

Step	Questions/Actions	Yes	No
Step 5.	**Note:** Before you replace the PC drum, do the following: • Push the Developer **Run** button. • Check the bead pile height on Mag Brush A and B. • If the bead pile height on Mag Brush A is lower than on Mag Brush B, install a new Mag Brush A • If the PC drum is filmed, try cleaning it with alcohol and a lint free cloth. – If the drum surface cannot be cleaned, install a new PC drum. • If the PC drum has wide scratches, check the gaps around the drum with the drum clearance gauge and inspect for any objects that may be scratching the drum. – Correct any problems found. • Install a new PC drum. • Reset the PM counter. @ (continued on next page)		

Table 174. MAP 1003 (continued)

Step	Questions/Actions	Yes	No
Step 5, (Cont)	**Hints** Before you replace the PC drum, run and fuse the Print Pack (1070) (Diagnostic, Print Log option). Perform the PC Drum Surface Voltage adjustment after replacing the drum. After you replace the PC drum, run and fuse "Print Pack" diagnostic and compare the two print samples for background, solid area fill, and stroke width. • Print 200 pages of the **primary** print sample (1069). **Do you still have light streaks?**	• SHUTDOWN AND POWER OFF THE PRINTER. • Remove the PC drum. Go to Step 6.	The actions taken during this step corrected the problem.
Step 6.	• Inspect the beam chute for any debris or cables that might be interfering with the laser beam as it scans the PC drum. Remove any debris, or move the cables. • Reinstall the PC drum. • Run the Primary Print Sample. **Do you still have light streaks?**	Go to Step 7.	The actions taken during this step corrected the problem.

Table 174. MAP 1003 (continued)

Step	Questions/Actions	Yes	No
Step 7.	If the following components in the printhead are dirty or defective, they can cause light streaks: • Return Mirror • F-theta Lens • Mirror Motor window • SHUTDOWN AND POWER OFF THE PRINTER. • Remove the printhead cover. Do the following, one at a time, until the problem is corrected: • Remove any debris that could be in the scanning beam path. • If the return mirror has any fingerprints on it or is dirty, clean it. • Check the F-theta lens for any cracks. Install a new lens if you find any cracks. • If either the F-theta Lens or the mirror motor window is dirty, clean it. @ • Run the **primary** print sample (1069). **Do you still have light streaks?**	Go to the Print Quality Checklist. Check, record, and adjust (as needed) all the items there.	The actions taken during this step corrected the problem.

MAP 1004: Dark Streaks or Black Lines

Symptom Explanation	Conditions That Could Cause This Symptom
Use this MAP if the print quality problem is dark streaks or black lines. The streaks or lines may or may not repeat with each drum rotation. Group F of the Print Quality Samples contains samples of dark streaks and black lines. A horizontal band of darker print across the page, ranging in thickness from 12 mm (0.5 inches) to 25 mm (1 inch) is normal. Every time printing stops, the print directly under the hot roll will “bloom” and appear darker than the other parts of the page. Consult your marketing support if this is a problem for your customer. The way print jobs are sent to the printer can affect the number of pages that will have “bloom.”	• The PC drum has been scratched. A new PC drum will probably need to be installed, but first correct anything that may continue to cause PC drum damage. Following are some possible causes of PC drum damage: – A PC drum spacing is not correct and the drum is being scratched. – The developer mix has debris in it. – A paper jam damaged the drum. • A corona is dirty or has some paper debris in it. (The charge corona is the most likely corona.) • The hot roll is worn or defective. • There is a cleaner station problem caused by: – Cleaner brush that is worn out or defective. – The cleaner housing air system is clogged or defective. This includes leaks around the fine filter, the fine filter door being open, and a defective Cyclone Blower Motor (M104). • The erase lamp filters are dirty. (continued on next page)

Symptom Explanation	Conditions That Could Cause This Symptom
Dark steaks or black lines (cont'd)	• The scavenger roll has an excessive developer mix buildup on the PC drum and is causing streaking. This could be caused by: – Defective scavenger roll mechanism – Scavenger roll installed upside down – Defective scavenger roll drive circuit – Mag brush and doctor blade adjustment not correct • The doctor blade or developer seals have accumulated excess toner that is contacting the drum. • Something in the stacker, or fuser is rubbing on the forms. • A reflection in the printhead or beam chute is reaching the drum surface.

REFERENCES

- Removals & Adjustments - Developer
- Removals & Adjustments - Cleaner
- Wiring Diagrams - WD13 - AC Motors M101, M104 & M108
- Print Quality Samples

FIX VERIFICATION

- Run the **primary** print sample (1069) for at least 30 prints to see if the dark streaks or black lines occur. If the defect the customer has noticed does not appear on print sample, print the other test patterns to see if the streaks or lines will appear.

QUICK CHECKS

1. Clean all the corona assemblies. Check carefully for paper or any debris in the charge and precharge coronas.
2. Ensure that all the charge corona wires are in their correct positions in the v-slot on the plastic endpieces. If a wire is not in the v-slot, the drum surface voltage will be low, which can cause either uniform background or dark streaks.
3. Check the customer's unused forms to see if the black lines are present before printing or if any creases in the forms may be causing the streaking.

SERVICE CHECKS

- None

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
PC drum damage	60%	1429	1974	1644
Charge Corona	19%	1429	1972	1557
Hot Roll	10%	1431	2062	1692
Developer problems	05%	1425	1990	1586
Cleaning problems	05%	- -	- -	1497
Printhead problems	01%	1454	2012	1765

MAP 1004 Begins

Table 175. MAP 1004

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Run the **primary** print sample (1069) for at least 30 prints. If the defect the customer has noticed does not appear on print sample, print the other test patterns to see if the defect appear. Save this output for a reference point as you work on the problem. • Do the QUICK CHECKS. **Do you still have streaks or black lines?**	Go to Step 2.	There is no longer a problem.
Step 2.	If there are streaks or lines on the printed output that are not visible on unfused pages between the transfer station and the fuser, then investigate the fuser area. **Are the streaks or lines visible on the unfused pages between the transfer station and fuser?**	Go to Step 5.	Go to Step 3.
Step 3.	• Check the hot roll for damaged or worn areas. **Is the hot roll OK?**	Go to Step 4.	• Install a new hot roll. • Reset the PM hot roll usage counter. @

Table 175. MAP 1004 (continued)

Step	Questions/Actions	Yes	No
Step 4.	• Check the fuser oiler belt/oiler wick roll for excessive buildup. It is normal for the belt to be coated with toner, paper dust, and chads. If there is so much toner and debris on the belt that it cannot keep the hot roll clean, then there is excessive buildup. **Is there excessive buildup on the fuser oiler belt/oiler wick roll that could be causing the dark streak or line?**	Go to MAP 1002: Random Spots or Marks, Step 5.	• Check the following items to isolate the source of streaks or lines. – Backup Roll – Scuff Roll – Scuff Pressure Rollers – Stacker Finger Belts – Pendulum – Anything in the stacker or fuser that contacts the paper. • Repair or replace as required. @
Step 5.	• Check the forms at the upper tractors to ensure the forms are under the white nylon guides on the right side of the tractors. **Are the forms correctly loaded?**	Go to Step 6.	• Load the forms correctly.

Table 175. MAP 1004 (continued)

Step	Questions/Actions	Yes	No
Step 6.	• Remove the PC drum. Inspect the surface of the PC drum. **Hint** The PC drum can be reversed to check if the streaks move when the PC is installed reversed. If the streaks move, the streaks are PC related. **Are there any scratches or physical damage on the surface of the PC drum?**	Go to Step 11.	Go to Step 7.
Step 7.	Buildup of adhesive on the PC drum from running labels can cause repeating spots or streaks. **Is there adhesive buildup on the surface of the PC drum?**	Go to Step 8.	Go to Step 9.
Step 8.	• Clean the PC drum. • Check the print after printing a full box of paper. **Are there still spots or streaks that repeat every drum rotation?**	Go to Step 9.	The problem was adhesive buildup on the PC drum surface. Running a box of paper about every ten boxes of labels helps keep the adhesive from building up. If the adhesive buildup is a continual problem, contact your marketing support to assist the customer with selecting a better label.

Table 175. MAP 1004 (continued)

Step	Questions/Actions	Yes	No
Step 9.	• Check the scavenger roll to ensure that it is not installed upside down. • Thoroughly clean all the process components around the PC drum. Give special attention to the developer and erase lamp filters. • Cover the developer with paper to prevent toner from the cleaner station falling into the developer. • Remove the cleaner brush and clean the cleaner housing. **Was the cleaner housing or cleaner brush excessively loaded with toner?**	• Check the air system for problems. • Repair any air system problems and install a new cleaner brush. @	Go to Step 10.

Table 175. MAP 1004 (continued)

Step	Questions/Actions	Yes	No
Step 10.	• Run Primary Print Sample. **Are streaks or lines still a problem?**	Do the following, one at a time, until the problem is corrected: • Cover the Return Mirror to ensure that no reflection or unwanted beam is reaching the PC drum. • Go through all the printhead adjustments in MAP D706: Beam Detect Missing; check for dirty lenses, dirty mirrors, or debris in the beam chute and printhead. Go to MAP D706: Beam Detect Missing, Step 2. • Check, record, and adjust (as needed) all the items there. **Note:** The Beam Detect Card can reflect the laser beam onto the return mirror. If you determine that the print defect is coming from the laser, adjust the horizontal and/or vertical angle of the Beam Detect Card to eliminate the defect.	The actions taken during this step corrected the problem.

Table 175. MAP 1004 (continued)

Step	Questions/Actions	Yes	No
Step 11.	A new PC drum must be installed, but first do the following to prevent damaging the new drum. • Thoroughly clean all the process components around the PC drum. Give special attention to the developer and cleaner areas. • Adjust any PC drum clearances that are not correct. See Drum Drive and Photoconductor (PC). • Ensure that there are no objects in the developer mix that can scratch the drum. • View or print the error log. If you find several of the same type of error, go to the MAP for that error and check any adjustments that may affect paper jams or arcing. • Install a new PC Drum. • Reset the PM counter. @ **Hints** Before you replace the PC drum, run the **Print Pack** (1070). Perform the adjustment. After you replace the PC drum, run another **Print Pack** and compare the two print samples for background, solid area fill, and stroke width.		

MAP 1005: Background or Dirty Prints

Symptom Explanation	Conditions That Could Cause This Symptom
Use this MAP if the print quality problem is background or dirty prints. The problem may occur in small or large portions of the print. Group C of the Print Quality Samples contains samples of this problem. More than one problem may be present. Usually there is the primary cause of the background to be fixed plus a general cleaning of the PC drum cavity, including coronas, cleaner housing, erase lamp filters, and developer. The operating environment is critical for machines that run for a period of 4 hours or longer.	• Corona assemblies or wires may be dirty or defective. **Note:** If the corona wires are dirty, ensure that the corona cleaning brushes are properly adjusted and that the operators are cleaning the wires each shift. • The printhead is not adjusted correctly and is partially discharging the drum. • The PC drum surface voltage adjustment is incorrect. • The cleaner housing air system is clogged or defective. This problem includes leaks around the fine filter and a defective cyclone blower. • Incorrect toner is installed. The developer mix also has to be replaced. • The developer mix is worn out or defective, or incorrect developer mix is installed. • The PC drum is dirty or contaminated. • Brush armatures are worn or make poor contact with mag rolls. • The PC drum is overheated; the drum cooling fans are not operating. (continued on next page)

Symptom Explanation	Conditions That Could Cause This Symptom
	• Laser optics are dirty or need adjustment. • The PC drum is worn out or defective. • There is a high concentration of toner, which can be caused by: – The toner control voltage adjustment on the CPxxx Card is not correct. – The CPxxx Card is defective. – The toner control sensor (S107) is jammed with developer mix. – The toner control shaft is not turning. • The developer bias circuit is defective. • The cleaner brush is worn out or defective. • The mag brush and doctor blade adjustments are incorrect. • The erase lamp filter is dirty. • The high voltage power supply circuit is defective. • Covers are open and light is exposing the drum. • The developer mix is insufficient. Check for mix leaking into the dump hose.

REFERENCES

- Removals & Adjustments - Coronas & High Voltage Power Supply
- Removals & Adjustments - Developer
- Removals & Adjustments - Cleaner
- Removals & Adjustments - Air System
- Wiring Diagrams - WD26 - High Voltage to Coronas & Mag Brush Rolls, WD47-1 - Process Sensors (S10x)
- Print Quality Samples

FIX VERIFICATION

- Run the **primary** print sample (1069) for at least 200 pages, then run the **all white** print sample for 12 pages.

QUICK CHECKS

Hint

If the PC drum was just replaced, you must do the PC Drum Surface Voltage adjustment.

1. If the covers are open, light may be discharging the drum and causing background. Check print quality after you print 100 prints with all covers installed and closed.
2. If the PC drum was just cleaned, run 100 to 200 prints using the **primary** print sample (1069). (The cleaning process can result in background on the first 100 to 200 pages.)
3. Clean all corona assemblies.
4. Ensure that all the charge corona wires are in their correct positions in the v-slots on the plastic end pieces. If a wire is not in the v-slot, the drum surface voltage is low, which can cause either uniform background or background varying across the page.
5. Clean toner or contamination off the drum shaft.
6. Brush armatures may be worn or making poor contact with mag rolls. Clean the contact points thoroughly.

Environmental Hint

If the printer has background after running for 4 hours or more but background disappears after the printer has cooled 10 minutes or more, the operating environment may be too warm. See the Environmental Requirements section in the *Introduction and Planning Guide*.

SERVICE CHECKS

DANGER

<5> High-voltage is present. Use care while working in this area.

Check for bias on the mag brush with a digital voltmeter:

1. Set the contrast control to **4**.
2. Remove the PC drum cover.
3. While you run Driver Routine C2 from the Maintenance Panel, measure the voltage directly on the mag brush. Driver Routine C2 turns on the high-voltage bias circuit for approximately 5 seconds.

Note: The voltage in the Mag Brush Bias Voltage procedure is the test point voltage on the power supply. To get the correct voltage for measuring at the mag brush or CH2, **multiply the numbers in the procedure by 100**.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Charge corona (dirty etc.)	30%	1429	1972	1557
Printhead/Laser adjustment	24%	1454	2012	1799
Drum surface voltage adjustment	10%	- -	- -	1574
Incorrect or worn developer mix	10%	- -	- -	- -
Cleaner brush	05%	1446	1974	1498

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Cleaner housing and air system	05%	1446, 1448	1966	1479 1511
Incorrect toner	04%	- -	- -	- -
Mag brush bias circuit	04%	- -	- -	1571
PC drum	04%	1429	1974	1644
Cyclone Blower Motor (M104)	01%	1448	2040	1490
CPxxx Card	01%	1453	2114	1760
High Voltage Power Supply	01%	1429	1964	1568
Covers open	- -	- -	- -	- -
Developer adjustments	- -	- -	- -	1659
Humidity setting	- -	- -	- -	- -
Toner control adjustment	- -	- -	- -	1631
Toner control sensor jammed	- -	1428	1992	1634
Interface Card (IF491)	- -	1456	2118	1520
Toner Control Sensor (S107)	- -	1428	1992	1634
Developer Fans	- -	1428	1958	

MAP 1005 Begins

Table 176. MAP 1005

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Run the **primary** and **all white** print sample (1069) for at least 30 prints. Use the print sample that best shows the problem for reference. Save this output as a reference point while you work on the problem. You may have more than one source for this problem, so check print samples frequently as you work on the problem. • Do the QUICK CHECKS. **Do you still see background?**	Go to Step 2.	• If cleaning the corona wires corrected the problem, ensure that the corona brushes are adjusted correctly and that the operators are cleaning the corona wires every shift.

Table 176. MAP 1005 (continued)

Step	Questions/Actions	Yes	No
	DANGER **<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.**		
Step 2.	A possible source of background can be the printhead. If the printhead is not adjusted correctly and is partially discharging the drum, background may result. • Cover the return mirror with a folded piece of paper to prevent any laser exposure on the PC drum. The paper should block the scanning beam as it exits the printhead, but the paper should not block the beam detect path. If the paper blocks the beam detect path, a D706 error occurs. See Printhead for gaining access to the printhead. • Reinstall the printhead cover. • Run the **all white** print sample (1069). **Do you still see background?**	Go to Step 4.	Go to Step 3.

Table 176. MAP 1005 (continued)

Step	Questions/Actions	Yes	No
Step 3.	Because blocking the scanning laser beam has eliminated the background, there must be a problem with the printhead adjustment. • Ensure that no reflection or unwanted beam is reaching the PC drum. • Go through all the printhead adjustments in MAP D706: Beam Detect Missing • Check for dirty lenses, dirty mirrors, or debris in the beam chute and printhead. Go to MAP D706: Beam Detect Missing, Step 2. **Do you still see background?**	Go to Step 4.	The actions taken during this step corrected the problem.
Step 4.	• Remove the paper on the return mirror. • Reinstall the printhead cover. Go to the “Print Quality Checklist” in MAP 1000: Print Quality Start MAP. • Check, record, and adjust (as needed) all the items there. **Do you still see background?**	Go to Step 5.	The actions taken during this step corrected the problem.
Step 5.	• Record the developer mix usage found in addresses FF1F and FF1E. • Measure and record the mag brush bias directly on the mag brush as described in the SERVICE CHECKS. **Was the voltage on the mag brush correct?**	Go to Step 6.	Go to Step 17.

Table 176. MAP 1005 (continued)

Step	Questions/Actions	Yes	No
Step 6.	• Remove the developer cover and check to see if the toner control shaft is turning when the developer is running. • Push the developer **Run** button on the front of the developer. This runs the developer for about one minute. The toner control shaft is below and to the right of the scavenger roll shaft. **Note:** The diagnostic function switch, located on the CPxxx Card, must be in position **0** (normal position) for the developer **Run** button to operate. If the shaft did not turn, go to MAP 0234: Toner Overfeed Error, Step 4. • Dump the developer mix and install new, unused mix. • Perform the toner control adjustments on the CPxxx Card. Do not reinstall the old developer mix in the printer after the adjustment is complete. (continued on next page)		

Table 176. MAP 1005 (continued)

Step	Questions/Actions	Yes	No
Step 6, (cont'd)	If it is impossible to adjust to the correct values, do the following, one at a time, until the adjustment can be made: • Install a new CPxxx Card. • Install a new Printhead Interface Card. • Repair any shorts to ground in the circuit from: – PJ132–2 to PJ334-46 – PJ132–4 to PJ334–4 • Install a new Toner Control Sensor (S107). • Repair any damage or blockage of the Toner Control Sensor (S107) chute and mechanism. @ **Do you still see background?**	Go to Step 7.	The actions taken during this step corrected the problem.
Step 7.	• Remove the PC drum. • Thoroughly clean all the process components around the PC drum. Give special attention to the developer and erase lamp filters. • Cover the developer with paper to prevent toner from the cleaner station falling into the developer. • Remove the cleaner brush and clean the cleaner housing. **Was the cleaner housing or cleaner brush excessively loaded with toner?**	Go to Step 11.	Go to Step 8.

Table 176. MAP 1005 (continued)

Step	Questions/Actions	Yes	No
Step 8.	• Inspect the surface of the PC drum. **Hint** You can reverse the PC drum to check if the print defects move when the PC is installed reversed. If the defects move, the defects are probably PC drum related. **Are there any patterns, discolored areas, or damage that are in the same area as the background?**	Go to Step 10.	Go to Step 9.
Step 9.	• Reinstall the PC drum. **Do you still see background?**	Go to Step 12.	The actions taken during this step corrected the problem.

Table 176. MAP 1005 (continued)

Step	Questions/Actions	Yes	No
Step 10.	• Install a new PC drum. • Reset the PM counter **Hints** Before you replace the PC drum, run the **Print Pack** (1070). Perform the PC Drum Surface Voltage adjustment, after replacing the drum. After you replace the PC drum, run another **Print Pack** and compare the two print samples for background, solid area fill, and stroke width. (continued on next page)		

Table 176. MAP 1005 (continued)

Step	Questions/Actions	Yes	No
Step 10, (cont'd)	• If you are replacing the PC drum because of a discolored area or filmed-on toner, check the following drum/developer cooling fans for operation when the printer is powered on. Repair or replace as necessary. – Right Front Developer Fan (B110) – Right Rear Developer Fan (B111) – Developer Motor Cooling Fan (B112) – Left Front Developer Fan (B104) – Lower Front Developer Fan (B108) – Lower Rear Developer Fan (B109) – Right Front Process Fan (B114) – Right Rear Process Fan (B115) Be aware that excessive heat can damage the electrical characteristics of the PC drum. Duplex Printer 2 is especially sensitive to heat build up because the paper that enters Printer 2 from Printer 1 is warm. A high-temperature operating environment also can cause overheating. Ensure that the room temperature is within the range specified in the planning manual. **Do you still see background?**	Go to Step 12.	The actions taken during this step corrected the problem.
Step 11.	• Check the air system for problems. • Repair any air system problems and install a new cleaner brush. @ **Do you still see background?**	Go to Step 12.	The actions taken during this step corrected the problem.

Table 176. MAP 1005 (continued)

Step	Questions/Actions	Yes	No
Step 12.	• Check the PC drum surface voltage in the front, center, and rear of the drum (1556). **Was the PC drum surface voltage OK?**	Go to Step 14.	Go to Step 13.
Step 13.	Follow the adjustment procedure for adjusting PC drum surface voltage in Coronas & High Voltage Power Supply. • If a new PC drum had to be installed to adjust the surface voltage to the correct value, check the following drum and developer cooling fans for operation when the printer is powered on. Repair or replace as necessary. – Developer Coding Fan (B101) – Lower Front Developer Fan (B102) – Lower Rear Developer Fan (B103) @ Be aware that excessive heat can damage the electrical characteristics of the PC drum. Duplex Printer 2 is especially sensitive to heat build-up because the paper that enters Printer 2 from Printer 1 is warm. A high-temperature operating environment also can cause overheating. Ensure the room temperature is within the range specified in the planning manual. **Do you still see background?**	Go to Step 14.	The actions taken during this step corrected the problem.

Table 176. MAP 1005 (continued)

Step	Questions/Actions	Yes	No
Step 14.	• Verify that the customer is using the correct toner and developer mix. If correct toner or mix is in question, remove the questionable supplies and install new supplies. **Do you still see background?**	Go to Step 15.	The actions taken during this step corrected the problem.
Step 15.	• If you have not installed a new PC drum in a previous step, do it now. • Reset the PM counter when you install a new PC drum. @ **Hints** Before you replace the PC drum, run a **Print Pack** (1070). Perform the PC Drum Surface Voltage adjustment, after replacing the drum. After you replace the PC drum, run another **Print Pack** and compare the two print samples for background, solid area fill, and stroke width. **Do you still see background?**	Go to Step 16.	The actions taken during this step corrected the problem.

Table 176. MAP 1005 (continued)

Step	Questions/Actions	Yes	No
Step 16.	• If you have not installed a new cleaner brush in a previous step, do it now. @ **Do you still see background?**	Call your next level of support.	The actions taken during this step corrected the problem.
	DANGER **<5> High-voltage is present. Use care while working in this area.**		
Step 17.	• Measure and record the voltage at the CH2 high-voltage connector on the High Voltage Power Supply, while you run Driver Routine 0F. (See the note in SERVICE CHECKS.) **Was the voltage at CH2 correct?**	• Correct the open circuit between CH2 and the mag brush.	Do the following, one at a time, until the problem is corrected: • Install a new High Voltage Power Supply. • Install a new CPxxx Card. • Correct any wiring problem in the high-voltage supply circuit. @

MAP 1006: Black Prints

Symptom Explanation	Conditions That Could Cause This Symptom
Use this MAP if the print quality problem is black prints. An all-black print has no visible images. The density of the black may vary across the page. If any print is visible, go to MAP 1005: Background or Dirty Prints for a background problem.	• The LD272 Card is defective. • The wiring between components on the LD272 Card is defective.

REFERENCES

- Wiring Diagrams - WD27 - Laser Driver

FIX VERIFICATION

- Run the **primary** print sample (1069).

QUICK CHECKS

- None

SERVICE CHECKS

- None

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
LD272 Card	95%	1454	2012	1781
Wiring problem	- -	- -	- -	- -

MAP 1006 Begins

Table 177. MAP 1006

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.**		
Step 1.	Do the following one at a time until the problem is corrected: • Install a new LD272 Card. • Correct any wiring problem from the BD and CVD connectors to the LD272 Card. • Check the laser diode fiber optic cables for damage. @		

MAP 1007: Blank Prints

Symptom Explanation	Conditions That Could Cause This Symptom
Use this MAP if the print quality problem is blank prints with no error code. If an error code is posted with the blank prints, go to the MAP indicated by the error code. An all-blank print has no visible print. If any print is visible, even if it is very light, go to MAP 1018: Light Print for a light-print problem. If the problem is an occasional blank page, there is probably a microcode or software problem. Call your next level of support for assistance.	• The printhead return mirror or beam chute is not adjusted correctly. • Developer mix is not installed. • The mag brushes are not installed correctly or are defective. • The transfer station retractor mechanism is defective or the retractor adjustment is not correct. • The phase rotation of the customer's power receptacle or the printer is not correct.

REFERENCES

- Removals & Adjustments - Transfer Station
- Removals & Adjustments - Printhead
- Removals & Adjustments - Developer

FIX VERIFICATION

- Run the **primary** print sample (1069).

QUICK CHECKS

- Ensure that developer mix is installed.
- If the developer was serviced immediately before this problem, ensure that the conveyor roll and mag brushes were installed in the correct position and that the angles are set correctly.

SERVICE CHECKS

- None

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Printhead problem	70%	1429	1976	1765
Mag Brushes	15%	1425 1427	2000	1612
Retractor mechanism/adjustment	15%	1443	2032	1898, 1930

MAP 1007 Begins

Table 178. MAP 1007

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Do the QUICK CHECKS. • Run the **primary** print sample (1069). **Was the print blank?**	Go to Step 2.	If nothing was done during the QUICK CHECKS, the problem is intermittent. Go to MAP 0001: Introduction.
Step 2.	• Check the first page of the **primary** print sample (1069). Look for a horizontal black or gray bar across the top of the first page. **Was the first page completely blank?**	Go to Step 3.	A black or gray bar across the top of the first page followed by blank print is caused by a defective retractor mechanism or an incorrect retractor adjustment.
Step 3.	• Run Driver Routine 09 and watch the Mag Brush Roll Rotation. **Did the 2 mag brush rolls rotate away from each other?**	Go to Step 4.	The power receptacle phase rotation and the printer phase rotation are not the same. • Correct the phase rotation.

Table 178. MAP 1007 (continued)

Step	Questions/Actions	Yes	No
Step 4.	• SHUTDOWN AND POWER OFF THE PRINTER. • Remove the PC drum and check for anything blocking the beam chute. • If nothing is blocking the beam chute, remove the top cover of the printhead and check for something blocking the return mirror. **Were the beam chute and return mirror OK?**	• Reinstall the PC drum and PC drum cover. Because the scanning beam is being blocked by the exit slit, the return mirror has to be adjusted. Adjusting the return mirror affects the vertical print registration. • Center the scanning beam in the exit slit by adjusting the return mirror; then adjust the vertical print registration.	• Remove whatever is blocking the beam chute or return mirror.

MAP 1008: Residual Images

Symptom Explanation	Conditions That Could Cause This Symptom
Use this MAP if the print quality problem is residual images. Residual images appear one drum rotation, 824 mm (32.45 in.), after printing. The residual image may appear in a blank area or in another image. If the residual images are accompanied by high background go to MAP 1005: Background or Dirty Prints. Sample A1 of the Print Quality Samples shows an example of either residual images or fuser offset. Read the description carefully to determine whether the problem is residual images or fuser offset. If the problem is fuser offset, go to MAP 1009: Fuser Offset or Forms Sticking Together. If the problem is similar to a sample other than Sample A1, go to the MAP indicated on that sample.	• The erase lamp filter is dirty. • Any of the corona assemblies or wires may be dirty or defective. • The cleaner brush is worn or defective. • The cleaner housing air system is clogged or defective. This includes leaks around the fine filter, the fine filter door being open, and a defective Cyclone Blower Motor (M104). • The developer mix is worn or defective. • The PC drum is worn or defective. • The PC drum surface voltage adjustment is not correct. • A high concentration of toner is caused by one of the following: – The toner control voltage adjustment on the CPxxx Card is not correct. – The CPxxx Card is defective. – The Toner Control Sensor (S107) is jammed with developer mix. – The toner control shaft is not turning. • The erase lamp is worn-out. • The High Voltage Power Supply circuit is defective. • The toner is defective. The developer mix will also have to be replaced.

REFERENCES

- Removals & Adjustments - Coronas & High Voltage Power Supply
- Removals & Adjustments - Developer
- Removals & Adjustments - Cleaner
- Removals & Adjustments - Air System
- Wiring Diagrams -
  - WD13 - AC Motors M101, M104 & M108
  - WD25 - Erase Lamp (PL101) and Usage Meter
  - WD26 - High Voltage to Coronas & Mag Brush Rolls
  - WD47-1 - Process Sensors (S10x)
- Print Quality Samples

FIX VERIFICATION

- Run the **primary** print sample (1069) for at least 200 pages; then run the **all white** print sample for 12 pages.

QUICK CHECKS

1. Verify that the customer is using the correct toner and developer mix.
2. If the PC drum was just cleaned, run 100 to 200 prints using the **primary** print sample (1069). (The cleaning process can result in background or offset on the first 100 to 200 pages.)
3. Clean all the corona assemblies.

SERVICE CHECKS

- Clean the erase lamp filter.
- Check the corona and bias voltages.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Dirty Erase Lamp Filter	20%	1429	1964	1662
Dirty Corona	15%	1429 1443	1964 1972 2032	1558
Preclean Corona defective	15%	1429	1964	1559
Developer Mix	10%	- -	- -	- -
PC Drum	10%	1429	1976	1644
Cleaner Brush	05%	1446	1966	1498
Cleaner Housing and air system	05%	1446 1448	- -	1511
Erase Lamp (PL101)	05%	1429 1443	1964	1662
Corona voltage adjustments	02%	- -	- -	1570, 1573, 1574
Toner Control Sensor (S107) jammed	02%	1428	1992	1634
Toner Control adjustment	02%	- -	- -	1631
High Voltage Power Supply	02%	1429	1964	1568
Cyclone Blower Motor (M104)	02%	1448	2040	1491
CPxxx Card	01%	1453	2114	1760
Toner	01%	- -	- -	- -

MAP 1008 Begins

Table 179. MAP 1008

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Determine if your problem is "Residual Image" or "Fuser Offset". Look at the printed page between the transfer station and the fuser. If the problem image is on the paper before fusing, the problem is "Residual Image". **Is the problem "Residual Image"?**	Go to Step 2.	Your problem is "Fuser Offset". Go to MAP 1009: Fuser Offset or Forms Sticking Together.
Step 2.	• Run the **primary** print sample (1069) for at least 30 prints and check for residual images. • If the defect the customer has noticed does not appear on the primary print sample, print the other test samples to see if it appears. Save this output as a reference while you work on the problem. If necessary, have the customer run the job on which the problem occurred on. • Do the QUICK CHECKS. **Do you still see residual images?**	Go to Step 3.	The actions taken during this step corrected the problem.

Table 179. MAP 1008 (continued)

Step	Questions/Actions	Yes	No
Step 3.	• Remove the developer cover and check to see if the toner control shaft is turning when the developer is running. Pushing the developer **Run** pushbutton on the front of the developer will run the developer for about one minute. The toner control shaft is below and to the right of the scavenger roll shaft. If the shaft did not turn, go to MAP 0234: Toner Overfeed Error, Step 7. • Remove the PC drum. • Thoroughly clean all the process components around the PC drum. Give special attention to the developer and erase lamp filter. • Cover the developer with paper to prevent toner from the cleaner station falling into the developer. • Remove the cleaner brush and clean the cleaner housing. **Is the cleaner housing or cleaner brush excessively loaded with toner?**	Go to Step 7.	Go to Step 4.

Table 179. MAP 1008 (continued)

Step	Questions/Actions	Yes	No
Step 4.	**Hint** You can reverse the PC drum to check if the print defect moves when the PC is installed reversed. If the defects move, the defects are PC drum related. • Inspect the surface of the PC drum. **Are there any patterns or discolored areas that match the residual images?**	Go to Step 6.	Go to Step 5.
Step 5.	• Reinstall the PC drum. **Do you still see residual images?**	Go to Step 8.	The actions taken during this step corrected the problem.

Table 179. MAP 1008 (continued)

Step	Questions/Actions	Yes	No
Step 6.	• Install a new PC drum. • Reset the PM counter. @ **Hints** Before you replace the PC drum, run and fuse the Print Pack (1070). Perform the PC Drum Surface Voltage adjustment, after replacing the drum. After you replace the PC drum, run and fuse the Print Pack diagnostic and compare the two print samples for background, solid area fill, and stroke width. **Do you still see residual images?**	Go to Step 8.	The actions taken during this step corrected the problem.
Step 7.	• Check the air system for problems. • Repair any air system problems and install a new cleaner brush. **Do you still see residual images?**	Go to Step 8.	The actions taken during this step corrected the problem.

Table 179. MAP 1008 (continued)

Step	Questions/Actions	Yes	No
Step 8.	• Dump the developer mix and install new, unused mix. • Perform the toner control adjustments on the CPxxx Card. Do not reinstall the old developer mix in the printer after you complete the adjustment. If it is impossible to adjust to the correct values, do the following, one step at a time, until you can make the adjustment: • Install a new CPxxx Card. • Repair a short circuit to ground between: – PJ132–2 and PJ334–2 – PJ132–4 and PJ334–4 • Install a new Toner Control Sensor (S107). • Repair any damage or blockage of the Toner Control Sensor chute and mechanism. @ **Do you still see residual images?**	Go to Step 9.	The actions taken during this step corrected the problem.
Step 9.	Go to MAP 1000: Print Quality Start MAP. • Check, record, and adjust (as needed) all the items there. **Do you still see residual images?**	Go to Step 10.	The actions taken during this step corrected the problem.
Step 10.	• Install a new Erase Lamp (PL101). @ **Do you still see residual images?**	Go to Step 11.	The actions taken during this step corrected the problem.

Table 179. MAP 1008 (continued)

Step	Questions/Actions	Yes	No
Step 11.	• If you have not installed a new PC drum in a previous step, do it now. • Reset the PM counter when you install the PC drum. @ **Hints** Before you replace the PC drum, run and fuse the Print Pack (1070). Perform the PC Drum Surface Voltage adjustment, after replacing the drum. After you replace the PC drum, run and fuse the Print Pack and compare the two print samples for background, solid area fill, and stroke width. **Do you still see residual images?**	Go to Step 12.	The actions taken during this step corrected the problem.
Step 12.	• If you have not installed a new cleaner brush in a previous step, do it now. @ **Do you still see residual images?**	• Verify that the customer is using the correct toner and developer mix. • If correct toner or developer mix are in question, remove the questionable supplies and install new supplies. Call your next level of support if you still see residual images.	The actions taken during this step corrected the problem.

MAP 1009: Fuser Offset or Forms Sticking Together

Symptom Explanation	Conditions That Could Cause This Symptom
Use this MAP if the print quality problem is fuser offset. Fuser offset is most noticeable on blank areas of a page one hot roll rotation later, 314 mm (12.4 in.). Also use this MAP if the forms are sticking together or there is a side-one smear problem. Sample A1 of the Print Quality Samples shows an example of either residual images or fuser offset. Read the description carefully to determine whether the problem is residual images or fuser offset. If the problem is residual images, go to MAP 1008: Residual Images. If the problem is similar to a sample other than one in Sample A1, go to the MAP indicated on that sample.	• The paper is not acceptable for this printer. • **For CP261 EPROM 0016 level K or lower:** The forms select setting on the stacker control panel (LP041) is not set correctly. This setting controls the oil flow rate for different weights of paper and the hot roll temperature for plastic labels. • **For CPxxx EPROM 0037 any level or 0016 level K/C or higher:** – Hot roll temperature is set too high. – Oil feed rate is set too high. • The hot roll is worn or defective. • An oil pump is defective. • The paper cooling fans are not operating. • The Oiler Belt Motor is defective. • The fuser oil tubing is defective. • The oiler belt mechanism is defective. • The Oiler Belt End Switch (S711) is defective and oiler belt is all used. • The Oil Empty Sensor (S702) is defective and there is no fuser oil. • The FU041 Card is defective. • The DV081 Card is defective. (continued on next page).

Symptom Explanation	Conditions That Could Cause This Symptom
(Continued from previous page)	• The backup roll is worn or defective. • The preheat temperature is set incorrectly. • The hot roll temperature control is defective. • The hot roll lamps are not installed correctly. • The toner is defective. The developer mix will also have to be replaced. • The developer mix is worn or defective.

REFERENCES

- Removals & Adjustments - Fuser
- Wiring Diagrams -
  - WD41 - Oiler Belt Motor (M706)
  - WD44 - DC Fans B7xx
  - WD45 - Oil Pumps L701, L702 & L703
  - WD48 - Fuser & Stacker Sensors (DV071 & FU041)
- Print Quality Samples

FIX VERIFICATION

- Manually advance the oiler belt to a clean area.
- Add fuser oil to the oiler belt and hot roll to avoid printing with a dry hot roll.
- Run Driver Routine 2A, 2B, or 2C for 10 loops to feed oil.
- Print a full box of forms.

QUICK CHECKS

- Ensure that the preheat temperature is not set too high. See “Adjusting the Preheat Temperature” in the Operator’s Guide for more information on this adjustment.
- **For CPxxx EPROM 0037 any level or 0016 level K/C or higher:**

  Ensure that the hot roll temperature is not set too high. See “Adjusting the Hot Roll Temperature” in the Operator’s Guide for more information on this adjustment.
- **For CPxxx EPROM 0037 any level or 0016 level K/C or higher:**

  Ensure that the oil feed rate is not set too high. See “Adjusting the Fuser Oil Rate” in the Operator’s Guide for more information on this adjustment.
- Check the Forms Select setting on the stacker control panel for correct setting with the customer’s forms. If this solves the problem, explain the operation of this control to the customer.
- Check to see if the problem occurs with other types of forms. If the problem does not occur with other forms, contact marketing to advise the customer on forms-selection.

SERVICE CHECKS

- Run Driver Routine 28 to verify Oiler Belt Motor operation.
- Run Driver Routines 2A, 2B, and 2C to verify Oil Pump 1 (L701), Oil Pump 2 (L702), and Oil Pump 3 (L703) operation.
- Run Sensor Routine 82 to verify Oil Empty Sensor (S702) operation.
- Run Driver Routine 32 to verify operation of the paper cooling fans.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Forms	- -	- -	- -	- -
Preheat temperature setting	- -	- -	- -	- -
Hot roll temperature setting	- -	- -	- -	- -
Oil feed rate setting	- -	- -	- -	- -
Forms Select setting	- -	1441	- -	- -
Hot Roll Lamps installation	- -	1433	2062	1700
Toner	- -	- -	- -	- -
Developer Mix	- -	- -	- -	- -
Hot Roll	30%	1431	2062	1692
Oil pump (L701, L702, or L703)	20%	1435	2072	1720
Cooling Fans (B703, B704, B705, B706, B707)	10%	1442 1431	2078 2086	1868 1725, 1726
Oiler mechanism	10%	1431	2058	1715
Backup Roll	04%	1433	2048	1670
Oiler Belt Motor (M706)	05%	1431	2058	1715
Oiler Belt End Switch (S711)	04%	1431	2078	1713
Oiler Empty Sensor (S702)	04%	1435	2072	1720
FU041 Card	04%	1442	2118	1764
DV081 Card	04%	1442	2118	1764
Forms Select setting	02%	1441		1869
Preheat Platen	01%	1431	2056	1727

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Hot Roll Temperature Control Sensor (S701)	01%	1431	2076	1710
DV071 Card	01%	1438	2048	1764
LP041 Card	- -	1441	2072	1869
CPxxx Card	- -	1453	2114	1760
Thermistors 1, 2, 3 (S621, S622, S623)	- -	1431	2078	1708
Hot Roll Over-Temperature Sensor (S705)	- -	1431	2076	1710

MAP 1009 Begins

Table 180. MAP 1009

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	CAUTION: **<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.**		
Step 1.	Determine if your problem is "Side One Smear". Look at the printed form at the output of the Printer 1 before it enters Printer 2. Look at side one of the printed form at the output of the Printer 2 fuser. If the image is smeared in the process direction on side one and the smeared image does not appear until after the form has gone through the Printer 2 fuser, the problem is "Side One Smear". **Note:** The side one smear problem may not occur on all customer prints. It can depend on the data being printed. **Is your problem "Side One Smear"?**	Go to Step 2.	Go to Step 3.

Table 180. MAP 1009 (continued)

Step	Questions/Actions	Yes	No
Step 2.	Do the following: • **For CP261 EPROM 0016 level K or lower:** Check the Forms Select setting on the stacker control panel on Printer 1. The correct Printer 1 setting is **A**. If this solves the problem, remind the customer that setting **A** should always be used on Printer 1. • Set the oil feed rate to a higher value. – **For CP261 EPROM 0016 level K or lower:**Set the value in printer memory location FF20 on Printer 1 to 32 (1114). (A lower value in FF20 causes more oil to be fed during printing.) – **For CPxxx EPROM 0037 any level or 0016 level K/C or higher and microcode level v9.7 or higher:** Set the Oil Rate value in **Define Forms** to 75. (A lower Oil Rate value causes more oil to be fed during printing.) • Check the Oil Port Assembly adjustment for Printer 1. • Ensure that **Printer Configuration** values are set as follows: – Front Sheet Sequence = Front First – Printer Mode = Duplex • Run the **primary** print sample (1069) for about 2000 prints to determine if you have fixed the problem. **Is side one smear visible on the last few forms printed?**	• Increase the preheat temperature setting on Printer 1. – **For microcode level v9.6 or lower:** Increase the preheat temperature setting on Printer 1 to 90°C. – **For microcode level v9.7 or higher:** Increase the preheat temperature setting on Printer 1 by 20. • Decrease the preheat temperature on Printer 2. • **For microcode level v9.6 or lower:** Decrease the preheat temperature setting on Printer 2 to 70°C. • **For microcode level v9.7 or higher:** Decrease the preheat temperature setting on Printer 2 by 20. • Run the **primary** print sample (1069) for about 2000 prints to determine if you have fixed the problem. @ If you have not fixed the problem, call your next level of support.	The actions taken during this step corrected the problem.

Table 180. MAP 1009 (continued)

Step	Questions/Actions	Yes	No
Step 3.	• Determine if your problem is “Residual Image” or “Fuser Offset”. Look at the printed page between the transfer station and the fuser. If the problem image is on the paper before fusing, your problem is “Residual Image”. **Is your problem Fuser Offset?**	Go to Step 4.	Your problem is “Residual Image”. Go to MAP 1008: Residual Images.
Step 4.	• Run the **primary** print sample (1069) for up to a full box of paper. Save a sample of the problem as a reference. If any error codes in the fuser area occur, go to the MAP for that error. • Do the QUICK CHECKS. • Check the PM log (1070); if due, replace the hot roll. • Check the PM log; if due, replace the backup roll. **Do you still have fuser offset or forms sticking together?**	Go to Step 5.	The actions taken during this step corrected the problem.

Table 180. MAP 1009 (continued)

Step	Questions/Actions	Yes	No
Step 5.	• Run Driver Routine 32 to check the operation of the paper cooling fans. Run Option **E0** with loop count **FF** for continuous operation of Driver Routine **32**. Because the continuous-loop option remains active for only one routine, you must enter **E0** and **FF** again if you run the routine more than once. • Run Driver Routine 32 to see if the following fans are operating while the routine is running: – Paper Cooling Fan (B704) – Paper Cooling Fan (B705) – Paper Cooling Fan (B706) – Paper Cooling Fan (B707) – Stacker Cooling Blower (B703) (also check this one for damaged or blocked air duct) **Do all these fans operate correctly?**	Go to Step 6.	Do the following, one at a time, until the fans operate correctly: • Check the wiring to the failing fan and correct any problem. • Repair or replace the failing fan. @
Step 6.	• Check the hot roll and backup roll for damage or worn areas. **Is the hot roll OK?**	Go to Step 7.	• Install a new hot roll. • Reset the PM counter. @
Step 7.	**Is the backup roll OK?**	Go to Step 8.	• Install a new backup roll. • Reset the PM counter. @

Table 180. MAP 1009 (continued)

Step	Questions/Actions	Yes	No
Step 8.	If the hot roll lamps are installed incorrectly, poor fusing and offset can occur at different points across the width of the forms. The four hot roll lamps have heating elements with different lengths, and they must be installed in the correct slot and in the correct orientation. (The lamp ends, with the numbers on them, should be installed toward the front of the printer.) In addition, the lamps can be accidentally “spiralled”, where the rear contacts are all rotated one position off their correct location. **Are the hot roll lamps installed correctly?**	Go to Step 9.	• Reinstall the hot roll lamps correctly. @

Table 180. MAP 1009 (continued)

Step	Questions/Actions	Yes	No
Step 9.	**Is there any oiler belt remaining on the supply roll?**	Go to Step 10.	The offset is caused by an end-of-belt condition that is not being detected. • Check for any obvious problems like incorrect installation of the belt, a broken tab on the end of the oiler belt, or a binding or broken Oiler Belt End Switch (S711). Repair or replace as needed. If you find no obvious problems, go to MAP 0793: End Of Oiler Belt Reached to repair an end-of-Oiler Belt condition that is not detected. @

Table 180. MAP 1009 (continued)

Step	Questions/Actions	Yes	No
Step 10.	• Locate the Oiler Belt Motor (M706) and remove the motor cover. • Mark the end of the motor shaft with a pencil as a reference point to check for motor rotation. • Run Driver Routine 28 from the Maintenance Panel. **Did the motor shaft turn approximately one rotation when Driver Routine 28 was run?**	Go to Step 11.	Do the following, one at a time, until the Oiler Belt Motor (M706) turns when Driver Routine 28 is running: • Check PJ723 for correct contact. • Remove the Oiler Belt Motor and ensure that the oiler belt mechanism is not binding. Repair or replace as necessary. • Install a new Oiler Belt Motor. • Correct any open or short between PJ723 and PJ521. • Install a new DV081 Card. • Install a new FU041 Card. • After you correct the problem, do the following: – Remove the oiler belt. – Advance the belt to a clean area. – Reinstall the belt. – Run Driver Routine 2A, 2B, or 2C. @

Table 180. MAP 1009 (continued)

Step	Questions/Actions	Yes	No
Step 11.	• Remove the oiler belt and check to see if oil is being fed through all the oil holes when Driver Routines 2A, 2B, and 2C are run. Use Run Option **E0** with loop count **FF** for continuous operation for routines 2A, 2B, and 2C. Because the continuous loop option remains active for only one routine, you must enter **E0** and **FF** each time you run 2A, 2B, or 2C. **Does oil feed through the holes while the Driver Routines are run continuously?**	Go to Step 13.	Go to Step 12.
Step 12.	• Check the oil pump assembly oil level. **Is the oil reservoir empty?**	Go to MAP 0792: Fuser Oil Empty to repair a Fuser Oil Empty condition that was not detected.	To fix the oil feeding problem, go to MAP 0134: Fuser Wrap, Step 13.
Step 13.	• Check the Hot Roll Temperature Control Sensor (S701) and Hot Roll Over-Temperature Sensor (S705) adjustments. Correct if necessary. • Run a full box of forms. If a **291** error occurs, go to MAP 0291: Hot Roll Over Temperature. **Do you still have fuser offset or forms sticking together?**	Go to Step 14.	The actions taken during this step corrected the problem.

Table 180. MAP 1009 (continued)

Step	Questions/Actions	Yes	No
Step 14.	Fuser offset can be caused by used or defective developer mix. • Dump the old developer mix and install new mix. • Manually advance the oiler belt to a clean area. • Add fuser oil to the oiler belt and hot roll to avoid printing with a dry hot roll. • Print a full box of forms. **Do you still have fuser offset?**	Go to Step 15.	The actions taken during this step corrected the problem.

Table 180. MAP 1009 (continued)

Step	Questions/Actions	Yes	No
Step 15.	Normally, the oiler belt is moderately coated with toner, paper dust, and chads. If so much toner and debris have accumulated on the oiler belt that it cannot keep the hot roll clean, buildup is excessive. **Is the problem, hot roll offset, caused by excessive buildup on the oiler belt?**	If the oiler belt mechanism has no failing component and excessive buildup on the oiler belt is a problem, do the following: • Emphasize operator cleaning for the oiler belt. See the Operator's Guide for details. • Contact your marketing support to assist the customer with selecting forms that produce less debris on the oiler belt. • The oiler belt speed and oil feed rate can be increased until the customer finds better forms. This may allow the customer to continue using these forms, but it will increase supplies usage. (continued on next page)	Go to Step 16.

Table 180. MAP 1009 (continued)

Step	Questions/Actions	Yes	No
Step 15, (cont'd)		Contact your next level of support before you change the belt speed and oil feed rate. • **For CP261 EPROM 0016 level K or lower:** Changing the value in printer memory location FF20 to **32** and FF21 to **01** runs the oiler belt at its maximum rate and doubles the amount of oil fed. The normal value for FF20 is **64**, and for FF21 the normal value is **8** (1114). • **For CPxxx EPROM 0037 any level or 0016 level K/C or higher:** Changing the oil rate setting to a value of **75** and the Oil Belt setting to **100** in **Define Forms** runs the oiler belt at its maximum rate and double the amount of oil fed. The normal value for both the oil rate and the oiler belt speed is **50**.	

Table 180. MAP 1009 (continued)

Step	Questions/Actions	Yes	No
Step 16.	Do the following, one at a time, until the problem is corrected: • The problem is most likely the forms or the way the forms are stored. Re-evaluate whether there is a problem with known good forms. • If the problem is occurring during postprocessing and not occurring in the printer stacker, assist the customer in evaluating how the forms are handled during postprocessing. • If a new hot roll has not been installed already and the forms appear to be OK, install a new hot roll. Add fuser oil to the oiler belt and hot roll to avoid printing with a dry hot roll. • Verify that the customer is using the correct toner. If correct toner is in question, remove the toner and developer mix, and install new supplies. Manually advance the oiler belt to a clean area. Add fuser oil to the oiler belt and hot roll to avoid printing with a dry hot roll. • Verify that the customer is using the correct fuser oil. If correct oil is in question, remove the oil and install new fuser oil and a new hot roll. Manually advance the oiler belt to a clean area. Add fuser oil to the oiler belt and hot roll to avoid printing with a dry hot roll. • Verify that the customer is using the correct oiler belt. If the correct oiler belt is in question, install a new belt and hot roll. Add fuser oil to the oiler belt and hot roll to avoid printing with a dry hot roll. • **For CP261 EPROM 0016 level K or lower:** Check the Forms Select setting on the Printer Control Panel (LP041) and the wiring back to the FU041 Card. Repair or replace as necessary. @ (continued on next page)		

Table 180. MAP 1009 (continued)

Step	Questions/Actions	Yes	No
Step 16, (cont'd)	• Call your next level of support and discuss the problem. The following components are low probability causes of offset or forms sticking together. If you are directed by support, install the following, one at a time, until the problem is corrected: – FU041 Card – LP041 Card (When CP261 EPROM level K or lower is installed) – Preheat Platen – Hot Roll Temperature Control Sensor (S701) – DV071 Card – Thermistor 1 (S621) – Thermistor 2 (S622) – Thermistor 3 (S623) – CPxxx Card @		

MAP 100A: Voids, Missing Print, or Poor Contrast

Symptom Explanation	Conditions That Could Cause This Symptom
Use this MAP if the print quality problem is voids, missing print, or poor contrast on images or characters. Voids or poor contrast near perforations are normal under certain conditions. The printer has the ability to “print to perf,” but there can be significant print quality degradation with printing near perforations: • Roll-feed forms may be printed no closer than 2 mm (0.1 in.) of a perforation. • Boxed forms may be printed no closer than 12 mm (0.5 in.) of a perforation. Consult your marketing support if this is a problem for the customer. For missing print in a band from top to bottom on every page, go to MAP 1003: Light Streaks. Group E of the Print Quality Samples contains samples of these problems. If the defect is similar to a sample other than one in Group E, go to the MAP indicated on that sample.	• Forms are the most likely cause of these problems. A fundamental forms problem may exist or “good” forms may have been stored improperly. Smooth, good quality forms that have good formation and moisture content just above 4% will produce the best quality print. Forms that have been stored in an extremely wet or dry environment can show voids along the edge of the page or contrast spots anywhere on the page. • The PC drum is either filmed, lightly scratched, has something stuck on the surface, or is defective. Voids caused by the PC drum will repeat on each drum rotation. • Light “scalloped” areas in the print near the tractor holes can be caused by: – Forms stretched too tight in the tractors. Incorrect forms width adjustment by the operator can cause this problem as well as form feeding errors. – Deformed tractor holes caused by transfer station adjustments that are not correct. • Dirt or debris moving in the printhead or beam chute can cause voids when it momentarily blocks the beam. (continued on next page)

Symptom Explanation	Conditions That Could Cause This Symptom
Poor contrast can be described as “grainy print” or print that has varying degrees of darkness or lightness over the printed page.	• A contrast problem is especially visible on gray prints or prints with a lot of text. Contrast spots can be caused by any of the following: – The transfer corona is dirty. – The transfer voltage adjustment is not correct. – The transfer station retractor adjustment is not correct. – The developer to drum spacing is not correct. This could be caused by worn mag-brushes shaft or bearings. – The doctor blade adjustment is not correct. – The PC drum surface voltage is too high. – If print is missing at the bottom of the last page printed as the paper stops: - Print registration (process direction) may be out of adjustment. - Retractor adjustments may be incorrect.

REFERENCES

- Removals & Adjustments - Transfer Station
- Removals & Adjustments - Drum Drive and Photoconductor (PC)
- Removals & Adjustments - Coronas & High Voltage Power Supply
- Removals & Adjustments - Printhead
- Print Quality Samples

FIX VERIFICATION

- Run the **primary** print sample (1069) on full-width forms or the customer’s problem forms if the problem is form-related.

QUICK CHECKS

1. Check the print contrast control. If adjusting it to a darker setting gives acceptable print, explain the function of this control to the operator.

   Note:

   - For microcode version 9.7 or higher, the operator will control the print contrast using **Define Forms**.
   - For lower versions of microcode, the operator will control the print contrast using the Printer Control Panel.
2. Ensure that the PQE Stroke Width Settings are correct.
3. Ensure that the tension on the forms between the transfer station tractors is correct. Explain the correct adjustment to the operator if this solves the problem.
4. Clean all corona assemblies. (Give special attention to the transfer corona.)
5. Try printing on a known “good” form. If the problem does not occur on good forms, have the customer determine whether the problem forms meet the Forms Design Reference guide specifications and were stored properly before use.

SERVICE CHECKS

- Print Quality Checklist in MAP 1000: Print Quality Start MAP.

Service Hint

If you are experiencing missing print or data loss on the trailing edge of the last page of print when the forms stop, do the following:

- Process Direction (Vertical) Adjustment
- Transfer Station Adjustments

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Forms	90%	- -	- -	- -
PC Drum	10%	1429	1976	1649
Transfer Station Adjustments	- -	1443	- -	1926
Transfer Corona Voltage Adjustment	- -	- -	- -	1570
Developer Adjustments	- -	1427	- -	1586
Printhead Adjustments	- -	1454	- -	1799

MAP 100A Begins

Table 181. MAP 100A

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Run the **primary** print sample (1069) on full-width paper or the customer's problem paper if the problem is paper-dependent. Save this output as reference while you work on the problem. If the voids are caused by poor fusing, go to MAP 1010: Poor Fusing. • Do the QUICK CHECKS. **Do you still have a void or contrast problem?**	Go to Step 2.	The actions taken during this step corrected the problem.
Step 2.	The PC drum circumference is 824 mm (32.45 inches). Voids or poor contrast that are caused by PC drum damage or something stuck on the drum repeat at that distance when continuous pages are printed. **Do any of the voids repeat at that distance?**	Go to Step 3.	Go to Step 5.

Table 181. MAP 100A (continued)

Step	Questions/Actions	Yes	No
Step 3.	• Remove the PC drum and clean it. If the surface of the PC drum is physically damaged, go to Step 4. **Do you still have a void or contrast problem?**	Go to Step 4.	The actions taken during this step corrected the problem. If the problem was adhesive buildup on the PC drum surface, running a box of paper about every 10 boxes of labels helps keep the adhesive from building up. If the adhesive buildup is a continual problem, contact your marketing support to assist the customer with selecting a better label.

Table 181. MAP 100A (continued)

Step	Questions/Actions	Yes	No
Step 4.	You need to install a new PC drum, but first do the following to prevent damaging the new drum. • Adjust any PC drum clearances that are not correct. • View or print the error log (1070). If you find several of the same type of error, go to the MAP for that error and check any adjustments that may affect paper jams. • Install a new PC drum. • Reset the PM counter. @ **Hints** Before you replace the PC drum, run the Print Pack (1070). Perform the PC Drum Surface Voltage after replacing the drum. After you replace the PC drum, run Print Pack again and compare the print samples for background, solid area fill, and stroke width. **Do you still have a void or contrast problem?**	Go to Step 5.	The actions taken during this step corrected the problem.

Table 181. MAP 100A (continued)

Step	Questions/Actions	Yes	No
Step 5.	Go to the Print Quality Checklist. • Check, record, and adjust (as needed) all the items there. **Do you still have a void or contrast problem?**	Go to Step 6.	The actions taken during this step corrected the problem.
Step 6.	• SHUTDOWN AND POWER OFF THE PRINTER. • Check the printhead and beam chute for any debris that could be moving around and momentarily blocking the scanning laser beam. • Ensure that none of the wires inside the printhead are in the path of the laser beam. **Do you still have a void or contrast problem?**	It must be the forms. Contact your marketing support to assist the customer with selecting better forms.	The actions taken during this step corrected the problem.

MAP 1010: Poor Fusing

Symptom Explanation	Conditions That Could Cause This Symptom
Use this MAP if the print quality problem is poor fusing. Poor fusing may occur over the entire print or only in small areas. Poor fusing is characterized by print that “wipes off” with only light pressure. Smearing of the print when the print is rubbed with moderate to heavy pressure is a normal condition for many forms. In addition, it is normal for a cloth or piece of paper that is repeatedly rubbed over a printed page to be lightly blackened. Careful forms selection can reduce this problem. If the customer has a problem with smear or print rubbing off, contact your marketing support for assistance in forms selection. If the fusing problem is fuser offset or forms sticking together, go to MAP 1009: Fuser Offset or Forms Sticking Together.	• The preheat temperature is set too low. • **For CP261 EPROM level K or lower:** The forms select setting on the stacker control panel (LP041) is not set correctly. This setting controls the oil flow rate for different weights of paper and the hot roll temperature for plastic labels. • **For CPxxx EPROM 0037 any level or 0016 level K/C or higher:** – Hot roll temperature is set too high. – Oil feed rate is set too high. • The forms are not acceptable. Forms with a rough surface, or surface coatings have poor fusing characteristics. • The hot roll is worn or defective. • The hot roll temperature control is defective. • Contrast set too low on forms greater than 24 lbs. • The forms were stored improperly and the moisture content is too high. • The toner is defective. The developer mix will also have to be replaced.

REFERENCES

- Removals & Adjustments - Air System
- Removals & Adjustments - Fuser
- Preventive Maintenance - 2211
- Print Quality Samples

FIX VERIFICATION

- Run the **primary** print sample (1069). Rub the fused print with a tissue or clean cloth.

  Read the Symptom Explanation to help you determine what poor fusing is and what is normal.

QUICK CHECKS

- Ensure that the preheat temperature is not set too low. See “Preheat Temperature” in the Operator’s Guide for more information on this adjustment.
- Check the **Forms Select** setting on the stacker control panel (LP041) for the correct setting with this customer’s forms. (for EPROM levels **K** or lower)

  If this solves the problem, explain the operation of this control to the customer.

SERVICE CHECKS

- Visually inspect the hot roll and backup roll for damage or excessive wear.

Hint on Heavy Forms

If you have solid-area-fill fusing problems on forms that are 24 lb. or heavier, set the contrast higher than 4. The increased setting may eliminate this problem.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Preheat temperature setting	---	- -	- -	- -
Forms Select setting	---	- -	- -	- -
Forms	50%	- -	- -	- -
Hot Roll	20%	1431	2062	1692
Backup Roll	15%	1433	2056	1670
Hot Roll Thermistors (S621, S622, S623)	02%	1431	2078	1708
CPxxx Card	02%	1453	2114	1760
DV071 Card	02%	1453	2048	1764
FU041 Card	02%	1442	2118	1764
Preheat Platen	02%	1431	2056	1727
DV081 Card	01%	1453	2114	1764
Hot Roll Temperature Sensor (S701)	02%	1431	2076	1710
Toner	01%	- -	- -	- -
Hot Roll Lamps	%	1433	2062	1700

MAP 1010 Begins

Table 182. MAP 1010

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Run the **primary** print sample (1069) for 30 pages. Save a sample of the problem as a reference. • Do the QUICK CHECKS. • Check the PM log; if due, replace the hot roll. • Check the PM log; if due, replace the backup roll. @ **Do you still have poor fusing?**	Go to Step 2.	The actions taken during this step corrected the problem.
Step 2.	• Check the hot roll and backup roll for damaged or worn areas. **Is the hot roll OK?**	Go to Step 3.	• Install a new hot roll. • Reset the PM counter. @
Step 3.	**Is the backup roll OK?**	Go to Step 4.	• Install a new backup roll. • Reset the PM counter. @

Table 182. MAP 1010 (continued)

Step	Questions/Actions	Yes	No
Step 4.	• Check the Hot Roll Temperature Control Sensor and Thermistor (S621, S622, and S623) adjustments. @ **Do you still have poor fusing?**	Go to Step 5.	The actions taken during this step corrected the problem.
Step 5.	If the hot roll lamps are installed incorrectly, poor fusing and offset can occur at different points across the width of the forms. The four hot roll lamps have heating elements with different lengths. They must be installed in the correct slot and in the correct orientation. (The lamp ends, with the numbers on them, should be installed toward the front of the printer.) In addition, the lamps can be accidentally “spiralled”, where the rear contacts are all rotated one position off their correct location. **Are the hot roll lamps installed correctly?**	Go to Step 6.	• Reinstall the hot roll lamps correctly.

Table 182. MAP 1010 (continued)

Step	Questions/Actions	Yes	No
Step 6.	Excessively dark print does not fuse well. • Check the reference prints in the Print Quality Samples to see what normal darkness should be. **Is the print darkness normal?**	Do the following, one step at a time, until the problem is corrected: • The problem is most likely the forms or the way the forms are stored. Reevaluate whether there is a problem with “known” good forms. • Ensure that the customer is storing the forms correctly. Read the Symptom Explanation again to help determine whether this is a fusing problem. • Verify that the customer is using the correct toner. If correct toner is in question, remove the toner and developer mix, and install new supplies. Perform the Toner Control Adjustment. (continued on next page)	Go to MAP 1013: Characters Too Dark or Stroke Width Too Wide.

Table 182. MAP 1010 (continued)

Step	Questions/Actions	Yes	No
Step 6, (cont'd)		• Call your next level of support and discuss the problem before you replace the following low probability causes: – DV071 Card – Preheat Platen – FU041 Card – Hot Roll Temperature Control Sensor (S701) – DV081 Card – Thermistor 1 (S621) – Thermistor 2 (S622) – Thermistor 3 (S623) – CPxxx Card @	

MAP 1011: Registration or Skew

Symptom Explanation	Conditions That Could Cause This Symptom
Use this MAP if the print quality problem is incorrect registration or skewed print. Vertical registration is defined as print position in the process direction; horizontal registration is defined as print position in the scan direction. Skew is defined by how parallel a horizontal line is to the perforation.	• Vertical registration: – The length value entered is not correct. – The adjust print setting is not correct. – The tractor motor detent position is not correct. – The angle of the printhead return mirror is not correct. – The process factory adjust value in configuration is not correct. • Horizontal registration: – The width value entered is not correct. – The adjust print setting is not correct. – The scan factory adjust value in configuration is not correct. – The Beam Detect Card (BD171) adjustment is not correct. – The print width adjustment in the printhead is not correct. – The Mechanism Interface Card (MIC) is defective. A failure in this card can cause compression or expansion of the print, which causes registration problems across the page. • Skew: – Preprinted forms were not printed correctly. – The printhead skew adjustment is not correct.

REFERENCES

- Removals & Adjustments - Transfer Station
- Removals & Adjustments - Printhead

FIX VERIFICATION

- Check the registration with the **primary** print sample (1069).

  The **primary** print sample is defined so that the outside edge of the top thick black line is 8.5 ±1.2 mm (0.34 ±0.05 in.) from the top of the page. The outside edge of the vertical thick black line is 23.3 ±1.2 mm (0.92 ±0.05 in.) from the edge of the paper.
- Skew can also be checked with the primary print sample.

  The difference in distance from the top of the page to the leading edge of the thick black line at any two points across the width of the page should be less than 0.2 mm (0.008 in.).

QUICK CHECKS

1. Ensure that the length and width values match the size of paper being used.
2. Ensure that the operator is correctly aligning the paper perforations with the scale on the transfer station.
3. Ensure that the paper is threaded properly.
4. Check the adjust print setting. If the registration problem can be corrected by changing the adjustment settings, explain the settings to the operator.
5. If the problem is skewed print on a preprinted form, measure the horizontal lines on the form to see if the form is skewed.

SERVICE CHECKS

- Registration – 1821
- Skew – 1818

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Operator settings	---	- -	- -	- -
Forms problem	---	- -	- -	- -
Printhead adjustments	70%	1454	2012	1799
Transfer Station adjustments	10%	1443 1445	- -	1926
Mechanism Interface Card (MIC)	01%	1460	2130	1522

MAP 1011 Begins

Table 183. MAP 1011

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Run the **primary** print sample (1069) for 30 pages. Save a sample of the problem as a reference. • Do the QUICK CHECKS. **Do you still have a registration or skew problem?**	Go to Step 2.	The actions taken during this step corrected the problem.
Step 2.	**Is the problem "Image Skew"?**	• Adjust the Print Skew.	Go to Step 3.
Step 3.	You have a registration problem. **Is the registration problem in the vertical (process) direction?**	Go to Step 4.	The problem is registration in the horizontal direction. Go to Scan Direction (Horizontal) Adjustment.
Step 4.	**Is the vertical registration changing?**	Go to Step 5.	Go to Process Direction (Vertical) Adjustment.
Step 5.	**Are you getting SRC 0131 or 0132 (TENSION ARM DOWN) errors?**	• Check for a slipping or broken tractor motor drive pulley.	Go to Step 6.
Step 6.	**Is the registration changing exactly $^{1}/_{6}$ inch during printing?**	• Install a new Mechanism Interface Card (MIC). @	• Check for a loose return mirror.

MAP 1012: Altered Characters or Images

Symptom Explanation	Conditions That Could Cause This Symptom
Use this MAP if the characters or images on the print appear altered. Characters or images may have extra information added, have missing portions, or have altered shapes. This includes wavy print (lines, character edges, image edges) in the forms direction. Group G of the Print Quality Samples contains samples of altered images. If the defect is similar to a sample other than one in Group G, go to the MAP indicated on that sample.	• The Mechanism Interface Card (MIC) is defective. • The PQE Card is defective. • The printhead is not adjusted correctly. • The Beam Detect Card (BD171) is defective. • The Mirror Motor (M501) is defective. • The Mirror Motor Driver circuitry is defective. • The PC561 Card is defective. • The stroke width adjustment is not correct. • The beam offset adjustment is not correct.

REFERENCES

- Print Quality Samples

FIX VERIFICATION

- Run the **primary** print sample (1069) for at least 30 prints and check the prints carefully for the problem. If the defects the customer has noticed do not appear on the primary print sample, print the customer job where the problem occurred.

QUICK CHECKS

- If the altered image appears only in the shading patterns of the primary print sample, there may not be a problem. The data used to create the patterns causes them to print at different widths depending on the **IPDS** resolution selected when the **printhead** resolution is set to 600 dpi. The shading patterns will be narrower when printed at an IPDS resolution of 600 then when printed at IPDS resolutions of 300 or 240. No printer adjustments are required. To verify that the IPDS resolution is affecting the shading pattern, change the IPDS resolution using **Configure Printer**.

SERVICE CHECKS

- None

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
PQE Card	50%	1461	2130	1532
Mechanism Interface Card (MIC)	35%	1460	2130	1522
Printhead adjustment	05%	- -	- -	1799
Stroke width adjustment	01%	- -	- -	1817
Beam Detect Card (BD171)	01%	1454	2016	1796
PC561 Card	01%	1453	2116	1764
Mirror Motor (M501)	01%	1454	2012	1792
DV101 Card	01%	1452	2118	1764
PR011 Card	01%	1446	2118	1764
LD272 Card	- -	1454	2012	1781
Video Cables	- -	1456	2168	- -

MAP 1012 Begins

Table 184. MAP 1012

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Run the **primary** print sample (1069) for at least 30 prints and check the prints carefully for the problem. If the defects the customer has noticed do not appear on the **primary** print sample, print the customer job where the problem occurred. Save this sample as a reference point. • Ensure that the stroke width adjustment is correct. • Check the printing again. **Is the problem corrected?**	The actions taken during this step corrected the problem.	Go to Step 2.
Step 2.	• Perform the MIC isolation wrap test. **Did the test fail?**	Go to MAP D000: Mechanism Interface Card (MIC) Detected Errors.	Go to Step 3.
Step 3.	• Ensure that the Beam Power Adjustment A and the STEP 5: Beam Detect Mirror Check are OK. • Check the printing again. **Do you still have altered characters?**	Go to Step 4.	The actions taken during this step corrected the problem.

Table 184. MAP 1012 (continued)

Step	Questions/Actions	Yes	No
Step 4.	**Is the problem wavy print?**	• Adjust beam offset. • Install the new parts listed below, one at a time, until the problem is corrected: – Beam Detect Card (BD171) – Mirror Motor (M501) – Mechanism Interface Card (MIC) – PC561 Card – PR011 Card – DV101 Card – LD272 Card @	Go to Step 5.
Step 5.	**Is the problem extended lines or bars in the scan direction similar to Sample G3?**	Go to Step 6.	Go to Step 7.
Step 6.	• Check the voltage at the +5 V dc output of the dc power supply (1759). • Adjust the voltage to the high side of the specification. **Did this adjustment correct the problem?**	The actions taken during this step corrected the problem.	Install the new parts listed below, one at a time, until the problem is corrected: • Mechanism Interface Card (MIC) • PQE Card @
Step 7.	**Is the problem diagonal bands similar to Sample G4?**	Go to Step 8.	Go to Step 10.

Table 184. MAP 1012 (continued)

Step	Questions/Actions	Yes	No
Step 8.	 **DANGER** **<5> High-voltage is present. Use care while working in this area.** • Check the connection of the beam detect cable at the Mechanism Interface Card (MIC). • Check the connection of the video cables at the PQE Card. • Check PJ204, PJ233, PJ234, PJ235, and PJ267 on the Printer Interface Card (IF491). • Check all the coaxial (BD and CVD) cables on the LD272 Card. **Are the video cable(s) securely connected and in good condition?**	Go to Step 9.	• Repair or replace the cables or connectors as needed.

Table 184. MAP 1012 (continued)

Step	Questions/Actions	Yes	No
Step 9.	Install the new parts listed below, one at a time, until the problem is corrected: • LD272 Card • Mechanism Interface Card (MIC) • PQE Card • Video Cable from the PQE Card to PJ204 on the Printer Interface Card (IF491) • Video Cable from the PQE Card to PJ233 on the Printer Interface Card (IF491) • Video Cable from the PQE Card to PJ234 on the Printer Interface Card (IF491) • Video Cable from the PQE Card to PJ235 on the Printer Interface Card (IF491) • Video Cable from the PQE Card to PJ267 on the Printer Interface Card (IF491) • Video Cable from PJ204 on the Printer Interface Card (IF491) to PJ503 on the LD272 Card • Video Cable from PJ233 on the Printer Interface Card (IF491) to PJ506 on the LD272 Card • Video Cable from PJ234 on the Printer Interface Card (IF491) to PJ507 on the LD272 Card • Video Cable from PJ235 on the Printer Interface Card (IF491) to PJ508 on the LD272 Card • Video Cable from PJ267 on the Printer Interface Card (IF491) to PJ509 on the LD272 Card @		
Step 10.	**Is the problem altered characters similar to Sample G5?**	Sample G5 illustrates beam crossing. • Verify the correct connection of the following cables: – Video Data 1 (VD1) – Video Data 2 (VD2) – Video Data 3 (VD3) – Video Data 4 (VD4) – Video Data 5 (VD5)	Install the new parts listed below, one at a time, until the problem is corrected: • Mechanism Interface Card (MIC) • PQE Card @

MAP 1013: Characters Too Dark or Stroke Width Too Wide

Symptom Explanation	Conditions That Could Cause This Symptom
Use this MAP if the characters are two dark or too wide. If there is also a high level of background, go to MAP 1005: Background or Dirty Prints.	• The print contrast setting is set too dark. • The mag brush bias circuit is defective. • High toner concentration, caused by the following: – The toner control voltage adjustment is not correct. – The CPxxx Card is defective. – The Toner Control Sensor (S107) is jammed with developer mix. – The toner control shaft is not turning. • The developer mix or toner is defective. • The beam offset adjustment is not correct. • The stroke width adjustment is not correct. • The mag brush and doctor blade adjustment is not correct. • The PC Drum surface voltage is not correct.

REFERENCES

- Removals & Adjustments - Coronas & High Voltage Power Supply
- Removals & Adjustments - Printhead
- Removals & Adjustments - Developer
- Wiring Diagrams - WD26 - High Voltage to Coronas & Mag Brush Rolls
- Wiring Diagrams - WD47-1 - Process Sensors (S10x)
- Wiring Diagrams - WD53 - Switches & Sensors (PC561 Card)

FIX VERIFICATION

- Run the **alternate** print pack (1069).

QUICK CHECKS

- Try a lighter setting for the print contrast. If this solves the customer's problem, explain how to set print contrast to the operator.

  Note:

  – For microcode version 9.7 or higher, the operator will control the print contrast using **Define Forms**.
  – For lower versions of microcode, the operator will control the print contrast using the Printer Control Panel.

SERVICE CHECKS

- Mag Brush Bias: 1571
- Stroke width adjustment: 1842

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Print Contrast setting	40%	- -	- -	- -
Developer Mix	38%	- -	- -	- -
Stroke width adjustment	10%	- -	- -	1842
Mag Brush Bias	10%	- -	- -	1571
High Voltage Power Supply	01%	1429	1964	1568
Toner Concentration Control	01%	1428	- -	1631
CPxxx Card	- -	1453	2116	1760
PC561 Card	- -	1453	2116	1764
Printer Control Panel (SW761)	- -	1429	1982	1897
PR011 Card	- -	1446	2118	1764
Toner Control Sensor (S107)	- -	1428	1992	1634

MAP 1013 Begins

Table 185. MAP 1013

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Run the **alternate** print sample (1069) for a full box of forms. If a 234 error occurs, go to MAP 0234: Toner Overfeed Error. Save a sample of the problem for a reference point. • Remove the developer cover and check to see if the toner control shaft is turning when the developer is running. Pushing the developer run pushbutton on the front of the developer will run the developer for about a minute. The toner control shaft is above and to the left of the scavenger roll shaft. If the shaft did not turn, go to MAP 0234: Toner Overfeed Error, Step 4. • Do the QUICK CHECKS. **Is the print still too dark or too wide?**	Go to Step 2.	The actions taken during this step corrected the problem.

Table 185. MAP 1013 (continued)

Step	Questions/Actions	Yes	No
Step 2.	• Check the Beam Offset Adjustment and perform the adjustment if necessary. • Check the PQE Stroke Width Settings and perform the adjustment if necessary. **Is the print still too dark or too wide?**	Go to Step 3.	The actions taken during this step corrected the problem.
Step 3.	• Print ten copies (50 copies if this is a duplex printing system) of the **alternate** print sample (1069) with the print contrast set to the lowest setting (**1**). • Then print ten copies (50 copies if this is a duplex printing system) of the **alternate** print sample with the print contrast set to the highest setting (**7**). **Did the print darkness change after the contrast setting was changed from 1 to 7?**	Go to Step 4.	Do the following, one at a time, until the problem is corrected: • Check the wiring from the printer control panel to the PC561 Card. • Install a new High Voltage Power Supply. • Install a new printer control panel (SW761) **if the microcode version is lower than 9.7**. • Install a new PC561 Card. • Install a new PR011 Card. @

Table 185. MAP 1013 (continued)

Step	Questions/Actions	Yes	No
Step 4.	• Dump the developer mix and install new, unused mix. • Perform the Toner Control Adjustment on the CPxxx • card. Do not reinstall the old developer mix in the printer after the adjustment is complete. If it is impossible to adjust to the correct values, do the following, one at a time, until the adjustment can be made: – Install a new CPxxx Card. – Repair any shorts to ground in the circuit from: - PJ132–2 to PJ334–2 - PJ132–4 to PJ334–4 – Install a new Toner Control Sensor (S107). – Repair any damage or blockage of the Toner Control chute and mechanism. • Run the **alternate** print sample (1069) for 200 pages. @ **Is the print still too dark or too wide?**	Go to Step 5.	The actions taken during this step corrected the problem.

Table 185. MAP 1013 (continued)

Step	Questions/Actions	Yes	No
Step 5.	Go to the PQE Stroke Width Settings. • Check, record, and adjust (as needed) all the items there. • Run the **alternate** print sample (1069) for 200 pages. **Is the print still too dark or too wide?**	Do the following, one at a time, until the problem is corrected: • Verify that the customer is using the correct toner and developer mix. • If correct toner or mix are in question, remove all the questionable supplies and install new supplies. • Perform the Toner Control Adjustment.	The actions taken during this step corrected the problem.

MAP 1014: Background Shadows (Bleeding)

Symptom Explanation	Conditions That Could Cause This Symptom
Use this MAP if the trailing edge of images and characters have background, but blank areas do not have any background. Sample C2, of the Print Quality Samples is a sample of this problem. If the defect is similar to a sample other than Sample C2, go to the MAP indicated on that sample. If this MAP does not solve the problem, go to the Print Quality Checklist. Check, record, and adjust (as needed) all the items there.	• The developer mix is worn out or defective. • The print is too dark. • The mag brush angles are not correct. • The printhead return mirror is dirty. • The transfer station retractor or path modifier adjustment is not correct. • The print is being smeared during postprocessing of the forms.

REFERENCES

- Removals & Adjustments - Developer
- Print Quality Samples

FIX VERIFICATION

- Run the **alternate** print sample (1069).

QUICK CHECKS

- If the print does not show background shadows when removed from the stacker, check the customer's postprocessing equipment to see if the problem is there.

SERVICE CHECKS

1. Ensure that the mag brush angles are correct.
2. Install new developer mix.
3. Clean any printhead mirrors or lenses that are dirty or have fingerprints on them.
4. Ensure that the retractor and path modifier adjustments are correct.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Developer Mix	55%	- -	- -	- -
Print Too Dark	40%			
Mag Brush Angle Adjustments	01%		- -	1612, 1599
Dirty Return Mirror	01%	1454	2016	1777
Transfer Station Adjustments	01%	1443 1445	- -	1926

MAP 1014 Begins

Table 186. MAP 1014

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Run the **alternate** print sample (1069) for at least 30 prints. Save this output as a reference point. • Do the QUICK CHECKS. • Check the PM log; do any procedures that are due. **Is the print too dark?**	Go to MAP 1013: Characters Too Dark or Stroke Width Too Wide.	Do the SERVICE CHECKS, one at a time, until the problem is fixed.

MAP 1015: Banding

Symptom Explanation	Conditions That Could Cause This Symptom
Use this MAP if there are horizontal (scan direction) bands, (uniform lighter and darker streaks) in the image areas of prints. Sample G7 of the Print Quality Samples is a sample of this problem. If the defect is similar to a sample other than Sample G7, go to the MAP indicated on that sample. If this MAP does not solve the problem, go to the Print Quality Checklist. Check, record, and adjust (as needed) all the items there.	• The Beam Spacing adjustment is not correct. • The Power Peaking and Matching adjustment is not correct. • The PQE adjustment is not correct. • The Mirror Motor (M201) is defective. • The PQE Card is defective.

REFERENCES

- Removals & Adjustments - Printhead
- Preventive Maintenance - Print Log (including Print Pack)
- Print Quality Samples

FIX VERIFICATION

- Run the **alternate** print sample (1069).

QUICK CHECKS

- None

SERVICE CHECKS

1. Ensure that the Beam Spacing Check & Adjustment is correct.
2. Ensure that the Beam Power Adjustment A is correct.
3. Ensure that the PQE Stroke Width Settings is correct.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Beam Spacing Adjustment	50%	1454	- -	1843
Beam Power Adjustment	25%	- -	- -	1810
PQE Adjustment	20%	- -	- -	1842
Mirror Motor (M201)	04%	1454	2012	1792
PQE Card	01%	1461	2130	1532
LD272 Card	%	1454	2012	1781

MAP 1015 Begins

Hint

Run the **alternate** print sample and observe the 2-pel on, 2-pel off checkerboard pattern to see banding. When everything is correct, there should be no banding in this pattern. You can observe the variable grey scale pattern in the center of the page to see if you are improving the banding when you make an adjustment.

When banding is at its worst, you will see bands throughout the pattern from the very dark end to the very light end. As you improve the adjustment, the banding will disappear from each end of the pattern and will only be visible in the center boxes of the pattern. When all adjustments are correct, banding completely disappears.

Because there are several things that can cause banding, you may not be able to completely eliminate banding with a single item. When you have the banding at its lowest level for the item you are adjusting, move on to the next step.

Table 187. MAP 1015

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Perform the Beam Spacing Check & Adjustment procedure. **Is problem corrected?**	One or more of the beams were not properly adjusted for start of scan.	Go to Step 2.

Table 187. MAP 1015 (continued)

Step	Questions/Actions	Yes	No
Step 2.	• Perform the Power Peaking and Matching Adjustment procedure. **Is the problem corrected?**	The power of the individual laser beams did not properly match.	Go to Step 3.
Step 3.	• Perform the PQE Adjustment procedure. **Is the problem corrected?**	The wrong PQE adjustment was the problem.	Install the new parts listed below, one at a time, until the problem is corrected: • Mirror Motor (M201) • LD272 Card • PQE Card @

MAP 1018: Light Print

Symptom Explanation	Conditions That Could Cause This Symptom
Use this MAP if the print quality problem is light print. The problem may be uniform over the whole page, isolated to one area of the page, or a gradual change in darkness on the form from the front to the rear of the machine. If the character darkness is acceptable and only the solid area fill or images are too light, go to MAP 1020: Poor Solid Area Fill or Images. If darkness of the print varies from character to character and the **primary** print sample (or another print sample) shows poor contrast, go to MAP 100A: Voids, Missing Print, or Poor Contrast. Group I of Print Quality Samples shows examples of light print. If the area of light print is confined to a band or streak, go to MAP 1003: Light Streaks. If this MAP does not solve the problem, go to the Print Quality Checklist. Check, record, and adjust (as needed) all the items there.	• The print contrast is not set correctly by the operator. • The developer adjustments are not correct. • The paper is defective. • The developer mix is at end of life or is defective. • The toner control adjustment on the CPxxx Card is not correct. • The PC drum is filmed, at end of life, or defective. • The mag brush bias is low. • A printhead lens or mirror is dirty. • The printhead adjustments are not correct, resulting in low scanning laser power and poor photoconductor discharge. • The PC drum surface voltage is too low because of a dirty or an incorrectly adjusted charge corona. • The transfer corona is dirty or not adjusted correctly. • The High Voltage Power Supply is defective. • The transfer station retractor adjustment is not correct. (continued on next page)

Symptom Explanation	Conditions That Could Cause This Symptom
(continued)	• The drive mechanism for the Toner Control Sensor (S107) is defective. • The CPxxx Card is defective. • The mag brush may be installed incorrectly. If the punch mark on the front end of the mag brush shafts are installed upside down, the print will be light. • The toner feed mechanism is defective and is not feeding toner at the normal rate. • The toner has caked and is not feeding at the normal rate. • The toner is defective or is not the correct toner for this printer. • The customer's job has a print demand beyond the toner feed capacity of this printer. Run the **primary** print sample for 200 pages to see if the print gets darker.

REFERENCES

- Removals & Adjustments - Transfer Station
- Removals & Adjustments - Drum Drive and Photoconductor (PC)
- Removals & Adjustments - Coronas & High Voltage Power Supply
- Removals & Adjustments - Printhead
- Removals & Adjustments - Developer
- Wiring Diagrams - WD26 - High Voltage to Coronas & Mag Brush Rolls, WD47-1 - Process Sensors (S10x)
- Print Quality Samples

FIX VERIFICATION

- Run the **primary** print sample (1069) for at least one full box of paper to ensure that the print darkness is stabilized at an acceptable level.

QUICK CHECKS

- Check the contrast setting for the printer. If changing the contrast to a darker setting gives acceptable print, explain the function of this control to the operator.

  Note:

  – For microcode version 9.7 or higher, the operator will control the print contrast using **Define Forms**.
  – For lower versions of microcode, the operator will control the print contrast using the Printer Control Panel.

- If changing the contrast control from **1** to **7** has no effect on the print, use the wiring diagrams to ensure that the control is working and there are no opens in the circuit.
- Check to see if the print is light on other kinds of forms. An 80 g/m² (20-lb.) good-quality paper is best to use as a reference.
- Clean all corona assemblies.

SERVICE CHECKS

- Ensure that the mag brush A and B angle is set correctly. (See Mag Brush Rolls Installation.)
- Ensure that the Conveyor Roll angle is set correctly. (See Conveyor Roll Installation.)

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Developer Adjustments	25%	1425 1427 1428	- -	1659, 1612, 1599
Developer Mix	25%	- -	- -	- -
CPxxx Card Toner Control Adjustment	25%	1453	- -	1631
Printhead Adjustments	20%	1454	2012	1799
CPxxx Card	- -	1453	2114	1760
Retractor Adjustment	- -	1443	2032	1898
Printhead lens/mirror dirty	- -	1454	2012	1777
Mag Brush Bias Voltage	- -	- -	- -	1571
Transfer Corona Voltage Adjustment	- -	- -	- -	1570
Stroke Width Adjustments	- -	- -	- -	1842
PC Drum	- -	1429	1976	1649
Paper	- -	- -	- -	- -
Toner Control adjustment	- -	- -	- -	1631
Toner Feed mechanism	- -	1425	2006	1639
High Voltage Power Supply	- -	1449	1964	1568
Toner	- -	- -	- -	- -

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Toner Control Sensor (S107)	- -	1454	2012	1634

MAP 1018 Begins

Table 188. MAP 1018

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.**		

Table 188. MAP 1018 (continued)

Step	Questions/Actions	Yes	No
Step 1.	If the light print is being caused by a toner feeding problem, printing a full box of paper should cause a 235 error. • Run the **primary** print sample (1069) for 2000 pages. If a 235 error occurs, go to MAP 0235: Toner Underfeed Error. • Save some of the **primary** print sample as a reference. • Remove the developer cover and check to see if the toner control shaft is turning when the developer is running. Pushing the developer run pushbutton on the front of the developer will run the developer for about a minute. The toner control shaft is below and to the right of the scavenger roll shaft. If the shaft did not turn, then go to MAP 0235: Toner Underfeed Error, Step 4. (continued on next page)		

Table 188. MAP 1018 (continued)

Step	Questions/Actions	Yes	No
Step 1, (cont'd)	**Hints** If the developer has just been worked on, ensure that the mag brush roll front knobs have been correctly installed. The punch mark on the end of the mag brush roll shafts should be at the top of the slot. You can view the punch mark by removing the angle adjustment knob on the front of the mag brush roll shafts. If you have light print on trailing edges only, increase the print contrast on the failing printer. This problem may be seen at print contrast settings between 1 and 4. Setting the contrast to a higher value may eliminate this problem. • Do the QUICK CHECKS. • Do the SERVICE CHECKS. • Run the **Primary** print sample (1069) for 200 pages. **Is the print still too light?**	Go to Step 2.	The actions taken during this step corrected the problem.

Table 188. MAP 1018 (continued)

Step	Questions/Actions	Yes	No
Step 2.	• Dump the developer mix and install new, unused mix. • Perform the toner control adjustments on the CPxxx Card. Do not reinstall the old developer mix in the printer after the adjustment is complete. If it is impossible to adjust to the correct value, do the following, one at a time, until the adjustment can be made: • Install a new CPxxx Card. • Repair any shorts to ground in the circuit from: – PJ132–2 to PJ334–2 – PJ132–4 to PJ334–4 • Install a new Toner Control Sensor (S107). • Repair any damage or blockage of the Toner Control Sensor chute and mechanism. • Run the **primary** print sample (1069) for 200 pages. @ **Is the print still too light?**	Go to Step 3.	The actions taken during this step corrected the problem.

Table 188. MAP 1018 (continued)

Step	Questions/Actions	Yes	No
Step 3.	• Check the following adjustments and correct if necessary: – Mag Brush Bias – Transfer Corona Voltage • If the Mag Brush Bias voltage is out of specification, install a new High Voltage Power Supply. • Run the **primary** print sample (1069) for 200 pages. @ **Is the print still too light?**	Go to Step 4.	The actions taken during this step corrected the problem.
Step 4.	• Check the following adjustments and correct if necessary: – Developer to PC Drum – Mag Brush to Doctor Blade Gaps – Retractors to PC Drum • Run the **primary** print sample (1069) for 200 pages. @ **Is the print still too light?**	Go to Step 5.	The actions taken during this step corrected the problem.

Table 188. MAP 1018 (continued)

Step	Questions/Actions	Yes	No
Step 5.	• Check the laser power adjustment and correct if necessary. • Check for any dirty printhead lenses or mirrors. • If the light print problem varies from the front to the rear of the printer, check the horizontal adjustment of mirror 2. • Run the **primary** print sample (1069) for 200 pages. @ **Is the print still too light?**	Go to Step 6.	The actions taken during this step corrected the problem.
Step 6.	• Check the PC drum surface voltage and correct if necessary. • Run the **primary** print sample (1069) for 200 pages. @ **Is the print still too light?**	Go to Step 7.	The actions taken during this step corrected the problem.

Table 188. MAP 1018 (continued)

Step	Questions/Actions	Yes	No
Step 7.	• Install a new PC drum. • Reset the PM counter. • Run the **primary** print sample (1069) for 200 pages. @ **Hints** Before you replace the PC drum, run and fuse the Print Pack (1070) (Diagnostic, Print Log option). Perform the PC Drum Surface Voltage adjustment after installing a new drum. After you replace the PC drum, run and fuse the “Print Pack” diagnostic and compare the two print samples for background, solid area fill, and stroke width. **Is the print still too light?**	• If you did not check the correct installation of the mag brush rolls front knob described in the “Hint” in Step 1, do it now. • Verify that the customer is using the correct toner and developer mix. If correct toner or mix are in question, remove all the questionable supplies and install new supplies. • Check the stroke width adjustment. • Call your next level of support if you still have light print. @	The actions taken during this step corrected the problem.

MAP 1020: Poor Solid Area Fill or Images

Symptom Explanation	Conditions That Could Cause This Symptom
Use this MAP if the character darkness is acceptable, but the solid area fill or image quality is poor. If the characters are also light, go to MAP 1018: Light Print. Before you change or replace anything, remember that this printer is not designed to print perfectly black or perfectly uniform solid area fill. If the print quality is generally good, contact marketing support to address marginal solid area fill problems before spending a great deal of time trying to make the solid fill darker or more uniform. Solid area fill and images will tend to be darker on the leading edge and show some reduced darkness in the middle. This effect will become more pronounced as the developer mix ages. Changing the printer memory locations **(addresses FF08 and FF09)** from 0850 to 0750 for **Developer Mix P/N 1402829**, or from 1000 to 0900 for **Developer Mix P/N 1402718** causes the `CHANGE DEVELOPER MIX` message to appear sooner. For details about changing printer memory, see Printer Diagnostics. Only make this change after checking out the printer and discussing lower mix life with the customer.	• The developer mix is at end of life or defective. • The print contrast is not set correctly by the operator. • The toner control adjustment on the CPxxx Card is not correct. • The developer adjustments are not correct. The following adjustments significantly affect solid area fill: – Mag brush to PC drum spacing – Mag brush angles – Doctor blade to mag brush gaps • The mag brush bias is low. • The transfer corona is dirty or the voltage adjustment is not correct. • The PC drum potential is too low because of a dirty or an incorrectly adjusted charge corona. • The transfer station retractor adjustment is not correct. • A printhead lens is dirty. • The printhead adjustments are not correct, resulting in low scanning laser power and poor photoconductor discharge. • The PC drum is filmed, at end of life, or defective. • The paper is defective.

REFERENCES

- Removals & Adjustments - Transfer Station
- Removals & Adjustments - Drum Drive and Photoconductor (PC)
- Removals & Adjustments - Coronas & High Voltage Power Supply
- Removals & Adjustments - Printhead
- Removals & Adjustments - Developer
- Print Quality Samples

FIX VERIFICATION

- Run the **alternate** print sample (1069) for at least one full box of paper to ensure that the print darkness is stabilized at an acceptable level.

QUICK CHECKS

- Check the developer mix life by viewing or printing the error log (1068). If the mix life is greater than 800 Kft, install new mix. Check the solid area fill after printing a full box of forms.
- Check the contrast setting on the printer. If changing the contrast to a darker setting gives acceptable print, explain the function of this control to the operator.

  Note:

  – For microcode version 9.7 or higher, the operator will control the print contrast using **Define Forms**.

  – For lower versions of microcode, the operator will control the print contrast using the Printer Control Panel. If changing the contrast control from **1** to **7** has no effect on the print, use the wiring diagrams to ensure that the control is working and there are no opens in the circuit.
- Clean all corona assemblies.
- Check to see if the print is light on other kinds of forms. A 20-lb good-quality paper is best to use as a reference.

SERVICE CHECKS

- Ensure that the Mag Brush roll A and B angles are set correctly. (See Mag Brush Rolls Installation.)
- Ensure that the Conveyor Roll angle is set correctly. (See Conveyor Roll Installation.)

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Developer Mix	84%	- -	- -	- -
Developer Adjustments	06%	- -	- -	1659, 1612, 1599
Mag Brush Bias Voltage	04%	- -	- -	1571
Transfer Corona Problem	01%	1429 1443	2026	1559
Charge Corona Problem	01%	1429	1974	1557
Retractor Adjustment	01%	1443	2032	1898
Printhead lens dirty	01%	1454	2012	1777
Printhead Adjustments	01%	1454	2012	1799
PC Drum	01%	1429	1976	1649
Toner Control Adjustment	- -	- -	- -	1631
Forms	- -	- -	- -	- -
CPxxx Card	%	1453	2114	1760
Toner Control Sensor (S107)	- -	1428	1992	1634
High Voltage Power Supply	- -	1449	1964	1568

Hint

If you have light print on the trailing edges only, increase the print contrast on the failing printer. This problem may be seen at print contrast settings between 1 and 4. Setting the contrast to a higher value may eliminate this problem.

MAP 1020 Begins

Table 189. MAP 1020

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 1.	• Run the **alternate** print sample (1069) for at least 30 prints. Save this output as a reference. • Do the QUICK CHECKS. • Do the SERVICE CHECKS. • Run the **alternate** print sample (1069) for 200 pages. **Is the print still too light?**	Go to Step 2.	The actions taken during this step corrected the problem.

Table 189. MAP 1020 (continued)

Step	Questions/Actions	Yes	No
Step 2.	• Dump the developer mix and install new, unused mix. • Perform the Toner Control adjustments on the CPxxx Card. Do not reinstall the old developer mix in the printer after the adjustment is complete. If it is impossible to adjust to the correct values, do the following, one at a time, until the adjustment can be made: • Install a new CPxxx Card.. • Repair any shorts to ground in the circuit from: – PJ132–2 to PJ334–2 – PJ132–4 to PJ334–4 • Install a new Toner Control Sensor (L101). • Repair any damage or blockage of the Toner Control Sensor chute and mechanism. • Run the **alternate** print sample (1069) for 200 pages. @ **Is the print still too light?**	Go to Step 3.	The actions taken during this step corrected the problem.

Table 189. MAP 1020 (continued)

Step	Questions/Actions	Yes	No
Step 3.	• Check the following adjustments and correct if necessary: – Mag Brush Bias Voltage – Transfer Corona Voltage • If the mag brush bias voltage is out of specification, install a new High Voltage Power Supply. • Run the **alternate** print sample (1069) for 200 pages. @ **Is the print still too light?**	Go to Step 4.	The actions taken during this step corrected the problem.
Step 4.	• Check the following adjustments and correct if necessary: – Mag Brush to PC Drum – Mag Brush to Doctor Blade – Retractors to PC Drum • Run the **alternate** print sample (1069) for 200 pages. @ **Is the print still too light?**	Go to Step 5.	The actions taken during this step corrected the problem.

Table 189. MAP 1020 (continued)

Step	Questions/Actions	Yes	No
Step 5.	• Check the laser power adjustment and correct if necessary. • Check for any dirty printhead lenses or mirrors. • Run the **alternate** print sample (1069) for 200 pages. @ **Is the print still too light?**	Go to Step 6.	The actions taken during this step corrected the problem.
Step 6.	• Check the PC drum surface voltage and correct if necessary. • Run the **alternate** print sample (1069) for 200 pages. @ **Is the print still too light?**	Go to Step 7.	The actions taken during this step corrected the problem.

Table 189. MAP 1020 (continued)

Step	Questions/Actions	Yes	No
Step 7.	**Hints** Before you replace the PC drum, run and fuse the Print Pack (1070) (Diagnostic, Print Log option). Perform the PC Drum Surface Voltage adjustment after replacing the drum. After you replace the PC drum, run and fuse the Print Pack diagnostic and compare the two print samples for background, solid area fill, and stroke width. • Install a new PC drum. • Reset the PM counter. • Run the **alternate** print sample (1069) for 200 pages. @ **Is the print still too light?**	• Read the Symptom Explanation again to help determine whether you really have a problem. • Call your next level support if you think the print is still too light.	The actions taken during this step corrected the problem.

MAP 1021: Bar Code Problems

Symptom Explanation	Conditions That Could Cause This Symptom
The customer has complained about a high scanner reject rate.	• The developer mix is worn out or defective. • Voids in the black bars can be caused by the following: – PC drum – Hot roll – Backup roll – The preheat temperature is set too high. – Printhead beam power is not correct. • There is high background between black bars. • There is random or repeating black spots or marks. • The stroke width is not correct. • The beam spacing is not correct. • The paper is defective. • The print may be smeared due to improper handling after printing. • The customer's bar codes may not be designed properly, per the IBM Forms Design Guide. • Bar Code Scanner adjustment is required. • The Mirror Motor encoder adjustment is not correct. • The Mirror Motor is defective. • The LD272 Card is defective.

REFERENCES

- Removals & Adjustments - Coronas & High Voltage Power Supply
- Removals & Adjustments - Printhead
- Removals & Adjustments - Developer
- Removals & Adjustments - Cleaner
- Removals & Adjustments - Air System

FIX VERIFICATION

- Have the customer measure the scanner reject rates.

QUICK CHECKS

- Ensure that the preheat temperature is not set too low or too high. See “Preheat Platen Temperature” in the *Operator’s Guide* for more information on this adjustment.
- Ensure that the hot roll temperature is not set too low or too high. See “Hot Roll Temperature” in the *Operator’s Guide* for more information on this adjustment.
- Print the customer’s bar code application on a good-quality 80 g/m² (20-lb) paper and check the reject rate. If the bar codes read OK on this paper, contact your marketing support to work with the customer on proper forms selection.
- Check the stroke width adjustment (1842).
- Check beam offset and adjust if necessary.
- Check beam power (1807).

SERVICE CHECKS

- See the Print Quality Checklist.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Developer Mix	25%	- -	- -	- -
PC Drum damage	15%	1429	- -	1654
Hot Roll damage	15%	1431	- -	1692
Developer adjustments	10%	1427	- -	1659
Printhead adjustments	10%	1429	- -	1799
Forms	10%	- -	- -	- -
Stroke width adjustment	10%		- -	1842
Mirror Motor	05%	1454	2012	1792

Hint

If you have light print on the trailing edges only of bar codes, increase the print contrast on the failing printer. (See print sample I4 in the Print Quality Samples) This problem may be seen at print contrast settings between 1 and 4. Setting the contrast to a higher value may eliminate this problem.

MAP 1021 Begins

When a customer complains about a high scanner reject rate, ask to inspect the rejects to look for a print quality problem that is causing the rejects. If you can see a problem, go to the MAP that addresses that problem. Problems to look for are:

- Smearing caused by poor fusing. Ensure that the preheat temperature and hot roll temperature are not set too low.
- Voids that may be caused by:
  - A damaged PC drum
  - A worn or damaged hot roll
  - A worn or damaged backup roll
  - Forms sticking together in the stacker or postprocessor
  - The preheat temperature is set too high. This can cause toner-to-toner sticking in the stacker.
- Background shadows (high background between bars)
- Random black spots or marks
- Repeating black spots or marks
- Light solid area fill
- Light print

If there is no obvious print quality problem on the reject samples, run the Print Pack (1070). Compare the prints to the samples in Print Quality Samples and the print quality problems described in MAP 1000: Print Quality Start MAP. Go to the MAPs that address the problems.

You can ensure that all the adjustments affecting print quality are in specification by using the Print Quality Checklist.

If the obvious print quality problems have been corrected and all the items on the Print Quality Checklist are OK, the rejects must be caused by the forms, the scanner, the bar code design, or the forms processing after printing. You can assist the customer in solving these problems with the following items.

1. Ask the customer the following questions:
   a. What is the width of the narrowest line? It is recommended that the lines be at least 0.3 mm (0.012 in.) wide.
   b. Is the bar code width and length within specification?
   c. Are the forms pressed or rubbed together in postprocessing equipment?

      Postprocessing procedures may need to be modified.
   d. Is the bar code scanner correctly adjusted?
   e. How do the bar codes look that will scan correctly?

      Infoprint 3000 printing is shinier, blacker, and may have more voids in the bars than other printers. The bar code scanner representative should be asked if a scanner adjustment may be required, and if the forms (especially labels) could be causing a problem. A typical problem is too much glare caused by shiny labels or the toner.
2. The problem may be caused by the printing application.
   a. Run plain paper through the machine after every 10,000 feet of labels to clean any adhesive from the PC drum surface.
   b. Rotate the bar codes so that they are printed with their length parallel to the laser scan direction. These bars will be blacker than those whose length is in the process direction. To see this effect, look at the wide horizontal and vertical bars on the **primary** print sample (1069).

The customer is expected to ensure that the bar code is designed within the bar code specification for width and length of the overall symbol as well as for the individual elements. The customer is also expected to ensure with the scanner representative that the forms material and the position and distortion of the label are acceptable as it passes under the scanner.

If support from product engineering is required, be sure to have the following information:

1. The answers to all of the above questions.
2. Run the Print Log (including Print Pack) at contrast **4**.
3. Actual bar code samples on the forms to be scanned, printed at print contrast **4**, and any other setting that the customer wants to use. Ensure that the samples are well labeled with the date, contrast setting, customer name, and machine serial number.
4. The type of bar code being printed (UPC, Interleaved 2/5, Code 3/9).
5. The width, in pels, of the narrow bar and space, and of the wide bar and space.
6. Your mailing address, telephone number, branch office and territory number. Optional, but useful, information is your VM USERID and node, Lotus Notes ID, or your RETAIN queue, especially if you are not in the United States.

Contact your next level support for the mailing address to which your samples should be sent.

MAP 1022: Label Problems

This is a start MAP for print quality problems that occur on labels. Try to recreate the label problem while running paper. If the problem can be recreated with paper, go to the MAP for that symptom.

If the customer has never had satisfactory performance with this label on this printer but printer performance is satisfactory on paper:

1. Determine if the teflon oiler belt and the high temperature hot roll are installed on this printer. If they are not, order FBM 38L1619 and install the contents of the FBM.
2. If necessary, contact your marketing support to work with the customer on correct selection of labels.

If the customer is experiencing problems with a label that has given satisfactory performance in the past on this printer, suspect that the supplier of labels has made changes. Have the customer contact the label supplier with the details of the current problem before you spend much time trying to find something wrong with the printer. When you are convinced that the labels have not changed and the printer performance with these labels has changed from satisfactory to unsatisfactory, then work on the printer.

The most common customer complaints when running labels are:

- Poor fusing
- Forms sticking together
- Voids or light print
- Paper path errors caused by dry gum labels

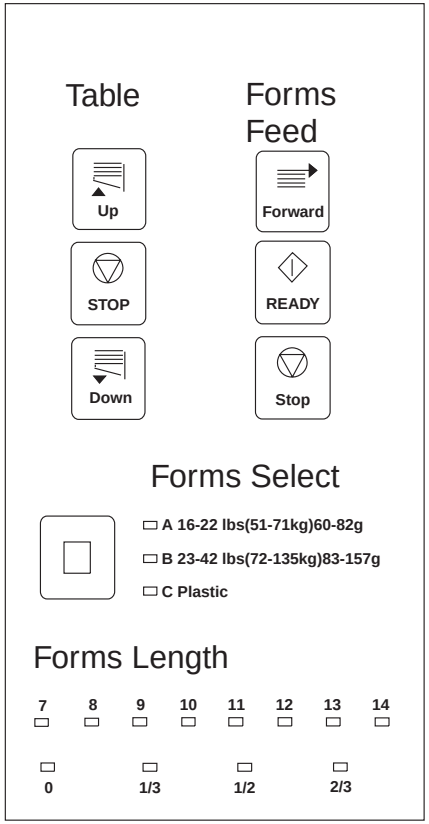
1. If there is a problem feeding the labels through the printer, do the following:
   - Adjust the Path Modifier Assembly for the maximum forms tension.
   - Adjust the Retractor to PC Drum Gap to the maximum allowable gap.
2. Ensure that the oil feed rate is set correctly.

   For microcode version 9.7 or higher, the operator controls the oil feed rate for each defined form using **Define Forms**. (The forms select button will have no effect.)

   For lower versions of microcode, the forms select setting **B** on the stacker control panel can be used to increase the oil feed rate.

Note:

- B may increase (double) the oil feed rate. (For microcode versions lower than 9.7)
- C has no effect.



3. Ensure that the preheat temperature is not set too low or too high. See “Preheat Temperature” in the Operator’s Guide for more information on this adjustment.
4. For microcode version 9.7 or higher, ensure that the hot roll temperature is set correctly. Reduce the hot roll temperature when forms stick together. Increase the hot roll temperature when poor fusing occurs.
5. Voids or light print are caused by adhesive collecting on the PC drum or damage to the drum surface by the labels. The transfer station and retractor adjustments should be checked if the drum is being damaged. Labels

that damage the drum should not be used. A box of paper should be printed at least every 10,000 feet of label running to remove adhesive that collects on the drum. Labels that deposit more adhesive than can be cleaned with periodic paper running should not be used.

6. Correct selection of labels and periodic printing with paper to clean up adhesive is critical to satisfactory performance on this printer. If the customer will not run paper periodically or is using labels that cause frequent repair actions, charge the customer for these calls. It is the customer's responsibility to ensure that labels are within the guidelines in the Forms Design Reference.

Product Engineering can assist the customer and the label supplier in problem determination. When requesting support, be sure to have the following information:

1. The Print Pack (1070) that was run at contrast **4** on the largest width paper available.
2. The type of label, including:
   - Supplier
   - Adhesives
   - Label material
3. Description of the postprocessing of labels
4. Some printed labels that show the problem
5. A sample of at least 400 pages of labels that have not been printed
6. Your mailing address, telephone number, branch office and territory number. Optional, but useful, information is your VM USERID and node, you Lotus Notes ID, or your RETAIN queue, especially if you are not in the United States.

Contact your next level support for the current mailing address to which your samples should be sent.

FIX VERIFICATION

- Be able to print the customer's label application.

QUICK CHECKS

- None

SERVICE CHECKS

- See the Print Quality Checklist.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Preheat temperature setting	---	- -	- -	- -
Hot roll temperature setting	---	- -	- -	- -
Stacker Control Panel (LP041) forms select setting/Oil Rate setting	---	1441	2072	1869
Labels	90%	- -	- -	- -
Adhesive on PC drum	10%	1429	- -	1654

MAP 2000: Controller Start MAP

REFERENCES

- RS/6000 Type 7025 Model F50 Series: Service Guide, SA38-0541
- RS/6000 Type 7043 43P Series: Models 140 and 240 Service Guide, SA38-0512
- RS/6000: Diagnostic Information for Multiple Bus Systems, SA38-0509
- Wiring Diagrams -
  - BD01 - 7025 Model F50 RS/6000 Controller
  - BD02 - 7043 Model 140-43P RS/6000 Controller
  - BD03 - Mechanism Interface Card (MIC)

MAP 2000 BEGINS

Table 190. Controller Problems

Step	Condition	Go to:
Step 1.	Use this step as a pointer to other steps for specific problems.	
	The diagnostics stopped with a flashing **888** or a steady number other than **c99** on the display.	Step 2
	The controller stopped with a number on its display. The Display/Touch Screen is blank.	Step 2
	The controller stops with a steady **552** in the second line of the display.	Step 2
	A hardware problem reoccurs intermittently.	Step 3
	A service request number (SRN) is known, and you want to determine the correct action.	Step 4
	The failing function code (FFC) is known, and you want to identify the part to replace.	Step 5
	The controller power indicator (green LED) is off, or turns off within 5 seconds after the power-on sequence.	Step 6
	Normal diagnostics do not solve the problem.	Step 7

Table 191. Disk IPL Symptoms for Models F50 and 43P-140 Controllers

Step	Symptom	Cause	Action
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
Step 2.	**Problem Determination Procedure** Use this step to get a service request number (SRN). Be prepared to record the numbers from the controller display and convert them to SRNs, which you can use to analyze problems.		Perform the following steps: • Request that the system operator stop activity on the printer. Disable all host attachments. • On the menu bar of the Display/Touch Screen main window, select **Operate**. • On the menu that appears, select **Shutdown**. • Run diagnostics only in Concurrent mode. Do not run in Service mode.
	The RS/6000 controller power-on light does not come on, or it comes on but does not stay on.	Power problem	Go to Step 6.
	The RS/6000 controller stops with a steady number on the display.	Hangs on test	See the F50 Series or 43P Series Service Guide, chapter "Error Code to FRU Index". @
Step 2, (cont'd)	The RS/6000 controller displays an **888** followed by other error codes.	Logic problem	See the Diagnostic Information for Multiple Bus Systems manual, chapter "Fast Path MAP". Run diagnostics only in Concurrent mode. Do not run in Service mode. @

Table 191. Disk IPL Symptoms for Models F50 and 43P-140 Controllers (continued)

Step	Symptom	Cause	Action
	The RS/6000 controller stops with a steady **552** on the second line of the display.	Possible SCSI hard drive failure	Go to the F50 Series or 43P Series Service Guide, chapter “Error Code to FRU Index”. @
	An SRN is displayed when diagnostics are running.		See the Diagnostic Information for Multiple Bus Systems manual, chapter “Diagnostic Numbers and Codes”. @
	Any other symptom		Go to the F50 Series or 43P Series Service Guide, chapter “Maintenance Analysis Procedures”. Run diagnostics only in Concurrent mode. Do not run in Service mode. @

Table 192. Intermittent Problems - Hardware

Step	Symptom	What to Check
Step 3.	**Intermittent Problems - Hardware** Use this step to analyze intermittent hardware problems. Consider all applicable symptoms before you replace any FRUs.	
	There is an unrecoverable error.	• Connections on the processor card and planar • Connections on the memory cards and SIMMs • Operating temperature
	The controller powers off within a few seconds of powering on.	• Fan speed (The power supply powers off if a fan is not turning at full speed.) • Voltage supplied to the RS/6000 controller • Power cable and fan connections (internal and external)
	The controller powers off after running more than several seconds.	• Excessive temperature in the power supply area (The power supply has a temperature sensor.) • Fan speed • Heat baffles (control air flow over the memory card) • Power cable and fan connections (internal and external)
	Only internal devices are failing.	• Ground connections on disk and diskette drives • Power cable connections to the planar, drives, fans, and battery • Cooling components: fan speed, air flow, vents • Signal cable connections to the drives, power supply, and display • Signal cable connections and terminators for SCSI devices • Address jumpers for SCSI devices • Cleanliness of any device that has a cleaning procedure

(continued on next page)

Table 192. Intermittent Problems - Hardware (continued)

Step	Symptom	What to Check
Step 3, (cont'd)	Only external devices are failing	• Static electricity • Voltage supplied to the RS/6000 controller • Operating temperature • Signal cable connections and terminators for SCSI devices • Address jumpers for SCSI devices • Cleanliness of any device that has a cleaning procedure • Static electricity • Voltage supplied to the RS/6000 controller • Sources of noise near the failing device

Table 193. Intermittent Problems - Software

Step	Symptom	What to Check
Step 3, (cont'd)	**Intermittent Problems - Software** Use this step to analyze intermittent software problems. Consider all applicable symptoms before you replace any FRUs.	
	There is an unrecoverable error.	• Other application programs for a similar problem • Other devices for a similar problem • Program installation • Recent program modification • Communication line • Static discharge when the failure occurred
	There is a hardware-caused software error.	• Connections on the processor card and planar • Connections on the memory cards and SIMMs • Operating temperature • Connection to the Display/Touch Screen , including the mouse, keyboard, and tablet (if any) • Display/Touch Screen operator controls: brightness, contrast, volume
	Anything you suspect is related to software	• RETAIN, for documented problems with the RS/6000 controller and software

Step	Questions/Actions	Yes	No
Step 4.	**Service Request Number (SRN)** Service request numbers (SRNs) are 6-character codes that represent a specific failure of a specific RS/6000 controller function. They are listed in numerical order. You use the SRN and the failing function code (FFC)—which identifies the failed part or FRU—to analyze and solve a hardware problem. Refer to the Diagnostic Information for Multiple Bus Systems manual, chapter “Diagnostic Numbers and Code”, to find the FFC and record the part number and description of each FRU. @ If you are instructed to replace FRUs, replace them in the order of decreasing failure percentage. **Exceptions:** • If the most probable failed FRU is the planar, you may want to replace any other FRUs first. Removing and installing the planar takes the most time. • If the most probable failed FRU is the disk drive, you may want to replace any other FRUs first. The data on the disk important to the printer. If you are replacing the disk drive, do not change the jumper positions on the hard drive. It is tested and shipped with the correct settings. However, you should ensure that the jumper positions are set to match those on the hard drive you are replacing.		
Step 5.	**Failing Function Code (FFC)** Failing function codes (FFCs) are numbers that appear on the controller display to indicate that an RS/6000 controller function has failed. Refer to the Diagnostics Information for Multiple Bus Systems manual, chapter “Failing Function Codes” to identify the part number of the failed FRU. @ **Note:** Some cards have fuses. Always check the fuses before you replace a card.		
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit’s Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		

Step	Questions/Actions	Yes	No
Step 6.	**Controller Power Problems** Before you use this step, determine which controller is in the Control Unit. • **Type 7025 Model F50:** Refer to the F50 Series Service Guide, chapter “MAP 1520: Power”. @ • **Type 7043 Model 43P-140:** Do the following: – Check to see if the voltage switch is set to 230 Volts on the controller. If the switch is not set to 230 Volts, do the following: - Install a new Controller Power Supply. - Set the switch to 230 Volts and mount the holding bracket that holds the switch in this position. If there is no holding bracket, place a piece of tape over the switch so that it cannot be moved or until you can install a holding bracket. – Refer to the 43P Series Models 140 & 240 Service Guide, chapter “MAP 1520: Power”. @		
Step 7.	**Minimum Configuration** This step helps you analyze bus failures that cause the RS/6000 controller to fail in a way that cannot be isolated by normal diagnostic procedures. • **Type 7025 Model F50:** Refer to the F50 Series Service Guide, chapter “MAP 1540: Minimum Configuration”. @ • **Type 7043 Model 43P-140:** Refer to the 43P Series Models 140 and 240 Service Guide, chapter “MAP 1540: Minimum Configuration”. @ Do the following: • Record the locations of the cards and of any cables attached to the cards. • Reduce the RS/6000 controller to one or more minimum configurations. • If the minimum configuration operates correctly, add FRUs, one at a time, until the failed FRU is identified. • If the minimum configuration does not operate correctly, remove FRUs, one at a time, until the failed FRU is identified.		

MAP A000: Host Attachment Detected Errors

REFERENCES

- Removals & Adjustments - RS/6000 Removal & Replacement Procedures
- Diagnostics - Attachment Diagnostics
- Diagnostics - RS/6000 Controller Diagnositcs
- Diagnostics - Traces

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Locations Link	Parts Link	Removals & Adjustments Link
Controller Configuration	- -	- -	- -
Host Failure	- -	- -	- -
Cabling	- -	- -	- -
ESCON Adapter	1466, 1470	2146, 2154	1550
Parallel Channel Adapter	1466, 1470	2146, 2154	1553
Token Ring Adapter	1466, 1470	2144, 2154	1536
Ethernet Adapter	1466, 1470	2146, 2154	1536
FDDI Adapter	1466, 1470	2144, 2154	1536
Controller Planar	1466, 1470	2146, 2154	1536

MAP A000 Begins

DANGER

<1-14> Switch off printer power and unplug the printer power cord before connecting or disconnecting a communication port, a teleport, or any other attachment connector.

DANGER

<12> During an electrical storm, do not handle channel cables, connectors, or power cords.

Find the SRC in Attachment SRCs and perform the action indicated.

Table 194. Attachment System Reference Codes (SRCs)

SRC	Description	Action
	ESCON Serial Channel	
A000	Program error	1. Restart the RS/6000 controller. 2. If the error repeats, call your next level of support.
A001	Functional error	Run card and wrap diagnostics.
A010	Card diagnostics failed; link A	1. Check the RS/6000 controller configuration. 2. Restart the RS/6000 controller. 3. If the error repeats, replace the ESCON adapter card, the ARTIC coprocessor card, and its SIMM. @
A018	Wrap diagnostics failed; link A	1. Ensure that the wrap plug is installed on A. 2. Check the RS/6000 controller configuration. 3. Restart the RS/6000 controller. 4. If the error repeats, replace the ESCON adapter card, the ARTIC coprocessor card, and SIMM. @

Table 194. Attachment System Reference Codes (SRCs) (continued)

SRC	Description	Action
A020	Card diagnostics failed; link B	1. Check the RS/6000 controller configuration. 2. Restart the RS/6000 controller. 3. If the error repeats, replace the ESCON adapter card, the ARTIC coprocessor card, and SIMM. @
A028	Wrap diagnostics failed; link B	1. Ensure that the wrap plug is installed on B. 2. Check the RS/6000 controller configuration. 3. Restart the RS/6000 controller. 4. If the error repeats, replace the ESCON adapter card, the ARTIC coprocessor card, and SIMM. @
A030	AIX system call failed	Call your next level of support.
A040	Bad RS/6000 controller configuration values	
A041	General load failure	
A042	No ESCON configuration file	
A050	Data overrun; link A	Check the host configuration.
A051	Data overrun; link B	
A052	Lost connection; link A	Restart the host.
A053	Lost connection; link B	
A054	Bus out check; link A	Check the cabling.
A055	Bus out check; link B	

Table 194. Attachment System Reference Codes (SRCs) (continued)

SRC	Description	Action
A056	Online failed; link A	Run diagnostics.
A057	Online failed; link B	
A058	Spurious interrupt; link A	
A059	Spurious interrupt; link B	
A05A	Unknown CCW; link A	Restart the RS/6000 controller.
A05B	Unknown CCW; link B	
A05C	Forced offline; link A	Re-enable the link.
A05D	Forced offline; link B	
A05E	Link failure; link A	Run card and wrap diagnostics.
A05F	Link failure; link B	
A060	Bit error rate exceeded (log only); link A	1. Run card and wrap diagnostics. Install a new ESCON card if necessary. 2. Ensure that the ESCON cables are not too long. 3. The cables are the responsibility of the customer. However, if you find it necessary to check the cables between the host/director, do the following: a. Clean the ends of the ESCON cables. (Use cleaning kit P/N 5453521). b. Multimode link (MM) is used between the printer and the host/director. Check the cable using the light power meter P/N 12G8814, optical source P/N 02G6154, and OMC tool P/N 73F4034. Refer to the manual “Maintenance Information for Enterprise Systems Connections Link”, SY27-2597. If you find a problem, inform the customer that a new cable is required. @
A061	Bit error rate exceeded (log only); link B	

Table 194. Attachment System Reference Codes (SRCs) (continued)

SRC	Description	Action
	Parallel Channel	
A201	Data streaming overrun	Check the host configuration and the RS/6000 controller configuration.
A203	Online failure	Run diagnostics.
A205	Bus out parity checks	Check the cabling.
A206	Functional failed	Run diagnostics.
A209	Card diagnostics failed; interface A	Replace Parallel Channel Adapter card for channel A. @
A210	Card diagnostics failed; interface B	Replace Parallel Channel Adapter card for channel B. @
A211	Wrap diagnostics failed; interface A	1. Ensure that the wrap blocks are installed on A. 2. Check the RS/6000 controller configuration. 3. Restart the RS/6000 controller. 4. If the error repeats, replace the parallel channel , the ARTIC coprocessor and SIMM. @
A212	Wrap diagnostics failed; interface B	1. Ensure that the wrap blocks are installed on B. 2. Check the RS/6000 controller configuration. 3. Restart the RS/6000 controller. 4. If the error repeats, replace the attachment card/cable. @
A213	Controller configuration failure	Check the configuration data.
A214	AIX system call failure	Call your next level of support.

Table 194. Attachment System Reference Codes (SRCs) (continued)

SRC	Description	Action
A215	PCA card operation failure	Turn the link back online and try again.
A216	PCA card internal error	
A217	Bad file; cannot open	Check the configuration.
A218	Program error	Call your next level of support.
A220	Bad command for this state	Shut down and try the operation again. If the SRC repeats, call your next level of support.
A221	Incomplete sense data received	Try the operation again. If the SRC repeats, call your next level of support.
A222	Data received after the acknowledgment request	

Table 194. Attachment System Reference Codes (SRCs) (continued)

SRC	Description	Action
	TCP/IP	
A400	Token Ring diagnostics timeout	The diagnostic was cancelled because it did not complete within eight minutes. Token ring diagnostics may generate this error even when there is no hardware failure. 1. Shutdown the printer. 2. Ensure that the token ring cable is an IBM cable or equivalent with built-in wrap capability and is connected or disconnected as directed in the diagnostic you are running. 3. Reseat the Token Ring adapter card. 4. Power on and see if the problem has been corrected. 5. If you cannot enable the token ring adapter or the customer communications still fail, try replacing the following hardware, one at a time, until the problem is corrected: a. Install a new token ring adapter card. b. Install a new token ring cable. c. Install a new system planar. 6. Call your next level of support. @
A401	Token Ring basic test failed	1. Shutdown the printer. 2. Do the following, one step at a time, until the problem is corrected: a. Install a new token ring adapter card. b. Install a new system planar. @
A402	Token Ring wrap test failed	The wrap tests do not work for this RS/6000 system as configured. Follow the procedures for SRC A400 for this RS/6000 system.

Table 194. Attachment System Reference Codes (SRCs) (continued)

SRC	Description	Action
A403	Ethernet diagnostics timeout	The diagnostic was cancelled because it did not complete within 8 minutes. 1. Ensure that the cables and wrap plug are connected or disconnected as directed in the diagnostic you are running. 2. Install a new adapter card. 3. If you cannot enable Ethernet or the customer communications still fail, call your next level of support. @
A404	Ethernet basic test failed	Install a new adapter card.
A405	Ethernet port wrap test failed	1. Ensure that the correct wrap connector is being used and that it is connected correctly. 2. Install a new Ethernet adapter card. @

Table 194. Attachment System Reference Codes (SRCs) (continued)

SRC	Description	Action
A40D	FDDI diagnostics timeout	The diagnostic was cancelled because it did not complete within eight minutes. FDDI diagnostics may generate this error even when there is no hardware failure. 1. Shutdown the printer. 2. Ensure that the cables, transceiver, and wrap plug are connected or disconnected as directed in the diagnostic you are running. 3. Reseat the FDDI adapter card. 4. Power on and see if the problem has been corrected. 5. If hardware is available, do the following, one step at a time, until the problem is corrected: a. Install a new FDDI adapter card. b. Install a new FDDI cable. c. Install a new system planar. 6. If an Infoprint MPC is available, the MPC can be used to test the FDDI connection. Read the “Infoprint Installation and Maintenance Guide” on the “ping” command for detailed instructions. 7. Call your next level of support. @
A40E	FDDI basic test failed	1. Shutdown the printer. 2. Do the following, one step at a time, until the problem is corrected: a. Install a new FDDI adapter card. b. Install a new system planar. @
A40F	FDDI wrap test failed	The wrap tests do not work for this RS/6000 system as configured. Follow the procedures for SRC A40D for this RS/6000 system.

Table 194. Attachment System Reference Codes (SRCs) (continued)

SRC	Description	Action
A440	PSF protocol error	1. Repeat and capture the attachment trace if possible. 2. Call your next level of support.
A441	ASA protocol error	
A442	Internal error	
Ethernet TCP/IP		
A450	Local software	1. Repeat and capture the attachment trace if possible. 2. Call your next level of support.
A451	Remote software	
A452	Network software	1. Report network problems to the site system/LAN administrator. 2. Repeat and capture the attachment trace if possible. 3. Call your next level of support.
A453	Unknown software	1. Repeat and capture the attachment trace if possible. 2. Call your next level of support.
A454	Local hardware	1. Perform hardware diagnostics on local attachment hardware. 2. Repeat and capture the attachment trace if possible. 3. Call your next level of support.
A455	Remote hardware	1. Perform hardware diagnostics on remote hardware attachment. 2. Repeat and capture the attachment trace if possible. 3. Call your next level of support.
A456	Network hardware	1. Report network problems to the site system/LAN administrator. 2. Repeat and capture the attachment trace if possible. 3. Call your next level of support.

Table 194. Attachment System Reference Codes (SRCs) (continued)

SRC	Description	Action
A457	Unknown hardware	1. Perform hardware diagnostics on local attachment hardware. 2. Perform hardware diagnostics on remote hardware attachment. 3. Report network problems to the site system/LAN administrator. 4. Repeat and capture the attachment trace if possible. 5. Call your next level of support.
A458	Local unknown	1. Perform hardware diagnostics on local attachment hardware. 2. Perform hardware diagnostics on remote hardware attachment. 3. Report network problems to the site system/LAN administrator. 4. Check the ethernet configuration. 5. If necessary, reconfigure and restart the printer. 6. Repeat and capture the attachment trace if possible. 7. Call your next level of support.
A459	Remote unknown	
A45A	Network unknown	
A45B	General run time error	
A45C	Invalid configuration during enable	1. Check the ethernet configuration items. 2. If necessary, reconfigure and restart the printer. 3. Report network problems to the site system/LAN administrator. 4. Repeat and print the internal control unit trace. 5. Call your next level of support.
A45D	Invalid configuration while running	1. Check the ethernet configuration items. 2. If necessary, reconfigure and restart the printer. 3. Report network problems to the site system/LAN administrator. 4. Repeat and capture the attachment trace if possible. 5. Call your next level of support.
Token Ring TCP/IP		

Table 194. Attachment System Reference Codes (SRCs) (continued)

SRC	Description	Action
A460	Local software	1. Repeat and capture the attachment trace if possible. 2. Call your next level of support.
A461	Remote software	
A462	Network software	1. Report network problems to the site system/LAN administrator. 2. Repeat and capture the attachment trace if possible. 3. Call your next level of support.
A463	Unknown software	1. Repeat and capture the attachment trace if possible. 2. Call your next level of support.
A464	Local hardware	1. Perform hardware diagnostics on local attachment hardware. 2. Repeat and capture the attachment trace if possible. 3. Call your next level of support.
A465	Remote hardware	
A466	Network hardware	1. Report network problems to the site system/LAN administrator. 2. Repeat and capture the attachment trace if possible. 3. Call your next level of support.
A467	Unknown hardware	1. Perform hardware diagnostics on local attachment hardware. 2. Perform hardware diagnostics on remote hardware attachment. 3. Report network problems to the site system/LAN administrator. 4. Repeat and capture the attachment trace if possible. 5. Call your next level of support.

Table 194. Attachment System Reference Codes (SRCs) (continued)

SRC	Description	Action
A468	Local unknown	1. Perform hardware diagnostics on local attachment hardware. 2. Perform hardware diagnostics on remote hardware attachment. 3. Report network problems to the site system/LAN administrator. 4. Check the token ring configuration items. 5. If necessary, reconfigure and restart the printer. 6. Repeat and capture the attachment trace if possible. 7. Call your next level of support.
A469	Remote unknown	
A46A	Network unknown	
A46B	General run time error	
A46C	Invalid configuration during enable	1. Check the token ring configuration items. 2. If necessary, reconfigure and restart the printer. 3. Report network problems to the site system/LAN administrator. 4. Repeat and print the internal control unit trace. 5. Call your next level of support.
A46D	Invalid configuration while running	1. Check the token ring configuration items. 2. If necessary, reconfigure and restart the printer. 3. Report network problems to the site system/LAN administrator. 4. Repeat and capture the attachment trace if possible. 5. Call your next level of support.

Table 194. Attachment System Reference Codes (SRCs) (continued)

SRC	Description	Action
	FDDI TCP/IP	
A470	Local software	1. Repeat and capture the attachment trace if possible. 2. Call your next level of support.
A471	Remote software	
A472	Network software	1. Report network problems to the site system/LAN administrator. 2. Repeat and capture the attachment trace if possible. 3. Call your next level of support.
A473	Unknown software	1. Repeat and capture the attachment trace if possible. 2. Call your next level of support.
A474	Local hardware	1. Perform hardware diagnostics on local attachment hardware. 2. Repeat and capture the attachment trace if possible. 3. Call your next level of support.
A475	Remote hardware	1. Perform hardware diagnostics on remote hardware attachment. 2. Repeat and capture the attachment trace if possible. 3. Call your next level of support.
A476	Network hardware	1. Report network problems to the site system/LAN administrator. 2. Repeat and capture the attachment trace if possible. 3. Call your next level of support.
A477	Unknown hardware	1. Perform hardware diagnostics on local attachment hardware. 2. Perform hardware diagnostics on remote hardware attachment. 3. Report network problems to the site system/LAN administrator. 4. Repeat and capture the attachment trace if possible. 5. Call your next level of support.

Table 194. Attachment System Reference Codes (SRCs) (continued)

SRC	Description	Action
A478	Local unknown	1. Perform hardware diagnostics on local attachment hardware. 2. Perform hardware diagnostics on remote hardware attachment. 3. Report network problems to the site system/LAN administrator. 4. Check the FDDI configuration items. 5. If necessary, reconfigure and restart the printer. 6. Repeat and capture the attachment trace if possible. 7. Call your next level of support.
A479	Remote unknown	
A47A	FDDI TCP/IP: Network unknown	
A47B	FDDI TCP/IP: General run time error	
A47C	FDDI TCP/IP: Invalid configuration during enable	1. Check the FDDI configuration items. 2. If necessary, reconfigure and restart the printer. 3. Report network problems to the site system/LAN administrator. 4. Repeat and print the internal control unit trace. 5. Call your next level of support.
A47D	FDDI TCP/IP: Invalid configuration while running	1. Check the FDDI configuration items. 2. If necessary, reconfigure and restart the printer. 3. Report network problems to the site system/LAN administrator. 4. Repeat and capture the attachment trace if possible. 5. Call your next level of support.

Table 194. Attachment System Reference Codes (SRCs) (continued)

SRC	Description	Action
Internal Print Driver		
A501	Invalid internal event	1. Run a trace. 2. Call your next level of support.
A502	Error opening or reading file	1. Run disk diagnostics 2. Run a trace. 3. Call your next level of support.
A503	Unexpected acknowledgment received	1. Run a trace. 2. Call your next level of support.
A504	Host recovery bit set	
A505	Invalid request from attachment subsystem application	
Attachment Subsystem Application		
AF00	Cannot open attachment driver	1. Check whether the attachment is valid for the type of printer. 2. Run diagnostics on attachment.
AF01	Cannot create a file	1. Power-On Reset or run RS/6000 controller diagnostics to check the disk. 2. Run a trace. 3. Call your next level of support.
AF02	Cannot open a file	
AF11	Attachment card not found since last shutdown	1. Ensure that the attachment card is installed. 2. If present, install a new attachment card. 3. If not present, install an attachment card as needed. @

MAP B000: Printer Detected Errors

MAP B000 Begins

DANGER

<12> During an electrical storm, do not handle channel cables, connectors, or power cords.

DANGER

<1-14> Switch off printer power and unplug the printer power cord before connecting or disconnecting a communication port, a teleport, or any other attachment connector.

SRCs B000 through BA02 are not displayed, but are logged. They record certain operator actions that may be important in identifying a microcode problem.

Find the SRC in Table 195 on page 1011 and perform the action indicated.

Table 195. Printer System Reference Codes (SRCs)

SRC	Description	Action
B000	Printer has been powered on or controller has been restarted.	No action required (not a hardware failure). This SRC is logged for information only.
B001	Communication link to a host (attachment) has been enabled.	
B002	Communication link to a host (attachment) has been disabled or reset by the host.	
B003	Printer attributes have been changed.	
B004	MICR (magnetic ink character reader) postprocessor has been enabled.	
B005	MICR postprocessor has been disabled.	
B006	Burster-trimmer-stacker state has changed (postprocessor enabled or disabled).	
B007	Medium modifier has been enabled or disabled by the postprocessor.	
B008	Stacker has been enabled or disabled.	
B009	Print position adjustment has been changed. Pages not yet committed will be discarded and the job will be resent by the host.	
B00A	Job has been canceled. Pages not yet committed will be discarded and the job will be canceled by the host.	
B00C	Printer has been made Not Ready.	
B00D	Operator has overridden jam recovery.	

Table 195. Printer System Reference Codes (SRCs) (continued)

SRC	Description	Action
B00E	Jam recovery has been suppressed. This is typically due to a “direct attached” application or for printing a sensitive job such as checks with MICR printing.	No action required (not a hardware failure). This SRC is logged for information only. Job repositioning must be done by the operator.
B010	Attachment has been suspended. This is done prior to running diagnostics or internal print.	No action required (not a hardware failure). This SRC is logged for information only.
B011	Attachment has been released from suspension. This is done prior to running diagnostics or internal print.	
B012	Paper path has been rethreaded. Pages not yet to the jam recovery point will be discarded and reprinted by the host.	
BA00	Hard program check, type 1.	No action required (not a hardware failure). This SRC is logged for information only. If the customer is having problems with hard program checks, call your next level support and report the sense data from the log.
BA01	Hard program check, type 2.	
BA02	Hard program check, type 3.	
BC01	Invalid paper size.	1. Ensure that the configuration form size is valid. 2. Shut down the system and power off. 3. Power on and retry. 4. Call your next level of support if the problem continues.
BC02	Invalid print head resolution.	1. Shut down the system and power off. 2. Power on and retry. 3. Call your next level of support if the problem continues.
BC03	Invalid forms source.	
BC04	Invalid maximum forms size.	

Table 195. Printer System Reference Codes (SRCs) (continued)

SRC	Description	Action
BC05	Memory size has changed.	The detected memory size does not match the configuration memory size. Each time you enter the **Service Action** screen, the configuration memory size is updated to match the current detected memory value. 1. Select the **Service Action** screen, log on, and observe the displayed memory size. 2. Compare the displayed memory value with the actual memory that is installed in the controller. 3. If the displayed memory value is correct, clear the error by pressing **Check/Reset** while logged into Service Mode. 4. If the displayed memory value does not match the actual value, go to MAP 2000: Controller Start MAP to diagnose the controller problem.
BF01	File read error (hard disk).	1. Perform the RS/6000 controller problem determination procedure in MAP 2000: Controller Start MAP.
BF02	File write error (hard disk).	
BF03	Hard disk backup to diskette failure.	

MAP C000: AFCCU Detected Errors

REFERENCES

- Removals & Adjustments - Control Unit

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Locations Link	Parts Link	Removals & Adjustments Link
Controller Planar	1466, 1470	2146, 2154	1536
Display Touch Screen	1457	2128	1519

MAP C000 Begins

DANGER

<12> During an electrical storm, do not handle channel cables, connectors, or power cords.

DANGER

<1-14> Switch off printer power and unplug the printer power cord before connecting or disconnecting a communication port, a teleport, or any other attachment connector.

Find the SRC in AFCCU Detected SRCs and perform the action indicated.

Table 196. AFCCU Detected System Reference Codes (SRCs)

SRC	Description	Action
C000	Display/Touch Screen error	Check for a number displayed on the front of the RS/6000 controller. • If a number is displayed, go to MAP 2000: Controller Start MAP to look for a problem with the RS/6000 controller. If there appears to be a problem with the serial port, disconnect the touch screen connector at the back of the RS/6000 controller and try the problem determination procedure again. **Notes:** 1. Ensure that the Display/Touch Screen is plugged into serial port **2**. – If a serial port problem is indicated again, install a new planar board in the RS/6000 controller. – If no error is indicated, reconnect the touch panel connector and try again. If the problem occurs again, install a new Display/Touch Screen . • If no number is displayed on the controller, contact your technical support before you install a new Display/Touch Screen . @
C001	Operator panel error	There is no operator panel. This SRC appeared because of a microcode problem. Contact your next level of support.
C002	Microcode update diskette error	An error was detected after the initial diskette check was successful. 1. Power-On Reset the machine. 2. Perform the microcode update procedure again. (1547) 3. If the problem continues, call your next level of support.

Table 196. AFCCU Detected System Reference Codes (SRCs) (continued)

SRC	Description	Action
C003	Microcode update failed	An error was detected when moving files to storage (after diskettes were successfully read). Check for a number displayed on the front of the RS/6000 controller. • If a number is displayed, go to MAP 2000: Controller Start MAP to look for a problem with the RS/6000 controller. • If no number is displayed on the controller, do the following: 1. Power-On Reset the machine. 2. If the error occurs again, perform the microcode update procedure again. (1547) 3. If the problem continues, call your next level of support.
C004	Microcode update failed	
C005	X Window event	No action is required (not a failure). This SRC is logged for information only.

MAP D000: Mechanism Interface Card (MIC) Detected Errors

REFERENCES

- Removals & Adjustments - Control Unit

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Locations Link	Parts Link	Removals & Adjustments Link
Mechanism Interface Card	1460	2130	1522
MIC Memory	1460	2130	1524
Host Application Problem	- -	- -	- -
Forms Size Mismatch	- -	- -	- -
Electrical Noise	- -	- -	- -
Side 1/Side 2 Sensor Card	2309	2038	2309
Side 1/Side 2 Control Card	2316	2136	1535
Tractor Timing	- -	- -	1907, 1927

MAP D000 Begins

DANGER

<12> During an electrical storm, do not handle channel cables, connectors, or power cords.

DANGER

<1-14> Switch off printer power and unplug the printer power cord before connecting or disconnecting a communication port, a teleport, or any other attachment connector.

Find the SRC in MIC Detected SRCs and perform the action indicated.

Table 197. MIC Detected System Reference Codes (SRCs)

SRC	Description	Action
D080	Mechanism Interface Card (MIC) abort	1. Observe the MIC LED display. Record the numbers displayed between the **(-)** displays. 2. Perform the Mechanism Interface Card (MIC) Isolation Wrap Test. • If an error occurs, install a new MIC. • If no error occurs, reconnect the MIC. Call your next level of support if the error is displayed again. You will be asked for the numbers you recorded from the LED display. @
D081	MIC permanent error	
D082	MIC error during internal diagnostic tests	1. Observe the MIC LED display. Record the numbers displayed between the **(-)** displays. 2. Ensure that PJJ5 and PJJ10 on the PQE card are connected properly. 3. Perform the Mechanism Interface Card (MIC) Isolation Wrap Test. • If an error occurs, install a new MIC. • If no error occurs, reconnect the MIC. Call your next level of support if the D082 error is displayed again. You will be asked for the numbers you recorded from the LED display. @

Table 197. MIC Detected System Reference Codes (SRCs) (continued)

SRC	Description	Action
D083	MIC failure during initial power on EPROM diagnostics	1. Observe the MIC LED display. Record the numbers displayed between the **(-)** displays. 2. Perform the Mechanism Interface Card (MIC) Isolation Wrap Test. • If an error occurs, install a new MIC. • If no error occurs, reconnect the MIC. Call your next level of support if the D083 error is displayed again. You will be asked for the numbers you recorded from the LED display. @
D084	MIC microcode error	The MIC is powered by the printer to which it is attached. To reset the MIC, power the printer off, and then on again. Call your next level of support if the problem occurs again.
D090	MIC failure during attention light test	Go to MAP 0321: Operator Alert Light Problem.
D091	MIC failure during printer ACTIVATE test	Go to MAP 0600: Printer Interface MAP.
D092	MIC failure during printer interface test	
D093	MIC failure during alarm test	Go to MAP 0322: Operator Alert Alarm Problem.
D095	MIC failure during intelligent interface wrap test	Go to MAP 0820: Intelligent Pre/Processing Interfaces.
D096	MIC failure during coupled interface wrap test	Go to MAP 0810: Coupled Pre/Processing Interfaces.
D097	MIC failure during pre/post run motor test	
D098	MIC failure during pre/post offset test	
D099	MIC failure during printer DORMANT test	Go to MAP 0600: Printer Interface MAP.

Table 197. MIC Detected System Reference Codes (SRCs) (continued)

SRC	Description	Action
D201	Fuser warming timeout	No action required. This SRC is only an event marker for the error log to assist in microcode problems.
D202	Pre/post PAUSE active for more than 100 seconds	
D203	Pre/post STOP line became active	No action required. This SRC is only an event marker for the error log to assist in microcode problems. If this signal should not be active, go to MAP 0800: Pre/Postprocessing Interface Start MAP.
D204	Pre/post NOT READY line became active	
D205	PAGE COMPLETE timeout	No action required. This SRC is only an event marker for the error log to assist in microcode problems.
D206	START selected before forms threaded/aligned	

Table 197. MIC Detected System Reference Codes (SRCs) (continued)

SRC	Description	Action
D208	Communication with the MIC has failed.	If this problem is intermittent, it is likely a noise problem. Ensure that the SSA cables are not coiled or routed near an ac power source. Perform a shutdown and power off of the printer system. Wait 2 minutes before you power the printer system back on. The printer may have been powered off and then powered back on with less than a 2 minute delay. The user must wait at least 2 minutes before powering a printer back on to avoid this error. This problem may be caused by a power control failure, a MIC or SSA failure, or a microcode problem. Do the following, one at a time, until the problem is corrected: 1. If the printer was powered off, but the control unit was not, you must perform a **Restart** after the printer is powered back on. 2. Ensure the SSA card is installed in the correct slot of the controller: • If this is a Type 7025 Model F50 controller, the SSA card is in slot 1. • If this is a Type 7043 Model 43P-140, the SSA card is in slot 3. 3. Check and reseat both ends of the SSA cables. 4. Check the jumper position on the Mechanism Interface Card (MIC). (continued on next page)

Table 197. MIC Detected System Reference Codes (SRCs) (continued)

SRC	Description	Action
D208, (Cont)	Communication with the MIC has failed.	5. Check all the connectors on the Mechanism Interface Card (MIC) for bent or broken pins. 6. Check for continuity between connectors PJH02 and PJMJ10. 7. If the printer appears to have a power problem, go to MAP 0500: Power Control – Simplex Printing System or MAP 0501: Power Control – Duplex Printing System. 8. If the printer powers up correctly, perform the MIC isolation wrap test. • If an error occurs, install a new MIC. • If no error occurs, there may be a problem with one of the following: a. Connector PJ510 b. SSA cable (damaged connector pins, loose connection or not plugged in straight, terminator missing) c. The differential SSA adapter in the microchannel slots in the RS/6000 controller. 9. Call your next level of support. @
D20A	Pre/postprocessor BUSY signal was active more than the amount of time defined in the pre/postprocessor configuration value.	If this signal should not be active, go to MAP 0800: Pre/Postprocessing Interface Start MAP. Otherwise, no action required. This SRC is only an event marker for the error log to assist in microcode problems.
D20B	Incorrect printer speed	Do the following, one step at a time, until the problem is corrected. 1. Check and reseat the following connectors: • PJ205 on the printer/control unit interface • PP5 in the control unit

Table 197. MIC Detected System Reference Codes (SRCs) (continued)

SRC	Description	Action
D20C	Forms length mismatch	Do the following, one step at a time, until the problem is corrected: 1. Ensure that the form size (in the Defining Forms procedure of the Operator's Guide) matches the form that is installed, and the form length set at the stacker. 2. Go to MAP 0176: Stacker Forms Length Sensor. If you do not find the problem using MAP 0176, continue with the following step. 3. Call your next level of support if the lengths in the form size setting, the form, and the stacker length are the same and no hardware problem was found.
D20D	Forms width mismatch	1. Ensure that the form size (in the Defining Forms procedure of the Operator's Guide) matches the form that is installed. 2. Go to MAP 0117: Forms Width Sensor. If you do not find the problem using MAP 0117, continue with the following step. 3. Call your next level of support if the widths in the form size and the form are the same and no hardware problem was found.
D20E	Pre/postprocessor power is off	Do the following: • Check the pre/postprocessor for errors. • Change the pre/postprocessor device busy timer configuration value if necessary. (Refer to the Operator's Guide.) • If the error still occurs, call your next level of support.
D20F	Undefined character received by intelligent interface Error messages may be printed at the end of the job.	This error is usually a host application problem. If the application owner and system programmer cannot identify an application problem, go to MAP 0820: Intelligent Pre/Processing Interfaces.
D210	Illegal position received by intelligent interface Error messages may be printed at the end of the job.	Do the following: 1. Ensure that the form size required by the application is loaded in the printer and postprocessor. 2. This error is usually a host application problem. If the application owner and system programmer cannot identify an application problem, go to MAP 0820: Intelligent Pre/Processing Interfaces.

Table 197. MIC Detected System Reference Codes (SRCs) (continued)

SRC	Description	Action
D211	Illegal medium modification received by intelligent interface Error messages may be printed at the end of the job.	Intelligent postprocessor devices support a set of medium modifications. The application sent a medium modification ID in the Select Medium Modification (SMM) command that is not supported by this device. If the application owner and system programmer cannot identify an application problem, go to MAP 0820: Intelligent Pre/Processing Interfaces.
D212	MICR data received while MICR option disabled	Do the following: 1. Ensure that the postprocessor is fully enabled. Some postprocessors will feed paper, but the MICR application can be disabled through a key, switch, or other means. (See the operator manual for the postprocessor.) 2. Ensure that the postprocessor is configured correctly and enabled. See “Configuring Pre/Postprocessing Devices/Interfaces” in the Operator’s Guide. 3. Go to MAP 0820: Intelligent Pre/Processing Interfaces.
D213	Availability of intelligent postprocessor has changed	The availability of medium modifications on the intelligent postprocessor has changed. (For example, perforations and separation cuts.) Do the following: 1. Check the pre/postprocessor for errors. 2. If the error still occurs, call your next level of support.
D214	Intelligent postprocessor forms jam.	Do the following: • Clear all jams and ensure that the forms match the current forms setting in the postprocessor. • If the error still occurs, go to MAP 0820: Intelligent Pre/Processing Interfaces.

Table 197. MIC Detected System Reference Codes (SRCs) (continued)

SRC	Description	Action
D215	MIC to intelligent interface communications failure	Do the following: 1. Ensure that the postprocessor is powered on, online, and ready. 2. If a Troy postprocessor is being used, ensure that its “Distance to Postprocessor” value in the Pre/Postprocessing Configuration is set to 99 inches or less. Any value greater than 99 is not valid for a Troy postprocessor. 3. Go to MAP 0820: Intelligent Pre/Processing Interfaces.
D216	Intelligent interface response timeout	Go to MAP 0820: Intelligent Pre/Processing Interfaces.
D217	Command rejected by intelligent interface	
D218	Intelligent interface responded, but is not in configuration	Do the following: 1. Ensure that the intelligent interface is configured correctly. 2. If you find no problem, go to MAP 0820: Intelligent Pre/Processing Interfaces.
D219	Intelligent interface type not recognized	If this type of intelligent interface is supported by the Infoprint 3000, go to MAP 0820: Intelligent Pre/Processing Interfaces. If the device is not supported, it must be disconnected and disabled before the printer will operate.
D21A	Intelligent postprocessor restarted	No action required (not a hardware failure). This SRC is displayed and logged for information only.
D21B	Intelligent postprocessor failed to clear buffer	Go to MAP 0820: Intelligent Pre/Processing Interfaces.
D21C	PAGE COMPLETE not sent by intelligent interface	
D21E	Side 2 verify has stopped checking pages.	A critical software check has been activated. Call your next level of support.

Table 197. MIC Detected System Reference Codes (SRCs) (continued)

SRC	Description	Action
D702	Out of data while printing	Go to MAP 0600: Printer Interface MAP.
D703	Printer unable to do requested command	
D705	Printhead overrun while printing	
D706	Beam detect not received	Go to MAP D706: Beam Detect Missing.
D707	Loss of printer DVS (vertical sync) pulse	Go to MAP 0600: Printer Interface MAP.
D70B	Printhead underrun	Go to MAP D70B: Printhead Under Run.
D70C	Print buffers out of sequence	Reseat the memory cards on the MIC. • If an error still occurs, do the following: – Install new MIC memory cards, one at a time. – If the error still occurs, perform the Mechanism Interface Card (MIC) Isolation Wrap Test. – If the error still occurs, install a new MIC. – If no error occurs, reset the controller. – If D70C occurs again, call your next level of support. • If no error occurs, reset the controller. @
D70D	DVS (vertical sync) pulse frequency is incorrect. • Low laser power • Noise on the printer interface cable	Go to MAP D706: Beam Detect Missing. If laser power is adequate, go to MAP 0600: Printer Interface MAP.
D70E	MIC parity error	There may be noise on the printer interface cable. Go to MAP 0600: Printer Interface MAP.
D70F	MIC print quality enhancement (PQE) error	Go to MAP D70B: Printhead Under Run.

Table 197. MIC Detected System Reference Codes (SRCs) (continued)

SRC	Description	Action
D714	MIC timer 2 failed	Restart the system from the operator menu. If the problem continues, install a new MIC. @
D715	Parity error between MIC and PQE card	Restart the system from the operator menu. One cause of this failure is electrical noise. Check the following: 1. Coronas 2. Corona high voltage cables 3. High Voltage Power Supply 4. Developer bias cable 5. Arcing of the developer bias to ground in or on the developer. 6. Static discharge If you have eliminated all sources of electrical noise and the problem still occurs, install new parts, one at a time, until the problem is fixed: 1. MIC Memory Cards (75%) 2. Mechanism Interface Card (MIC) (25%) @
D716	PQE card failed to initialize	Restart the system from the operator menu. If the problem continues, go to MAP D706: Beam Detect Missing and MAP D70B: Printhead Under Run.
D717	Early ACK received from intelligent interface	Go to MAP 0820: Intelligent Pre/Processing Interfaces.
D718	MIC failed to send frame to intelligent interface	
D719	Response timeout on intelligent interface	Record the sense information for this error from the error log. Go to MAP 0820: Intelligent Pre/Processing Interfaces.

Table 197. MIC Detected System Reference Codes (SRCs) (continued)

SRC	Description	Action
D71A	Noise detected on pre/post port 1	Go to MAP 0800: Pre/Postprocessing Interface Start MAP.
D71B	Noise detected on pre/post port 2	
D71C	Noise detected on pre/post port 3	
D71D	6 PPI sync pulse from printer is missing	
D71E	Scan line error while printing	The error could be caused by one of the beams not being detected at the BD card. Perform the following: 1. STEP 4: Beam Power Check 2. STEP 5: Beam Detect Mirror Check Another likely cause of this failure on all printers is electrical noise. Check the following: 1. Coronas 2. Corona high voltage cables 3. High Voltage Power Supply 4. Developer bias cable 5. Arcing of the developer bias to ground in or on the developer 6. Static discharge If you have eliminated all sources of electrical noise and the problem still occurs, replace the Mechanism Interface Card (MIC).
D71F	Side 1/side 2 mismatch	Side 1 and side 2 of the forms are misaligned by at least one full page. 1. Perform the thread/align forms procedure. 2. Verify the print quality of the verification marks. Check for light or smeared print. Fix any print quality problems. 3. Do the following, one at a time, until the problem is fixed. a. Clean the Side 1/Side 2 Verification Sensor. b. Install a new Side 1/Side 2 Verification Sensor Card. c. Install a new Mechanism Interface Card (MIC). @

Table 197. MIC Detected System Reference Codes (SRCs) (continued)

SRC	Description	Action
D720	Verification mark position incorrect	Do the following, one at a time, until the problem is fixed: 1. Examine the forms being used. Pre-printed marks within the carrier strip will cause this error. Also, some colored forms may cause the error. The duplex verification feature can be disabled so that these types of forms can be used in the printer. See “Configure Pre/Post Devices/Interfaces” in the Operator’s Guide. 2. Perform the Side 1/Side 2 Diagnostics. 3. Verify the print quality of the verification marks. Check for light or smeared print. Fix any print quality problems. 4. Check the forms alignment on Printer 1 and Printer 2. The perforation must be aligned correctly. See “Checking Forms Alignment” in the Operator’s Guide. 5. Perform the Upper and Lower tractor timing adjustments. @

Table 197. MIC Detected System Reference Codes (SRCs) (continued)

SRC	Description	Action
D721	Hardware Error: verification sensor error	• If the Side 1/Side 2 Verification function is not installed in the printer, ensure that **Enabled** is set to **No** for the **Side2Verify** selection of the **Configure Pre/Postprocessors** window. If D721 occurs again, call your next level of support. • If the Side 1/Side 2 Verification function is installed, perform the following: – If the error occurs before any pages are printed, do the following, one at a time, until the problem is fixed. 1. Install a new Side 1/Side 2 Verification Sensor Card. 2. Install a new Side 1/Side 2 Verification Control Card. 3. Inspect all Side 1/Side 2 Verification Cables for damage. Repair if necessary. 4. Install a new Mechanism Interface Card (MIC). – If the error occurs after at least five pages are printed, do the following, one at a time, until the problem is fixed: 1. Clean the Side 1/Side 2 Verification Sensor. 2. Check the print contrast setting. 3. Check for light, smeared, or missing verification marks. 4. Check the forms alignment on printer 1 and printer 2. The perforation must be aligned correctly. See “Checking Forms Alignment” in the Operator’s Guide. 5. Perform the Side 1/Side 2 Diagnostics. 6. Perform the upper and lower tractor timing adjustments. @

Table 197. MIC Detected System Reference Codes (SRCs) (continued)

SRC	Description	Action
D723	MIC memory error	Reseat the memory cards on the MIC. If the error still occurs, install new MIC memory cards, one at a time, until the problem is fixed. @
D724	Side 2 Verify has been disabled.	No action is required (not a hardware error). The error is posted if working Side 2 Verify hardware is detected, but has not been enabled by the operator. To prevent the error, ensure that **Enabled** is set to **Yes** for the **Side2Verify** selection of the **Configure Pre/Postprocessors** window. If Side 1/Side 2 verification hardware is not installed in the printer, install a new Mechanism Interface Card (MIC).
D725	Side 2 Verify diagnostic mode running	No action required (not a hardware error). The SRC is logged when side 2 verify has been disabled to run CE diagnostics.
D726	Side 2 Verify diagnostic mode stopped	

MAP D706: Beam Detect Missing

Symptom Explanation	Conditions That Could Cause This Symptom
The Mechanism Interface Card (MIC) has not detected the start-of-scan signal from the Beam Detect Card (BD171).	• The laser beam power is low. • The laser beam is misaligned at the Beam Detect Sensor. • There is a failure in the control unit or in the connections to the printhead.

REFERENCES

- Removals & Adjustments - Printhead
- Wiring Diagrams - WD27 - Laser Driver
- Wiring Diagrams - WD28 - Beam Detect

FIX VERIFICATION

- Print the Print Log (including Print Pack). An error is indicated by SRC D706.

QUICK CHECKS

If the printer is newly installed and has never printed:

- Ensure that the coaxial cables to the PQE Card are correctly connected (firmly seated and not reversed) at both ends.
- One or more of the mirrors may have moved in shipment. Adjust only Mirror 1, Mirror 2, or the Beam Detect Mirror if it is necessary to change the beam position. You will be guided by this MAP.

If the problem occurs after the printhead or printer was serviced:

- Ensure that the coaxial cables to the PQE Card are correctly connected (firmly seated and not reversed) at both ends.
- Ensure that the coaxial cables between the printhead and the Printer Interface Card (IF491) are correctly connected (firmly seated and not reversed) at both ends.
- Ensure that the printhead cover is in place, and that the Printhead Interlock Switch operating tab on the inside of the inner printhead cover was inserted into the Printhead Interlock Switch slot.

If the problem is intermittent:

The resolution switching lens may be vibrating out of position during printing. Do the following:

- Move the lens up and down several times using Driver Routine 3F. Ensure that the beam is centered correctly on the beam detect card each time. (See Table 522.)
- If the resolution lens arm is loose, tighten the mounting screws for the resolution lens arm and perform the Resolution Lens Sensor Adjustment Procedure.

SERVICE CHECKS

- Run Adjustment Routine C0.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Laser Driver Card (LD272)		1454	2012	1781
Beam Detect Mirror adjustment		1454	- -	1812
Beam Detect Card (BD171)		1454	2016	1796
Miscellaneous		- -	- -	- -
Printer Coax BD Cable		1456	2168	- -
PQE Card		1461	2130	1532
PR011 Card		1446	2118	1764
DV061 Card		1453	2114	1764
PC561 Card		1453	2116	1764
Printhead Interlock Switch		1454	2018	1779
Mechanism Interface Card (MIC)		1460	2124	1522

MAP D706 BEGINS

Table 198. MAP D706

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.**		

Table 198. MAP D706 (continued)

Step	Questions/Actions	Yes	No
Step 1.	**Important** Follow the correct shutdown and power-off procedures for the Infoprint 3000 and any attached devices. You must power-off the control unit after a SRC D706. This is to ensure that the control unit will no longer be driving the laser after the error. In other words, the laser beam may be "locked on" until you power-off the control unit. The laser beam will be off, as normal, when you power-on again. • SHUTDOWN AND POWER OFF THE PRINTER. • Remove the Printhead covers. • Cover the Return Mirror with paper to protect the PC Drum. • Place the Diagnostic Function Switch in position **3**. • Power on the printer. • Ensure that the Printhead Cover Interlock switch is working. • Run Adjustment Routine C0. • Press **ENTER** as necessary to turn on the Mirror Motor (M501). • Check for the scan line on the Return Mirror. **Tip** If the printer has recently been installed or moved, the problem is probably caused by movement of Mirror 1, Mirror 2, or the Beam Detect Mirror. One or all of these parts may have moved. This MAP will fix a printhead with multiple problems. Continue at Step 2.		
Step 2.	**Is there any beam present at the Beam Detect Card?**	Go to Step 3.	Go to Step 7.

Table 198. MAP D706 (continued)

Step	Questions/Actions	Yes	No
Step 3.	• Do the following check at both printhead resolutions (resolution switching lens in the beam path and out of the beam path). **Is the beam centered on the white line of the sensor cover on the Beam Detect Card sensor?**	Go to Step 6.	Go to Step 4.
Step 4.	**Is the beam displaced in the vertical direction only?**	Go to Step 5.	Go to Step 12.

Table 198. MAP D706 (continued)

Step	Questions/Actions	Yes	No
Step 5.	• Perform the adjustment procedure under STEP 5: Beam Detect Mirror Check until the beam is centered on the sensor. • Run Test prints. **Do you still have a D706 SRC?**	Go to Step 6.	Although it is possible that only the Beam Detect Mirror adjustment was incorrect, another part, such as Mirror 1 or Mirror 2, may be out of adjustment. • Perform STEP 4: Beam Power Check. If you find any problems, you may have to preform the entire printhead adjustment sequence, beginning with STEP 1: Fiber Module Alignment Check. **Important** If the printer was newly installed or moved and has never printed, Mirror 1 may have moved. Adjust only Mirror 1.

Table 198. MAP D706 (continued)

Step	Questions/Actions	Yes	No
Step 6.	• Perform STEP 4: Beam Power Check. **Is the beam power correct?**	Do the following, one at a time, until the problem is corrected: • Perform STEP 5: Beam Detect Mirror Check. • Check for continuity in the following wires. If you find an open, repair the open circuit. – PJ510-1 and PJ502-7 – PJ510-2 and PJ502-8 – PJ510-3 and PJ502-9 – PJ510-4 and PJ502-10 – PJ510-5 and PJ502-19 – PJ510-6 and PJ502-20 – PJ510-7 and PJ502-17 – PJ510-8 and PJ502-18 – PJ510-9 and PJ502-15 – PJ510-10 and PJ502-16 – PJ516-31 and PJ101-31 – PJ516-32 and PJ101-32 – PJ516-33 and PJ101-33 – PJ516-34 and PJ101-34 – BD and VD coax cables. • Install a new Beam Detect Card (BD171). • Install a new PQE Card. • Install a new PR011 Card. @	Go to Step 12.

Table 198. MAP D706 (continued)

Step	Questions/Actions	Yes	No
Step 7.	Do the following: • Insert a piece of white paper in the beam path between the Fiber Module and Mirror M1. • Look for the beam on the paper. • Remove the paper. **Could you see the laser beam on the paper?**	Go to Step 12.	Go to Step 8.
Step 8.	There is no laser beam. Do the following: • SHUTDOWN AND POWER OFF THE PRINTER. • Ensure that the foam next to the fiber module is not blocking the beam. • Go to STEP 1: Fiber Module Alignment Check. • Turn on each beam individually using routines C8, C9, CA, Cb, and Cd. **Could each beam be seen at Mirror M1?**	Go to Step 13.	Go to Step 9.
Step 9.	• Measure the voltage between PJ511-1 and PJ511-2. **Is the voltage +12 V dc?**	Go to Step 10.	Do the following, one at a time, until the problem is corrected: • Repair an open circuit between: – PJ511-1 and PJ107-1 – PJ511-2 and PJ107-2 – PJ105-8 and PJ313-5 – PJ105-9 and PJ313-6 • Install a new PR011 Card. • Install a new DV061 Card. @

Table 198. MAP D706 (continued)

Step	Questions/Actions	Yes	No
Step 10.	• Measure the voltage between PJ511-3 and PJ511-4. **Is the voltage -12 V dc?**	Go to Step 11.	Do the following, one at a time, until the problem is corrected: • Repair an open circuit between: – PJ511-3 and PJ107-3 – PJ511-4 and PJ107-4 – PJ105-10 and PJ313-7 • Install a new PR011 Card. • Install a new DV061 Card. @
Step 11.	• Measure the voltage between PJ511-5 and PJ511-6. **Is the voltage +12 V dc?**	Do the following, one at a time, until the problem is corrected: • Install a new LD272 Card and Fiber Module assembly. • Install a new PR011 Card. • Install a new PC561 Card. @	Do the following, one at a time, until the problem is corrected: • Repair an open circuit between: – PJ511-5 and PJ107-5 – PJ511-6 and PJ107-6 – PJ105-6 and PJ313-2 – PJ105-7 and PJ313-4 • Install a new PR011 Card. • Install a new DV061 Card. @

Table 198. MAP D706 (continued)

Step	Questions/Actions	Yes	No
Step 12.	**Tip** If you always seem to have a beam on (that is, you cannot turn all beams off), fully power off the printer using the correct shutdown procedures and power it back on again. This resets the control unit that may be driving the laser. Read the IMPORTANT information in the following statement. **Important:** If the printer was newly installed or moved and has never printed, Mirror 1 may have moved. Adjust only Mirror 1. • Perform STEP 1: Fiber Module Alignment Check. **Could you make the adjustments correctly?**	Go to Step 14.	Go to Step 13.

Table 198. MAP D706 (continued)

Step	Questions/Actions	Yes	No
Step 13.	Run Sensor Routine 9E and check the operation of the printhead interlock switch. **Does the printhead interlock switch operate correctly?**	• SHUTDOWN AND POWER OFF THE PRINTER. Do the following, one at a time, until the problem is corrected: • Install new parts as listed below, one at a time, until the problem is corrected: – PR011 Card – LD272 Card When you have made the repair, go to Step 14.	Do the following, one at a time, until the problem is corrected: • Repair an open circuit between PJ513 and PJ517. • Install a new printhead interlock switch. • Install a new PC561 Card. • Install a new PR011 Card. • Install a new LD272 Card. @
Step 14.	• Perform STEP 2: M1 Mirror Check and STEP 5: Beam Detect Mirror Check • Run Test prints. **Does the D706 still occur?**	Go to Step 15.	The adjustment procedure corrected the problem.
Step 15.	The tab on the inner printhead cover operates the safety switch when the cover is in place. **Is the tab in place on the inner printhead cover?**	Go to Step 16.	Repair the inner printhead cover as necessary.

Table 198. MAP D706 (continued)

Step	Questions/Actions	Yes	No
Step 16.	Do the following, one at a time, until the problem is corrected: • See STEP 5: Beam Detect Mirror Check. Ensure that all the checks (cables, alignment, etc.) have been made. • Install a new Beam Detect Card (BD171). • Install a new PR011 Card. • Install a new PC561 Card. @ (continued on next page)		

Table 198. MAP D706 (continued)

Step	Questions/Actions	Yes	No
Step 16, (cont'd)	• Check for continuity in the following wires. If an open is found, repair the open circuit. – PJ510-1 and PJ502-7 – PJ510-2 and PJ502-8 – PJ510-3 and PJ502-9 – PJ510-4 and PJ502-10 – PJ510-5 and PJ502-19 – PJ510-6 and PJ502-20 – PJ510-7 and PJ502-17 – PJ510-8 and PJ502-18 – PJ510-9 and PJ502-15 – PJ510-10 and PJ502-16 – PJ516-31 and PJ101-31 – PJ516-32 and PJ101-32 – PJ516-33 and PJ101-33 – PJ516-34 and PJ101-34 – BD and VD coax cables. • Install a new LD272 Card. • Run Test prints. @ **Does the D706 error still occur?**	Go to Step 18.	The problem is fixed.
Step 17.	• If this unit is a new installation or the control unit has been recently attached, check the following coaxial connectors at the printer interface plate: – PJ203 on the printer connector labeled DBD. **Are the connectors installed correctly?**	Go to Step 18.	Install the connectors correctly.

Table 198. MAP D706 (continued)

Step	Questions/Actions	Yes	No
Step 18.	• Run the MIC isolation wrap test. **Did the test fail?**	• Install a new Mechanism Interface Card (MIC). @	Do the following, one at a time, until the problem is corrected: • Repair an open circuit between one of the following pairs of connectors: – Connector pin P501-1 and PJ203-1 – Connector pin P203-1 and DB on the PQE Card • Repair a short circuit to ground in the wiring network described by the following end points: – PJ203-1 – PJ501-1 • Install a new Beam Detect Card (BD171). • Install a new PQE Card. • Install a new Mechanism Interface Card (MIC). @

MAP D70B: Printhead Under Run

Symptom Explanation	Conditions That Could Cause This Symptom
The Mechanism Interface Card (MIC) has not detected the start-of-scan signal from the Beam Detect Card for one of the beams, or the Printhead is not accepting Mechanism Interface Card (MIC) data at the proper rate.	• The Beam Detect Sensor does not have enough laser beam power on one of the beams. • The laser beam is misaligned at the Beam Detect Sensor. • There is a failure in the control unit or in the connections to the printhead. • The printhead resolution lens is in the beam path when the printer is printing 600 dpi.

REFERENCES

- Removals & Adjustments - Printhead
- Wiring Diagrams - WD27 - Laser Driver, WD28 - Beam Detect

FIX VERIFICATION

- Print the Print Pack (1070). An error is indicated by SRC D70B.

QUICK CHECKS

- Ensure that the PQE stroke width values are set correctly.

If the printer is newly installed and has never printed or if the problem occurs after the printhead or printer was serviced:

- Ensure that the coaxial cables to the PQE Card, Printer Interface Card (IF491), and LD272 Card are correctly connected (not reversed and firmly seated) at both ends.

SERVICE CHECKS

- Run Adjustment Routine C0 to ensure that all beams are on.
- Run Driver Routine 40 to check if a beam is not detected at the beam detect sensor.
  A beam detect error is indicated by one of the following:
  - E14F (Beam 5 missing)
  - E150 (Beam 1 missing)
  - E151 (Beam 2 missing)
  - E152 (Beam 3 missing)
  - E153 (Beam 4 missing)
- Use the MIC isolation wrap test to confirm that the Mechanism Interface Card (MIC) is good.

POSSIBLE FAILING PARTS OR ADJUSTMENTS

Item	Probability	Locations Link	Parts Link	Removals & Adjustments Link
Beam Detect Mirror adjustment	30%	1454	- -	1812
Printer Coax VD Cable	30%	1456	2168	- -
Laser Driver Card (LD272)	20%	1454	2012	1781
Mechanism Interface Card (MIC)	05%	1460	2130	1522
PQE Card	05%	1461	2130	1532
PR011 Card	04%	1446	2118	1764
Miscellaneous	03%	- -	- -	- -
Beam Detect Card (BD171)	02%	1454	2016	1796
CPxxx Card	01%	1453	2114	1760
Printer Interface Card (IF491)	%	1456	2118	1520

MAP D70B BEGINS

Table 199. MAP D70B

Step	Questions/Actions	Yes	No
	CAUTION: **<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.**		
	DANGER **<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.**		
Step 1.	• Perform the QUICK CHECKS. **Did a beam missing error occur when you ran Driver Routine 40?**	Go to Step 2.	Go to Step 5.

Table 199. MAP D70B (continued)

Step	Questions/Actions	Yes	No
Step 2.	**Important** Follow the shutdown and power-off procedures for the printer and attached devices. You must power-off the control unit after an SRC D70B. This is to ensure that the control unit will no longer be driving the LD272 Card after the error. In other words, the laser beam may be “locked on” until you power-off the control unit. The laser beam will be off, as is normal, when you power-on again. • SHUTDOWN AND POWER OFF THE PRINTER. • Remove the printhead covers. • Ensure that the printhead interlock switch is operating correctly. • Cover the Return Mirror with paper to protect the PC Drum. • Place the Diagnostic Function Switch in position **3**. (continued on next page)		

Table 199. MAP D70B (continued)

Step	Questions/Actions	Yes	No
Step 2, (cont'd)	• Power on the printer. • Perform STEP 1: Fiber Module Alignment Check and STEP 2: M1 Mirror Check. • Install the printhead cover. • Run Driver Routine 40. **Did a beam missing error occur?**	Go to Step 3.	The adjustments fixed the problem. • Perform steps 3 to 5 in Printhead Check and Adjustment.
Step 3.	• Perform STEP 4: Beam Power Check to ensure that each beam has the correct power at point "A". **Do all the beams have the correct power?**	Go to Step 4.	• Adjust the beam power. • If beam power is not acceptable, install a new LD272 Card. @
Step 4.	• Perform STEP 5: Beam Detect Mirror Check to ensure that the beam is aligned properly on the Beam Detect Card (BD171). **Was the adjustment correct?**	Go to Step 5.	• Correct the adjustment.

Table 199. MAP D70B (continued)

Step	Questions/Actions	Yes	No
Step 5.	Check the following connectors to ensure that they are properly connected: • PJ503 • PJ204 • VD1 at the PQE Card • PJ233 • PJ506 • VD2 at the PQE Card • PJ507 • PJ234 • VD3 at the PQE Card • PJ508 • PJ235 • VD4 at the PQE Card • PJ267 • PJ509 • VD5 at the PQE Card **Are all the connectors properly connected?**	Go to Step 6.	• Ensure that all connectors are properly connected.
Step 6.	Check the continuity between the following wires: • PJ503 to PJ204 • PJ204 to VD1 on the PQE Card • PJ506 to PJ233 • PJ233 to VD2 on the PQE Card • PJ507 to PJ234 • PJ234 to VD3 on the PQE Card • PJ235 to PJ254 • PJ508 to VD4 on the PQE Card • PJ267 to PJ265 • PJ509 to VD5 on the PQE Card **Do all the wires have continuity?**	Go to Step 7.	• Repair or replace the broken wires or cables as necessary.

Table 199. MAP D70B (continued)

Step	Questions/Actions	Yes	No
Step 7.	• Run the MIC isolation wrap test. **Did the test complete without an error?**	• SHUTDOWN AND POWER OFF THE PRINTER. Do the following, one step at a time, until the problem is corrected: • Check the following cables for proper contact at their connectors and for any damage: – Interface cable from PJ202 to PJJ6 on the Mechanism Interface Card – Cable PJ327 to PJ201 @ (continued on next page)	• Install a new Mechanism Interface Card (MIC). @

Table 199. MAP D70B (continued)

Step	Questions/Actions	Yes	No
Step 7, (cont'd)		• Install the following new parts: – Interface cable PJ202 to PJJ6 on the Mechanism Interface Card – Beam Detect Card (BD171) – PQE Card – LD272 Card – Printer Interface Card (IF491) – Cable PJ327 to PJ201 – Mechanism Interface Card (MIC) – PR011 Card – CPxxx Card	

Chapter 2. Diagnostics

Using the Display/Touch Screen 1059
  Display/Touch Screen Main Window 1060
  Printer Status Window 1062
Password 1063
Service Actions 1064
  Logs 1065
    Error Log 1066
    Summary Log 1067
    PM Log 1068
  Print 1069
    Print Log (including Print Pack) 1070
  Diagnostics - General 1072
  Attachment Diagnostics 1073
    Parallel Channel Tests 1074
    ESCON Channel Tests 1075
    Token Ring Tests 1076
    Ethernet Tests 1077
    FDDI Tests 1078
    Token Ring, Ethernet, and FDDI Attachment Test Results 1079
  Mechanism Diagnostics 1080
  Pre/Postprocessor Diagnostics 1083
  Pre/Postprocessing Interface Test Card 1087
    Checking signals 1089
    Checking voltages 1092
  Print Quality Enhancement 1093
  Disk Operations 1094
Traces 1096
  Configuring the Internal Control Unit Trace 1098

© Copyright IBM Corp. 1999, 2000

Print Samples 1100
Print Sample Terms 1101
Primary Print Sample 1102
Bar Code Sample 1103
Alternate Print Sample 1104
Printer Diagnostics 1107
Diagnostic Function Switch Positions 1110
Normal Print (Position 0) 1111
Read From or Write to Memory (Position 2) 1112
Preparing to Read From or Write to Memory 1112
Reading from Memory 1113
Writing to Memory 1114
Memory Addresses and Values 1116
Read From or Write to Toner Control Program Memory (Position 2) 1118
Exerciser Routines (Position 3) 1119
Selecting Run Options 1120
Driver Routines 1125
Driver Routine Descriptions 1129
Sensor Routines 1148
Sensor Routine Descriptions 1152
Adjustment Routines 1176
Adjustment Routine Descriptions 1178
Read Memory Address String (Position 5) 1189
Write Memory Address (Position 5) 1190
Modify Steering Servo (Position 5) 1191
Modify Backup Roll Lift Motor Open/Close Timing (Position 5) 1193
Backup Roll Lift Motor Timing Adjustment Procedure for Bloom Improvement 1194
Clear Memory (Position 8) 1195
Optical Sensor Margin Tests (Position 9) 1196
Side 1/Side 2 Diagnostics 1197
MIC Side 2 Verification Test 1197

MIC Side 2 Sensor Test . . . 1199
RS/6000 Controller Diagnositcs . . . 1200
Automatic Tests . . . 1200
Mechanism Interface Card (MIC) Isolation Wrap Test . . . 1204
Host Error Reporting . . . 1207
EREP Summary Report . . . 1208
EREP Detail Report . . . 1209
Interpretation of EREP Sense Bytes . . . 1211
Format 0 . . . 1212
Format 1 . . . 1213
Format 2 . . . 1214
Format 3 . . . 1215
Format 4 . . . 1217
Format 5 . . . 1218
Sense Byte 0 . . . 1220
Sense Byte 1 . . . 1220
Sense Byte 2 - Action Code . . . 1221
Sense Byte 3 . . . 1223
E0XX Codes and SRC Cross-References . . . 1224
E1XX Error Codes to MAP Cross Reference . . . 1230
Hexadecimal-to-Decimal Conversion . . . 1234

Using the Display/Touch Screen

The Display/Touch Screen provides a touch sensitive screen that allows you to interact with the printer. You select functions from the menus. These functions enable you to:

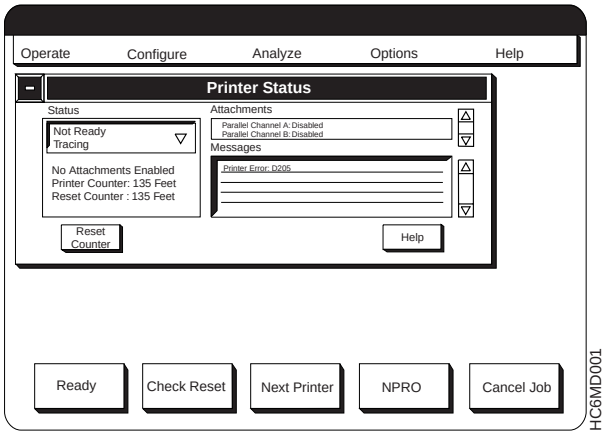
- Display and record problem conditions during normal operation
- Configure the printer, attachments and pre/post processing interfaces.
- Run tests to recreate problems and isolate failures.
- You also can review and print logs, print print-quality samples, run traces, and back up and restore memory.

Table 200. Menu Functions

Operate	Configure	Analyze	Options	Help
• Ready • Stop • Printer Status • Cancel Job • Clear Buffers • Thread/Align Forms • NPRO • NPRO Page • Shutdown/Restart	• Define Forms • Configure Printer • Configure Attachments • Configure Pre/Post • Adjust Print	• Service Actions • Traces • Print Samples	• Assign Form to Load • Enable/Disable Attachments • Password • Change Language • Clean Screen • Calibrate Touch Screen • Front Face • Special Features	• General Help

Display/Touch Screen Main Window

Table 201. Display/Touch Screen Main Window



The menu bar at the top of the Display/Touch Screen main window provides access to the following functions: **Operate, Configure, Analyze, Options,** and **Help**.

Pushbuttons at the bottom of the Display/Touch Screen main window are:

- **Ready/Stop**

  Acts as a toggle between Ready and Stop, depending on the current state of the printer.

  Ready - Lets you put the printer in Ready status if there is no problem, and start printing if a job is waiting.

  Stop - Finishes the page that is currently printing and then lets you stop the printer (Not Ready status).
- **Check Reset**

  Informs the system that an error has been corrected and the printer can return to a Ready status. This pushbutton is not active when the printer is in Ready mode.
- **Next Printer**

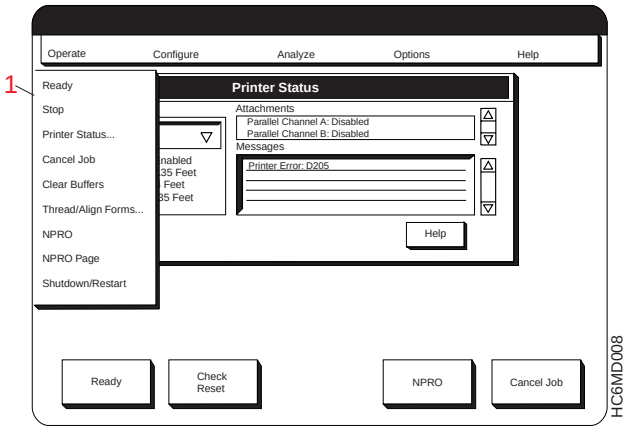
  Switches from one simplex printer window to the other simplex printer window (shown only on duplex systems when the system is in dual-simplex mode).
- **NPRO** (nonprocess runout)

  Lets you move forms through the printer without printing them.
- **Cancel Job**

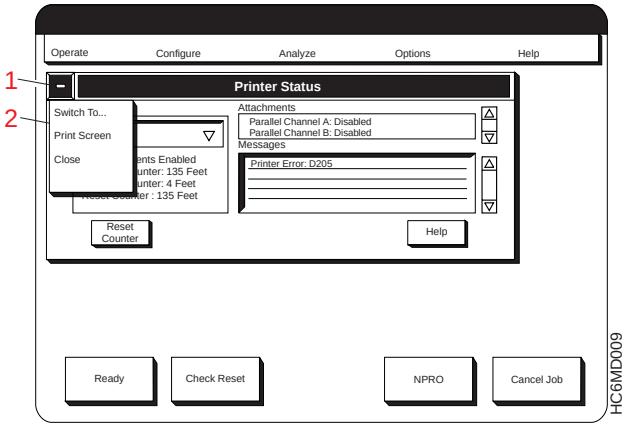
  Lets you stop a print job. The print data is deleted.

(continued on next page)

Table 201. Display/Touch Screen Main Window (continued)



This figure shows the Operate, pull-down menu and the Printer Status, procedure window.



- **Pull-Down Menus**

  A pull-down menu **(1)** appears when you select a choice from the Main Window Menu Bar. The menu contains a list of functionally-grouped procedures.
- **Procedure Windows**

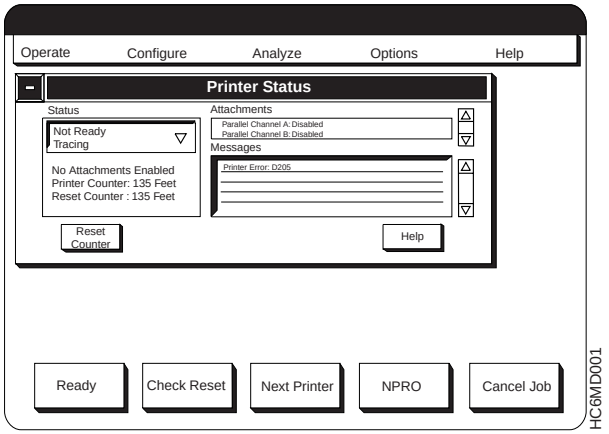
  A procedure window appears when you select a procedure from the pull-down menu. The procedure window provides you with all the lists, options, and pushbuttons you need to accomplish the procedure you have selected.

The system menu symbol **(1)** is at the left side of the title bar on procedure windows. When you select the symbol, a pull-down menu **(2)** appears directly under the symbol. There are three actions on the pull-down menu from which you can choose:

- **Switch To** Displays a pop-up window that lists all the procedures that are currently open. Select any procedure name from the list moves the window for the procedure to the front.
- **Print Screen** lets you print the current screen (if all host attachments are disabled)
- **Close** lets you close the current procedure window.

Printer Status Window

Table 202. Printer Status Window



The **Printer Status** window provides the following information as a result of the automatic checks:

- **Status**
  - Printer: Ready, Not Ready, or specific activity
  - Attachments: Enabled or Disabled
  - Print Counter: Total print count
  - Reset Counter: Print count for a specific time

    To set the reset counter to zero, select the **Reset Counter** button.
  - Pre/Postprocessors: Enabled or Disabled.
- **Attachments**

  A list of the installed host attachments in the system configuration and their enabled/disabled status
- **Messages**

  Information requiring intervention on the printer.

  To retrieve deferred **Intervention Required, Printer Error**, or **Out of Supplies** messages window with more information, select the message in the list in the **Messages** box.

Password

The procedures and information available on the Display/Touch Screen depend on the user's level of authorization. A procedure is grayed out if it is not authorized for the current user.

No password is required for access to operator procedures, but Key Operator and Customer Engineer (CE) procedures are password-protected. The key operator can change the Key Operator password, and the customer engineer can change both the Key Operator and the Customer Engineer passwords.

Initially, the CE password may be set as "empty", meaning that you select the password by selecting only the **OK** key on the password keyboard.

If you do not know the password, contact your next level support.

Entering a Password

To enter a password

1. Select a password-protected user authorization level choice in the **Password** window from the **Options** pulldown menu.
2. Use the **Password Keypad** that appears to enter the password.
3. Select the **OK** key.

When the password is accepted, the new authorization level is shown highlighted on the **Password** window.

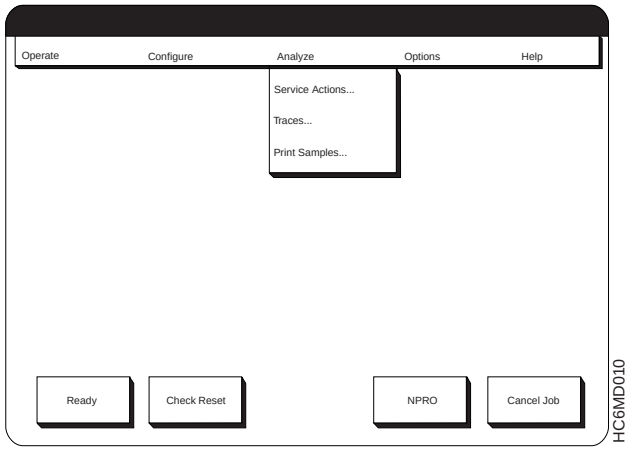
Changing a Password

To change your password, or that of the Key Operator:

1. Select **Options** on the menu bar of the Display/Touch Screen main window.
2. Select the **Password** procedure on the pulldown menu that appears. The **Password** window appears with the current level of authorization highlighted.
3. If you want to change the password of the level that is highlighted, go to step 5.
4. To change the password for a higher level of authorization than the level initially highlighted, select the higher level and enter the current password for that level on the **Password Keypad** that appears. The **Password** window will appear with the new level highlighted.
5. Select the **Change** pushbutton.
6. Use the **Password Keypad** that appears to enter a new password, and then select the **OK** pushbutton. The **Password** window reappears.
7. Select the **Close** pushbutton to leave the **Password** window.

Service Actions

Table 203. Service Actions



Accessing Service Actions

1. Select **Analyze** on the menu bar of the Display/Touch Screen main window.
2. Select **Service Actions**.
3. If you have not already entered your password as a customer engineer (through **Options** on the menu bar of the Display/Touch Screen main window), the Password keyboard appears.

Note: If preventive maintenance is not due, the **Service Actions** window will appear. If preventive maintenance is due, the **Preventive Maintenance Log** window also appears with a pop-up **PM Due** window indicating which services are due. Select the **Cancel** button to close the **PM Due** window.

The selections available on the menu bar of the Service Actions window are:

- **Logs**
- **Print**
- **Diagnostics**
- **Disk Operations**

In addition to the selections on its menu bar, the Service Actions window provides the following information:

- Print Count
- Analysis
  - SRC
  - Events
- Configuration
  - Code level
  - EC level
  - OS level
  - Memory
- Printer
  - Type
  - Manufacturing plant
  - Serial number.

Logs

The **Logs** function on the menu bar of the Service Actions window lets you review the error logs and work with the preventive maintenance (PM) log.

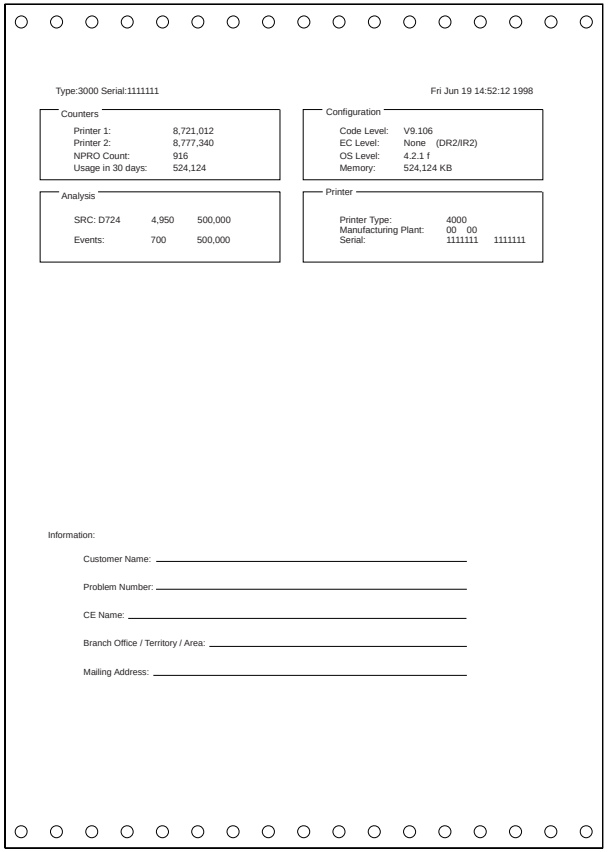
The error log is a chronological listing of printer errors. The summary log is a sorted list of the most frequent SRCs in the error log. The PM log is a cumulative indicator of printer usage (rolls, brushes) with projections of when preventive maintenance is due.

You can use these logs to:

- Determine the number of failures in a particular area of the printer
- Obtain printer usage information
- Look for parts that fail intermittently
- Verify a customer description of a problem
- Set the PM counters for special situations
- Record completed preventive maintenance.

To access the logs, select **Logs** on the Service Actions menu bar.

The first page of a printed log looks like this:



Error Log

Table 204. Error Log

If you select **Error Log** on the Logs menu, the Error Log window appears. The error list includes:

- SRC number
- Date and time
- Print count
- CE (whether the error occurred in service mode)
- S/D (whether the error occurred in simplex or duplex mode)
- P (printer number):
  - 0 - control unit or common
  - 1 - printer 1
  - 2 - printer 2.

Filter

The **Filter** button, when in the On condition, filters *events* out of the list of errors.

To change the filter condition, select the **Filter: On** button and then select **Filter: Off** in the pop-up window. To return to filter on, reverse this procedure.

To leave the Error Log window, select the **Close** button.

After you select one of the errors in the log, you also can select one of the following, which will be displayed in a in a pop-up window.

- **Details**

  Details explains the SRC and provides the frequency of the SRC occurrence and the attachment involved. If all the SRCs occurred with the same form, the form name is provided. Select the Error Log to leave the Details window.
- **Sense Data**

  Sense Data is used primarily by support level personnel. It lists the exception code, environment code, and sense format. For some errors, it provides the contents of several memory locations. Select the Error Log to leave the Sense Data window.
- **Bookmark**

  The “bookmark” is a marker that initially is at the end of the list of errors. When you select **Bookmark,** the marker is placed after the selected error. You can move the bookmark (including returning it to the end of the list) by repeating the process of selecting an error and then selecting **Bookmark.**

  The Bookmark is used to view the subset of errors in the list above the Bookmark in the Summary Log when a count of **0** is selected.

Summary Log

Table 205. Summary Log

If you select **Summary Log** on the Logs menu, the Summary Log window appears. The summary list includes:

- SRC number
- Frequency of occurrence of the SRC
- MPSRC (mean prints between occurrences of this SRC).

  MPSRC is the result of dividing the number of prints by the number of SRCs (repeats included). Both the measurement interval and the number of prints correspond to either the actual number of prints (shown in the field at the bottom of the window) or 50000 prints, whichever is less.

You also can review the SRCs within a range, for example, the last 50000 prints:

1. Select the print count field at the bottom of the Summary Log window. A numeric key pad appears along with keys to control the position of the cursor in the pad's data field.
2. Select a new print count (range) value (in this example, 50000).
3. Select the **OK** key. The Summary Log window reappears showing only the SRCs in the restricted range.

If you previously placed the bookmark in the error log, you can review the subset of errors in the list above the bookmark:

1. Select the print count field at the bottom of the Summary Log window.
2. On the numeric key pad that appears, select 0.
3. Select the **OK** key. The Summary Log window reappears showing only the SRCs in the list above the bookmark.

Filter

The **Filter** button, when in the On condition, filters *events* out of the list of errors.

To change the filter condition, select the **Filter: On** button and then select **Filter: Off** in the pop-up window. To return to filter on, reverse this procedure.

Sort

The list initially is sorted by frequency. To sort it by SRC, select the **Sort: Freq** button and then the **Sort: SRC** button in the pop-up window. To return to frequency sorting, reverse this procedure.

To leave the Summary Log window, select the **Close** button.

PM Log

Table 206. PM Log

If you select **PM Log** on the Logs menu, the Preventive Maintenance Log window appears. The PM list includes:

Item (maintenance levels and specially tracked parts)

Feet:

Used

Remaining

% Remaining

Days Left (estimated).

Use the information in the PM log to identify printer areas that need planned maintenance or parts replacement.

OK

If you select the **OK** button, the window closes and any PM changes you have made are accepted.

CANCEL

If you select the **Cancel** button, the window closes without accepting any changes.

Change

To change a PM counter:

1. Select the item in the log window.
2. Select the **Change** button. The Change Preventive Maintenance Data window appears showing the values when last changed for that item.
3. Select the counter you want to change. A numeric key pad appears along with keys to control the position of the cursor in the pad's data field.
4. Select the new PM value to appear in the data field.
5. Select the **OK** key. The Change Preventive Maintenance Data window reappears with the new value.
6. If the new value is correct, select the **OK** button. The Preventive Maintenance Log window reappears. If the new value is not correct, repeat step 3 through step 6.
7. If the PM data is correct, select the **OK** button. If not, repeat this set of step 1 through step 7.

Completed

To record that PM has been done:

1. Select the item in the log window.
   Note: Selecting the **Completed** button resets the "Feet Used " counter to zero for the item selected.
2. Select the **Completed** button.
3. If the PM data is correct, select the **OK** button. If not, repeat steps 1 to 3.

Print

This function lets you print the print-quality samples and the error logs. On the Service Actions menu bar, select **Print Samples** or **Print Log**.
Note: Disable all attachments before printing print samples, error logs, and traces.

Print Samples

If you select **Print Samples** on the Print menu, you can print patterns, bar codes, and text to check visually for print-quality defects.

There are 10 selections:

- Primary
- Bar code
- Alternate
- Gray
- All white
- Postprocessor
- Text 1
- Text 2
- Printhead power
- Color.

See Print Samples for print quality definitions and print sample descriptions.

Print Log (including Print Pack)

Table 207. Print Log

If you select **Print Log** on the Print menu, you can choose five types of printout. Each includes a header that records printer data and conditions when the log is printed. The header provides model, serial number, EC level, total usage, 30-day usage, and most frequent SRC.

Print Pack includes:

- The short filtered error log .
- A selection of print samples, which includes enough copies of each of the samples to represent two revolutions of the PC drum. The print samples printed are:
  - Primary
  - All white (simplex)
  - Alternate
  - Bar code (simplex)
  - All white (duplex)
  - Text 1 (duplex).

  See Print Samples for print quality definitions and print sample descriptions.

(continued on next page)

Long Error Log

This log provides all data about each error: SRC, date, time, print count, CE mode, simplex/duplex mode (S/D), printer number (P), form name, message (intervention text), sense data, and attachment data.

The long log also includes:

- Identification/heading information
- One page each of:
  1. Forms identification/description from the configure program and preventive maintenance log (current PM status)
  2. Attachment identification/description from the configure program for each attachment.

The long log is printed in landscape mode.

Table 207. Print Log (continued)

Long Filtered Error Log

This log provides all the information of the long error log except that filtering removes events such as power-on, that is, the SRCs with B0xx numbers. This log is printed in landscape mode.

Short Filtered Error Log

This log provides all the information of the short error log except that filtering removes events such as power-on, that is, the SRCs with B0xx numbers. This log is printed in portrait mode.

Short Error Log

This log provides all the information of the long error log except sense and attachment data. It is printed in portrait mode.

You can print **multiple copies** of a log:

1. Select the log you want to print.
2. Select the **How Many?** field. A numeric key pad appears along with keys to control the position of the cursor in the pad's data field.
3. Select the number of copies.
4. Select the **OK** key. The Print Logs window appears again with the new value.
5. Select the **Print** button.

Diagnostics - General

If you select **Diagnostics** on the Service Actions menu, you can test attachments, the printers, and preprocessor and postprocessor interfaces.

To run a test in one of the Diagnostics lists:

1. Read the instructions for the test and make the required power status and cabling changes.
2. Select the test.
3. Select the **Run** button to start the test.

The pop-up window that appears identifies the test running and provides a **Stop** button when needed.

If there is a problem with a test, a Printer Error or Intervention Required window (red title bar) appears with a description of the problem and how to clear it. If an SRC is displayed, go to the MAP with that number.

4. To leave the Diagnostics window, select the **Close** button.

Shutdown Procedure

Attention: Do not stop an Infoprint 3000 by turning the control unit and printer power switches to Off. There is a procedure to shut down the printer that performs all necessary cleanup operations before powering off.

To shut down an Infoprint 3000:

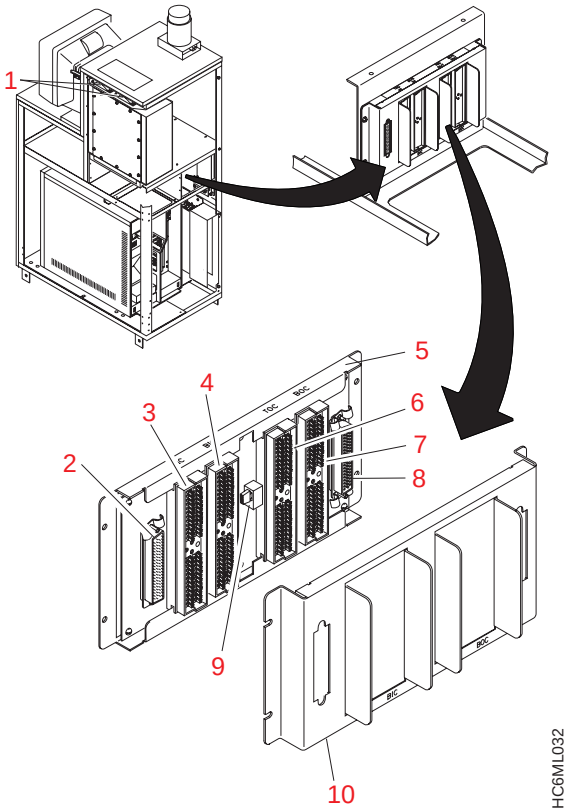
1. On the menu bar of the Display/Touch Screen main window, select **Operate**.
2. On the pulldown menu that appears, select **Shutdown/Restart**.
3. On the procedure window that appears, select **Shutdown**.
4. When a `Shutdown is complete` message appears on the Display/Touch Screen, you can power off the printer.

Attachment Diagnostics

Select **Analyze** on the menu bar of the Display/Touch Screen main window, and then select **Service Actions** on the menu that appears.

If you select **Attachment** on the Diagnostics menu, the Attachment Diagnostics window appears listing the available tests.

Parallel Channel Tests



Note: The channel must be disabled to run the test. If a two-channel switch is present, diagnostics can be run on one channel while the second channel is enabled.

Parallel Channel A (or B) Basic Test

Select this test to exercise the functions of parallel channel A or B. Select the **Run** button to start the test.

Parallel Channel A (or B) Wrap Test

Use this test to check the input and output circuits of parallel channel A or B.

1. Ensure that all devices on the channel are varied off at the host Display/Touch Screen.
2. Disable the channel.
3. Open the rear cover of the control unit.
4. Disconnect the channel cables from the channel tailgate.
5. Install terminator block P/N 2282675 on the bus out-connector (BOC) **(7)**
6. Install terminator block P/N 2262676 on the tag out-connector (TOC) **(6)**.
7. Attach channel wrap block P/N 8575337 to the bus in-connector (BIC) **(4)**.
8. Install channel wrap block P/N 8575338 to the tag in-connector (TIC) **(3)** .
9. Select **Parallel Channel A (or B) Wrap Test**.
10. Select the **Run** button to start the test.

ESCON Channel Tests

ESCON Channel A (or B) Basic Test

Select this test to exercise the functions of ESCON channel A or B. Select the **Run** button to start the test.

ESCON Channel A (or B) Wrap Test

Use this test to check the input and output circuits of ESCON channel A or B.

1. Ensure that all devices on the channel are varied off at the host Display/Touch Screen.
2. Disable the channel.
3. Disconnect the channel cable from the channel card connector on the rear of the RISC controller (slot 4 if channel A; slot 2 if channel B).
4. Attach the ESCON wrap plug (P/N 5605670) to the channel card connector on the RISC controller.
5. Select **ESCON Channel A (or B) Wrap Test.**
6. Select the **Run** button to start the test.

Token Ring Tests

The following conditions must be met before the you can run the Token Ring tests:

- The Token Ring attachment must be disabled.
- The Token Ring adapter card must be physically installed.
- The Token Ring attachment must be configured as “Installed” in the attachment configuration.
- Ensure that the SNMP agent and RMI are turned OFF. The SNMP agent and RMI are turned On/Off on the Printer Configuration screen.

Note: If the SNMP agent or RMI is ON, it is necessary to turn it OFF. You must then perform the **Shutdown** procedure, power off the entire system, and power on again before you can continue with diagnostics.

Token Ring Basic Test

Select this test to check the basic function of the token ring adapter card. The test does NOT test the input and output of the adapter.

1. Unplug the Token Ring cable at the customer port.
2. Leave the Token Ring cable plugged into the controller adaptor card slot.
3. Select **Token Ring Basic Test**.
4. Select the **Run** pushbutton to start the test.

Token Ring Wrap Test

Select this test to check all the functions of the Token Ring adapter card.

1. Unplug the Token Ring cable at the customer port.
2. Leave the Token Ring cable plugged into the controller adaptor card slot.
3. Select **Token Ring Wrap Test**.
4. Select the **Run** pushbutton to start the test.

Ethernet Tests

The following conditions must be met before you can run the Ethernet tests:

- With an RS/6000 Type 7025 Model F50 or Type 7043 Model 43P-140 controller installed in the control unit, an Ethernet Adapter Card must be physically present in an adapter card slot of the controller.
- The Ethernet attachment must be configured as “Installed” in the attachment configuration.
- Ensure that the SNMP agent is turned **Off**. Turn the SNMP agent off on the Remote Access window if necessary.

Note: If the SNMP agent is **On** and you turn it off, you must select the RESTART pushbutton before you continue with the diagnostics.

Ethernet Basic Test:

Select this test only if wrap plugs are not available. The test checks the basic function of the Ethernet card. The test does not test the input and output of the Ethernet card.

- Unplug the Ethernet cable or transceiver from the rear of the controller.
- Select **Ethernet Basic Test**.
- Select the **Run** pushbutton to start the test.

Ethernet Wrap Tests:

- **Twisted pair 10BaseT or 100BaseT**

  Select this test to check the Ethernet functions of the Ethernet card for 10BaseT and 100BaseT attachments.

  – Unplug the Ethernet cable from the rear of the controller.
  – Install the Ethernet wrap connector (P/N 00G2380) on the Ethernet adapter card connector at the rear of the controller.
  – Select **Ethernet Port Wrap Test**.
  – Select the **Run** pushbutton to start the test.

FDDI Tests

Table 208. FDDI Tests

The following conditions must be met before the you can run the FDDI tests (Type 7025 Model F50 Only):

- The FDDI attachment must be disabled.
- The FDDI adapter card must be physically installed.
- The FDDI attachment must be configured as “Installed” in the attachment configuration.
- Ensure that the SNMP agent is turned OFF. The SNMP agent is turned On/Off on the Printer Configuration screen.

Note: If the SNMP agent is ON, it is necessary to turn it OFF. You must then perform the **Shutdown** procedure, power off the entire system, and power on again before you can continue with diagnostics.

FDDI Basic Test

Select this test to check the basic function of the FDDI adapter card. The test does NOT test the input and output of the adapter.

1. Unplug the FDDI cable at the customer port.
2. Leave the FDDI cable plugged into the controller adaptor card slot.
3. Select **FDDI Basic Test**.
4. Select the **Run** pushbutton to start the test.

FDDI Wrap Test

Select this test to check all the functions of the FDDI adapter card.

1. Unplug the FDDI cable at the customer port.
2. Leave the FDDI cable plugged into the controller adaptor card slot.
3. Select **FDDI Wrap Test**.
4. Select the **Run** pushbutton to start the test.

Token Ring, Ethernet, and FDDI Attachment Test Results

These attachment tests are unable to test all of the circuitry on an adapter. Use the following as a guideline to interpret the results of a test.

The test will end with one of the following results:

- The test indicates it completed successfully.

  This result is a strong indication that the adapter is working properly, at least during the test. If the customer communication problem is a solid continuous problem, it is probably configuration or software and not the adapter.
- The test indicates a specific failure of a component with an SRC.

  This result is a strong indication that the adapter has a hardware problem. However, the defect on the adapter may not be causing any problem with the customer communications. If the customer is having communication problems for no other obvious reason, use the MAPs for further problem determination.
- The test terminates with a timeout. The SRC may be A400, A403 or A40D.

  Use the MAPs for further problem determination.
- The test terminates with a control unit crash. A code usually appears in the control unit LED display.

  This result is a strong indication of a hardware problem. Reseat the adapter card and rerun the test. Be certain to follow the instructions for plugging or unplugging any wrap plugs or cables. If the same result occurs again and there does not appear to be any other reason for a communication failure, the adapter should be replaced as a further step in problem determination.

Mechanism Diagnostics

If you select **Mechanism** on the Diagnostics menu, the Control Unit Diagnostics (Mechanism) window appears listing the available tests.

Note: Running these diagnostics prevent further printing until you do a Restart.

Table 209. Mechanism Disagnostics

Reading the MIC LED Display

The LED has 7 segments and displays one digit at a time. The numbers that appear are progress indicators.

Three horizontal bars that appear for 5 seconds indicate that an error occurred. The digits of the error code are then appear sequentially. After the last digit, a hyphen (-) appears and the sequence repeats. Trailing zeros are suppressed.

Other MIC LED status indicators

- 0 - Normal (Printing)
- 2 - Normal (Ready to Print)
- 3 - Engine cycling up, or out of supplies condition
- 6 - Waiting for fuser temperature
- 9 - Memory test failure
- L - Looking for active SSA link
- = - Waiting for RISC memory download

MIC BASIC Test

Select this test to exercise the functions of the mechanism interface card.

Select the **Run** button to start the test.

MIC Loop Test

Select this test to further exercise the mechanism interface card by looping part of the MIC test.

Select the **Run** button to start the test.

Results appear on the LED attached to the MIC.

Select the **Power Off** button in the pop-up window to stop the test. After the message **Shutdown complete** appears, power off the control unit and the printer.

Table 209. Mechanism Disagnostics (continued)

MIC Communication Test

You can perform this test on any of the printer models. This routine searches the communication path and reports which devices are communicating with the control unit. Select this test to determine which device or connection to the device is failing when a D208 error is detected.

To run the test:

1. Select **Analyze** and then select **Service Actions**.
2. Select **Diagnostics**.
3. Select **MIC Communications Test**.
4. Select **RUN**.

The results of the diagnostic test appear in a pop-up window on the Display/Touch Screen. Examples of possible messages are:

```
Printer 1 MIC (2 paths) and a Printer 2 MIC (1 path) were sensed.

No devices were sensed.
```

Note: SSA requires 2 MIC paths. SCSI requires 1 MIC path.

MIC Isolation Wrap Test

Perform this test in stand-alone mode, not using the Display/Touch Screen. See Mechanism Interface Card (MIC) Isolation Wrap Test.

Table 209. Mechanism Disagnostics (continued)

Printer Interface Test

Select this test to check communication between the printer logic and the control unit.

1. Select the **Run** button to start the test.
2. Select the **Restart** button in the pop-up window to stop the test.

Printer Activation Test

Select this test to run the printer but not the forms. (Forms must be installed, however, or the end-of-forms sensor must be covered.)

Use caution if it is necessary to remove safety covers, because this test applies voltage to the lamps, coronas, and PC drum; heats the fusing elements to operating temperature; and turns the PC drum and developer rolls.

1. Select the **Run** button to start the test.
2. Select the **Stop** button in the pop-up window to stop the test and the printer.

Alarm Test

Select this test to check and set the volume on the alarm that sounds when the printer requires operator intervention. The volume control is on the back of the alarm and light assembly.

1. Select the **Run** button to start the test.
2. Select the **Stop** button in the pop-up window to stop the test.

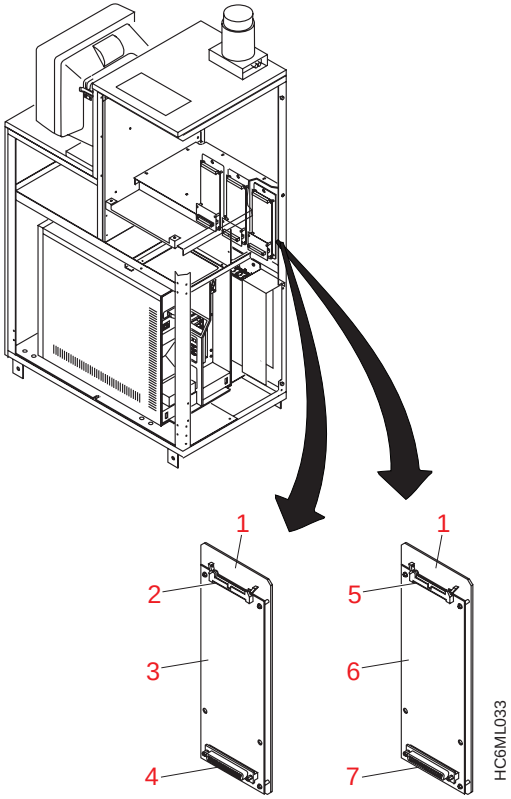
Attention Light Test

Select this test to check the light that flashes when the printer requires operator intervention. The electrical contacts for remote alarm devices are included in this test.

1. Select the **Run** button to start the test.
2. Select the **Stop** button in the pop-up window to stop the test.

Pre/Postprocessor Diagnostics

Table 210. Pre/Postprocessor Diagnostics



Important: If the Side 1/Side 2 Verification function is installed, you must unplug the Side 1/Side 2 Verification Control Card from the MIC to allow the Pre/Processor diagnostics to run properly.

(continued on next page)

Two interfaces accommodate a variety of pre/postprocessing devices:

1. 4710 Pre/postprocessor interface feature:

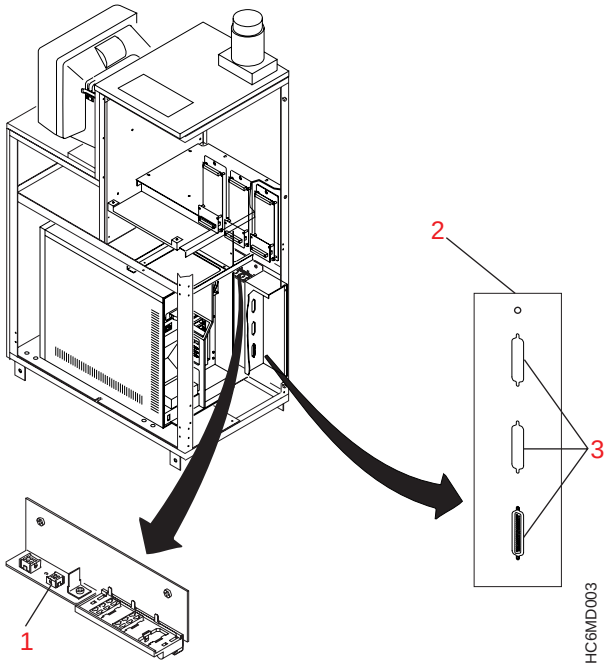
   The 4710 interface card is a single card called the CGUC . It is also known as the coupled interface card.
2. 4720 Pre/postprocessor interface feature:

   The 4720 interface card is a single card called the CGIC and is also known as the intelligent postprocessor card.

The pre/postprocessor card assemblies are mounted on the frame. The card positions are labeled PRE/POST CARD 1 or 2 or 3 as appropriate.

1. If you select **Pre/Postprocessor** on the Diagnostics menu, the Pre/Postprocessor Diagnostics window appears listing the available tests.
2. Select **Port 1, Port 2,** or **Port 3.**
3. If the printer is running in duplex mode on a duplex printing system, also select **Printer 1**, or **Printer 2**.

Table 210. Pre/Postprocessor Diagnostics (continued)



Note: The tailgate connectors are numbered from top to bottom and are labeled `P/P DEVICE 1` or `2` or `3` as appropriate.

Attention: Equipment will be damaged if you use the wrong wrap plug. If you are not certain whether you are testing a 4710 or 4720 interface card, then check the part number on the card against parts catalog.

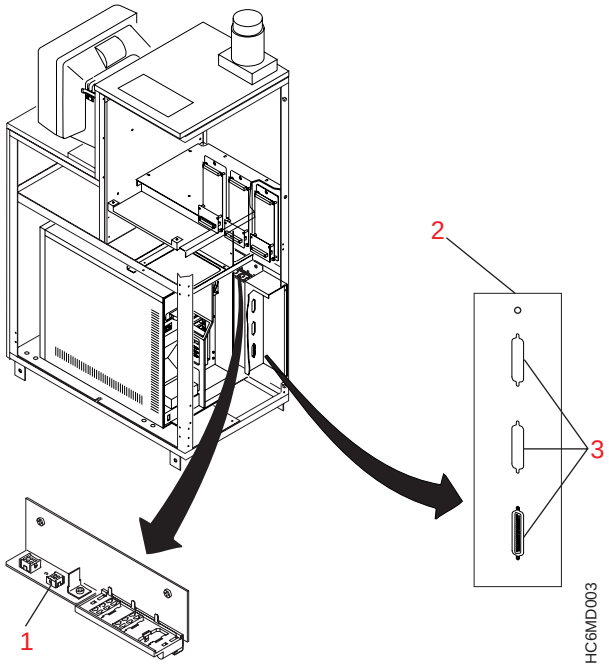
(continued on next page)

Intelligent Interface Wrap Test (For 4720 feature cards only)

Use this test to identify a problem in the advanced function postprocessing interface.

1. Disable the channels.
2. Disconnect the postprocessor cable from the pre/postprocessor card **(3)** at the lower right rear of the control unit.
3. Open the rear cover of the control unit.
4. Connect wrap plug B (P/N 45G2037) (For the 4720 feature only) to the pre/postprocessor tailgate connector from which the cable was removed in step 2.
5. Plug the power connector on the wrap plug into the service power takeoff connector **(1)** on the channel tailgate frame.
6. Select **Intelligent Interface Wrap Test.**
7. Select the **Run** button to start the test.
   - Successful completion of the test may be followed by intervention-required message D204. This message is due only to the presence of the wrap plug and can be ignored. No action is required.
   - Run the test multiple times to ensure accurate results.
8. When the test is completed, remove the wrap plug and power connector and reconnect the postprocessor cable.
9. Press the **Restart** button; this causes a system **Restart**.

Table 210. Pre/Postprocessor Diagnostics (continued)



Note: The tailgate connectors are numbered from top to bottom and are labeled `P/P DEVICE 1` or `2` or `3` as appropriate.

Attention: Equipment will be damaged if you use the wrong wrap plug. If you are not certain whether you are testing a 4710 or 4720 interface card, then check the part number on the card against parts catalog.

(continued on next page)

Coupled Interface Wrap Test (4710 feature cards only)

Use this test to identify a problem in the pre/post-processing interface.

1. Disable the channels.
2. Disconnect the pre/postprocessor cable from the pre/postprocessor card **(3)** at the lower right rear of the control unit.
3. Open the rear cover of the control unit.
4. Connect wrap plug A (P/N 45G2036) (For the 4710 feature cards only) to the pre/postprocessor tailgate connector from which the cable was removed in step 2.
5. Plug the power connector on the wrap plug into the service power takeoff connector **(1)** on the channel tailgate frame.
6. Select **Coupled Interface Wrap Test.**
7. Select the **Run** button to start the test.
   - Successful completion of the test may be followed by intervention-required message D204. This message is due only to the presence of the wrap plug and can be ignored. No action is required.
   - Run the test multiple times to ensure accurate results.
8. When the test is completed, remove the wrap plug and power connector and reconnect the pre/postprocessor cable.
9. Press the **Close** button, then do a system **Restart** procedure.

Table 210. Pre/Postprocessor Diagnostics (continued)

Offset Test

Select this test to generate a job offset signal.

Select the **Run** button to start the test.

Select the **Stop** button in the pop-up window to end the test.

When you are instructed by a MAP to check the offset signal at the pre/postprocessor interface with the pre/postprocessor interface test card, see Pre/Postprocessing Interface Test Card.

Motor Test

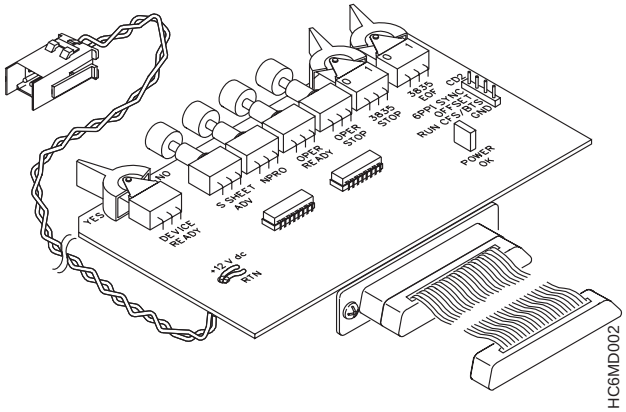
Select this test to generate a signal to run the pre/postprocessor motor.

Select the **Run** button to start the test.

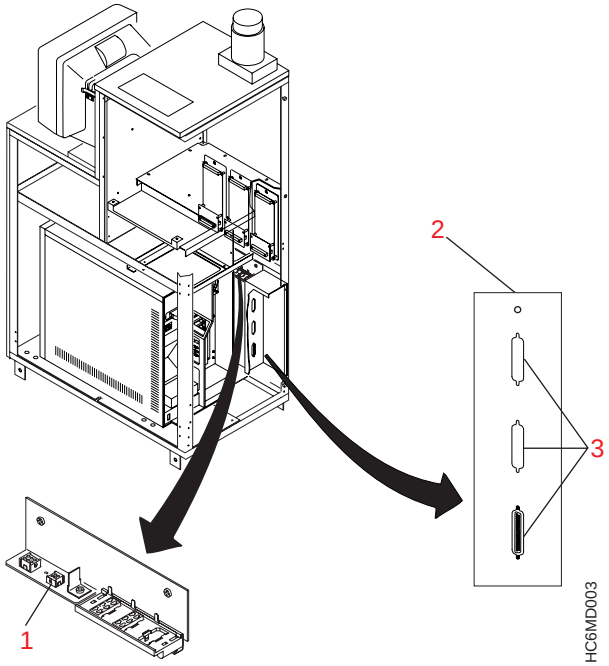
Select the **Stop** button in the pop-up window to end the test.

When you are instructed by a MAP to check the motor signal at the pre/postprocessor interface with the pre/postprocessor interface test card, see Pre/Postprocessing Interface Test Card.

Pre/Postprocessing Interface Test Card



HC6MD002



HC6MD003

The pre/postprocessing interface test card (P/N 45G2033) is used to diagnose problems that might be caused either by the printer or by a pre/postprocessor.

Attention: Use the pre/postprocessing interface test card only with the 4710 interface card, *not* with (intelligent advanced function postprocessing) 4720 interface cards. If you are not certain if the card is a 4710 or 4720 interface card, then check the part number against the parts catalog.

1. Using its extension cable, attach the test card to the pre/postprocessor tailgate in place of the pre/postprocessor cable.
2. Plug the power connector on the test card into the service power takeoff connector **(1)** on the channel tailgate frame.
3. Printer states generated by the interface test card produce messages on the Display/Touch Screen in a pop-up window.
   - Select the **Printer Status** field to see these messages about the pre/postprocessor devices.

If the printer operates correctly with the test card, you can assume that the problem is in the pre/postprocessor.

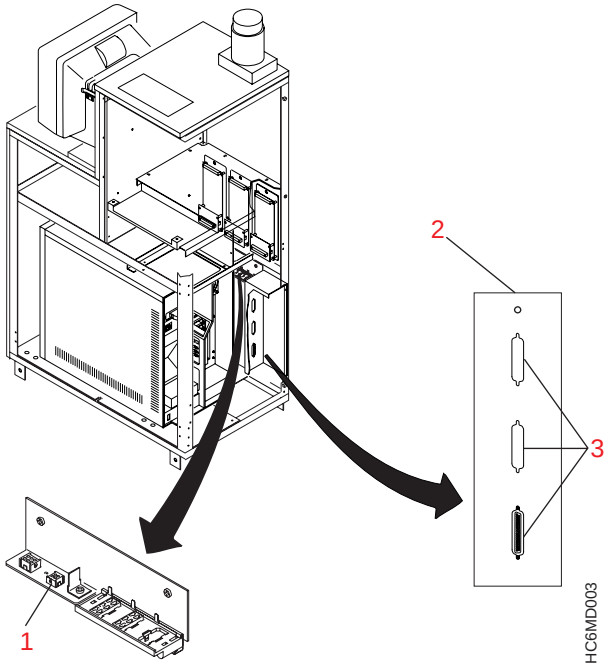
Table 211 describes the functions of the switches and test points on the interface test card, and the Display/Touch Screen messages the procedures produce.

Table 211. Pre/Postprocessing Interface Test Card

Switch, Test Point, or LED	Description
DEVICE READY (YES position)	Indicates that the device is powered on and ready.
DEVICE READY (NO position)	Simulates a jam or hard stop at the device. The Display/Touch Screen shows: `Pre/postprocessor Not Ready SRC D204`.
S SHEET ADV	Causes the printer to advance one page of forms.
NPRO	Causes the printer to fuse the forms already between the transfer station and the fuser, and feed them into the stacker. The Display/Touch Screen shows: `PRINTING`.
OPER READY	Resets the OPER STOP condition.
OPER STOP	Simulates the action of a stop key on the pre/postprocessor, a soft stop, a recoverable error, or a pause. The Display/Touch Screen shows: `Pre/postprocessor Busy`.
3835 STOP (0 position)	Simulates the action of a stop key on the pre/postprocessor, a soft stop, a recoverable error, or a pause. The Display/Touch Screen shows: `Pre/postprocessor Busy`.
3835 STOP (1 position)	Normal position.
3835 EOF (0 position)	Simulates an end-of-forms signal from the pre/postprocessor. The Display/Touch Screen shows: `End of Forms`.
3835 EOF (1 position)	Normal position.
6 PPI SYNC	Test point for ac voltage measurement.
OFFSET	Test point for dc voltage measurement.
RUN CFS/BTS	Test point for dc voltage measurement.
GND	Ground point for voltage measurements.
POWER OK	Lights when the interface test card is installed and powered, and checks the voltage regulator on the isolation card.

Checking signals

Table 212. Checking Pre/Post Signals



(continued on next page)

Use this procedure to test the interface signals. To activate a pushbutton switch, press it until it clicks, and then release it. If a problem occurs, go to MAP 0840.

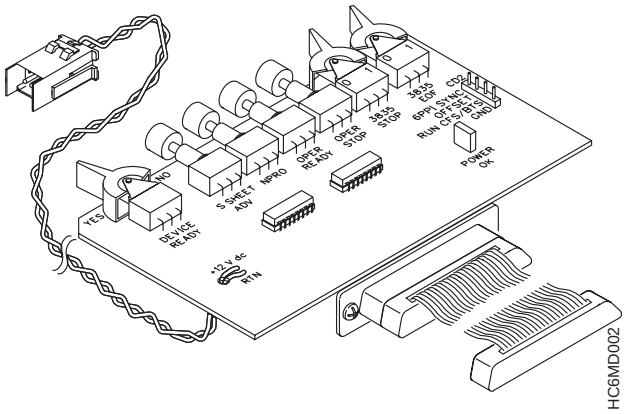
1. Disable the attachments.
2. Press READY to make the printer ready.
3. Set the toggle switches on the test card:

   DEVICE READY to YES

   3835 STOP to 1

   3835 EOF to 1.
4. Attach the test card extension cable to the test card and then connect the other end of the cable to the appropriate pre/postprocessor connector **(3)** on the pre/postprocessor tailgate **(2)**
5. Connect the test card power cable to the service power takeoff connector **(1)** on the channel tailgate frame. The POWER OK LED on the test card should now be on.

Table 212. Checking Pre/Post Signals (continued)



6. Set the DEVICE READY switch on the test card to the NO position. The Display/Touch Screen shows:

   `Pre/postprocessor Not Ready`

7. A “Printer Error” window appears with SRC D204.
   - Press **Complete** on the Display/Touch Screen.
   - Press **Ready** on the Display/Touch Screen.
8. Set the DEVICE READY switch on the test card to the YES position.
9. Press and release the OPER STOP button on the test card. The Display/Touch Screen shows:

   `Pre/postprocessor Busy`

10. Press and release the OPER READY button on the test card. The Display/Touch Screen shows:

    `Ready`

11. Set the 3835 STOP switch on the test card to 0. The Display/Touch Screen shows:

    `Pre/postprocessor Busy`

12. Set the 3835 STOP switch on the test card to 1. The Display/Touch Screen shows:

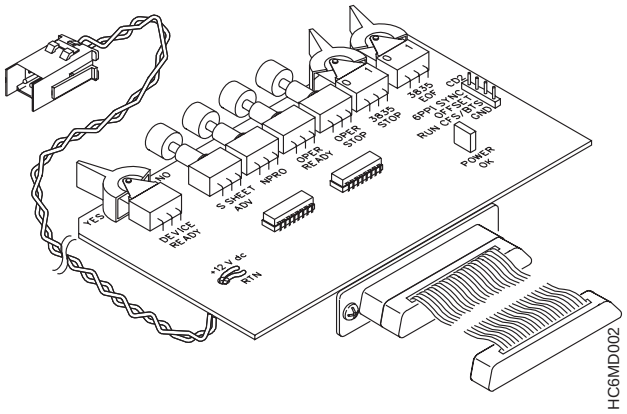
    `Ready`

13. Press and release the OPER STOP button on the test card. The Display/Touch Screen shows:

    `Pre/postprocessor Busy`

(continued on next page)

Table 212. Checking Pre/Post Signals (continued)



14. Press and release the NPRO button on the test card. The printer should perform a nonprocess runout. The Display/Touch Screen shows:

    `Printing`

    `Pre/postprocessor Busy`
15. Press and release the S SHEET ADV button on the test card.
16. Press and release the NPRO button on the test card. The printer should perform a nonprocess runout of one sheet. The Display/Touch Screen shows:

    `Printing`

    `Pre/postprocessor Busy`
17. Press and release the OPER READY button on the test card. The Display/Touch Screen shows:

    `Ready`
18. Set the 3835 EOF switch on the test card to 0. The Display/Touch Screen shows:

    `Pre/postprocessor End of Forms`
19. A “Printer Error” window will be displayed with EOF.
20. Set the 3835 EOF switch on the test card to 1.
21. Press **Complete** on the Display/Touch Screen.
22. Press **Ready** on the Display/Touch Screen.

Repeat these checks with the test card extension cable attached to another coupled interface pre/postprocessor connector on the tailgate.

Checking voltages

Four pins on the pre/postprocessing interface test card are collectively labeled CD2. You can use those pins to probe the 6 PPI Sync, Offset, and Run CFS/BTS signals.

Attention: Use only a digital multimeter, not an electrostatic voltmeter or oscilloscope, for these voltage readings.

Table 213. Checking Pre/Post Voltages

6 PPI Sync

Run one of the print samples or any customer form to generate a 6 pulse-per-inch synchronization signal.

The voltage at test point 6 PPI SYNC should be:

- Greater than 0.2 V ac when the forms are running
- 0 V ac when the forms are stopped.

Offset

Run the Offset Test to generate a job offset signal.

When the test begins, the voltage at test point OFFSET should change from its previous level. It can change in either direction:

- The low level should be less than +0.2 V dc.
- The high level should be greater than +3.5 V dc.

Run CFS/BTS

Run the Motor Test to generate a signal to run the pre/post-processor motor.

The voltage at test point RUN CFS/BTS should be:

- Greater than +3.5 V dc when the test is running
- Less than +0.2 V dc when the test is not running
- Greater than +3.5 V dc when forms are running.

Repeat these checks with the test card extension cable attached to another coupled interface pre/postprocessor connector on the tailgate.

Print Quality Enhancement

Even though this shows up on the Diagnostics menu, Print Quality Enhancement (PQE) is really an adjustment procedure rather than a diagnostic test. These values must be set to the default values. See PQE Stroke Width Settings.

Disk Operations

If you select **Disk Operations** on the Service Actions menu, you can update the system microcode, and back up and restore the hard-disk files.

Table 214. Disk Operations

Update Microcode

Select this function to determine the current microcode version and EC level.

Attention: Never install a lower version of microcode. If the new level microcode version does not work correctly, contact your next level support.

To update the microcode,

1. Select **Diskette** as the source of the update.
2. Select the **Update** button.

Select the **Cancel** button to close the window without updating the microcode.

Back Up Disk

Select this function to back up the configuration information to diskette.

Select the **Continue** button to perform the backup, or the **Cancel** button to close the window without backing up the configuration information.

Restore Disk

Select this function to restore the configuration files from the backup diskette to the hard disk files.

Attention: Do NOT use the Restore Function: If the model, feature, or RPQ is not the same on the backup diskette, as on the printer where the configuration files are to be restored. The hard drive data will be damaged. For example, an ES1 backup diskette cannot be used on an ED2.

Select the **OK** button to perform the restore or the **Cancel** button to close the window without restoring.
Note: After this function is completed, a reboot of the printer is required. Messages on the screen will provide instructions.

Table 214. Disk Operations (continued)

Save Forms

Select this function to save the forms information for loading to a another printer. Save all the “Defined Forms”information on a blank 1.4MB formatted diskette. The Save function will only save forms information for the current printer mode (either simplex for duplex).

Restore Forms

Select this function to restore the forms information on a “Save Forms” diskette taken from one printer to restore to another printer. The “Restore Forms” function will only restore forms information for the current printer mode (either simplex for duplex).

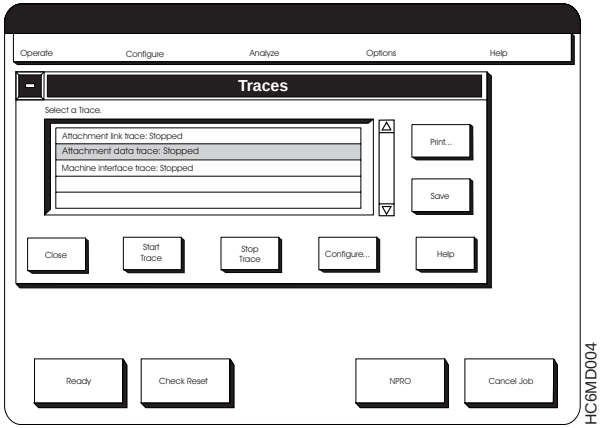
Traces

Table 215. Traces

Traces lets you record channel and microcode events as an aid in resolving problems. More than one trace can be started at one time, and a trace remains active until you stop it. When you start a trace, data from a previous trace of the same kind is lost unless you have printed the earlier trace.

Stop a trace before you try to print it. Powering off does not stop a trace but does cause the data to be lost.

This function requires a password and can be used by a key operator as well as by a customer engineer.



(continued on next page)

Note: Disable all attachments before you print traces, print samples, and error logs.

To access the Traces:

1. Select **Analyze** on the menu bar
2. Select **Traces** on the menu that appears.
3. The Traces window shows you the status of each trace as Started or Stopped.

The buttons in the window let you

- **Start**
- **Stop**
- **Configure** (used only with the Internal Control Unit Trace).

Note: The **Configure** button is grayed out unless you have entered a CE password.

- **Print**
- **Save**

Table 215. Traces (continued)

To **run** a trace:

1. Select the trace on the list in the Traces window.
2. Select the **Start Trace** button.
3. Run the operation you want to trace. If an operational problem occurs, stop the trace.
4. Select the **Stop Trace** button when you have collected sufficient data.
5. Select the **Print** button. Do not send this printout to Engineering unless you are requested to do so. It is better to send a diskette for analysis, as noted below.

To **save** a trace:

1. After you select, run, and stop a trace, select the **Save** button.
2. Insert a formatted 3.5-inch diskette in the diskette drive of the RISC controller as instructed in the pop-up window.
3. Select the **Save** button in the pop-up window.
4. If there is a problem that needs to be resolved, send the diskette to Engineering for analysis.

Attachment Link Trace

This trace records the activity in the attachment driver.

Attachment Data Trace

This trace records that data that passes between the host and the rasterizer.

Mechanism Interface Trace

This trace records all operations of the mechanism interface card (MIC).

Internal Control Unit Trace

This trace continuously records the communications being generated and sent within and among the subsystems of the control unit. For more details on this trace see Configuring the Internal Control Unit Trace.

Configuring the Internal Control Unit Trace

Table 216. Configuring the Internal Control Unit Trace

Note: You probably will use these traces only when working with your next level support.

Unlike the other traces, you can print this “always on” trace without stopping it.

The standard default activities that are traced are as follows:

- Printer Ops
- Display/Touch Screen
- Mechanism
- Rasterizer
- Decompressor
- Attachment

For a list activities that you can configure for this trace see Table 217.

To configure the internal control unit trace:

1. Select it on the list of traces.
2. Select the **Configure** button.
3. Make your selections on the Subsystems and Trace Items menus.
4. Select the **Run** button to start these additional traces.
5. Select the **Reset** button to stop these additional traces.

Table 217. Internal Control Activity Options

You can configure this trace to record the following activities:	C–Communications M–Memory creation P–Process creation Q–Queue access R–Resources S–Shared memory access T–Timer services D–Data Base L–Data Base Library	0–User level 0 1–User level 1 2–User level 2 3–User level 3 4–User level 4 5–User level 5 6–User level 6 7–User level 7 8–User level 8 9–User level 9	a–User level 10 b–User level 11 c–User level 12 d–User level 13 e–User level 14 f–User level 15 g–User level 16
The activities can be recorded for these subsystems:	Global Printer Ops Display/Touch Screen Mechanism Rasterizer Decompressor Attachment	Msnwrite_Cntl Msnwrite_PM Msnread_Status Msnshift Internalprint TCP_Attachment	DM TM Msn_Model_Input Msn_Input1_Main Msnwrite_pd snmp

Print Samples

Table 218. Print Samples

Note: Disable all attachments before you print traces, print samples, or error logs.

Use this function to print selected samples:

- All samples (8 each of the following)
- Primary
- Alternate
- All white
- Bar code
- Text 1
- Text 2

An operator can use this function as well as a customer engineer because it does not require a password.

To access the Print Samples:

1. Select **Analyze** on the menu bar of the Display/Touch Screen main window.
2. Select **Print Samples** on the menu that appears.
3. Select the sample you want to print.
4. Select the **How Many?** field. A numeric key pad appears along with keys to control the position of the cursor in the pad's data field.
5. Select the number of copies.
6. Select the **OK** key. The Print Samples window reappears with the new value.
7. Select the **Print** button.

Eight is the minimum number of copies you need to see repeating spots (2 revolutions) on the photoconductor drum when you use an 8.5-in. wide form. For other form widths, divide twice the circumference of the drum 165.1 cm (65 in.) by the form width to determine the minimum number of copies to print.

Patterns are truncated if the form is smaller than the pattern. If a failure occurs during a test, the SRC is displayed and can be used as an entry point to the MAPs.

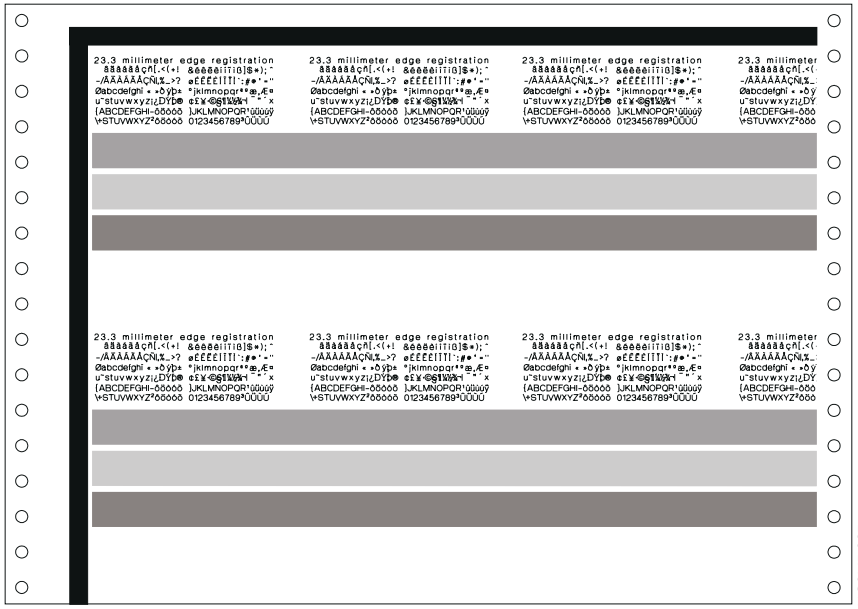
Print Sample Terms

The following terms are used in describing the print-quality samples:

Term	Definition
Scan (horizontal) direction	The direction the laser beam travels in the printer, from the front of the printer to the rear.
Process (vertical) direction	The direction the forms travel through the printer, from the transfer station to the stacker area.
Leading edge	The edge of the forms that proceeds first through the printer.
Scan edge	The edge of the forms nearer the front of the printer.
Registration	The location of the image on the forms.

Primary Print Sample

Table 219. Primary Print Sample



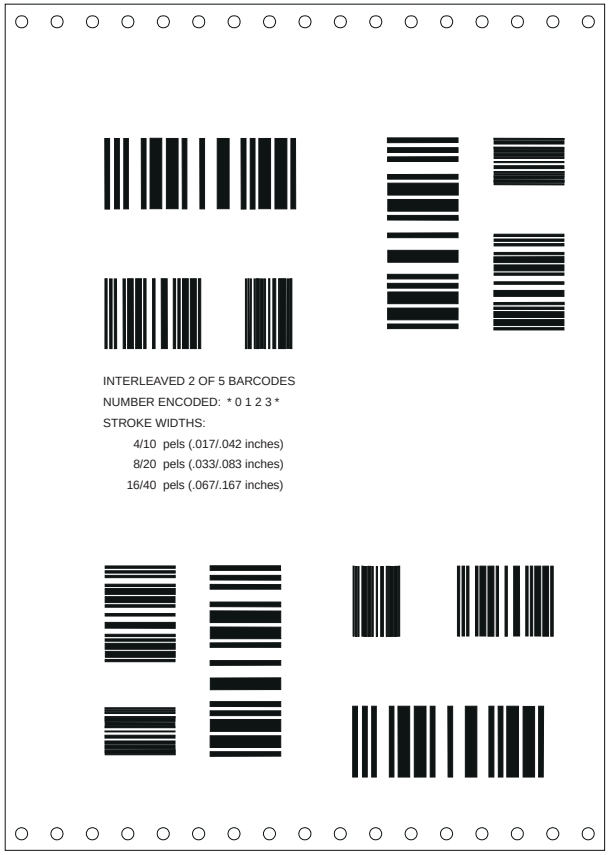
Use the primary sample to evaluate overall print quality. The primary sample is repeated to fill the form being used; it contains:

- **Wide scan and process band patterns (100% black shading).**These patterns can disclose light prints and defects such as poor density, corona streaks, and clinkers of toner. The bands also allow you to check the edge definition in the scan direction. For registration, the 100% black band should be 23.3 mm from the front form edge.
- **A 25% black shading pattern**. This pattern corresponds to a job that specifies light print.
- **A 6% black shading pattern**. This pattern corresponds to a job that specifies extra light print.
- **A 47% black shading pattern**. This pattern corresponds to a job that specifies medium dark print.
- **Default font**. Use this pattern to verify that the font prints correctly.

Note: The shading patterns may be a different width than shown here. The width of the pattern depends on the IPDS resolution selected in Configure Printer.

Bar Code Sample

Table 220. Bar Code Sample



Use the bar code sample to test the accuracy of printing for optical scanning. Symbols in different sizes are printed in both the process and the scan directions.

Alternate Print Sample

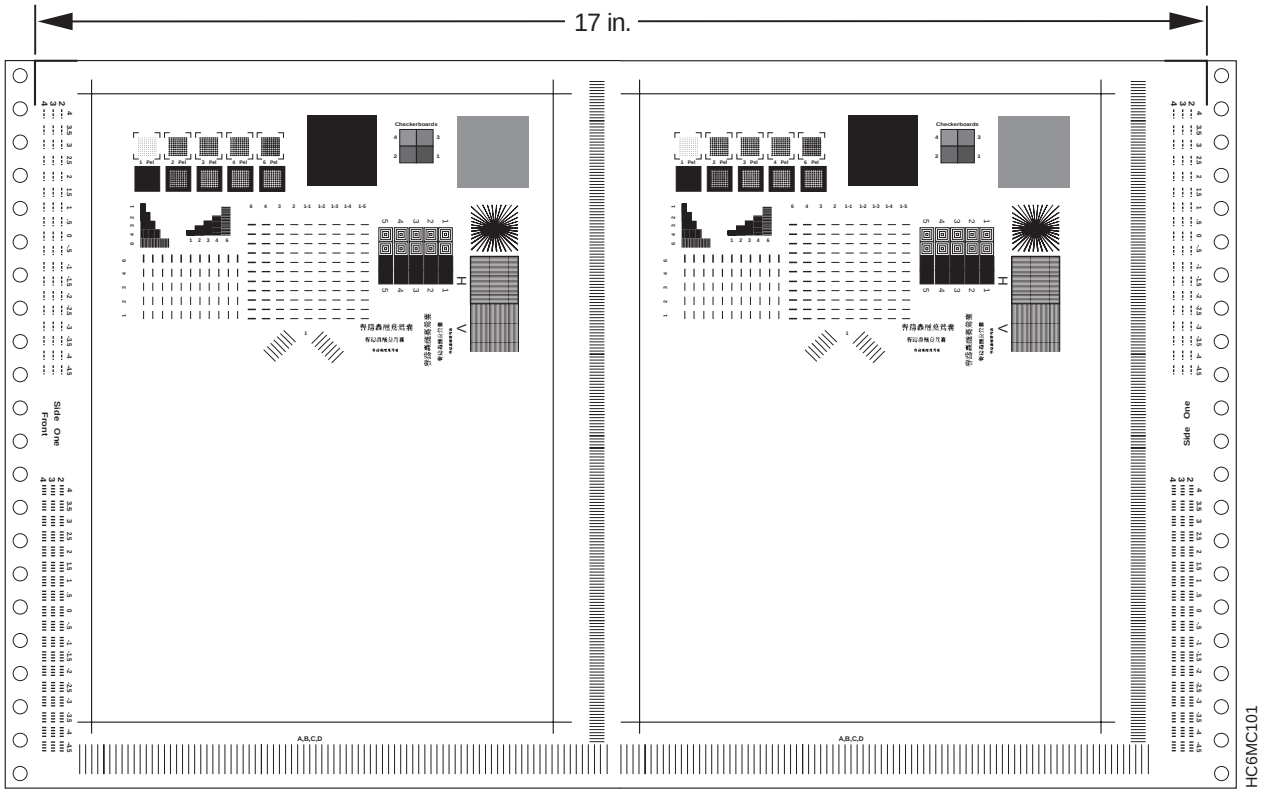


Figure 1. Alternate Print Sample

Use the alternate sample to evaluate other print-quality problems such as spots, background streaks, and light print.

(continued on next page)

The alternate sample contains:

- **A straight line in the process direction**. Use this pattern to check for lines not printing straight in the process direction.
- **A straight line in the scan direction**. Use this pattern to check for lines not printing straight in the scan direction.
- **Magnification bars**. Use this pattern to check for even spacing. Irregular spacing indicates that moving parts within the printer are changing speed during printing.
- **Black patches**. Use this pattern to check for light print and defects.
- **A character written with a 1-pel scan line and a 1-pel process line**. Use this pattern to detect problems printing characters and images that are 1 pel wide.
- **A character written with a 2-pel scan line and a 2-pel process line**. Use this pattern to detect problems printing characters and images that are 2 pels wide.
- **A character written with a 3-pel scan line and a 3-pel process line**. Use this pattern to detect problems printing characters and images that are 3 pels wide.
- **A character written with a 4-pel scan line and a 4-pel process line**. Use this pattern to detect problems printing characters and images that are 4 pels wide.
- **A set of concentric boxes.** Use this pattern to compare stroke widths in the scan and process directions.

Gray Print Sample *

Use the gray sample to detect spots and streaks. A 24% black shading pattern is printed on the entire page.

All White Print Sample

Use the all-white sample to detect marks, residual images, and background. The electrophotographic process is turned on and forms are fed through the printer, but no print data is sent to the printer (that is, all pels are off).

Postprocessor Print Sample

Use this sample to detect problems with the OFFSET signal for postprocessing equipment. One copy of the postprocessor print sample will print 200 sheets (200 simplex pages or 400 duplexed pages). The print sample will generate “Alternate Offset Stacker” signals, which will activate the OFFSET signal in the postprocessor interface cable. The sample will be printed in sets of 20 sheets, and the first sheet of each set will toggle the OFFSET signal. The print sample will allow testing, problem isolation, and setup of postprocessor equipment that supports the OFFSET signal.

Text 1 Print Sample

Use this text sample to evaluate general print quality when running large numbers of prints. The text sample is a repetition of the letter E. It represents 4% for a 216 x 279-mm (8.5 x 11-in.) print. Three copy marks are printed at the perforation.

Text 2 Print Sample

Use this text sample to detect spots and streaks. The sample has characters covering the page.

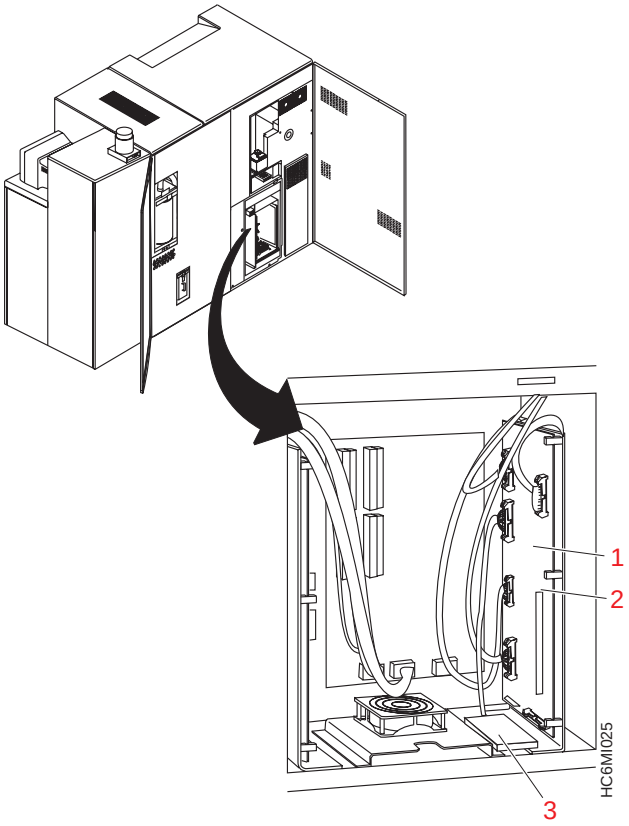
Printhead Power Sample *

Use the printhead power sample to measure the effect of printhead power at the drum when directed by your next level support. A 38-mm wide black stripe is printed 137 mm from the front edge of the paper. The printhead power sample also produces a thin line in the carrier strip centered at the location of the Side1/Side2 verification marks. The thin line may be used to adjust the position of the Side1/Side2 verification sensor.

* - Only available when printing from Service Actions.

Printer Diagnostics

Table 221. Maintenance Panel



(continued on next page)

Maintenance Panel

Printer diagnostics, which you run from the maintenance panel, allow you to:

- Read or write to the printer memory
- Test individual printer parts
- Clear the printer memory.

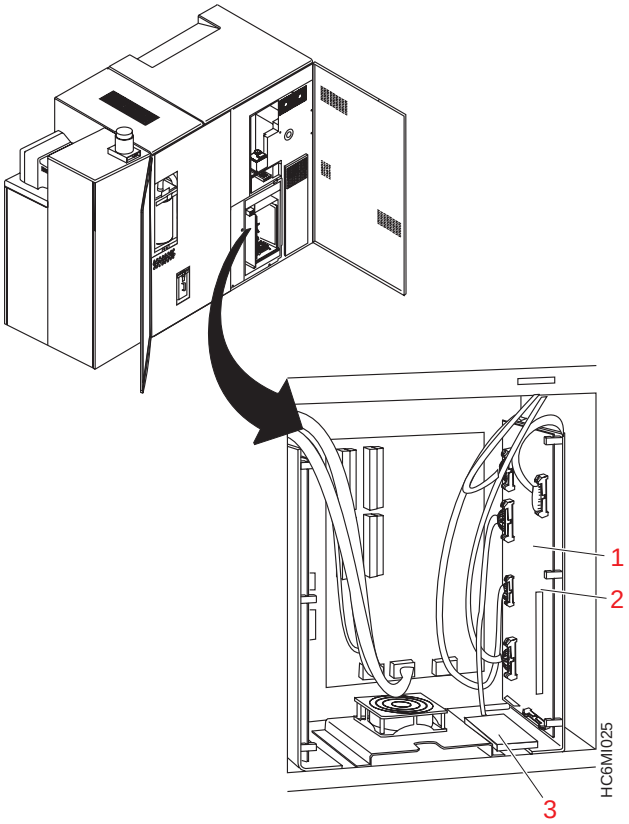
The maintenance panel **(3)** is located behind the cover of the printer. It has a 4-digit LED display and a hexadecimal key pad.

When you have completed your service call, ensure that you put away the maintenance panel.

An extension cable is available to allow you to move the panel close to where you are working. (See Tool Usage Descriptions.) For example, it is convenient to have the panel at the right end of the machine when you are performing printhead adjustments. The connectors are keyed, so that they cannot be installed upside down. When using the extension cable, remember:

- Always power off the machine before connecting or disconnecting the extension cable.
- Do not attach the panel to a vertical surface, such as a cover. The magnets are not strong enough to hold the panel, and they may scratch the paint.

Table 221. Maintenance Panel (continued)



Diagnostic Function Switch

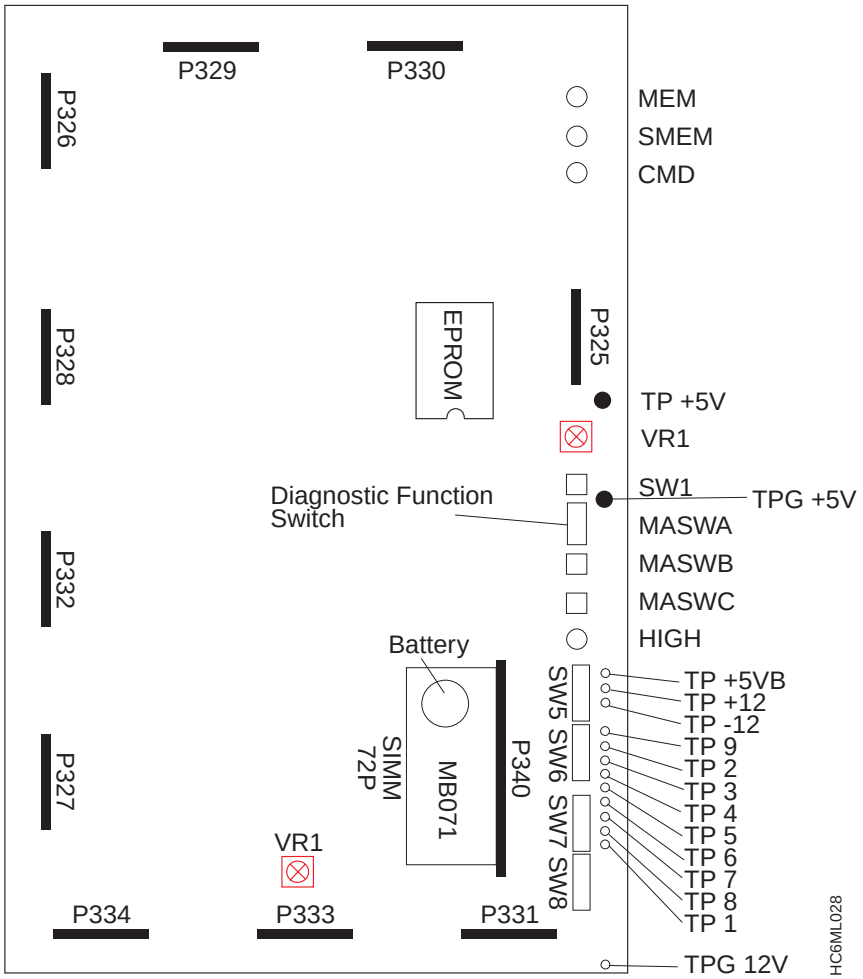
(continued on next page)

Diagnostic Function Switch

You use the diagnostic function switch **(2)** to select among the various functions of the maintenance panel.

- The switch is labeled MASWA and is located on the edge of the CPxxx Card **(1)**.
- You can reach it reached through a small cover directly over the card by loosening the screws, lifting the cover, and swinging it to one side.
- It is a rotary switch with 10 positions, 0–9. The switch functions are described in Diagnostic Function Switch Positions.
- After setting the diagnostic function switch to 3 or 8, the function is not available until the reset switch is toggled or the printer is powered on.

Table 222. Reset Switch



* Note: Depending on card level VR1 could be in either location.

CPxxx Card

Reset Switch

- The reset switch is located above the diagnostic function switch on the CPxxx Card. It is labeled **SW1**.
- The reset switch is a spring-loaded toggle switch used with the diagnostic function switch when the diagnostic function switch is set to position 3 or 8.
- Use the reset switch to start the diagnostic functions associated with the switch setting.
- When the diagnostics are completed, return the diagnostic function switch to position 0, and toggle the reset switch or power on the printer.

Diagnostic Function Switch Positions

Table 223. Settings and Functions of the Diagnostic Function Switch

Switch Position	Function	Description	Refer to Page:
0	Normal print	Normal operating mode. Set the switch to this position before you power on or reset the printer.	1111
1	Not used		
2	Read from or write to memory	Allows nonvolatile storage (NVS) to be read or written.	1112
3	Driver, sensor, and encoder margin tests, and adjustment routines	Tests the operation of the motors, sensors, and encoders, and gives feedback while making adjustments.	1119
4	Not used		
5	Read and write memory address	Allows long strings of continuous memory addresses to be conveniently read. Also allows FExx addresses to be written.	1189
5	Hot Roll Control	Set address FE10 to 0.	1190
5	Modify steering servo	Allows the service representative to increase servo gain.	1191
5	Modify backup roll lift motor open/close timing	Allows the service representative to change backup roll lift motor open/close timing.	1193
6	Not used		
7	Not used		
8	Clear memory	Clears the contents of the NVS (memory). **Attention:** Use with caution because the contents of the NVS cannot be recovered once the NVS is cleared.	1195
9	Optical sensor margin tests	Tests the optical sensors for low output.	1196

Normal Print (Position 0)

When the diagnostic function switch is set to position 0, printer-logic routines automatically run and are followed by a printer warm-up sequence whenever you:

- Initially power on the printer
- Move the reset switch.

To start the initialization sequence:

1. Set the diagnostic function switch to position 0.
2. Either power on the printer or move the reset switch.

When the printer-logic routines complete, the maintenance panel displays:

0	0	0	0

If an error code appears before the above is displayed, see MAP 0010: Symptom Start MAP.

Read From or Write to Memory (Position 2)

Note: For information on reading from and writing to the Toner Control Program, see: Read From or Write to Toner Control Program Memory (Position 2).

With the diagnostic function switch set to position 2, you can read from or write to NVS. Doing this helps you:

- Restore the developer mix count if it is necessary to drain and reinstall it
- Read and change machine operating parameters.

Preparing to Read From or Write to Memory

Step 1	Set the diagnostic function switch to position 2.				
Step 2	Move the maintenance panel to the service position.				
Step 3	Wait until the maintenance panel display looks like this:	F			_
Step 4	Press **3** followed by **Enter.**				
Step 5	The display shows a flashing:	u	c		_

Reading from Memory

Step 1	First follow the steps in Preparing to Read From or Write to Memory.				
Step 2	Use Memory Addresses and Values to find the addresses for the counters you want to display. **Note:** Counters usually consist of two memory addresses—a high and a low address.				
Step 3	The maintenance panel display is flashing and looks like this:	u	c		_
Step 4	Press **0 1** followed by **Enter.**				
Step 5	The display shows:	u	c	0	1
Step 6	The display changes to a flashing:				_
Step 7	Enter the memory address, for example, **F F 0 1**.				
Step 8	The display shows a flashing:	F	F	0	1
Step 9	Press **Enter**.				
Step 10	The display shows: Where 0 1. is the low-order byte of the selected address, and X Y is the value at that address.	0	1.	X	Y
Step 11	Press **Enter** to go to the next memory address (FF02).				
Step 12	To determine actual feet, combine the two values read from two memory addresses and add three zeros. For example, suppose FF1F contained 01 and FF1E contained 40; the combined result would be 0140, to which you add three zeros. Thus, 0 140 000 linear feet have printed since that counter was last set to zero.				
Step 13	Press **Start/Stop** when you are finished reading memory addresses.				
Step 14	Set the diagnostic function switch to position 0..				

Writing to Memory

Step 1	First follow the steps in Preparing to Read From or Write to Memory.				
Step 2	Use Memory Addresses and Values to find the memory addresses for the counters you want to display or change. **Note:** Counters usually consist of two memory addresses—a high address and a low address.				
Step 3	The maintenance panel display is flashing and looks like this:	u	c		_
Step 4	Press **F 1** followed by **Enter.**				
Step 5	The display shows:	u	c	F	1
Step 6	The display changes to a flashing:				_
Step 7	Enter the memory address, for example, **F F 1 E**				
Step 8	The display shows a flashing:	F	F	1	E
Step 9	Press **Enter**				
(continued on next page)					

Step 10	The display shows: Where 1 E. is the low-order byte of the selected address, and X Y is the value at that address.	1	E.	X	Y
Step 11	Enter the desired value, for example, **5 0**				
Step 12	The display shows:	1	E.	5	0
Step 13	Press **Enter.**				
Step 14	The display changes to: Where 1 F. is the next address (1F is the high-order byte in this example) and X Y is the value at that address.	1	F.	X	Y
Step 15	Press **Enter** to go to the next memory address, if desired.				
Step 16	Press **Start/Stop** when you are finished writing memory addresses.				
Step 17	Set the diagnostic function switch to position 0..				

Memory Addresses and Values

Note: See Hexadecimal-to-Decimal Conversion for conversion assistance.

Table 224. Memory Addresses and Values

Memory Address (Hex)	Description	Default Value (Hex)	Actual Value or Other Valid Value (Hex)
FF09 (high) FF08 (low)	Standard developer-mix reference setting	Mix PN 1402729 08 (high) 50 (low)	Approximately 850 Kft
		PN 1402718 10 (high) 00 (low)	Approximately 1 Mft
FF0D (high) FF0C (low)	Oil feed rate when not printing (minutes between feeds)	00 20	0D = 00 0C = 10, 20, 25, 30, 35
FF16 (high) FF17 (low)	Hot Roll print count	00 (high) 00 (Low)	Set to “00” when Hot Roll is replaced
FF18 (high) FF19 (low)	Backup Roll print count	00 (high) 00 (Low)	Set to “00” when Backup Roll is replaced.
FF1F (high) FF1E (low)	Developer mix usage value based on conveyor roll revolutions. This usage is greater than the actual footage printed.	Mix usage ÷ 1000. If usage is unknown, install new mix.	× 1000
FF20 (See note 3)	Oil feed rate during printing (printing between feeds)	Normal value = 64	
FF21 (See note 4)	Cycle time for oiler belt (seconds between belt movements)	Normal value = 08	08 = 1.2 seconds 04 = 0.6 second 02 = 0.3 second
FF23	Steering motor maximum rotation.	32	32 = 50 steps
FF24	Steering motor skew data.	A8	32 = 50 steps

Table 224. Memory Addresses and Values (continued)

Memory Address (Hex)	Description	Default Value (Hex)	Actual Value or Other Valid Value (Hex)
FF25	Flag to save steering control changes	00 = Restore default values in addresses FF23 and FF24	FF = Save changes
FF28	Toner empty counter for toner collector full.		0, 1, 2, 3
FF29 (See note 1)	Page counter after toner empty was detected		100 pages/count ADD TONER at X'0A'
FE50 (See note 2)	Steering gain	00	00 (low), 01 (medium), 02 (high)

Notes:

1. This memory address does not need to be updated or restored in case of an NVS erase.
2. This memory value must be read or written using diagnostic function switch position 5 (see Modify Steering Servo (Position 5)).
3. For microcode levels 9.7 and higher: If this value is set using the Maintenance Panel, the value will be over-written by the Oil Rate value set in Configure Printer and Define Forms when ever the form is changed or a Restart or Shutdown occurs.
4. For microcode levels 9.7 and higher: If this value is set using the Maintenance Panel, the value will be over-written by the Oil Belt Speed value set in Configure Printer and Define Forms when ever the form is changed or a Restart or Shutdown occurs.

Read From or Write to Toner Control Program Memory (Position 2)

With the diagnostic function switch set to position 2, you can Read from or Write to NVS to change the Toner Control Program or see what value is set in the Toner Control Program.

Step 1	Set the diagnostic function switch to position 2.				
Step 2	Move the maintenance panel to the service position				
Step 3	Wait until the maintenance panel display looks like this:	F			_
Step 4	Press **5** followed by **Enter**.				
Step 5	The display shows: Where “XX” is the selected Toner Control Program.	1	1	X	X
Step 6	Key in the value for the toner P/N being used on this printer. • **Toner P/N 1402828:** Key in the value **16** and press Enter. • **Toner P/N 1402717:** Key in the value **04** and press Enter. **Attention:** Do not use any other setting unless you are instructed to do so by level 2 support.				
Step 7	The display shows: Where “XX” controls the drum surface voltage and developer bias voltage.	1	H	X	X
Step 8	Key in the value for the toner P/N being used on this printer. • **Toner P/N 1402828:** Key in the value **C1** for Japan or **C5** for all other countries and press Enter. • **Toner P/N 1402717:** Key in the value **A1** for Japan or **A3** for all other countries and press Enter.				
Step 9	Press Enter.				
Step 10	The flashing display shows:	F			_
Step 11	Set the diagnostic function switch to position 0.				

Exerciser Routines (Position 3)

You run the exerciser routines from the maintenance panel.

The exerciser routines are divided into three types:

- Driver Routines which enable you to test the operation of components such as motors, coronas, fans and lamps.
- Sensor Routines enable you to test the operation of sensors and switches.
- Adjustment Routines allow you to adjust the laser diodes, drum surface voltage and toner concentration.

Preparing to Run Exerciser Routines

1. Remove all forms from the forms path if necessary.
2. Move the maintenance panel to the service position.
3. Set the diagnostic function switch to position 3.
4. Either power on the printer or toggle the reset switch.

At this point, you can select the run options and the routine you want to invoke.

Run Options

You can select different options for the routines you run.

These options enable you to:

- Change loop count
- Set buzzer on or off
- Read memory address
- Set optical sensor margin check on or off.

Selecting Run Options

Step 1	Remove all forms from the forms path if necessary.				
Step 2	Move the maintenance panel to the service position.				
Step 3	Set the diagnostic function switch to position 3.				
Step 4	Either power on the printer or toggle the reset switch.				
Step 5	The display shows: Where X can be one of the following: - No option selected. 0 A loop count has been selected. 1 Continuous looping has been selected 5 A margin check of the optical sensors has been selected.	F	X		_
Step 6	Enter the option number: (For example, **E 0**)				
Step 7	The display looks this with **E 0** flashing.	F	X	E	0
Step 8	Press **Enter**.				
Step 9	The display shows:	F	X	E	0
Step 10	The operation executes.				
Step 10	The remaining displays depend on which routine was selected.				
Step 11	Press **Start/Stop**, to select a routine or to change the option that was selected.				
Step 12	After completing testing: 1. Set the diagnostic function switch to position 0. 2. Toggle the reset switch.				

Run Option E0 - Change Loop Count:

Use this function to set the number of times a driver routine will loop.

Valid values are 01 to FF (in hex).

Entering FF causes the routine to loop continuously.

This setting applies only to the next driver routine you select. After that routine completes the loop option is automatically reset to 01.

Note: See Hexadecimal-to-Decimal Conversion for conversion assistance.

Step 1	Follow the procedure in Selecting Run Options to start a run option.				
Step 2	Enter run option E0.				
Step 3	The display shows:	c	-		_
Step 4	Enter the loop count: (For example, **1 A** for 26 loops.)				
Step 5	The looks like this with **1 A** flashing.	c	-	1	A
Step 6	Press **Enter**.				
Step 7	The display shows:	c	-	1	A
Step 8	Press **Start/Stop**.				
Step 9	Go to Driver Routines and select the desired routine.				

Run Option E2 - Set Buzzer On or Off:

Use this function to turn on or off the printer diagnostic buzzer.					
Step 1	Follow the procedure in Selecting Run Options to start a run option.				
Step 2	Enter run option E2.				
Step 3	The display shows: Where X can be one of the following: 0 Buzzer presently set off. 1 Buzzer presently set on.	b	X	-	_
Step 4	Change the setting if desired. (For example, enter **0** to turn the buzzer off.)				
Step 5	The display looks like this with **- 0** flashing.	b	1	-	0
Step 6	Press **Enter**.				
Step 7	The display shows:	b	1	-	0
Step 8	Press **Start/Stop**				
Step 9	Go to Sensor Routines or Driver Routines and select the desired routine.				

Run Option E4 - Read Memory Address:

Use this function to read from printer memory. Use diagnostic function switch position 2 to write to the memory. **Note:** See Hexadecimal-to-Decimal Conversion for conversion assistance.					
Step 1	See Selecting Run Options for the procedure to start a run option.				
Step 2	Enter run option E4.				
Step 3	The display shows:				_
Step 4	Enter the memory address. (For example, **F 1 0 1**)				
Step 5	The display shows a flashing:	F	1	0	1
Step 6	Press **Enter**.				
Step 7	The display shows: Where 0 1. is the low order byte of the selected address, and X Y is the value at that address.	0	1.	X	Y
Step 8	Press **1** to go to the next memory address (FF02), or press **0** to go to the previous memory address (FF00).				
Step 9	Press **Start/Stop** when you are finished reading memory addresses.				

Run Option E5 - Set Optical Sensor Margin Check On or Off:

Use this function to check for optical sensors that may fail intermittently. Set the margin check to 1, then run the sensor routine for the sensor in question.					
Step 1	See Selecting Run Options for the procedure to start a run option.				
Step 2	Enter run option E5.				
Step 3	The flashing display shows:	5	o	-	_
Step 4	Enter 1 to turn on the margin check, or 0 to turn off the margin check. For example, enter **1**.				
Step 5	The display looks like this with the **1** flashing.	5	o	-	1
Step 6	Press **Enter**.				
Step 7	The display shows:	5	o	-	1
Step 8	Press **Start/Stop**.				
Step 9	Go to Sensor Routines and run the desired routine.				

Driver Routines

Driver routines are used to test components such as motors, sensors, and switches. Table 225 lists the driver routines by number. Table 316 lists all the exerciser routines by part ID, for example, M101, M102,.... The routines are described in more detail on the following pages. E1XX Error Codes to MAP Cross Reference lists the Driver Routine error codes.					
Step 1	Remove all forms from the forms path if necessary.				
Step 2	Move the maintenance panel to the service position.				
Step 3	Set the diagnostic function switch to position 3.				
Step 4	Either power on the printer or toggle the reset switch.				
Step 5	The display shows: Where X can be one of the following: - No option selected. 0 A loop count has been selected. 1 Continuous looping has been selected 5 A margin check of the optical sensors has been selected.	F	X		_
Step 6	Enter the routine number: for example, **0 1**				
Step 7	The display looks like this with **0 1** flashing.	F	X	0	1
Step 8	Press **Enter**.				
Step 9	The driver routine runs and the routine number appears:	F	X	0	1
(continued on next page)					

Step 10	The remaining displays depend on which routine was selected. The test number appears while the test is running. **F - flashes display when the test is complete**.
Step 11	Press **Start/Stop**, to stop the driver routine or select another exerciser routine.
Step 12	After completing the routine you selected: 1. Set the diagnostic function switch to position 0. 2. Toggle the reset switch.

Table 225. Driver Routines by Number

Routine	Part ID	Part Name
01	M501	Mirror Motor
02	M104	Cyclone Blower Motor
03	M106	Cleaner Housing Motor
04	M108	Cleaner Brush Motor (Clockwise)
05	M108	Cleaner Brush Motor (Counterclockwise)
08	M107	Drum Motor
09	M101	Mag Brush Motor
0A	M102	Toner Feed Motor
0B	PL101	Erase Lamp
0C	CH1	Charge Corona
0D	CH4	Preclean Corona
0E	CH3	Transfer Corona
0F	CH2	Developer Bias
10	M105	Tractor Motor
11	M103	Retractor Motor
18	M804	Pendulum Motor
19	M804	Pendulum Motor
1B	M803	Stacker Table Motor
1C	M801 M802	Left Finger Belt Motor Right Finger Belt Motor
23	M705	Steering Motor
25	M701	Backup-Roll Motor

Table 225. Driver Routines by Number (continued)

Routine	Part ID	Part Name
26	M703	Hot Roll Motor
27	M701 M703	Hot Roll Motor
28	M706	Oiler-Belt Motor
29	M704	Scuff Roll Motor
2A	L701	Oil Pump 1
2B	L702	Oil Pump 2
2C	L703	Oil Pump 3
30	PH	Preheat Platen
31		Fuser
32	B705 B707	Paper Cooling Fans
35	CPxxx	Toner Supply Low Signal on CPxxx Card
3B	LD272	Laser Diode Card
3F	M502	Resolution Lens Motor
40	LD272	Laser Diode Card
4D	M610	Backup Roll Lift Motor

Driver Routine Descriptions

Table 226. Driver Routine 01

Routine #	01
Routine Name	Mirror Motor (M501) Driver Routine
What happens during the Routine	This test activates the Mirror Motor (M501) for one minute to test the motor and driver operation.
Errors that can be detected	E148

Table 227. Driver Routine 02

Routine #	02
Routine Name	Cyclone Blower Motor (M104) Driver Routine
What happens during the Routine	This test activates the Cyclone Blower Motor (M104) for 5 seconds to test the motor and driver operation.
Errors that can be detected	E141

Table 228. Driver Routine 03

Routine #	03
Routine Name	Cleaner Housing Motor (M106) Driver Routine
What happens during the Routine	This test activates the Cleaner Housing Motor (M106) to test the motor and driver operation. 1. The test first detects the initial home position of the Cleaner Housing Motor. 2. The motor continues to turn until the home position is detected again. 3. The buzzer sounds when the home position is detected.
Error Free Results	If the test completes with no error, a value appears in the display. The normal value is 0200 ±6.
Errors that can be detected	E143, E144, E109

Table 229. Driver Routine 04

Routine #	04
Routine Name	Cleaner Brush Motor (M108) Driver Routine
What happens during the Routine	This test operates the Cleaner Brush Motor (M108) in the *clockwise* direction, as seen from the front. The test runs for 5 seconds.
Errors that can be detected	E1E3

Table 230. Driver Routine 05

Routine #	05
Routine Name	Cleaner Brush Motor (M108) Driver Routine
What happens during the Routine	This test runs the Cleaner Brush Motor (M108) in the counter*clockwise* direction, as seen from the front. The test runs for 5 seconds.
Errors that can be detected	E1E3

Table 231. Driver Routine 08

Routine #	08
Routine Name	Drum Motor (M107) Driver Routine
What happens during the Routine	This test activates the Drum Motor (M107) for 5 seconds to test the motor and driver operation.
Actions you need to perform	Open the transfer station to verify that the drum rotates.

Table 232. Driver Routine 09

Routine #	09
Routine Name	Mag Brush Motor (M101) Driver Routine
What happens during the Routine	This test activates the Mag Brush Motor (M101) for 10 seconds to test the motor and driver operation.
Errors that can be detected	E1E1

Table 233. Driver Routine 0A

Routine #	0A
Routine Name	Toner Feed Motor (M102) Driver Routine
What happens during the Routine	This test activates the Toner Feed Motor (M102) for 5 seconds to allow a visual inspection of the toner feed driver operation (Motor turns in the forward direction).
Actions you need to perform	Watch the toner feed roll shaft and the toner hopper paddle shaft to verify that a toner feed operation is performed.

Table 234. Driver Routine 0B

Routine #	0B
Routine Name	Erase Lamp (PL101) Driver Routine
What happens during the Routine	This test activates the Erase Lamp (PL101) for 5 seconds to test the lamp and the lamp sensor.
Errors that can be detected	E1d3, E1d4

Table 235. Driver Routine 0C

Routine #	0C
Routine Name	Charge Corona Driver Routine
What happens during the Routine	This test activates the charge corona high voltage power supply for 5 seconds to test the power supply and the corona.
Errors that can be detected	E138

Table 236. Driver Routine 0D

Routine #	0D
Routine Name	Preclean Corona Driver Routine
What happens during the Routine	This test activates the AC corona high voltage power supply for 5 seconds to test the power supply and corona operation.
Errors that can be detected	E136

Table 237. Driver Routine 0E

Routine #	0E
Routine Name	Transfer Corona Driver Routine
What happens during the Routine	This test activates the transfer corona high voltage power supply for 5 seconds to test the power supply and corona operation.
Errors that can be detected	E139

Table 238. Driver Routine 0F

Routine #	0F
Routine Name	Developer Bias Driver Routine
What happens during the Routine	This test activates the developer bias high voltage power supply for 5 seconds to test the developer bias supply and the developer bias.
Errors that can be detected	E137
	Note: Run routine **C2** to measure the actual high voltage bias output.

Table 239. Driver Routine 10

Routine #	10
Routine Name	Tractor Motor (M105) Driver Routine
What happens during the Routine	1. This routine initializes the forms feed position. 2. Then feeds an 11 inch page at normal speed.

Table 239. Driver Routine 10 (continued)

Errors that can be detected	E186

Table 240. Driver Routine 11

Routine #	11
Routine Name	Retractor Motor (M103) Driver Routine
What happens during the Routine	1. This routine initializes the Retractor Motor (M103) position, then the retractor is advanced and retracted. The buzzer sounds when the retractor reaches the forward or reverse position. 2. When the advance operation is completed, the Retractor Motor (M103) stays in position for 2 seconds. The retractor will stay in the same position if you press the **Enter** key. 3. The Retractor Motor (M103) retracts when you press the **Enter** key a second time.
Errors that can be detected	E18A, E18b

Table 241. Driver Routine 18

Routine #	18
Routine Name	Pendulum Motor (M804) Driver Routine
What happens during the Routine	1. The Pendulum Motor (M804) is driven until the initial position of the pendulum is detected. 2. The buzzer sounds when the initial position is detected.
Errors that can be detected	E1C3, E1C5, E1DD

Table 242. Driver Routine 19

Routine #	19
Routine Name	Pendulum Motor (M804) Driver Routine
What happens during the Routine	1. The initial position of the pendulum is detected. 2. The pendulum operates continuously for 5 seconds.
Errors that can be detected	E1C3, E1C5, E1DD

Table 243. Driver Routine 1B

Routine #	1B
Routine Name	Stacker Table Motor (M803) Driver Routine
What happens during the Routine	1. The Stacker Table Motor (M803) raises the table to the upper limit position. 2. The table stays in the upper limit position for 2 seconds. 3. The table is lowered in 100-ms motor drive pulses, with a 500-ms pause between pulses. 4. When a stacker-full condition is detected, the buzzer sounds.
Error free results	A normal value is 50 (the number of times required to fill the stacker from the upper limit) when the stacker height adjustment knob is in the lower position. A normal value is 28 (the number of times required to fill the stacker from the upper limit) when the stacker height adjustment knob is in the upper position.
Errors that can be detected	E1Cb, E1C9 (thermal error (M803-TH)– turn power off when this error occurs).

Table 244. Driver Routine 1C

Routine #	1C
Routine Name	Left Finger Belt Motor (M801) and Right Finger Belt Motor (M802) Driver Routine
What happens during the Routine	This test operates the Left Finger Belt Motor (M801) and the Right Finger Belt Motor (M802) for approximately 5 seconds.

Table 245. Driver Routine 23

Routine #	23
Routine Name	Steering Motor (M705) Driver Routine
What happens during the Routine	This routine moves the Steering Motor (M705): 1. Counterclockwise 20 steps. 2. Clockwise 40 steps. 3. Counterclockwise 20 steps.
Errors that can be detected	E194

Table 246. Driver Routine 25

Routine #	25
Routine Name	Backup-Roll Motor (M701) Driver Routine
What happens during the Routine	1. Move the backup roll (BUR) to the closed position. 2. Stop for approximately 2 seconds; the buzzer sounds for approximately 1 second. (Press the ENTER key to stop the backup roll at the closed position.) 3. Move the backup roll to the open position; the buzzer sounds for approximately 1 second.
Errors that can be detected	E195, E196, E197, E198, E1EF, E1F0. If backup roll motor thermal error E1d1 (M701-TH) occurs or backup idler roll motor thermal error E1d2 occurs, power off the failing printer.

Table 247. Driver Routine 26

Routine #	26
Routine Name	Hot Roll Motor (M703) Driver Routine
What happens during the Routine	This routine drives the Hot Roll Motor (M703) (with the backup roll open) for approximately 5 seconds.

Table 248. Driver Routine 27

Routine #	27
Routine Name	Hot Roll Motor (M703) Driver Routine
What happens during the Routine	This routine drives the Hot Roll Motor (M703) (with the backup roll closed) for approximately 5 seconds.
Errors that can be detected	E195, E196, E197, E198, E19d. If backup roll motor thermal error E1d1 (M703-TH) occurs, power off the failing printer.

Table 249. Driver Routine 28

Routine #	28
Routine Name	Oiler-Belt Motor (M706) Driver Routine
What happens during the Routine	This routine operates the Oiler-Belt Motor (M706) for 200 steps, and checks the operation of motor and drive system (200 steps is 1 revolution of the motor shaft).
Actions you need to perform	Locate the Oiler-Belt Motor (M706) and remove the motor cover. Mark the end of the motor shaft with a pencil as a reference point to check for motor rotation.
Errors that can be detected	E18F

Table 250. Driver Routine 29

Routine #	29
Routine Name	Scuff Roll Motor (M704) Driver Routine
What happens during the Routine	This routine drives the scuff roll motor for approximately 5 seconds to check the operation of the motor and drive system.

Table 251. Driver Routine 2A

Routine #	2A
Routine Name	Oil Pump 1 (L701) Driver Routine
What happens during the Routine	This routine runs the oil pump which feeds oil to the front third of the oiler belt
Actions you need to perform	You can make a visual check while this routine is running to verify that oil is being fed to the oiler belt. Remove the oiler belt and use run option E0 with loop count FF for continuous operation while this routine runs.
Error free results	Oil should feed through the oil holes on the front third of the oiler belt.
Errors that can be detected	E199, E19b

Table 252. Driver Routine 2B

Routine #	2B
Routine Name	Oil Pump 2 (L702) Driver Routine
What happens during the Routine	This routine runs the oil pump which feeds oil to the middle third of the oiler belt
Actions you need to perform	You can make a visual check while this routine is running to verify that oil is being fed to the oiler belt. Remove the oiler belt and use Run Option E0 - Change Loop Count with loop count FF for continuous operation while this routine runs.
Error free results	Oil should feed through the oil holes on the middle third of the oiler belt.
Errors that can be detected	E199, E19b

Table 253. Driver Routine 2C

Routine #	2C
Routine Name	Oil Pump 3 (L703) Driver Routine
What happens during the Routine	This routine runs the oil pump which feeds oil to the rear third of the oiler belt
Actions you need to perform	You can make a visual check while this routine is running to verify that oil is being fed to the oiler belt. Remove the oiler belt and use Run Option E0 - Change Loop Count with loop count FF for continuous operation while this routine runs.
Error free results	Oil should feed through the oil holes on the rear third of the oiler belt.
Errors that can be detected	E199, E19b

Table 254. Driver Routine 30

Routine #	30
Routine Name	Preheat Platen Driver Routine
What happens during the Routine	This routine starts the preheater and measures the time it takes the preheat platen to reach the ready state. The buzzer sounds for approximately 1 second when the heater is ready. **Note:** You can set the length of time the Preheat Platen remains ON after becoming READY by setting Run Option E0 - Change Loop Count to (unit = minute).
Error free results	If the test completes with no error, the display shows a number that indicates the time it took the preheat platen to become READY. The first 2 digits are minutes, and the second 2 digits are seconds. A normal value is 15 minutes or less.
Errors that can be detected	E1AE, E1AF, E1b0

Table 255. Driver Routine 31

Routine #	31
Routine Name	Fuser Driver Routine
What happens during the Routine	This routine rotates the fuser roll and energizes the heater lamps to measure the time it takes the hot roll to reach operating temperature. The buzzer sounds for approximately 1 second when the fuser roll reaches operating temperature. **Note:** You can set the length of time the Fuser Drive Platen remains ON after becoming READY by setting Run Option E0 - Change Loop Count to (unit = minute).
Error free results	If the test completes with no error, the display shows a number that indicates the time it took the fuser roll to become READY. The first 2 digits are minutes, and the second 2 digits are seconds. A normal value is 15 minutes or less.
Errors that can be detected	E1A4, E1A7

Table 256. Driver Routine 32

Routine #	32
Routine Name	Paper Cooling Fans Driver Routine
What happens during the Routine	This routine operates the following paper cooling fans B705 and B707 for 5 seconds. Set Run Option E0 - Change Loop Count to FF for continuous operation aids in checking the fans while this driver routine is running.

Table 257. Driver Routine 35

Routine #	35
Routine Name	Toner Supply Low Signal Routine
What happens during the Routine	This routine turns on the Toner Supply Low signal (-TNR Empty Detect) for 5 seconds. Measure the voltage between P251–5 and P251–6 while running the routine. The voltage should switch between +3.5 and –3.5 Vdc as the routine starts and stops. Set Run Option E0 - Change Loop Count to FF for continuous operation aids in checking the voltage while this driver routine is running.

Table 258. Driver Routine 3B

Routine #	3B
Routine Name	Laser Diode Routine
What happens during the Routine	This routine switches on all five beams for 5 seconds without switching on the mirror motor. **Note:** You can set the length of time the Laser remains ON by setting Run Option E0 - Change Loop Count to (unit = 5 seconds).
Error free results	If the routine completes with no error, a flashing Fx3b is displayed.

Table 258. Driver Routine 3B (continued)

Errors that can be detected	E135

Table 259. Driver Routine 3F

Routine #	3F
Routine Name	Resolution Lens Motor (M502) Routine
What happens during the Routine	This routine tests the resolution lens motor. It does the following: 1. Moves the lens into the 480 DPI position. 2. Stops the motor for 2 seconds; the buzzer sounds for 1 second. **Note:** If you press **Enter**, the motor stops at the 480 DPI position. 3. Moves the resolution lens to the 600 DPI position. 4. Stops the motor for 2 seconds; the buzzer sounds for 1 second.
Errors that can be detected	E154

Table 260. Driver Routine 40

Routine #	40
Routine Name	Laser Beam Scanning Position Driver Routine
What happens during the Routine	This routine cycles through each of the Laser Beams. 1. The resolution lens motor is started. 2. After 1 minute, Laser 1 turns on. Beam Detect signal is checked. Laser 1 turns off. 3. Laser 2 turns on. Beam Detect signal is checked. Laser 2 turns off. 4. Laser 3 turns on. Beam Detect signal is checked. Laser 3 turns off. 5. Laser 4 turns on. Beam Detect signal is checked. Laser 4 turns off. 6. Laser 5 turns on. Beam Detect signal is checked. Laser 5 turns off.
Errors that can be detected	E135, E148, E14A, E14b, E14F, E150, E151, E152, E153

Table 261. Driver Routine 4D

Routine #	4D
Routine Name	Backup Roll Lift Motor (M610) Driver Routine
What happens during the Routine	This routine activates the backup roll lift motor (M610) and moves the motor through the operating cycle. 1. Clockwise (press the `Start/Stop` key two times quickly to stop the motor in this position. The backup roll will move slightly away from the hot roll) 2. Counterclockwise 3. Clockwise 4. Counterclockwise when `Start/Stop` key is pressed.
Errors that can be detected	E0D5

Sensor Routines

Sensor routines are used to test components such as sensors and switches. Table 262 lists the sensor routines by number. Table 316 lists all the exerciser routines by part ID, for example, S617, S624. The routines are described in more detail on the following pages.					
Step 1	Remove all forms from the forms path if necessary.				
Step 2	Move the maintenance panel to the service position.				
Step 3	Set the diagnostic function switch to position 3.				
Step 4	Either power on the printer or toggle the reset switch.				
Step 5	The display shows: Where X can be one of the following: - No option selected. 0 A loop count has been selected. 1 Continuous looping has been selected 5 A margin check of the optical sensors has been selected.	F	X		_
Step 6	Enter the routine number: for example, **5 0**				
Step 7	The display looks like this with **5 0** flashing.	F	X	5	0
Step 8	You will perform different actions at this point depending on which routine has been selected. Follow the instructions for the particular routine you wish to run.				
Step 09	Press **Start/Stop**, to stop the routine or select another exerciser routine.				
Step 10	After completing the routine you selected: 1. Set the diagnostic function switch to position 0. 2. Toggle the reset switch.				

Table 262. Sensor Routines by Number

Routine	Part ID	Part Name
50	S116	Cyclone Blower Rotation Sensor
51	S104	Cleaner Brush Rotation Sensor
52	S103	Cleaner Housing Position Switch
53	S101	Toner Collector Switch
54	S106	Fine Filter Switch
55	S102	Filter Pressure Switch
56	S105	Drum Rotation Sensor
57	S110	Conveyor Roll Rotation Sensor
58	S108	Toner Empty Sensor
59	S118	PC Drum Cover Interlock Switch
5A	S111	Developer Drain Lever Switch
5B	S109	Developer Run Switch
5C	S115	Erase Lamp Sensor
5D	S117	EOF Sensor
60	S114	Transfer Station Open Sensor
62	S301	Upper Tractor Jam Sensor
64	S708 S709 S710	Tension Arm Encoder Sensors
65	PW111	Form Width Sensor Board
67	SW761	Printer Control Panel
68	S119	Splicing Lever Sensor

Table 262. Sensor Routines by Number (continued)

Routine	Part ID	Part Name
6E	S707	Skew Sensor
70	S617	Fuser Wrap Sensor
71	S712	BUR Position Sensor
72	S712	BUR Position Encoder Sensor
74	FL061	Stacker Length Rotary Board
75	S805 D803	Stacker Jam Sensor
76	S801 S802	Stacker Gate Safety Switch
77	S806	Stacker Gate Open Switch
78	S807	Stacker Table Upper Limit Switch
7A	S808	Stacker Table Lower Limit Switch
7D	S809	Pendulum Position Sensor
7E	LP041	Stacker Control Panel
80	S704	Oiler Gate Open Switch
81	S711	Oiler Belt End Switch
82	S702	Oiler Empty Sensor
8D	S803 D801	Rear Stacker Height Sensor
8E	S804 D802	Front Stacker Height Sensor
91	S112	Tractor Motor Encoder Sensor
92	S113	Retractor Motor Encoder Sensor

Table 262. Sensor Routines by Number (continued)

Routine	Part ID	Part Name
9C	S624	Backup Roll Lift Motor Sensor
9D	S503	Lens Position Sensor
9E	S501	Printhead Cover Interlock Switch

Sensor Routine Descriptions

Table 263. Sensor Routine 50

Routine #	50				
Routine Name	Cyclone Blower Rotation Sensor (S116) Routine				
Action 1	Rotate the pulley so that the magnet is opposite the Cyclone Blower Rotation Sensor (S116).				
Result 1	The buzzer should be on, and the display should show:	o	n	5	0
Action 2	Rotate the pulley so that the magnet is more than 90° from the Cyclone Blower Rotation Sensor (S116).				
Result 2	The buzzer should be off, and the display should show:	o	F	5	0

Table 264. Sensor Routine 51

Routine #	51				
Routine Name	Cleaner Brush Rotation Sensor (S104) Routine				
Action 1	Rotate the pulley so that the magnet is opposite the Cleaner Brush Rotation Sensor (S104).				
Result 1	The buzzer should be on, and the display should show:	o	n	5	1
Action 2	Rotate the pulley so that the magnet is away from the Cleaner Brush Rotation Sensor (S104).				
Result 2	The buzzer should be off, and the display should show:	o	F	5	1

Table 265. Sensor Routine 52

Routine #	52				
Routine Name	Cleaner Housing Position Switch (S103) Routine				
Action 1	Ensure that the cleaner housing is in the print position. **Note:** Use driver routine 03 to change the cleaner housing position.				
Result 1	The buzzer should be on, and the display should show:	o	n	5	2
Action 2	Move the cleaner housing away from the print position.				
Result 2	The buzzer should be off, and the display should show:	o	F	5	2

Table 266. Sensor Routine 53

Routine #	53				
Routine Name	Toner Collector Switch (S101) Routine				
Action 1	Lower the toner collector assembly.				
Result 1	The buzzer should be on, and the display should show:	o	n	5	3
Action 2	Raise the toner collector assembly.				
Result 2	The buzzer should be off, and the display should show:	o	F	5	3

Table 267. Sensor Routine 54

Routine #	54				
Routine Name	Fine Filter Switch (S106) Routine				
Action 1	Remove the fine filter.				
Result 1	The buzzer should be on, and the display should show:	o	n	5	4
Action 2	Reinstall the fine filter.				
Result 2	The buzzer should be off, and the display should show:	o	F	5	4

Table 268. Sensor Routine 55

Routine #	55				
Routine Name	Filter Pressure Switch (S102) Routine				
Result 1	The cyclone blower is not running during this test. Correct operation of the Filter Pressure Switch (S102) is indicated by a display of:	o	F	5	5

Table 269. Sensor Routine 56

Routine #	56				
Routine Name	Drum Rotation Sensor (S105) Routine				
Action 1	Rotate the pulley so that the magnet is opposite the Drum Rotation Sensor (S105).				
Result 1	The buzzer should be on, and the display should show:	o	n	5	6
Action 2	Rotate the pulley so that the magnet is more than 90° from the Drum Rotation Sensor (S105).				
Result 2	The buzzer should be off, and the display should show:	o	F	5	6

Table 270. Sensor Routine 57

Routine #	57				
Routine Name	Conveyor Roll Rotation Sensor (S110) Routine				
Action 1	Rotate the pulley so that the magnet is opposite the Conveyor Roll Rotation Sensor (S110).				
Result 1	The buzzer should be on, and the display should show:	o	n	5	7
Action 2	Rotate the pulley so that the magnet is more than 90° from the Conveyor Roll Rotation Sensor (S110).				
Result 2	The buzzer should be off, and the display should show:	o	F	5	7

Table 271. Sensor Routine 58

Routine #	58				
Routine Name	Toner Empty Sensor (S108) Routine				
Action 1	Clean all toner from the Toner Empty Sensor (S108).				
Result 1	The buzzer should be on, and the display should show:	o	n	5	8
Action 2	Cover the Toner Empty Sensor (S108) with toner.				
Result 2	The buzzer should be off, and the display should show:	o	F	5	8

Table 272. Sensor Routine 59

Routine #	59				
Routine Name	PC Drum Cover Interlock Switch (S118) Routine				
Action 1	Open the drum cover.				
Result 1	The buzzer should be on, and the display should show:	o	n	5	9
Action 2	Close the drum cover.				
Result 2	The buzzer should be off, and the display should show:	o	F	5	9

Table 273. Sensor Routine 5A

Routine #	5A				
Routine Name	Developer Drain Lever Switch (S111) Routine				
Action 1	Pull out the drain lever knob. **Note:** Do not raise the lever.				
Result 1	The buzzer should be on, and the display should show:	o	n	5	A
Action 2	Release the drain lever knob.				
Result 2	The buzzer should be off, and the display should show:	o	F	5	A

Table 274. Sensor Routine 5B

Routine #	5B				
Routine Name	Developer Run Switch (S109) Routine				
Action 1	Press the developer run switch.				
Result 1	The buzzer should be on, and the display should show:	o	n	5	b
Action 2	Release the developer run switch.				
Result 2	The buzzer should be off, and the display should show:	o	F	5	b

Table 275. Sensor Routine 5C

Routine #	5C				
Routine Name	Erase Lamp Sensor (S115) Routine				
Action 1	Shine a flashlight directly on the sensor.				
Result 1	The buzzer should be off, and the display should show:	o	F	5	c
Action 2	Remove the flashlight beam from the sensor.				
Result 2	The buzzer should be on, and the display should show:	o	n	5	c

Table 276. Sensor Routine 5D

Routine #	5D				
Routine Name	EOF Sensor (S117) Routine				
Action 1	Cover the EOF Sensor (S117) with paper.				
Result 1	The buzzer should be on, and the display should show:	o	n	5	d
Action 2	Expose the EOF Sensor (S117) to light.				
Result 2	The buzzer should be off, and the display should show:	o	F	5	d

Table 277. Sensor Routine 60

Routine #	60				
Routine Name	Transfer Station Open Sensor (S114) Routine				
Action 1	Move the transfer station release lever to the left.				
Result 1	The buzzer should be on, and the display should show:	o	n	6	0
Action 2	Latch the transfer station in the print position.				
Result 2	The buzzer should be off, and the display should show:	o	F	6	0

Table 278. Sensor Routine 62

Routine #	62				
Routine Name	Upper Tractor Jam Sensor (S301) Routine				
Action 1	Cover the Upper Tractor Jam Sensor (S301) with paper.				
Result 1	The buzzer should be on, and the display should show:	o	n	6	2
Action 2	Remove the paper from the Upper Tractor Jam Sensor (S301).				
Result 2	The buzzer should be off, and the display should show:	o	F	6	2

Table 279. Sensor Routine 64

Routine #	64				
Routine Name	Tension Arm Encoder Board Routine				
Action 1	Remove the paper from the machine and allow the tension arm to raise to its uppermost position.				
Result 1	The buzzer should be off, and the display should show:	-	-	6	4
Action 2	Move the tension arm slowly to its lowest position.				
Result 2	The buzzer should remain off, and the display should show: (This is the upper limit.)	U	L	6	4
			5	6	4
			3	6	4
			1	6	4
		-	1	6	4
		-	5	6	4
		-	3	6	4
	(This is the lower limit.)	L	L	6	4

Table 280. Sensor Routine 65

Routine #	65				
Routine Name	Form Width Sensor Board (PW111) Routine				
Action	When you initiate this test, the display should show the paper width setting of the tractors. As the width changes, the display should change accordingly.				
Result	The buzzer should be on, and the display should show:	X	X.	X	
	where XX.X = 08.0, 08.5, 09.0, 09.5, 10.0, 10.5, 11.0, 11.5, 12.0, 12.5, 13.0, 13.5, 14.0, 14.5, 5.0, 15.5, 16.0, 16.5, 17.0, 17.5, or 18.0				

Table 281. Sensor Routine 67

Routine #	67				
Routine Name	Printer Control Panel (SW721) Routine				
Action 1	With no control panel button pressed.				
Result 1	The buzzer should be off, and the display should show:	o	F	-	
Action 2	Press the control panel buttons. **Note:** The LEDs on the panel flash on and off.				
Result 2	The buzzer should be on, and the display should show:				
	When the Contrast Up button is pressed	o	n	-	1
	When the Contrast Down button is pressed	o	n	-	2
	When the Paper Forward button is pressed	o	n	-	3
	When the Paper Reverse button is pressed	o	n	-	4
	When the Left-perf button is pressed	o	n	-	5
	When the Right-perf button is pressed	o	n	-	6

Table 282. Sensor Routine 68

Routine #	68				
Routine Name	Splicing Lever Sensor (S119) Routine				
Action 1	Move the lever to the run position.				
Result 1	The buzzer should be off, and the display should show:	o	F	6	8
Action 2	Move the lever to the splice position.				
Result 2	The buzzer should be on, and the display should show:	o	n	6	8

Table 283. Sensor Routine 6E

Routine #	6E				
Routine Name	Skew Sensor (S707) Routine				
Action 1	Completely uncover the sensor. **Note:** Shield the sensor from room light during the following test.				
Result 1	The buzzer should be on, and the display should show:	L	r	6	E
Action 2	Cover the rear half of the sensor with white paper.				
Result 2	The buzzer should be off, and the display should show:		r	6	E
Action 3	Cover the front half of the sensor with white paper.				
Result 3	The buzzer should be off, and the display should show:	L		6	E
Action 4	Completely cover the sensor with white paper.				
Result 4	The buzzer should be off, and the display should show:			6	E

Table 284. Sensor Routine 70

Routine #	70				
Routine Name	Fuser Wrap Sensor (S617) Routine				
Action 1	Operate the wrap sensor actuator.				
Result 1	The buzzer should be on, and the display should show:	o	n	7	0
Action 2	With the wrap sensor actuator in the normal operating position.				
Result 2	The buzzer should be off, and the display should show:	o	F	7	0

Table 285. Sensor Routine 71

Routine #	71				
Routine Name	Backup Roll Position Sensor (S712) Routine				
Action 1	**Note:** Use driver routine 25 to close and open the backup roll. With the backup roll in the closed position				
Result 1	The buzzer should be on, and the display should show:	o	n	7	1
Action 2	With the backup roll in the open position:				
Result 2	The buzzer should be off, and the display should show:	o	f	7	1

Table 286. Sensor Routine 72

Routine #	72				
Routine Name	Backup Roll Position Encoder Sensor (S712) Routine				
Action 1	Remove the sensor. Insert a piece of metal to block and unblock the sensor. With the sensor unblocked				
Result 1	the buzzer should be on, and the display should show:	o	n	7	2
Action 2	With the sensor blocked with metal				
Result 2	The buzzer should be off, and the display should show:	o	F	7	2

Table 287. Sensor Routine 74

Routine #	74				
Routine Name	Stacker Length Rotary Board (FL031) and Forms Length Sensor Board (FL061) Routine				
Result	The current forms length is shown on the display.				
	For example, the 8.5-in. form length displays:		8.	5	
	And the 11.0-in. form length displays:	1	1.	0	

Table 288. Sensor Routine 75

Routine #	75				
Routine Name	Stacker Jam Sensor (S805) and Stacker Jam LED (D803) Routine				
Action 1	Block the light of the stacker jam sensor with paper.				
Result 1	The buzzer should be on, and the display should show:	o	n	7	5
Action 2	Remove the paper from the stacker jam sensor.				
Result 2	The buzzer should be off, and the display should show:	o	F	7	5

Table 289. Sensor Routine 76

Routine #	76				
Routine Name	Stacker Gate Safety Switch (S801) and (S802) Routine				
Action 1	Press the Stacker Gate Safety Switch bail.				
Result 1	The buzzer should be on, and the display should show:	o	n	7	6
Action 2	Release the Stacker Gate Safety Switch bail.				
Result 2	The buzzer should be off, and the display should show:	o	F	7	6

Table 290. Sensor Routine 77

Routine #	77				
Routine Name	Stacker Gate Open Switch (S806) Routine				
Action 1	Open the stacker gate.				
Result 1	The buzzer should be on, and the display should show:	o	n	7	7
Action 2	Close the stacker gate.				
Result 2	The buzzer should be off, and the display should show:	o	F	7	7

Table 291. Sensor Routine 78

Routine #	78				
Routine Name	Stacker Table Upper Limit Switch (S807) Routine				
Action 1	Run driver routine 1B. Press **Start/Stop** when the stacker table is at the upper limit.				
Action 2	Run sensor routine 78.				
Result 2	The buzzer should be on, and the display should show:	o	n	7	8
Action 3	Run driver routine 1B to move the stacker table down.				
Result 3	The buzzer should be off, and the display should show:	o	F	7	8

Table 292. Sensor Routine 7A

Routine #	7A				
Routine Name	Stacker Table Lower Limit Switch (S808) Routine				
Action 1	Insert a feeler gauge blade or screwdriver in the Stacker Table Lower Limit Switch (S808).				
Result 1	The buzzer should be on, and the display should show:	o	n	7	A
Action 2	Remove the feeler gauge blade or screwdriver from the Stacker Table Lower Limit Switch (S808).				
Result 2	The buzzer should be off, and the display should show:	o	F	7	A

Table 293. Sensor Routine 7D

Routine #	7D				
Routine Name	Pendulum Position Sensor (S809) Routine				
Action 1	Pivot the pendulum slowly toward the extreme rear of its travel. The pendulum is in the home position when it is vertical. When the pendulum is in the back end of the stacker				
Result 1	The buzzer should go off and remain off, and the display should show:	o	F	7	d
Action 2	Pivot the pendulum toward the front of the stacker.				
Result 2	The buzzer should go on and remain on, and the display should show:	o	n	7	d

Table 294. Sensor Routine 7E

Routine #	7E				
Routine Name	Stacker Control Panel (LP041) Routine				
Action 1	With no stacker panel button pressed				
Result 1	The buzzer should be off, and the Maintenance Panel display should show:	o	F	-	
	The stacker panel display should show:			.0	
Action 2	Press the stacker panel buttons. **Note:** While this test is running, the page length LEDs on the stacker panel flash on and off.				
Result 2	The buzzer should be on, and the maintenance panel display should show:	o	n	-	**X**
	The stacker panel display should show: where **X** =		**X**	.0	
	When the Ready button is pressed	**1**			
	When the Stop button is pressed	**2**			
	When the Table Up button is pressed	**5**			
	When the Table Stop button is pressed	**6**			
	When the Table Down button is pressed	**7**			
	When the Forms Feed button is pressed	**8**			
	When the Forms Select button is pressed	**9**			

Table 295. Sensor Routine 80

Routine #	80				
Routine Name	Oiler Gate Open Switch (S704) Routine				
Action 1	Open the oiler gate.				
Result 1	The buzzer should be on, and the display should show:	o	n	8	0
Action 2	Close the oiler gate.				
Result 2	The buzzer should be off, and the display should show:	o	F	8	0

Table 296. Sensor Routine 81

Routine #	81				
Routine Name	Oiler Belt End Switch (S711) Routine				
Action 1	Move the Oiler Belt End Switch (S711) actuator to the left.				
Result 1	The buzzer should be on, and the display should show:	o	n	8	1
Action 2	Return the Oiler Belt End Switch (S711) actuator to its normal position (straight up).				
Result 2	The buzzer should be off, and the display should show:	o	F	8	1

Table 297. Sensor Routine 82

Routine #	82				
Routine Name	Oiler Empty Sensor (S702) Routine				
Action 1	When the oil supply is empty				
Result 1	The buzzer should be on, and the display should show:	o	n	8	2
Action 2	When oil is in the reservoir				
Result 2	The buzzer should be off, and the display should show:	o	F	8	2

Table 298. Sensor Routine 8D

Routine #	8D				
Routine Name	Rear Stacker Height Sensor (S803) Routine				
Action 1	Interrupt the beam on the Rear Stacker Height Sensor (S803) with a piece of paper.				
Result 1	The buzzer should be on, and the display should show:	o	n	8	d
Action 2	Remove the paper from the beam path.				
Result 2	The buzzer should be off, and the display should show:	o	F	8	d

Table 299. Sensor Routine 8E

Routine #	8E				
Routine Name	Front Stacker Height Sensor (S804) Routine				
Action 1	Interrupt the beam on the Front Stacker Height Sensor (S804) with a piece of paper.				
Result 1	The buzzer should be on, and the display should show:	o	n	8	E
Action 2	Remove the paper from the beam path.				
Result 2	The buzzer should be off, and the display should show:	o	F	8	E

Table 300. Sensor Routine 91

Routine #	91				
Routine Name	Tractor Motor Encoder (S112)				
Action 1	Manually turn the tractors. The signal should switch between Result 1 and Result 2 every $^{1}/_{6}$ inch.				
Result 1	The buzzer should be on, and the display should show:	o	n	9	1
Result 2	The buzzer should be off, and the display should show:	o	f	9	1

Table 301. Sensor Routine 92

Routine #					
Routine Name	Retractor Motor Encoder Sensor (S113) Routine				
Action 1	Open the upper tractors. Open the transfer station. Manually move the retractor out (pull on the “lower” side).				
Result 1	With the retractor fully out, the beeper sounds and the panel shows:	o	n	9	2
Action 2	Manually move the retractor in (push on the “lower” side).				
Result 2	There is no beeper sound and the panel shows:	o	f	9	2

Table 302. Sensor Routine 9C

Routine #	9C				
Routine Name	Backup Roll Lift Motor Sensor (S624) Routine				
Action 1	Use driver routine 4D to move the backup roll lift motor shaft. When the backup roll lift motor has returned the backup roll to its normal position				
Result 1	The buzzer should be on and the display should show:	o	n	9	C
Action 2	When the backup roll lift motor has moved the backup roll away from the hot roll				
Result 2	The buzzer should be off and the display should show:	o	F	9	C

Table 303. Sensor Routine 9D

Routine #	9D				
Routine Name	Resolution Lens Position Sensor (S503) Routine				
Action 1	Use driver routine 3F to move the resolution switching lens. When the lens is in position				
Result 1	The buzzer should be on, and the display should show:	o	n	9	d
Action 2	When the lens is not in position				
Result 2	The buzzer should be off, and the display should show:	o	F	9	d

Table 304. Sensor Routine 9E

Routine #	9E				
Routine Name	Printhead Cover Interlock Switch (S502) Routine				
Action 1	Remove the printhead cover.				
Result 1	The buzzer should be on, and the display should show:	o	n	9	e
Action 2	Install the cover				
Result 2	The buzzer should be off, and the display should show:	o	F	9	e

Adjustment Routines

Adjustment routines are used to make adjustments to drum surface voltage, toner concentration, and laser diodes. Table 305 lists the adjustment routines by number. Table 316 lists all the exerciser routines by part ID, for example, LD1, M102,.... The routines are described in more detail on the following pages.					
Step 1	Remove all forms from the forms path if necessary.				
Step 2	Move the maintenance panel to the service position.				
Step 3	Set the diagnostic function switch to position 3.				
Step 4	Either power on the printer or toggle the reset switch.				
Step 5	The display shows: **Note:** The X values are not used for these routines.	F	X		_
Step 6	Enter the routine number: for example, **C 1**				
Step 7	The display looks like this with **C 1** flashing.	F	X	C	1
Step 8	Press **Enter**.				
Step 9	The routine executes and the routine number appears:	F	X	0	1
Step 10	The remaining displays depend on which routine was selected.				
Step 11	Press **Start/Stop**, to stop the driver routine or select another exerciser routine.				
Step 12	After completing the routine you selected: 1. Set the diagnostic function switch to position 0. 2. Toggle the reset switch.				

Table 305. Adjustment Routines by Number

Routine	Part ID	Part Name
C0	LD1 LD2 LD3 LD4 LD5	Laser Diodes
C1	LD1 LD2 LD3 LD4 LD5	Laser Diodes
C2	Charge	Drum Surface Voltage
C3	Toner Feed	Increase the Toner Concentration
C7	Charge	Drum Surface Voltage
C8	LD1	Laser Diode
C9	LD2	Laser Diode
CA	LD3	Laser Diode
CB	LD4	Laser Diode
CD	LD5	Laser Diode

Adjustment Routine Descriptions

Table 306. Adjustment Routine C0

Routine #	C0
Routine Name	Laser Diode (LD1), (LD2), (LD3), (LD4), and (LD5) Adjustment Routine
Action 1	Cover the return mirror with paper to prevent damage to the photoconductor drum. The mirror motor (M501) is off at first.
Action 2	Press Enter repeatedly to turn the mirror motor, on and off .

Table 307. Adjustment Routine C1

Routine #	C1
Routine Name	Laser Diode (LD1), (LD2), (LD3), (LD4), and (LD5) Adjustment Routine
Action 1	The mirror motor is turned on immediately. **Note:** The laser diodes are turned off and on, but the mirror motor (M501) is always on.
Action 2	The laser diodes are off at first. Press **Enter** repeatedly to turn on and off all the laser diodes.

Table 308. Adjustment Routine C2

Routine #	C2				
Routine Name	Drum Surface Voltage Adjustment Routine				
Use this test to perform the Drum Surface Voltage measurements. It charges and rotates the PC Drum and operates the developer, but no toner feeds take place.					
Action 1	The print process turns on immediately.				
Result 1	While the routine is running the display shows:	r	A	d	y

Table 309. Adjustment Routine C3

Routine #	C3				
Routine Name	Increase the Toner Concentration				
Use this test after a Toner Underfeed error (SRC 0235), has occurred. The toner has been removed from the mix and must be restored to the correct level.					
Action	This routine alternately feeds toner for 1.5 seconds, and then pauses for 1.5 seconds, until the normal value is reached. **Note:** The toner feeding begins immediately.				
Result	The buzzer is off, the display shows: Where xxx is the toner control reference voltage.	b	x	x	x
	The buzzer is off, and the display shows: Where yyy is the actual voltage measurement.	b	y	y	y
	The display will continue to change until the actual voltage measurement is ≥ to the reference voltage. The toner feed stops and the buzzer beeps.				
	If the actual voltage measurement is < the reference voltage, toner feed starts again for 1.5 seconds then pauses for 1.5 seconds, until the actual voltage measurement is ≥ to the reference voltage.				
	If the actual voltage measurement is too high a toner overfeed condition is indicated by the display:	_	_	L	C

Table 310. Adjustment Routine C7

Routine #	C7
Routine Name	Drum Surface Voltage Adjustment
Use this routine to initialize the high voltage power supply before you adjust the drum surface voltage. See PC Drum Surface Voltage for the adjustment steps.	

Table 311. Adjustment Routine C8

Routine #C8					
Routine Name	Laser Diode (LD1) Adjustment Routine				
Use this routine to turn on laser diode LD1.					
Action 1	Cover the return mirror with paper to prevent damage to the photoconductor drum. **Note:** The Mirror Motor (M501) is off at first.				
Action 2	Press **Enter** repeatedly to turn off and on the Mirror Motor.				

Table 312. Adjustment Routine C9

Routine #	C9
Routine Name	Laser Diode (LD2) Adjustment Routine
Use this routine to turn on laser diode LD2.	
Action 1	Cover the return mirror with paper to prevent damage to the photoconductor drum. **Note:** The Mirror Motor (M501) is off at first.
Action 2	Press **Enter** repeatedly to turn off and on the Mirror Motor.

Table 313. Adjustment Routine CA

Routine #	CA
Routine Name	Laser Diode (LD3) Adjustment Routine
Use this routine to turn on laser diode LD3.	
Action 1	Cover the return mirror with paper to prevent damage to the photoconductor drum. **Note:** The Mirror Motor (M501) is off at first.
Action 2	Press **Enter** repeatedly to turn off and on the Mirror Motor.

Table 314. Adjustment Routine CB

Routine #	CB
Routine Name	Laser Diode (LD4) Adjustment Routine
Use this routine to turn on laser diode LD4.	
Action 1	Cover the return mirror with paper to prevent damage to the photoconductor drum. **Note:** The Mirror Motor (M501) is off at first.
Action 2	Press **Enter** repeatedly to turn off and on the Mirror Motor.

Table 315. Adjustment Routine CD

Routine #	CD
Routine Name	Laser Diode (LD5) Adjustment Routine
Use this routine to turn on laser diode LD5.	
Action 1	Cover the return mirror with paper to prevent damage to the photoconductor drum. **Note:** The Mirror Motor (M501) is off at first.
Action 2	Press **Enter** repeatedly to turn off and on the Mirror Motor.

Table 316. Exerciser Routines by Part ID

Part ID	Routine	Part Name
B705	32	Paper Cooling Fans
B707	32	Paper Cooling Fans
Charge	C7	Drum Surface Voltage
CH1	0C	Charge Corona
CH2	0F	Developer Bias
CH3	0E	Transfer Corona
CH4	0D	Preclean Corona
CPxxx	35	Toner Supply Low Signal on CPxxx Card
D801	8D	Stacker Height Rear Sensor Lamp
D802	8E	Stacker Height Front Sensor Lamp
D803	75	Stacker Jam Sensor Lamp
FL031	74	Forms Length Sensor Card
FL061	74	Stacker Length Select Card
Fuser	31	Hot Roll
Laser	3B	LD272
LD1	C8	Laser Diode
LD2	C9	Laser Diode
LD272	C0	Laser Diodes
LD272	C1	Laser Diodes
LD3	CA	Laser Diode
LD4	CB	Laser Diode
LD5	CD	Laser Diode

Table 316. Exerciser Routines by Part ID (continued)

Part ID	Routine	Part Name
LP041	7E	Stacker Control Panel
L701	2A	Oil Pump 1
L702	2B	Oil Pump 2
L703	2C	Oil Pump 3
M101	09	Mag Brush Motor
M102	0A	Toner Feed Motor
M103	11	Retractor Motor
M104	02	Cyclone Blower Motor
M105	10	Tractor Motor
M106	03	Cleaner Housing Motor
M107	08	Drum Motor
M108	04	Cleaner Brush Motor (Clockwise)
M108	05	Cleaner Brush Motor (Counter Clockwise)
M501	01	Mirror Motor
M502	3F	Resolution Lens Motor
M610	4D	Backup Roll Lift Motor
M701	25	Backup-Roll Motor
M703	26	Hot Roll Motor
M703	27	Hot Roll Motor
M704	29	Scuff Roll Motor
M705	23	Steering Motor
M706	28	Oiler-Belt Motor

Table 316. Exerciser Routines by Part ID (continued)

Part ID	Routine	Part Name
M801	1C	Stacker Rear Finger Belt Motor
M802	1C	Stacker Gate Finger Belt Motor
M803	1B	Stacker Table Motor
M804	18	Pendulum Motor
M804	19	Pendulum Motor
PH	30	Preheat Platen
PL101	0B	Erase Lamp
PW111	65	Form Width Sensor Board
SW761	67	Printer Control Panel
S101	53	Toner Collector Switch
S102	55	Filter Pressure Switch
S103	52	Cleaner Housing Position Switch
S104	51	Cleaner Brush Rotation Sensor
S106	54	Fine Filter Switch
S108	58	Toner Empty Sensor
S109	5B	Developer Run Switch
S110	57	Conveyor Roll Rotation Sensor
S111	5A	Developer Drain Lever Switch
S112	91	Tractor Motor Encoder Sensor
S113	92	Retractor Motor Encoder Sensor
S114	60	Transfer Station Open Sensor
S115	5C	Erase Lamp Sensor

Table 316. Exerciser Routines by Part ID (continued)

Part ID	Routine	Part Name
S116	50	Cyclone Blower Rotation Sensor
S117	5D	EOF Sensor
S118	59	PC Drum Cover Interlock Switch
S119	68	Splicing Lever Sensor
S502	9E	Printhead Cover Interlock Switch
S503	9D	Lens Position Sensor
S617	70	Fuser Wrap Sensor
S624	9C	Backup Roll Lift Motor Sensor
S702	82	Oiler Empty Sensor
S704	80	Oiler Gate Open Switch
S707	6E	Skew Sensor
S708	64	Tension Arm Encoder Sensor
S709	64	Tension Arm Encoder Sensor
S710	64	Tension Arm Encoder Sensor
S711	81	Oiler Belt End Switch
S712	71	BUR Position Sensor
S712	72	BUR Position Encoder Board
S801 S802	76	Stacker Gate Safety Switch
S803	8D	Rear Stacker Height Sensor
S804	8E	Front Stacker Height Sensor
S805	75	Stacker Jam Sensor

Table 316. Exerciser Routines by Part ID (continued)

Part ID	Routine	Part Name
S806	77	Stacker Gate Open Switch
S807	78	Stacker Table Upper Limit Switch
S808	7A	Stacker Table Lower Limit Switch
S809	7D	Pendulum Position Sensor
Toner Feed	C3	Increase the Toner Concentration

Read Memory Address String (Position 5)

Use this function to read a continuous string of printer memory addresses. It is most useful for support purposes, which require the reading of logged data. **Note:** See Hexadecimal-to-Decimal Conversion for conversion assistance.					
Step 1	Press **Stop** on the Display/Touch Screen .				
Step 2	Set the diagnostic function switch to position 5.				
Step 3	The maintenance panel display is flashing and looks like this:				_
Step 4	Press **0** followed by **Enter**				
Step 5	The display changes to a flashing:			_	
Step 6	Enter the memory address, for example, **F F 0 1**				
Step 7	The display shows a flashing:	F	F	0	1
Step 8	Press **Enter**.				
Step 9	The display shows: Where 0 1. is the low-order byte of the selected address, and X Y is the value at that address.	0	1.	X	Y
Step 10	Press **Enter** to go to the next memory address (FF02).				
Step 11	The display shows:	0	2.	X	Y
Step 12	Press **Start/Stop** when you are finished reading memory addresses.				
Step 13	Set the diagnostic function switch to position 0..				

Write Memory Address (Position 5)

Use this function to write to printer memory addresses FExx. **Note:** See Hexadecimal-to-Decimal Conversion for conversion assistance.					
Step 1	Press **Stop** on the Display/Touch Screen .				
Step 2	Set the diagnostic function switch to position 5.				
Step 3	The maintenance panel display is flashing and looks like this:				_
Step 4	Press **7** followed by **Enter**				
Step 5	The display changes to a flashing:			_	
Step 6	Enter the memory address, for example, **F E 0 1**				
Step 7	The display shows a flashing:	F	E	0	1
Step 8	Press **Enter**.				
Step 9	The display shows: Where 0 1. is the low-order byte of the selected address, and X Y is the value at that address.	0	1.	X	Y
Step 10	Enter the desired value, for example, **55**				
Step 11	The display shows:	0	1.	5	5
Step 12	Press **Enter** to go to the next memory address .				
Step 13	Press **Start/Stop** when you are finished writing memory addresses.				
Step 14	Set the diagnostic function switch to position 0..				

Modify Steering Servo (Position 5)

Table 317. Modify Steering Servo

Use this function to improve steering performance.					
Step 1	Set the diagnostic function switch to position 2.				
Step 2	Follow the instructions in Writing to Memory to set memory address FF23 to 32 and FF25 to FF.				
Step 3	Set the diagnostic function switch to position 5. **Note:** If E02C appears, continue to wait.				
Step 4	The display looks like this:	F			_
Step 5	Press **7** and then **Enter.**				
Step 6	The display is flashing and looks like this:				_
Step 8	Enter the memory address, **F E 5 0**				
Step 9	The flashing display looks like this:	F	E	5	0
Step 10	Press **Enter.**				
Step 11	The display shows: Where 5 0 is the low-order byte of the selected address, and X Y is the value at that address. The default value is 00.	5	0.	X	Y
Step 12	Enter **0 1** or **0 2**				
(continued on next page)					

Table 317. Modify Steering Servo (continued)

Step 13	The display looks like this:	5	0	0	1
Step 14	Press **Enter.**				
Step 15	The display changes to: Where 5 1 is the next address, and X Y is the value at that address.	5	1.	X	Y
Step 16	Press **Start/Stop**				
Step 17	Set the diagnostic function switch to position 0.				

Modify Backup Roll Lift Motor Open/Close Timing (Position 5)

Use this function to set up the correct backup roll lift motor timing.					
Step 1	Set the diagnostic function switch to position 5.				
Step 2	The display looks like this:	F			_
Step 5	Press **7** and then **Enter.**				
Step 6	The display is flashing and looks like this:				_
Step 8	Enter the memory addresses, as shown in Table 318.				
Step 9	Press **Enter** to advance to the next memory address.				
Step 10	Press **Start/Stop**				
Step 11	Set the diagnostic function switch to position 0.				

Table 318. Backup Roll Lift Motor Open/Close Timings

Memory Address (Hex)	Description	Default Value (Hex)	Actual Value or Other Valid Value (Hex)
FE01 (high) FE00 (low)	BR Lift Motor Close Timing	016E Where 01 (high) 6E (low)	 0180 (Maximum) 012E (Minimum)
FE03 (high) FE02 (low)	BR Lift Motor Open Timing	01BE Where 01 (high) BE (low)	 01F0 (Maximum) 01A0 (Minimum)

Backup Roll Lift Motor Timing Adjustment Procedure for Bloom Improvement

To make adjustments (reduce bloom), the CLOSE timing value should be increased (delayed) and the OPEN timing value should be decreased. However, changing the values too much can cause poor fuse grade and/or forms motion errors. Keep in mind that the initial values are already changed from previous values. Therefore, and changes should be made carefully and possible problems, such as areas left unfused, should be looked for.

Step 1. Start with the CLOSE (Low Data) timing value

Step 2. Increase the value to **76**, for example.

Step 3. Record the value and print several **Text 2** samples of five pages with stops between runs, marking the area near the backup roll or hot roll at each stop in order to identify bloom regions.

- If you get a error or if bloom gets worse, return to **6E** or some intermediate value.
- If no change is observed or bloom is improved, increase the value again to **7A** or perhaps **80**.

This is an iterative process, and it might be desirable to return to the initial setting if no improvement is observed. Record values at each step and keep samples in order to track any improvement or worsening of bloom.

Step 4. Adjust OPEN (Low Data) timing value.

Step 5. Decrease the value to **B0**, for example.

Step 6. Follow the same process as adjusting the close value, to determine whether any improvement can be gained by changing the value.

Step 7. Record values and keep samples at each step to track changes.

Step 8. Ensure that address FE08 is set to **FF** to save these values.

Clear Memory (Position 8)

With the diagnostic function switch set to position 8, you can clear the contents of nonvolatile storage (NVS) in the printer.

Attention: Use this setting only when instructed to by the MAPs.

1. Move the maintenance panel to the service position.
2. Set the diagnostic function switch to position 8.
3. Either toggle the reset switch or power on the printer.

The contents of memory are now cleared.

4. Allow 3 minutes for the printer to initialize.
5. Follow the procedures in
   - 1) Writing to Memory to restore the default values. (Default values appear in Table 224.)
   - 2) Read From or Write to Toner Control Program Memory (Position 2)
   - 3) Modify Backup Roll Lift Motor Open/Close Timing (Position 5) and Modify Steering Servo (Position 5)

Optical Sensor Margin Tests (Position 9)

With the diagnostic function switch set to position 9, you can test the following optical sensors in the printer:

- EOF sensor
- Erase sensors
- Stacker jam sensors
- Skew sensor
- Upper tractor jam sensor.

With age and use, deterioration, contamination, and misalignment of the optical sensors can cause form jams and background.

To test the optical sensors:

1. Move the maintenance panel to the service position.
2. Set the diagnostic function switch to position 9 .
3. Load forms in the printer.
4. Print several copies of a print sample.
5. Watch the Display/Touch Screen for an SRC to appear.
   - If no SRC appears, all sensors are within specification. Go to step 6.
   - If an SRC appears, do one of the following:
     – Clean sensor and lamp, check their alignment, and do steps 3 through 5.
     – Replace the lamp and do steps 3 through 5.
     – Replace the sensor and do steps 3 through 5.
6. Set the diagnostic function switch to position 0.

Side 1/Side 2 Diagnostics

There are two Side 1/Side 2 diagnostic tests available. They are as follows:

- MIC Side 2 Verification Test
- MIC Side 2 Sensor Test

To run Side 1/Side 2 Diagnostics:

- Select **Analyze** and then select **Service Actions**.
- Select **Mechanism Diagnostics**
- Then select one of the following:
  - MIC Side 2 Verification Test
  - MIC Side 2 Sensor Test

MIC Side 2 Verification Test

To perform the side 2 verification test do the following:

Note: Side 2 Verify must be enabled and the printer must be printing.

1. Select **Analyze** and then select **Service Actions**.
2. Select **Diagnostics**.
3. Select **Mechanism Diagnostics**.
4. Select printer **2**.
5. Select **MIC Side 2 Verification Test**.
6. Press **Run**. Nothing appears on the display until prints are run.
7. Run 250 primary print samples.

   Note: Side 1/side 2 verification SRCs (D71F, D720, D721, D724) are NOT reported while running in side 1/side 2 verification check mode.

   The printer will remain in test mode for 250 prints after **each** press of run, and will ignore side 1/side 2 errors for those 250 prints.

8. Return to the Side 1/Side 2 Verification Test screen and press **Run**.
9. The display shows the following:
   - WHITE BLACK POSITION

     New values appear after each title when **run** is pressed, while running.
10. The verification function is adjusted correctly when:
    - POSITION = 0
    - BLACK/WHITE > 2
11. If the black-to-white ratio is less than two, check the print quality of the verification marks to ensure that they are not light, smeared, or missing.
12. If the value of POSITION is not zero (0) or a value in the list below, you must adjust the process direction registration. See Registration.
    - 480 DPI = –10
    - 600 DPI = –15

    The POSITION value indicates the amount that the sensor card is out of adjustment, however, the sensor card is not adjustable. The value shown corresponds to the number of pels of adjustment required. A positive number means that the ’ Process Factory Adjust ’ value for Printer 1 should be increased.

    If the ’ Process Factory Adjust ’ had to be misadjusted so that the process registration is off by more than ±1.2 mm (to allow Side 2 Verify to work), contact your next level support.

MIC Side 2 Sensor Test

Note: Side 2 Verify must be enabled and the printer engine stopped.

To adjust the Side 1/Side 2 sensor:

1. Select **Analyze** and then select **Service Actions**.
2. Select **Print**.
3. Select **Print Samples**.
4. Select **Printhead power**.

Print enough Printhead Power samples to reach into printer 2. Note that this sample will not print side 1/side 2 verify marks. It should also be noted that this test must be done with the forms stopped.

1. Select **MIC Side 2 Sensor Test**
2. Press **Run**
3. The display shows **SENSOR OUTPUT** (and a value):

   If the sensor output is 0 or 255, the Side 1/Side 2 Sensor may be dirty or the control circuit may have failed.

   Note: It is very important that print registration has been accurately set (factory adjustment) before adjusting the Side 1/Side 2 Verify hardware. An example of good sensor output numbers are 60 with white paper under the Side 2 Verify sensor and 150 with the black bar under the sensor.

RS/6000 Controller Diagnositcs

Automatic Tests

The automatic diagnostic tests run after the RS/6000 Controller is turned on and before the AIX operating system is loaded. These tests also run when the system is reset. The following features are used during hardware problem determination.

Power On Light

The power on light indicates that all voltages in the power supply are present and within limits and that the fans are running. If a fan that is controlled by this power supply stops or does not start, the power supply turns the RS/6000 Controller off.

(continued on next page)

Diagnostics for Controller Type 7025 Model and Type 7043 Model 43P-140

Because there is no mode switch on these controllers, do the following to run diagnostics.

Use your laptop computer and the CE Tool Kit that is shipped with the controller to perform diagnostics on these types of controllers.

Ensure that the following laptop functions are active when you perform either ONLINE or STANDALONE diagnostic routines:

- Thinkpad functions
- Thinkpad configuration
- Serial Port

Run ONLINE Diagnostics in CONCURRENT Mode

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. SHUTDOWN AND POWER OFF THE PRINTER.
3. Power off the laptop computer.
4. Plug the Null Modem Cable (PJ 62H4857) into the Serial Port jack on the laptop.
5. Connect the other end of this cable to the controller Serial Port 1.
6. Insert the Laptop Communications Diskette (P/N 90H1644) into the laptop diskette drive.
7. Power on the laptop.
8. When the `Enter New Date` message appears on the laptop, enter the time and date.

   Press the **Enter** key twice.
9. At the `a:\>` prompt, type `ftterm`.

   Press the **Enter** key.
10. At the IBM screen, press the **Enter** key.
11. At the FTTERM main menu, press **ALT-F10**.

    `***Establish Connection If Necessary***` appears at the bottom of the screen
12. Power on the printer.
13. Wait until `login` appears on the laptop screen.

Note: The laptop may enter Screensaver mode. Press the **Enter** key periodically. If `login` does not appear within 10 minutes, go to Run Standalone Diagnostics.

14. When `login` appears, type `root` and press the **Enter** key.

    If a `password request` message appears, press **CTRL-D** to log off from `root`. Return to Step 13.
15. When `afccutok#` appears on the laptop screen, type `diag` and press the **Enter** key.
16. Follow the displayed instructions and select **Diagnostic Routines**.
17. Type **VT100** to define the terminal.
18. Select “System Verification” or “Problem Determination.”.
19. Select the resources for testing.
20. Press **ESC+7** for “Commit”. (F7 does not work.)
21. When testing is complete, use **F3** as many times as necessary to return to the AIX prompt `afccutok#`.
22. Press **CTRL-D** to log off from “root”.
23. Request that the system operator stop activity on the printer. Disable all host attachments.
24. Shutdown and power off the printer.
25. Power off the laptop.
26. Disconnect the Serial Port cable from the laptop and the controller.
27. Remove the Communications Diskette from the laptop.
28. Power on the printer.

Run STANDALONE Diagnostics

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. SHUTDOWN AND POWER OFF THE PRINTER.
3. Power off the laptop computer.
4. Plug the Null Modem Cable (PJ 62H4857) into the Serial Port jack on the laptop.
5. Connect the other end of this cable to the controller Serial Port 1.
6. Insert the Laptop Communications Diskette (P/N 90H1644) into the laptop diskette drive.
7. Power on the laptop.
8. When the `Enter New Date` message appears on the laptop, enter the time and date.

   Press the **Enter** key twice.
9. At the `a:\>` prompt, type `ftterm`.

   Press the **Enter** key.
10. At the IBM screen, press the **Enter** key.
11. At the FTTERM main menu, press **ALT-F10**.

    `***Establish Connection If Necessary***` appears at the bottom of the screen
12. Power on the printer.
13. Install the RS/6000 Diagnostics CD-ROM in the controller as soon as possible. (The RS/6000 CD is shipped with the controller.)

Note: The laptop may enter Screensaver mode. Press the **Enter** key periodically.

14. When the message `memory keyboard network SCSI` appears, press the **5** key.

    Wait several minutes until the `please define the system console` message appears.
15. Press the **2** key followed by ENTER to define the system console.
16. Follow the displayed instructions and select **Diagnostic Routines**.
17. Type in **VT100** to define the terminal.
18. If New Resource screen appears scroll down to continue... The resource list should appear
19. Select “System Verification” or “Problem Determination.”.
20. Select the resources for testing.
21. Press **ESC+7** for “Commit”. (F7 does not work.)
22. Follow the displayed instructions
23. When testing is complete, press **ESC–0**.
24. Remove the CD-ROM from the controller.
25. Shutdown and power off the printer.
26. Power off the laptop.
27. Disconnect the Serial Port cable from the laptop and the controller.
28. Remove the Communications Diskette from the laptop.
29. Power on the printer.

Redirect Systems Management Services (SMS) Screen

After you have installed or replaced a card in the controller, a Systems Management Services (SMS) window may appear on the Display/Touch Screen before the normal printer windows. The (SMS) window contains two icons for a short time. This does not interfere with normal printer operations.

If you wish, use the following procedure to stop the SMS window from appearing:

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. SHUTDOWN AND POWER OFF THE PRINTER.
3. Power off the laptop computer.
4. Plug the Null Modem Cable (PJ 62H4857) into the Serial Port jack on the laptop.
5. Connect the other end of this cable to the controller Serial Port 1 .
6. Insert the Laptop Communications Diskette (P/N 90H1644) into the laptop diskette drive.
7. Power on the laptop.
8. When the `Enter New Date` message appears on the laptop, enter the time and date.

   Press the **Enter** key twice.
9. At the `a:\>` prompt, type `ftterm`.

   Press the **Enter** key.
10. At the IBM screen, press the **Enter** key.
11. At the FTTERM main menu, press **ALT-F10**.

    `***Establish Connection If Necessary***` appears at the bottom of the screen
12. Power on the printer.
13. When `Press 0 to select this console as the active console` appears on the screen, immediately press **0** and then press the **Enter** key.
14. When the IML is complete, SHUTDOWN AND POWER OFF THE PRINTER.
15. Power off the laptop.
16. Disconnect the Serial Port cable from the laptop and the controller.
17. Remove the Communications Diskette from the laptop.
18. Power on the printer.

Maintenance Panel Display

The Maintenance Panel display does the following:

- Tracks and controls the progress of the built-in self-test (BIST), POST, and configuration programs
- Displays a unrecoverable-error message when the system control program ends abnormally
- Displays a diagnostic program message when there is no Display/Touch Screen

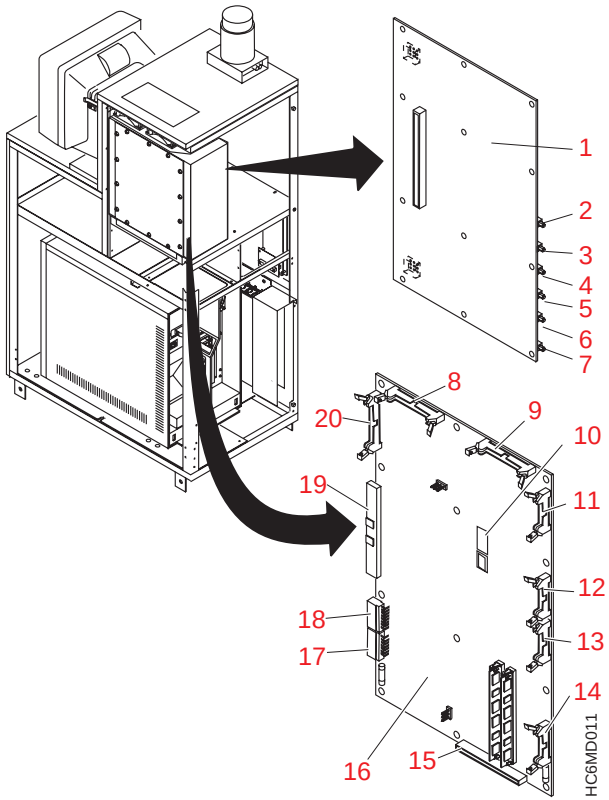
To form a service request number (SRN) from any steady number that appears during system power-on testing, put **101–** in front of the displayed number.

When a flashing **888** appears, an unrecoverable-error message is waiting to be read.

Mechanism Interface Card (MIC) Isolation Wrap Test

Use this test to diagnose mechanism interface card (MIC) problems in a standalone mode.

Table 319. MIC Isolation Wrap Test



Required Tools:

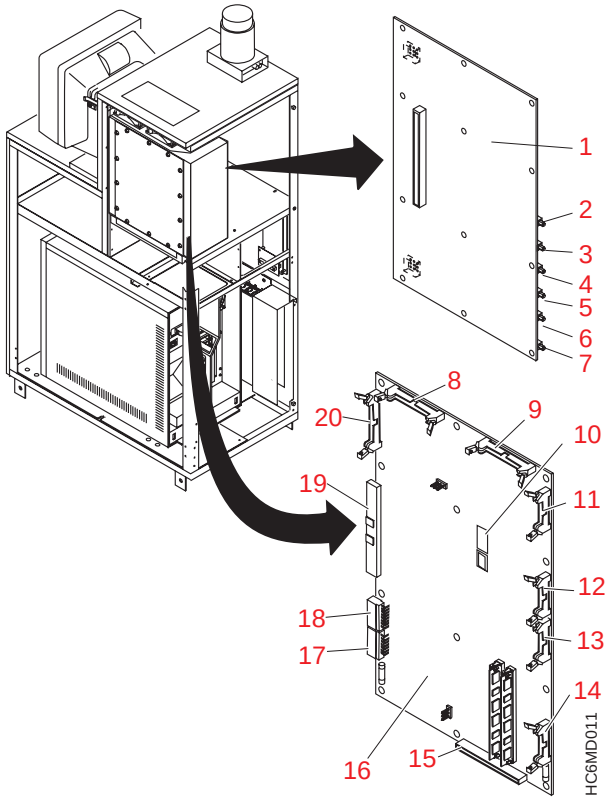
- MIC PJ1 wrap plug
- MIC PJ6 wrap plug
- MIC PJ2–PJ3–PJ12 wrap Y-cable

1. Shutdown and power off the printer.
2. Disconnect the video data coax cables from connectors
   - VD1 **(2)**
   - VD2 **(3)**
   - VD3 **(4)**
   - VD4 **(5)**
   - VD5 **(6)**

   on the PQE card **(1)**.
3. Remove the screws holding the PQE card to the MIC **(16)** and remove the PQE card.
4. Disconnect the following connectors on the MIC:
   - PJMJ01 **(11)**
   - PJMJ02 **(12)**
   - PJMJ06 **(15)**
   - PJMJ07 **(9)**
   - PJMJ09 **(8)**
   - PJMJ11 **(20)**
5. Do not disconnect the power connector PJMJ10 **(19)**.
6. Disconnect the SSA cables from the MIC connector PJMJ21 **(17)** and PJMJ22 **(18)**.

(continued on next page)

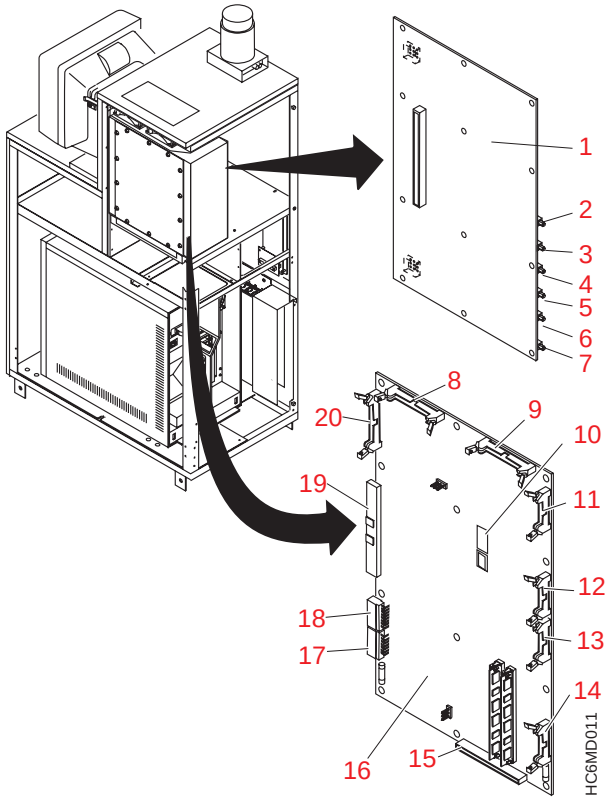
Table 319. MIC Isolation Wrap Test (continued)



(continued on next page)

7. Connect the wrap plug labeled MIC PJ1 to the MJ01 connector **(11)** on the MIC.
8. Connect the wrap plug labeled MIC PJ6 to the MJ06 connector **(15)**.
9. Connect the wrap plug labeled MIC PJ2 to the MJ02 connector **(12)**.
10. Connect the wrap plug labeled MIC PJ3 to the MJ03 connector **(13)**.
11. Connect the wrap plug labeled MIC PJ12 to the MJ12 connector **(14)**.
12. Set the RS/6000 controller power switch to Off to prevent the microcode from loading.
13. **Power On the printer**.

Table 319. MIC Isolation Wrap Test (continued)



Step 14. Watch the single-digit LED display **(10)** on the MIC for the following results:

- Because of the testing of the memory, the test can take up to 6 minutes to complete. The number **5** appears on the LED for up to 5 minutes while the memory is being tested.
- The letter **P** displayed for 5 seconds indicates that the test completed successfully. The test then repeats. The numbers displayed are progress indicators.
- Three horizontal bars indicate that an error occurred. The error codes appear following the horizontal bars. Record all the numbers that appear and report them to your technical support. In general they indicate that the MIC failed. The sequence of numbers is repeated endlessly.

Step 15. **You may Power Off the printer at any time**.

Step 16. Remove the 5 wrap plugs that were installed in step 7 through step 11.

Step 17. Reverse the procedures in step 2 through step 6.

Step 18. Set the RS/6000 controller power switch to On.

Host Error Reporting

The InfoPrint 3000 Printers are members of the Advanced Function Printer family. These printers operate under the Print Services Facility (PSF) of the IBM Advanced Function Presentation (AFP) software application. This software drives the printer during normal operation and manages the error recovery and logging in SYS1.LOGREC.

Two types of host-supported diagnostics for problem determination are provided:

- System tests
- Environmental Record Editing and Printing (EREP) program

System Tests

System tests for each family of host systems are provided as a system installation tool when you install or relocate a system. The tests verify that the system is configured correctly and is functional.

An interface test and a print test are provided for the printer. Refer to the applicable host system user's guide or tutorial for more information on the use and running of the tests.

Environmental Record Editing and Printing (EREP) Program

The EREP program is provided for each IBM operating system to format and print the error information recorded in the error-recording data set. This program is usually run by the customer once a day and is used as a tool to aid system management.

The general device-type designation, AFP1, is used for the EREP DEV (device type) selection parameter for the InfoPrint 3000 and appears in the Device Type1 field in the header of the reports. Unique Type/Model information is provided in the body of each report.

A summary report and a detail report are provided for the AFP1 printers.

EREP Summary Report

Table 320. EREP Summary Report

The summary report provides statistical data on the errors that have occurred on a machine during a period, usually one day. It is identified by the title, **Report: Outboard Summary**. This report contains some of the information also found in the error log.

Error Conditions

This information is common to both the summary and the detail reports and includes the following fields:

- **SCP** - shows the release level of the operating system or System Control Program.
- **Mode** - the mode of operation of the operating system.
- **Record Is** - interpreted as either a temporary or a permanent error by the software recovery program.

Machine Identification

Information about the failing machine is common to both the summary and the detail reports and includes the following fields:

- **Device Number** - the channel address of the printer.
- **Device Type** - AFP1 for all InfoPrint 3000 printers.
- **Model** - the model number of the host CPU.
- **Serial** - the number found on the printer's control unit.
- **Type/Model** - 3300 followed by the model number of the printer.

Report Events

The following fields describe the period to which this report applies:

- **Report Date** - the date the EREP is run, shown as the number of the day (1–366) and the year.
- **Period From/To** - the dates of the first and last outboard records, shown as the number of the day (1–366) and the year.
- **Usage Start/Last** - the usage counts in feet of paper at the time of the first and last outboard records.

Statistical Data

This field shows the number of errors from which recovery was successful.

Sense Data Summary

This field shows the number of errors for which an SRC was logged. The errors may be permanent or temporary, although most SRCs indicate a permanent, or unrecoverable, failure of the printer.

EREP Detail Report

Table 321. EREP Detail Report

The detail report is printed in either long form or short form and provides detailed information on one error that occurred on one machine. The detail report uses the same header as the summary report to identify the machine, the time, and the conditions when the error occurred.

Machine Identification

Information about the failing machine is common to both the summary and the detail reports and includes the following fields:

- **Device Number** - the channel address of the printer.
- **Device Type** - AFP1 for all InfoPrint 3000 printers.
- **Model** - the model number of the host CPU.
- **Serial** - the number found on the printer's control unit.
- **Type/Model** - 3300 followed by the model number of the printer.

Time Stamp

The time the error occurred is identified by the date and time fields:

- **Date** - the date on which the error occurred, shown as the number of the day (1–366) and the year.
- **Time** - the time at which the error occurred, using a 24-hour clock.

Error Conditions

This information is common to both the summary and the detail reports and includes the following fields:

- **SCP** - shows the release level of the operating system or System Control Program.
- **Mode** - the mode of operation of the operating system.
- **Record Is** - interpreted as either a temporary or a permanent error by the software recovery program.

Table 321. EREP Detail Report (continued)

Entries in the Long Form

The long form of the detail report is identified by the header, Report: Outboard (Long). In addition to the common data found on both forms of the detail report, the long form also has the following fields:

- **Statistical Data:** This field shows the number of errors from which recovery was successful. The channel errors may be from earlier, unrelated errors, but the paper-jam and temporary-error counts apply to the error that initiated this report.
- **Sense Byte Data:** This field shows the 24 bytes of sense information sent by the or when the error occurred.
- **Device-Dependent Data:** This field is 3300 followed by the model number.
- **Error Environment:** The following fields provide details of the environment outside the or at the time of the error:
  - Job identification
  - Error path
  - Failing CCW (channel control word)
  - Channel status and flags
  - Hex dump of record (OBR).

Entries in the Short Form

The short form of the detail report is identified by the header, Report: Outboard (Short). The short form does not describe an error. In addition to the common data found on both forms of the detail report, the short form also has the following fields:

- **Statistical Data:** This field shows the unformatted form of the counters in the statistical data area of the long form.
- **Hex Dump of Record:** This field shows the unformatted data from which the header and the statistical data fields of the form are created.

Interpretation of EREP Sense Bytes

Table 322. Interpretation of EREP Sense Bytes

When a failure occurs on an InfoPrint 3000, 24 sense bytes (numbered 0 to 23) are sent to the host system. The print services facility (PSF) software uses these sense bytes print to recover from data stream or hardware errors. The recovery action by PSF may be to resend lost pages or to wait for the operator to correct the printer problem.

When the problem is in the printer hardware, interpreting the sense bytes when reading the long form of the detail report may be helpful.

Pay close attention to the SRCs and the usage count at the time of the error because this information is contained in the sense bytes but is not printed by the EREP program in the detail report. By matching the SRC and the usage count from the sense bytes with the values in the error log, you can:

- Determine the date, time, and job identification of errors that appear in the log.
- Collect the following information from the log to analyze the SRC found in the long form of the detail report:
  - Engineering support
  - InfoPrint 3000 microcode EC level
  - PM counter values.

Sense Byte 5 - Format Information

Sense byte 5 identifies the format of the bytes 0–23. (For example, if sense byte 5 is X'02' (that is, 2), use format 2 to interpret the other sense bytes). See Hexadecimal-to-Decimal Conversion for help with converting hexadecimal (X) values.

Check Sense Byte 5 and identify the proper format of the sense information.

- Format 0 - data check, specification check, and command reject errors.
- Format 1 - data stream positioning errors.
- Format 2 - intervention required and equipment check errors.
- Format 3 - errors detected by the controller.
- Format 4 - printer errors that are detected by the printer.
- Format 5 - printer errors that are detected by the printer.

Format 0

This format applies to all data check, specification check, and command reject errors.

Table 323. EREP Sense Bytes - Format 0

Byte	Explanation
0	Defines the error group for a specific error. The error can be a hardware or a programming error. Sense byte 0 is the first byte of the 3-byte error code. See Sense Byte 0.
1	Defines the status code for a specific error and identifies the cause for the unit check. The error can be a hardware or a programming error. This byte and byte 19 define a specific error for an error group. Sense byte 1 is the second byte of the 3-byte error code.
2	Contains the error-recovery action code for the condition the printer senses. See Sense Byte 2 - Action Code.
3	Defines the printer environment. See Sense Byte 3.
4	Data error, X'DE'
5	X'00', identifies format 0.
6–7	Count of occurrences of the error
8–9	Overlay ID that has an error.
10–11	Segment ID that has an error.
12–13	Command in process when the error occurred.
14–15	Object identifier (other than segment or overlay that has an error; for example, font).
16–17	Element identifier; identifies a part within the object that has the error.
18	Reserved.
19	Byte 3 of the 3-byte error code.
20–23	Page identifier for the page that has the error as defined in the Begin Page command.

Format 1

This format applies to all data stream positioning errors.

Table 324. EREP Sense Bytes - Format 1

Byte	Explanation
0	Defines the error group for a specific error. The error can be a hardware or a programming error. Sense byte 0 is the first byte of the 3-byte error code. See Sense Byte 0.
1	Defines the status code for a specific error and identifies the cause for the unit check. The error can be a hardware or a programming error. This byte and byte 19 define a specific error for an error group. Sense byte 1 is the second byte of the 3-byte error code.
2	Contains the error-recovery action code for the condition the printer senses. See Sense Byte 2 - Action Code.
3	Indicates the printer-ready state at the time of the error.
4	Data error, X'DE'
5	X'01', identifies format 1.
6–7	Count of occurrences of the error
8–9	Overlay ID that has an error.
10–11	Segment ID that has an error.
12–13	Command in process when the error occurred.
14	Text position error, count maximum 255, no wrap.
15	Image position error, count maximum 255, no wrap.
16	Rule position error, count 255, no wrap.
17	Graphic position error, count 255.
18	Reserved.
19	Byte 3 of the 3-byte error code.
20–23	Page identifier for the page that has the error as defined in the Begin Page command.

Format 2

This applies to all intervention required and equipment check errors.

Table 325. EREP Sense Bytes - Format 2

Byte 0	Byte 1	Byte 2	Explanation
01	E4	15	Cancel selected.
10	10	02	Printer hardware error.
10	F1	18	Transparent permanent hardware exception (retry successful).
10	10	18	Channel or file adapter temporary error.
10	F2	09	Print overrun.
10	F2	18	Transparent print overrun (retry successful).
40	E4	08	Paper jam recovery needed.
50	10	02	Printer hardware error.
Byte 3			See Sense Byte 3.
Byte 4			Device sense format identification.
Byte 5			X'02', identifies format 2.
Byte 6 –7			System reference code.
Byte 8–18			Sense detail.
Byte 19			Byte 3 of the 3-byte error code.
Byte 20–23			Usage count in sides of paper in hex.

Format 3

This applies to errors detected by the controller.

Byte 0	Byte 1	Byte 2	Explanation
80	05	04	Invalid channel command.
80	05	1C	Invalid channel command sequence or “Sense extended” expected but not received by the printer.
20	11	04	Channel command parity error.
20	12	04	Channel data parity error.
10	E0	04	Channel adapter check.
04	01	04	Channel overrun
Byte 3			See Sense Byte 3
Byte 4			Reserved
Byte 5			X'03', identifies format 3.
Byte 6 - 7			Reserved
Byte 8–9			Reserved
Byte 10			Channel adapter error log register.
Byte 11			Channel adapter error log register.
Byte 12			Data transfer protocol.
Byte 13			Data streaming rate.
Byte 14			Channel command register.

(continued on next page)

	Explanation
Byte 15	Channel (host) status register.
Byte 16	Channel adapter (request) wait register.
Byte 17	Command table.
Byte 18 – 19	Reserved.
Byte 20	Storage control block number.
Byte 21	Data transfer byte count.
Byte 22–23	Reserved.

Format 4

This applies to printer errors that are detected by the printer.

Table 326. EREP Sense Bytes - Format 4

Byte 0	Byte 1	Byte 2	Explanation
40	00	03	Printer not ready.
40	01	03	Out of paper.
40	02	03	Stacker full.
40	04	03	Toner supply empty.
40	E2	03	Operator intervention needed.
Byte 3			See Sense Byte 3
Byte 4			X'00'
Byte 5			X'04', identifies format 4.
Byte 6 – 23			X'00'

Format 5

This applies to errors that are detected by ESCON channel attachment.

Table 327. EREP Sense Bytes - Format 5

Byte 0	Byte 1	Byte 2	Explanation
80	05	04	Invalid Channel Command
80	05	1C	Invalid Channel Command Sequence
80	06	24	Printer Not Assigned
20	01	04	Link Adapter A/B Device-Level Error
20	02	04	Link Adapter A/B Link-Level Error
10	E2	04	Link Adapter A/B Check
04	01	04	Link Adapter A/B Overrun
01	A0	25	Printer Assigned Elsewhere
01	A1	04	Sense Reset due to Reset Allegiance
01	A2	04	Operation Terminated due to Reset Allegiance
01	A3	4D	Resetting Event
Byte 3			See Sense Byte 3
Byte 4			Reserved.
Byte 5			X'05', identifies format 5.
Byte 6	Physical Interface Identifier — Preceded by an implied byte of all zero to form the standard two byte interface ID of the link adapter on which these sense bytes are being transmitted. This is the same interface ID that is defined in the Node Element Descriptor (ND). Set to X'01' if the sense bytes are returned on link adapter A Set to X'02' if the sense bytes are returned on link adapter B		

(continued on next page)

Table 327. EREP Sense Bytes - Format 5 (continued)

	Explanation
Byte 7 – 8	Link Adapter A Basic Status Reg.
Byte 9	Link Adapter A Error Log Reg Byte 1.
Byte 10–12	Link Adapter A Link Error Log.
Byte 13–14	Link Adapter B Basic Status Reg.
Byte 15	Link Adapter B Error Log Reg Byte 1.
Byte 16–18	Link Adapter B Link Error Log.
Byte 19	Set to 01 for Link Adapter A. Set to 02 for Link Adapter B. Set to 00 for a condition not related to Link Adapter A or B.
Byte 20	Reserved.
Byte 21	VCU ID (0-15 Link A, 16-31 Link B).
Byte 22–23	Virtual Error Log for VCU ID.

Sense Byte 0

With the sense byte expressed in binary bits, numbered from left to right, a 1 in a given position is defined as:

Table 328. EREP Sense Byte 0 - Explanation

Bit On	Hex	Explanation
0	X'80'	Channel command reject
1	X'40'	Intervention required
2	X'20'	Bus-out parity check
3	X'10'	Equipment check
4	X'08'	Data check
5	X'04'	Channel overrun
6	X'02'	Specification check
7	X'01'	Condition requiring host notification

Sense Byte 1

This byte contains code which identifies the failure. Byte 1 definitions are found in the format tables.

Sense Byte 2 - Action Code

The hex value of the byte is defined as follows:

Table 329. EREP Sense Byte 2 - Explanations

Hex Value	Explanation
01	Data stream error. A syntax error has been detected in the printer data stream. The specific recovery actions depend on host support requirements.
02	Operator intervention. Equipment check and OBR record. No pages resent.
03	Operator intervention. No OBR record (that is, EOF; not ready).
08	Paper jam. Host software should retransmit all pages and associated resources that have not passed the printer-defined jam-recovery point.
09	Data-related print error. Host software should retransmit all pages and associated resources that have not been committed for printing except the first one, which cannot be printed.
0C	Resource storage error. Host software should delete resources (overlays, page segments, and fonts) and retransmit them. If this fails, the recovery action depends on host support requirements.
0D	Printer restart. All pages, fonts, overlays, and page segments have been lost. Host software should retransmit all fonts, overlays, and page segments needed to reestablish the environment and retransmit pages that have not been committed for printing.
15	Cancel. Host recovery should cancel the job containing the page at the host-defined canceling point.
16	Hardware-related print error. Host software should retransmit all pages and associated resources that have not been committed for printing.
17	Printer down. A printer condition has occurred from which the printer cannot recover. Host software should take appropriate action.
1A	Redrive buffered pages. Host software should retransmit all pages and associated resources that have not been committed for printing.
1D	Redrive buffered pages. Host software should obtain printer characteristics and then retransmit all pages and associated resources that have not been committed for printing.

(continued on next page)

Table 329. EREP Sense Byte 2 - Explanations (continued)

Hex Value	Explanation
1F	Data stream error. This error is the same as X'01', but it occurs in a secure environment.
22	Communication inoperative. A printer condition has occurred from which the printer cannot recover. Host software should terminate the conversation and session.
The following actions codes are for ESCON attachment only.	
24	Printer Not Assigned. Reissue this command following the successful execution of an Assign command.
25	The printer is assigned to another host. Issue an Assign command at a later time or when the printer is known to be available.
4D	Resetting Event. Re-establish path group ID and path mode and re-issue failing command.

Sense Byte 3

Table 330. EREP Sense Byte 3 Explanations

Sense Byte 3 - ESCON attached This defines the printer environment at the time of the error for all action codes ***other*** than X'01', X'0C', X'0D', X'15', and X'18'. For these five exceptions, this byte defines the printer environment at the time the error is reported to the host.	
Bit	**Explanation**
0	• If one - indicates that the printer is in the ready state. • If zero - indicates that the printer is in the not-ready state.
1–2	The dynamic partitioning status will be encoded in these two bits (for all sense formats). • Bit 1 - if set indicates Multiple Host • Bit 2 - if set indicates that the code is activated to generate an interrupt for assignment change.
3–6	Reserved.
7	Set to one to indicate that the printer operate in page mode only.
Sense Byte 3 - non-ESCON attached This defines the printer environment at the time of the error, not at the time the error is reported to the host. But there are two exceptions: Sense byte 3 for action codes X'15' and X'0D' defines the printer environment at the time the error is reported to the host.	
Bit	**Explanation**
0	If one - indicates that the printer is in the ready state.
3–6	Reserved.
7	Set to one to indicate that the printer operate in page mode only.

E0XX Codes and SRC Cross-References

This list cross references the E0XX codes that appear on the maintenance panel with the system reference codes (SRCs) that appear on the Display/Touch Screen.

Use this list when an E0XX code appears but no SRC appears. This may occur when there is an error following a power on and the controller is still initializing.

You can go directly to the MAP with the same number as the SRC. If you do not find a MAP with that number, go to MAP 0010, step 3, to find the appropriate MAP for that SRC.

The Maintenance Panel displays **b** and **d** in place of **B** and **D**; do not confuse **b** with **6**.

E0XX Code	Description	MAP Link	SRC Code
E001	End of Forms.	721	078A
E004	Stacker Full.	756	0796
E005	Change Toner Collector.	702	0785
E006	Add Toner.	706	0786
E007	Change Developer Mix.	713	0788
E009	Change Oiler Belt.	741	0793
E00A	Add Fuser Oil.	737	0792
E00C	Change Fine Filter.	730	0791
E00E	Check Toner Collector.	709	0787
E00F	Developer Drain Open.	717	0789
E010	Transfer Station Open.	698	0783
E011	Splice Error.	693	0782
E015	Stacker safety switch on.	323	0174
E016	Stacker Table Down.	768	0798
E018	Check Fine Filter.	776	0799
E01C	Stacker Gate Open.	764	0797

E0XX Code	Description	MAP Link	SRC Code
E01E	Oiler Gate Open.	746	0794
E01F	Developer Running.	726	078B
E02C	Set Forms Direction.	751	0795
E02d	Stacker length motor timeout.	343	0177
E030	Drum rotation error.	172	0121
E035	PC drum cover is open (laser interlock).	408	022A
E036	Preclean corona voltage error.	367	0213
E037	Mag brush bias error.	412	0231
E038	Charge corona voltage error.	354	0211
E039	Transfer corona voltage error.	361	0212
E03b	Conveyor roll rotation error.	417	0232
E03C	Toner over-feed error.	429	0234
E03d	Toner under-feed error.	436	0235
E03E	Mag roll motor thermal.	425	0233
E03F	Toner feed motor overcurrent.	447	0236
E040	Cleaning brush rotation error.	460	0251
E043	Cleaner housing always at home.	476	0256
E041	Cyclone blower rotation error.	483	0266
E044	Cleaner housing position error.	471	0253
E045	Cyclone blower motor thermal.	480	0264
E046	Cleaner brush motor thermal.	465	0252
E048	Mirror (M201) operating error.	371	0221
E04A	Mirror motor (M201) drive off.	382	0223

E0XX Code	Description	MAP Link	SRC Code
E04b	Mirror motor (M201) start-up error.	391	0224
E04d	Video data active.	377	0222
E054	Resolution lens initial position error.	399	0225
E055	Resolution lens motor (M202) overcurrent.	404	0226
E059	Form length fuse.	667	0521
E05A	Forms width sensor fuse.	148	0118
E05B	Cancel received at PRINT=0.	686	0631
E05C	ACT is received during COOL.	686	0632
E05d	CHK RESET received at PRINT=1.	686	0632
E05E	DORMANT received at PRINT/WAIT=1.	686	0632
E05f	CPF/CNP received when COOL/WAIT|DORM=1.	686	0633
E060	CNP received without PH DRV.	686	0633
E074	CPF and CNP both on.	686	0634
E075	CPF or CNP on too long.	686	0634
E077	Tension arm up.	187	0132
E078	Tension arm down.	179	0131
E07b	Forms jam at upper tractor.	151	0119
E07d	Skew error.	194	0133
E07E	Fuser wrap.	208	0134
E080	Stacker jam (light never sensed).	277	0161
E081	Stacker jam (light always sensed).	299	0164
E084	Tractor motor encoder phase error.	129	0113
E086	Tractor motor initial position error.	168	011E

E0XX Code	Description	MAP Link	SRC Code
E08A	Retractor Position error.	126	0104
E08B	Retractor seek error.	138	0115
E08F	Felt oiler belt driver error.	247	0141
E090	Felt oiler belt motor always driven.	253	0143
E091	Felt oiler belt motor never driven.	256	0144
E094	Steering motor driver.	233	0137
E096	Backup roll driver signal on.	236	013A
E097	Backup roll not open.	242	013B
E098	Backup roll closed error.	227	0136
E099	Oil pump driver error.	250	0142
E09A	Oil pump always driven.	259	0145
E09b	Oil pump never driven.	262	0146
E09E	Hot roll lamp 1 driver error.	546	0296
E09F	Hot roll lamp 1 filament open.	549	0297
E0A0	Hot roll lamp 2 driver error.	554	0298
E0A1	Hot roll lamp 2 filament open.	558	0299
E0A3	Hot roll over-temperature.	535	0291
E0A6	Hot roll undertemperature.	542	0295
E0A8	Thermistor 1 under temperature	524	028D
E0A9	Thermistor 2 under temperature	527	028E
E0AA	Thermistor 3 under temperature	531	028F
E0Ab	Preheat overtemperature.	488	0281
E0AE	Preheat A/B undertemperature.	494	0282

E0XX Code	Description	MAP Link	SRC Code
E0AF	Preheat platen not ready.	498	0284
E0b2	Preheat element C lost temperature.	508	0288
E0b4	Preheat element B lost temperature.	505	0287
E0b8	Preheat element A lost temperature.	502	0286
E0bA	Thermistor 1 over temperature	511	028A
E0bb	Thermistor 2 over temperature	514	028B
E0bC	Thermistor 3 over temperature	518	028C
E0bE	Hot roll lamp 4 filament open.	570	029E
E0bF	Hot roll lamp 4 driver error.	574	029F
E0C0	Hot roll lamp 3 filament open.	562	029C
E0C1	Hot roll lamp 3 driver error.	566	029D
E0C5	Pendulum position error.	294	0163
E0C7	Scuff roll motor driver error.	265	0152
E0C9	Stacker table motor thermal.	308	0171
E0CA	Stacker table timeout.	312	0172
E0Cb	Stacker table motor runs too long.	329	0175
E0CE	Forms width sensor.	145	0117
E0CF	Stacker forms length Sensor.	339	0176
E0d1	Backup roll motor thermal.	222	0135
E0d3	Primary erase lamp never on.	450	0241
E0d4	Primary erase lamp always on.	455	0243
E0d5	Backup roll lift motor (M610) overcurrent.	273	0157
E0d8	Tractor motor overcurrent.	135	0114

E0XX Code	Description	MAP Link	SRC Code
E0d9	Retractor motor overcurrent.	142	0116
E0dA	Drum motor overcurrent.	177	0122
E0db	Cleaning housing motor driver.	475	0254
E0dC	Hot roll overcurrent.	539	0294
E0dd	Pendulum motor overcurrent.	292	0162
E0EE	Backup roll lift motor (M610) position error.	268	0156
E0F3	Postprocessor Not Ready	783	0841
E0F4	Postprocessor STOP line active	783	0842
E0F6	Rear finger belt motor overcurrent.	348	017A
E0F7	Front finger belt motor overcurrent.	351	017B
E0F9	Laser driver fuse.	670	0522
E0FA	+ 5v to connectors PJ103 and PJ104 fuse.	675	0523
E0Fb	Fuser sensor fuse.	679	0524
E0FC	ST sensor fuse.	682	0525

E1XX Error Codes to MAP Cross Reference

- This list cross references E1xx (Driver Routine) Error Codes to the MAPs.When the driver tests are running, error codes can appear on the maintenance panel.
- The Maintenance Panel displays **b** and **d** in place of **B** and **D**; do not confuse **b** with **6**.

See MAP 0070: Printer Logic Cards for a table of error codes that can appear during a power-on sequence.

(continued on next page)

Table 331. Driver Routine Error Codes

Error Code	Description	MAP
E109	The home position of the Cleaner Housing Position Switch (S103) has not been detected after the Cleaner Housing Motor (M106) has been driven.	MAP 0253: Cleaner Housing Never Homes
E11C	The stacker gate is open.	MAP 0797: Stacker Gate Open
E12d	One of the Hall sensors on the Forms Length Sensor Board (FL061) has failed.	MAP 0177: Stacker Length Sensor Timeout
E135	The Drum Cover is open.	MAP 022A: PC Drum Cover Is Open
E136	The Preclean Corona is arcing or shorted.	MAP 0213: Preclean Corona Voltage Error
E137	The Developer Bias is arcing or shorted.	MAP 0231: Mag Brush Bias Error
E138	The Charge Corona is open, arcing, or shorted.	MAP 0211: Charge Corona Voltage Error
E139	The Transfer Corona is open, arcing, or shorted.	MAP 0212: Transfer Corona Voltage Error
E143	The home position of the Cleaner Housing is always detected by the Cleaner Housing Position Switch (S103) after the Cleaner Housing Motor (M106) has been driven.	MAP 0256: Cleaner Housing Always at Home
E144	The home position of the Cleaner Housing is never detected by the Cleaner Housing Position Switch (S103) after the Cleaner Housing Motor (M106) has been driven.	MAP 0253: Cleaner Housing Never Homes
E148	A speed error occurred after the Mirror Motor (M201) has been driven.	MAP 0221: Mirror Motor Operating Error
E150	No beam detect signal is detected when LD1 is on.	MAP D706: Beam Detect Missing
E151	No beam detect signal is detected when LD2 is on.	MAP D706: Beam Detect Missing
E152	No beam detect signal is detected when LD3 is on.	MAP D706: Beam Detect Missing

Table 331. Driver Routine Error Codes (continued)

Error Code	Description	MAP
E153	No beam detect signal is detected when LD4 is on.	MAP D706: Beam Detect Missing
E154	The initial position of the lens assembly motor (M202) can not be detected.	MAP 0225: Resolution Lens Initial Position Error
E186	The home position of the Tractor Motor (M303) is never detected.	MAP 011E: Tractor Motor Initial Position Error
E18b	The home position of the Retractor Motor (M304) is never detected.	MAP 0225: Resolution Lens Initial Position Error
E196	The Backup-Roll Motor (M603) does not reach the closed position in the specified time.	MAP 013A: Backup Roll Drive Signal On
E197	Backup roll does not open.	MAP 013B: Backup Roll Open Error
E198	Backup roll does not close.	MAP 0136: Backup Roll Position Error
E199	Oil pump driver error.	MAP 0142 (250) MAP 0143 (253) MAP 0144 (256)
E19A	Oil pump driver is never on.	MAP 0146: Oil Pump Never Driven
E19b	Oil pump driver is always on.	MAP 0145: Oil Pump Always Driven
E1A4	The temperature of hot roll does not rise within the specified time.	MAP 0295: Hot Roll Does Not Reach Operating Temperature
E1AE	The temperature of the preheater (upper preheater plate) does not rise within the specified time.	MAP 0282: Preheat A/B Under Temperature
E1AF	The temperature of the preheater (lower preheater plate) does not rise within the specified time.	MAP 0284: Preheat C Under Temperature
E1C0	An error occurred on the Forms Width Sensor Board (PW091).	MAP 0117: Forms Width Sensor
E1C5	The initial position of the pendulum is not detected.	MAP 0163: Pendulum Initial Position Error
E1C9	The Stacker Table Motor (M803) overheated.	MAP 0171: Stacker Table Motor Thermal

Table 331. Driver Routine Error Codes (continued)

Error Code	Description	MAP
E1Cb	The Stacker Table Motor (M803) continued to drive over the specified time.	MAP 0175: Stacker Table Motor Runs Too Long
E1CF	An error occurred on the forms length data.	MAP 0176: Stacker Forms Length Sensor
E1d1	The Backup-Roll Motor (M6030 overheated.	MAP 0135: Backup Roll Motor Thermal
E1d3	The Primary Erase Lamp (PL102) is never on.	MAP 0241: Primary Erase Lamp Never On
E1d4	The Primary Erase Lamp (PL102) is always on.	MAP 0243: Primary Erase Lamp Always On
E1E1	The rotation sensor signal of the Mag Brush Motor (M101) cannot be detected within the specified time.	MAP 0232: Conveyor Roll Rotation Error
E1E2	The rotation sensor signal of Cyclone Blower Motor (M104) cannot be detected with the specified time.	MAP 0266: Cyclone Blower Rotation Error
E1E3	The rotation sensor signal of the Cleaner Brush Motor (M108) cannot be detected within the specified time.	MAP 0251: Cleaner Brush Rotation Error
E1EC	The encoder signal of the Tractor Motor (M303) cannot be detected within the specified time.	MAP 0113: Tractor Motor Encoder Phase Error

Hexadecimal-to-Decimal Conversion

Hex	Dec	Hex	Dec	Hex	Dec	Hex	Dec	Hex	Dec
00	000	19	025	32	050	4B	075	64	100
01	001	1A	026	33	051	4C	076	65	101
02	002	1B	027	34	052	4D	077	66	102
03	003	1C	028	35	053	4E	078	67	103
04	004	1D	029	36	054	4F	079	68	104
05	005	1E	030	37	055	50	080	69	105
06	006	1F	031	38	056	51	081	6A	106
07	007	20	032	39	057	52	082	6B	107
08	008	21	033	3A	058	53	083	6C	108
09	009	22	034	3B	059	54	084	6D	109
0A	010	23	035	3C	060	55	085	6E	110
0B	011	24	036	3D	061	56	086	6F	111
0C	012	25	037	3E	062	57	087	70	112
0D	013	26	038	3F	063	58	088	71	113
0E	014	27	039	40	064	59	089	72	114
0F	015	28	040	41	065	5A	090	73	115
10	016	29	041	42	066	5B	091	74	116
11	017	2A	042	43	067	5C	092	75	117
12	018	2B	043	44	068	5D	093	76	118
13	019	2C	044	45	069	5E	094	77	119
14	020	2D	045	46	070	5F	095	78	120
15	021	2E	046	47	071	60	096	79	121
16	022	2F	047	48	072	61	097	7A	122
17	023	30	048	49	073	62	098	7B	123
18	024	31	049	4A	074	63	099	7C	124

(continued on next page)

Hex	Dec	Hex	Dec	Hex	Dec	Hex	Dec	Hex	Dec
7D	125	97	151	B1	177	CB	203	E5	229
7E	126	98	152	B2	178	CC	204	E6	230
7F	127	99	153	B3	179	CD	205	E7	231
80	128	9A	154	B4	180	CE	206	E8	232
81	129	9B	155	B5	181	CF	207	E9	233
82	130	9C	156	B6	182	D0	208	EA	234
83	131	9D	157	B7	183	D1	209	EB	235
84	132	9E	158	B8	184	D2	210	EC	236
85	133	9F	159	B9	185	D3	211	ED	237
86	134	A0	160	BA	186	D4	212	EE	238
87	135	A1	161	BB	187	D5	213	EF	239
88	136	A2	162	BC	188	D6	214	F0	240
89	137	A3	163	BD	189	D7	215	F1	241
8A	138	A4	164	BE	190	D8	216	F2	242
8B	139	A5	165	BF	191	D9	217	F3	243
8C	140	A6	166	C0	192	DA	218	F4	244
8D	141	A7	167	C1	193	DB	219	F5	245
8E	142	A8	168	C2	194	DC	220	F6	246
8F	143	A9	169	C3	195	DD	221	F7	247
90	144	AA	170	C4	196	DE	222	F8	248
91	145	AB	171	C5	197	DF	223	F9	249
92	146	AC	172	C6	198	E0	224	FA	250
93	147	AD	173	C7	199	E1	225	FB	251
94	148	AE	174	C8	200	E2	226	FC	252
95	149	AF	175	C9	201	E3	227	FD	253
96	150	B0	176	CA	202	E4	228	FE	254
								FF	255

Chapter 3. Wiring, Circuit & Block Diagrams

© Copyright IBM Corp. 1999, 2000

Wiring Diagrams

Wiring Diagrams - Introduction 1240
Zoning Grid - Landscape Layout 1241
Connector Layouts 1242
AC Input / Output Tables 1247
AC Input 1247
AC / DC Power Tables 1248
DC Output 1248
Over Temperature Protection 1249
AC Circuits 1250
WD01 - Printer AC Power Supply - (200 to 240V) 1251
WD03 - Printer AC Power Supply - (380/400/415V) 1252
WD05 - Low Voltage Power Supply, MIC, PQE & Fans 1253
WD06 - Control Unit AC Power Control (Simplex) 1254
WD07 - Control Unit AC Power Control (Duplex) 1255
WD08 - Control Unit AC Control Box (Simplex). 1256
WD09 - Control Unit AC Control Box (Duplex) 1257
WD10 - AC Power Control (Simplex) 1258
WD11 - AC Power Control (Duplex) 1259
WD12 - Printer Power Supply - Power On/Off 1260
WD13 - AC Motors M101, M104 & M108. 1261
WD15 - AC Motors M701, M703, M803 1262
WD16 - AC Distribution To Hot Roll Lamps. 1263
WD17 - AC Distribution To Preheat Platen 1264
DC Circuits and Channel Attach Electronics 1265
WD24-1 - Printer DC Power Distribution 1266
WD24-2 - Printer DC Power Distribution 1267
WD25 - Erase Lamp (PL101) and Usage Meter 1268
WD26 - High Voltage to Coronas & Mag Brush Rolls 1269
WD27 - Laser Driver 1270

WD28 - Beam Detect 1271
WD29 - Maintenance Panel 1272
WD30 - Toner Feed Motor (M102) 1273
WD31 - Retractor Motor (M103) 1274
WD32 - Tractor Motor (M105) 1275
WD33 - Cleaner Housing Motor (M106) 1276
WD34 - Drum Motor (M107) 1277
WD35 - Mirror Motor (M501) 1278
WD36 - Resolution Switching Lens Motor (M502) 1279
WD37 - Backup Roll Lift Motor (M610) & Sensor (S624) 1280
WD38 - Hot Roll Drive Motor (M703) 1281
WD39 - Motors M704, M801, M802 1282
WD40 - Steering Motor (M705) 1283
WD41 - Oiler Belt Motor (M706) 1284
WD42 - Pendulum Motor M804 & Sensor S809 1285
WD43 - DC Fans B101, B102, B103, B301 & B501 1286
WD44 - DC Fans B7xx 1287
WD45 - Oil Pumps L701, L702 & L703 1288
WD46 - Address/Data Bus Networks 1289
WD47-1 - Process Sensors (S10x) 1290
WD47-2 - Process Sensors (S11x) 1291
WD48 - Fuser & Stacker Sensors (DV071 & FU041) 1292
WD49 - Stacker Sensors (DV071 Card) 1293
WD50 - Stacker Switch Panel (LP041 & FU041 Card) 1294
WD51 - Stacker Switch Panel (Forms Length Cards) 1295
WD52 - Backup Roll Encoder (DV071 & FU041 Cards) 1296
WD53 - Switches & Sensors (PC561 Card) 1297
WD54 - Switches & Sensors - PC561 & PR011 Cards 1298
WD55 - Forms Path Sensors - PW111 & PC561 Cards 1299
WD56 - Forms Path Sensors (DV071 & FU041 Cards) 1300
WD57 - Fuser Thermistors 1301

WD58 - Fuser Sensors 1302
WD60 - Control Unit Display/Touch Screen 1303
WD61 - Urge Unit (Duplex) 1304
WD62 - Parallel Channel Signal - Tailgate to Controller 1305
WD63 - Parallel Channel Signal - Tailgate to Controller 1306
WD64 - Control Unit (Controller to MIC) 1307
WD65 - MIC Control Unit 2 to MIC Control Unit 1 1308
WD66 - MIC to Printer Control Cable (1 of 2) 1309
WD67 - MIC to Printer Control Cable (2 of 2) 1310
WD68 - MIC to Operator Alert Assembly 1311
WD69 - PQE 1312
WD70 - MIC to Coupled Pre/Postprocessor Interface 1313
WD71 - MIC to Intelligent Postprocessor 1314
WD72 - Side 1/Side 2 Verify to MIC 1315
WD73 - Coupled Pre/Post Interface Wrap Plug A 1316
WD74 - Intelligent Postprocessor Int Wrap Plug B 1317
WD75 - MIC Wrap Cable (PJJ2, PJJ3 and PJJ12) 1318
WD76 - MIC Wrap Plugs (PJJ1 and PJJ6) 1319
WD77-1 - Pre/Post Printer 1 of 2 1320
WD77-2 - Pre/Post Printer 2 of 2 1321
WD78 - Enhanced Toner Loading to MIC 1322

Wiring Diagrams - Introduction

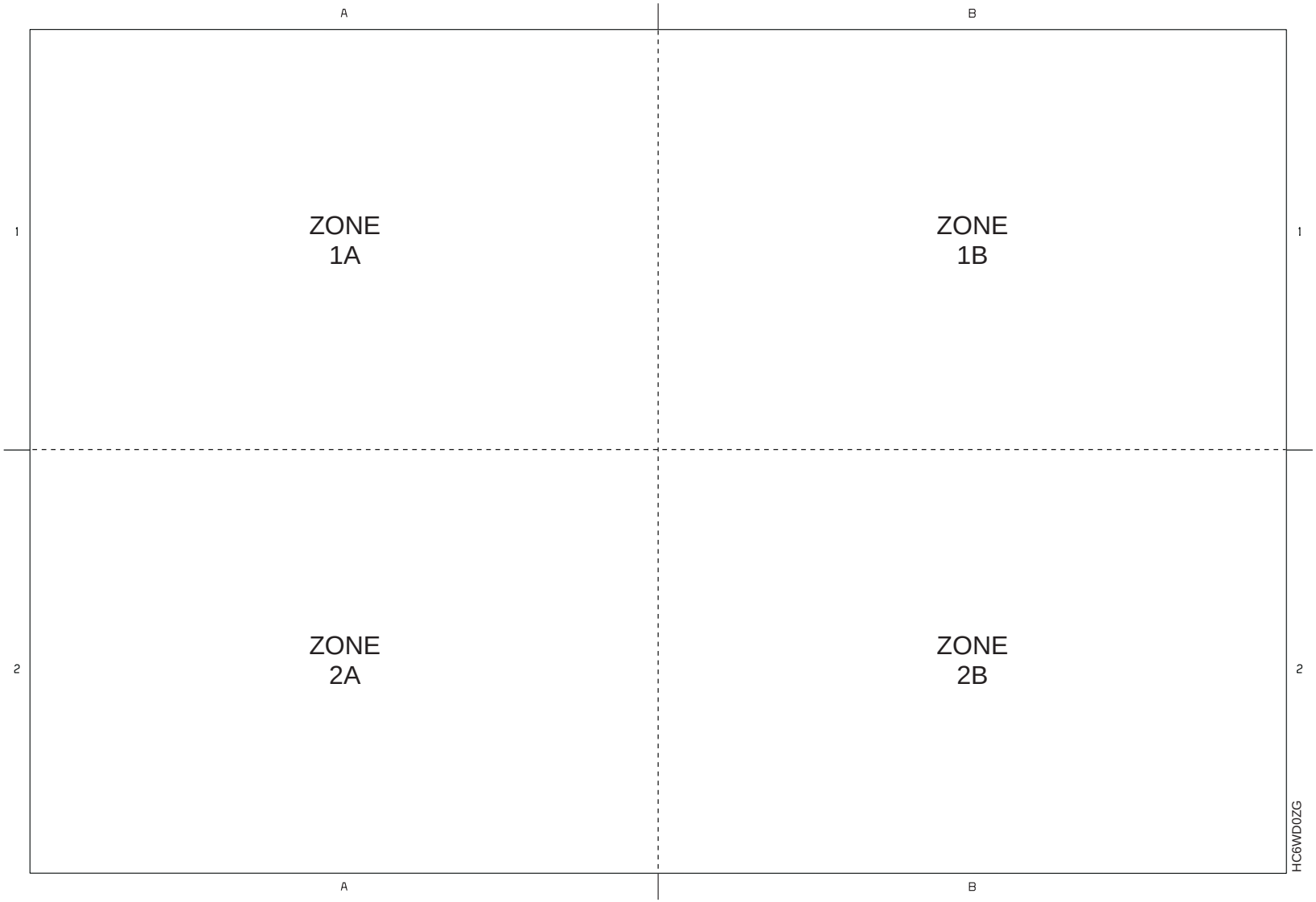
The primary purpose of these diagrams is to support the MAPs by providing a means of locating, servicing and troubleshooting the electronics portion of the InfoPrint 3000 printers.

The InfoPrint 3000 printers include both simplex and duplex systems. Circuits unique to simplex printers will have SIMPLEX in their title. Circuits unique to duplex printers will have DUPLEX in their title. Duplex systems are made up of two printers.

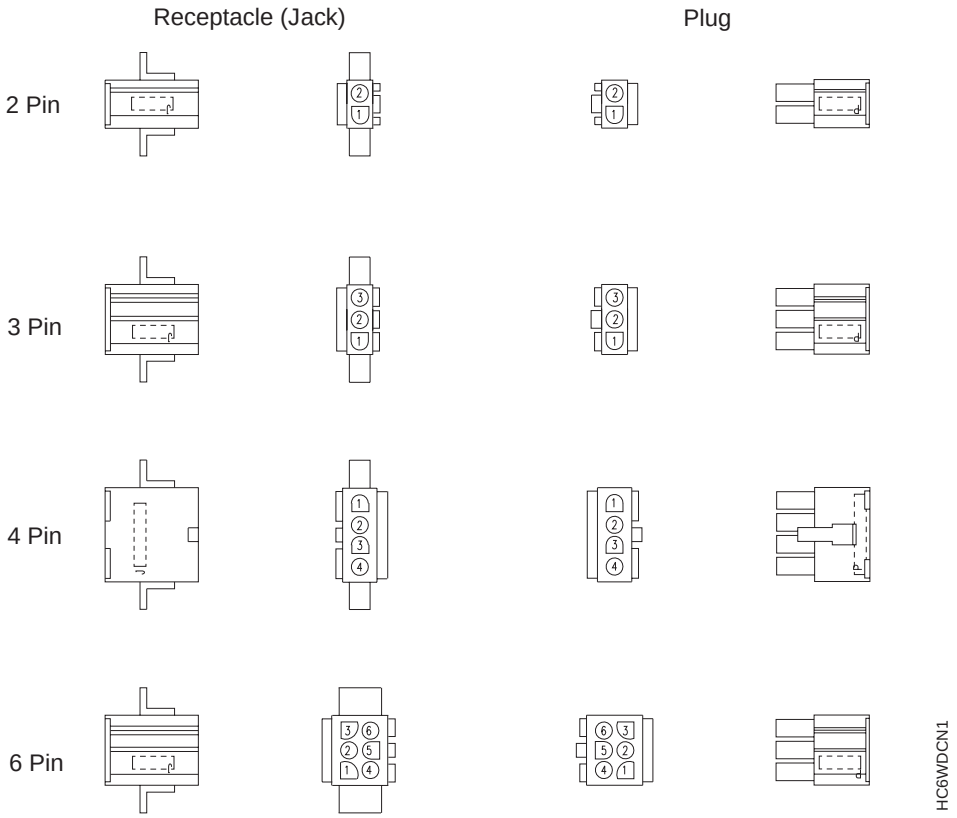
The wiring diagrams are divided into two sections as follows:

- “AC Circuits” on page 1250
- “DC Circuits and Channel Attach Electronics” on page 1265

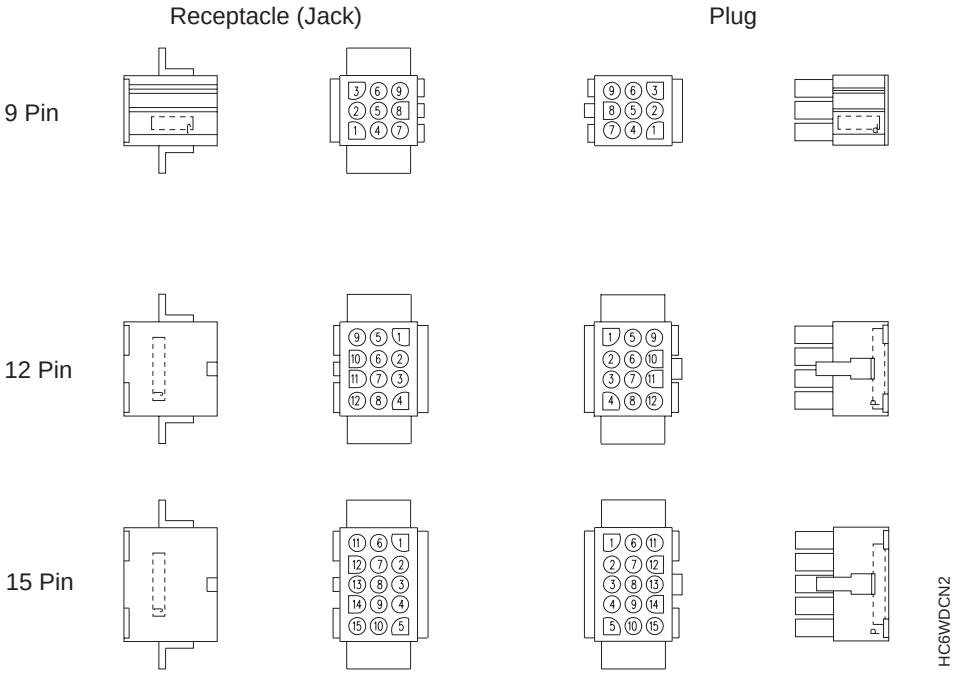
Zoning Grid - Landscape Layout



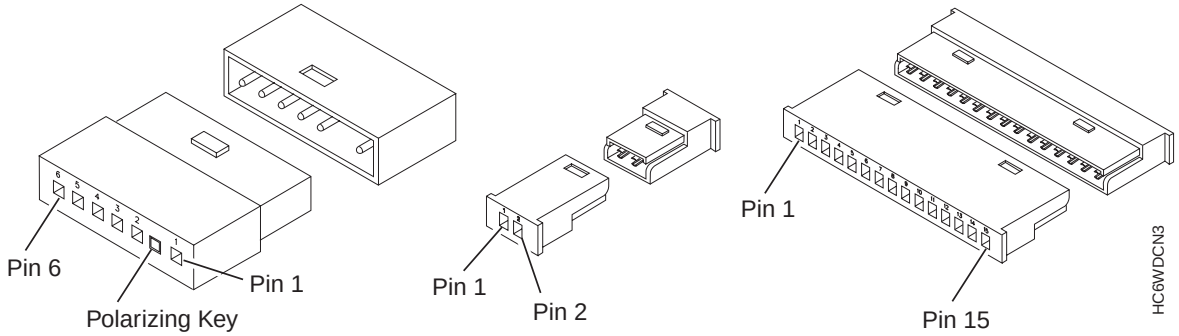
Connector Layouts
MATE-N-LOCK Connectors

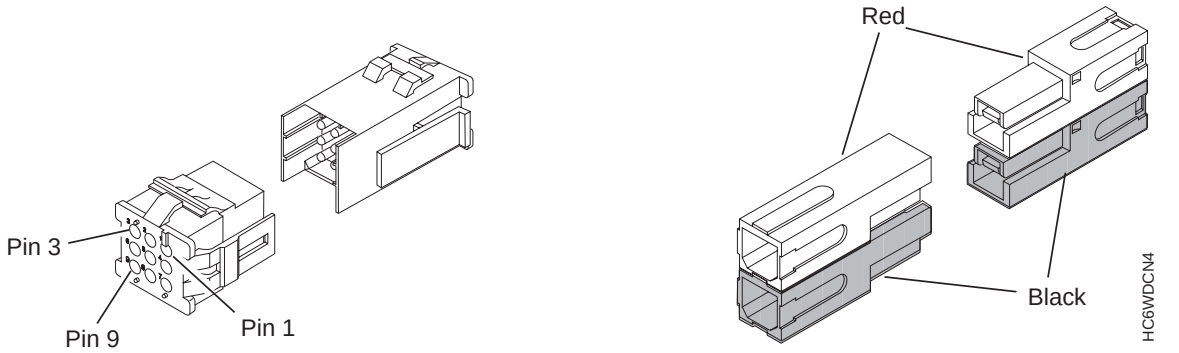


MATE-N-LOCK Connectors (cont'd)

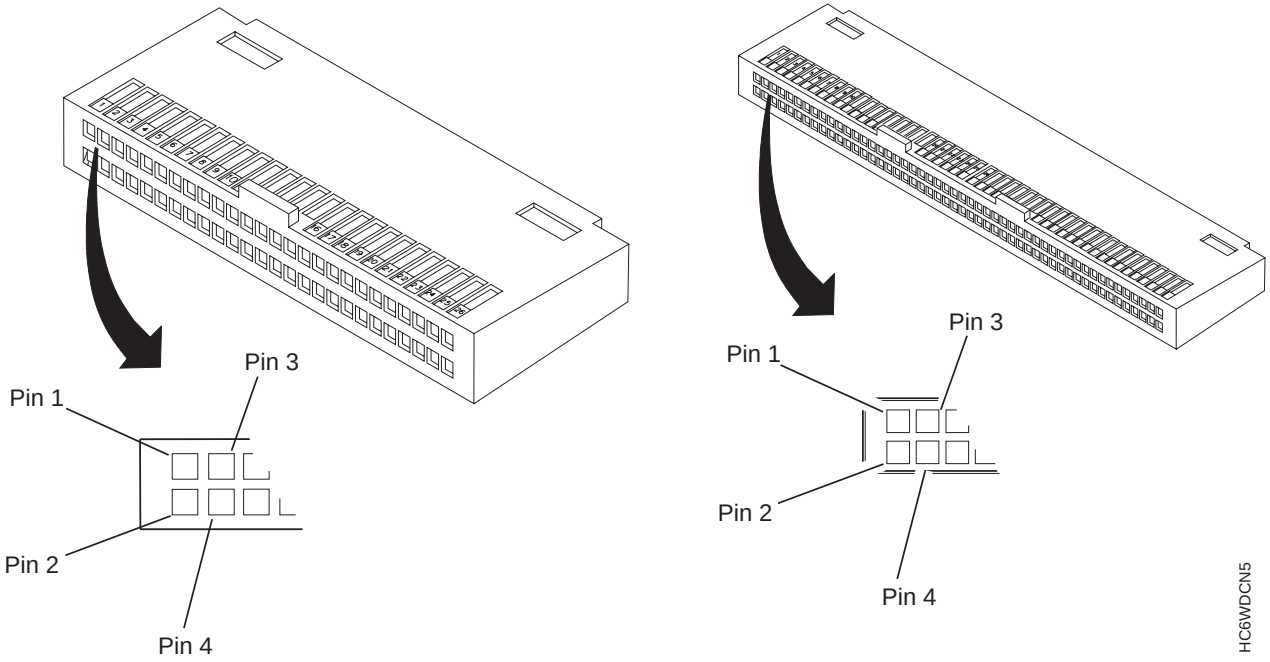


ELCO, AMP and Polarized Connectors



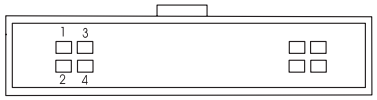


ELCO, AMP and Polarized Connectors (cont'd)

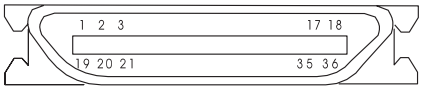


ELCO, AMP and Polarized Connectors (cont'd)

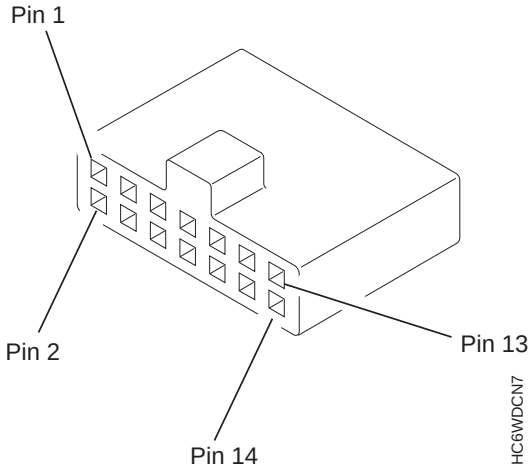
CD4 Pin Side



P229 Contact Side



HC6WDCN6



HC6WDCN7

AC Input / Output Tables

AC Input

Table 332. AC Input

Input Voltage (VAC)	Frequency	Phase/Wire
200/208/220 230/240	50/60 HZ	3 Phase - Ground
380/400/415	50 HZ	3 Phase - Neutral - Ground

AC / DC Power Tables

DC Output

Table 333. DC Output

DC Output	Voltage		Purpose
	Min	Max	
+5V	5.25	5.45	Logics
+5VM	3.5	6.5	Mirror Mtr Logics
+12V	11.5	12.5	OP AMP
+12VM	7.0	17.0	Mirror Mtr Transistor
-12V	-11.5	-12.5	OP AMP
+24VD	23.0	25.0	Motor
+24VE	23.0	25.0	Thermal System
+24VF	23.0	25.0	Driver Cards
+24VH	23.3	24.7	High Voltage PS
+40VD	39.0	41.0	Motor
+100VM	98	102	Mirror Motor

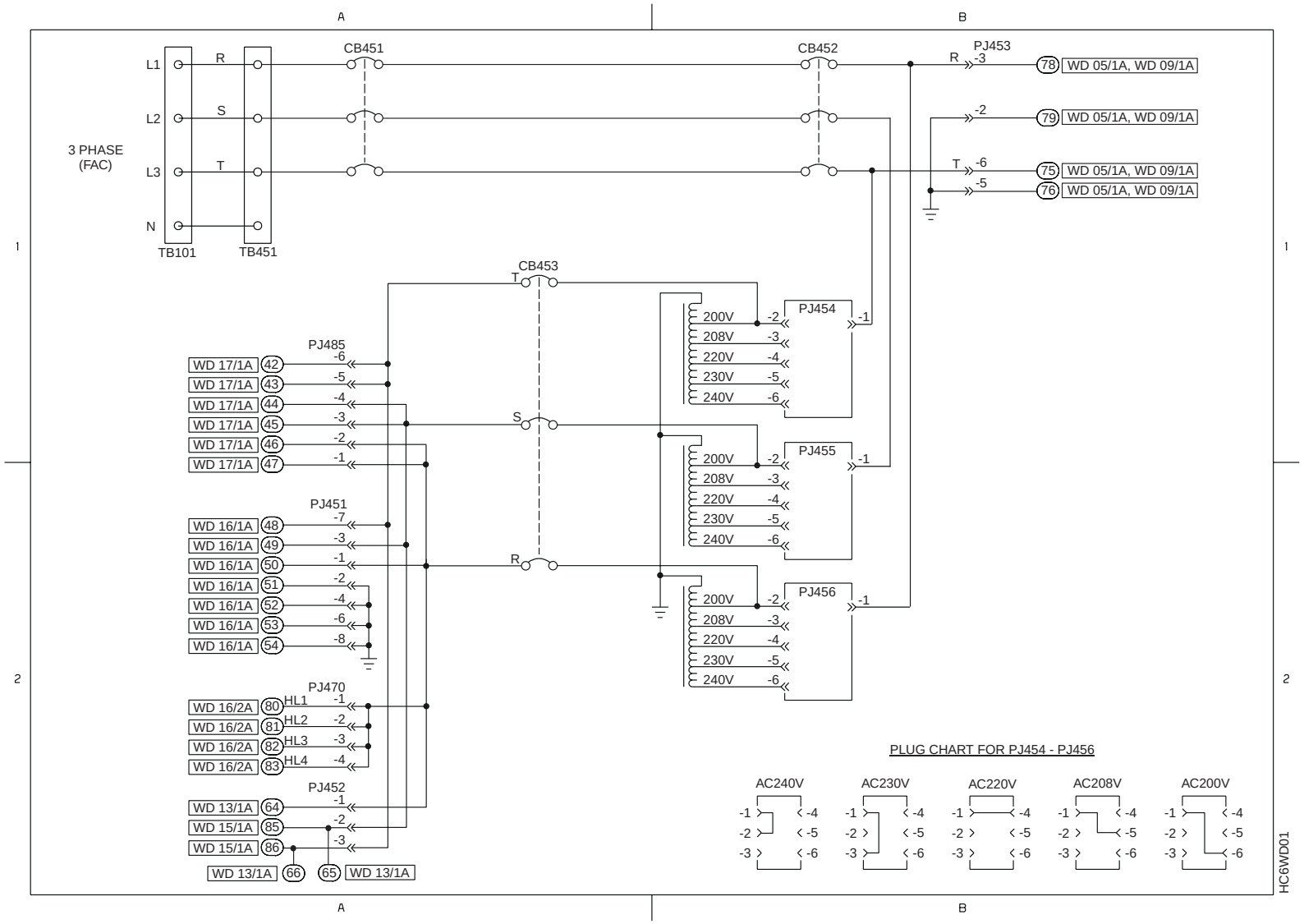
Over Temperature Protection

Table 334. Over Temperature Protection

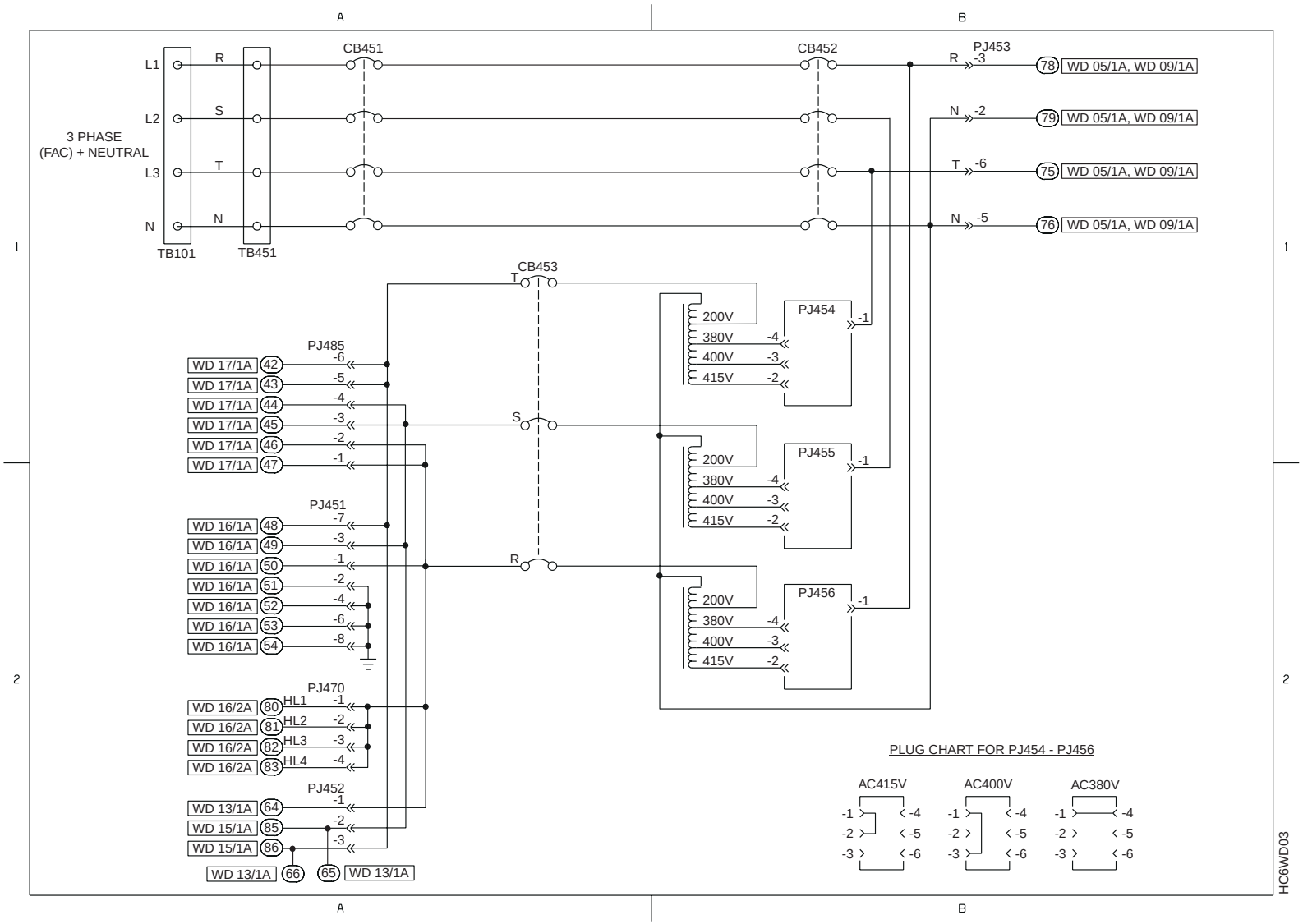
Marking	Component	Temp	Component
TH501	Thermal Switch	70°C	Soft Start Resistor
TH502	Thermal Switch	70°C	
T501	Thermal Switch	135°C	Transformer
T502	Thermal Switch	135°C	

AC Circuits

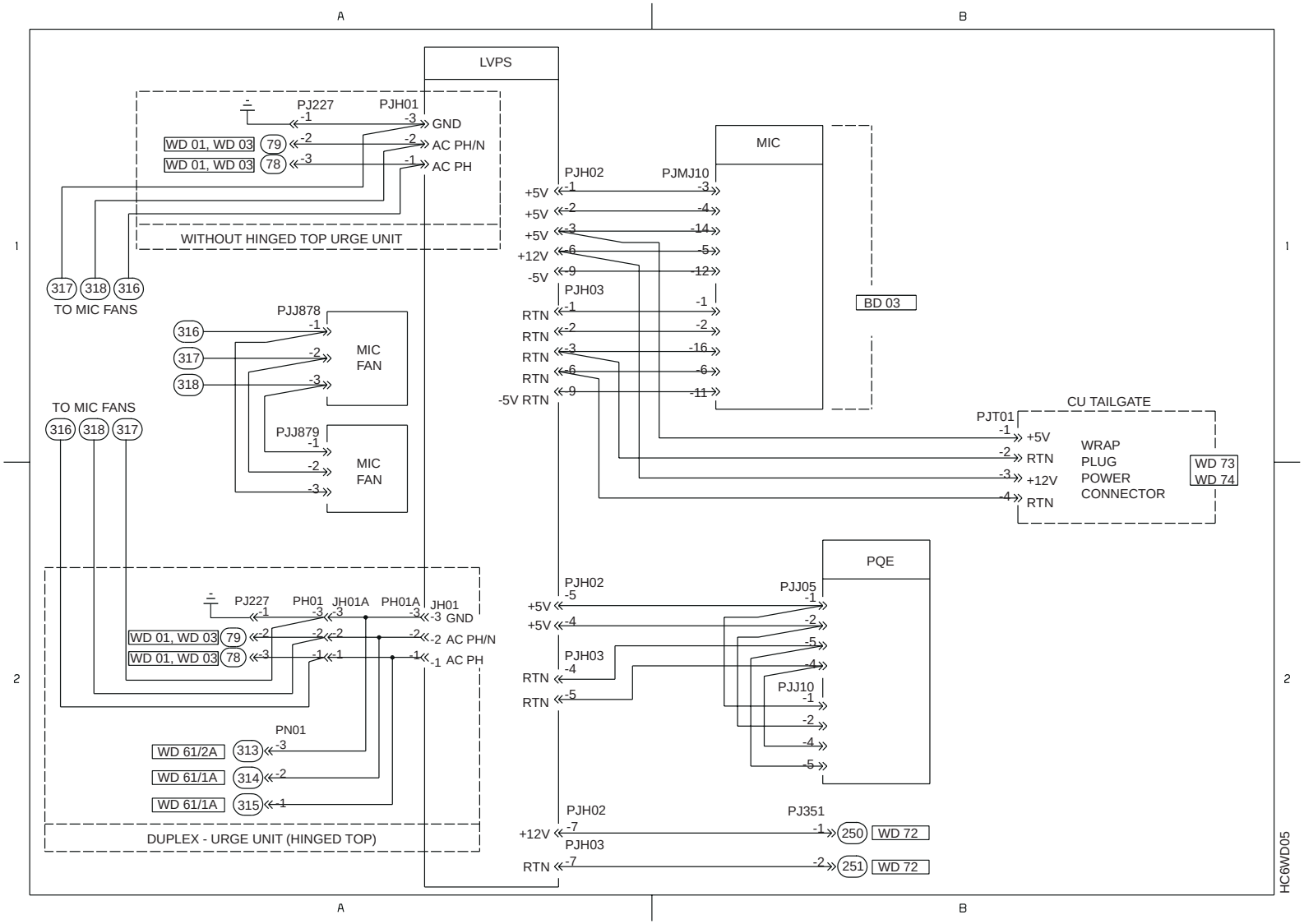
WD01 - Printer AC Power Supply - (200 to 240V)



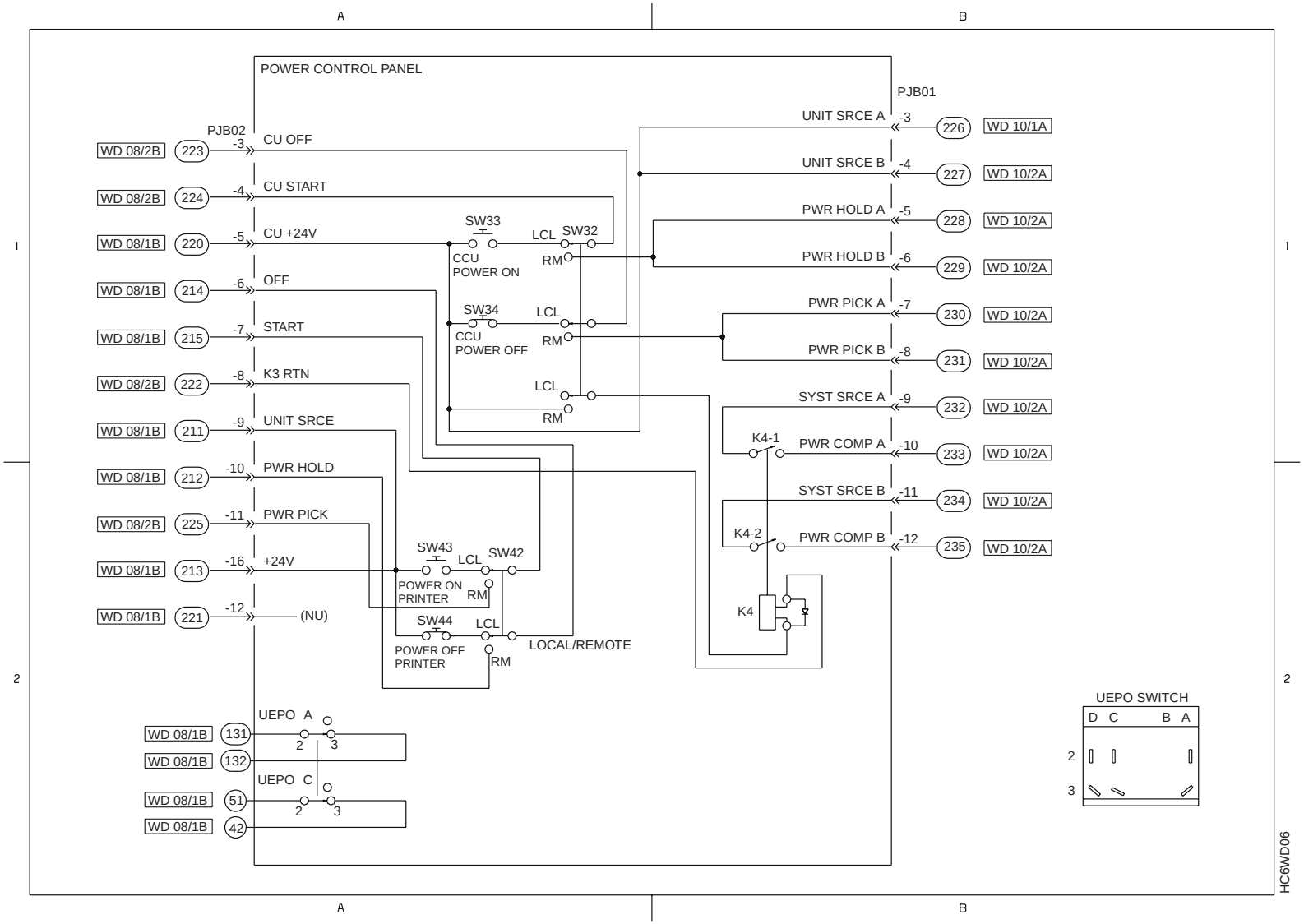
WD03 - Printer AC Power Supply - (380/400/415V)



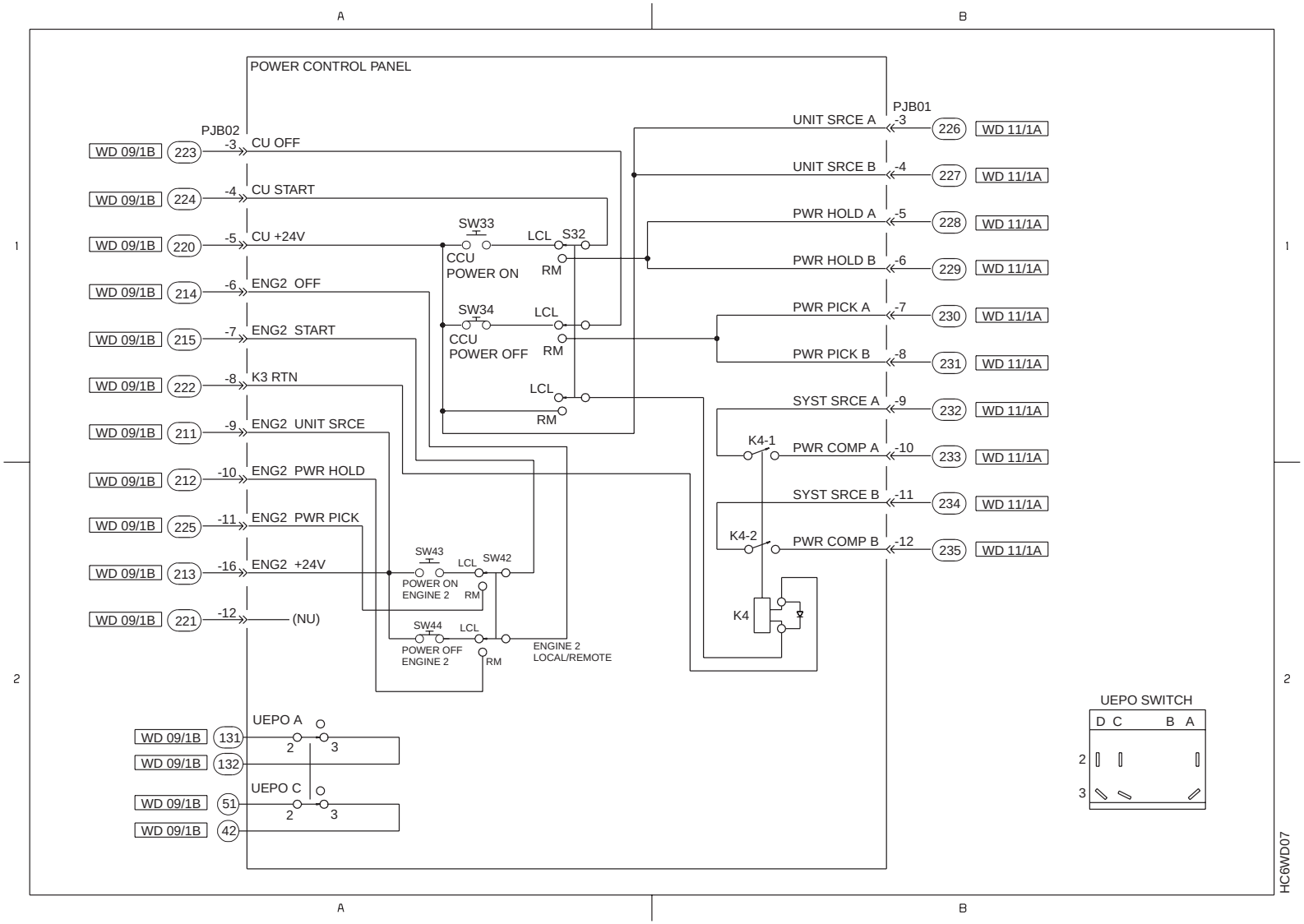
WD05 - Low Voltage Power Supply, MIC, PQE & Fans



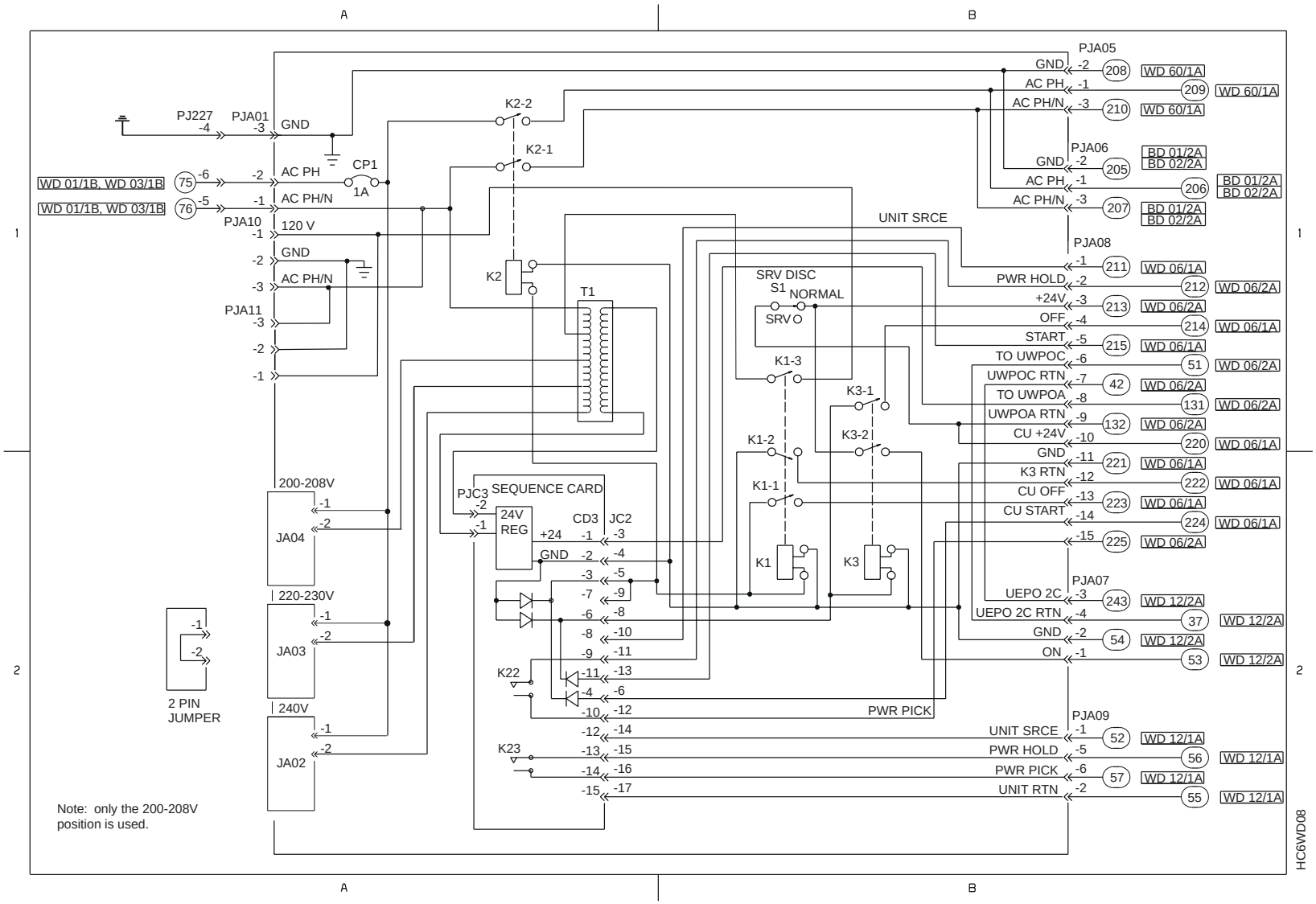
WD06 - Control Unit AC Power Control (Simplex)



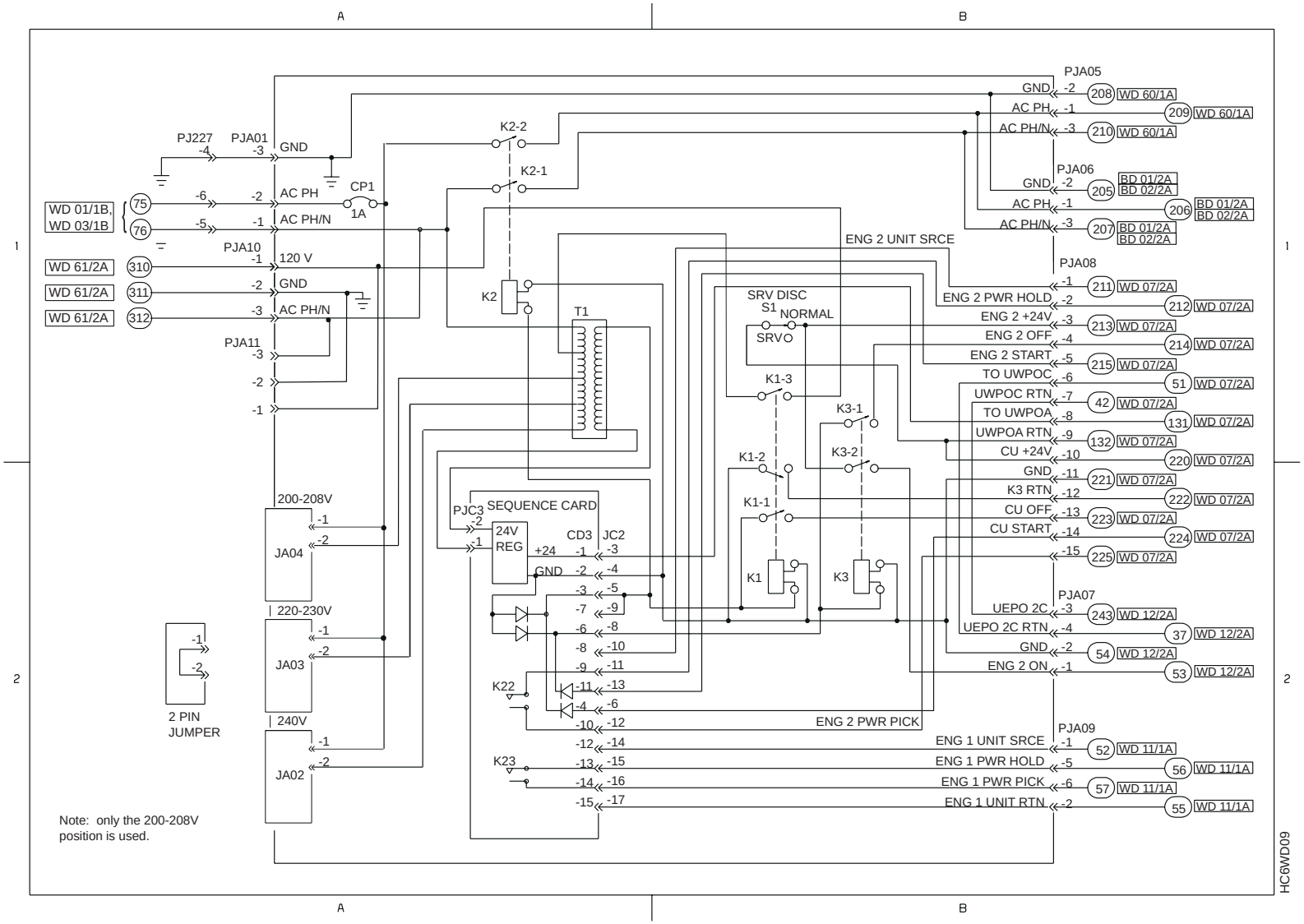
WD07 - Control Unit AC Power Control (Duplex)



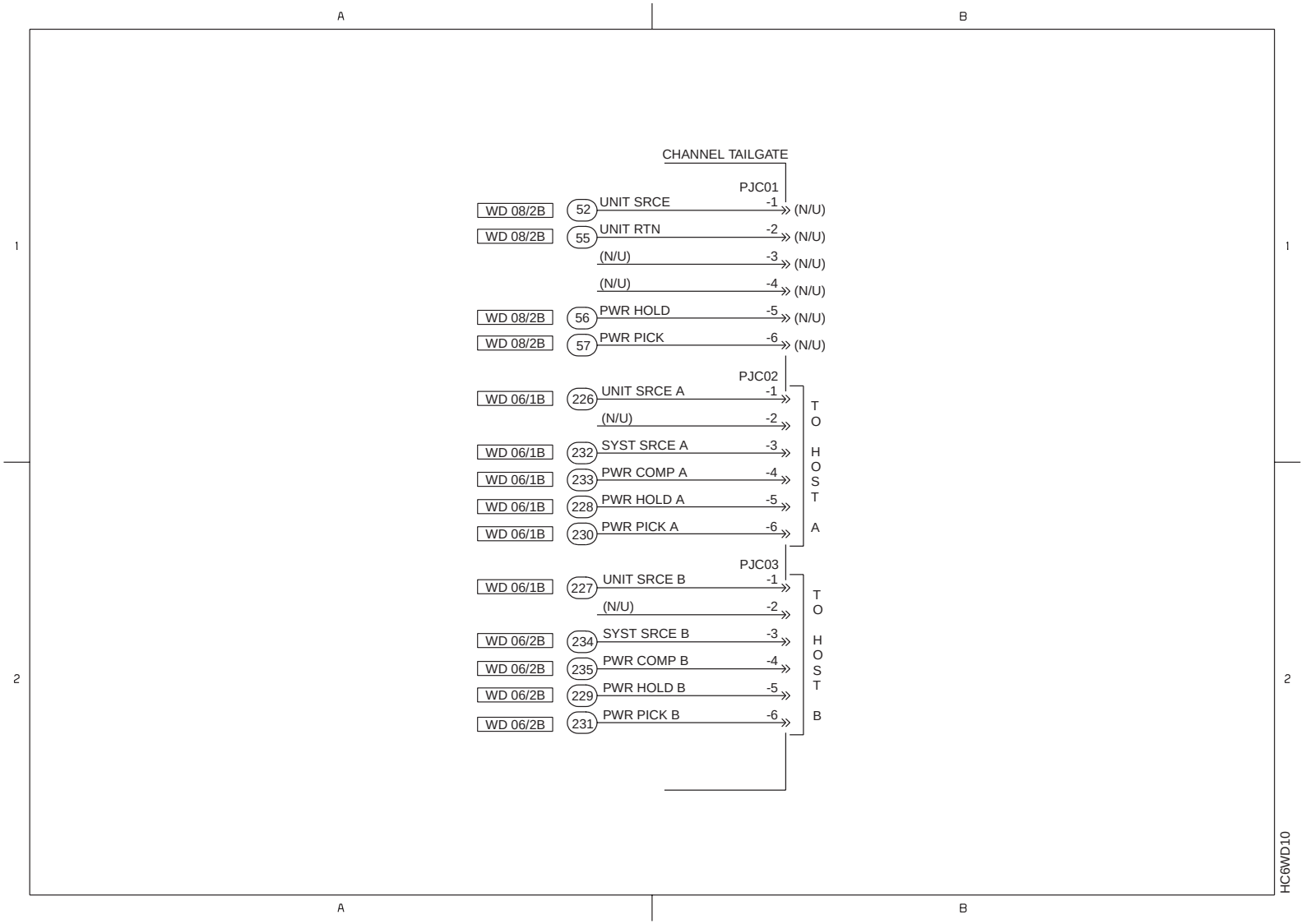
WD08 - Control Unit AC Control Box (Simplex)



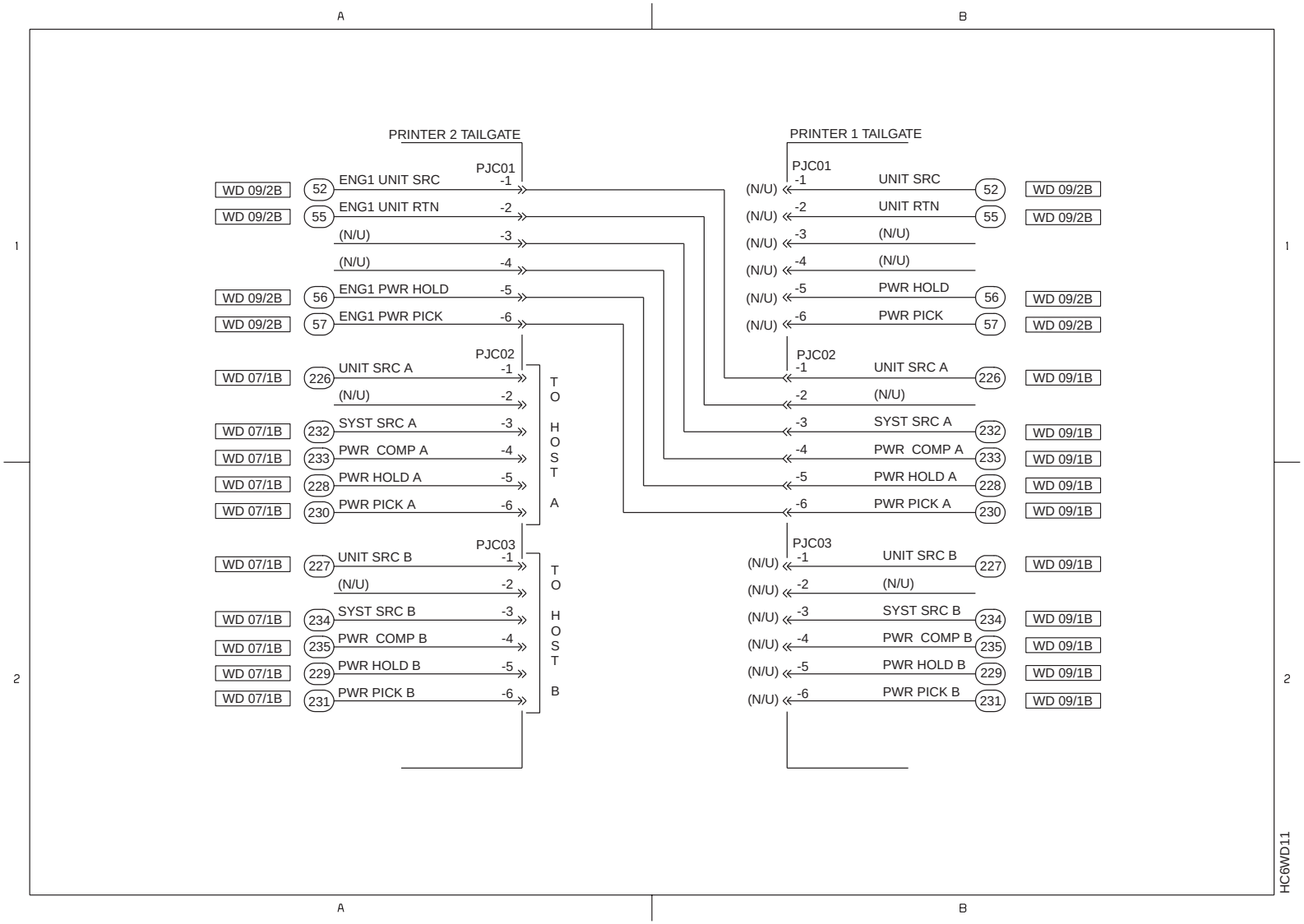
WD09 - Control Unit AC Control Box (Duplex)



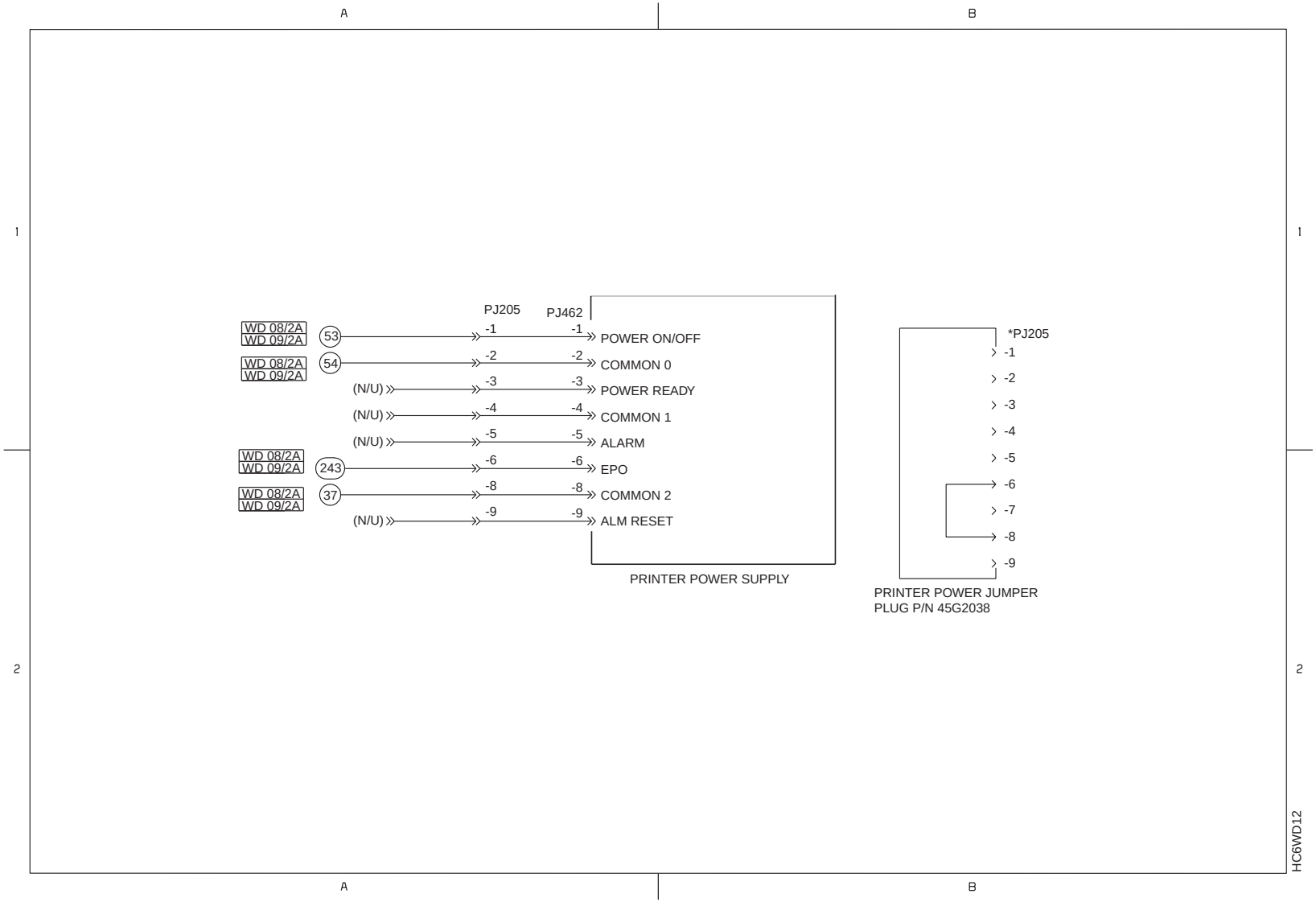
WD10 - AC Power Control (Simplex)



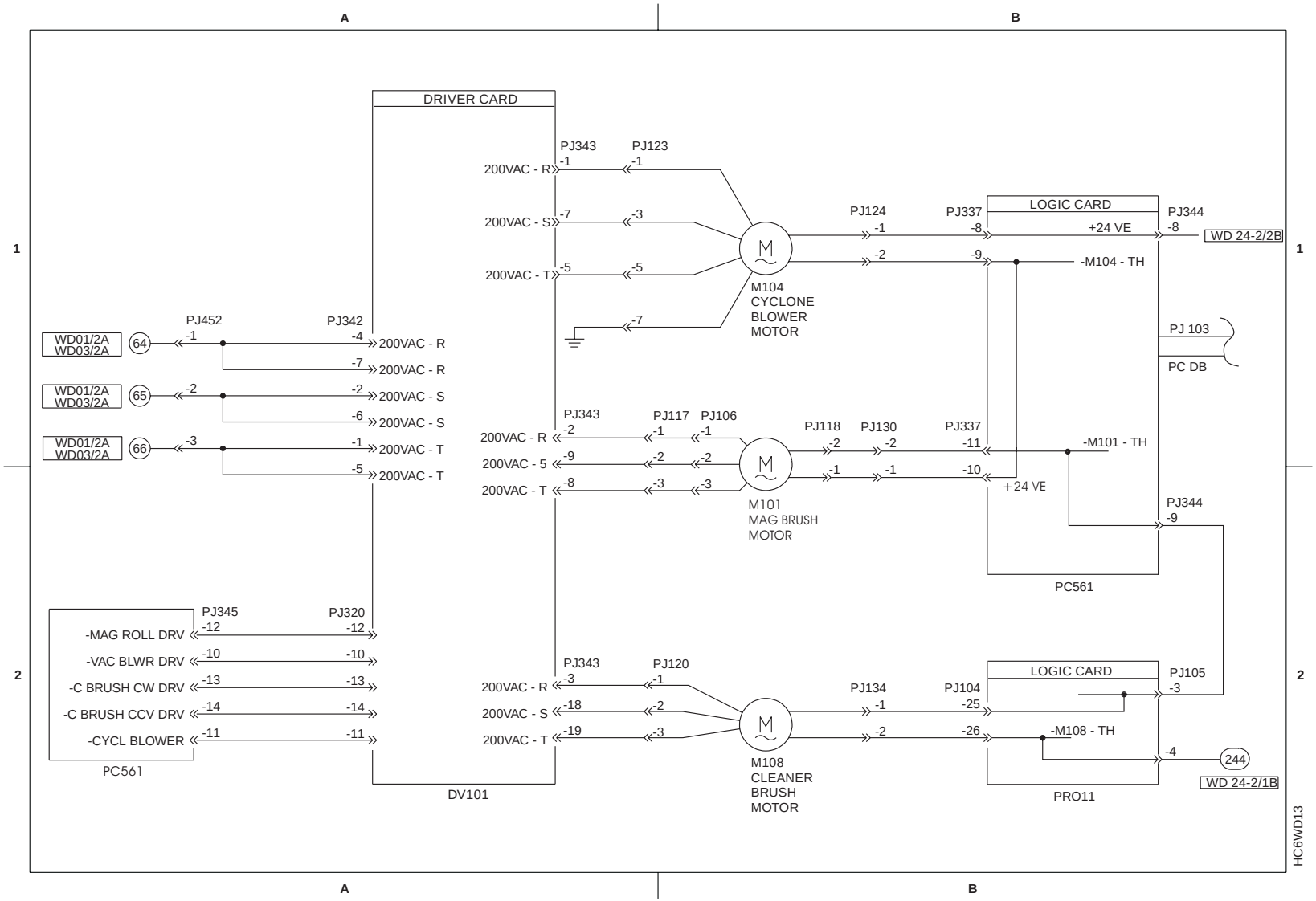
WD11 - AC Power Control (Duplex)



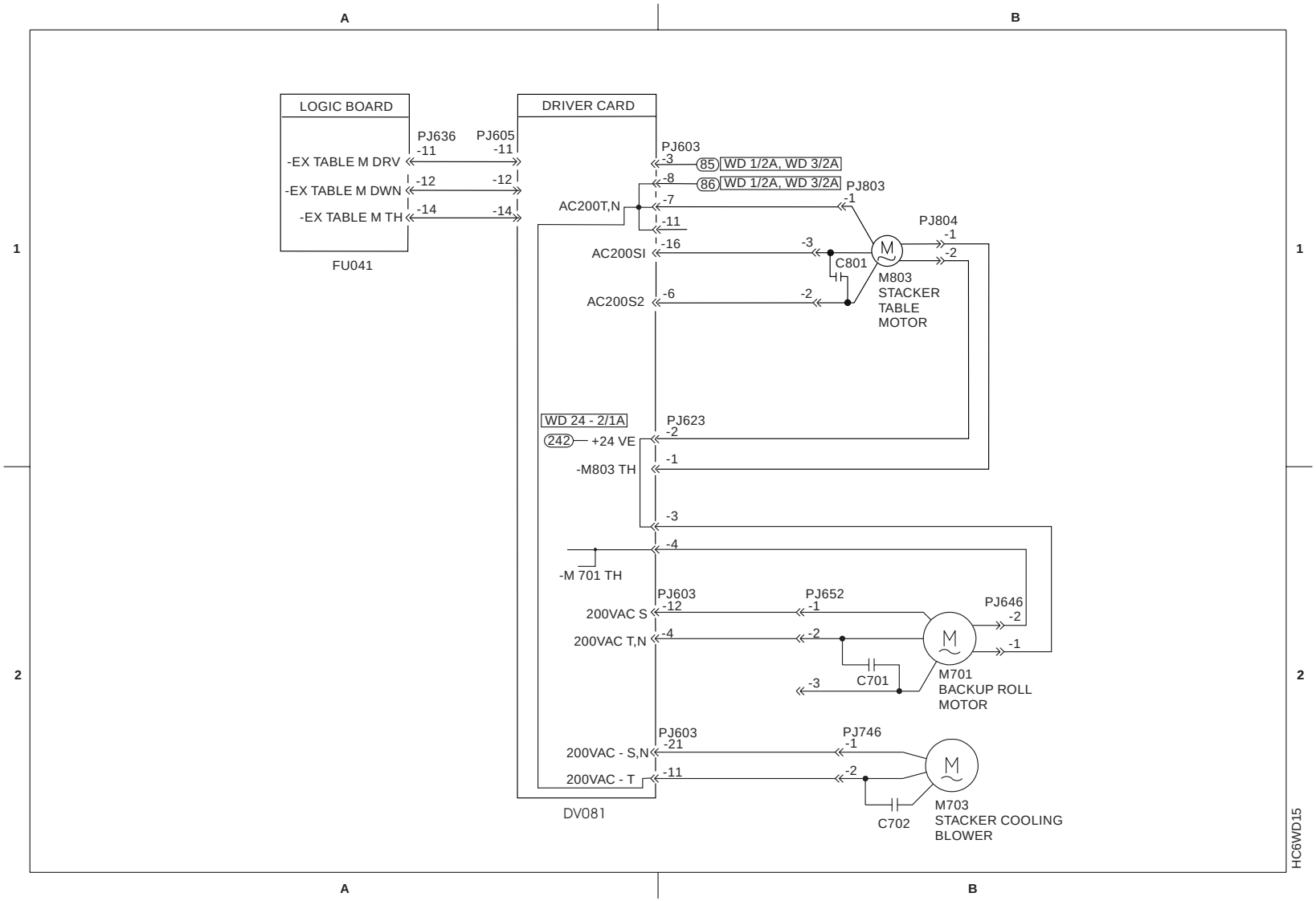
WD12 - Printer Power Supply - Power On/Off



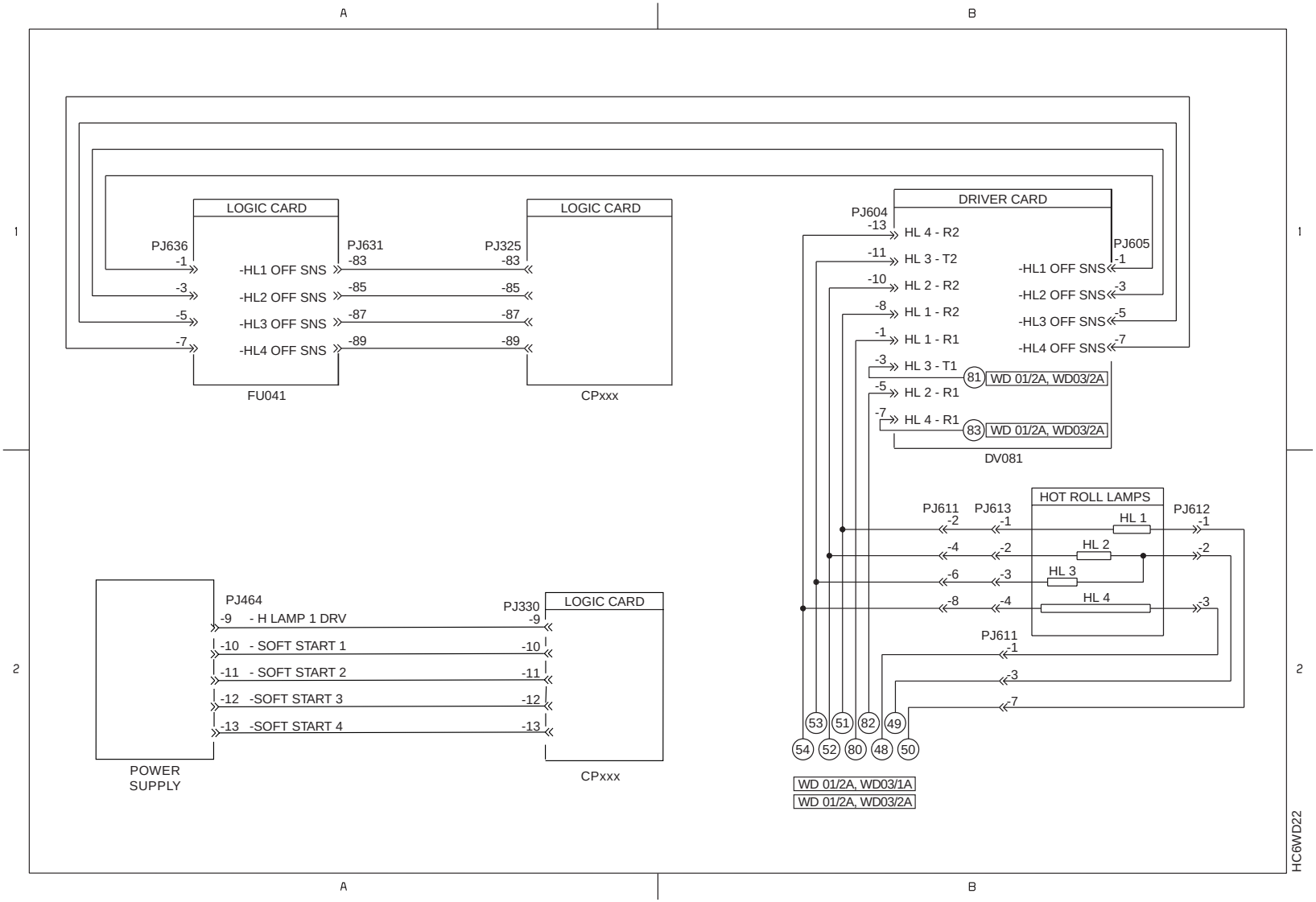
WD13 - AC Motors M101, M104 & M108



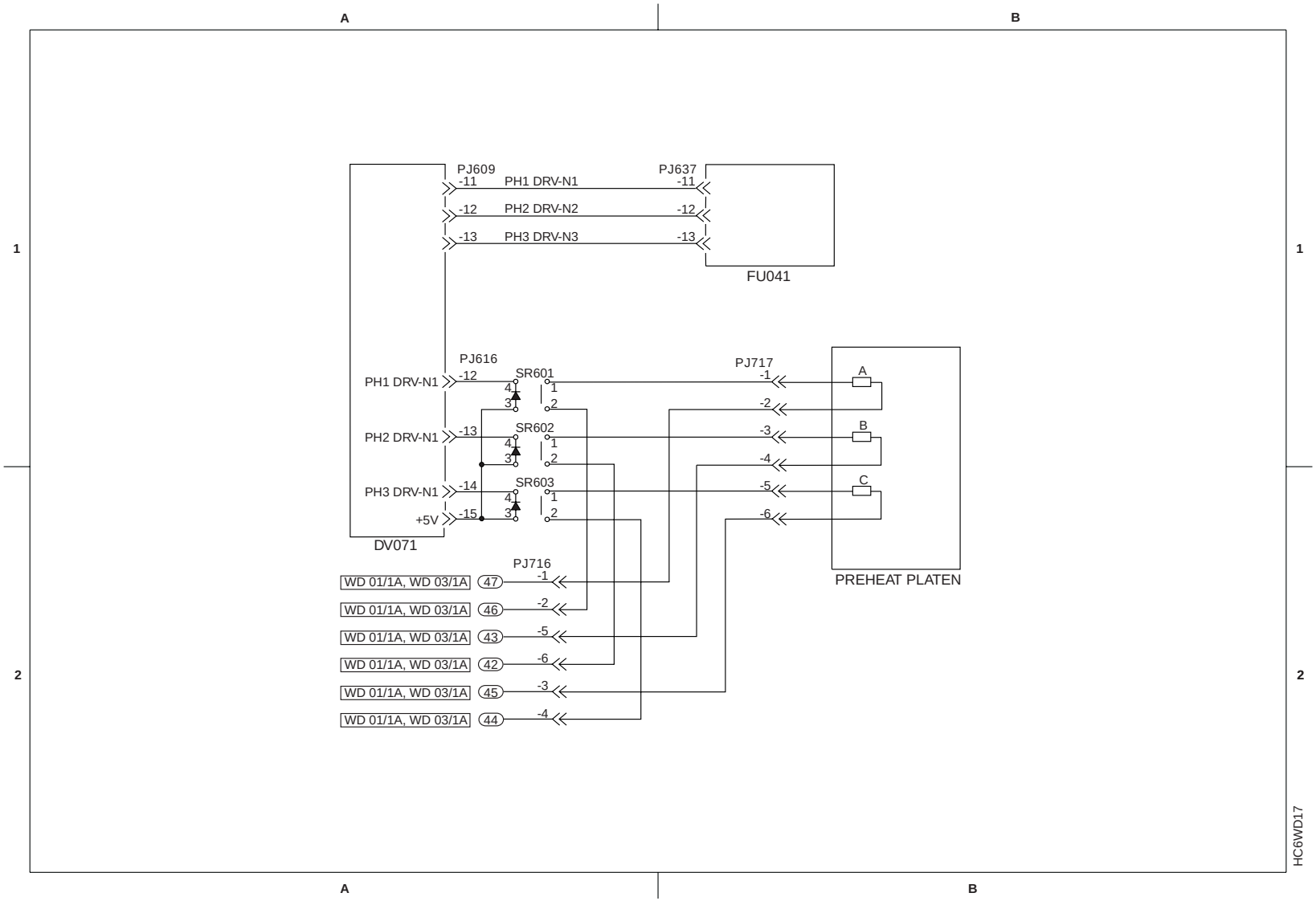
WD15 - AC Motors M701, M703, M803



WD16 - AC Distribution To Hot Roll Lamps

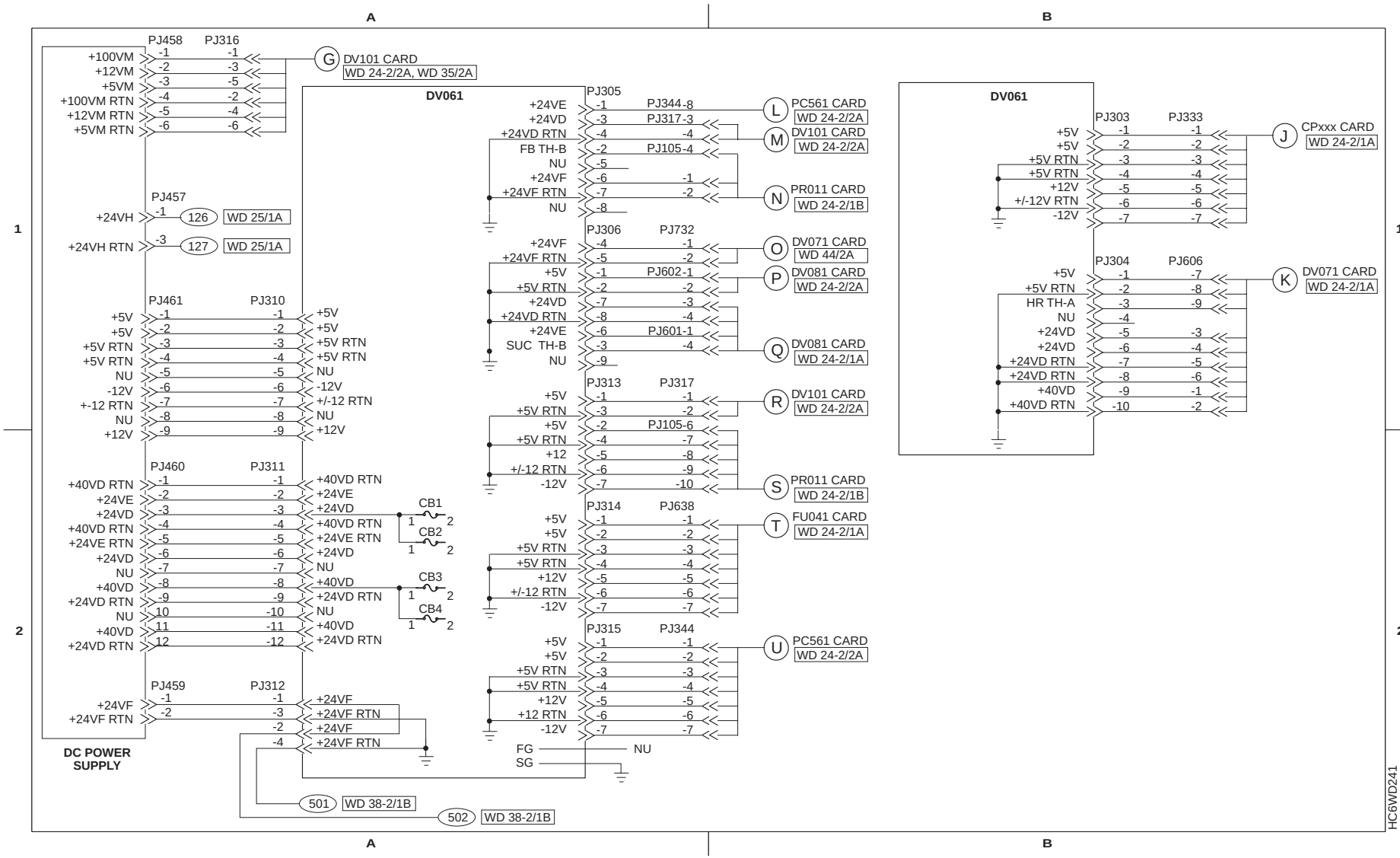


WD17 - AC Distribution To Preheat Platen

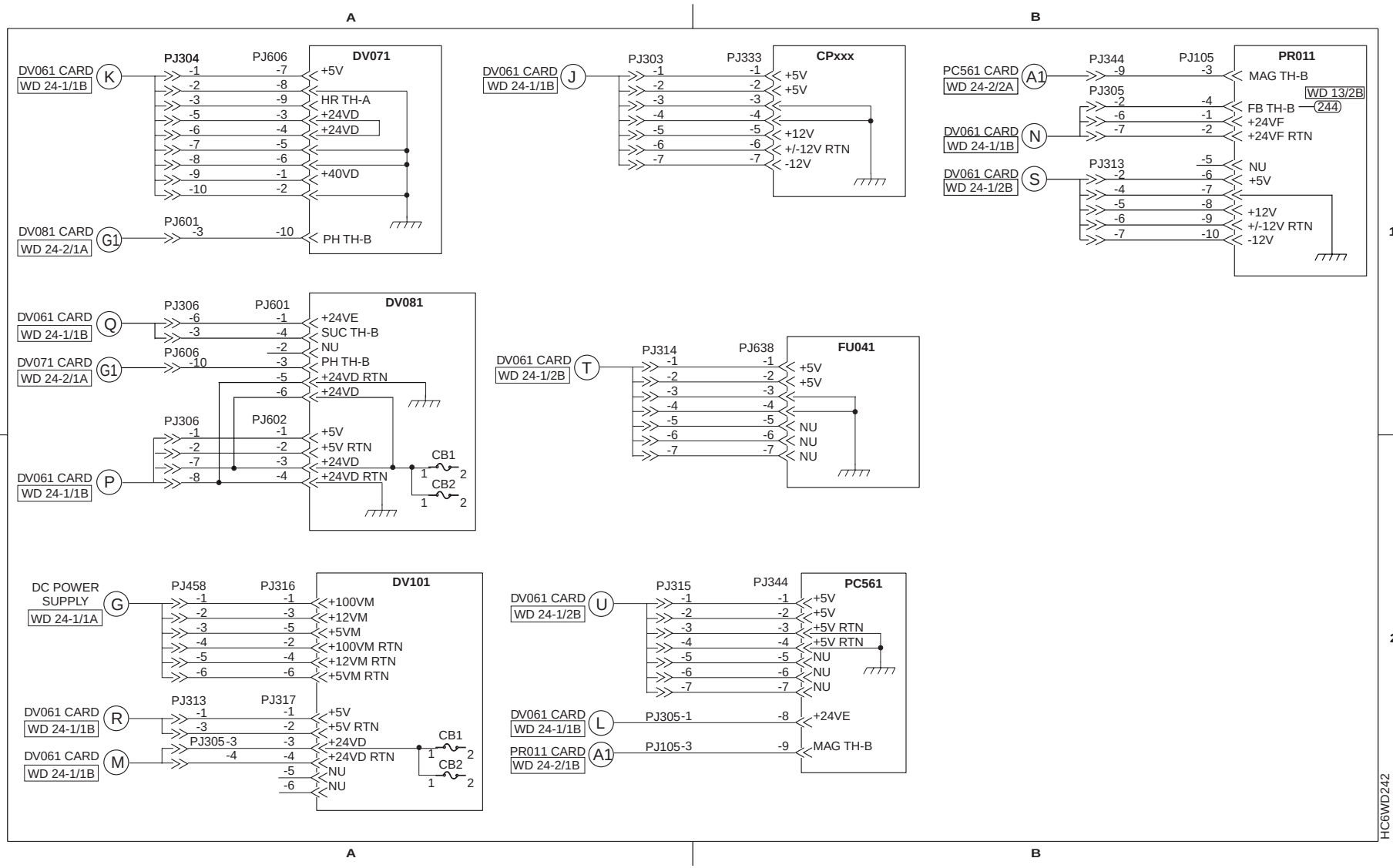


DC Circuits and Channel Attach Electronics

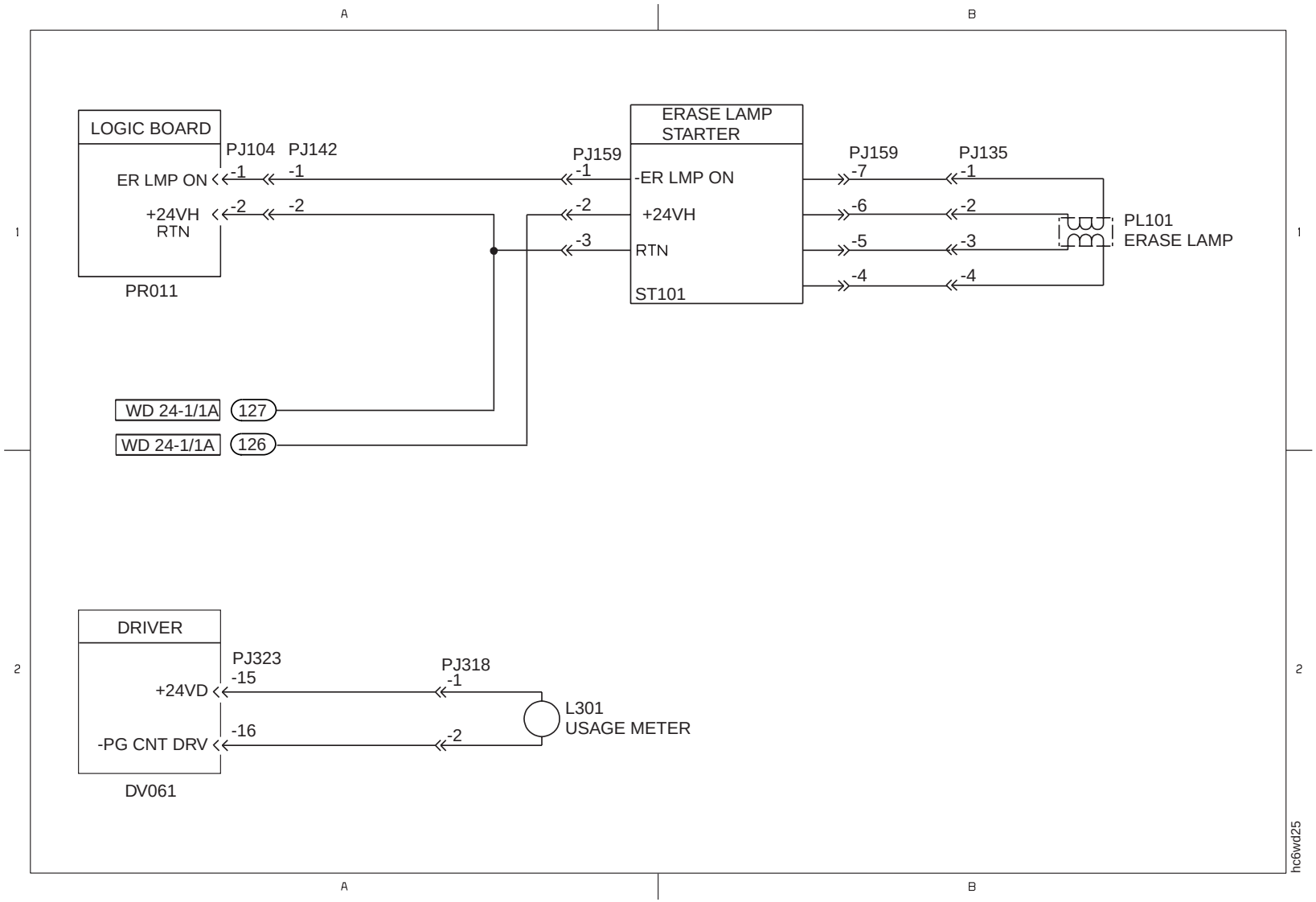
WD24-1 - Printer DC Power Distribution



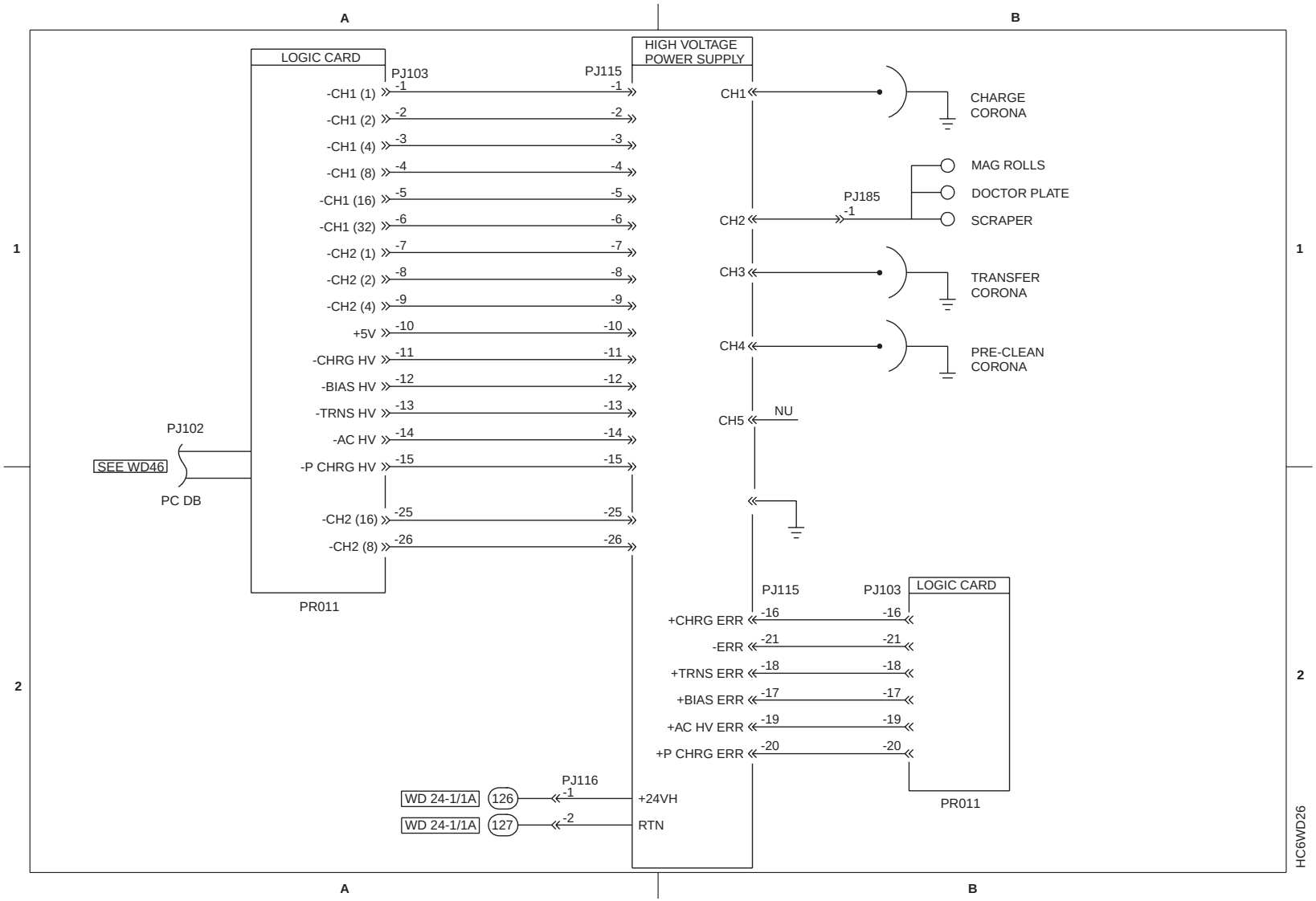
WD24-2 - Printer DC Power Distribution



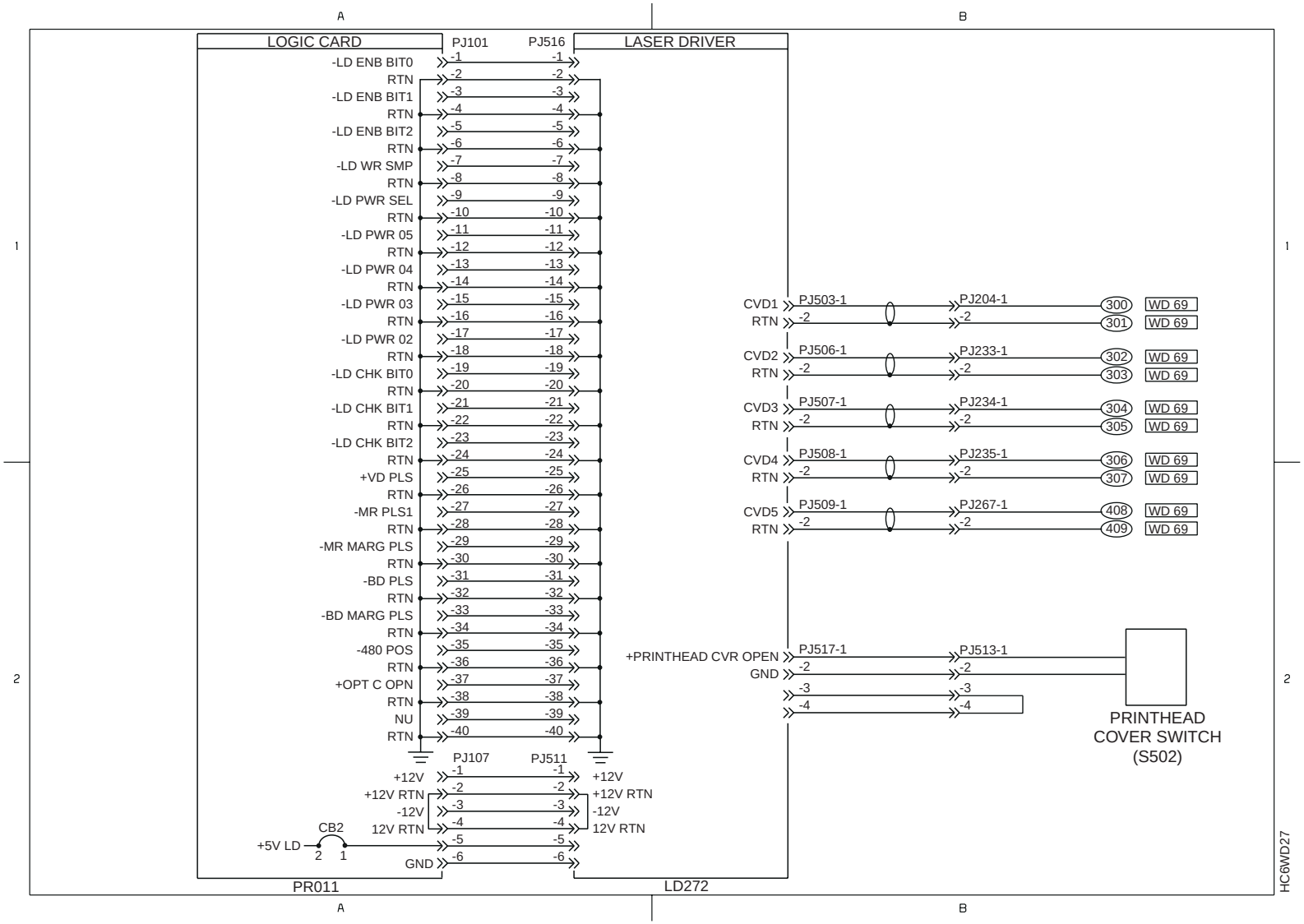
WD25 - Erase Lamp (PL101) and Usage Meter



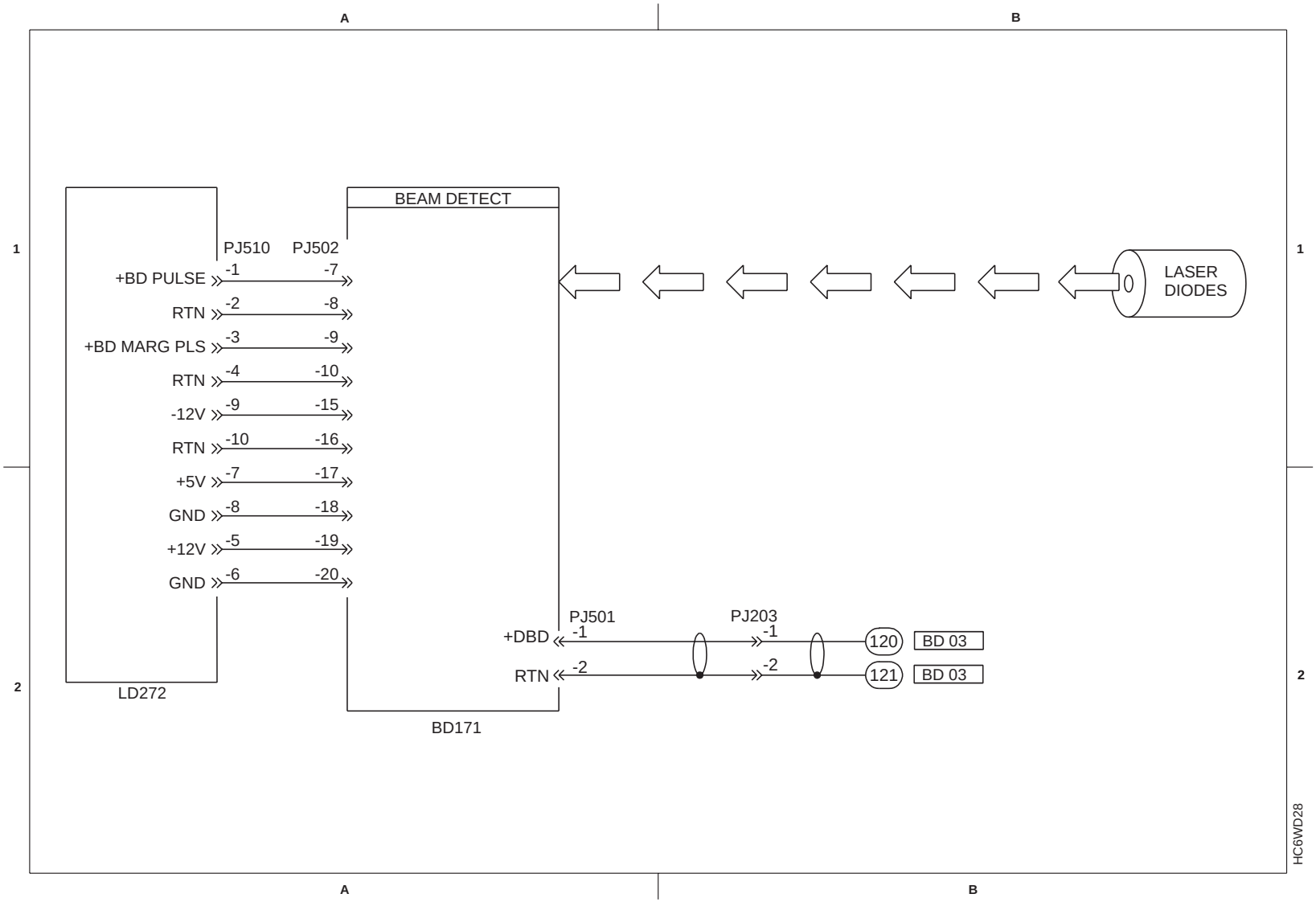
WD26 - High Voltage to Coronas & Mag Brush Rolls



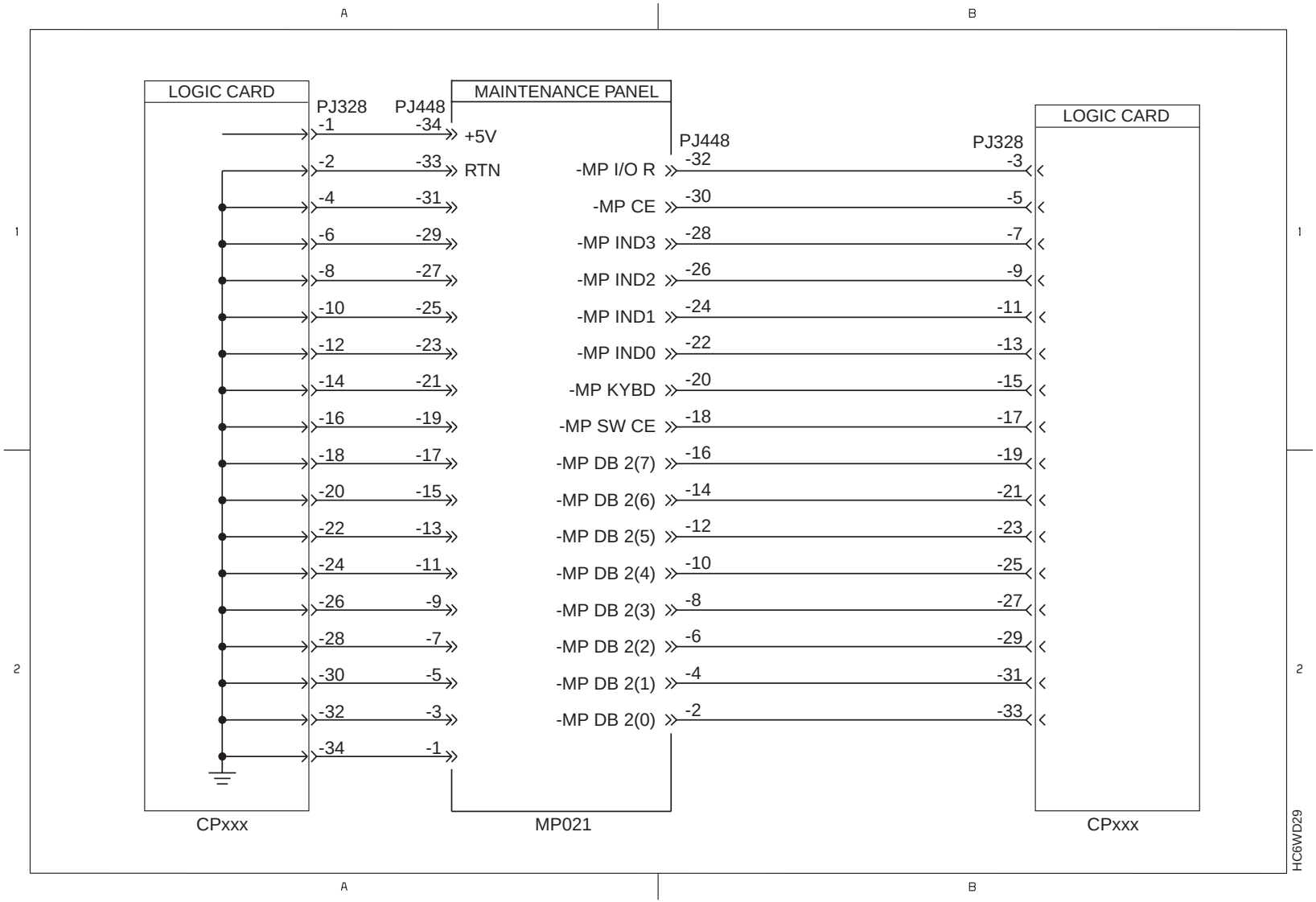
WD27 - Laser Driver



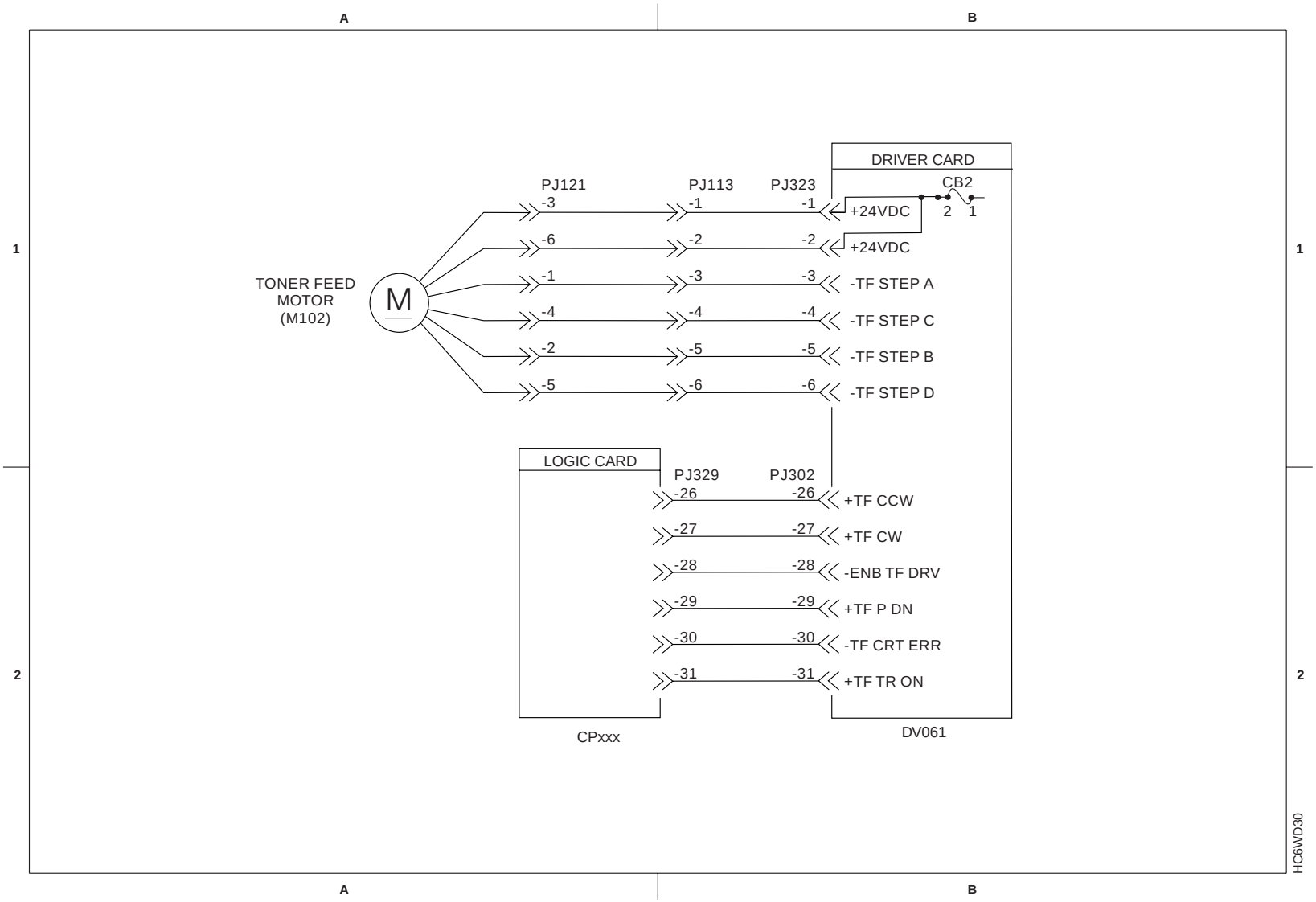
WD28 - Beam Detect



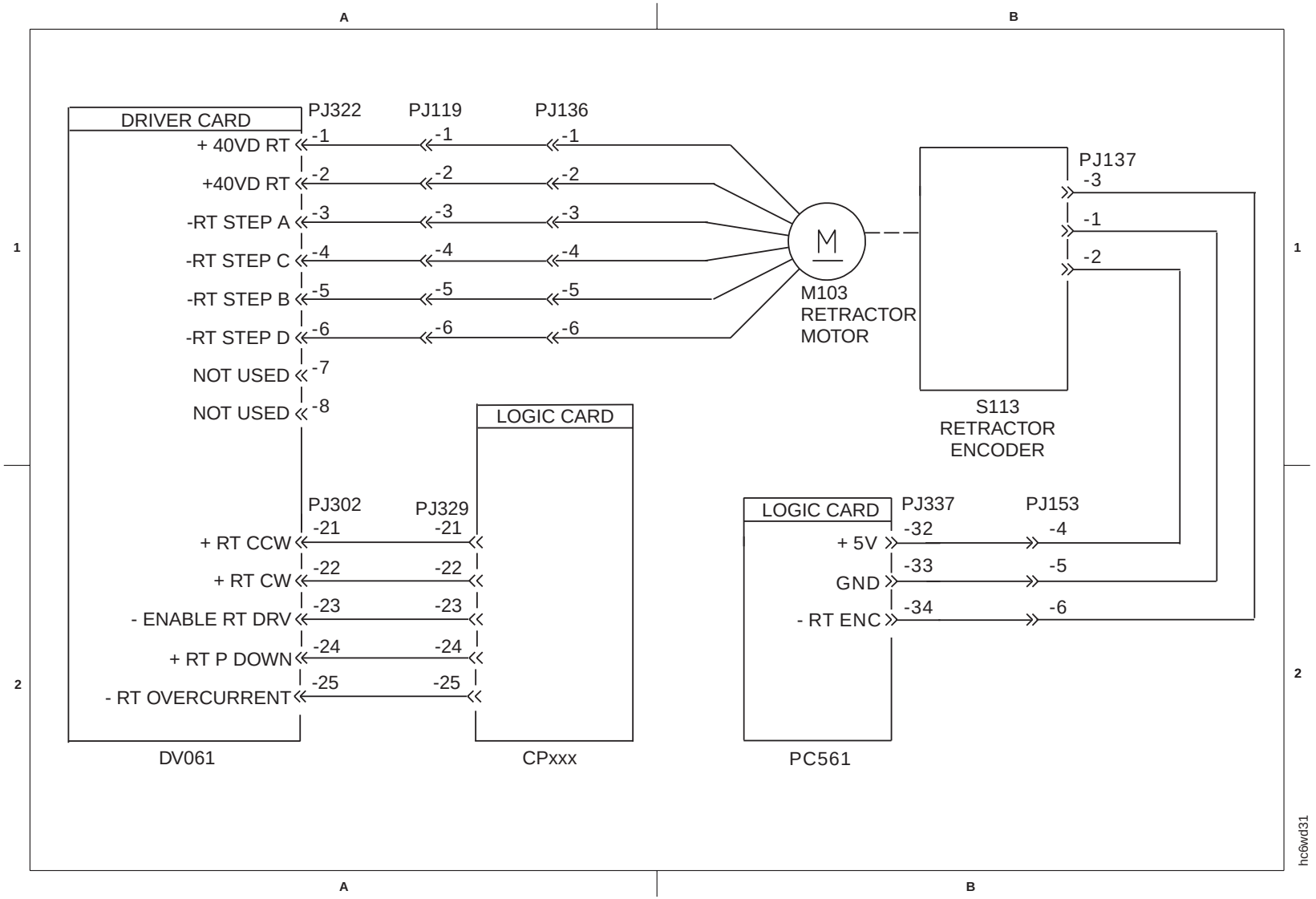
WD29 - Maintenance Panel



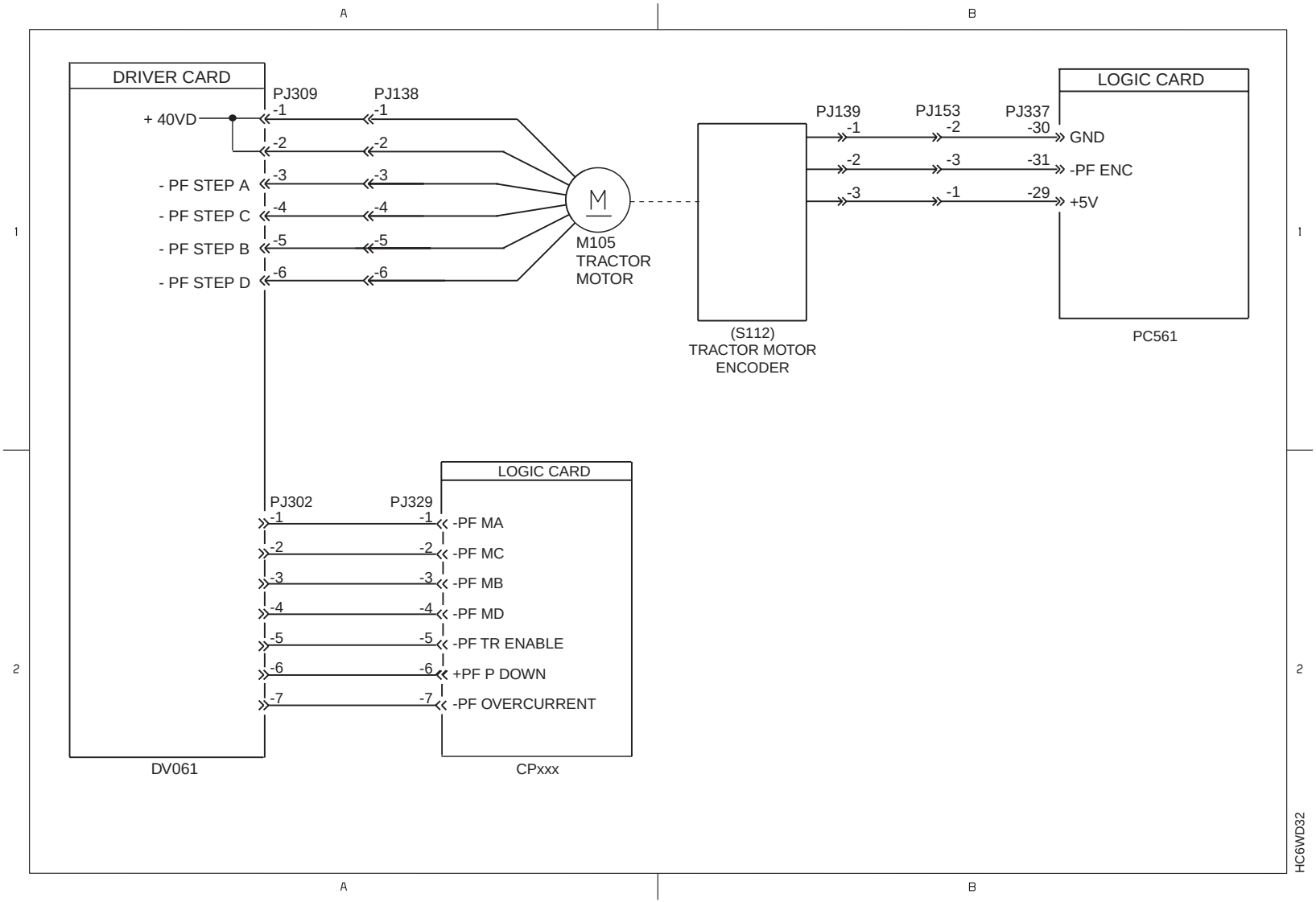
WD30 - Toner Feed Motor (M102)



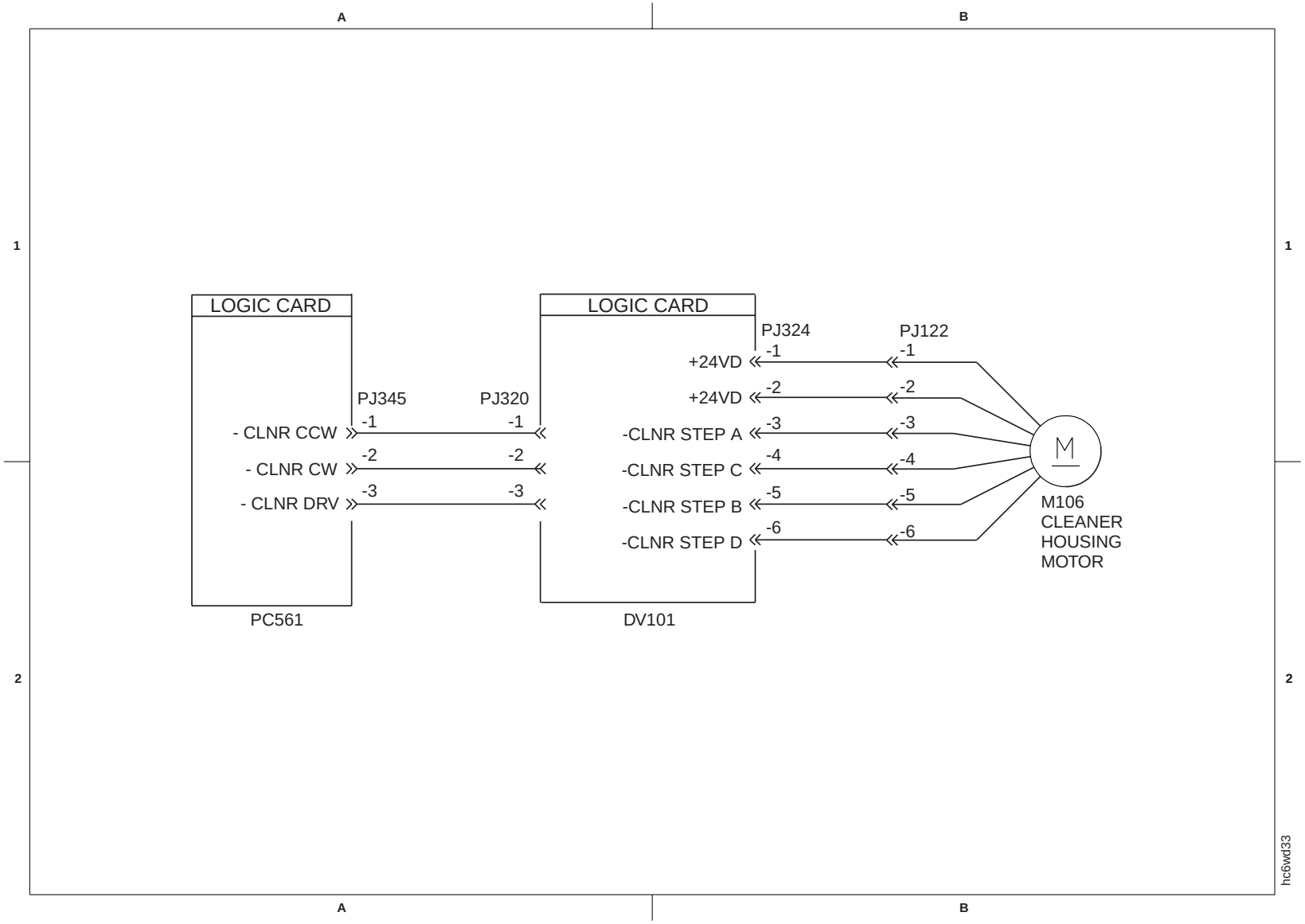
WD31 - Retractor Motor (M103)



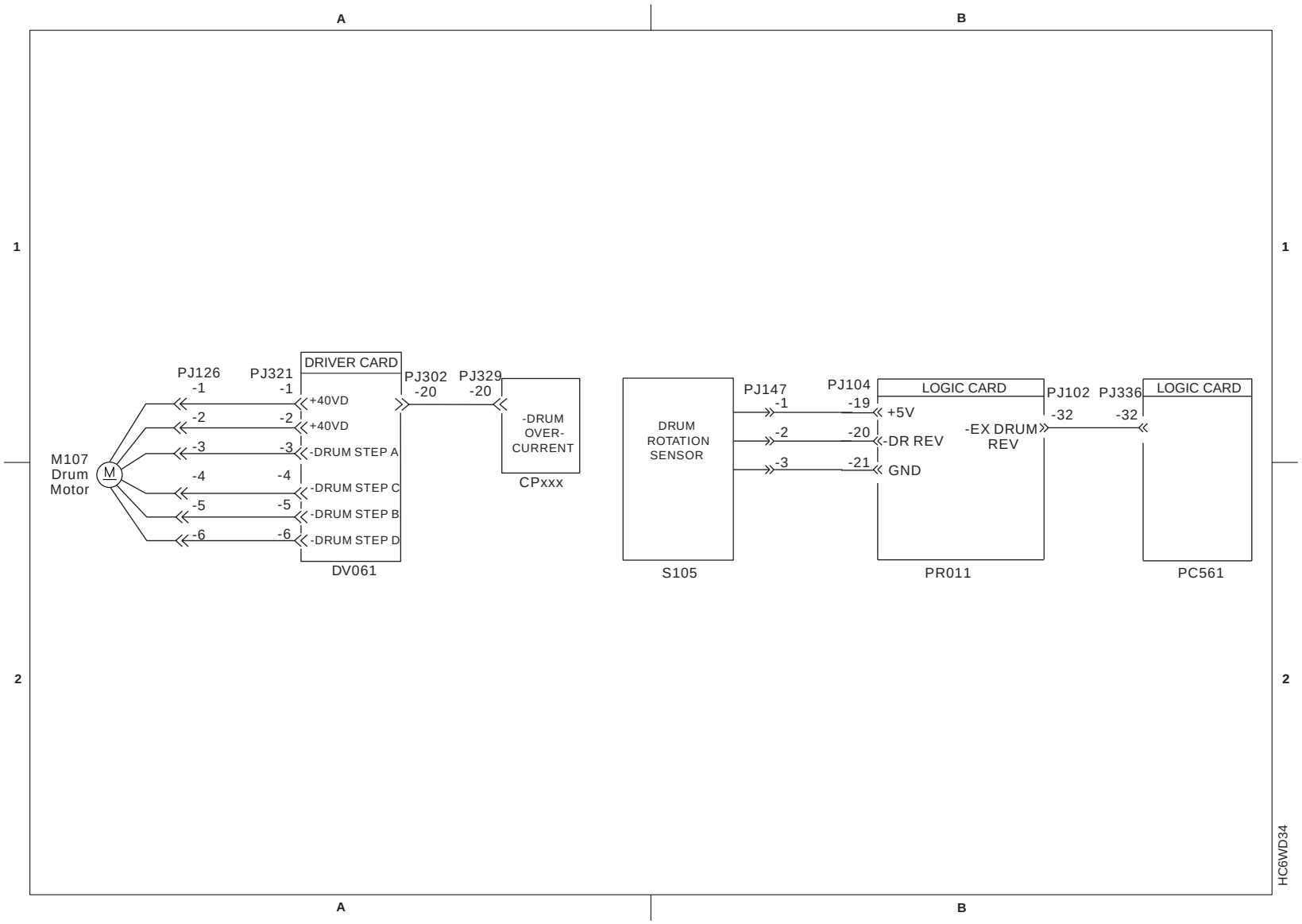
WD32 - Tractor Motor (M105)



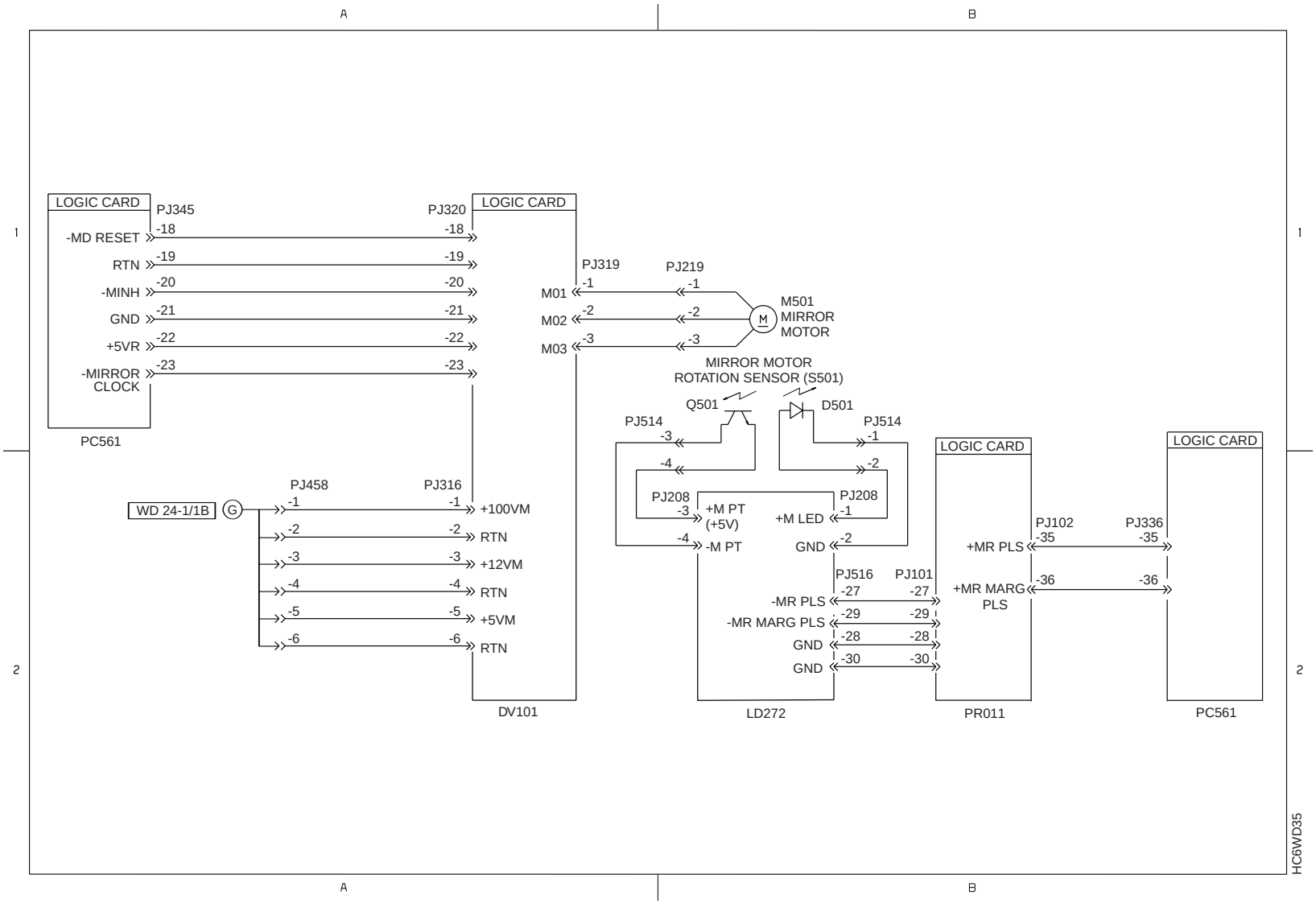
WD33 - Cleaner Housing Motor (M106)



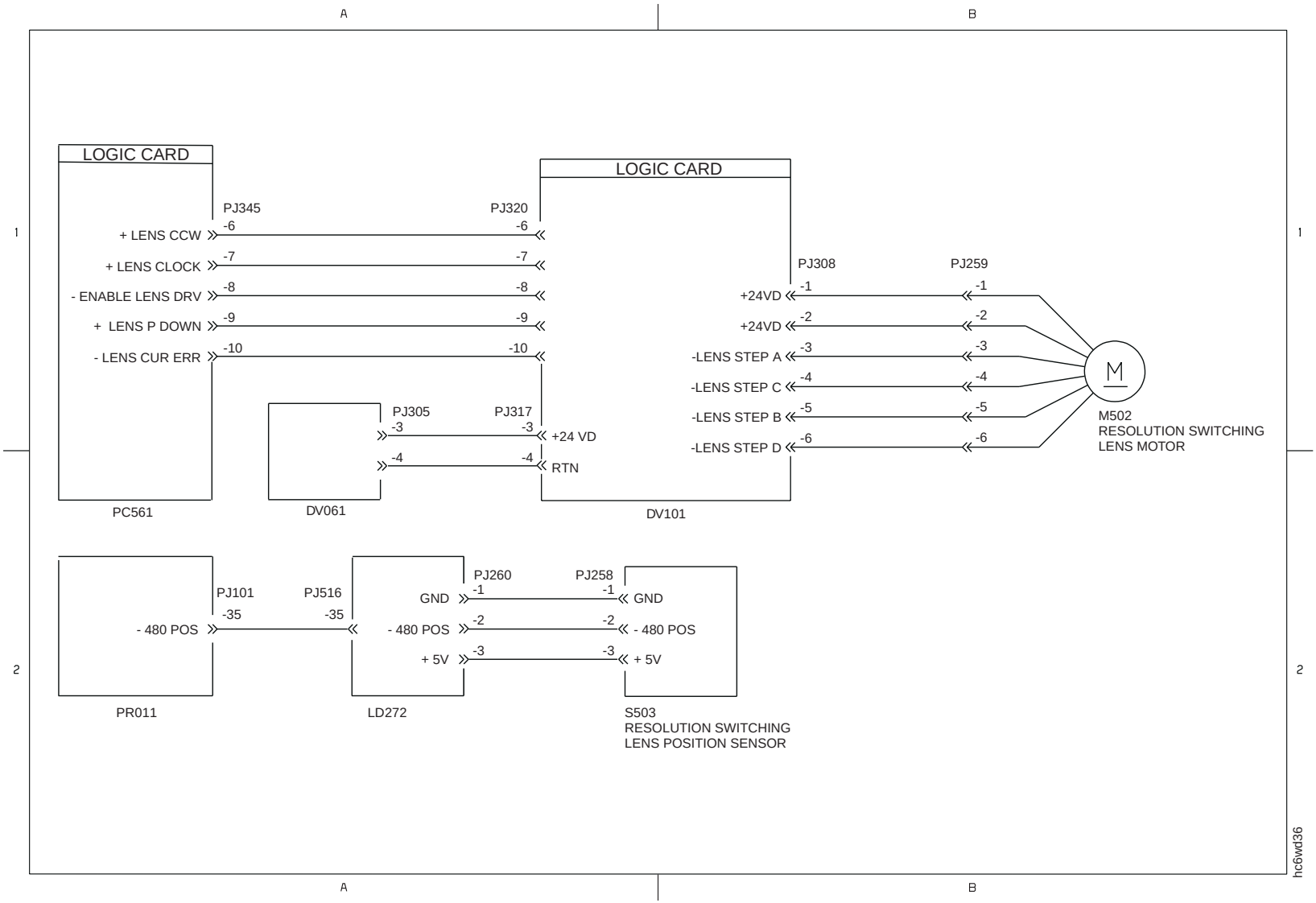
WD34 - Drum Motor (M107)



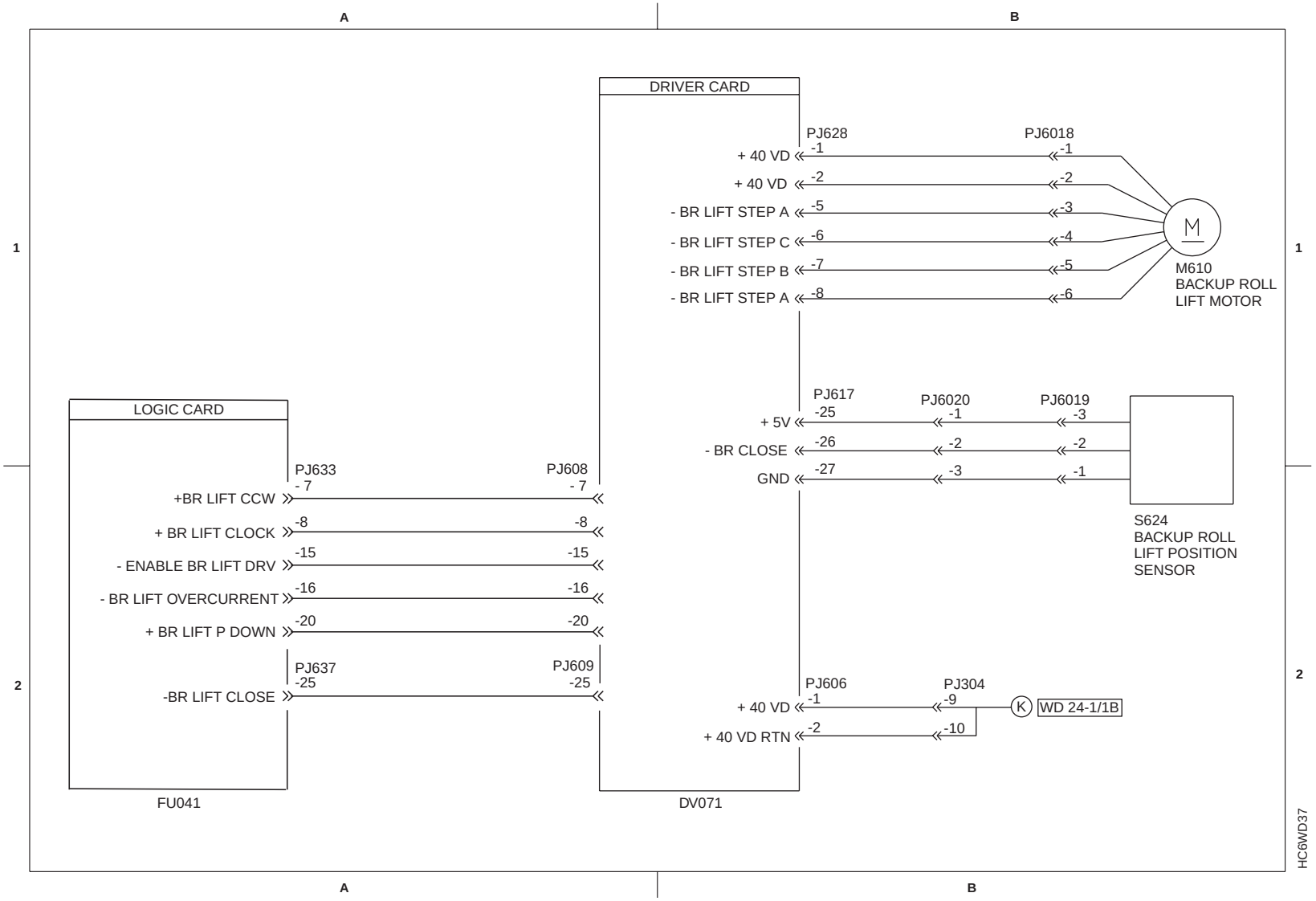
WD35 - Mirror Motor (M501)



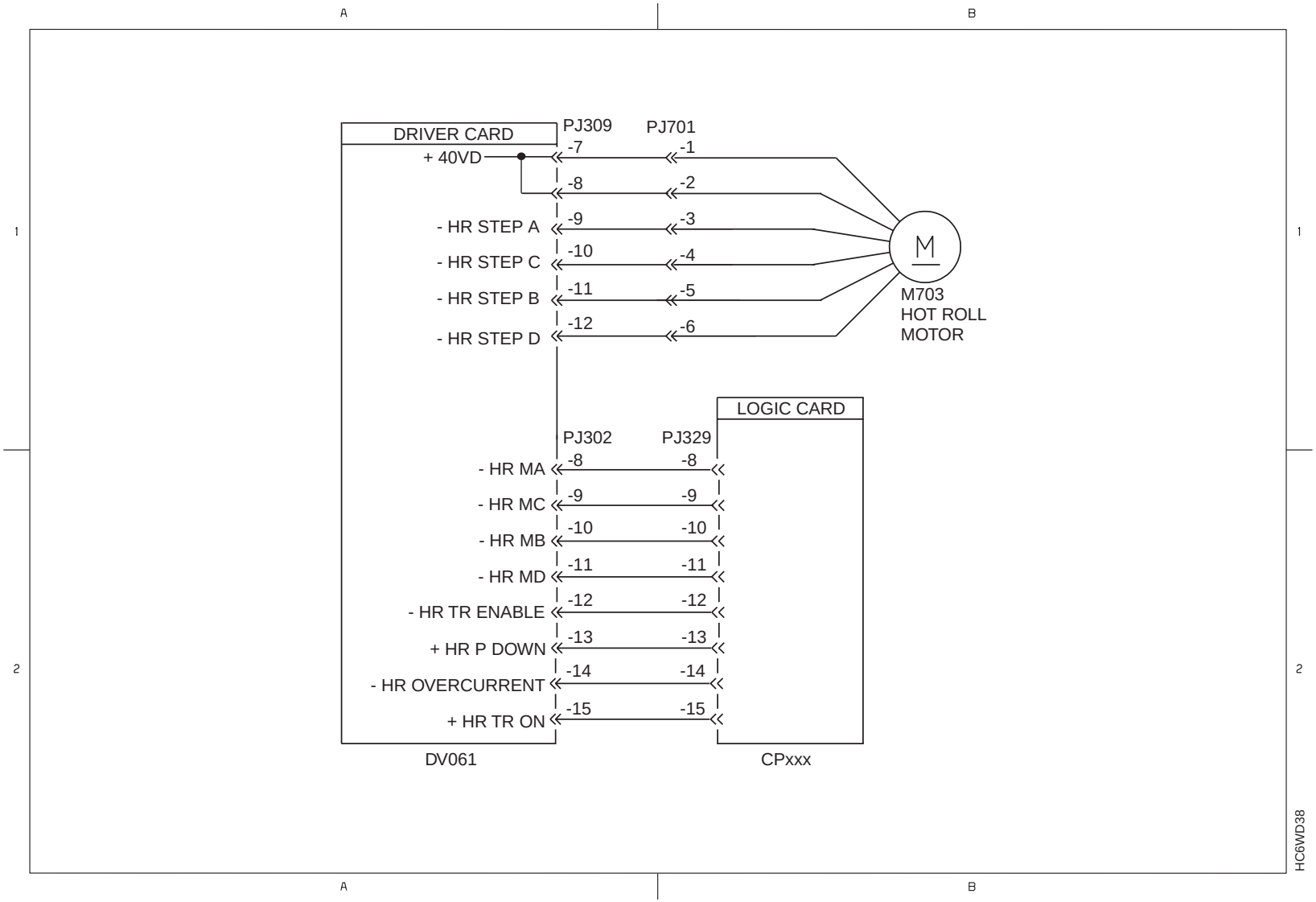
WD36 - Resolution Switching Lens Motor (M502)



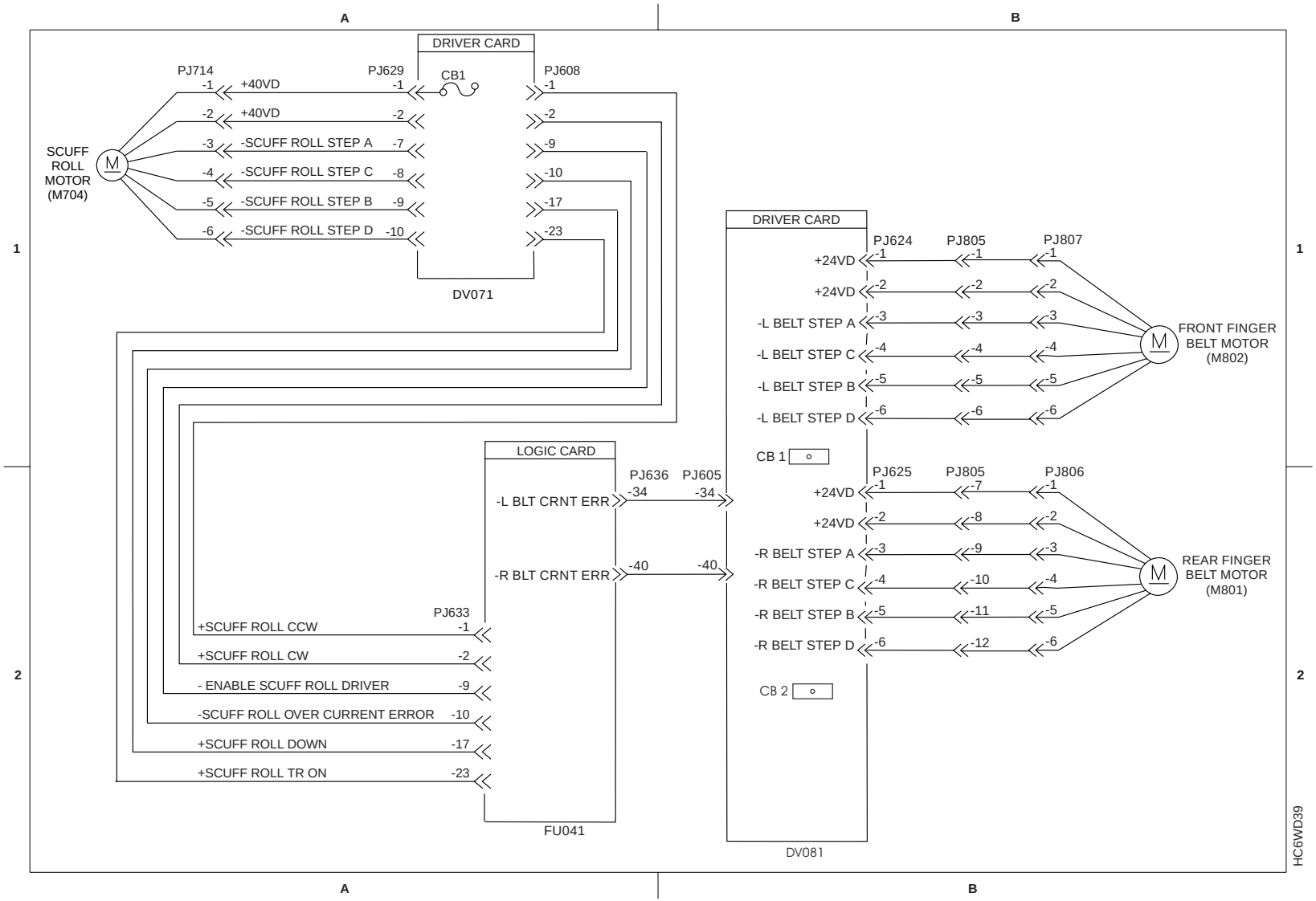
WD37 - Backup Roll Lift Motor (M610) & Sensor (S624)



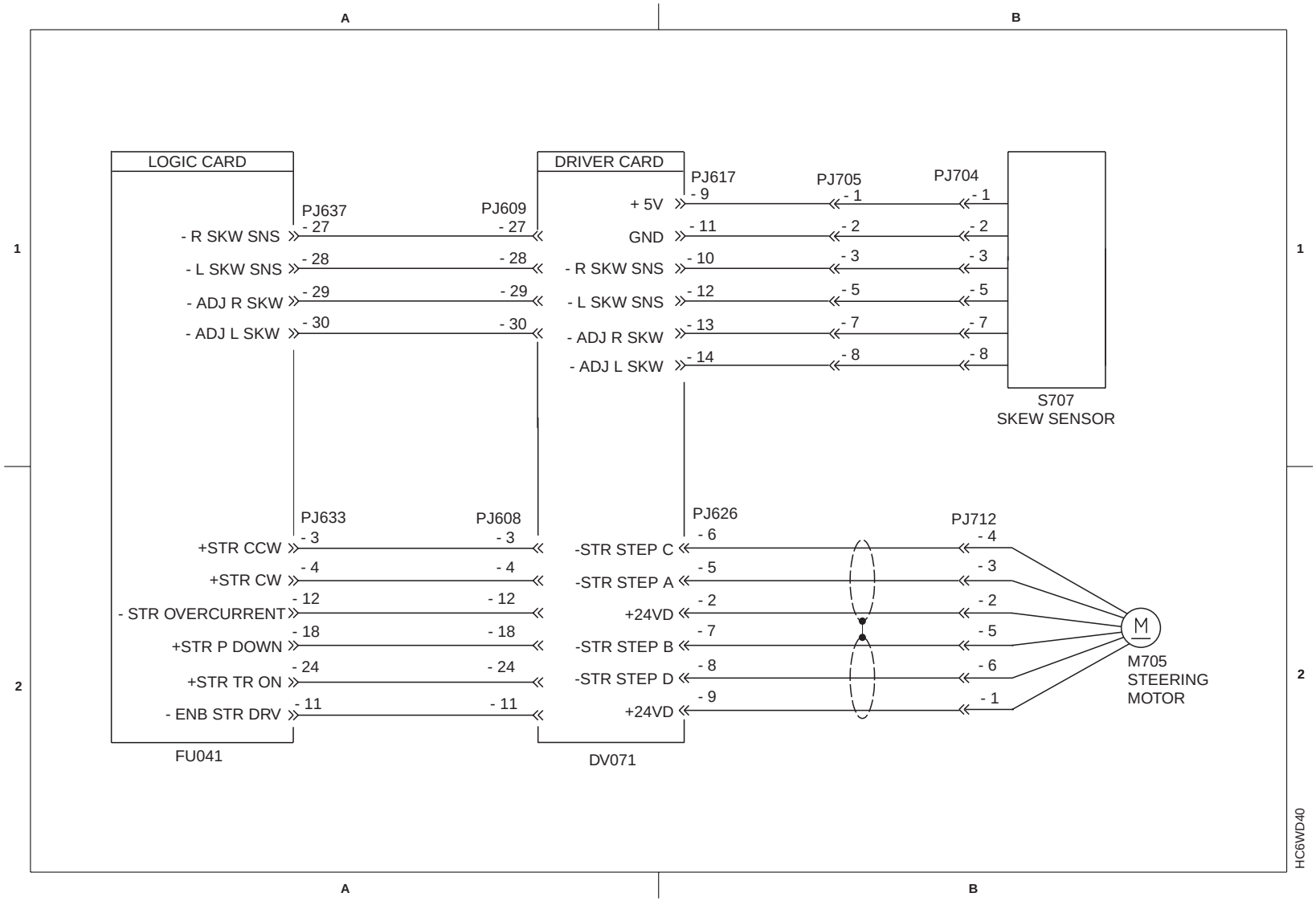
WD38 - Hot Roll Drive Motor (M703)



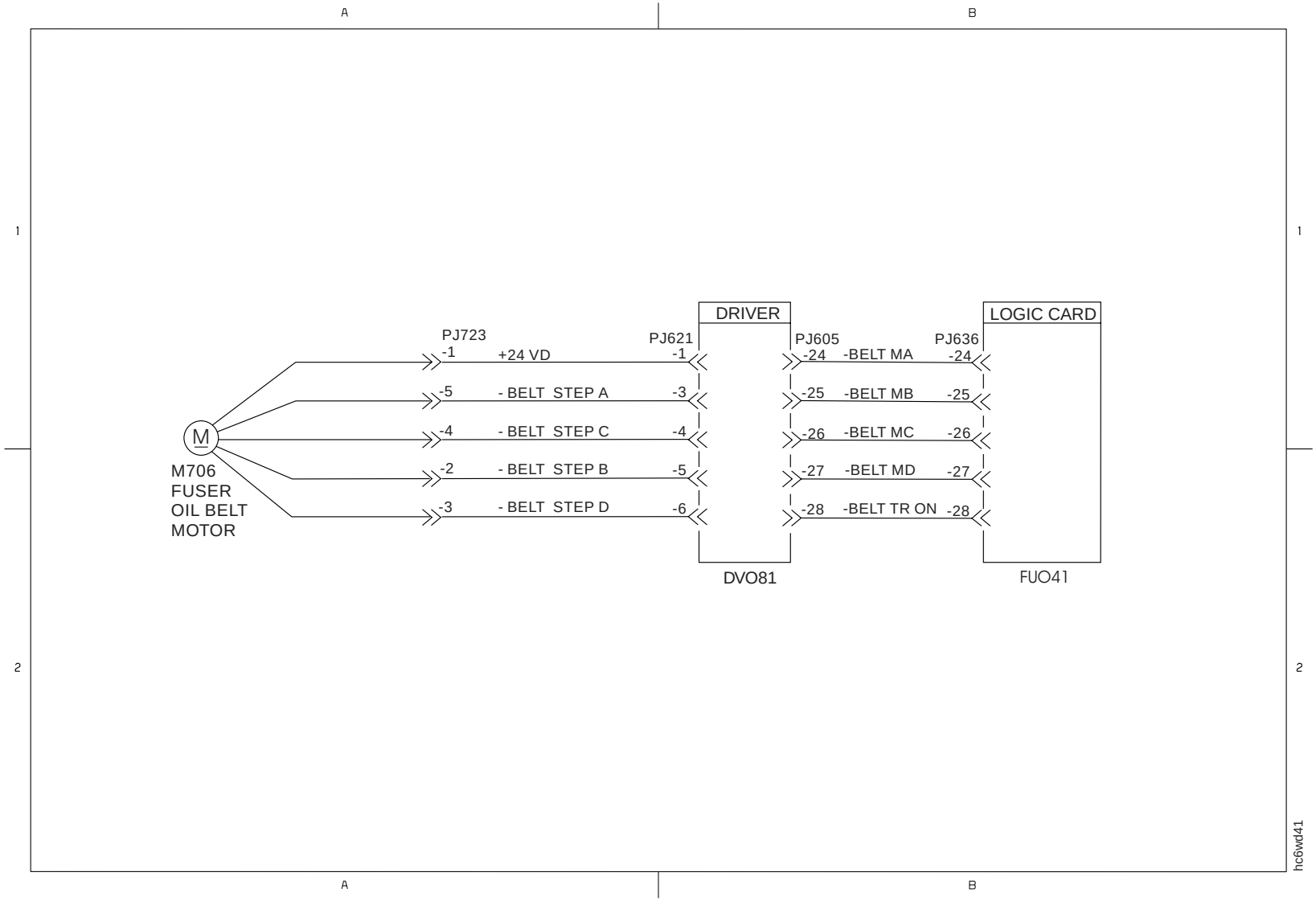
WD39 - Motors M704, M801, M802



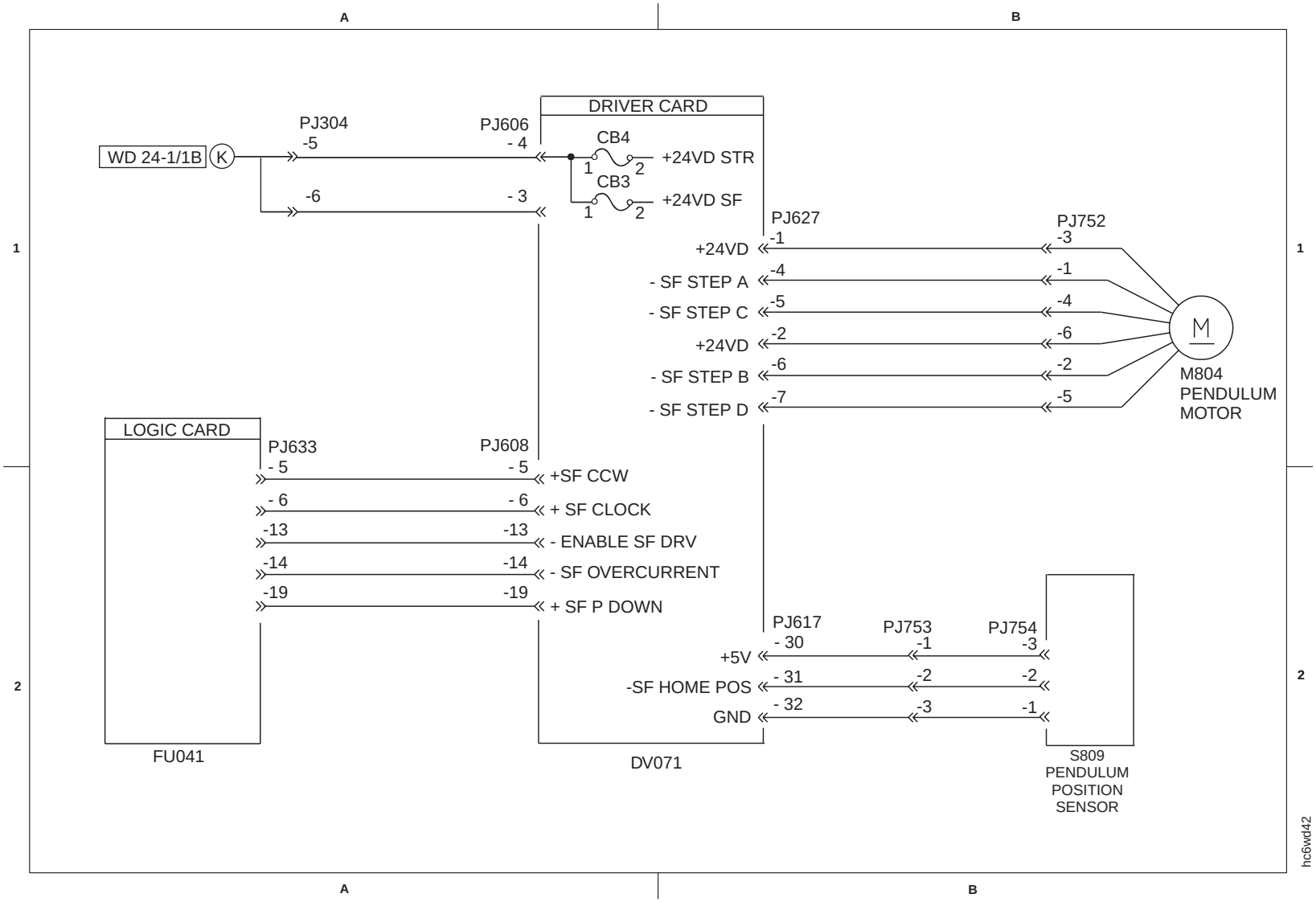
WD40 - Steering Motor (M705)



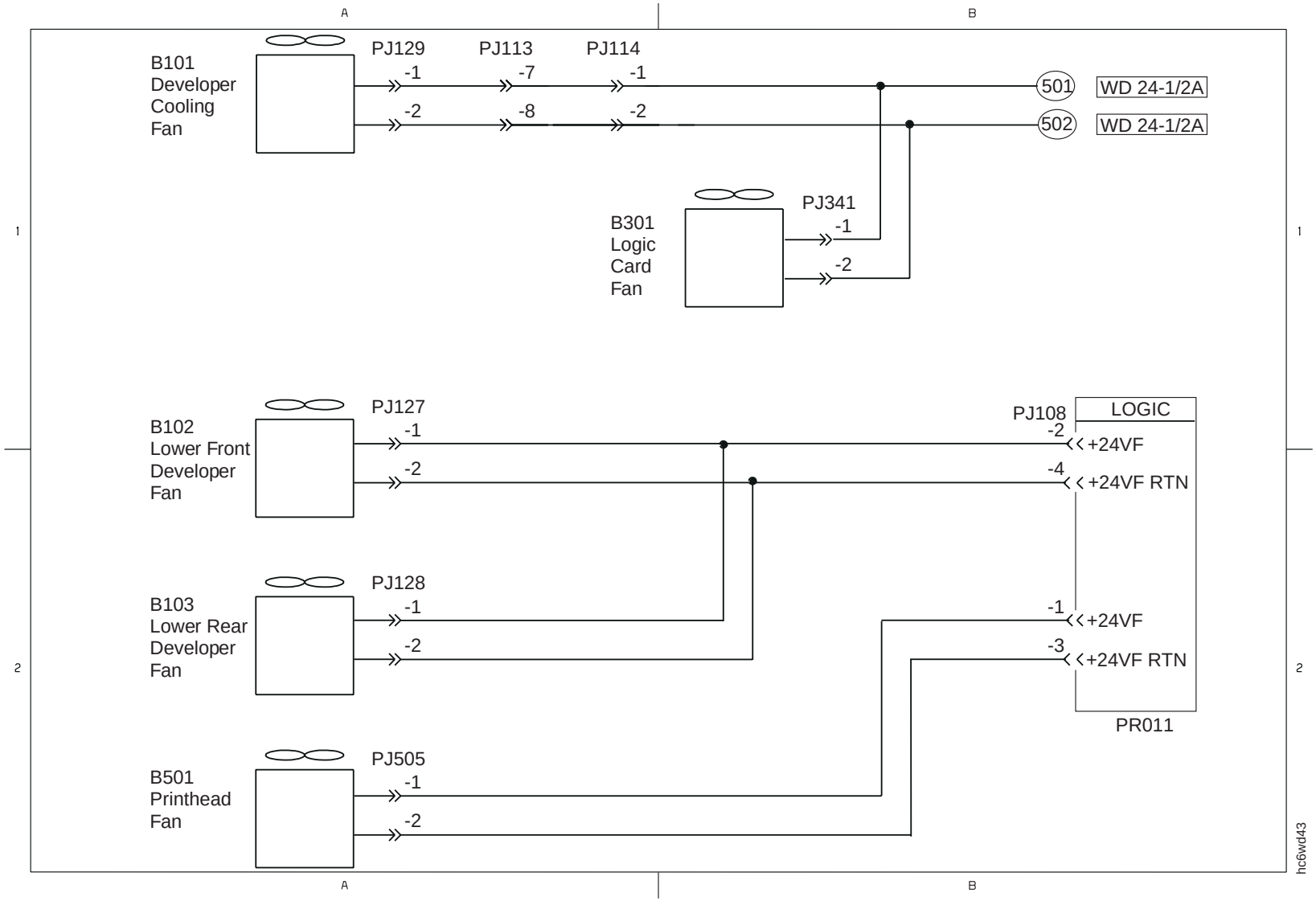
WD41 - Oiler Belt Motor (M706)



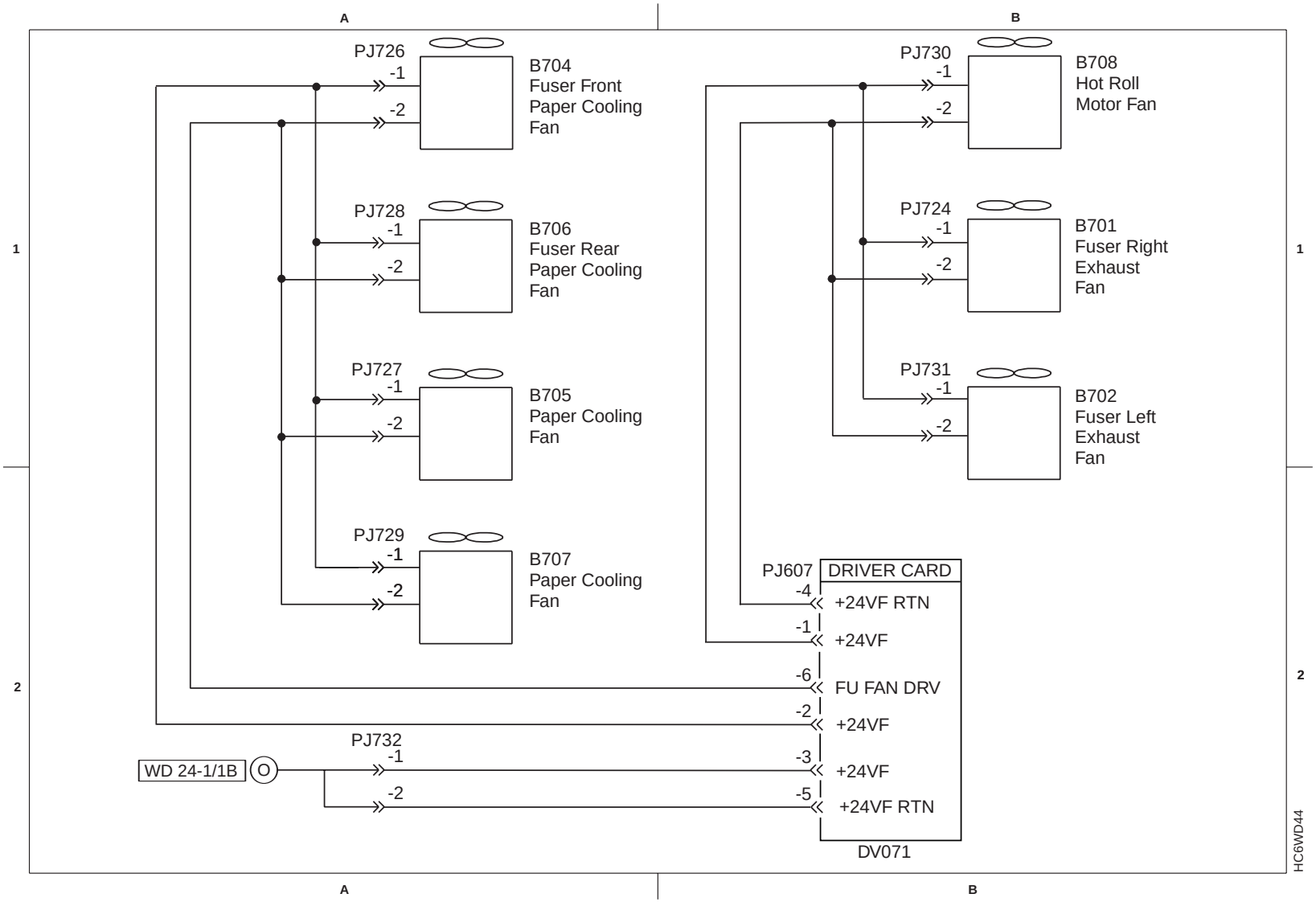
WD42 - Pendulum Motor M804 & Sensor S809



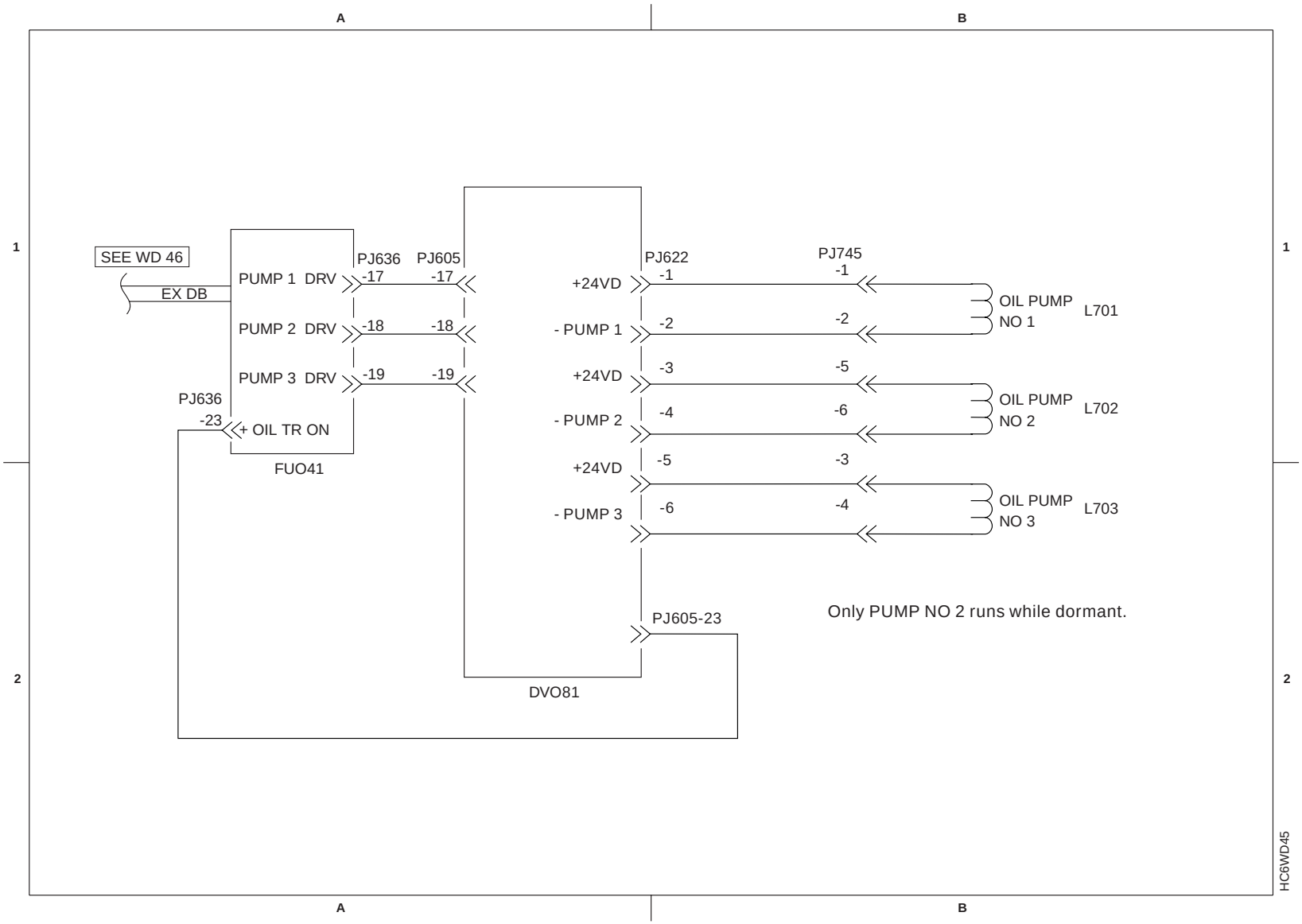
WD43 - DC Fans B101, B102, B103, B301 & B501



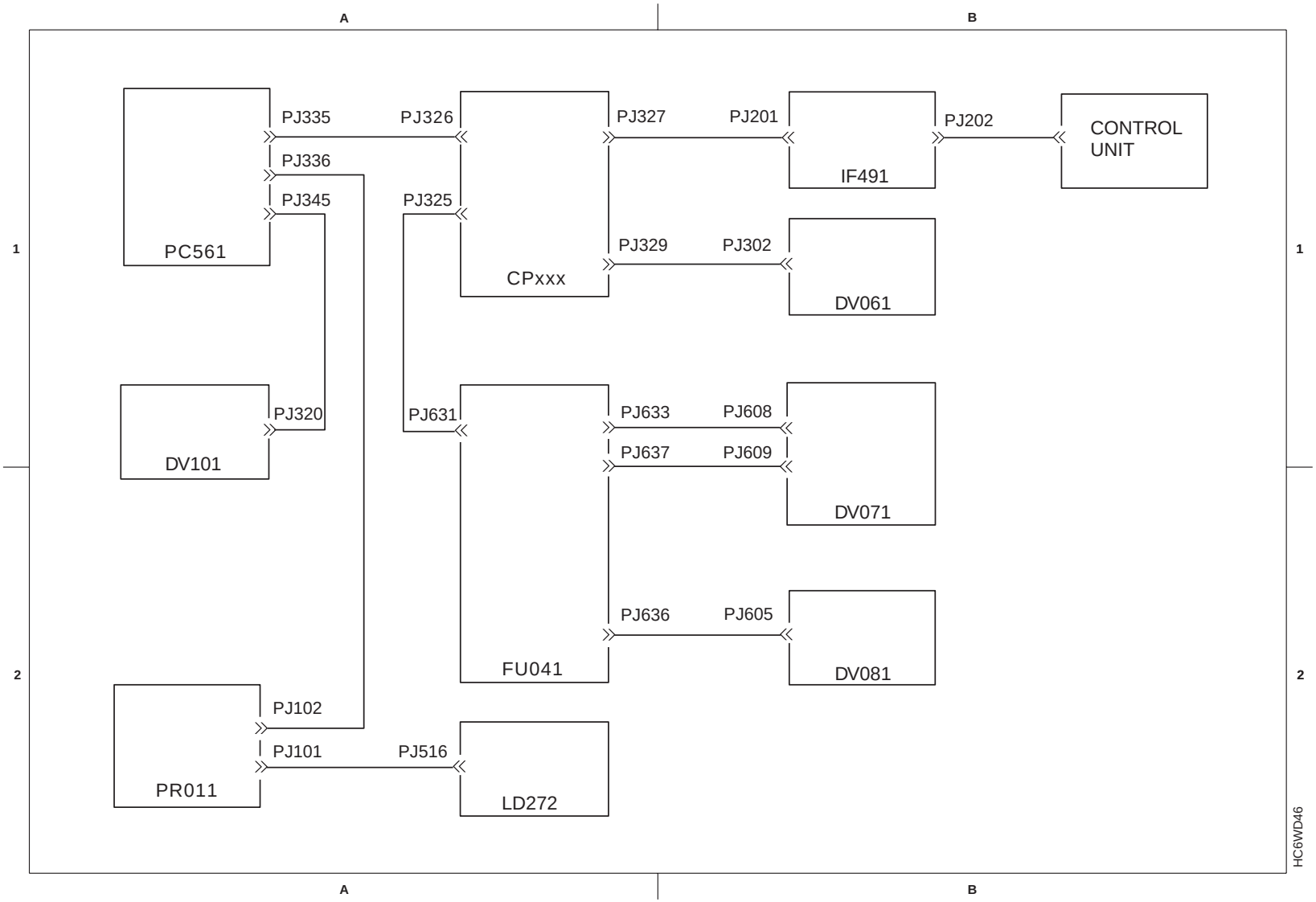
WD44 - DC Fans B7xx



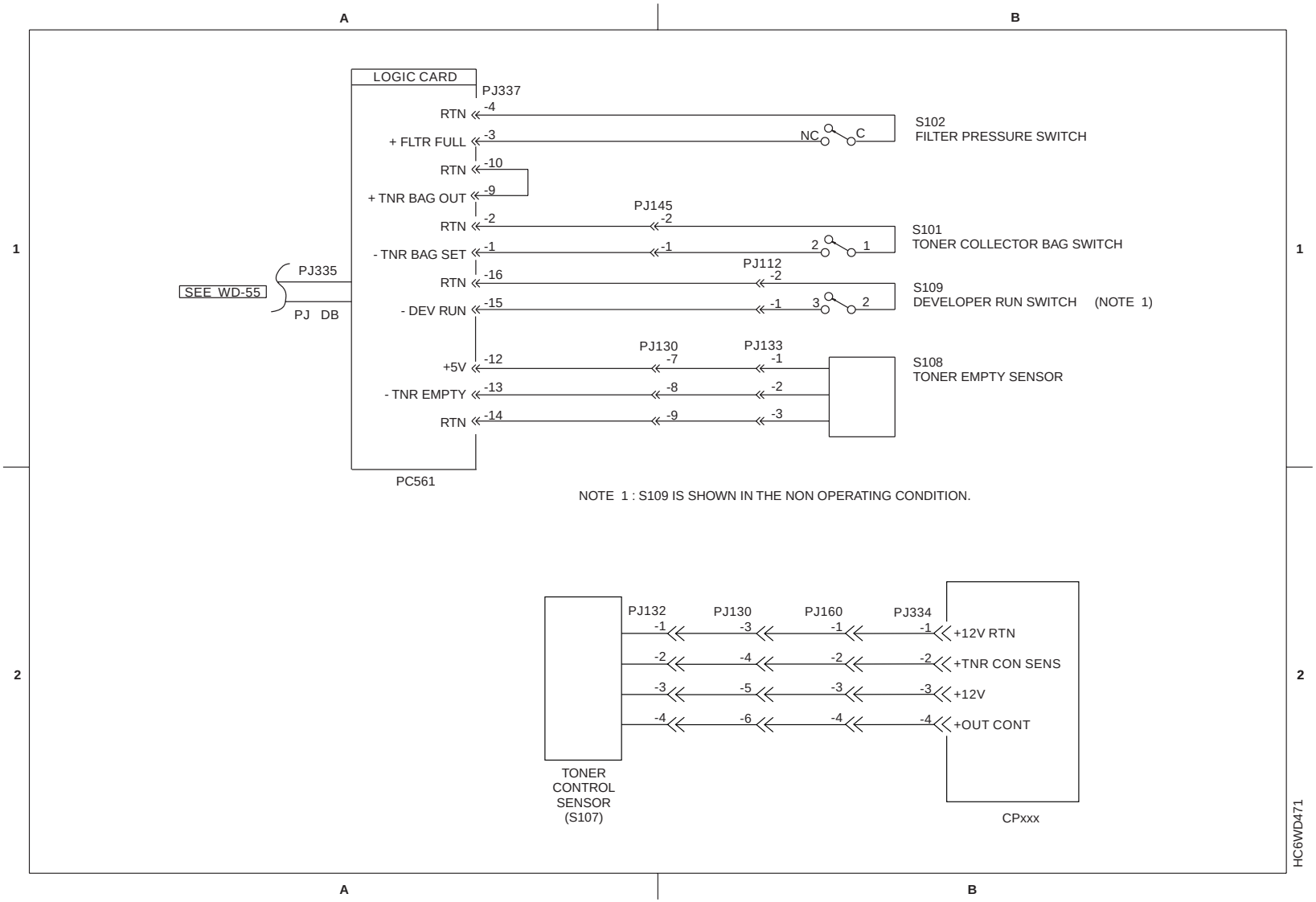
WD45 - Oil Pumps L701, L702 & L703



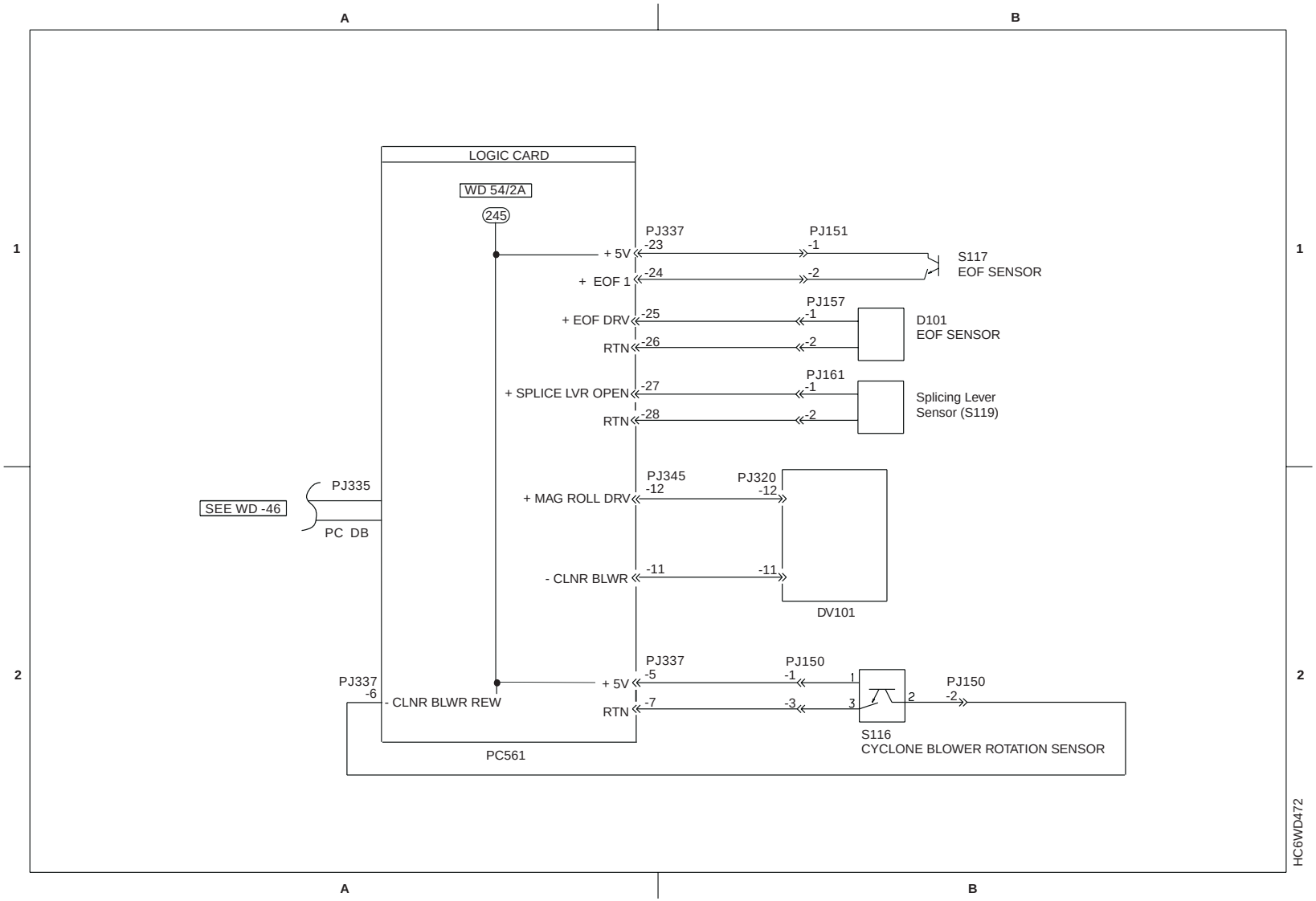
WD46 - Address/Data Bus Networks



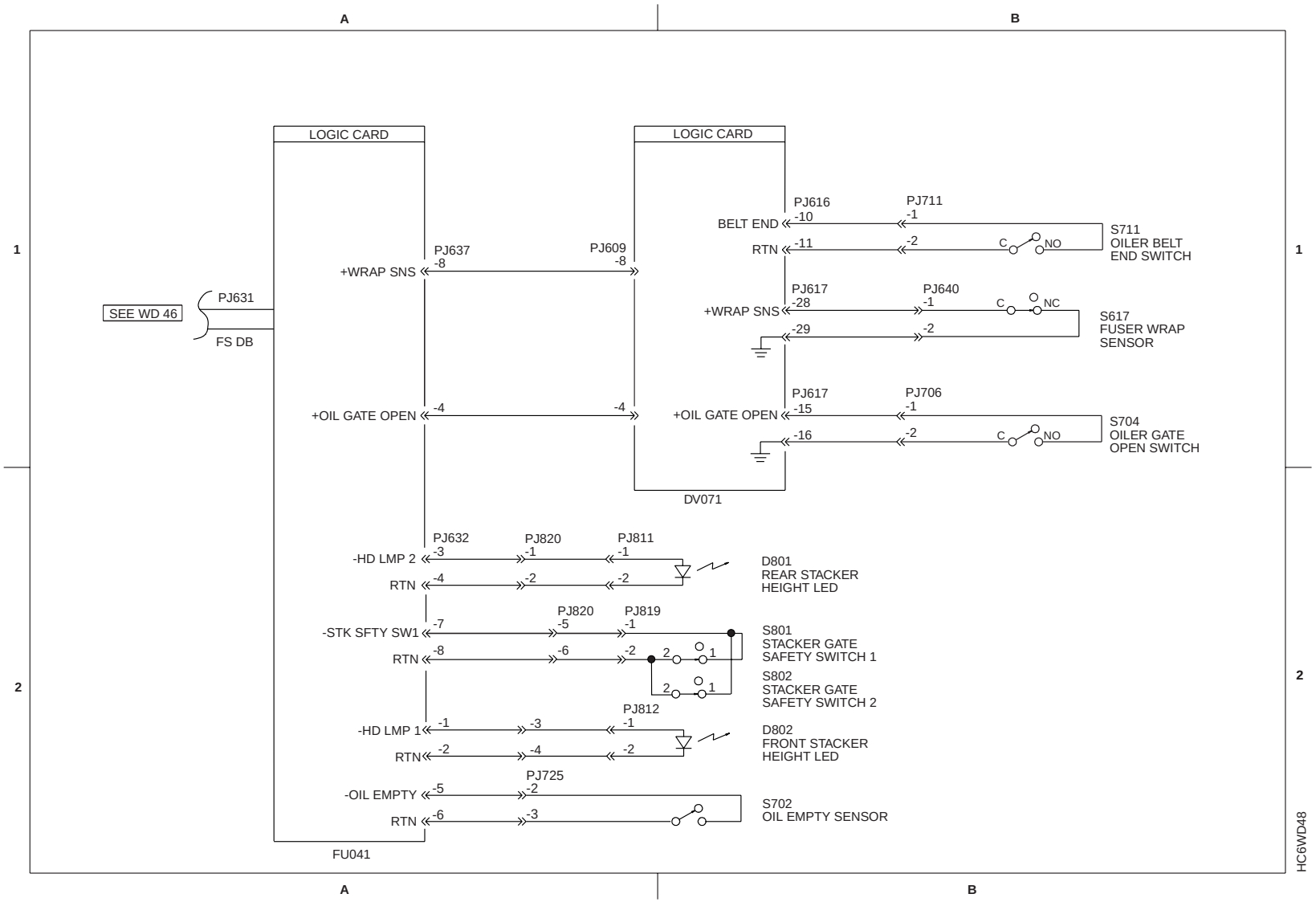
WD47-1 - Process Sensors (S10x)



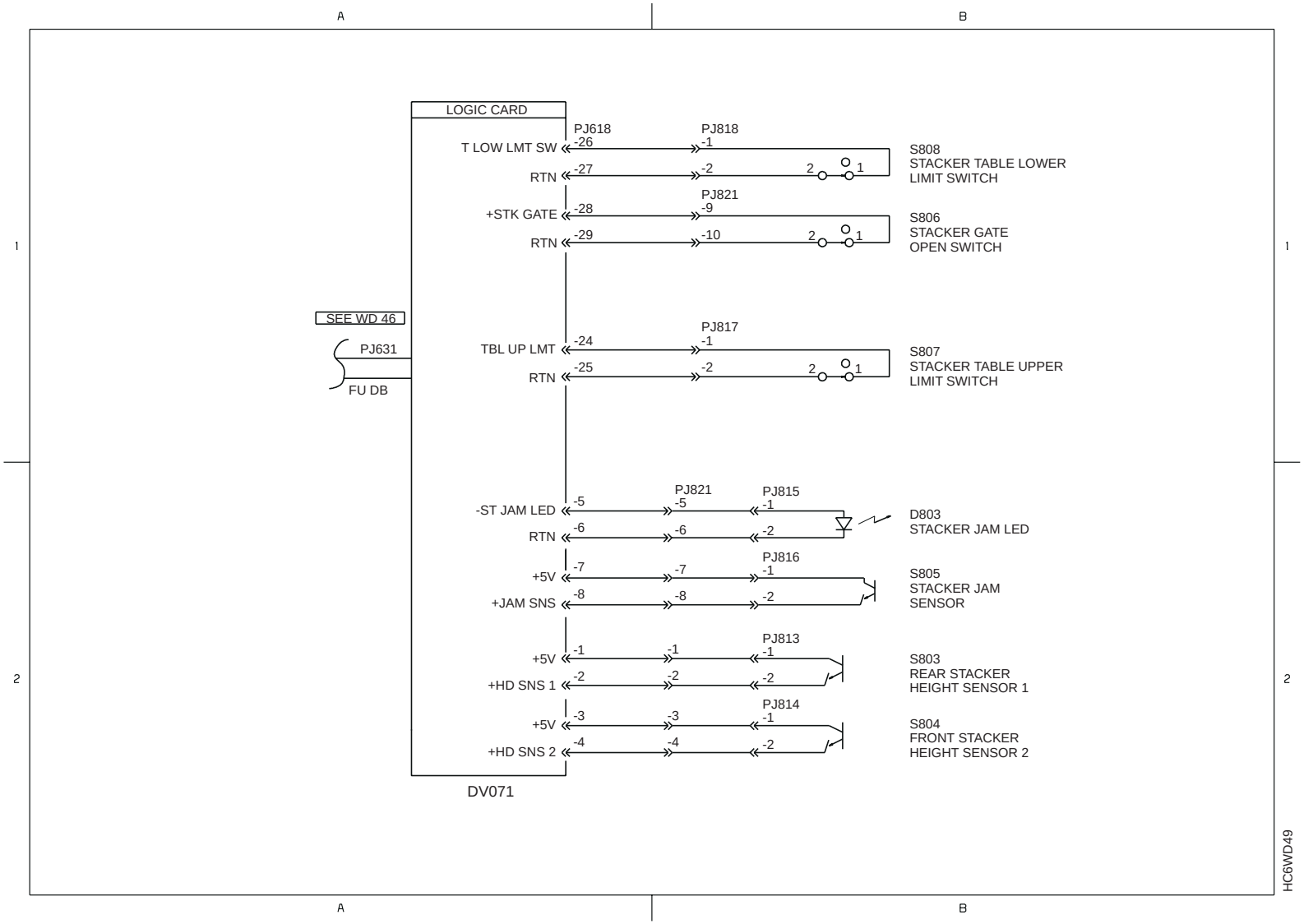
WD47-2 - Process Sensors (S11x)



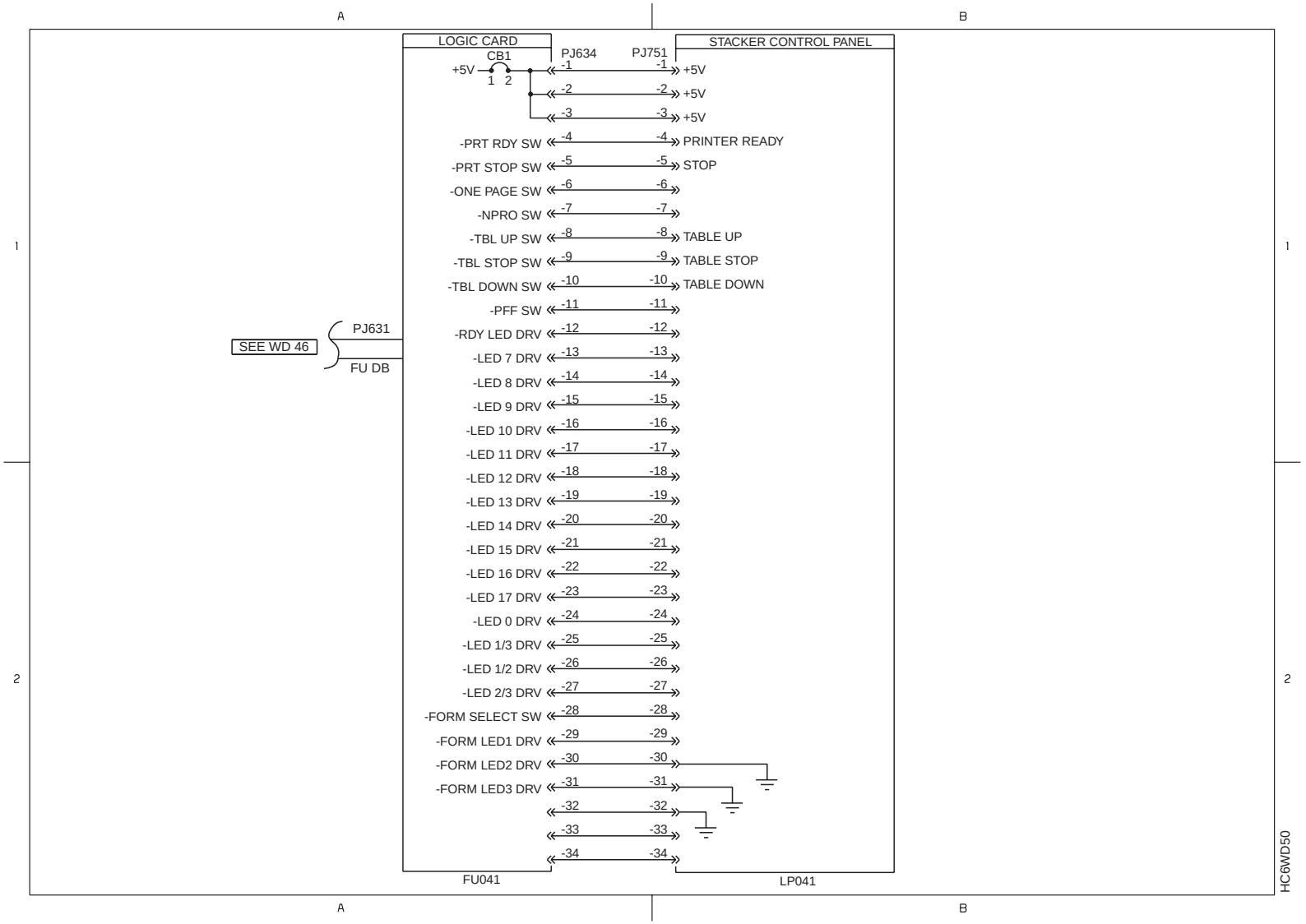
WD48 - Fuser & Stacker Sensors (DV071 & FU041)



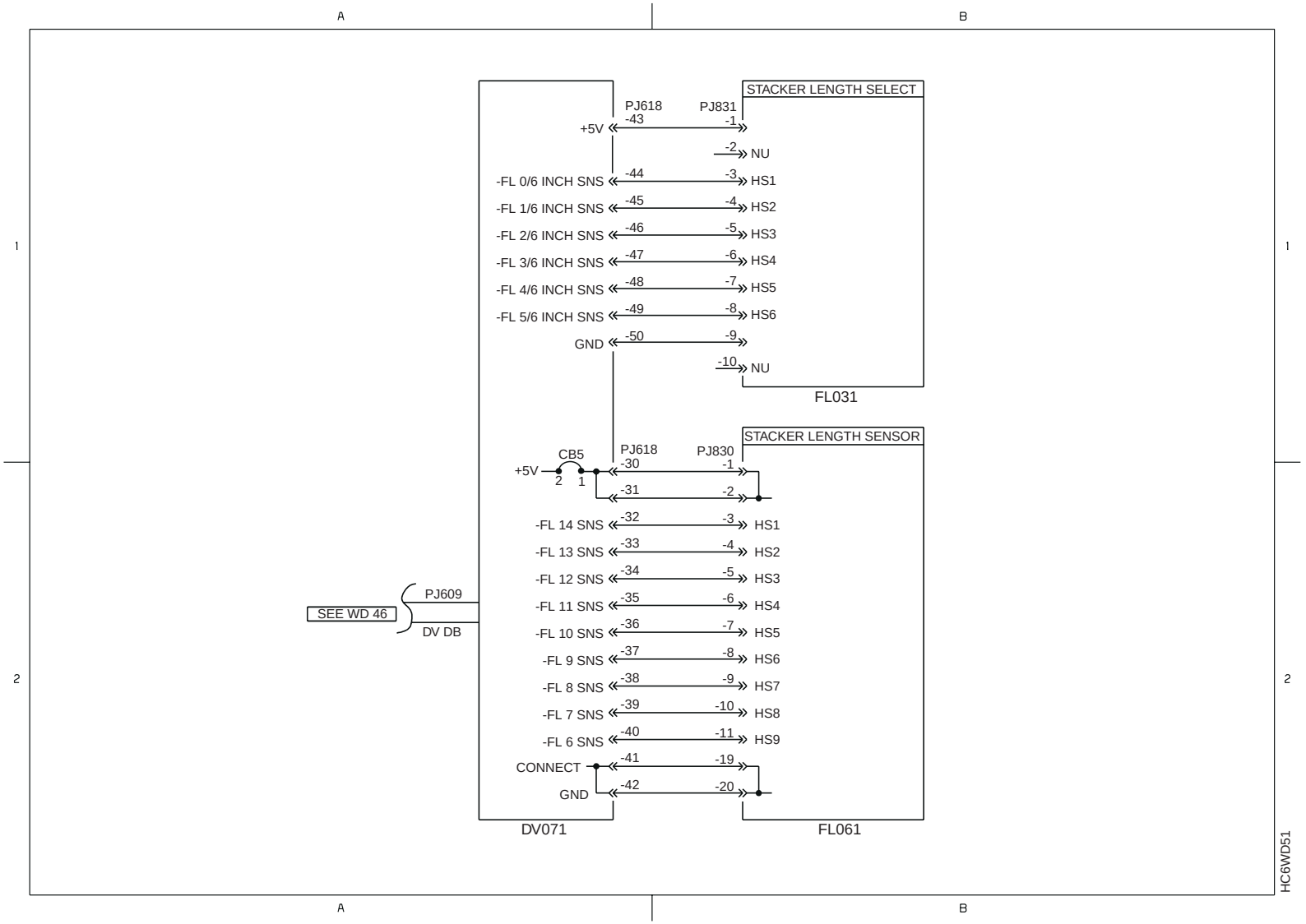
WD49 - Stacker Sensors (DV071 Card)



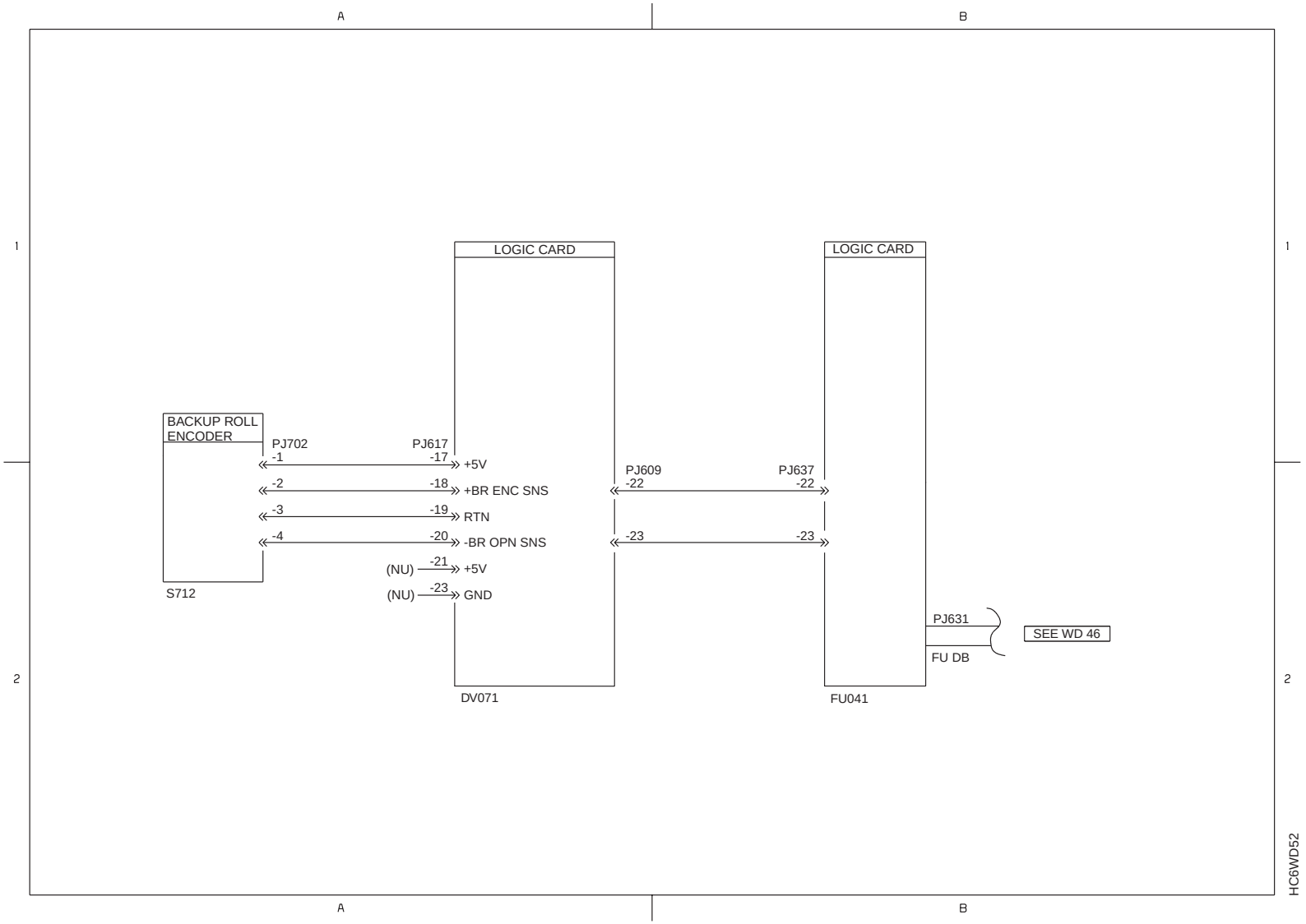
WD50 - Stacker Switch Panel (LP041 & FU041 Card)



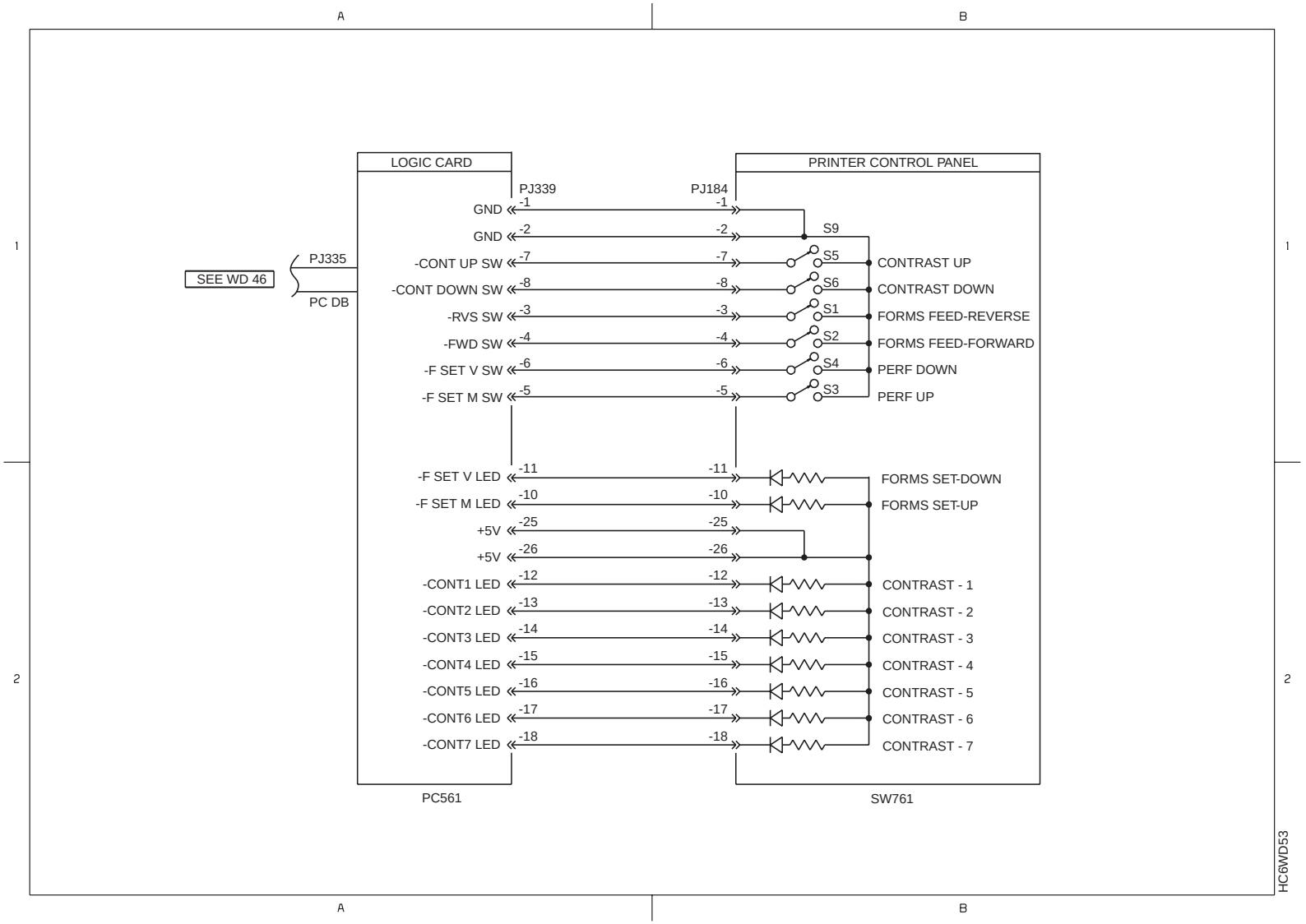
WD51 - Stacker Switch Panel (Forms Length Cards)



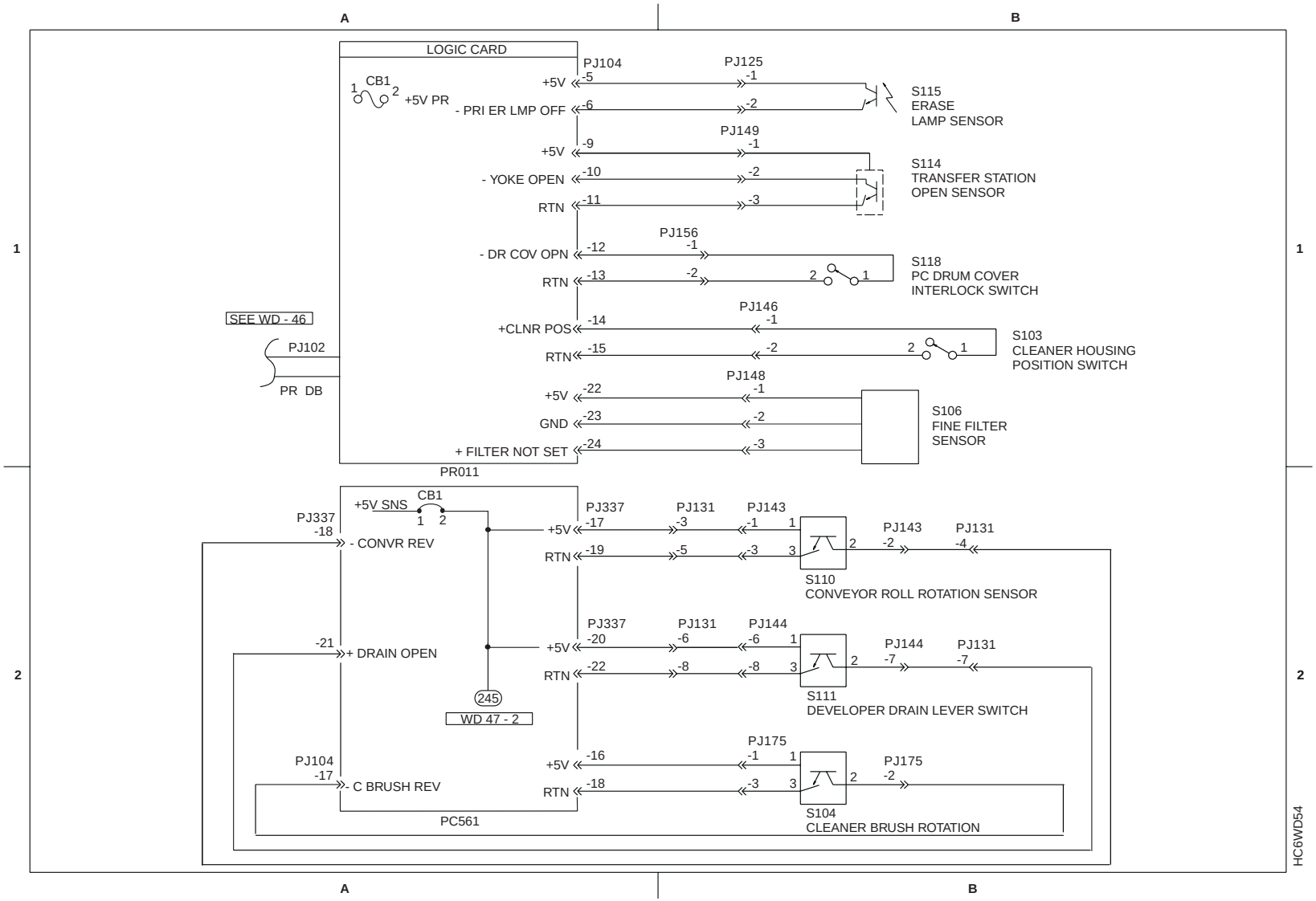
WD52 - Backup Roll Encoder (DV071 & FU041 Cards)



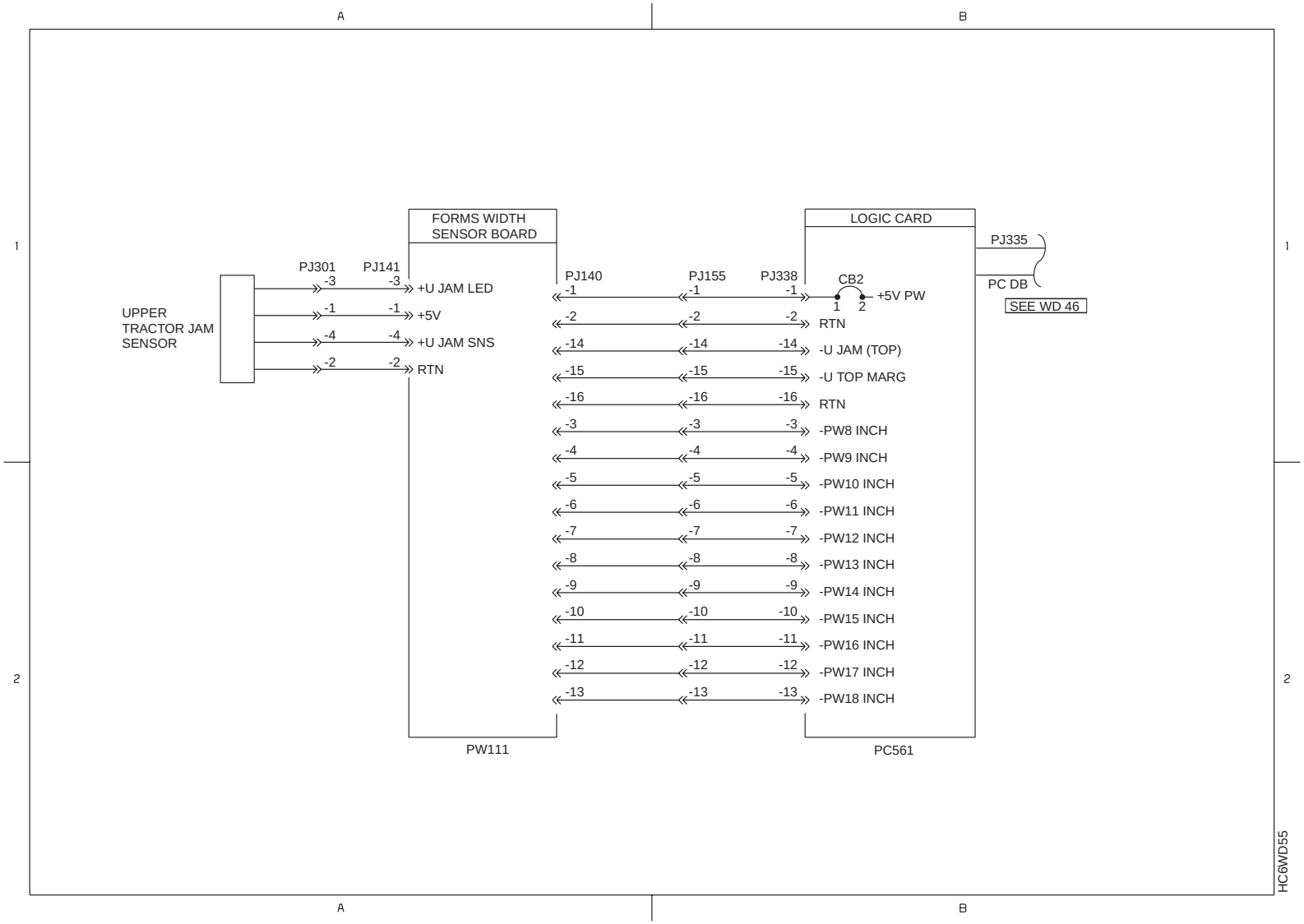
WD53 - Switches & Sensors (PC561 Card)



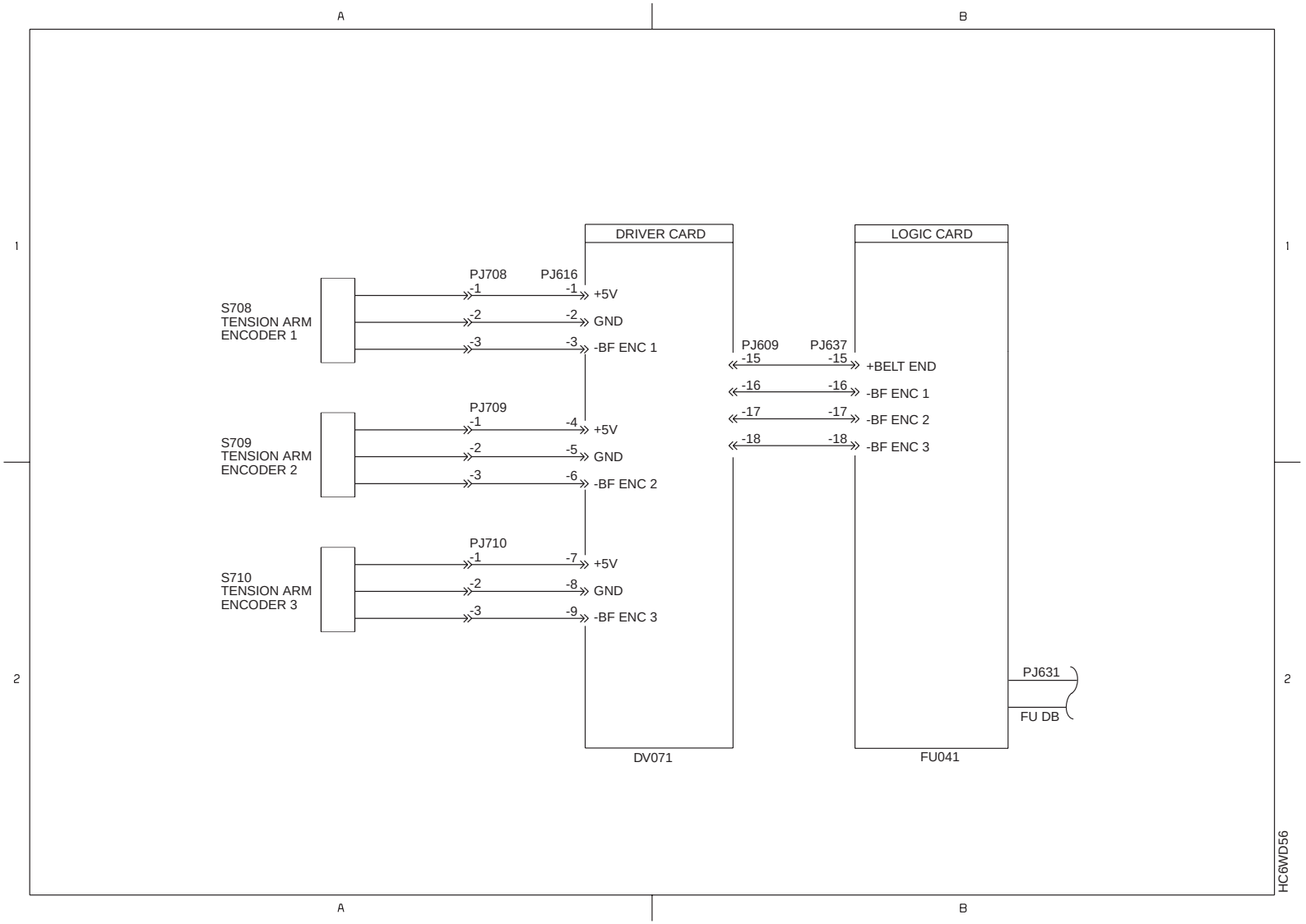
WD54 - Switches & Sensors - PC561 & PR011 Cards



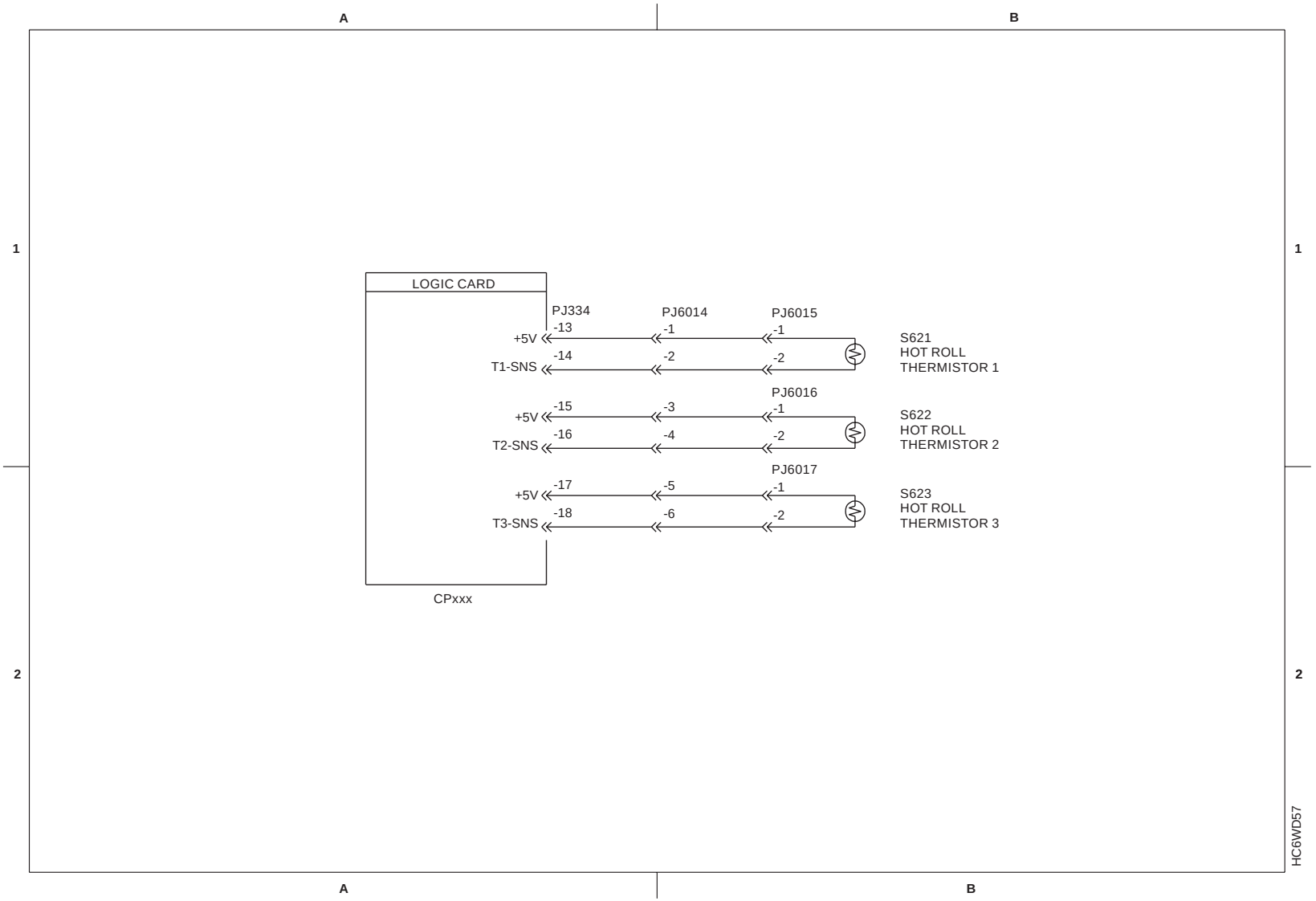
WD55 - Forms Path Sensors - PW111 & PC561 Cards



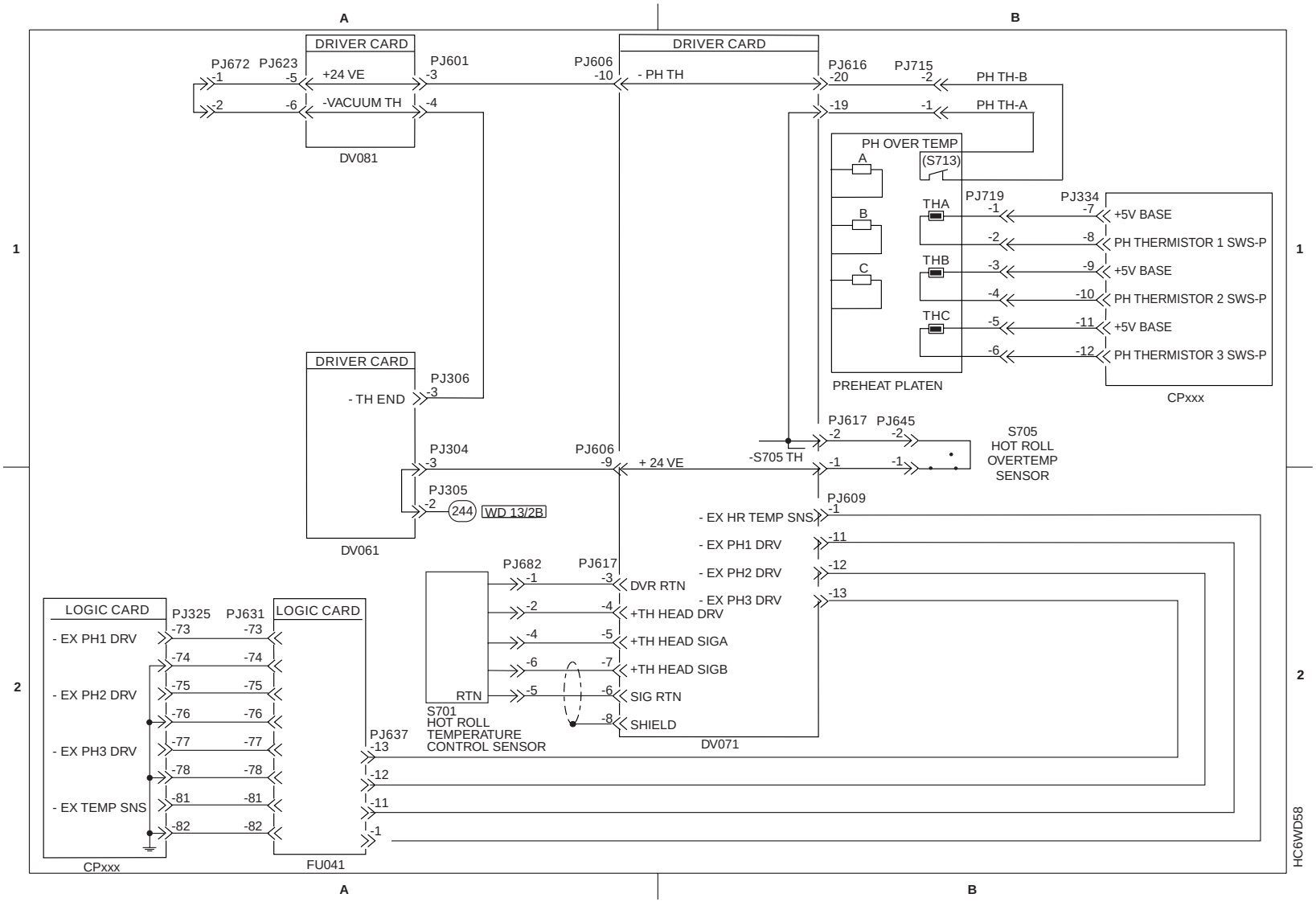
WD56 - Forms Path Sensors (DV071 & FU041 Cards)



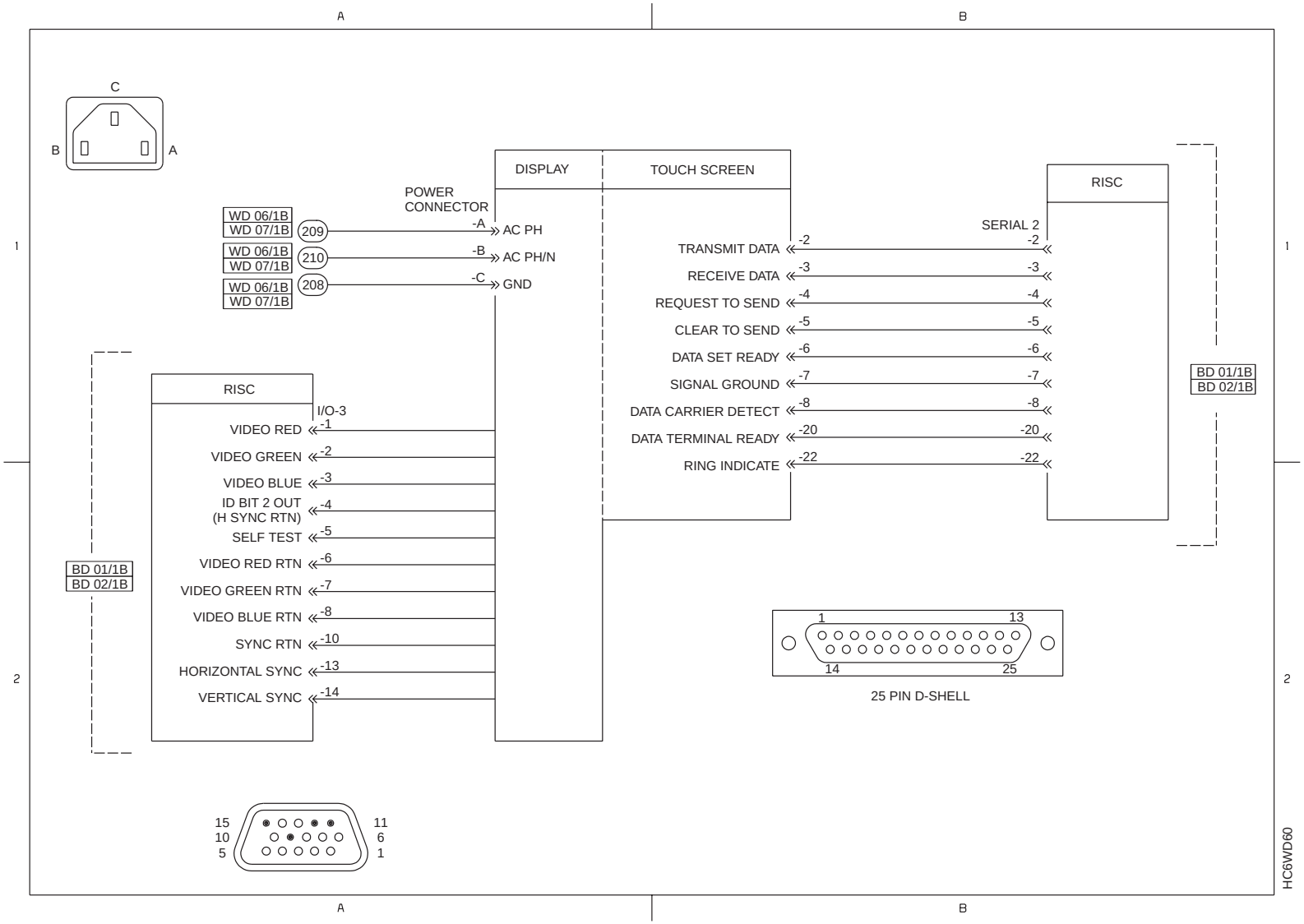
WD57 - Fuser Thermistors



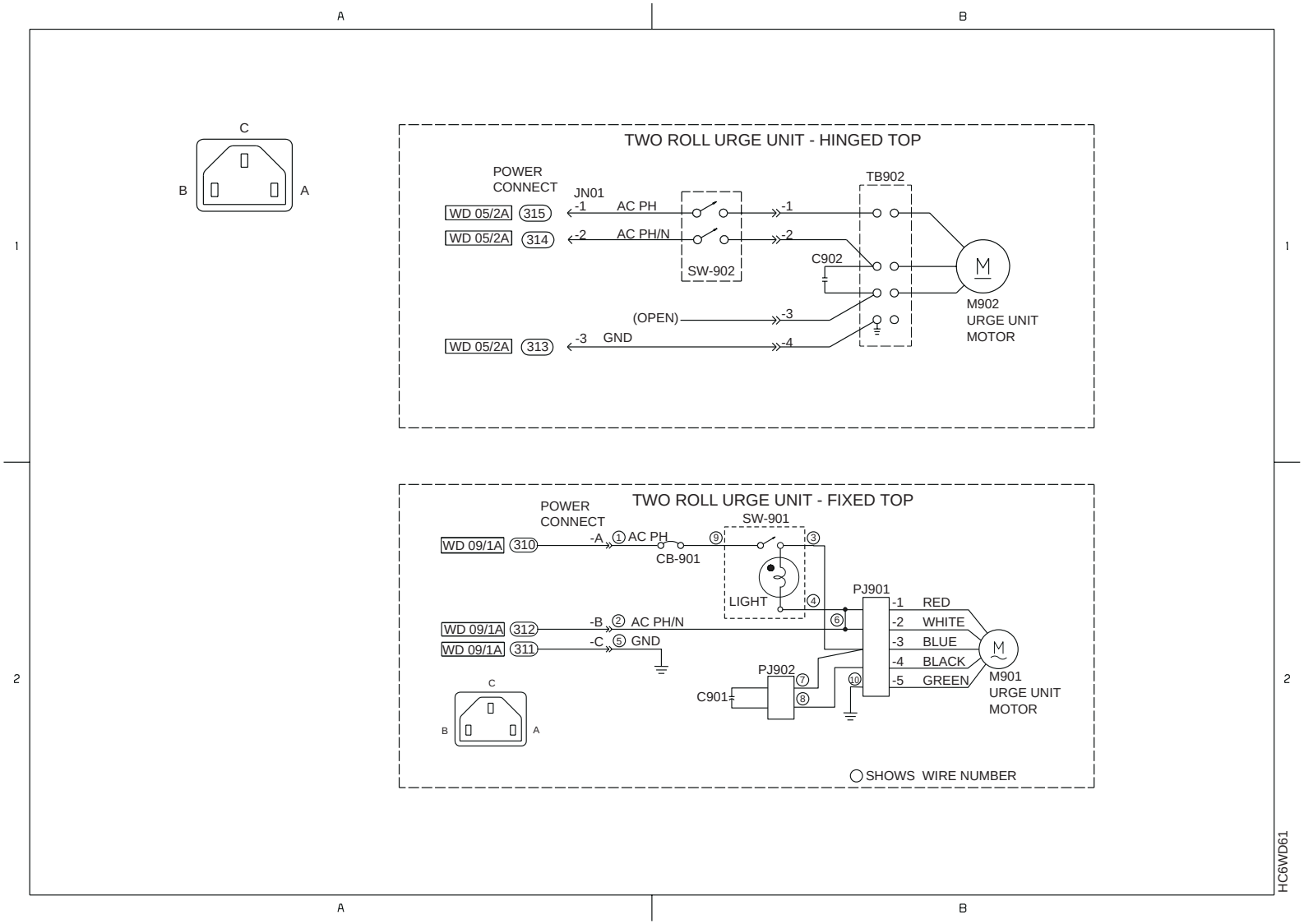
WD58 - Fuser Sensors



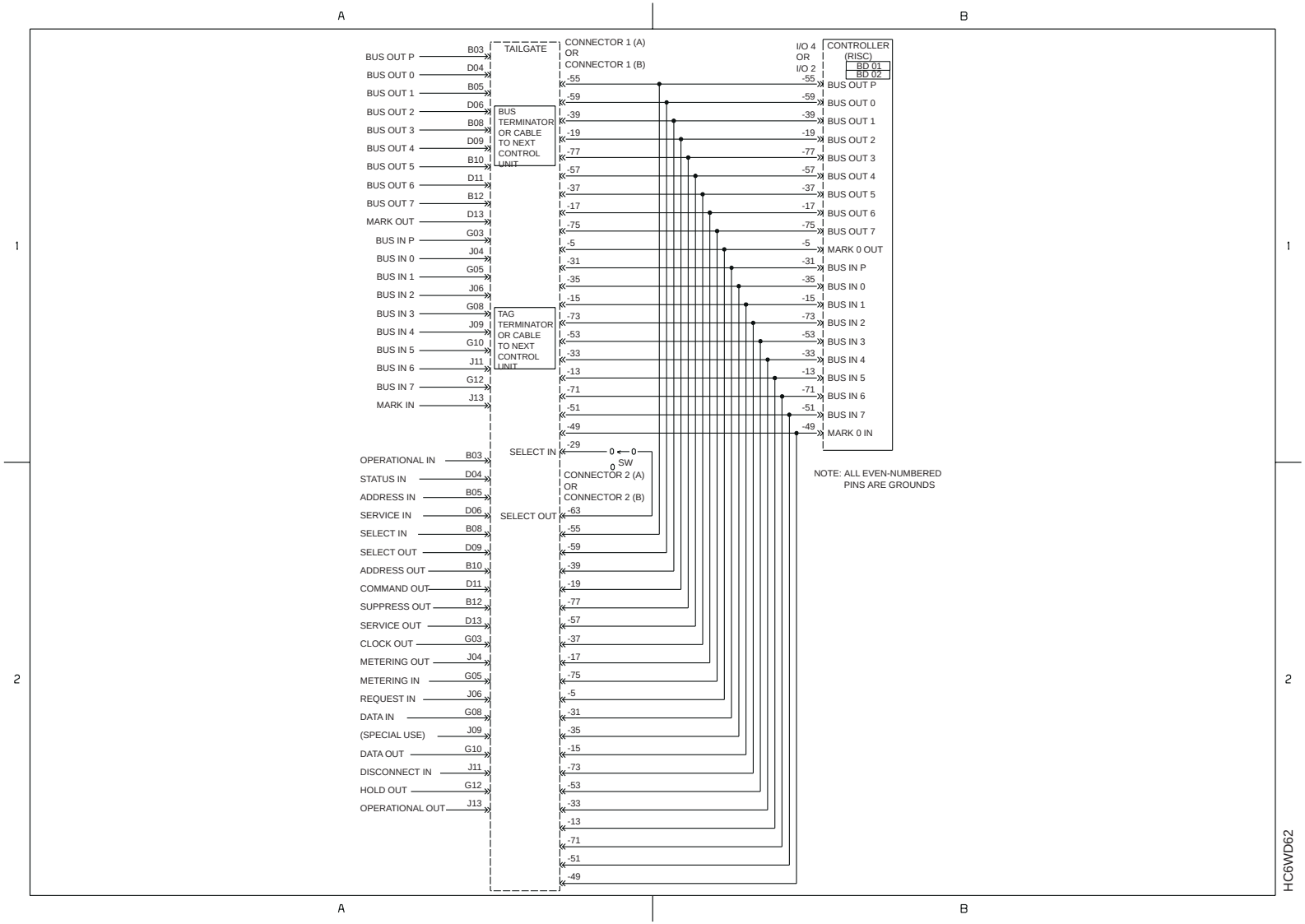
WD60 - Control Unit Display/Touch Screen



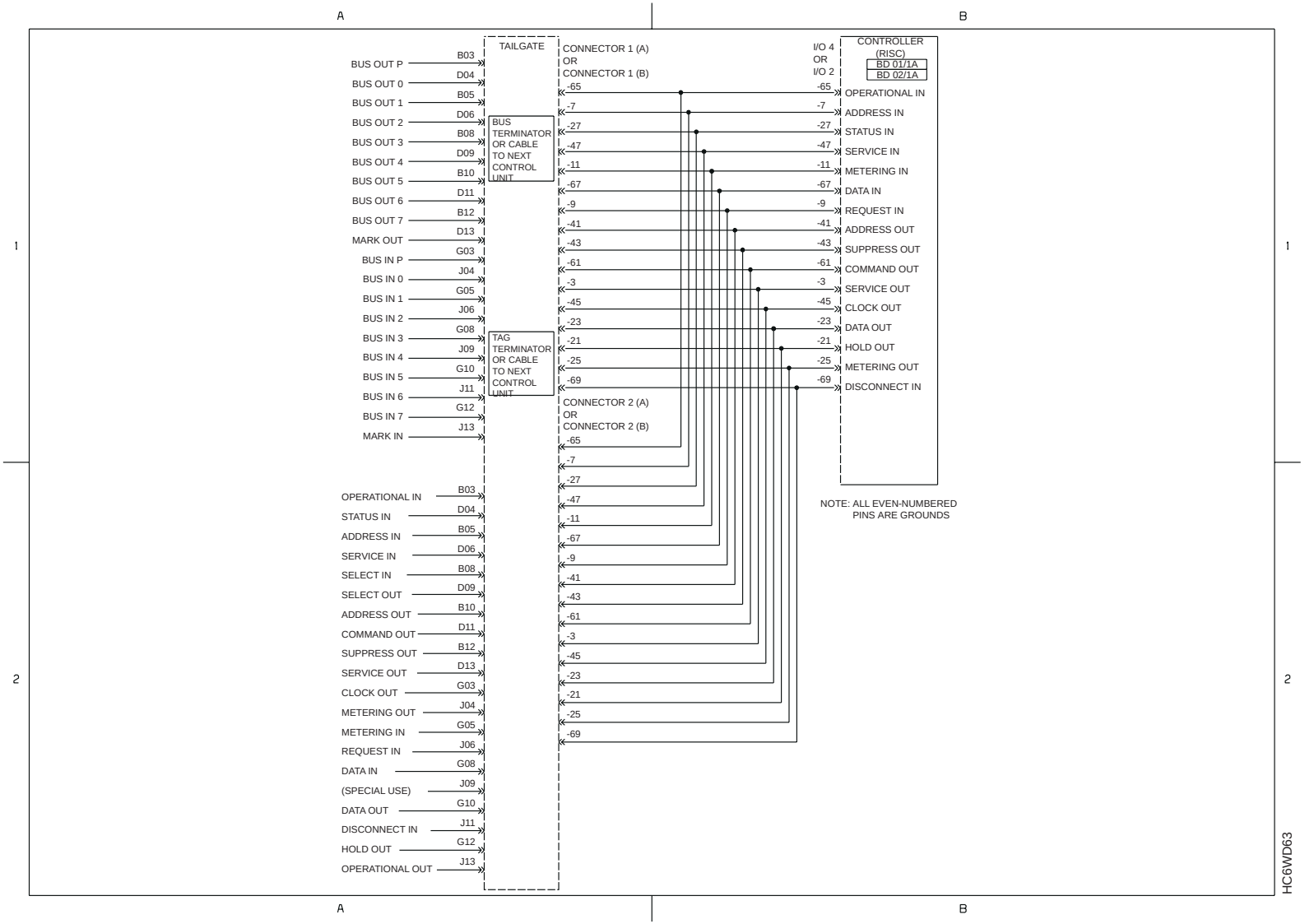
WD61 - Urge Unit (Duplex)



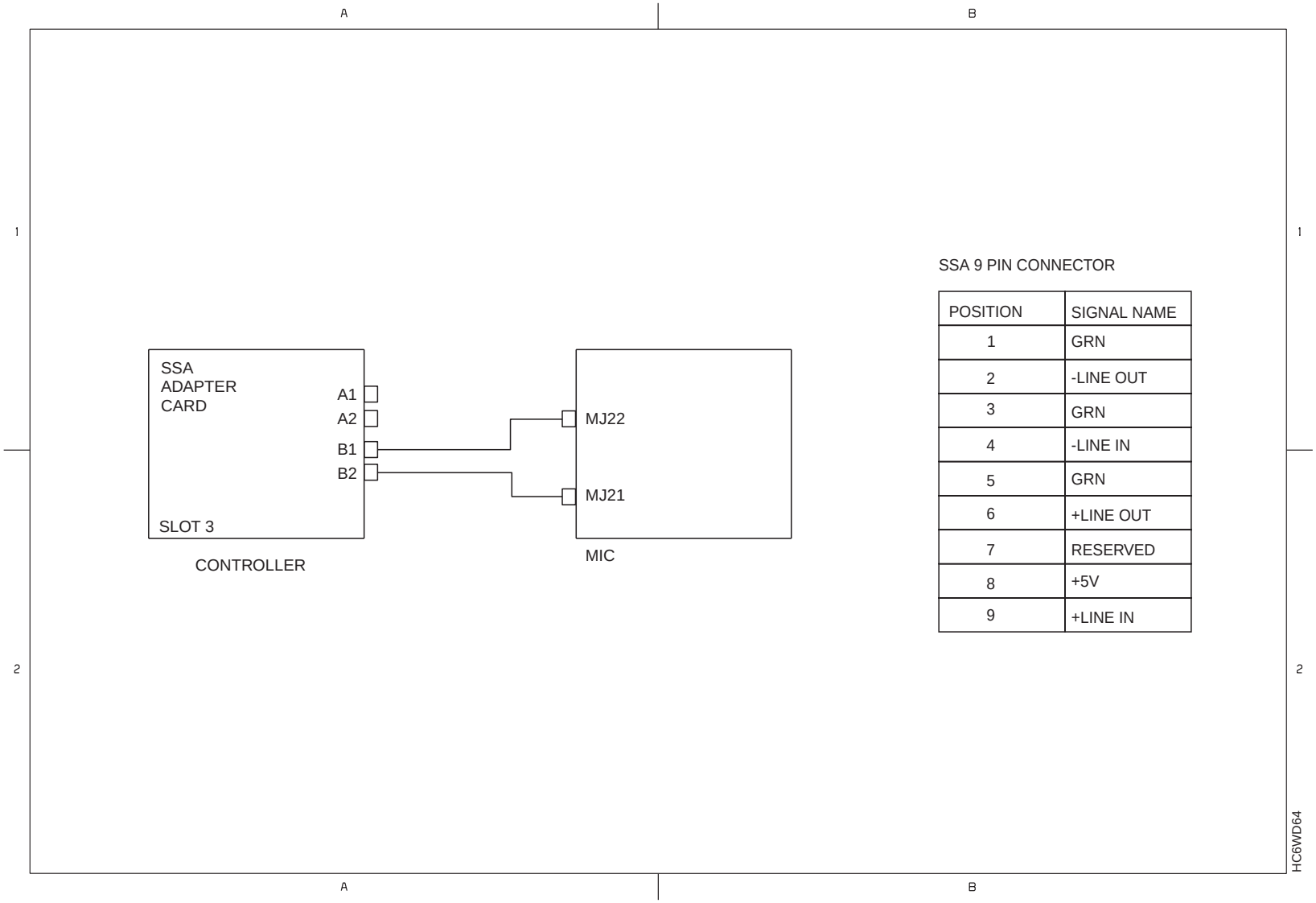
WD62 - Parallel Channel Signal - Tailgate to Controller



WD63 - Parallel Channel Signal - Tailgate to Controller



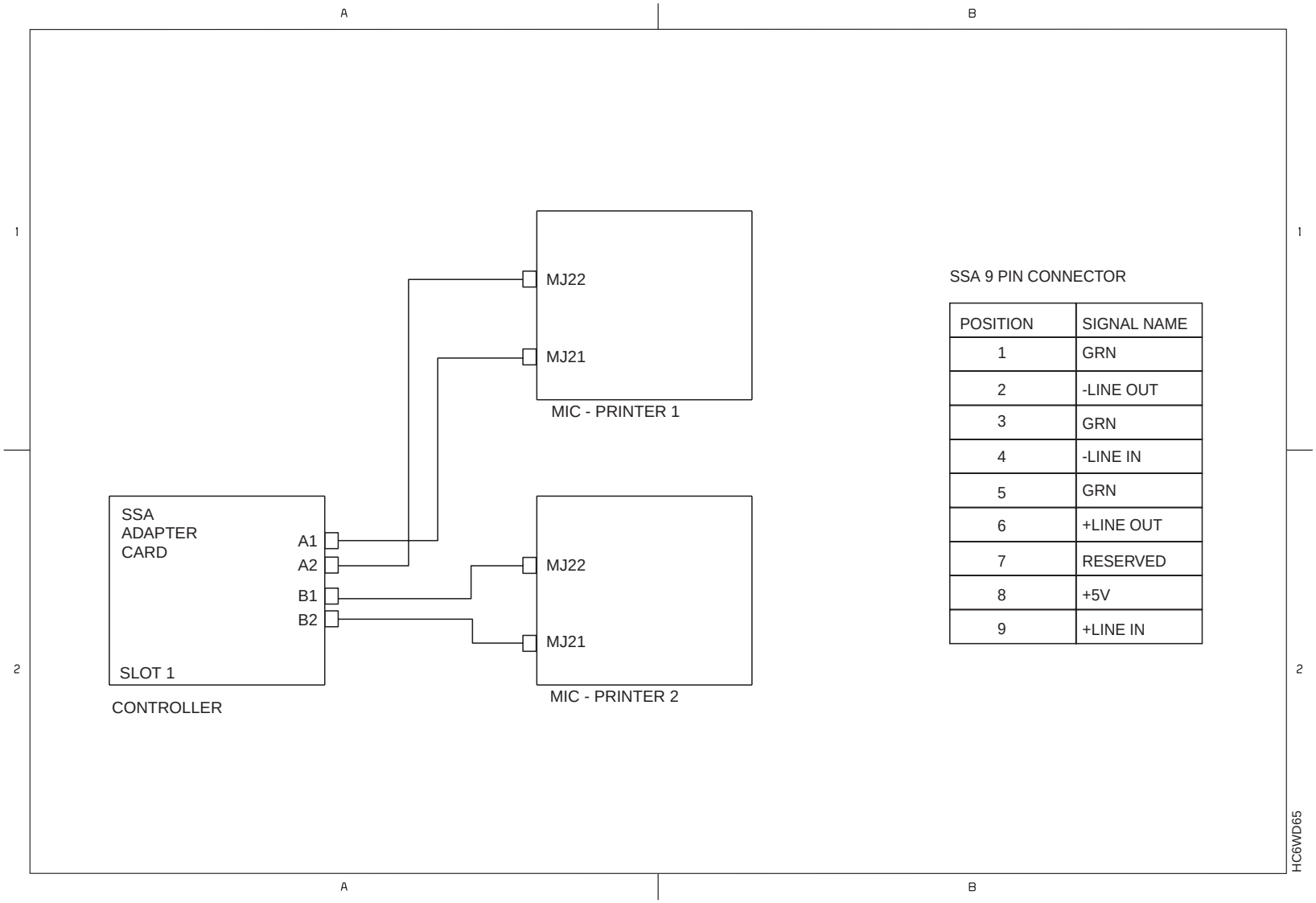
WD64 - Control Unit (Controller to MIC)



SSA 9 PIN CONNECTOR

POSITION	SIGNAL NAME
1	GRN
2	-LINE OUT
3	GRN
4	-LINE IN
5	GRN
6	+LINE OUT
7	RESERVED
8	+5V
9	+LINE IN

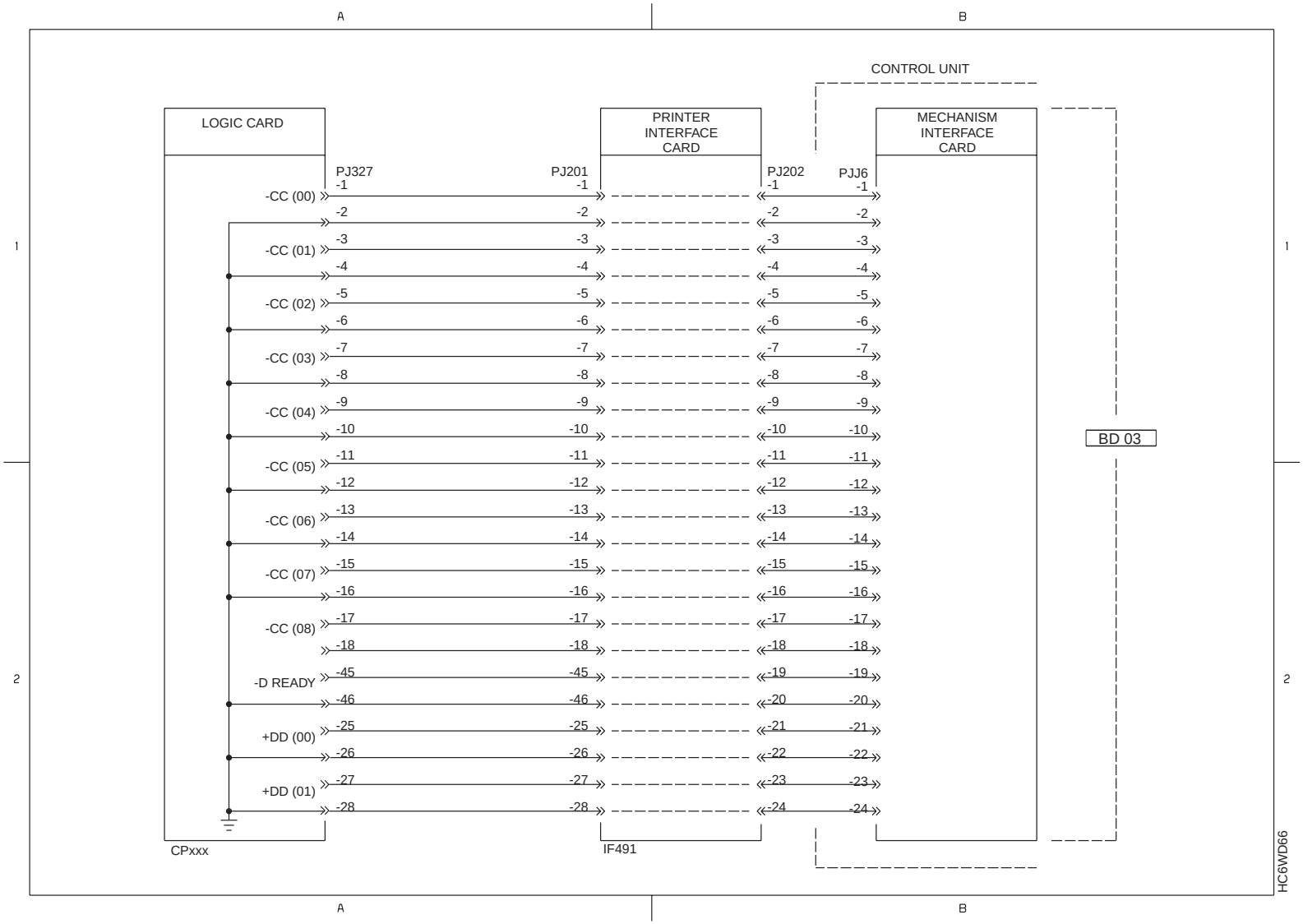
WD65 - MIC Control Unit 2 to MIC Control Unit 1



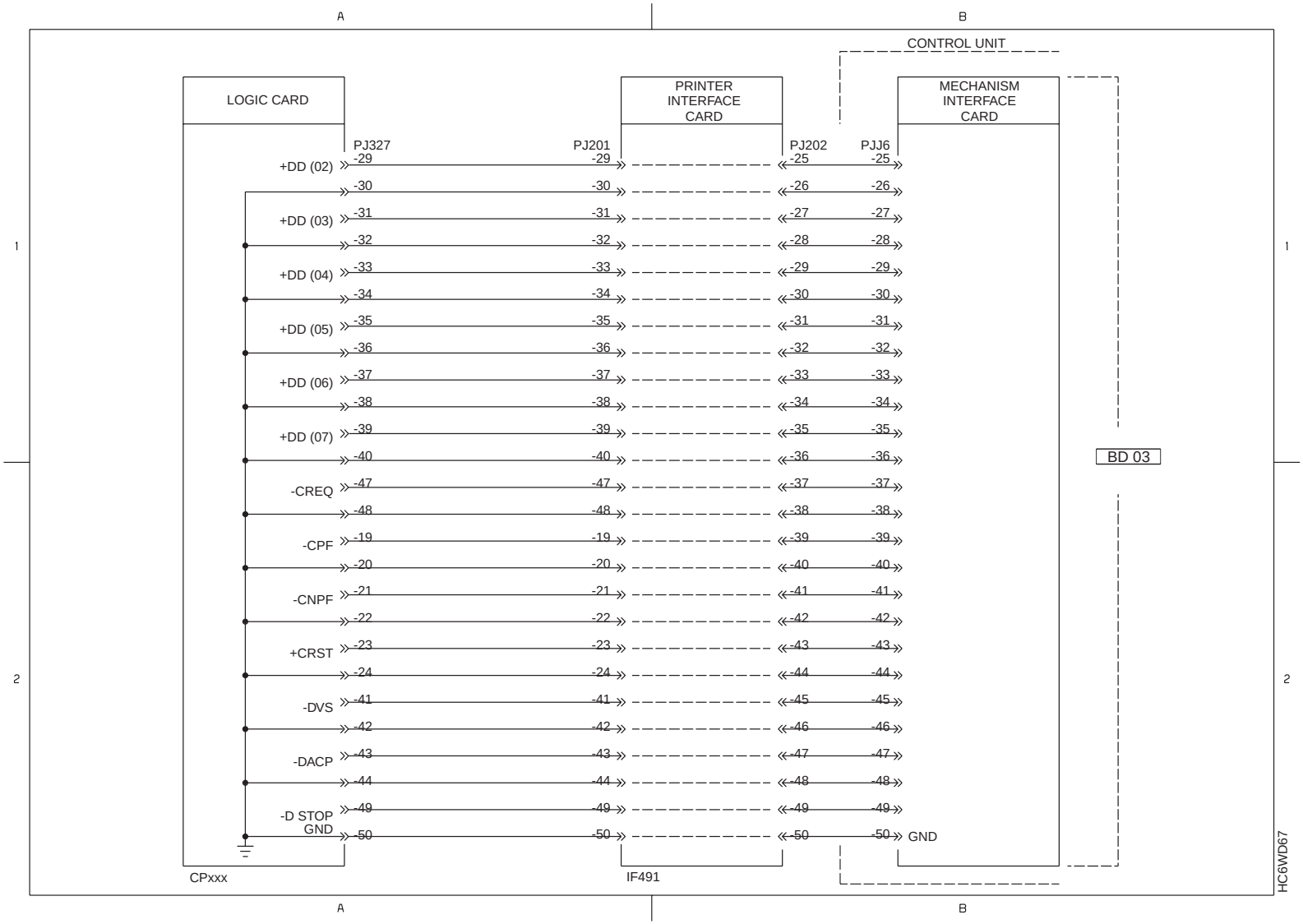
SSA 9 PIN CONNECTOR

POSITION	SIGNAL NAME
1	GRN
2	-LINE OUT
3	GRN
4	-LINE IN
5	GRN
6	+LINE OUT
7	RESERVED
8	+5V
9	+LINE IN

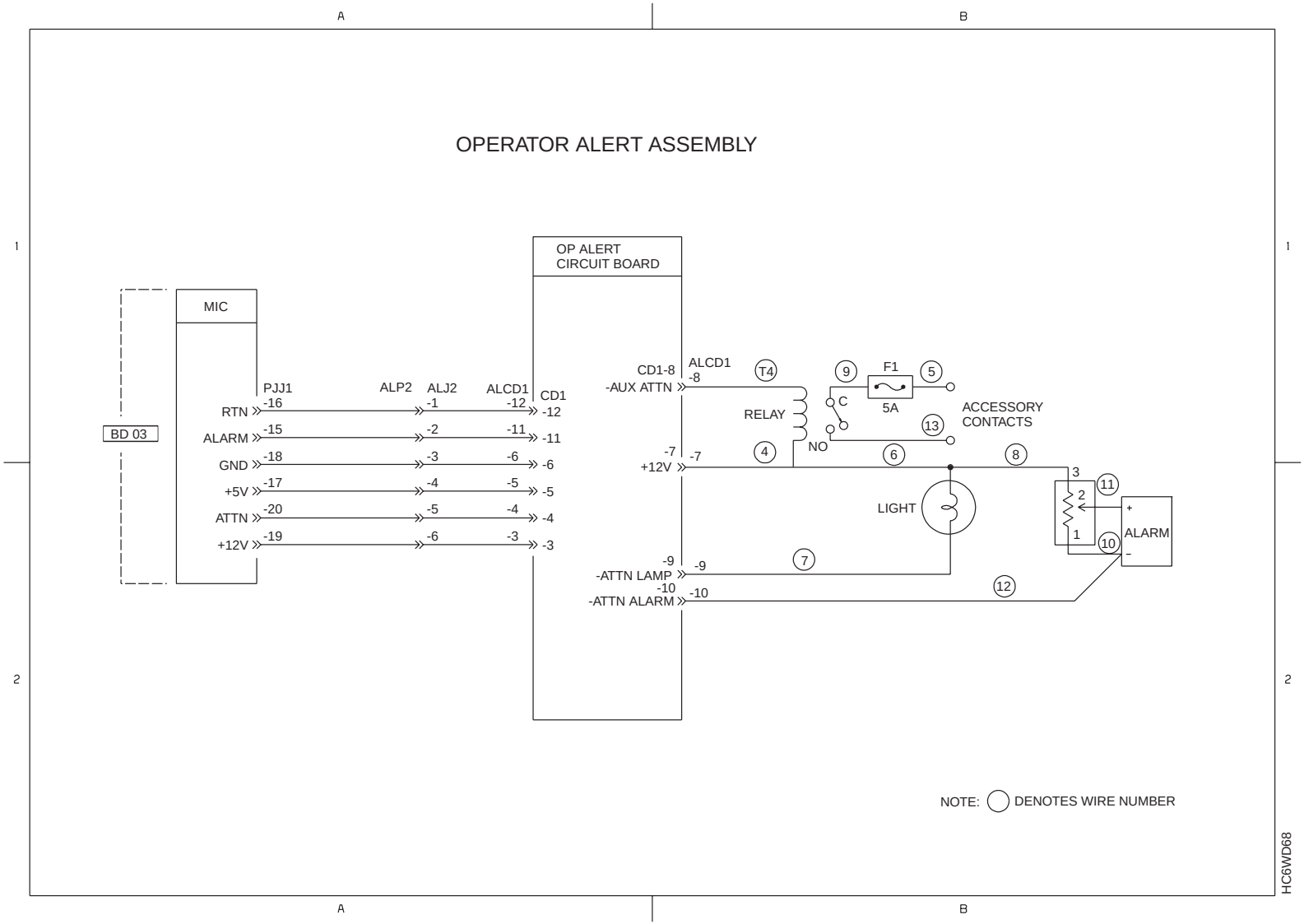
WD66 - MIC to Printer Control Cable (1 of 2)



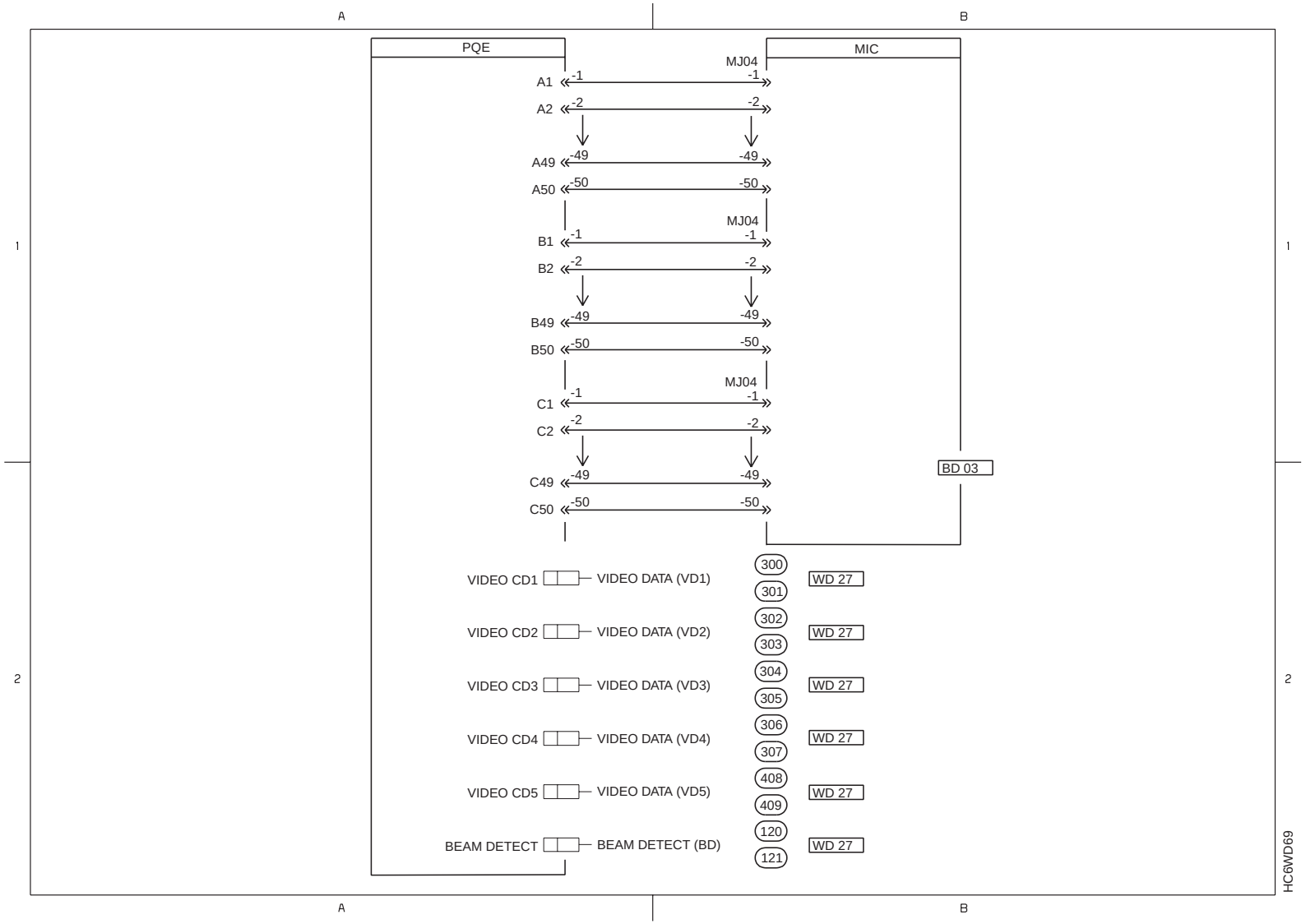
WD67 - MIC to Printer Control Cable (2 of 2)



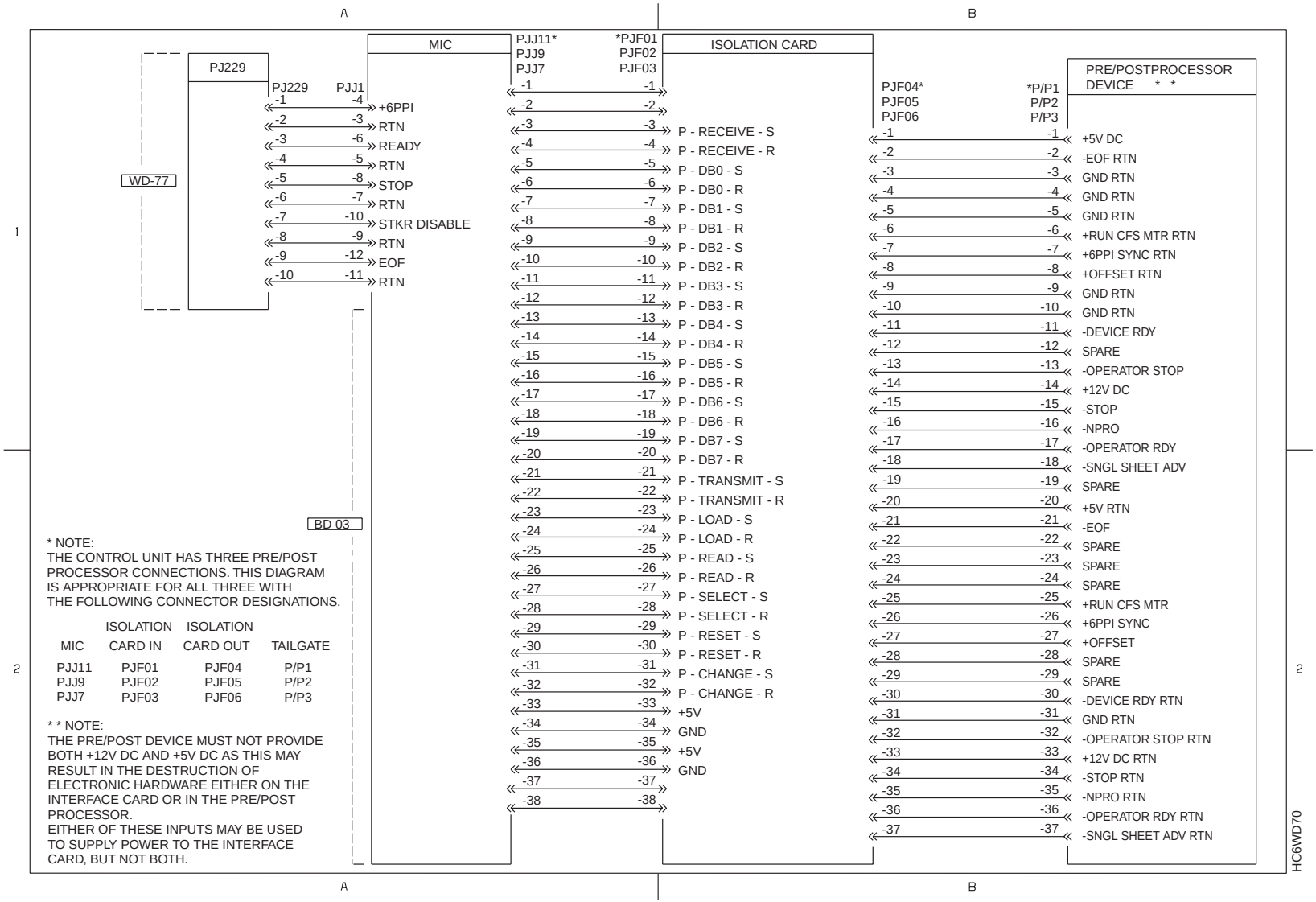
WD68 - MIC to Operator Alert Assembly



WD69 - PQE


A
B
1
2
PQE
MIC
MJ04
A1
A2
A49
A50
B1
B2
B49
B50
C1
C2
C49
C50
-1
-2
-49
-50
BD 03
VIDEO CD1
VIDEO CD2
VIDEO CD3
VIDEO CD4
VIDEO CD5
BEAM DETECT
VIDEO DATA (VD1)
VIDEO DATA (VD2)
VIDEO DATA (VD3)
VIDEO DATA (VD4)
VIDEO DATA (VD5)
BEAM DETECT (BD)
300
301
302
303
304
305
306
307
408
409
120
121
WD 27
HC6WD69

WD70 - MIC to Coupled Pre/Postprocessor Interface

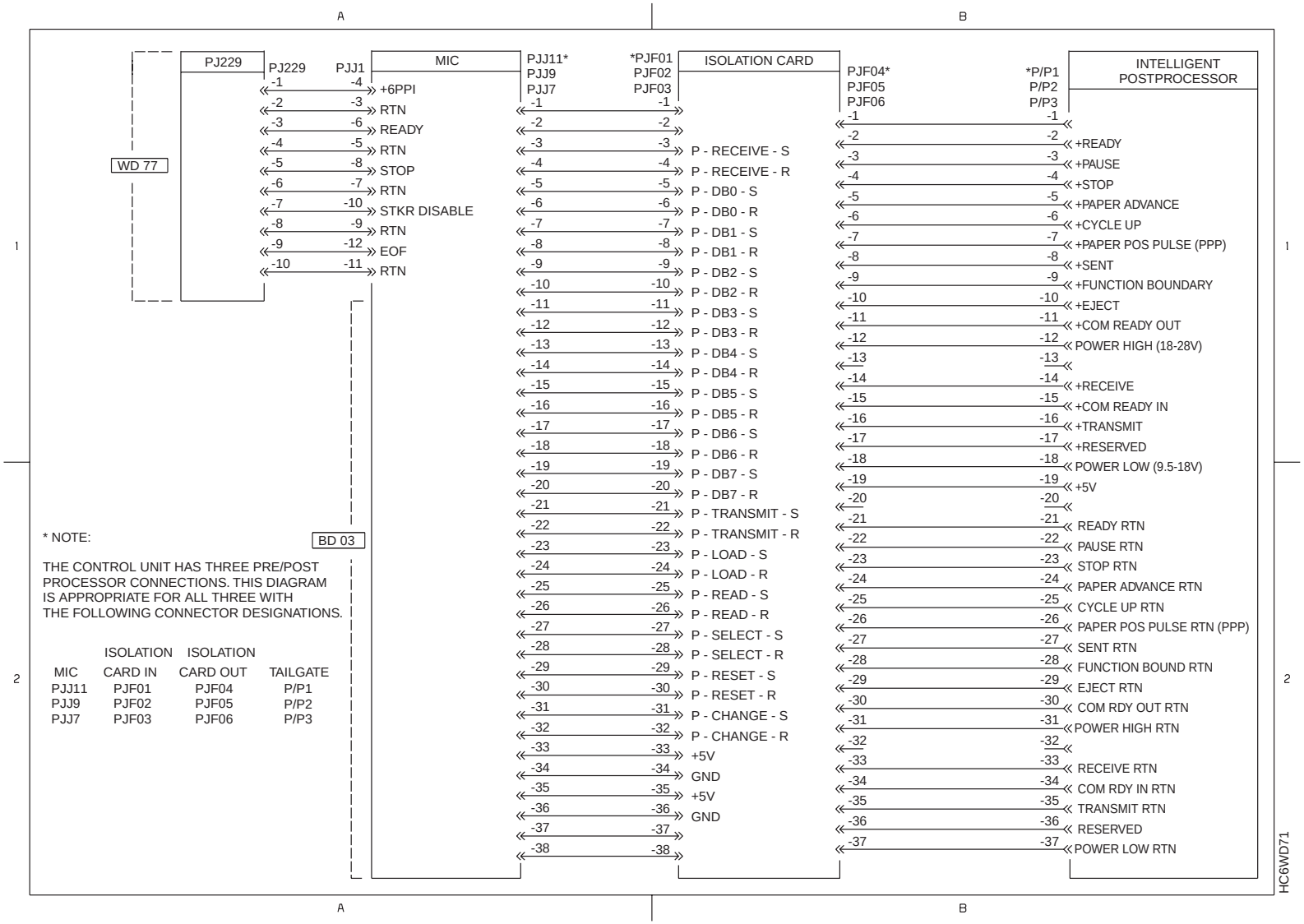


* NOTE:
THE CONTROL UNIT HAS THREE PRE/POST PROCESSOR CONNECTIONS. THIS DIAGRAM IS APPROPRIATE FOR ALL THREE WITH THE FOLLOWING CONNECTOR DESIGNATIONS.

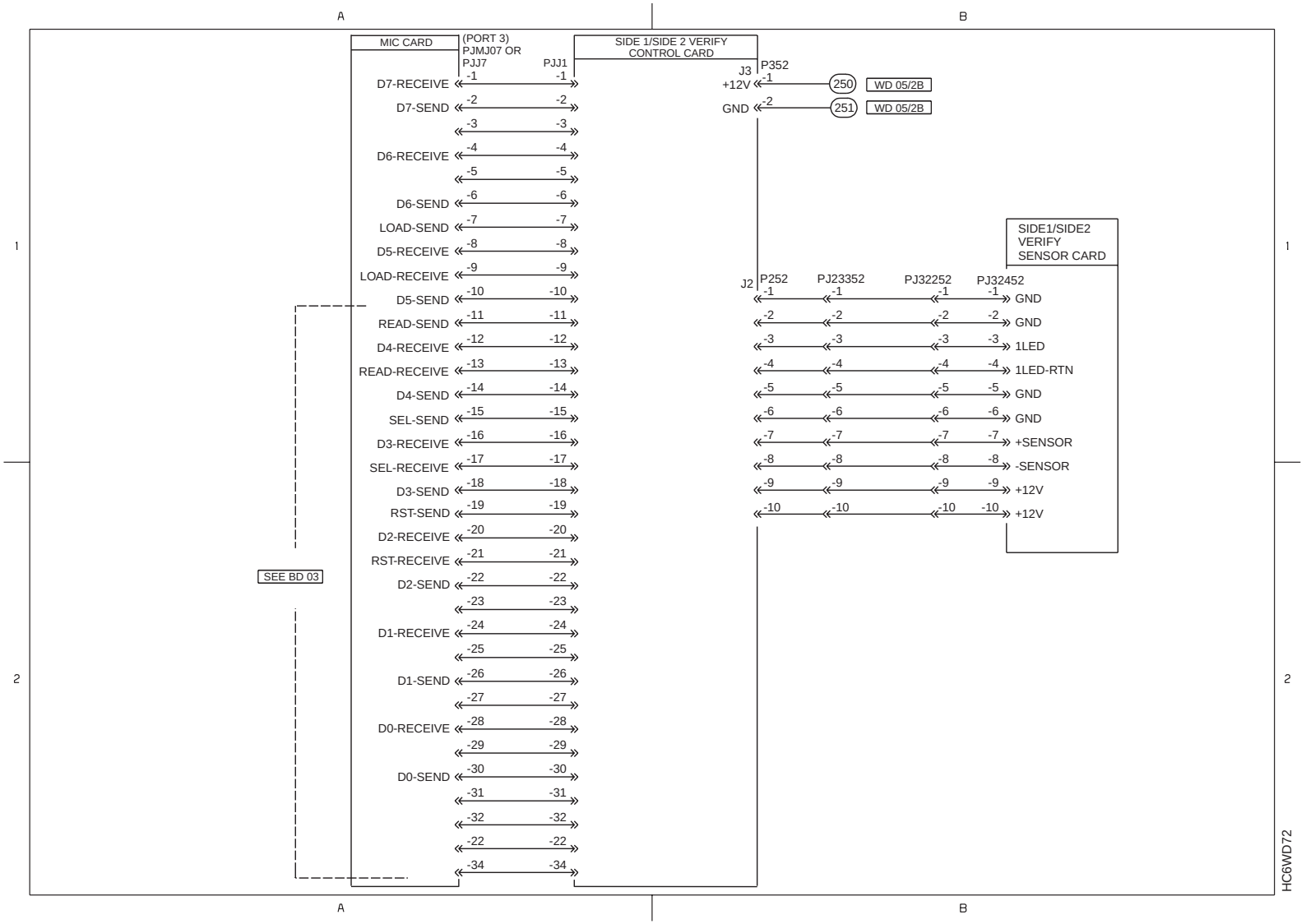
MIC	ISOLATION CARD IN	ISOLATION CARD OUT	TAILGATE
PJJ11	PJF01	PJF04	P/P1
PJJ9	PJF02	PJF05	P/P2
PJJ7	PJF03	PJF06	P/P3

* * NOTE:
THE PRE/POST DEVICE MUST NOT PROVIDE BOTH +12V DC AND +5V DC AS THIS MAY RESULT IN THE DESTRUCTION OF ELECTRONIC HARDWARE EITHER ON THE INTERFACE CARD OR IN THE PRE/POST PROCESSOR.
EITHER OF THESE INPUTS MAY BE USED TO SUPPLY POWER TO THE INTERFACE CARD, BUT NOT BOTH.

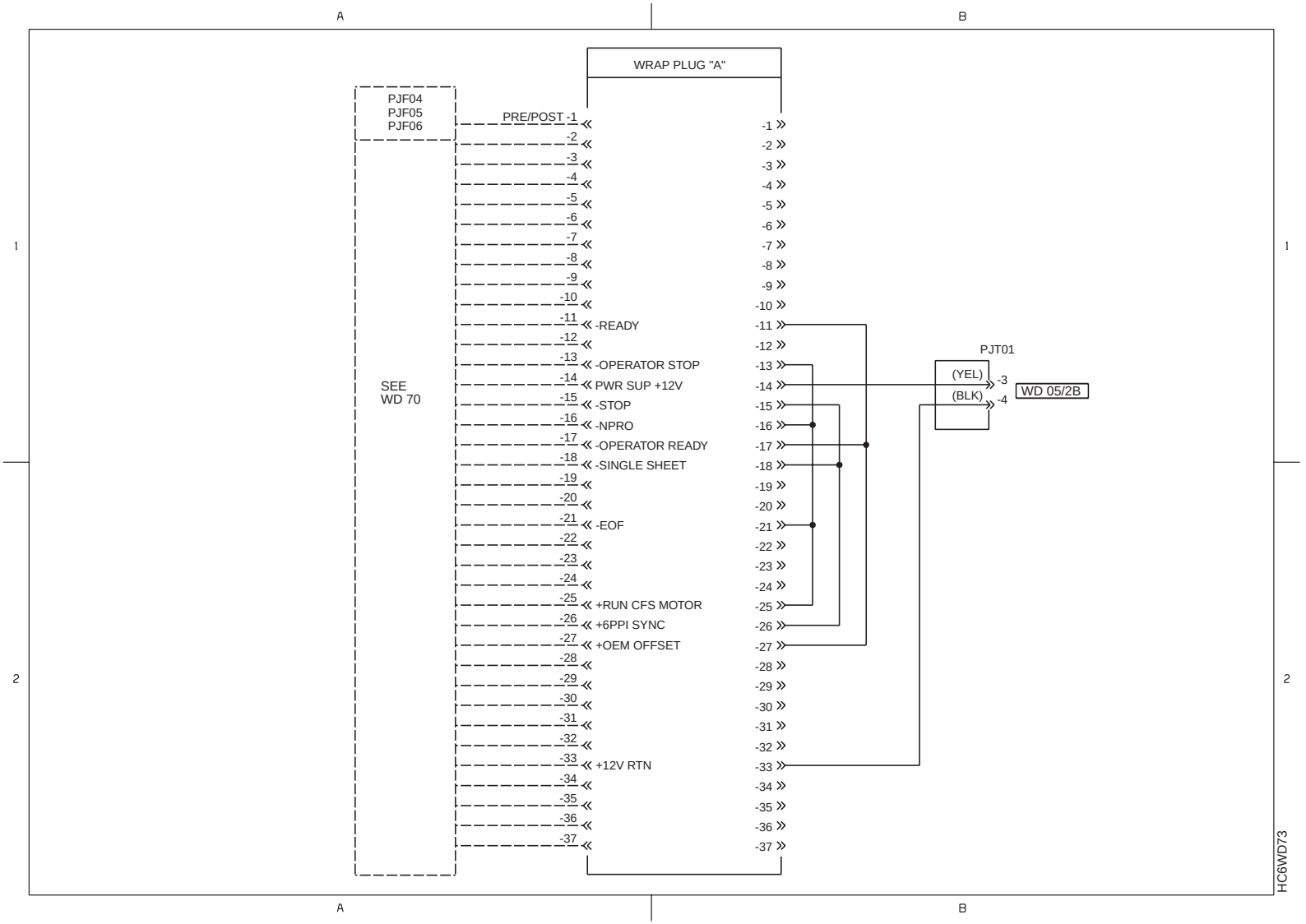
WD71 - MIC to Intelligent Postprocessor



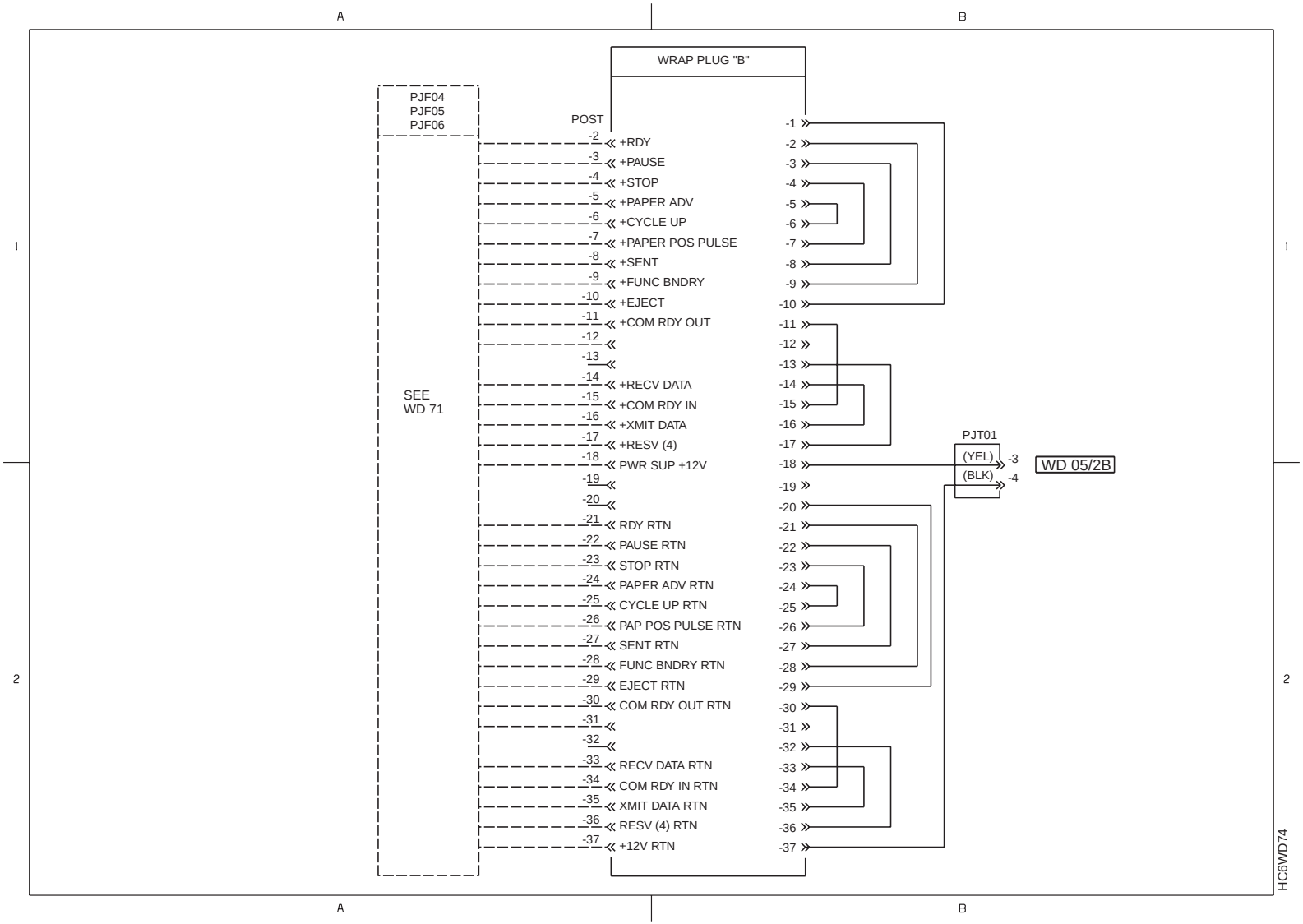
WD72 - Side 1/Side 2 Verify to MIC



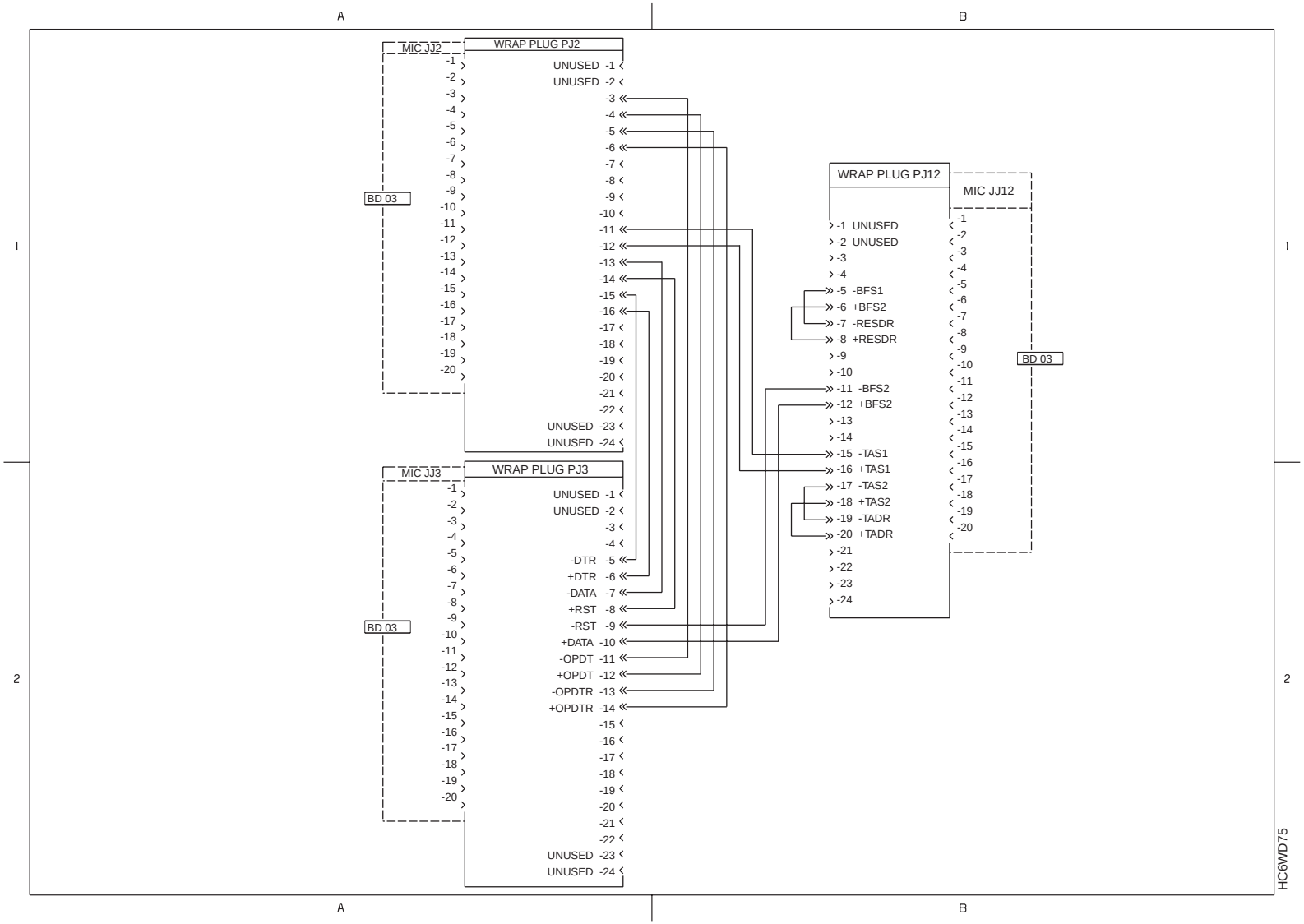
WD73 - Coupled Pre/Post Interface Wrap Plug A



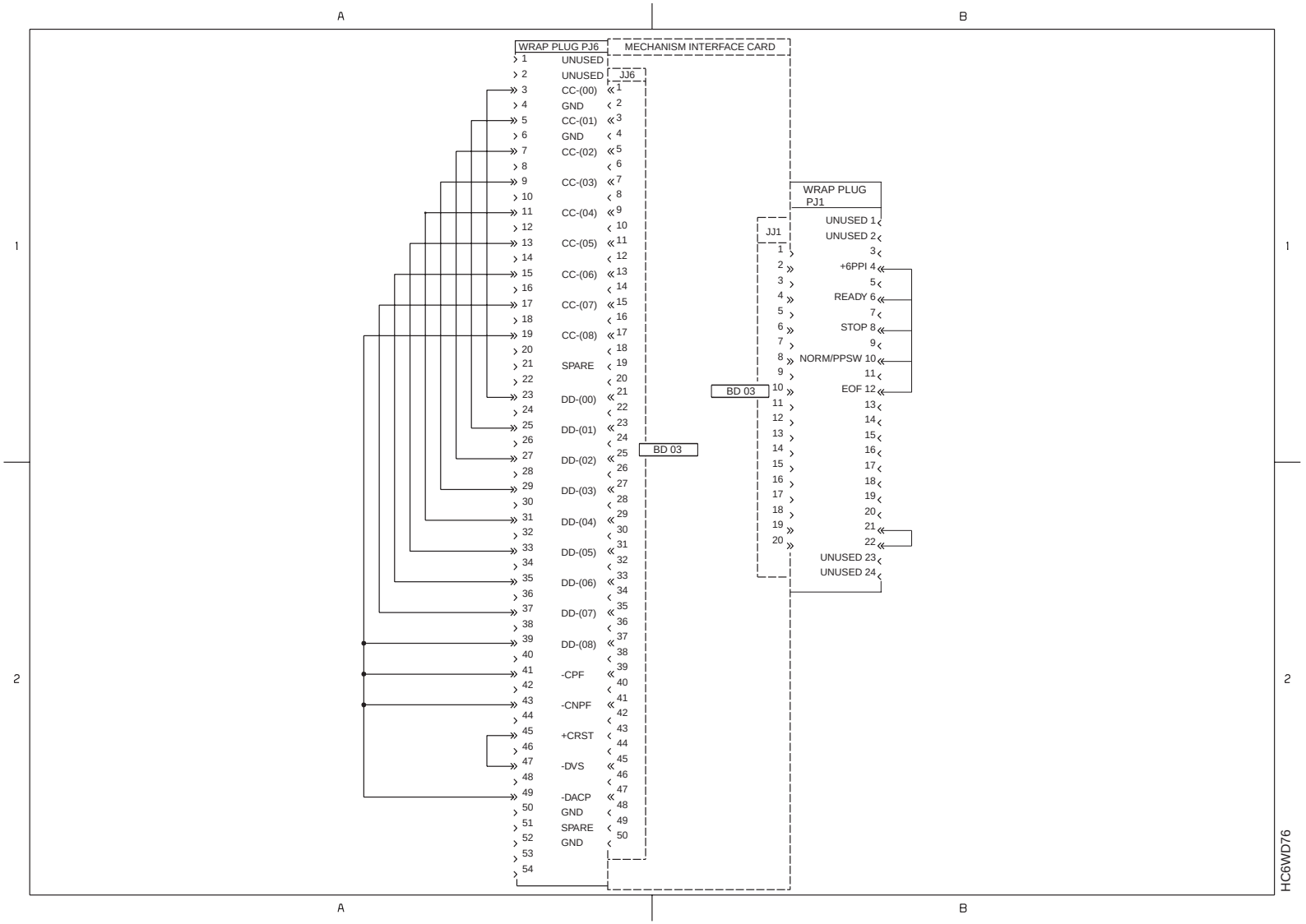
WD74 - Intelligent Postprocessor Int Wrap Plug B



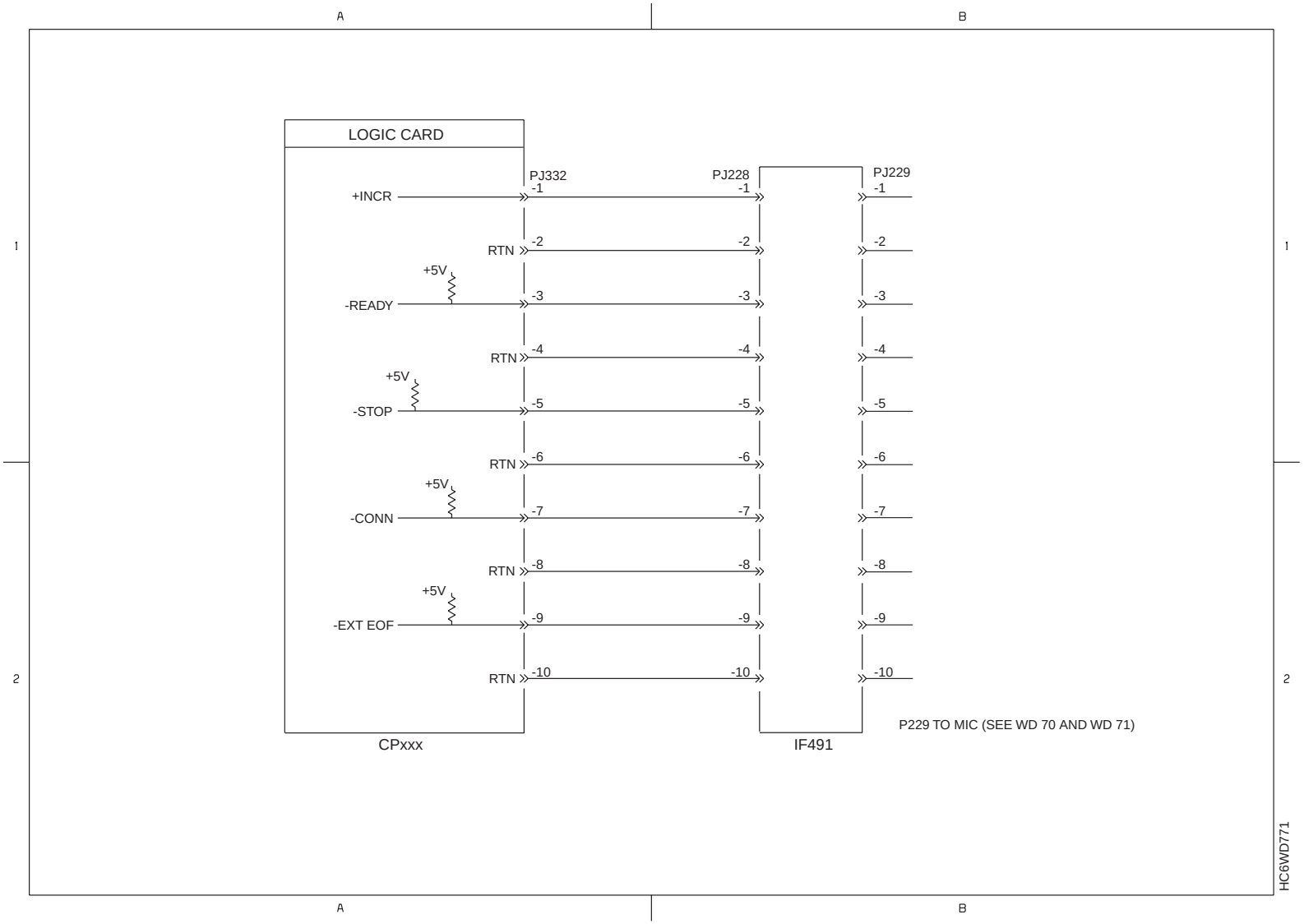
WD75 - MIC Wrap Cable (PJJ2, PJJ3 and PJJ12)



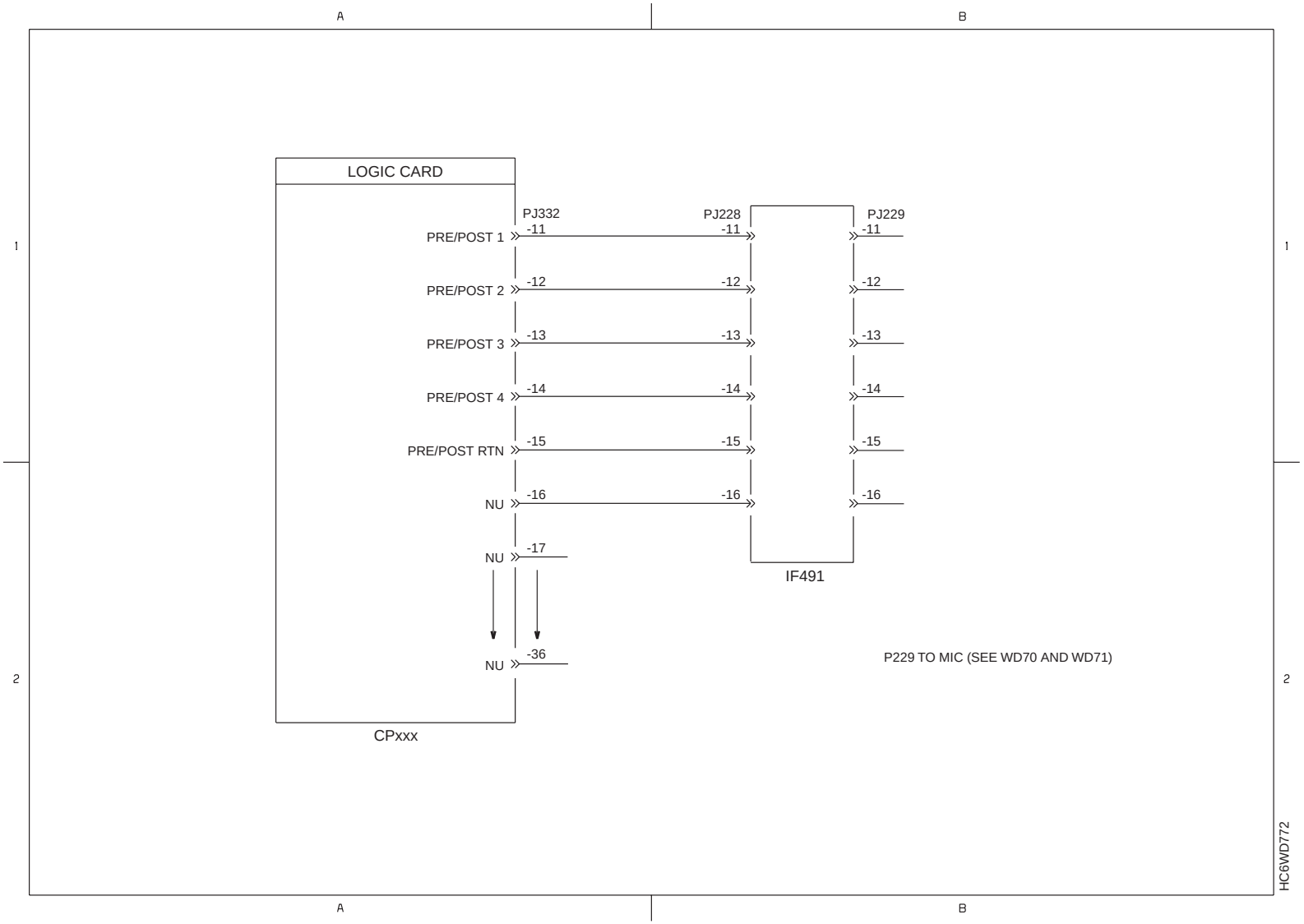
WD76 - MIC Wrap Plugs (PJJ1 and PJJ6)



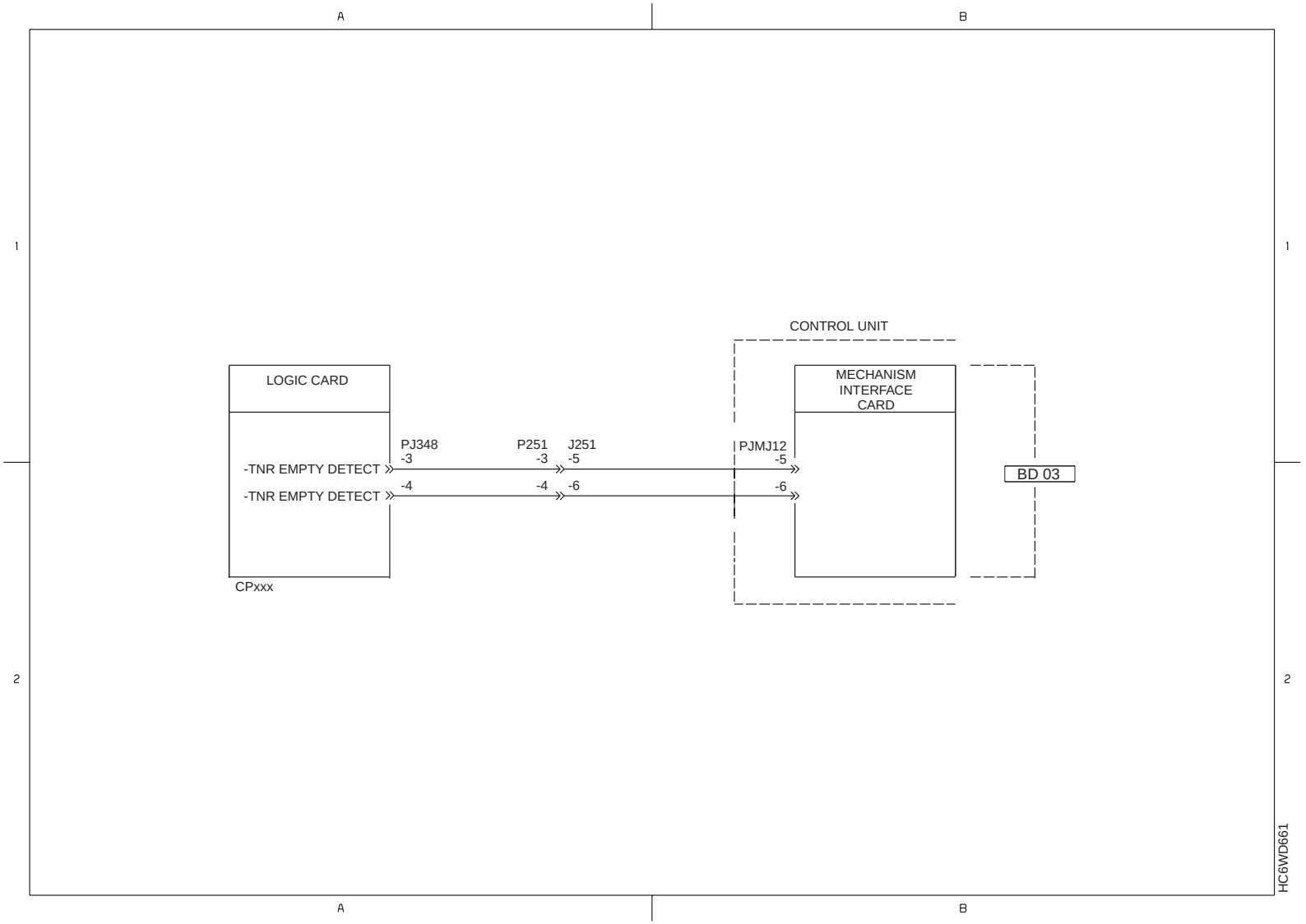
WD77-1 - Pre/Post Printer 1 of 2



WD77-2 - Pre/Post Printer 2 of 2



WD78 - Enhanced Toner Loading to MIC



Circuit Diagrams

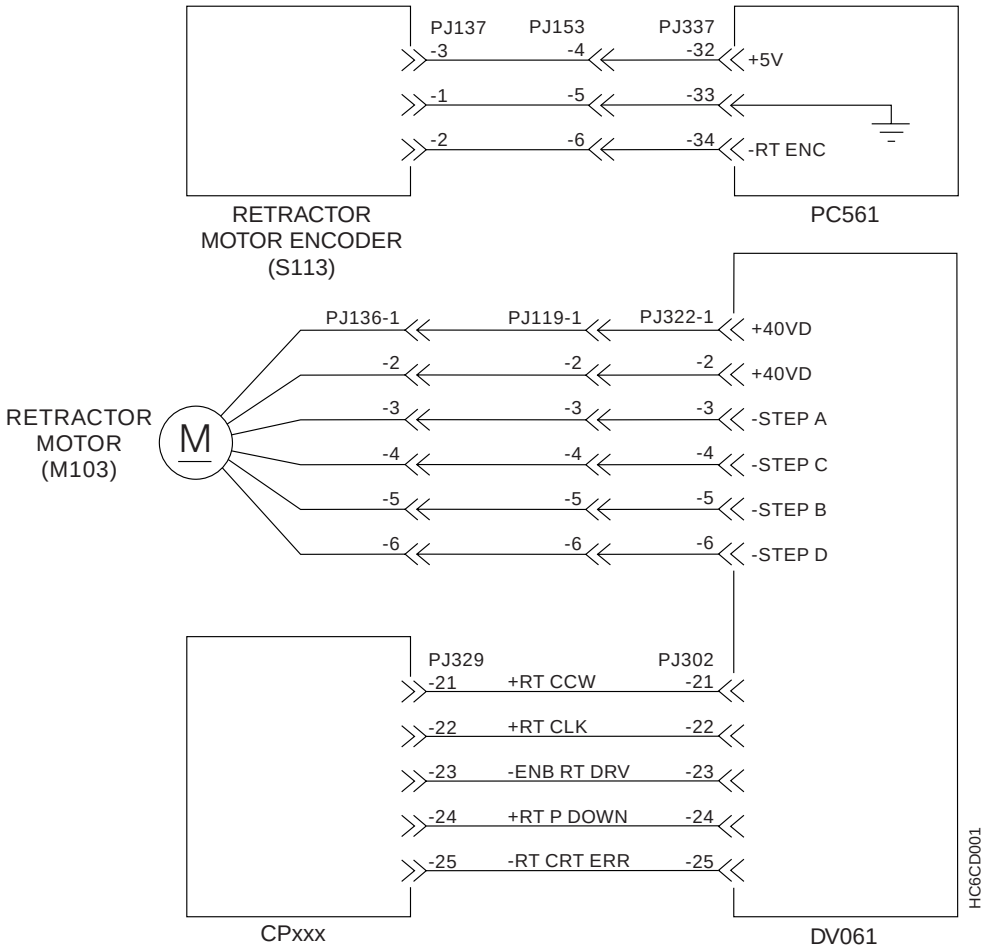
CD01 - Retractor Motor (M103) 1327
CD02 - Printer Control Panel (SW761) 1328
CD03 - Tractor Motor and Encoder (M105) 1329
CD04 - Upper Tractor Jam Sensor 1330
CD05 - Forms Width Hall Sensor 1331
CD06 - Forms Width Sensor Circuit Breaker 1332
CD07 - End Of Forms Sensor (S117) 1333
CD08 - Transfer Station Open Sensor (S114) 1334
CD09 - Tension Arm Encoder (S708) 1335
CD10 - Skew Sensor (S707) 1336
CD11 - Steering Motor (M705) 1337
CD12 - Drum Motor (M107) & Overcurrent Detection 1338
CD13 - Drum Rotation Sensor (S105) 1339
CD14 - Filter Pressure Switch (S102) 1340
CD15 - Fine Filter Switch (S106) 1341
CD16 - Developer Drain Lever Switch (S111) 1342
CD17 - Developer Run Switch (S109) 1343
CD18 - Scuff Roll Motor (M704) & Fuser Wrap Sensor (S617) 1344
CD19 - Oiler Belt Motor (M706) & Driver 1345
CD20 - Oil Pumps and Driver 1346
CD21 - Oiler Belt End Switch (S711) 1347
CD22 - Oiler Gate Open Switch (S704) 1347
CD23 - Backup-Roll Motor (M701) & Thermal Sense 1348
CD24 - Backup-Roll Motor (M701) - Open/Close Mechanism & Position Sensor (S712) 1349
CD25 - Hot Roll 1350
CD26 - Backup Roll Lift Motor (M610) & Position Sensor (S624) 1351
CD27 - Hot Roll Temperature Control Sensor (S701) 1352
CD28 - Preheat Platen 1353
CD29 - Fuser Oil Empty Sensor (S702) 1354

CD30 - Hot Roll Over-temperature Sensor (S705) 1355
CD31 - Hot Roll Temperature Control Thermistors (S621 - S622 - S623) 1356
CD33 - Hot Roll Drive Motor (M703) and Overcurrent Detection 1357
CD34 - Hot Roll Lamp 1 1358
CD35 - Hot Roll Lamp 2 1359
CD36 - Hot Roll Lamp 3 1360
CD37 - Hot Roll Lamp 4 1361
CD38 - Erase Lamp (PL101) - Starter (ST101) & Sensor (S115). 1362
CD39 - Stacker Jam Sensor (S805/D803) 1363
CD40 - Pendulum Motor (M804) 1364
CD41 - Pendulum Motor (M804) Control 1365
CD42 - Pendulum Motor (M804) - Positioning 1366
CD43 - Finger Belt Motors (M801 & M802). 1367
CD44 - Stacker Table Motor (M803) - Thermal Sense 1368
CD45 - Stacker Height Sensors (S803/D801 & S804/D802) 1369
CD46 - Stacker Gate Safety Switches (S801 & S802) 1370
CD47 - Stacker Table Limit Switches (S807 & S808). 1371
CD48 - Stacker Forms Length Hall Sensor 1372
CD49 - Stacker Rear Finger Belt Motor (M801) 1373
CD50 - Stacker Front Finger Belt Motor (M802) 1374
CD51 - Stacker Gate Open Switch (S806) 1375
CD52 - Stacker Control Panel (LP041) 1376
CD53 - Forms Length Circuit Breaker 1377
CD54 - Cyclone Blower Motor (M104) - Thermal Sense 1378
CD55 - Cyclone Blower Motor (M104) & Rotation Sensor (S116) 1379
CD56 - Cleaner Brush Motor (M108) & Rotation Sensor (S104) 1380
CD57 - Cleaner Brush Motor (M108) - Thermal Sense 1381
CD58 - Cleaner Housing Motor (M106) & Position Switch (S103) 1382
CD59 - Scuff Roll Motor Drive (M704) 1383
CD60 - Charge Corona 1384
CD61 - Transfer Corona 1385

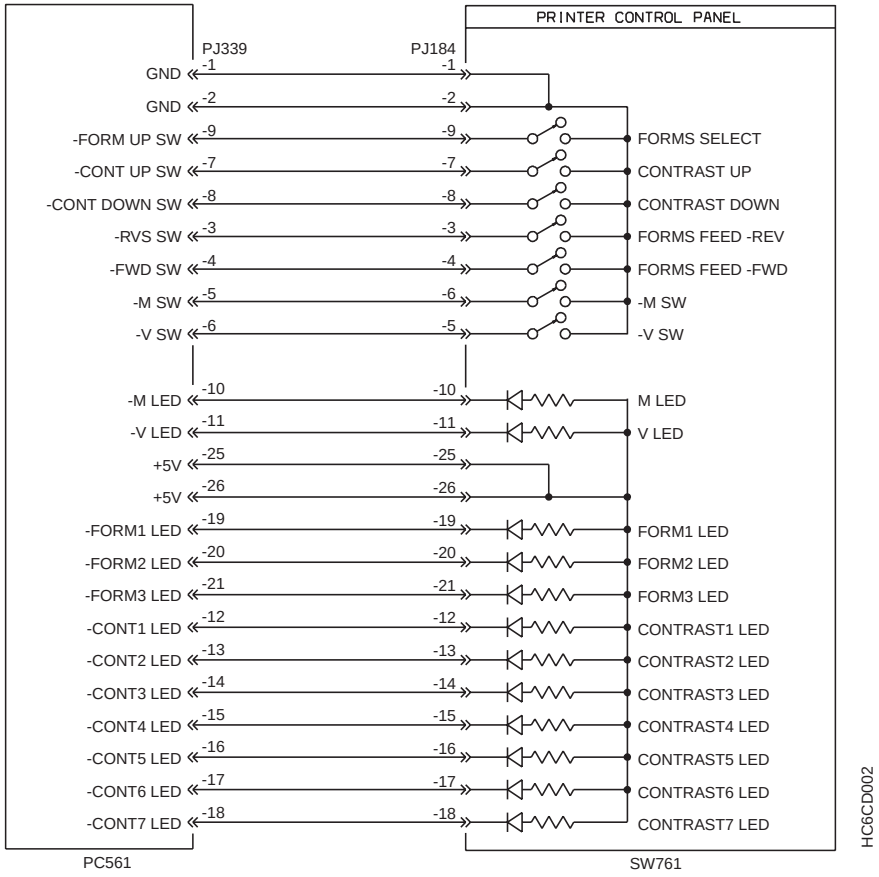
CD62 - Preclean Corona 1386
CD63 - Laser Driver Circuit Breaker 1387
CD64 - Mirror Motor (M501) 1388
CD65 - Printhead 1389
CD66 - Beam Detect 1390
CD67 - Video Data 1391
CD68 - Resolution Switching Lens Motor Postion Sensor (S502) 1392
CD69 - PC Drum Cover Interlock Switch (S118) 1393
CD70 - Mag Brush Bias 1394
CD71 - Mag Brush Motor (M101) & Conveyor Roll Rotation Sensor (S110) 1395
CD72 - Mag Brush Motor (M101) - Thermal Sense. 1396
CD73 - Toner Control Sensor (S107) & Toner Feed Motor (M102) 1397
CD74 - Toner Collector Switch (S101) 1398
CD75 - Toner Empty Sensor (S108) 1399
CD76 - Toner Feed Motor (M102) 1400
CD77 - Operator Alert 1401
CD78 - Printer Remote Power Circuit 1402
CD79 - Printer 1 Remote Power Circuit 1403
CD80 - (+5 V) Voltage Distribution 1404
CD81 - (+5 V) Voltage Distribution 1405
CD82 - (+5 V) Voltage Distribution 1406
CD83 - (+5 V) Voltage Distribution 1407
CD84 - (+/- 12V) Voltage Distribution 1408
CD85 - (+24VE) Voltage Distribution 1409
CD86 - (+24VF) Voltage Distribution 1410
CD87 - (+24VH) Voltage Distribution 1411
CD88 - (+5VM/+12VM/+100VM) Voltage Distribution (Mirror) 1412
CD89 - (24VD) Power Supply (Fans) 1413
CD90 - PR011 Sensor Circuit Breaker 1414
CD91 - ST Sensor Circuit Breaker 1415
CD92 - ST Sensor Circuit Breaker 1416

CD93 - Splicing Station 1416

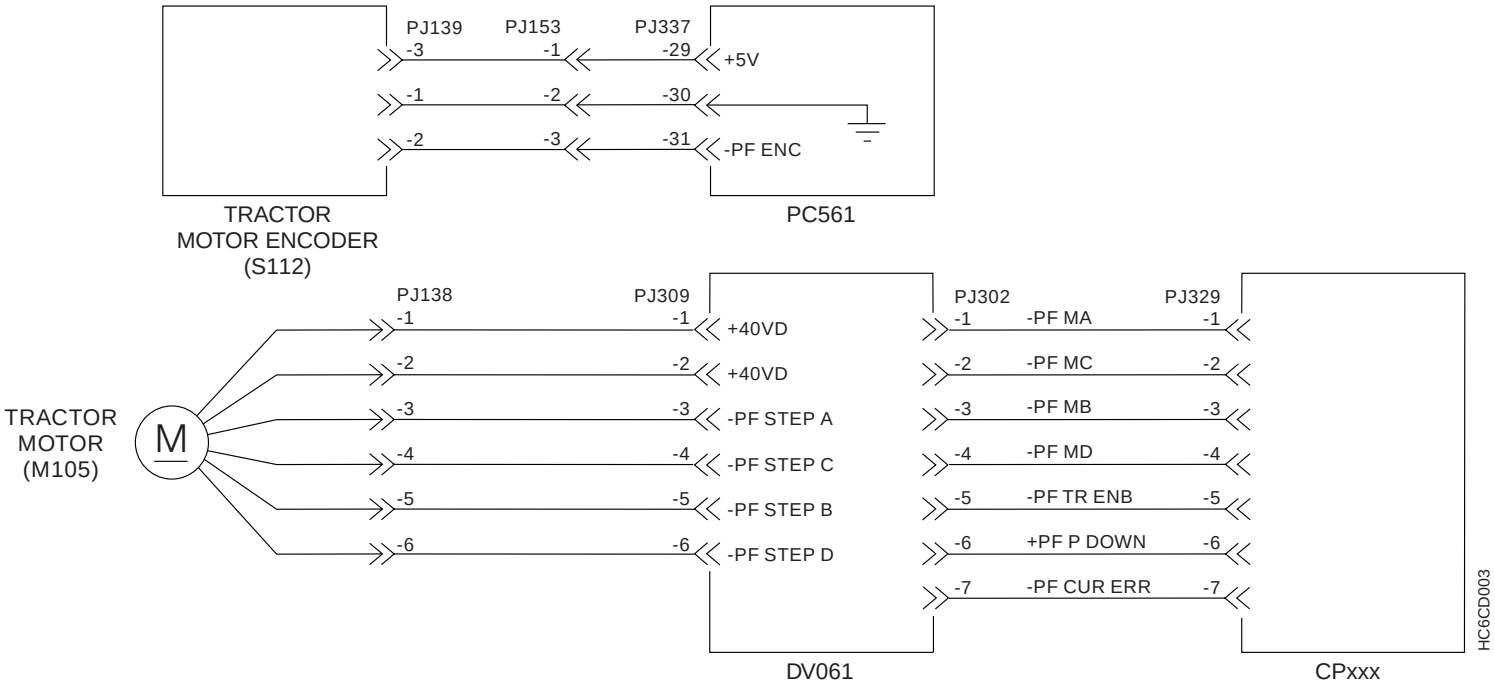
CD01 - Retractor Motor (M103)



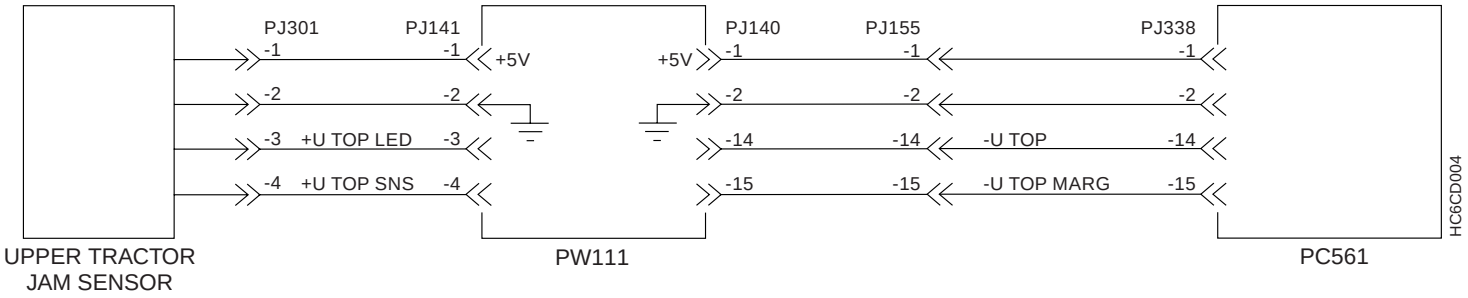
CD02 - Printer Control Panel (SW761)



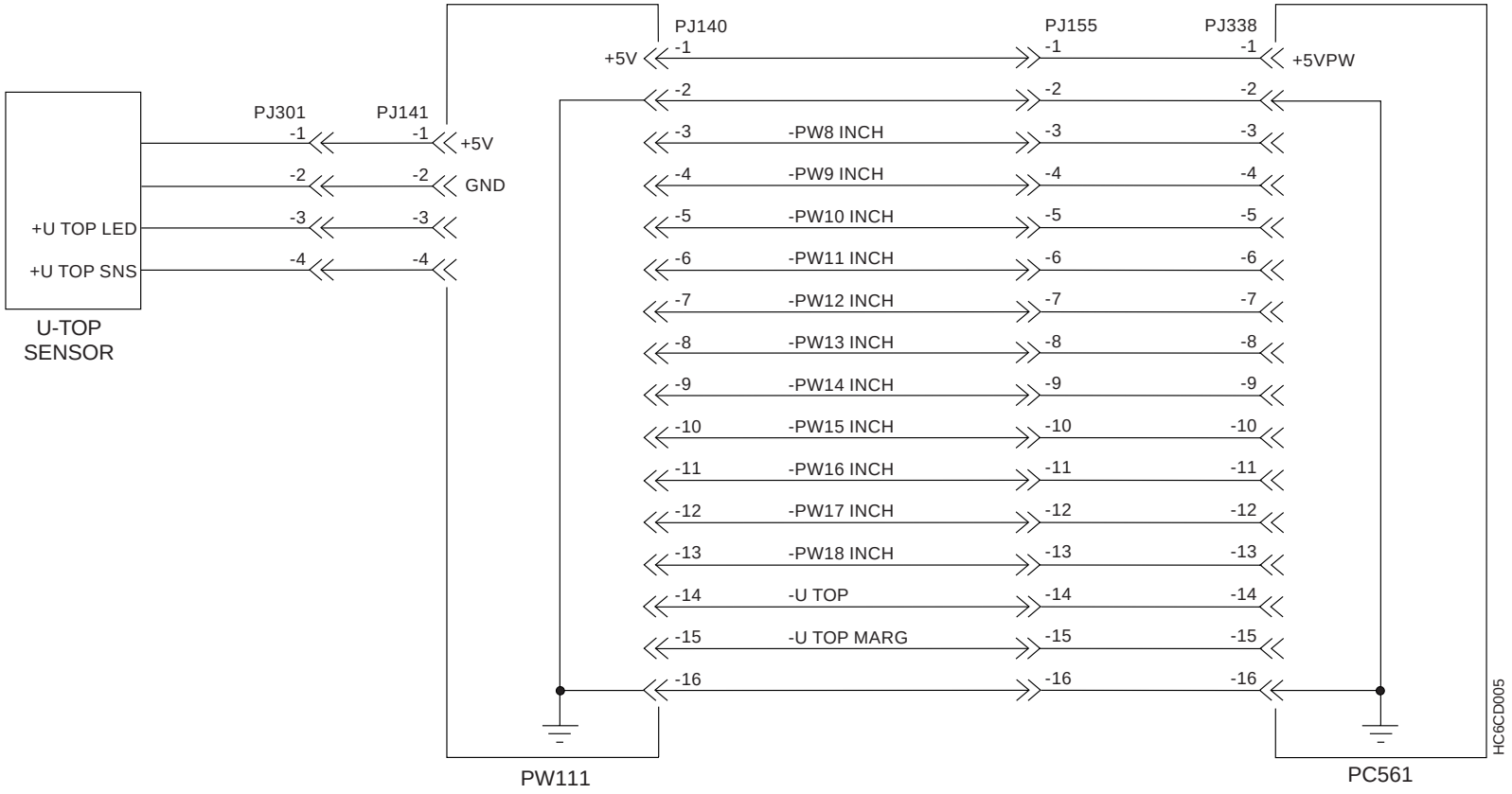
CD03 - Tractor Motor and Encoder (M105)



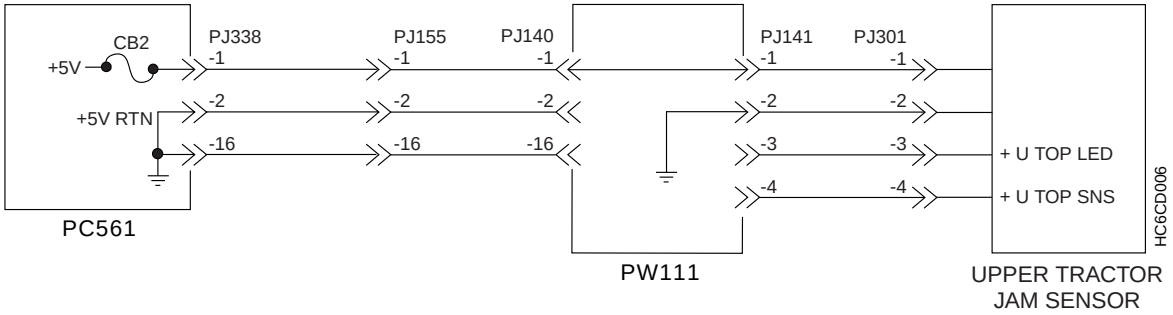
CD04 - Upper Tractor Jam Sensor



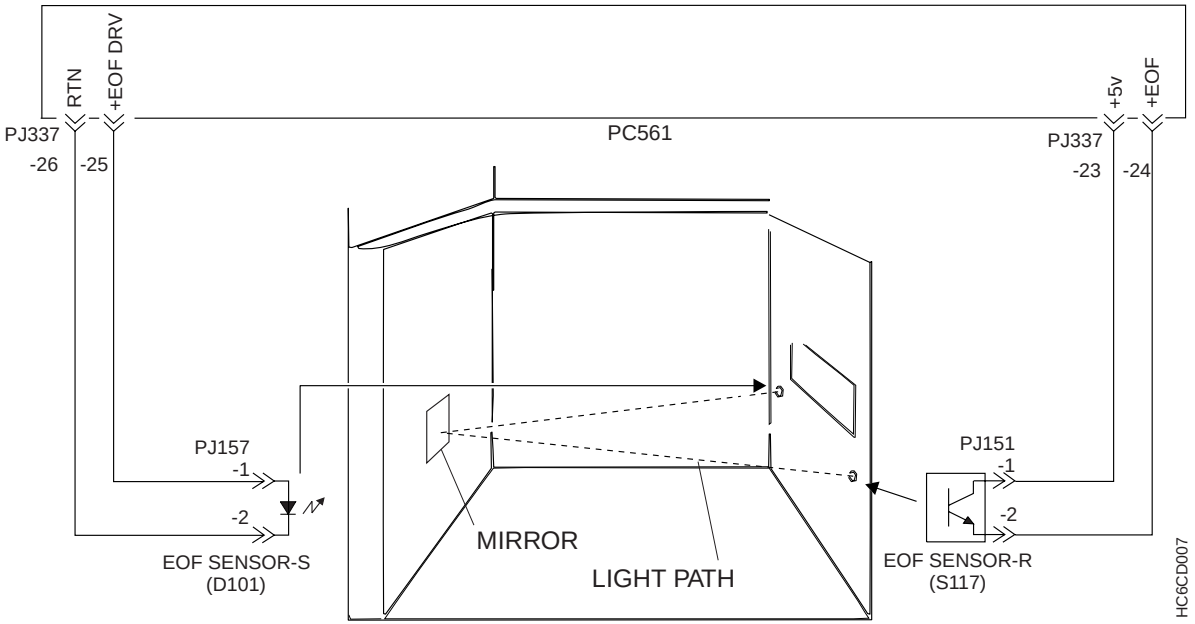
CD05 - Forms Width Hall Sensor



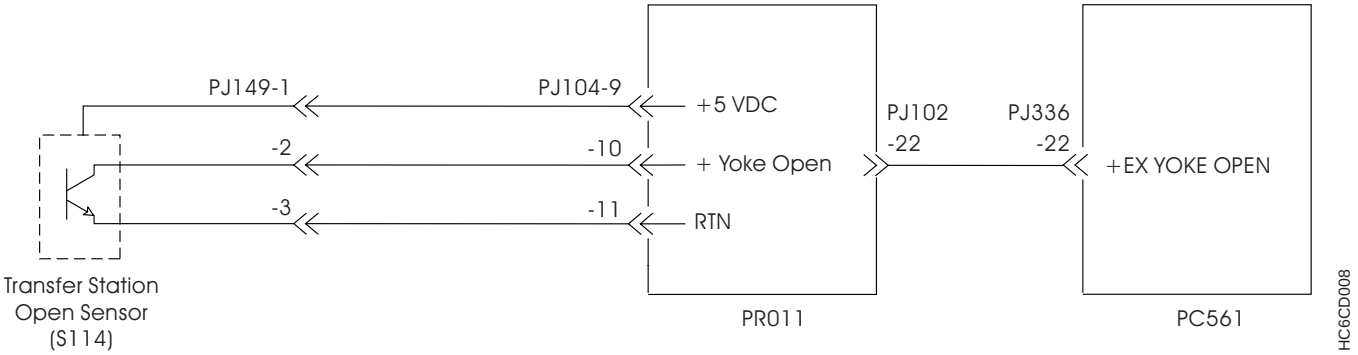
CD06 - Forms Width Sensor Circuit Breaker



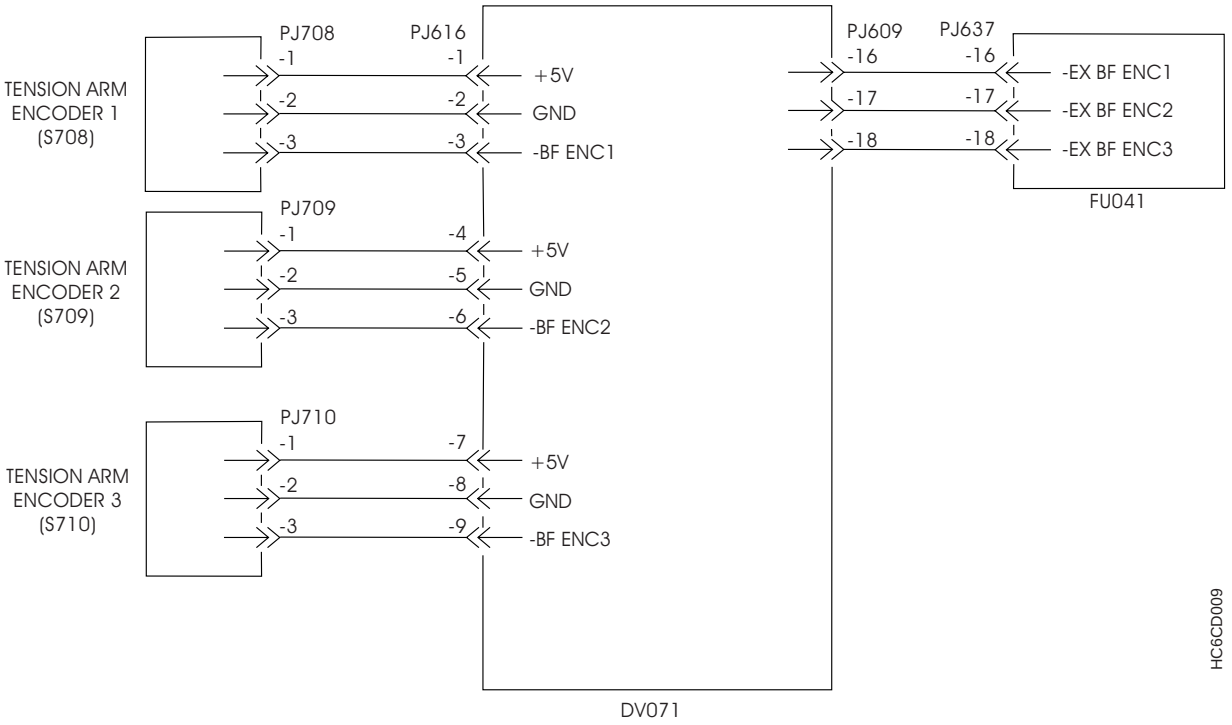
CD07 - End Of Forms Sensor (S117)



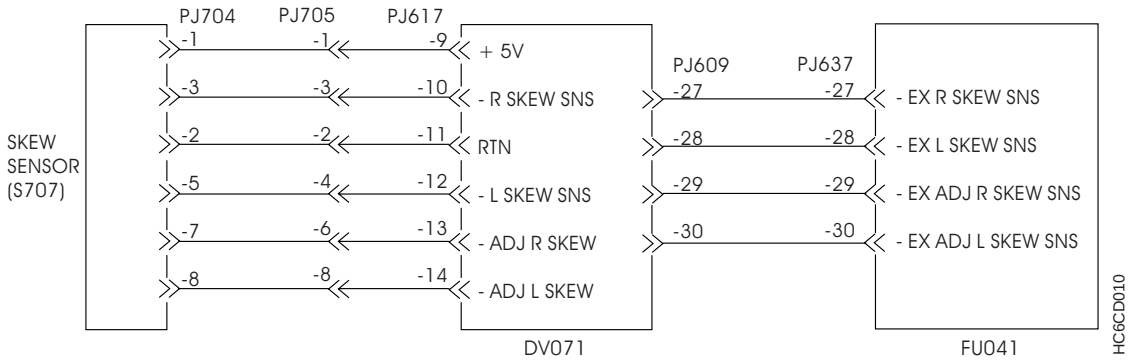
CD08 - Transfer Station Open Sensor (S114)



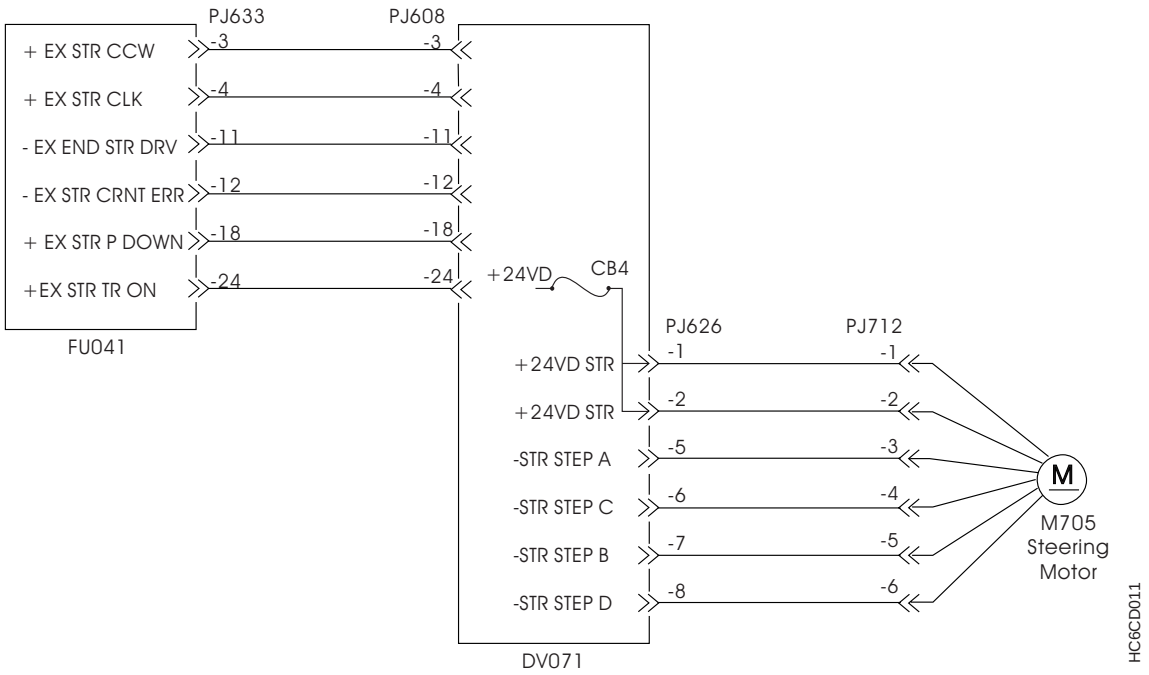
CD09 - Tension Arm Encoder (S708)



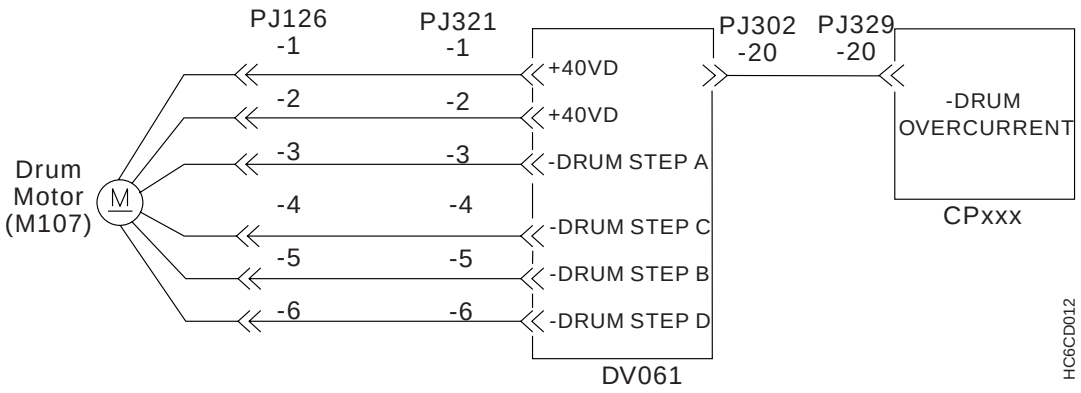
CD10 - Skew Sensor (S707)



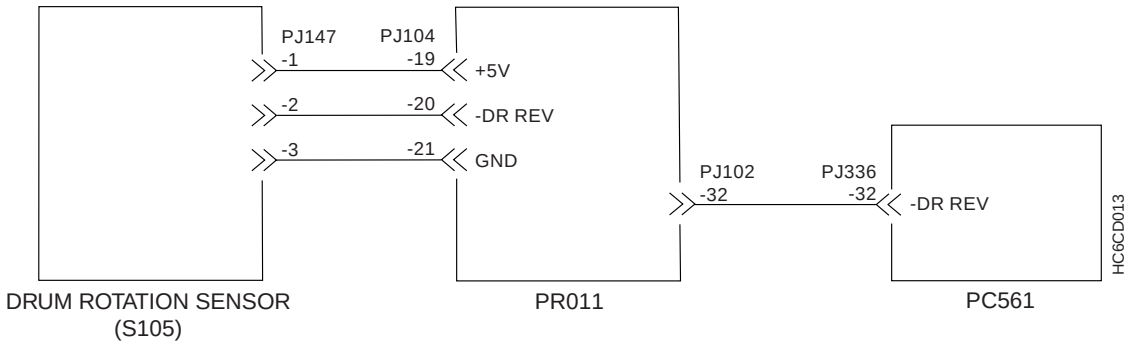
CD11 - Steering Motor (M705)



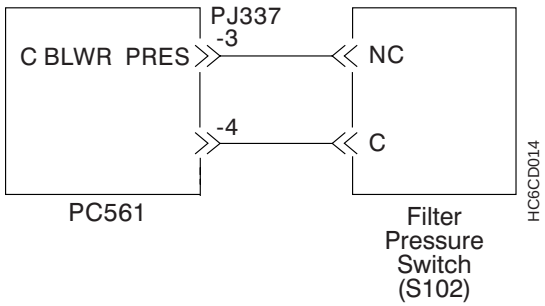
CD12 - Drum Motor (M107) & Overcurrent Detection



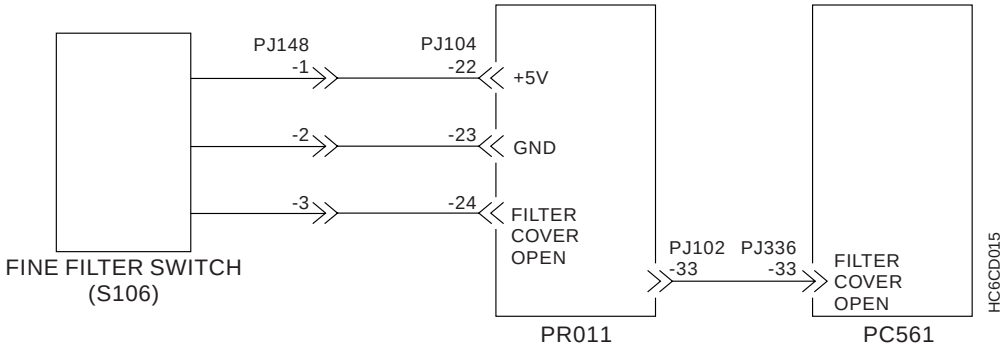
CD13 - Drum Rotation Sensor (S105)

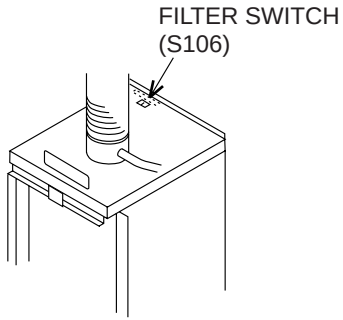


CD14 - Filter Pressure Switch (S102)

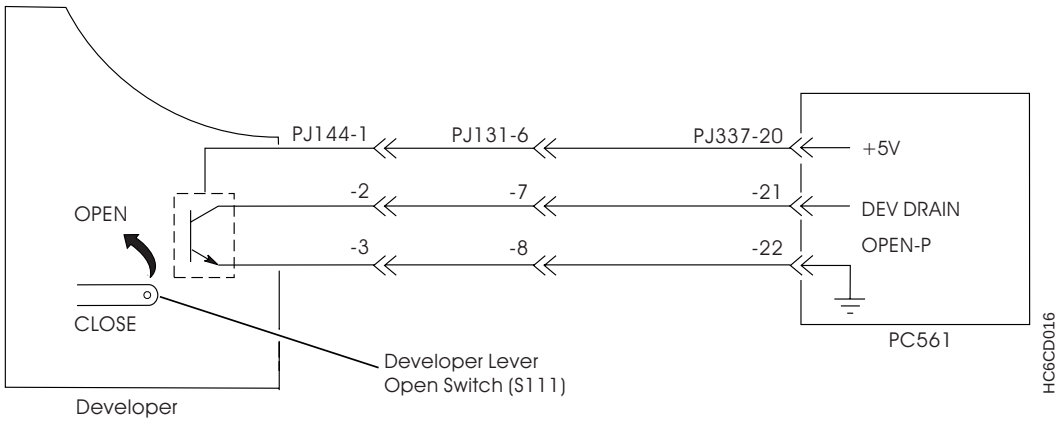


CD15 - Fine Filter Switch (S106)

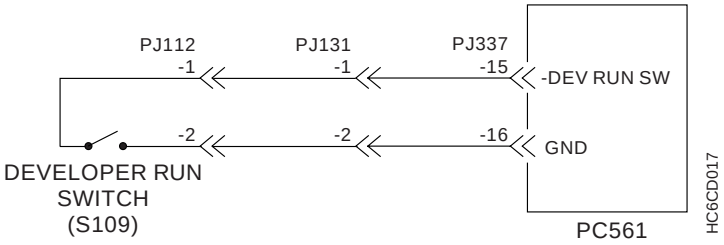




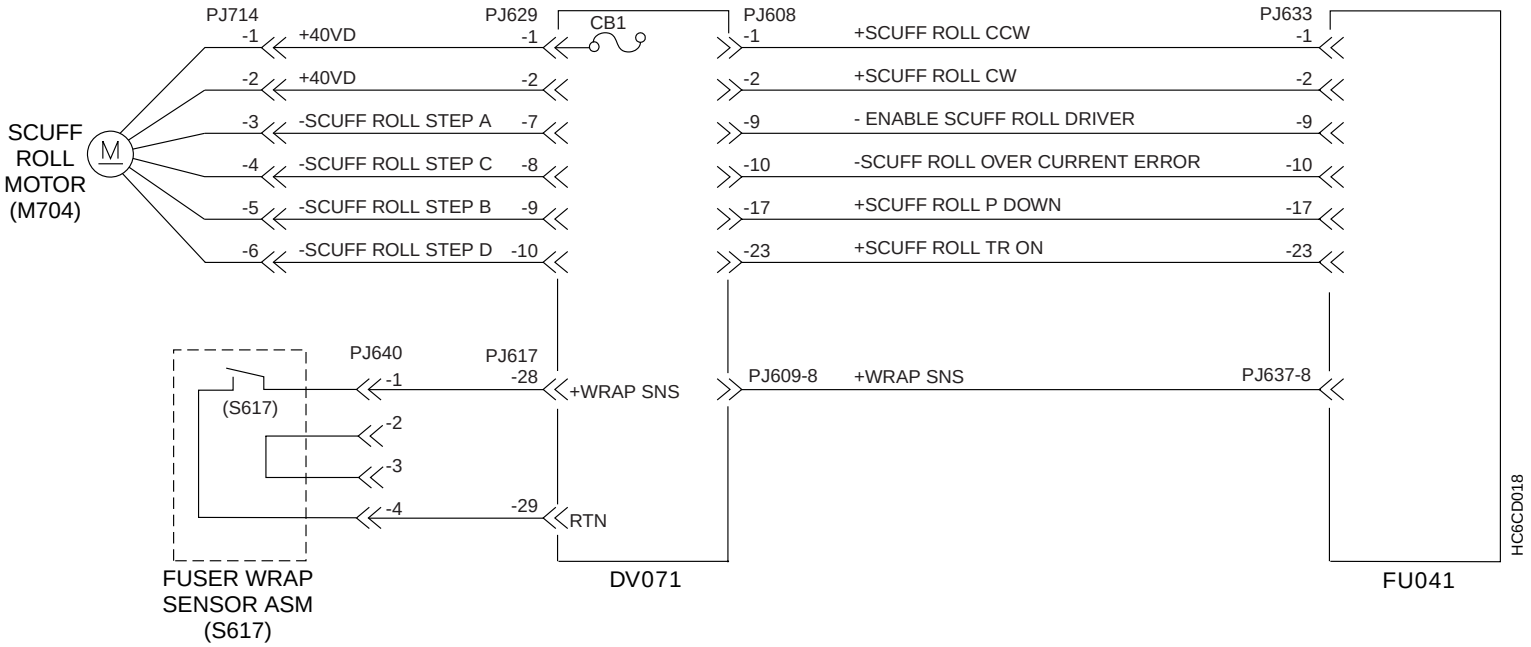
CD16 - Developer Drain Lever Switch (S111)



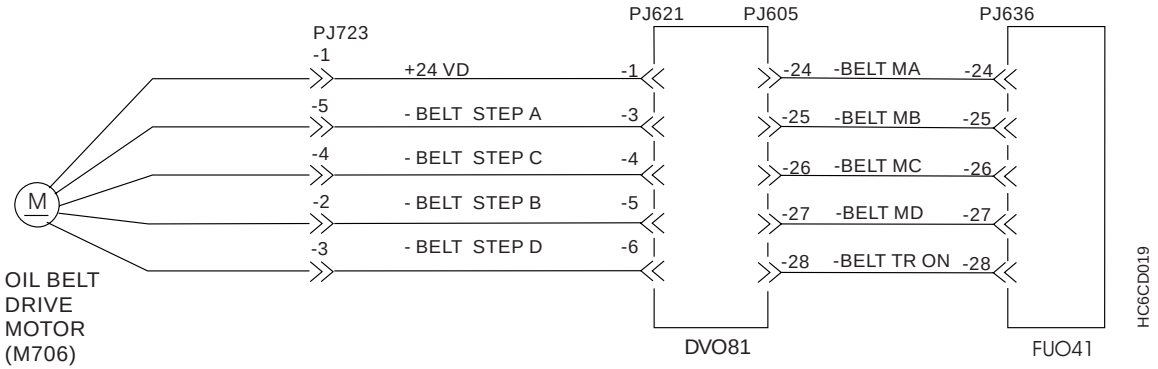
CD17 - Developer Run Switch (S109)



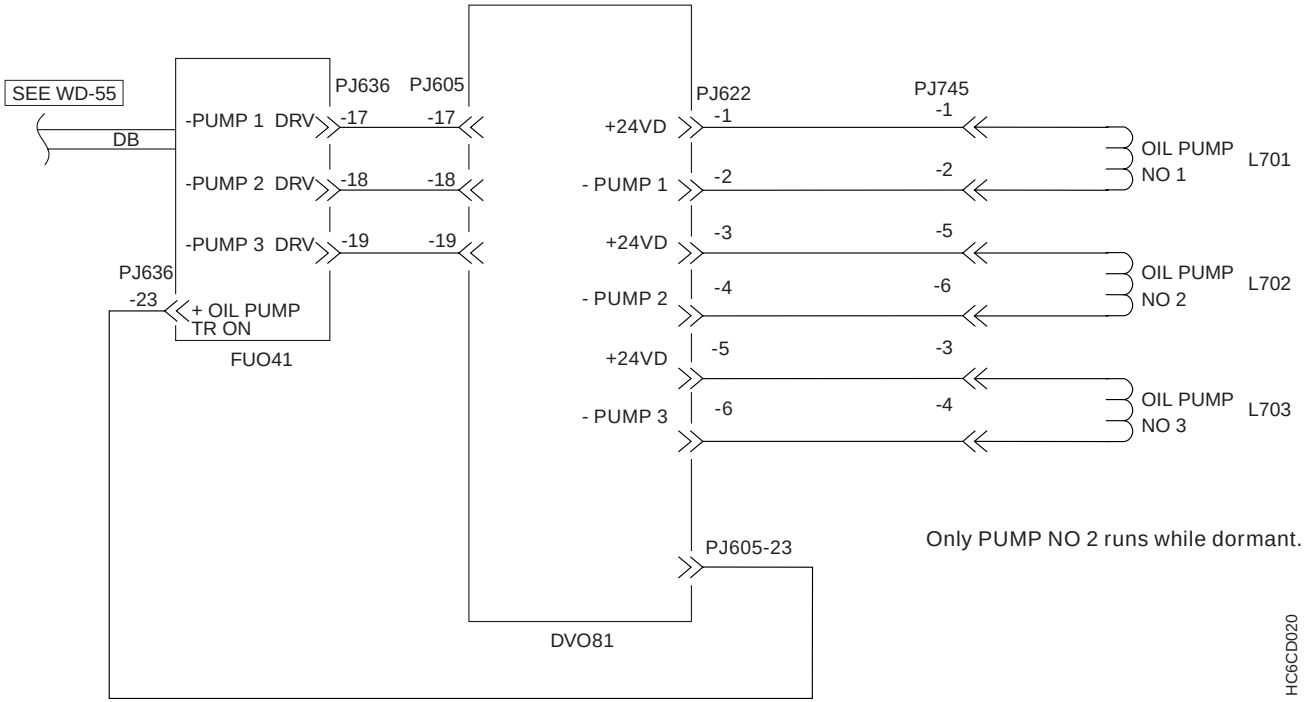
CD18 - Scuff Roll Motor (M704) & Fuser Wrap Sensor (S617)



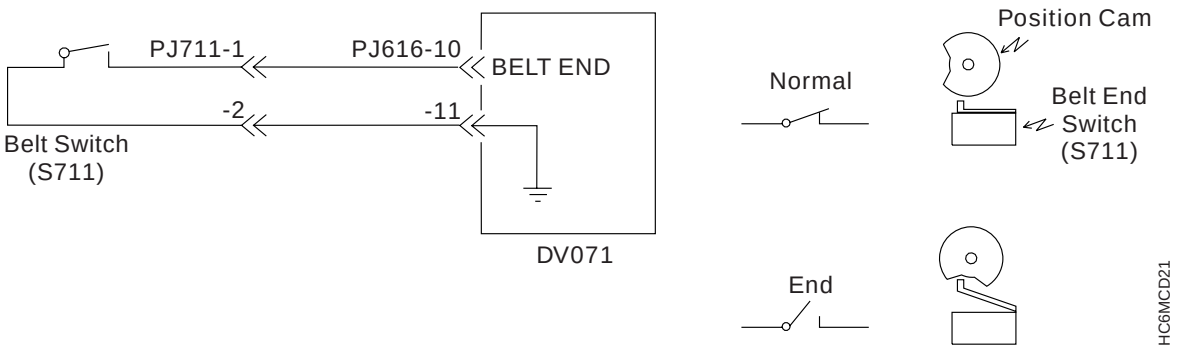
CD19 - Oiler Belt Motor (M706) & Driver



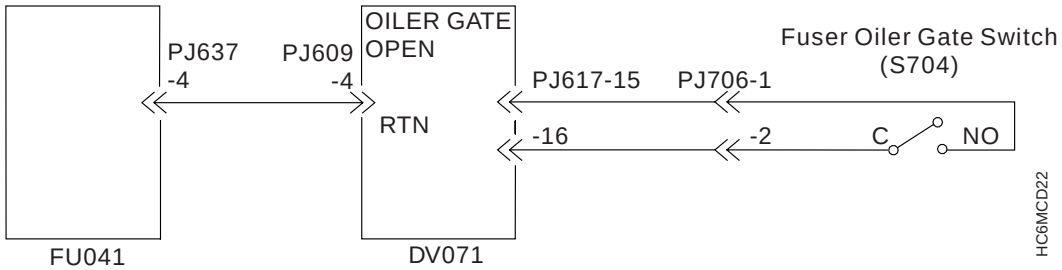
CD20 - Oil Pumps and Driver



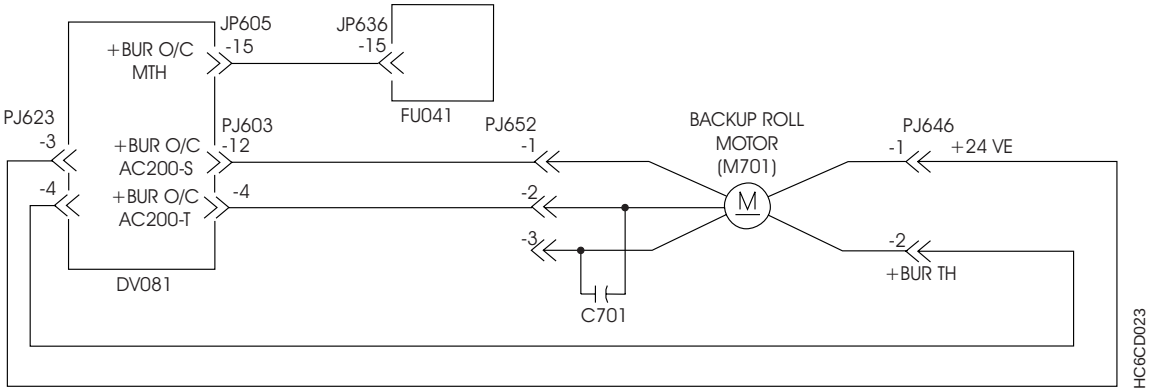
CD21 - Oiler Belt End Switch (S711)



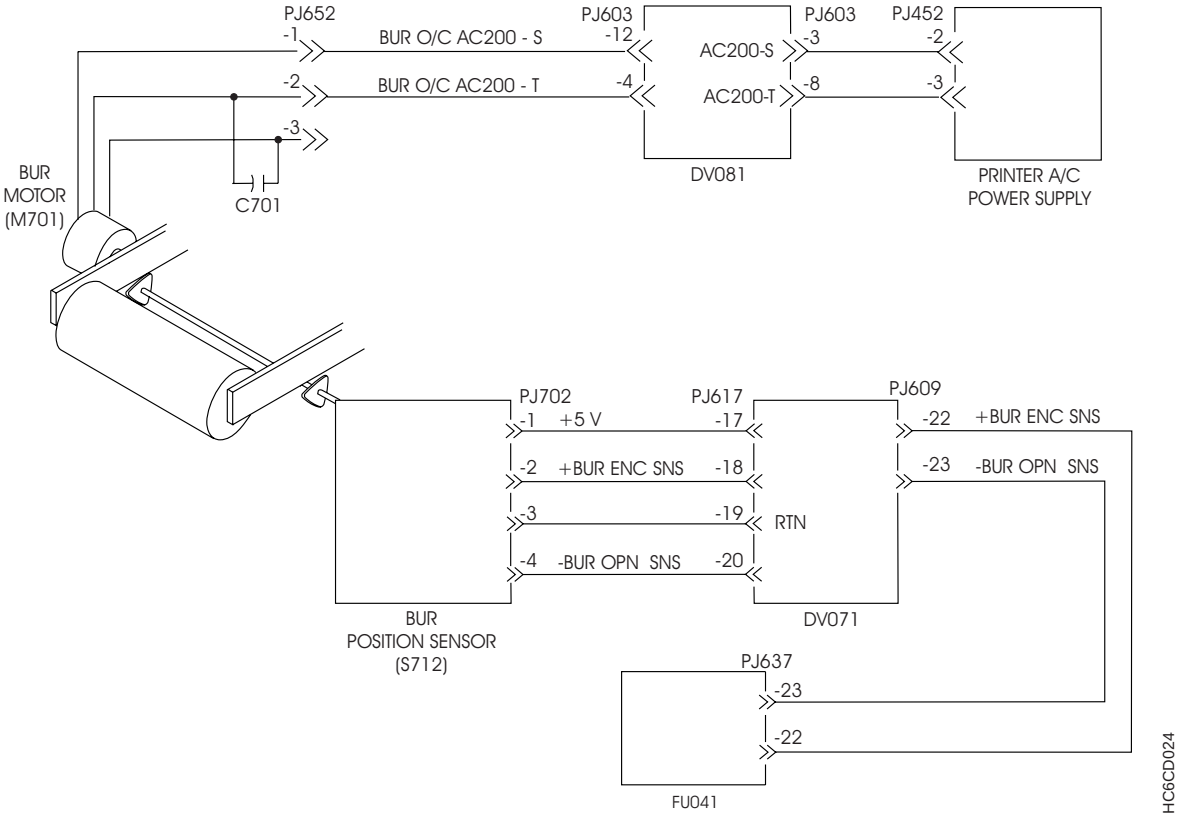
CD22 - Oiler Gate Open Switch (S704)



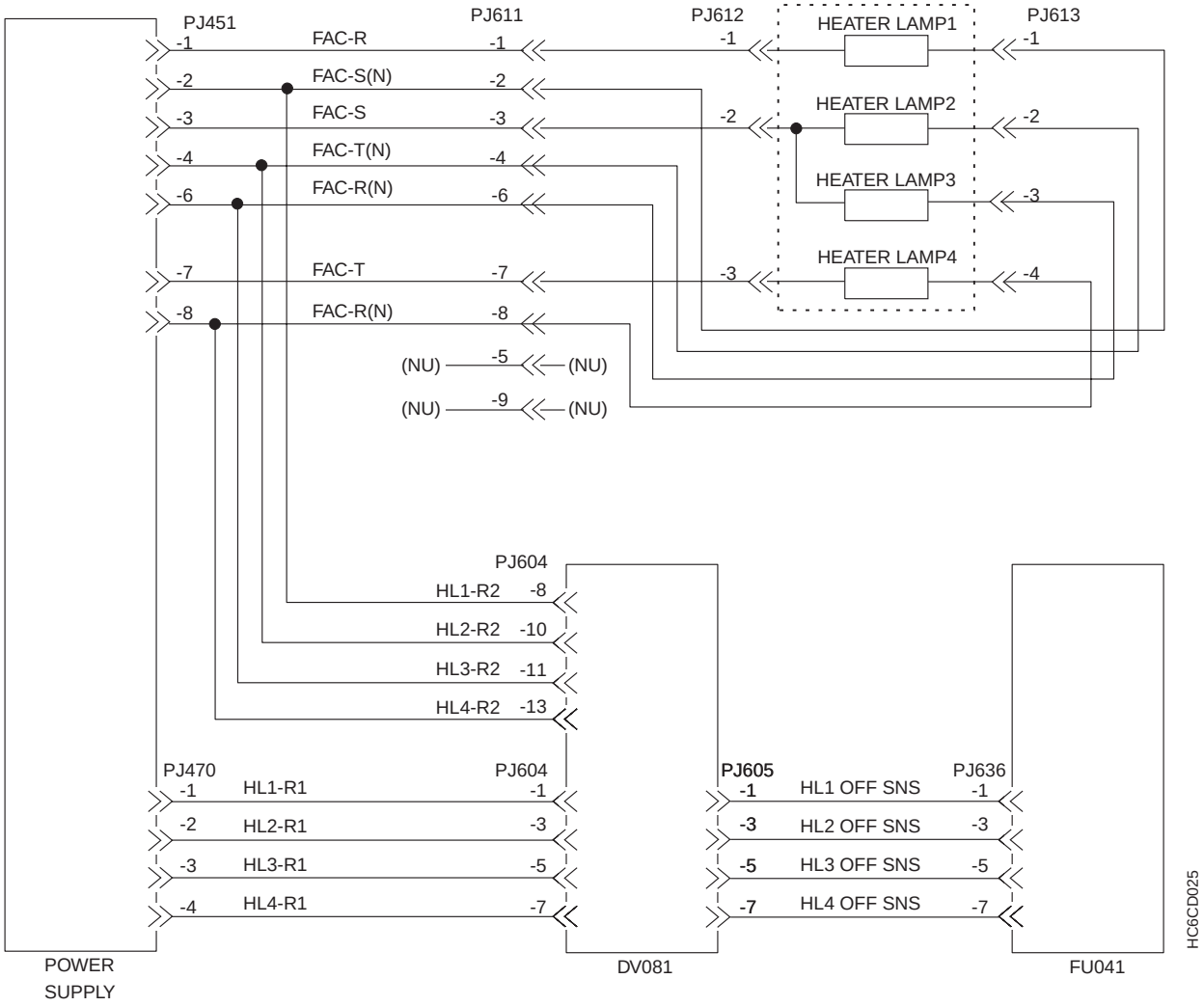
CD23 - Backup-Roll Motor (M701) & Thermal Sense



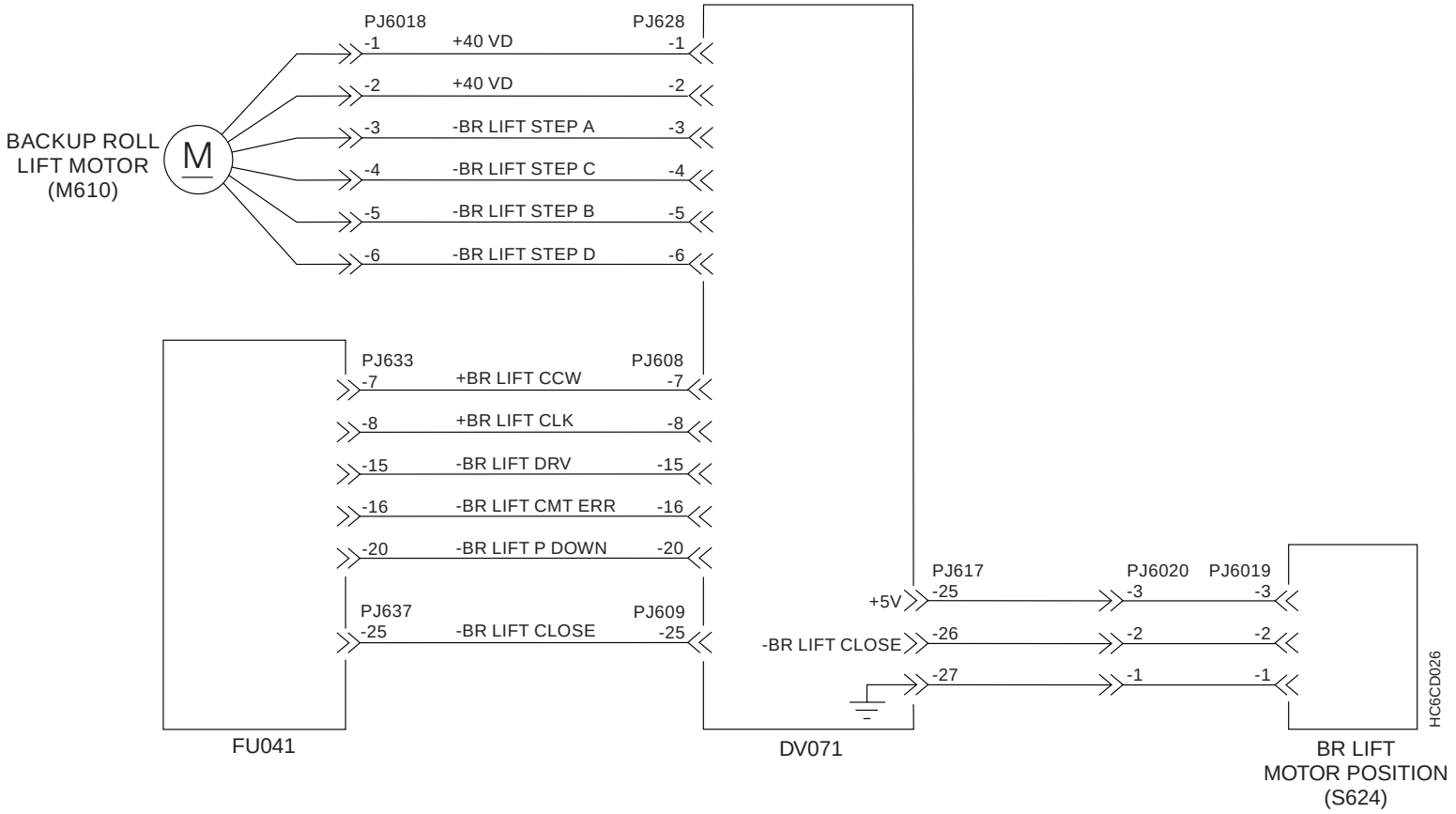
CD24 - Backup-Roll Motor (M701) - Open/Close Mechanism & Position Sensor (S712)



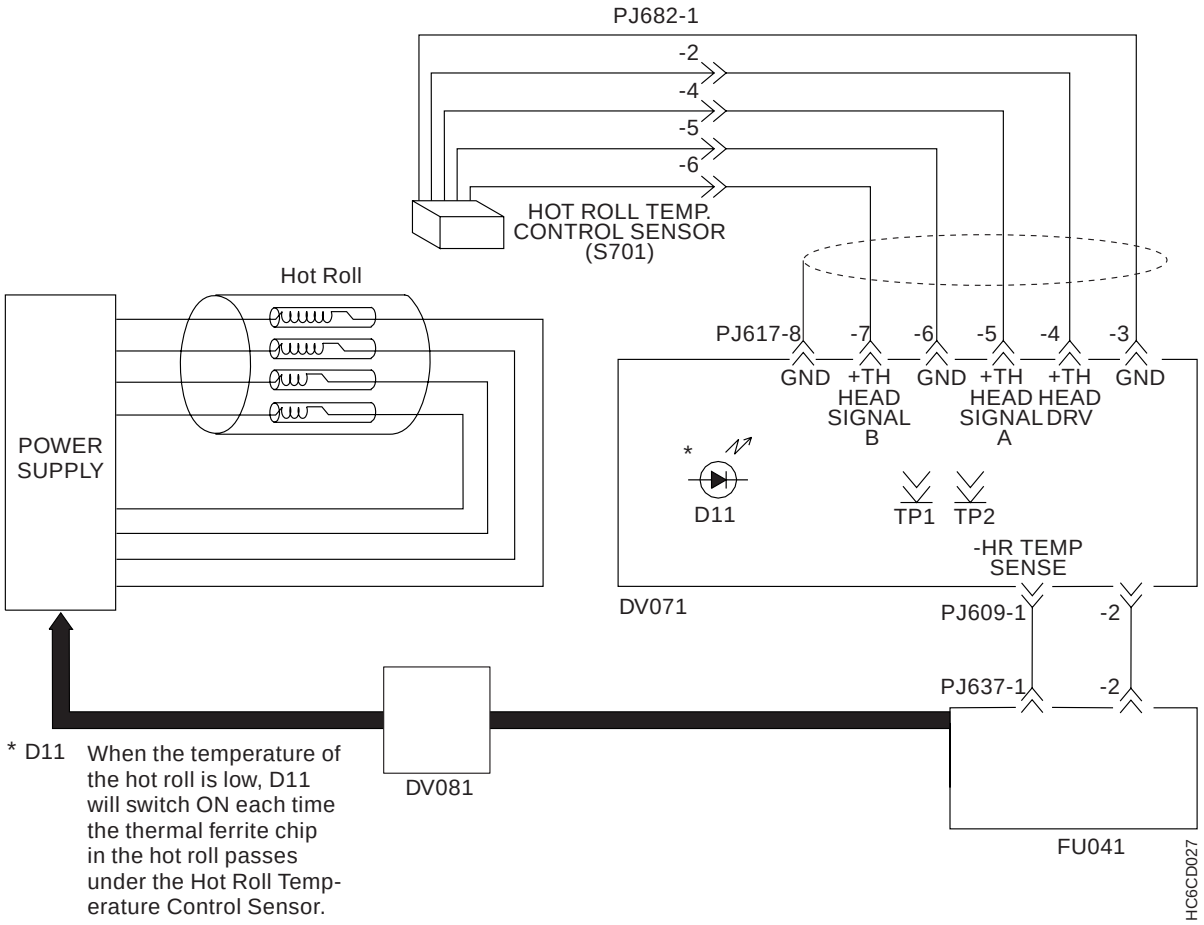
CD25 - Hot Roll



CD26 - Backup Roll Lift Motor (M610) & Position Sensor (S624)

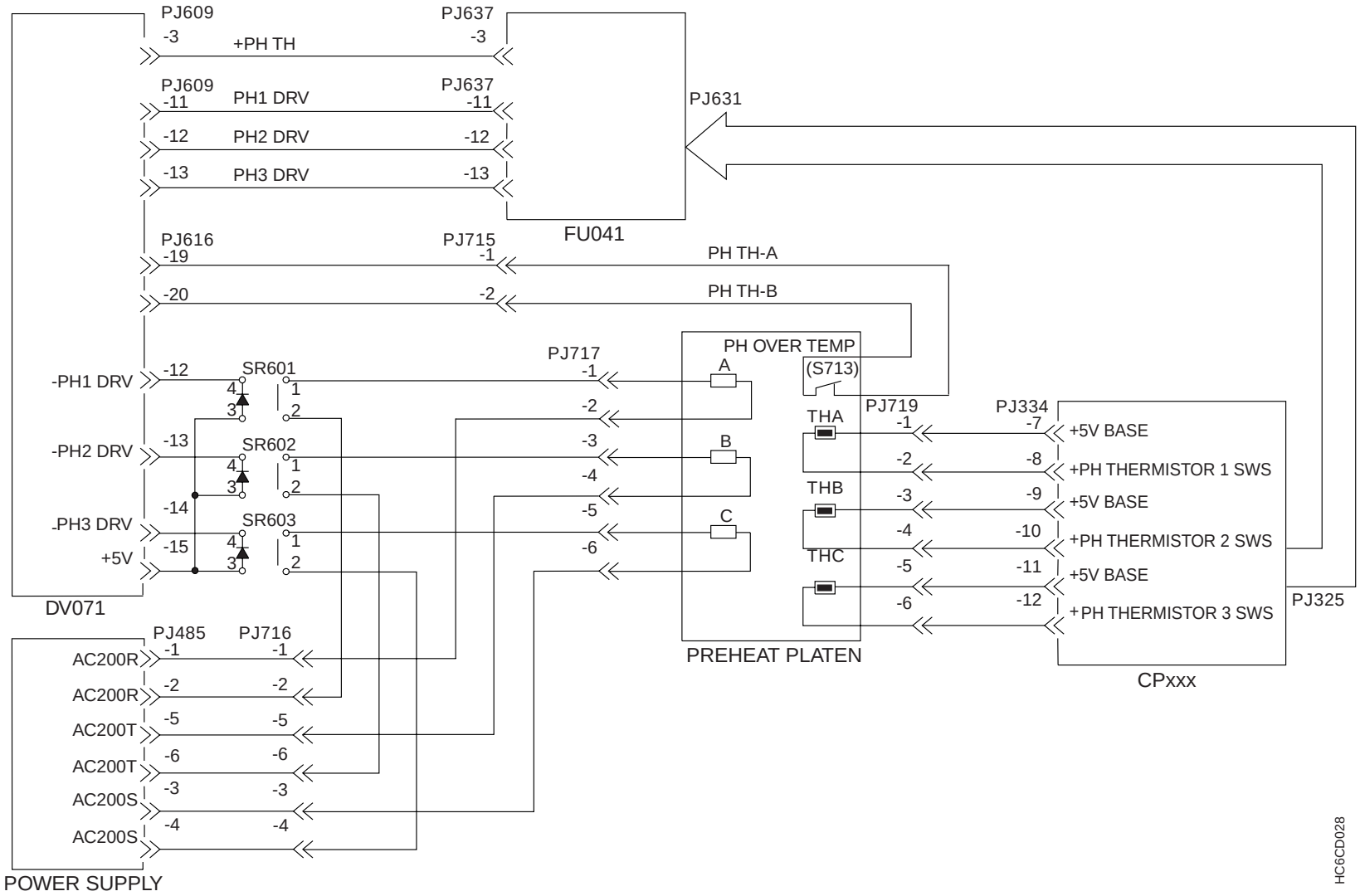


CD27 - Hot Roll Temperature Control Sensor (S701)

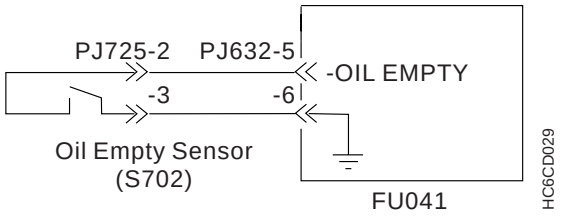


* D11 When the temperature of the hot roll is low, D11 will switch ON each time the thermal ferrite chip in the hot roll passes under the Hot Roll Temperature Control Sensor.

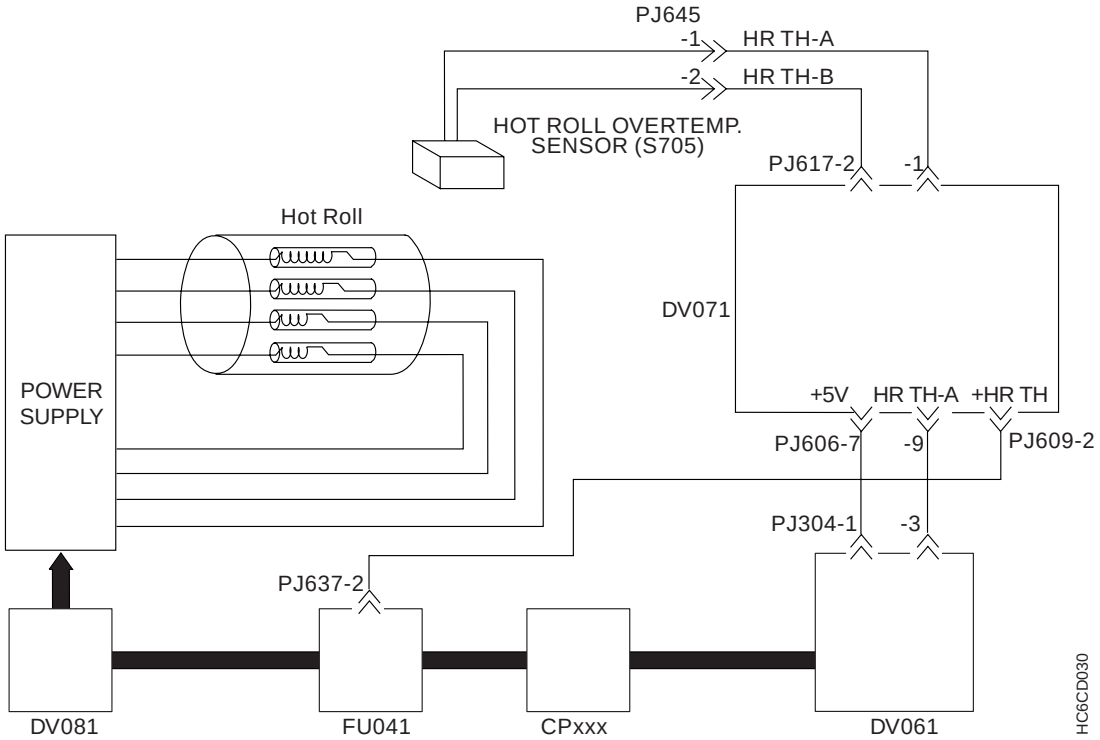
CD28 - Preheat Platen



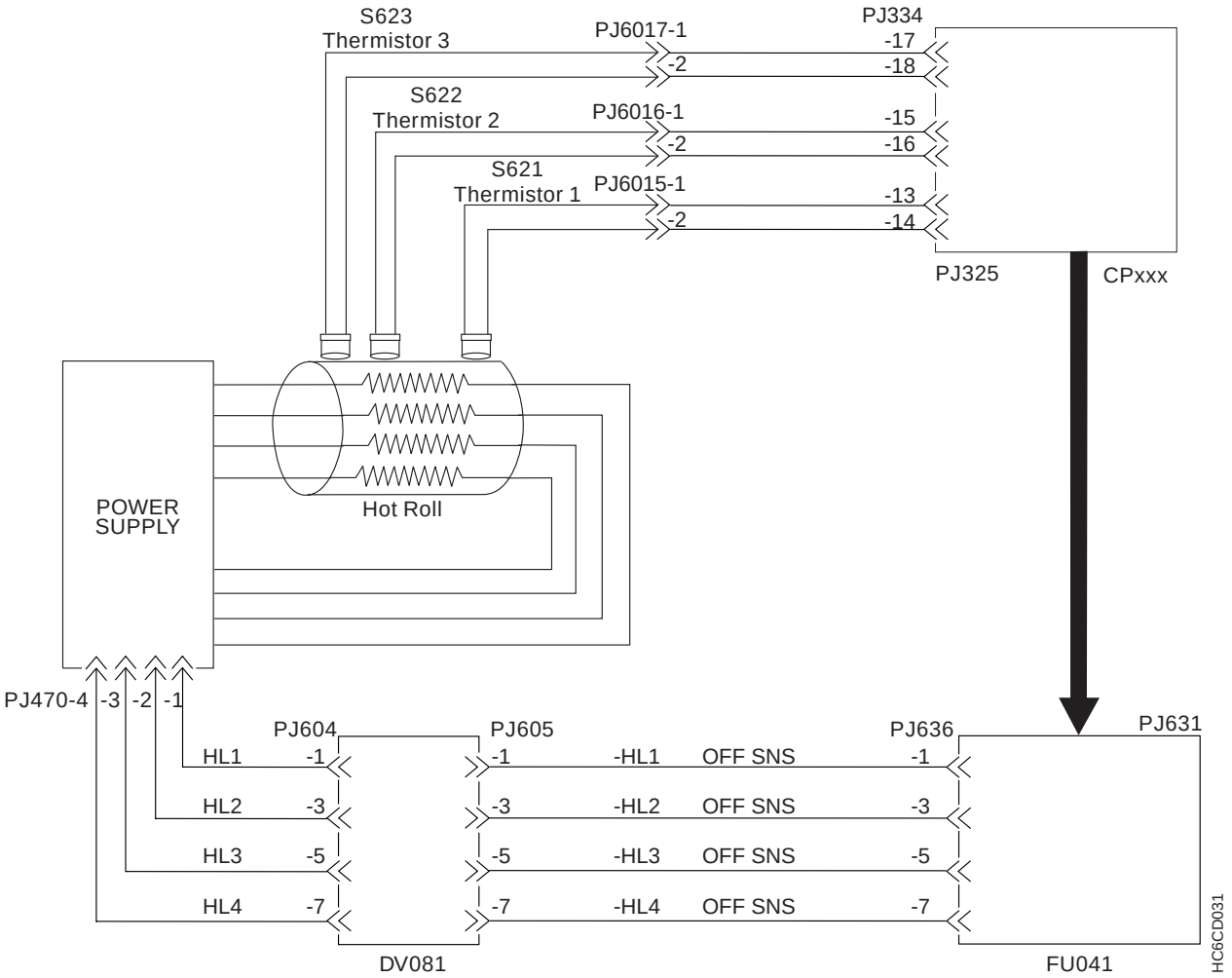
CD29 - Fuser Oil Empty Sensor (S702)



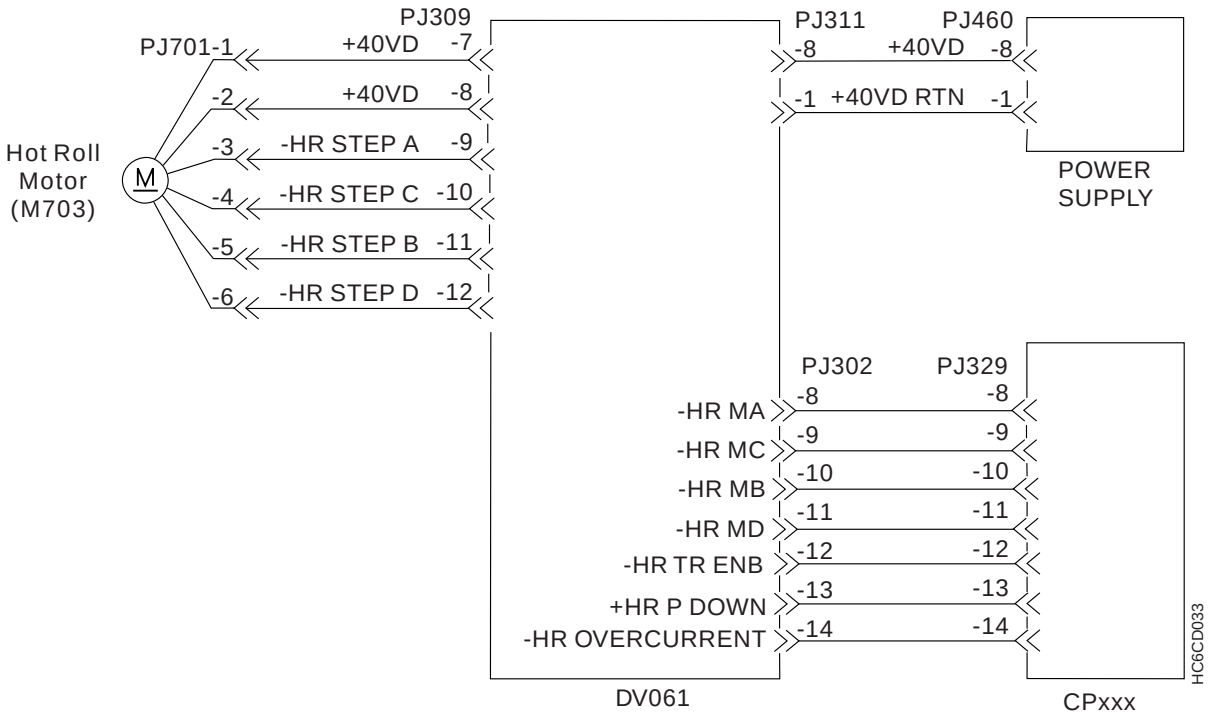
CD30 - Hot Roll Over-temperature Sensor (S705)



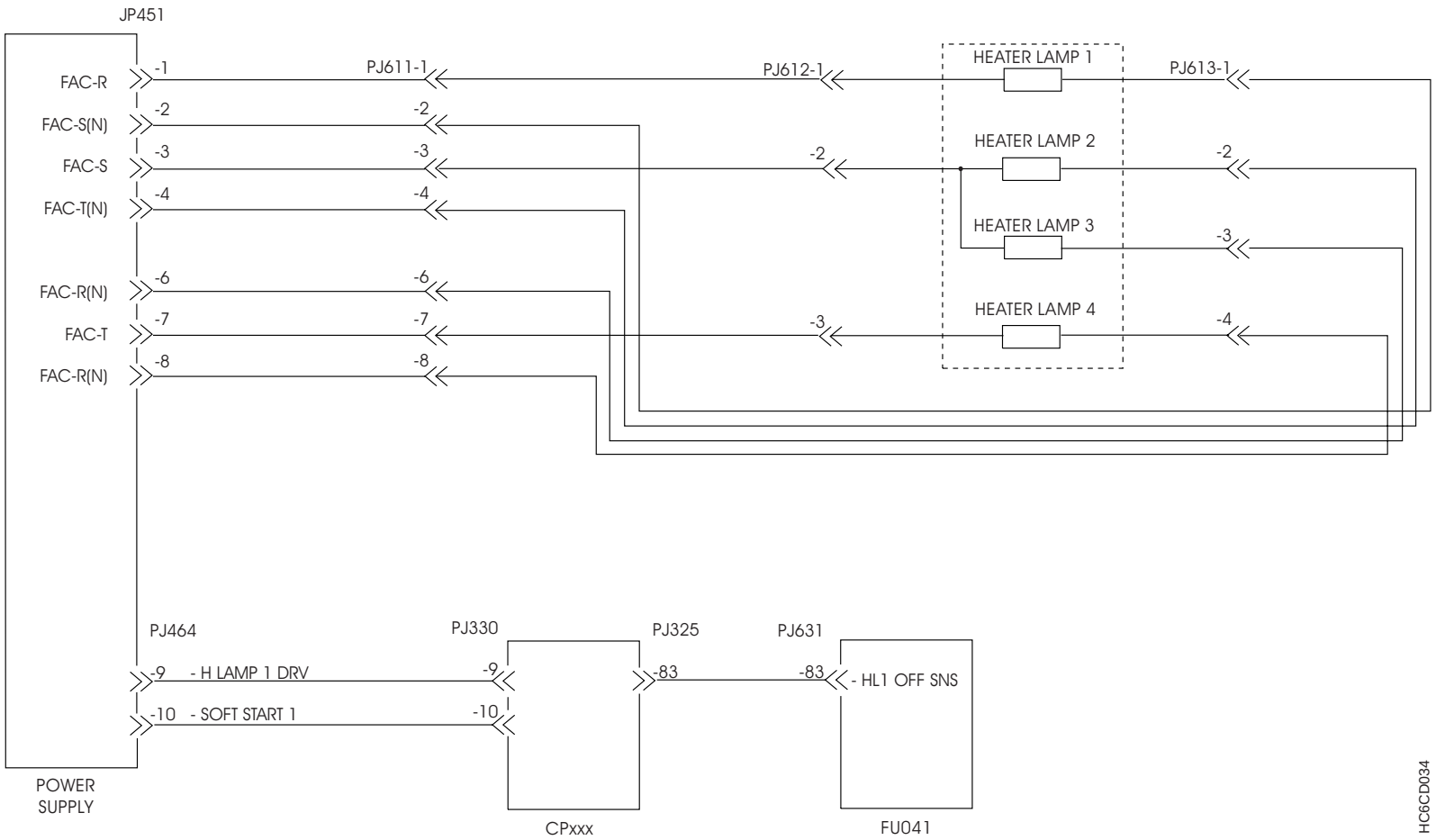
CD31 - Hot Roll Temperature Control Thermistors (S621 - S622 - S623)



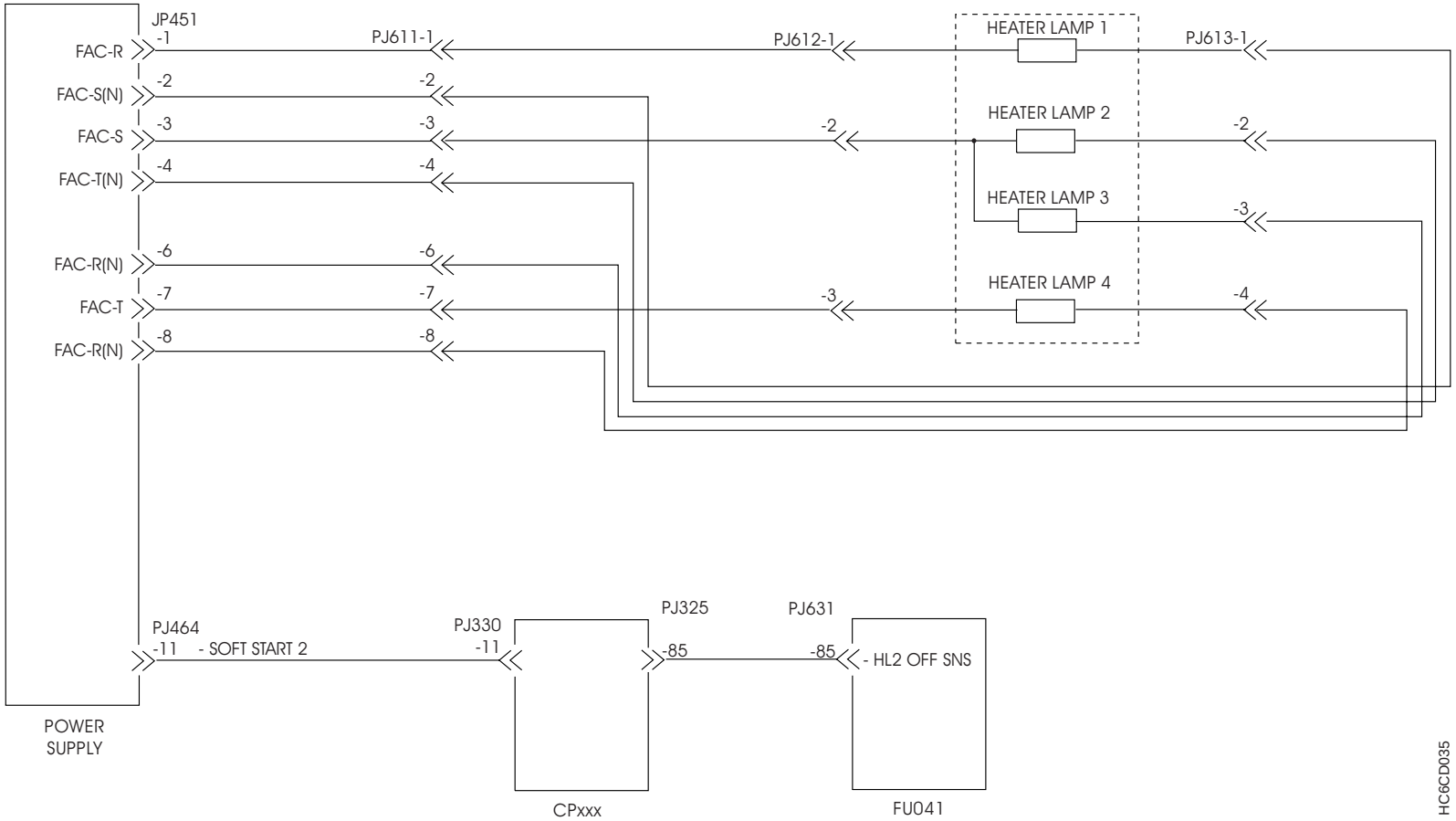
CD33 - Hot Roll Drive Motor (M703) and Overcurrent Detection



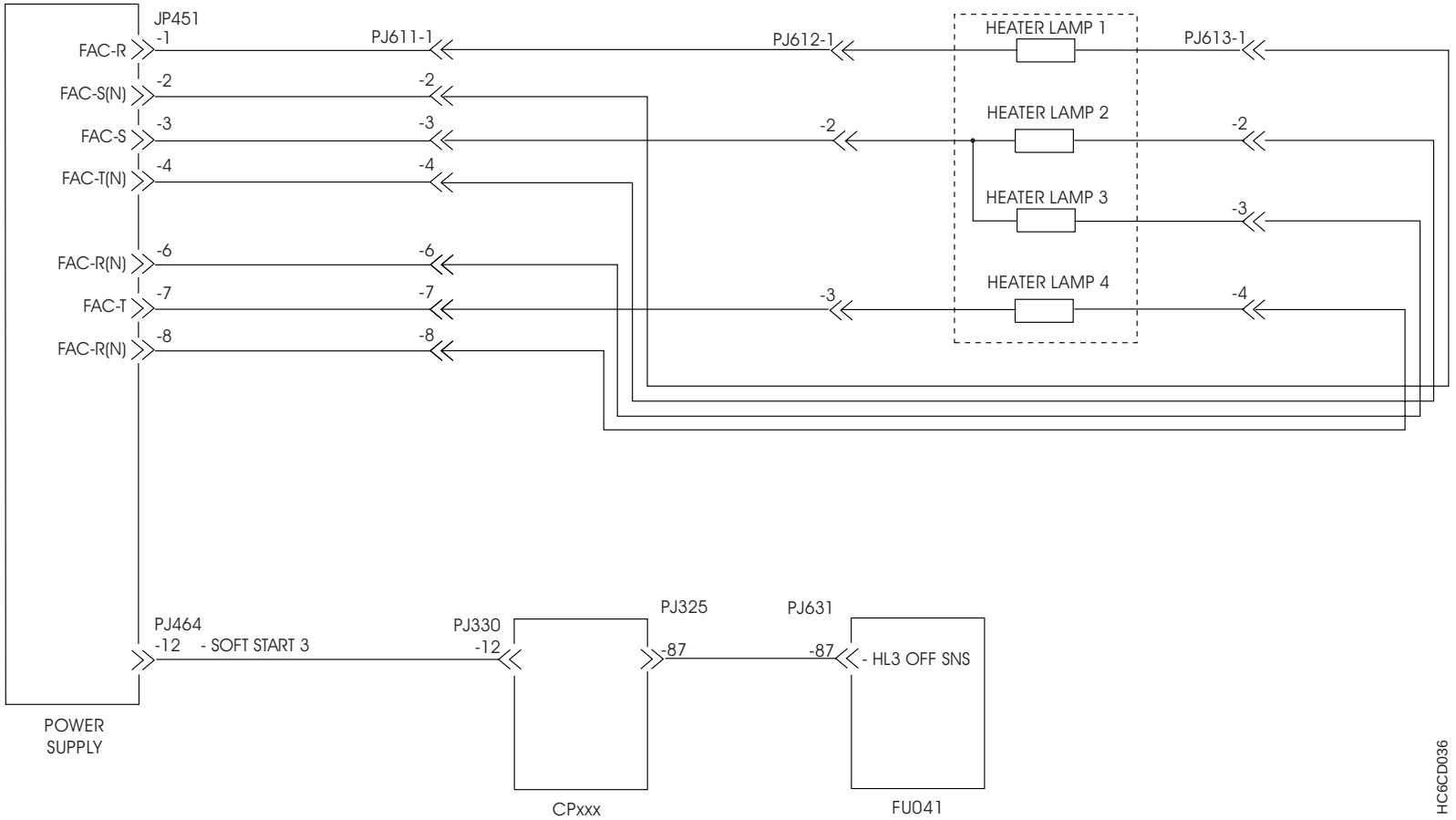
CD34 - Hot Roll Lamp 1



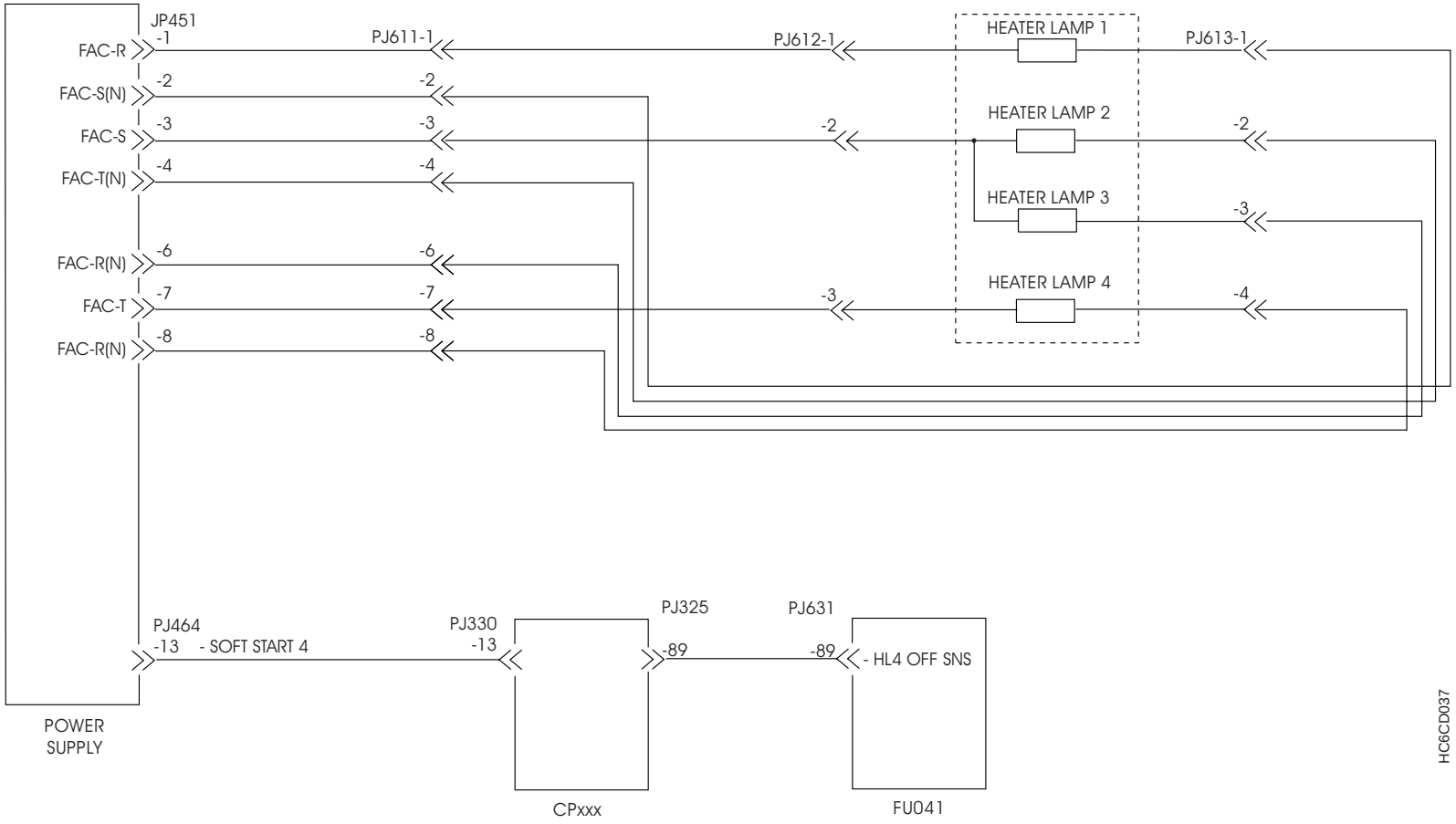
CD35 - Hot Roll Lamp 2



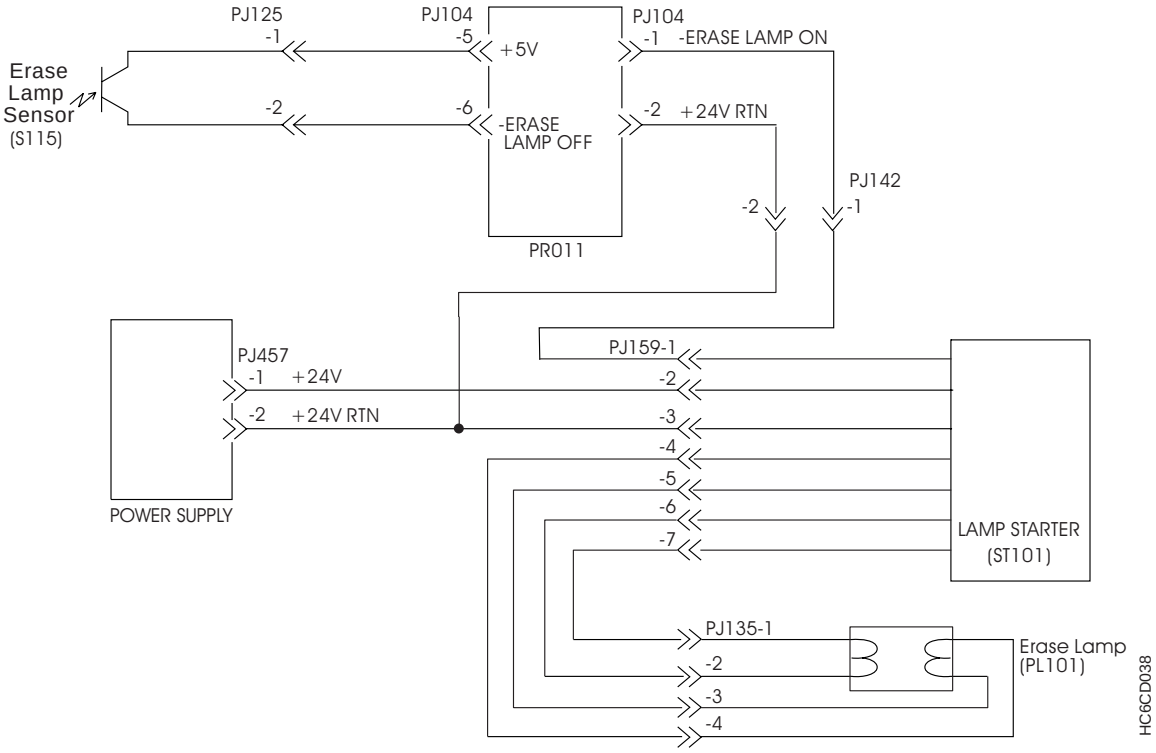
CD36 - Hot Roll Lamp 3



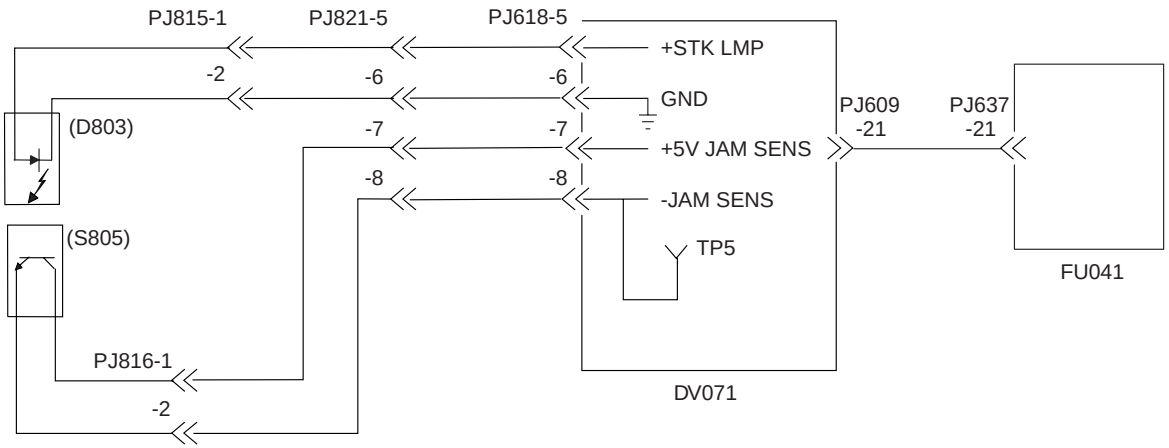
CD37 - Hot Roll Lamp 4



CD38 - Erase Lamp (PL101) - Starter (ST101) & Sensor (S115)



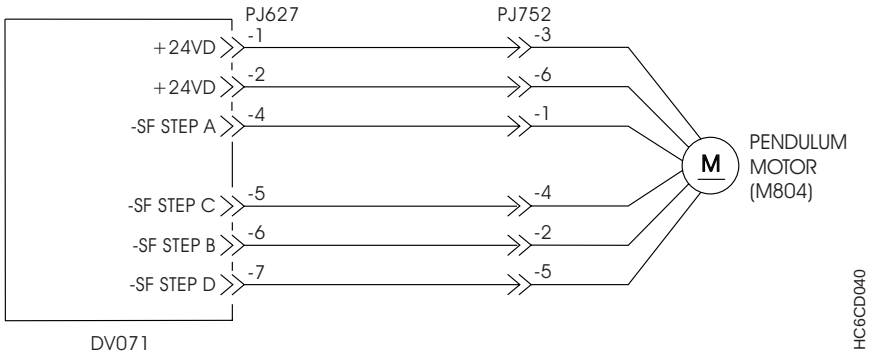
CD39 - Stacker Jam Sensor (S805/D803)



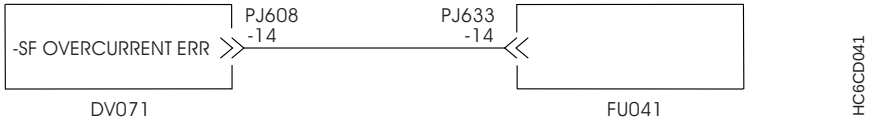
TP5 Output Voltage Levels	
With Paper:	≤ 1.0V
Without Paper:	≥ 4.7V

HC6CD039

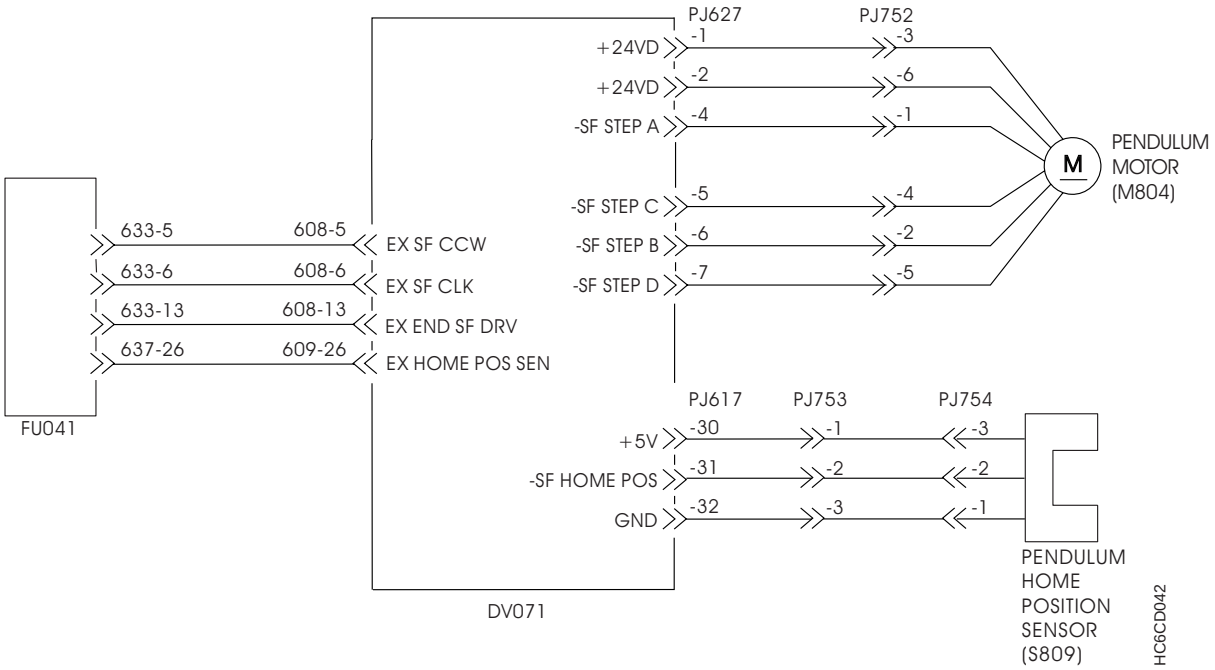
CD40 - Pendulum Motor (M804)



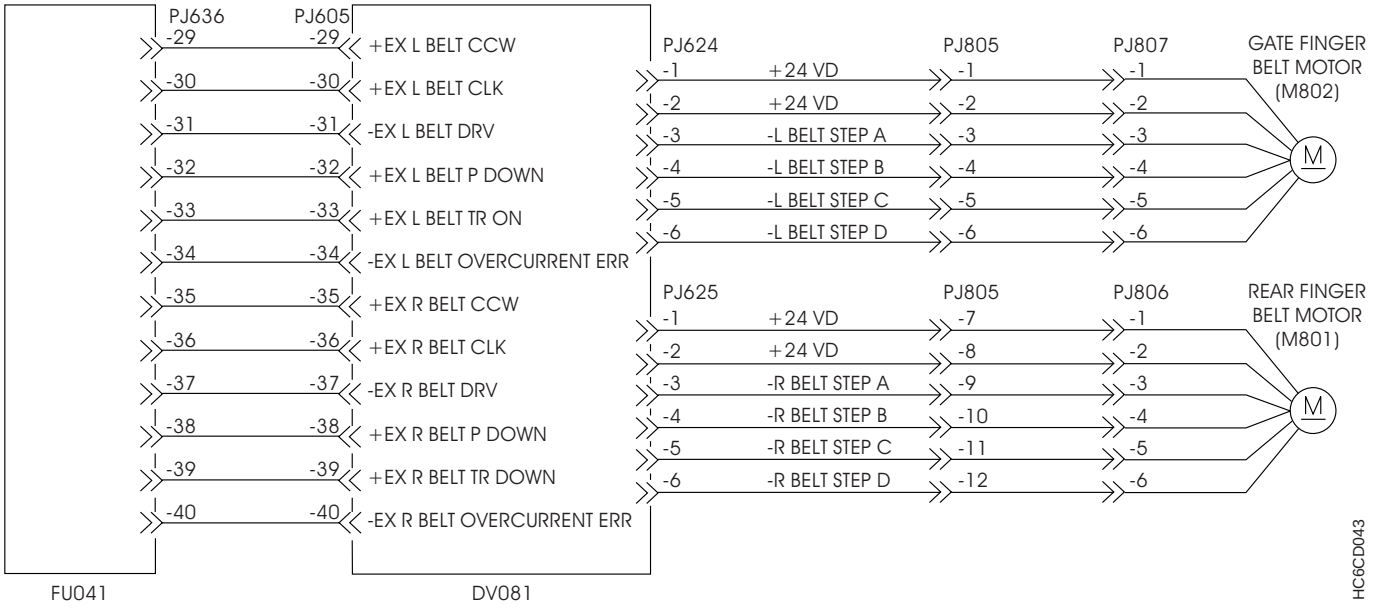
CD41 - Pendulum Motor (M804) Control



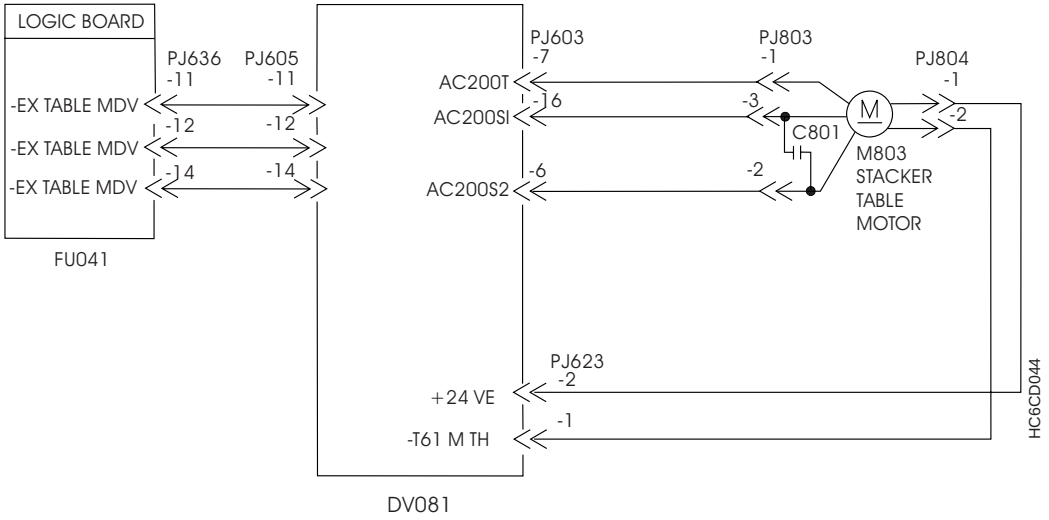
CD42 - Pendulum Motor (M804) - Positioning



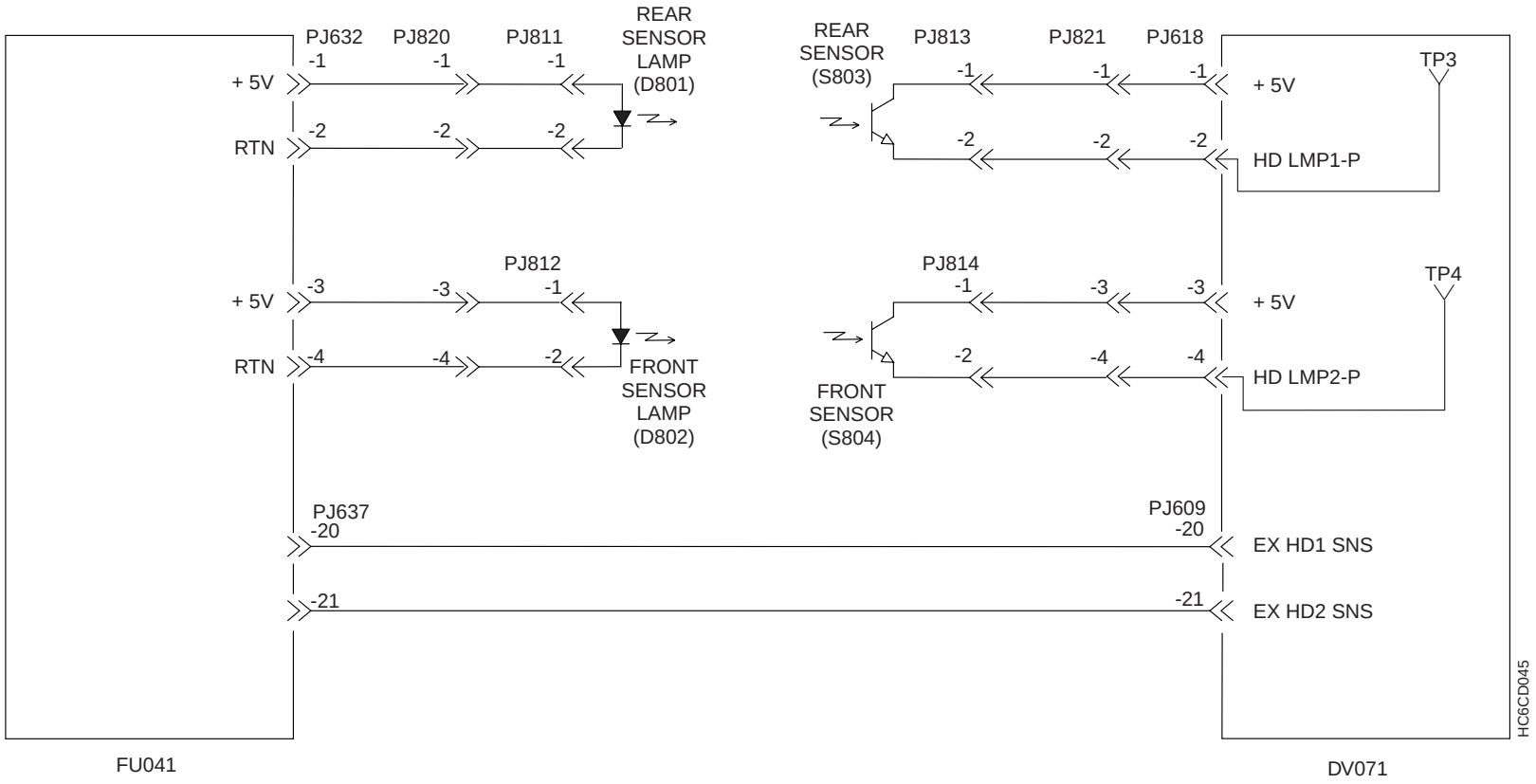
CD43 - Finger Belt Motors (M801 & M802)



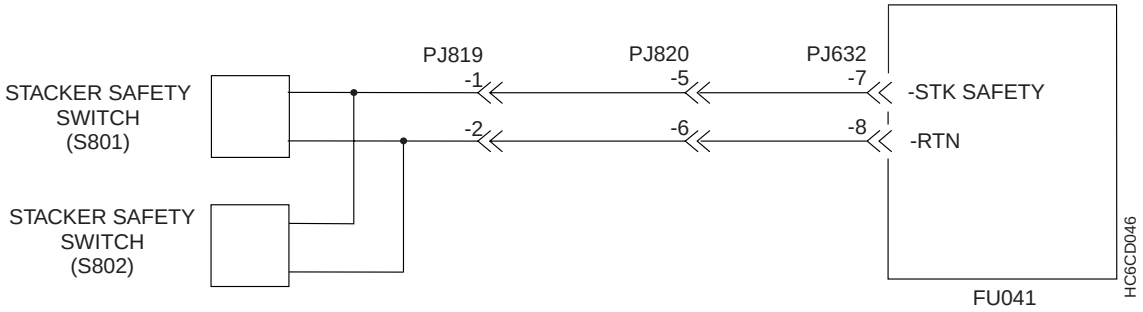
CD44 - Stacker Table Motor (M803) - Thermal Sense



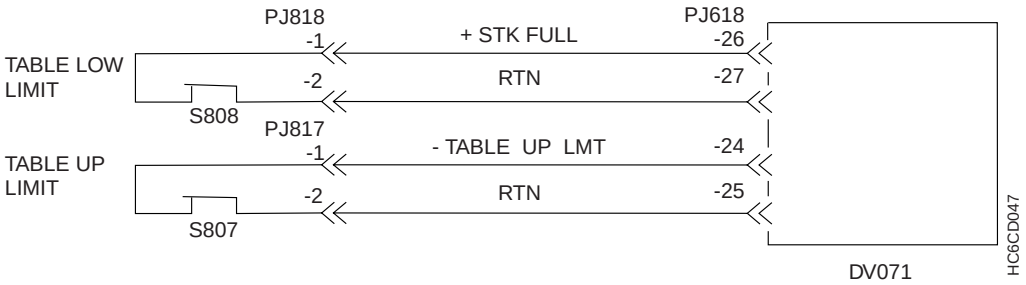
CD45 - Stacker Height Sensors (S803/D801 & S804/D802)



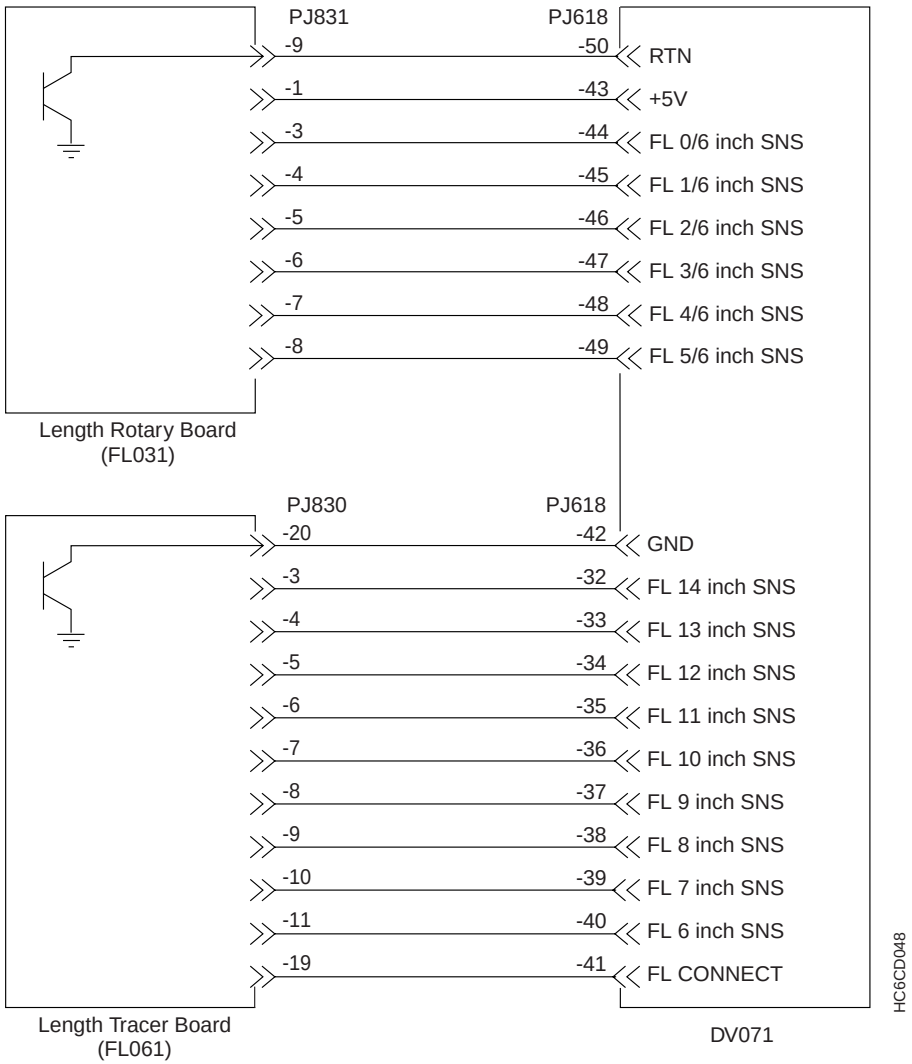
CD46 - Stacker Gate Safety Switches (S801 & S802)



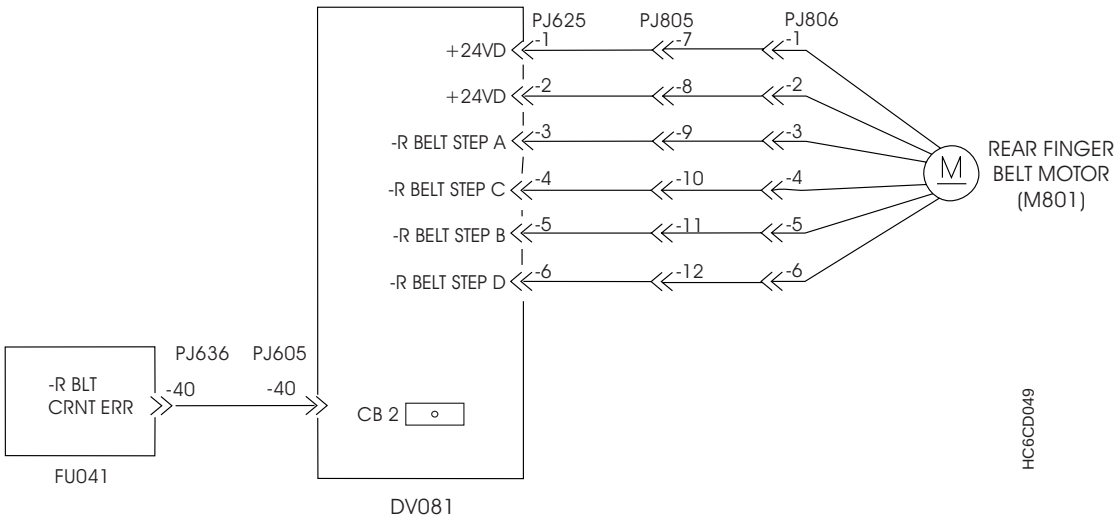
CD47 - Stacker Table Limit Switches (S807 & S808)



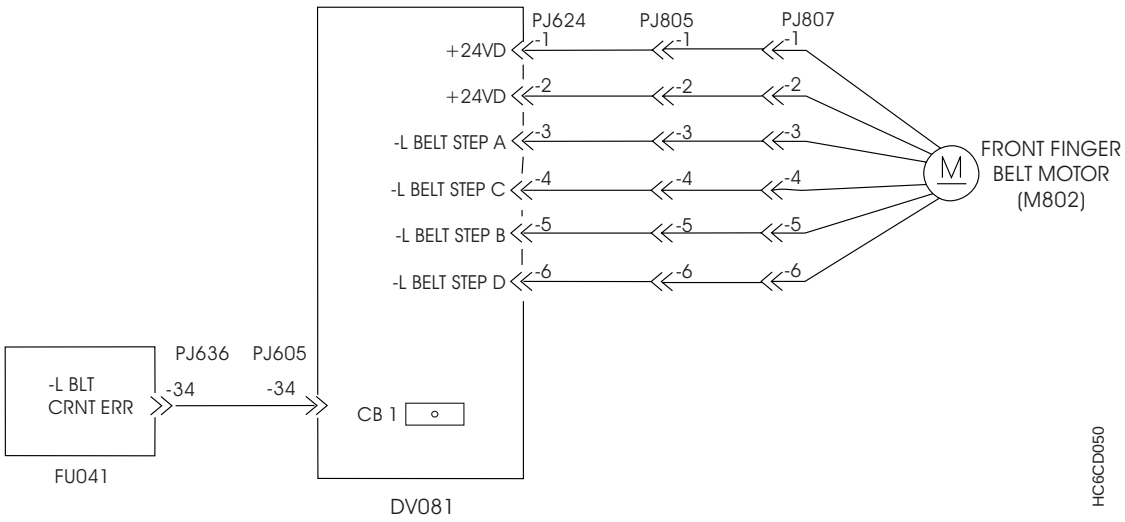
CD48 - Stacker Forms Length Hall Sensor



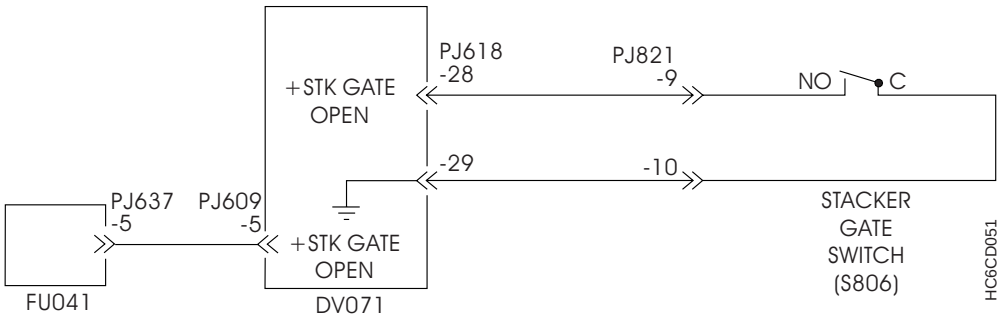
CD49 - Stacker Rear Finger Belt Motor (M801)



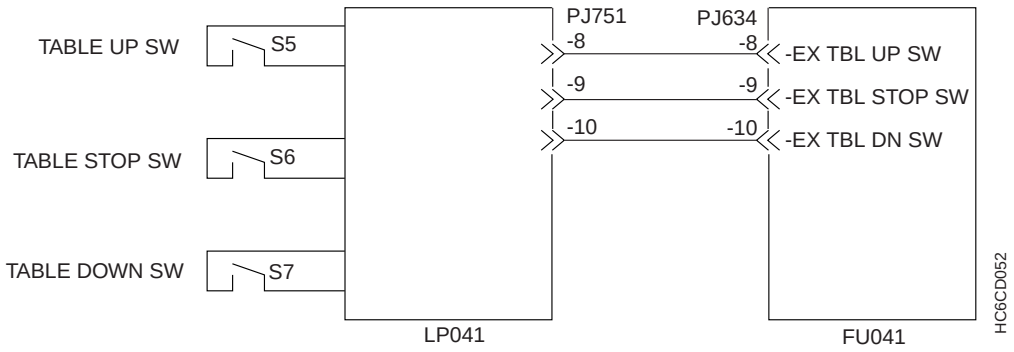
CD50 - Stacker Front Finger Belt Motor (M802)



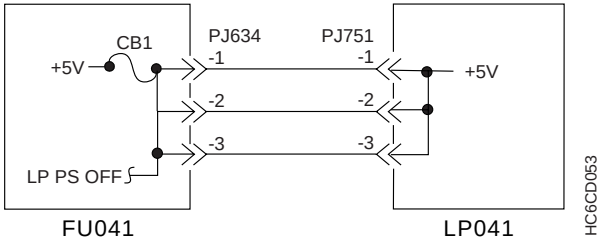
CD51 - Stacker Gate Open Switch (S806)



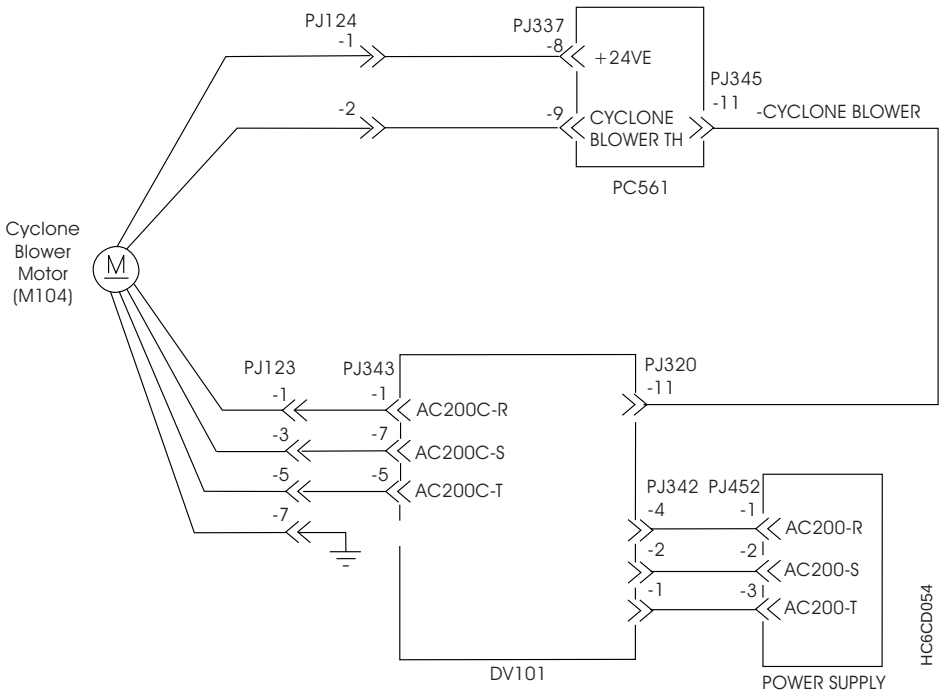
CD52 - Stacker Control Panel (LP041)



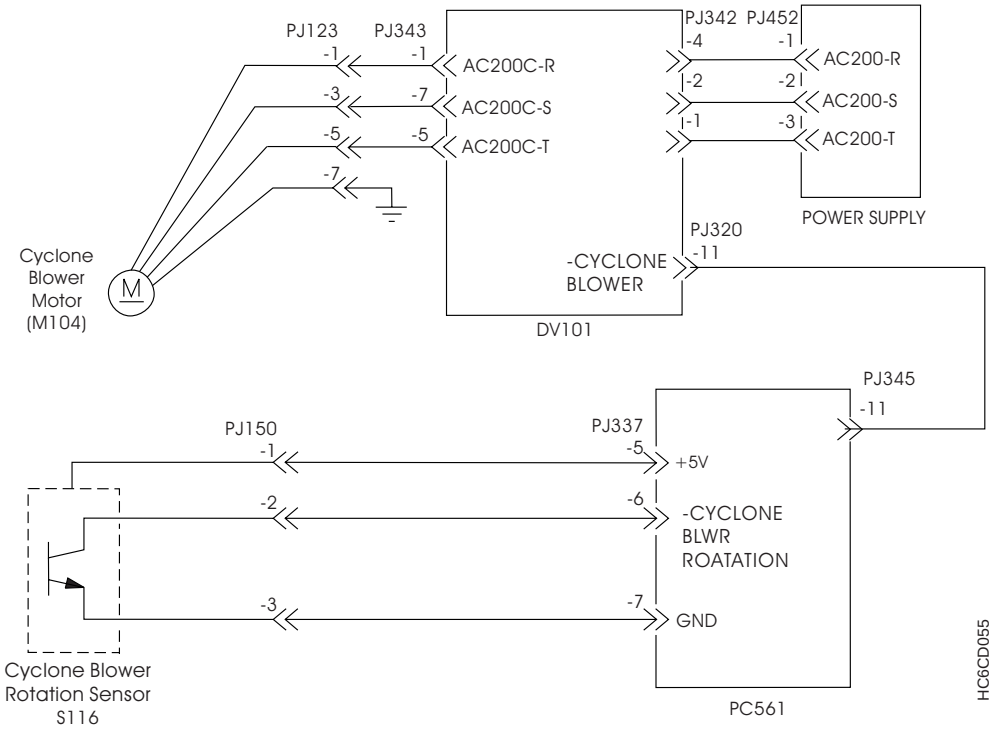
CD53 - Forms Length Circuit Breaker



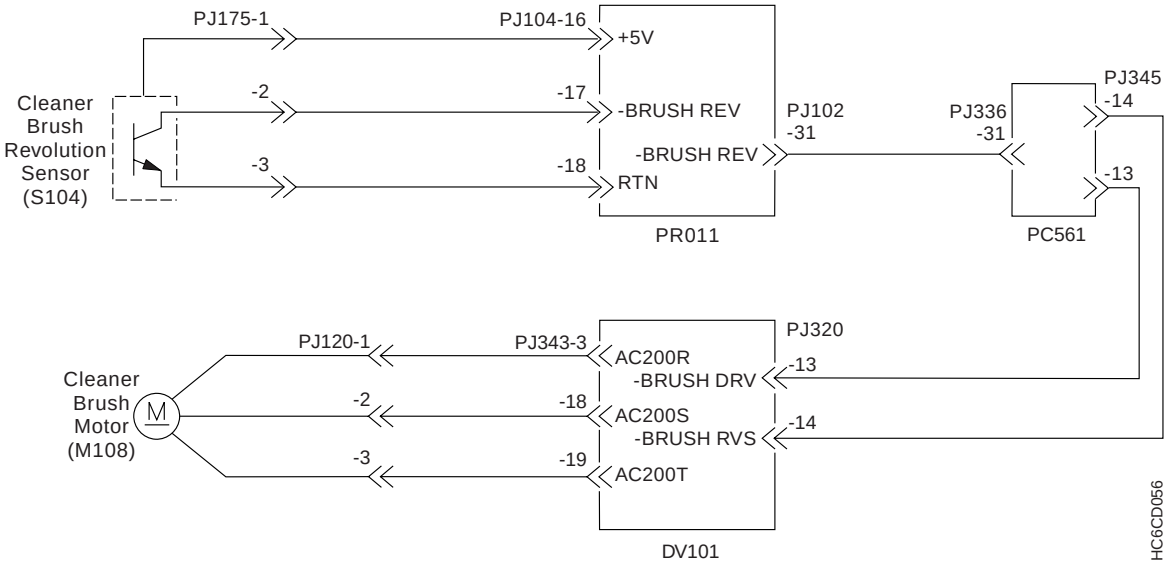
CD54 - Cyclone Blower Motor (M104) - Thermal Sense



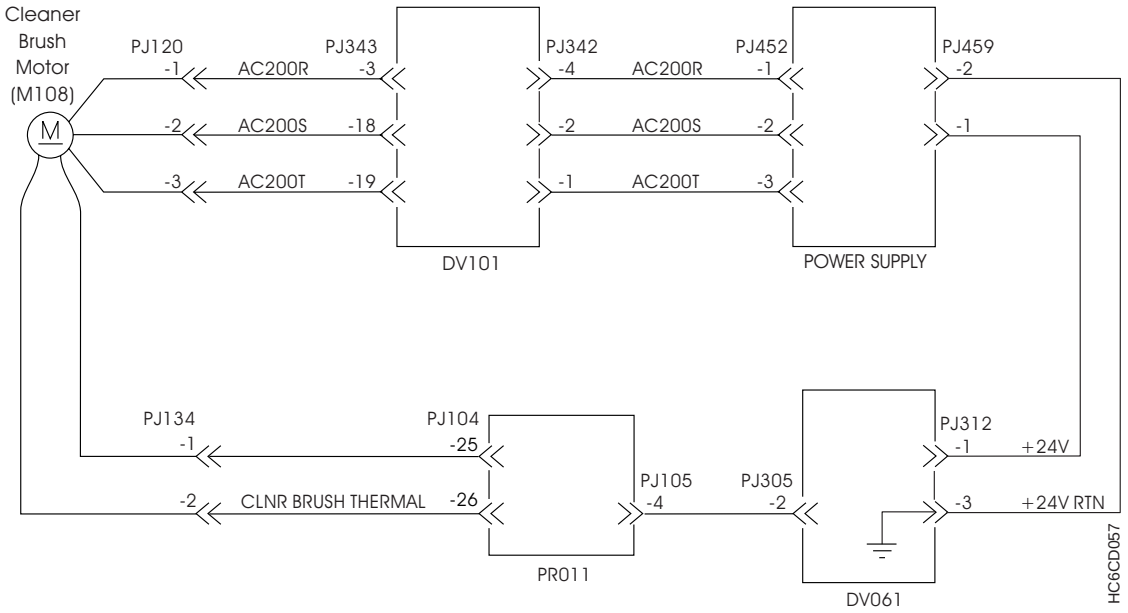
CD55 - Cyclone Blower Motor (M104) & Rotation Sensor (S116)



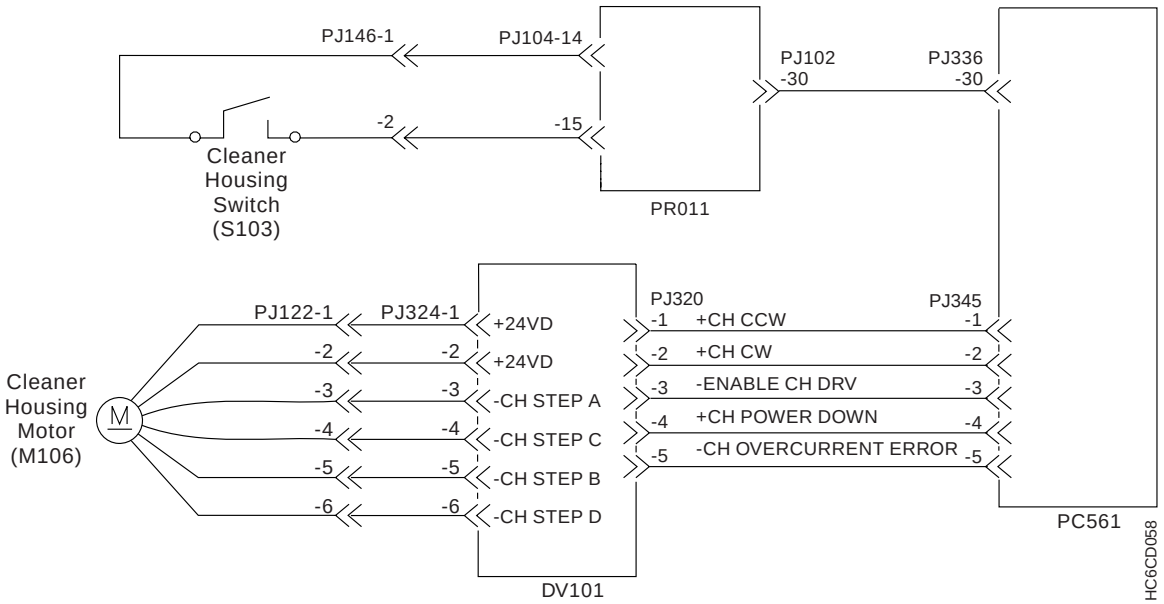
CD56 - Cleaner Brush Motor (M108) & Rotation Sensor (S104)



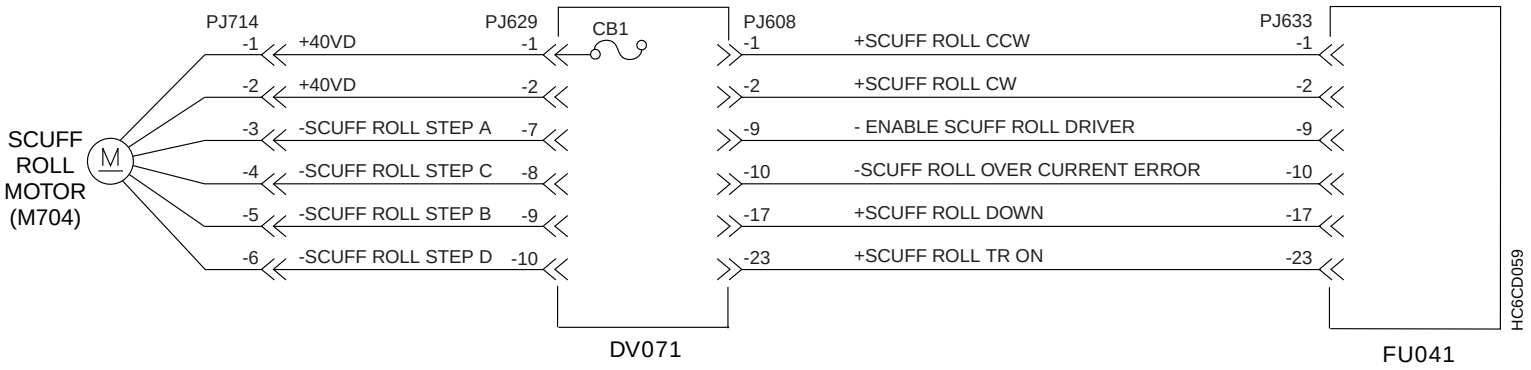
CD57 - Cleaner Brush Motor (M108) - Thermal Sense



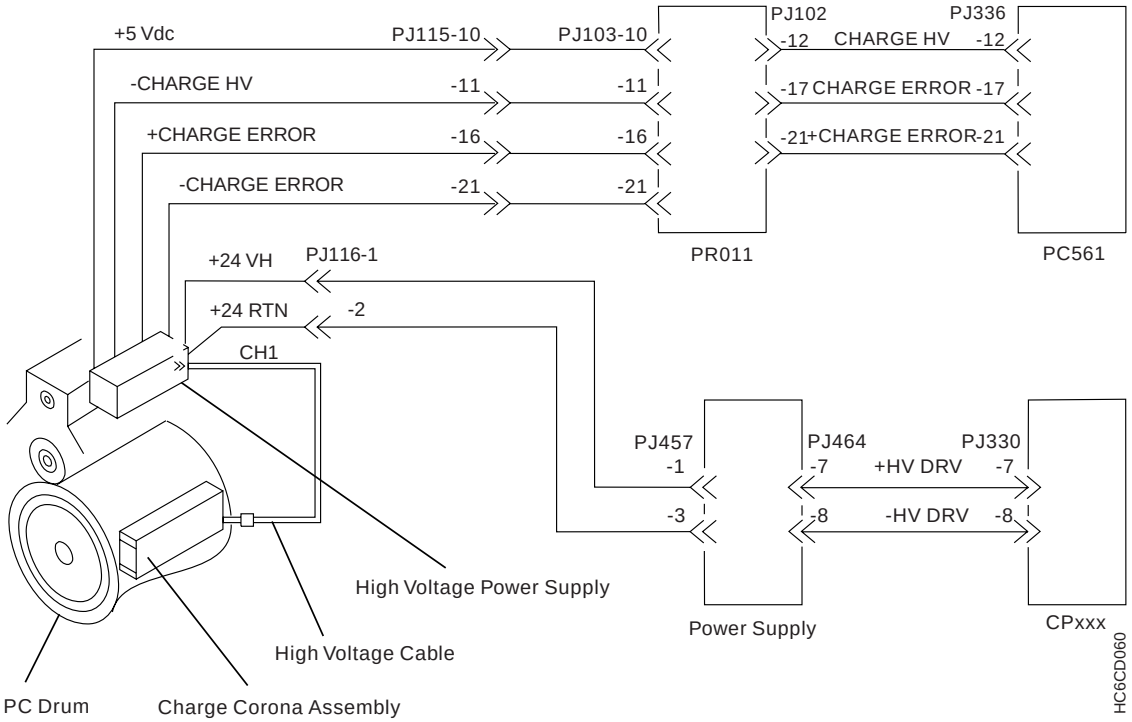
CD58 - Cleaner Housing Motor (M106) & Position Switch (S103)



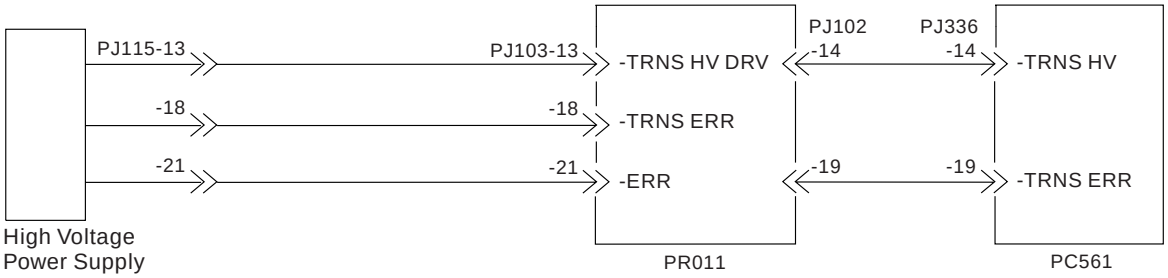
CD59 - Scuff Roll Motor Drive (M704)

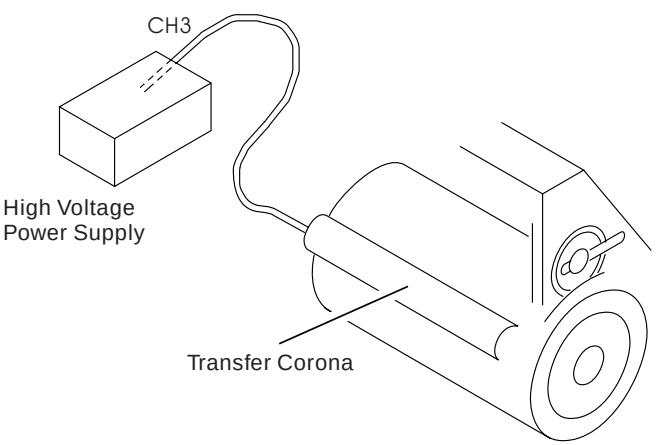


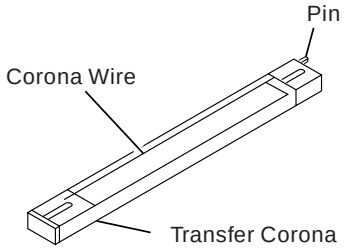
CD60 - Charge Corona



CD61 - Transfer Corona

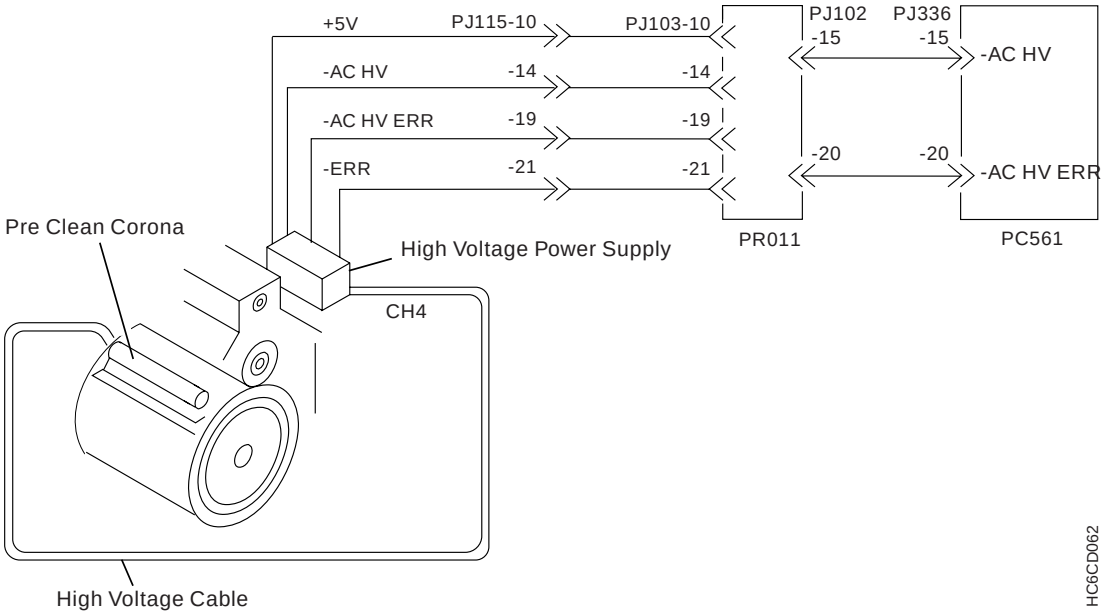




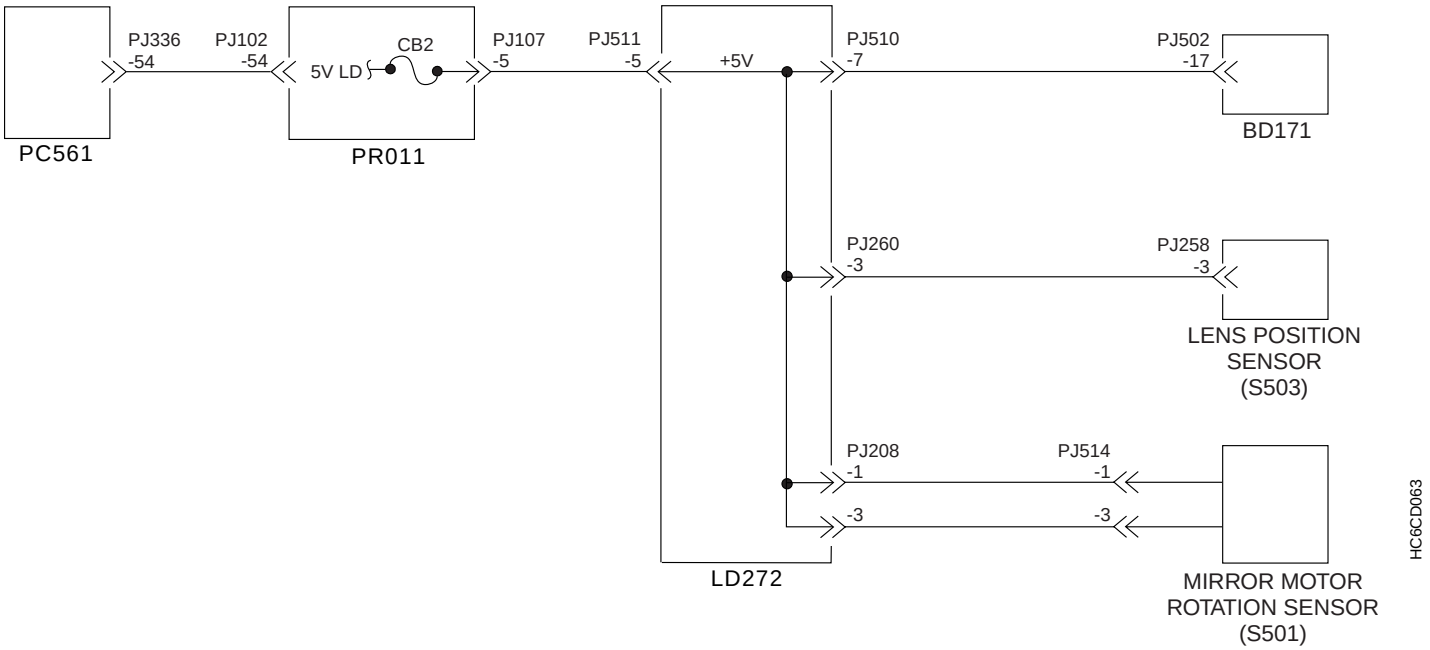


HC6CD061

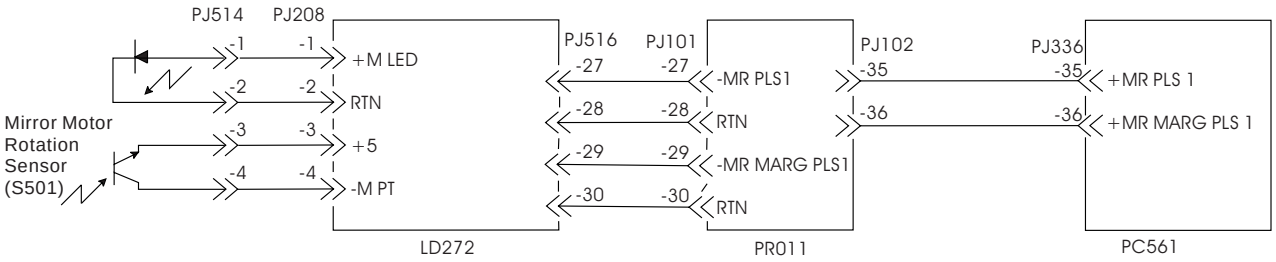
CD62 - Preclean Corona

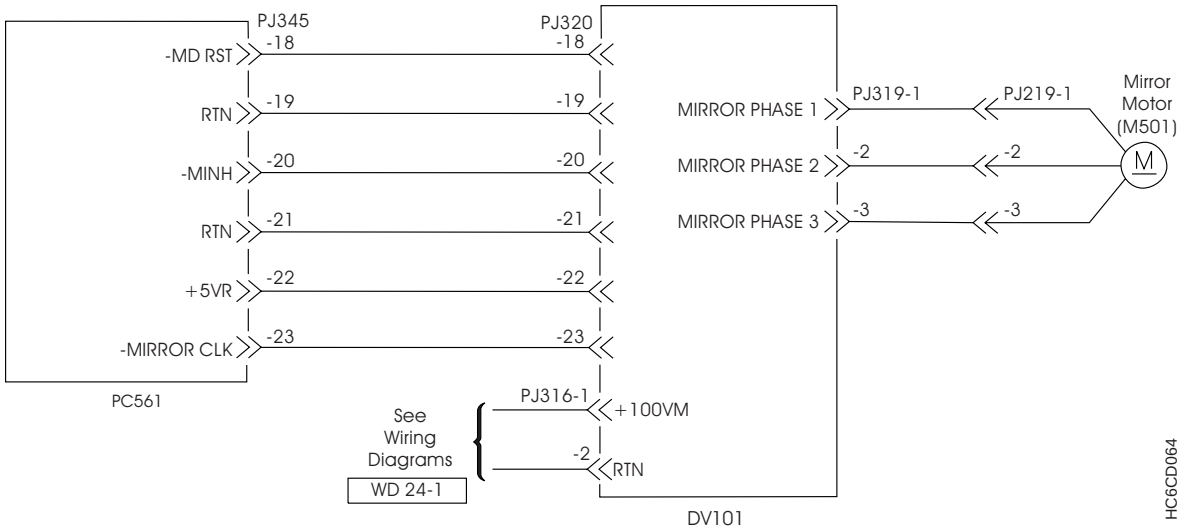


CD63 - Laser Driver Circuit Breaker

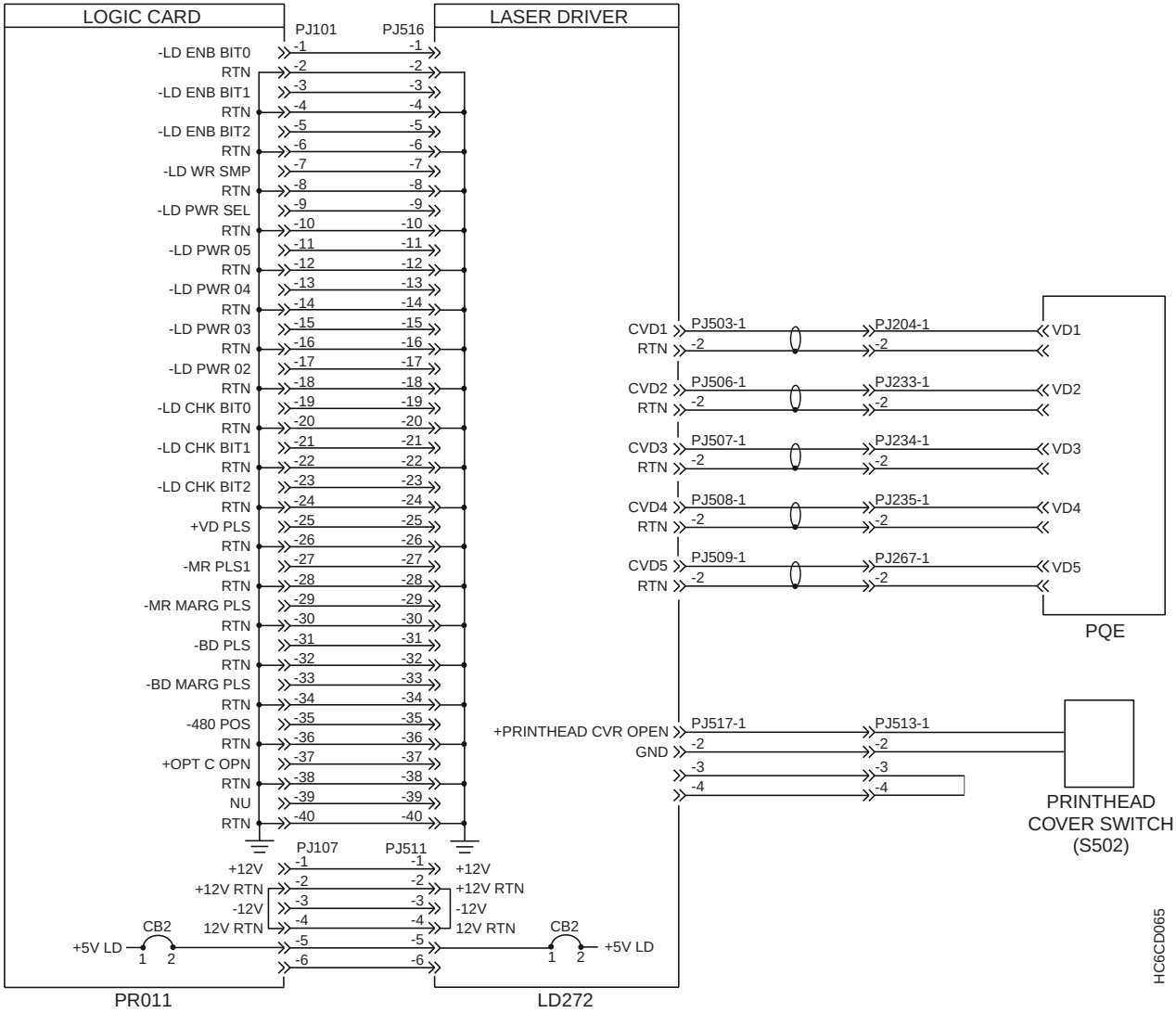


CD64 - Mirror Motor (M501)

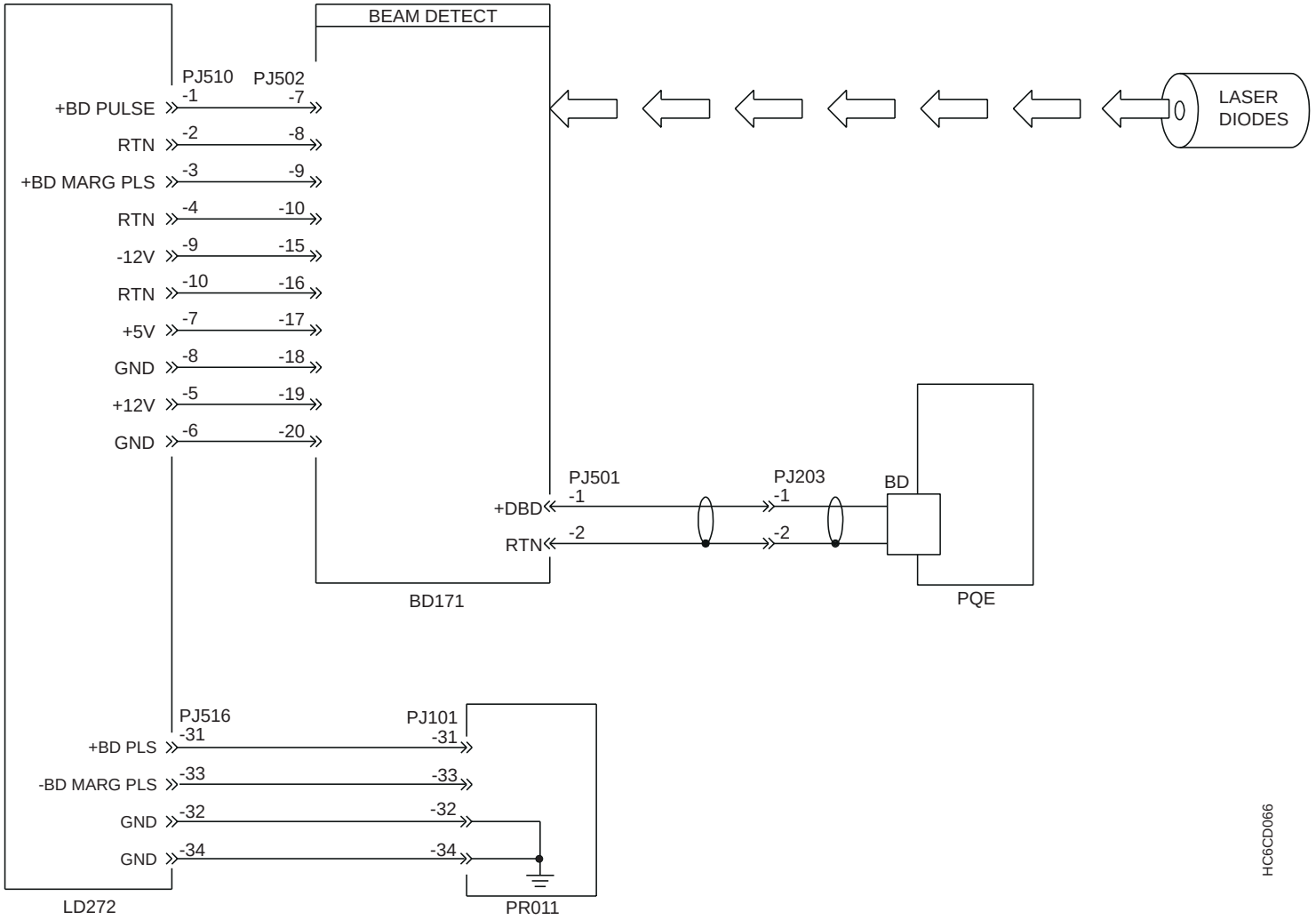




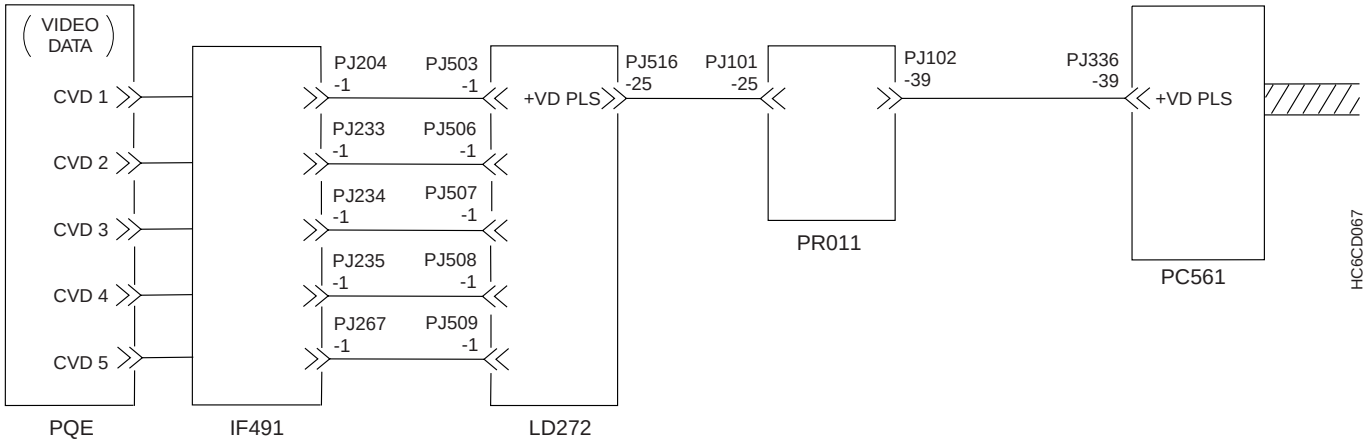
CD65 - Printhead



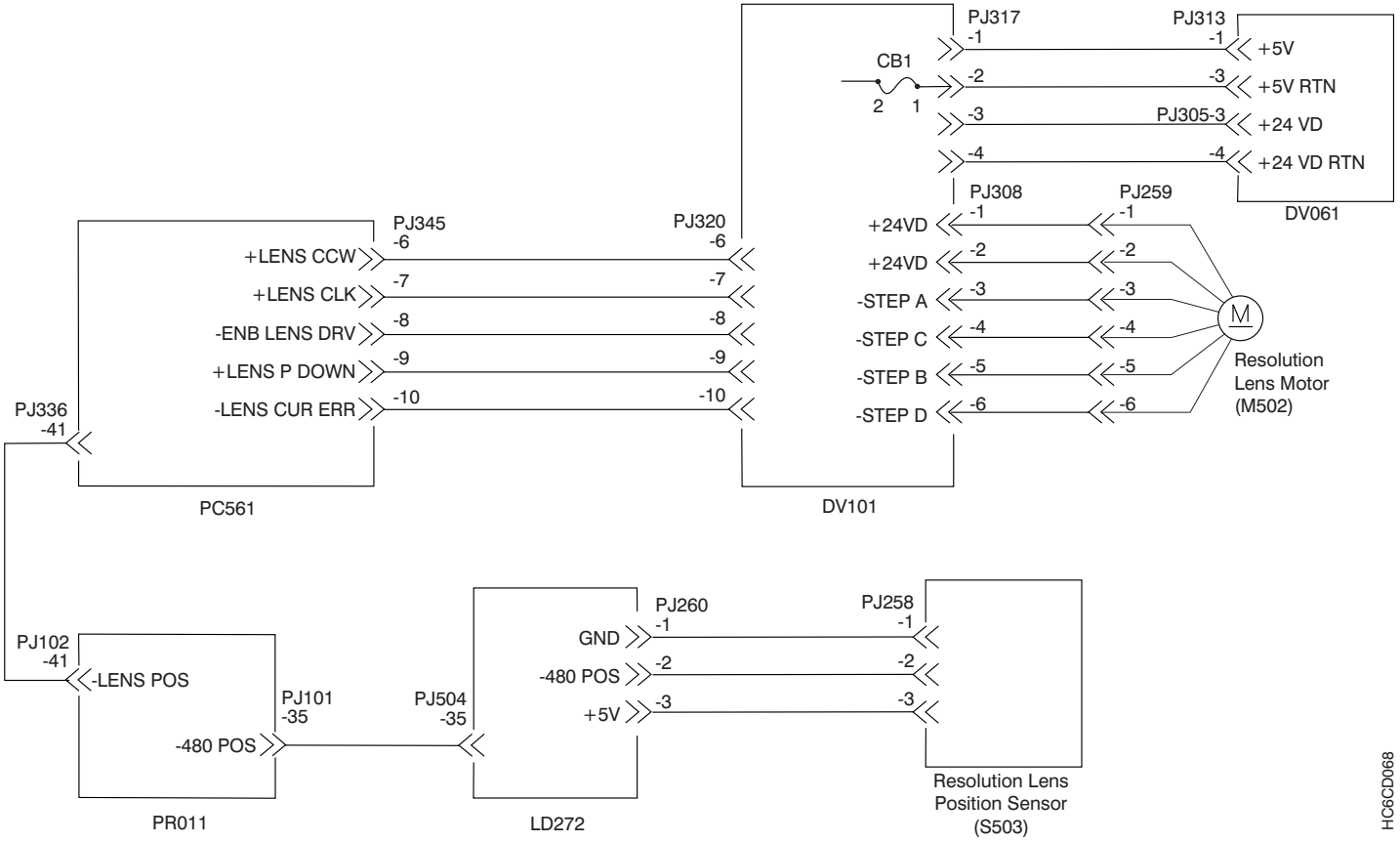
CD66 - Beam Detect



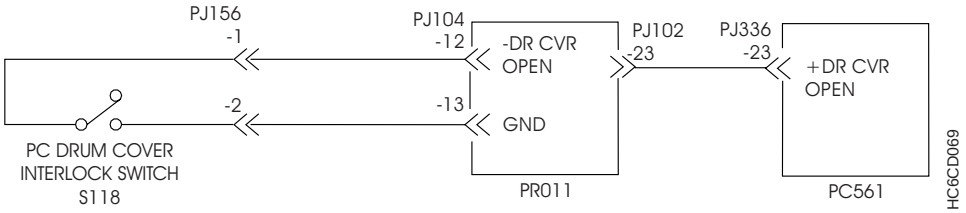
CD67 - Video Data



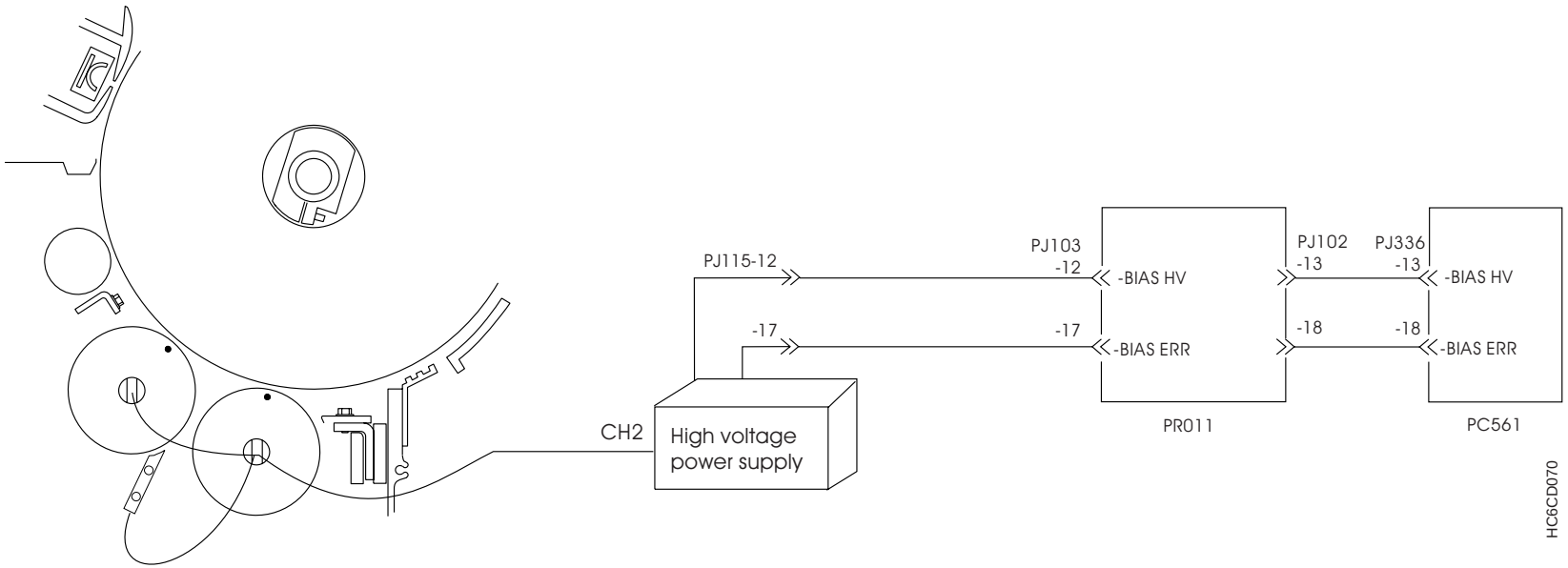
CD68 - Resolution Switching Lens Motor Postion Sensor (S502)



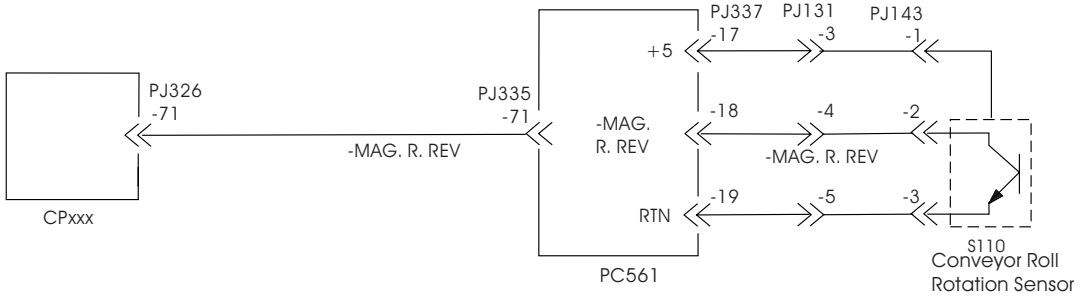
CD69 - PC Drum Cover Interlock Switch (S118)

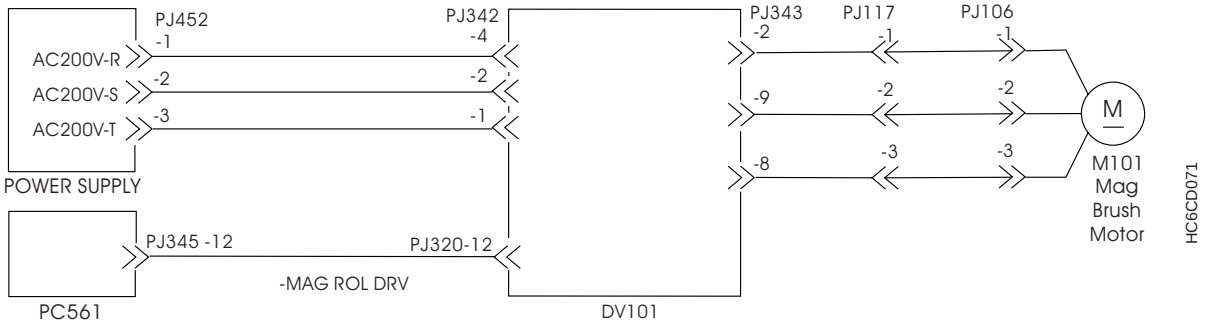


CD70 - Mag Brush Bias

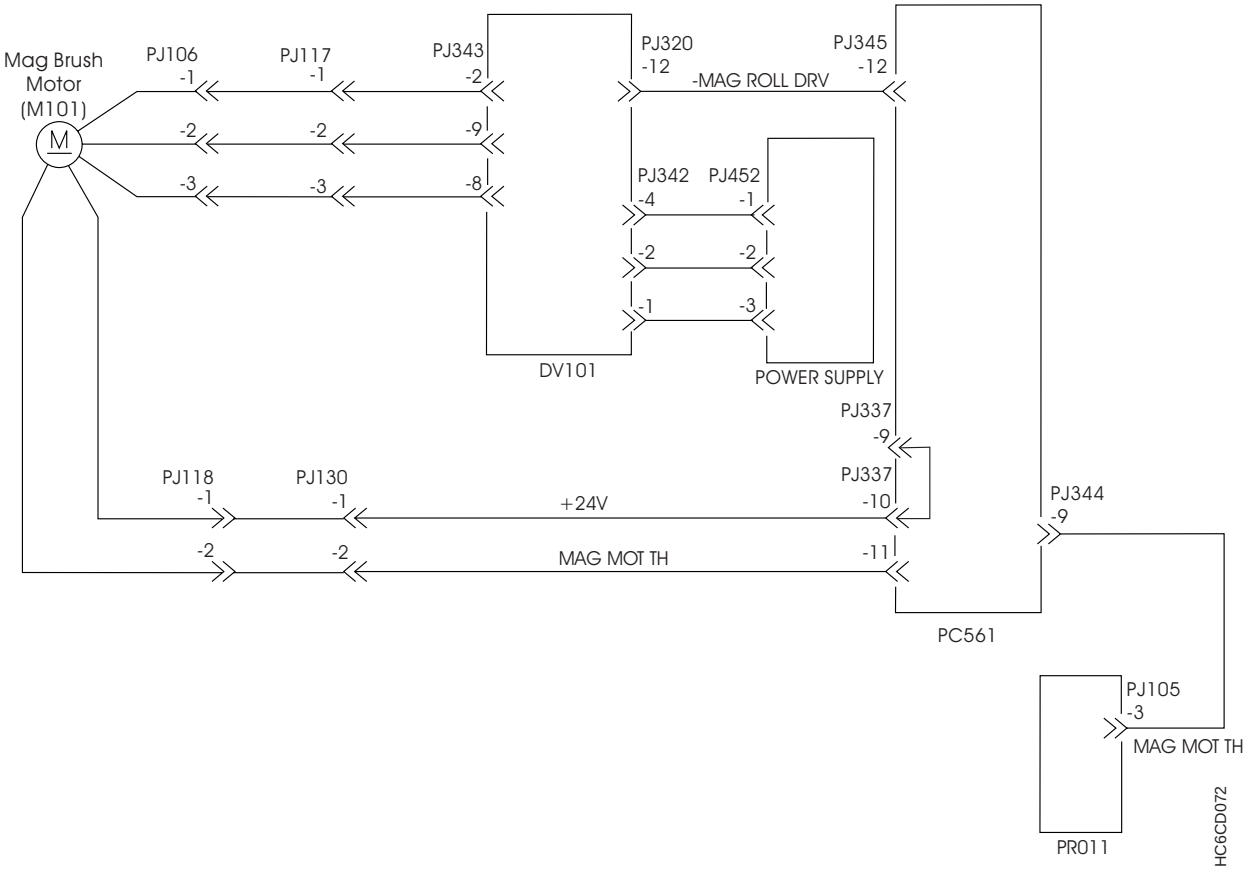


CD71 - Mag Brush Motor (M101) & Conveyor Roll Rotation Sensor (S110)

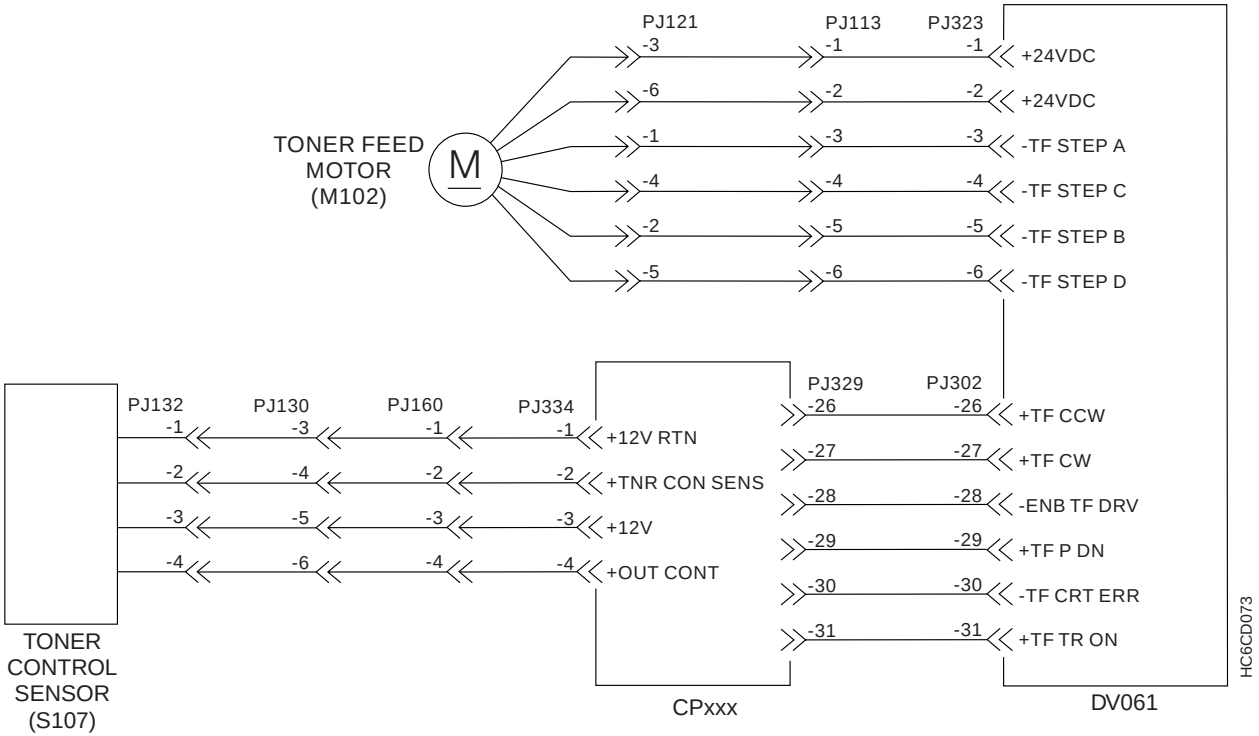




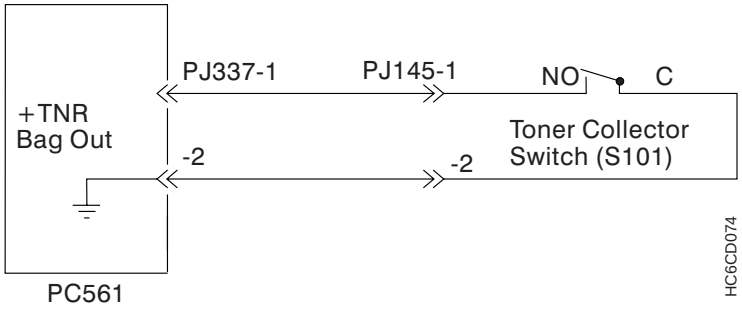
CD72 - Mag Brush Motor (M101) - Thermal Sense



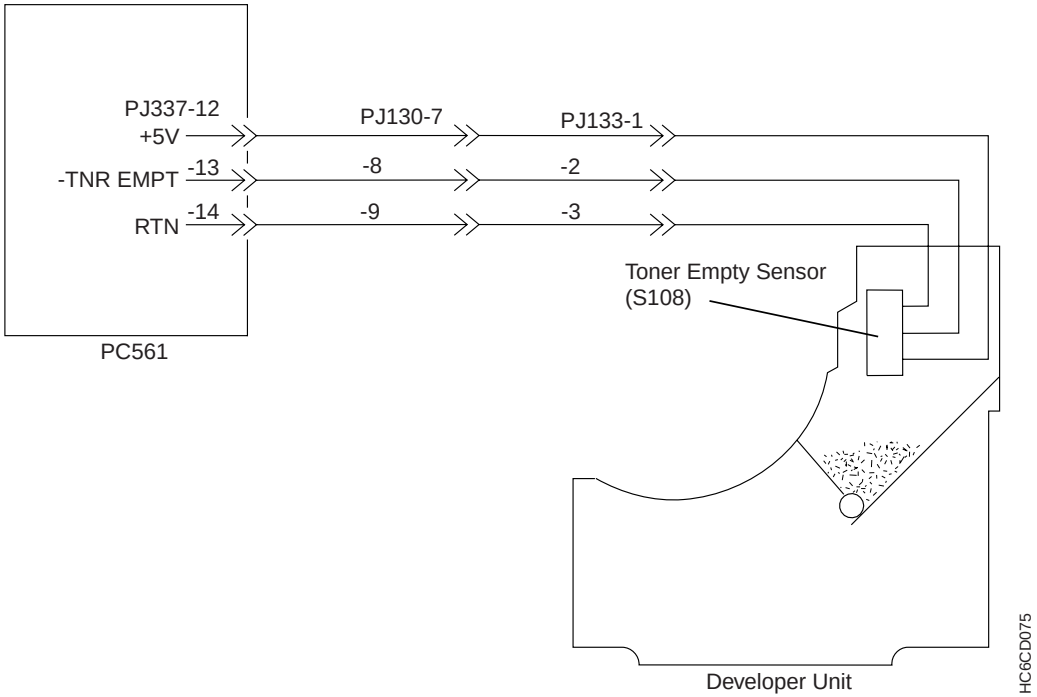
CD73 - Toner Control Sensor (S107) & Toner Feed Motor (M102)



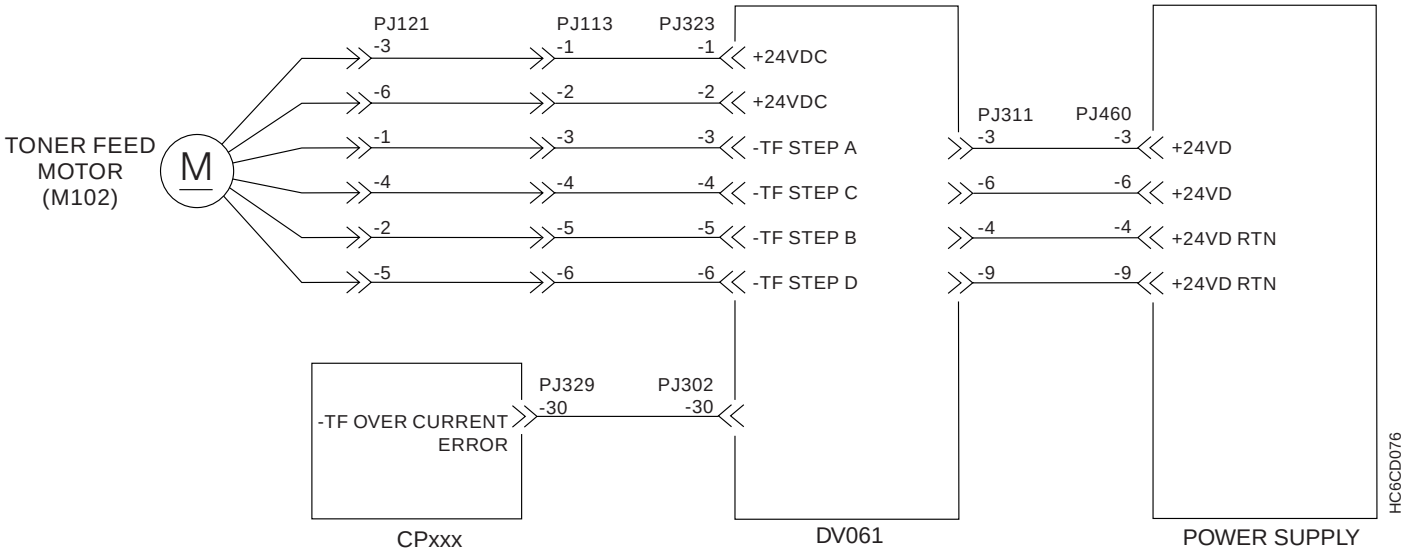
CD74 - Toner Collector Switch (S101)



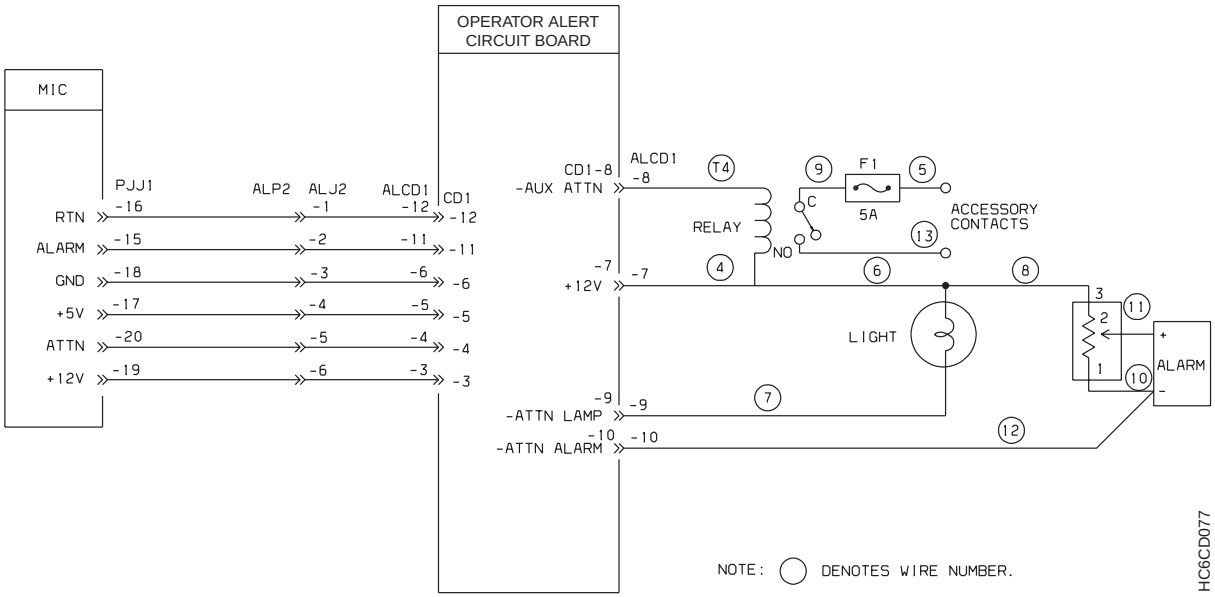
CD75 - Toner Empty Sensor (S108)



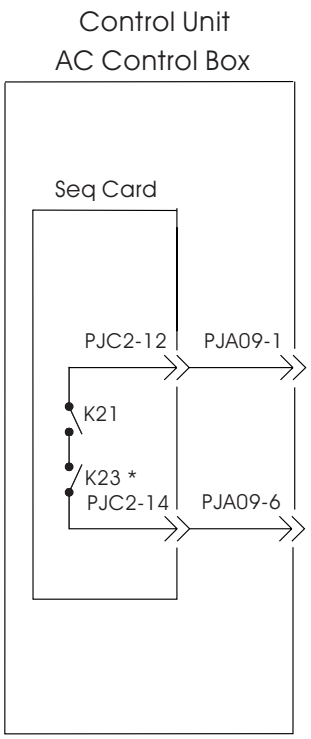
CD76 - Toner Feed Motor (M102)

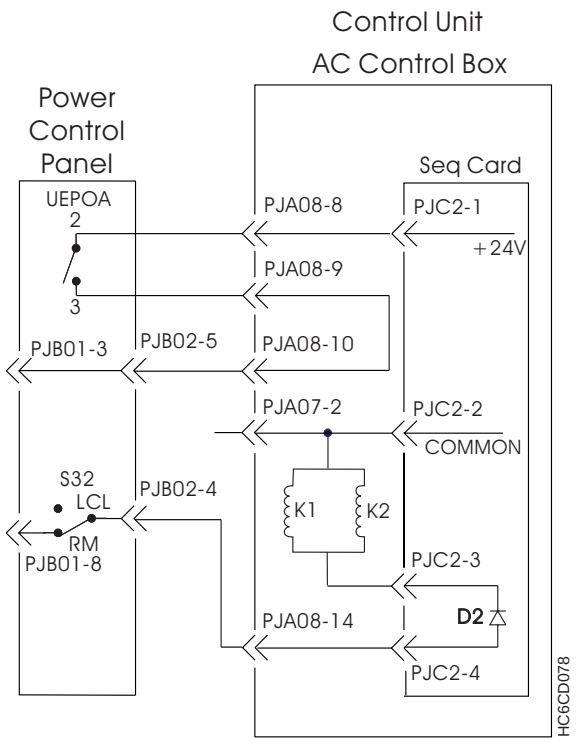


CD77 - Operator Alert

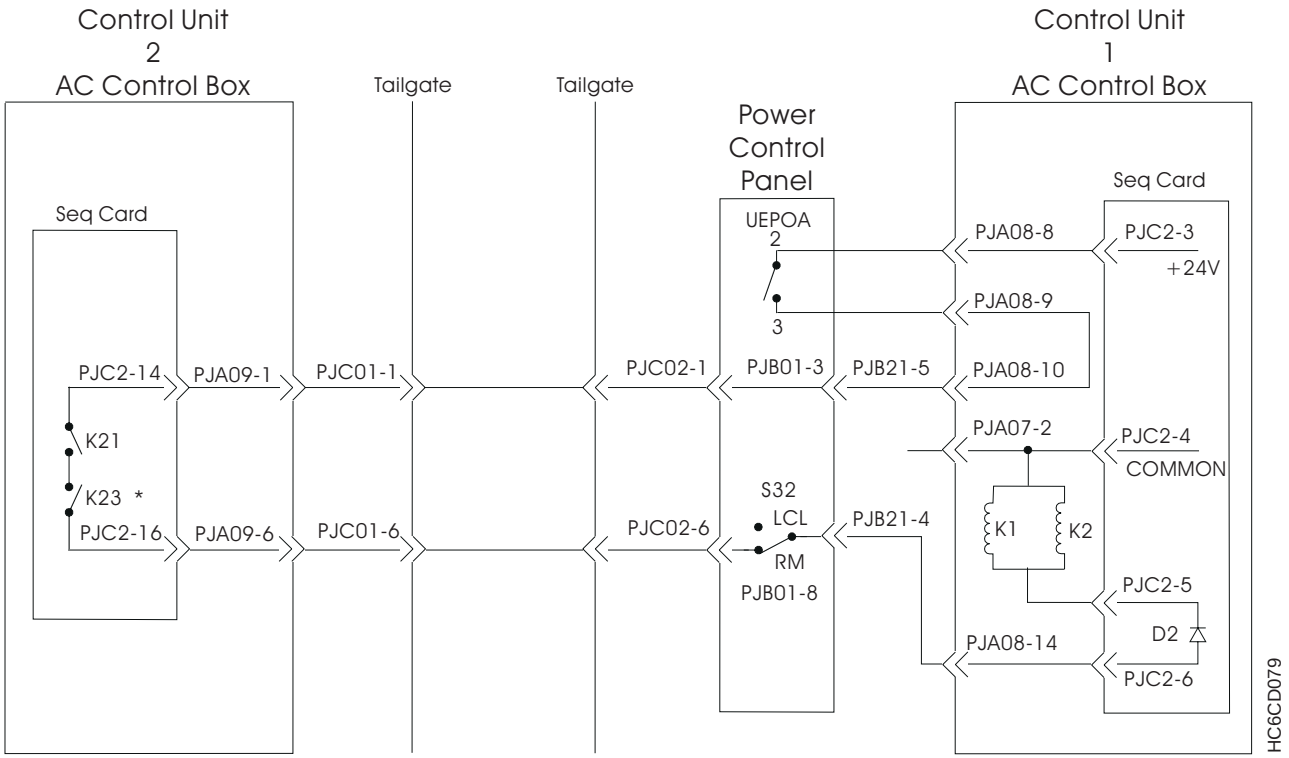


CD78 - Printer Remote Power Circuit

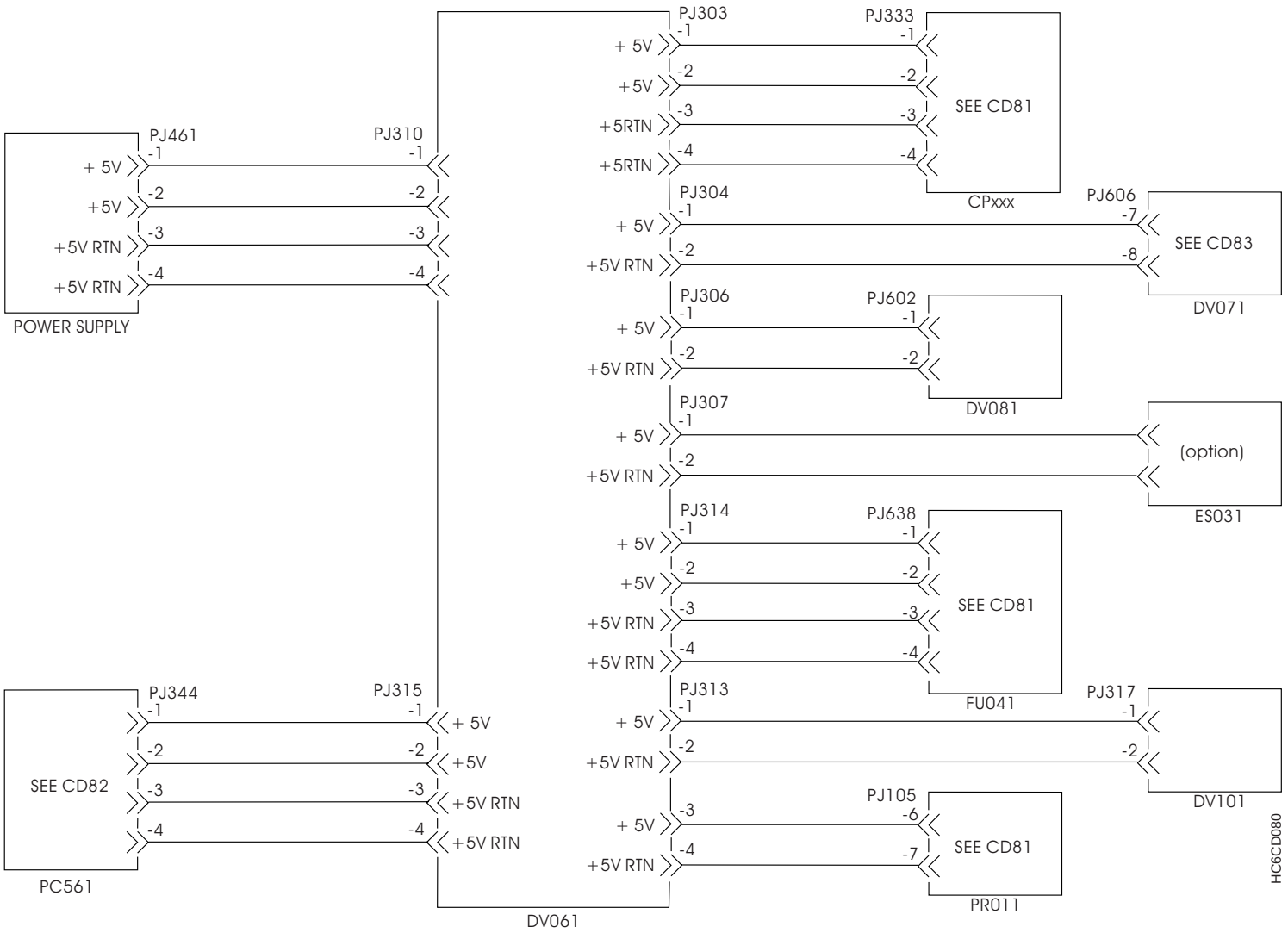




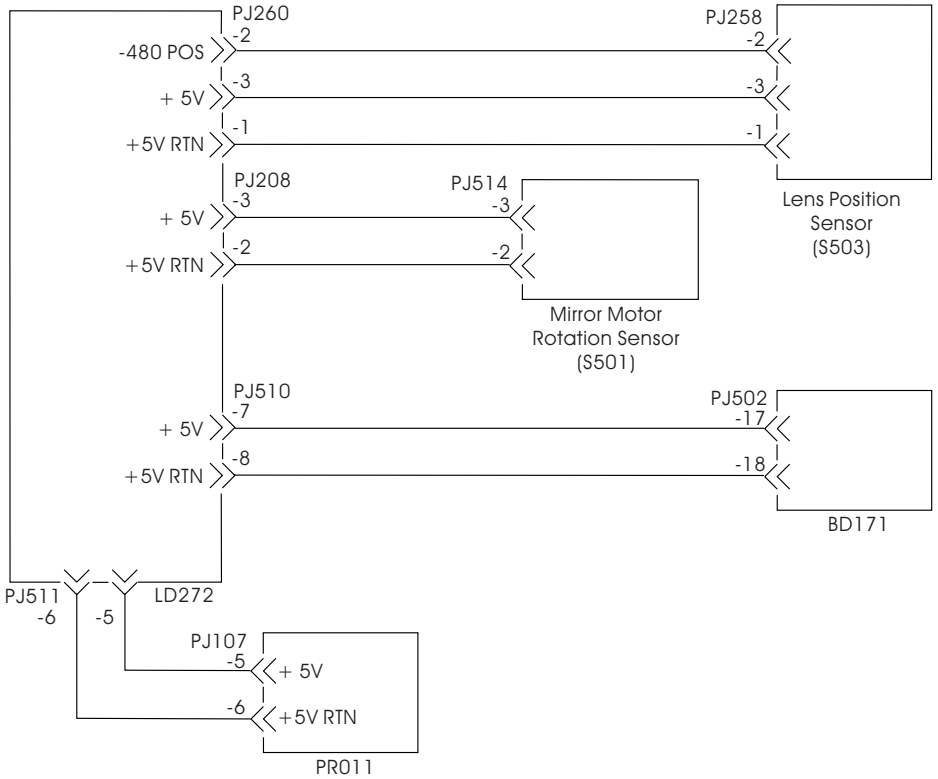
CD79 - Printer 1 Remote Power Circuit

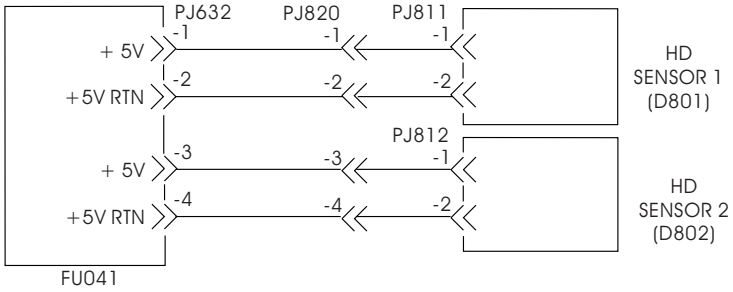


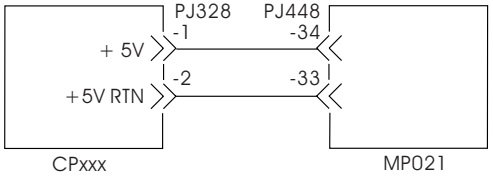
CD80 - (+5 V) Voltage Distribution



CD81 - (+5 V) Voltage Distribution

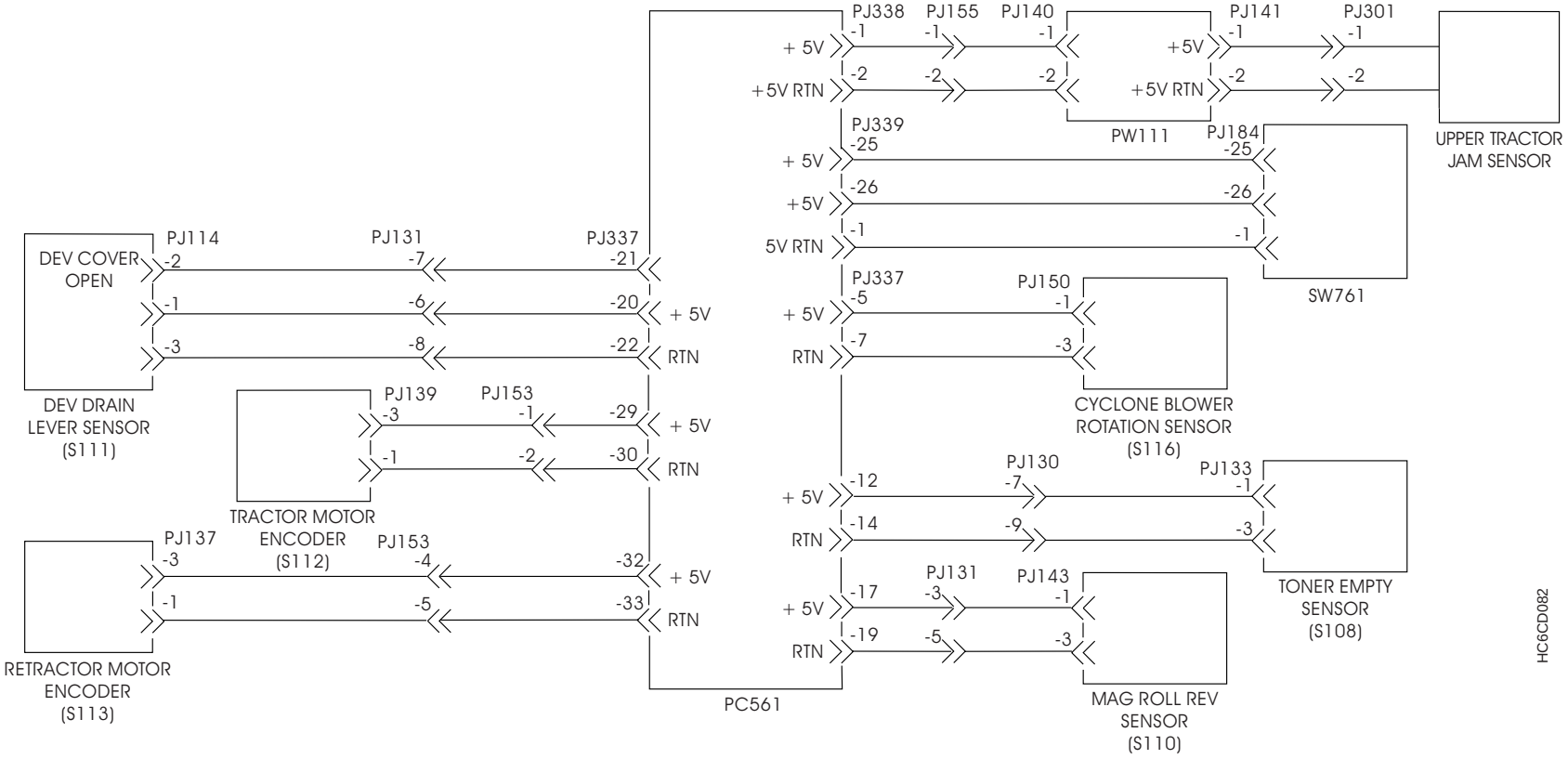




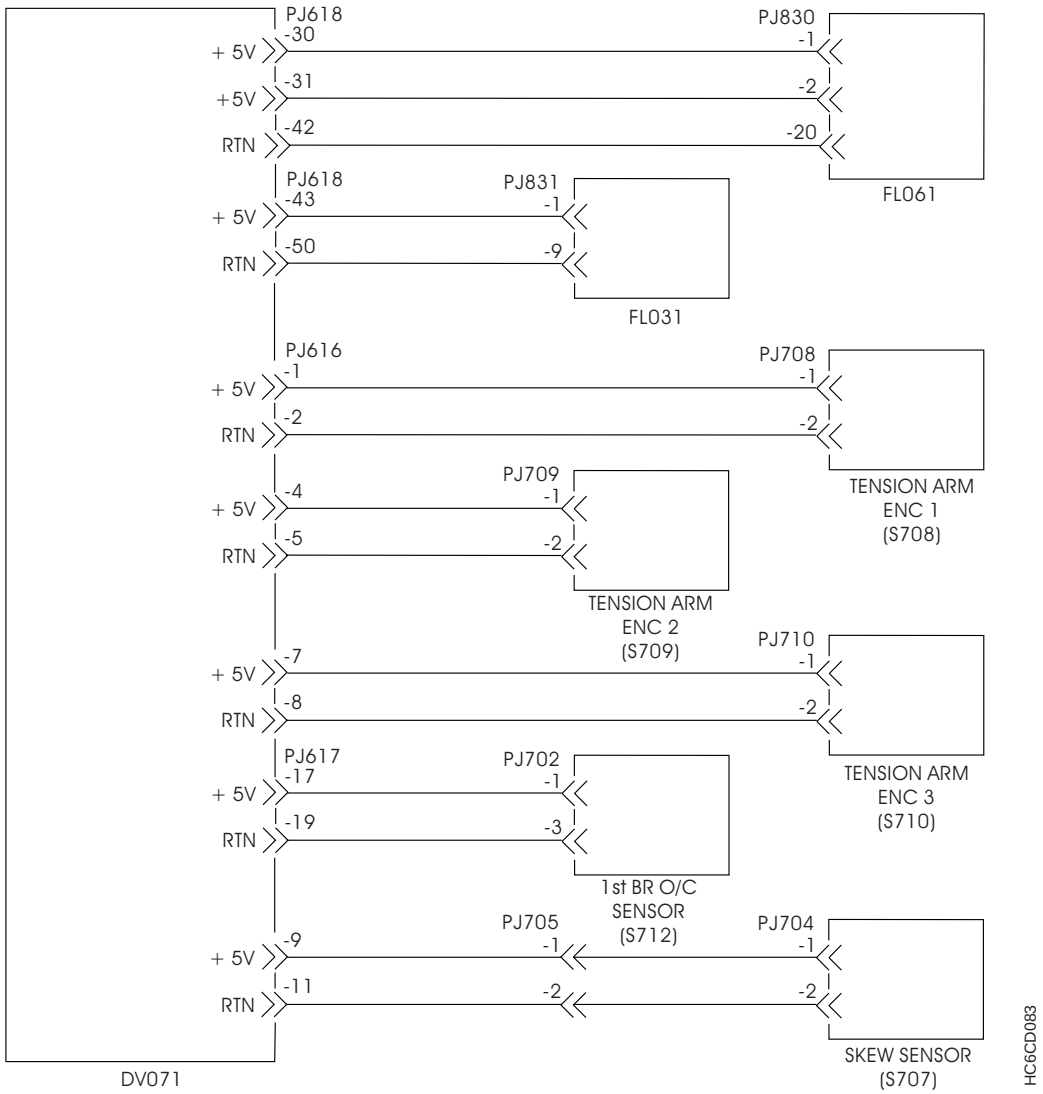


HC6CD081

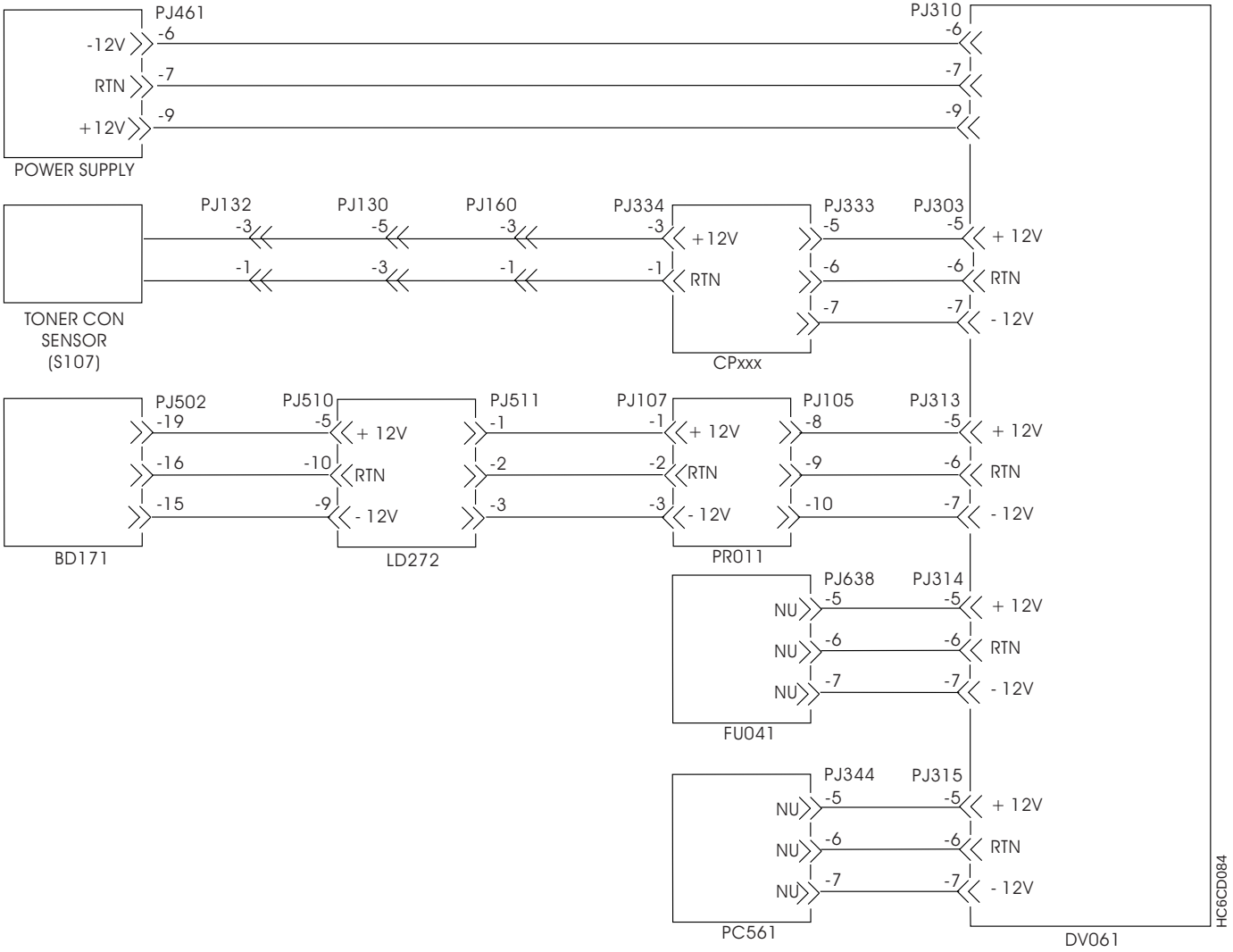
CD82 - (+5 V) Voltage Distribution



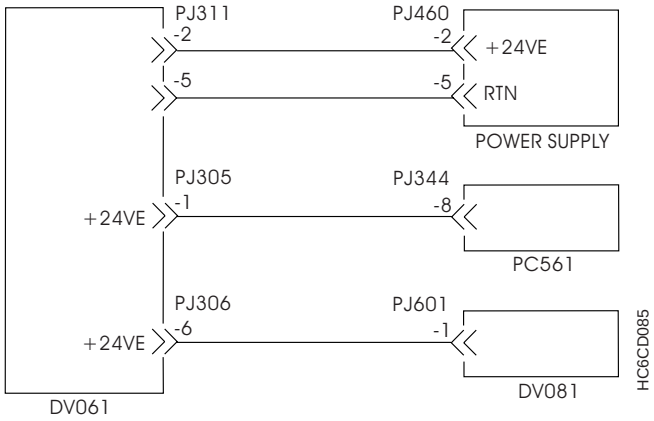
CD83 - (+5 V) Voltage Distribution



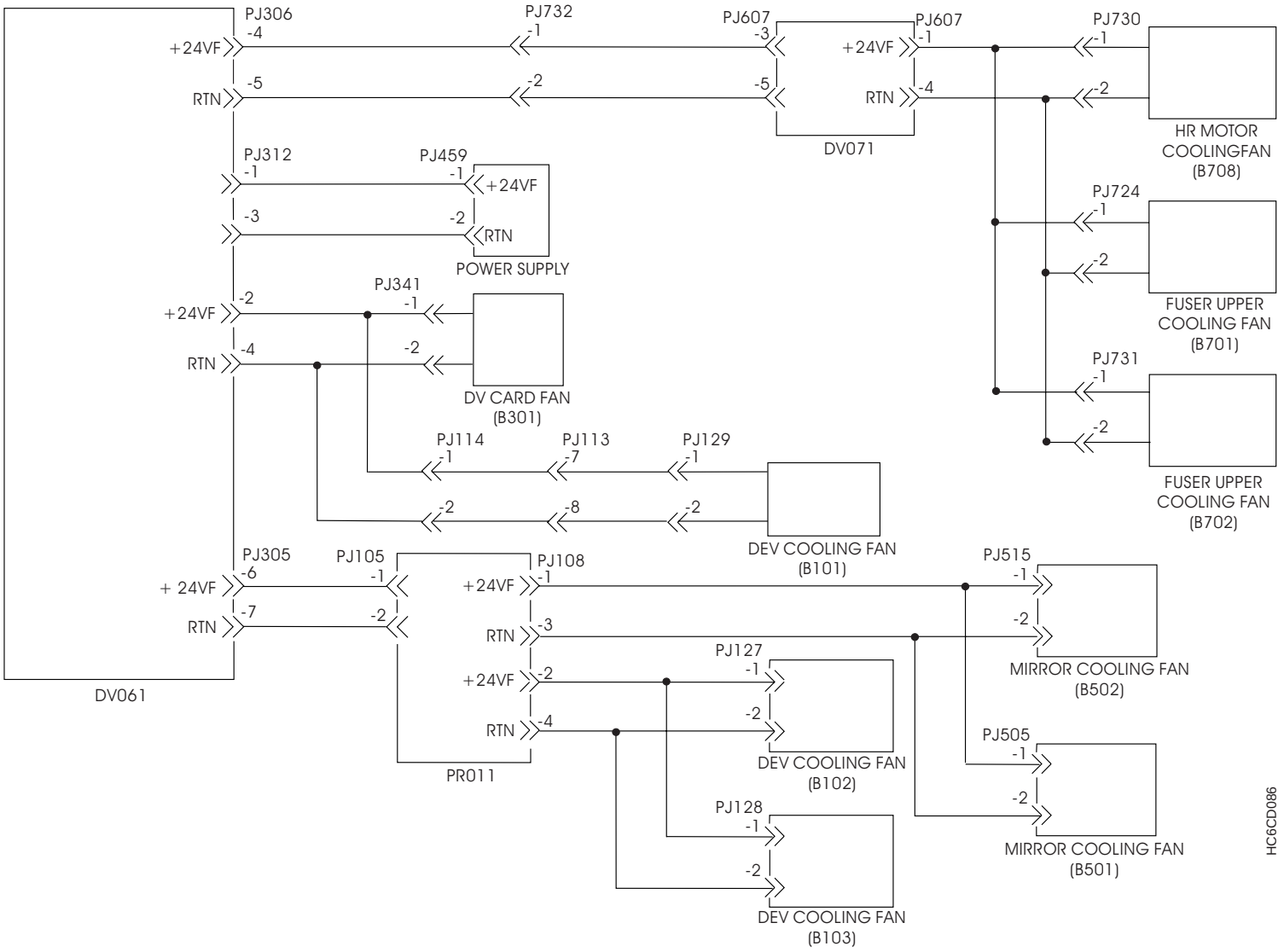
CD84 - (+/- 12V) Voltage Distribution



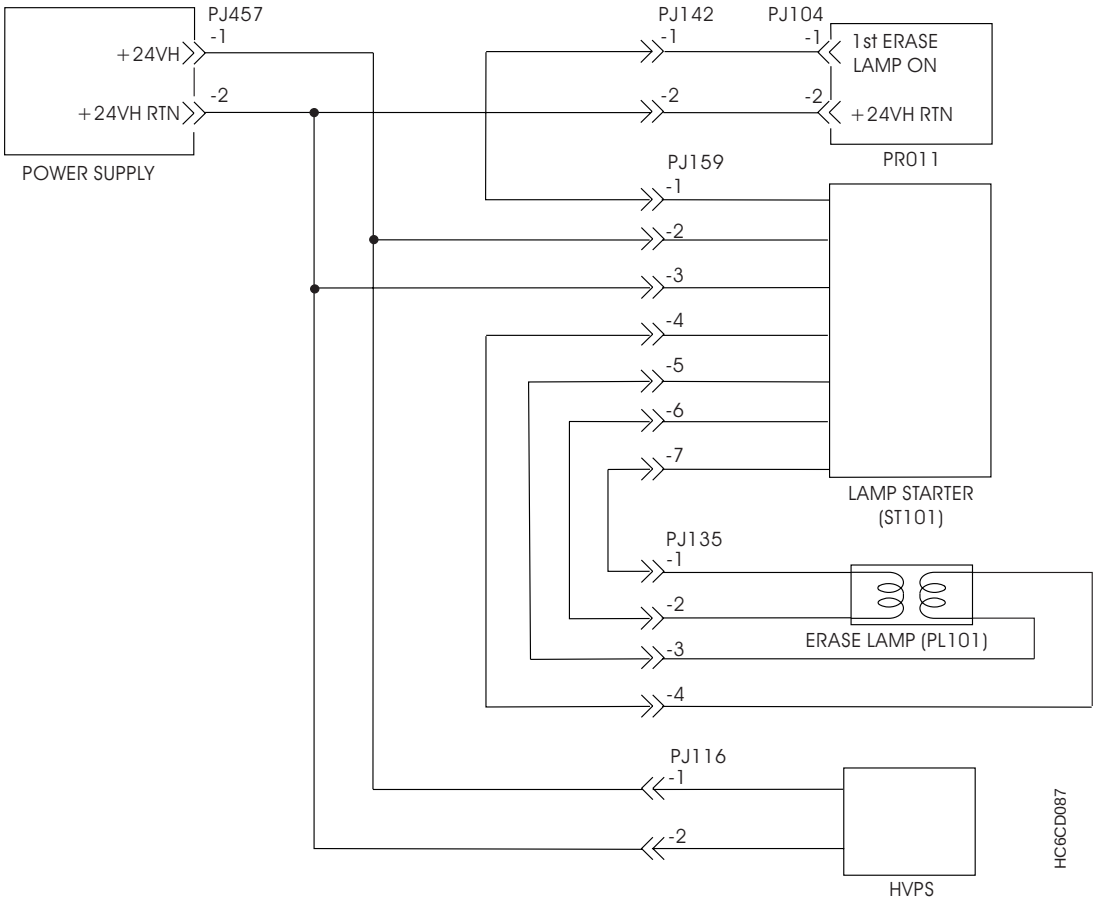
CD85 - (+24VE) Voltage Distribution



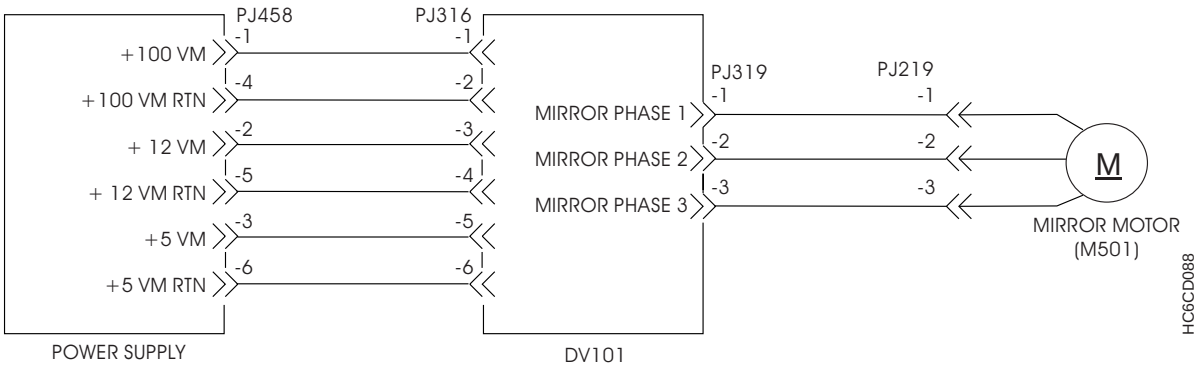
CD86 - (+24VF) Voltage Distribution



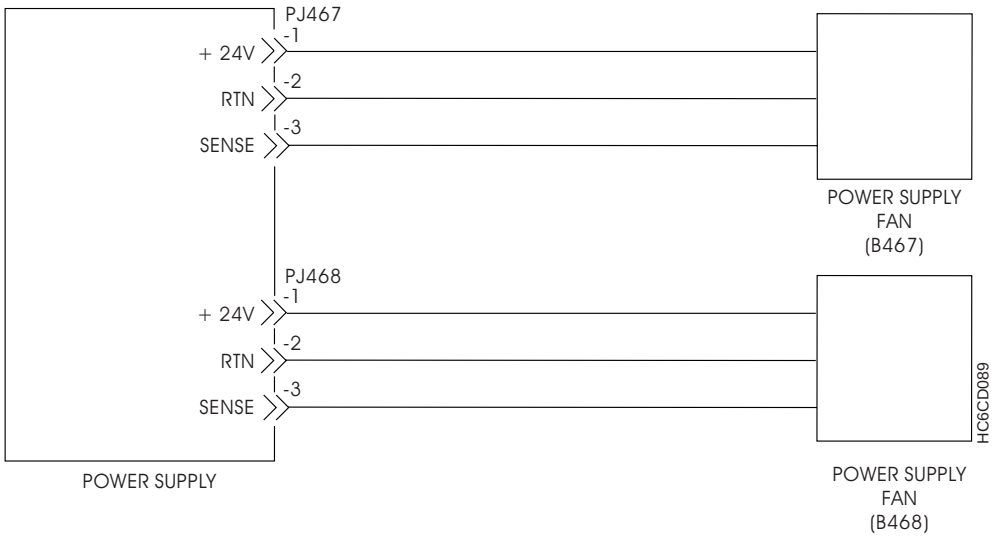
CD87 - (+24VH) Voltage Distribution



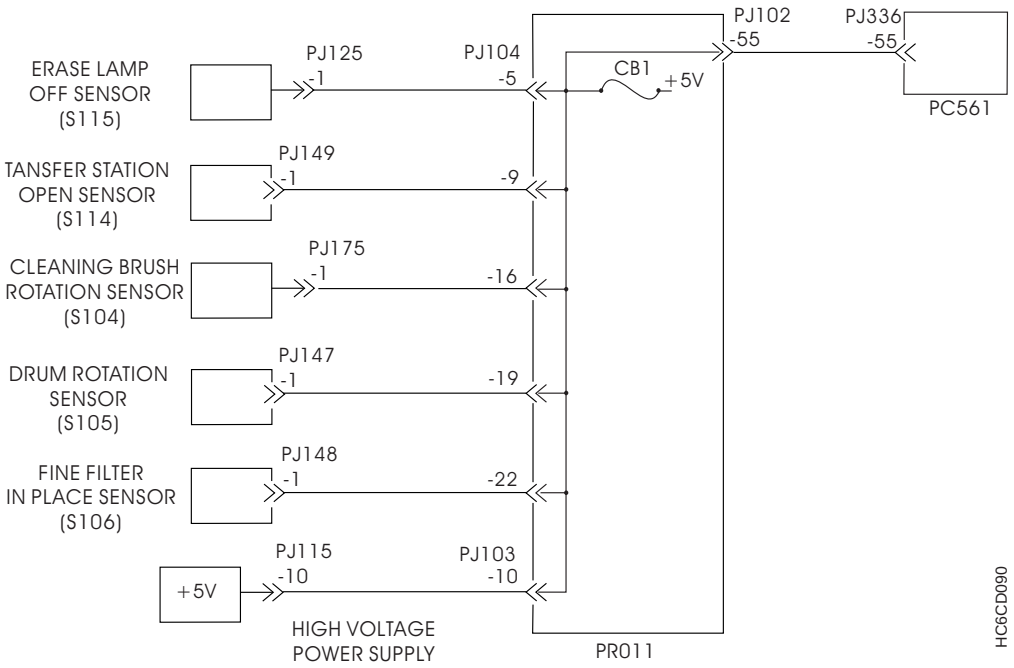
CD88 - (+5VM/+12VM/+100VM) Voltage Distribution (Mirror)



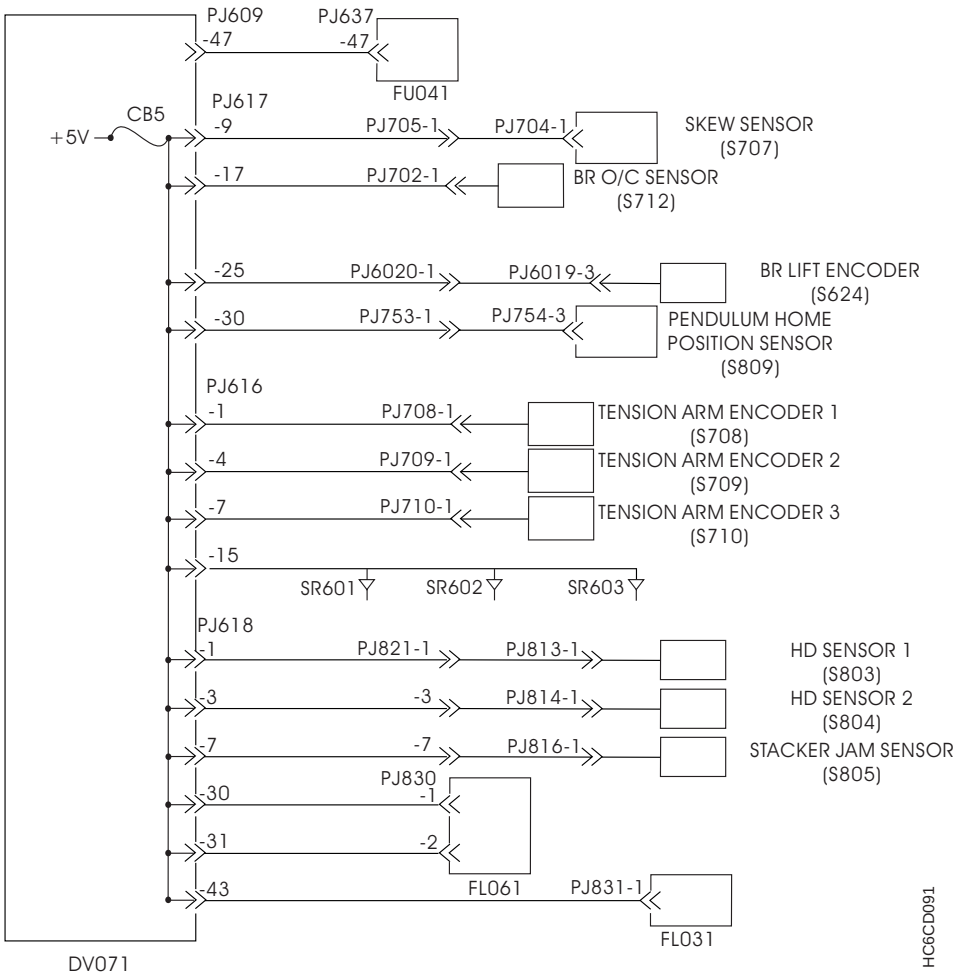
CD89 - (24VD) Power Supply (Fans)



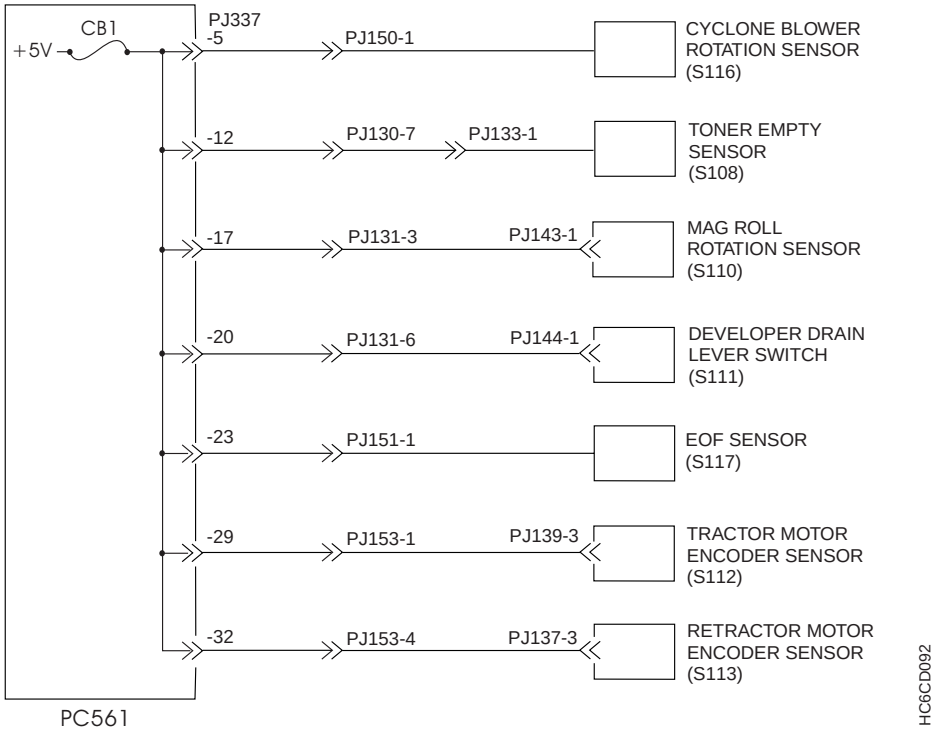
CD90 - PR011 Sensor Circuit Breaker



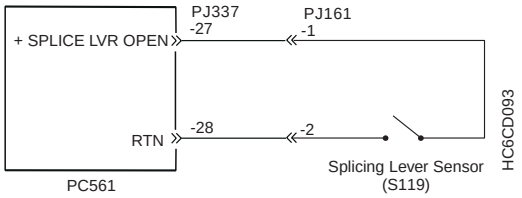
CD91 - ST Sensor Circuit Breaker



CD92 - ST Sensor Circuit Breaker



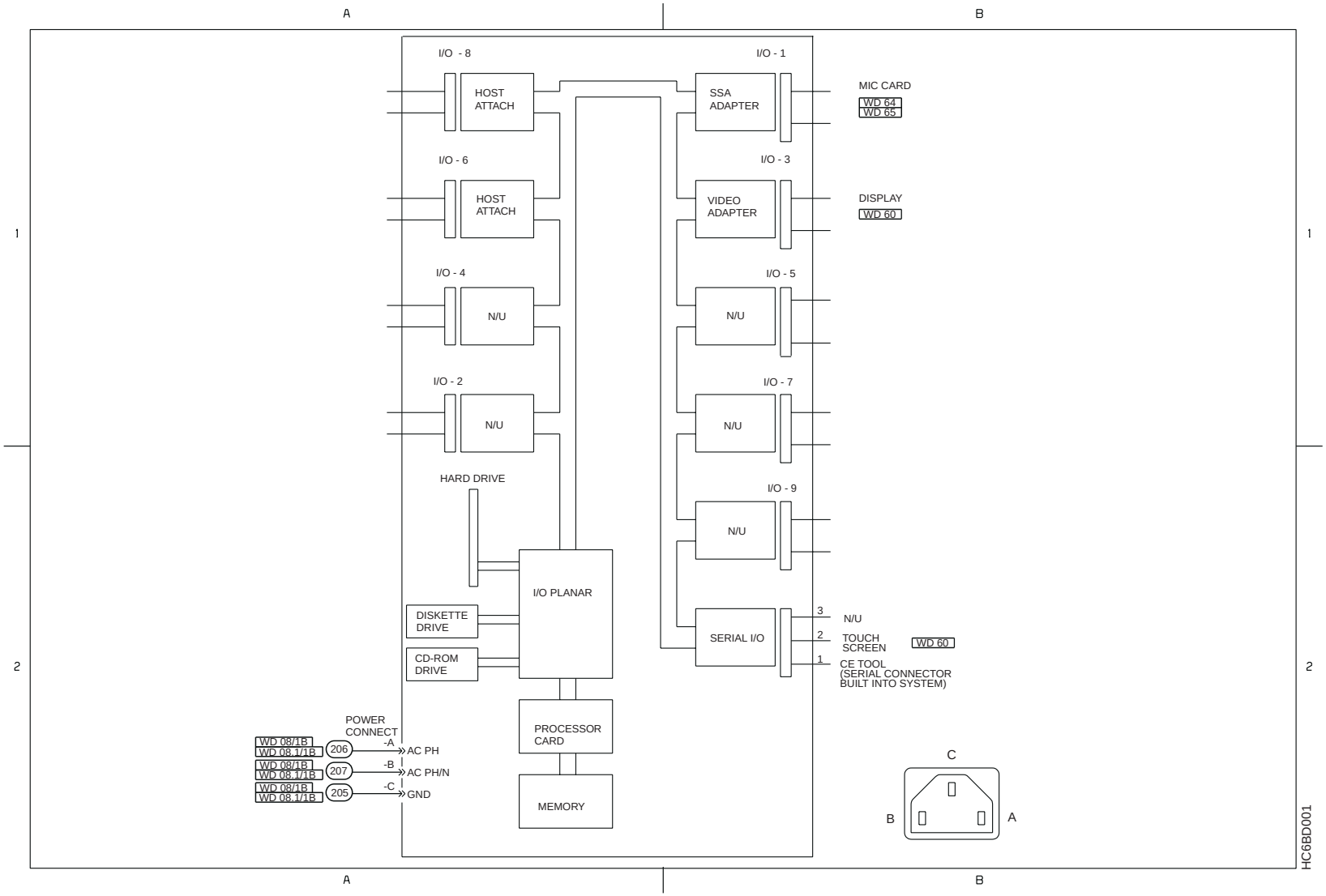
CD93 - Splicing Station



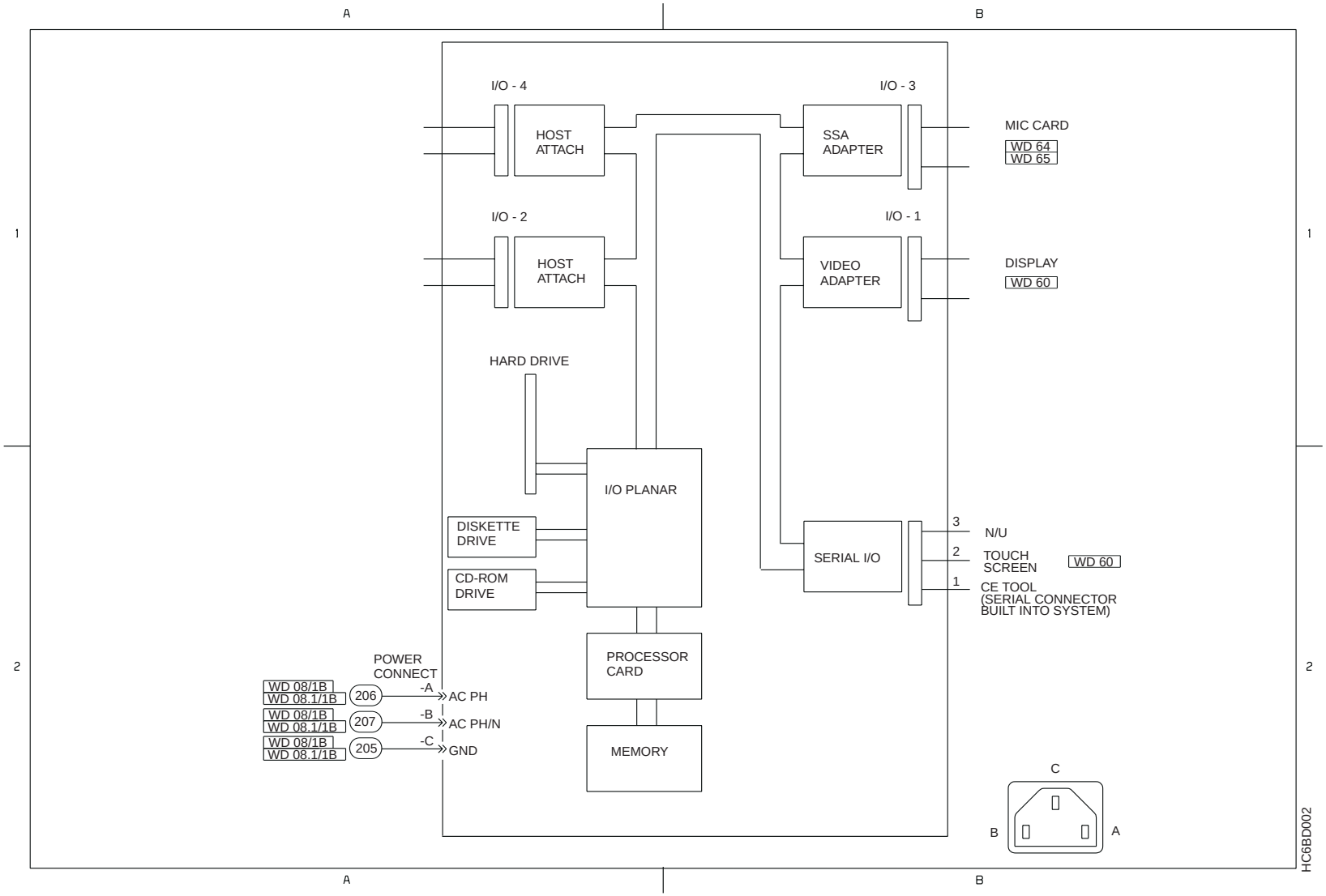
Block Diagrams - Logic Flow

BD01 - 7025 Model F50 RS/6000 Controller 1418
BD02 - 7043 Model 140-43P RS/6000 Controller 1419
BD03 - Mechanism Interface Card (MIC) 1420
BD04-1 - Channel A Attach 1421
BD04-2 - Channel B Attach 1422

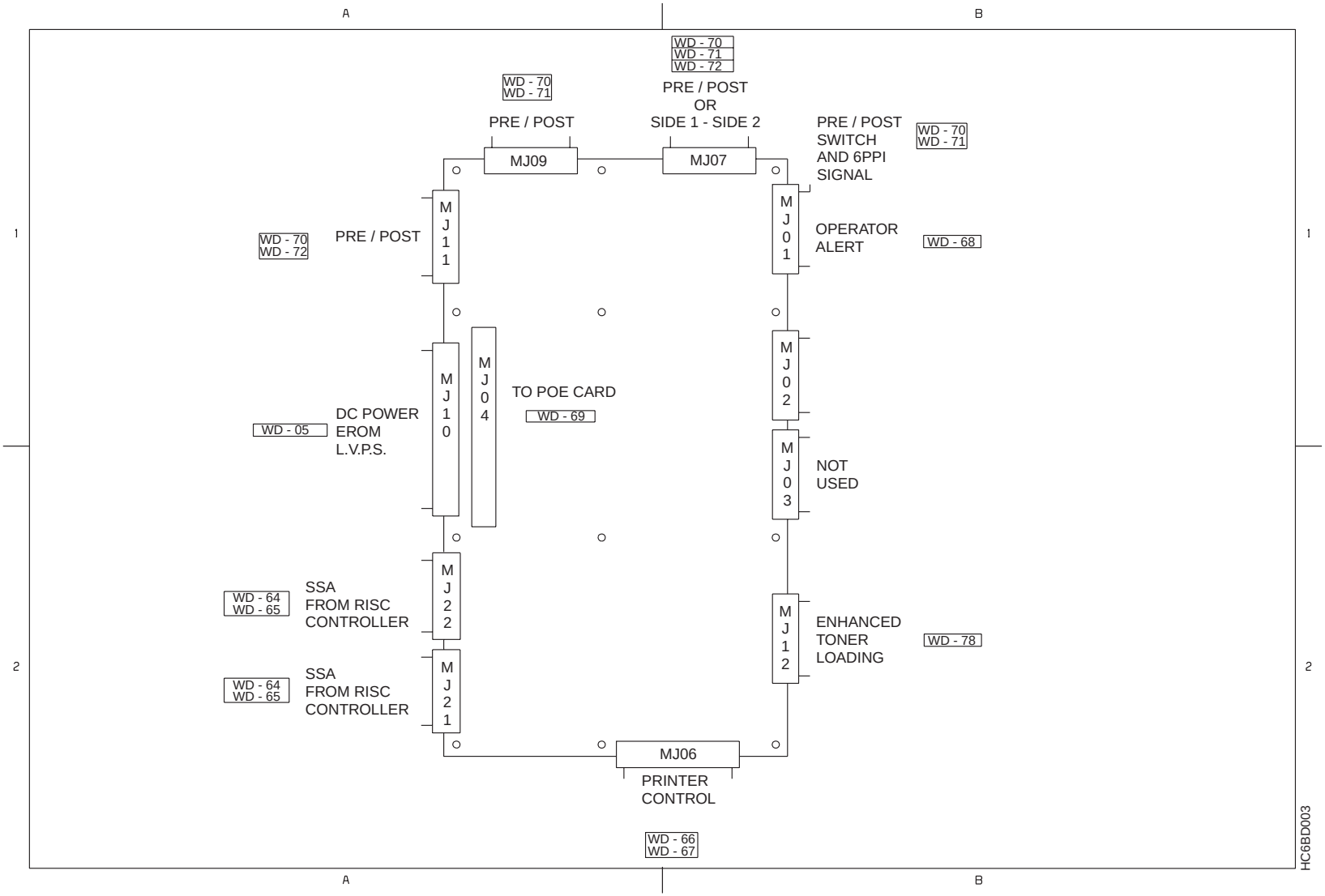
BD01 - 7025 Model F50 RS/6000 Controller



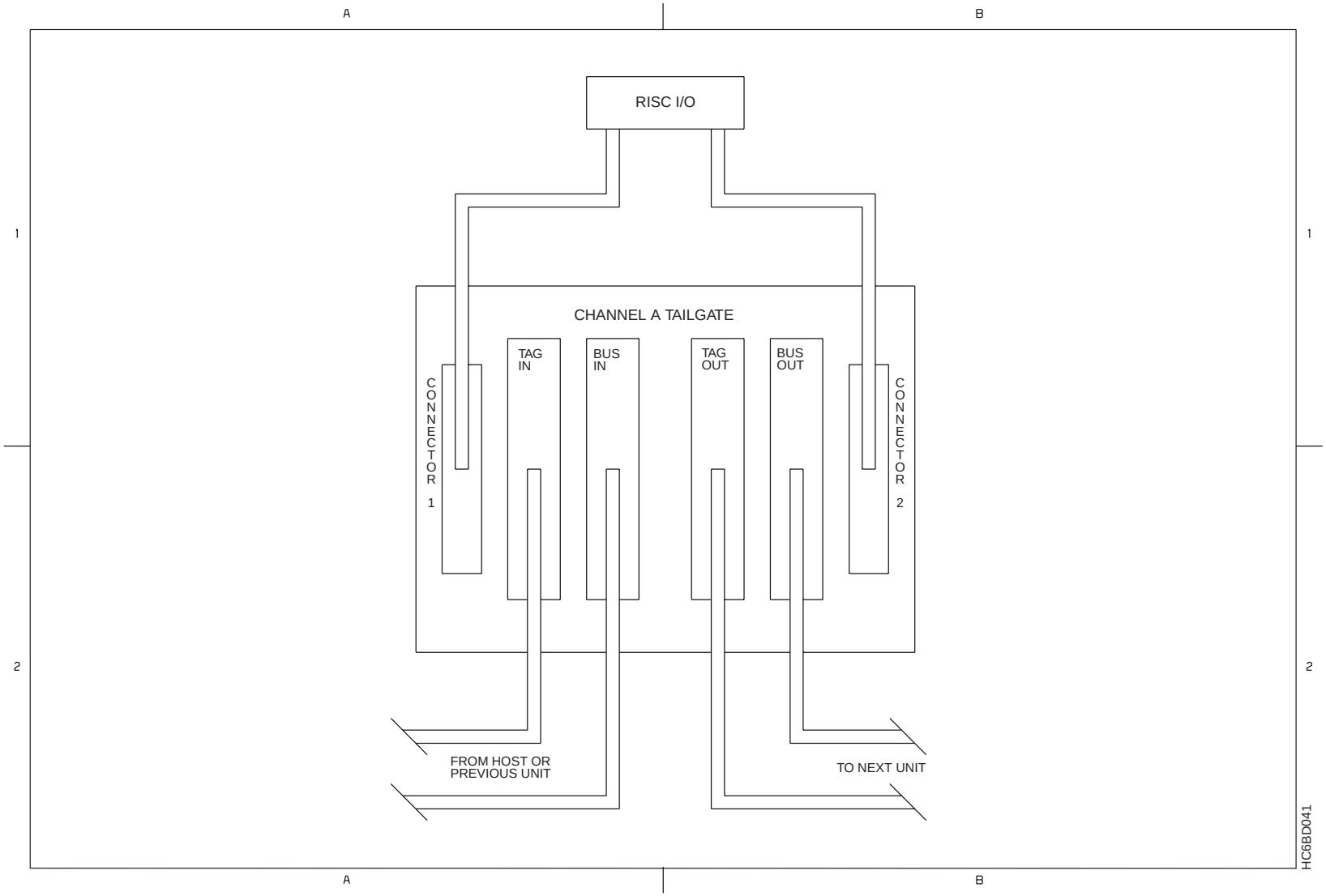
BD02 - 7043 Model 140-43P RS/6000 Controller



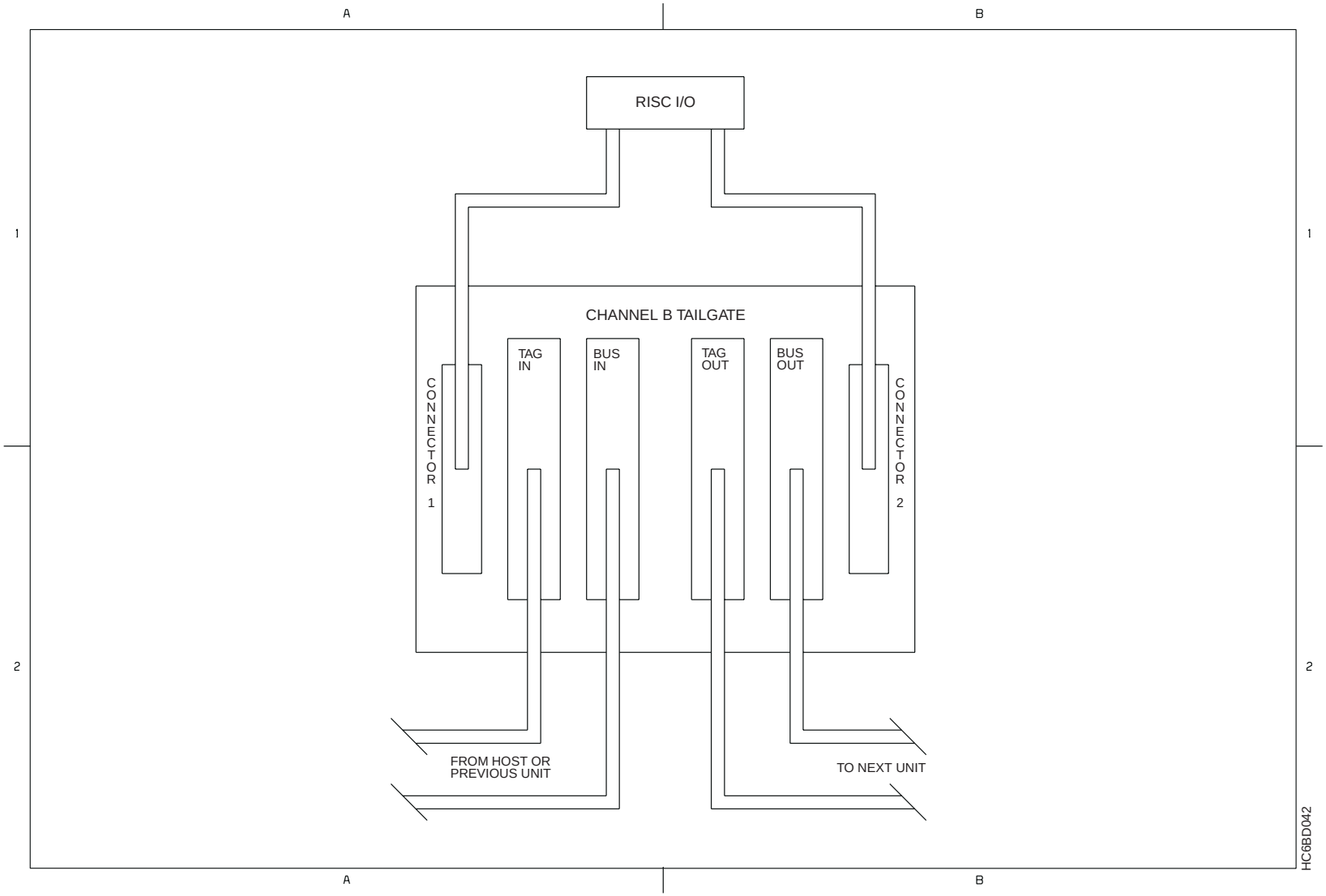
BD03 - Mechanism Interface Card (MIC)



BD04-1 - Channel A Attach



BD04-2 - Channel B Attach



Chapter 4. Locations

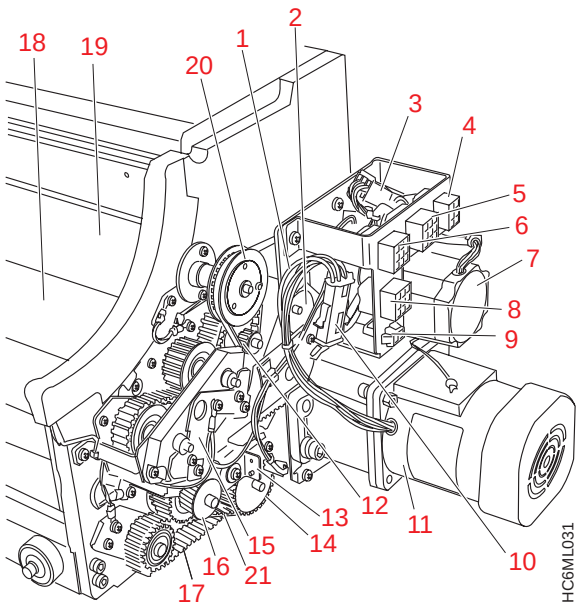
Developer - Rear View 1425
Developer Front View 1427
Developer Side View 1428
PC Drum Front View 1429
Fuser End View 1431
Fuser Front View 1433
Fuser Rear View 1435
Fuser Right Side View 1437
Stacker Front View 1438
Stacker End View (1) 1439
Stacker End View (2) 1441
Stacker Rear View 1442
Transfer Station Front View 1443
Transfer Station Rear View 1445
Cleaner Mechanism Rear (1) 1446
Cleaner Mechanism Rear (2) 1448
HVPS Area Rear View 1449
Printer AC/DC Power Supply ASM - Front View 1450
Printer AC/DC Power Supply - Left Side View 1452
Logic Card Area 1453
Printhead 1454
Printer Interface 1456
Control Unit - Front View 1457
Control Unit - Left Side View 1458
Control Unit - Mechanical Interface Card (MIC) 1460
Control Unit - Print Quality Enhancement Card (PQE) 1461
Control Unit - Pre/Post Processing Cards 1462
Control Unit - Channel I/O Connection 1463

© Copyright IBM Corp. 1999, 2000

RS/6000 Controller 7025 Model F50 - Front & Back 1464
RS/6000 Controller 7025 Model F50 - Cards 1466
RS/6000 Controller 7025 Model F50 - Bays 1467
RS/6000 Controller 7043 Model 43P-140 Front & Back 1468
RS/6000 Controller 7043 Model 43P-140 Cards 1470
Card Details 1470
CPxxx Printer Control Cards 1471
DV061 Stepper Motor Driver Card 1472
DV071 Fuser/Stacker Driver Card 1473
DV081 Fuser/Stacker Driver Card 1474
DV101 AC Motor Driver Card 1475
FU041 Fuser Control Card 1476
LD272 Laser Diode Card 1477
PC561 Paper Path Control Card 1477
PR011 EP Process Card 1478

Developer - Rear View

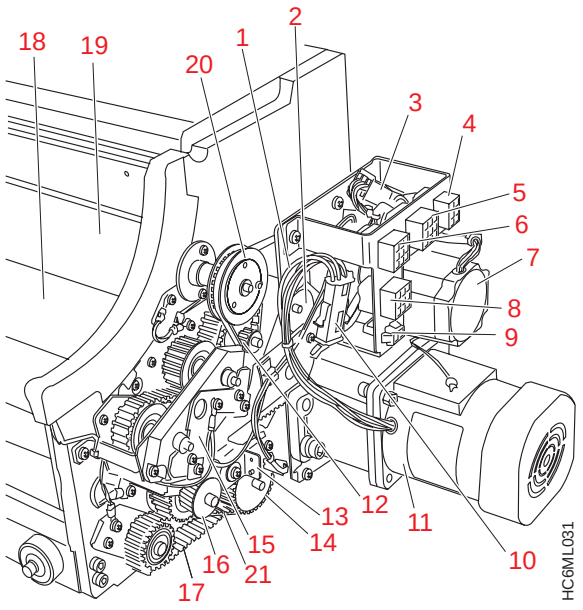
Table 335. Developer Rear View



Part Name	Callout
Belt, Developer Mixing Paddle	21
Belt, Mag Brush	17
Belt, Scavenger Roll	12
Belt, Toner Feed	2
M101 Mag Brush Motor	11
M102 Toner Feed Motor	7
Mag Brush A	18
Mag Brush B	19
PJ106	10
PJ113	5
PJ117	4
PJ118	10
PJ121	3

(continued on next page)

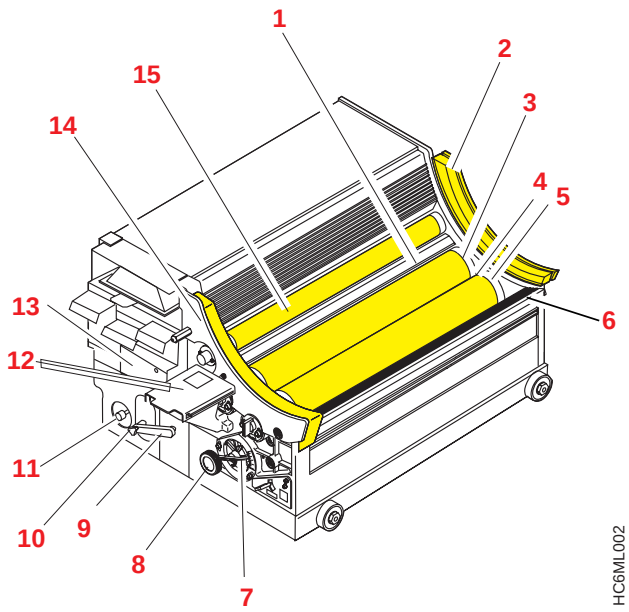
Table 335. Developer Rear View (continued)



Part Name	Callout
PJ130	6
PJ131	8
PJ133 (under the developer)	
PJ143	13
PJ185	9
Plate, Bias Contact	15
Pulley, Mixing Paddle	14
Pulley, Scavenger Roll	20
Pulley, Toner Feed (1)	2
Pulley, Toner Paddle (1)	1
Roll, Conveyor	16
S110 Conveyor Roll Rotation Sensor	13

Developer Front View

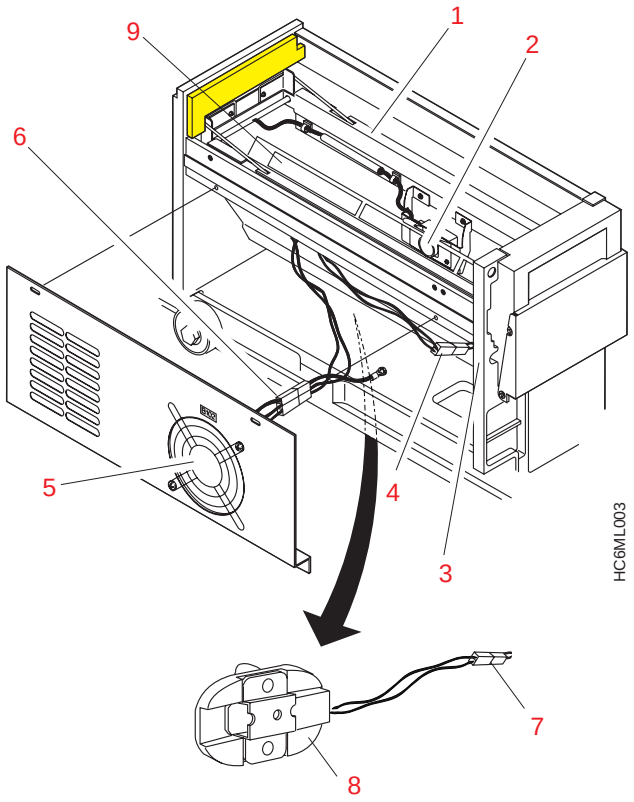
Table 336. Developer Front View



Part Name	Callout
Blade, Doctor	4
Inlet, Developer Mix	12
Lever, Developer Drain	9
Mag Brush A	5
Mag Brush B	3
Plate, Developer Seal	6
Roll, Conveyor	7
Roll, Scavenger	15
S109 Developer Run Switch	11
S111 Developer Drain Lever Switch	10
Seal, Developer Front	14
Seal, Developer Rear	2
Shaft, Mix Auger	8
Shaft, Toner Feed	13
Wiper, Scavenger Roll	1

Developer Side View

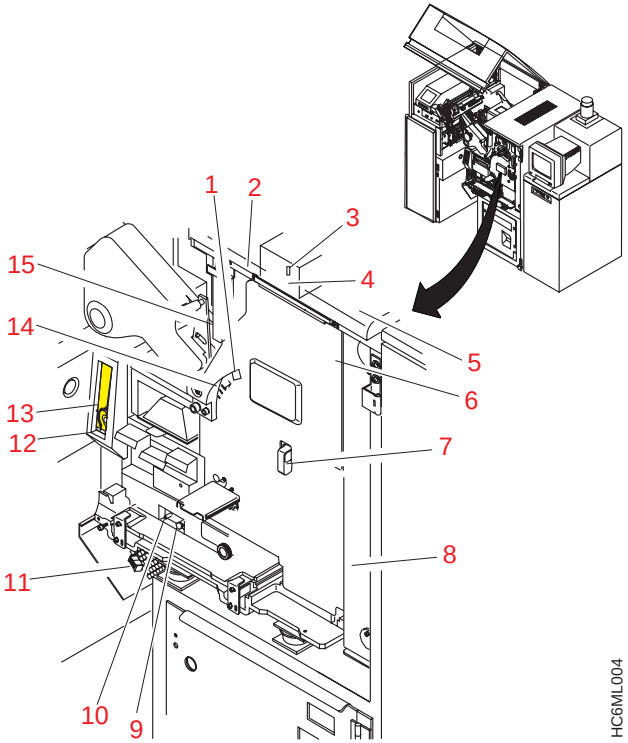
Table 337. Developer Side View



Part Name	Callout
B101, Developer Cooling Fan	5
Holder, Toner Cartridge	1
PJ112	4
PJ129	6
PJ132	7
PJ144	3
S107 Toner Control Sensor	8
S108 Toner Empty Sensor	2
Shaft, Toner Paddle	9

PC Drum Front View

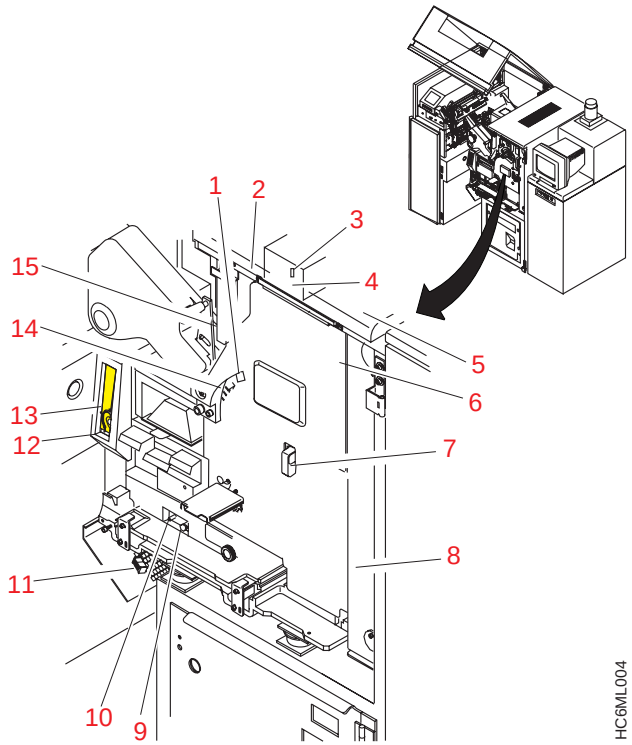
Table 338. PC Drum Front View



Part Name	Callout
B102 (below developer)	16
B103 (below developer)	16
Corona, Charge	7
Corona, Preclean	1
Corona, Transfer	14
PJ115	3
PJ116	2
PJ127 (below developer)	16
PJ128 (below developer)	16
PJ151	11
PJ156	6
P157A	11

(continued on next page)

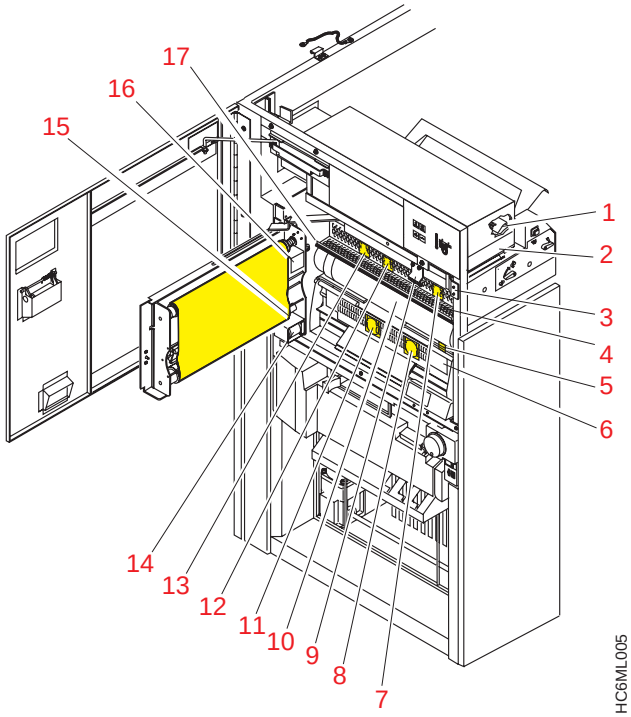
Table 338. PC Drum Front View (continued)



Part Name	Callout
PJ184	12
PJ505	5
PJ515	5
PL101 Erase Lamp	15
Power Supply, High Voltage	4
Printhead	8
S109 Developer Run Switch	10
S111 Developer Drain Lever Switch	9
S117 EOF Sensor	11
S118 Drum Cover Interlock Switch	6
SW761, Printer Control Panel Card	13

Fuser End View

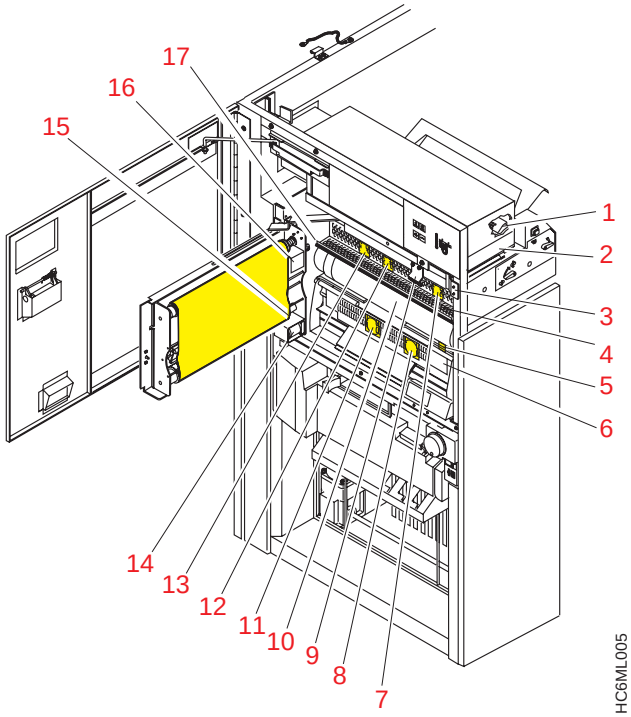
Table 339. Fuser End View



Part Name	Callout
Assembly, Scuff Pressure Roller	6
B705 Paper Cooling Fan	8
B707 Paper Cooling Fan	11
Card, Skew Sensor	1
Chain, Oiler Belt Drive	16
Filter, Fuser	2
M706 Oiler Belt Motor	14
PJ645	9
PJ704	1
PJ711	17
PJ723 Connector, Oiler Belt Motor	15
PJ727 Connector, B705 Fan	8
PJ729 Connector, B707 Fan	11

(continued on next page)

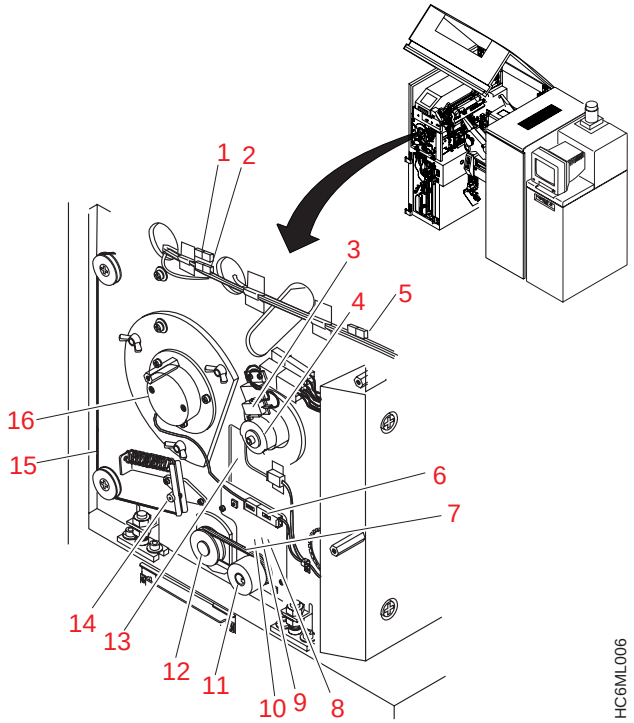
Table 339. Fuser End View (continued)



Part Name	Callout
Preheat Platen	1
Roll, Hot	10
S617 Fuser Wrap Sensor	5
S621 Hot Roll Thermistor	7
S622 Hot Roll Thermistor	12
S623 Hot Roll Thermistor	13
S701, Hot Roll Temperature Control Sensor	4
S704 Oiler Gate Open Switch	3
S705 Hot Roll Over-temp Sensor	9
S711 Oiler Belt End Sensor	16

Fuser Front View

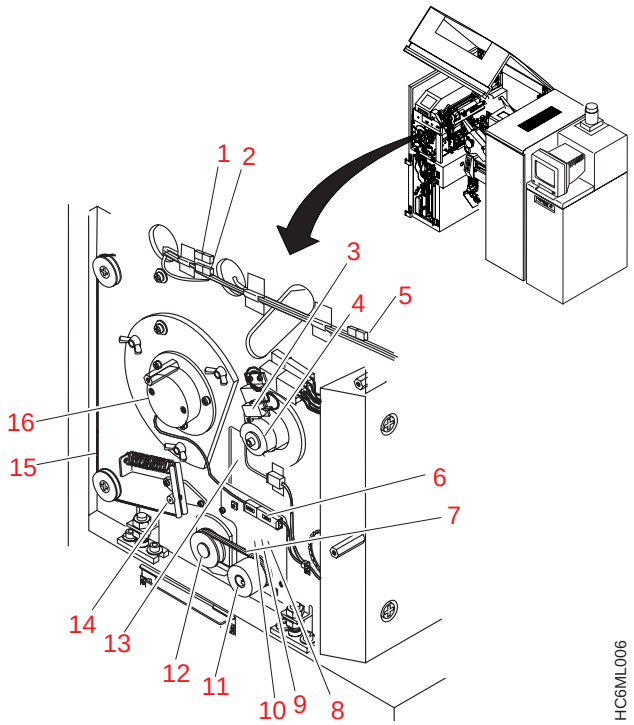
Table 340. Fuser Front View



Part Name	Callout
Assembly, Scuff Pressure Roller Shaft	14
Assembly, Scuff Roller Shaft	12
B704 Paper Cooling Fan	10
B706 Paper Cooling Fan	10
Belt, Scuff Roller Drive	7
Cable, Scuff Pressure Roll Release	15
Encoder, Backup Roll Position	4
Lamps, Hot Roll	16
M704 Scuff Roll Motor	11
PJ612	6
PJ640	8

(continued on next page)

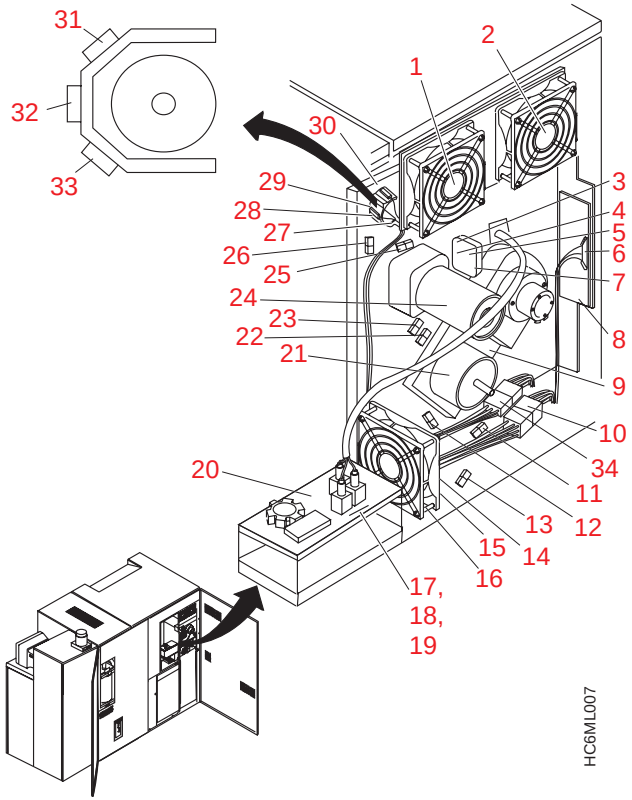
Table 340. Fuser Front View (continued)



Part Name	Callout
PJ682	2
PJ702	3
PJ705	5
PJ706	1
PJ714	10
PJ726	10
PJ728	10
PJ753	9
Roll, Backup	13
S712 Backup Roll Position Sensor	3

Fuser Rear View

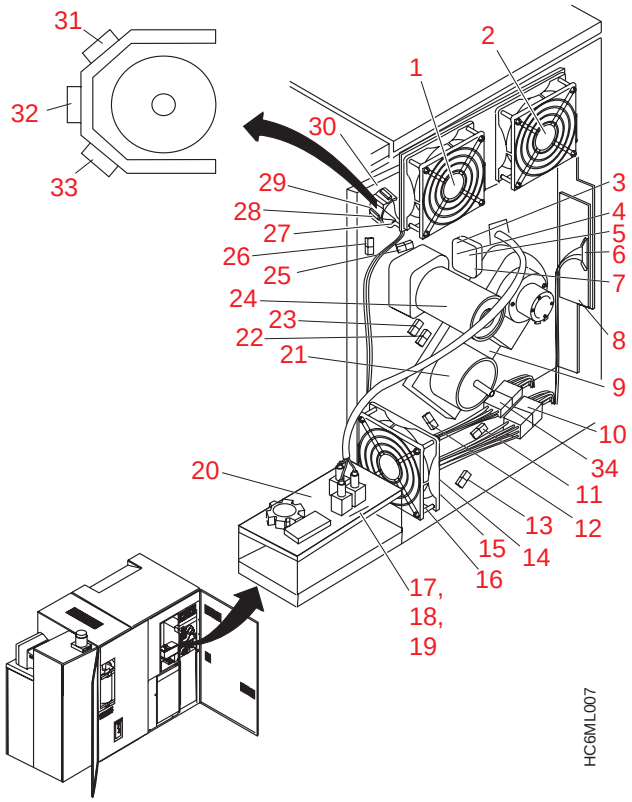
Table 341. Fuser Rear View



Part Name	Callout
B701 Fuser Exhaust Fan	1
B702 Fuser Exhaust Fan	2
B708 Fan	16
Belt, Hot Roll Drive	9
C701, Capacitor	25
Encoder Asm, Tension Arm	29
L701 Oil Pump 1	17
L702 Oil Pump 2	18
L703 Oil Pump 3	19
LP041 Stacker Control Card	8
M701 Backup Roll Motor	24
M703 Hot Roll Motor	21
PJ6015	26
PJ6016	12
PJ6017	13
PJ611	10
PJ613	7

(continued on next page)

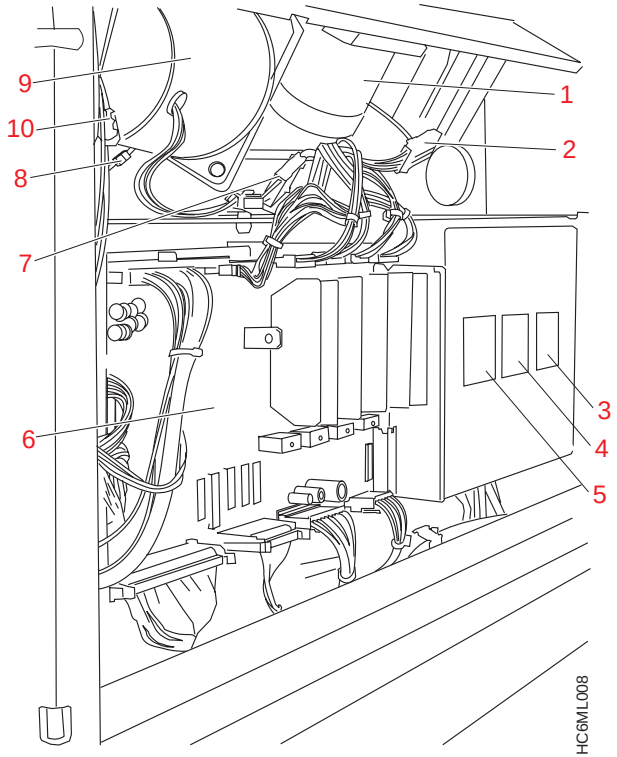
Table 341. Fuser Rear View (continued)



Part Name	Callout
PJ646	23
PJ652	22
PJ701	11
PJ708	30
PJ709	28
PJ710	27
PJ715	3
PJ716	34
PJ717	4
PJ719	5
PJ724	1
PJ725	16
PJ730	15
PJ731	2
PJ732	14
PJ745	16
PJ751	6
S702 Oil Empty Sensor	20
S708 Tension Arm Encoder Sensor	31
S709 Tension Arm Encoder Sensor	32
S710 Tension Arm Encoder Sensor	33

Fuser Right Side View

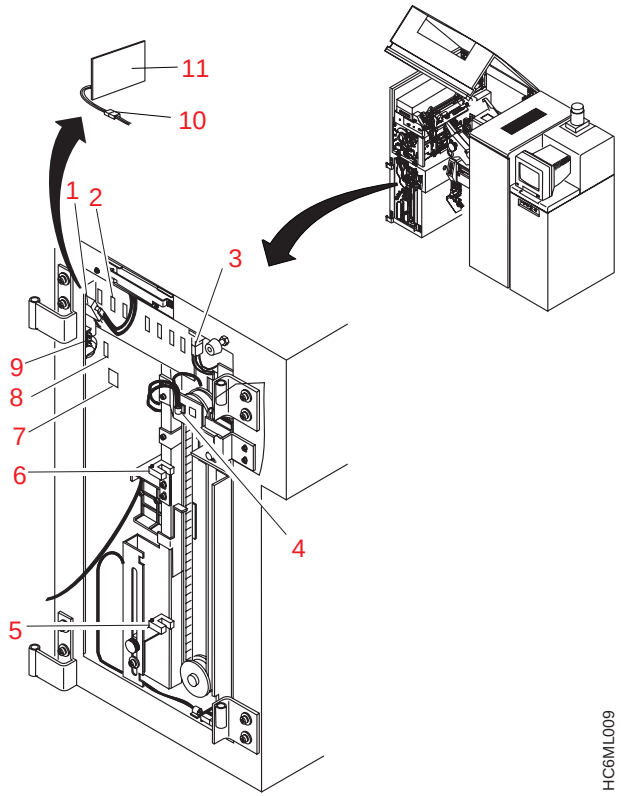
Table 342. Fuser Right Side View



Part Name	Callout
DV071 Fuser/Stacker Driver Card (See DV071 Fuser/Stacker Driver Card for card details.)	6
M610 Backup Roll Lift Motor	9
M705 Steering Motor	1
PJ6018	7
PJ6019	8
PJ6020	10
PJ712	2
S624 Backup Roll Lift Encoder	8
SR601, Solid State Relay	5
SR602, Solid State Relay	4
SR603, Solid State Relay	3

Stacker Front View

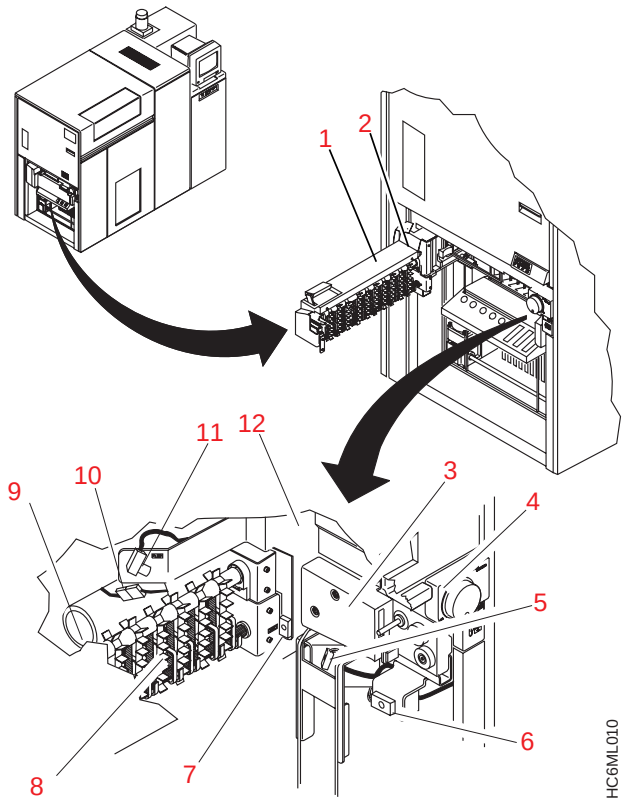
Table 343. Stacker Front View



Part Name	Callout
FL031 Forms Length Fraction Select Card	11
FL061 Forms Length Select Card	2
PJ754	5
PJ814	8
PJ816	9
PJ817	6
PJ818	5
PJ821	1
PJ830	3
PJ831	10
S804 Stacker Front Height Sensor Receiver	7
S805 Stacker Jam Sensor Receiver	4
S807 Stacker Table Upper Limit Sensor	6
S808 Stacker Table Upper Limit Sensor	5

Stacker End View (1)

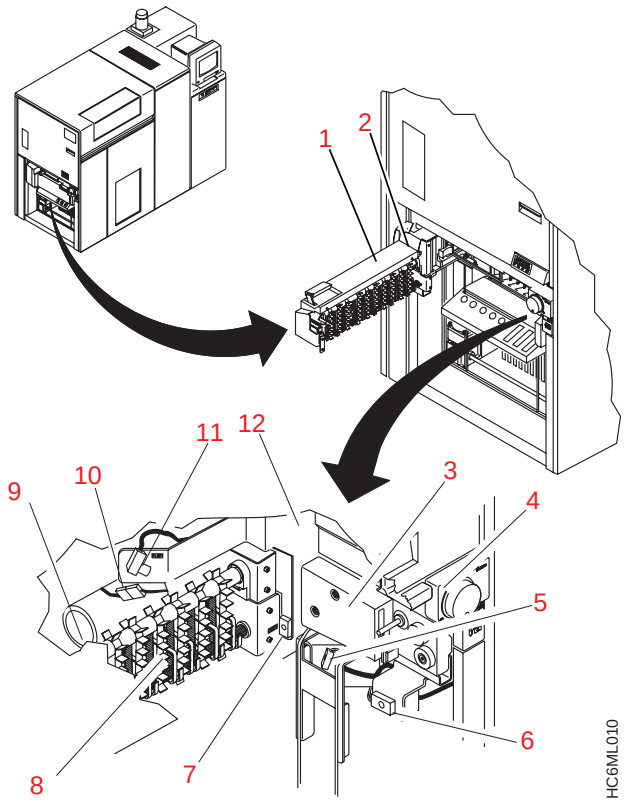
Table 344. Stacker End View (1)



Part Name	Callout
D803 Stacker Jam Sensor Lamp	11
FL031 Forms Length Fraction Select Card	4
M801 Stacker Rear Finger Belt Motor	9
M802 Stacker Gate Finger Belt Motor	2
PJ806	10
PJ807	2
PJ813	7
PJ814	6
PJ815	11

(continued on next page)

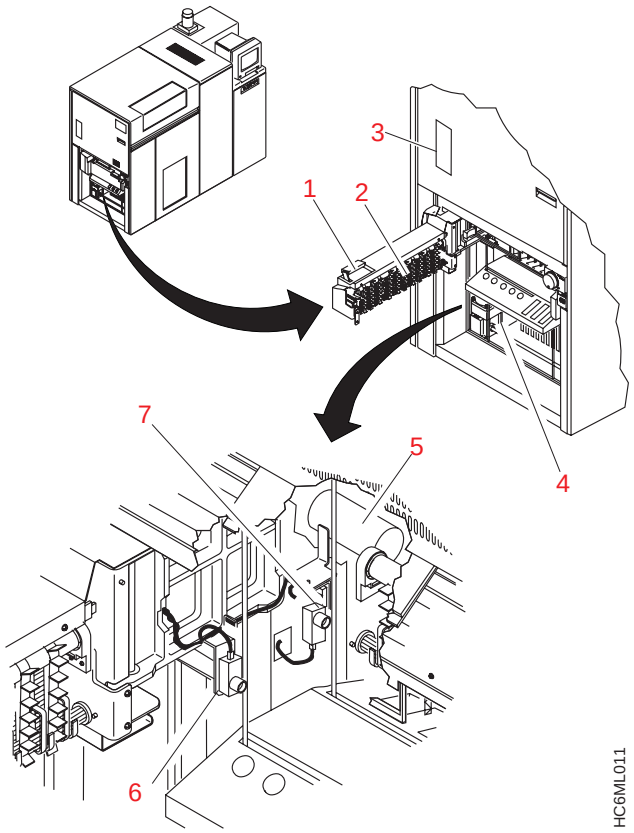
Table 344. Stacker End View (1) (continued)



Part Name	Callout
PJ819	2
S802 Stacker Gate Safety Switch	1
S803 Stacker Rear Height Sensor Receiver	7
S804 Stacker Front Height Sensor Receiver	6
S805 Stacker Jam Sensor Receiver	5
S806 Stacker Gate Open Switch	3
S809 Pendulum Home Position Sensor	12
Stacker Rear Finger Belts	8

Stacker End View (2)

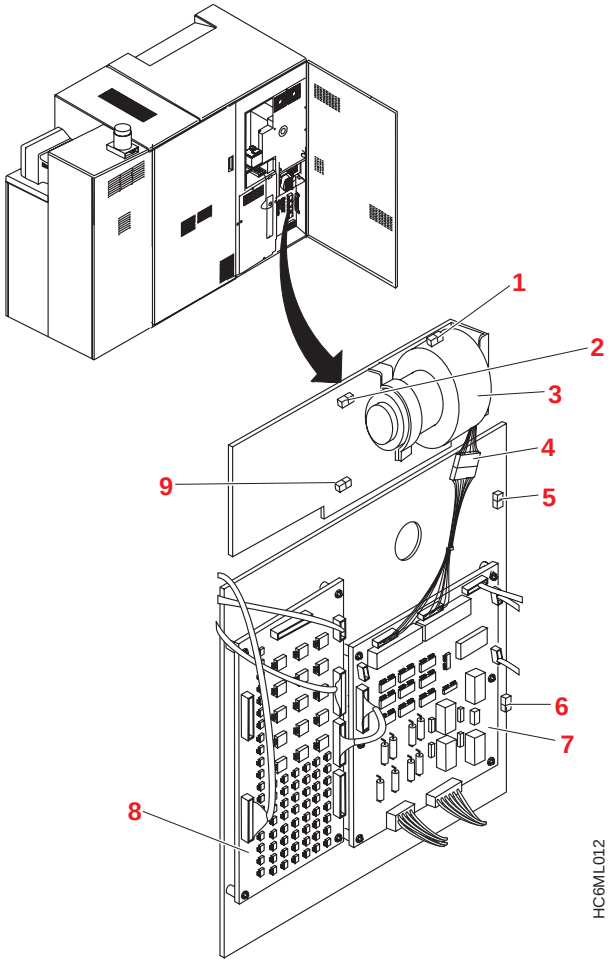
Table 345. Stacker End View (2)



Part Name	Callout
D801 Stacker Rear Height Sensor Lamp	7
D802 Stacker Front Height Sensor Lamp	6
LP041 Stacker Control Card	3
M803 Stacker Table Motor	4
M804 Pendulum Motor	5
PJ751	3
PJ752	5
PJ803	4
PJ804	4
PJ811	7
PJ812	6
Stacker Gate	1
Stacker Gate Finger Belts	2

Stacker Rear View

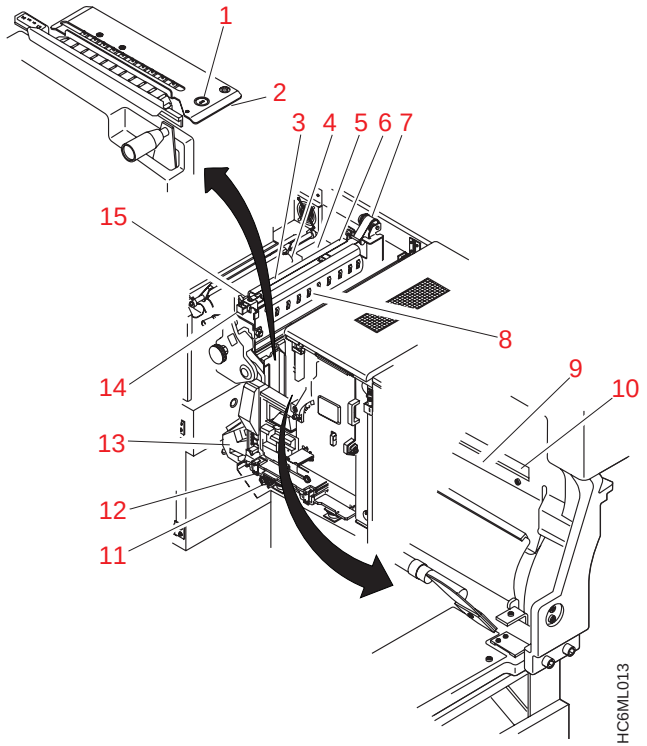
Table 346. Stacker Rear View



Part Name	Callout
B703 Stacker Cooling Blower	3
C702 Capacitor	2
DV081 Fuser/Stacker Driver Card (See DV081 Fuser/Stacker Driver Card for card details.)	7
FU041 Fuser Control Card (See FU041 Fuser Control Card for card details.)	8
PJ672	6
PJ746	5
PJ747	9
PJ805	4
PJ820	2

Transfer Station Front View

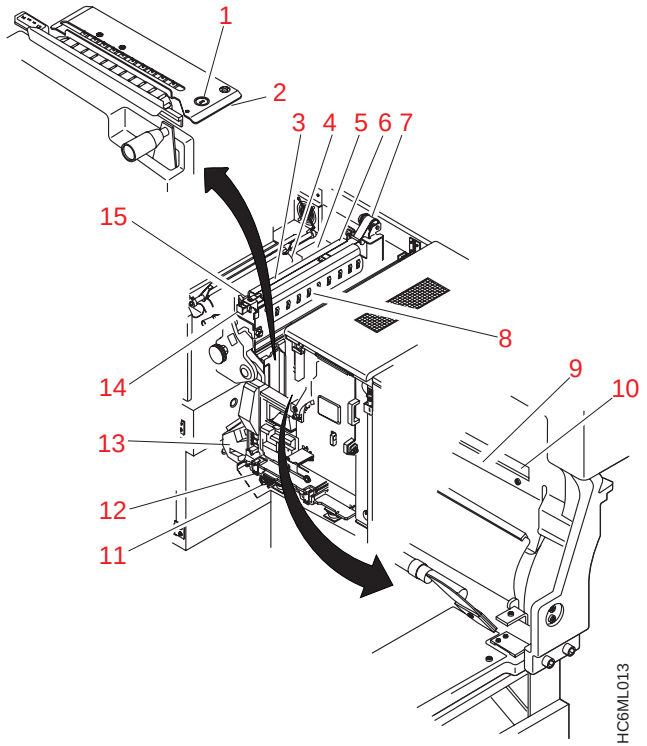
Table 347. Transfer Station Front View



Part Name	Callout
D101 EOF Sensor Lamp	11
M103 Retractor Motor	15
Path Modifier	8
PJ125	9
PJ136	15
PJ137	15
PJ140	6
PJ141	4
PJ151	12
PJ157	11
PJ161	13

(continued on next page)

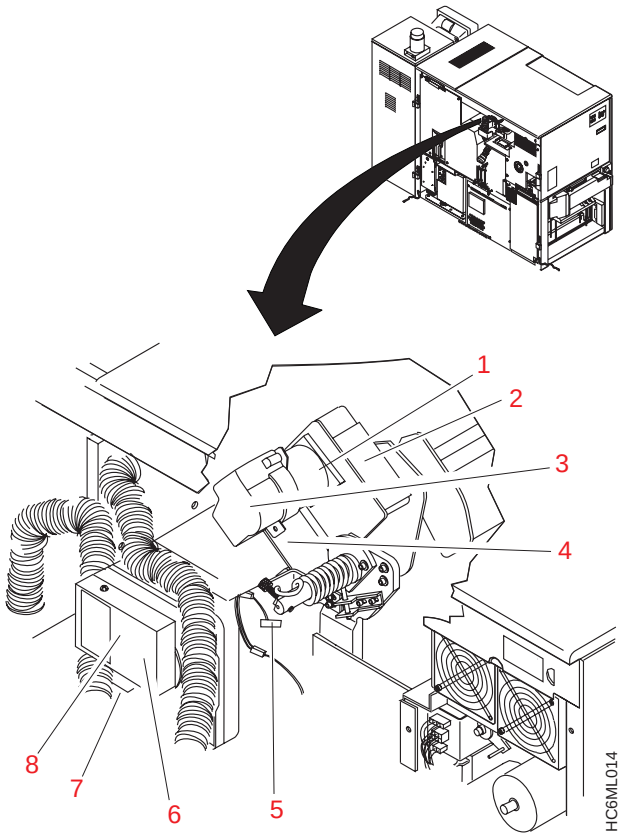
Table 347. Transfer Station Front View (continued)



Part Name	Callout
PJ301	2
PL101 Erase Lamp	10
PW111 Form Width Sensor	5
Retractor Asm	3
S113 Retractor Motor Encoder Sensor	15
S115 Erase Lamp Sensor	9
S117 EOF Sensor	12
S119 Splicing Lever Sensor	13
Transfer Corona	14
Transfer Corona Shield	7
Upper Tractor Jam Sensor	1

Transfer Station Rear View

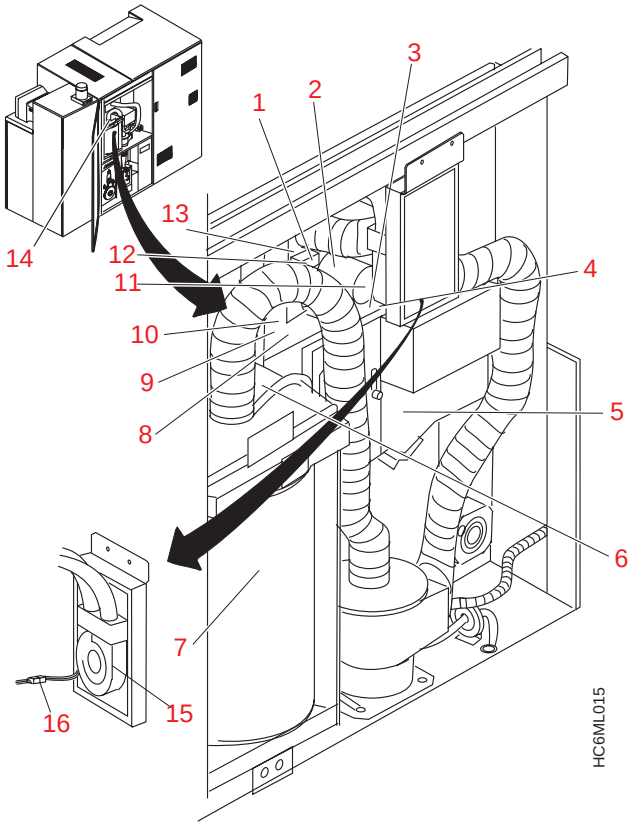
Table 348. Transfer Station Rear View



Part Name	Callout
Belt, Tractor Motor	2
M105 Tractor Motor	1
M107 Drum Motor	6
PJ126	7
PJ138	4
PJ139	3
PJ147	8
PJ149	5
S105 Drum Rotation Sensor	8
S112 Tractor Motor Encoder Sensor	3
S114 Transfer Station Open Sensor	5

Cleaner Mechanism Rear (1)

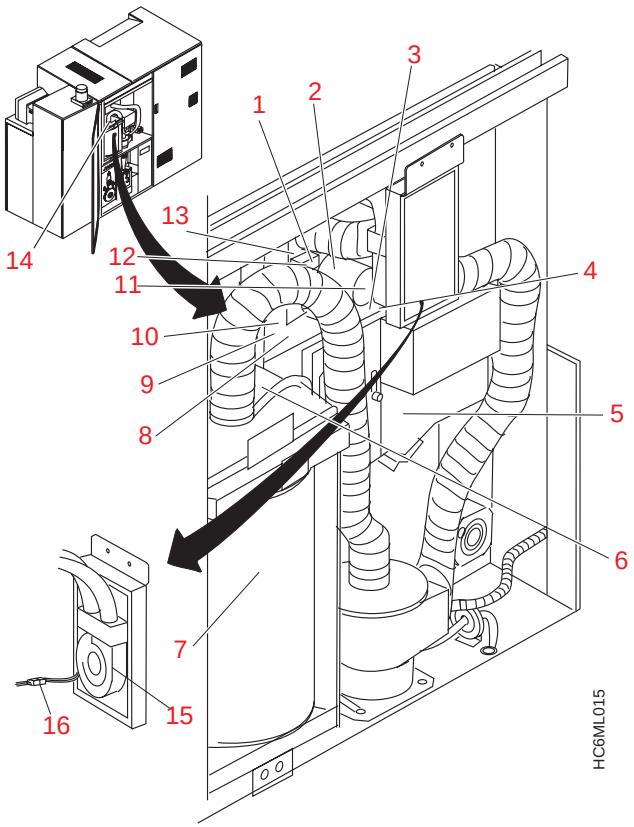
Table 349. Cleaner Mechanism Rear (1)



Part Name	Callout
B501, Printhead Fan	15
Drum Ground Brush	5
Fine Filter	7
M106 Cleaner Housing Motor	8
M108 Cleaner Brush Motor	11
PJ120	3
PJ122	10
PJ134	3
PJ135	4
PJ142	9

(continued on next page)

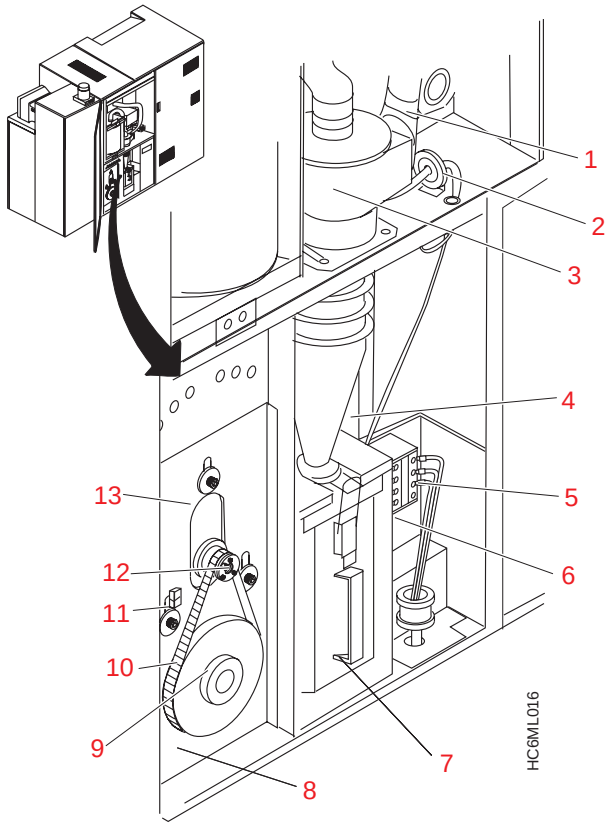
Table 349. Cleaner Mechanism Rear (1) (continued)



Part Name	Callout
PJ146	1
PJ148	6
PJ159	9
PJ175	10
PJ505	16
ST101 Erase Lamp Starter	13
PR011 EP Process Card (See PR011 EP Process Card for card details.)	14
S103 Cleaner Housing Position Sensor	12
S104 Cleaner Brush Rotation Sensor	2
S106 Fine Filter In Place Sensor	6

Cleaner Mechanism Rear (2)

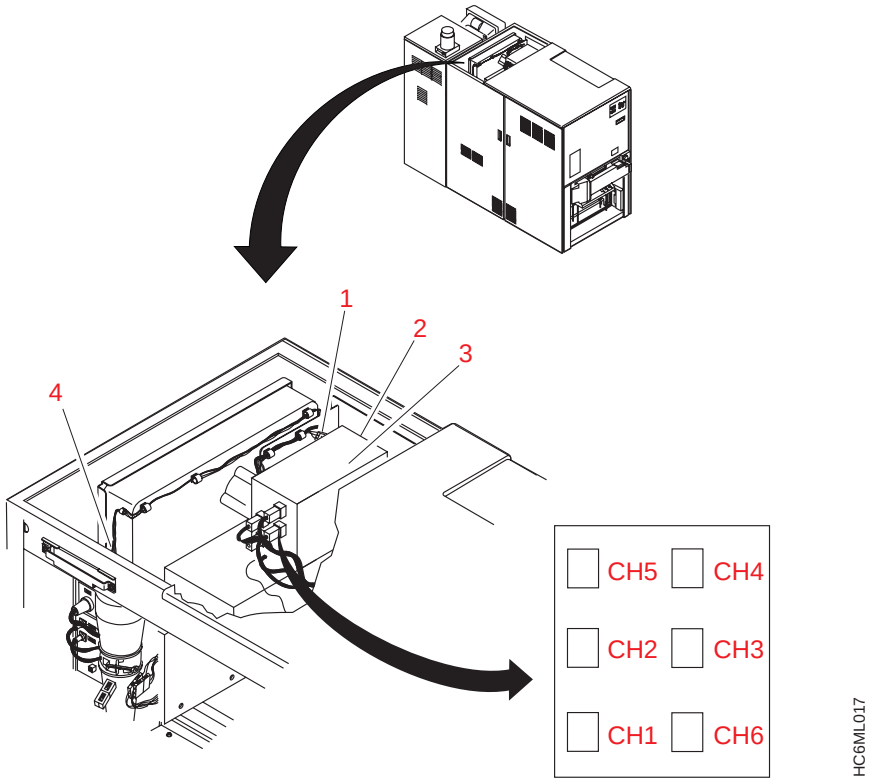
Table 350. Cleaner Mechanism Rear (2)



Part Name	Callout
Belt, Cyclone Blower Drive	10
Cyclone Assembly	3
M104 Cyclone Blower Motor	13
Main Power Input	5
PJ114	4
PJ119	2
PJ123	8
PJ124	8
PJ145	6
PJ150	11
PJ153	2
S101 Toner Collector Switch (behind toner collector box)	6
S116 Cyclone Blower Rotation Sensor	12
S102 Filter Pressure Switch	2
Toner Collector	7
Vacuum Hose to Transfer Corona	1

HVPS Area Rear View

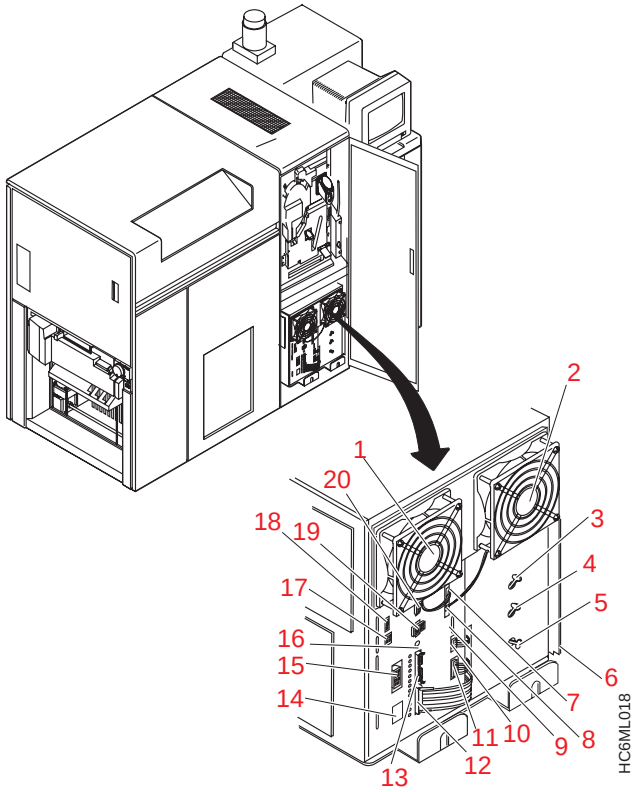
Table 351. HVPS Area Rear View



Part Name	Callout
CH1, High Voltage Connector	
CH2, High Voltage Connector	
CH3, High Voltage Connector	
CH4, High Voltage Connector	
CH5 (not used)	
CH6 (not used)	
HV101 High Voltage Power Supply	3
PJ115	2
PJ116	2
PJ156	1

Printer AC/DC Power Supply ASM - Front View

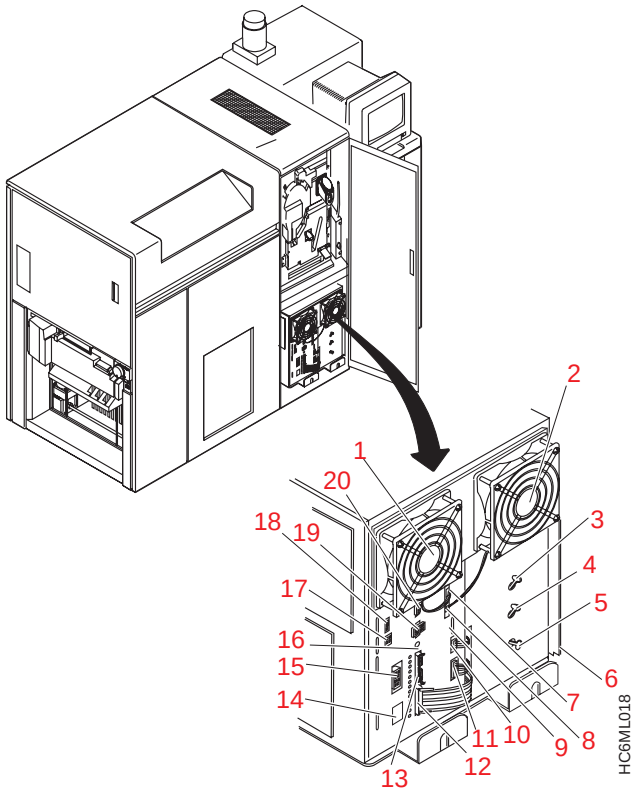
Table 352. AC/DC Power Supply - Front View



Part Name	Callout
B467 Power Supply Fan	2
B468 Power Supply Fan	1
CB451	4
CB452	3
CB453	5
CB454	9
CB463	6
PJ453	6
PJ457	18
PJ458	17
PJ459	20

(continued on next page)

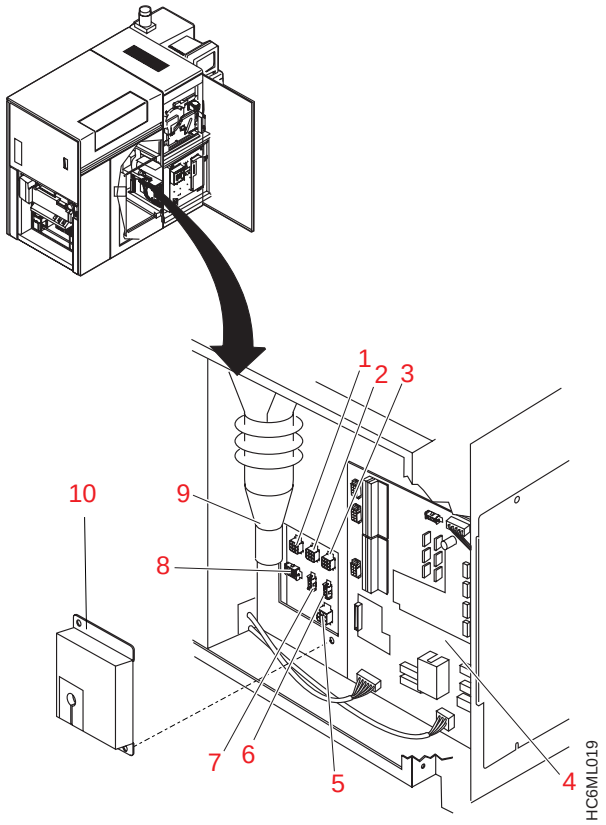
Table 352. AC/DC Power Supply - Front View (continued)



Part Name	Callout
PJ460	15
PJ461	14
PJ462	9
PJ464	13
PJ465	11
PJ466	12
PJ467	7
PJ468	8
PJ469	10

Printer AC/DC Power Supply - Left Side View

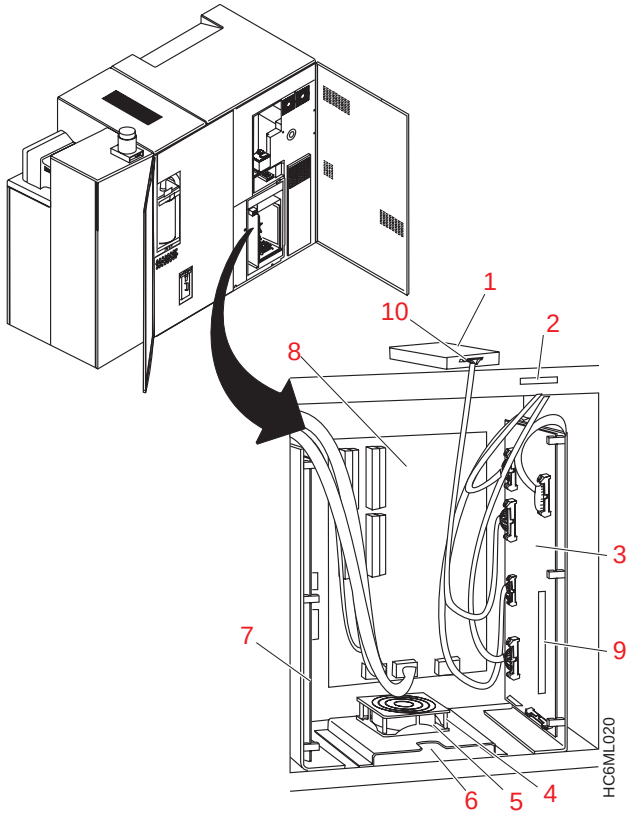
Table 353. AC/DC Power Supply - Left Side View



Part Name	Callout
Developer Drain Hose	9
DV101 AC Motor Driver Card (See DV101 AC Motor Driver Card for card details.)	4
PJ451	8
PJ452	6
PJ454	1
PJ455	2
PJ456	3
PJ470	7
PJ485	5

Logic Card Area

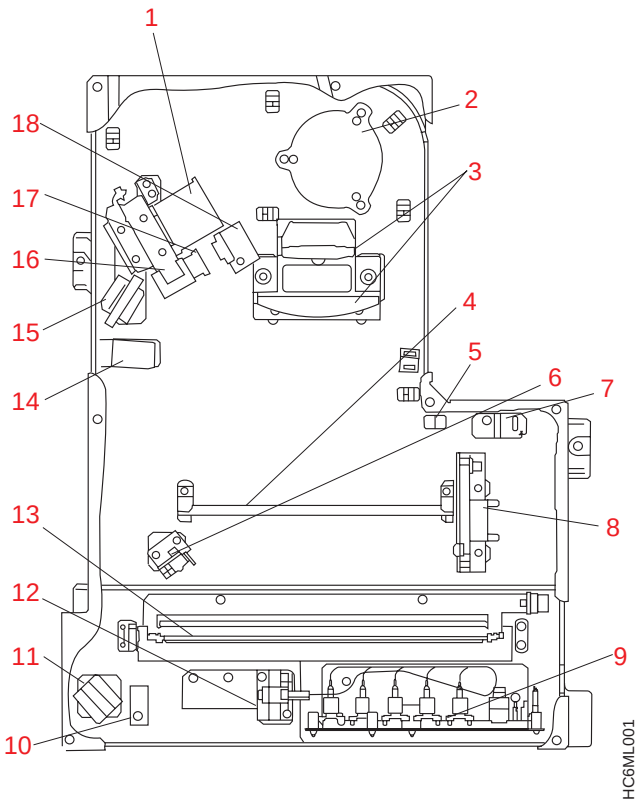
Table 354. Logic Card Area



Part Name	Callout
B301, Logic Area Fan	4
CPxxx, Printer Control Card (See CPxxx Printer Control Cards for card details.)	3
DV061, Stepper Motor Driver Card (See DV061 Stepper Motor Driver Card for card details.)	8
Filter, Logic Fan	6
MB071, Memory Module Card (See CPxxx Printer Control Cards for card details.)	9
Meter, Usage (L301)	2
MP201 Maintenance Panel	1
PC561 Paper Path Control Card (See PC561 Paper Path Control Card for details.)	7
PJ318	2
PJ341	5
PJ448	10

Printhead

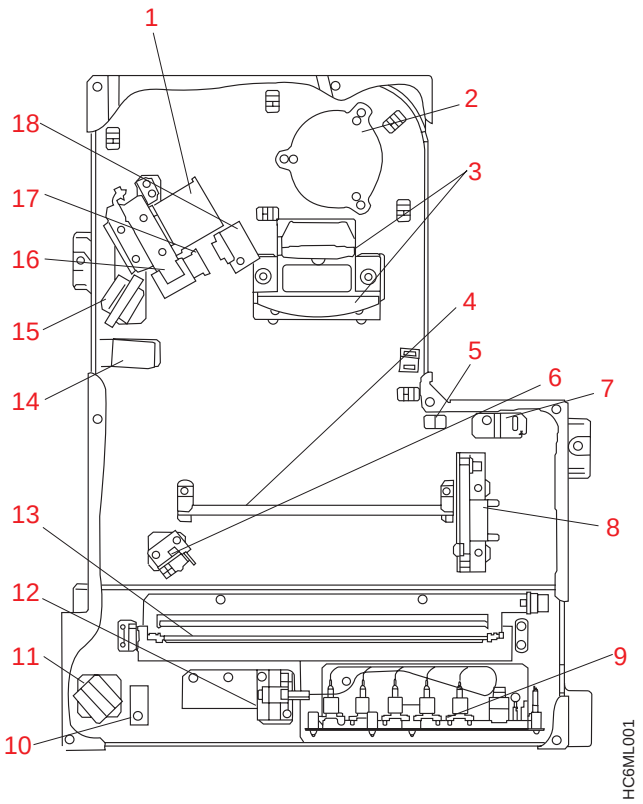
Table 355. Printhead



Part Name	Callout
BD171 Beam Detect Card	8
Beam Detect Mirror	6
CYL1, Cylinder Lens	18
Fiber Module / L1 Lens	12
F-Theta Lens	3
L2, Lens 2	10
L3, Lens 3	14
LD272 Laser Diode Card (See LD272 Laser Diode Card for card details.)	9
Long Lens	4
M1, Mirror 1	11
M2, Mirror 2	15

(continued on next page)

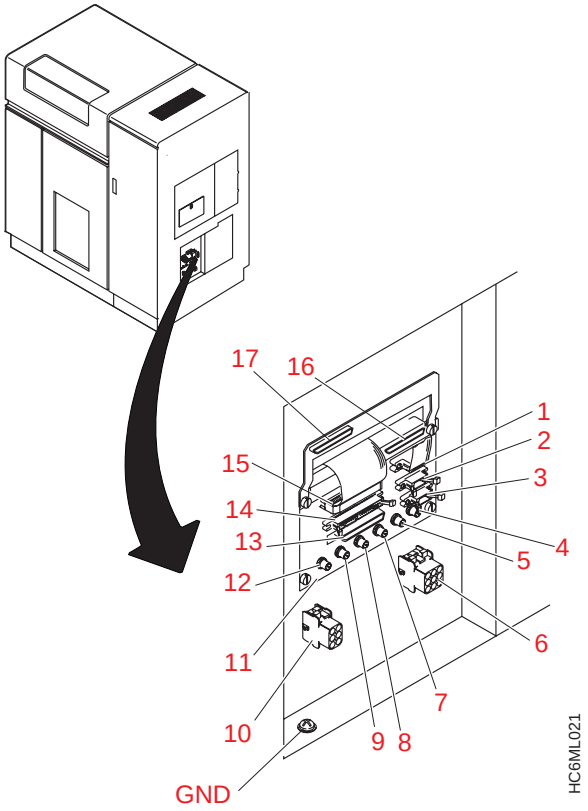
Table 355. Printhead (continued)



Part Name	Callout
M501, Mirror Motor	2
M502, Resolution Lens Motor	1
PJ258	16
PJ259	1
PJ501	8
PJ502	8
PJ513	7
PJ514	5
Resolution Switching Lens	17
Return Mirror	13
S502, Printhead Cover Switch	7
S503, Resolution Lens Sensor	16

Printer Interface

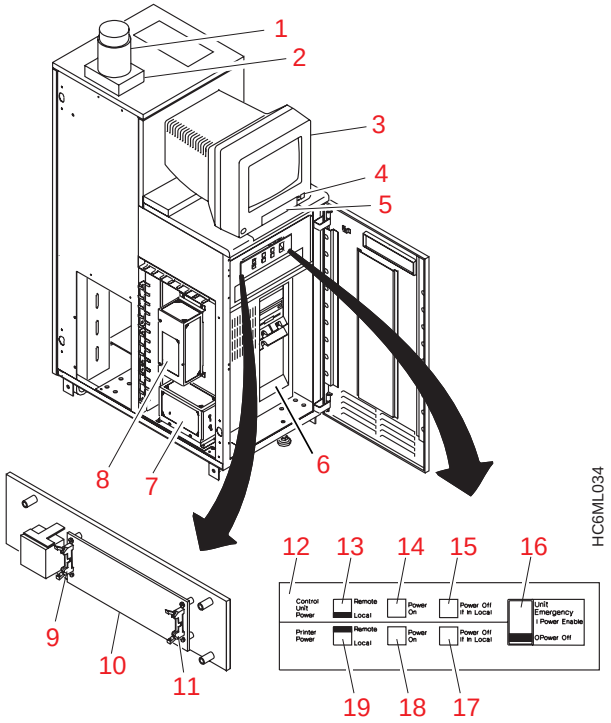
Table 356. Printer Interface



Part Name	Callout
IF491, Interface Card	11
PJ201	15
PJ202	14
PJ203 (BD)	12
PJ204 (VD1)	9
PJ205	10
PJ227	6
PJ228	1
PJ229	13
PJ230	2
PJ232	3
PJ233 (VD2)	8
PJ234 (VD3)	7
PJ235 (VD4)	5
PJ267 (VD5)	4
PJ233S2 (ED2 only)	16
PJ251 (Enhanced Toner Loading)	17

Control Unit - Front View

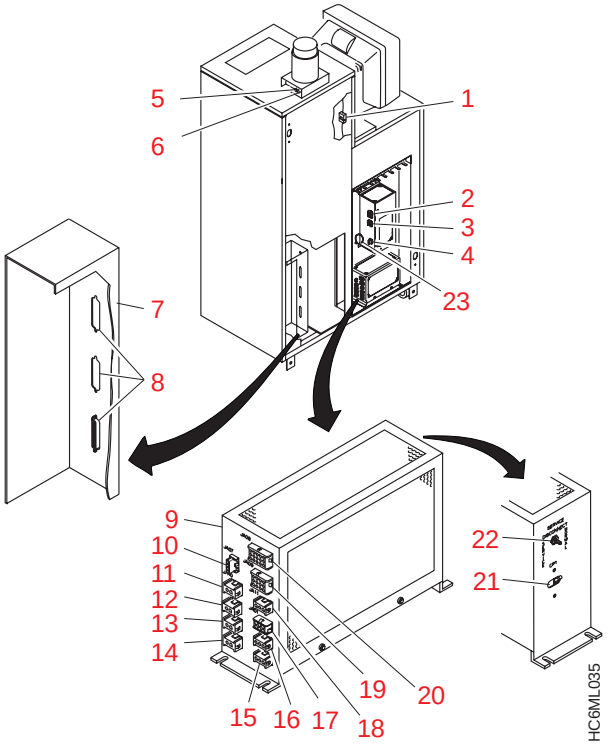
Table 357. Control Unit - Front View



Part Name	Callout
AC Control Box	7
Alarm, Operator Alert	2
Card, Power Control Panel	10
Controller (RS/6000)	6
Display/Touch Screen	3
Light, Operator Alert	1
Panel, Display Control	5
Panel, Power Control	12
PJB01	11
PJB02	9
Push-button, Display Power On/Off	4
SW32 CU Remote/Local Switch	13
SW33 CU Power On Switch	14
SW34 CU Power Off If In Local Switch	15
SW42 Printer Remote/Local Switch	19
SW43 Printer Power On Switch	18
SW44 Printer Power Off If In Local Switch	17
UEPO Unit Emergency Power Enable/Off Switch	16

Control Unit - Left Side View

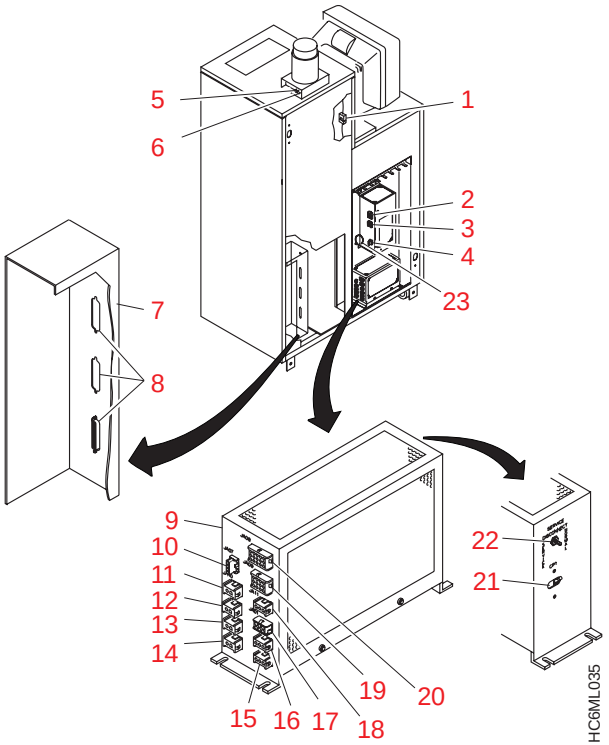
Table 358. Control Unit Left Side View



Part Name	Callout
AC Control Box	9
ALJ2	1
ALP2	1
CP1 Circuit Protector	21
Operator Alert Accessory Contacts	6
Operator Alarm Volume Control	5
PJA01	17
PJA02	12
PJA03	13
PJA04	14
PJA05	16
PJA06	15

(continued on next page)

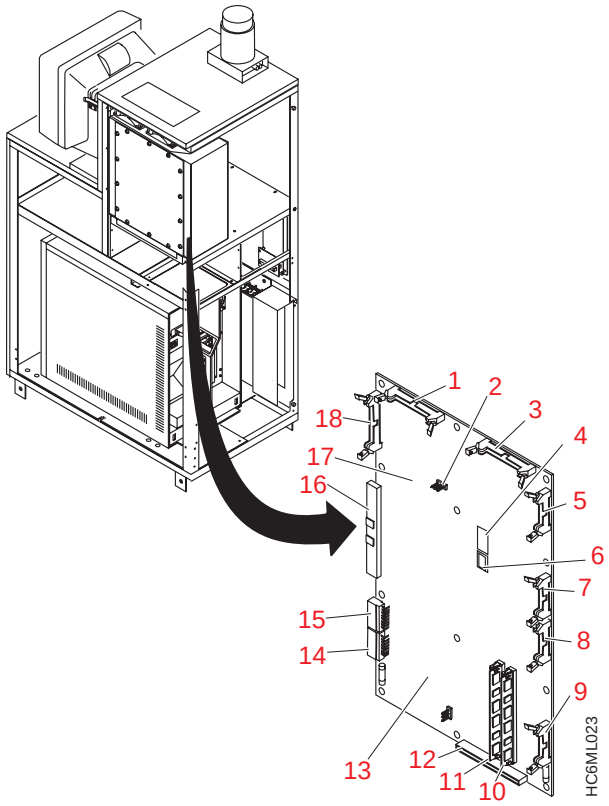
Table 358. Control Unit Left Side View (continued)



Part Name	Callout
PJA07	10
PJA08	20
PJA09	19
PJA10	11
PJA11	18
PJH01	4
PJH02	2
PJH03	3
Power Supply, DC	2
Pre/postprocessing Tailgate	7
Pre/postprocessing Tailgate Connectors	8
S1 Service Disconnect Switch	22

Control Unit - Mechanical Interface Card (MIC)

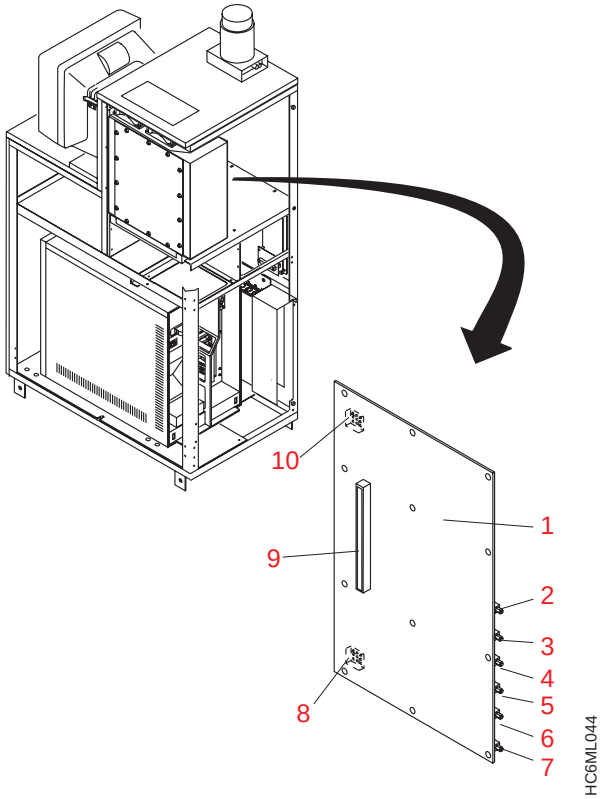
Table 359. Mechanical Interface Card (MIC)



Part Name	Callout
Mechanical Interface Card (MIC)	13
MIC Display	4
MJ01	5
MJ02	7
MJ03 (not used)	8
MJ06	12
MJ07 (port 3)	3
MJ09 (port 2)	1
MJ10	16
MJ11 (port 1)	18
MJ12 (not used)	9
MJ21	14
MJ22	15
Printer Jumper	2
SIMM 1	10
SIMM 2	11
SSA (fast/slow)	17
SW1	6

Control Unit - Print Quality Enhancement Card (PQE)

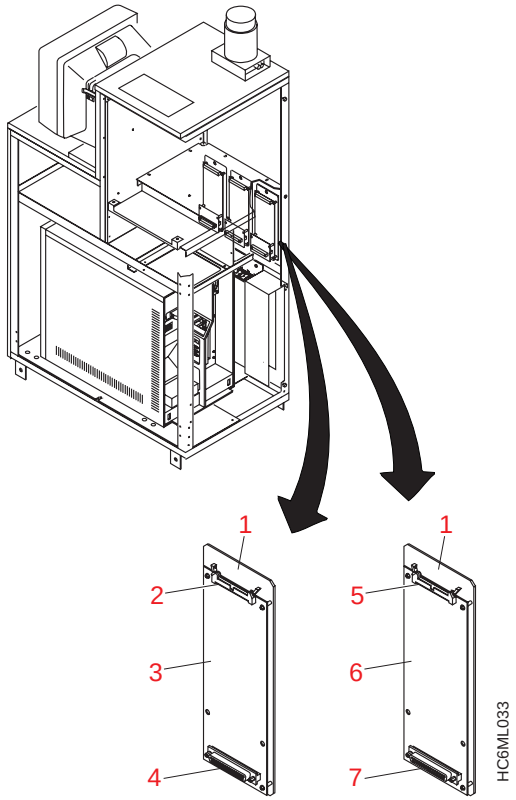
Table 360. Print Quality Enhancement Card (PQE)



Part Name	Callout
Print Quality Enhancement Card (PQE)	1
BD	7
PJ5	8
PJ10	10
VD1	2
VD2	3
VD3	4
VD4	5
VD5	6
PJMJ04	9

Control Unit - Pre/Post Processing Cards

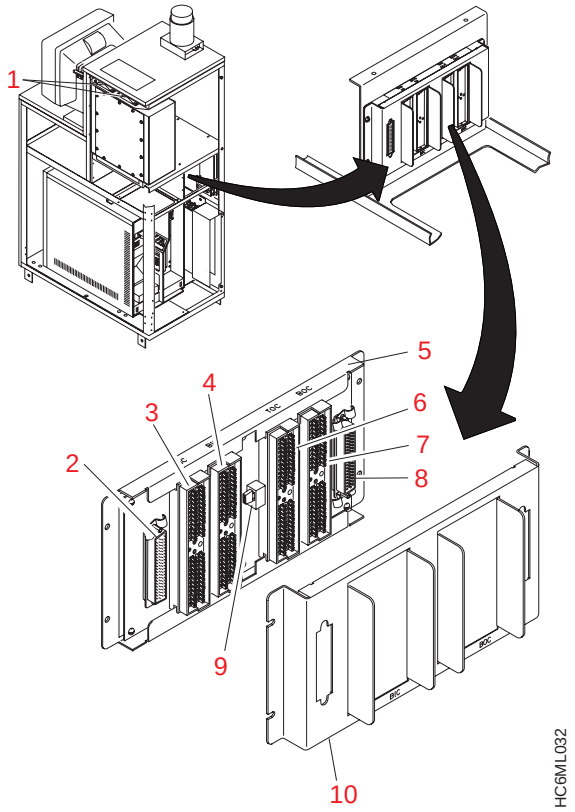
Table 361. Pre/Post Processing Cards



Part Name	Callout
CD1 Connector (CGIC)	2
CD1 Connector (CGUC)	5
Common Ground Isolated Card (CGIC) Type2 Pre/Post	3
Type 1 Pre/Post Card (CGUC)	6
Mounting Plate	1
PJF04	4
PJF04	7

Control Unit - Channel I/O Connection

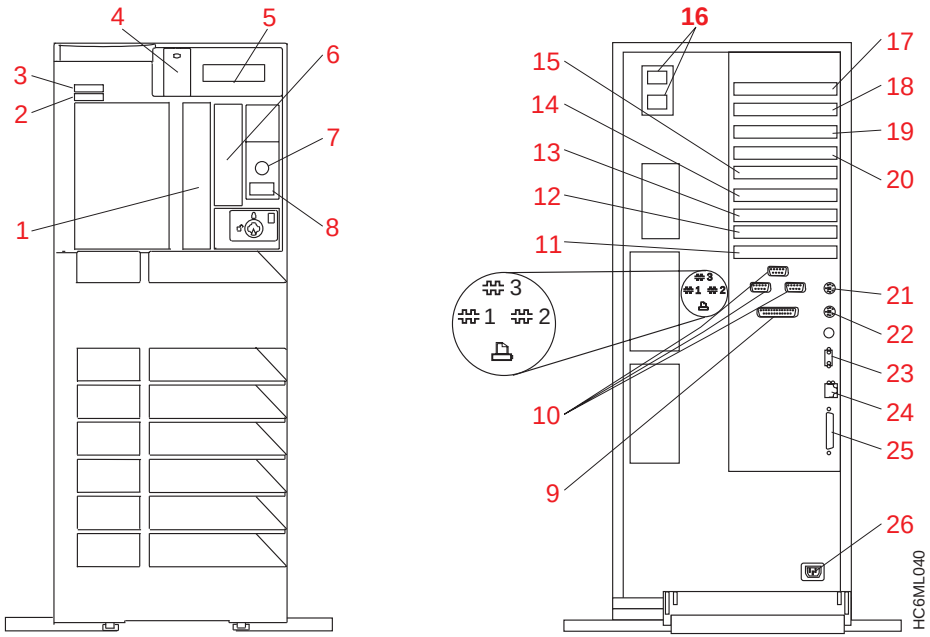
Table 362. Channel I/O Connection



Part Name	Callout
BUS IN Connector (BIC)	4
BUS OUT Connector (BOC)	7
Cover, Channel Tailgate	10
MIC Fans	1
SW1 Channel Priority Switch	9
TAG IN Connector (TIC)	3
TAG OUT Connector (TOC)	6
Tailgate, Channel	5
Y Cable Connector	8
Y Cable Connector	2

RS/6000 Controller 7025 Model F50 - Front & Back

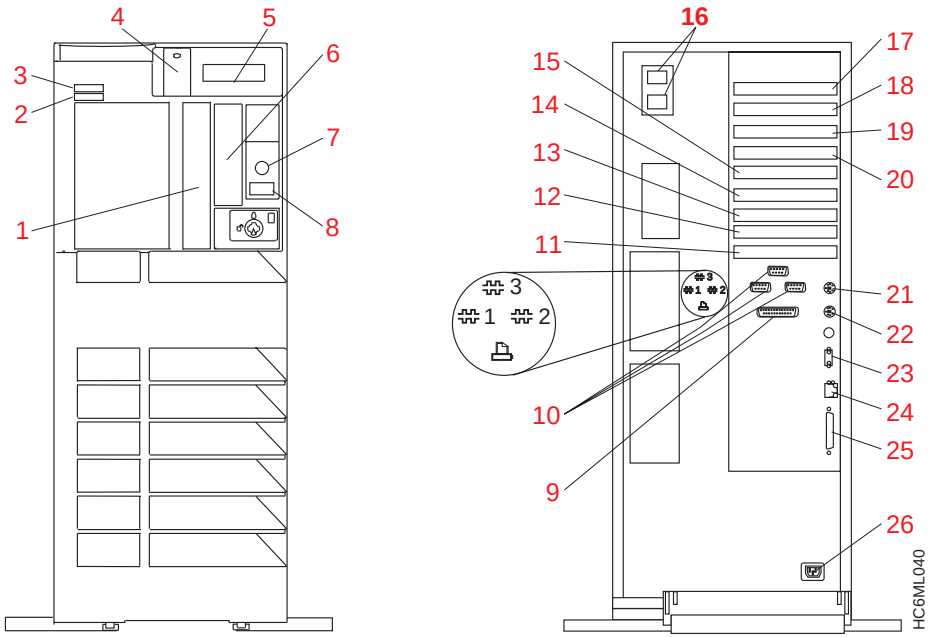
Table 363. RS/6000 - 7025 F50 Front & Back



Part Name	Callout
Adapter Card Slot 2 (not used)	12
Adapter Card Slot 5 (not used)	15
Adapter Card Slot 7 (not used)	19
Button, Reset	7
Connector, Display/Touch Screen (Serial Port S2)	10
Connector, Display/Touch Screen (Slot 3)	13
Connector, Ethernet (not used)	23
Connector, Ethernet Twisted Pair (not used)	24
Connector, External SCSI Interface Terminator	25
Connector, Host Attachment Card (Slot 6)	20
Connector, Host Attachment Card (Slot 8)	18
Connector, Keyboard	22
Connector, Mouse	21
Connector, Parallel Port (not used)	9

(continued on next page)

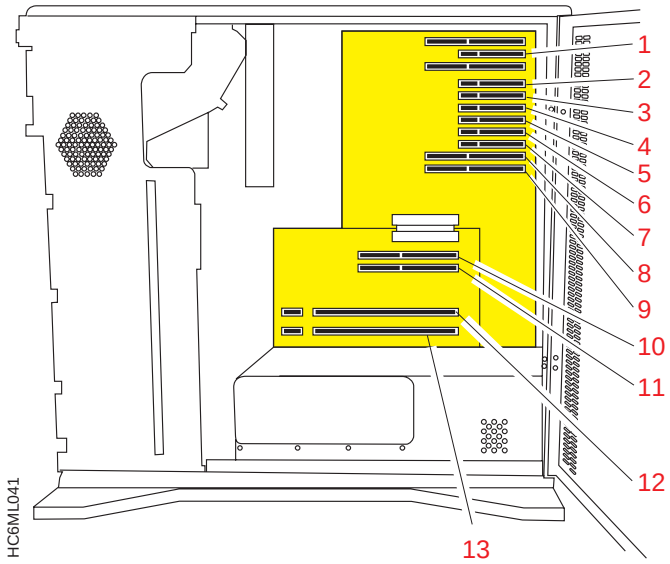
Table 363. RS/6000 - 7025 F50 Front & Back (continued)



Part Name	Callout
Connector, Power	26
Connector, Serial Port S1	10
Connector, Serial Port S3	10
Connector, SSA (A1, A2, B1, B2) (Slot 1)	11
Connector, (Slot 4) not used	14
Connector, (Slot 9) not used	17
Connector, SSA Disk Drive (top & bottom)	16
Display, 3-Character (optional)	5
Drive, CD-ROM	1
Drive, Diskette 3.5-inch	6
Label, CPU Speed/Type	2
Label, Serial Number	3
LED, Power On	4
Switch, Power (On/Off Push-button)	8

RS/6000 Controller 7025 Model F50 - Cards

Table 364. RS/6000 - 7025 F50 Card Locations



Part Name	Callout
Adapter Card Slot 1, SSA	9
Adapter Card Slot 2 (not used)	8
Adapter Card Slot 3, Display/Touch Screen	7
Adapter Card Slot 4, (not used)	6
Adapter Card Slot 5 (not used)	5
Adapter Card Slot 6, Host Attachment Card	4
Adapter Card Slot 7 (not used)	3
Adapter Card Slot 8, Host Attachment Card	2
Adapter Card Slot 9, (not used)	1
Memory Card	10
Memory Card	11
Processor Card	12
Processor Card	13

RS/6000 Controller 7025 Model F50 - Bays

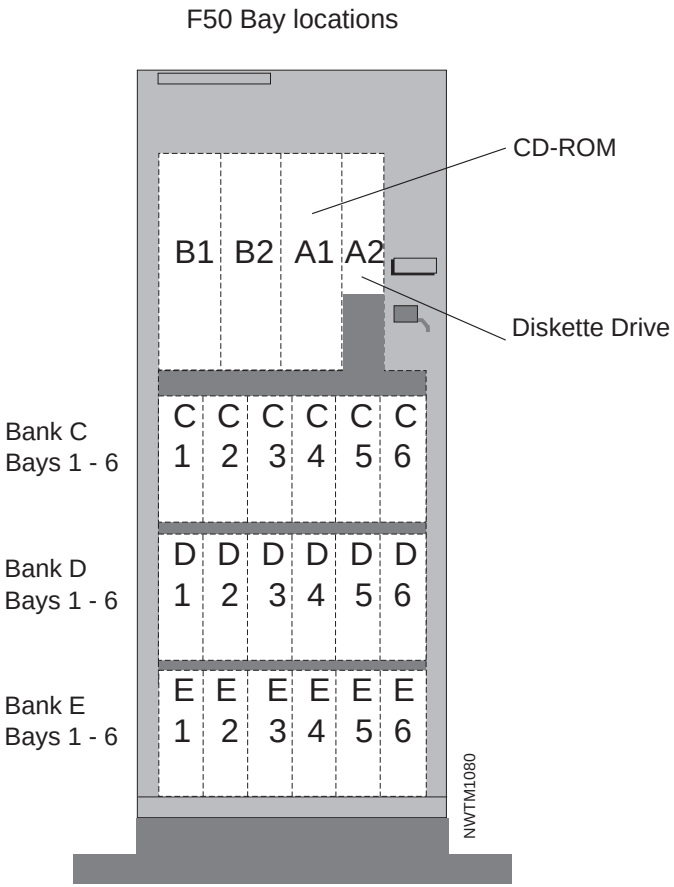
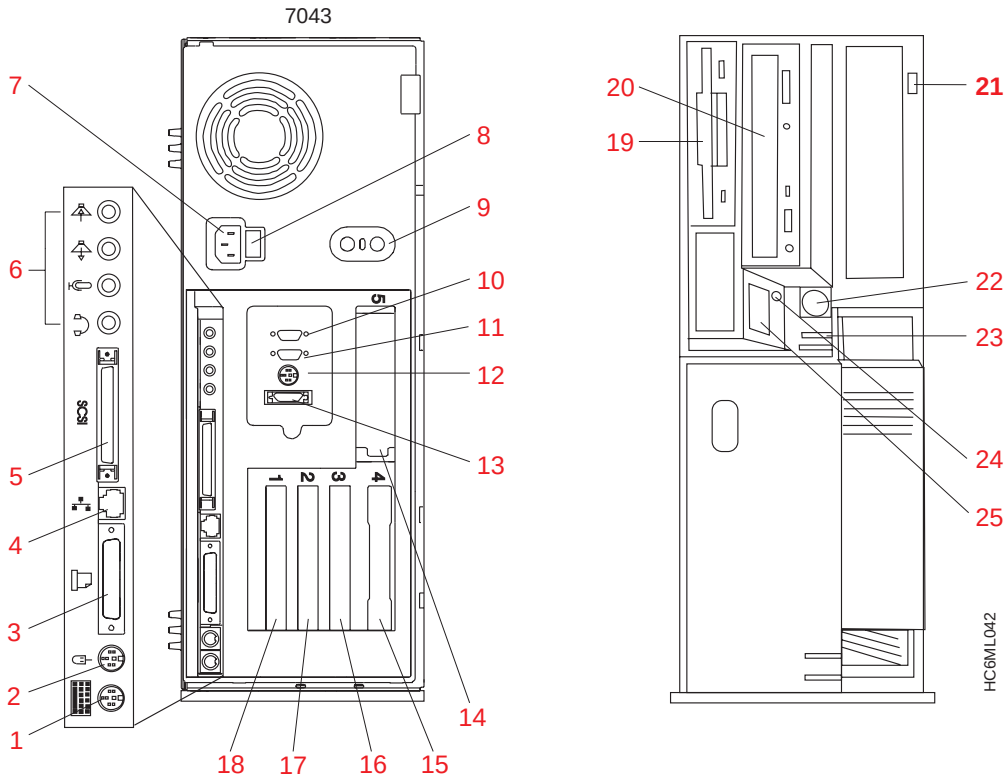


Figure 2. RS/6000 - 7025 F50 Bay Locations

RS/6000 Controller 7043 Model 43P-140 Front & Back

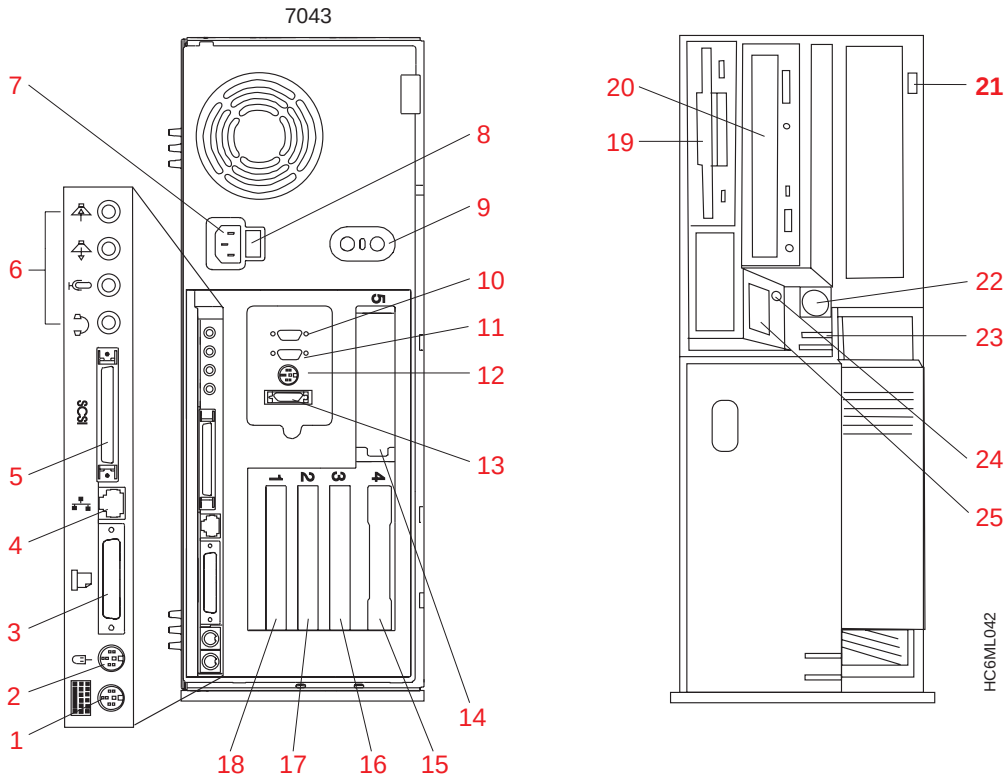
Table 365. RS/6000 - 7043 43P-140 Front & Back



Part Name	Callout
Adapter Card Slot 5 (not used)	14
Button, Reset	24
Connector, Display/Touch Screen (Slot 1)	18
Connector, Display/Touch Screen (Serial Port S2)	11
Connector, Ethernet (not used)	13
Connector, Ethernet Twisted Pair (not used)	4
Connector, External SSA Interface Terminator	5
Connector, Host Attachment Card (Slot 2)	17
Connector, Host Attachment Card (Slot 4)	15
Connector, Keyboard	1
Connector, Mouse	2
Connector, Parallel Port (not used)	3
Connector, Power	7

(continued on next page)

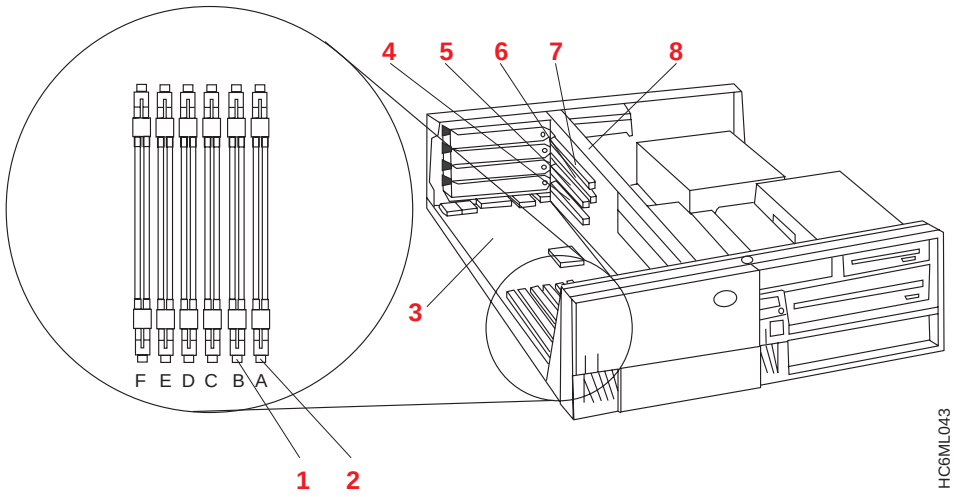
Table 365. RS/6000 - 7043 43P-140 Front & Back (continued)



Part Name	Callout
Connector, SSA I/O to MIC Card (slot 3)	16
Connector, Serial Port S1	10
Connector, Tablet (not used)	12
Display	25
Drive, CD-ROM	20
Drive, Diskette 3.5-inch	19
Label, CPU Speed/Type	21
Label, Serial Number	21
LED, Power On	23
Ports, Audio	6
Switch, Power (On/Off Push-button)	22
Switch, Voltage	8
Tether, Security	9

RS/6000 Controller 7043 Model 43P-140 Cards

Table 366. RS/6000 - 7043 43P-140 Card Locations



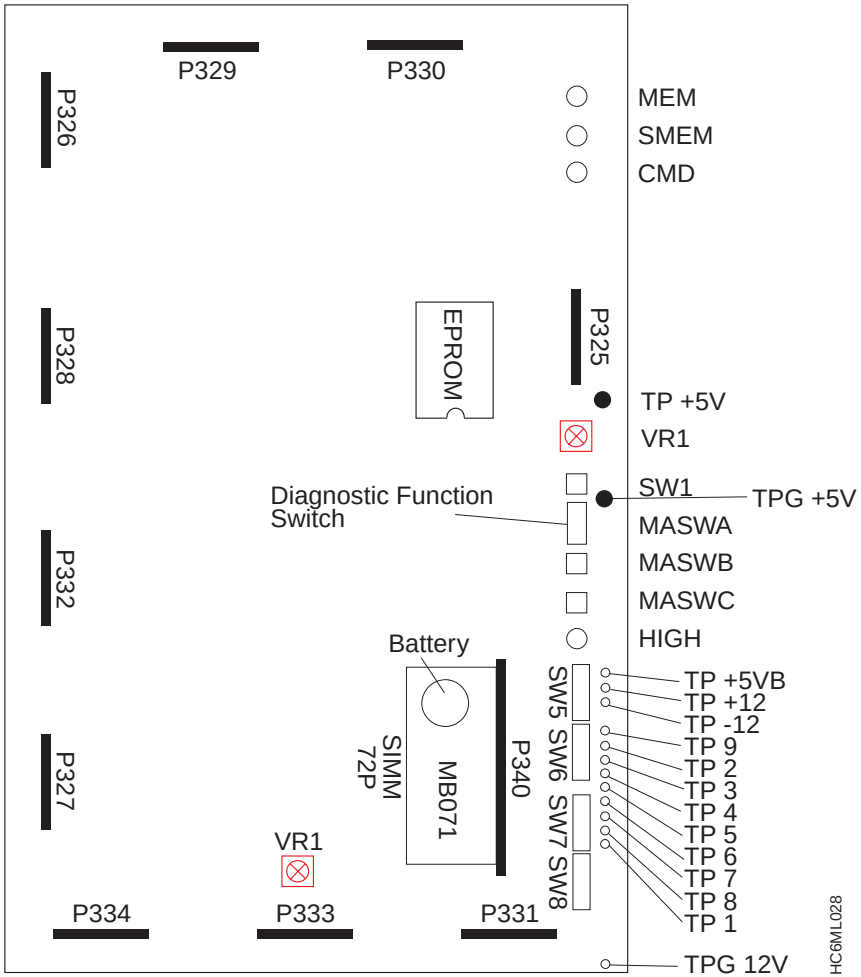
Part Name	Callout
Adapter Card Slot 1, Display/Touch Screen	4
Adapter Card Slot 2, Host Attachment Card	5
Adapter Card Slot 3, SSA	6
Adapter Card Slot 4, Host Attachment Card	7
Adapter Card Slot 5 (not used)	8
Dual Inline Memory Module, 64MB	1
Dual Inline Memory Module, 64MB	2
Processor Card	3

Card Details

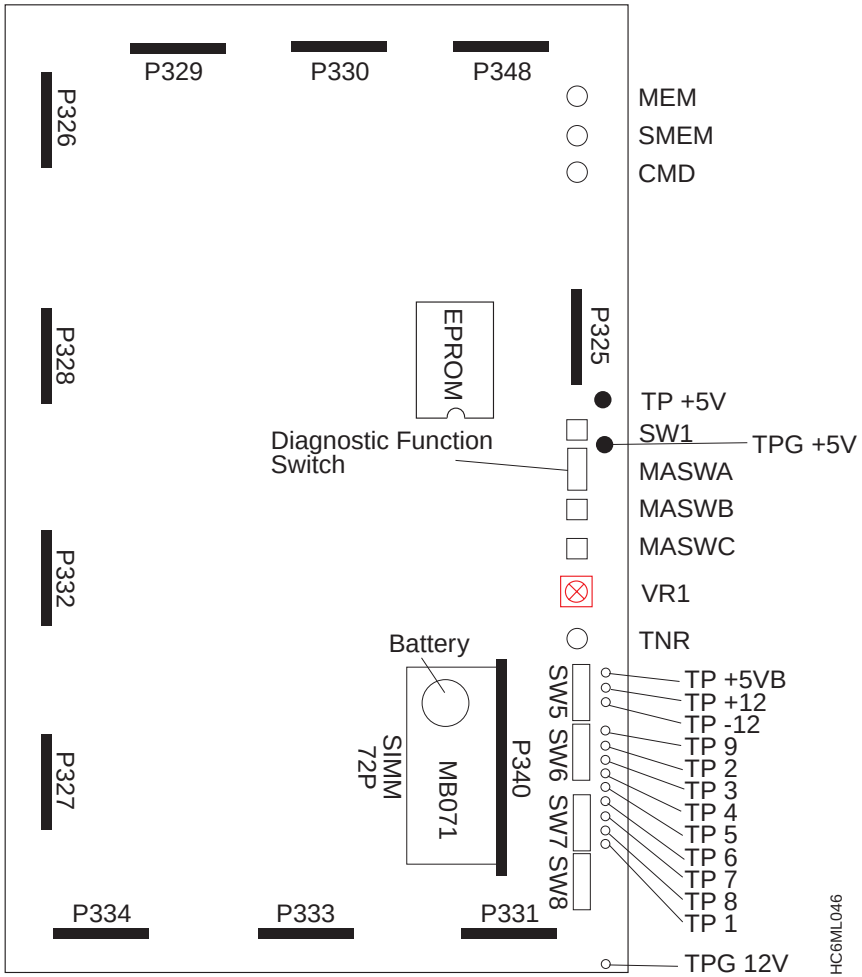
CPxxx Printer Control Cards

Table 367. CPxxx Printer Control Cards

CP261 Card

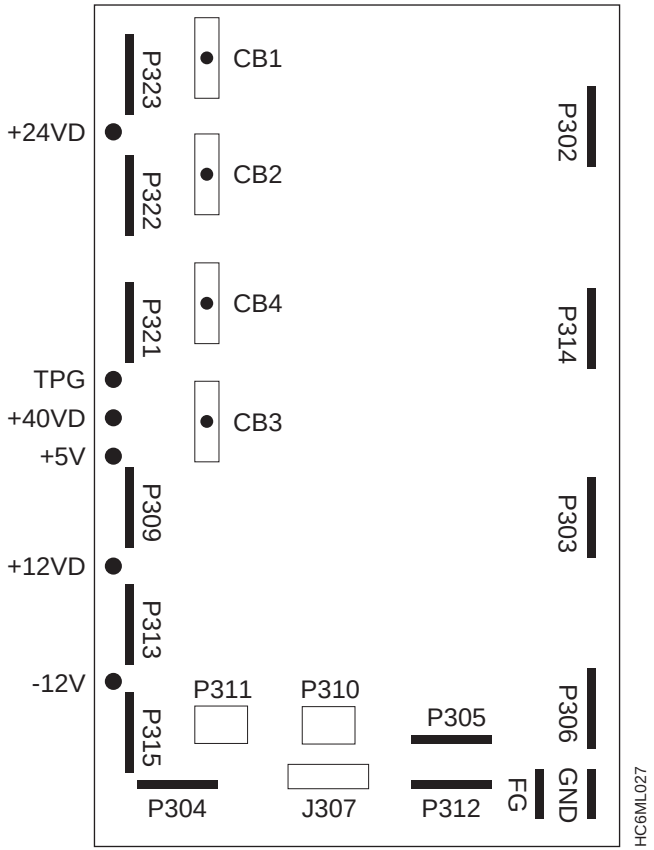


CP471 Card

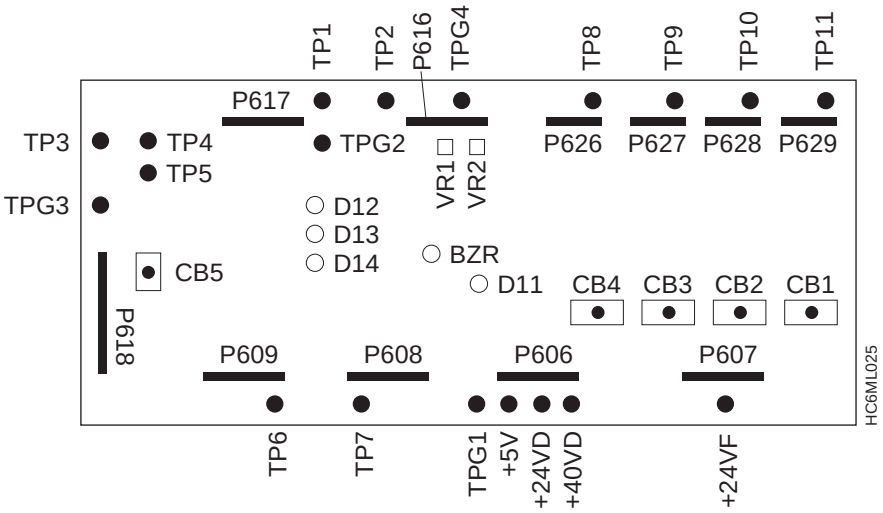


* Note: Depending on card level VR1 could be in either location.

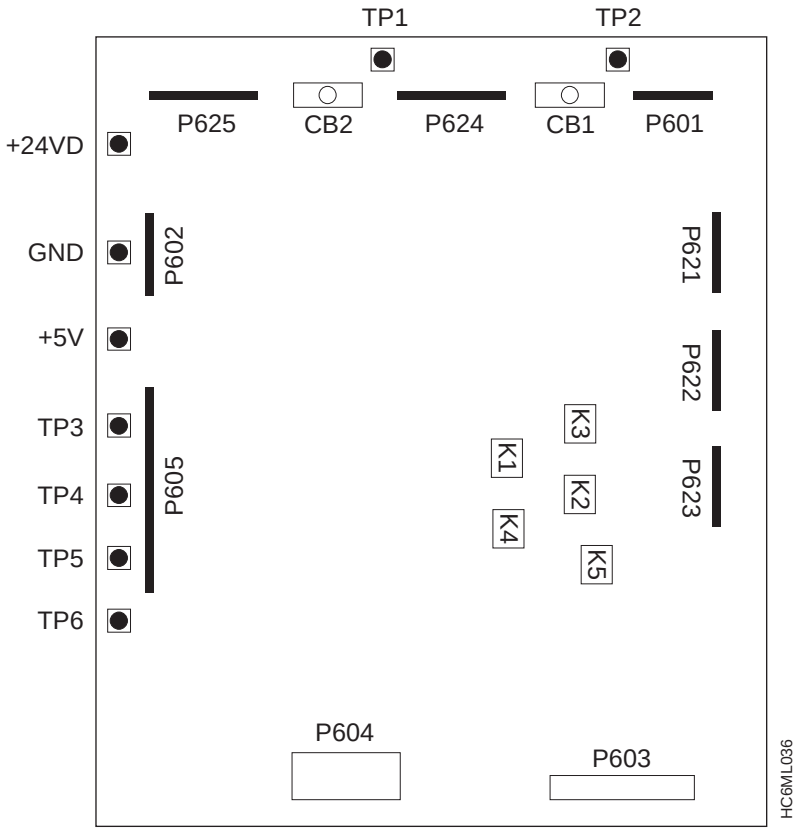
DV061 Stepper Motor Driver Card



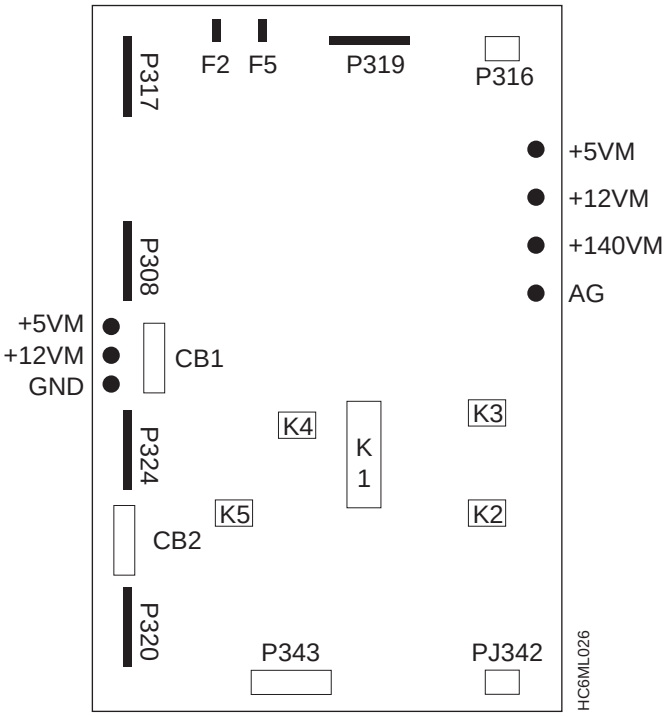
DV071 Fuser/Stacker Driver Card



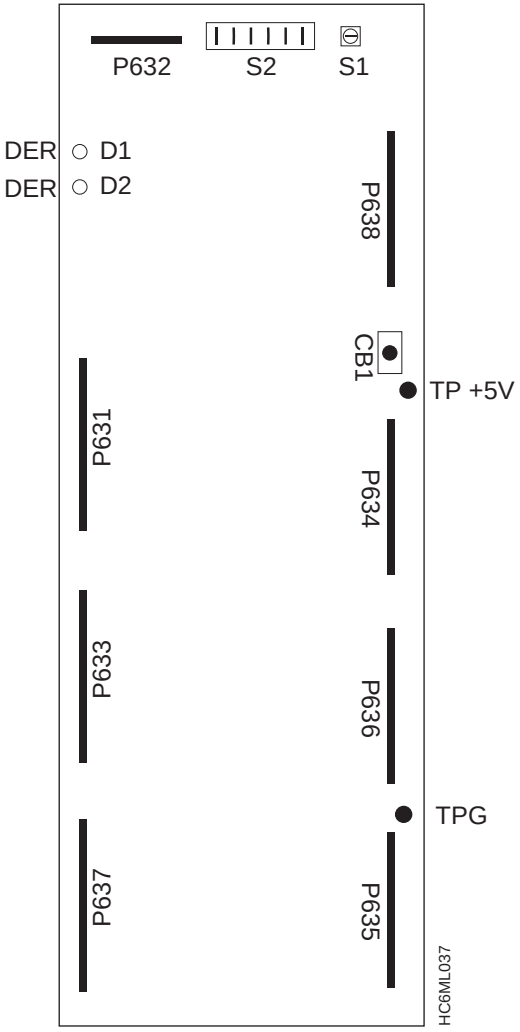
DV081 Fuser/Stacker Driver Card



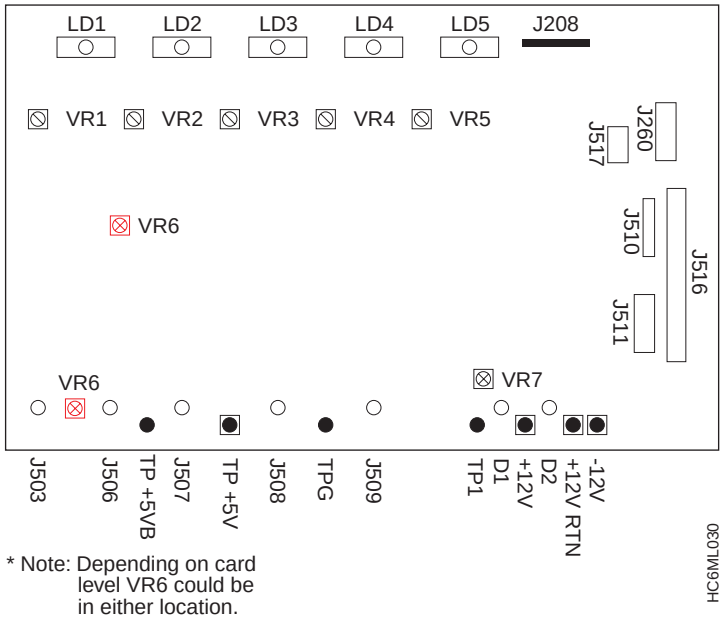
DV101 AC Motor Driver Card



FU041 Fuser Control Card

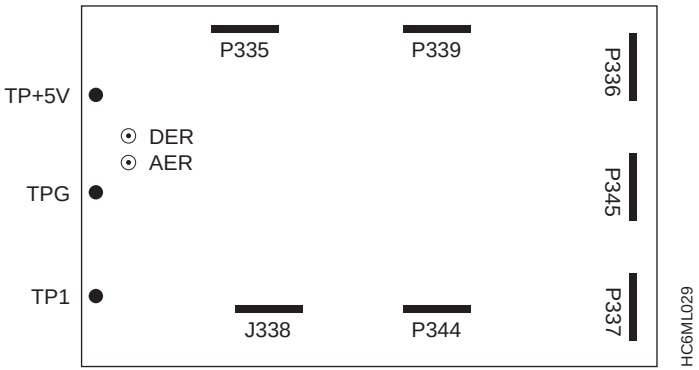


LD272 Laser Diode Card

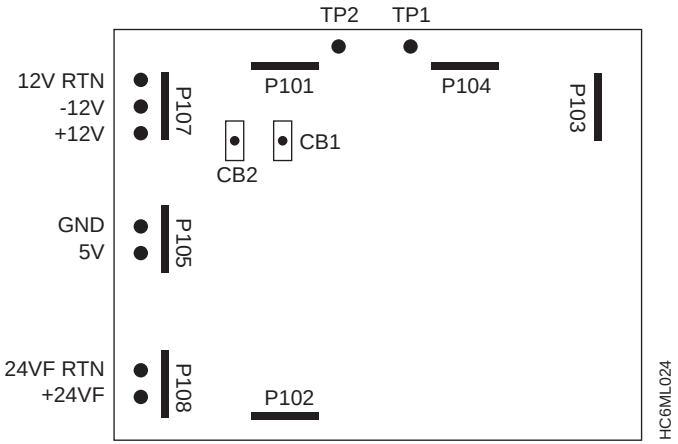


* Note: Depending on card level VR6 could be in either location.

PC561 Paper Path Control Card



PR011 EP Process Card



Chapter 5. Removals and Adjustments

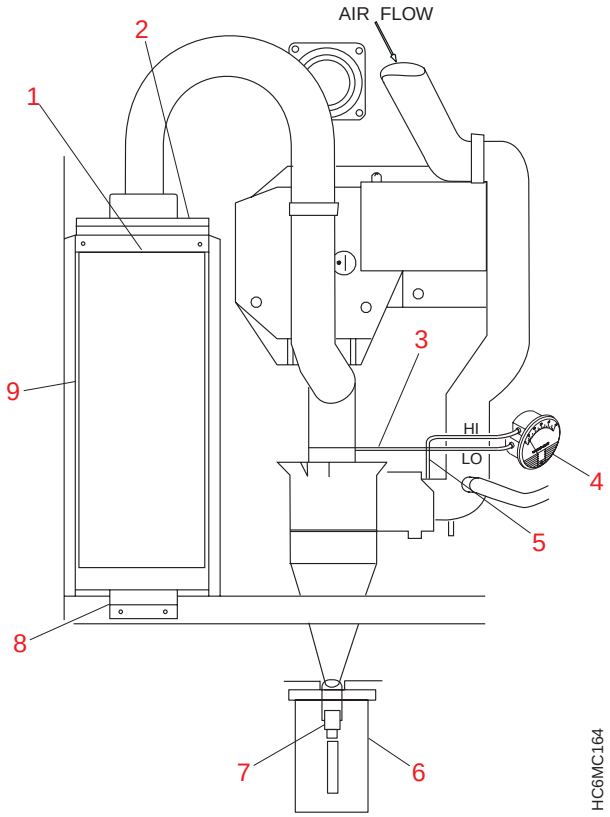
Air System

Fine Filter 1480
Fine Filter Case 1481
Fine Filter Switch (S106) 1482
Toner Collector Assembly 1483
Toner Collector Switch (S101) 1485
Filter Pressure Switch (S102) 1487
Cyclone Blower Drive Belt 1488
Cyclone Blower Motor (M104) 1490
Cyclone Blower 1491
Cyclone Blower Rotation Sensor (S116) 1493
Cyclone Pressure Check 1495

© Copyright IBM Corp. 1999, 2000

Fine Filter

Table 368. Fine Filter



Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the center rear cover.
4. Remove the rear process cover.
5. Release the latch **(1)**, raise the fine filter cover **(2)**, and pull the filter housing **(9)** forward to clear the cover.
6. Carefully lift the fine filter out of the filter housing.
7. Use a vacuum to clean the paper dust and debris from the inside of the filter housing.
8. Vacuum the filter.

   If the filter is damaged or you cannot clean it thoroughly, order a new filter.

Installation

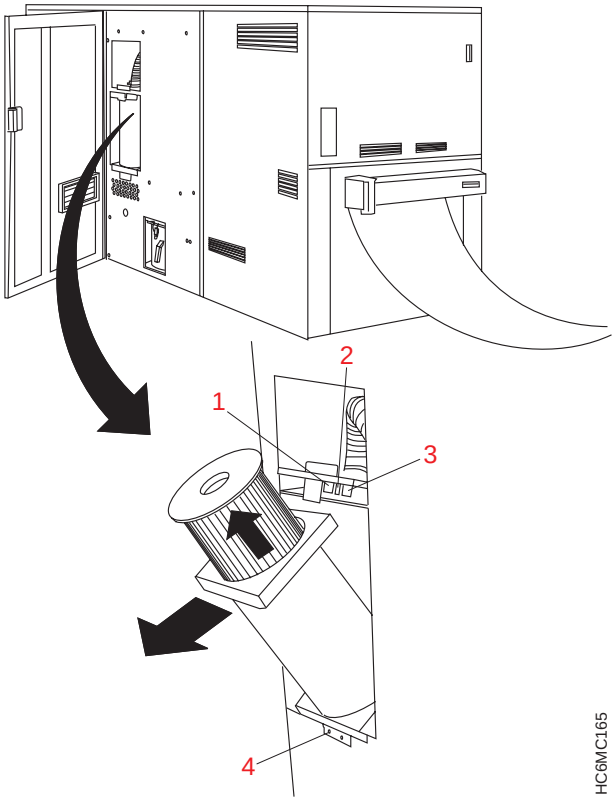
1. Reverse the removal procedure to install a new fine filter.

Check and Adjustment

1. Make sure that the fine filter cover is firmly latched.
2. Run Print Pack to verify print quality.

Fine Filter Case

Table 369. Fine Filter case



Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the center rear cover.
4. Remove the rear process cover.
5. Remove the Fine Filter.
6. Remove the four screws **(4)**.
7. Slide out the fine filter housing.
8. Tape a piece of paper over the filter vacuum hole to prevent contamination.

Installation

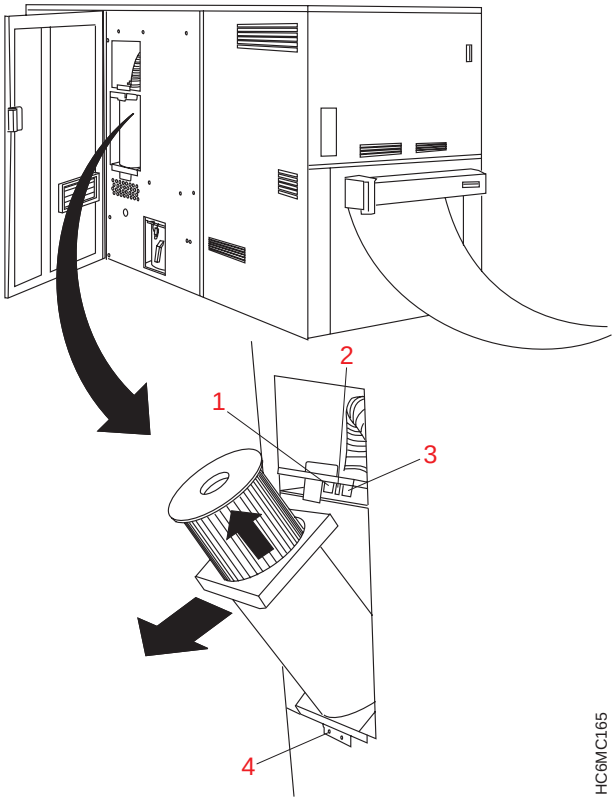
1. Reverse the removal procedure to install a new fine filter housing.

Verify

1. Run Print Pack to verify print quality.

Fine Filter Switch (S106)

Table 370. Fine Filter Switch (S106)



Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the left rear cover.
4. Remove the rear process cover.
5. Remove the four hinge screws and remove the filter cover.
6. Disconnect connector PJ148 **(2)**.
7. Mark the location of the fine filter switch.
8. Remove the two screws and remove the switch.

Installation and Adjustment

1. Reverse the removal procedure to install a new fine filter pressure switch.
2. Make sure the filter cover is securely latched.
3. Move the switch interruptor and ensure that it clears the gap in the switch.

Check

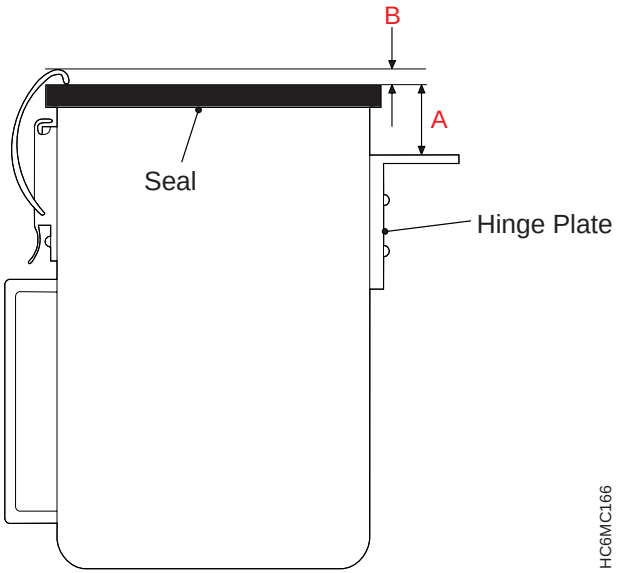
1. Run Sensor Routine 54 to ensure that the sensor correctly senses the presence of the fine filter.

Verify

1. Run Print Pack to verify print quality.

Toner Collector Assembly

Table 371. Toner Collector Assembly



(continued on next page)

Removal

1. Open the left rear cover.
2. Release the latch holding the toner collector housing.
3. Slide the housing out carefully to prevent spilling loose toner.
4. Place the housing on a sheet of paper.
5. Lift the toner collector bag out of the housing.

Installation

1. Reverse the removal procedure to install a new toner collector bag.

Check

Note: You must remove the toner collector housing to perform the following checks and adjustments.

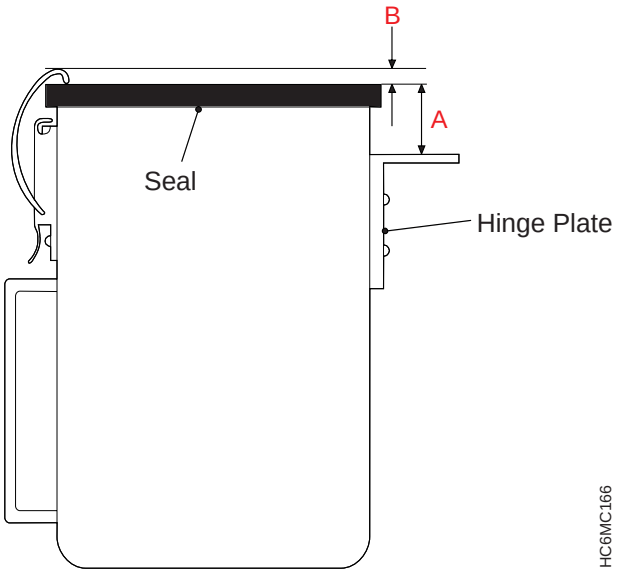
1. Place the housing on a sheet of paper.
2. Lift the toner collector bag out of the housing.
3. Measure the distance from the top of the hinge plate to the top of the seal **(A)**.

   Place the ruler vertically against the seal to ensure an accurate reading.

   If **(A)** is within 23 to 23.5 mm (0.91 to 0.93 in.), you do not have to make any adjustment to the hinge plate.
4. Close the latch and hold the wire clamp lightly against the seal.
5. Measure the distance from the top of the seal to the top of the wire clamp **(B)**.

   If **(B)** is within 5.0 to 7.0 mm (0.20 to 0.28 in.), you do not have to make any adjustment to the latch.

Table 371. Toner Collector Assembly (continued)

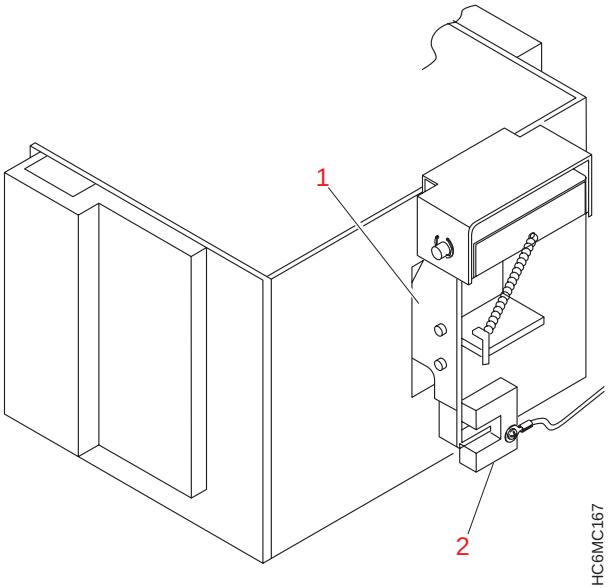


Adjustment

1. To change dimension **(A)**, do the following:
   a. Loosen the two screws on the hinge plate.
   b. Adjust the hinge plate up or down as necessary.
   c. Tighten the two screws.
   d. Check dimension **(A)** again.
2. To change dimension **(B)**, do the following:
   a. Loosen the two screws on the latch.
   b. Adjust the latch up or down as necessary.
   c. Tighten the two screws.
   d. Check dimension **(B)** again.

Toner Collector Switch (S101)

Table 372. Toner Collector Switch (S101)

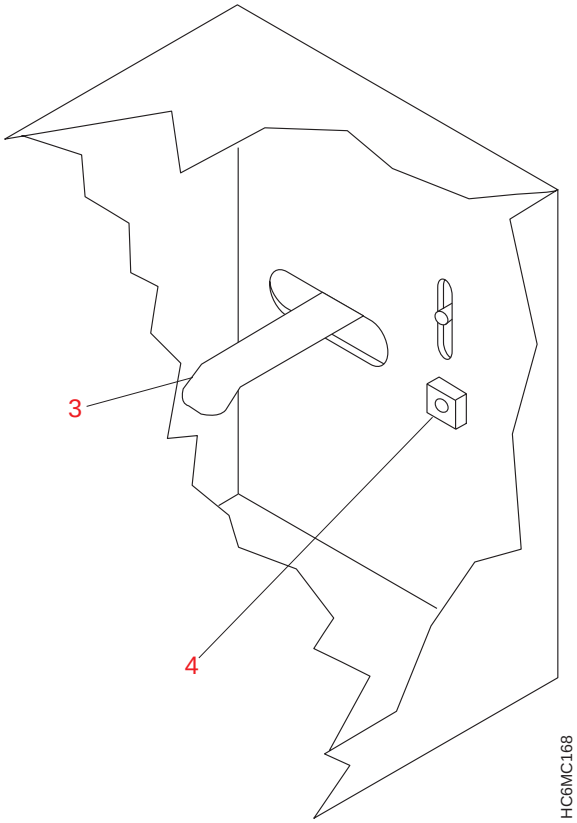


(continued on next page)

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Open the left rear cover.
3. Remove the blower cover.
4. Remove the Toner Collector Assembly.
5. Disconnect connector P145.
6. Remove the two screws.
7. Remove the toner collector box compartment.
8. Remove the screw and remove the toner collector switch **(2)**.

Table 372. Toner Collector Switch (S101) (continued)



Installation and Adjustment

1. Install the toner collector switch.
2. Adjust the switch so that the actuator arm **(3)** operates without interference.
3. Install the toner collector box compartment.
4. Install the toner collector box.

Check

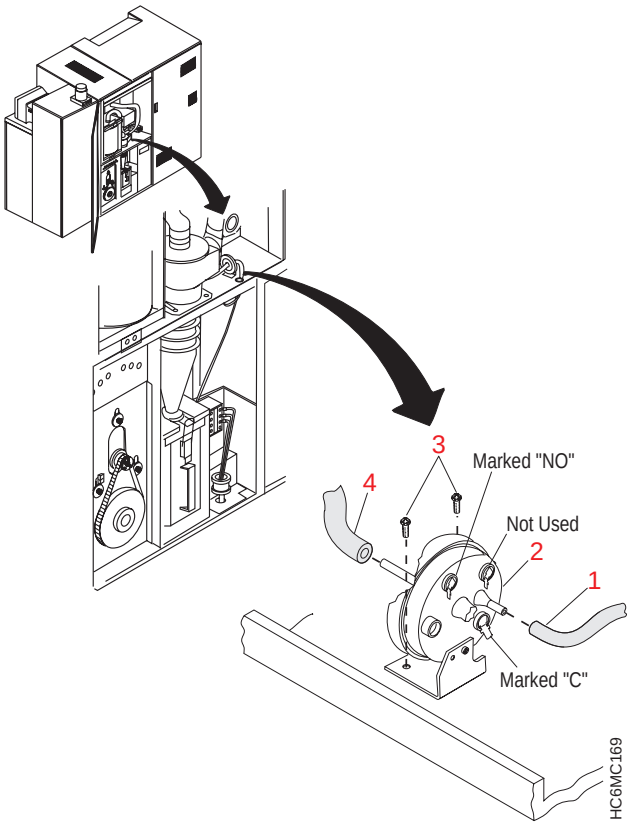
1. Run Sensor Routine 53 to ensure that the sensor detects the presence of the toner collector box.

Verify

1. Run Print Pack to very print quality.

Filter Pressure Switch (S102)

Table 373. Filter Pressure Switch (S102)



Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the rear covers.
4. Remove the rear process cover.
5. Remove the hoses **(1)** and **(4)** from the pressure switch.
6. Remove the two wires **('NO')** and **('C')** from the switch.
7. Remove the two screws **(3)** and remove the pressure switch **(2)**.

Installation

1. Reverse the removal procedure to install a new fine filter pressure switch.
2. Power on the printer.

Check

1. Remove one hose from the filter pressure switch.
2. Force an end-of-forms condition by doing the following:
   a. Run Print Pack.
   b. Shine a light on the end of forms sensor.
3. The `Change Fine Filter` appears on the Display/Touch Screen.

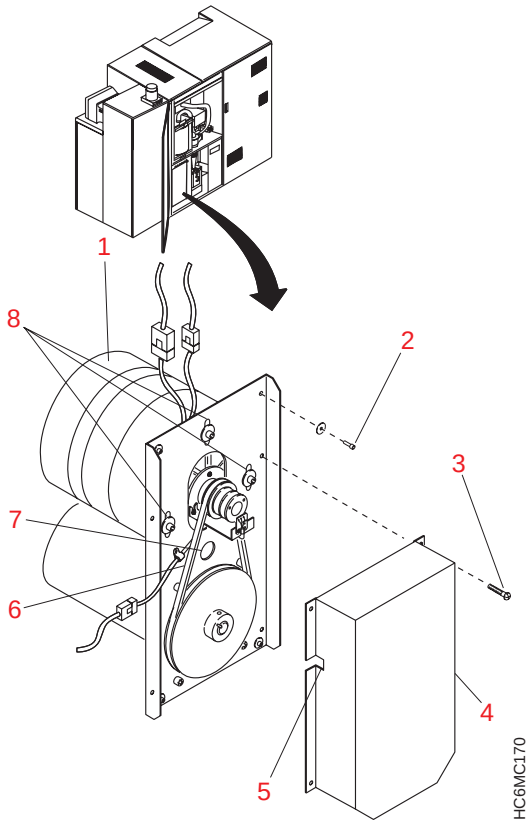
   This indicates that the pressure switch works correctly.

Verify

1. Run Print Pack to verify print quality.

Cyclone Blower Drive Belt

Table 374. Cyclone Blower Drive Belt



(continued on next page)

Special Tools Required:

- Push-pull scale (P/N 0460870)

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the left rear cover.
4. Remove the blower cover.
5. Remove the four screws **(3)** and remove the belt cover **(4)**.

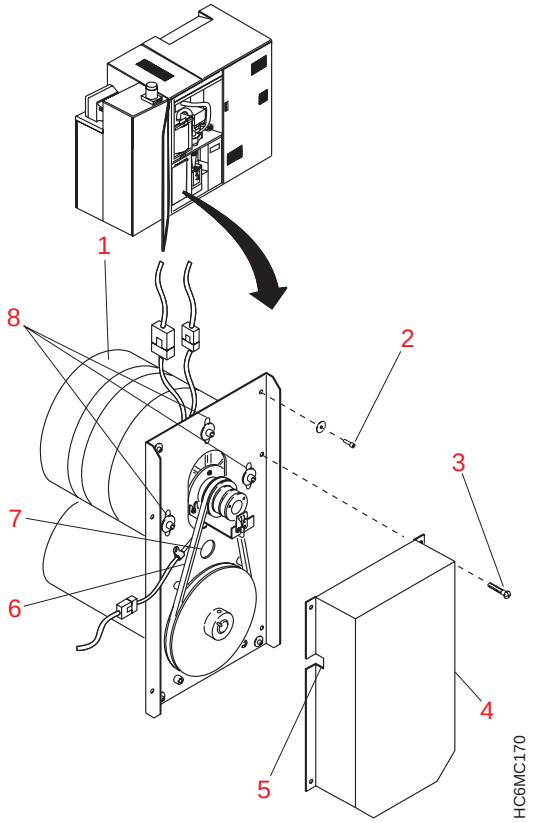
Note: Because the holes in the belt cover are slotted, you can loosen the screws and flex the cover to free it.

6. Loosen the four screws **(2)** to relieve pressure from the rear rubber gasket on the cyclone blower **(1)**.

Note: Before you remove the belt from the cyclone blower pulley, note on which pulley, the large or small one, the belt **(6)** is mounted. You will use the same pulley during installation.

7. Loosen the three screw **(8)**; lower the cyclone blower **(1)**; and remove the belt **(6)**.

Table 374. Cyclone Blower Drive Belt (continued)



Installation and Adjustment

Note: For 60-Hz printer, the belt goes on the large pulley. For 50-Hz printers, the belt goes on the small pulley.

1. Install the belt **(6)**.
2. Insert a screw driver into the hole **(7)** on the cyclone blower plate.

   Lift up on the cyclone blower **(1)** to adjust the belt tension.
3. Adjust the belt **(6)** so that there is a deflection of 3.0 mm (0.1 in.) when 1.0 to 1.3 kg (2.2 to 2.8 lb) of force is applied to the midpoint of the belt.
4. Tighten the three screws **(8)**.
5. Tighten the four screws **(2)** on the cyclone blower motor assembly.
6. Install the belt cover **(4)**.

   Ensure that the cable is in the cutout **(5)**.
7. Power on the printer.

Check

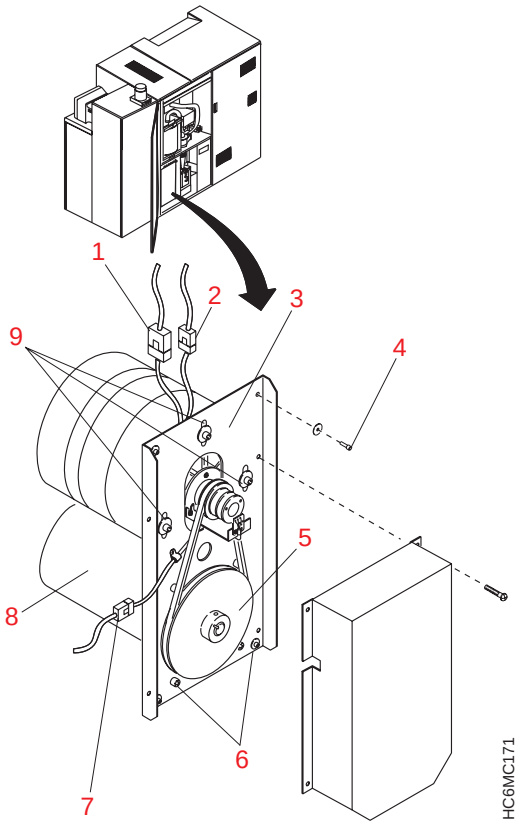
1. Check the belt for a deflection of 3.0 mm (0.1 in.) when 1.0 to 1.3 kg (2.2 to 2.8 lb) of force is applied to the midpoint of the belt.
2. Ensure that the pressure differential across the cyclone is greater than 130 mm (5.0 in.) of water (Cyclone Pressure Check).

Verify

1. Run Print Pack to verify print quality.

Cyclone Blower Motor (M104)

Table 375. Cyclone Blower Motor (M104)



CAUTION:
<54> The cyclone blower motor weighs 17.7 kg (39 lb). Support the blower motor when removing the two bolts to prevent the blower motor from dropping.

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Remove the Cyclone Blower Drive Belt.
4. Remove the four screws **(4)**; remove the cyclone blower and motor assembly **(3)**.
5. Disconnect connectors PJ150 **(7)**, PJ123 **(1)**, and PJ124 **(2)**.
6. Loosen the two screws on the motor pulley **(5)** and slide it off the shaft.
7. Remove the four screws **(6)** with nuts and washers and remove the motor **(8)**.

Installation

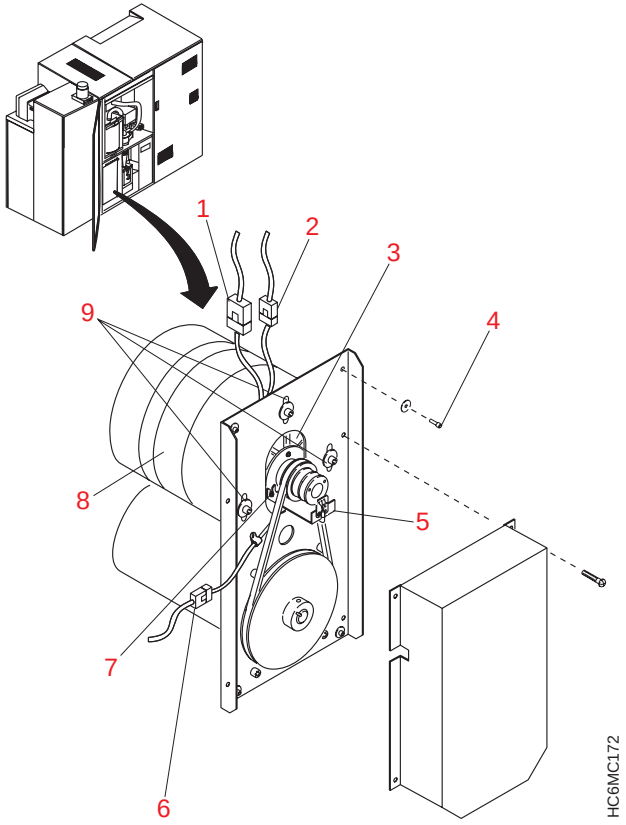
1. Reverse the removal procedure to install a new cyclone blower motor.
2. Power on the printer.

Check

1. Ensure the pressure differential across the cyclone is greater than 130 mm (5.0 in.) of water (Cyclone Pressure Check).
2. Run Print Pack to verify print quality.

Cyclone Blower

Table 376. Cyclone Blower



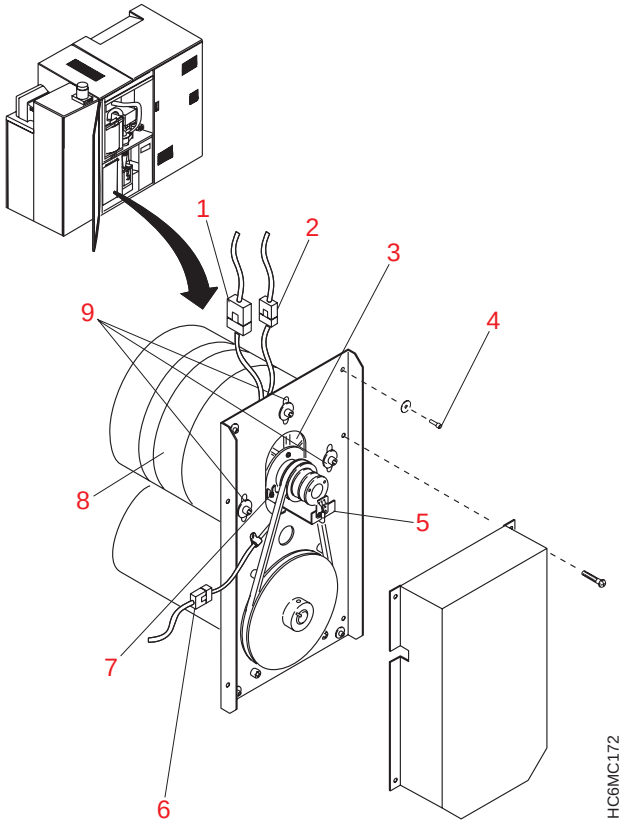
(continued on next page)

CAUTION:
<54> The cyclone blower motor weighs 17.7 kg (39 lb). Support the blower motor when removing the two bolts to prevent the blower motor from dropping.

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Remove the Cyclone Blower Drive Belt.
4. Remove the four screws **(4)**; remove the cyclone blower and motor assembly **(3)**.
5. Disconnect connectors PJ150 **(6)**, PJ123 **(1)**, and PJ124 **(2)**.
6. Loosen the two screws **(7)** and remove the rotation sensor and mounting bracket **(5)**.
7. Remove the three screws **(9)** and remove the cyclone blower **(8)**.

Table 376. Cyclone Blower (continued)



Installation

1. Reverse the removal procedure to install a new cyclone blower.
2. Power on the printer.

Check

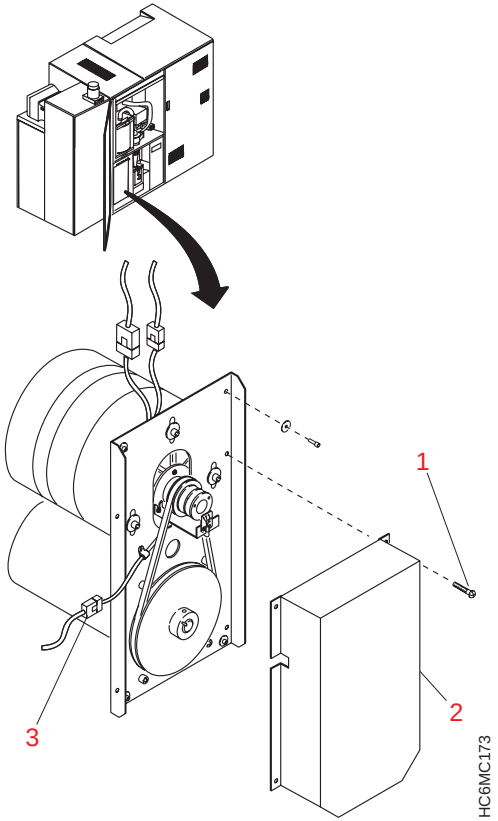
1. Ensure that there is a clearance of 1.0 ±0.5 mm (0.04 ±0.02 in.) between the Cyclone Blower Rotation Sensor (S116) and the cyclone blower pulley.
2. Ensure the pressure differential across the cyclone is greater than 130 mm (5.0 in.) of water (Cyclone Pressure Check).

Verify

1. Run Print Pack to verify print quality.

Cyclone Blower Rotation Sensor (S116)

Table 377. Cyclone Blower Rotation Sensor (S116)

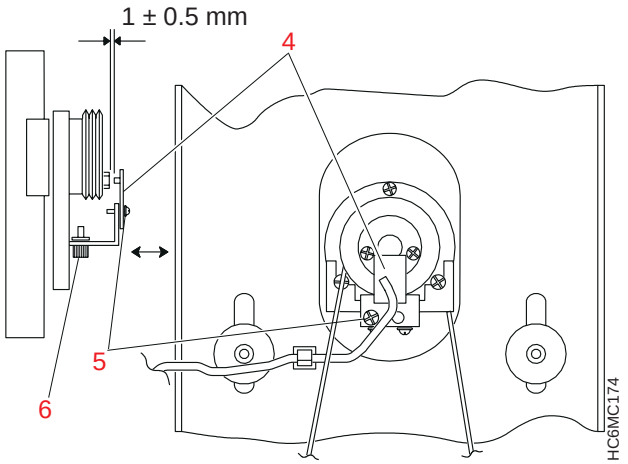


Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the center rear cover.
4. Remove the blower cover.

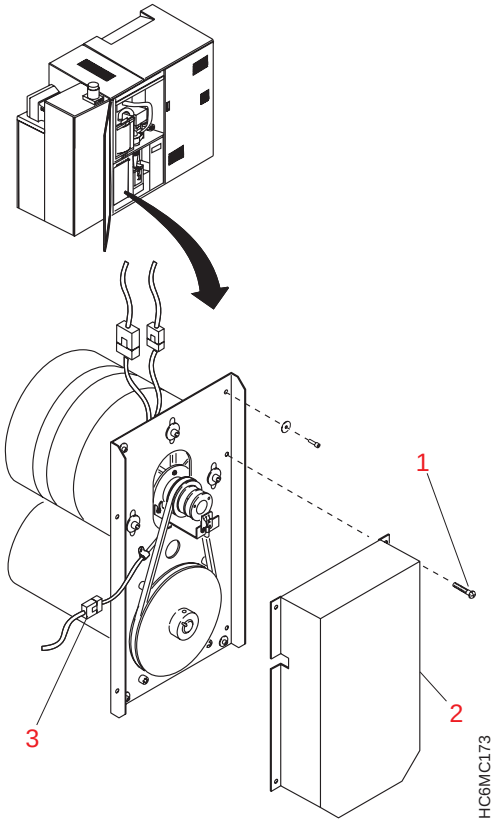
Note: Because the holes in the belt cover are slotted, you can loosen the screws and flex the cover to free it.

5. Remove the four screws **(1)** and remove the belt cover **(2)**.
6. Disconnect connector PJ150 **(3)** and remove the cable from the clamp.
7. Remove the screw **(5)** and remove the cyclone blower rotation sensor **(4)**.



(continued on next page)

Table 377. Cyclone Blower Rotation Sensor (S116) (continued)



Installation and Adjustment

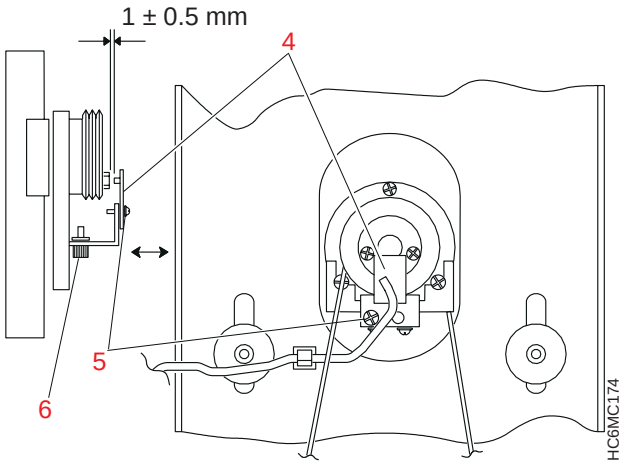
1. Install the rotation sensor.
2. Install the rotation sensor in the clamp and connect connector PJ150 **(3)**.
3. Loosen the screw **(6)** and adjust the rotation sensor gap so that there is a clearance of 1.0 ±0.5 mm (0.04 ±0.02 in.).
4. Install the belt cover **(2)**.
5. Install the blower cover.
6. Power on the printer.

Check

1. Ensure that there is a clearance of 1.0 ±0.5 mm (0.04 ±0.02 in.) between the rotation sensor and the magnet.
2. Run Sensor Routine 50 to ensure that the cyclone blower rotation sensor works correctly.

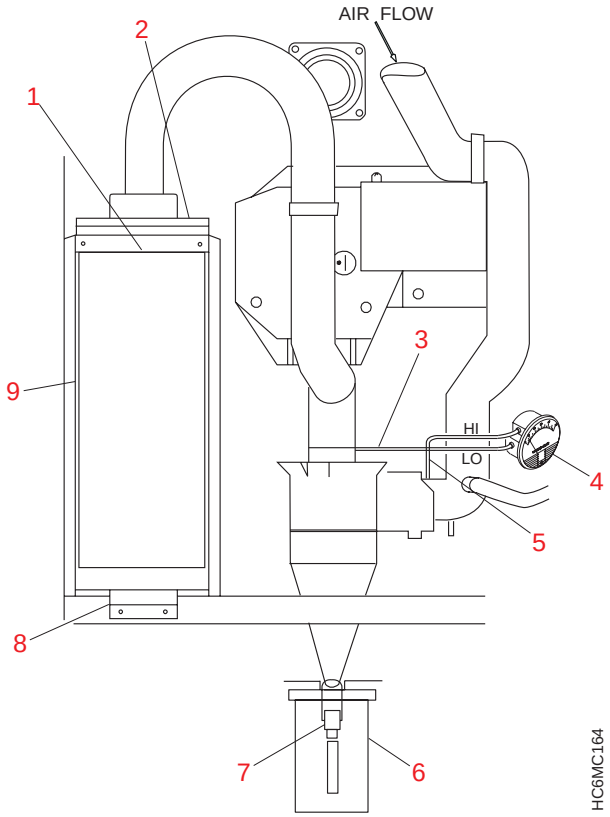
Verify

1. Run Print Pack to verify print quality.



Cyclone Pressure Check

Table 378. Cyclone Pressure Check



(continued on next page)

Special Tools Required:

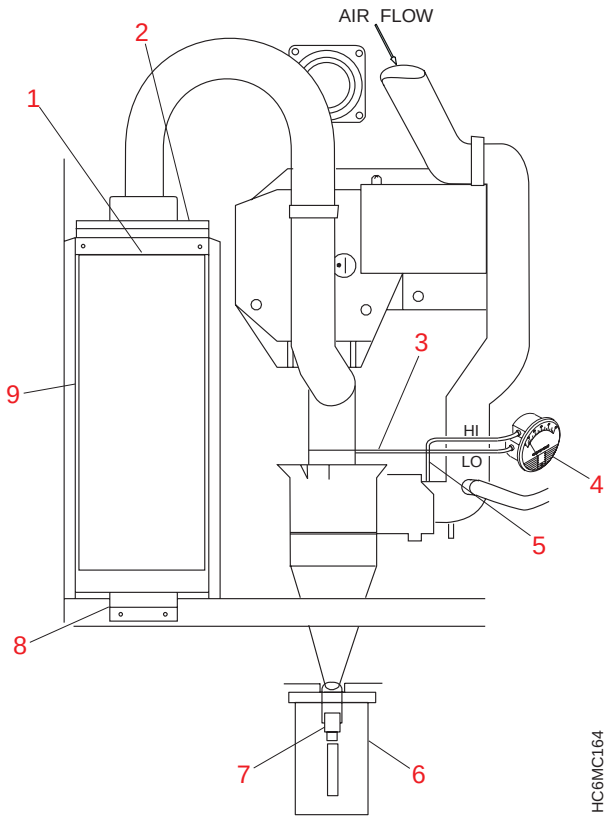
- Pressure gauge (P/N 03F5635)

Procedure

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Ensure that the toner collector and the fine filter are not full before you continue with this procedure.
3. Open the center rear cover.
4. Remove the rear process cover.
5. Remove the two air caps from the air test points **(3)** and **(5)** near the top of the cyclone neck.
6. If necessary, load full-size forms into the printer
7. Pinch both pressure gauge hoses closed and fit the LO side hose over the air test point **(3)**.
8. Fit the HI side hose over the air test point **(5)**.
9. Slowly, simultaneously release the two hoses.
10. Run forms through the printer. (The printer must be printing.)
11. Read the pressure gauge as the printer prints.

    The pressure differential across the cyclone must measure 90 to 140 mm (3.5 to 5.5 in.) of water.

Table 378. Cyclone Pressure Check (continued)



You cannot make an adjustment to correct a low or high reading.

- A low vacuum reading may indicate one of the following:
  - A leaking, loose, or torn hose or fitting
  - A faulty cyclone blower
  - A clogged air hose
  - A fine filter that is full or not seated correctly.
- A high vacuum reading may indicate one of the following:
  - An obstruction in the cleaner, in the hose from the cleaner, or in the cyclone.

Installation

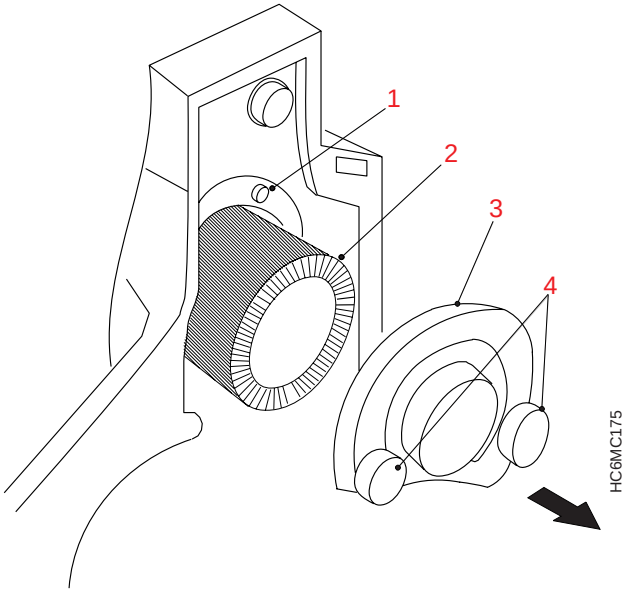
1. Reinstall the two air caps on the cyclone air test points.

Cleaner

Cleaner Brush 1498
Cleaner Brush Drive Cone 1500
Cleaner Brush Driven Cone 1501
Cleaner Brush Motor (M108) and Drive Belt 1503
Cleaner Brush Rotation Sensor (S104) 1505
Cleaner Housing Motor (M106) and Switch (S103) 1507
Cleaner Housing Cleaning 1511
Cleaner Skirt 1513

Cleaner Brush

Table 379. Cleaner Brush



(continued on next page)

Special Tools Required:

- Drum shaft extension (P/N 06F1025)
- Drum bag or protective box
- Cleaner housing brush (P/N 06F1027)
- Lint-free cloth (P/N 2108930)
- Vacuum cleaner (P/N 9900735)

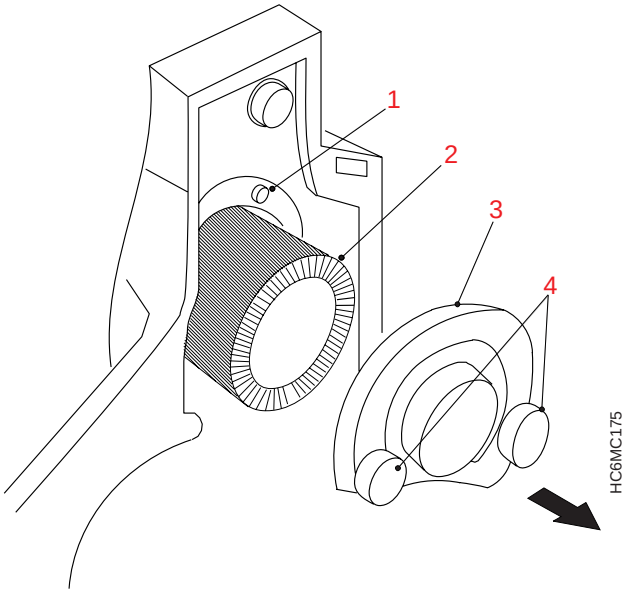
Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Remove the drum cover.
4. Perform the PC Drum Removalprocedure and store it in a protective box.
5. Lay a disposable cloth or paper over the developer to prevent loose toner and other contaminants from falling into it.
6. Remove the front cap **(3)** by loosening the two screws **(4)**.
7. From the front of the printer, slide the cleaner brush **(2)** out of the housing.

Attention: Do not touch the brush fibers. Handle the cleaner brush only from the inside of the cylinder.
Note: If the brush is too snug to remove with your fingers, use narrow-nose pliers to grip the edge of the cylinder and loosen it.

8. To remove built up toner, clean the inside of the cleaner brush housing and air chamber with the vacuum cleaner and cleaner housing brush, seeCleaner Housing Cleaning.

Table 379. Cleaner Brush (continued)



Installation

1. Reverse the removal procedure to install the cleaner brush.

Note: When you replace a cleaning brush, enter **00** in the cleaner brush usage counter. See Using the PM Log.

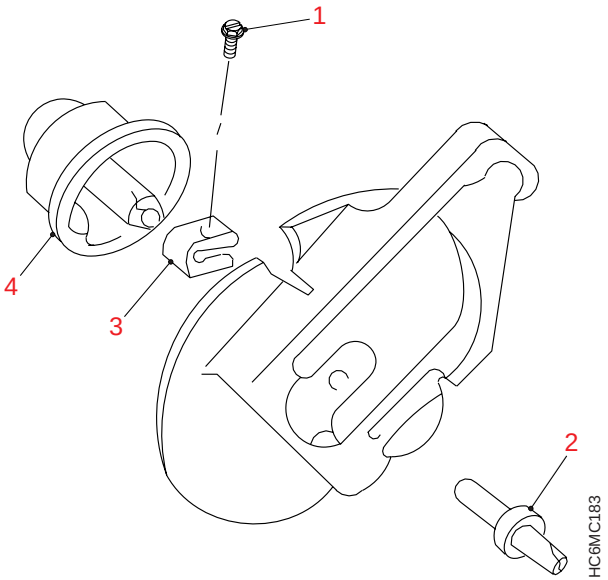
2. When you install the front cap, ensure that the cone section engages the center of the cleaner brush.

Verify

1. Run Print Pack to verify print quality.

Cleaner Brush Drive Cone

Table 380. Cleaner Brush Drive Cone



Special Tools Required:

- Push-pull scale (P/N 0460870)

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Remove the Cleaner Brush Motor (M108) and Drive Belt.
4. At a clean work place, loosen the screw **(1)**.

Note: The pulley shaft **(2)** remains in the pulley (not shown) during the next step.

5. Remove the coupler **(3)** and the drive cone **(4)** from the pulley shaft **(2)**.

Reassembly

1. Install a new drive cone **(4)** onto the pulley shaft **(2)**.

Adjustment

1. Adjust the clearance between the cleaner brush drive cone and the Cleaner Brush Rotation Sensor (S104) to 1.2 ±0.7 mm (0.05 ±0.028 in.) ().

Installation

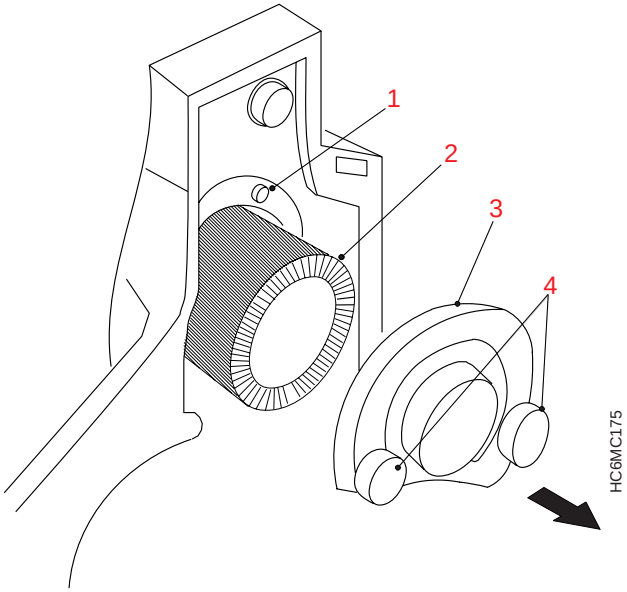
1. Reverse the removal procedure to install the cleaner brush motor.

Check

1. Power on the printer.
2. Run Print Pack to verify print quality.

Cleaner Brush Driven Cone

Table 381. Cleaner Brush Driven Cone



(continued on next page)

Special Tools Required:

- Lint-free cloth (P/N 2108930)

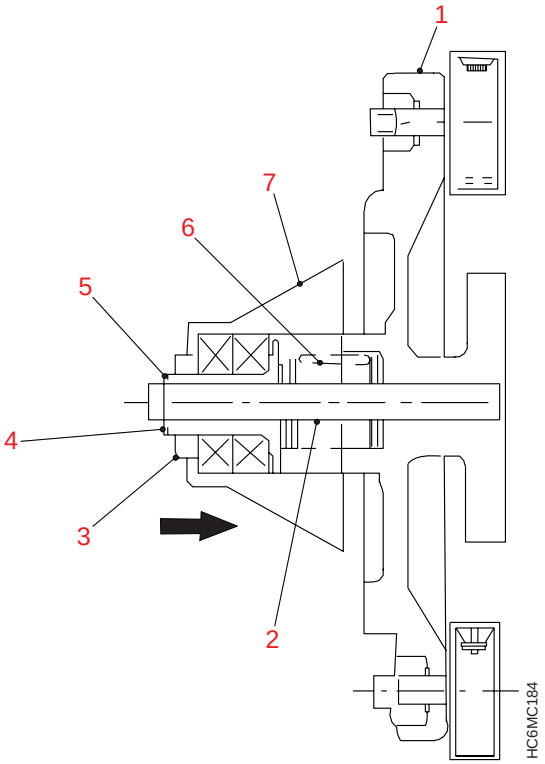
Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.

Attention: Avoid exposing the photoconductor (PC) when you remove the cleaner brush front cap.

3. Remove the cleaner brush front cap **(3)**.

Table 381. Cleaner Brush Driven Cone (continued)



4. At a clean workplace, slide the cone **(7)** in the direction of the arrow to compress the spring and remove the clip **(4)**.
5. Remove the clip **(5)**.
6. Remove the cone spacer **(3)**, the sleeve **(2)**, and the driven cone **(7)**.
7. Clean the parts with a lint-free cloth.

Replacement

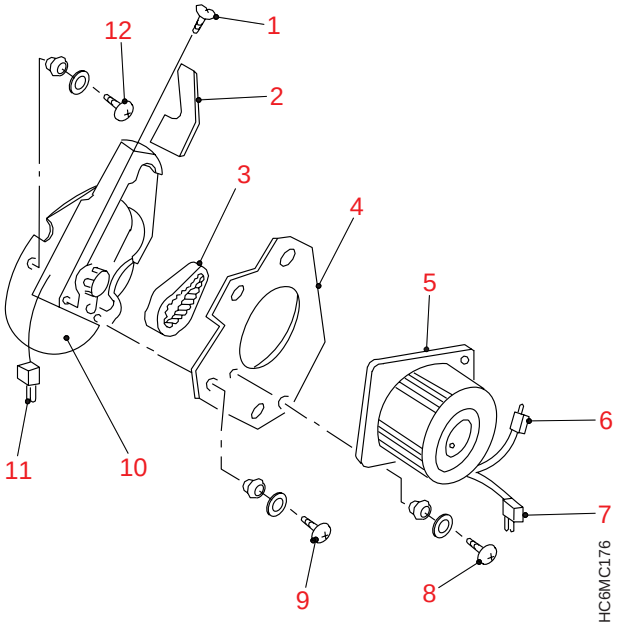
1. Reverse the removal procedure to install a new cleaner brush driven cone.

Check

1. Ensure that the driven cone moves freely on the sleeve.
2. Power on the printer.
3. Run Print Pack to verify print quality.

Cleaner Brush Motor (M108) and Drive Belt

Table 382. Cleaner Brush Motor (M108) and Belt



Special Tools Required:

- Cleaner housing brush (P/N 06F1027)
- Lint-free cloth (P/N 2108930)
- Vacuum cleaner (P/N 9900735)
- Push-pull scale (P/N 0460870)

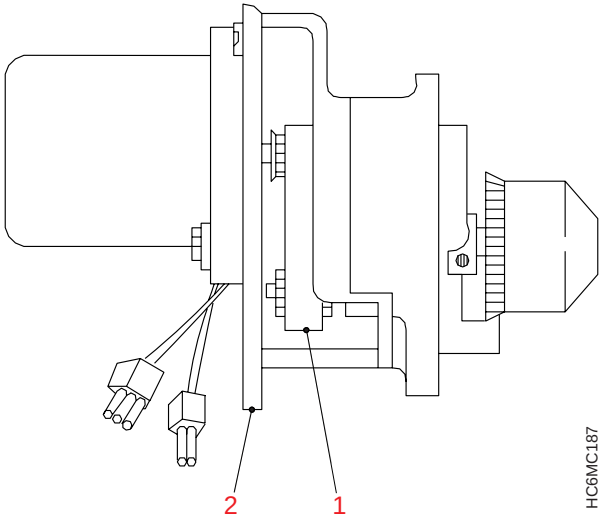
Removal

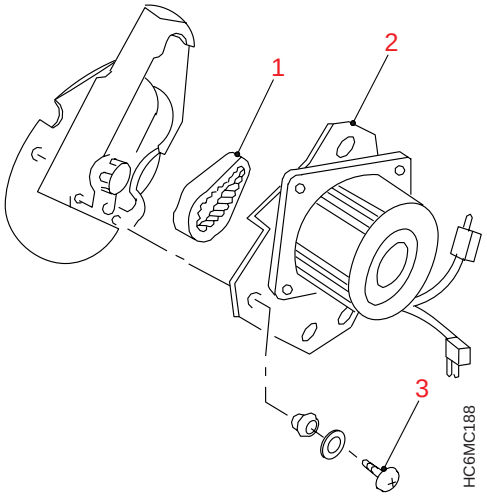
1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Remove the drum cover.
4. Remove the Cleaner Brush.
5. Open the left rear cover.
6. Remove the rear process cover.
7. Remove the PR011 cover.
8. Disconnect connector PJ135.
9. Loosen the clamp on the hose below the motor.
10. Disconnect connectors PJ175 **(11)**, PJ120 **(6)**, and PJ134 **(7)**.
11. Remove the two screws **(12)** (one shown) and remove the drive assembly **(10)**.

Disassembly

1. Remove the two screws **(1)** (one shown) and remove the belt cover **(2)**.
2. Remove the three screws **(9)** and remove the brush motor subassembly **(5)** and timing belt **(3)**.
3. Remove the three screws **(8)** (one shown) to separate the motor subassembly **(5)** from the motor plate **(4)**.

Table 382. Cleaner Brush Motor (M108) and Belt (continued)



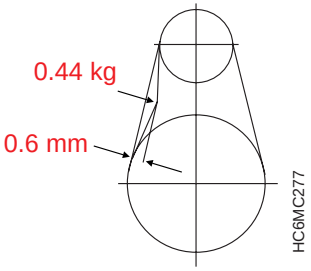


Reassembly

1. Reverse the disassembly procedure to assemble the motor and drive assembly.

Adjustment

1. With the screws **(3)** loosened, move the motor plate **(2)** to loosen or tighten the timing belt **(1)**.
2. Adjust the timing belt to deflect 0.6 mm (0.024 in.) when 0.44 kg (1 lb) of force is applied to the belt.



3. Tighten the screws **(3)**.
4. Install the belt cover.

Installation

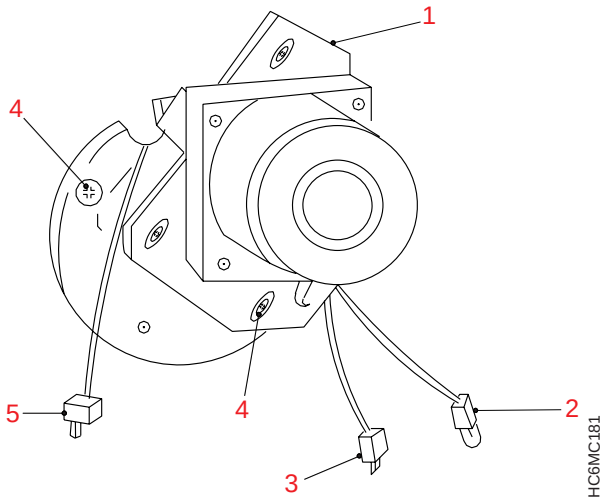
1. Reverse the removal procedure to install the cleaner brush motor.

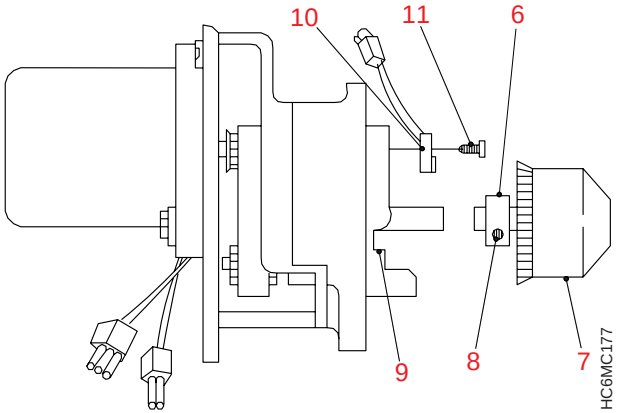
Check

1. Power on the printer.
2. Run Print Pack to verify print quality.

Cleaner Brush Rotation Sensor (S104)

Table 383. Cleaner Brush Rotation Sensor (S104)





(continued on next page)

Special Tools Required:

- Thickness gauge

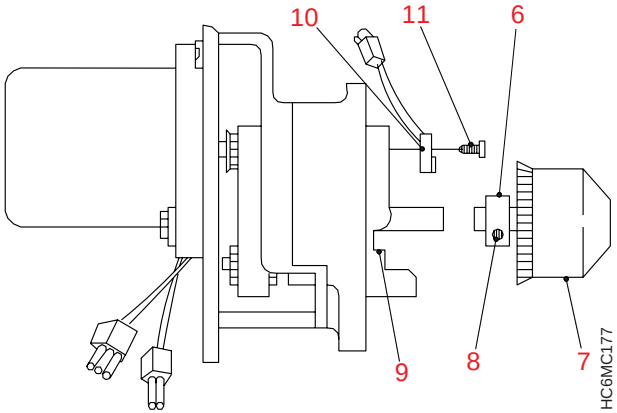
Removal

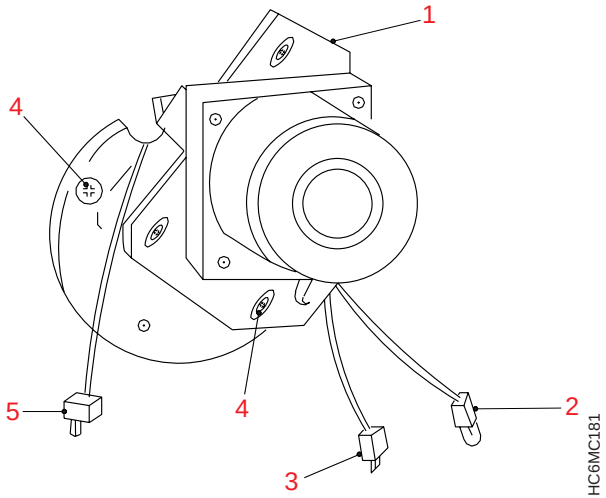
1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Remove the drum cover.
4. Remove the Cleaner Brush.
5. Disconnect connectors PJ175 **(5)**, PJ120 **(2)**, and PJ134 **(3)**.
6. Remove the two screws **(4)** and remove the cleaner motor drive assembly **(1)**.
7. Loosen the screw **(8)** and remove the clamp ring **(6)** and cone assembly **(7)**.

Note: Rotate the cone assembly **(7)** to expose the head of the screw **(8)** in the slot **(9)** of the motor mount flange.

8. Remove the screw **(11)** and remove the cleaner rotation sensor **(10)**.

Table 383. Cleaner Brush Rotation Sensor (S104) (continued)

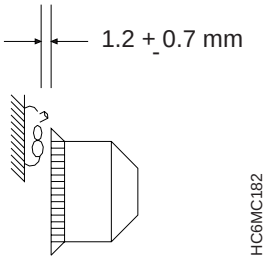




Adjustment

1. Adjust the clearance between the rotation sensor **(10)** and the magnet on the drive cone **(7)** before you install the cleaner brush drive motor assembly **(1)**.

   The clearance should be 1.2 ±0.7 mm (0.05 ±0.028 in.).



Installation

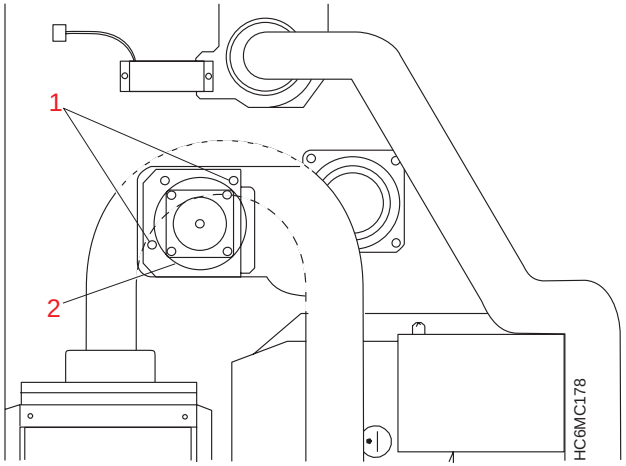
1. Reverse the removal procedure to install a new cleaner brush rotation sensor.

Check

1. Power on the printer.
2. Run Print Pack to verify print quality.

Cleaner Housing Motor (M106) and Switch (S103)

Table 384. Cleaner Housing Motor (M106) and Switch (S103)



Special Tools Required:

- Drum shaft extension (P/N 06F1025)
- Drum clearance gauge (P/N 06F1029)
- Drum bag or protective box
- IBM lubricant No. 23
- Digital voltmeter (DVM)
- Lint-free cloth (P/N 2108930)

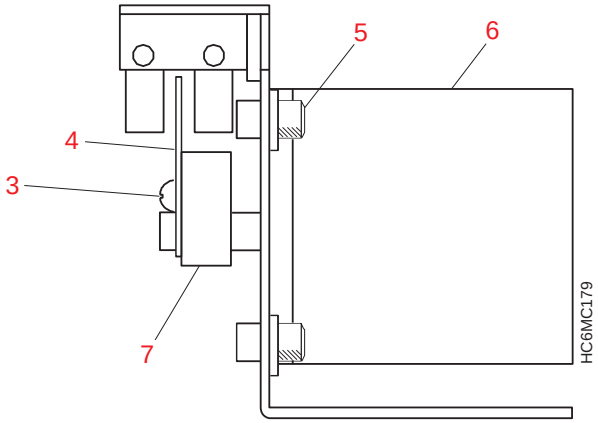
Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Remove the rear process cover.
4. Disconnect connectors PJ122 (cleaner housing motor) and PJ146 (cleaner housing switch).
5. Remove the two screws **(1)** and remove the housing assembly **(2)**.

Note: If you are replacing only the switch, go to step 8.

(continued on next page)

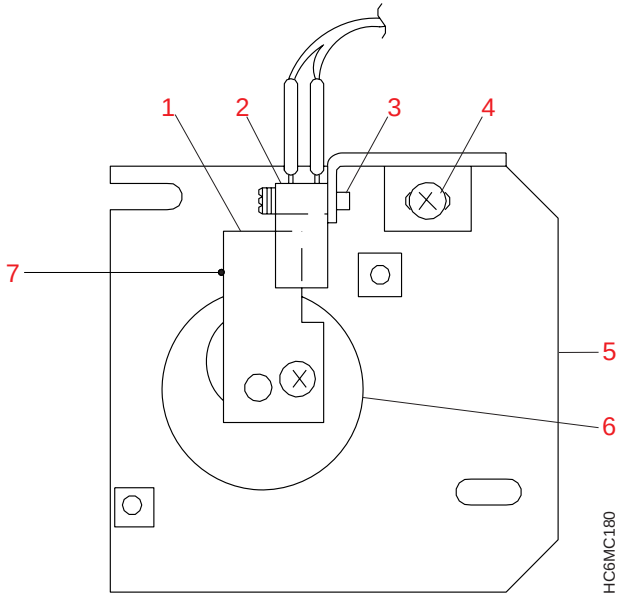
Table 384. Cleaner Housing Motor (M106) and Switch (S103) (continued)



(continued on next page)

6. Remove the screw **(3)** and remove the housing sensor actuator **(4)**.
7. Remove the two screws **(5)** and remove the motor assembly **(6)**.

Table 384. Cleaner Housing Motor (M106) and Switch (S103) (continued)



Cleaner Housing Switch Removal

8. Remove the screw **(3)** and remove the cleaner housing switch **(2)**.

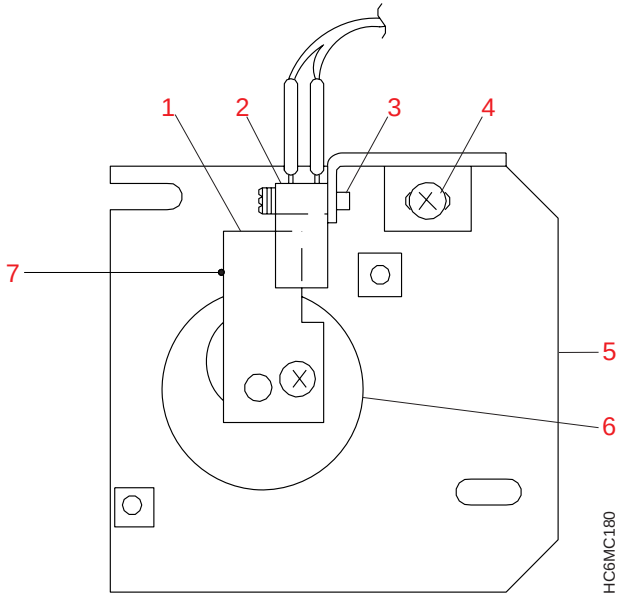
Adjustment

Note: Perform these steps before you install the motor motor, plate, and sensor.

1. Rotate the housing sensor actuator **(1)** to the home position, with the reference edge **(7)** of the sensor actuator **(1)** parallel with the edge of the motor plate **(5)**.
2. To adjust the position of the cleaner housing switch **(2)**, do the following:
   a. Set the digital volt meter (DVM) to measure resistance and connect the meter leads to connector PJ146-1 and PJ146-2.
   b. Loosen the screw **(4)**.
   c. While you keep the edge of the motor plate **(5)** parallel to the edge of the housing sensor actuator **(1)**, slide the sensor mounting plate towards the housing sensor actuator until the DVM shows open.
   d. Tighten the screw **(4)**.

(continued on next page)

Table 384. Cleaner Housing Motor (M106) and Switch (S103) (continued)



Installation

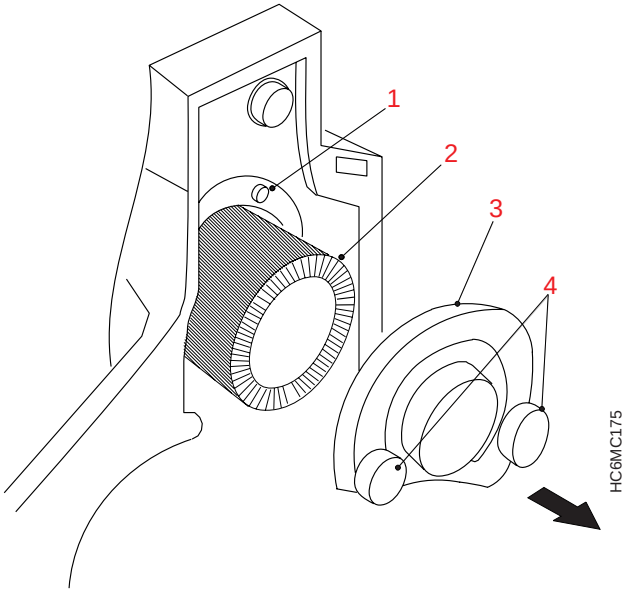
1. Coat the cam **(6)** with IBM lubricant No. 23.
2. Reverse the removal procedure to install a new cleaner housing motor and/or switch.
3. If you are replacing the motor, check the switch adjustment.

Check

1. Power on the printer.
2. Run Driver Routine 03 to ensure that the cleaner housing and switch work correctly.
3. Run Sensor Routine 52.
4. Verify that the cleaner housing moves first to the right and then to the left, stopping in the middle.
5. Run Print Pack to verify print quality.

Cleaner Housing Cleaning

Table 385. Cleaner Housing Cleaning



(continued on next page)

Special Tools Required:

- Drum shaft extension (P/N 06F1025)
- Drum bag or protective box
- Cleaner housing brush (P/N 06F1027)
- Lint-free cloth (P/N 2108930)
- Vacuum cleaner (P/N 9900735)

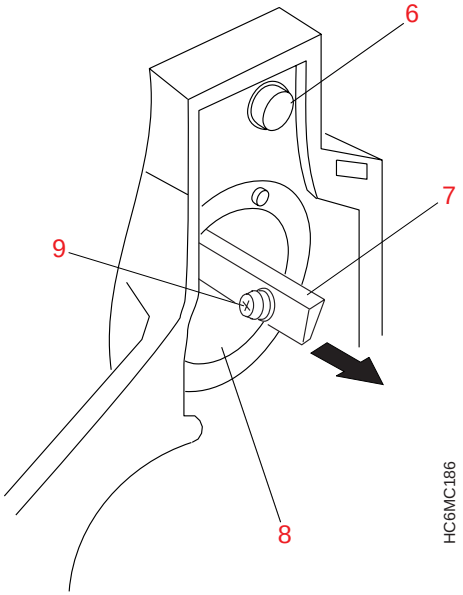
Cleaning

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Initialize the cleaner housing position by toggling the reset switch on the CPxxx card.
3. Shutdown and power off the printer.
4. Remove the drum cover.
5. Perform the PC Drum Removal procedure and store it in a protective box.
6. Lay a disposable cloth or paper over the developer to prevent loose toner from falling into the developer.
7. Loosen the two screws **(4)** and remove the front cap **(3)**.

Attention: Handle the cleaner brush only by the inside of the tube.

8. From the front of the printer, slide the cleaner brush **(2)** out of the housing.

Table 385. Cleaner Housing Cleaning (continued)



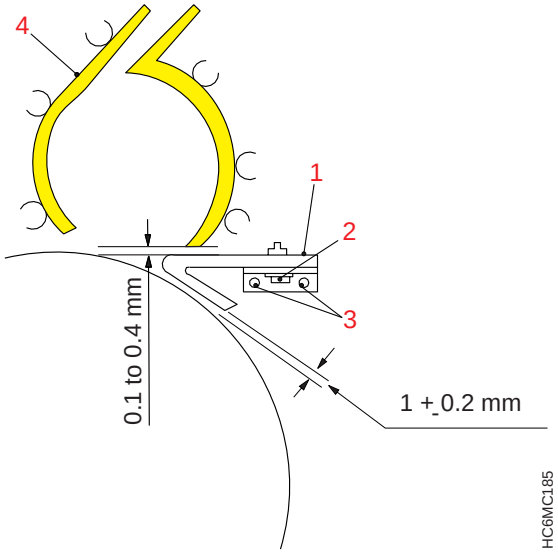
9. Remove the air chamber cap **(6)** and vacuum the toner from it.

   Use a brush, if necessary, to remove any caked-on toner.
10. Vacuum toner from the cleaner brush front cap.
11. Use the cleaner housing brush and the vacuum cleaner to remove all toner from the air chamber **(6)** above the cleaner housing and the cleaner housing.

    Pay particular attention to the duct and knock-off shelf .
12. Wipe any remaining toner from the cleaner housing and cap with a lint-free cloth.
13. Install a cleaner brush in the housing.
14. Install the air chamber cap and the cleaner brush front cap.
15. Remove the disposable cloth or paper from the developer.
16. Install the PC drum.

Cleaner Skirt

Table 386. Cleaner Skirt



Special Tools Required:

- Drum clearance gauge (P/N 06F1029)
- Thickness gauge
- Drum bag or protective box

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Remove the photoconductor and store in it a protective box
4. Remove the Cleaner Brush.

Adjustment

1. Loosen the 4 screws **(3)** and adjust the gap between the cleaner housing **(4)** and the cleaner skirt **(1)** so it is 0.1 to 0.4 mm (0.004 to 0.016 in.).
2. Using the drum gauge, adjust the gap (front and rear) to the cleaner skirt **(1)** to 1.0 ± 0.2 mm (0.039 ±0.008 in.).

Check

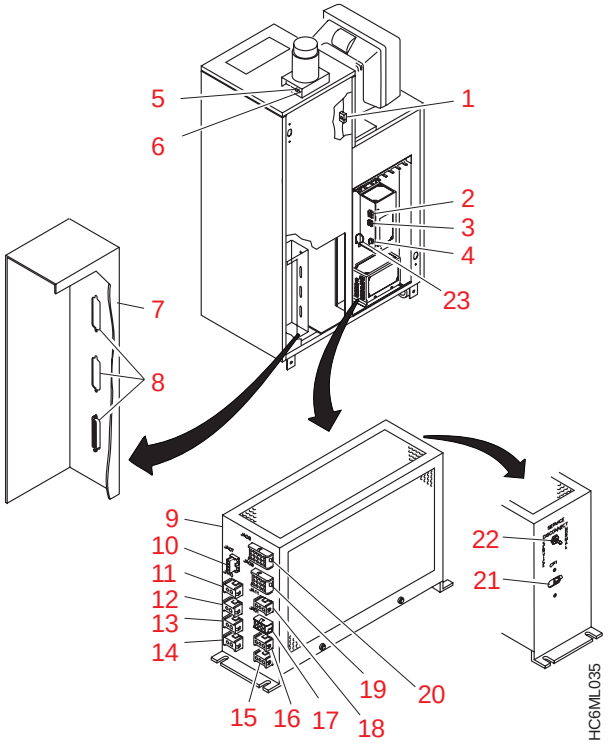
1. Power on the printer.
2. Run Print Pack to verify print quality.

Control Unit

AC Control Box 1515
DC Power Supply 1517
  DC Voltage Measurements 1518
Display/Touch Screen 1519
Interface Card (IF491) 1520
Mechanism Interface Card (MIC) 1522
Mechanism Interface Card (MIC) Memory Cards 1524
Operator Alert Assembly 1526
Parallel Channel Tailgate 1529
Power Control Panel 1531
PQE Card 1532
Pre/Postprocessing Interface Cards 1534
Side 1/Side 2 Verification Control Card 1535
RS/6000 Removal & Replacement Procedures 1536
  Controller – RS/6000, Type 7043 Model 43P-140 1537
  Controller – RS/6000 Type 7025 Model F50 1541
  Hard Drive Replacement 1545
  Updating Microcode 1547
  ESCON Serial Channel Adapter Card 1550
  PCI Parallel Channel Adapter Card 1553

AC Control Box

Table 387. AC Control Box



(continued on next page)

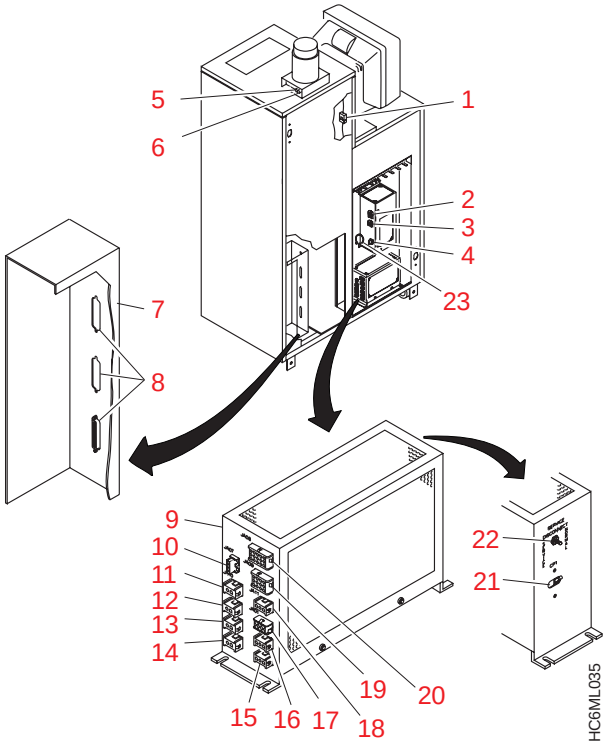
Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the control unit rear cover.
4. Set the Power Switch on the front of the RISC Controller to **Off**.
5. Swing the control unit away from the printer.
6. Disconnect the following connectors:
   - PJA01 - **(17)**
   - PJA05 - **(16)**
   - PJA06 - **(15)**
   - PJA07 - **(10)**
   - PJA08 - **(20)**
   - PJA09 - **(19)**
   - PJA10 - **(11)** (if an urge unit is present and is powered from the control unit)
7. Disconnect the voltage selection jumper PJA02 **(12)**, PJA03 **(13)**, or PJA04 **(14)** from the rear of the ac control box.
8. Remove the screw and the ground wire.
9. Remove the screws and remove the ac control box.

Installation

1. Reverse the removal procedure (steps 5 through 9) to install the ac control box.

Table 387. AC Control Box (continued)

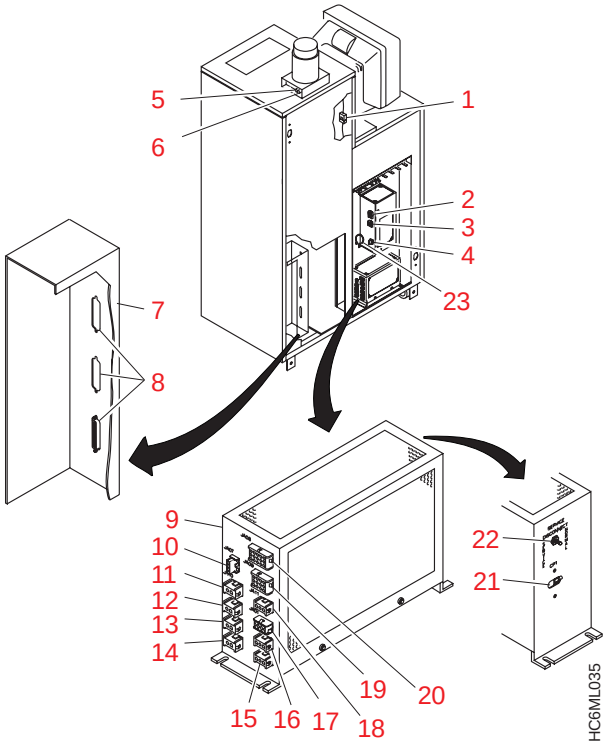


Verify

1. Set the Power Switch on the front of the RISC Controller to **On**.
2. Power on the printer.
3. Run print samples to verify print quality.

DC Power Supply

Table 388. DC Power Supply



Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the control unit rear cover.
4. Set the Power Switch on the front of the RISC Controller to **Off**.
5. Swing the control unit away from the printer.
6. Disconnect connectors PJH01 **(4)**, PJH02 **(2)**, and PJH03 **(3)**.
7. Remove the screw holding the ground wire **(23)**.
8. Remove the screws and remove the dc power supply.

Installation

1. Reverse the removal procedure (steps 5 through 8) to install the dc power supply.

Verify

1. Set the Power Switch on the front of the RISC Controller to **On**.
2. Power on the printer.
3. Run print samples to verify print quality.

DC Voltage Measurements

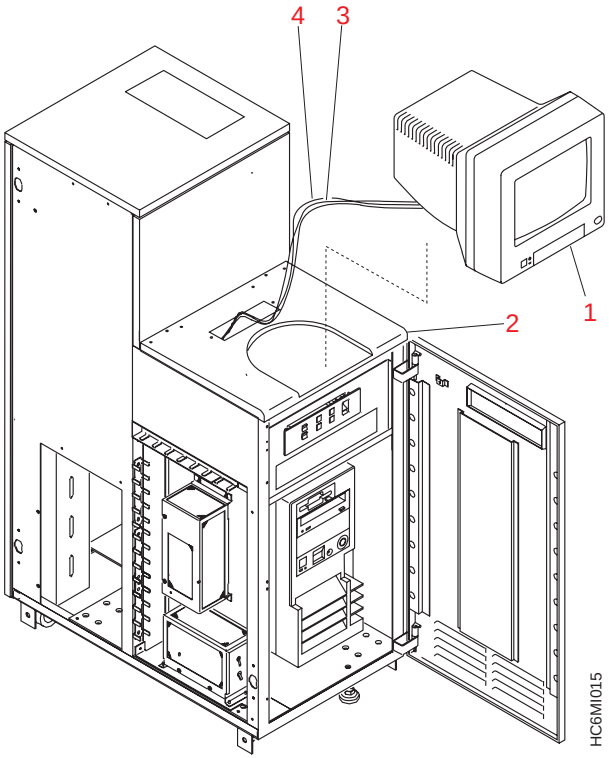
Voltage (V dc)	Regulation Under Load (V dc)	Test Point/Connector
+12	+11.7 to +12.5	PJH02 pins 6 and 7 to PJH03 pins 7 and 9
−12	−12.7 to −11.5	PJH02 pin 8 to PJH03 pin 8
+5	+4.9 to +5.2	PJH02 pins 1, 2, 3, 4, 5 to PJH03 pins 1, 2, 3, 4, 5
−5	−5.0 to −5.3	PJH02 pin 9 to PJH02 pin 10

Notes:

1. The voltages are not adjustable.
2. If the load is removed, voltages may be slightly out of specification.
3. The ac circuits in the control unit are protected by circuit breaker CB452 in the printer.
4. An internal failure or a short circuit in any dc voltage circuit electronically limits the dc current; therefore, fuses are not needed on the dc circuits.

Display/Touch Screen

Table 389. Display/Touch Screen



Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the control unit rear cover.
4. Open both control unit side covers.
5. Set the Power Switch on the front of the RISC Controller to **Off**.
6. Disconnect the Display/Touch Screen power cord from the ac control box.
7. Disconnect the video cable from the adapter on the rear of the controller.
8. Disconnect the display cable from the serial port S2 connector on the rear of the controller.
9. Pull the Display/Touch Screen cables **(3 & 4)** from the control unit and lift the Display/Touch Screen **(1)** off the control unit shelf **(2)**.

Installation

1. Reverse the removal procedure (steps 4 through 9) to install a Display/Touch Screen .

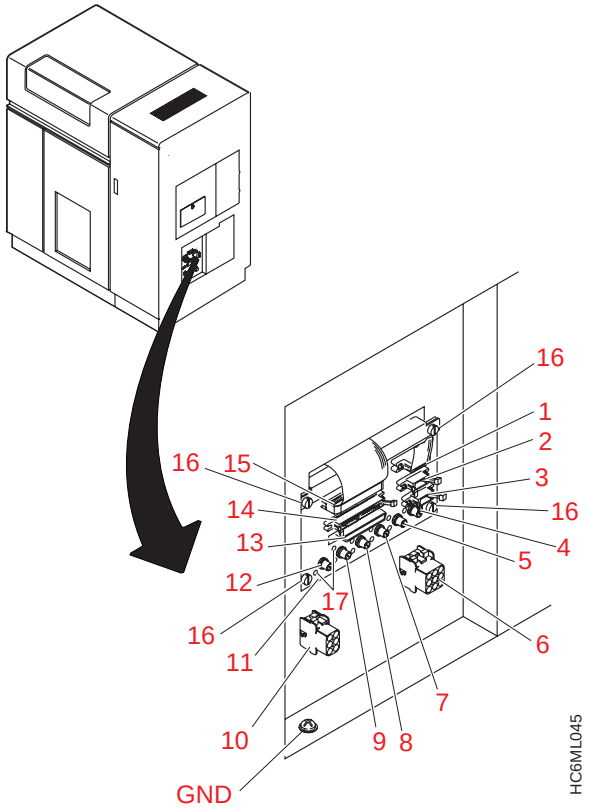
Verify

1. Set the Power Switch on the front of the RISC Controller to **On**.
2. Power on the printer.
3. Perform several operations from the Display/Touch Screen to ensure that it is working properly.

Interface Card (IF491)

Note: Follow ESD procedures for handling static-sensitive parts.

Table 390. Interface Card (IF491)

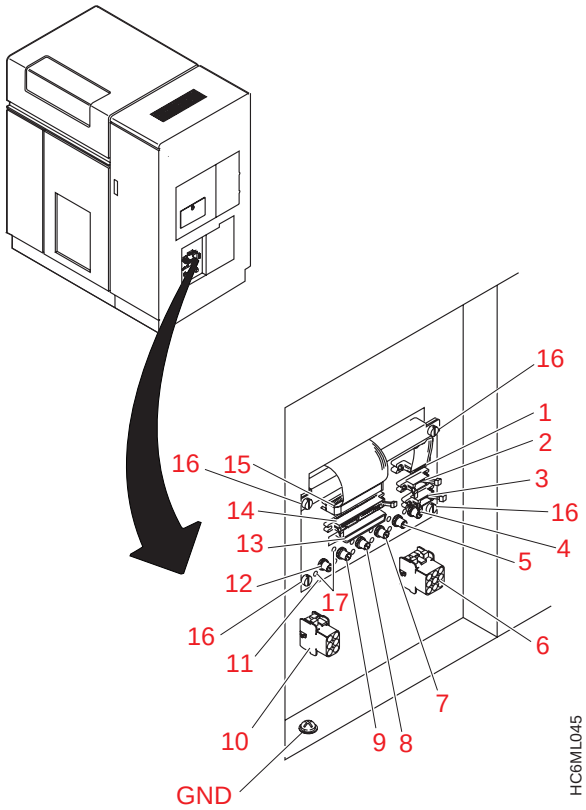


(continued on next page)

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the control unit rear cover.
4. Remove the knobs that hold the control unit to the printer.
5. Move the control unit away from the printer.
6. Disconnect the following connectors from the IF491 Card **(11)**:
   - VD1 **(9)**
   - VD2 **(8)**
   - VD3 **(7)**
   - VD4 **(5)**
   - VD5 **(4)**
   - BD **(12)**
   - PJ201 **(15)**
   - PJ202 **(14)**
   - PJ228 **(1)**
   - PJ229 **(13)**
   - PJ232 **(3)**
   - PJ23352 — on Printer 2 of a duplex printing system

Table 390. Interface Card (IF491) (continued)



7. Remove the four screws **(16)** and carefully move the IF491 Card **(11)** away from the printer.
8. The printer BD and VD cables are still attached to the IF491 Card.

   To detach each BD and VD cable from the IF491 Card, remove the two screws **(17)** at each connector.

Installation

1. Reverse the IF491 Card removal procedure.

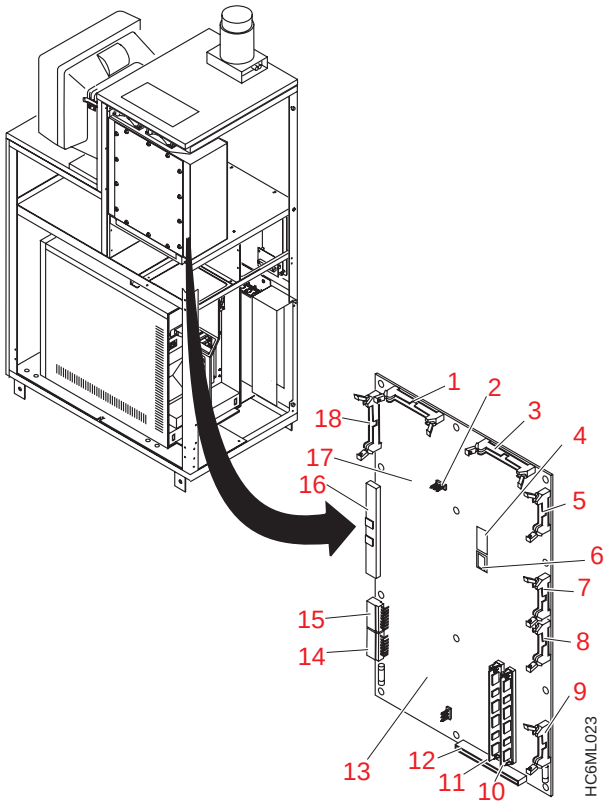
Verify

1. Set the Power Switch on the front of the RISC/6000 to **On**.
2. Power on the printer.
3. Run print samples to verify print quality.

Mechanism Interface Card (MIC)

Note: Follow ESD procedures for handling static-sensitive parts.

Table 391. Mechanism Interface Card (MIC)

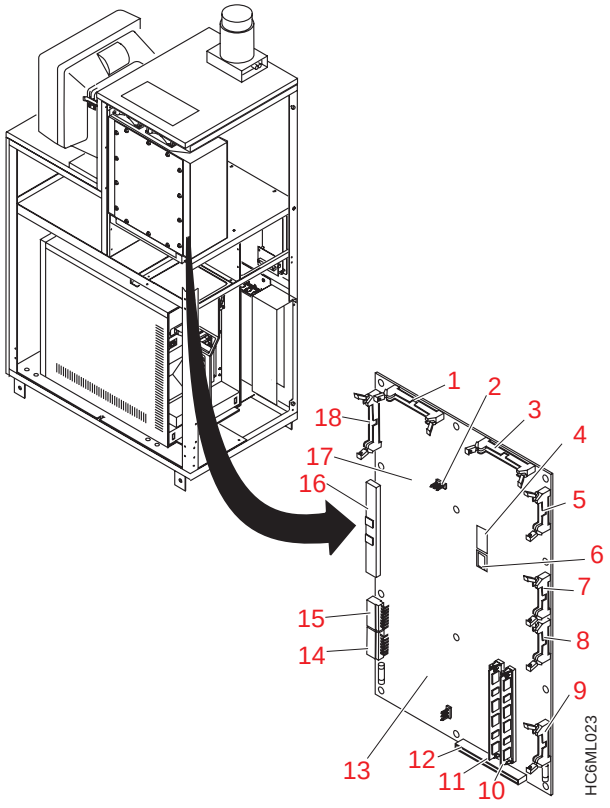


Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the control unit rear cover.
4. Remove the control unit rear inner cover.
5. Open both control unit side covers
6. Set the Power Switch on the front of the RISC Controller to **Off**.
7. Remove the screws from the PQE/MIC enclosure cover.
8. Disconnect the cables from the following MIC card connectors:
   - MJ01 Operator Alert Cable **(5)**
   - MJ02 **(7)**
   - MJ06 Cable to Printer **(12)**
   - MJ07 To Pre/Postprocessing Interface Card **(3)**
   - MJ09 To Pre/Postprocessing Interface Card **(1)**
   - MJ10 DC Power Cable **(16)**
   - MJ11 To Pre/Postprocessing Interface Card **(18)**
   - MJ21 To RISC Controller (SSA) **(14)**
   - MJ22 To RISC Controller (SSA) **(15)**

(continued on next page)

Table 391. Mechanism Interface Card (MIC) (continued)



9. Remove nuts and washers that hold the MIC to the plate. Separate connector on the PQE and MIC cards by gently lifting the MIC off the connector on the PQE card.
10. If you are replacing the MIC, remove the Mechanism Interface Card (MIC) Memory Cards **(10)** and **(11)** from the MIC and install them on the new MIC.

Installation

1. Reverse the removal procedure (steps 3 through 9) to install the new Mechanism Interface Card (MIC).

Verify

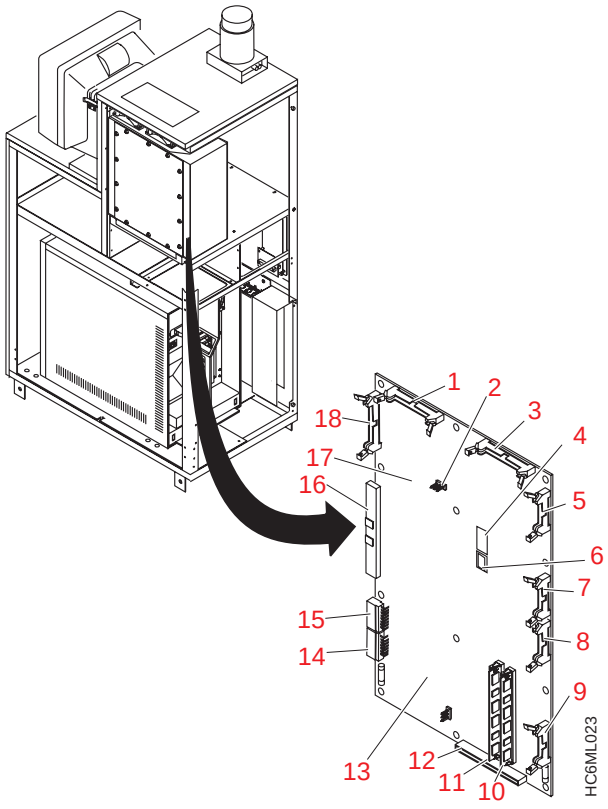
1. You must install the 2-pin MIC jumper.

   For a duplex printer, ensure that the jumper is installed as follows:
   - For Printer 1, install the jumper on pins 1 and 2.
   - For Printer 2, install the jumper on pins 2 and 3.
2. Set the Power Switch on the front of the RISC Controller to **On**.
3. Power on the printer.
4. Run the MIC Basic Test to ensure that the MIC works correctly. (SeeMechanism Diagnostics.)
5. Run print samples to verify print quality.

Mechanism Interface Card (MIC) Memory Cards

Note: Follow ESD procedures for handling static-sensitive parts.

Table 392. Mechanism Interface Card (MIC) Memory Cards



(continued on next page)

Removal

1. Remove the Mechanism Interface Card (MIC).
2. Place the MIC on a flat surface with the memory cards facing up.

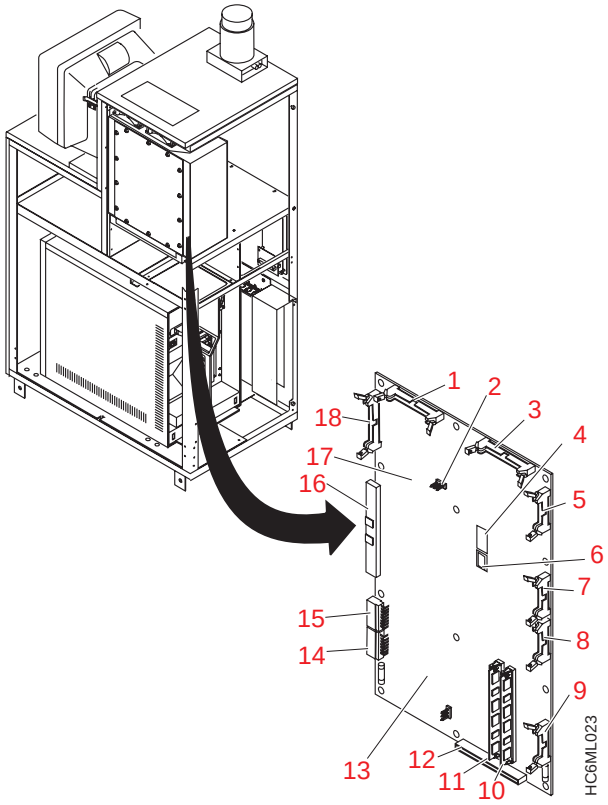
Note: The memory cards are ESD-sensitive parts.

3. Remove cards **(10)** and **(11)** by pushing the latches.

   As the latches are released, the memory cards pivot to the left.

   Lift the card out of the socket and repeat the procedure for both memory cards.

Table 392. Mechanism Interface Card (MIC) Memory Cards (continued)



Installation

Note: Read step 2 before you begin installing the memory cards.

1. Install the memory cards **(10)** and **(11)**.
2. Position each memory card so that the notch is at the bottom of the socket.
3. Notch should be centered on a corresponding socket.
4. Insert each memory card into the sockets at an angle of approximately 35° left of vertical.

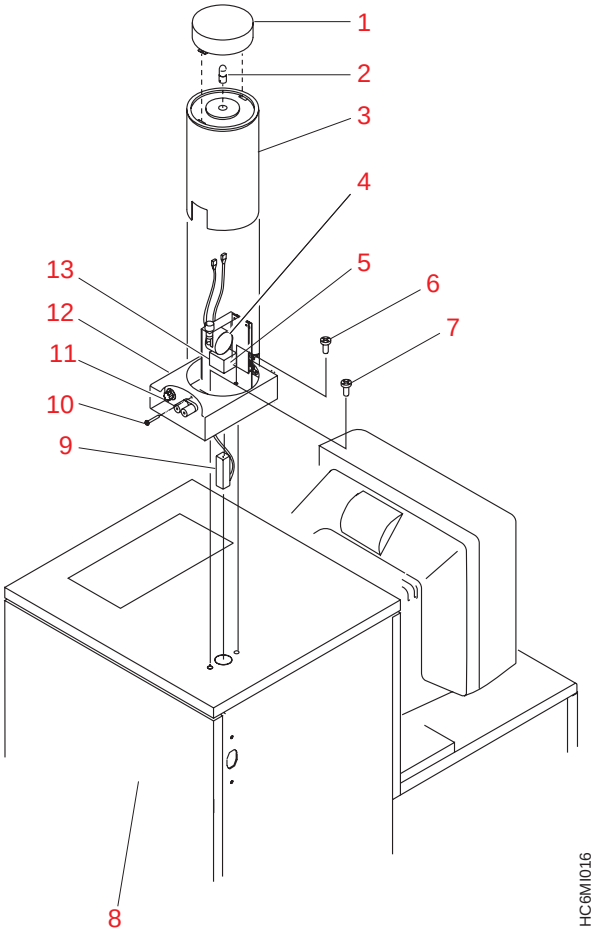
   When the angle is correct and the notches are aligned, the memory card drops easily into the socket.
5. After each memory card has dropped fully into the socket, rotate the card into the vertical position.

   Make sure that both of the latches are fully seated in the locked position.
6. Reinstall the MIC (Mechanism Interface Card (MIC)).

Operator Alert Assembly

Note: To replace just the light bulb, go to step 7.

Table 393. Operator Alert Assembly



(continued on next page)

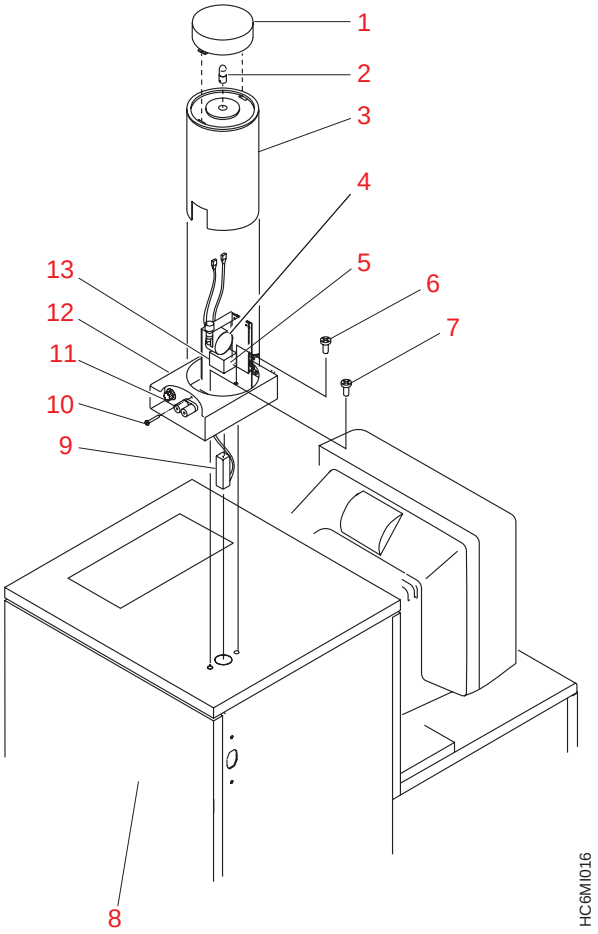
Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the control unit rear cover.
4. Set the Power Switch on the front of the RISC Controller to **Off**.
5. Remove the screw **(10)**.
6. Lift off the operator alert sleeve **(3)** and place it on the top of the control unit.

Note: In the next step, note which numbered wires are attached to the component.

7. Use the following information to remove assembly components:
   - Light bulb **(2)**: Squeeze the plastic light cover **(1)** to remove it. Rotate the bulb counterclockwise.
   - Speaker **(4)**: Unscrew the collar to remove it from the mounting plate.
   - Relay **(5)**: Remove the screws and disconnect the wires.
   - Circuit board **(13)**: Squeeze each mounting standoff while you pull on the circuit board, disconnect the connector, and remove the board.
   - Volume control potentiometer **(11)**: Remove the setscrew in the knob and remove the collar.

Table 393. Operator Alert Assembly (continued)



(continued on next page)

8. To remove the operator alert base **(12)**, open the control unit rear cover **(8)**.
   a. Disconnect connector ALP2 **(9)**.
   b. Loosen the rear screw **(7)**, loosen the front screw **(6)**, and slide the operator alert base **(12)** to the rear of the control unit.
      Note: In the next step be careful not to damage the ALP2 connector **(9)** while you remove the cable from the control unit.
   c. Lift the operator alert base **(12)** from the control unit.

Installation

Note: During installation, be careful not to damage the operator alert cable when you attach the sleeve to the base.

1. Reverse the removal procedure (steps 5 through 8) to install the operator alert assembly.

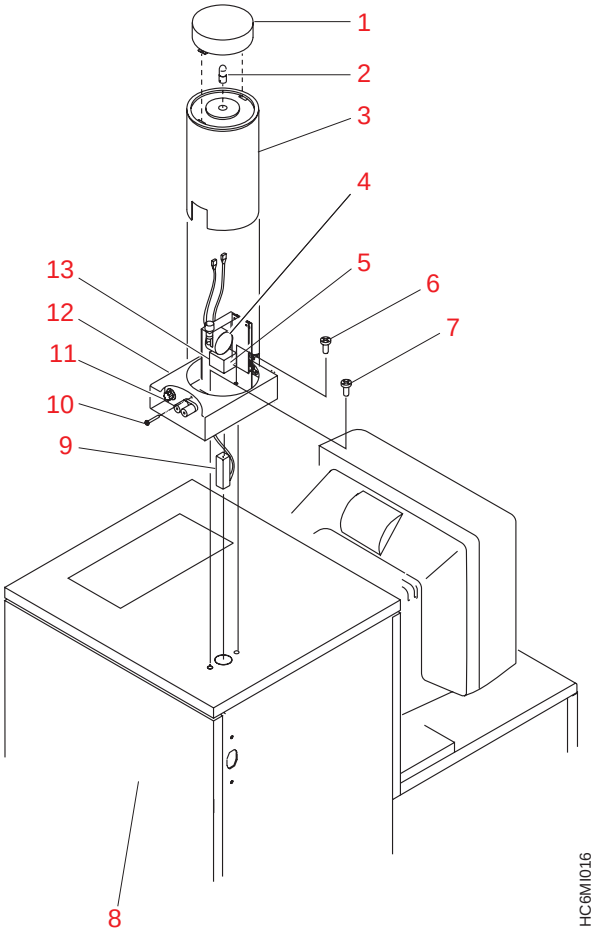
Adjustment

Make the following adjustments as necessary:

- To adjust the alarm volume, use the knob **(11)** on the base.
- To turn off the alarm, set DIP switch 2 on the circuit board **(13)** to **Off**.
- To set the attention light to glow without flashing, set DIP switch 1 on the circuit board **(13)** to **Off**.
- To adjust the attention light flash rate, adjust the potentiometer on the circuit board **(13)**.

Note: DIP switches 3 and 4 are not used and are normally set to the **Off** position.

Table 393. Operator Alert Assembly (continued)

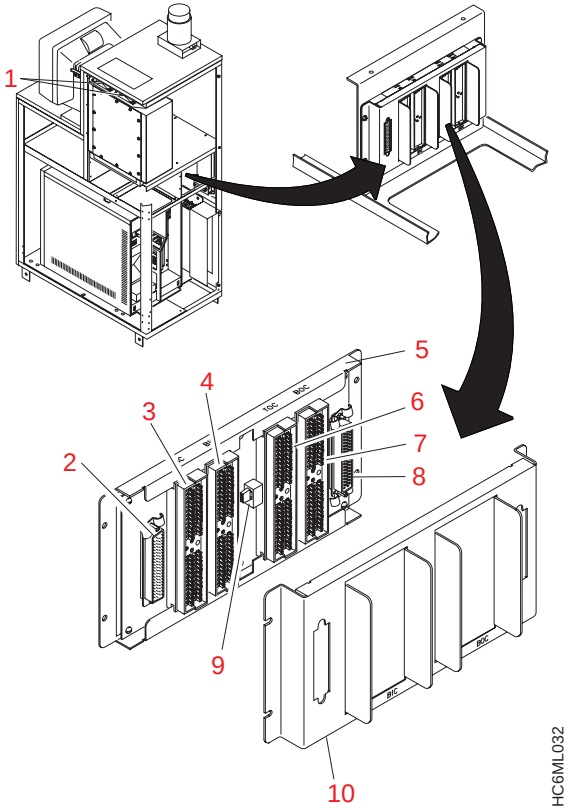


Verify

1. Set the Power Switch on the front of the RISC Controller to **On**.
2. Power on the printer.
3. Run the Alarm and Attention Light tests.

Parallel Channel Tailgate

Table 394. Parallel Channel Tailgate



DANGER

<1-14> Switch off printer power and unplug the printer power cord before connecting or disconnecting a communication port, a teleport, or any other attachment connector.

Special Tools Required:

- Channel wrap blocks

Removal

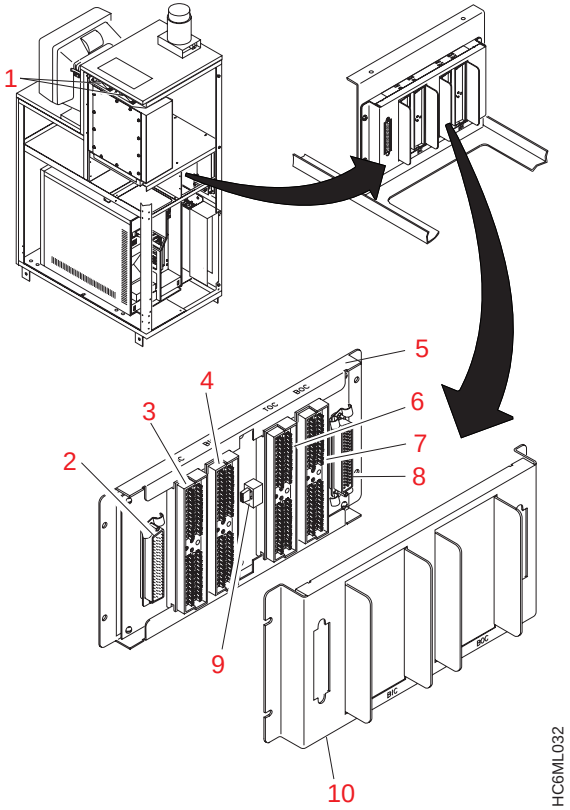
1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the control unit rear cover.
4. Set the Power Switch on the front of the RISC Controller to **Off**.
5. Disconnect the power cord from the electrical outlet.
6. Remove the control unit rear inner cover.
7. Disconnect the external cables from the BUS IN **(4)** and TAG IN **(3)** connectors and the BUS OUT (or terminator) **(7)** and TAG OUT (or terminator) **(6)** connectors on the tailgate assembly.

Attention: Take care when you disconnect or connect the BUS/TAG cables, because the connector pins are very easy to bend.

8. Disconnect the internal tailgate to controller “Y” cable from connectors **(2)** and **(8)** on the tailgate.

Table 394. Parallel Channel Tailgate (continued)

(continued on next page)



9. Remove four screws that hold the channel tailgate assembly to the tailgate frame.
10. Note the setting of the channel priority switch **(9)** on the tailgate assembly (LOW or HIGH) and remove the tailgate assembly.

Installation

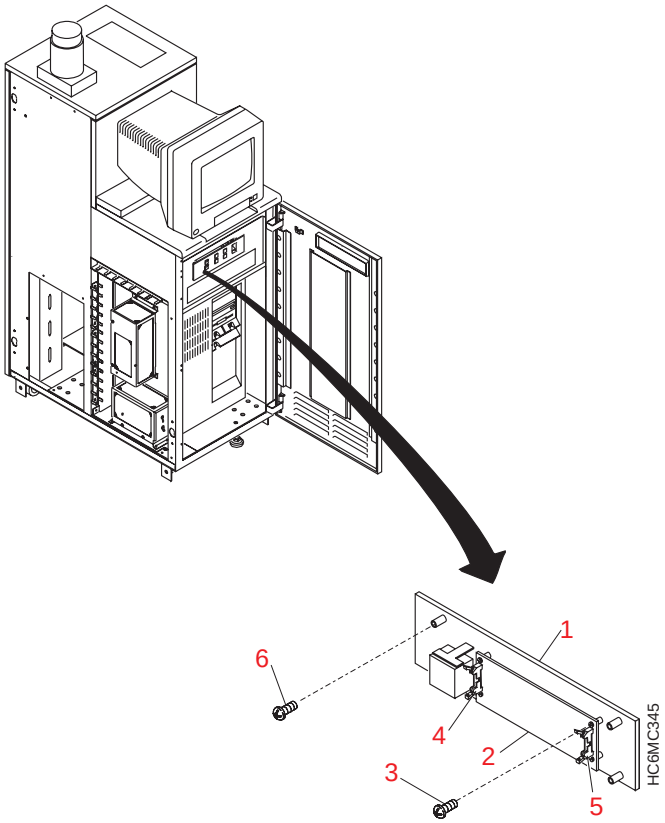
1. Reverse the removal procedure (steps 6 through 10) to install the tailgate assembly.
2. Ensure that the channel priority switch **(9)** on the new tailgate card is set the same as on the old card.

Verify

1. Set the Power Switch on the front of the RISC Controller to **On**.
2. Power on the printer.
3. Run the print samples.
4. Run a customer print job to ensure that print data are being received correctly.

Power Control Panel

Table 395. Power Control Panel



Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open both control unit side covers.
4. Set the Power Switch on the front of the RISC Controller to **Off**.
5. Open the control unit front cover.
6. Remove the four screws **(6)** and remove the power control panel **(1)**.
7. Disconnect connectors PB01 **(4)** and PB02 **(5)** on the power control panel.
8. Remove the four screws **(3)**, and remove the power control panel card **(2)**.

Installation

1. Reverse the removal procedure (steps 5 through 8) to install a new power control panel.

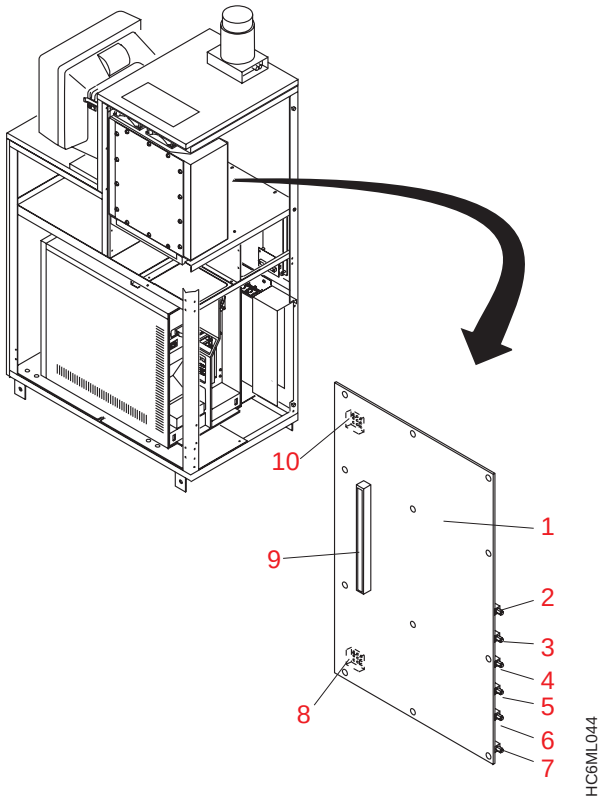
Verify

1. Set the Power Switch on the front of the RISC Controller to **On**.
2. Power on the printer.
3. Run print samples to verify operation.

PQE Card

Note: Follow ESD procedures for handling static-sensitive parts.

Table 396. PQE Card



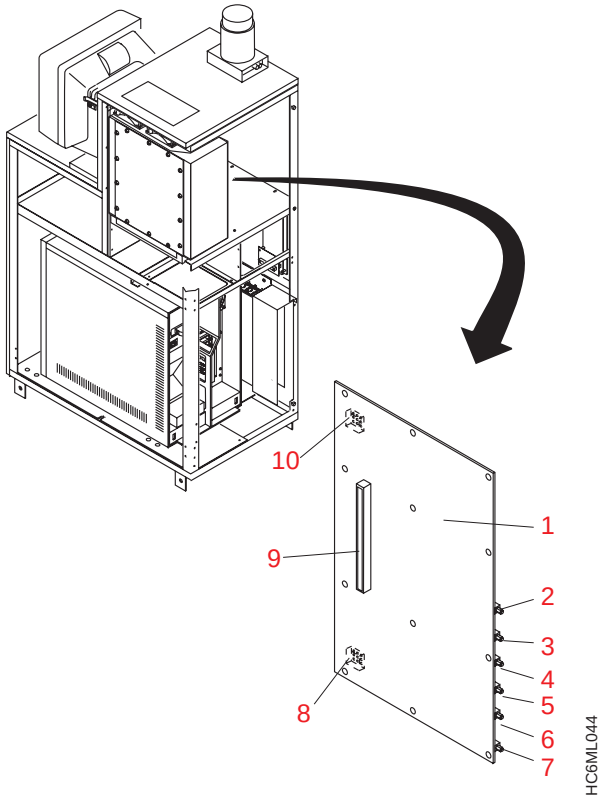
(continued on next page)

The AFCCU print quality enhancement (PQE) card is connected to the mechanism interface card (MIC) through the opening in the assembly plate in the control unit.

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the control unit rear cover.
4. Open both control unit side covers.
5. Set the Power Switch on the front of the RISC Controller to **Off**.
6. Remove the screws from the PQE/MIC enclosure cover.
7. Disconnect the video data coax cables from connector VD1 **(2)**, VD2 **(3)**, VD3 **(4)**, VD4 **(5)**, VD5 **(6)**, and BD **(7)** on the PQE card **(1)**.
8. Disconnect connectors PJ10 **(10)** and PJ5 **(8)**.
9. Remove the nuts and washers, and remove the PQE card by gently prying the card off connector MJ04 **(9)** on the MIC.

Table 396. PQE Card (continued)



Installation

1. Reverse the removal procedure (steps 3 through 9) to install a PQE card.
2. Carefully align the 150-pin connectors and MJ04 on the MIC card when you put the PQE card on the MIC.

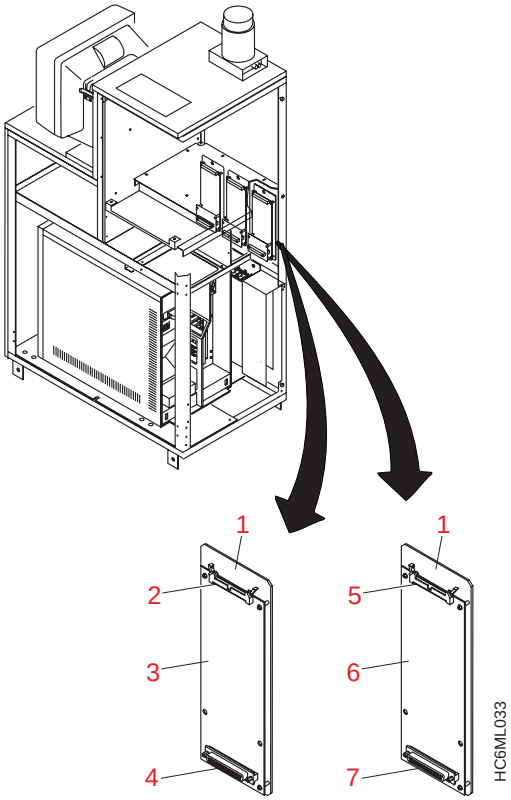
Verify

1. Set the Power Switch on the front of the RISC Controller to **On**.
2. Power on the printer.
3. Print the Print Pack to check printer operation.

Pre/Postprocessing Interface Cards

Note: Follow ESD procedures for handling static-sensitive parts.

Table 397. Pre/Postprocessing Interface Cards



Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the control unit rear cover.
4. Remove the control unit rear inner cover.
5. Set the Power Switch on the front of the RISC Controller to **Off**.
6. Disconnect the top **(2)** and **(5)**, and bottom **(4)** and **(7)** cable connectors from the pre/postprocessing interface card assembly **(1)** you are replacing.
7. Remove the one mounting screw that holds the pre/postprocessing interface card assembly **(1)** to the vertical frame in the control unit.
8. Remove the card assembly.

Installation

1. Reverse the removal procedure (steps 6 through 8) to install the pre/postprocessing interface card.

Verify

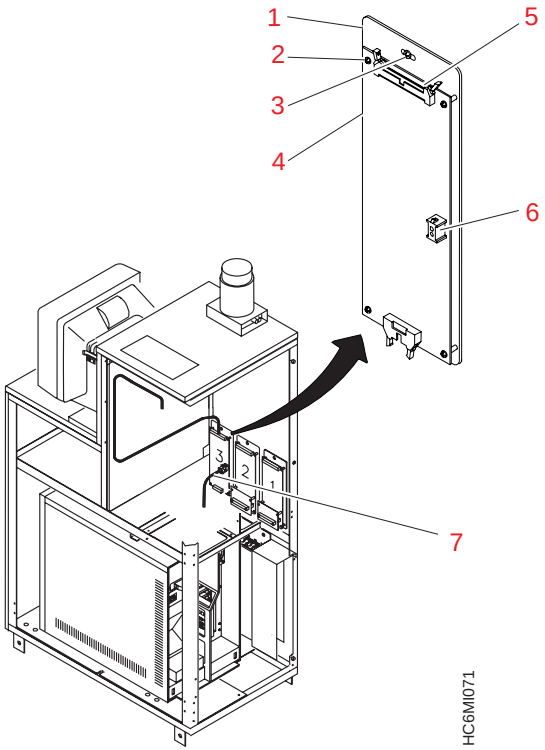
1. Set the Power Switch on the front of the RISC Controller to **On**.
2. Power on the printer.
3. To check the interface cards, see Pre/Postprocessor Diagnostics.
4. Perform an NPRO or run print sample to test the operation of the pre/postprocessor.

Side 1/Side 2 Verification Control Card

Note: This procedure applies only to Printer 2 of a duplex printing system.

Note: Follow ESD procedures for handling static-sensitive parts.

Table 398. Side 1/Side 2 Verification Control Card



Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Remove the control unit side cover.
4. Disconnect cable connectors J1 **(5)**, P2S2 **(6)**, P3S2 **(7)** from the verification control card **(1)**.
5. Remove the screw **(3)** and remove the card/plate assembly **(4)** from the control unit.
6. Remove the four mounting screws **(2)** that hold the control card to the plate.

Installation

1. Reverse the steps of the removal procedure to install the verification control card.

Check

1. To check the verification control card, perform the verification sensor card adjustment procedures.

Verify

1. Run print samples to verify the operation of Side 1/Side 2 Verification.

RS/6000 Removal & Replacement Procedures

ESD Precautions

Cards, planars, diskette drives, and disk drives can be damaged by electrostatic discharge (ESD). To prevent damage to these components use the following precautions:

- Wear an ESD wrist strap when you handle these components.
- When you replace a component - with the component still in its antistatic bag touch the metal frame of the RS/6000.
- Do not remove the component from the antistatic bag until you are ready to install it.
- Hold the cards and planar by the edges.
- Hold the drives by the frame.
- Avoid touching solder joints or pins.
- If you must lay a component down while it is out of the antistatic bag, lay it on the bag. Before you pick it up again, touch the antistatic bag and the metal frame of the controller at the same time.
- For Hard Drive Replacement Procedure, refer to page 1545.
- For Microcode Update Procedure, refer to page 1547.
- For ESCON Card Replacement Procedure, refer to page 1550.
- For Parallel Channel Card Replacement Procedure, refer to page 1553.

For all other replacement activity, refer to the “Removal and Replacement Procedures” chapter in the Service Guide for the RS/6000 that is installed.

- **RS/6000 7025 F50 Series** Service Guide - SA38–0541
- **RS/6000 7043 43P Series** Models 140 and 240 Service Guide - SA38–0512

For options/features, refer to the chapter “Installing and Removing Options” in the appropriate User’s Guide:

- **RS/6000 7025 F50 Series** User’s Guide - SA38–0540
- **RS/6000 7043 43P Series** Models 140 and 240 User’s Guide - SA38–0511

Redirect Systems Management Services (SMS) Screen

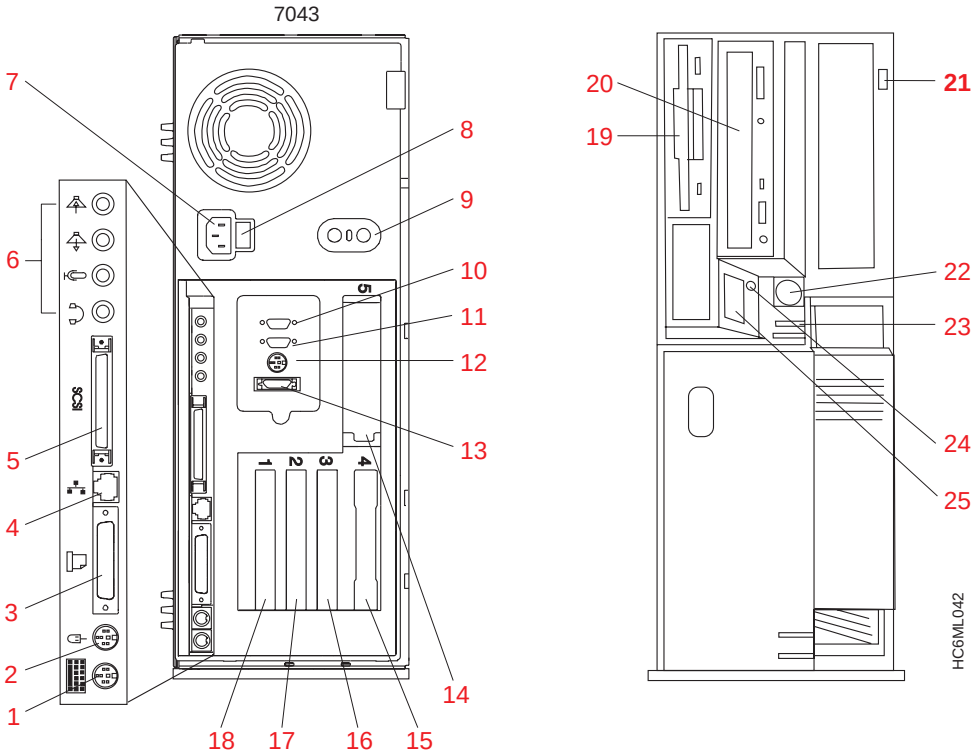
After you have installed or replaced a card in the controller, a Systems Management Services (SMS) window may appear on the Display/Touch Screen before the normal printer windows. The (SMS) window contains two icons for a short time. This does not interfere with normal printer operations.

If you wish, use the following procedure to stop the SMS window from appearing; refer to the RS/6000 Controller Diagnositcs.

Controller – RS/6000, Type 7043 Model 43P-140

Note: These instructions apply to the control unit attached to a simplex printer.

Table 399. Controller – RS/6000, Type 7043 Model 43P-140



CAUTION:
<80> This assembly weighs between 18 kg (39.7 lbs) and 32kg (70.5 lbs). If the entire assembly must be lifted, use two or more persons.

Removal

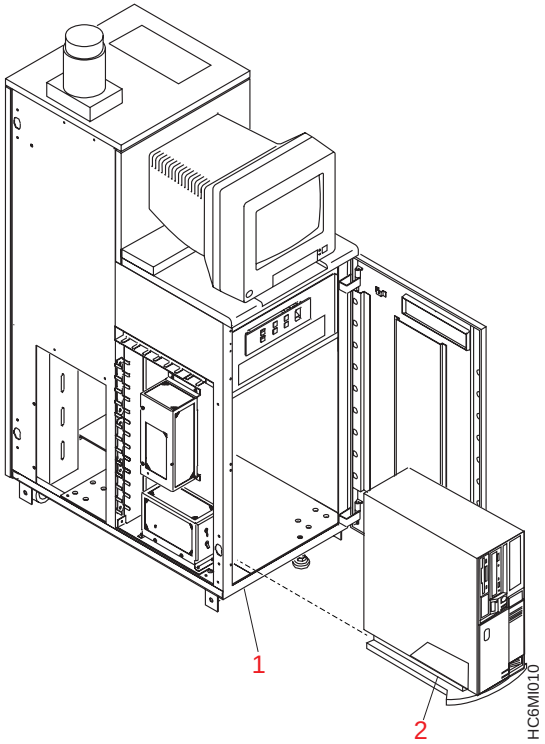
1. Request that the system operator stop activity on the printer. Disable all host attachments.

   If System/370 Parallel Channels are installed and there are other control units installed on the Parallel Channels, request the system operator to stop all activity on those channels.

DANGER

<1-14> Switch off printer power and unplug the printer power cord before connecting or disconnecting a communication port, a teleport, or any other attachment connector.

Table 399. Controller – RS/6000, Type 7043 Model 43P-140 (continued)



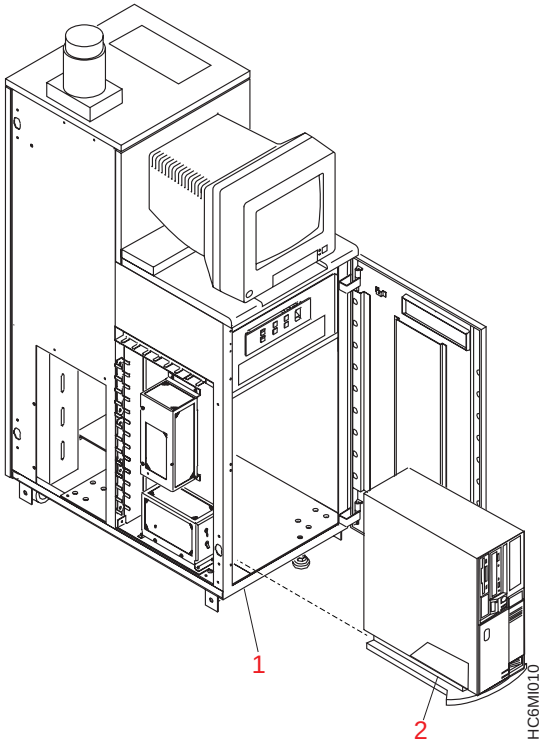
2. Shutdown and power off the printer.
3. Unplug the printer power cord.
4. Open the control unit rear cover.
5. Open both control unit side covers.
6. Set the Power Switch on the front of the RISC Controller to **Off**.
7. Disconnect the cables at the rear of the controller and label them for reinstallation.
8. If System/370 Parallel Channels were installed, disconnect the external channel cables from the channel tailgates; pull them clear of the control unit frame either across the floor or under a raised floor.

   If there are other control units installed on the Parallel Channels and the controller repair or replacement activity will take an extended period of time, you may temporarily restore channel activity by the following steps:

   a. Join the BUS IN cable connector block to the BUS OUT cable connector block, and join the TAG IN cable connector block to the TAG OUT cable connector block if the printer control unit is not the last control unit on the channel.
   b. Remove the terminator blocks from the BUS OUT and TAG OUT tailgate positions and plug them into the respective BUS IN and TAG IN cable connector blocks if the printer control unit is the last control unit on the channel.
   c. Request the system operator to resume Parallel channel activity.

(continued on next page)

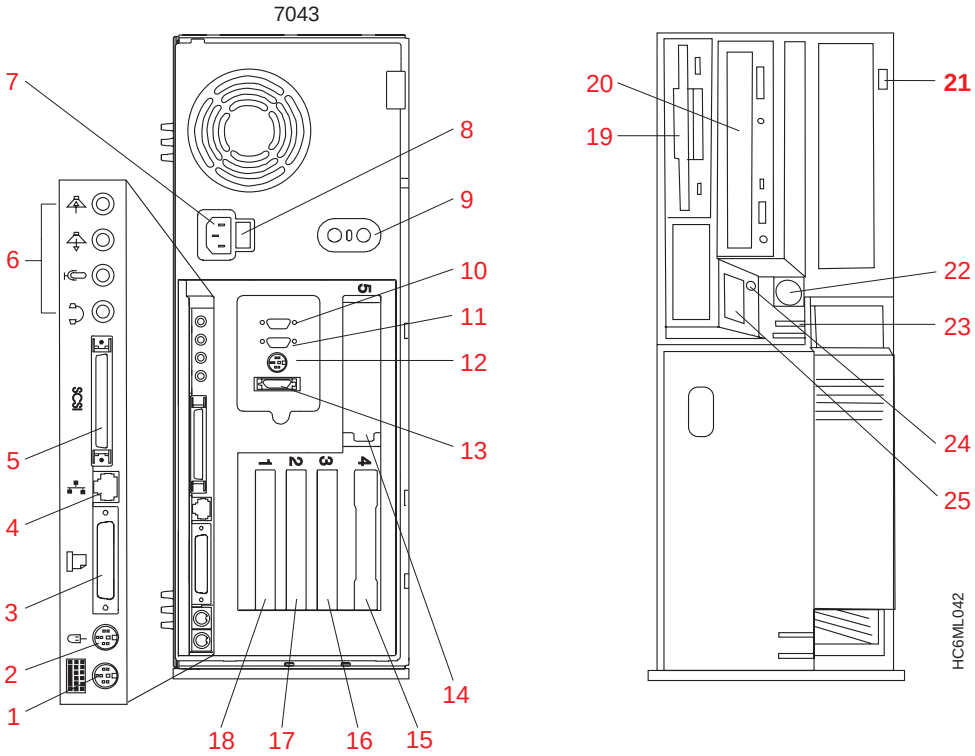
Table 399. Controller – RS/6000, Type 7043 Model 43P-140 (continued)



(continued on next page)

9. Pull all non-Parallel Channel cables disconnected from connector slots clear of the control unit frame, either across the floor or pushed under a raised floor.
10. Disconnect any Preprocessor or Postprocessor external device cables connected to the pre/post tailgate and pull them clear of the control unit frame.
11. If an Urge Unit is installed in the input area of the printer and its power cable is plugged into connector JA10 on the control unit ac control box, disconnect the cable and pull it clear of the control unit frame.
12. Remove the controller from the control unit frame.

Table 399. Controller – RS/6000, Type 7043 Model 43P-140 (continued)



Installation

1. Reverse the removal procedure (step 4 on page 1538 through step 12 on page 1539) to install the controller.

Note: If Parallel Channels are installed and you joined the BUS IN and TAG IN cables to the BUS OUT and TAG OUT cables and resumed channel activity, you must again request the system operator to stop all channel activity while you return the channel cables to their normal configuration.

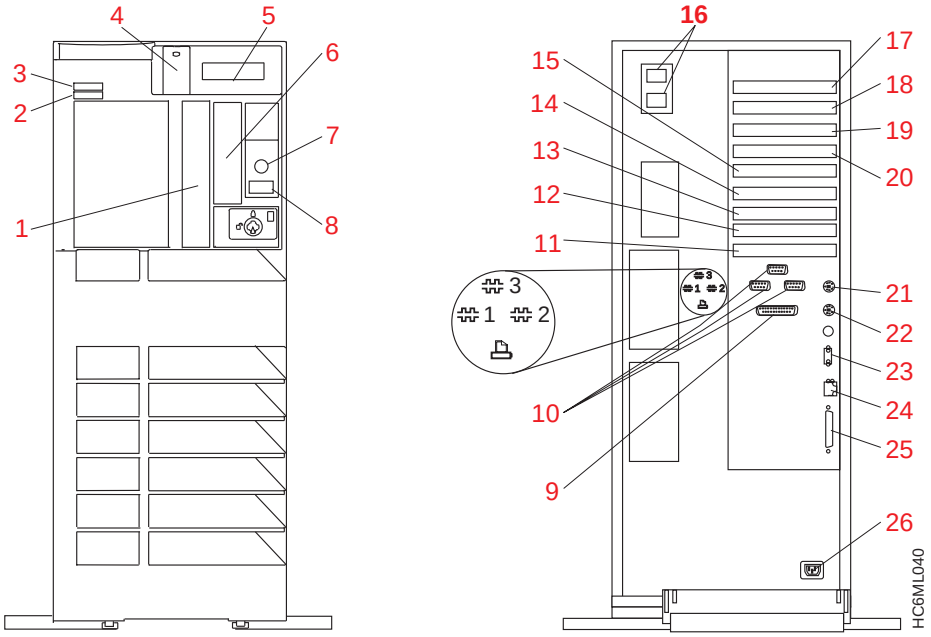
Verify

1. Set the Power Switch on the front of the RISC Controller to **On**.
2. Power on the printer.
3. Run the print samples to verify print quality.

Controller – RS/6000 Type 7025 Model F50

Note: These instructions apply to the control unit attached to Printer 2 of a duplex printing system.

Table 400. Controller – RS/6000 Type 7025 Model F50



CAUTION:
<77> The RISC Controller weighs more than 45 kg (100 lb) . If the entire controller must be lifted, use three or more persons.

Removal

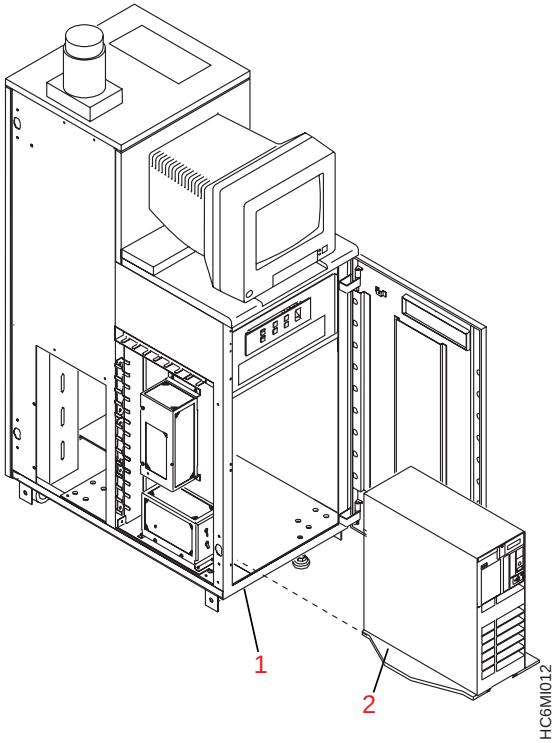
1. Request that the system operator stop activity on the printer. Disable all host attachments.

   If System/370 Parallel Channels are installed and there are other control units installed on the Parallel Channels, request the system operator to stop all activity on those channels.

DANGER

<1-14> Switch off printer power and unplug the printer power cord before connecting or disconnecting a communication port, a teleport, or any other attachment connector.

Table 400. Controller – RS/6000 Type 7025 Model F50 (continued)



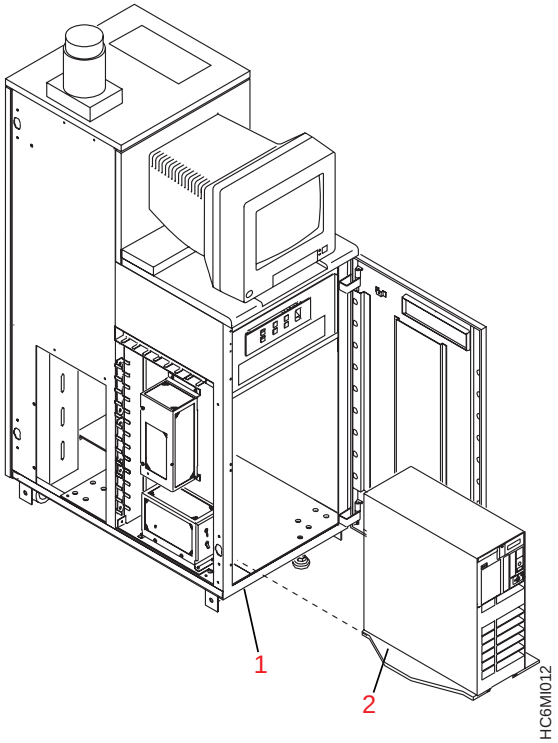
2. Shutdown and power off the printer.
3. Unplug the printer power cord.
4. Open the control unit rear cover.
5. Open both control unit side covers.
6. Set the Power Switch on the front of the RS/6000 Controller to **Off**.
7. Disconnect the cables at the rear of the controller and label them for reinstallation.
8. If System/370 Parallel Channels were installed, disconnect the external channel cables from the channel tailgates; pull them clear of the control unit frame either across the floor or under a raised floor.

   If there are other control units installed on the Parallel Channels and the controller repair or replacement activity will take an extended period of time, you may temporarily restore channel activity by the following steps:

   a. Join the BUS IN cable connector block to the BUS OUT cable connector block, and join the TAG IN cable connector block to the TAG OUT cable connector block if the printer control unit is not the last control unit on the channel.
   b. Remove the terminator blocks from the BUS OUT and TAG OUT tailgate positions and plug them into the respective BUS IN and TAG IN cable connector blocks if the printer control unit is the last control unit on the channel.
   c. Request the system operator to resume Parallel Channel activity.

(continued on next page)

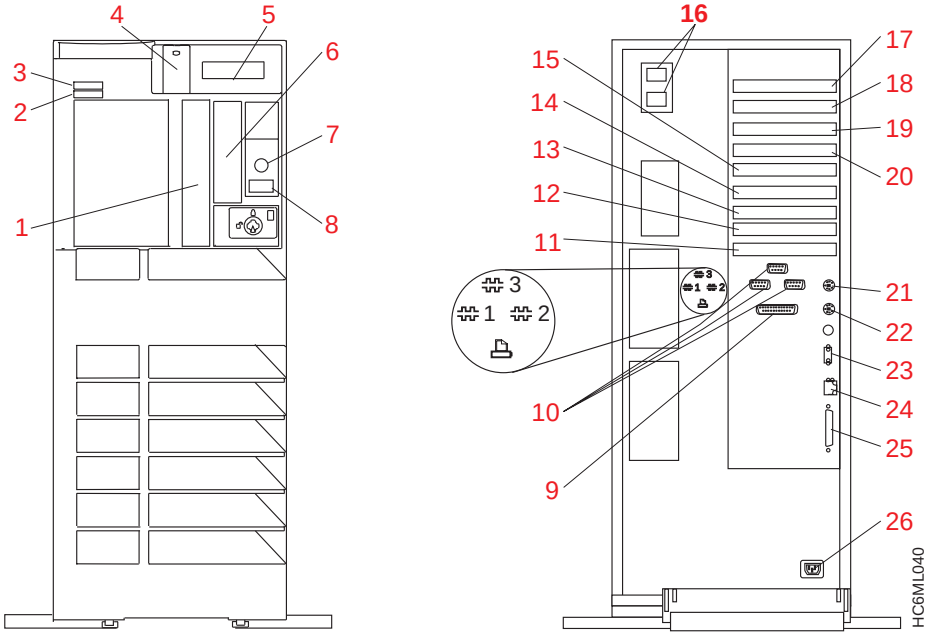
Table 400. Controller – RS/6000 Type 7025 Model F50 (continued)



(continued on next page)

9. You must also pull all non-Parallel Channel cables disconnected from connector slots 6 and 8 clear of the control unit frame, either across the floor or pushed under a raised floor.
10. Also, you must disconnect any Preprocessor or Postprocessor external device cables connected to the pre/post tailgate and pull them clear of the control unit frame.
11. If an Urge Unit is installed in the input area of the printer and its power cable is plugged into connector JA10 on the control unit ac control box, disconnect the cable and pull it clear of the control unit frame.
12. Remove the controller from the control unit frame.

Table 400. Controller – RS/6000 Type 7025 Model F50 (continued)



Installation

1. Reverse the removal procedure (step 4 through step 12) to install the controller.

Note: If Parallel Channels are installed and you joined the BUS IN and TAG IN cables to the BUS OUT and TAG OUT cables and resumed channel activity, you must again request the system operator to stop all channel activity while you return the channel cables to their normal configuration.

Verify

1. Set the Power Switch on the front of the RISC Controller to **On**.
2. Power on the printer.
3. Run the print samples to verify print quality.

Hard Drive Replacement

Table 401. Hard Drive Replacement

Parts Disposition - The hard drive contains copyrighted information and is the property of IBM. Please return all defective hard drives in accordance with the used parts return procedures.

Note: If installation instructions are provided with the hard drive, use those instructions instead of this procedure.

Attention: The hard drive contains microcode. When you order a new hard drive, use the FRU number on the existing hard drive.

1. Shutdown and power off the printer.
2. Remove the controller from the control unit.
   - For the 7043, follow the procedure on page 1537.
   - For the 7025, follow the procedure on page 1541.
3. Remove the defective hard drive; refer to the appropriate RS/6000 User's Guide for the procedure.
   - For the 7025, the hard drive is installed in Bay C1.
4. After you install the new hard drive:
   - Reinstall the controller in the control unit.
   - Power on the printer.
   - After the printer has successfully powered up, perform the shutdown procedure.
   - Power on the printer.

   Note: If error indications are posted on the RS/6000 controller during power up:
   – Remove the RS/6000 battery; refer to the appropriate Service Guide for the procedure.
   – The battery must be left unplugged for 15 minutes to allow time for the non-volatile memory to lose stored information.

(continued on next page)

Table 401. Hard Drive Replacement (continued)

5. Update the Printer Configuration data from the Display/Touch Screen .
   a. From the main window menu bar, select **Configure**.
   b. On the next menu that appears, select **Configure Printer**.
   c. Select **Machine Sequence**, and enter the Machine Sequence number found on the rear of the control unit frame.
   d. Select **Manufacturing Plant**, and enter the Manufacturing Plant data retained from a prior Configure Printer operation.
   e. Select **Date and Time**; use the numeric keypad window to select the elements of the date (month, day, year) and time (hours, minutes, seconds).
   f. Select **OK**, on the keypad window.
   g. Select the **OK** pushbutton on the **Configure Printer**window. The **Restart** window appears.
   h. Select the **Restart** pushbutton from that window to enable the configuration change to become effective.

Updating Microcode

Table 402. Updating Microcode

Note: If installation instructions are provided with the new microcode, use those instructions instead of this procedure.

1. Log on as a Customer Engineer.
2. Select **Analyze** then **Service Actions**.
3. Select **Disk Operations** on the Service Actions window, then select **Update Microcode**. If you are updating microcode, go to step 4.
4. Note the microcode level of the new disk drive in the **Update Microcode** window. Compare it with the level of the microcode diskettes you ordered with the disk drive.
   - If the microcode level of the new disk is equal to the level of the microcode diskettes, go to step 5.
   - If the microcode level of the new disk is lower than the level of the microcode diskettes, continue with the next step.
5. Select **Diskette** as the source of the update, in the **Update Microcode** window.
6. Insert the first microcode backup diskette in the diskette drive.
7. Select the **Update** pushbutton in the **Update Microcode** window.
8. Complete the update with the remaining diskettes, following the instructions on the Display/Touch Screen . When the last diskette has been read, the controller initiates a restart procedure to activate the microcode.
9. When the restart is complete:
   - If you have just installed a new hard drive, continue with step 10.
   - If you are only updating the microcode, continue with step 30.
10. Do one of the following:
    - If there is a valid configuration backup diskette, continue with step 22.
    - If there is no configuration backup diskette, continue with the next step.
11. From the main window, menu bar, select **Configure**.
12. On the next menu that displays, select **Configure Printer**.
13. Select **Machine Sequence**, and enter the Machine Sequence number found on the rear of the control unit frame.
14. Select **Manufacturing Plant**, and enter the Manufacturing Plant data retained from a prior Configure Printer operation.

(continued on next page)

Table 402. Updating Microcode (continued)

15. Set the **Printer Counter**, to the value in the usage meter on the rear the printer engine.
16. Select **Date and Time**; use the numeric keypad window to select the elements of the date (month, day, year) and time (hours, minutes, seconds).
17. Select **Configure Attachments** on the Configure pull down menu. Set all the configuration items according to the information recorded the last time that configuration actions were taken.
18. Select **Configure Pre/Postprocessors** on the Configure pull down menu. Set all the configuration items according to the information recorded the last time that configuration actions were taken.
19. Update the PM Counters per printed logs. (See Using the PM Log.)
20. Define the Customer's forms (see the Operator's Guide). Restore Forms can be used if a Save Forms operation was performed previously. (See Disk Operations.)
21. Go to step 29.
22. **Note:** There are restrictions on when the Restore function can be used; see Disk Operations for those restrictions.
    - Select **Analyze** then **Service Actions**.
    - Select **Disk Operations** on the Service Actions window, then select **Restore Disk**.
23. Insert the configuration diskette in the diskette drive.
24. Select the **OK** pushbutton in the **Restore Disk** window.
25. From the main window menu bar, select **Configure**.
26. On the next menu that appears, select **Configure Printer**.
27. Update the **Printer Counter** to the value in the usage meter on the rear the printer engine.
28. Select **Date and Time**; use the numeric keypad window to select the elements of the date (month, day, year) and time (hours, minutes, seconds).

(continued on next page)

Table 402. Updating Microcode (continued)

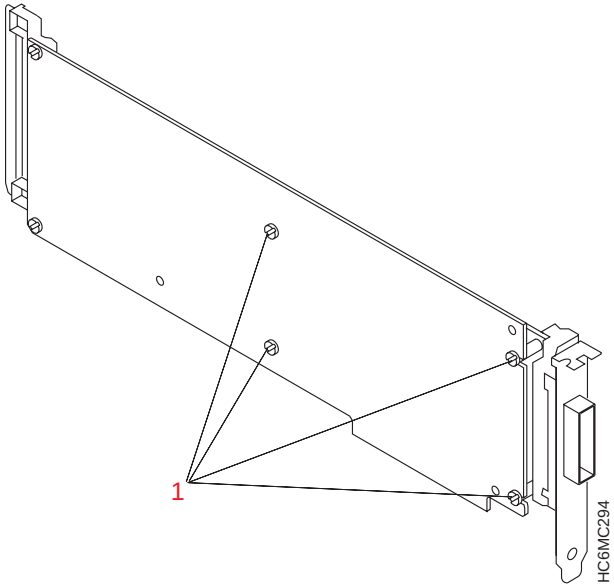
29. Do a restart to enable the configuration changes to be activated. Once the restart has completed:
    - If there is new configuration or forms data, continue with step 30.
    - If there is no new configuration or forms data to be added, go to verification.
30. From the main window menu bar, select **Configure**, and verify all the configuration items in all categories.
31. Select **Analyze**, then select **Service Actions**.
32. Select **Disk Operations** on the Service Actions window, then select **Back Up Disk**. The **Save to a Diskette** window appears.
33. Insert a DOS-formatted diskette in the diskette drive.
34. Select the **Continue** pushbutton on the **Save to a Diskette** window to save the new configuration files.
35. Leave the configuration backup diskette in the diskette drive to receive automatic backup every 24 hours or 1000 prints, whichever greater.

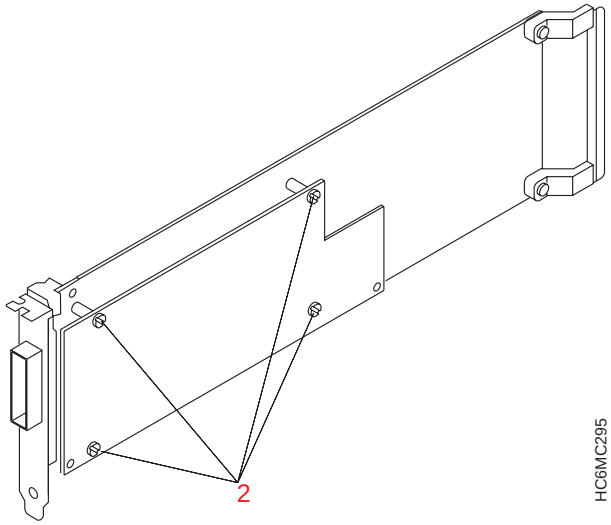
Verification

1. Load forms in the printer.
2. Ensure that the forms are aligned.
3. Select **Analyze**, then **Service Actions**.
4. Select **Print**.
5. Select **Print Log** on the **Print** window.
6. Select **Print Pack**.
7. Select **Print** pushbutton.
8. Review the prints and correct any problems.
9. Enable the host attachments.
10. Notify the system operator that the printer is ready for printing.

ESCON Serial Channel Adapter Card

Table 403. ESCON Serial Channel Adapter





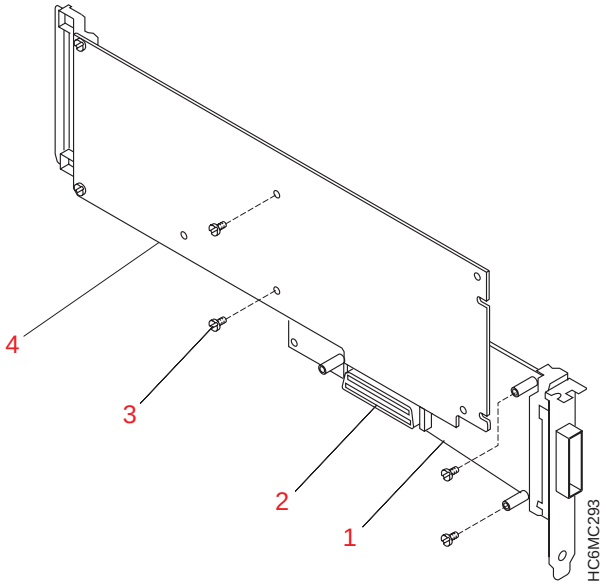
(continued on next page)

DANGER

<1-14> Switch off printer power and unplug the printer power cord before connecting or disconnecting a communication port, a teleport, or any other attachment connector.

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open all control unit covers.
4. Set the Power Switch on the front of the RS/6000 Controller to **Off**.
5. Remove the controller from the control unit.
6. Remove the RS/6000 controller covers.
7. Remove the ESCON card assembly from the controller.
8. Loosen the four screws **(1)** on the Co-processer Card side of the assembly, and the four screws **(2)** on the adapter card side of the assembly.

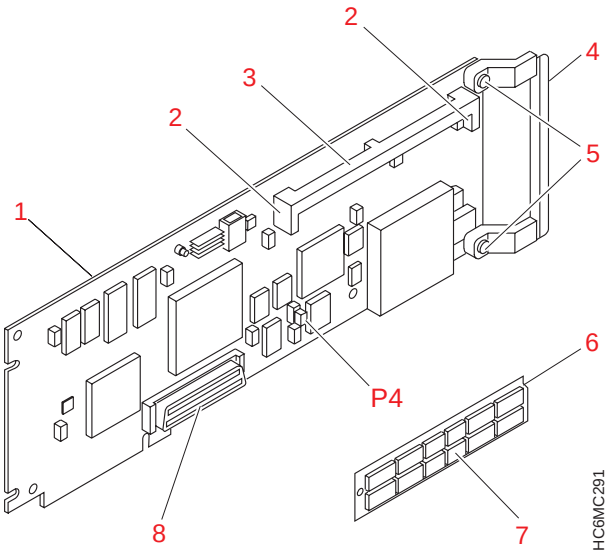
Table 403. ESCON Serial Channel Adapter (continued)



(continued on next page)

9. Remove the four screws **(3)** (that pass through the Co-processor Card **(4)**) from the four standoffs.
10. Gently pull the Co-processor Card **(4)** and the Adapter card **(1)** apart.

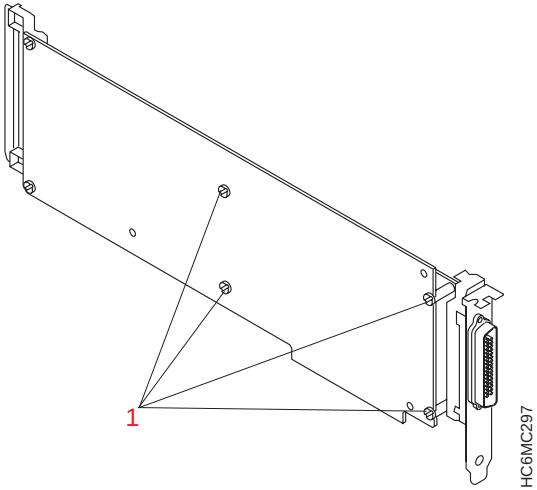
Table 403. ESCON Serial Channel Adapter (continued)

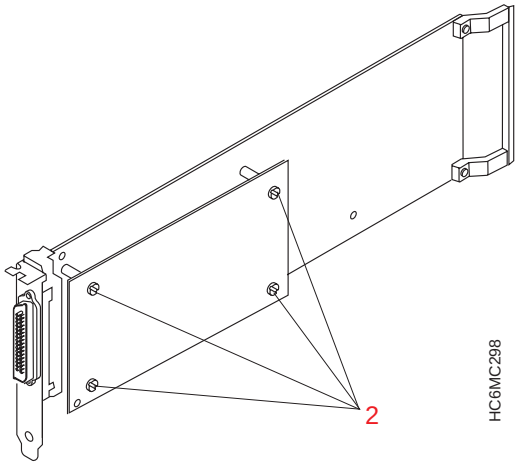


11. Remove the retainer **(4)** from the end of the old ARTIC Co-Processor Card **(1)** by removing the two screws **(5)**. Keep the retainer and screws to install on the new card.
12. Remove the retainer from the end of the new ARTIC Co-Processor Card.
13. Install the retainer **(4)**, that was removed from the old card in step 11, on the new card.
14. Remove the 4MB SIMM card from the old ARTIC Co-Processor.
15. Plug the 4MB SIMM card into the new ARTIC Co-Processor, using the following procedure:
    a. Hold the SIMM card **(7)** with the notch **(6)** on the right, facing the retainer on the Co-Processor card.
    b. Insert the SIMM card at an angle (approximately 45°) in the connector **(3)**.
    c. Place your thumbs on the top corners on the SIMM card and press the SIMM card toward the Co-Processor card until it snaps into the two retainer clips **(2)**.
16. Verify that the jumper plug on P4 is installed between pins 1 and 2.
17. Reverse the removal procedures to reassemble the Adapter Card assembly and install it in the controller.
18. Run the ESCON Channel Tests to verify operation.

PCI Parallel Channel Adapter Card

Table 404. Parallel Channel Adapter





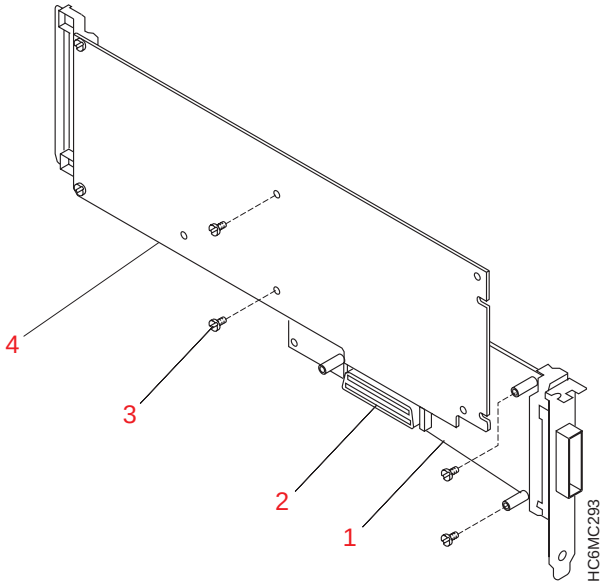
(continued on next page)

DANGER

<1-14> Switch off printer power and unplug the printer power cord before connecting or disconnecting a communication port, a teleport, or any other attachment connector.

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open all control unit covers.
4. Set the Power Switch on the front of the RS/6000 to **Off**.
5. Remove the controller from the control unit.
6. Remove the RS/6000 controller covers.
7. Remove the Parallel Channel card assembly from the controller.
8. Loosen the four screws **(1)** on the Co-processer Card side of the assembly, and the four screws **(2)** on the adapter card side of the assembly.

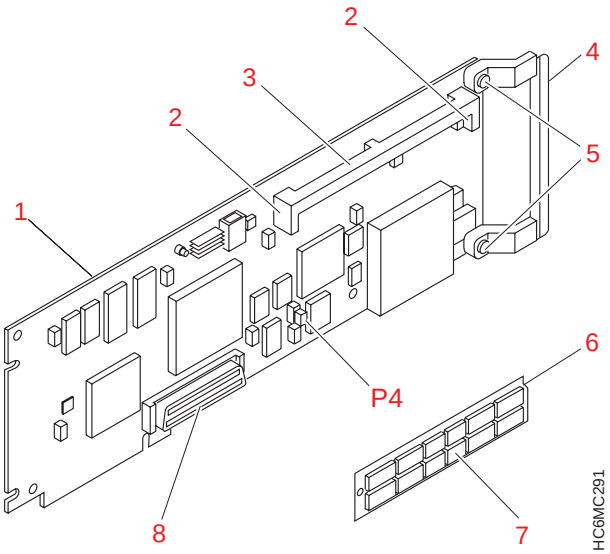
Table 404. Parallel Channel Adapter (continued)



(continued on next page)

9. Remove the two screws **(3)** (that pass through the Co-processor Card **(4)**) from the two standoffs.
10. Gently pull the Co-Processor Card **(4)** and the Adapter card **(1)** apart.

Table 404. Parallel Channel Adapter (continued)



11. Remove the retainer **(4)** from the end of the old ARTIC Co-Processor Card **(1)** by removing the two screws **(5)**. Keep the retainer and screws to install on the new card.
12. Remove the retainer from the end of the new ARTIC Co-Processor Card.
13. Install the retainer **(4)**, removed from the old card in step 11, on the new card.
14. Remove the 4MB SIMM card from the old ARTIC Co-Processor.
15. Plug the 4MB SIMM card into the new ARTIC Co-Processor, using the following procedure:
    a. Hold the SIMM card **(7)** with the notch **(6)** on the right, facing the retainer on the Co-Processor card.
    b. Insert the SIMM card at an angle (approximately 45°) in the connector **(3)**.
    c. Place your thumbs on the top corners on the SIMM card and press the SIMM card toward the Co-Processor card until it snaps into the two retainer clips **(2)**.
16. Verify that the jumper plug on P4 is installed between pins 1 and 2.
17. Reverse the removal procedures to reassemble the Adapter Card assembly and install it in the controller.
18. Run the Parallel Channel Tests to verify operation.

Coronas & High Voltage Power Supply

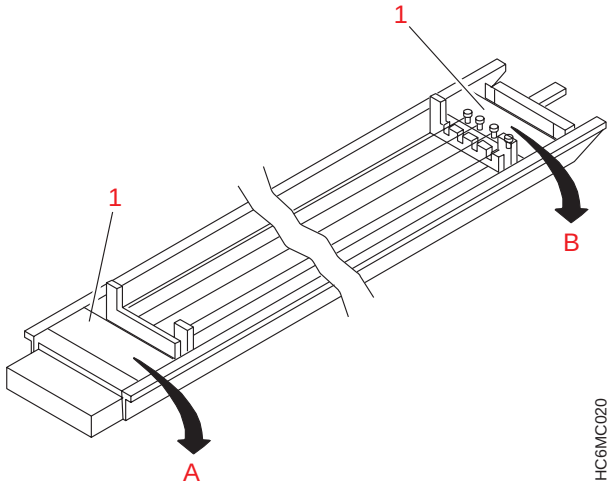
Charge Corona 1557
Preclean Corona and Transfer Corona 1559
Corona Cleaning Brushes 1562
Charge Corona to PC Drum Clearance 1564
High Voltage Power Supply 1568
Transfer Corona Voltage 1570
Mag Brush Bias Voltage 1571
Preclean Corona Voltage 1573
PC Drum Surface Voltage 1574

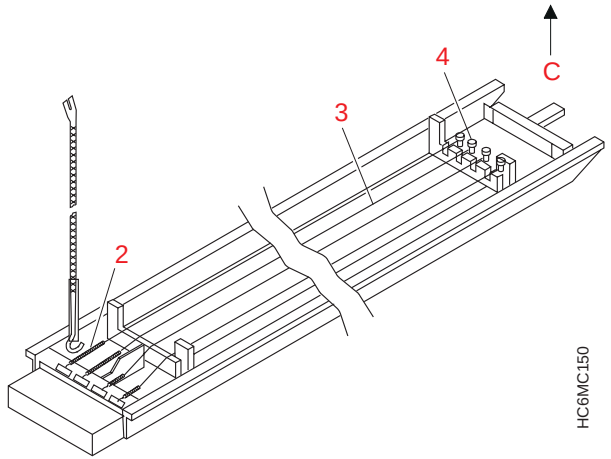
Charge Corona

Table 405. Charge Corona

Special Tools

- Corona Brush (P/N 06F0423)
- Lint Free Cloth (P/N 2108930)





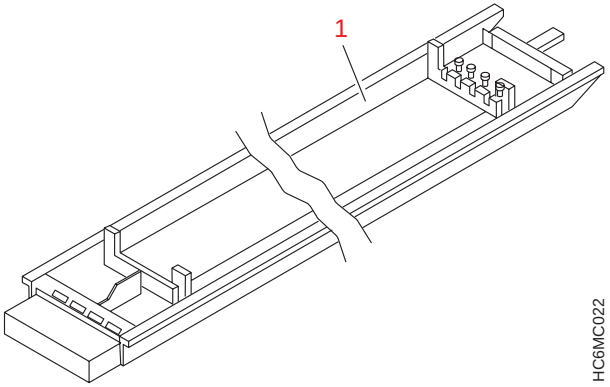
(continued on next page)

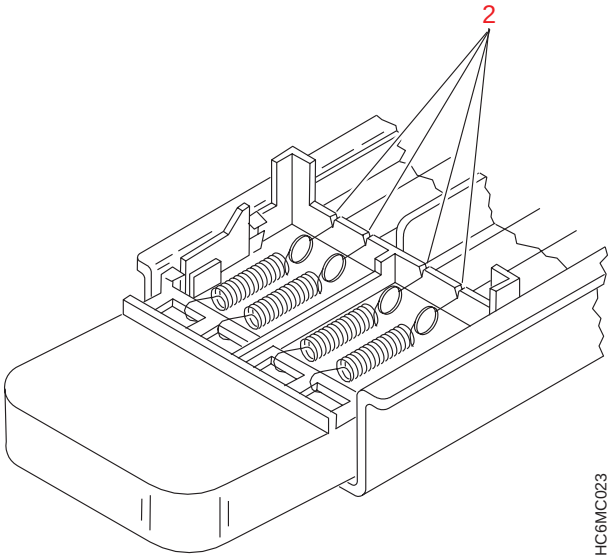
Note: Before you remove the charge corona wire, ensure that the replacement wire is not bent. A bent wire causes an irregular flow of electricity, which results in an abnormal surge of high voltage. This causes the corona to arc.

Wire Removal Procedure

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the right front cover.
4. Pull the charge corona out of its housing.
5. Place the corona on a clean, flat work surface.
6. Remove the two corona wire covers **(1)** by lifting them in the directions **(A)** and **(B)**.
   Note: Go to Charge Corona Cleaning Procedure if the corona wire only needs cleaning.
7. Use a spring hook to pull on the spring **(2)** to ease its removal from the mounting.
   Note: Hold your finger on the spring **(2)** to keep from losing it.
8. Lift the ring out in the **(C)** direction.
9. Remove spring **(2)** wire **(3)** and ring **(4)** assembly and discard it.
10. Repeat this procedure for each corona wire assembly.

Table 405. Charge Corona (continued)





(continued on next page)

Cleaning Procedure

1. Use the corona brush to clean the corona assembly and wire. Brush back and forth several times the full length of the corona assembly and wire.
2. Moisten a clean cloth with water and remove dust and corrosion from the inner and outer surfaces of the corona frame **(1)**.
   Note: Check for fibers and filaments on the wires, and brush them off.
3. Soak the tip of a lint-free cloth with water and wipe the corona wire with the cloth.

Installation

1. Reverse the removal procedure, to install the charge corona.
2. When you replace the corona wire covers, ensure that the flat cover is at the plug end (rear) of the assembly.
3. The charge corona wires must be in the v-slots **(2)** on the base of the corona. If you do not install the wires correctly, print quality problems may occur.

Check

1. Run Print Pack to verify the print quality.

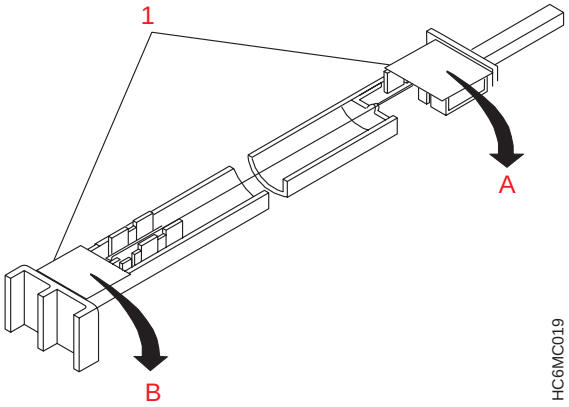
Note: If background or light print occurs, check the PC Drum Surface Voltage.

Preclean Corona and Transfer Corona

Table 406. Transfer & Preclean Coronas

Special Tools

- Corona Brush (P/N 06F0423)
- Lint Free Cloth (P/N 2108930)



(continued on next page)

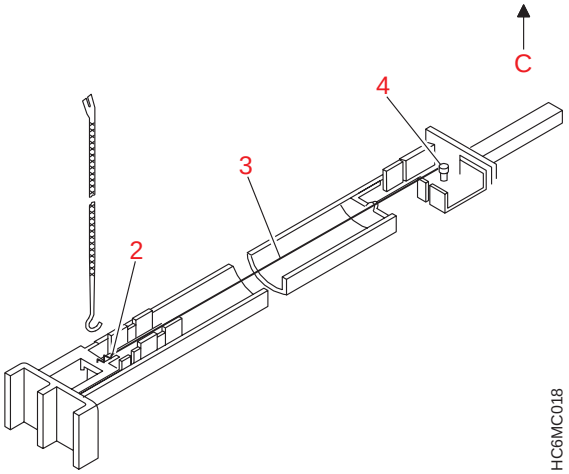
The transfer corona and preclean corona are identical assemblies. The transfer corona is located in the transfer station; the preclean corona is located to the left of the cleaner.

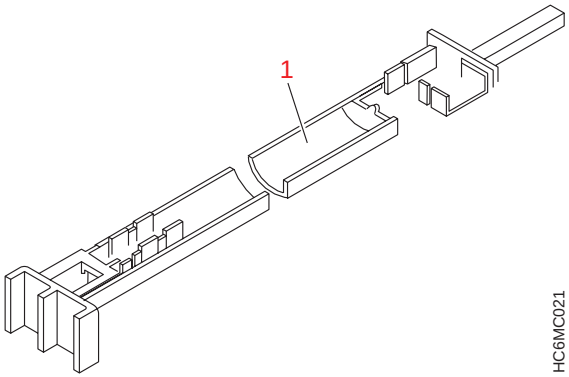
Before you remove any corona wire, ensure that the replacement wire is not bent. A bent wire causes an irregular flow of electricity, which results in an abnormal surge of high voltage. This causes the corona to arc.

Wire Removal Procedure

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Pull the corona out of its housing.
4. Place the corona frame on a clean, flat work surface.
5. Remove the two corona wire covers **(1)** by lifting them in the directions **(A)** and **(B)** shown.
   Note: Go to Transfer & Preclean Corona Cleaning Procedure if the corona wire only needs cleaning.

Table 406. Transfer & Preclean Coronas (continued)





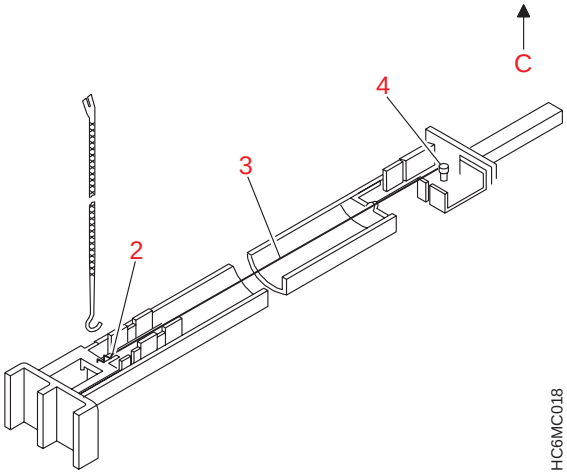
(continued on next page)

6. Use a spring hook to pull on the spring **(2)** to ease in releasing it from its mounting **(3)**.
7. Lift the ring **(4)** out in the **(C)** direction.
8. Remove spring **(2)**, wire **(3)** and ring **(4)** assembly and discard it.
9. Repeat this procedure for each corona assembly.

Cleaning Procedure

1. Use the corona brush to clean the corona assembly and wire. Brush back and forth several times the full length of the corona assembly and wire.
2. Moisten a clean cloth with water and remove dust and corrosion from the inner and outer surfaces of the corona frame **(1)**.
   Note: Check for fibers and filaments on the wires, and brush them off.
3. Soak the tip of a lint-free cloth with water and wipe the corona wire with the cloth.

Table 406. Transfer & Preclean Coronas (continued)



Installation

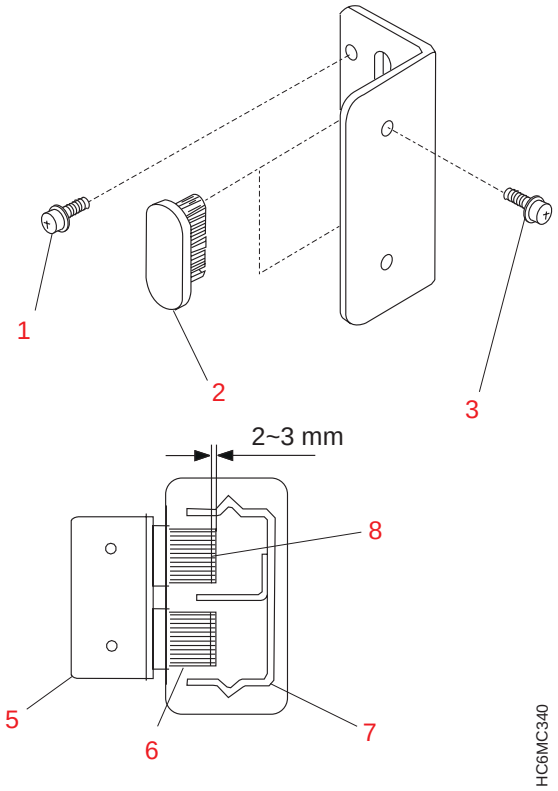
1. Reverse the removal procedure, to install the transfer corona and the preclean corona.
2. When you replace the corona wire covers, ensure that the flat cover is at the plug end (rear) of the assembly.
3. The charge corona wires must be in the v-slots **(2)** on the base of the corona. If you do not install the wires correctly, print quality problems may occur.

Check

1. Run Print Pack to verify the print quality.

Corona Cleaning Brushes

Table 407. Corona Cleaning Brushes



Charge Corona Cleaning Brush

The charge corona cleaning brushes are located inside the drum cover on a bracket, and are adjustable.

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Remove the PC drum cover.
3. Loosen the 3 screws **(1)** to remove the two cleaning brushes **(2)**.
4. If you are going to install new cleaning brushes, discard the old brushes.

Installation

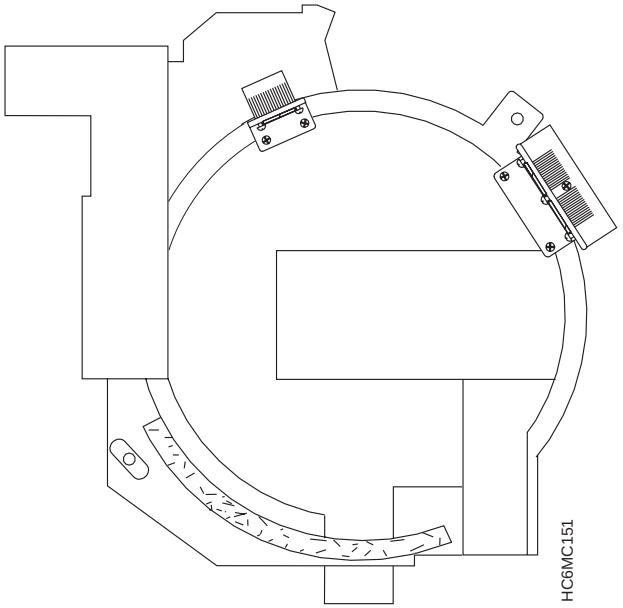
1. Reverse the Removal Procedure.
2. Adjust the new cleaning brushes.

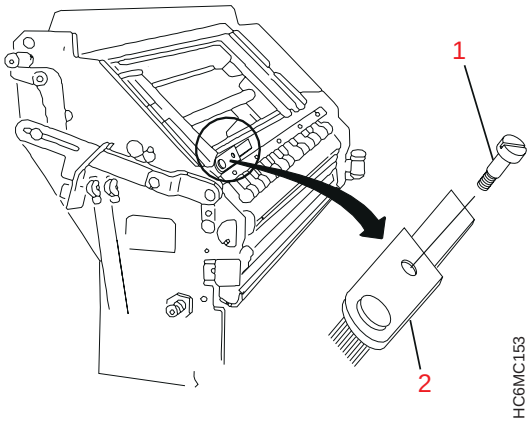
Adjustment

Ensure that the charge corona cleaning brushes have a 2.5 ±0.5 mm (0.10 ±0.02 in.) overlap of the corona wires. With the corona inserted in the printer adjust the individual brushes as needed.

1. Replace the drum cover.
2. Loosen the two screws **(3)** to adjust each brush **(6)**.
3. Pull the corona out 3 to 6 in. to get brush engagement with the wires **(8)**.
4. Move the brush holder **(5)** up or down to get the 2 to 3 mm (0.08 to 0.12 in.) overlap.
5. Check the brush gap to the corona wires.
6. If necessary, repeat the procedure.

Table 407. Corona Cleaning Brushes (continued)





Preclean Corona Cleaning Brush

The preclean corona cleaning brush is located on top of the preclean corona and is not adjustable.

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Remove the preclean corona.
3. Loosen the screw (not shown).
4. Remove the cleaning brush.
5. If you are going to install a new cleaning brush, discard the old brush.

Installation

1. Reverse the Removal Procedure.

Transfer Corona Cleaning Brush

The transfer corona cleaning brush is located on top of the preclean corona and is not adjustable.

Removal

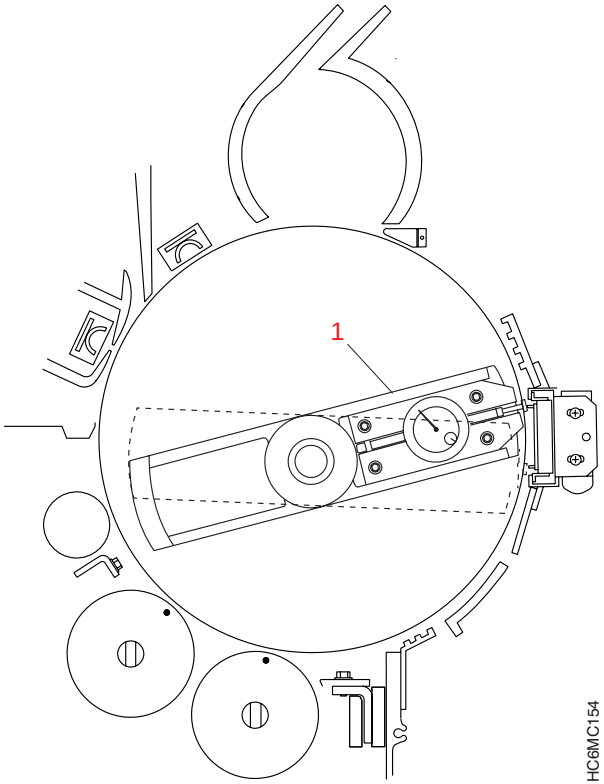
1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Loosen the screw **(1)**.
3. Remove the cleaning brush **(2)**.
4. If you are going to install a new cleaning brush, discard the old brush.

Installation

1. Reverse the Removal Procedure.

Charge Corona to PC Drum Clearance

Table 408. Charge Corona to PC Drum Clearance



(continued on next page)

Special Tools Required:

- Drum shaft extension (P/N 06F1025)
- Drum clearance gauge (P/N 06F1029)

Check

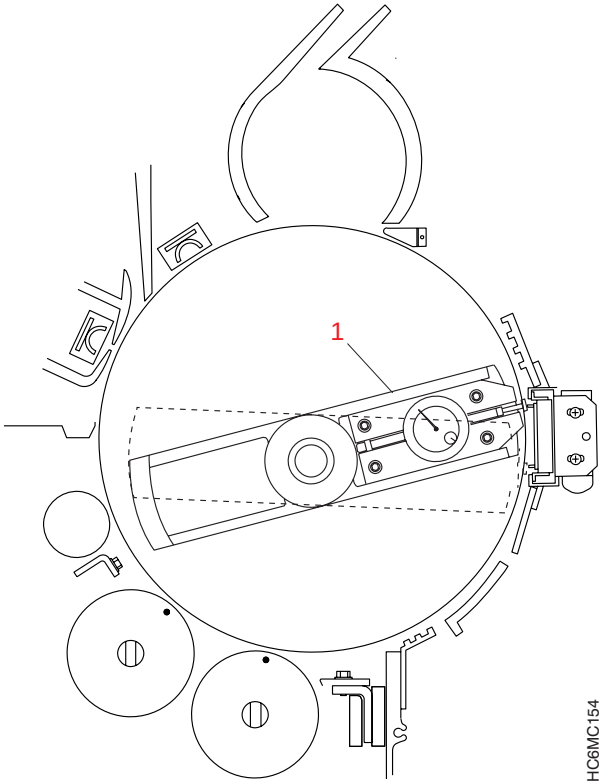
1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Perform the PC Drum Removal procedure and store it in a protective box.

Attention:

- Cover the developer with paper to prevent foreign material from falling in.
- During the next steps, be careful to not drop screws into the developer.

4. Calibrate the Drum Clearance Gauge.
5. Place the drum gauge **(1)** and the drum shaft extension onto the drum shaft.

Table 408. Charge Corona to PC Drum Clearance (continued)



6. Using the drum gauge, measure the clearance between white plastic tips at the rear of the charge corona frame and the PC drum.

Note: You will have to pull the frame out part way to make the measurement at the rear of the drum.

Record the measurement.

- For Toner P/N 1402828, the clearance should be 1.5 ±0.2 mm.
- For Toner P/N 1402717, the clearance should be 2.0 ±0.2 mm.

7. Using the drum gauge, measure the clearance between white plastic tips at the front of the charge corona frame and the PC drum.

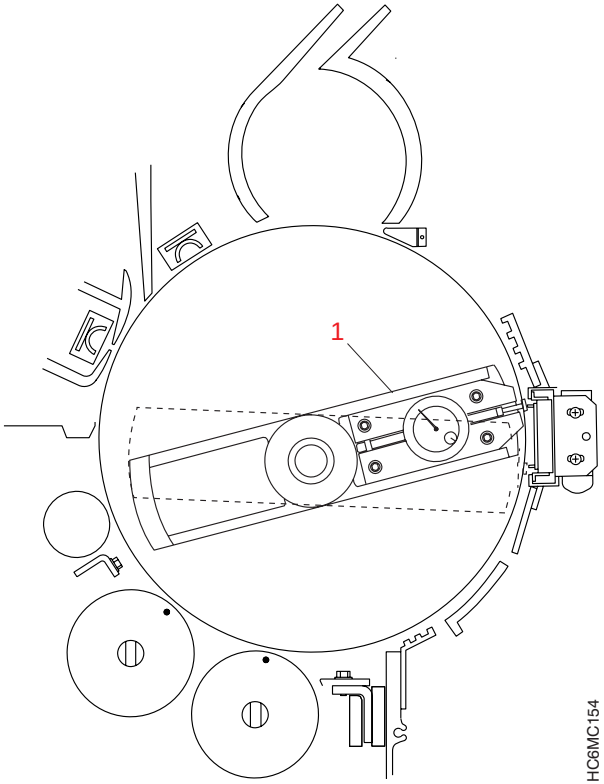
Record the measurement.

- For Toner P/N 1402828, the clearance should be 1.5 ±0.2 mm.
- For Toner P/N 1402717, the clearance should be 2.0 ±0.2 mm.

8. Review the measurements you recorded.
   - If the front measurement is within 0.2 mm of the rear measurement and both measurements are within the range shown above, no adjustment is needed.
   - If the corona is out of adjustment, proceed with Charge Corona to PC Drum Clearance Adjustment.

(continued on next page)

Table 408. Charge Corona to PC Drum Clearance (continued)



Adjustment

1. Using the drum gauge, measure the clearance between white plastic tips at the **rear of the charge corona** frame and the PC drum.

Note: You will have to pull the frame out part way to make the measurement at the rear of the drum.

The charge corona to PC drum clearance values are different depending on which toner P/N is being used in the printer.

- For Toner P/N 1402828, the clearance should be 1.5 ±0.2 mm.
- For Toner P/N 1402717, the clearance should be 2.0 ±0.2 mm.

a. If the rear clearance is correct as shown above, do not adjust the rear housing.

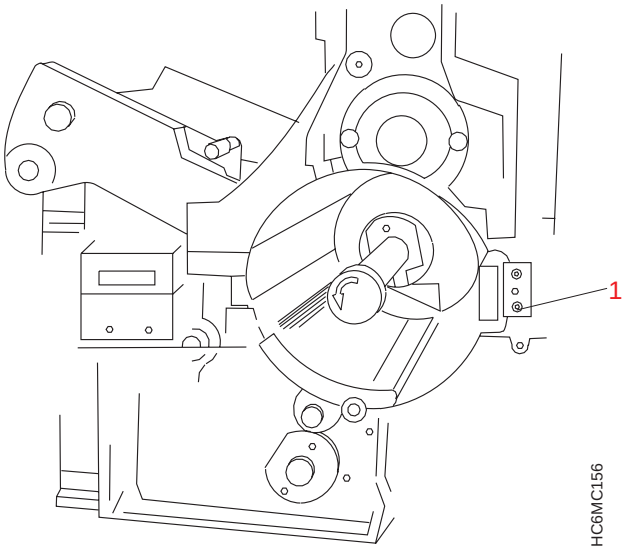
b. If the rear clearance is not correct, loosen the two screws at the rear of the charge corona mounting bracket and set the clearance.

Note: The two rear mounting screws are opposite the two in the front. To access them remove the process /filter cover.

2. Using the drum gauge, measure the clearance at the **front of the charge corona.**
3. Compare the front and rear measurements.
   - The clearance difference should be no greater than 0.2 mm.
   - If the difference is greater that 0.2 mm go to step 4.

(continued on next page)

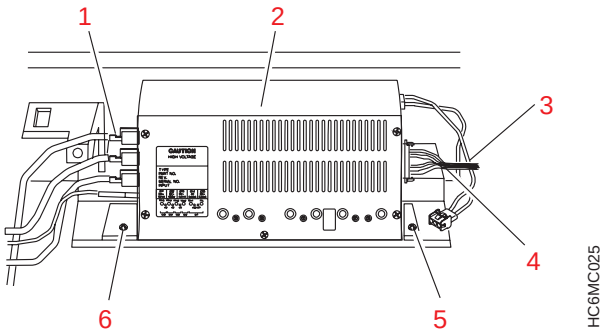
Table 408. Charge Corona to PC Drum Clearance (continued)



4. Loosen the two screws **(1)** at the front of the charge corona mounting bracket.
5. Adjust the front housing so that the clearance is the same in the front and in the rear.
   - For Toner P/N 1402828, the clearance should be:
     - no less than 1.3 mm
     - no greater than 1.7 mm.
   - For Toner P/N 1402717, the clearance should be:
     - no less than 1.8 mm
     - no greater than 2.2 mm.
6. Use the drum gauge to verify that the charge corona shields do not contact the PC drum.
7. Remove the drum gauge.
8. Install the PC drum (PC Drum Removal).
9. Perform the PC Drum Surface Voltage

High Voltage Power Supply

Table 409. High Voltage Power Supply



DANGER

<5> High-voltage is present. Use care while working in this area.

Special Tools Required:

- Digital voltmeter (DVM)

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Remove the printer top cover.

Note: Remove the cover carefully so you do not disturb the optical unit filter.

4. Disconnect the connectors **(1)** attached to channels CH1, CH2, CH3, and CH4 at the rear of the power supply **(2)**.
5. Disconnect connectors JP115 **(3)** and JP116 **(4)** from the front of the power supply.
6. Disconnect the ground connector **(6)**.
7. Remove the two screws **(5)** and remove the high voltage power supply **(2)**.

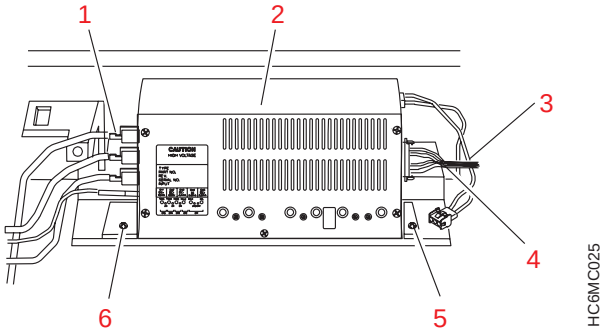
Installation

1. Reverse the removal procedure to install a new high voltage power supply.

Note: When you replace the top cover, make sure that the vent holes are over the optical unit filter.

(continued on next page)

Table 409. High Voltage Power Supply (continued)



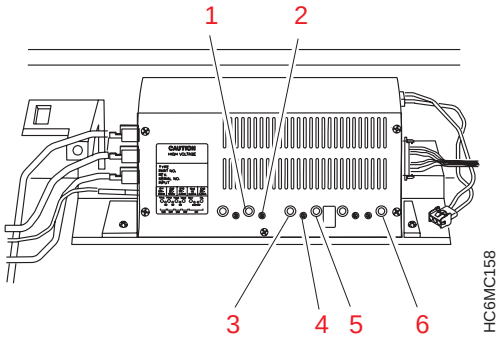
Check and Adjustment

Note: When you install a new high voltage power supply, make the adjustments of CH1, and CH4 and the checking of CH2 power supply voltages with the photoconductor drum removed. If it is not removed, there is a possibility of arcing.

1. Perform the Mag Brush Bias Voltage Check .
   Note: You cannot adjust the bias voltage.
2. Adjust the Transfer Corona Voltage check.
3. Adjust the Preclean Corona Voltage.
4. Adjust the PC Drum Surface Voltage.

Transfer Corona Voltage

Table 410. Transfer Corona Voltage



DANGER

<3> High-voltage is present on coronas during these adjustments.

Special Tools Required:

- Digital Voltmeter (DVM)

Check and Adjustment

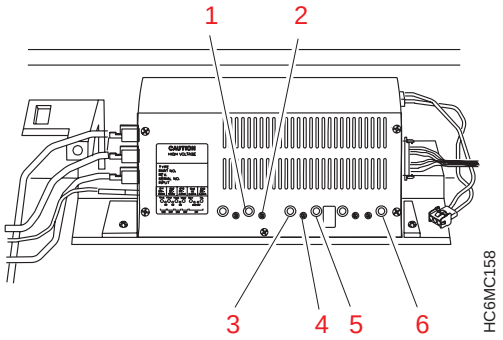
1. Open the top and front covers.
2. Remove the high voltage power supply cover.
3. Set the digital voltmeter (DVM) for dc voltage.
4. Adjust the CH3 VR potentiometer **(4)** on the high voltage power supply so that the voltage between test points TPH3 **(3)** and TPL **(6)** is 1.0 ±0.02 V dc.

Note: If necessary, turn the CH3 VR potentiometer **(4)** clockwise to increase the voltage or counterclockwise to decrease the voltage.

5. Run Print Pack. The DVM should continue to indicate 1.0 ±0.02 V dc while running prints.

Mag Brush Bias Voltage

Table 411. Bias Voltage



(continued on next page)

DANGER

<5> High-voltage is present. Use care while working in this area.

Special Tools Required:

- Digital Voltmeter (DVM)

Note: This procedure is only a check. No adjustment is possible for an out-of-specification condition. You must replace the high voltage power supply if the bias voltage is out of specification.

Check

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Open the top and front covers.
3. Remove the high voltage power supply cover.
4. Set the printer control panel contrast to **4**.
5. Set the digital voltmeter (DVM) for dc voltage.
6. While the printer is running print samples, check the voltage between TPH2 **(5)** and TPL **(6)** on the high voltage power supply. The voltage should be as shown in Table 412 or Table 413
7. Replace the High Voltage Power Supply if the voltage reading is out of specification.

Table 412. Mag Brush Bias Voltage for Developer Mix P/N 1402829

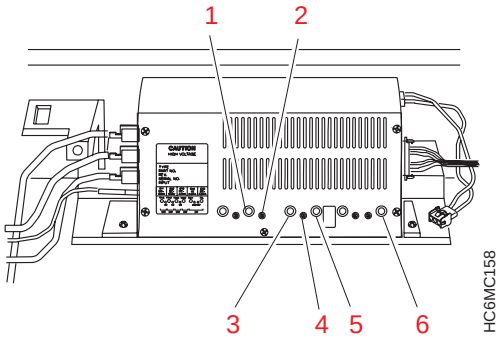
Mag Brush Bias Voltage at Contrast 4 for Developer Mix P/N 1402829				
Non Japan Printers			**Japan Printers**	
Dev Mix Counter (kft)	Bias Voltage		Dev Mix Counter (kft)	Bias Voltage
0-200	3.0 ± 0.1 Vdc		0–200	2.5±0.1 Vdc
201-300	3.0 ± 0.1 Vdc		201-300	2.5 ±0.1 Vdc
301-	3.0 ± 0.1 Vdc		301-	2.5 ± 0.1 Vdc

Table 413. Mag Brush Bias Voltage for Developer Mix P/N 1402718

Mag Brush Bias Voltage at Contrast 4 for Developer Mix P/N 1402718				
Non Japan Printers			**Japan Printers**	
Dev Mix Counter (kft)	Bias Voltage		Dev Mix Counter (kft)	Bias Voltage
0-200	2.0 ± 0.1 Vdc		0–200	1.5± 0.1 Vdc
201-300	2.0± 0.1 Vdc		201-300	1.25 ± 0.1 Vdc
301-	1.5 ± 0.1 Vdc		301-	1.25± 0.1 Vdc

Preclean Corona Voltage

Table 414. Preclean Corona Voltage



DANGER

<3> High-voltage is present on coronas during these adjustments.

Special Tools Required:

- Digital Voltmeter (DVM)

Check and Adjustment

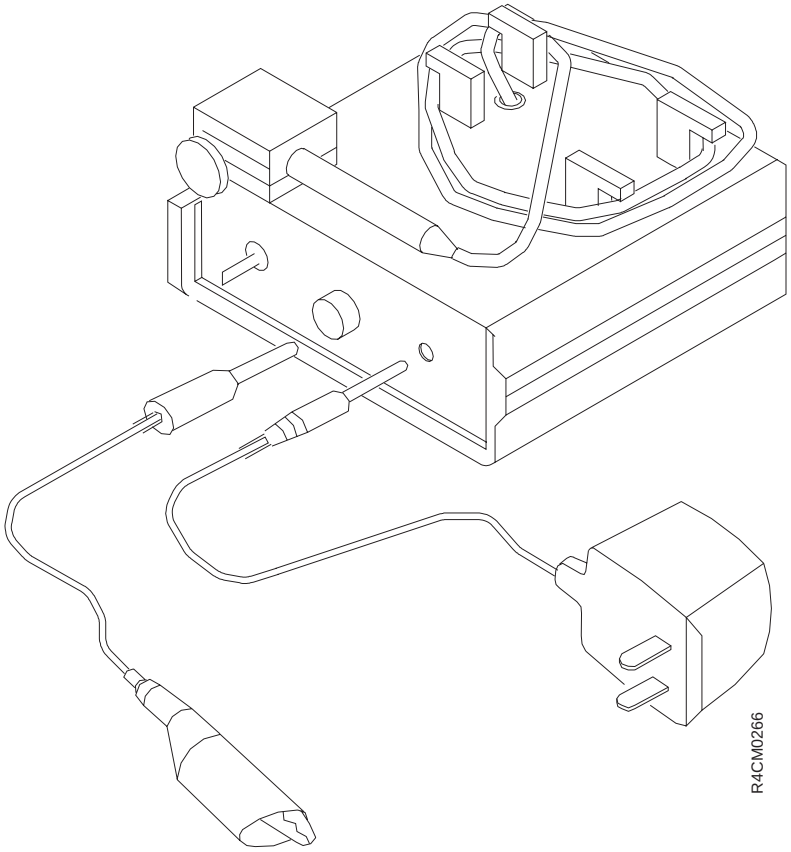
1. Open the top and front covers.
2. Remove the high voltage power supply cover.
3. Set the digital voltmeter (DVM) for ac voltage.
4. Adjust the CH4 VR potentiometer **(2)** of the high voltage power supply so that the voltage between test points TPH4 **(1)** and TPL **(6)** is 1.7 ±0.02 V ac.

Note: If necessary, turn the CH4 VR potentiometer **(2)** clockwise to increase the voltage or counterclockwise to decrease the voltage.

5. Run Print Pack. The DVM should continue to indicate 1.7 ±0.02 V ac while running prints.

PC Drum Surface Voltage

Table 415. Photoconductor (PC) Drum Surface Voltage



(continued on next page)

DANGER

<4> High-voltage is present on the electrostatic voltmeter (ESV) probe. Power-off the ESV before touching the probe or probe block.

Special Tools Required:

- Electrostatic Voltmeter (ESV) and probe (P/N 03F5634)
- AC power supply for ESV (P/N 06F1904)
- ESV probe holder (P/N 06F0256)
- Lint-free cloth (P/N 2108930)

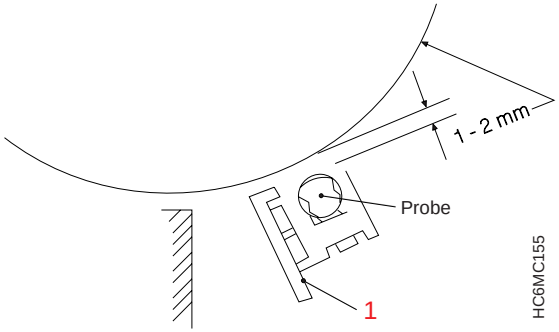
ESV Zero Adjustment Procedure:

1. Connect the ac power supply to the ESV. If the ac power supply is not available, use two 9-volt batteries to power the ESV.
2. Ensure that the ESV probe is installed in the storage bracket on the top of the ESV.
3. Insert the minus lead into the ESV.
4. Attach the other end of the cable to the machine ground.
5. **Power on the ESV**.

Note: If you are using batteries, they will last approximately 20 minutes.

6. Turn the zero control until the ESV displays 00.0.
7. **Power off the ESV**.

Table 415. Photoconductor (PC) Drum Surface Voltage (continued)



CAUTION:
<55> Disable the channels and/or attachments, and ensure that the Control Unit's Local/Remote switch is in the Local position to prevent the host system from remotely powering up the printer.

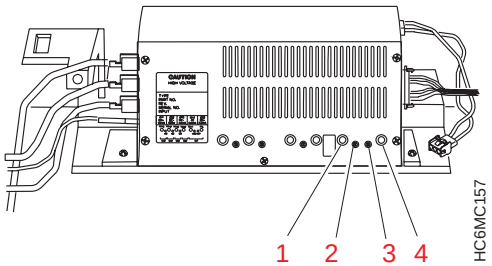
Electrostatic Probe Installation:

1. Remove the PC drum cover.
2. Use a lint-free cloth to clean the ESV rail **(1)**.
3. The ESV rail has three rectangular windows. Install the probe block in the center window of the ESV rail.

   A magnet is bonded to the probe block to attach it to the rail. Ensure that no dirt holds the block away from the rail, and that the block is fully seated in the window.

(continued on next page)

Table 416. Charge Corona Voltage

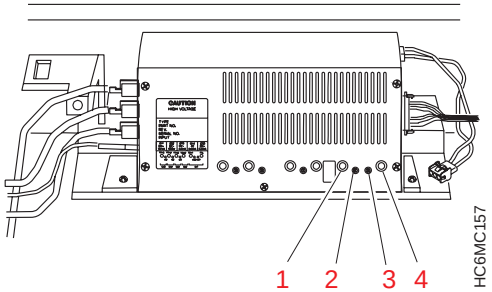


(continued on next page)

Check and Adjustment

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Before you make the voltage measurement, do the following:
   a. Ensure that the charge corona assembly is clean and the wires are in good condition before you make any adjustments. Go to Charge Corona Wire Replacment or Charge Corona Cleaning Procedure , if necessary.
   b. Ensure that the Charge Corona to PC Drum Clearance is in specification.
4. Remove the PC drum (PC Drum Removal).
5. Remove the high voltage power supply cover.
6. Run Adjustment Routine C7. `_off` appears on the maintenance panel.
7. Set the digital voltmeter (DVM) for dc voltage.

Table 416. Charge Corona Voltage (continued)

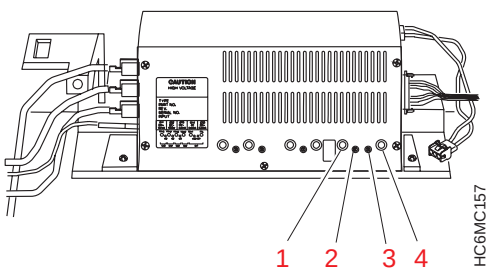


8. Check the voltage across the terminal points **(1)** (TPH1) and **(4)** (TPL) of the high voltage power supply.
9. Adjust CH1 VR1 **(3)**, if necessary, to give a reading of 0.4 V dc ±0.02 V dc.
10. Press the **Enter** button on the maintenance panel. `__on` appears on the maintenance panel.
11. Check the voltage across terminal points **(1)** (TPH1) and **(4)** (TPL) of the high voltage power supply.
12. Adjust CH1 VR2 **(2)**, if necessary, to give a reading of 1.0 V dc ±0.02 V dc.
13. Set the diagnostic function switch to 0 (zero). Toggle the reset switch on the CPxxx card.
14. If you have not already done so, perform the Electrostatic Voltmeter Adjustment Procedure.
15. Reinstall the drum.
16. Continue with Measurements.

    For PC drum surface voltage, use Adjustment Routine C2 and an ESV meter.

(continued on next page)

Table 416. Charge Corona Voltage (continued)



(continued on next page)

DANGER

<4> High-voltage is present on the electrostatic voltmeter (ESV) probe. Power-off the ESV before touching the probe or probe block.

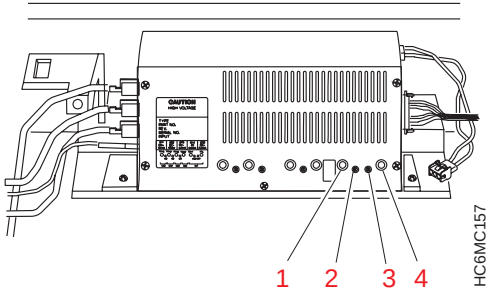
Measurements

1. Ensure that the ESV probe block is fully seated in the appropriate position on the rail.
2. Close the machine covers to prevent light from striking the PC drum.
3. Power on the printer.
4. Power on the ESV.
5. Set the printer control panel contrast to **4**.
6. Run at least 50 all white pages.
7. If necessary, adjust CH1 VR1 **(3)** on the high voltage power supply so that the PC surface voltage measures the correct voltage on the ESV. See Table 417 or Table 418 for the correct voltages.

Note: Turning the potentiometer clockwise increases the voltage.

8. Repeat steps 1 through 7 with the ESV probe seated at the front and rear windows on the ESV rail.

Table 416. Charge Corona Voltage (continued)



DANGER

<4> High-voltage is present on the electrostatic voltmeter (ESV) probe. Power-off the ESV before touching the probe or probe block.

9. If the voltage difference is more than 40 volts from the center position voltage, do the following:
   a. Ensure that the ESV probe spacing is correct, front to rear.

Hint

If the spacing is on the high side (that is, 2 mm) the PC drum surface voltage runs lower.

If the spacing is on the low side (1 mm), the surface voltage runs higher.

   b. Clean the erase lamp filter and the erase lamp.
   c. Perform Charge Corona Cleaning Procedure . Ensure that the wires are positioned correctly in their respective V-slots.
   d. Inspect the PC drum for toner film or dust. If necessary, clean the PC (PC Drum Cleaning).

Table 417. Drum Surface Voltage for Developer Mix P/N 1402829

Drum Surface Voltage at Contrast 4 for Developer Mix P/N 1402829				
Non Japan Printers			**Japan Printers**	
Dev Mix Counter (kft)	Surface Voltage		Dev Mix Counter (kft)	Surface Voltage
0-50	700 ± 20V		0-50	650 ± 20V
51-500	750 ± 20V		51-500	700 ± 20V
501-1500	750 ± 20V		501-1500	700 ± 20V
1501-	750 ± 20V		1501-	700 ± 20V

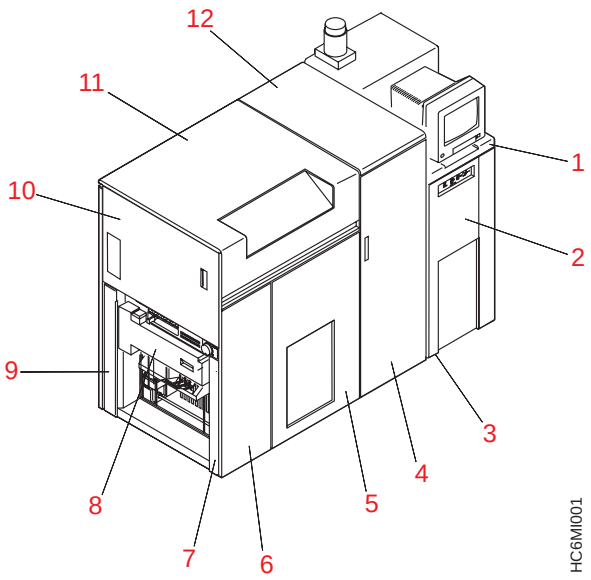
Table 418. Drum Surface Voltage for Developer Mix P/N 1402718

Drum Surface Voltage at Contrast 4 for Developer Mix P/N 1402718				
Non Japan Printers			**Japan Printers**	
Dev Mix Counter (kft)	Surface Voltage		Dev Mix Counter (kft)	Surface Voltage
0-200	500 ± 20V		0-200	450 ± 20V
201-300	500± 20V		201-300	425± 20V
301-500	500± 20V		301-500	475 ± 20V
501-	550 ± 20V		501-	525 ± 20V

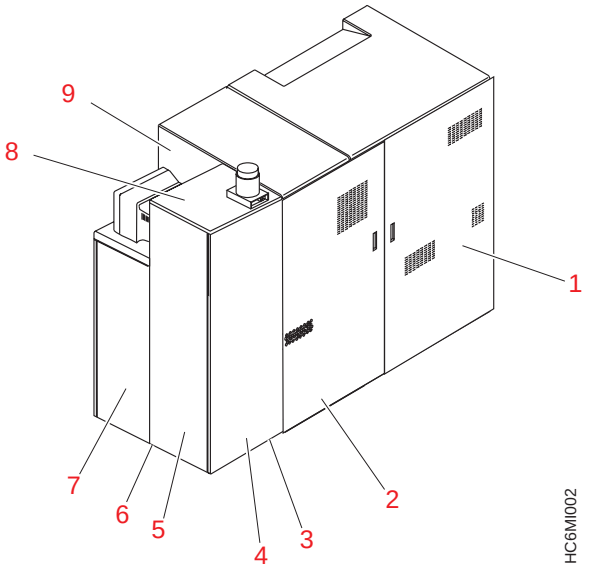
Covers

External Covers 1582
Service Covers 1583

External Covers



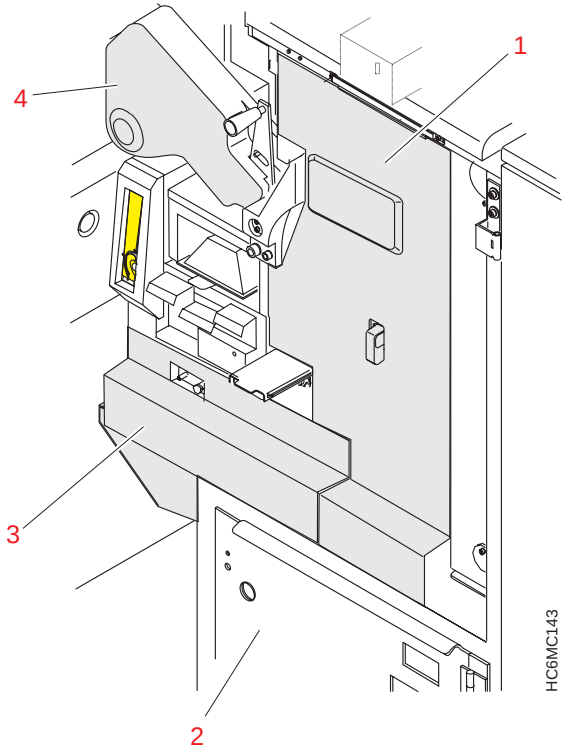
- **(1)** Control unit shelf
- **(2)** Control unit front cover
- **(3)** Cover latch release
- **(4)** Printer right front cover
- **(5)** Printer center front cover
- **(6)** Printer left front cover
- **(7)** Stacker lower right end cover
- **(8)** Stacker gate cover
- **(9)** Stacker lower left end cover
- **(10)** Stacker end cover
- **(11)** Printer left top cover
- **(12)**Printer right top cover



- **(1)** Printer right rear cover
- **(2)** Printer left rear cover
- **(3)** Cover latch release
- **(4)** Control unit rear cover
- **(5)** Control Unit right side cover
- **(6)** Cover latch release
- **(7)** Control Unit left side cover
- **(8)** Control Unit top cover
- **(9)** Printer right end cover

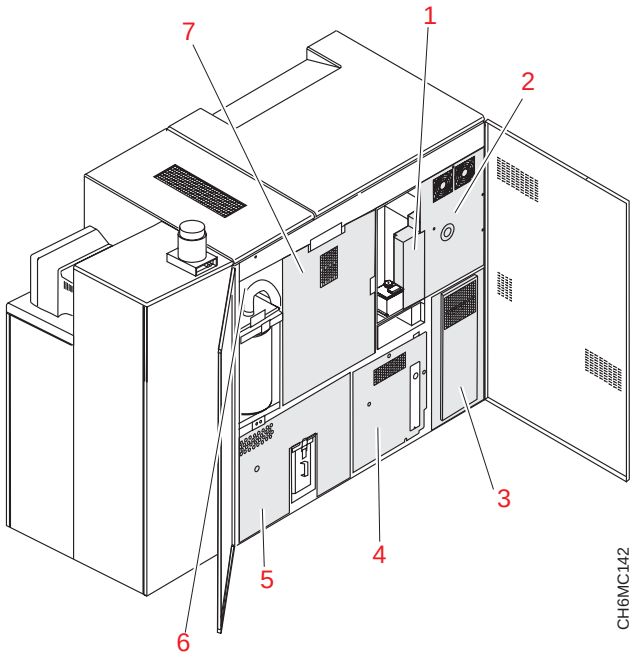
Service Covers

Table 419. Service Covers



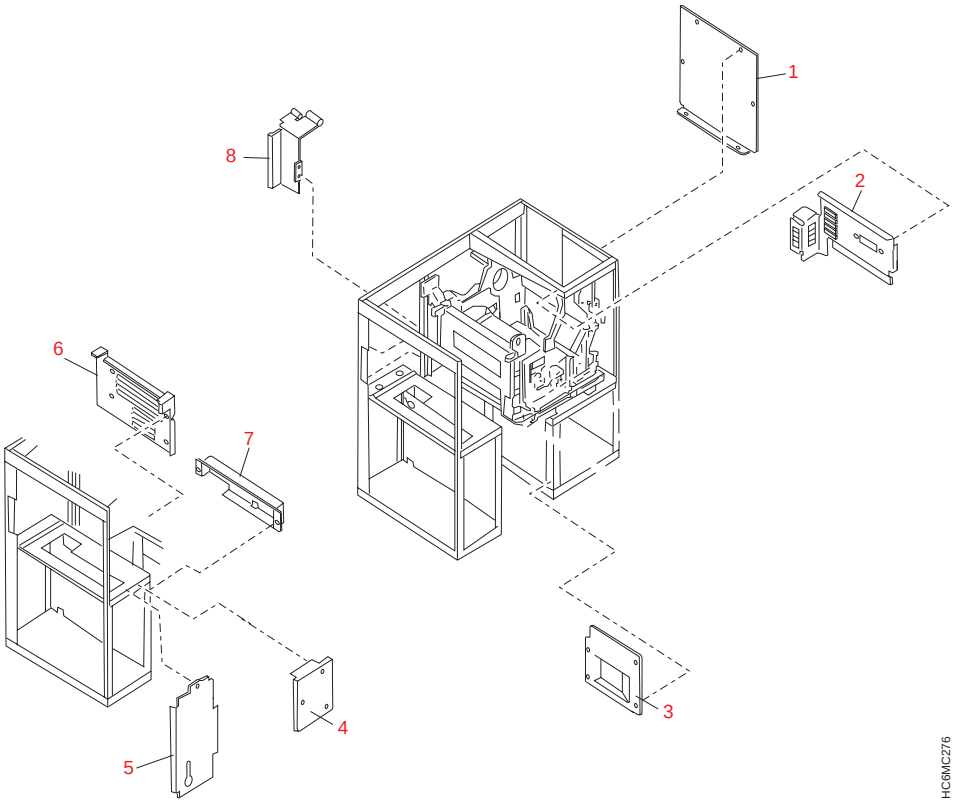
- **(1)** Drum cover
- **(2)** Power Supply cover
- **(3)** Developer Front cover
- **(4)** Transfer Station cover

Table 419. Service Covers (continued)



- **(1)** Oil Assembly cover
- **(2)** Fuser Top Rear cover
- **(3)** Fuser Lower Rear cover
- **(4)** Logic Card cover
- **(5)** Blower cover
- **(6)** PR011 cover
- **(7)** Rear Process cover

Table 419. Service Covers (continued)



- **(1)** Printer Right End cover
- **(2)** Erase Lamp cover
- **(3)** Input Bin Right cover
- **(4)** Fuser Front cover
- **(5)** Stacker Height cover
- **(6)** Blower cover
- **(7)** Input Bin Left cover
- **(8)** Transfer Station Rear cover

Developer

Developer Removal 1587
Developer Installation & Checks 1591
Developer Drain Lever Sensor (S111) 1592
Developer Front Seal Assembly 1593
Developer Rear Seal Removal 1594
Developer Run Switch (S109) 1595
Developer Seal Plate 1596
Bias Contacts 1597
Conveyor Roll and Lift Plate 1599
Conveyor Roll Rotation Sensor (S110) 1603
Idler Pulley A 1605
Idler Pulley B 1606
Mag Brush Belt 1608
Mag Brush Motor (M101) 1610
Mag Brush Rolls Removal 1612
Mixing Paddle Belt 1625
Scavenger Roll 1626
Scavenger Roll Belt 1629
Scavenger Roll Idler Pulley 1630
Toner Control Adjustment 1631
Toner Control Sensor (S107) 1634
Toner Empty Sensor (S108) 1635
Toner Feed Belt 1637
Toner Feed Motor (M102) 1639
Toner Feed Roller 1641

Developer Removal

Table 420. Developer Removal

Important Notes About Developer Maintenance:

1. Nonmagnetic screws are used inside of the developer. When replacing a damaged screw, ensure that a nonmagnetic screw is replaced with a nonmagnetic screw.
2. The developer rolls have strong magnetic fields. Remove watches and reader badges to prevent possible damage.
3. Keep the work area clean with frequent vacuuming, removal of paper scraps, etc.
4. When reassembling the developer, vacuum screw holes and screws to remove toner and developer mix.
5. Be careful to keep screws, washers, etc. from falling into the developer.

Developer Removal Special Tools

- Drum shaft extension (P/N 06F1025)
- Developer rail assembly (P/N 24L3388)
- Drum clearance gauge (P/N 06F1029)
- Drum bag of empty drum box
- Vacuum cleaner (P/N 9900735)
- Lint free cloth (P/N 2108930)

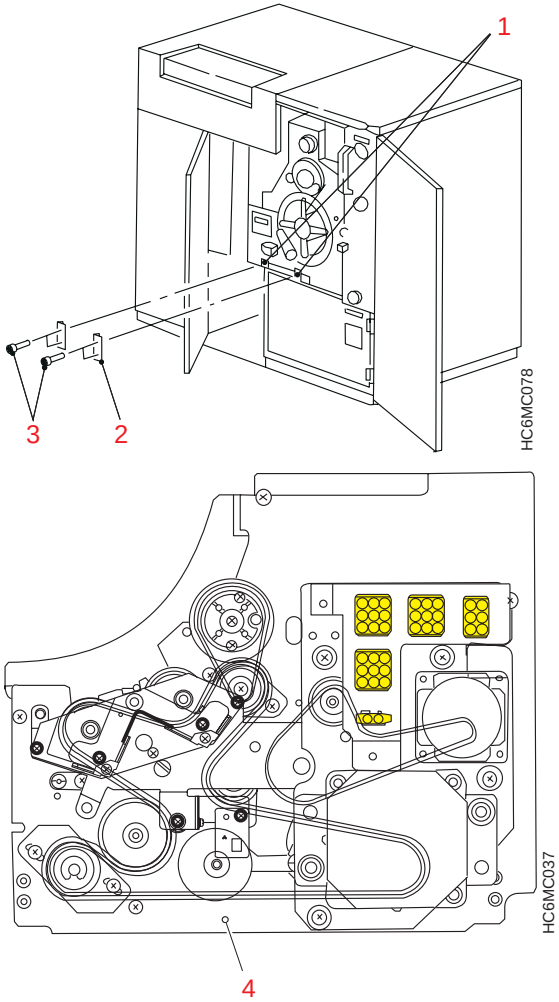
(continued on next page)

Removal Procedure

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Clear the area in front of the printer for the developer rail assembly.
3. Read and save the values in developer mix usage values from counters FFIE and FFIF. To read the developer mix usage values, perform the following procedure from the maintenance panel:
   a. Set the diagnostic switch to **2** .
   b. Key in **3** and press **Enter**.
   c. Key in **01** and press **Enter**.
   d. Key in **FF1E** and press **Enter** to read the low-order byte.
   e. Press **Enter** to read the high-order byte, **FF1F**.

   You will reenter these values into the usage counters at the end of this procedure.
   Note: The developer mix usage counter is automatically reset to zero when you move the developer drain lever from the open to the closed position with power on.
4. Remove the developer mix. See ″Replace Developer Mix″ in the Operator’s Guide for procedure.
5. Shutdown and power off the printer.

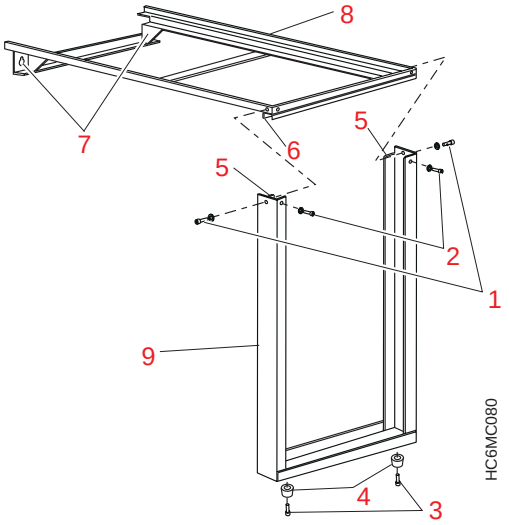
Table 420. Developer Removal (continued)

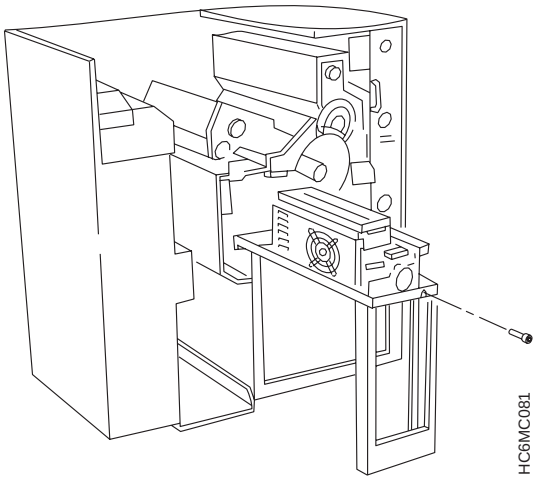


(continued on next page)

6. Remove the developer cover.
7. Remove the rear process cover.
8. Remove the Developer Front Seal Assembly.
9. Remove 4 screws **(3)** and 2 clamps **(2)** using 4 mm Allen wrench.
10. Remove the photoconductor (PC) drum and store it in a drum bag or box. See PC Drum Removal.
11. Remove the drum shaft extension.
12. Disconnect the 5 connectors (PJ117, PJ113, PJ130, PJ131, and PJ185) at the rear of the developer.
13. Remove rear developer retention screw **(4)** .
    Note: At the completion of this step all developer constraints are disengaged.

Table 420. Developer Removal (continued)

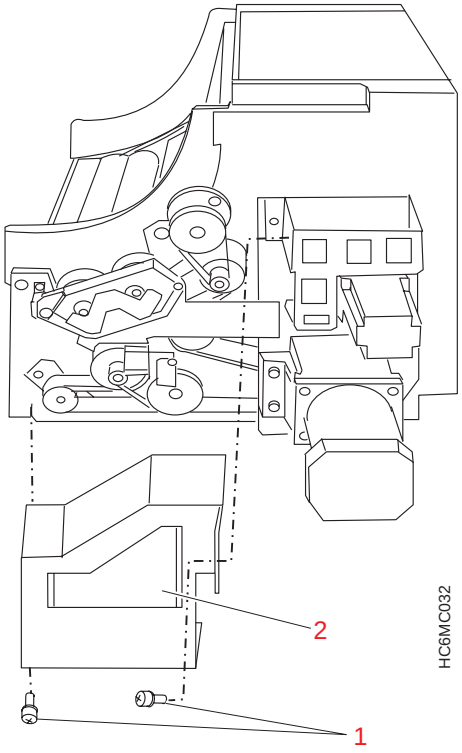




(continued on next page)

14. **Assemble the developer rail assembly.**
    a. Locate the two parts of the developer rail assembly.
    b. If this is the first time that the developer rail assembly is being used, using 2 screws **(3)** install the two rubber pads **(4)**, on the bottom of the upright section **(9)** of the developer rail assembly.
    c. Insert the inner edge **(5)** of the upright section into the slot of the horizontal section **(8)**.
    d. Install four screws and washers **(1)** and **(2)** (stored on the developer rail assembly) through the upright and into the horizontal track of the developer rail assembly.
    e. Align the developer rail assembly to the printer, and use the two screws removed in step 9 to attach the developer rail assembly to the printer at holes **(7)** .
    f. Slide the developer onto the developer rail assembly.

Table 420. Developer Removal (continued)



CAUTION:
<79> This assembly weighs between 32 kg (70.5 lbs) and 55 kg (121.2 lbs). If the entire assembly must be lifted, use three or more persons.

15. Move the developer from the developer rails to a clean solid work area (to be referred to as the ″service position″) before performing any developer maintenance.
16. Remove 2 screws **(1)** and belt cover assembly **(2)** from the rear of the developer.
17. Inspect the area for toner or developer mix contamination.
18. Check for belt wear, belt tension, and loose pulleys or worn bearings.
19. Remove (vacuum) paper dust and spilled toner.
20. Use a lint-free cloth to clean the developer rails and rollers.

Developer Installation & Checks

Notes:

1. Ensure all connectors are out of the way from getting pinched.
2. An extra force may be needed to seat the developer in place during the last inch of travel.

CAUTION:
<79> This assembly weighs between 32 kg (70.5 lbs) and 55 kg (121.2 lbs). If the entire assembly must be lifted, use three or more persons.

Installation

1. Reverse the removal procedure to install the developer into the printer.
2. If a new developer is being installed perform the Checks. After you complete the checks continue with this procedure.
3. Install the PC Drum.
4. Install the drum cover.
5. Power on the printer.
6. Reenter the developer mix usage values if reusing the old mix.
   a. Set the diagnostic switch to **2** .
   b. Key in **3** and press **Enter**.
   c. Key in **F1** and press **Enter**.
   d. Key in **FF1E** and press **Enter**.
   e. Key in the correct value for byte **1E** and press **Enter**.
   f. Key in the correct value for byte **1F** and press **Enter**.

Developer Checks and Adjustments

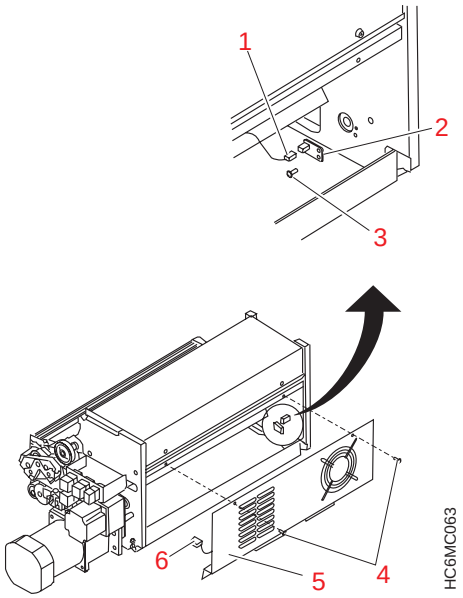
1. Check the following PC Drum & Developer Clearances/Gaps perform adjustments as necessary in this order
   a. Mag brush roll gaps to PC drum
   b. Gap between scavenger roll and PC drum
   c. Gap between developer seal plate and PC drum
2. Check the developer front seal to ensure that it is not causing any frictional noise with the PC drum, during initializing of the printer and while printing.

Verification

1. Run Print Samples to verify print quality.

Developer Drain Lever Sensor (S111)

Table 421. Developer Drain Lever Sensor



Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Follow the PC Drum Removal procedure.

CAUTION:
<79> This assembly weighs between 32 kg (70.5 lbs) and 55 kg (121.2 lbs). If the entire assembly must be lifted, use three or more persons.

3. Follow the Developer Removal procedures and place it on a solid, clean service area.

Attention: Do not leave the developer out on the rail assembly while you do maintenance tasks.

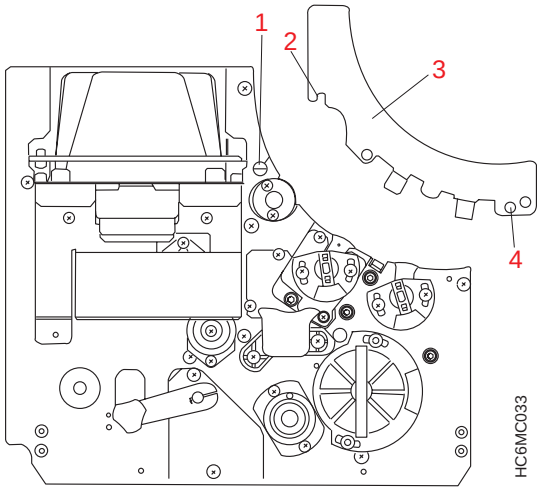
4. Move the developer to the service position.
5. Remove the two screws **(4)** and the rear cover assembly **(5)**.
   Disconnect connector PJ129 **(6)**.
6. Disconnect connector PJ144 **(1)**.
7. Remove screw **(3)** and the developer drain lever sensor assembly **(2)**.

Installation

1. Reverse the Removal procedure to install the developer drain lever sensor.
2. Complete Developer Installation procedure.

Developer Front Seal Assembly

Table 422. Developer Front Seal Assembly Removal



Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Remove screw **(4)**.
3. Loosen shoulder screw **(1)**.
4. Lift up on the seal assembly **(3)** to release it from slot **(2)**.

Installation

1. Reverse the removal procedures.

To Prevent Toner & Developer Leakage

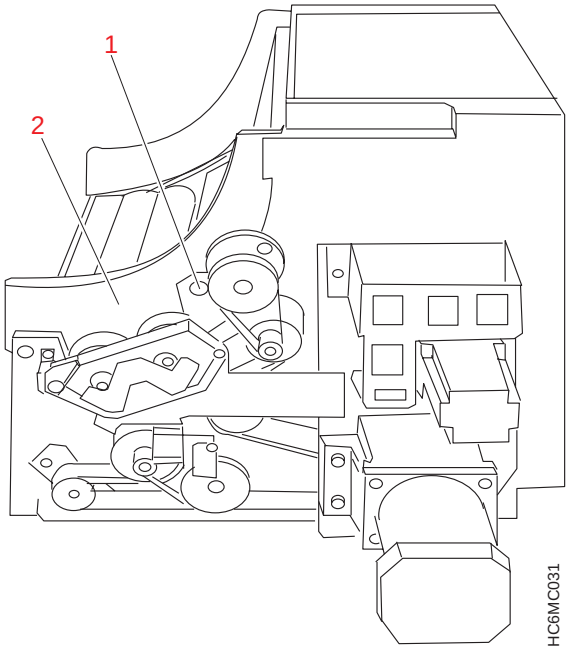
2. Ensure that the foam projections (tabs) on the developer seal fit into their respective slots without binding.
3. Ensure that the seal plate is flush to the side wall of the developer.
4. Power on the printer.

Check

1. Run Print Samples to verify print quality.

Developer Rear Seal Removal

Table 423. Developer Rear Seal



CAUTION:
<79> This assembly weighs between 32 kg (70.5 lbs) and 55 kg (121.2 lbs). If the entire assembly must be lifted, use three or more persons.

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Remove the PC drum.
3. Follow the Developer Removal procedures and place it on a solid, clean service area.

Attention: Do not leave the developer out on the rail assembly while you do maintenance tasks.

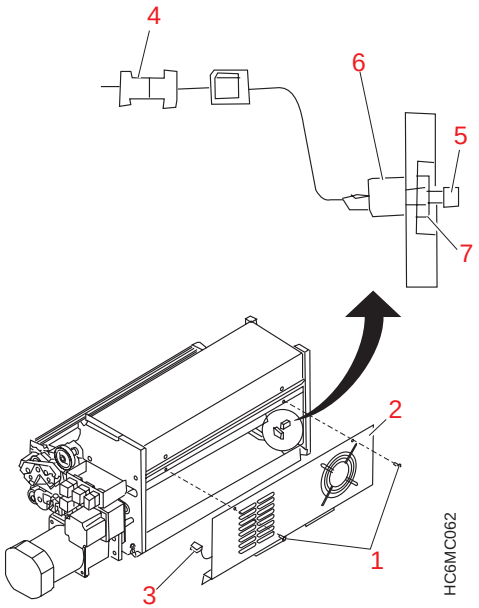
4. Remove screw **(1)** and slide the drum seal assembly **(2)** out of the developer.

Installation

1. Vacuum loose toner and mix from the seal and from the interfacing surfaces of the developer.
2. Reverse the Removal procedure to install the seal.
3. Complete Developer Installation procedure.

Developer Run Switch (S109)

Table 424. Developer Run Switch



Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Follow the PC Drum Removal procedure.

CAUTION:
<79> This assembly weighs between 32 kg (70.5 lbs) and 55 kg (121.2 lbs). If the entire assembly must be lifted, use three or more persons.

3. Follow the Developer Removal procedures and place it on a solid, clean service area.

Attention: Do not leave the developer out on the rail assembly while you do maintenance tasks.

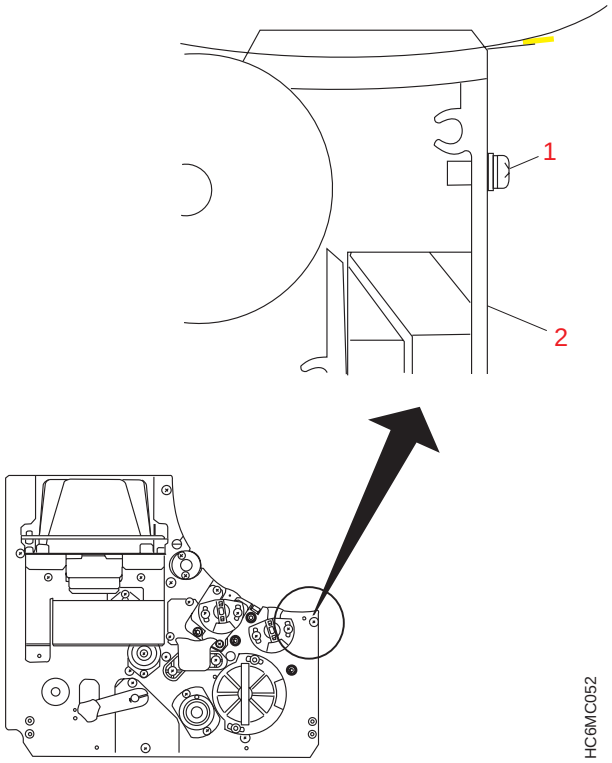
4. Move the developer to the service position.
5. Remove the two screws **(1)** and the left cover assembly **(2)**.
   Disconnect connector PJ129 **(3)**.
6. Disconnect connector PJ112 **(4)**.
7. Pull out the button **(5)** from developer run switch **(6)**.
8. Remove the nut **(7)** and the developer run switch **(6)**.

Installation

1. Reverse the removal procedure to install the developer run switch.
2. Complete Developer Installation procedure.

Developer Seal Plate

Table 425. Developer Seal Plate



Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Follow the PC Drum Removal procedure.

CAUTION:
<79> This assembly weighs between 32 kg (70.5 lbs) and 55 kg (121.2 lbs). If the entire assembly must be lifted, use three or more persons.

3. Follow the Developer Removal procedures and place it on a solid, clean service area.

Attention: Do not leave the developer out on the rail assembly while you do maintenance tasks.

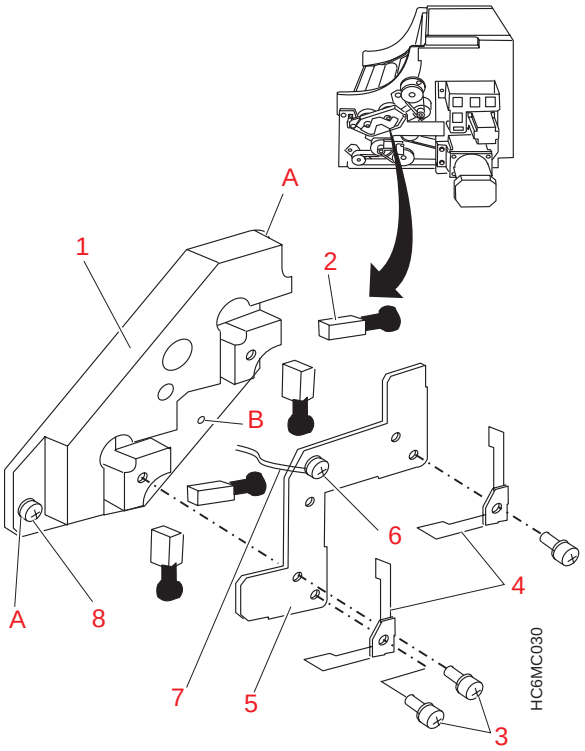
4. Move the developer to the service position.
5. If the developer seal plate **(2)** shows any sign of damage, warping, or nicks in the edge which faces PC drum, replace it.
6. Remove the three screws **(1)**, washers, and seal plate **(2)**.
7. Install a new seal plate **(2)**.

Adjustment

1. If you have measured the developer seal plate with a drum gauge and it is out of adjustment, reset it to the adjustment value in PC Drum & Developer Clearances/Gaps.
2. Loosen the three screws **(1)**, move the seal plate **(2)** to the adjustment value, and tighten the three screws **(1)**.

Bias Contacts

Table 426. Bias Contacts



(continued on next page)

CAUTION:
<79> This assembly weighs between 32 kg (70.5 lbs) and 55 kg (121.2 lbs). If the entire assembly must be lifted, use three or more persons.

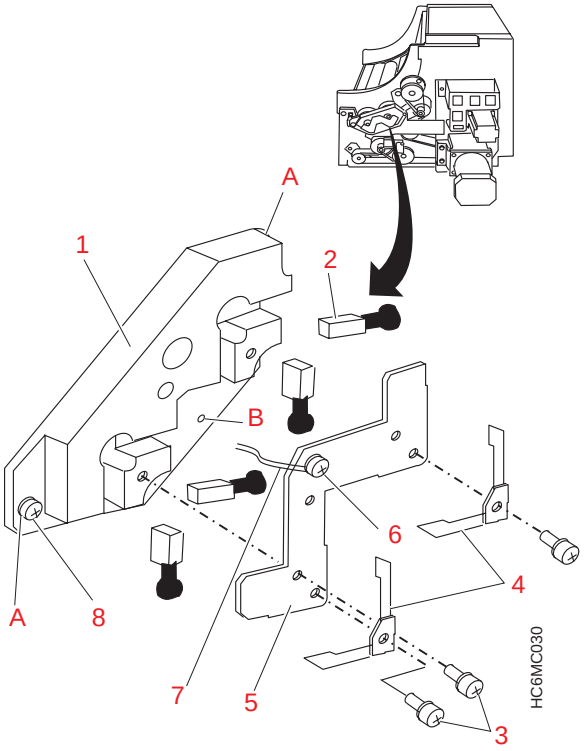
Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Remove the PC drum.
3. Follow the Developer Removal procedures and place it on a solid, clean service area.

Attention: Do not leave the developer out on the rail assembly while you do maintenance tasks.

4. Remove screw **(6)** to disconnect wires **(7)**.
5. Remove the belt cover, remove 3 screws **(8)** and the subassembly consisting of retainer block **(1)**, bias plate **(5)**, bias contact retainers **(4)**, and brush contacts **(2)** .
6. Remove 2 screws **(3)** to disassemble 2 bias contact retainers **(4)** and bias contact brushes **(2)**.
7. Inspect the brushes for obvious damage and wear. Replace if damaged or if required by a PM interval.

Table 426. Bias Contacts (continued)

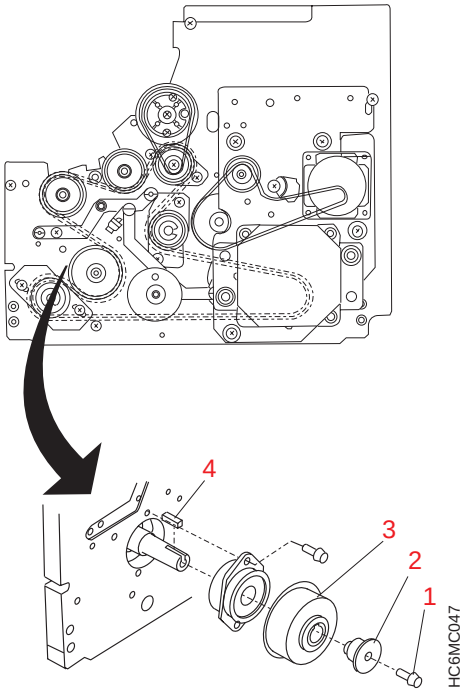


Installation

1. Wipe the mag roll contact armatures to remove any particulates
2. Install the bias plate **(5)**and retainer block subassembly **(1)** with 2 screws **(8)** at position **(A)**.
3. Install 4 brushes **(2)** and 2 bias contact retainers **(4)** with 2 screws **(3)** .
4. Install screw **(8)** at position **(B)**
5. Install wires **(7)** with screw **(6)**.
6. Use a digital voltmeter to ensure that there is continuity between the mag brush rolls and the wire supplying the bias voltage.
7. Complete Developer Installation procedure.

Conveyor Roll and Lift Plate

Table 427. Conveyor Roll and Lift Plate



(continued on next page)

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Perform the PC Drum Removal procedure.

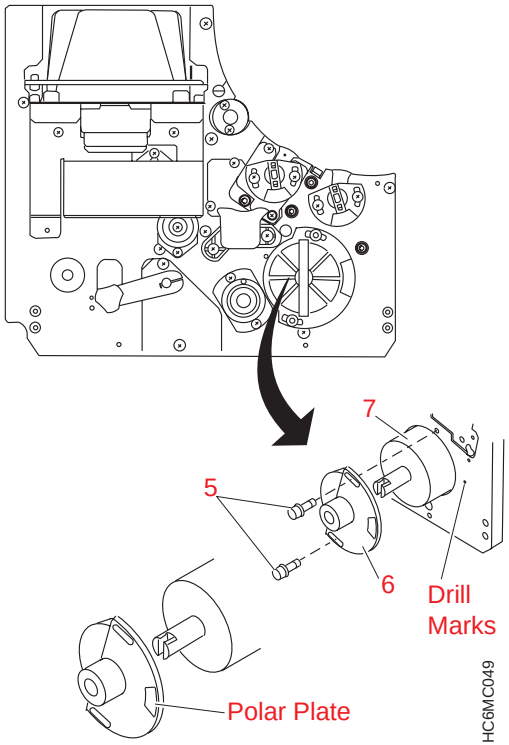
CAUTION:
<79> This assembly weighs between 32 kg (70.5 lbs) and 55 kg (121.2 lbs). If the entire assembly must be lifted, use three or more persons.

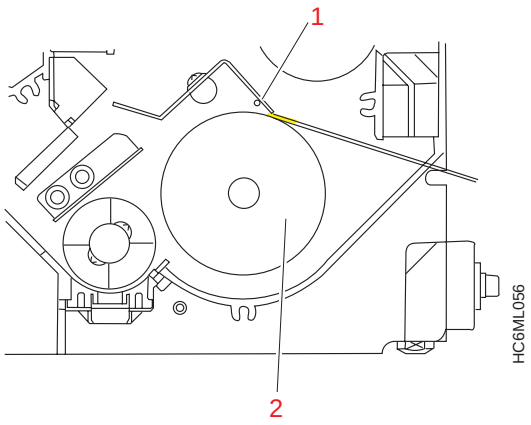
3. Follow the Developer Removal procedures and place it on a solid, clean service area.

Attention: Do not leave the developer out on the rail assembly while you do maintenance tasks.

4. Follow the Mag Brush Rolls Removal procedure.
5. At the rear of the developer, remove the hex bolt **(1)** and washer.
6. Remove pulleys **(2)** and **(3)** and the key **(4)**.

Table 427. Conveyor Roll and Lift Plate (continued)





(continued on next page)

7. At the front of the developer remove the two hex bolts **(5)** and washers.
8. Remove the roll flange assembly **(6)**.
9. Push the conveyor roll **(7)** from the rear of the developer, while you carefully remove it from the developer.

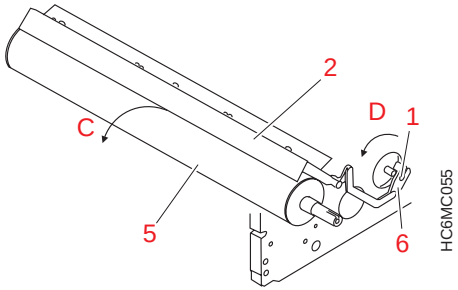
Installation

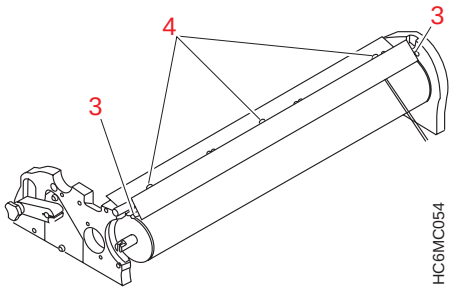
1. Reverse the removal procedure to install the Conveyor Roll and Lift Plate, except perform any adjustments before you reinstall the mag brush rolls.
2. With the slot in the shaft (at the front end of the conveyor roll **(7)**) vertically oriented, install the roll flange assembly **(6)** so that the polar dial is oriented with the 0° position in line with the punch mark on the front side plate.
3. Complete Developer Installation procedure.

Adjustments

1. Check and adjust the gap between the lift plate **(1)** and conveyor roll **(2)**as specified in PC Drum & Developer Clearances/Gaps. If the gap is out of specification, continue with next steps.

Table 427. Conveyor Roll and Lift Plate (continued)





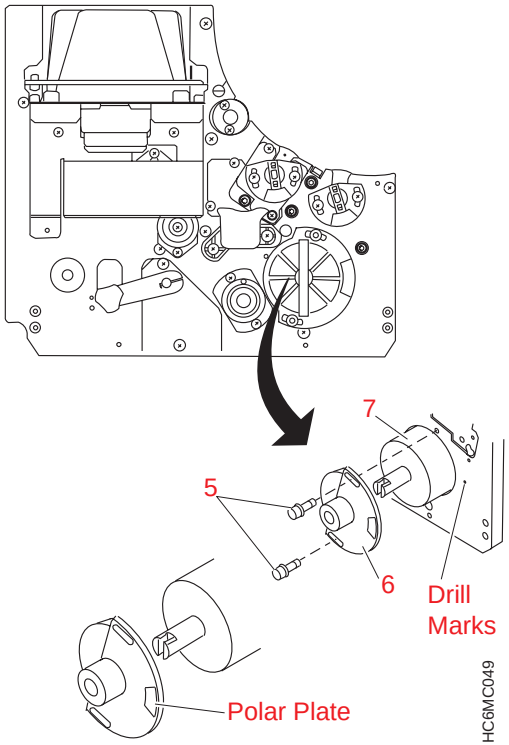
2. **Lift plate adjustment:** Loosen screw **(1)** and rotate lift plate **(2)** in the C-direction until pins **(3)** on the front and rear side walls of the developer are contacted.

3. Loosen the three screws **(4)** and adjust the gap between lift plate **(2)** and conveyor roll **(5)** to the adjustment value in PC Drum & Developer Clearances/Gaps, while you maintain contact between the lift plate **(2)** and the contact pins **(3)**.

4. Tighten the three screws **(4)** and screw **(1)**. While you tighten screw **(1)**, turn link **(6)** in the D-direction to remove play in lift plate **(2)**.
5. Turn link **(6)** a few times and check the gap between the lift plate **(2)** and conveyor roll **(5)** again to ensure that it stays within the specification.

(continued on next page)

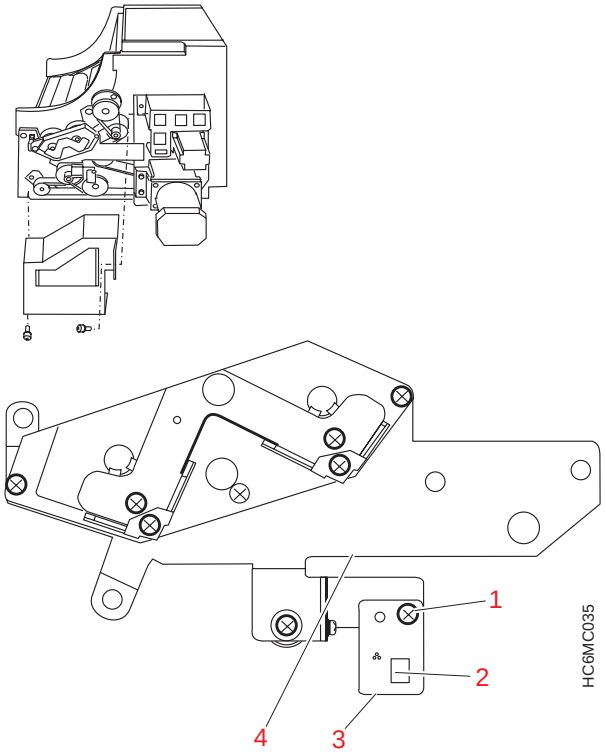
Table 427. Conveyor Roll and Lift Plate (continued)



6. **Magnet polar position:** Check to confirm that the 0° position on the polar plate of the roll flange assembly **(6)** lines up with the drill mark on the front side plate.

Conveyor Roll Rotation Sensor (S110)

Table 428. Conveyor Roll Rotation Sensor (S110)



CAUTION:
<79> This assembly weighs between 32 kg (70.5 lbs) and 55 kg (121.2 lbs). If the entire assembly must be lifted, use three or more persons.

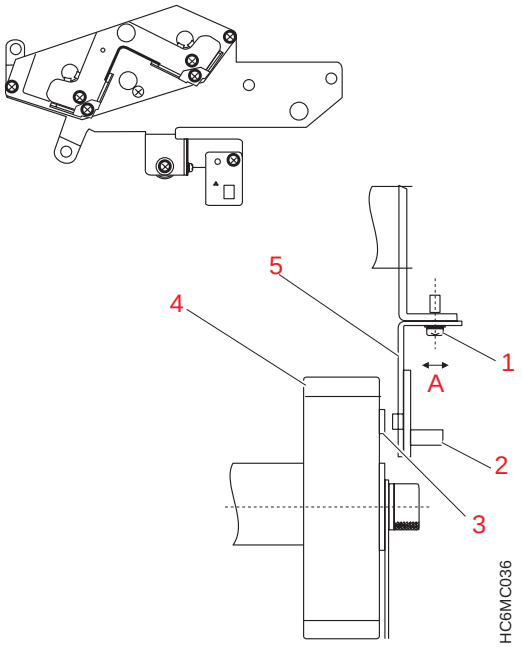
Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Remove the PC drum.
3. Follow the Developer Removal procedures and place it on a solid, clean service area.

Attention: Do not leave the developer out on the rail assembly while you do maintenance tasks.

4. With the belt cover removed, disconnect connector PJ143 **(2)** .
5. Remove screw **(1)** and the conveyor roll rotation sensor **(3)** from holder **(4)**

Table 428. Conveyor Roll Rotation Sensor (S110) (continued)

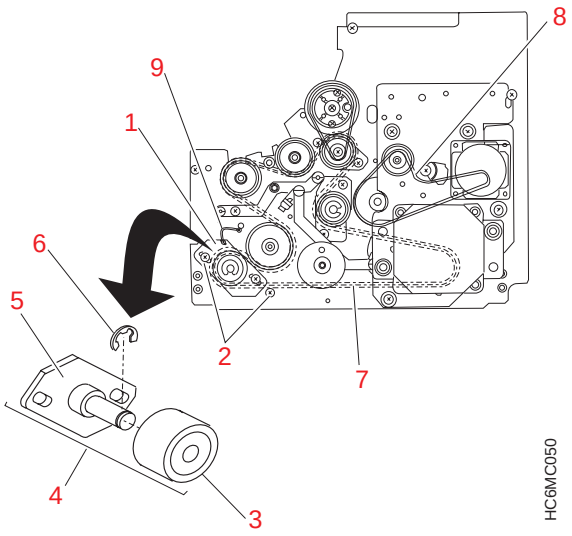


Installation & Adjustment

1. Reverse the Removal procedure to install the conveyor roll rotation sensor.
2. Check for a gap of 1.0 +0.5 mm (0.04 +0.02 in.) between the magnet **(3)** on pulley **(4)** and sensor **(2)** .
3. If the gap is not correct loosen screw **(1)** and adjust the gap by sliding sensor holder **(5)** in the **(A)** direction shown to achieve the 1.0 +0.5 mm gap.
4. Complete Developer Installation procedure.

Idler Pulley A

Table 429. Developer Idler Pulley A



CAUTION:
<79> This assembly weighs between 32 kg (70.5 lbs) and 55 kg (121.2 lbs). If the entire assembly must be lifted, use three or more persons.

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Remove the PC drum.
3. Follow the Developer Removal procedures and place it on a solid, clean service area.

Attention: Do not leave the developer out on the rail assembly while you do maintenance tasks.

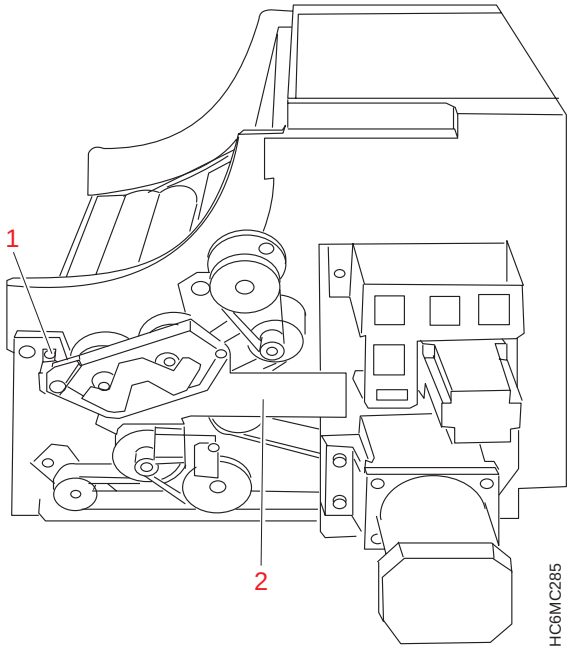
4. Remove screw **(1)** to disconnect wire **(9)** .
5. Remove 2 screws **(2)**, and remove idler A assembly **(4)**.
6. Remove retaining ring **(6)** and idler pulley **(3)** from idler stand **(5)**.

Installation

1. Reverse the Removal procedure to install idler pulley A.
2. Make belt tension adjustments for Mag Brush Belt **(7)** and Toner Feed Belt, **(8)**.
3. Complete Developer Installation procedure.

Idler Pulley B

Table 430. Developer Idler Pulley B



(continued on next page)

CAUTION:
<79> This assembly weighs between 32 kg (70.5 lbs) and 55 kg (121.2 lbs). If the entire assembly must be lifted, use three or more persons.

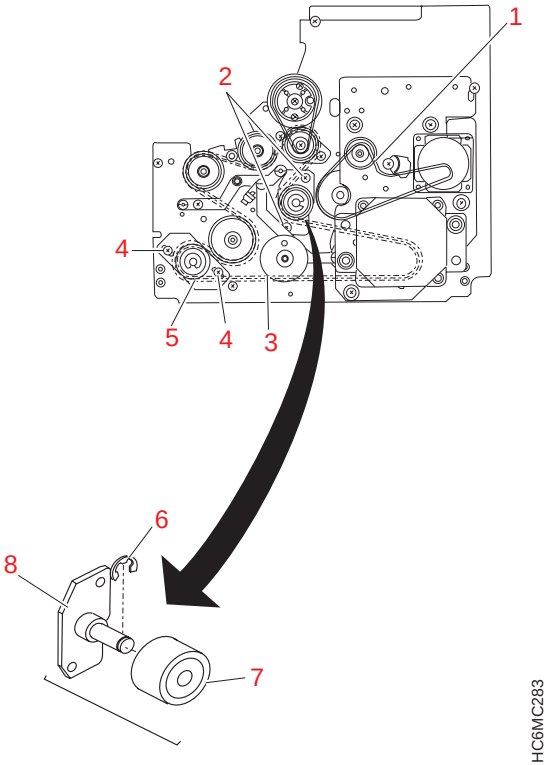
Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Remove the PC drum.
3. Follow the Developer Removal procedures and place it on a solid, clean service area.

Attention: Do not leave the developer out on the rail assembly while you do maintenance tasks.

4. Remove the Bias Contacts.
5. Remove the Conveyor Roll Rotation Sensor (S110).
6. Remove 3 screws **(1)** and bracket **(2)**.

Table 430. Developer Idler Pulley B (continued)



Removal (cont'd)

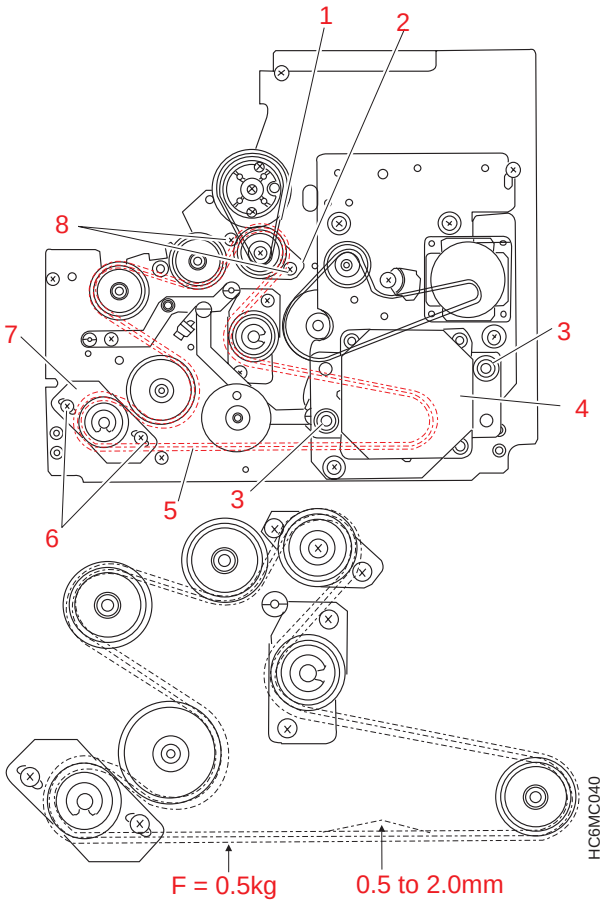
7. Loosen 2 screws **(4)** on Idler A to reduce tension on mag brush belt **(3)** by sliding Idler A assembly **(5)**.
8. Remove 2 screws **(2)** to remove Idler B assembly and release ground wire.
9. Remove retaining ring **(6)** and idler pulley **(7)** from idler stand **(8)**.

Installation

1. Reverse the Removal procedure to install idler pulley B.
2. Make belt tension adjustments for Mag Brush Belt **(3)** and Toner Feed Belt, **(1)**.
3. Complete Developer Installation procedure.

Mag Brush Belt

Table 431. Mag Brush belt



(continued on next page)

CAUTION:
<79> This assembly weighs between 32 kg (70.5 lbs) and 55 kg (121.2 lbs). If the entire assembly must be lifted, use three or more persons.

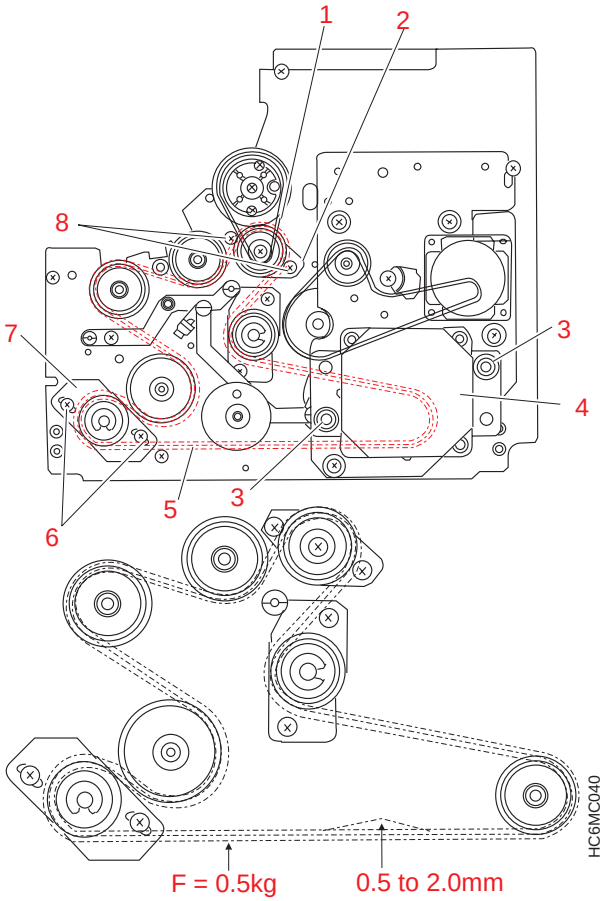
Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Remove the PC drum.
3. Follow the Developer Removal procedures and place it on a solid, clean service area.

Attention: Do not leave the developer out on the rail assembly while you do maintenance tasks.

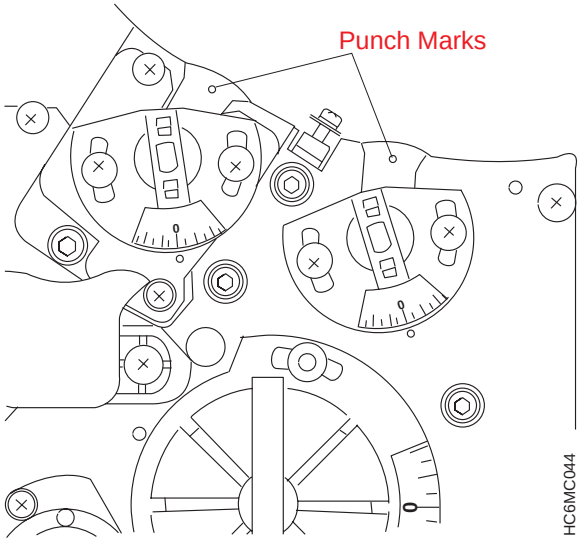
4. Remove the Bias Contacts.
5. Remove Idler Pulley B.
6. Loosen 2 screws **(6)** and slide Idler A assembly **(7)** to reduce tension on mag brush belt **(5)**.
7. Disconnect connectors PJ106 and PJ118, and release the ground wire on mag brush motor **(4)** .
8. Remove 2 hex bolts **(3)** and washers to release the mag brush motor **(4)** .
9. Loosen 2 screws **(8)** to relieve the scavenger roll idler assembly **(2)** and allow additional slack on scavenger roll belt **(1)**.
10. Remove scavenger roll belt **(1)**.
11. Remove mag brush belt **(5)** .

Table 431. Mag Brush belt (continued)



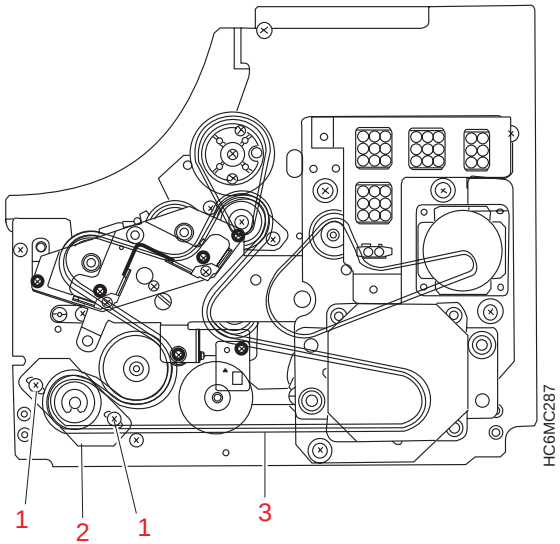
Installation & Adjustment

1. Assure that the scavenger roll belt is adjusted, and Idler B is secured.
2. Ensure that the 2 mag roll punch marks are aligned toward the PC drum while installing the mag brush belt **(5)**.
3. With screws **(6)** loosened move Idler A assembly **(7)** to tighten the mag brush belt **(5)**.
4. Adjust the mag brush belt to deflect 0.5 to 2.0 mm when a force of 0.5 kg is applied to the center of the lower, horizontal stretch of belt as shown.
5. Tighten 2 screws **(6)**.
6. Recheck the 2 mag brush rolls to ensure that the punch marks are still aligned with the PC drum.
7. Complete Developer Installation procedure.



Mag Brush Motor (M101)

Table 432. Mag Brush Motor



(continued on next page)

CAUTION:
<79> This assembly weighs between 32 kg (70.5 lbs) and 55 kg (121.2 lbs). If the entire assembly must be lifted, use three or more persons.

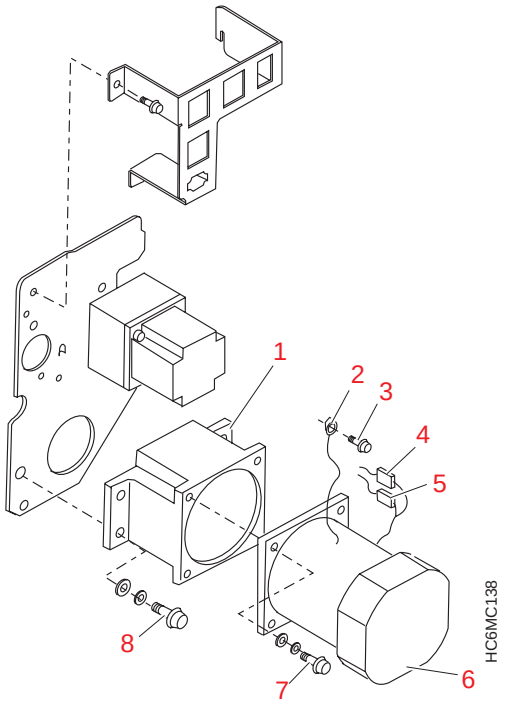
Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Remove the PC drum.
3. Follow the Developer Removal procedures and place it on a solid, clean service area.

Attention: Do not leave the developer out on the rail assembly while you do maintenance tasks.

4. Loosen 2 screws **(1)** to slide the mag roll idler A assembly **(2)** and loosen the mag brush belt **(3)**.

Table 432. Mag Brush Motor (continued)



Removal (cont'd)

5. Disconnect connectors PJ106 **(4)** and PJ118 **(5)**.
6. Remove screw **(3)** and washer to disconnect ground wire **(2)** from mag brush motor **(6)**.
7. Remove 2 bolts **(8)** and washers, and remove the mag brush motor-gearhead assembly **(1)** and **(6)**.
8. At a clean work place, remove 4 bolts **(7)**, nuts, and washers to separate the mag brush motor **(6)** and gearhead **(1)**.

Installation

1. Reverse the Removal procedure to install the mag brush motor.
2. Follow the procedure for adjusting the mag brush belt.
3. Complete Developer Installation procedure.

Mag Brush Rolls Removal

Table 433. Mag Brush Rolls A and B

Special Tools Required

- 0.9 mm - Doctor gauges (45G2040)
- 0.8 mm - Doctor gauges (45G2080)

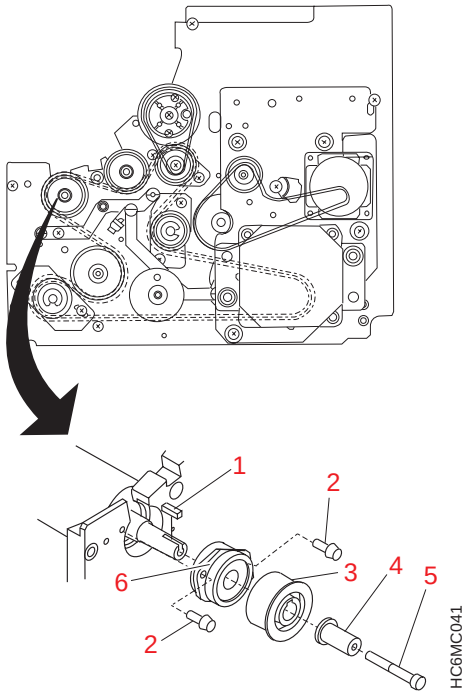
(continued on next page)

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Perform the PC Drum Removal procedure.

CAUTION:
<79> This assembly weighs between 32 kg (70.5 lbs) and 55 kg (121.2 lbs). If the entire assembly must be lifted, use three or more persons.

Table 433. Mag Brush Rolls A and B (continued)



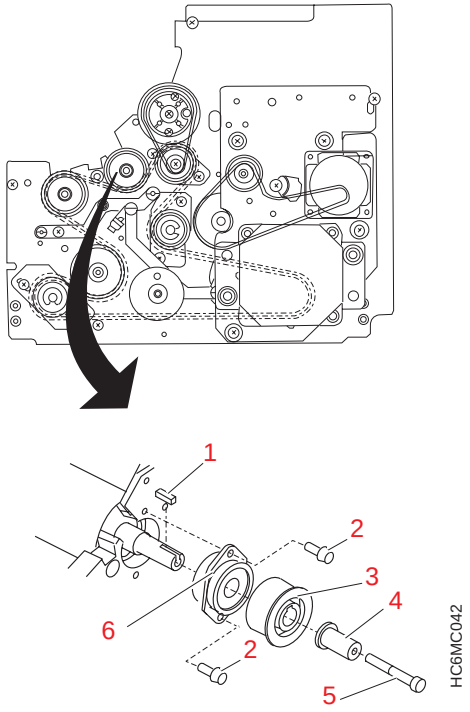
Mag Brush A

(continued on next page)

3. Follow the Developer Removal procedures and place it on a solid, clean service area.

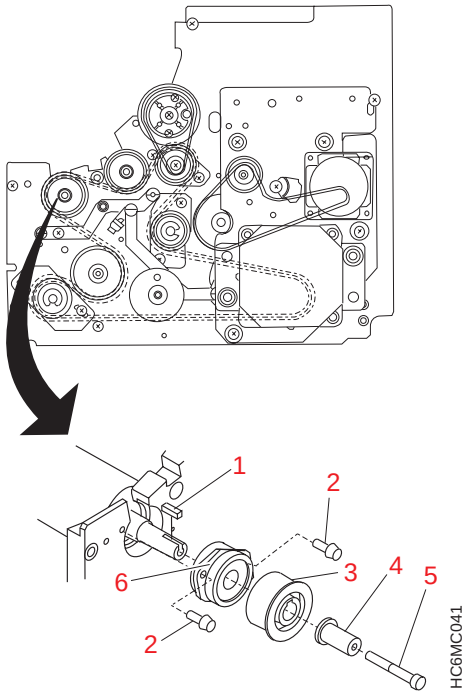
Attention: Do not leave the developer out on the rail assembly while you do maintenance tasks.

4. Remove the Mag Brush Belt.
5. Remove the Developer Rear Seal, see Developer Rear Seal Removal.
6. Remove any developer mix that is stuck to the rolls by turning each pulley **(3)** by hand.



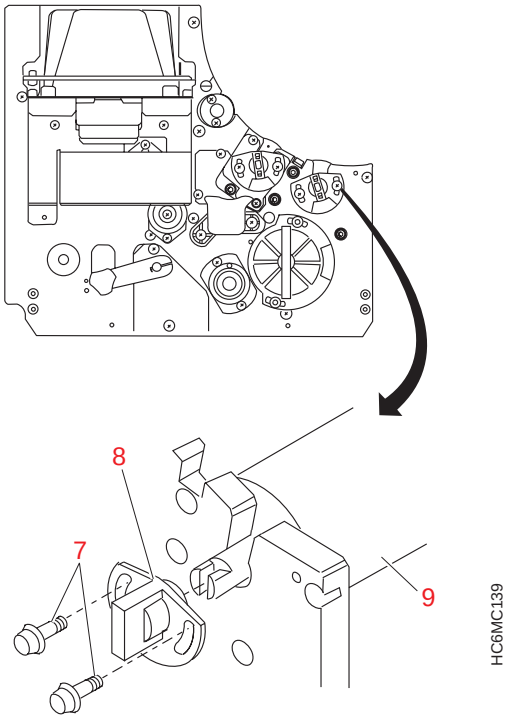
Mag Brush B

Table 433. Mag Brush Rolls A and B (continued)



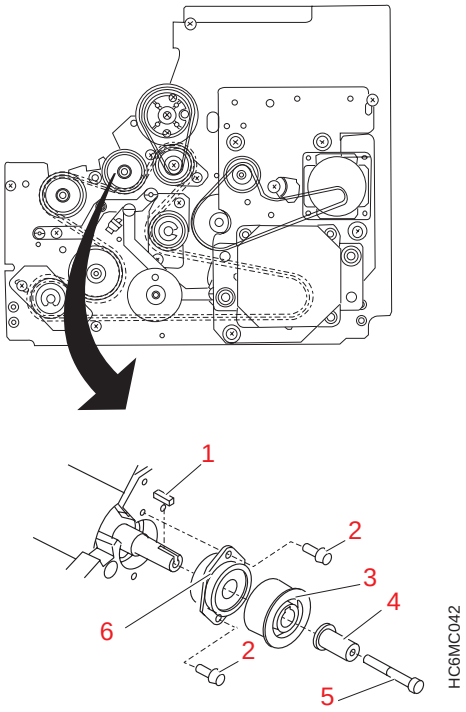
Mag Brush A

7. Remove hex bolt **(5)**, bias shaft **(4)**, pulley **(3)**, and key **(1)**.
8. Remove 2 screws **(2)** and flange assembly **(6)**.
9. Remove 2 screws **(7)** and flanged magnet orientation indicator **(8)** from the front of the developer.
10. Carefully lift mag brush roll A **(9)** out of the developer and set it on a clean, non-magnetizable surface and clear of any objects that might be attracted to the roll.



(continued on next page)

Table 433. Mag Brush Rolls A and B (continued)

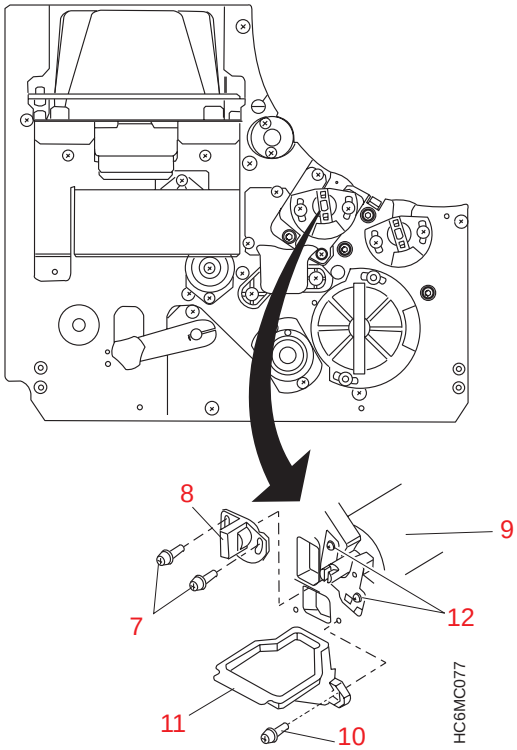


(continued on next page)

Mag Brush B

11. Remove hex bolt **(5)**, bias shaft **(4)**, pulley **(3)**, and key **(1)**.
12. Remove 2 screws **(2)** and flange assembly **(6)**.

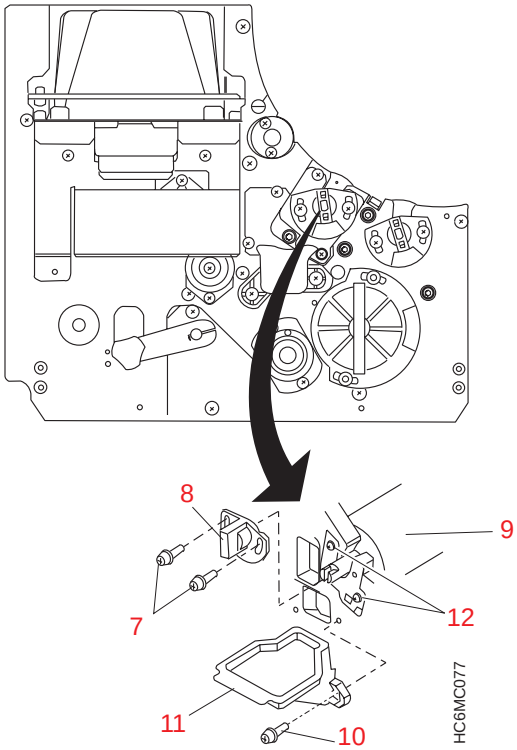
Table 433. Mag Brush Rolls A and B (continued)



13. Remove 2 screws **(7)** and flanged magnet orientation indicator **(8)** from the front of the developer. Never loosen screws **(12)**.

(continued on next page)

Table 433. Mag Brush Rolls A and B (continued)

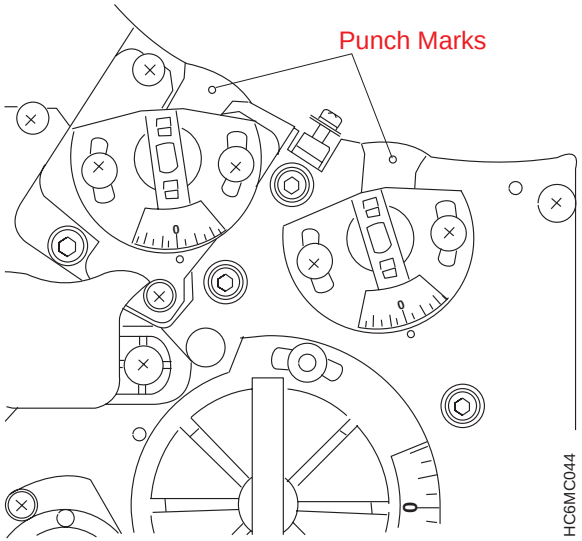


(continued on next page)

Mag Brush B (cont'd)

14. Remove the screws **(10)** and the developer hopper **(11)**.
15. Carefully lift mag brush roll B **(9)** out of the developer and set it on a clean, non-magnetizable surface and clear of any objects that might be attracted to the roll.

Table 433. Mag Brush Rolls A and B (continued)



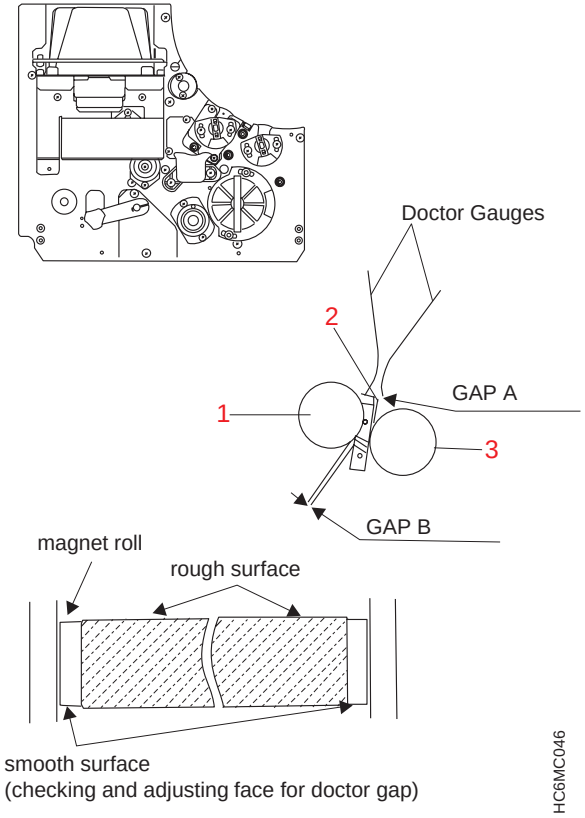
Front Side

(continued on next page)

Installation

1. Clean all toner and developer mix from the screws, threaded holes, and bearing assemblies. Ensure that all mounting interfacing surfaces are clear of toner and developer mix.
2. Reverse the removal procedure to install the mag brushes.
3. Locate punch marks at the end of the rolls upward as shown.

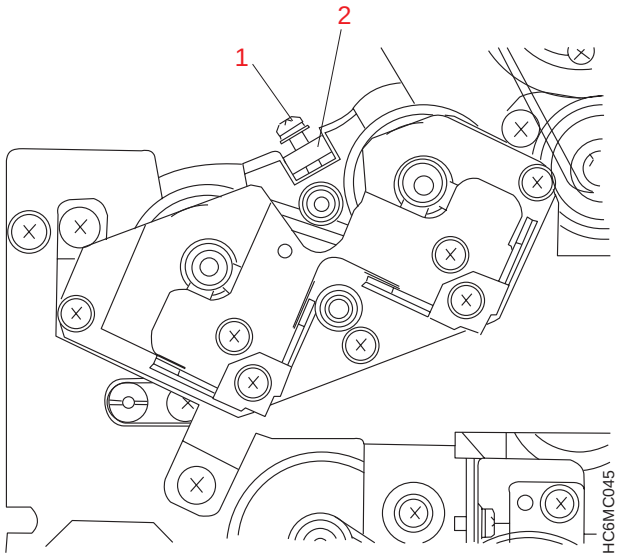
Table 433. Mag Brush Rolls A and B (continued)



4. Check doctor blade gaps A and B with doctor gauges at the smooth ends (front and rear) of each mag brush roll. Note these settings.

(continued on next page)

Table 433. Mag Brush Rolls A and B (continued)

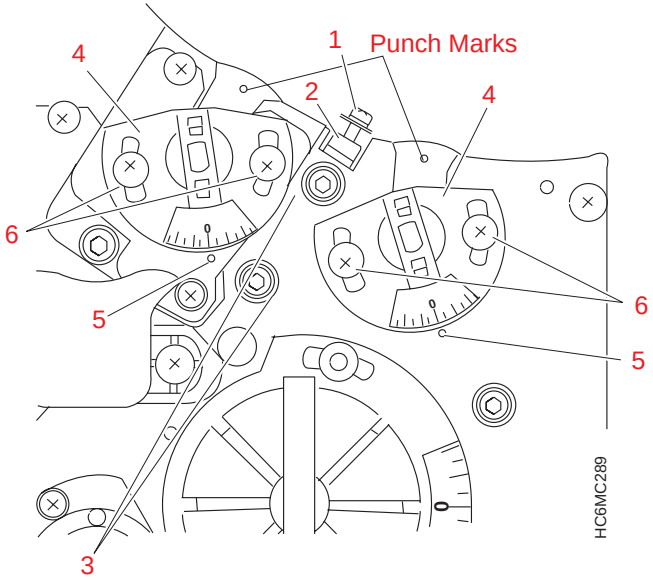


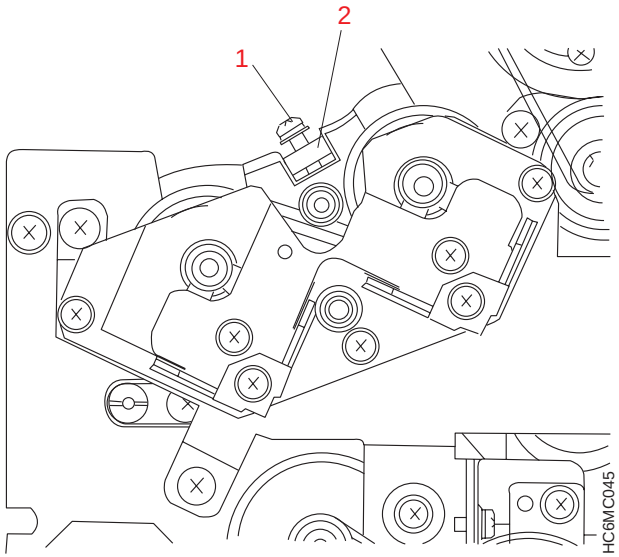
Rear Side

(continued on next page)

5. If the gaps are not at the adjustment values specified in PC Drum & Developer Clearances/Gaps, proceed with steps 6 through 11.
6. Clean the two screw holes (for screws **(1)**) on the top of doctor blade holder **(2)**.

Table 433. Mag Brush Rolls A and B (continued)

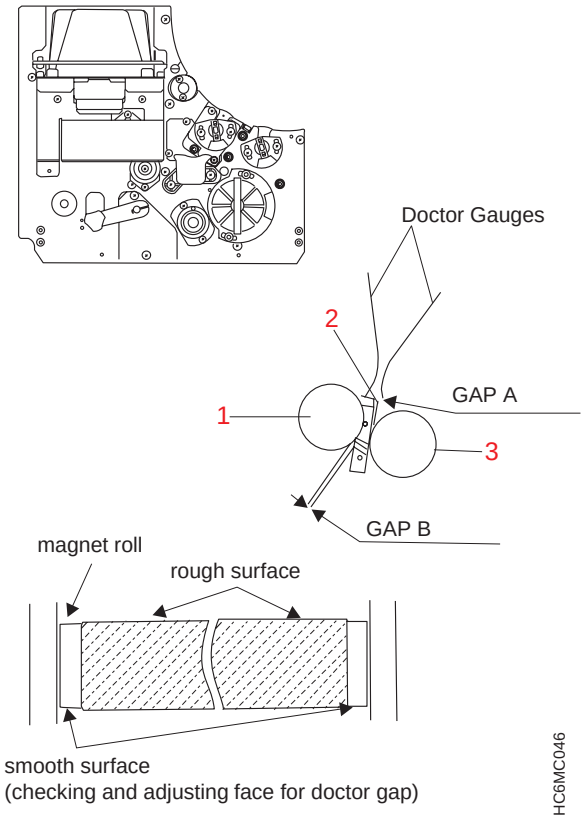




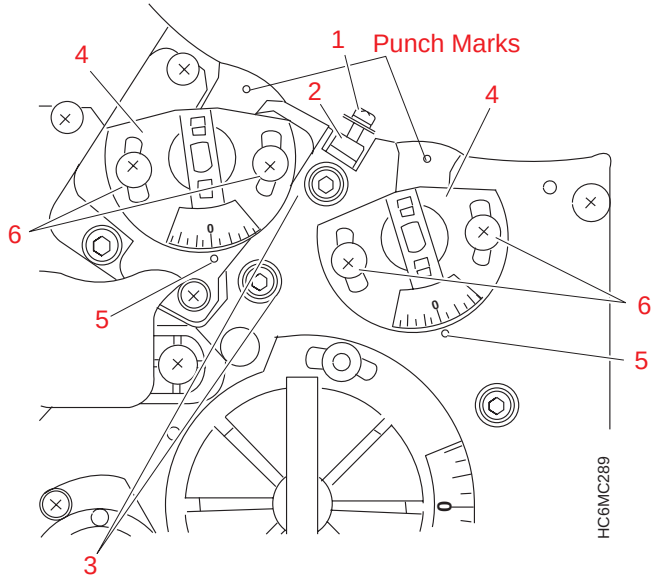
(continued on next page)

7. Insert two screws **(1)** (3 mm), one at each end of doctor blade holder **(2)**.
   Turn them in until they contact the doctor blade. These screws act as stops.
8. Loosen the two hex head screws **(3)** at each end of the developer. At this point the doctor blade is free to move.

Table 433. Mag Brush Rolls A and B (continued)



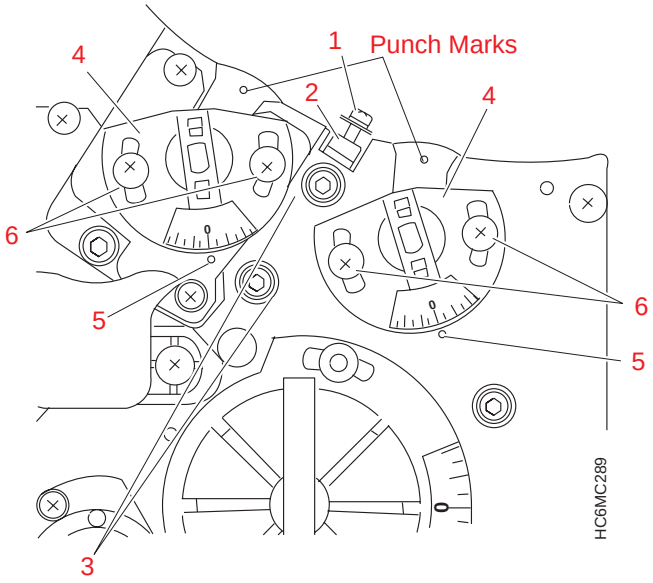
9. Insert the doctor gauges, corresponding to the nominal gap settings (see page 1659) between each roll and doctor plate **(2)** and at the smooth ends of rolls **(1)** and **(3)**.
10. Raise the doctor plate **(2)** until the feeler gauges are pinched between the roll surfaces and the doctor plate.

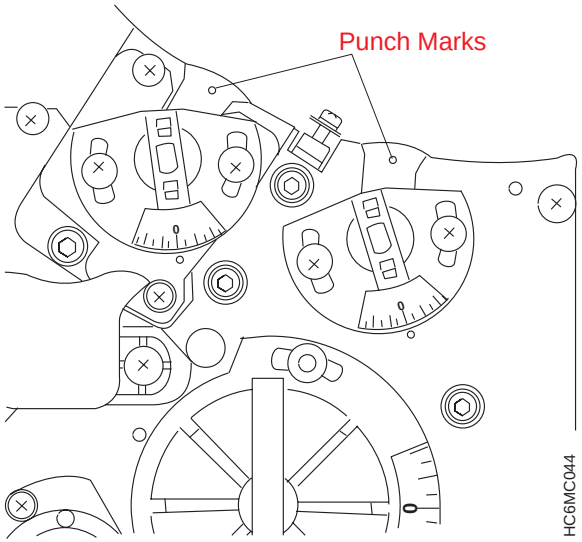


Note: You may need to adjust screws **(1)** clockwise if the original gaps were too narrow or counterclockwise if the original gaps were too wide.

(continued on next page)

Table 433. Mag Brush Rolls A and B (continued)





(continued on next page)

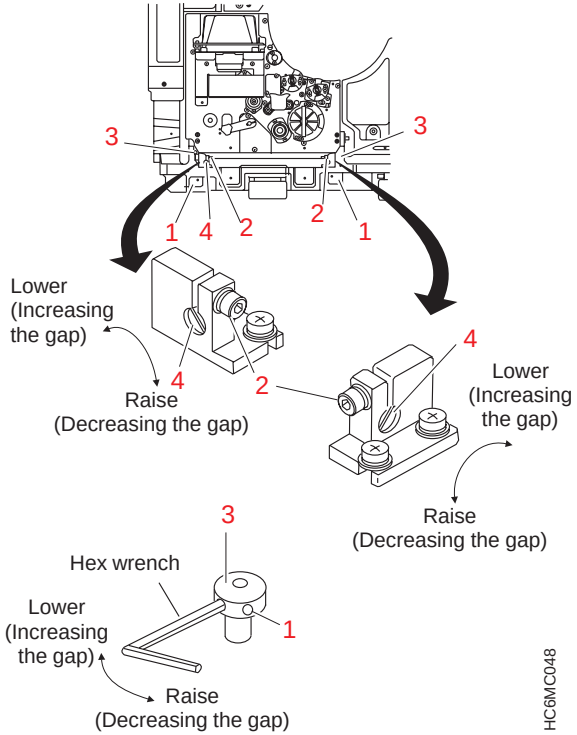
11. Tighten the four screws **(3)**, and remove the two screws **(1)**.
12. **Mag brush angles:** Check to confirm that the mag brush roll degree positions on the two magnet orientation indicators **(4)** are in line with drill marks **(5)** on the front side plate.
    - For Developer Mix P/N 1402829, Mag brush roll A should be 0°. Mag brush roll B should be 0°.
    - For Developer Mix P/N 1402718, Mag brush roll A should be 0°. Mag brush roll B should be +2.5°.

    To set the position on each roll, loosen two screws **(6)** on the appropriate roll, set the correct ° position, and tighten the screws.

Mag Roll Gaps to PC Drum:

1. Install the developer in the printer.
2. Locate the punch marks on the mag brush rolls upward as shown.
3. Check the gaps with the drum gauge. If these gaps are not at the adjustment values specified in PC Drum & Developer Clearances/Gaps, continue with the following steps.

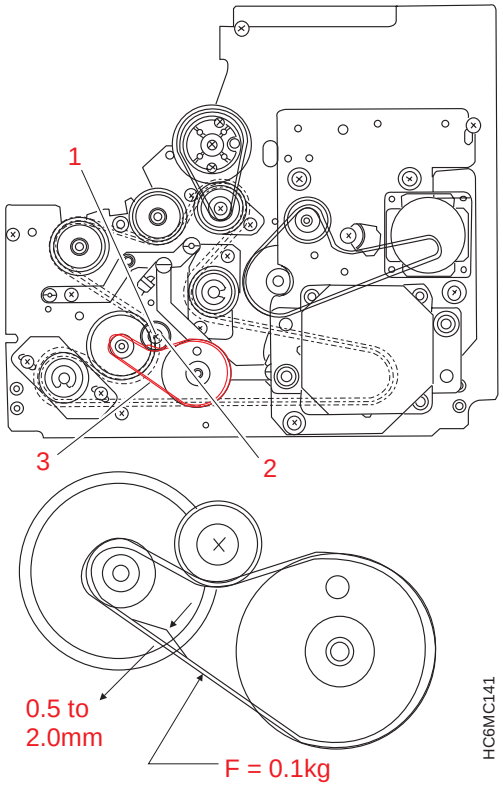
Table 433. Mag Brush Rolls A and B (continued)



4. Loosen two set screws **(1)** and two socket head screws **(2)**.
5. Adjust the mag brush roll gaps at the front side of the developer by raising or lowering adjustment screws **(3)**.
6. Adjust the mag brush roll gaps at the rear side by turning adjustment screws **(4)**.
7. Check the gaps in front again, and readjust them if necessary.
8. Check gaps at rear again if you changed the settings in front in step 7.
9. Repeat steps 7 and 8, as necessary, until the mag brush roll gaps are within the specified limits.
10. Secure the screws **(1)** and **(2)**.
11. Complete Developer Installation procedure.

Mixing Paddle Belt

Table 434. Mixing Paddle Belt



CAUTION:
<79> This assembly weighs between 32 kg (70.5 lbs) and 55 kg (121.2 lbs). If the entire assembly must be lifted, use three or more persons.

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Remove the PC drum.
3. Follow the Developer Removal procedures and place it on a solid, clean service area.

Attention: Do not leave the developer out on the rail assembly while you do maintenance tasks.

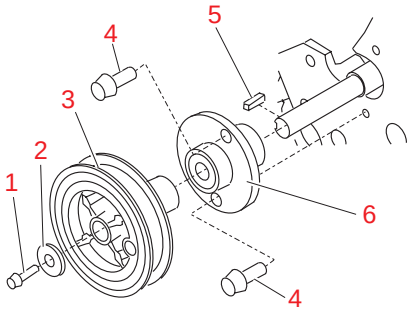
4. Loosen screw **(1)** to reduce tension on mixing paddle belt **(3)** while sliding idler pulley assembly **(2)**.
5. Remove the Conveyor Roll Rotation Sensor (S110).
6. Remove mixing paddle belt **(3)** .

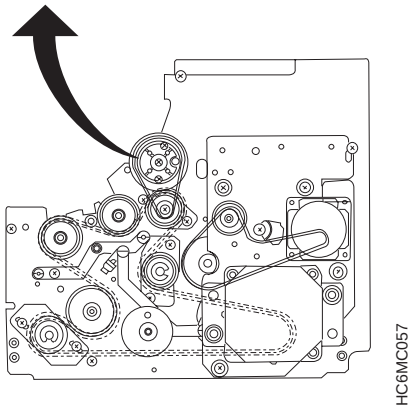
Installation & Adjustment

1. With screw **(1)** loosened move idler pulley assembly **(2)** to tighten the mixing paddle belt **(3)**.
2. Adjust the belt to deflect 0.5-2.0 mm when a force of 0.1 kg (0.22 lb.) is applied to the center of the belt as shown.
3. Complete Developer Installation procedure.

Scavenger Roll

Table 435. Scavenger Roll





(continued on next page)

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Follow the PC Drum Removal procedure.

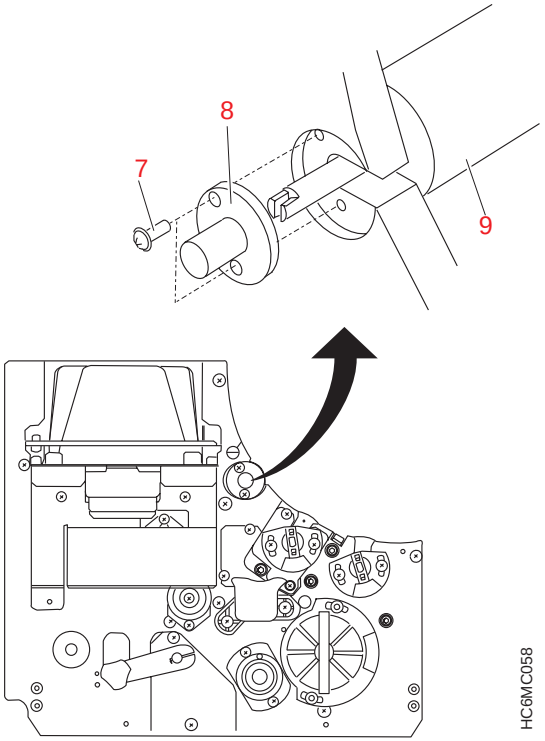
CAUTION:
<79> This assembly weighs between 32 kg (70.5 lbs) and 55 kg (121.2 lbs). If the entire assembly must be lifted, use three or more persons.

3. Follow the Developer Removal procedures and place it on a solid, clean service area.

Attention: Do not leave the developer out on the rail assembly while you do maintenance tasks.

4. Remove the Scavenger Roll Belt.
5. Follow the Developer Rear Seal Removal procedure.
6. Remove the screw **(1)**, washer **(2)**, pulley **(3)**, and key **(5)**.
7. Remove the two screws **(4)** and the scavenger roll rear flange **(6)**.

Table 435. Scavenger Roll (continued)



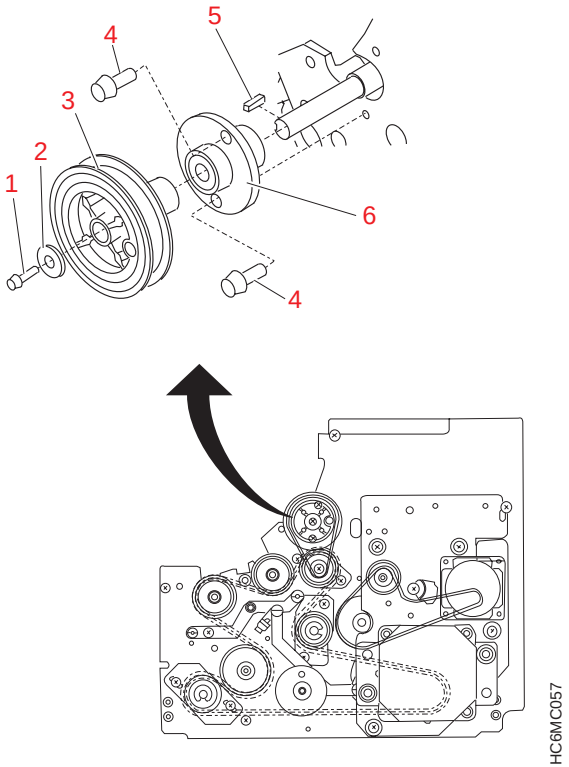
(continued on next page)

8. Remove the two screws **(7)** and the scavenger roll front flange **(8)**.
9. Carefully remove the scavenger roll **(9)**.

Installation

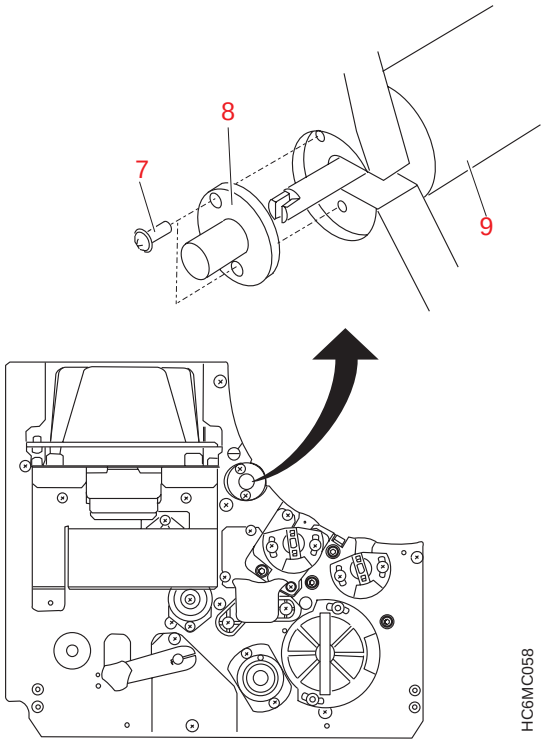
1. Reverse the removal procedure to install the scavenger roll.
2. With the recess in the front end shaft of scavenger roll **(9)** facing up, attach the scavenger roll flange **(8)**.

Table 435. Scavenger Roll (continued)



3. **Scavenger roll gap to PC drum:** With the two screws **(4)** at the rear and the two screws **(7)** at the front loosened (2-3 turns), set the gap on the cleaning roll **(9)** to the setting in PC Drum & Developer Clearances/Gaps.

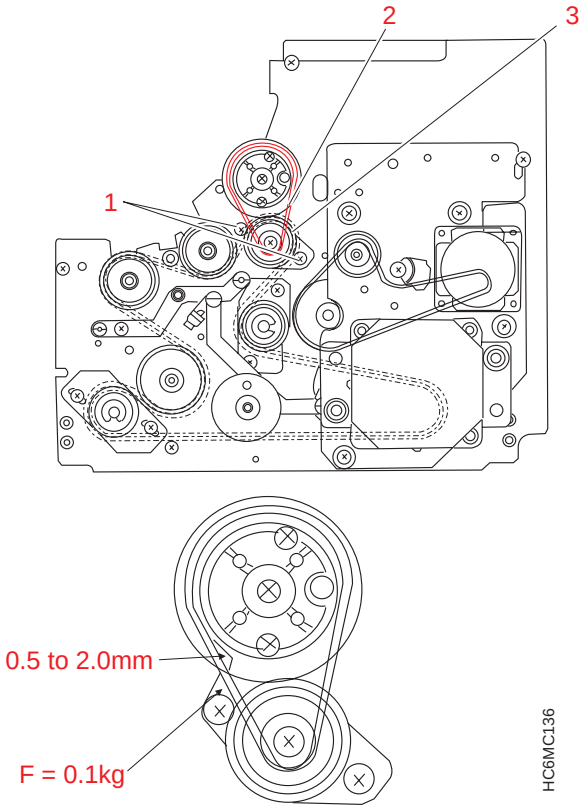
   Tighten screws **(4)** and **(7)**.



4. Adjust the Scavenger Roll Belt tension .
5. Adjust the Mag Brush Belt tension.
6. Complete Developer Installation procedure.

Scavenger Roll Belt

Table 436. Scavenger roll belt



CAUTION:
<79> This assembly weighs between 32 kg (70.5 lbs) and 55 kg (121.2 lbs). If the entire assembly must be lifted, use three or more persons.

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Remove the PC drum.
3. Follow the Developer Removal procedures and place it on a solid, clean service area.

Attention: Do not leave the developer out on the rail assembly while you do maintenance tasks.

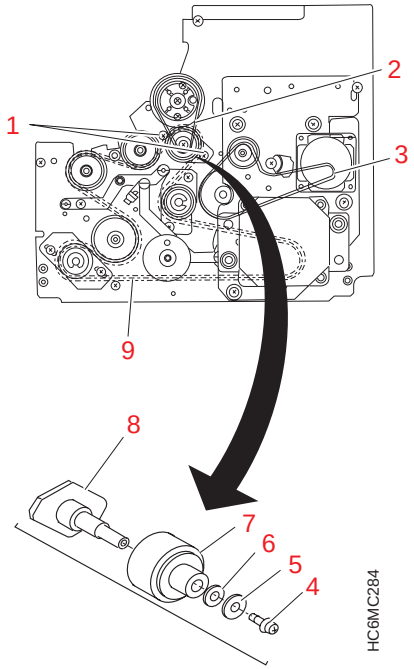
4. Loosen 2 screws **(1)** to reduce tension on scavenger roll belt **(2)** while sliding scavenger roll idler assembly **(3)** .
5. Remove scavenger roll belt **(2)** .

Installation & Adjustment

1. With screws **(1)** loosened move scavenger roll idler **(3)** to tighten timing belt **(2)**.
2. Adjust the belt to deflect 0.5 to 2.0 mm (0.02 to 0.08 in.) when a force of 0.1 kg (0.22 lb) is applied to the center of the belt as shown.
3. Tighten 2 screws **(1)** .
4. Complete Developer Installation procedure.

Scavenger Roll Idler Pulley

Table 437. Scavenger Roll Idler Pulley



CAUTION:
<79> This assembly weighs between 32 kg (70.5 lbs) and 55 kg (121.2 lbs). If the entire assembly must be lifted, use three or more persons.

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Remove the PC drum.
3. Follow the Developer Removal procedures and place it on a solid, clean service area.

Attention: Do not leave the developer out on the rail assembly while you do maintenance tasks.

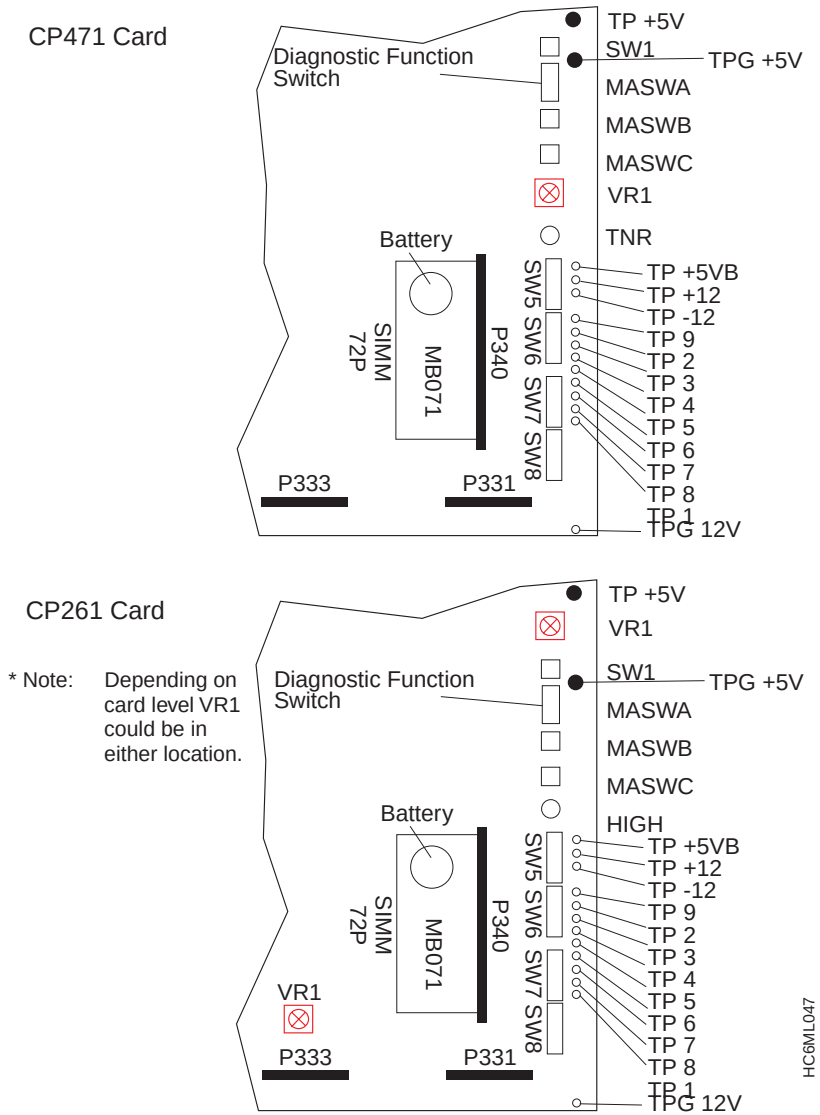
4. Loosen 2 screws **(1)** to allow removal of scavenger roll belt **(2)** .
5. Remove 2 screws **(1)** to remove scavenger roll idler assembly.
6. Remove screw **(4)**, washers **(5)** and **(6)** to allow removal of idler pulley assembly **(7)** from idler stand **(8)**.

Installation

1. Reverse the Removal procedure to install scavenger roll idler pulley.
2. Follow the procedures for adjusting the mag brush belt **(9)** and adjusting the toner feed belt **(3)**.
3. Complete Developer Installation procedure.

Toner Control Adjustment

Table 438. Toner Control Adjustment



CP261/CP471 Cards

DANGER

<5> High-voltage is present. Use care while working in this area.

Special Tools Required:

- Digital voltmeter

Adjustment

1. Power on the printer.
2. Request that the system operator stop activity on the printer. Disable all host attachments.
3. Read and save the values in the developer mix usage counter, **FF1E** and **FF1F**. You will need these values in step 20. See Read From or Write to Memory (Position 2).

Note: The developer mix usage counter is automatically reset to zero when you move the developer drain lever from the open to the closed position with power on.

Note: You must use the following steps to clean the developer before you calibrate TP1 with new developer mix.

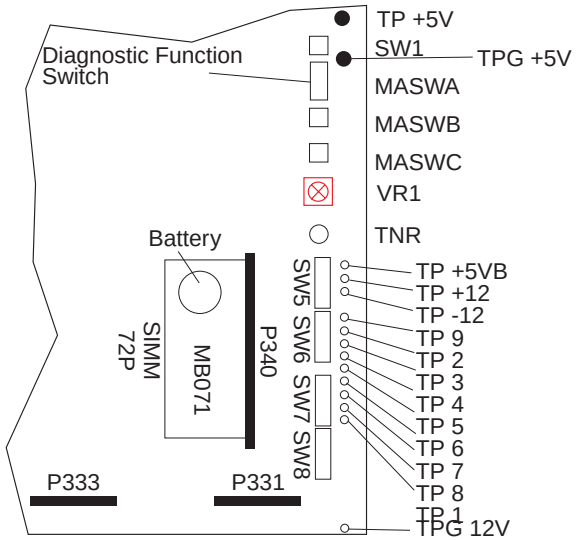
4. Drain the old developer mix into the bottle (see the *Operator's Guide*).

   Move the developer drain lever on the front of the developer a few times while the developer is running. Let the developer stop by itself (usually in about 2 minutes).

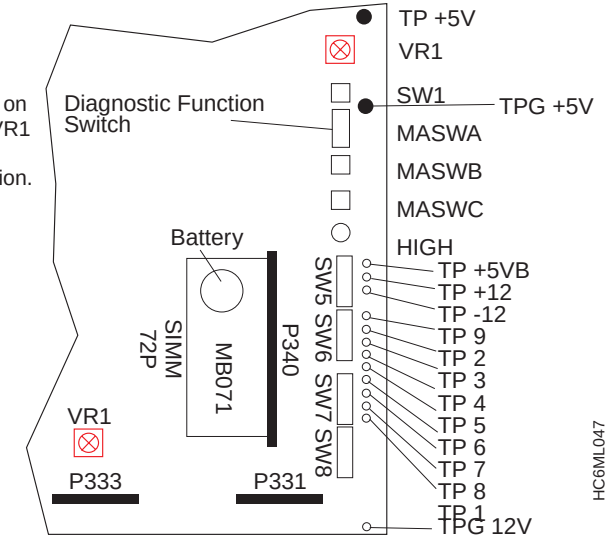
Table 438. Toner Control Adjustment (continued)

(continued on next page)

CP471 Card



CP261 Card



* Note: Depending on card level VR1 could be in either location.

CP261/CP471 Cards

(continued on next page)

5. Close the developer drain lever and fill the developer mix inlet on the front of the developer with the old mix without running the developer.

   After you fill the inlet, press the developer run button and feed the mix into the into the inlet as fast as possible. Let the developer stop by itself (usually in about 2 minutes).
6. Repeat steps 4 and 5.
7. Repeat step 4.

   Ensure that there are no kinks in the drain hose. Shake the hose while the developer is running to ensure that all the old mix is completely drained.

Note: This allows the complete removal of the excess toner in the developer and a more accurate setting of the toner control voltage.

8. Set the old developer mix aside.
9. Close the developer drain.
10. Set the contrast switch on the printer control panel to **4**.
11. Remove the logic card cover.
12. Add new, unused developer mix.

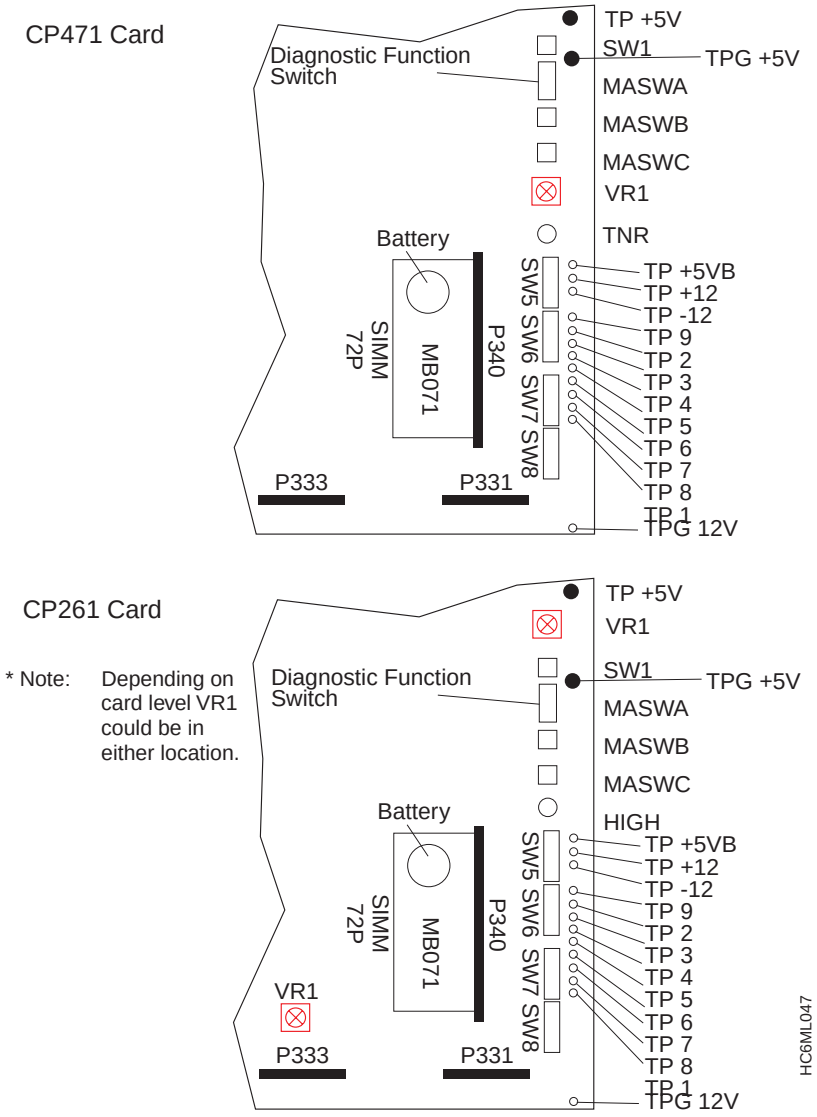
Note: You must calibrate a new toner control card with new developer mix.

Make this adjustment while the developer is running.

(Setting the MASWB switch on the CPxxx card to **1** will cause the maintenance panel to display the voltage between TP1 and TPG 12V while the developer is running.)

13. Attach the voltmeter + (plus) lead to TP1 and the − (minus) lead to TPG 12V on the CPxxx card.
14. Press the developer run button.

Table 438. Toner Control Adjustment (continued)



CP261/CP471 Cards

15. Check the TP1 voltage.
    - For Developer Mix P/N 1402829, the TP1 value should be 2.3 ±0.02 V dc.
    - For Developer Mix P/N 1402718, the TP1 value should be 3.4 ±0.02 V dc.
16. If TP1 is correct, go to step 18.

    If TP1 is not correct, go to step 17.
17. Adjust VR1 so that the voltage at TP1 is the correct voltage as shown above while the developer is running.
18. Drain the new developer mix into the bottle (see the *Operator's Guide*).

    Put a note on the bottle of the mix you just drained that reads, "**Do not calibrate with this mix.**".

    You can use developer mix only one time for calibration.
19. Install the original developer mix.
20. Reset the developer mix usage counter to the values you recorded in step 3.

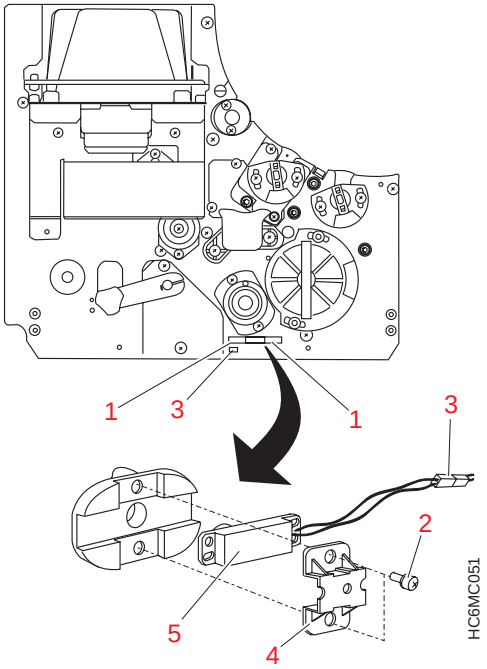
Hint

To reset the developer mix usage values, see Read From or Write to Memory (Position 2).

21. Ensure the MASWB switch is set to **0**.
22. Run at least 500 feet of forms using **Print Pack** to allow the original developer mix to reach the correct toner concentration.

Toner Control Sensor (S107)

Table 439. Toner Control Sensor



Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Follow the PC Drum Removal procedure.

CAUTION:
<79> This assembly weighs between 32 kg (70.5 lbs) and 55 kg (121.2 lbs). If the entire assembly must be lifted, use three or more persons.

3. Follow the Developer Removal procedures and place it on a solid, clean service area.

Attention: Do not leave the developer out on the rail assembly while you do maintenance tasks.

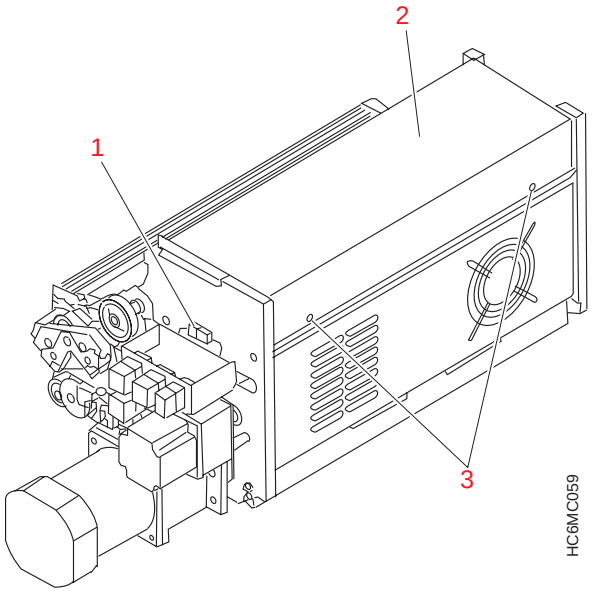
4. Move the developer to the service position. Place it on its left side.
5. Disconnect connector PJ132 **(3)**.
6. Remove the two hex head bolts **(1)** and the washers.
7. Remove the toner control sensor assembly.
8. Remove the two screws **(2)** to disassemble the sensor holder **(4)** and the toner control sensor **(5)**.

Installation

1. Reverse the removal procedure to install the toner control sensor.
2. Complete the Developer Installation procedure.

Toner Empty Sensor (S108)

Table 440. Toner Empty Sensor



(continued on next page)

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Follow the PC Drum Removal procedure.

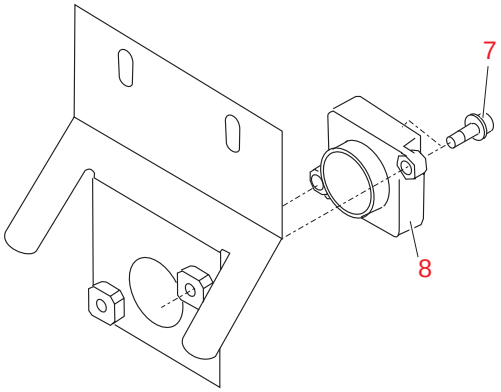
CAUTION:
<79> This assembly weighs between 32 kg (70.5 lbs) and 55 kg (121.2 lbs). If the entire assembly must be lifted, use three or more persons.

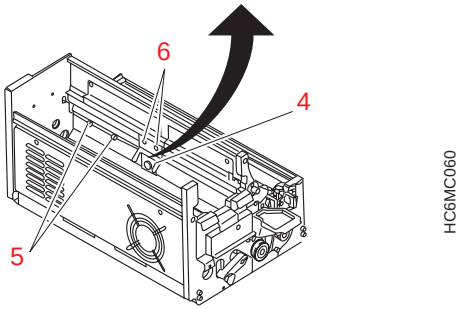
3. Follow the Developer Removal procedures and place it on a solid, clean service area.

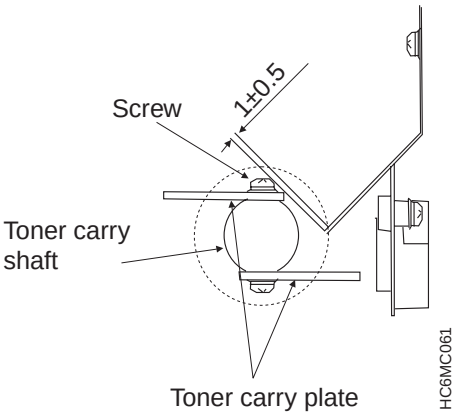
Attention: Do not leave the developer out on the rail assembly while you do maintenance tasks.

4. Move the developer to the service position.
   Note: Before you proceed, ensure that the toner cartridge is empty. Verify this by tapping on the cartridge and then directing a light (flashlight) at the translucent housing.
5. Remove the two screws **(3)** and the toner hopper cover **(2)**.
6. Disconnect connector PJ133 **(1)**

Table 440. Toner Empty Sensor (continued)







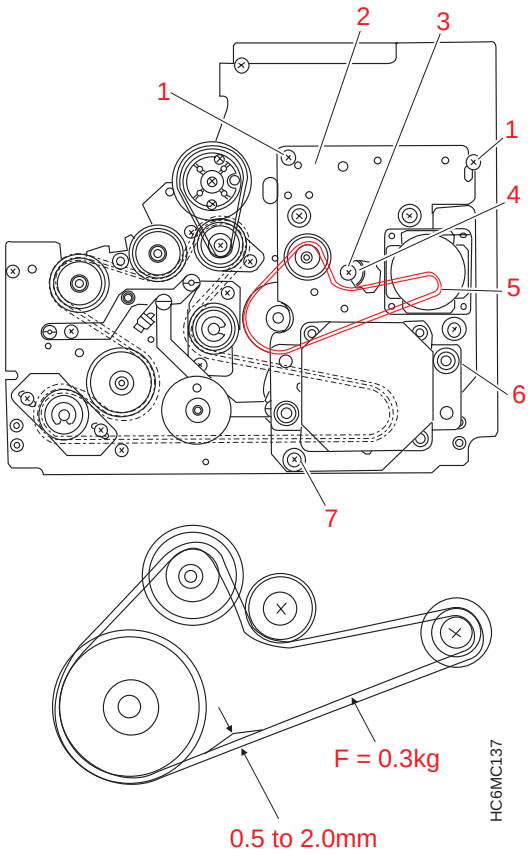
7. Push the toner cartridge away from the toner empty sensor holder assembly **(4)**, the two clamps **(5)**, and the cable to the sensor.
8. Open the two clamps **(5)** to free the cable to the toner empty sensor holder assembly **(4)**.
9. Remove the two screws **(6)**, and remove the toner empty sensor assembly **(4)** and the attached cabling.
10. Remove the two screws **(7)** to disassemble the toner empty sensor **(8)**.

Installation

1. Reverse the Removal procedure to install the toner empty sensor.
2. Check the dimension with the toner carry plates in the positions shown.
3. Complete Developer Installation procedure.

Toner Feed Belt

Table 441. Toner Feed Belt



CAUTION:
<79> This assembly weighs between 32 kg (70.5 lbs) and 55 kg (121.2 lbs). If the entire assembly must be lifted, use three or more persons.

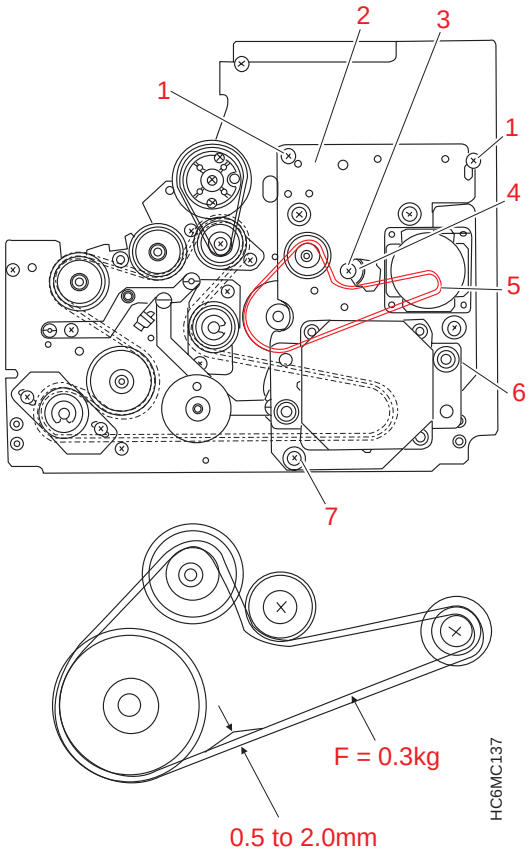
Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Remove the PC drum.
3. Follow the Developer Removal procedures and place it on a solid, clean service area.

Attention: Do not leave the developer out on the rail assembly while you do maintenance tasks.

4. Remove 2 screws **(1)** and connector holder **(2)**.
5. Loosen screw **(3)** to reduce tension on toner feed belt **(5)** while sliding the toner feed idler assembly **(4)**.
6. Remove 4 screws **(7)** and motor mount assembly **(6)**.
7. Remove toner feed belt **(5)**.

Table 441. Toner Feed Belt (continued)

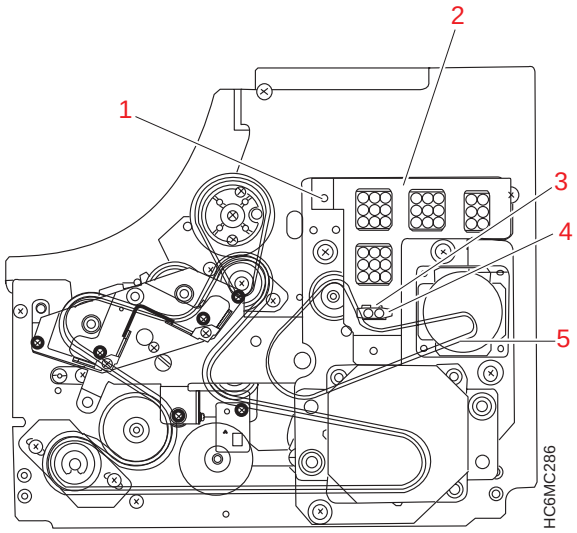


Installation & Adjustment

1. Install toner feed belt.
2. With screw **(3)** loosened move toner feed idler pulley assembly **(4)** to tighten the toner feed belt.
3. Adjust the belt to deflect 0.5 to 2.0 mm (0.02 to 0.08 in.) when a force of 0.3 kg (0.66 lb.) is applied to the center of the belt as shown.
4. Tighten screw **(3)**.
5. Complete Developer Installation procedure.

Toner Feed Motor (M102)

Table 442. Toner Feed Motor



(continued on next page)

CAUTION:
<79> This assembly weighs between 32 kg (70.5 lbs) and 55 kg (121.2 lbs). If the entire assembly must be lifted, use three or more persons.

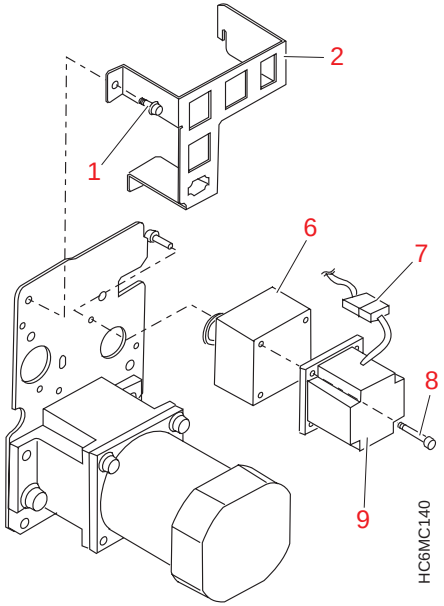
Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Remove the PC drum.
3. Follow the Developer Removal procedures and place it on a solid, clean service area.

Attention: Do not leave the developer out on the rail assembly while you do maintenance tasks.

4. Remove 2 screws **(1)** and connector holder **(2)**.
5. Loosen screw **(3)** to reduce tension on toner feed belt **(5)** while sliding the toner feed idler assembly **(4)**.

Table 442. Toner Feed Motor (continued)



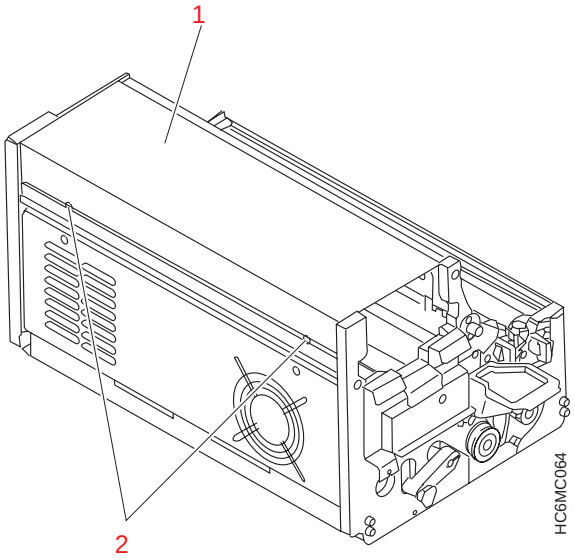
6. Disconnect connector PJ121 **(7)**.
7. Remove 2 screws **(8)**, and remove the toner feed motor assembly **(9)**.
8. At a clean workplace, disassemble the toner feed gearhead by removing 4 screws and separating motor **(9)** from gearhead **(6)**.

Installation

1. Reverse the Removal procedure to install the toner feed motor.
2. Follow the procedure for adjusting the toner feed belt.
3. Complete Developer Installation procedure.

Toner Feed Roller

Table 443. Toner Feed Roller



(continued on next page)

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Follow the PC Drum Removal procedure.

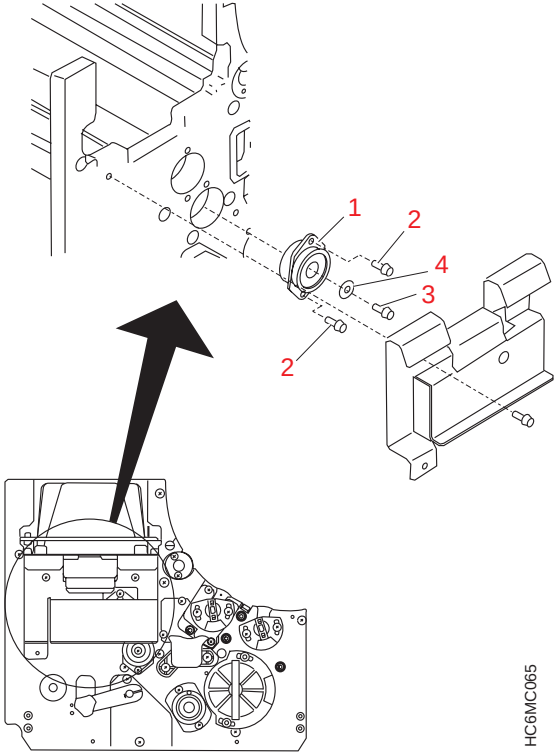
CAUTION:
<79> This assembly weighs between 32 kg (70.5 lbs) and 55 kg (121.2 lbs). If the entire assembly must be lifted, use three or more persons.

3. Follow the Developer Removal procedures and place it on a solid, clean service area.

Attention: Do not leave the developer out on the rail assembly while you do maintenance tasks.

4. Move the developer to the service position.
5. Remove the Toner Feed Belt.
   Note: Before you proceed, ensure that the toner cartridge is empty. Verified by tapping on the cartridge and by directing a light (flashlight) at the translucent cartridge.
6. Remove the two screws **(2)** and the toner hopper cover **(1)**.
7. Remove the toner cartridge.
8. Clean (vacuum) out the inside of the toner hopper.

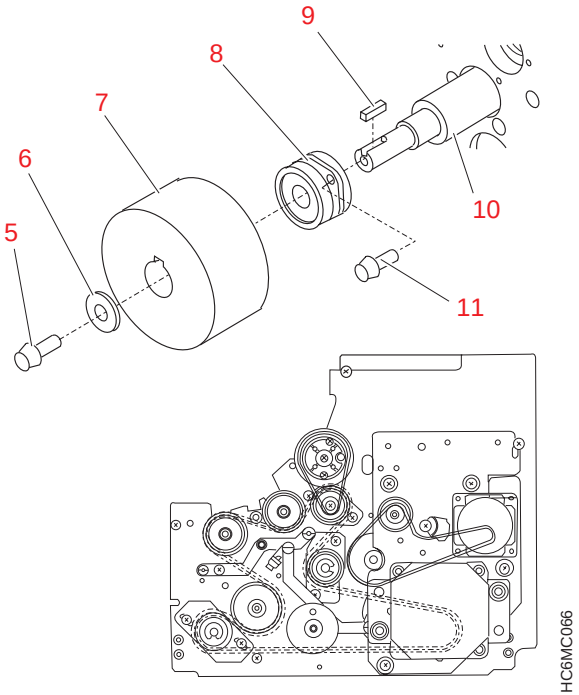
Table 443. Toner Feed Roller (continued)



(continued on next page)

9. Remove screw **(3)** and washer **(4)**.
10. Remove the two screws **(2)** and the flange assembly **(1)**.

Table 443. Toner Feed Roller (continued)



11. Remove screw **(5)** and washer **(6)**, and remove the toner feed pulley **(7)** and the key **(9)**.
12. Remove screw **(11)**, and remove the flange assembly **(8)**.
13. Remove the toner feed roller **(10)**.

Installation

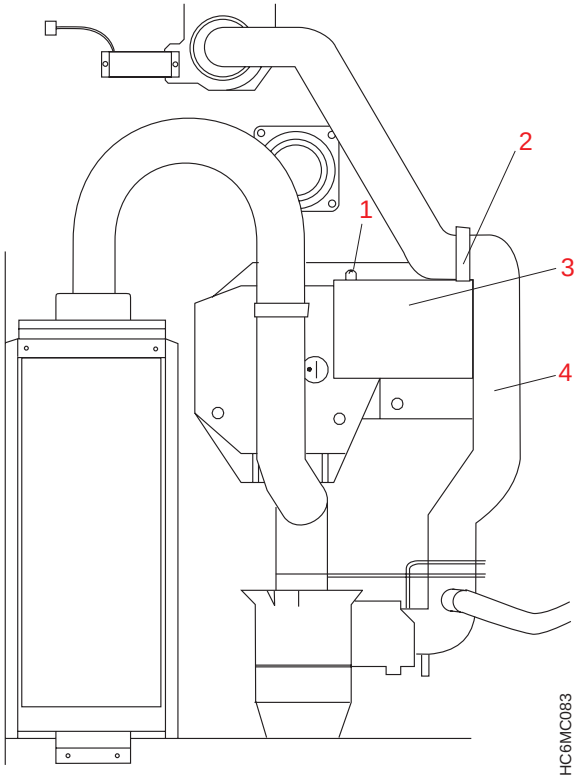
1. Reverse the Removal procedure to install the toner feed roller. See Toner Feed Roller Removal.
2. Complete Developer Installation procedure.

Drum Drive and Photoconductor (PC)

Drum Motor (M107), Drive Belt, and Drum Rotation Sensor (S105) 1645
PC Drum Removal 1649
PC Drum Cleaning 1654
PC Drum Cover Interlock Switch (S118) 1656
Drum Ground 1657
PC Drum & Developer Clearances/Gaps 1658

Drum Motor (M107), Drive Belt, and Drum Rotation Sensor (S105)

Table 444. Drum Motor (M107), Drive Belt, and Drum Rotation Sensor (S105)



Attention:

The photoconductive surface of the drum is sensitive.

- Do not expose the photoconductive surface to light for more than **5 minutes**.
- Do not touch the photoconductive surface; handle the drum from the inside only or wear plastic gloves. The drum is easily scratched and is sensitive to all contamination.

Special Tools Required:

- Push-pull scale (P/N 0460870)
- Thickness gauges

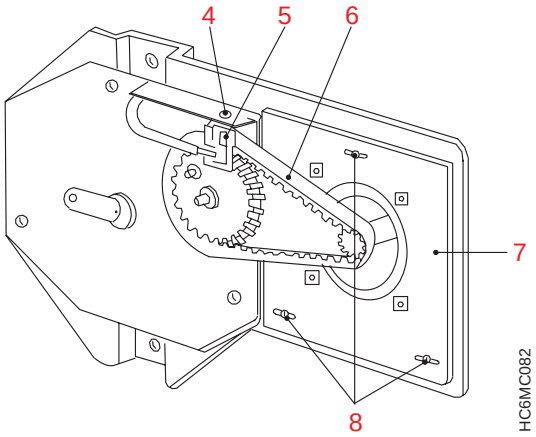
Removal

Note: If you are removing only the drum rotation sensor, stop with step 9.

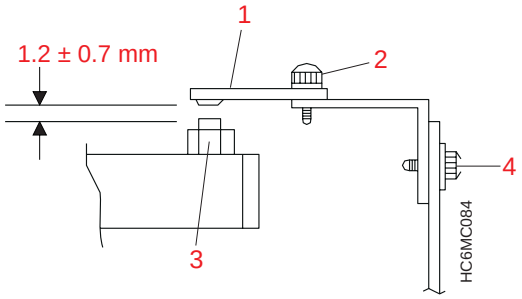
1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the rear covers.
4. Remove the process and filter covers.
5. Remove the screw **(2)** to release the hose clamp, sensor, washers, and hose **(4)**.
6. Release the two wire clamps (not shown) on the drum motor cover **(3)** to release the wire bundles.
7. Remove the screw **(1)** and the drum motor cover **(3)**.

(continued on next page)

Table 444. Drum Motor (M107), Drive Belt, and Drum Rotation Sensor (S105) (continued)

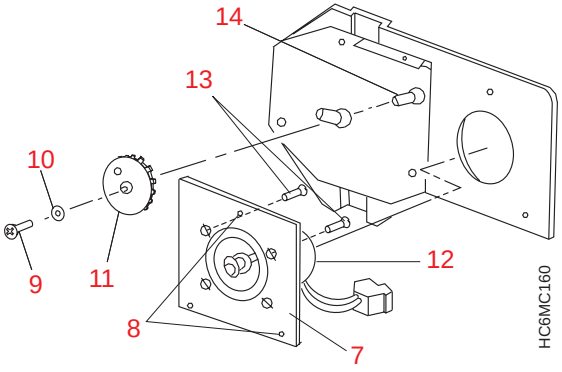


8. Disconnect connectors PJ126 (to the drum motor) and PJ147 (to the drum rotation sensor).
9. Remove the screw **(4)** and sensor assembly **(5)**.
10. Remove the screw **(2)** to remove the drum rotation sensor **(1)**.



Note: If you are removing the timing belt, continue with the next two steps.

11. Loosen the three screws **(8)**; move the motor plate **(7)** to free the timing belt **(6)**.
12. Remove the timing belt **(6)**.

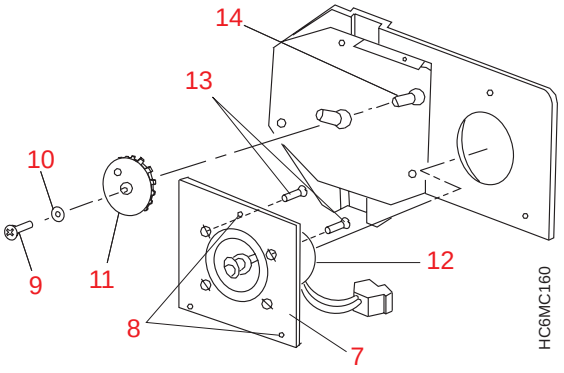


Note: If you are removing the motor, continue with the next three steps.

13. Remove the screw **(9)**, washer **(10)**,pulley **(11)**, and key **(14)**.
14. Remove the three screws **(8)** you loosened in step 11.
15. Remove the motor plate **(7)** with the attached motor assembly **(12)**.
16. Separate the motor **(12)** from the mounting plate **(7)** by removing the three screws **(13)**.

(continued on next page)

Table 444. Drum Motor (M107), Drive Belt, and Drum Rotation Sensor (S105) (continued)



Installation

1. Reverse the removal procedure to install a new:
   - Drum motor
   - Drum motor drive belt
   - Drum rotation sensor

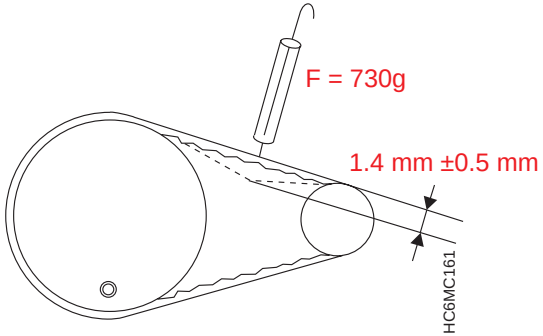
Note: Make sure the pulley **(11)** has the magnet facing out.

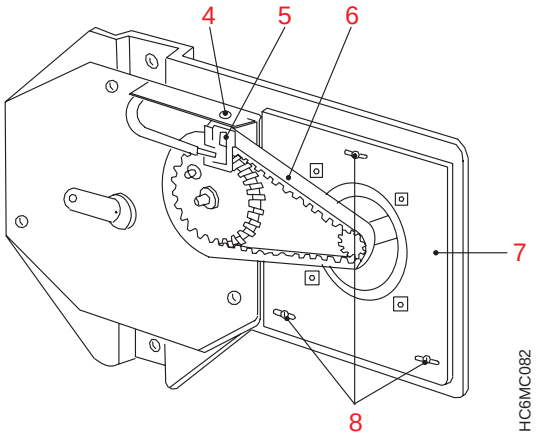
Hint

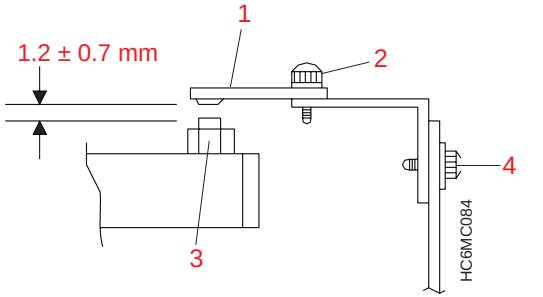
When you replace the pulley **(11)**, have the shaft with the slot facing up. This makes it easier to capture the key **(14)** while you remount the pulley.

(continued on next page)

Table 444. Drum Motor (M107), Drive Belt, and Drum Rotation Sensor (S105) (continued)







Check and Adjustment

1. With the 3 screws **(8)** loosened, move the motor plate **(7)** to tighten the belt **(6)**.
2. Adjust the belt to deflect as shown.

Note: Ensure that the belt seats with the teeth in the grooves of both pulleys.

3. Tighten the three screws **(8)**.
4. Set the drum rotation sensor gap to the magnet **(3)** and tighten the screw **(2)**.
5. Run Print Pack to verify print quality.

PC Drum Removal

Table 445. PC Drum Removal

Attention:

The photoconductive surface of the drum is sensitive.

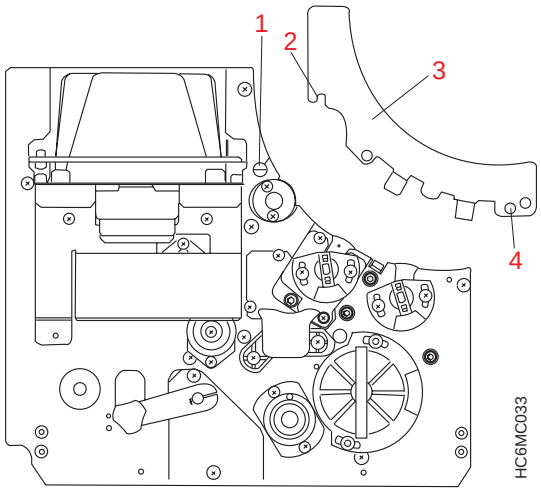
- Do not expose the photoconductive surface to light for more than

5 minutes

.

- Do not touch the photoconductive surface; handle the drum from the inside only or wear plastic gloves.

The drum is easily scratched and is sensitive to all contamination.



(continued on next page)

Special Tools Required:

- Drum shaft extension (P/N 06F1025)
- Drum bag or empty box
- Lint-free cloth (P/N 2108930)
- Molycoat G (P/N 0357830)
- Gloves, plastic (P/N 2200041)

Removal

Hint

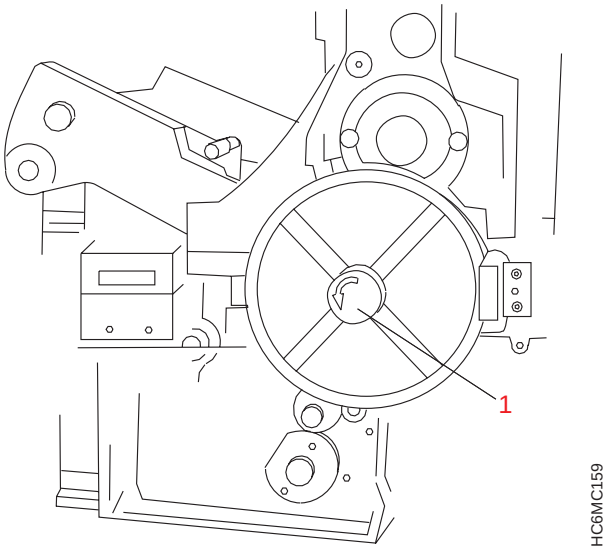
If you are planning to replace the PC drum, run and fuse approximately 50 pages of Print Pack.

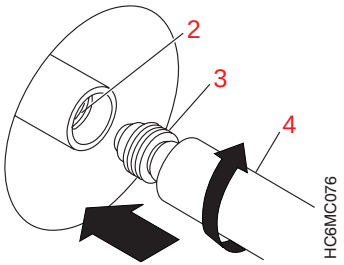
After you have replaced the PC drum, run and fuse approximately 50 pages of Print Pack and compare the two print samples for background, solid area fill, and stroke width. If the print quality changed from good to bad with the new PC drum, the PC Drum Surface Voltage may need to be adjusted.

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the front covers.
4. Remove the screw **(4)** and loosen the shoulder screw **(1)**.

   Remove the developer front seal **(3)**. Lift the developer front seal up to release it from the slot **(2)**.

Table 445. PC Drum Removal (continued)



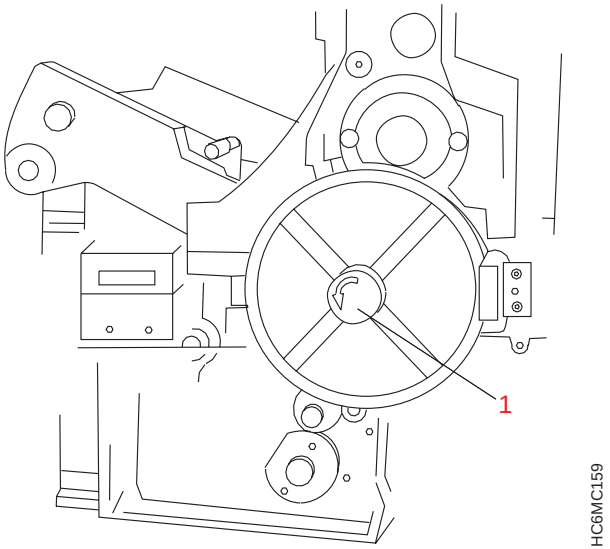


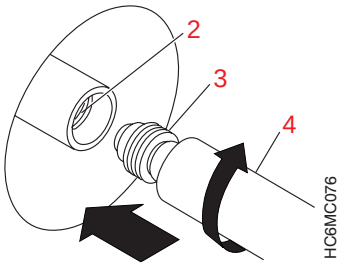
(continued on next page)

CAUTION:
<58> Drum shaft threads are sharp. To avoid cutting yourself, do not use excessive pressure when wiping the threads.

5. Unscrew the drum knob **(1)** and remove it from the drum shaft.
6. With a lint-free cloth, remove any foreign material from the threads by doing the following:
   a. Wipe the internal threads of the drum shaft **(2)**
   b. Wipe the external threads of the drum shaft extension **(3)**.
7. If necessary, lightly coat the threads with molycoat G grease.

Table 445. PC Drum Removal (continued)





(continued on next page)

CAUTION:
<58> Drum shaft threads are sharp. To avoid cutting yourself, do not use excessive pressure when wiping the threads.

8. Install the drum shaft extension **(4)** where you removed the knob.

Note: The drum shaft extension should be only hand-tightened.

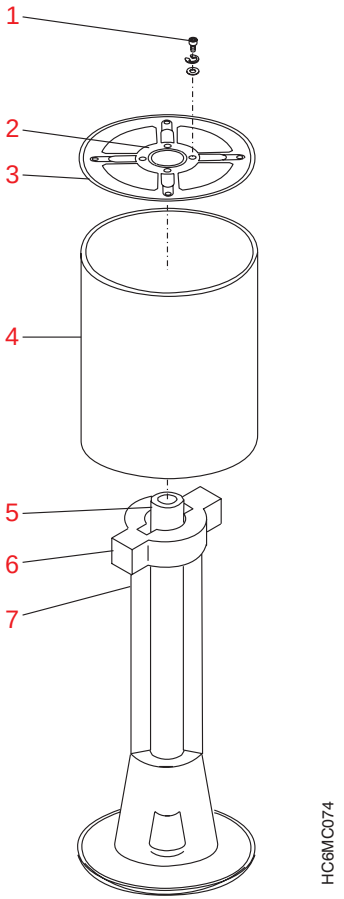
9. Wipe the surface of the drum shaft extension with a lint-free cloth.
10. Open the transfer station.

Attention: Do not apply downward pressure on the drum while you remove it. This could result in scratches on the drum.

11. Carefully slide the PC drum onto the drum extension shaft.
12. Remove the PC drum from the extension shaft and store it in a drum bag or box.

Note: You may remove the drum extension shaft temporarily after you have removed the drum. but you must reattach it before you reinstall the drum.

Table 445. PC Drum Removal (continued)



(continued on next page)

Installation

If you are installing a new drum, perform the following steps. If not, go to step 10.

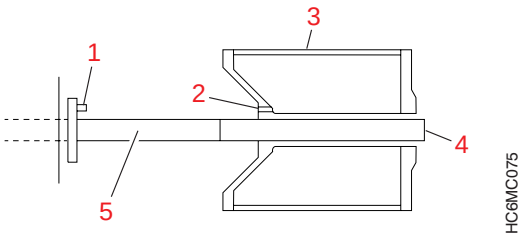
1. Run the PM Log to reset the drum PM counter.
2. Remove the four screws **(1)** and washers that secure the front end plate **(2)** to the PC drum support end plate **(3)**.
3. Remove the front end plate **(2)**.
4. Lift the PC drum **(4)** from the PC drum support **(5)**.
5. Clean excess toner from the front end plate **(2)**, the drum support end plate **(3)**, and the PC drum support **(5)**.
6. Remove the new PC drum from its box and install it on the PC drum support **(5)**.
7. Place the old PC drum in the box. Follow the instructions that were shipped with the box to dispose of the old drum.
8. Align the hole in the front end plate **(2)** with the aligning pin on the PC drum support **(6)**.
9. Alternately tighten the four screws **(1)**, one turn at a time to evenly seat the end plate **(2)** to the PC drum **(4)** and the drum support **(5)**.
10. Clean the drum shaft and the drum shaft extension before you reinstall the PC drum.

Table 445. PC Drum Removal (continued)

11. Carefully install the drum in the printer.

To ease the installation and prevent damage to the PC drum, pay attention to the following:

a. Rotate the drum shaft extension **(4)** and the drum shaft **(5)** clockwise until the pin **(1)** on the rear of the drum frame is at the top position



b. Carefully slide the PC drum **(3)** onto the drum shaft extension **(4)** until the pin **(1)** is fully seated into the hole **(2)** of the PC drum support.

Note: The drum is keyed to fit on the shaft in the printer. The surface of the hole into which the PC drum retaining plug fits is approximately flush with the inner end surface of the drum when the drum is completely inserted.

12. Attach the developer front seal.
    a. Ensure that the PC drum it is in its fully-loaded position.
    b. Ensure that the foam projections (tabs) fit into their respective slots without binding
    c. Ensure that the seal plate is flush to the side wall of the developer.
13. Power on the printer.
14. You should check the PC Drum Surface Voltage after you have changed the drum. If an electrostatic voltmeter (ESV) is not available, postpone the voltage check until an ESV is available.

Verify

1. Run Print Pack to verify print quality.

Note: If background or light print occurs, check the PC Drum Surface Voltage.

PC Drum Cleaning

Table 446. PC Cleaning

Special Tools Required:

- Drum shaft extension (P/N 06F1025)
- Lint-free cloth (P/N 2108930)
- Isopropyl alcohol (P/N 2200200)
- Gloves, plastic (P/N 2200041)

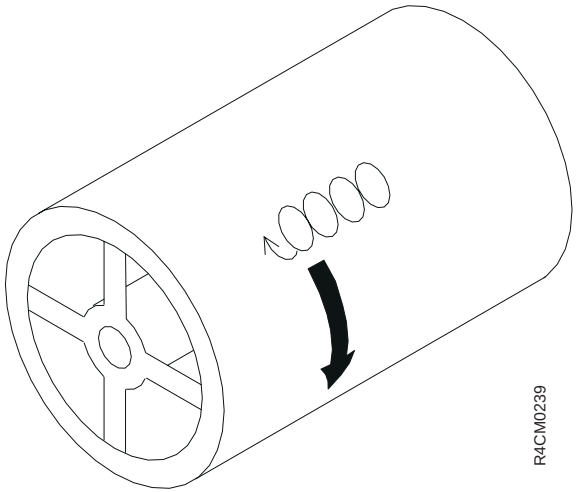
Purpose

- Follow this procedure to remove fused toner or adhesives from the photoconductive surface of the PC drum. Wear gloves while you perform this procedure.

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Do PC drum removal steps 3 through 11.
4. Pull the PC drum out just far enough onto the drum shaft extension to access the drum surface. Do not remove the drum from the drum shaft extension.

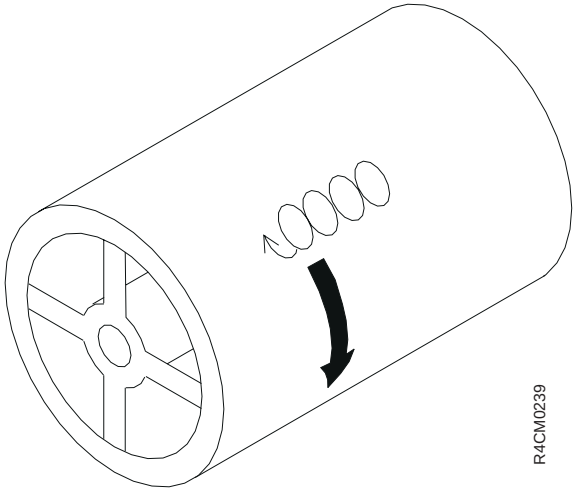
(continued on next page)



Notes About Cleaning

1. Always rotate the PC drum clockwise to prevent unscrewing the drum shaft extension.
2. Always wipe the drum with an overlapping circular motion.
3. Begin at the rear and work toward the front of the printer during each step of this cleaning procedure.
4. Do not apply excessive pressure when cleaning the drum.
5. Do not attempt to completely remove discoloration during a single cleaning. Several cleanings reduce the risk of scratching the PC.
6. The drum surface is made of a soft coating that can be damaged easily.

Table 446. PC Cleaning (continued)



Note: If there are deep scratches in the drum surface, you may have to replace the drum.

1. Wipe the PC drum with a dry, lint-free cloth to remove any loose toner and developer beads.
2. Moisten a lint-free cloth with alcohol. Do not pour the alcohol directly onto the PC drum.

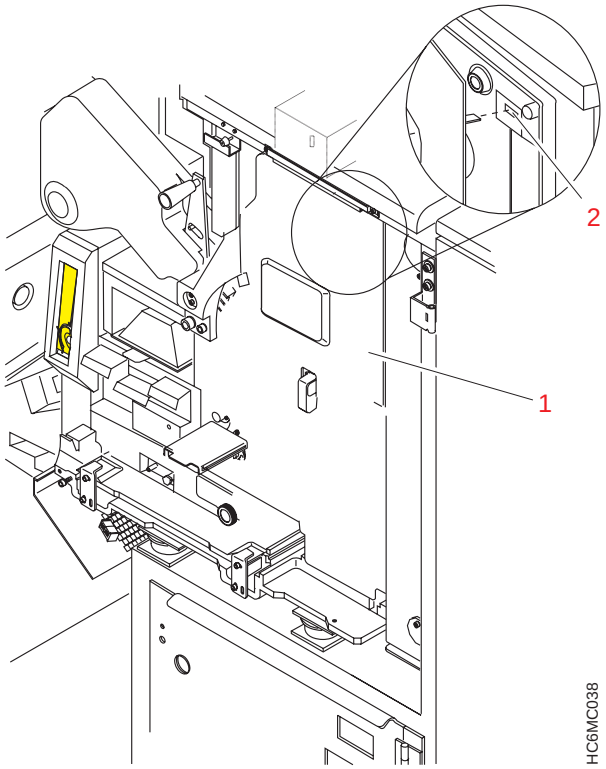
Attention: Ensure that no alcohol spills onto printer parts.

3. Wipe the PC surface with the moistened cloth.
4. Use a clean, dry, lint-free cloth to wipe the PC surface to remove streaks or film. Rotate the PC drum clockwise as you clean it.
5. Ensure that the drum is free of streaks. If it is not, perform the cleaning procedure again.
6. Install the drum.
7. Power on the printer.
8. Run Print Pack to verify print quality. Run 100 to 200 pages.

   If the background defects continue, run another 200 pages before you go back to the print quality MAP.

PC Drum Cover Interlock Switch (S118)

Table 447. PC Drum Cover Interlock Switch (S118)



Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the right center front cover.
4. Remove the drum cover **(1)**.
5. Remove the two screws; carefully remove the switch mounting plate and sensor **(2)**.
6. Disconnect connector PJ156.
7. Loosen the wire clamp.
8. Remove the screw and the interlock switch.

Installation

1. Reverse the removal procedure to install a new drum cover interlock switch.

Adjustment

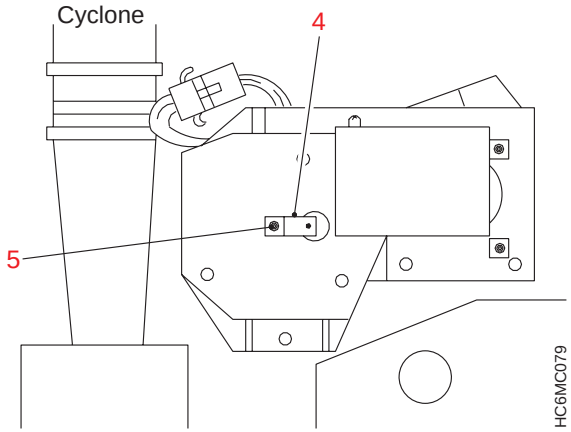
1. Adjust the tab on the drum cover so that it passes through the slot in the switch mounting plate without interference.

Check

1. Power on the printer.
2. Run Sensor Routine 59 to ensure that the switch is working correctly.

Drum Ground

Table 448. Drum Ground



Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the rear covers.
4. Remove the process and filter covers.
5. Remove the screw **(5)** to remove the drum ground **(4)**,

Installation

1. Reverse the removal procedure to install a new drum ground.

Check and Adjustment

1. Ensure that the drum ground makes contact with the end of the shaft.

PC Drum & Developer Clearances/Gaps

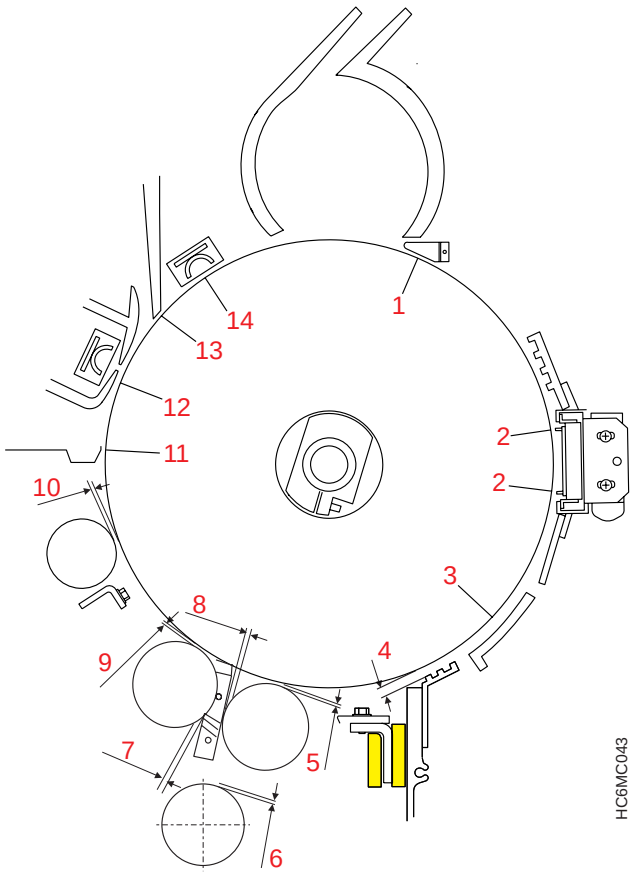
Table 449 indicates the locations around the PC drum where you must measure the gap to ensure the correct clearance between individual parts and the PC drum.

If you are getting scratches on the PC drum, use the values in the table to correctly adjust the gap between the PC drum and the parts listed in the table.

IMPORTANT:

- Ensure that the mag brush rolls and the scavenger roll punch marks (high points) are towards the PC drum.
- Ensure that the Drum Clearance Gauge is calibrated.
- Remember to subtract 5 mm from the reading on the drum gauge to obtain the values shown in the following table.

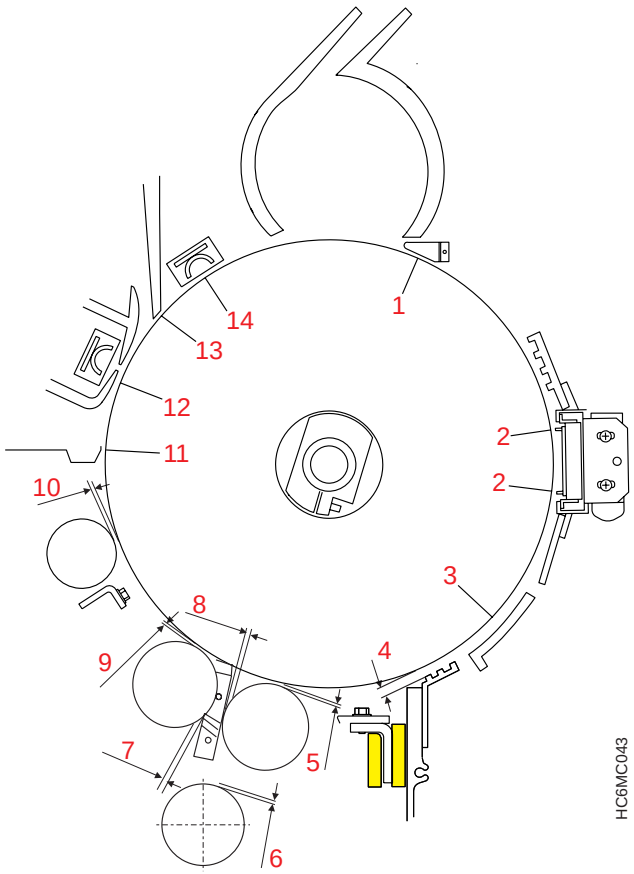
Table 449. Drum & Developer Clearances



Item	Part	Distance from Drum (in mm)
1	Cleaner Skirt	1.0 ±0.2 mm
2	Charge Corona: Developer Mix P/N 1402829 Developer Mix P/N 1402718	 1.5 ±0.2 2.0 ±0.2
3	Electrostatic Probe Rail	1.5 ±0.5

(continued on next page)

Table 449. Drum & Developer Clearances (continued)



Item	Part	Distance from Drum (in mm)	
		Adjustment value	**Check value**
4	Developer Seal Plate	0.8 ±0.1	0.8 ±0.15
5	Mag Brush Roll A	1.35 ±0.05	1.35 ±0.10
6	Lift Plate	0.55 +0.20, −0.15	0.55 ±0.25
7	Doctor Plate B	0.95 ±0.07	0.95 ±0.16
8	Doctor Plate A	0.85 ±0.07	0.85 ±0.15
9	Mag Brush Roll B: Developer Mix P/N 1402829 Developer Mix P/N 1402718	 1.20 ±0.05 1.15±0.05	 1.20 ±0.10 1.15±0.10
10	Scavenger roll	0.60 ±0.10	0.60 ±0.15
11	Chad Tray	1.0 ±0.3	
12	Upper Retractor	0.5 + 0.15	
13	Erase Lamp Cover	5.0 ±1.0	
14	Preclean Corona	9.0 ±0.5 (see note)	

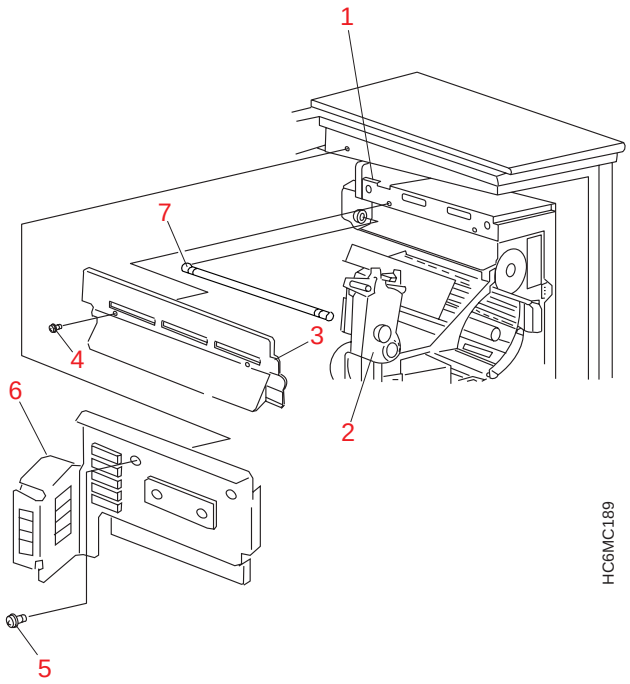
Note: The preclean corona dimension cannot be checked with the indicator portion of the drum clearance gauge.

Erase Lamp

Erase Lamp (PL101) 1662
Erase Lamp Sensor (S115) 1664
Erase Lamp Starter (ST101) 1666

Erase Lamp (PL101)

Table 450. Erase Lamp (PL101)



(continued on next page)

Special Tools Required:

- Drum shaft extension (P/N 06F1025)
- Drum bag or empty box

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Remove the photoconductor (PC) drum and store it in a drum bag or protective box.
4. Open the transfer station **(2)**.
5. Remove the two screws **(5)** and the upper cover **(6)**.
6. Mark the position of the erase lamp cover **(3)** on the erase lamp holder **(1)** before you remove it.

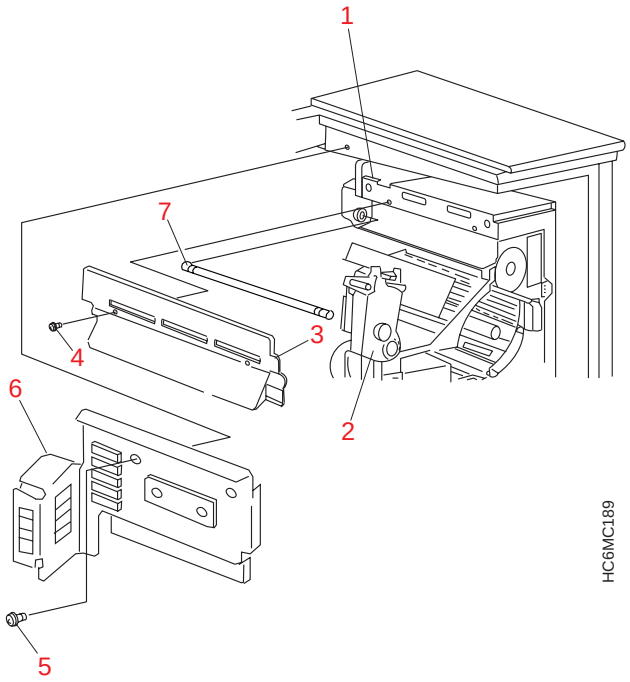
Note: By doing this you do not have to adjust the gap between the erase lamp cover and the PC drum when you reinstall the cover.

7. Remove the two screws **(4)** and the erase lamp cover **(3)**.
8. Turn the erase lamp **(7)** 90° counterclockwise and remove it.

Installation

1. Use a clean, dry cloth to wipe toner, paper dust, or other contaminants from the blue filter (which is under the erase lamp **(7)**), and the lamp housing.
2. Reverse the removal procedure to install a new erase lamp.

Table 450. Erase Lamp (PL101) (continued)



Check and Adjustment

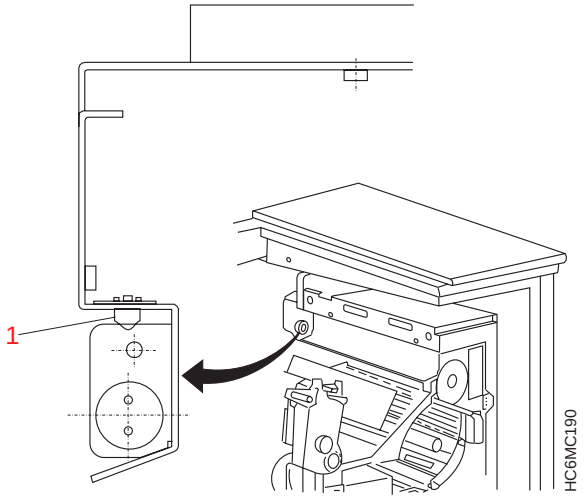
1. Check the gap between the erase lamp cover **(3)** and the PC drum.
2. Power on the printer.
3. Ensure that the erase lamp is lighting.

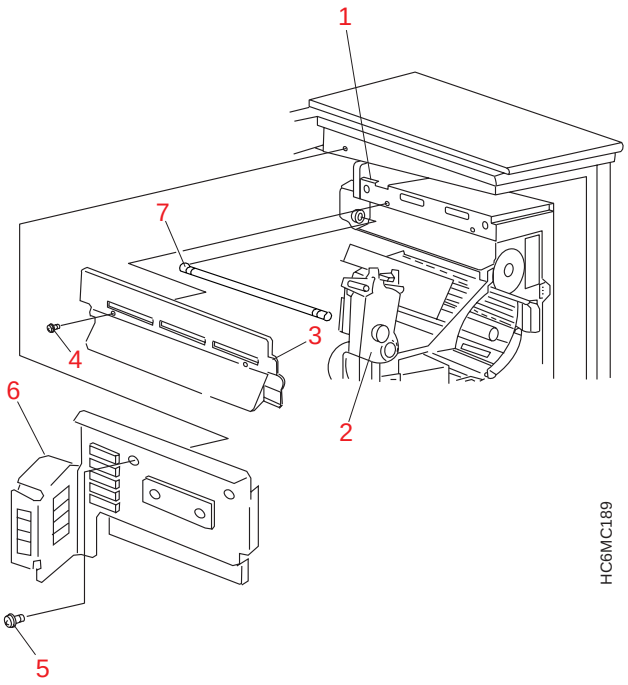
Verify

1. Run Print Pack to verify that the erase lamp is working correctly.

Erase Lamp Sensor (S115)

Table 451. Erase Lamp Sensor (S115)





Special Tools Required:

- Drum shaft extension (P/N 06F1025)
- Drum bag or empty box

Removal

1. Follow the Removal steps for the Erase Lamp.
2. Disconnect connector PJ125 (not shown) and disconnect the cable clamp (not shown).
3. Remove the sensor **(1)** and its lead wires.

Installation

1. Reverse the removal procedure to install a new erase lamp sensor.

Check and Adjustment

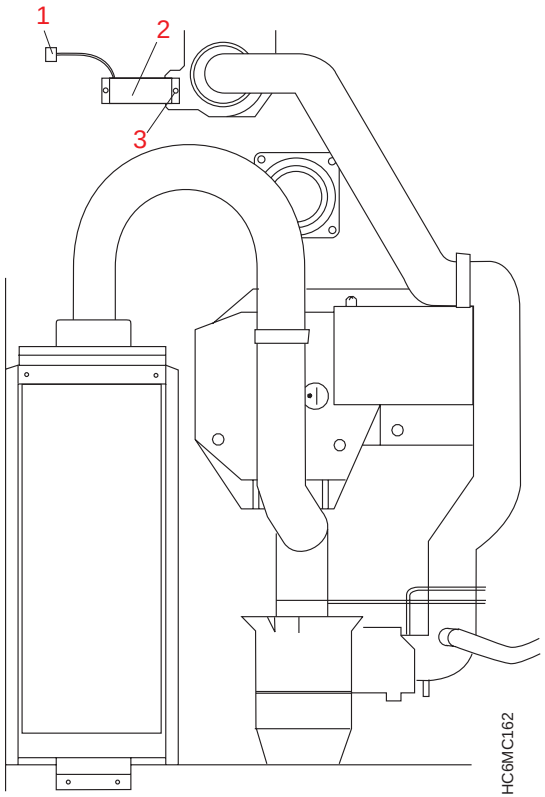
1. Check the gap between the erase lamp cover **(3)** and the PC drum.
2. Power on the printer.
3. Ensure that the erase lamp is lighting.

Verify

1. Run Print Pack to verify that the erase lamp is working correctly.

Erase Lamp Starter (ST101)

Table 452. Erase Lamp Starter (ST101)



Special Tools Required:

- None

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the left rear cover.
4. Disconnect connector PJ159 **(1)**.
5. Remove the two screws **(3)** to remove the starter (ST101) **(2)**.

Installation

1. Reverse the removal procedure to install a new starter.

Verify

1. Run Print Pack to verify print quality.

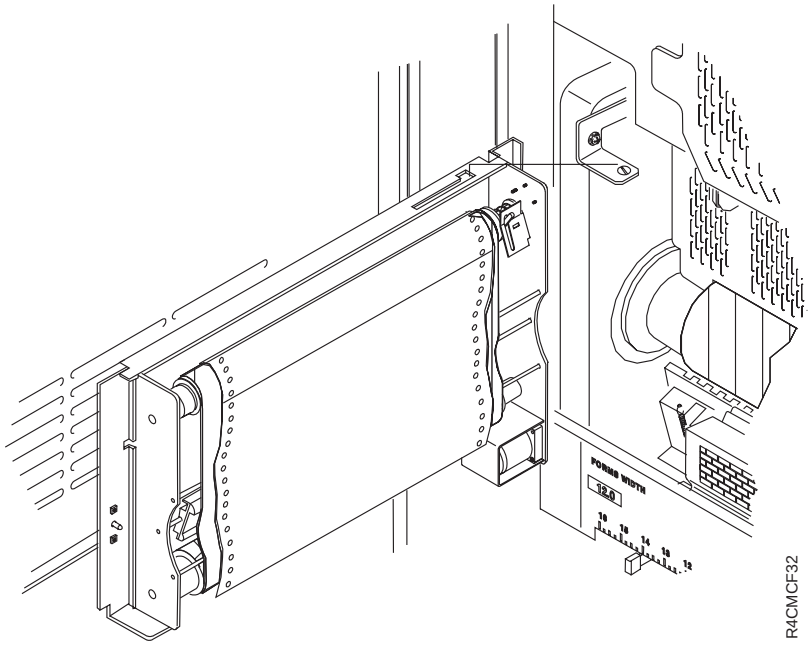
Fuser

Before You Begin 1669
Backup Roll 1670
Backup Roll Discharge Brush 1672
Backup Roll Encoder (S712) 1673
Backup Roll Lift Motor (M610) 1675
Backup Roll Lift Motor Drive Belt 1677
Backup Roll Lift Position Sensor (S624) 1683
Backup Roll Motor (M701) 1684
Fuser Control Card (DV071) 1685
Fuser Exhaust Fans (B701 & B702) 1687
Fuser Wrap Sensor (S617) 1688
Hot Roll Drive Assembly Removal & Lubrication 1690
Hot Roll and Collars 1692
Hot Roll Drive Collar 1695
Hot Roll Drive Motor (M703) 1696
Hot Roll Front Hub 1698
Hot Roll Lamps 1700
Hot Roll Lamp End Cap 1704
Hot Roll Lamp Receptacle Contacts 1706
Hot Roll Thermistors (S621, S622, S623) 1708
Hot Roll Temperature Control Sensor (S701) and Over-temperature Sensor (S705) 1710
  Hot Roll Temperature Control Sensor (S701) 1711
  Hot Roll Over-temperature Sensor (S705) 1712
Oiler Belt End Switch (S711) 1713
Oiler Belt Motor (M706) 1715
Oiler Gate Interlock (S704) 1717
Oil Pan 1718
Oil Port Assembly 1719
Oil Pumps (L701, L702, and L703) & Oil Empty Sensor (S702) 1720

Paper Cooling Fans (B704 and B706) 1725
Paper Cooling Fans (B705 and B707) 1726
Preheat Platen 1727
Preheat Platen Lift Plate Assembly 1728
Scuff Pressure Rollers 1730
  Scuff Roller Pressure Check 1732
Scuff Roll 1734
Scuff Roll Drive Belt and Motor (M704) 1736
Scuff Roll Release Cable 1737
Skew Sensor (S707) 1739
Solid State Relays (SR601, SR602 & SR603) 1745
Steering Motor (M705) 1747
Tension Arm Encoder Sensors (S708, S709 & S710) 1750

Before You Begin

Throughout this section of Removals and Adjustments, you are asked to work in a high-temperature area or with the oiler belt gate open. Keep the following suggestions in mind as you work in these areas.



CAUTION:
<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

When you see this Caution notice, do the following to aid in cooling the fuser area:

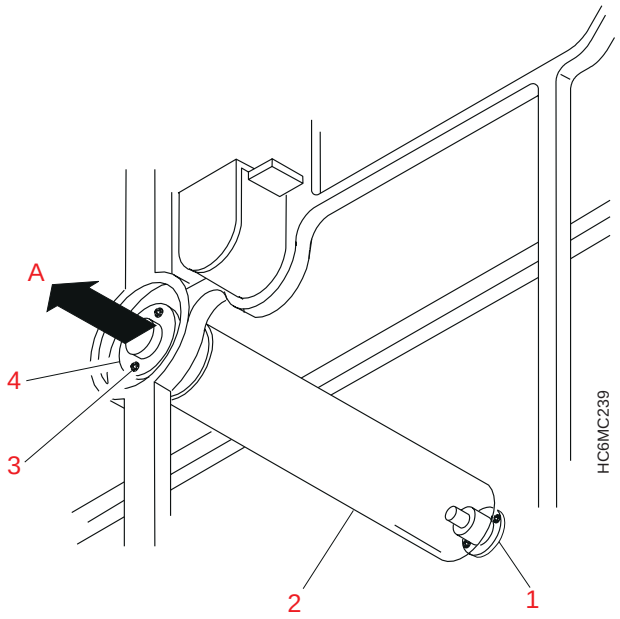
1. Open the stacker end cover.
2. Open and lock the oiler belt gate.

Clothing Damage

Fuser oil and other contaminants from the fuser oiler belt can damage your clothing. While you work in this area, cover the oiler belt with several lays of forms or paper towels.

Backup Roll

Table 453. Backup Roll



(continued on next page)

CAUTION:
<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

See Before You Begin.

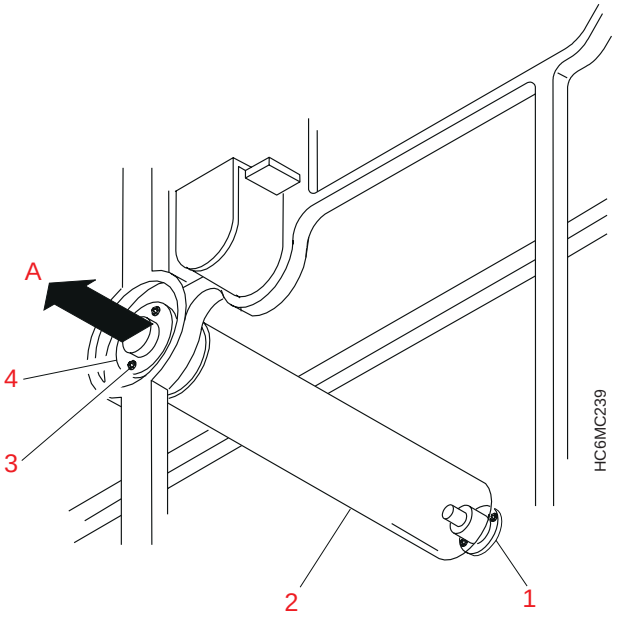
Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the left front cover.
4. Remove the Hot Roll Lamp End Cap.
5. Remove the Hot Roll Lamps.
6. Perform steps 3 through 5, and 8 under Hot Roll Front Hub.
7. Perform steps 6 through 9 under Hot Roll and Collars.

Attention: Screws in this area can damage the backup roll surface.

Place several layers of paper in the area under the backup roll and over the scuff roll drive motor and scuff roll cooling fan covers.

Table 453. Backup Roll (continued)



8. Remove the two screws **(3)** in the backup roller front support pin **(4)**.
9. While you hold the backup roll **(2)**, pull the front support pin in the **(A)** direction out through the front of the printer frame.

Note: Do **not** remove the backup roll through the hole in the fuser front casting.

10. Carefully move the backup roll to the front to disengage it from the rear support pin **(1)** and then remove the backup roll.

Installation

1. Reverse the removal procedure to install a new backup roll.

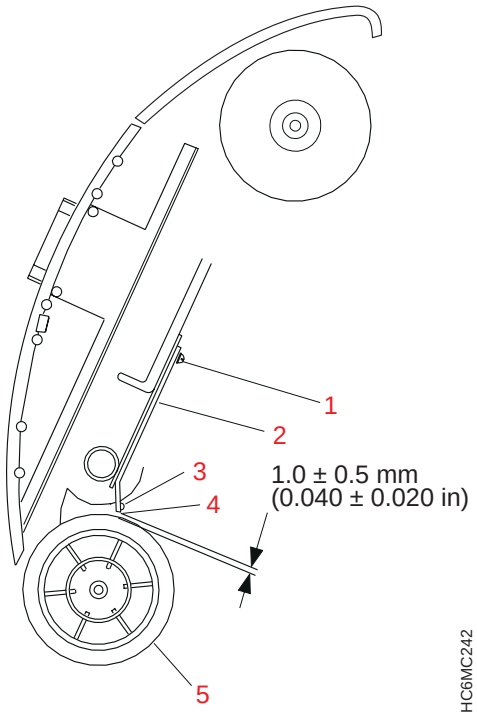
   A new backup roll is wrapped in paper. To protect the backup roll, do not remove the paper until the roll is installed.
2. Ensure that the rear support pin is seated correctly in the backup roll rear bearing.
3. Power on the printer.
4. When you have installed a new backup roll, select **PM Log** on the Logs menu to reset the backup roll counter to 0.

Verify

1. Run Print Pack to verify print quality.

Backup Roll Discharge Brush

Table 454. Backup Roll Discharge Brush



CAUTION:
<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

See Before You Begin.

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the left front cover.
4. Remove the preheat plate assembly (Backup Roll Lift Motor Drive Belt).
5. Loosen the two screws **(1)** and remove the discharge brush holder **(2)**.
6. Remove the two screws **(3)** and remove the discharge brush **(4)**.

Installation

1. Reverse the removal procedure to instal a new backup roll discharge brush.
2. Power on the printer.

Adjustment

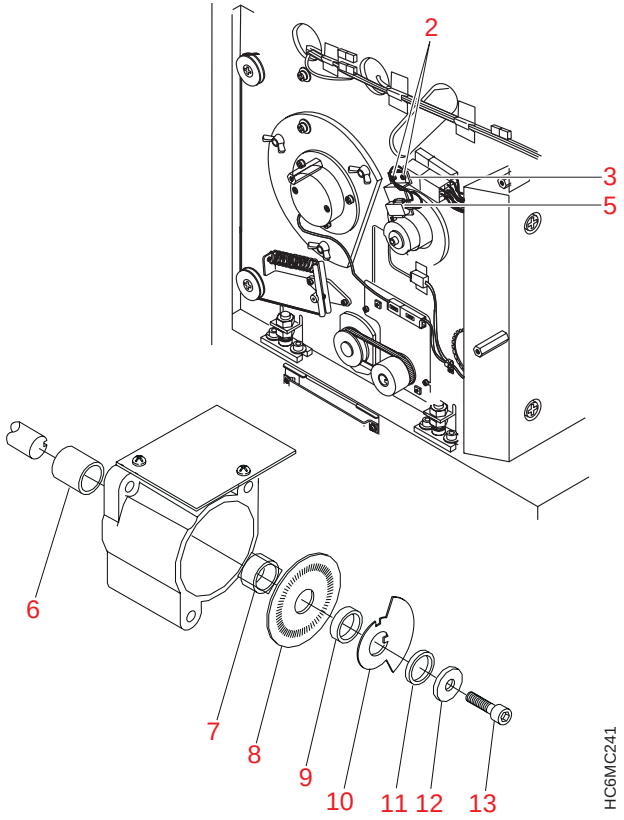
1. Adjust the discharge brush holder **(2)** so that the gap between the discharge brush **(4)** and the backup roll **(5)** is 1.0 ±0.5 mm (0.040 ±0.020 in.).

Verify

1. Run Print Pack to verify print quality.

Backup Roll Encoder (S712)

Table 455. Backup Roll Encoder (S712)



(continued on next page)

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the left front cover.
4. Disconnect connector PJ702 **(3)**.
5. Remove the two screws **(2)** to remove the backup roll encoder sensor **(5)**.

Attention: The timing wheel and disk bend easily.

6. Remove the screw **(13)** and **carefully** disassemble the encoder.

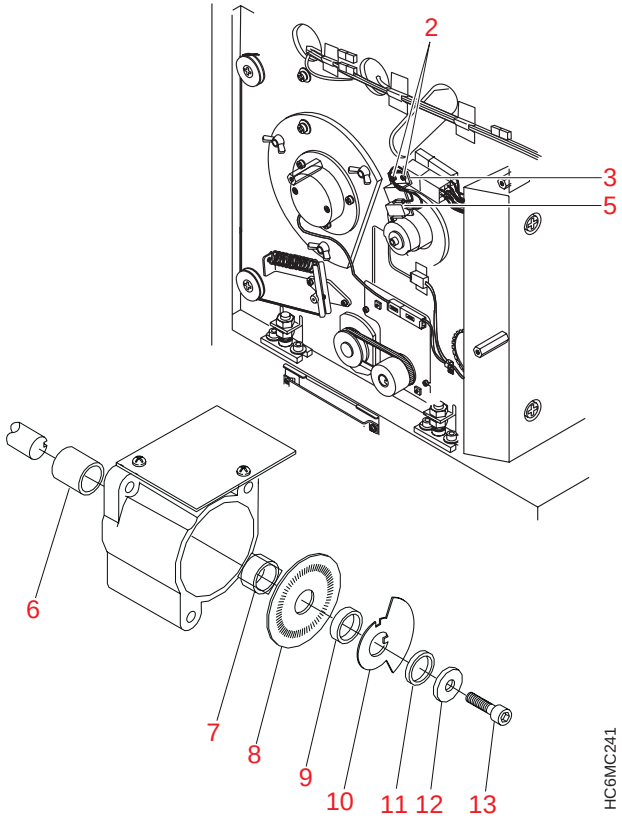
Installation

Note:

- The 5 spacers **(6)**, **(7)**, **(9)**, **(11)**, and **(12)** are different sizes. Ensure that these spacers are installed correctly, or the timing disk and timing wheel can be damaged.
- The notch in timing disk **(10)** must be oriented as shown during assembly.
- The shiny surface of the timing wheel **(8)** must face the front of the printer.

1. Reverse the removal procedure to install a new backup roll encoder.
2. Power on the printer.

Table 455. Backup Roll Encoder (S712) (continued)



Check

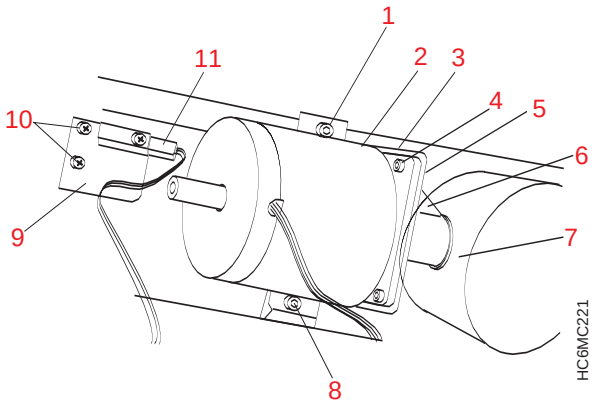
1. Run Driver Routine 25 to run the backup roll motor and to ensure that the encoder shaft is turning properly.
2. Run Sensor Routine 71 and 72 to ensure that the backup roll encoder works correctly.

Verify

1. Run Print Pack to verify print quality.

Backup Roll Lift Motor (M610)

Table 456. Backup Roll Lift Motor (M610)



(continued on next page)

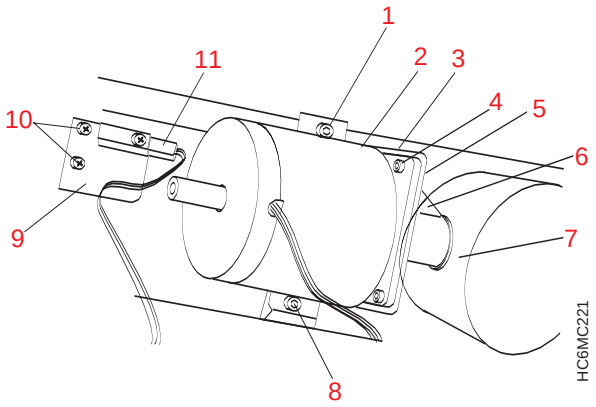
Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the left front cover, the center front cover, and the top cover.
4. Remove the fuser right side cover.
5. Disconnect connector PJ6018 **(11)**.

Note: The backup roll lift motor **(2)** is located to the left (towards the front of the printer) of the backup roll steering motor **(7)**.

6. Remove the two hex socket head bolts (not shown) that hold the backup roll lift motor holder **(3)** to the preheat platen frame. Slip the drive belt **(6)** off the lift motor pulley as you remove the lift motor/holder assembly.
7. Remove the two screws **(4)** that attach the lift motor **(2)** to the holder **(3)**.

Table 456. Backup Roll Lift Motor (M610) (continued)



Installation

1. Reverse the removal procedure to install a new backup roll lift motor.
2. Push the motor mounting bolts to the top of the slotted holes in the motor holder to put tension on the drive belt and then tighten the bolts.
3. Power on the printer.

Check

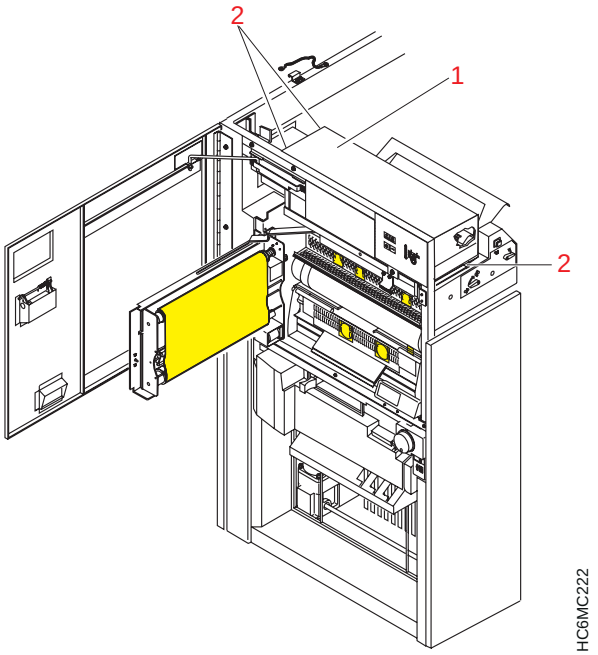
1. Run Driver Routine 4D to ensure that the lift motor and sensor are operating correctly.

Verify

1. Run Print Pack to verify print quality.

Backup Roll Lift Motor Drive Belt

Table 457. Backup Roll Lift Motor Drive Belt

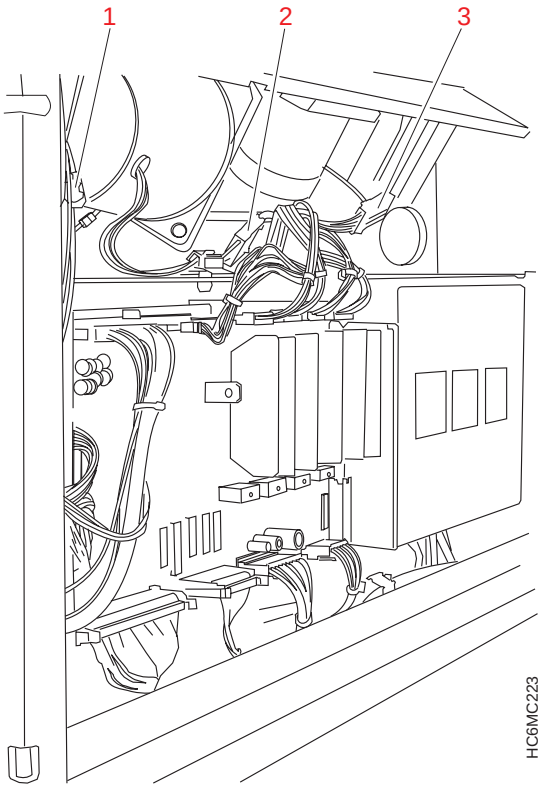


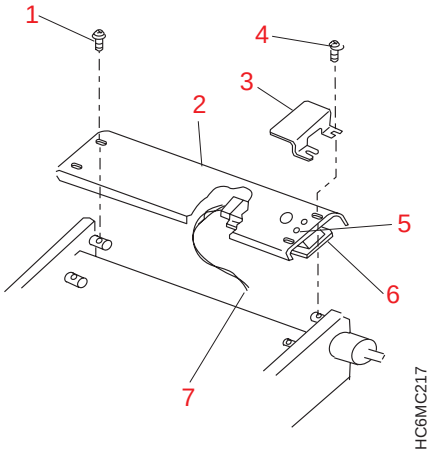
(continued on next page)

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the top cover, the center left front cover, and the center right front cover,
4. Remove the right rear cover.
5. Remove the fuser right side cover.
6. Remove the preheat platen front cover and the hot roll shield.
7. Remove the fuser oil filter assembly **(1)** by removing the three screws **(2)**.
8. Remove the Hot Roll Lamps.
9. Remove the Hot Roll and Collars.
10. Remove the Preheat Platen.
11. Remove the Backup Roll.

Table 457. Backup Roll Lift Motor Drive Belt (continued)

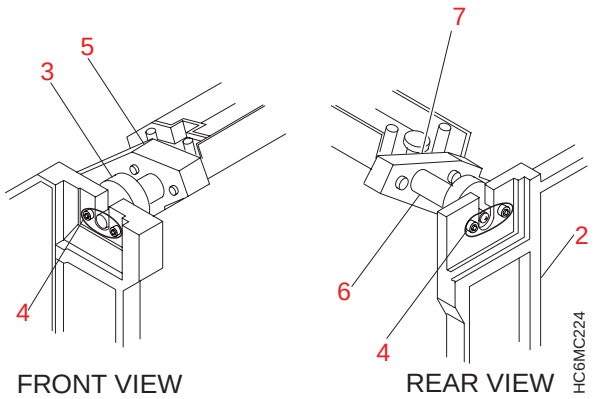




Remove the Preheat Platen Frame Assembly

1. Remove cable connectors J6018 **(1)**, and J6020 **(2)**, and J712 **(3)** (not shown).
2. Remove the four screws **(1)** from the shutter plate **(2)** and lift the plate from the shutter assembly.
3. Disconnect connector PJ704 **(5)** from the sensor board.

Table 457. Backup Roll Lift Motor Drive Belt (continued)

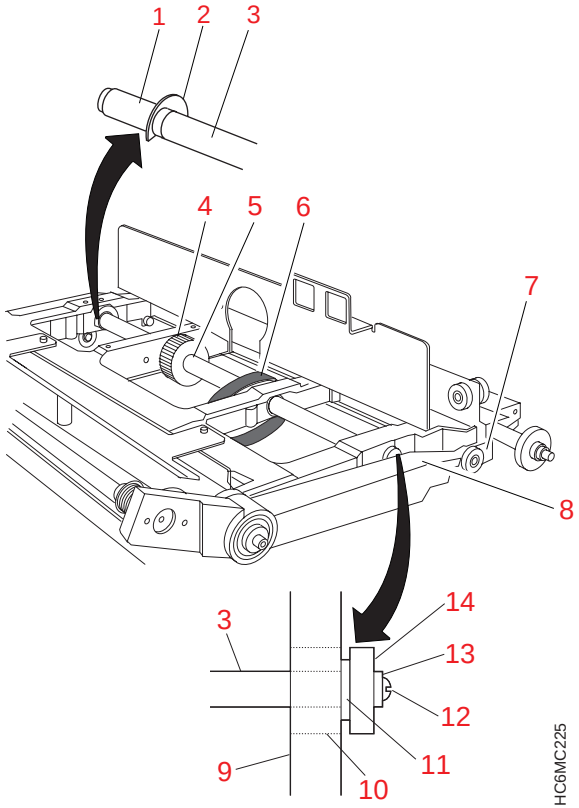


(continued on next page)

Note: Two people are required to lift the preheat platen frame assembly out of the fuser frame and to reinstall it.

4. Remove the four screws **(4)** (two on the front side and two on the rear side) that hold the preheat platen frame assembly to the fuser frame.
5. Remove the screw and washer **(5)** (not shown) and remove the support **(3)** that holds the preheat platen assembly to the fuser frame.
6. Remove the bolt and washer **(7)** (not shown) and remove the support **(6)** that holds the preheat platen assembly to the fuser fame.
7. Lift the preheat platen frame assembly out of the fuser frame.

Table 457. Backup Roll Lift Motor Drive Belt (continued)

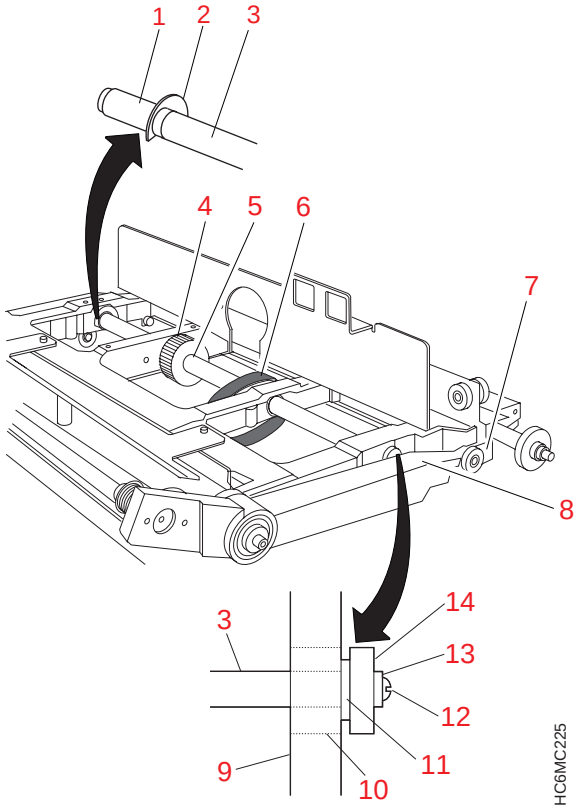


(continued on next page)

Replace the Backup Roll Lift Motor Drive Belt

1. Lay the frame assembly on a flat working surface with the backup roll lift motor and the steering motor facing upward.
2. Use Backup Roll Lift Motor (M610) to remove the backup roll lift motor/holder from the preheat platen frame.
3. Use Steering Motor (M705) to remove and keep the two steering motor cable springs, the steering motor short cable, and the steering motor/pulley.
4. Lift up both the front and rear backup roll arms **(8)** to gain access to the stopper plates **(7)** and drive shaft cams **(14)**.
5. Remove the two bolts mounting each of the front and rear stopper plates **(7)** (the stopper plate is identified by the included hex socket head set screw and locking nut).
6. Use the Removal procedures in Backup Roll Lift Position Sensor (S624) to remove the lift position sensor block from the preheat platen frame.
7. Remove the two C-clips **(5)** on either side of the drive gear **(4)**; slide the gear on the drive shaft **(3)**; and remove the gear key (not shown).
8. Remove the screw **(13)** and washer **(12)** from both the front and rear cams **(14)** on the ends of the drive shaft **(3)**.
9. Remove both the front and rear cams **(14)**, along with a spacer **(11)** and a key (not shown) for each cam, from the ends of the drive shaft.

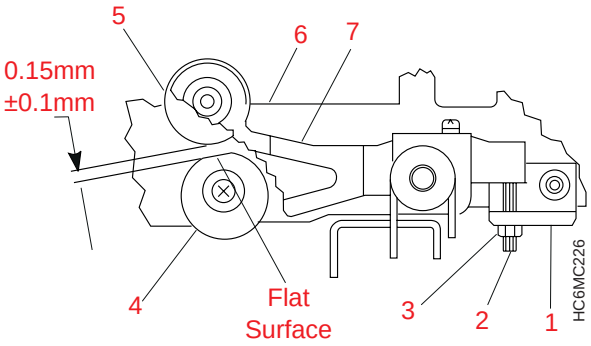
Table 457. Backup Roll Lift Motor Drive Belt (continued)



(continued on next page)

10. Pull the drive shaft **(3)** out the rear side of the preheat platen frame through the rear bearing **(10)** about two inches.
11. Pull the sleeve **(1)** off of the front end of the drive shaft, and remove the keyed drive shaft sensor disk **(2)**.
12. Pull the drive shaft completely out of the rear side of the frame so that the drive belt **(6)** may be removed off of the shaft and replaced.
13. Perform steps 2 through 12 above in reverse order to reassemble the drive shaft containing a new drive belt.
    Note: Ensure that the spacer **(11)** is installed between the bearing **(10)** and the cam **(14)** when you reinstall both the front and rear cams.

Table 457. Backup Roll Lift Motor Drive Belt (continued)



Preheat Platen Frame Assembly Adjustment

1. Loosen the locking nut **(3)** on the front stopper plate **(1)**.
2. Adjust the hex socket head set screw **(2)** so that the gap between the flat surface on the cam **(4)** and the opposing roller **(5)** is 0.15 ±0.1 mm.
3. Apply grease to the in-contact surfaces of both the cam and the opposing roller.
4. Perform the three steps above on the rear stopper plate.

Installation

1. Reverse the removal procedure to reassemble the printer containing a replacement backup roll lift motor drive belt.
2. Power on the printer.

Check

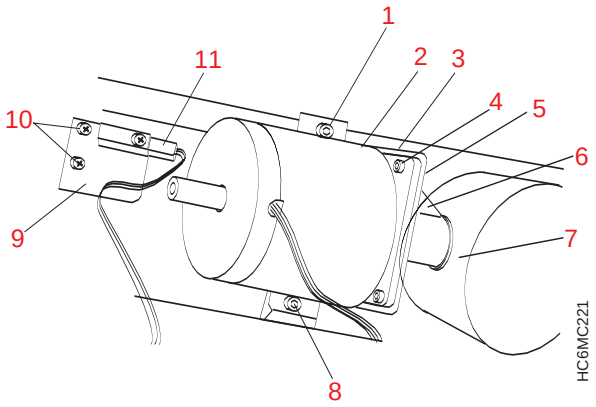
1. Run Driver Routine 4D to ensure that the lift motor and sensor are operating correctly.

Verify

1. Run Print Pack to verify print quality.

Backup Roll Lift Position Sensor (S624)

Table 458. Backup Roll Lift Position Sensor (S624)



Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the top cover, the left front cover, and the center left front cover.
4. Remove the fuser right side cover.
5. Remove the two Phillips pan head screws **(10)** and remove the backup roll lift position sensor assembly **(9)**.
6. Disconnect connector PJ6019 **(11)** from the sensor assembly.

Installation

1. Reverse the removal procedure to install a new backup roll lift position sensor.
2. Power on the printer.

Check

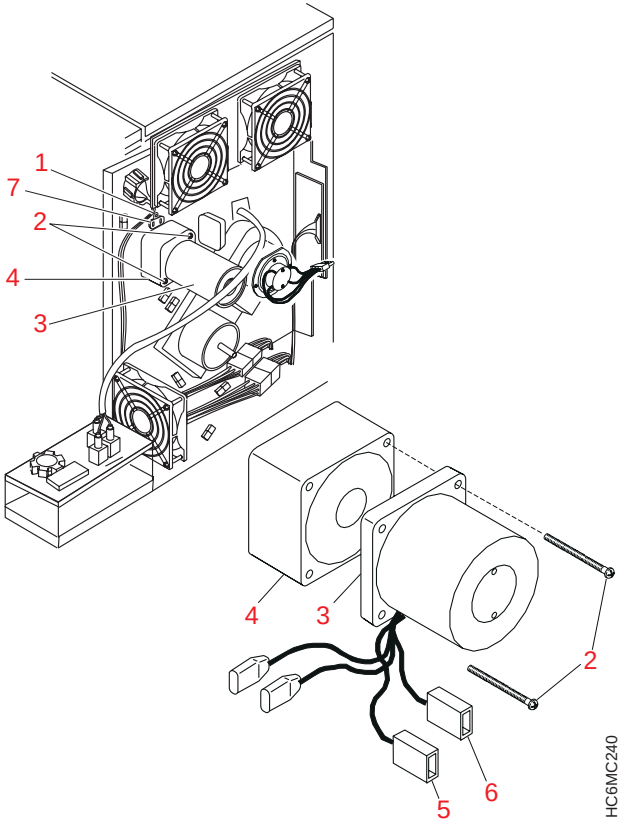
1. Run Sensor Routine 9D to ensure that the sensor is operating correctly.

Verify

1. Run Print Pack to verify print quality.

Backup Roll Motor (M701)

Table 459. Backup Roll Motor (M701)



Special Tools Required:

- IBM SBB Grease No. 3 (P/N 1665927)

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the right rear cover.
4. Disconnect connectors PJ646 **(5)** and PJ652 **(6)**.
5. Remove the screw **(1)** and remove the motor capacitor **(7)**. Leave the capacitor attached to its leads.
6. Hold the motor **(3)** and the gearbox **(4)** while you remove the two screws **(2)**, remove the motor and gearbox.

Installation

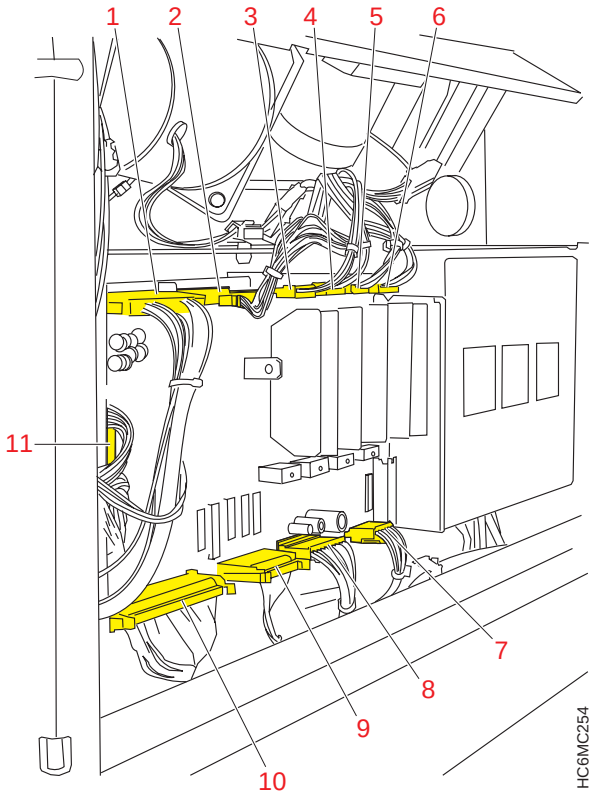
1. If necessary, apply IBM SBB Grease No. 3 to the backup roll load motor gear.
2. Reverse the removal procedure to install a new backup roll load motor or gearbox.

Verify

1. Power on the printer.
2. Run Print Pack to verify print quality.

Fuser Control Card (DV071)

Table 460. Fuser Control Card (DV071)

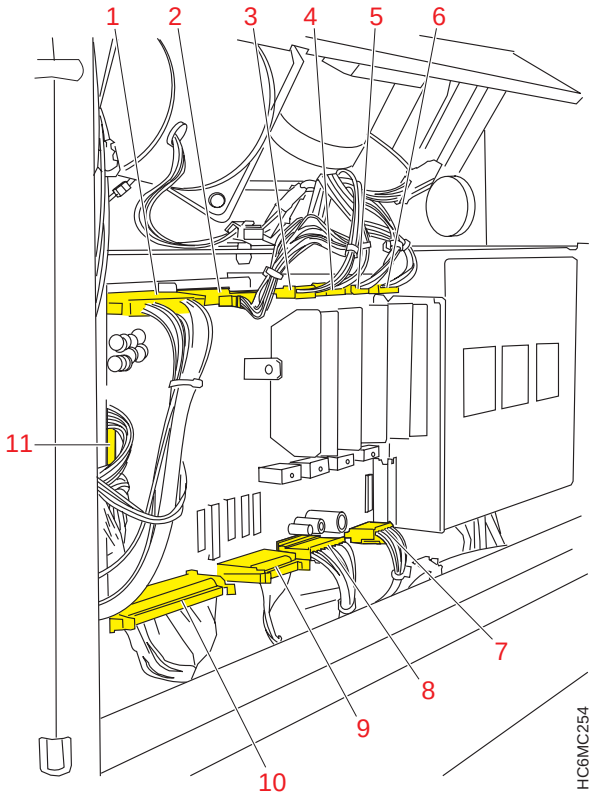


(continued on next page)

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the top cover.
4. Open the left center front cover.
5. Remove the fuser right side cover.
6. Disconnect the following connectors:
   - PJ617 **(1)**
   - PJ616 **(2)**
   - PJ626 **(3)**
   - PJ627 **(4)**
   - PJ628 **(5)**
   - PJ629 **(6)**
   - PJ607 **(7)**
   - PJ606 **(8)**
   - PJ608 **(9)**
   - PJ609 **(10)**
   - PJ618 **(11)**
7. Lift each of the six card clips and remove the fuser control card.

Table 460. Fuser Control Card (DV071) (continued)



Installation

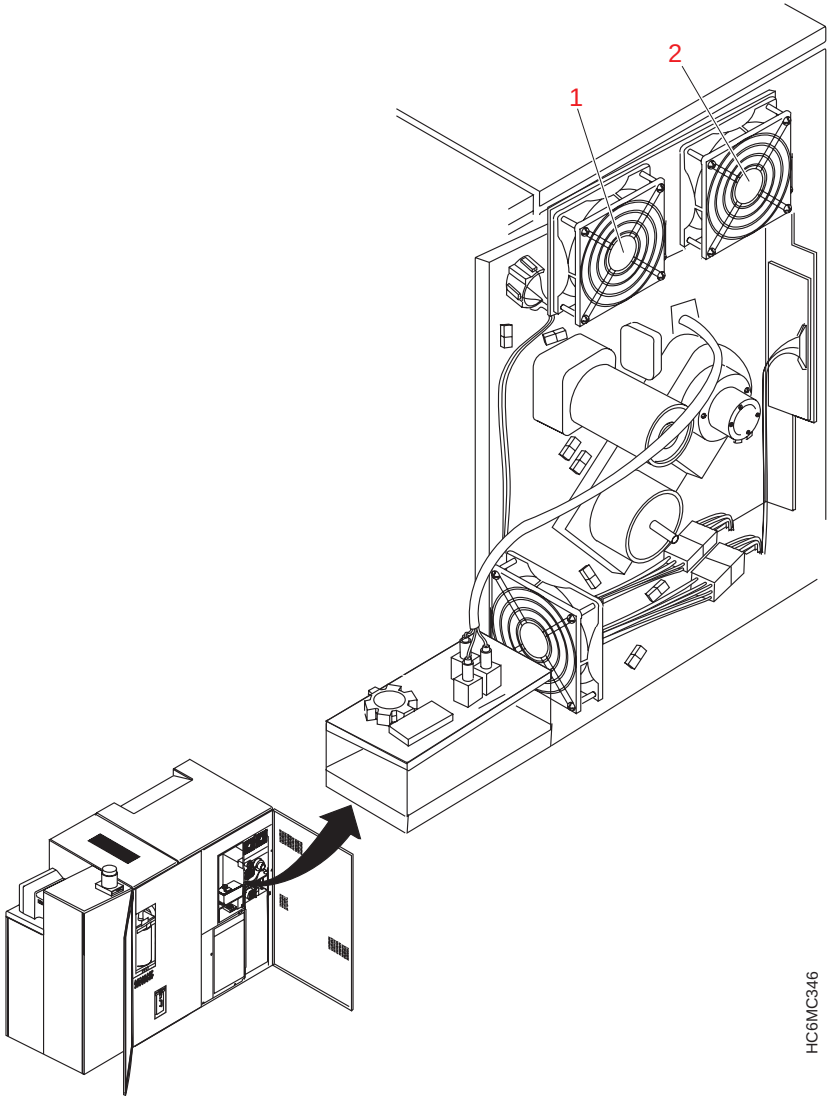
1. Reverse the removal procedure to install a new fuser control card.
2. Power on the printer.

Verify

1. Run Print Pack to verify print quality.

Fuser Exhaust Fans (B701 & B702)

Table 461. Fuser Exhaust Fans (B701 and B702)



Removal

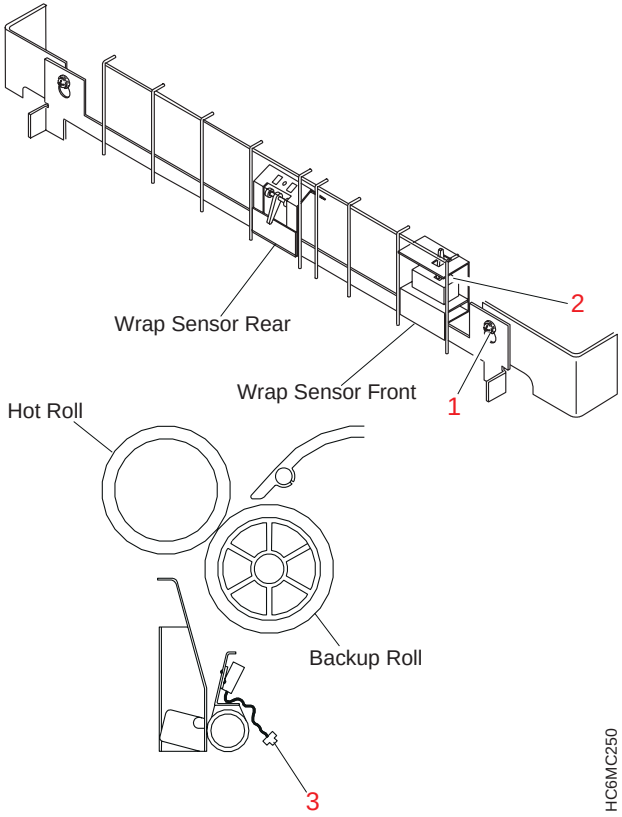
1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the right rear cover.
4. Disconnect the fan connector and remove the two screws holding each fan and remove the fans **(1)** and **(2)**.

Installation

1. Reverse the removal procedure to install new fuser exhaust fans (B701, B702).
2. Power on the printer.

Fuser Wrap Sensor (S617)

Table 462. Fuser Wrap Sensors (S617)



(continued on next page)

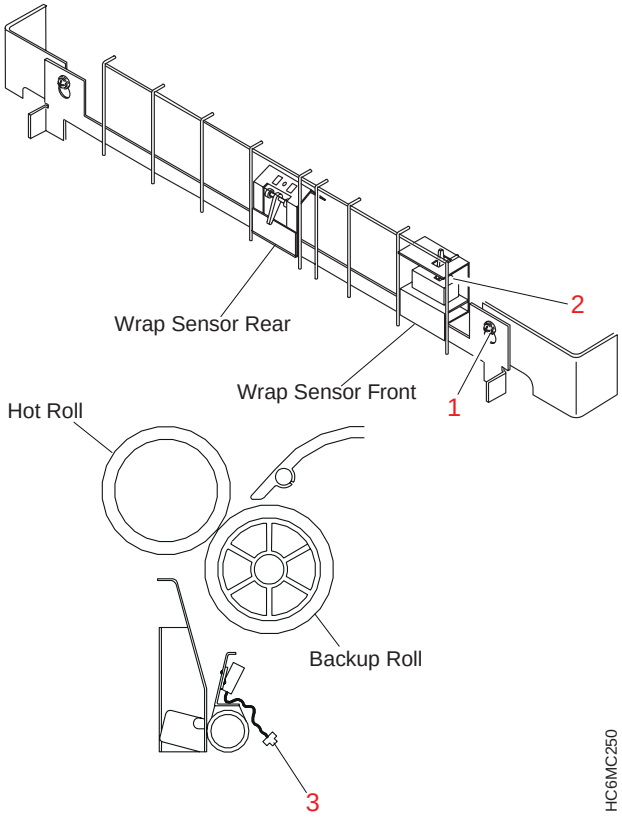
CAUTION:
<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

See Before You Begin.

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the stacker end gate.
4. Open and lock the oiler belt gate.
5. Lift the release lever and pivot the fuser scuff roller assembly down.
6. Open the left front cover.
7. Disconnect connector PJ640 **(3)**.
8. Loosen the screw **(1)** that hold the paper guide **(2)** and lift the paper guide away from the fuser scuff roll assembly and out of the printer.
9. Remove the nuts, remove the necessary cable clamps, and remove the sensors.

Table 462. Fuser Wrap Sensors (S617) (continued)



Installation

1. Reverse the removal procedure to install new fuser wrap sensors.
2. Power on the printer.

Check

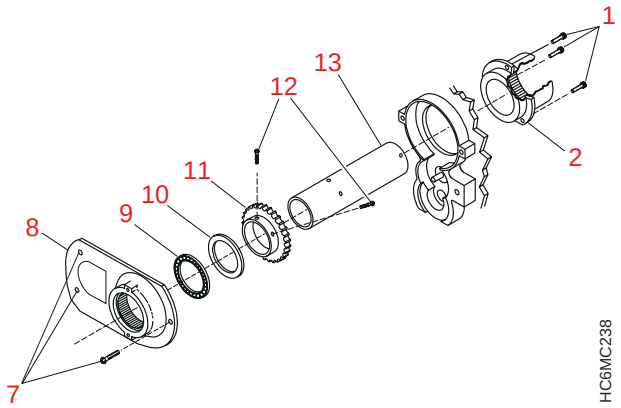
1. Run Sensor Routine 70 to ensure that both switches work correctly.

Verify

1. Run Print Pack to verify that the forms are feeding correctly.

Hot Roll Drive Assembly Removal & Lubrication

Table 463. Hot Roll Drive Assembly Removal & Lubrication



CAUTION:
<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

See Before You Begin.

Special Tools Required:

- IBM SBB Grease No. 3 (P/N 1665927
- Krytox 283AC (P/N 65F6223)

Removal

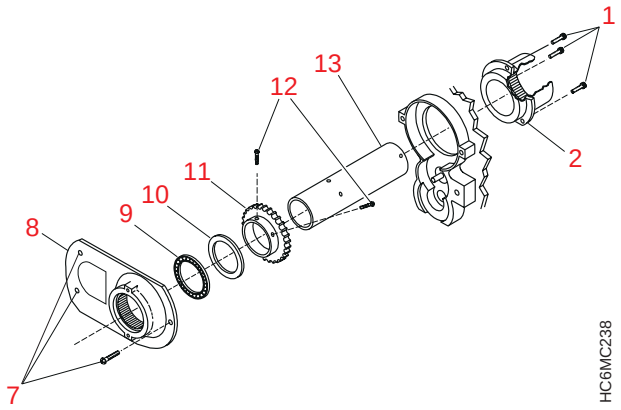
1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.

Note: Protect the hot roll surface; cover it with clean paper.

3. Remove the Hot Roll Lamp End Cap.
4. Remove the Hot Roll Lamps.
5. Perform steps 3 through 5, and 8 under Hot Roll Front Hub.
6. Perform steps 6 through 9 under Hot Roll and Collars.
7. Perform steps 7 and 8 under Hot Roll Drive Collar.
8. Perform steps 5 through 7 under Hot Roll Lamp Receptacle Contacts.
9. Remove the Hot Roll Drive Motor (M703).
10. Remove the three screws **(7)**; grasp the rear flange **(8)** and pull it to the rear of the printer.

(continued on next page)

Table 463. Hot Roll Drive Assembly Removal & Lubrication (continued)



11. If the thrust bearing **(9)** and bearing race **(10)** did not come off with the rear flange, remove them from the drive shaft **(13)**.
12. Slide the hot roll gear **(11)** and drive shaft **(13)** to the rear of the printer and remove them from the rear hub and bearing assembly **(2)**.
13. Remove the two screws **(12)**. Remove the hot roll gear **(11)** from the drive shaft **(13)**.
14. Remove the three screws **(1)**; remove the rear hub and bearing assembly **(2)**.

Lubrication

Note: Do not mix the IBM SBB Grease No. 3 and the Krytox 283AC. The IBM SBB Grease No. 3 goes on the gears only, and the Krytox 283AC goes on the bearings only.

1. Clean the excess grease from the idler gear **(4)** and the hot roll gear **(11)**. Lubricate these gears with IBM SBB Grease No. 3.
2. Clean the excess grease from the rear flange **(8)**, the thrust bearing **(9)**, the bearing race **(10)**, the drive shaft **(13)**, and the rear hub and bearing assembly **(2)**. Lubricate these bearings with Krytox 283AC.

Installation

1. Reverse the removal procedure to install a new hot roll drive.
2. Power on the printer.

Check

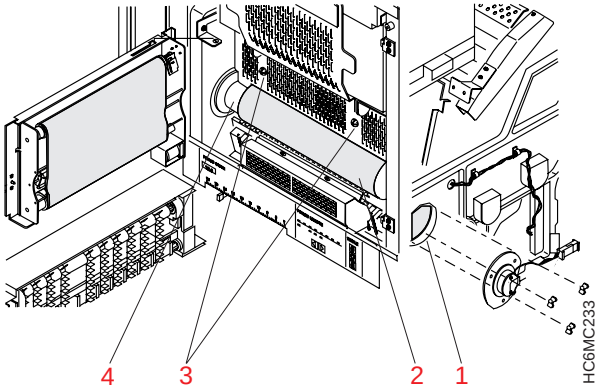
1. Run Driver Routine 31 to check the hot roll lamp operation.

Verify

1. Run Print Pack to verify print quality.

Hot Roll and Collars

Table 464. Hot Roll and Collars



(continued on next page)

CAUTION:
<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

See Before You Begin.

Special Tools Required:

- Lint-free cloth (P/N 2108930)

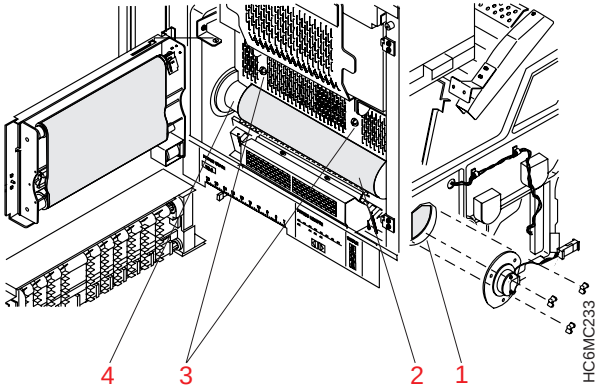
Removal

Note: The Hot Roll Collars (P/N 88F2947) get brittle from the heat of the hot roll lamps. They break easily if they are removed and then reinstalled. Therefore, **replace the hot roll collars whenever the hot roll is removed from the printer, even if a new hot roll is not installed.**

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Remove the Hot Roll Lamp End Cap.
4. Remove the Hot Roll Lamps.
5. Perform steps 3 through 5, and 8 under Hot Roll Front Hub.

Note: Do **not** remove the hot roll through the front frame hole **(1)**. You must perform the next step from the oiler belt gate (left side of the printer).

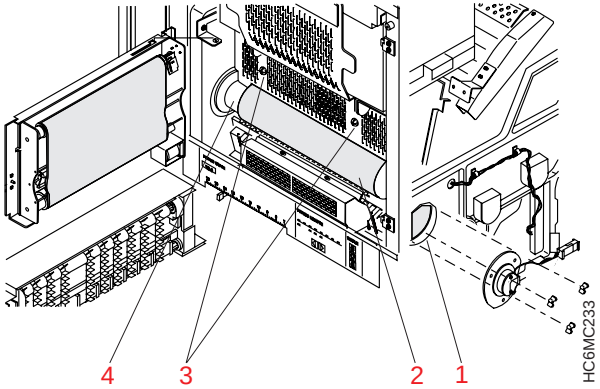
Table 464. Hot Roll and Collars (continued)



(continued on next page)

6. Remove the 2 screws **(3)**, remove the hot roll shield.
7. Lift the release lever and pivot the fuser scuff roller assembly down.
8. Carefully move the hot roll **(2)** forward, into the front frame hole **(1)**, until the rear of the hot roll disengages from the rear hub **(4)**, remove the hot roll from the left end of the printer.
9. You can easily remove the collars, plastic rings at either end of the hot roll (the collars are not fastened to the hot roll).

Table 464. Hot Roll and Collars (continued)



Installation

Hint

The end of the hot roll with the largest band of exposed aluminum must be oriented towards the front of the printer. A thermal ferrite chip at this end activates the temperature sensor (L601).

1. Always install new hot roll collars (P/N 88F2947).
2. Reverse the removal procedure to install a new hot roll and collars.
3. Use a clean cloth to apply fuser oil to the new hot roll to prevent fuser offset.
4. Power on the printer.
5. If you have installed a new hot roll, select **PM Log** on the Logs menu to reset the hot roll counter to 0.

Important

You must also reset the Hot Roll print count to "**0**". See Read From or Write to Memory (Position 2). This will reset the oiler algorithm to correctly oil the new Hot Roll. Failure to reset this count will result in reduced Hot Roll life.

Check

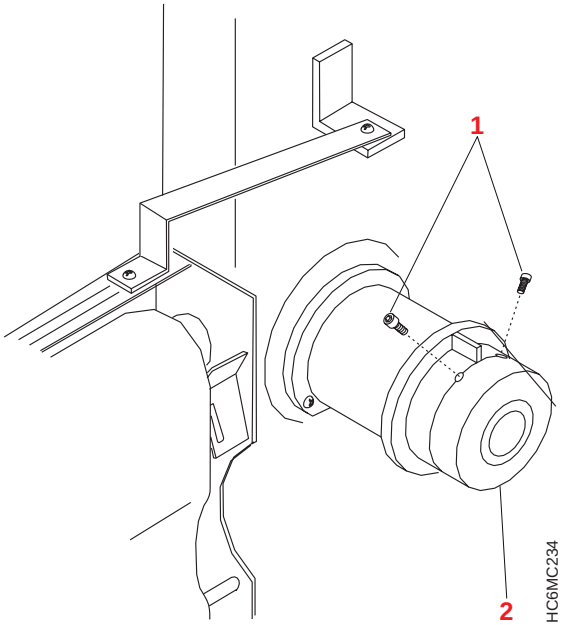
1. Run Driver Routine 31 to check hot roll lamp operation.
2. The operating temperature of the hot roll is 180°C.

Verify

1. Run Print Pack to verify print quality.

Hot Roll Drive Collar

Table 465. Hot Roll Drive Collar



CAUTION:
<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

See Before You Begin.

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Remove the Hot Roll Lamp End Cap.
4. Remove the Hot Roll Lamps.
5. Perform steps 3 through 5, and step 8 under Hot Roll Front Hub.
6. Perform steps 6 through 9 under Hot Roll and Collars.
7. Remove the two screws **(1)**. Remove the drive collar **(2)**.
8. Clean the excess grease from the contact area between the drive collar and shaft.

Installation

1. Reverse the removal procedure to install a new hot roll rear collar.
2. Power on the printer.

Check

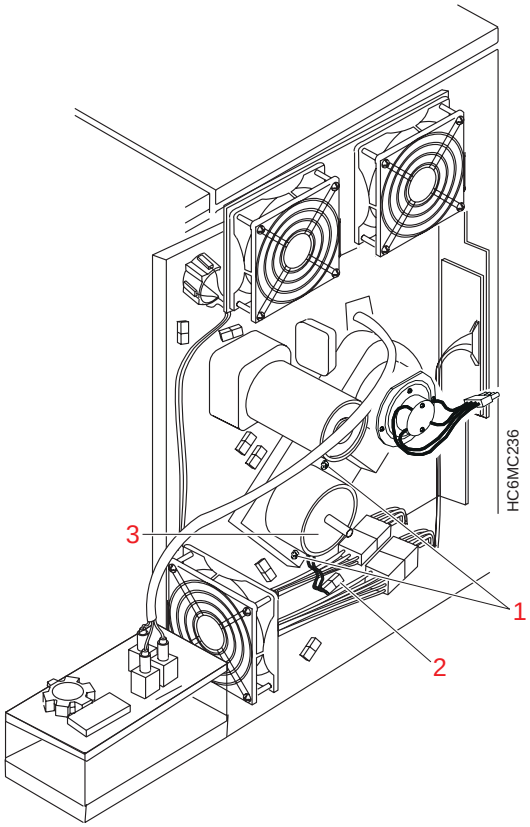
1. Run Driver Routine 31 to check the hot roll lamp operation.

Verify

1. Run Print Pack to verify print quality.

Hot Roll Drive Motor (M703)

Table 466. Hot Roll Drive Motor (M703)



(continued on next page)

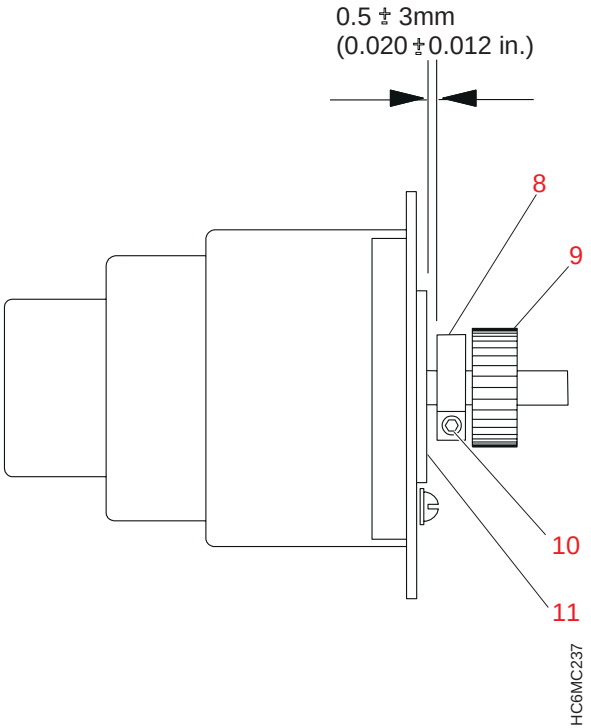
Special Tools Required:

- IBM SBB grease no. 3 (P/N 1665927)

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the right rear cover.
4. Disconnect connectors PJ701 **(2)**.
5. Hold the drive motor **(3)** while you remove the three screws **(1)**.
   Remove the motor.

Table 466. Hot Roll Drive Motor (M703) (continued)



6. Loosen the screw **(10)** on the collar **(8)** and remove the collar and drive gear **(9)**.

Lubrication

1. Clean the excess grease from the drive gear and lubricate the drive gear with IBM SBB Grease No. 3.

Installation

1. Install the drive gear **(9)** and the collar **(8)** onto the motor shaft.
2. Adjust the collar so that it is flush with the drive gear and there is a clearance of 0.5 ±0.3 mm (0.020 ±0.012 in.) between the collar and the motor **(11)**.
3. Reverse the removal procedure to instal a new hot roll drive motor.
4. Power on the printer.

Check

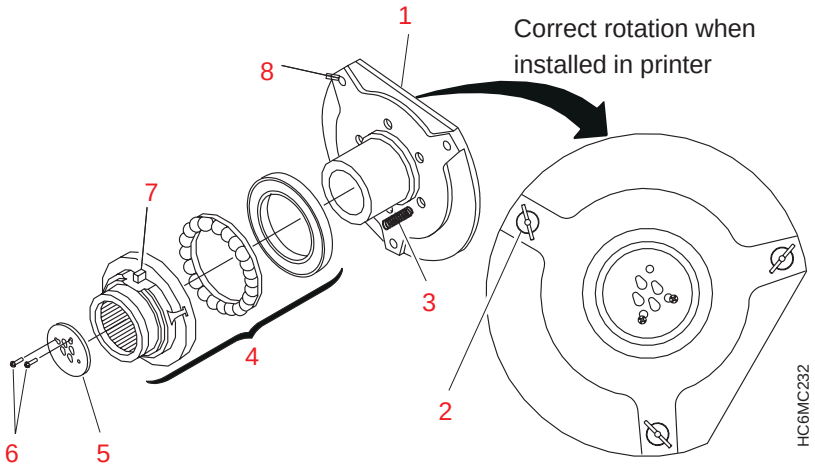
1. Run Driver Routine 31 to check the hot roll lamp operation.

Verify

1. Run Print Pack to verify print quality.

Hot Roll Front Hub

Table 467. Hot Roll Front Hub



CAUTION:
<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

See Before You Begin.

Special Tools Required:

- Krytox 283AC (P/N 65F6223)
- Lint-free cloth (P/N 2108930)

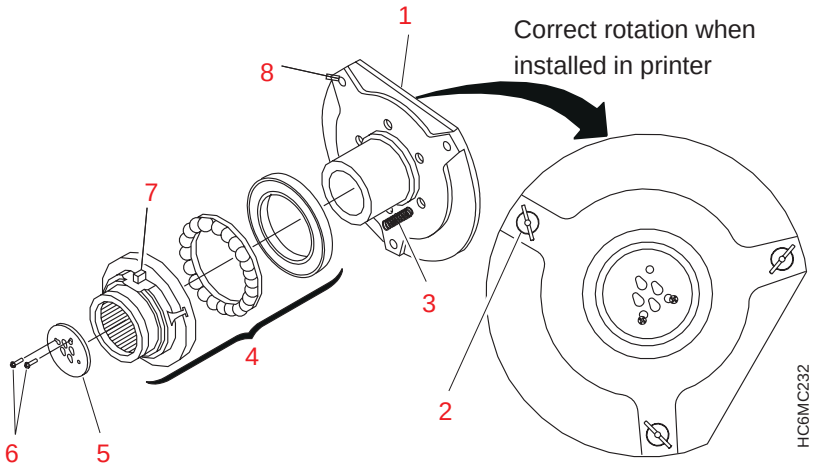
Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the stacker end cover.
4. Open and lock the oiler belt gate.
5. Lift the release lever and pivot the fuser scuff roller assembly down.
6. Remove the Hot Roll Lamp End Cap.
7. Remove the Hot Roll Lamps.

Note: Locate the key on the rear hub and the slot in the rear of the hot roll before you proceed. (Rotate the hot roll, if necessary, to see the slot.)

(continued on next page)

Table 467. Hot Roll Front Hub (continued)



8. With a clean cloth, hold the hot roll to prevent the front end from dropping and remove the 3 wing nuts **(2)**.

   Remove the hot roll front hub and rest the hot roll on the felt pad.

Attention: Six springs **(3)** load the bearing assembly **(4)** away from the inner wall of the hub **(1)**.
Note: Observe the position of the lamp guide plate **(5)** in relation to the hub **(1)**.

9. Remove the 2 screws **(6)** from the lamp guide plate **(5)**.
10. Remove the bearing assembly **(4)** and springs **(3)** from the hub.

Lubrication

1. Clean the excess grease from the hub **(8)**, and bearing assembly **(4)**.
2. Clean excess grease from the lamp guide plate **(5)**. Be sure that the holes in the guide plate are free of grease.
3. Lubricate the bearings with Krytox 283AC.

Installation

1. Reverse the removal procedure to install a new hot roll front hub.

Note: Observe the key **(7)** on the hub and the slot in the front of the hot roll.

2. Power on the printer.

Check

1. Run Driver Routine 31 to check the hot roll lamp operation.

Verify

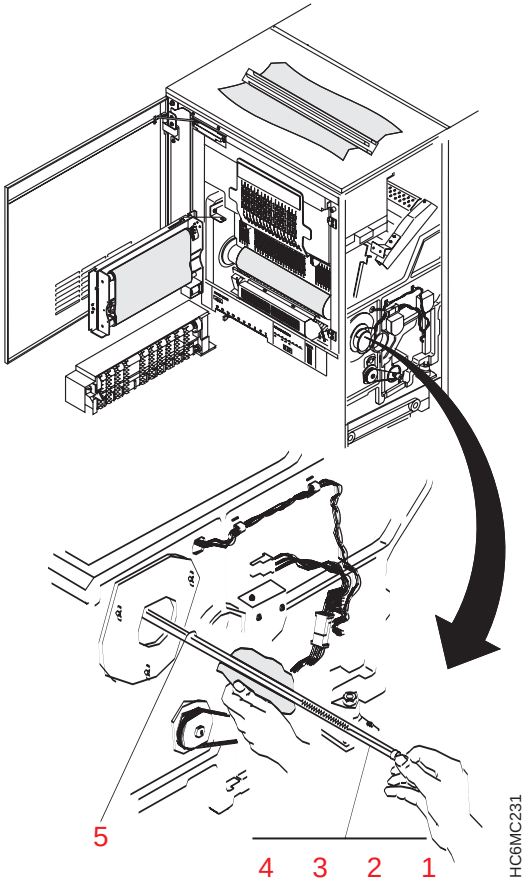
1. Run Print Pack to verify print quality.

Hot Roll Lamps

Table 468. Hot Roll Lamps - Wattages

Machine Version	Lamp 1	Lamp 2	Lamp 3	Lamp 4
US	1570W (230V)	805W (230V)	805W (230V)	1555W (230V)
Europe	1530W (240V)	785W (240V)	785W (240V)	1515W (240V)
Japan	1555W (220V)	800W (220V)	800W (220V)	1540W (220V)
Note: The wattage rating is printed on each lamp.				

Table 469. Hot Roll Lamps



CAUTION:
<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

See Before You Begin.

Special Tools Required:

- Lint-free cloth (P/N 2108930)

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Remove the hot roll lamp end cap.

Note: Ensure that the hot roll lamps **(1)**, **(2)**, **(3)**, and **(4)** are cool enough to touch.

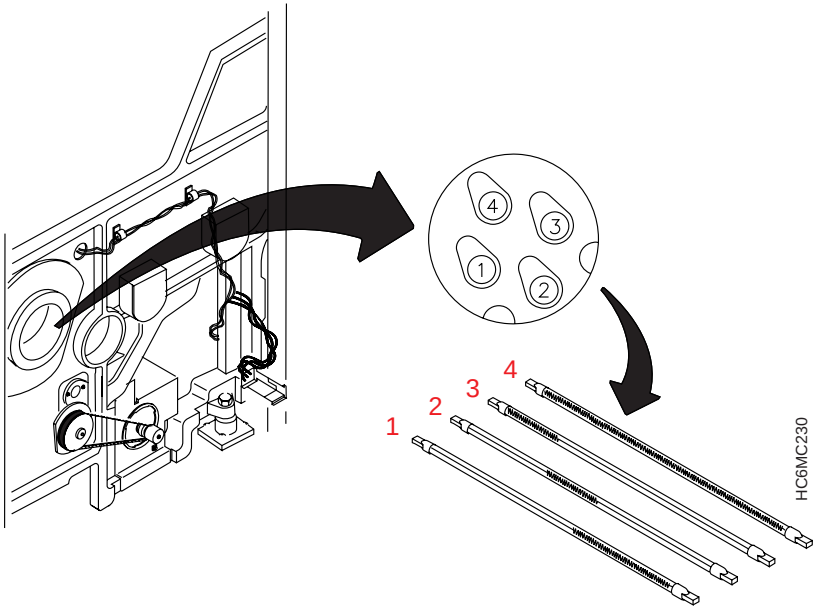
Handle a hot roll lamp only by the ceramic end caps. Do not touch the glass with your skin or contaminated cloth.

While you remove the hot roll lamps, be careful not to damage the molding mark **(5)** midway down the length of the hot roll lamp. Notice the cutout in the lamp guide plate that is for the hot roll lamp molding mark to pass through.

4. Remove the hot roll lamps with a lint-free cloth and put them in a safe place.

(continued on next page)

Table 469. Hot Roll Lamps (continued)



(continued on next page)

Installation

Understand and verify the conditions listed in the following notes before you install the hot roll lamps.

Notes:

a. Handle a hot roll lamp only by the ceramic end caps. Do not touch the glass with your skin or contaminated cloth.

b. Observe the end caps of lamps **(1)**, **(2)**, **(3)**, and **(4)**. One end is marked with the wattage rating of the lamp **and** the lamp number (1, 2, 3, or 4). **This end must be installed toward the front of the printer.**

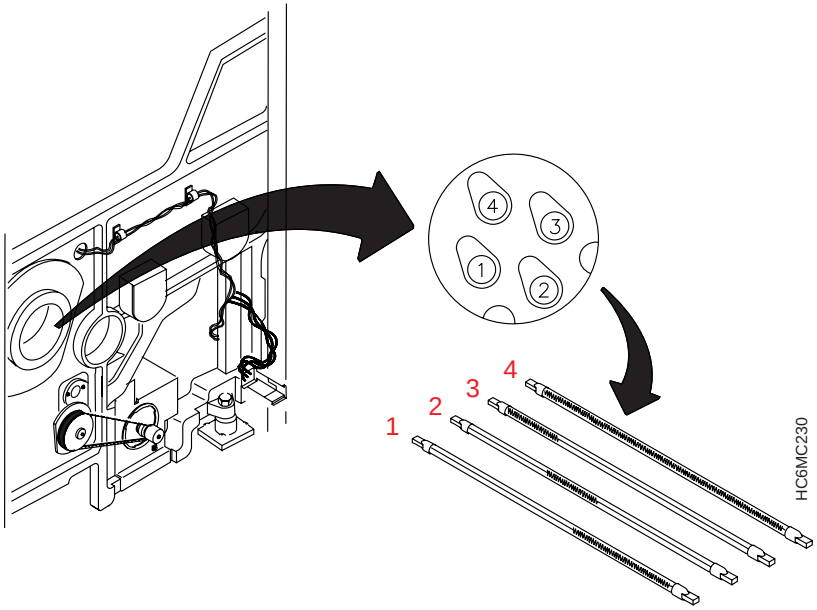
Attention: Each lamp has a specific position. It is possible to install the 4 lamps such that the front and rear contacts **do not match** (the front end caps can be rotated, offset, by one position from the lamp rear end caps).

1. Install the hot roll lamps so that the end socket marked with the lamp number and wattage rating are toward the front of the printer. Use care not to hit the molding mark of the lamp as it passes through the opening in the lamp guide plate. See Table 468.

Attention: When you check the seating of the lamps, use care to keep slight pressure on the lamp to prevent it from coming out of the rear lamp socket.

2. Press in lightly on the front end of each lamp. If it springs back, it is seated correctly.
3. Reverse the removal procedure to install a new hot roll lamp.
4. Power on the printer.

Table 469. Hot Roll Lamps (continued)



Check

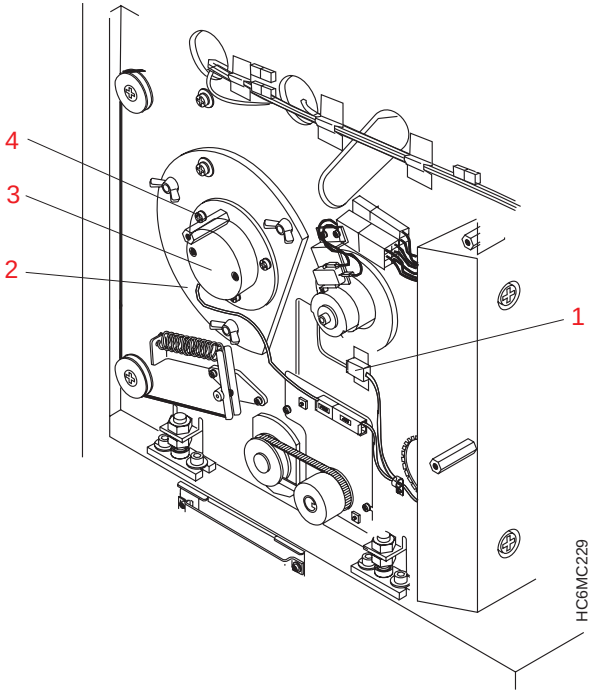
1. Run Driver Routine 31 to check hot roll lamp operation.

Verify

1. Run Print Pack to verify print quality.

Hot Roll Lamp End Cap

Table 470. Hot Roll Lamp End Cap



(continued on next page)

CAUTION:
<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

See Before You Begin.

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the front left front cover.
4. Disconnect connector PJ612 **(1)**.

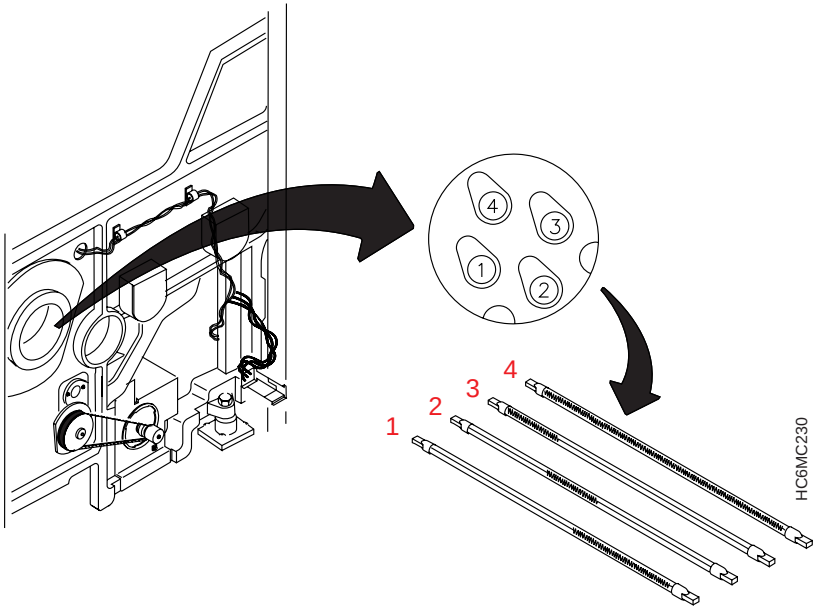
Attention:

Do not turn the end cap **(3)**; the hot roll lamps can be damaged easily.

5. Remove the three screws **(4)** that hold the end cap **(3)** to the hot roll front hub **(2)**.

Note: Remember the position of the cable on the end cap for reassembly. Wire **1** is aligned with hot roll lamp **1**.

Table 470. Hot Roll Lamp End Cap (continued)



Installation

Attention: Each lamp has a specific position. It is possible to install the four lamps such that the front and rear contacts **do not match** (the front end caps can be rotated, offset, by one position from the lamp rear end caps).
Note: When you check the seating of the lamps, keep slight pressure on the lamp or it may fall and break.

1. Press in lightly on the front end of each lamp. If it springs back, it is seated correctly.
2. Reverse the removal procedure to install a new hot roll lamp end cap.
3. Power on the printer.

Check

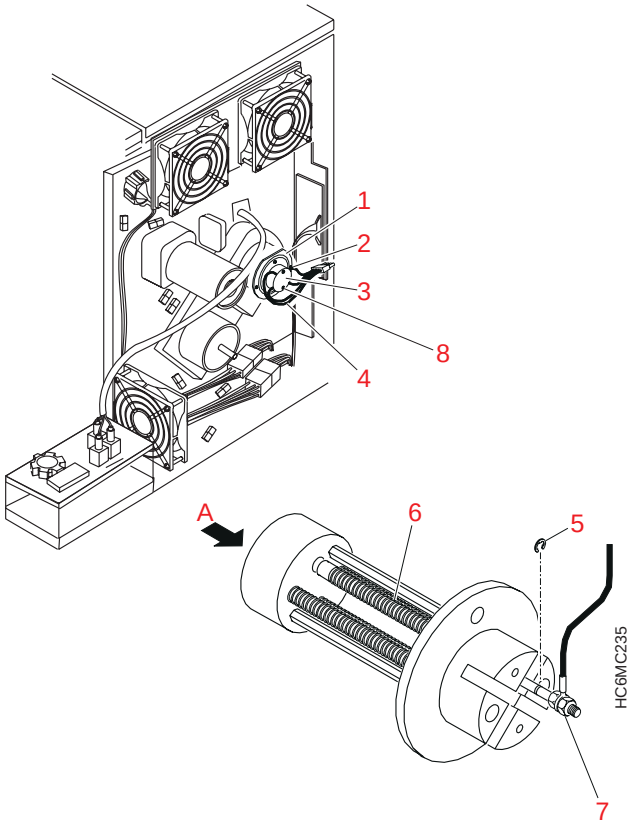
1. Run Driver Routine 31 to check hot roll lamp operation.

Verify

1. Run Print Pack to verify print quality.

Hot Roll Lamp Receptacle Contacts

Table 471. Hot Roll Lamp Receptacle Contacts



CAUTION:
<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

See Before You Begin.

Removal

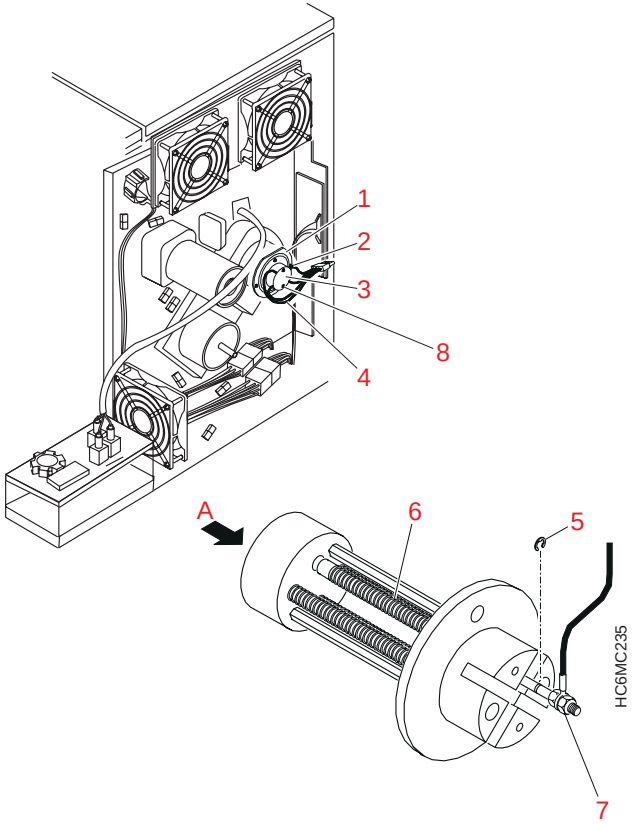
1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Remove the Hot Roll Lamp End Cap.
4. Remove the Hot Roll Lamps.
5. Open the right rear cover.
6. Disconnect connector PJ613 **(4)**.

Note: Place a mark at the top of the hot roll lamp receptacle for reference during reassembly.

7. Remove the two screws **(2)** and carefully pull the hot roll lamp receptacle from the hot roll rear hub **(1)**.
8. Remove the four screws **(8)**. Remove the end cap **(3)** from the receptacle.
9. Push the contact shaft **(6)** in direction **(A)** to expose the wire-holding nuts **(7)** and the clip **(5)**. Then do the following:
   a. Remove the nuts and wire from the contact.
   b. Remove the clip and slide the contact out of the other end of the receptacle.

(continued on next page)

Table 471. Hot Roll Lamp Receptacle Contacts (continued)



Installation

1. Reverse the removal procedure to install new hot roll lamp rear contacts.

Note: Wires 3 and 4 should be on the top of the receptacle when installed correctly.

2. Power on the printer.

Check

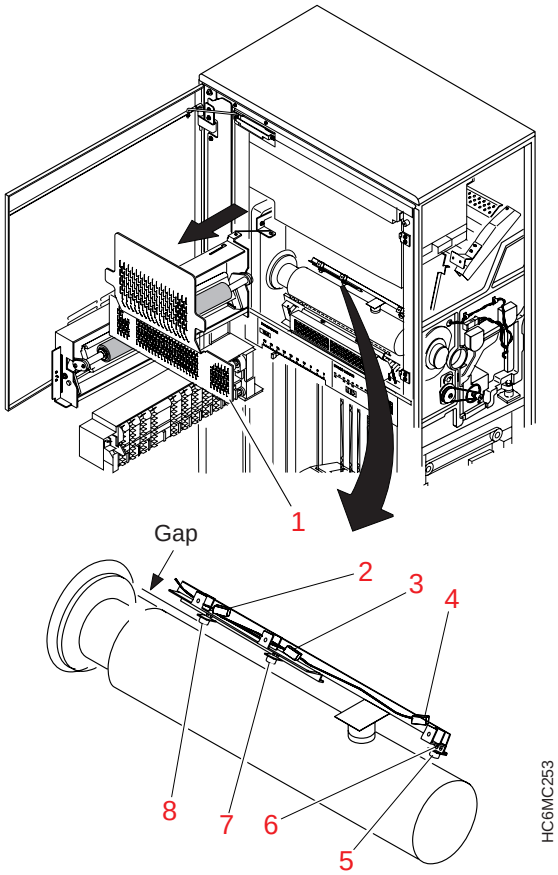
1. Run Driver Routine 31 to check the hot roll lamp operation.

Verify

1. Run Print Pack to verify print quality.

Hot Roll Thermistors (S621, S622, S623)

Table 472. Hot Roll Thermistors (S621, S622, S623)



(continued on next page)

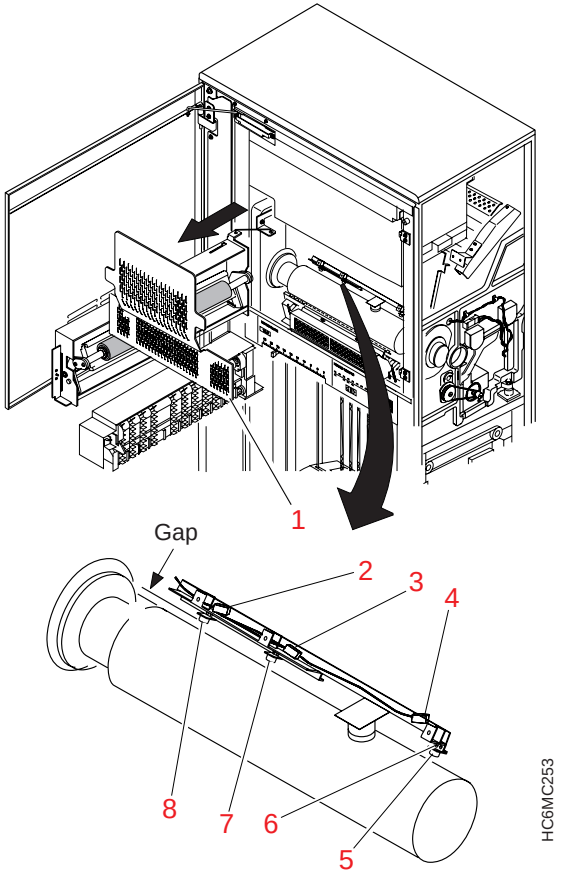
CAUTION:
<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

See Before You Begin.

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the stacker end gate.
4. Open and lock the oiler belt gate.
5. Remove the hot roll shield **(1)**.
6. Open the left front cover.
7. Disconnect the connector and all necessary cable clamps for the thermistor that you are removing.
   - S621 **(5)** - PJ6015 **(4)**
   - S622 **(7)** - PJ6016 **(3)**
   - S623 **(8)** - PJ6017 **(2)**
8. Remove the two screws **(6)** and remove the thermistor from the bracket.

Table 472. Hot Roll Thermistors (S621, S622, S623) (continued)



Installation

1. Reverse the removal procedure to install a new thermistor.

Adjustment

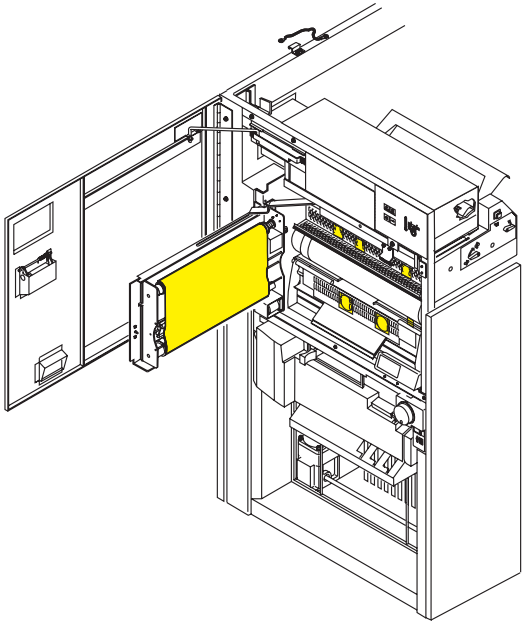
1. Adjust the thermistors so the gap between the thermistor and the hot roll is 0.9 ±0.2 mm (0.023 ±0.008 in.).
2. Power on the printer.

Verify

1. Run Print Pack to verify print quality.

Hot Roll Temperature Control Sensor (S701) and Over-temperature Sensor (S705)

Table 473. Temperature Sensor (S701) and Over-temperature Sensor (S705)



HC6MC288

(continued on next page)

CAUTION:
<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

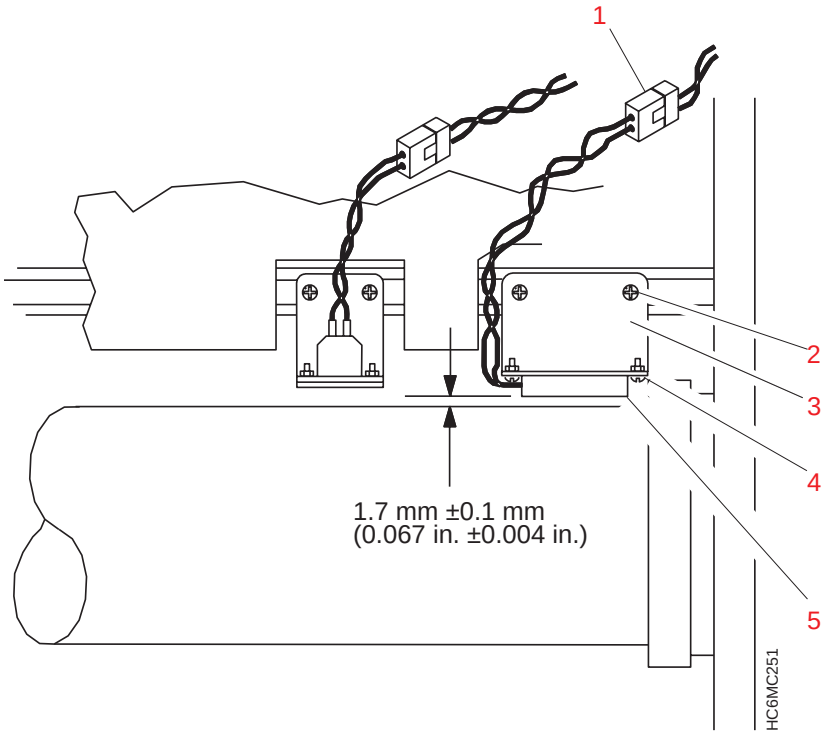
See Before You Begin.

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the stacker end cover.
4. Open and lock the oiler belt gate.
5. Remove the hot roll shield.
6. Open the left front cover.
7. Continue to the appropriate sensor removal procedure (Hot Roll Temperature Control Sensor (S701)) or (Hot Roll Over-temperature Sensor (S705)).

Hot Roll Temperature Control Sensor (S701)

Table 474. Temperature Sensor (L601)



(continued on next page)

Removal

1. Disconnect connector PJ682 **(1)** and all necessary cable clamps.
2. Remove the 2 screws **(2)** from the sensor bracket **(3)**.
3. Remove the two screws **(4)** and remove the sensor **(5)** from the bracket.

Installation

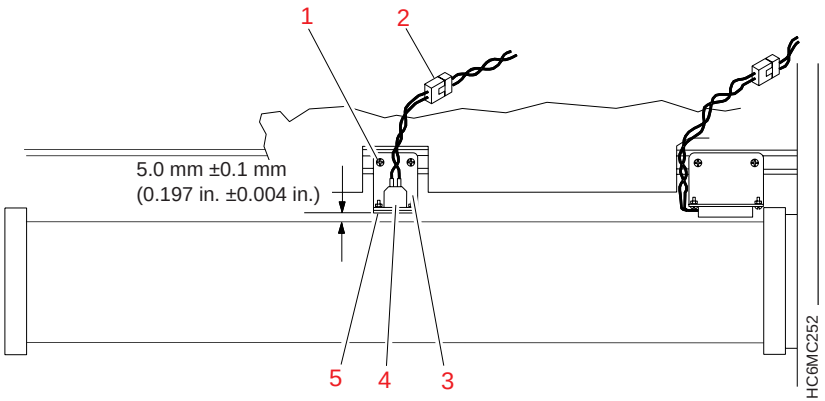
1. Reverse the removal procedure to install a new temperature sensor.

Adjustment

1. Adjust the temperature sensor bracket **(3)** so the gap between the sensor and the hot roll is 1.7 ±0.1 mm (0.067 ±0.004 in.).
2. Power on the printer.

Hot Roll Over-temperature Sensor (S705)

Table 475. Hot Roll Over-temperature Sensor (S705)



Removal

1. Disconnect connector PJ645 **(2)** and all necessary cable clamps.
2. Remove the two screws **(1)** from the sensor bracket **(3)**.
3. Remove the two screws **(5)**, remove the sensor **(4)** from the bracket.

Installation

1. Reverse the removal procedure to install a new over-temperature sensor.

Adjustment

1. Adjust the over-temperature sensor bracket **(3)** so the gap between the sensor and the hot roll is 5.0 ±0.1 mm (0.197 ±0.004 in.).
2. Power on the printer.

Check

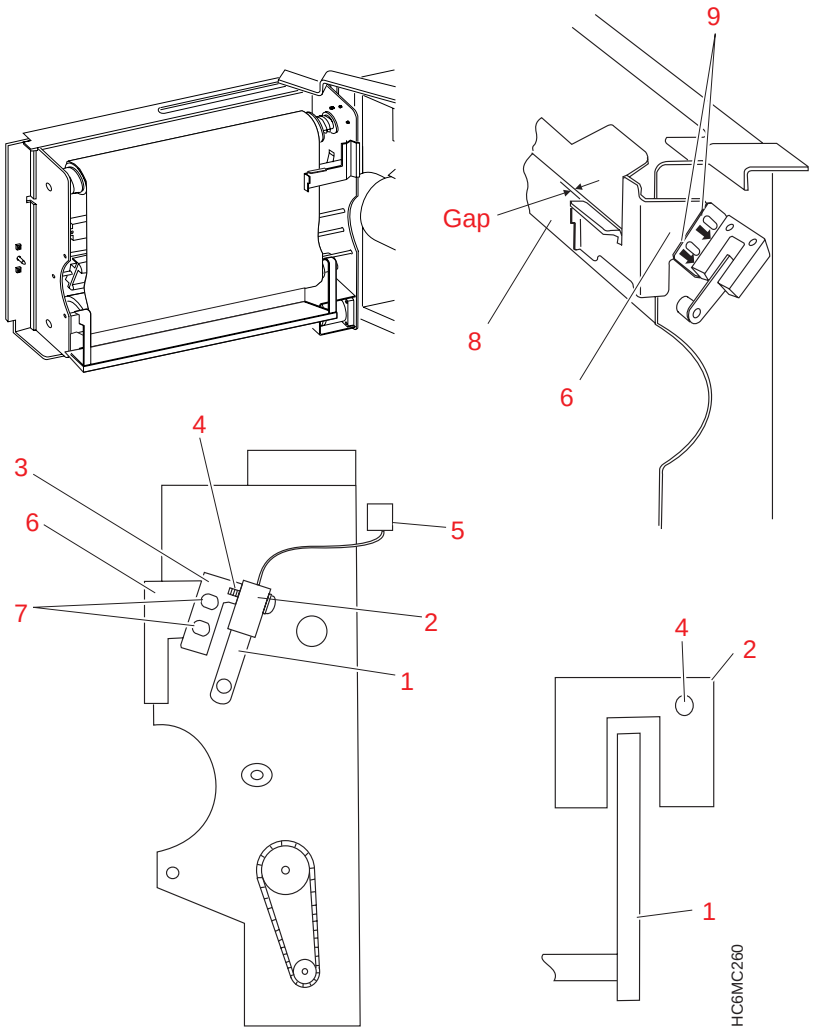
1. Run Driver Routine 31 to check hot roll lamp operation.

Verify

1. Run Print Pack to verify print quality.

Oiler Belt End Switch (S711)

Table 476. Oiler Belt End Switch (S711)



(continued on next page)

CAUTION:
<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

See Before You Begin.

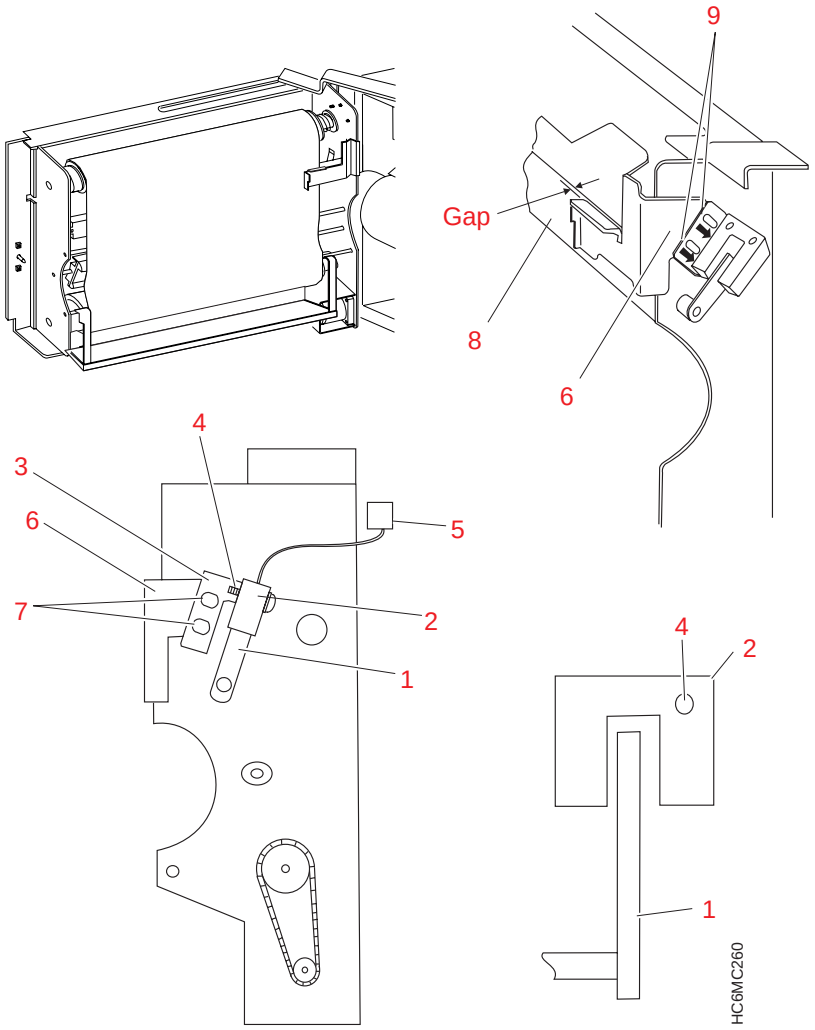
Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the stacker end cover.
4. Open and lock the oiler belt gate.
5. Disconnect the connector PJ711 **(5)**.
6. Remove the two screws **(7)** and remove the switch support bracket.
7. Remove the screw **(4)** and remove the switch **(2)**.

Installation

1. Reverse the removal procedure to install a new oiler belt end switch.
2. Power on the printer.

Table 476. Oiler Belt End Switch (S711) (continued)



Check and Adjustment

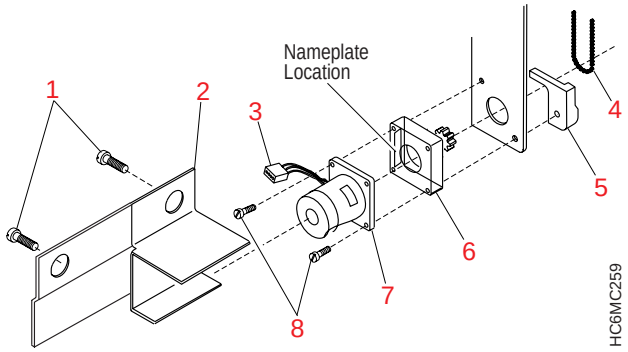
1. Remove the oiler belt.
2. Loosen the two screws **(7)** to free the switch bracket **(3)**, and the belt plate**(6)**.
3. Move the bracket **(3)** in the direction of arrows **(9)**, as far as possible.
4. Adjust the gap between the oiler belt frame **(8)** and the belt plate **(6)** to be 1.3 to 1.6 mm.
5. Tighten the two screws **(7)** .
6. Move the actuator **(1)** while you run sensor routine 81 to check the switch position.
7. Reinstall the oiler belt.

Verify

1. Run Print Pack to verify print quality.

Oiler Belt Motor (M706)

Table 477. Oiler Belt Motor (M706)



(continued on next page)

CAUTION:
<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

See Before You Begin.

Special Tools Required:

- Push-pull scale (P/N 0460870)
- IBM lubricant No. 23

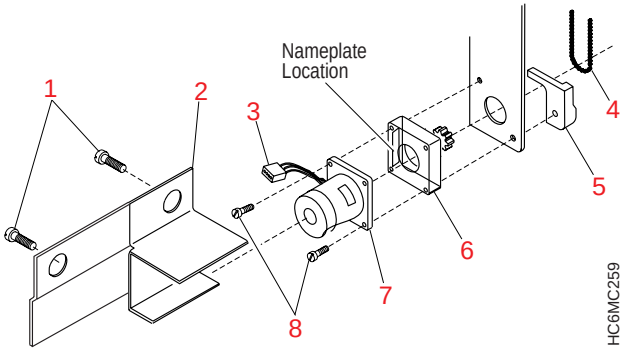
Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the stacker end cover.
4. Loosen the two screws **(1)** and remove the oiler motor cover **(2)**.
5. Disconnect connector PJ723 **(3)**.
6. Open and lock the oiler belt gate.

Attention: **Clothing Damage** Oil and other contaminations from the fuser oiler belt can damage clothing. While you work in this area, place forms over the oiler belt gate.

7. Remove the two screws **(8)** and the oiler belt motor **(7)**. This releases the gearbox **(6)** and the plate **(5)**.

Table 477. Oiler Belt Motor (M706) (continued)



Installation

Note: Apply IBM lubricant No. 23 to the gear on the motor before you install it into the gearbox.

1. Reverse the removal procedure to install a new oiler belt motor.

Note: Ensure that the nameplate on the gearbox **(6)** is positioned as shown.

2. Power on the printer.

Adjustment

1. Loosen the two screws **(8)**.
2. Adjust the motor **(7)** and gearbox **(6)** so that the chain **(4)** will deflect 3.0 ±1.0 mm (0.120 ±0.040 in.) when 200 g (7 oz) of force is applied to the center of the chain.

Check

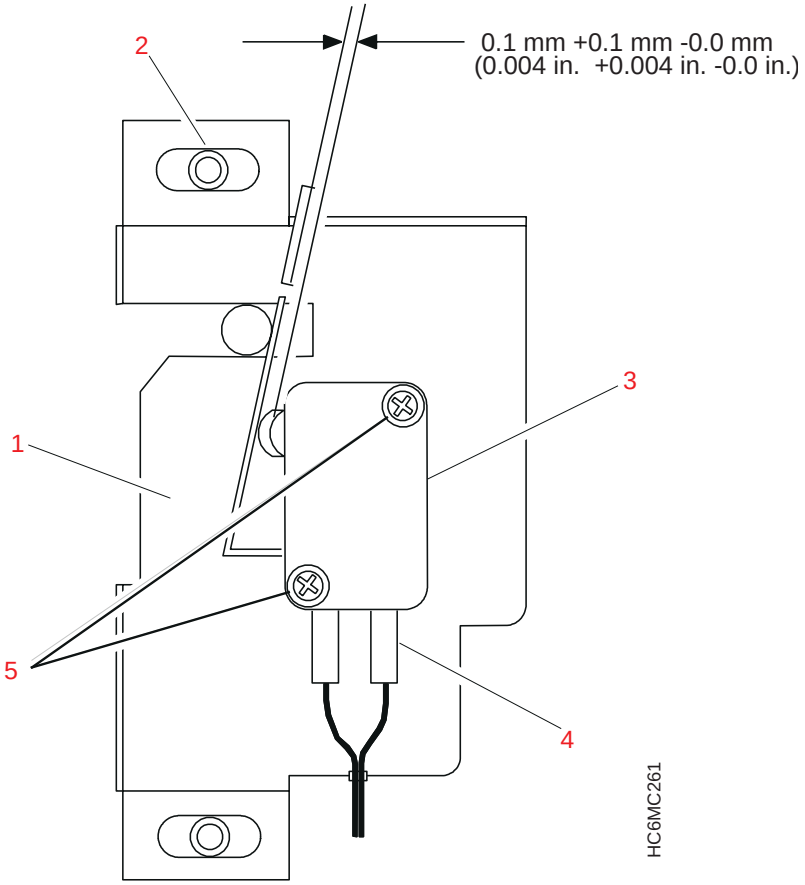
1. Ensure that the drive chain **(4)** is tight.

Verify

1. Run Print Pack to verify print quality.

Oiler Gate Interlock (S704)

Table 478. Oiler Gate Interlock (S704)



CAUTION:
<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

See Before You Begin.

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the left front cover.
4. Open the stacker end cover.
5. Open and lock the oiler belt gate.
6. Remove the two screws **(2)** and remove the interlock cover **(1)**.
7. Disconnect the connectors **(4)** from the interlock switch **(3)**.
8. Remove the two screws **(5)** and remove the switch **(3)**.

Installation

1. Reverse the removal procedure to install a new oiler gate interlock.
2. Power on the printer.

Check and Adjustment

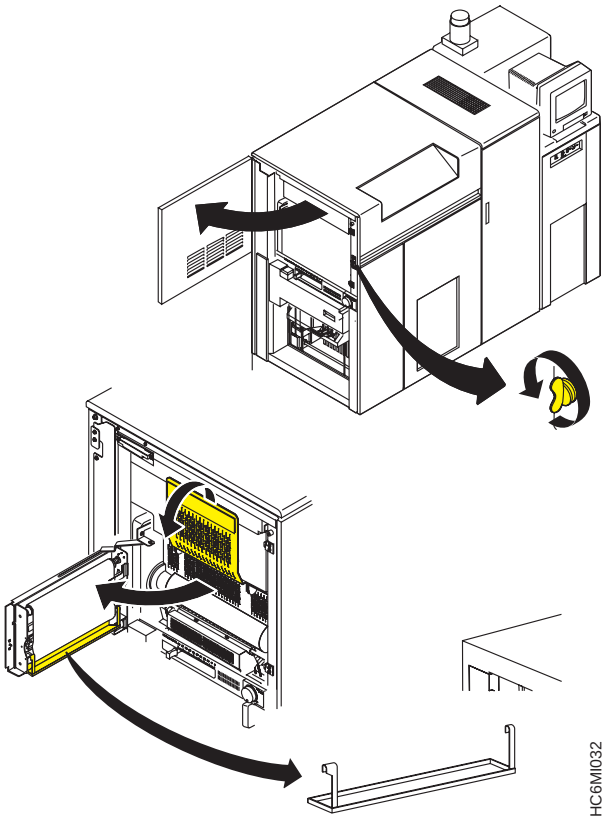
1. Adjust the interlock cover **(1)** so that the switch is transferred with .1 +0.1 −0.0 mm (0.004 +0.004 −0.0 in.) travel remaining when the oiler belt gate is latched closed.
2. Alternately open and close the oiler belt gate while you run sensor routine 80 to check this.

Verify

1. Run Print Pack to verify print quality.

Oil Pan

Table 479. Installing the Oil Pan



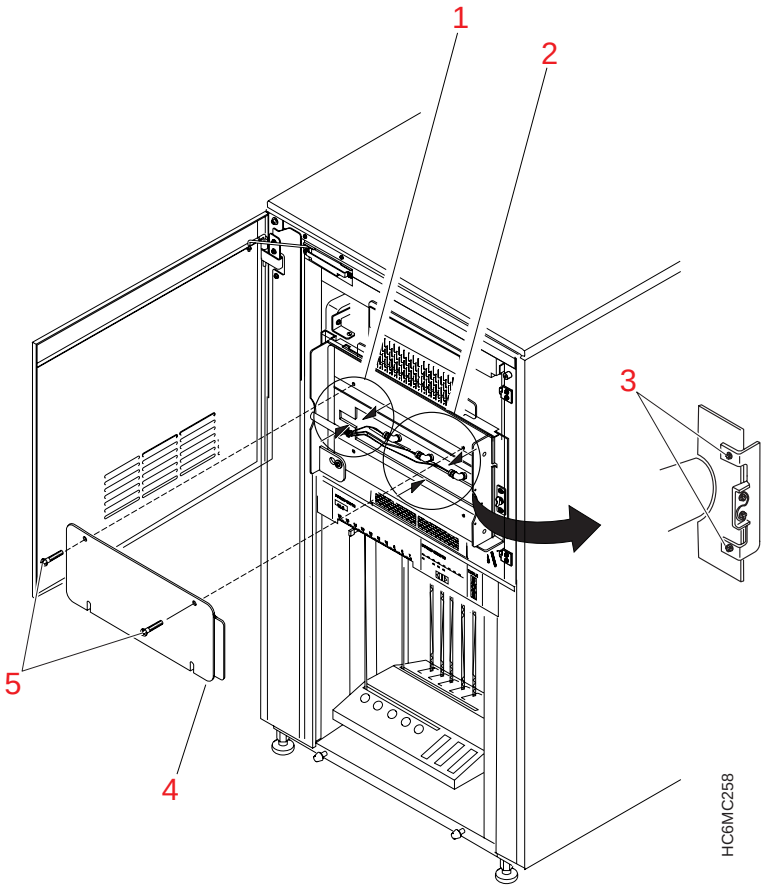
1. Open the stacker end cover.

Note: When the oiler-belt gate is opened, the fuser begins to cool down immediately, and the printer operator panel message may change to `OILER GATE OPEN`.

2. Turn the wing nut counterclockwise to release the oiler-belt gate.
3. Open the oiler-belt gate.
4. Allow the printer to cool down for a least **20 minutes** before you proceed.
5. Lower the hot roll shield.
6. Install the oil pan by hooking the oil pan over the lower oiler belt support shaft **(1)**. Ensure that the bottom of the oil pan sits on the shelf below the oiler belt as shown.
7. Raise the hot roll shield.
8. Close the oiler-belt gate and secure it in place by turning the wing nut clockwise.
9. Close the stacker end cover.
10. Instruct the operator to check the absorbent pad weekly to see if it needs to be changed. Depending on printer usage, the pad will last from one week to several months.
11. Show the operator how to remove and replace the oil pan to clean oil from the pan.

Oil Port Assembly

Table 480. Oil Port Assembly



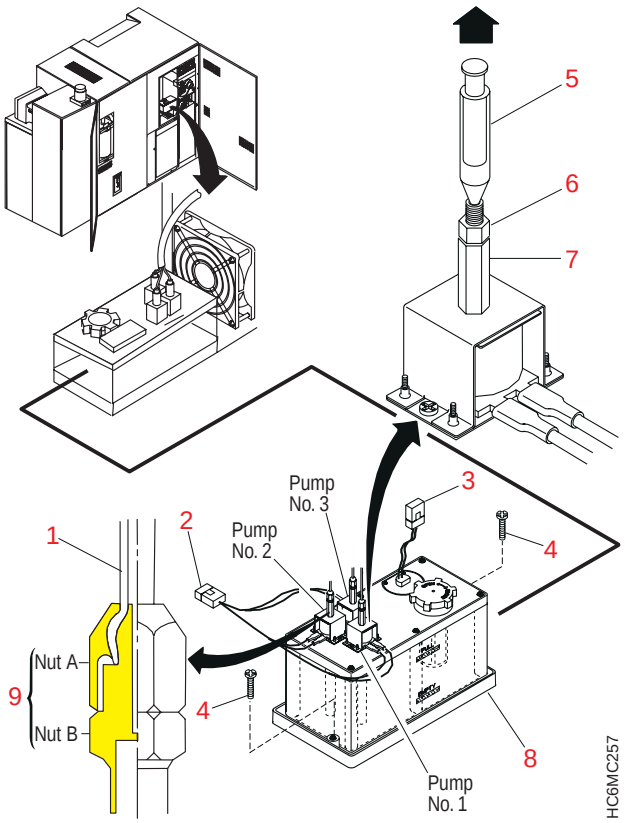
Check and Adjustment

1. Remove the oil port cover **(4)** by removing the top two screws **(5)**.
2. Ensure the oiler gate is latched.
3. Measure the distance between the flat surface of the oil port assembly and the cutout at the rear of the oiler gate **(1)**.
4. Measure the distance between the flat surface of the oil port assembly and the cutout at the front of the oiler gate **(2)**.
5. The distance at the front must be within ±1.0 mm of the distance measured at the rear.

   If it is not, perform the adjustment in step 6.
6. Loosen the two screws **(3)** on the oiler gate latch and adjust the position of the latch to obtain the correct oil port assembly front position.
7. Ensure the Oiler Gate Interlock (S704) adjustment is still correct.

Oil Pumps (L701, L702, and L703) & Oil Empty Sensor (S702)

Table 481. Oil Pumps (L701, L702, and L703)



Special Tools Required:

- Three rubber bands
- Thread sealant tape (P/N 0596763)
- Fuser oil

Removal

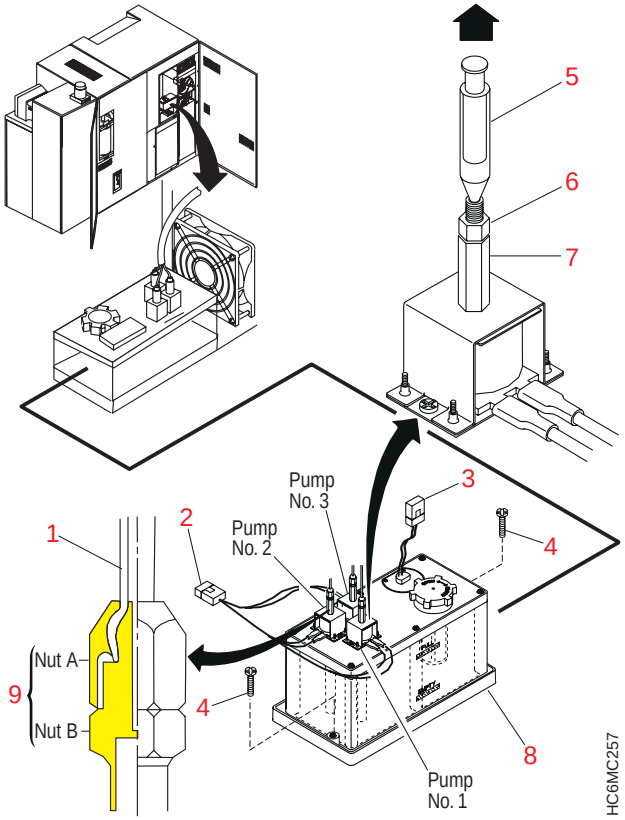
1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the right rear cover.
4. Remove the oil pump assembly cover.
5. Open the stacker end cover.
6. Tighten the filler cap on the oil pump to avoid spillage.
7. Disconnect connectors PJ725 **(3)** and PJ745 **(2)**.

Note: For the next step, you need a cloth and some rubber bands to avoid spilling the oil.

8. Ensure that each oil line is clearly labeled before you loosen the fitting.
9. Loosen each line **(1)** by separating the fittings **(9)** as follows:
   a. Hold nut **(B)** with a 12-mm (0.50-in.) open-end wrench.
   b. Loosen and remove nut **(A)** with the second 12-mm (0.50-in.) open-end wrench; nut **(A)** remains with the oil line.
   c. Fold back each oil line and wrap it with a rubber band then wrap it in cloth.

(continued on next page)

Table 481. Oil Pumps (L701, L702, and L703) (continued)



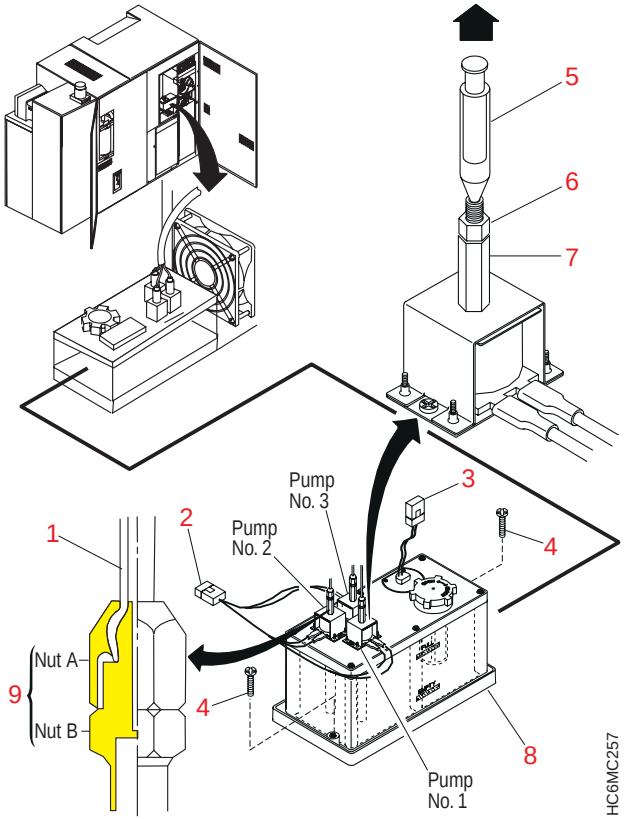
(continued on next page)

10. Remove the oil pump assembly **(8)** by removing the two screws **(4)**.
11. Remove the three oil-line fittings **(9)** from the pump.
12. Clean the 3 oil-line fittings **(9)**.
13. Wrap 1 or 2 layers of clean thread sealant tape to each of the three fittings.

Installation

1. Install the oil pump assembly with the two screws **(4)**.
2. Screw the 3 fittings **(9)** into the pumps.
3. Reconnect connectors PJ725 **(3)** and PJ745 **(2)**.
4. Fill the reservoir of the new pump with fuser oil.
5. Run Driver Routines 2A, 2B, and 2C in continuous looping mode to remove air from the pumps and to ensure that oil is being fed through the oil port assembly.
6. Attach each oil line by screwing nut **(A)** on to the correct nut **(B)**. Ensure that each oil fitting is tight.

Table 481. Oil Pumps (L701, L702, and L703) (continued)



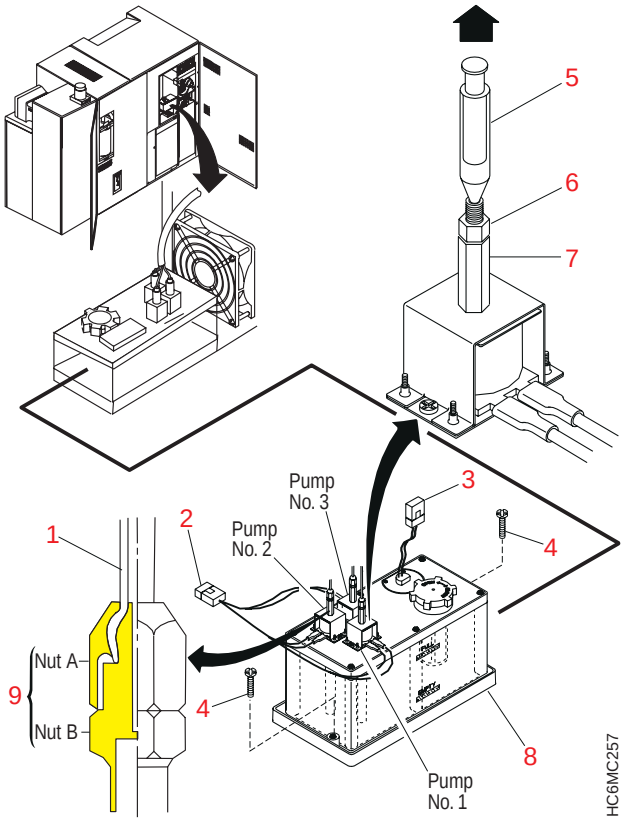
(continued on next page)

An adequate supply of fuser oil must be provided by the three oil lines to the three sections of the oiler belt or oiler wick roll on three pump systems (six oil lines on a six pump system). Air or contaminants may prevent the oil from reaching the oiler belt. Air is introduced into the lines when the oil supply in the reservoir is depleted; contaminants are introduced into the lines through the oil reservoir. Oil is provided to each section of the oiler belt in response to the width of the forms being run.

Have some disposable cloths available to collect the oil during the next procedures.

1. Power on the printer.
2. Ensure that there are no oil leaks. Spilled silicon oil is very slippery and extremely difficult to remove from floors.
3. Load the widest forms available.
4. While you run test prints, watch for movement of the bubbles in the lines. If the bubbles do not move in oil line 3.

Table 481. Oil Pumps (L701, L702, and L703) (continued)

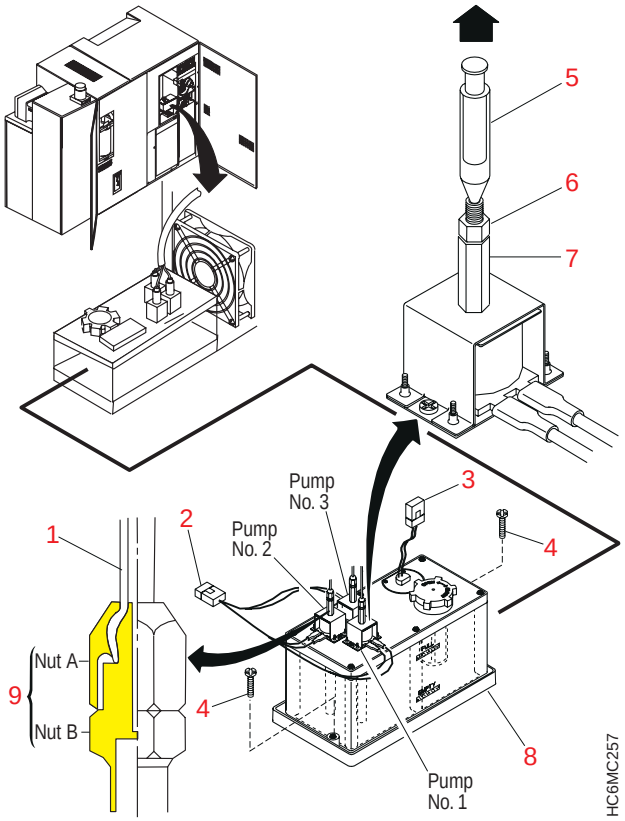


(continued on next page)

Check

5. You can also check the pumps by doing the following:
   a. Open and lock the oiler belt gate.
   b. Remove the bottom roll of the oiler belt by grasping the roll and pushing against the spring on the hinge side of the gate. Place the roll on the top of the oiler belt gate. See Replace Oiler Belt in the *Operator's Guide*.
   c. Run Driver Routines 2A, 2B, and 2C to ensure that the pumps work correctly.
   d. Watch for oil flowing from the holes in the distribution manifold behind the oiler belt.
   e. If all the holes are feeding oil, go directly to step 6.
   f. If some of the holes are not feeding oil to the belt area, remove the oiler gate cover from the opposite side (outside) of the oiler belt gate.
   g. Remove a hose at its fitting from the opposite side of the oiler belt gate. Oil should flow from this hose within a few seconds. Run the driver routines until the air or contaminant is removed.
   h. Replace this hose before you remove the next hose.
   i. Ensure that:
      - Each of the oil supply sections is operating.
      - The oil reservoir is not contaminated.
      - All the oil lines are reinstalled.
      - The oil reservoir is filled.
6. Reinstall the oiler belt.

Table 481. Oil Pumps (L701, L702, and L703) (continued)

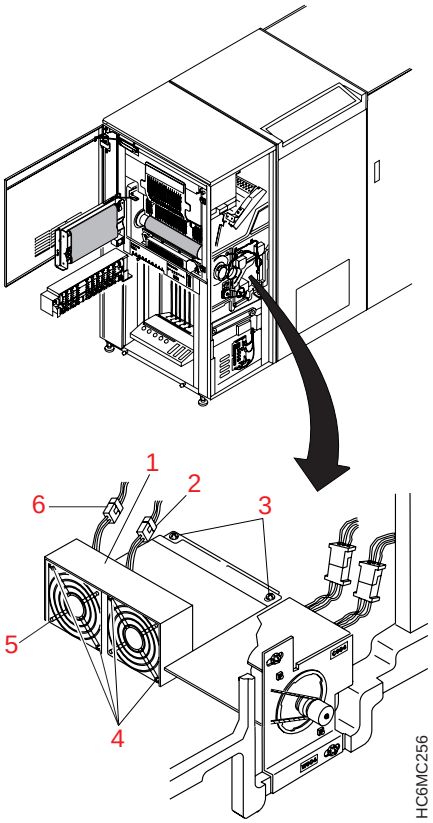


Verify

1. Run Print Pack to verify print quality.

Paper Cooling Fans (B704 and B706)

Table 482. Paper Cooling Fans (B704 and B706)



Removal

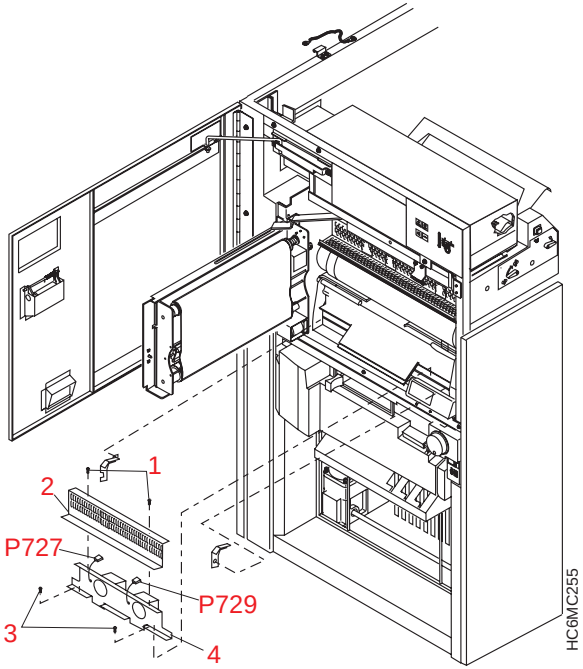
1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the left front cover.
4. Remove the hot roll (Hot Roll and Collars).
5. Remove the Preheat Platen.
6. Remove the Backup Roll.
7. Disconnect connector PJ726 **(2)** and PJ728 **(6)**.
8. Remove two screws **(3)** and slide the cooling assembly **(1)** out of the printer.
9. Remove four screws **(4)** holding the fan. Remove the fan.

Installation

1. Reverse the removal procedure to install new paper cooling fans (B704, B706).
2. Power on the printer.

Paper Cooling Fans (B705 and B707)

Table 483. Paper Cooling Fans (B705 and B707)



(continued on next page)

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the stacker end cover.
4. Open and lock the oiler belt gate.
5. Remove the two screws **(1)** and remove the fan cover **(2)**.
6. Remove the two screws **(3)** and pivot the fan assembly **(4)** out so that the rear of the assembly is visible.
7. Disconnect the fan connector and remove the two screws holding the fans.

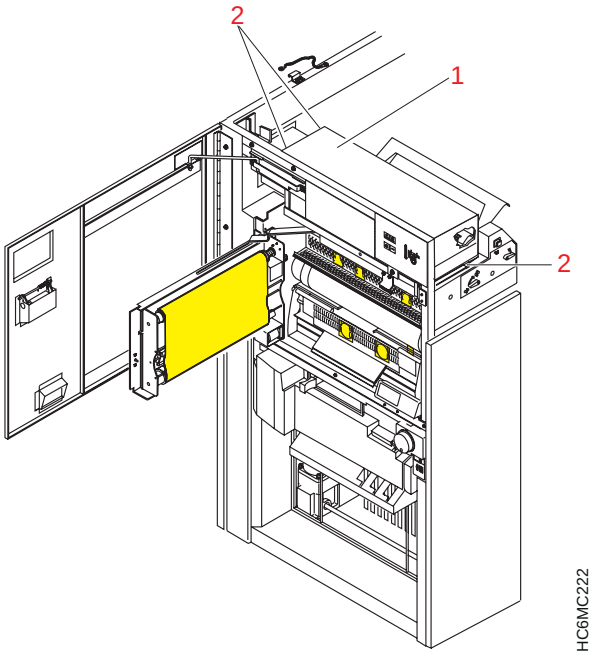
   Remove the fans.

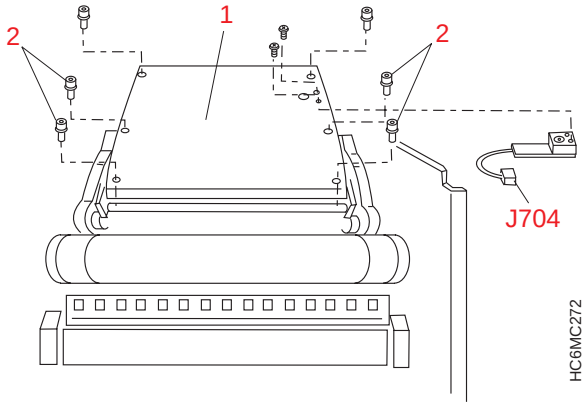
Installation

1. Reverse the removal procedure to install new paper cooling fans (B705, B707).
2. Power on the printer.

Preheat Platen

Table 484. Preheat Platen





CAUTION:
<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

See Before You Begin.

Removal

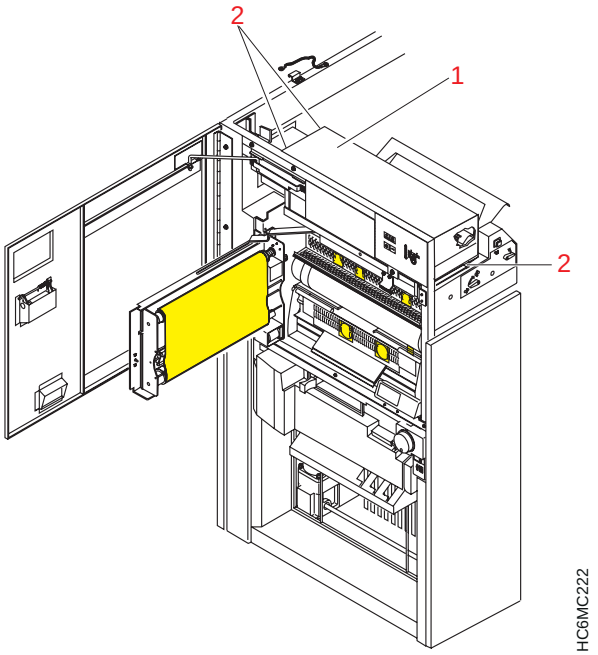
1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the top cover, the front left cover, the front left center cover, and the stacker end cover.
4. Open the right rear cover.
5. Disconnect connectors PJ715, PJ717, and PJ719 from the fuser right side.
6. Remove the fuser oil filter **(1)** by removing the three screws **(2)**.
7. Remove the preheat platen **(1)** by removing the four socket head bolts and washers **(2)**.

Installation

1. Reverse the removal procedure to install a new preheat platen.

Preheat Platen Lift Plate Assembly

Table 485. Preheat Platen Lift Plate Assembly



(continued on next page)

CAUTION:
<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

See Before You Begin.

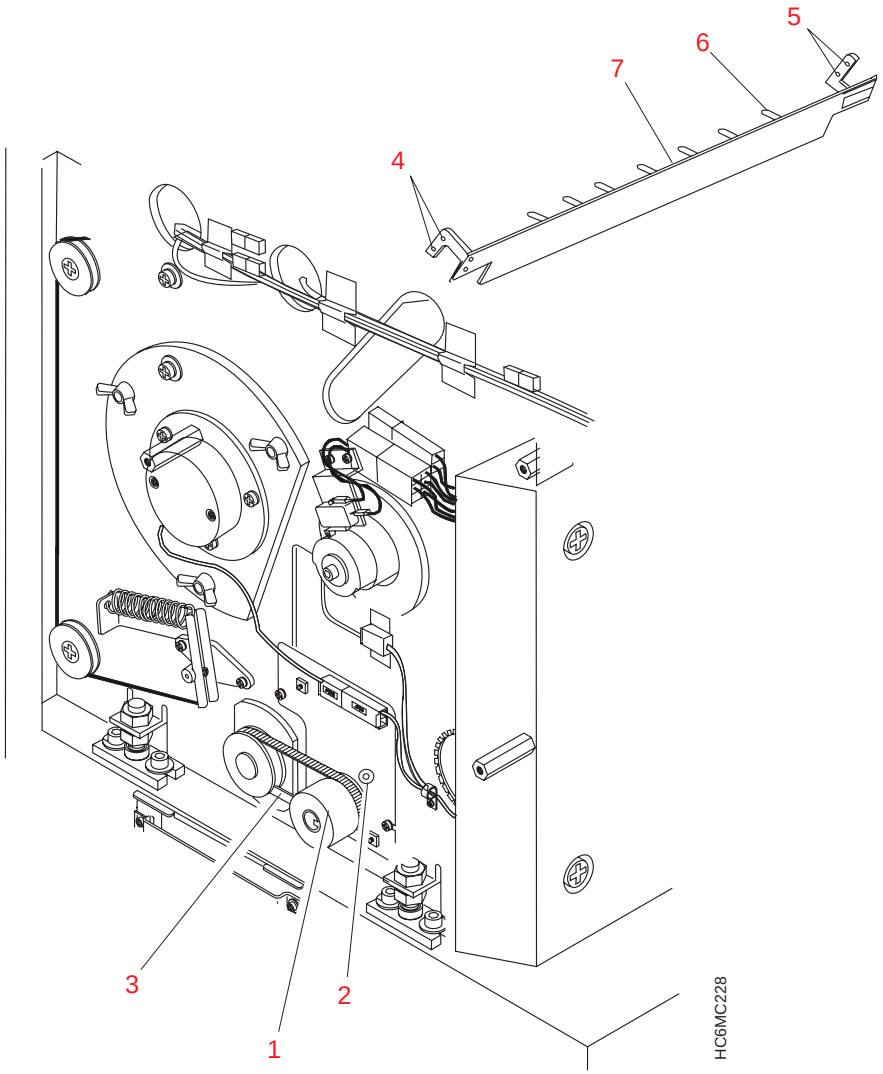
Special Tools Required:

- IBM SBB grease No. 3

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the top cover, the front left cover, the front left center cover, and the stacker end cover.
4. Open the right rear cover.
5. Remove the fuser right side cover.
6. Remove the fuser oil filter assembly **(1)** by removing the three screws **(2)**.

Table 485. Preheat Platen Lift Plate Assembly (continued)



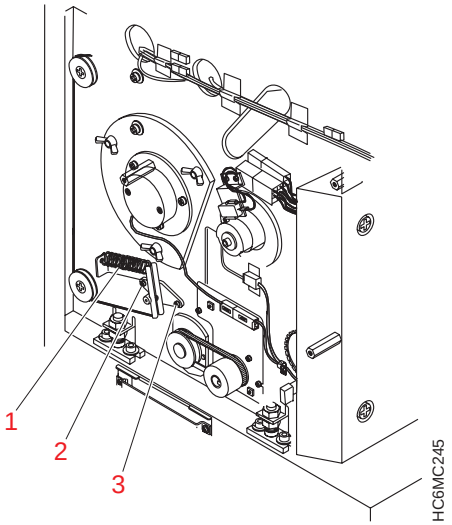
7. Remove the Preheat Platen.
8. Remove the lift plate assembly **(7)** by removing the two screws **(4)** from the front and the two screws **(5)** from the rear lift plate brackets.

Installation

1. Reverse the removal procedure to install the Preheat Lift Plate Assembly.

Scuff Pressure Rollers

Table 486. Scuff Pressure Rollers



(continued on next page)

CAUTION:
<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

See Before You Begin.

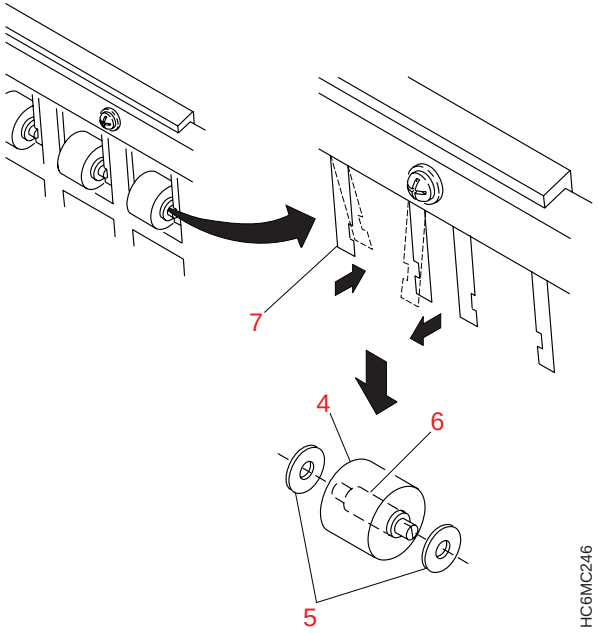
Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the stacker end cover.
4. Open and lock the oiler belt gate.
5. Remove the Paper Cooling Fans (B705 and B707).

Note: A small piece of paper under the rear cover of the pressure roll assembly will prevent the screw from falling into the stacker.

6. Remove the screw **(2)**.
7. Release the spring **(1)**.
8. Remove the screw **(3)** that holds the tension cable.
9. Remove the terminal of the scuff pressure roll assembly by removing the C-clip.
10. Move the assembly to the end of the printer to remove it.

Table 486. Scuff Pressure Rollers (continued)



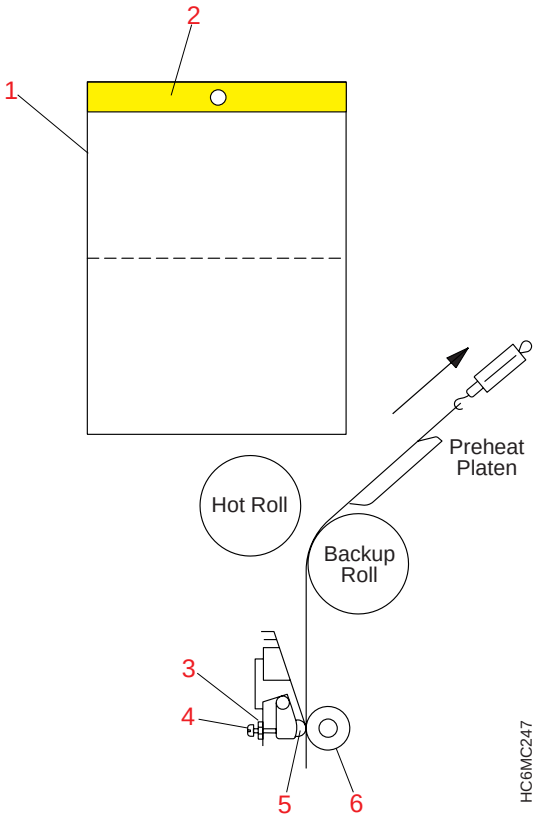
11. If you are replacing the rollers, force open the pressure-roller holder **(7)** and pull out the washers **(5)**, the shaft **(6)**, and roller **(4)**.

Installation

1. Reverse the removal procedure to install new scuff pressure rollers.
2. Power on the printer.

Scuff Roller Pressure Check

Table 487. Scuff Roller Pressure Check



(continued on next page)

Special Tools Required:

- Gram gauge
- Masking or adhesive tap

Pressure Check Procedure

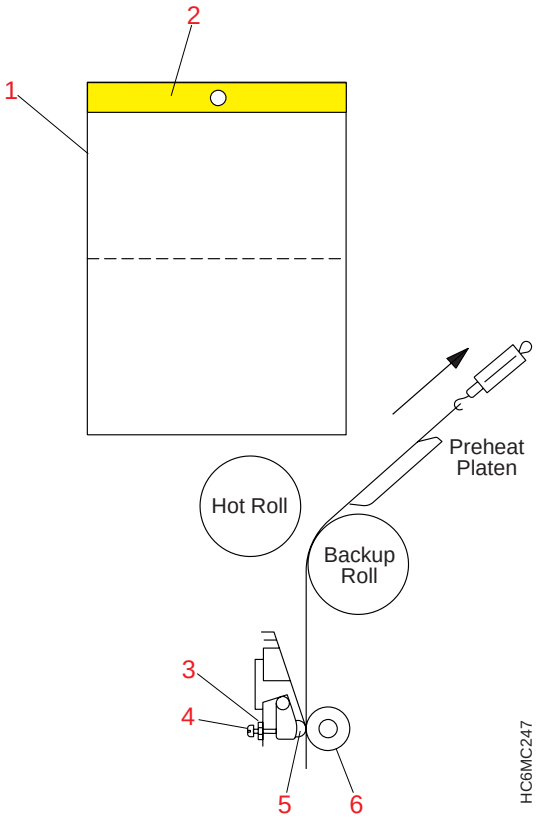
1. Place forms of 64 g/m²-weight that are 15 inches wide and 11 inches long on the preheat platen.
2. Apply adhesive or masking tape on the top edge **(2)** of the form **(1)** to reinforce the paper so that it does not tear when you pull it during the measurement procedure.
3. Place the forms between the scuff roll **(6)** and the scuff pressure rollers **(5)**. Ensure that the form is straight so that the forms contact all of the pressure rollers.
4. Attach the gram gauge to the reinforced edge of the form and hold the form in place.
5. Press the “Table Up” switch to activate the scuff roll and hold the form in place by pulling slightly as shown. The gram gauge should read between 450 and 750 g.

Adjustment

If the tension is not within the specified range, adjust the tension as follows:

1. Loosen the locknut **(3)**.
2. Adjust the tension by tightening or loosening screw **(4)**.
3. When the tension is correct, tighten the locknut **(3)**.
4. Check the gap between the pressure rollers and the scuff roll and adjust if necessary (Scuff Roll Release Cable).

Table 487. Scuff Roller Pressure Check (continued)



Check

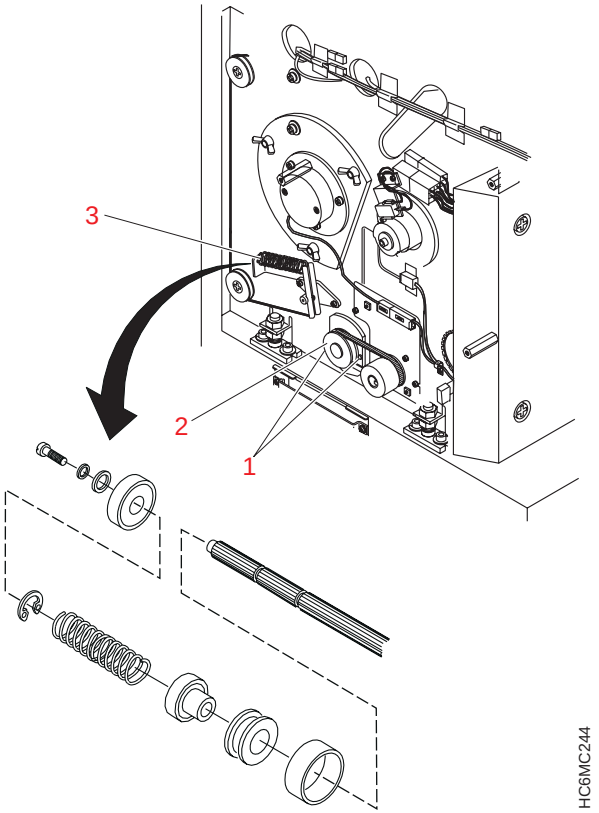
1. Run Driver Routine 29 to ensure that the scuff roll motor works correctly.

Verify

1. Run Print Pack to verify that the forms are feeding correctly.

Scuff Roll

Table 488. Scuff Roll



(continued on next page)

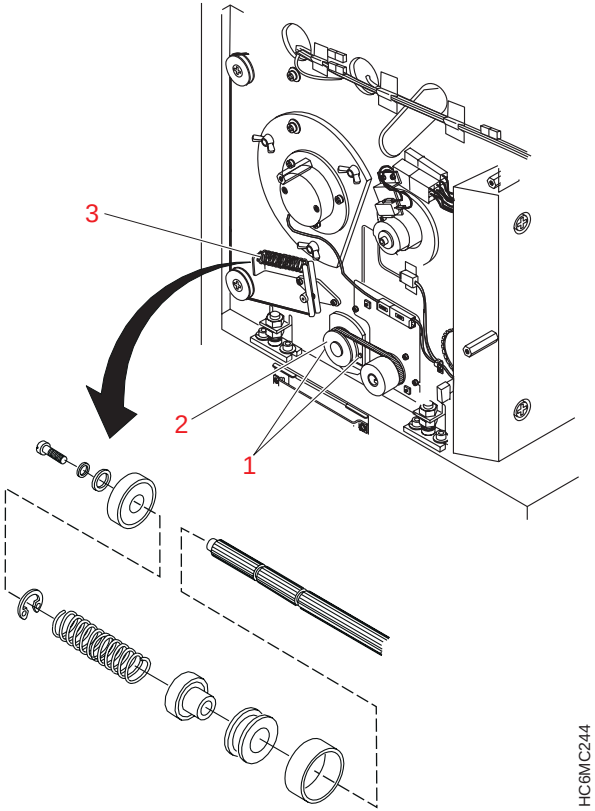
CAUTION:
<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

See Before You Begin.

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Release the spring **(3)**.
4. Perform the removal procedure for the scuff roll belt (Scuff Roll Drive Belt and Motor (M704)).
5. Remove the two screws **(1)** that hold the front bearing **(2)**.
6. Carefully pull the bearing and shaft out through the front casting and remove the scuff roll assembly.
7. Replace the rollers as necessary.

Table 488. Scuff Roll (continued)



Installation

1. To avoid damage to the scuff rolls, replace the bearing and shaft through the front casting as follows:
   a. Allow the rear of the shaft to move to the right as the rear bearing clears the front casting.
   b. Keep the front of the shaft down and to the right as the front bearing is moved toward the front casting.
2. Carefully slide the shaft to the rear.
3. Slide all of the rollers to the rear approximately 13.0 mm (0.500 in.) to position them between the finger tabs on the forms guide.
4. Position the front and rear bearings in the castings.
5. Attach the spring **(3)**.
6. Perform the install procedure for the scuff roll drive belt. (See page 1736.)
7. Power on the printer.
8. Perform the Scuff Roller Pressure Check to ensure that the proper tension is on the paper.

Check

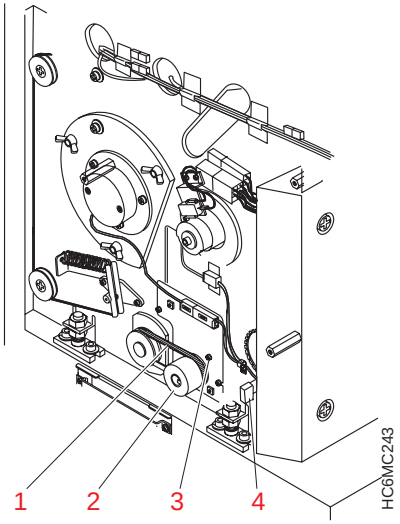
1. Run Driver Routine 29 to ensure that the scuff roll motor works correctly.

Verify

1. Run Print Pack to verify print quality.

Scuff Roll Drive Belt and Motor (M704)

Table 489. Scuff Roll Drive Belt and Motor (M704)



Special Tools Required:

- Push-pull scale (P/N 0460870)

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the left front cover.
4. Loosen the 2 screws **(3)** and move the motor **(2)** to the left; then, remove the belt **(1)**.

If you are removing only the belt, go directly to Installation. If you are removing the motor, continue with the next step.

5. Disconnect connector PJ714 **(4)** (not shown).

Installation

1. Reverse the removal procedure to install a new scuff roll drive belt and motor.
2. Power on the printer.

Adjustment

1. Adjust the motor left to right so that the belt will deflect 1.0 mm (0.040 in.) when 70–100 g (2.5–3.5 oz) of force is applied to the center of the belt.

Check

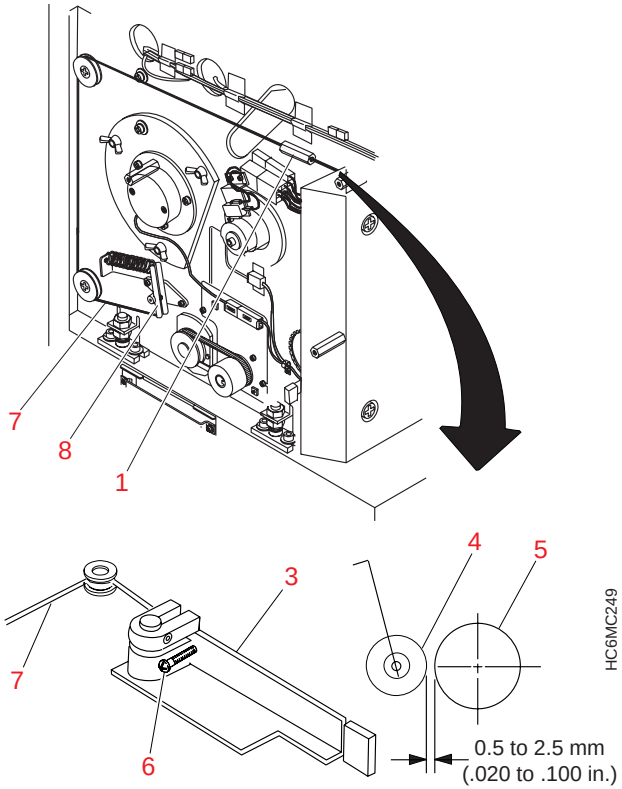
1. Run Driver Routine 29 to ensure that the scuff roll motor works correctly.

Verify

1. Run Print Pack to verify that the forms are feeding correctly.

Scuff Roll Release Cable

Table 490. Scuff Roll Release Cable



(continued on next page)

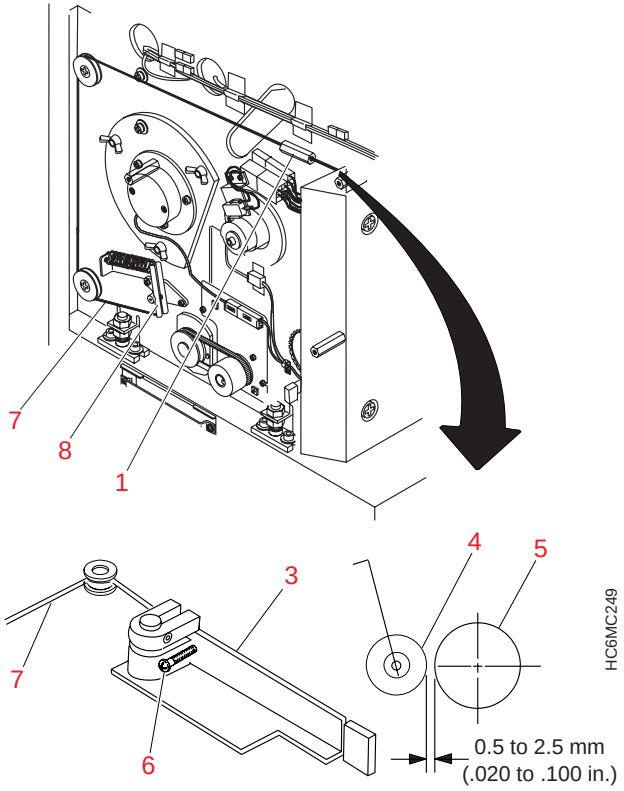
CAUTION:
<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

See Before You Begin.

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the stacker end cover.
4. Open and lock the oiler belt gate.
5. Open the left front cover.
6. Remove the fuser front cover.
7. Remove the screw **(6)** and remove the release cable **(7)** from the lever **(3)**.
8. Remove the Scuff Roll Drive Belt and Motor (M704).
9. Remove the Scuff Roll.
10. Remove screw **(8)** (not shown) and remove the cable **(7)**.

Table 490. Scuff Roll Release Cable (continued)



Installation

1. Reverse the removal procedure to install a new scuff roll release cable.
2. Power on the printer.

Adjustment

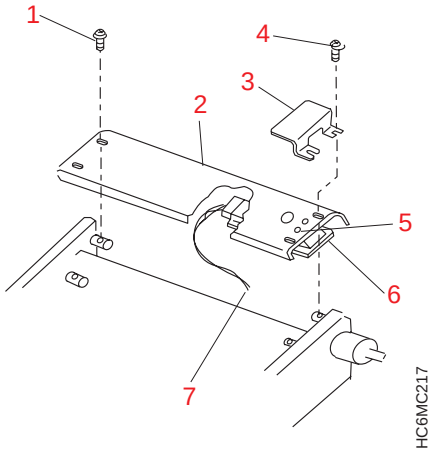
1. Hold the lever **(3)** in the front (operated) position and adjust the length of the cable by rotating the collar **(1)** so that the gap between the scuff roll **(5)** and the scuff pressure rollers **(4)** is 0.5 to 2.5 mm (0.020 to 0.100 in.)

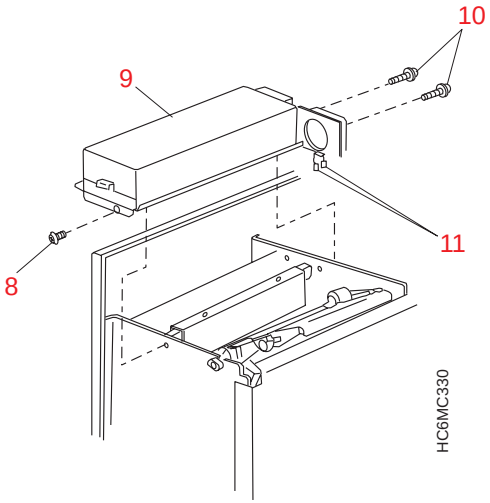
Verify

1. Run Print Pack to verify print quality.

Skew Sensor (S707)

Table 491. Skew Sensor (S707)





CAUTION:
<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

See Before You Begin.

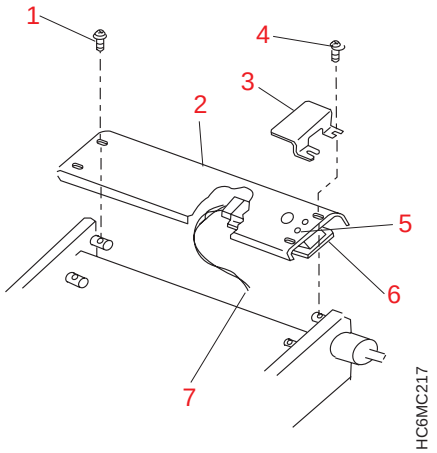
Special Tools Required:

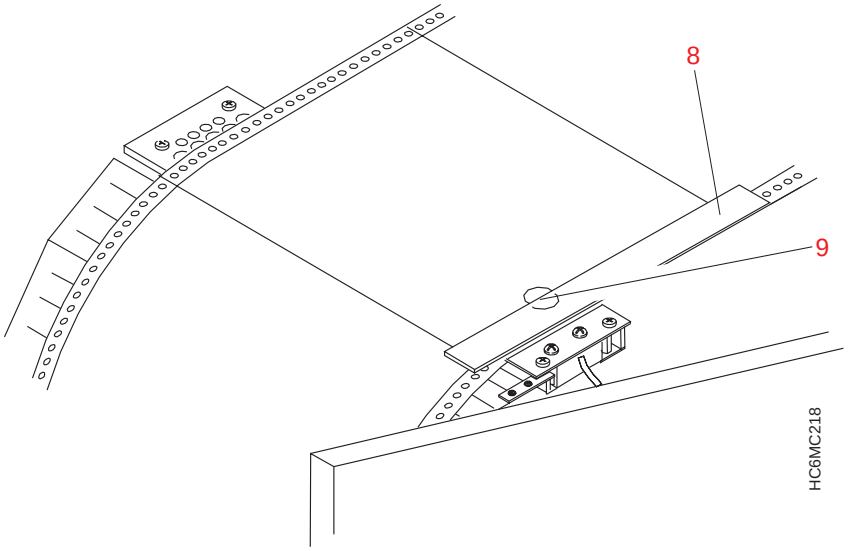
- Lint-free cloth (P/N 2108930)
- Isopropyl alcohol (P/N 2200200)

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the left top and left front covers.
4. Remove the fuser front cover.
5. Remove the screw **(8)**.
6. Open the printer right rear cover.
7. Disconnect connectors PJ724 and PJ731 **(11)**.
8. Remove the two screws **(10)** and remove the fuser filter assembly **(9)** from the printer.
9. Remove the two screws **(4)** and remove the skew sensor cover **(3)**.
10. Remove the two screws **(1)** from the preheat paper guide plate **(2)** and lift the plate from the printer.
11. Remove any necessary cable clamps and disconnect connector PJ704 **(7)**.
12. Remove the two screws **(5)** and remove the skew sensor board **(6)** from the plate.

Table 491. Skew Sensor (S707) (continued)





(continued on next page)

Installation

1. Reverse the removal procedure to install a new skew sensor. Center the sensor in the round hole in the vacuum plate. Tighten the two sensor mounting screws **(3)**.

> **Hint**
> The two sensor mounting screws are located in long slots in the vacuum plate. These **long slots** provide for centering of the sensor in the round hole in the vacuum plate, **not for skew sensor adjustment**.

Check

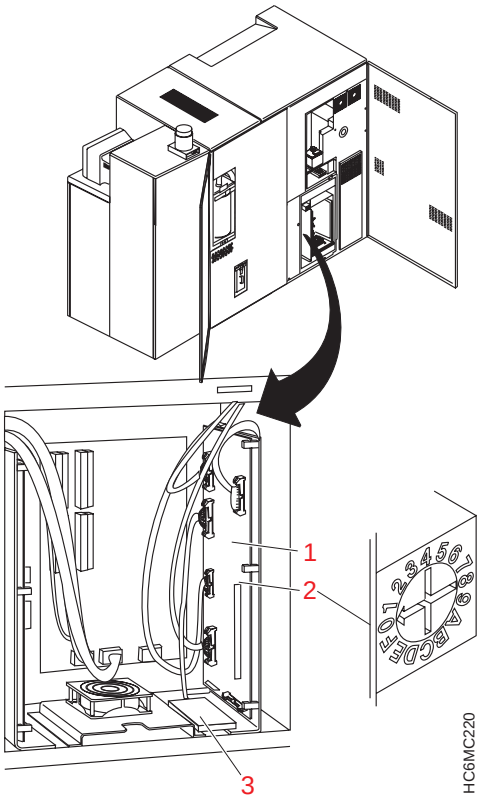
1. Clean the upper surface of the shutter vacuum plate and the skew sensor window of any forms residue with Isopropyl alcohol and a lint-free cloth.
2. Power on the printer.

> **Hint—Skew Sensor:**
> Ambient light affects the skew sensor; the printer top cover may need to be closed in the next step.

3. Run Sensor Routine 6E. Use an approximately ½-inch wide strip of paper **(8)** to ensure that the skew sensor **(9)** works correctly.

Verify

1. Run Print Pack to verify that the forms are feeding correctly.



(continued on next page)

CAUTION:
<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

See Before You Begin.

Adjustment

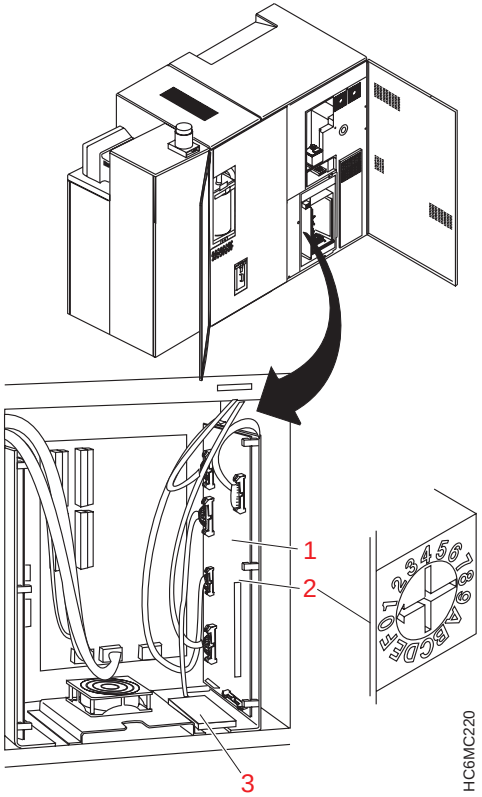
Important

Perform this adjustment only when the printer is level and a new hot roll and backup roll are installed. Use Map 133 if the machine has skew errors.

Hint

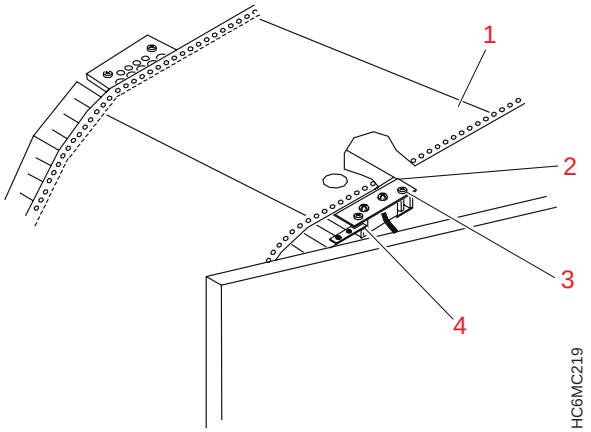
The two sensor mounting screws are located in long slots in the vacuum plate. These **long slots** provide for centering of the sensor in the round hole in the vacuum plate, **not for skew sensor adjustment**.

1. Ensure that the printer is level.
2. Open the printer center front cover.
3. Open the stacker end cover.
4. Carefully inspect the **hot roll, hot roll plastic collars, backup roller, scuff rollers, and the scuff pressure rollers** for binds, wear, or damage; these can cause either skew or steering problems.
5. Clean the upper surface of the shutter plate and the skew sensor window of any forms residue with Isopropyl alcohol and a lint-free cloth.



(continued on next page)

6. Open the printer center rear cover.
7. Remove the CE access cover.
8. Set the diagnostic function switch on the CPxxx card to position **2**.
9. Set the MASWB digital switch **(2)** on the CPxxx card to position **5** to disable steering.
   Note: The initial setting of this switch is **0**.
10. **Ensure that all host attachments are disabled.**
11. Power on the printer.



(continued on next page)

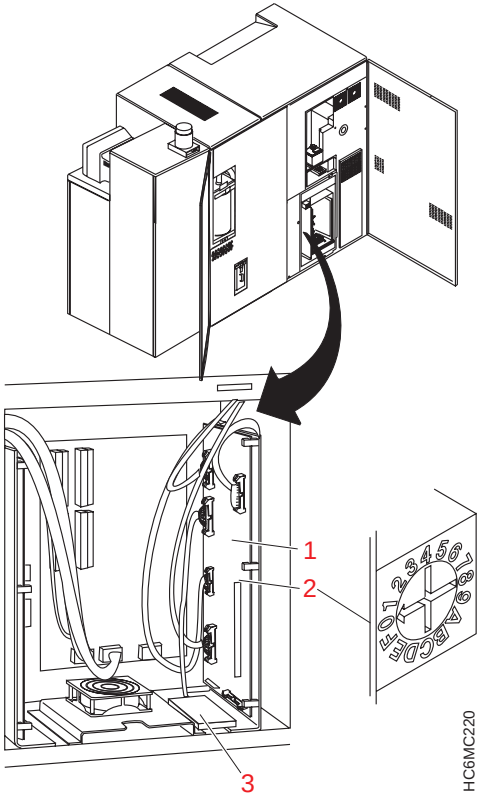
12. Load the widest forms available and observe the maintenance panel while you run 50 test prints. The paper skew indication on the maintenance panel is usually greater at the beginning of the run; then it decreases toward the end of the run. Use the indication given near the end of the run.

    If the paper skew is less than **l. 05** or **r. 05**, go to step 15. If it is not, perform the following steps.

13. Move the stop **(4)** on the preheat platen so that it does not interfere with the movement of the vacuum plate in the next step. Loosen the four screws **(3)** that hold the shutter vacuum plate and align the red line **(2)** with the front edge of the forms **(1)**. Tighten the four screws, and rerun 50 test prints while you observe the maintenance panel. Do this until the skew checks less than **05**. Ensure that all four shutter vacuum plate screws **(3)** are tight.

Note: If you cannot make this adjustment by repositioning the shutter vacuum plate, repeat step 1 and reinspect the parts noted in step 4.

14. Adjust the stop **(4)** on the preheat platen to just touch the edge of the shutter vacuum plate.



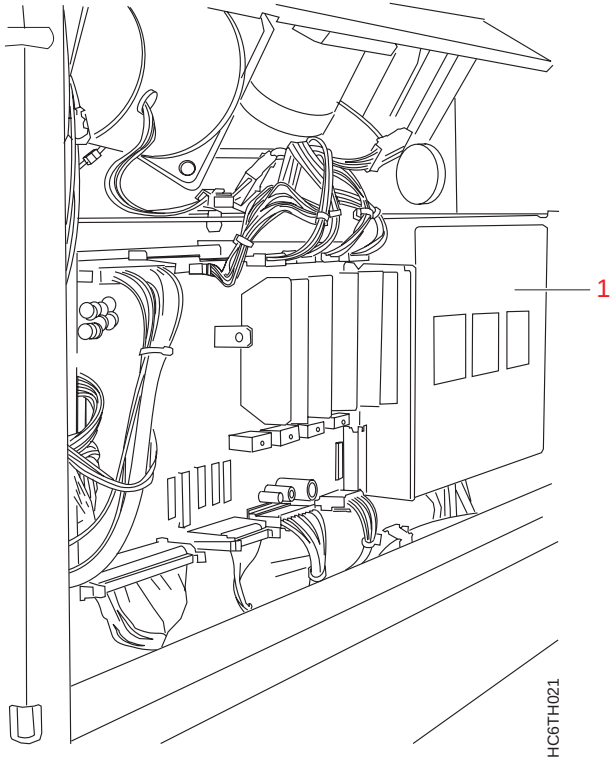
15. Return the MASWB digital switch on the CPxxx card to position **0**.
16. Return the diagnostic function switch to position **0**.

Verify

1. Run Print Pack to verify that the forms are feeding correctly. Ensure that the front edge of forms is aligned on the red line.

Solid State Relays (SR601, SR602 & SR603)

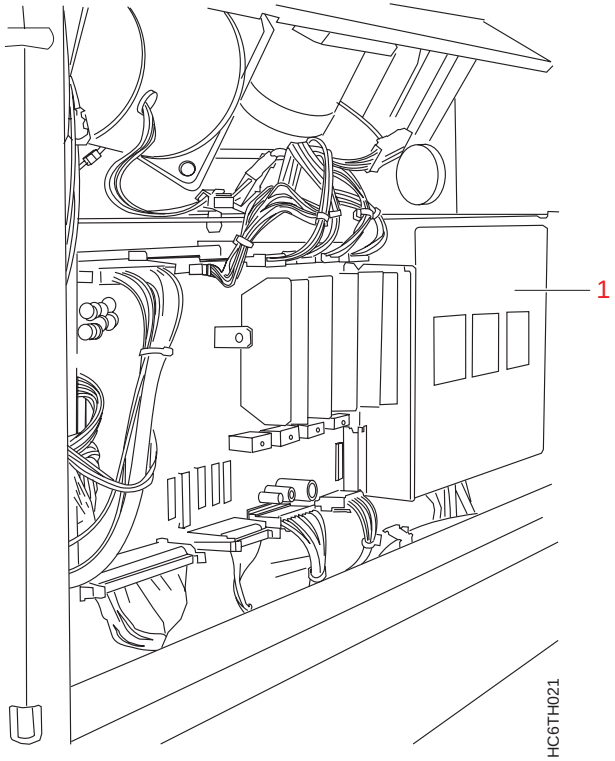
Table 492. Solid State Relays (SR601, SR602 and SR603)



Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the top cover, the left front cover, and the center left front cover.
4. Remove the fuser right side cover.
5. Remove the solid state relay cover **(1)**.
6. Loosen the 4 contact screws on the front of the relay and remove the contacts.
7. Remove the 2 screws, to remove the relay.

Table 492. Solid State Relays (SR601, SR602 and SR603) (continued)



Installation

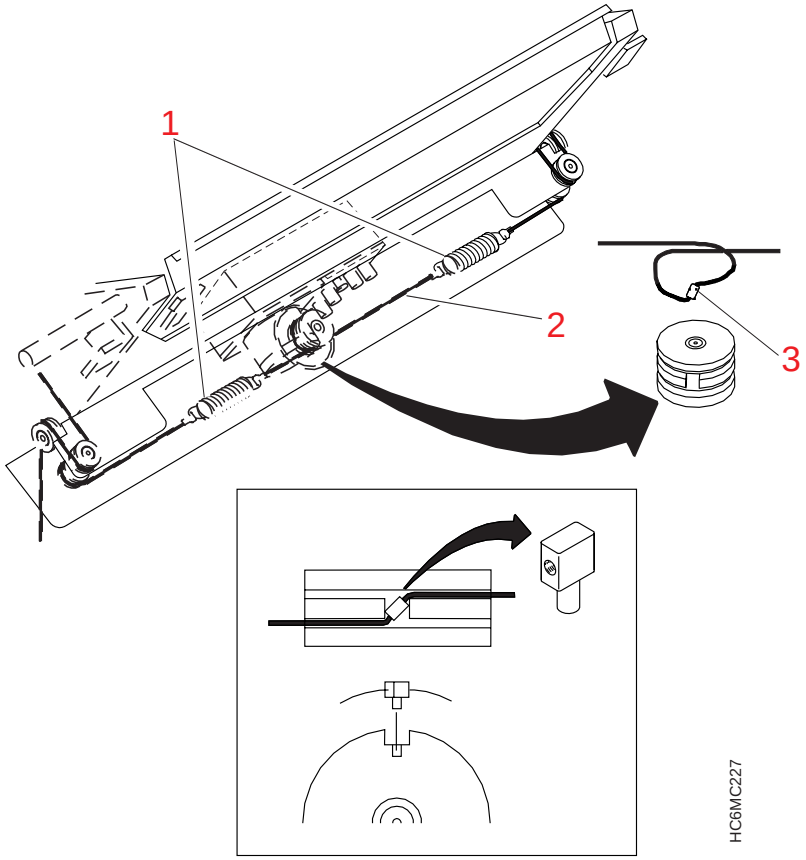
1. Reverse the removal procedure to install a relay.
   Note: The contacts on the relay, and the wires leading to the relay are numbered. When installing the relay, ensure that the wires on the dc side of the relay (3 & 4) are correctly installed on the corresponding contacts. The wires on the ac side of the relay can be in either position.
2. Power on the printer.

Check

1. Ensure that the fuser lamps operate correctly.

Steering Motor (M705)

Table 493. Steering Motor (M705), Pulleys, and Cables

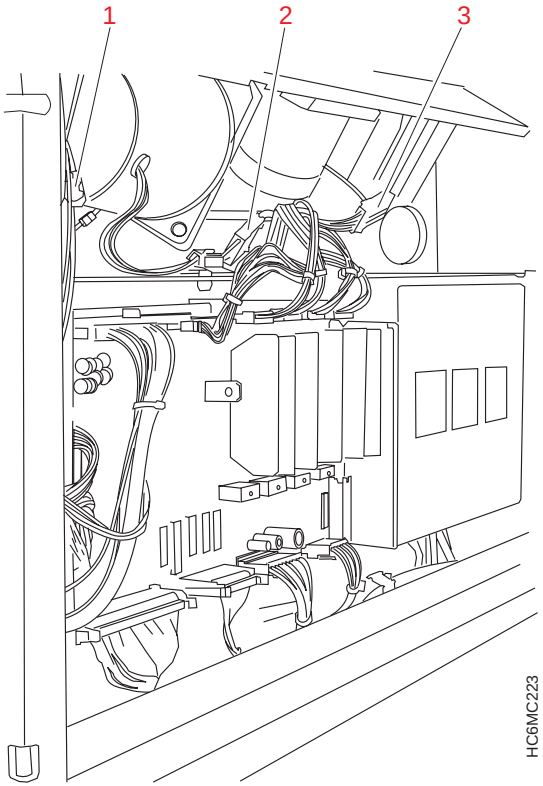


(continued on next page)

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the top cover, the left front cover, and the center left front cover.
4. Remove the fuser right side cover.
5. Release the springs **(1)**.
6. Disconnect the middle steering cable **(2)** from the springs **(1)** and remove the cable.
7. Remove the screw **(3)**, remove the steering cable holder, and remove the cable.

Table 493. Steering Motor (M705), Pulleys, and Cables (continued)

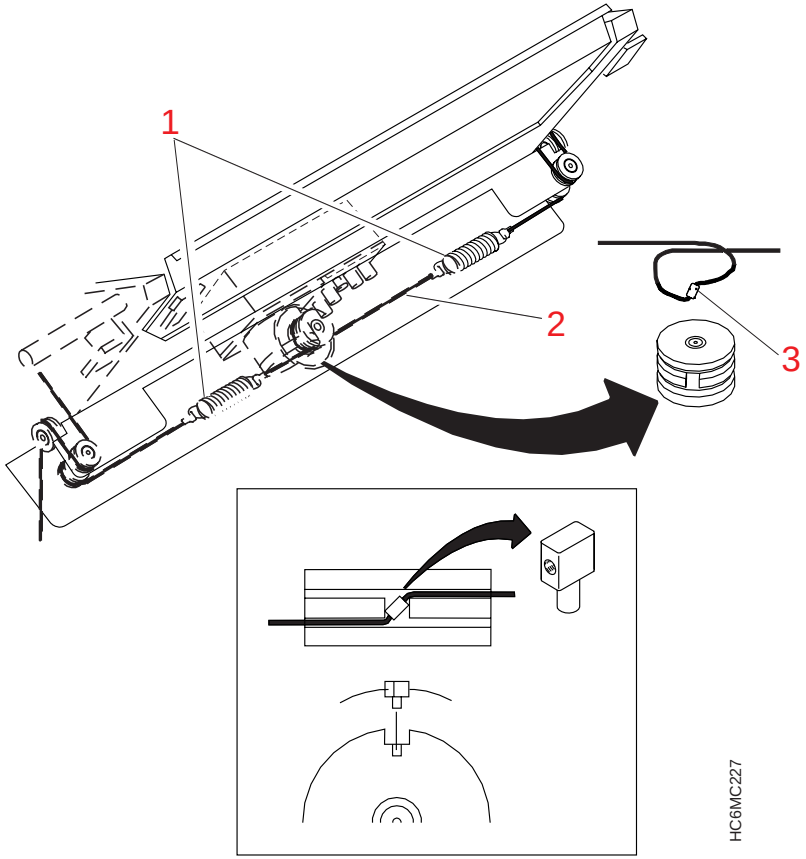


(continued on next page)

If you are removing only the cable, go to Installation. If you are removing the steering motor, continue with the next steps.

8. Disconnect connector PJ717 **(3)**.

Table 493. Steering Motor (M705), Pulleys, and Cables (continued)



9. Remove the Backup Roll Lift Motor (M610).
10. Loosen the screw (located in the center of the pulley's front face) and remove the steering motor pulley.
11. Hold the steering motor while you remove the 2 screws (removed from below) and remove the motor.

Installation

1. Reverse the removal procedure to install a new steering motor, pulleys, and cables.
2. Power on the printer.

Check

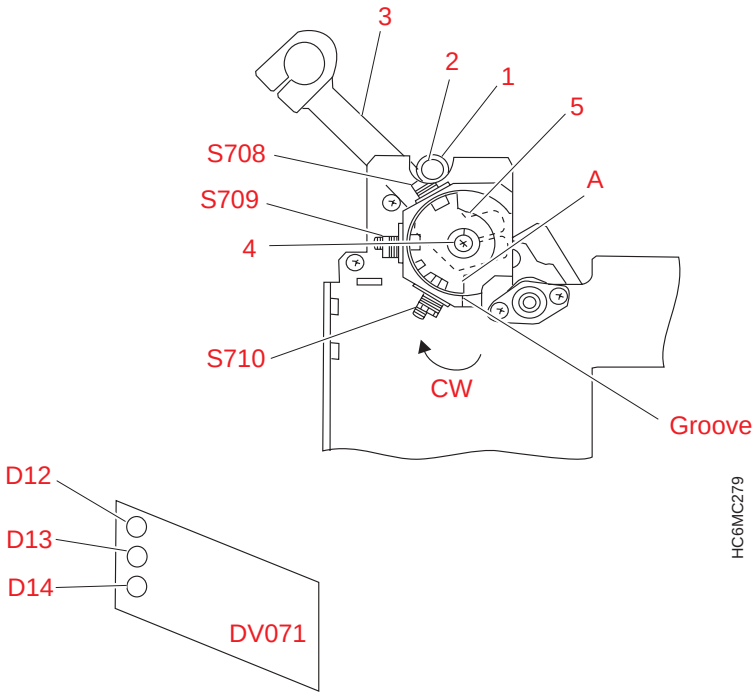
1. Ensure that the steering pulley is flush with the end of the steering motor shaft.
2. Run Driver Routine 23 to ensure that the steering motor works correctly.

Verify

1. Run Print Pack to verify print quality.

Tension Arm Encoder Sensors (S708, S709 & S710)

Table 494. Tension Arm Encoder



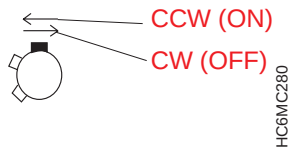
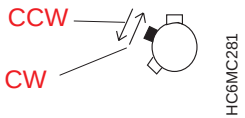
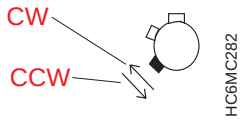
(continued on next page)

Adjustment

Note: Do this procedure with power on.

1. Open the right rear cover and remove the rear fuser cover.
2. Remove the tubing **(1)** from the tension arm upper stop **(2)**.
3. Remove forms from the printer or loosen the forms so that the tension arm **(3)** is against the upper stop. (It is held there by the tension arm springs.)
4. Loosen the screw **(4)** that fastens the encoder disk.
5. Align edge **A** of the encoder disk with the groove in the encoder housing.
6. Tighten the screw **(4)**.

Tension Arm Encoder (continued)

LED	BF Sensor	BF Sensor Position (From BF Encoder Side)
D12	S708	
D13	S709	
D14	S710	

7. Adjust sensors S708, S709, and S710 individually:
   - When the tension arm is against the upper stop **(2)**, all three LEDs (D12, D13, and D14) on the DV071 Card are off.
   - When the gap between the tension arm and the upper stop is 0.5 ±0.2 mm, all three LEDs turn on at almost the same time.

Check

1. Place the printer in Diagnostic mode. (The digital switch should be set to position **3**.)
2. Run Sensor Routine 64.
3. Move the tension arm manually from its upper limit to its lower limit and ensure that the maintenance panel display matches the Sensor Routine description.

Printer Power Supplies and Control Cards

Power Control Panel Switch Settings 1753
Power On Procedure 1754
Power Off Procedure 1755
Power Supply Access 1756
AC Power Supply 1757
DC Power Supply 1758
Printer DC Voltage Measurements and Adjustments 1759
CP261/CP471 Card Replacement 1760
CP261/CP471 EPROM Module Replacement 1762
CP261/CP471 Memory Module - MB071 Replacement 1763
Control Cards 1764

Power Control Panel Switch Settings

Table 495. Power Control Panel Switch Settings For Simplex Systems

Condition	CU	Printer	Action
Control unit and printer	Local	Remote	Press CU Power On or Off button
Printer only	Local	Local	Press printer Power On or Off button

Table 496. Power Control Panel Switch Settings For Duplex Systems

Condition	CU 2	Prt 2	CU 1	Prt 1	Action
Both control units and both printers	Local	Remote	Remote	Remote	Press CU2 Power On or Off button
Control unit 2 and Printer 2 only	Local	Remote	Local	Remote	Press CU2 Power On or Off button
Control unit 1 and Printer 1 only	Local	Remote	Local	Remote	Press CU1 Power On or Off button
Printer 2 only	Local	Local	Local	Remote	Press Printer 2 Power On or Off button
Printer 1 only	Local	Remote	Local	Local	Press Printer 1 Power On or Off button

Power On Procedure

Note: The Power On procedure is differs if you powered off the printer and the control unit or just the printer.

Table 497. Power On Procedures

Power On the Complete Printing System

Note: Both the control unit and printer are off.

1. Use Table 495 for the correct Local/Remote switch settings to power on a simplex printer.
2. Use Table 496 for the correct Local/Remote switch setting to power on a duplex printing system.
3. Verify that you have the correct settings.
4. Press the appropriate Power On pushbutton.
5. After the microcode has loaded, enable the appropriate host attachments and preprocessor/postprocessor.

Power On the Printer Only

Note: the control unit is on and the printer is off.

1. Use Table 495 for the correct Local/Remote switch settings to power on a simplex printer.
2. Use Table 496 for the correct Local/Remote switch setting to power on a duplex printing system.
3. Verify that you have the correct settings.
4. Press the appropriate Power On pushbutton.
5. Go to the Display/Touch Screen and select **Operate** on the menu bar.
6. On the menu that appears, select **Shutdown/Restart**.
7. On the next window that appears, select **Restart**. This ensures proper initialization of the printing system.
8. After the microcode has loaded, enable the appropriate host attachments and preprocessor/postprocessor.
9. Place the printer Local/Remote switch in the Remote position.

Power Off Procedure

Attention: There is a procedure to shut down the Infoprint 3000 that performs all the necessary cleanup operations before the printer is powered off. **Do not** power off the Infoprint 3000 before you run the shut down procedure.

Table 498. Power Off Procedures

Power Off the Complete Printing System

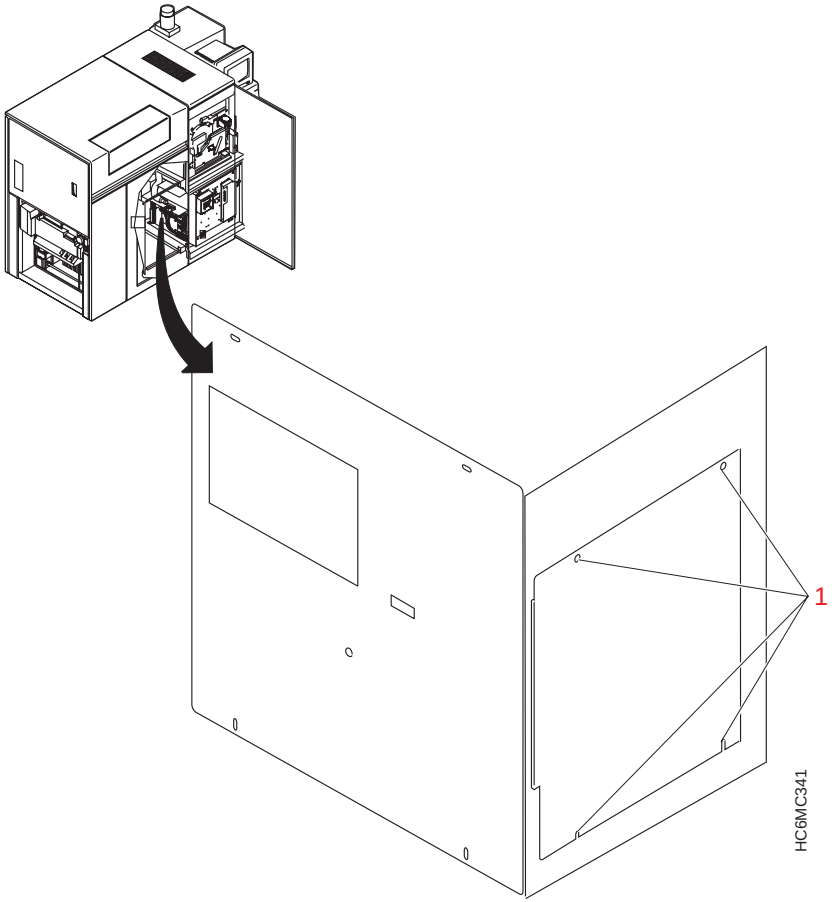
1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. On the Display/Touch Screen press **Stop** to make the printer Not Ready.
3. On the menu bar of the Display/Touch Screen main window, select **Operate**.
4. On the menu that appears, select **Shutdown/Restart**. (In dual simplex mode, select **Shutdown** on the **Shutdown/Restart** window for the other printer if desired.)
5. On the next window that appears, select **Shutdown**. When `Shutdown is complete` appears on the Display/Touch Screen , continue with the next step. (In dual simplex mode, this message appears only if both printers are shutdown.)
6. Use Table 495 for the correct Local/Remote switch settings to power off a simplex printer.
7. Use Table 496 for the correct Local/Remote switch setting to power off a duplex printing system.
8. Verify that you have the correct settings.
9. Press the Power Off in Local button.

Power Off the Printer Only

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. On the Display/Touch Screen press **Stop** to make the printer Not Ready. (Do not power off the control unit.)
3. Use Table 495 for the correct Local/Remote switch settings to power off a simplex printer.
4. Use Table 496 for the correct Local/Remote switch setting to power off a duplex printing system.
5. Verify that you have the correct settings.
6. Press the Power Off in Local button.

Power Supply Access

Table 499. Power Supply Access



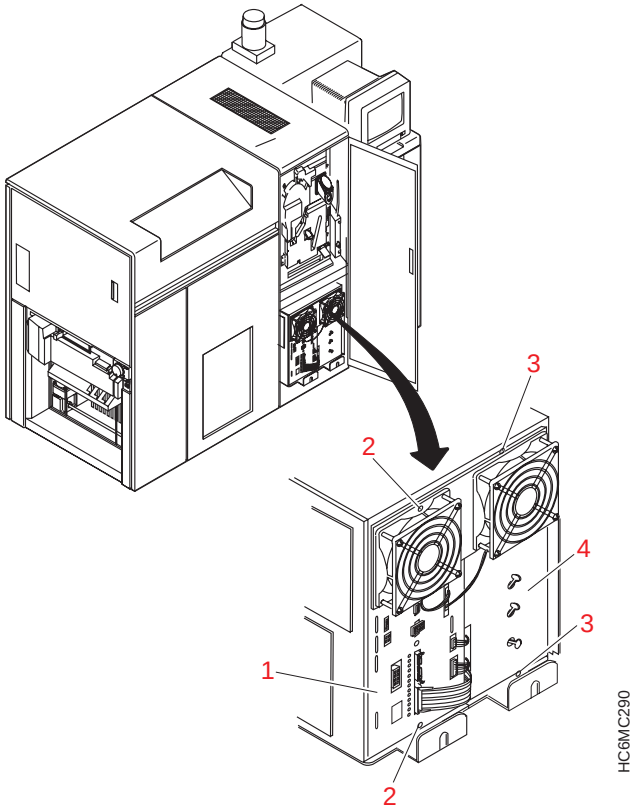
DANGER

<7> Line voltage is present when the printer is powered-off. Disconnect the power cord before working in this area.

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. SHUTDOWN AND POWER OFF THE PRINTER.
3. Open the right front cover.
4. Turn off circuit breaker CB451.
5. Turn off the circuit breaker that provides power to the customer outlet.
6. Unplug the printer power cord from the outlet.
7. Remove the four screws **(1)**, fastening the cover .
8. Remove the power supply cover.

AC Power Supply

Table 500. AC Power Supply



Removal

1. Follow the Power Supply Access procedure.
2. Remove the DC Power Supply.
3. Disconnect connector PJ453.
4. Remove the two screws **(3)** and slide the ac assembly toward the front of the printer.
5. Disconnect the following connectors:
   - PJ473
   - PJ474
   - PJ472
   - PJ476
   - PJ477
   - PJ471 (on the back of the ac power supply)
6. Remove the ac power supply **(4)**.

Installation

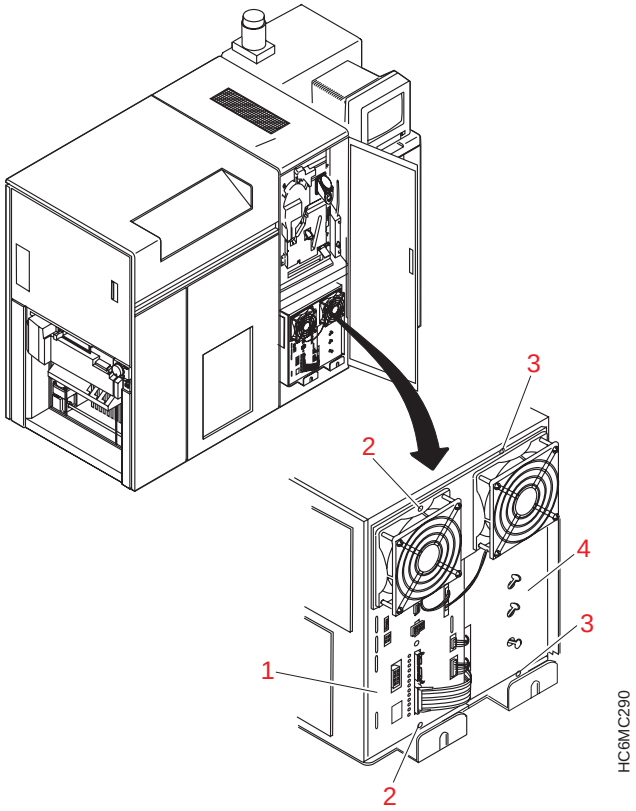
1. Reverse the removal procedure to install the ac power supply.

Verify

1. Run print samples to verify print quality .

DC Power Supply

Table 501. DC Power Supply



Removal

1. Follow the Power Supply Access procedure.
2. Disconnect the following connectors:
   - PJ457
   - PJ459
   - PJ458
   - PJ462
   - PJ467
   - PJ468
   - PJ460
   - PJ461
   - PJ465
   - PJ464
   - PJ466
   - PJ469
3. Remove the two screws **(2)**.
4. Remove the dc power supply **(1)**.

Installation

1. Reverse the removal procedure to install the dc power supply.
2. Power on the printer.

Verify

1. Run print samples to verify print quality.

Printer DC Voltage Measurements and Adjustments

Table 502. Voltage Test Points

Note: The DC voltages are factory adjusted and should not require any further adjustment. If any voltage measurement at the test points is outside the specified range in the table, the following supplies may be adjusted in emergency conditions to keep the printer running: +5V, +24VH, +24VE/F, +24VD, +40VD, and +100VM. The adjusting potentiometers are located on the front of the dc power supply.

Item	Voltage Range	Test Point/Connector (TP/P)
+5V	+5.35 ±0.1 V	TP (+5V) and TP (0V)
+5VM	+5 ±1.5 V	TP (+5VM) and TP (0VM)
+12V	+12 ±0.5 V	TP (+12V) and TP (0V)
+12VM	+12 ±5.0 V	TP (+12VM) and TP (0VM)
−12V	−12 ±0.5 V	TP (−12V) and TP (0V)
+24VD	+24 ±1.0 V	TP (+24VD) and TP (0V)
+24VE	+24 ±1.0 V	TP (+24VE) and TP (0VE/F)
+24VF	+24 ±1.0 V	TP (+24VF) and TP (0VE/F)
+24VH	+24 ±0.7 V	TP (+24VH) and TP (0VH)
+40VD	+40 ±1.0 V	TP (+40VD) and TP (0VD)
+100VM	+100 ±2.0 V	TP (100VM) and TP (0VM) (May be labeled +140VM)

CP261/CP471 Card Replacement

Table 503. CP261/CP471 Removal

Attention:

- If the **new CPxxx Card** is installed without copying the memory or the memory data is destroyed inadvertently, the Clear Memory (Position 8) routine should be run to avoid a parity error.
- After memory is cleared, Writing to Memory the default values. See Memory Addresses and Values

Note: Check all RPQs and features that may have been installed on this printer for any special switch settings required for switch **SW8** for each RPQ or feature.

(continued on next page)

Attention: Use ESD procedures when you handle ESD-sensitive parts.

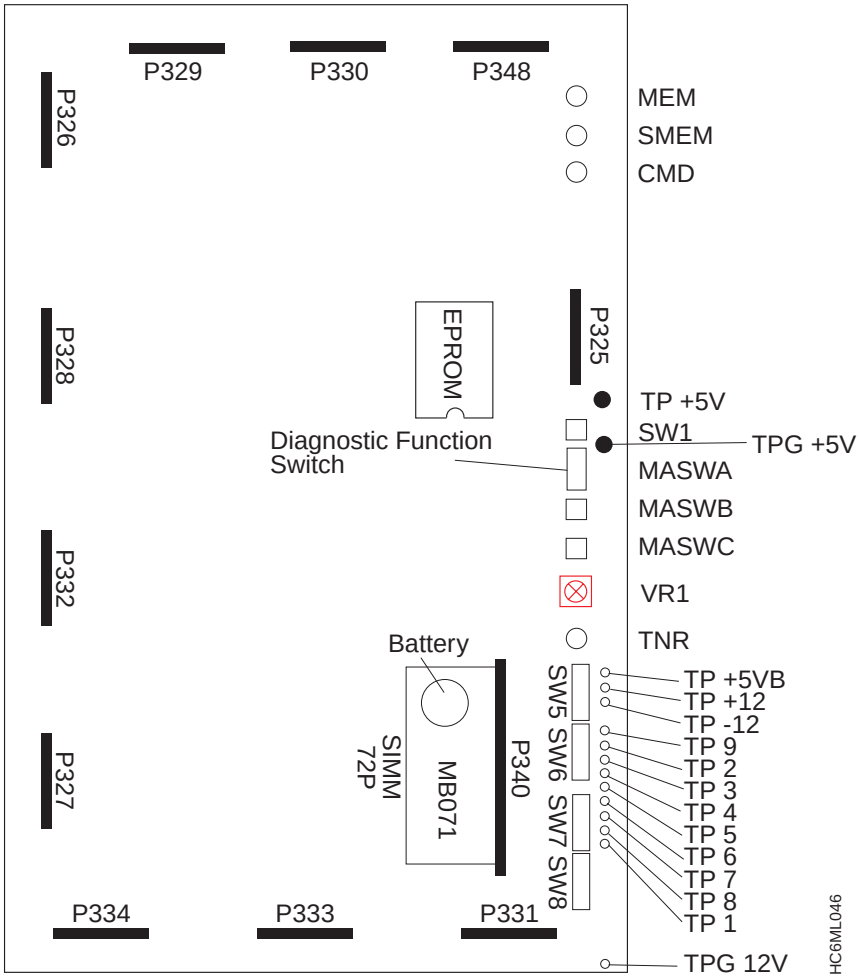
Replacement

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. SHUTDOWN AND POWER OFF THE PRINTER.
3. Locate the CPxxx Card (1453).
4. Access the functional the card by removing the appropriate covers.
5. Disconnect all the connectors that are attached to the card.
6. Release the plastic clips that hold the card in place.
7. Ensure that the EPROM on the new card is at the same or higher level than the old card.
8. Remove the Memory Card (MB071) from the old CPxxx Card.

   Install the MB071 Card on the new CPxxx Card.
9. Connect pins 1 and 2 of J1 on the CPxxx Card to connect the memory backup battery. (When shipping, the jumper should be between pins 2 and 3.) Some cards may have a backup battery switch, SW9. If the switch is present, set it to position 1.

Note: This card contains a nickel-cadmium battery. You should return the card to IBM as part of IBM's card return program or dispose of it in accordance with federal, state, and local government regulations.

Table 503. CP261/CP471 Removal (continued)



10. Set the thumb-wheel switch MASWA switch on the new card to **0**.
11. Set DIP switch SW8 on the new card as follows:
    - For 50-Hz machines: Set SW8–1 to **On**.
    - For 60-Hz machines: Set SW8–1 to **Off**.
    - For machines with Enhanced Toner Loading (Connector PJ251 present near IF491 Card): Set **SW8-3** to **OFF**.
    - For machines without Enhanced Toner Loading: Set **SW8-3** to **ON**.
    - Set all other SW8 DIP switches to **On**.
12. Set DIP switch SW7 on the new card as follows:
    - For printers with a splicing station: Set SW7–1 to **Off**.
    - For printers without a splicing station: Set SW7–1 to **On**.
    - For EPROM 0037 any level or 0016 level K/C or higher: Set SW7–2 to **Off**.
    - Set all other SW7 DIP switches to **On**.
13. Install the new CPxxx Card and connect all connectors. **(Connector PJ348 is only used if Enhanced Toner Loading is installed)**.
14. Power on the printer.
15. Perform the Toner Control Adjustment.

Verify

1. Power on the printer.
2. Run print samples to verify print quality.

CP261/CP471 EPROM Module Replacement

Table 504. CPxxx EPROM Module

Attention: Use ESD procedures when you handle ESD-sensitive parts.

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. SHUTDOWN AND POWER OFF THE PRINTER.
3. Disconnect all the connectors on the CPxxx Printer Control Cards.
4. Release the plastic clips that hold the card in place.
5. Remove the CPxxx card from the printer.
6. Locate the EPROM Module.
   Note: Note the module orientation by observing the notch on the EPROM.
7. Carefully lift the EPROM module from the card.

Installation

1. Install the module in the same orientation.
2. Ensure that all the pins are aligned with the holes in the socket before you insert the module.
   Note: It may be necessary to lay the pins on a flat surface and form them slightly before you insert the module into the socket.
3. Reinstall the card in the printer.
4. Reconnect all the connectors. **(Connector PJ348 is only used if Enhanced Toner Loading is present)**.

Verify

1. Power on the printer.
2. Run print samples to verify print quality.

CP261/CP471 Memory Module - MB071 Replacement

Table 505. MB071 Memory Module Replacement

Attention: Use ESD procedures when you handle ESD-sensitive parts.

Replacement

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. SHUTDOWN AND POWER OFF THE PRINTER.
3. Disconnect all the connectors on the CPxxx Printer Control Cards.
4. Release the plastic clips that hold the card in place.
5. Remove the CPxxx card from the printer.
6. Locate the Memory Module (MB071).
7. Remove the old MB071 from the card, and install the new MB071.
8. Set SW1 on the MB071 card to position 1.

Installation

1. Reinstall the CPxxx card in the printer.
2. Reconnect all the connectors. **(Connector PJ348 is only used if Enhanced Toner Loading is present)**.

Verify

1. Power on the printer.
2. Clear Memory (Position 8).
3. Set the diagnostic function switch to 0 and toggle the reset switch.
4. Run print samples to verify print quality.

Control Cards

Table 506. Functional Control Cards

Attention: Use ESD procedures when you handle ESD-sensitive parts.

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. SHUTDOWN AND POWER OFF THE PRINTER.
3. Locate the functional control card you are replacing:
   - PR011 Card (1446)
   - PC561 and DV061 Cards (1453)
   - DV101 Card (1452)
   - DV081 and FU041 Cards (1442)

   Note:

   For DV071 Card Replacement go to Fuser Control Card (DV071).

   For LD272 Card Replacement go to Laser Diode Card (LD272) & Fiber Module.
4. Access the functional control card by removing the appropriate covers.
5. Disconnect all the connectors that are attached to the card you are replacing.
6. Release the plastic clips that hold the card in place.

Installation

1. For FU041 card - set all positions of S2 to ON. Set S1 to the 1 position.
2. Reverse the removal procedure to install a new functional control card.

Verify

1. Power on the printer.
2. Run print samples to verify print quality.

Printhead

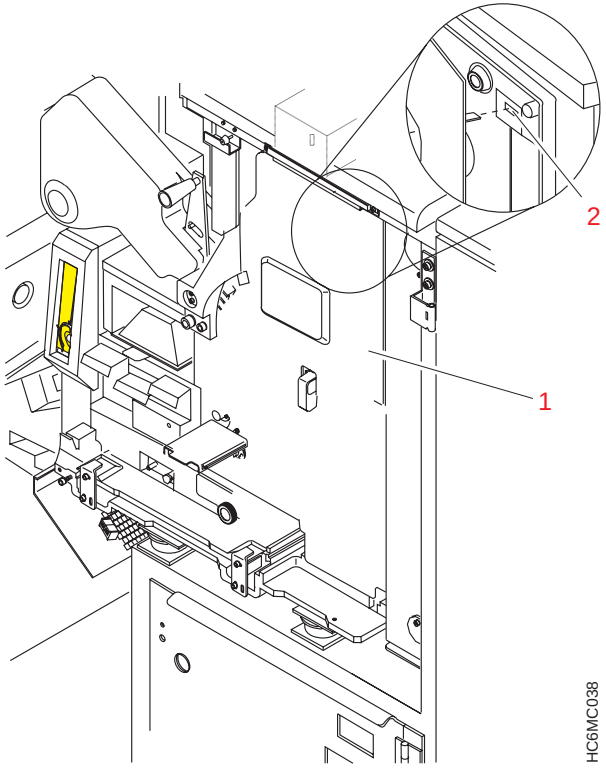
Safety 1767
Laser Interlock 1767
Printhead Cover Interlock Switch 1768
Printhead Components 1771
Laser Beam Path 1773
Printhead Do’s and Don’ts 1774
Printhead Access 1775
Printhead Cleaning Procedure 1777
Printhead Cover Switch (S502) 1779
Laser Diode Card (LD272) & Fiber Module 1781
Lens L2 1783
Lens L3 1785
Resolution Lens Motor (M502) 1786
Resolution Lens Sensor (S503) 1788
Cylinder Lens (CYL 1) 1790
Mirror Motor (M501) 1792
F-Theta Lens 1795
Beam Detect Card (BD171) 1796
Printhead Pressurizing Fan (B501) and Filter 1798
Printhead Check and Adjustment 1799
STEP 1: Fiber Module Alignment Check 1801
STEP 2: M1 Mirror Check 1803
STEP 3: M2 Mirror Check 1805
STEP 4: Beam Power Check 1807
Beam Power Adjustment A 1810
STEP 5: Beam Detect Mirror Check 1812
Completing Adjustment Procedure 1815
Print Sample Adjustments 1816
Print Width 1817

Print Skew 1818
Registration 1821
Process Direction (Vertical) Adjustment 1825
Scan Direction (Horizontal) Adjustment 1832
Beam Offset Adjustment 1838
PQE Stroke Width Settings 1842
Beam Spacing Check & Adjustment 1843

Safety

Laser Interlock

Table 507. PC Drum Cover Interlock Switch S118



A switch **(2)** is provided to remove power from the laser when you remove the PC drum cover **(1)**. Its purpose is to prevent accidental exposure to the laser beam when working in the PC drum cavity with power on.

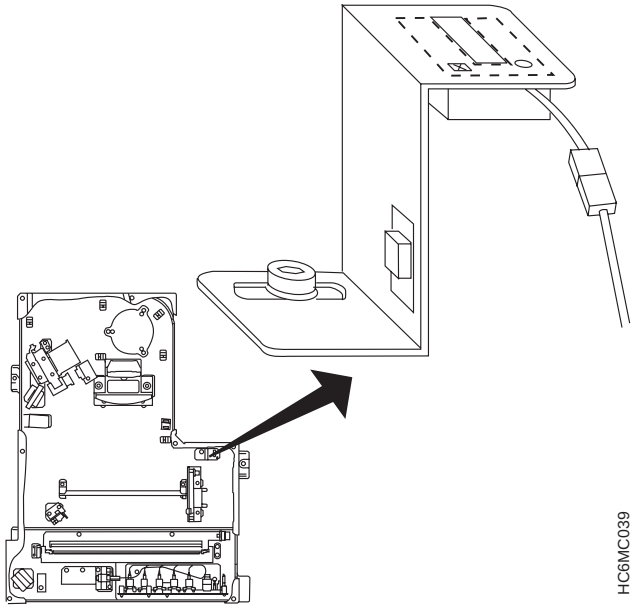
Be aware that if switch S118 is disconnected, the safety feature does not work. Do not disconnect or create an open circuit in the wiring to the switch. If you must disconnect the switch, check for pushed pins and good contact when the connector is reconnected.

When it is necessary to work in the PC drum cavity with power on:

1. Use only the routines available with the diagnostic function switch in position 3.
2. For extra safety, open the printhead cover to reduce the beam power.

Printhead Cover Interlock Switch

Table 508. Printhead Cover Interlock Switch



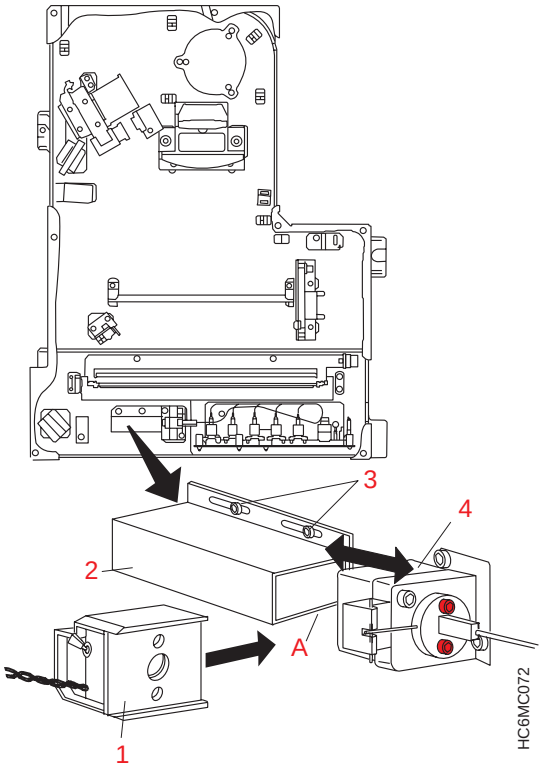
(continued on next page)

The operating power of the laser can damage the eyes. A printhead cover safety interlock switch will cause the LD272 Card to reduce the power of the laser diodes, to a safe level for maintenance, when the printhead cover is removed.

When the printhead cover is removed, less than 1 milliwatt of laser beam power is present.

Table 508. Printhead Cover Interlock Switch (continued)

Note: The laser power tool is required for use during this procedure.



(continued on next page)

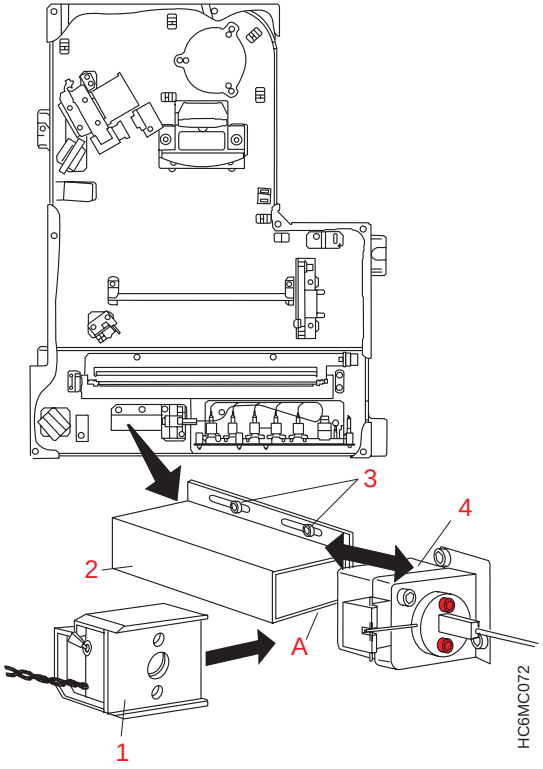
DANGER

<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.

Checking the Printhead Interlock Switch

1. Access the printhead. See Printhead Access.
2. Set the diagnostic function switch to position 3.
3. Set the switch on the laser power tool **(1)** to **High**.
4. Install the laser power tool after the fiber module assembly **(4)** in the printhead.
5. Ensure that the connectors PJ513 and PJ514 for the printhead cover interlock switch are connected.
6. Power on the printer by pressing the **Printer Power On** switch on the power control panel.
7. Run diagnostic routine C0.

Table 508. Printhead Cover Interlock Switch (continued)

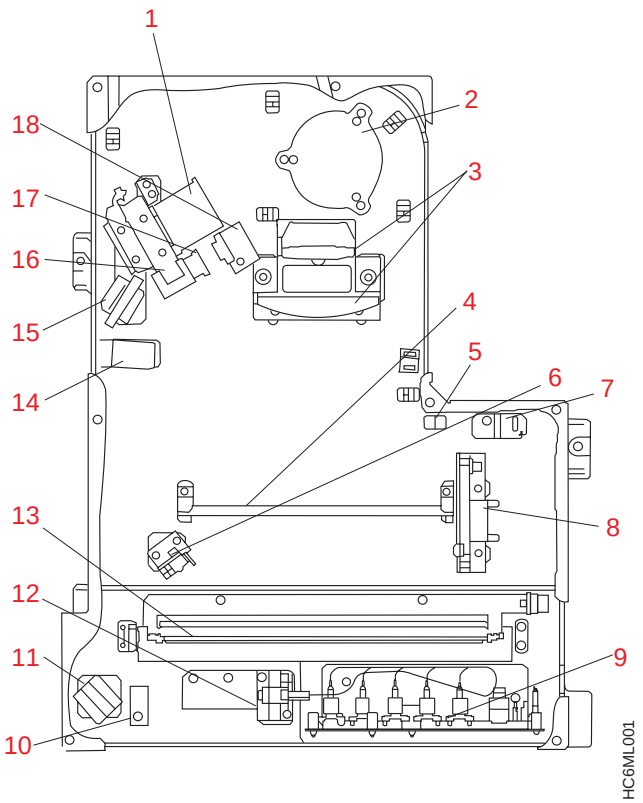


Checking the Printhead Interlock Switch (cont'd)

8. With the printhead cover off, measure the total power of the five beams.
9. Verify that the printhead power with all beams on is less than 25 mV.
10. If the power reading is not less than 25 mV, there is a fault with either the interlock switch or the Laser Diode Card (LD272).
    - For replacement procedures for the printhead cover interlock go to Printhead Cover Switch (S502).
    - For replacement procedures for the laser diode card go to Laser Diode Card (LD272) & Fiber Module.
11. If the power reading is correct, remove the laser power tool. Reinstall the printhead cover.

Printhead Components

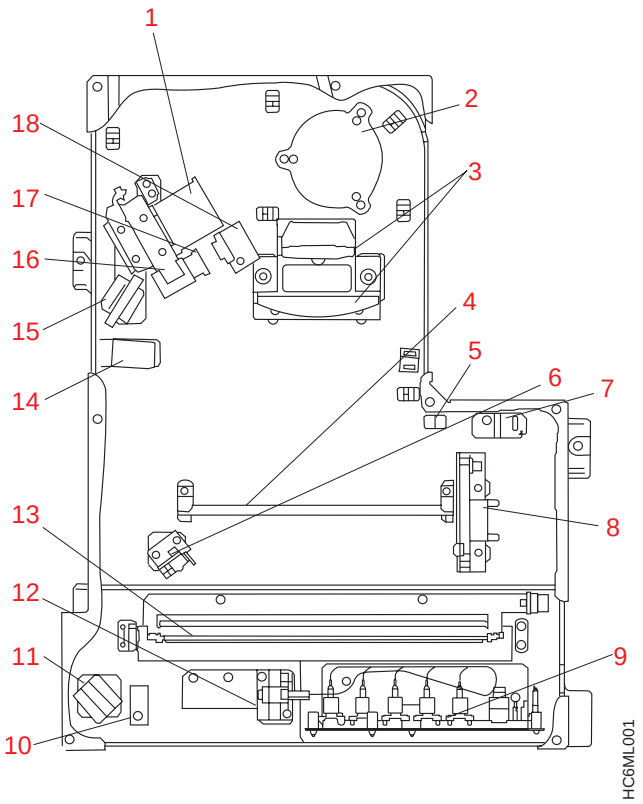
Table 509. Printhead Components



Part Name	Callout
BD171 Beam Detect Card	8
Beam Detect Mirror	6
CYL1, Cylinder Lens	18
Fiber Module / L1, Lens 1	12
F-Theta Lens	3
L2, Lens 2	10
L3, Lens 3	14
LD272 Laser Driver Card (See LD272 Laser Diode Card for card details.)	9
Long Lens	4
M1, Mirror 1	11
M2, Mirror 2	15

(continued on next page)

Table 509. Printhead Components (continued)



Part Name	Callout
M501, Mirror Motor	2
M502, Resolution Lens Motor	1
PJ258	16
PJ259	1
PJ501	8
PJ502	8
PJ513	7
PJ514	5
Resolution Switching Lens	17
Return Mirror	13
S502, Printhead Cover Switch	7
S503, Resolution Lens Sensor	16

Laser Beam Path

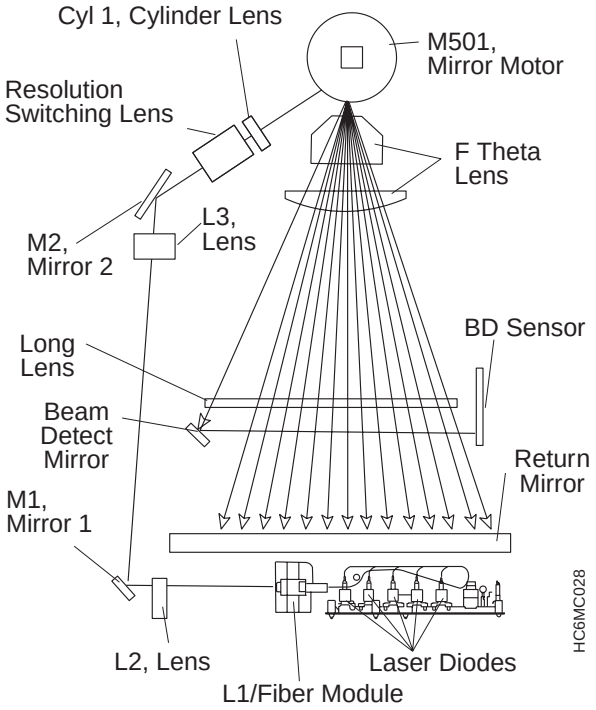


Figure 3. Laser Beam Path

Printhead Do's and Don'ts

What You Should Do

Before you begin these procedures:

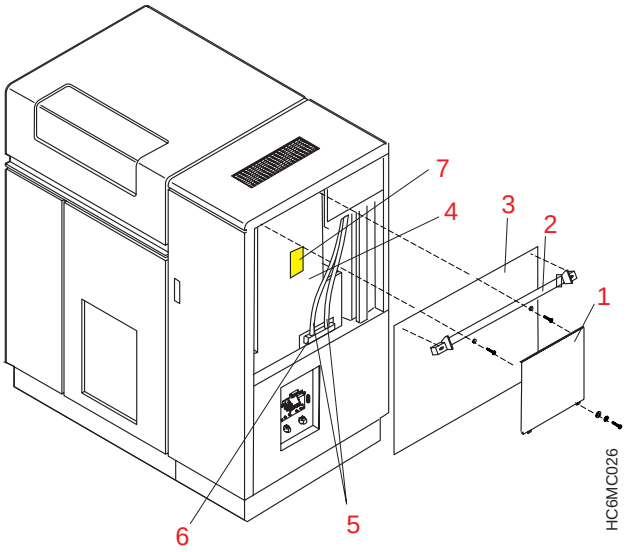
1. Use the MAPs before you begin any adjustments.
2. Adjust only the following parts:
   - Laser Diode Card
   - Fiber module
   - Mirror 1 (M1)
   - Mirror 2 (M2)
   - Beam detect card
   - Mirror motor encoder (PC561)
   - Return mirror
   - Beam detect mirror.

What You Should Not Do

1. The printhead is very sensitive. Do not randomly replace parts or loosen screws as this could cause more problems.
2. Do not remove the following without approval from next level of support.
   - Cylinder 1 lens
   - F-Theta lens
   - L2 lens
   - L3 lens.
3. Do not disable, remove, or manually override the printhead cover interlock.
4. Do not look directly into the laser beam. If the beam seems uncomfortably bright, close your eyes, and turn your head. Use a darker or less shiny piece of paper (a piece of cardboard from the top of a box of forms). Look at the beam after the target and not into the source.
5. Do not use shiny tools when the laser beam is present. If necessary, wrap black tape around the tools that you are using.

Printhead Access

Table 510. Printhead Access



(continued on next page)

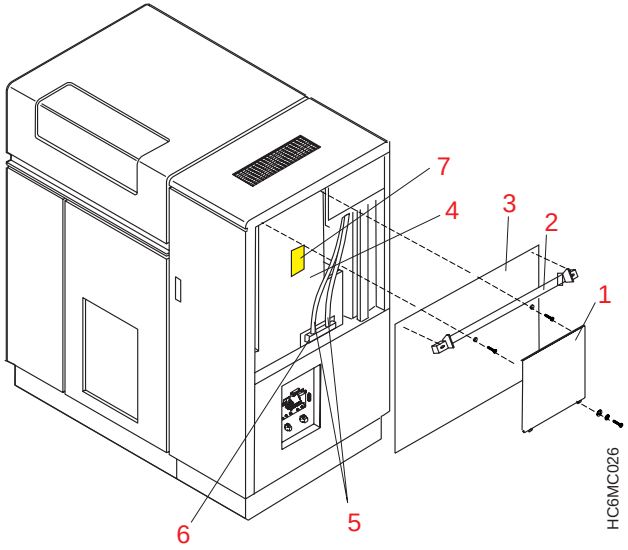
DANGER

<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.

Removal

1. Request that the system operator stop activity on the printer. Disable all host system attachments.
2. Shutdown and power off the printer.
3. Move the control unit away from the printer.
4. You may want to install the AFCCU Interface Extension Cable. The cable will allow the control unit to be moved a greater distance away from the printer.
5. Remove the printer right end cover **(1)** and bracket **(2)**.

Table 510. Printhead Access (continued)



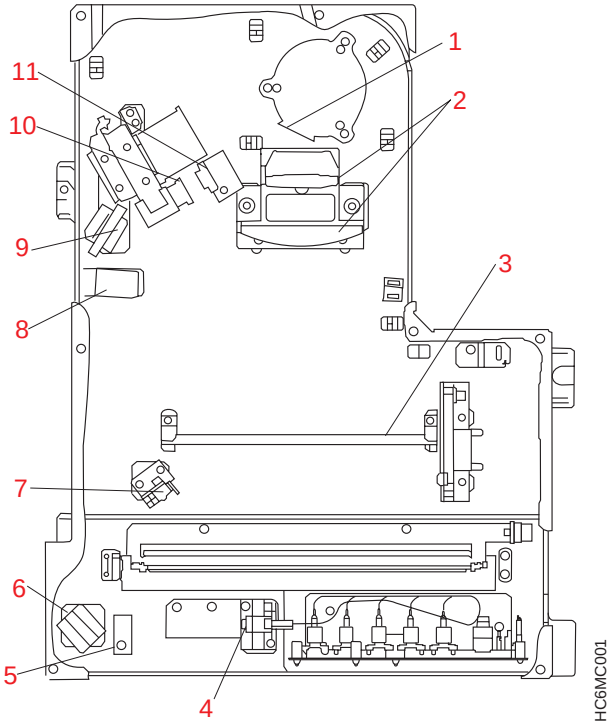
6. Remove the service right end cover **(3)**.
7. Remove the cooling duct **(6)**.
8. Remove the seven screws in the printhead cover **(4)** and lift the cover off.
9. Center the cooling duct in front of the laser diode card. Ensure that the metal parts do not make contact with card.

Installation

1. Reverse the removal procedure.
2. Power on the printer.

Printhead Cleaning Procedure

Table 511. Printhead Cleaning Procedure



(continued on next page)

DANGER

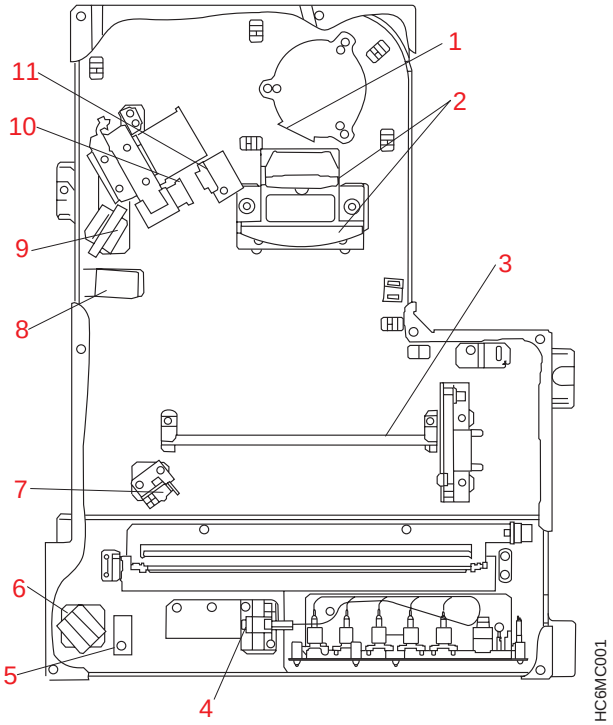
<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.

Purpose

Use this procedure to clean contamination from the printhead lenses and mirrors. This is not a normal printhead procedure. Use it only if you find a contamination problem.

The printhead fan provides a positive pressure inside the printhead to keep out contamination. If the fan should fail, check the lenses and mirrors carefully for toner and paper dust that may have entered the printhead.

Table 511. Printhead Cleaning Procedure (continued)



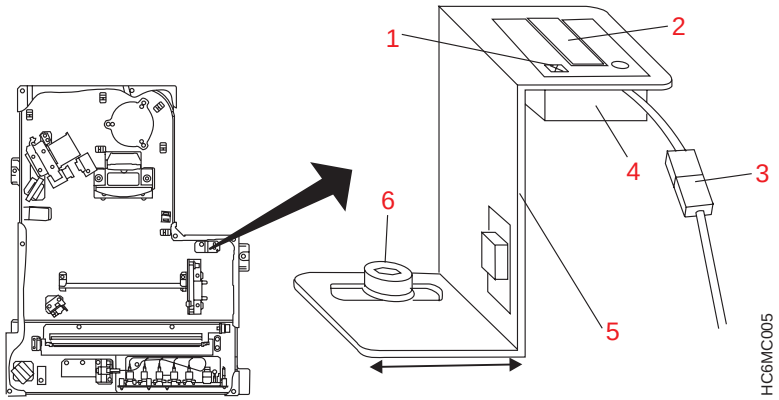
Procedure

1. Request that the system operator stop activity on the printer. Disable all host system attachments.
2. Shutdown and power off the printer.
3. Follow the Printhead Access procedure.
4. Clean the following items with a dry cotton swab or lint free wipe.

   Attention: Any wipes or swabs must be very soft and lint-free. Use isopropyl alcohol only to remove fingerprints.
   - Beam Detect Mirror **(7)**
   - Cyl 1, Cylinder Lens (Both surfaces) **(11)**
   - F-theta Lens, (All surfaces) **(2)**
   - Fiber Module / Lens 1 (Outer surface) **(4)**
   - L2, Lens (Both surfaces) **(5)**
   - L3, Lens (Both surfaces) **(8)**
   - Long Lens **(3)**
   - M1, Mirror 1 **(6)**
   - M2, Mirror 2 **(9)**
   - Resolution Switching Lens (Both surfaces if in use) **(10)**
   - Scanner Window **(1)**

Printhead Cover Switch (S502)

Table 512. Printhead Cover Switch Removal



(continued on next page)

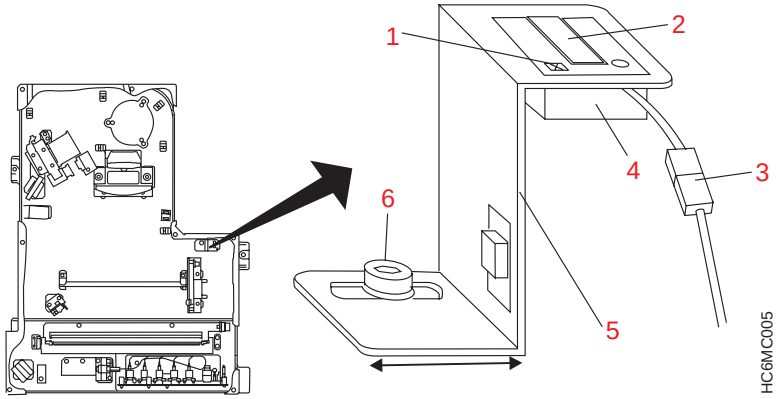
DANGER

<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.

Removal

1. Request that the system operator stop activity on the printer. Disable all host system attachments.
2. Shutdown and power off the printer.
3. Follow the Printhead Access procedure.
4. Disconnect PJ513 **(3)**.
5. Remove the hex head screw **(6)** , take out the holder **(5)** and the switch **(4)**.
6. Remove the screw **(1)** and the switch **(4)**.

Table 512. Printhead Cover Switch Removal (continued)



Installation

1. Reverse the removal procedure.

Check Procedure

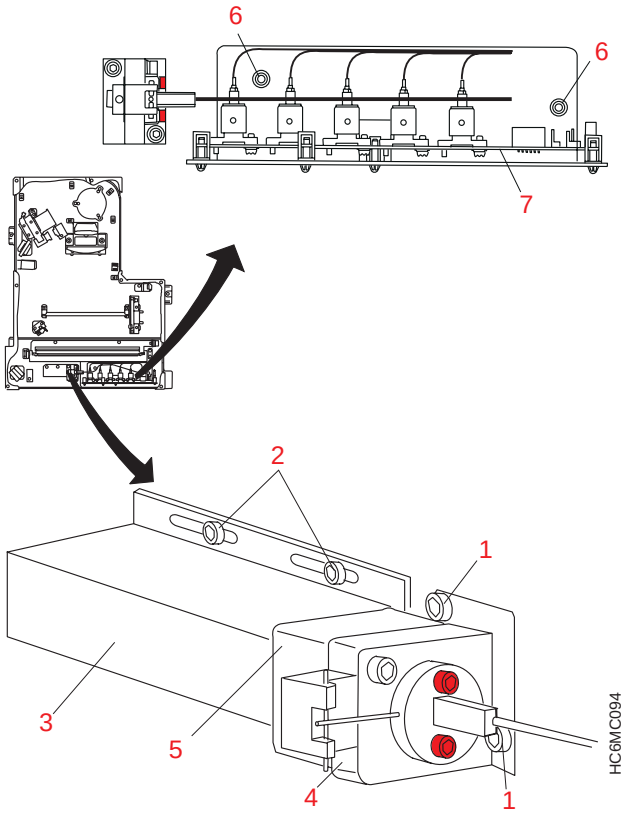
1. Run Sensor Routine 9E to ensure that the printhead cover switch works correctly.
2. Run test prints to verify that no system reference codes are displayed and that print quality is good.

Adjustment Procedure

1. Loosen the hex head screw **(6)**.
2. Slide the cover open switch **(5)** in the direction of the arrow so that the small tab on the printhead cover can be inserted into the slot **(2)** of the switch **(4)**.

Laser Diode Card (LD272) & Fiber Module

Table 513. Laser Diode Card Removal



(continued on next page)

DANGER

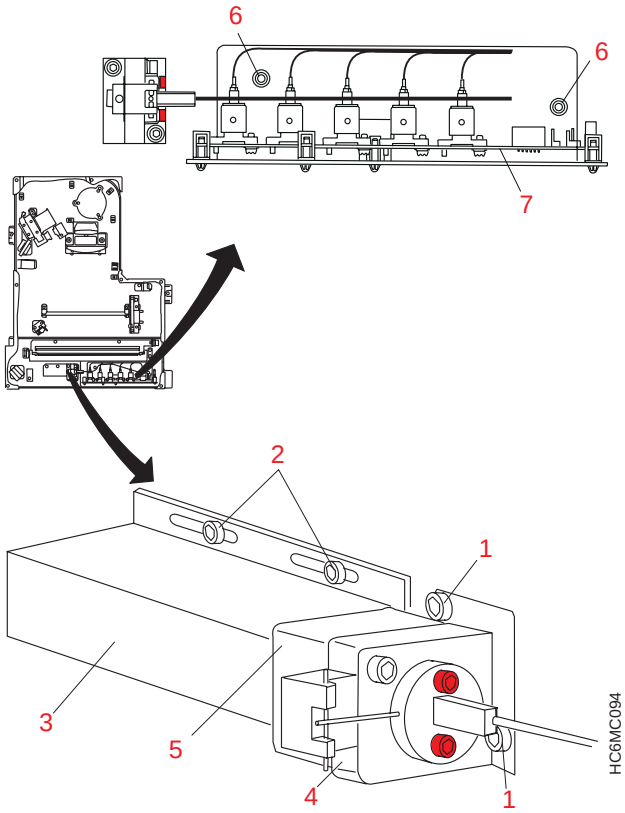
<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.

Note: Do not loosen or remove the two screws marked in red.

Removal

1. Request that the system operator stop activity on the printer. Disable all host system attachments.
2. Shutdown and power off the printer.
3. Follow the Printhead Access.
4. Disconnect all the connectors from the laser diode card. See LD272 Laser Diode Card for connector locations.
5. Open the 3 cable clamps holding the fiber cables.
   Note: Do not bend the fiber cables with a radius of 30 mm (1.2 in.) or less.
6. Loosen the two hex head screws **(2)** and slide the channel cover **(3)** to the left.

Table 513. Laser Diode Card Removal (continued)



7. Remove the two hex head screws **(1)**.
8. Remove the fiber module **(4)** and the sealing foam **(5)**.
9. Detach the laser diode card from the clips and remove the card **(7)**.

Note: Do not power on the printer with the printhead cover removed prior to completing Checking the Printhead Interlock Switch.

Installation

1. Reverse the removal procedure.

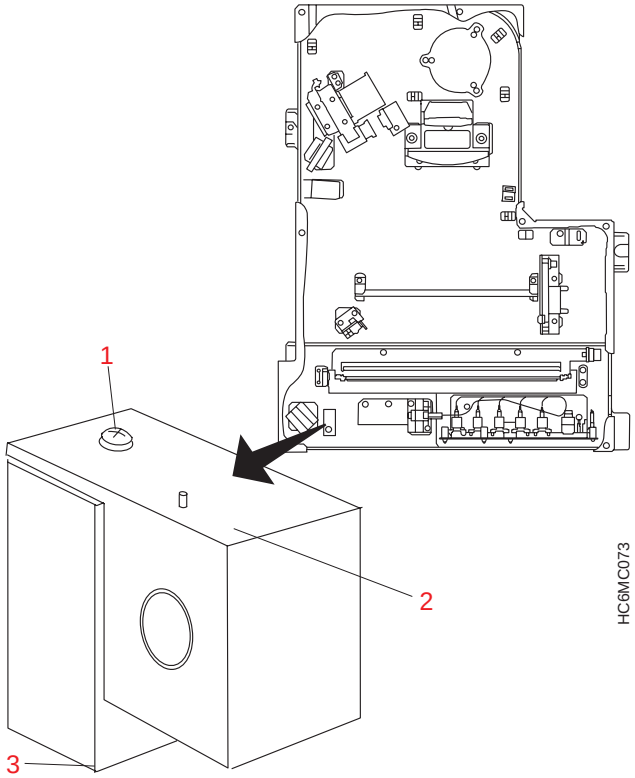
Adjustment Procedure

1. Measure the voltage at TP +5V on the laser diode card. If the voltage is less than +4.7 Vdc, adjust the +5V on the dc power supply until the voltage at TP +5V on the laser diode card is greater than +4.7 Vdc. (Printer DC Voltage Measurements and Adjustments)
2. Measure the voltage at TP +5VB on the laser diode card. Adjust VR6 on the laser diode card so that the voltage is 5.00 ± 0.02 Vdc at TP +5VB.
3. Perform the Mirror Motor Encoder Adjustment.
4. Go to Printhead Check and Adjustment.

Lens L2

Table 514. Lens L2 Removal
Attention:

BEFORE YOU REMOVE the L2 Lens, contact the next level of support. The lens should only be removed as the last option in a critical situation. Adjustment of the printhead lense is required after you replace this lens. This requires a beam scanner.



(continued on next page)

DANGER

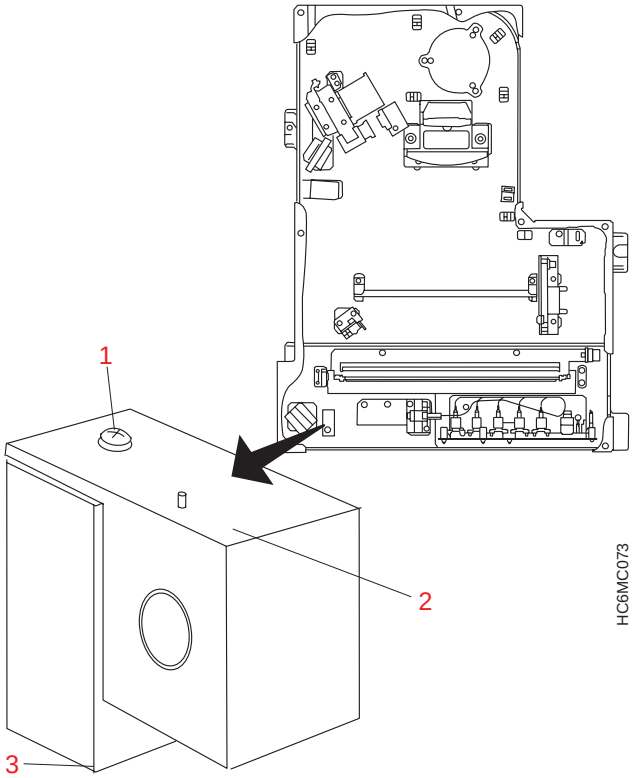
<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.

Removal

1. Request that the system operator stop activity on the printer. Disable all host system attachments.
2. Shutdown and power off the printer.
3. Follow the Printhead Access procedure.
4. Scribe a mark on the L2 lens pedestal **(3)** at the reference surfaces so that you can reinstall the lens in the exact same position from which you removed it.
5. Remove the screw **(1)**.

   Attention: Do not touch the glass lens surface with your fingers. Oils from your fingers will contaminate the lens. This causes a reduction in the power of the laser beam.
6. Remove the L2 lens **(2)**.

Table 514. Lens L2 Removal (continued)



Installation

1. Reverse the removal procedure.
2. Ensure that the L2 Lens is installed in the exact same position from which you removed it.

Check Procedure

1. Power on the printer.
2. Run test prints to verify that no system reference codes are displayed and that print quality is good.

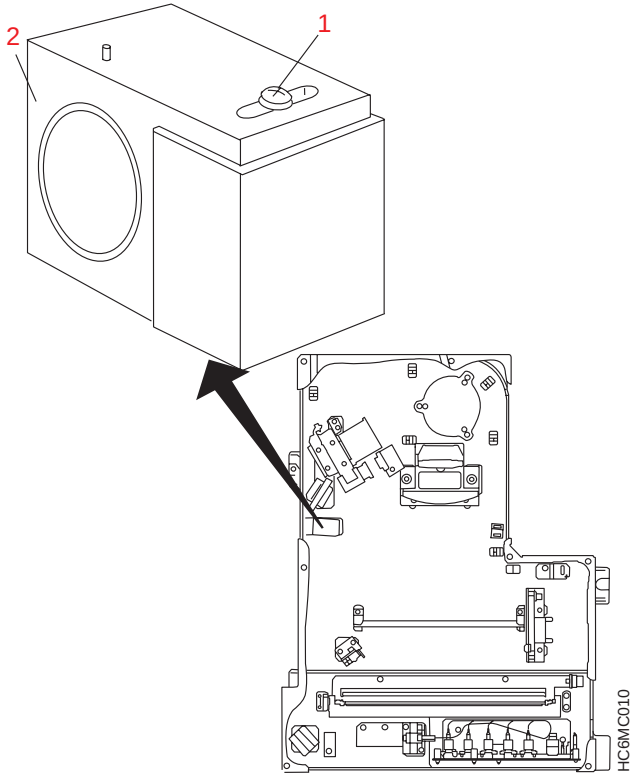
Lens L3

Attention:

BEFORE REMOVING the L3 Lens, contact the next level of support. The lens should only be removed as the last option in a critical situation. Exact positioning of the lens is extremely important, and can only be achieved using a beam scanner. This is a factory adjustment only.

DANGER

<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.



Removal

1. Request that the system operator stop activity on the printer. Disable all host system attachments.
2. Shutdown and power off the printer.
3. Follow the Printhead Access procedure.
4. Remove the screw **(1)**.

   Attention: Do not touch the glass lens surface with your fingers. Oils from your fingers will contaminate the lens. This causes a reduction in the power of the laser beam.
5. Remove the L3 lens **(2)**.

Installation

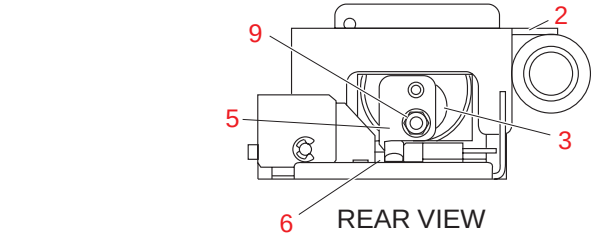
1. Reverse the removal procedure.

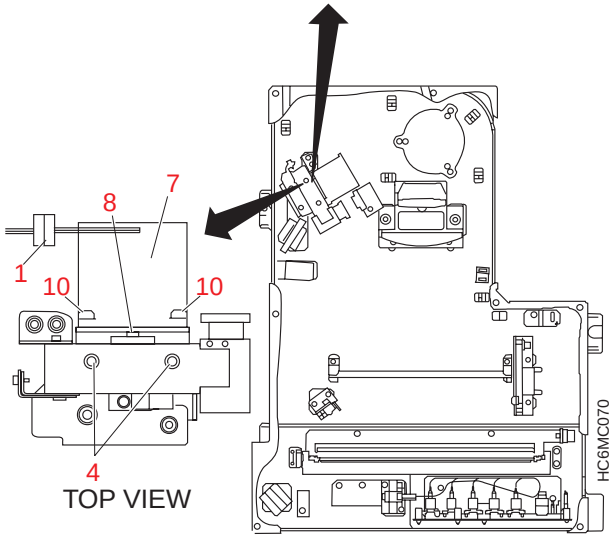
Check Procedure

1. Power on the printer.
2. Run test prints to verify that no system reference codes are displayed and that print quality is good.

Resolution Lens Motor (M502)

Table 515. Resolution Lens Motor Removal





(continued on next page)

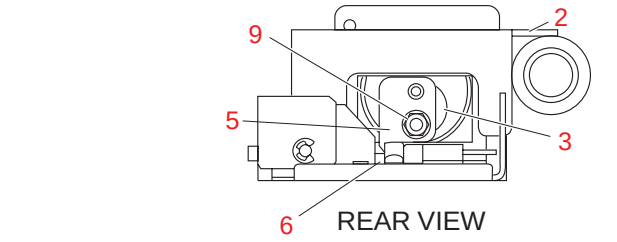
DANGER

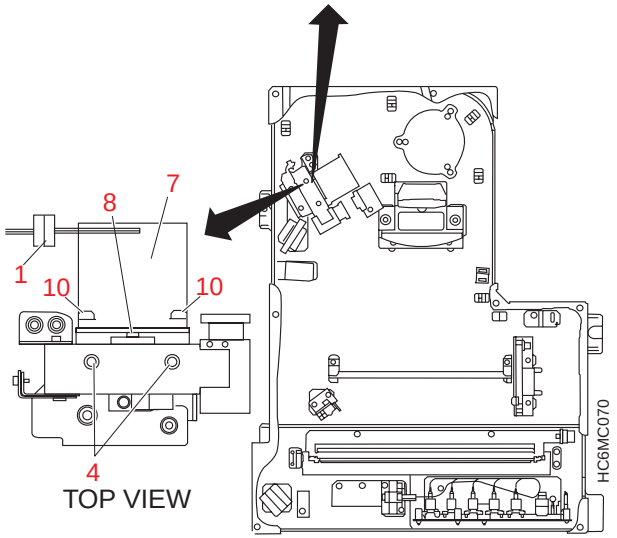
<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.

Removal

1. Request that the system operator stop activity on the printer. Disable all host system attachments.
2. Shutdown and power off the printer.
3. Follow the Printhead Access procedure.
4. Disconnect PJ259 **(1)**.
5. Turn the cam **(3)** so that the lens assembly **(2)** is in the down position.
6. Loosen the two hex head screws **(4)** through the holes on the switching arm.

Table 515. Resolution Lens Motor Removal (continued)





7. Turn the cam **(3)** so that the sensor plate **(5)** clears the resolution sensor assembly **(6)**.
8. Pull the motor assembly **(7)** out away from the resolution sensor.
9. Remove the hex head screw **(9)** and remove the sensor plate **(5)** from the motor assembly.
10. Remove the two hex socket head bolts **(10)** and remove the motor **(7)** from the motor mounting plate **(8)**.

Installation

1. Reverse the removal procedure.

Check Procedure

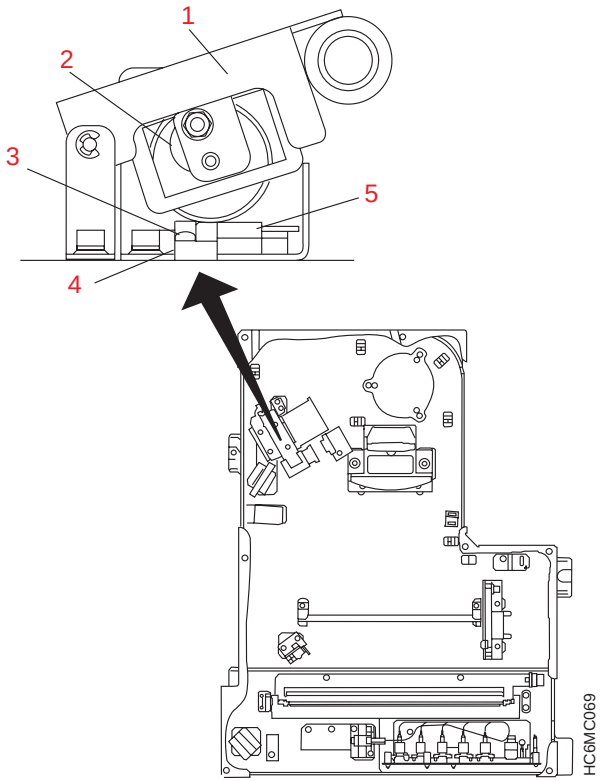
1. Power on the printer.
2. Run Driver Routine 3F to ensure that the motor is working properly.
3. Run test prints to verify that no system reference codes are displayed and that print quality is good.

Adjustment Procedure

1. Perform Resolution Lens Sensor Adjustment Procedure.

Resolution Lens Sensor (S503)

Table 516. Resolution Lens Sensor Removal



(continued on next page)

DANGER

<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.

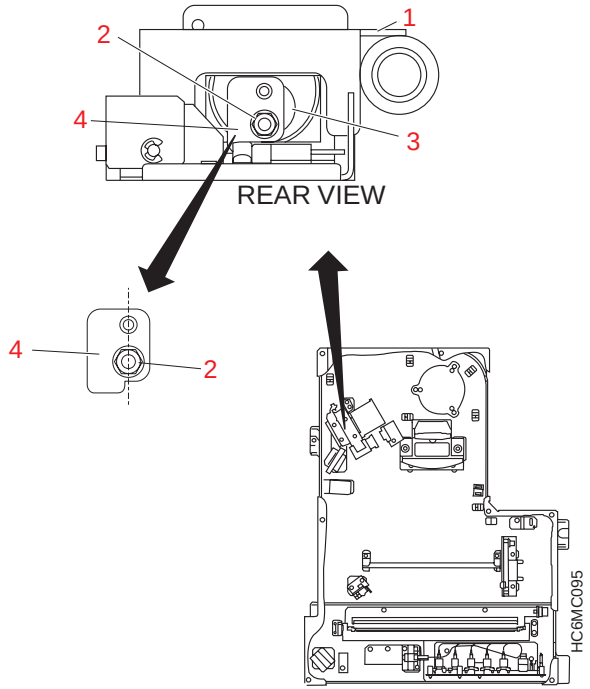
Removal

1. Request that the system operator stop activity on the printer. Disable all host system attachments.
2. Shutdown and power off the printer.
3. Follow the Printhead Access procedure.
4. Turn the cam **(2)** so that the lens assembly **(1)** is in the up position.
5. Remove the Phillips head screw **(3)**.
6. Remove the sensor **(4)** and disconnect connector PJ258 **(5)**.

Installation

1. Reverse the removal procedure.

Table 517. Resolution Lens Sensor Adjustment



Check Procedure

1. Power on the printer.
2. Run Driver Routine 3F to set the resolution lens **(1)** to the lowered position.
3. Check the alignment of the hex socket head bolt **(2)** with the shaft through the cam **(3)**. They should align vertically as shown.
4. If they are not aligned properly, perform “Resolution Lens Sensor Adjustment Procedure”.
5. If they are properly aligned, run test prints to verify that no system reference codes are displayed and that print quality is good.

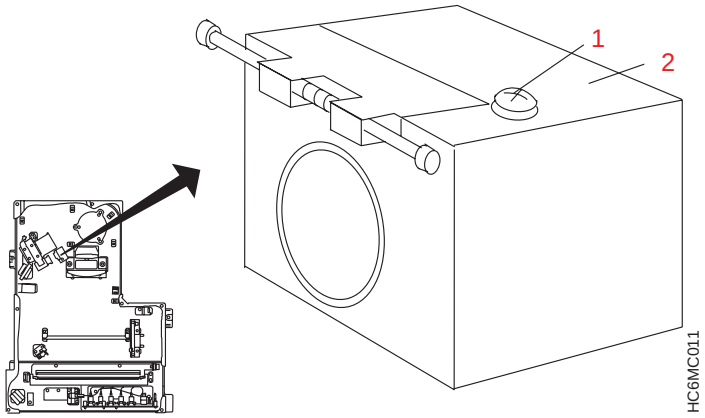
Adjustment Procedure

1. Run driver routine 3F to set the resolution lens **(1)** to the lowered position.
2. Loosen the hex socket head bolt **(2)**.
3. Turn the sensor plate **(4)** until the bolt is aligned vertically with the shaft through the cam.
4. Tighten the hex socket head bolt **(2)**.
5. Run driver routine 3F to set the resolution lens to the lowered position.
6. Verify that the sensor plate is aligned properly.

Cylinder Lens (CYL 1)

Table 518. Cylinder Lens Removal

Attention: BEFORE REMOVING the Cylinder Lens, contact the next level of support. The lens should only be removed as the last option in a critical situation. Exact positioning of the lens is extremely important, and can only be achieved using a beam scanner. This is a factory adjustment only.



(continued on next page)

DANGER

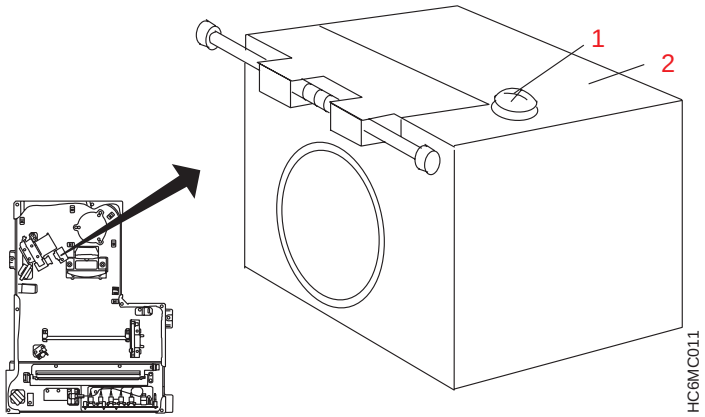
<25>Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.

Removal

1. Request that the system operator stop activity on the printer. Disable all host system attachments.
2. Shutdown and power off the printer.
3. Follow the Printhead Access procedure.
4. Scribe a mark on the cylinder lens pedestal at the reference surfaces so that you can reinstall the lens in the exact same position from which you removed it.
5. Remove the screw **(1)**.

   Attention: Do not touch the glass lens surface with your fingers. Oils from your fingers will contaminate the lens. This causes a reduction in the power of the laser beam.
6. Carefully lift out the cylinder lens **(2)**.

Table 518. Cylinder Lens Removal (continued)



Installation

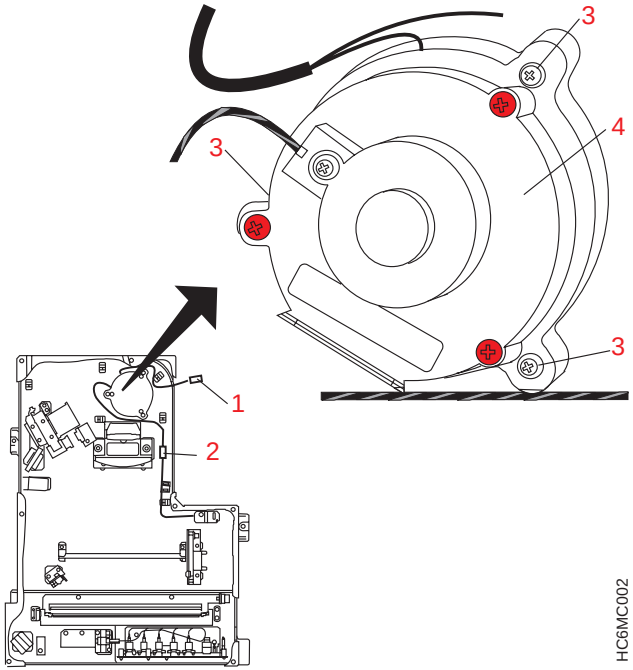
1. Reverse the removal procedure.
2. Ensure that the cylinder Lens is installed in the exact same position from which you removed it.

Check Procedure

1. Power on the printer.
2. Run test prints to verify that no system reference codes are displayed and that print quality is good.

Mirror Motor (M501)

Table 519. Mirror Motor Removal



(continued on next page)

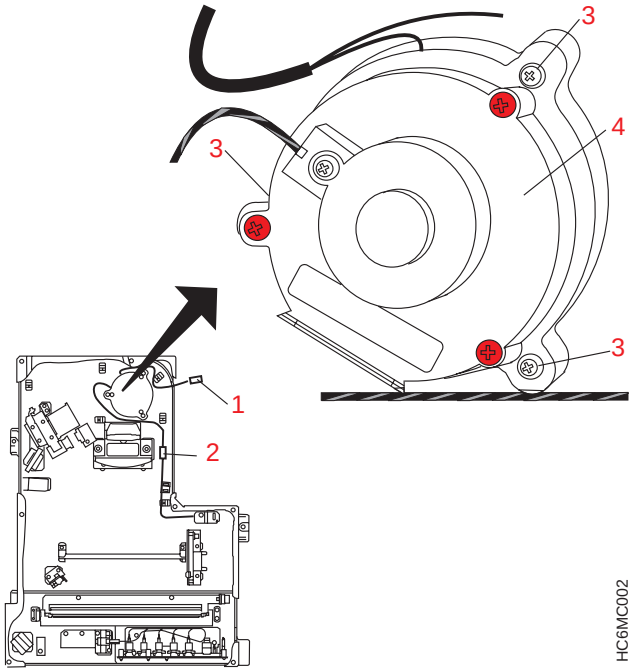
DANGER

<25>Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.

Removal

1. Request that the system operator stop activity on the printer. Disable all host system attachments.
2. Shutdown and power off the printer.
3. Follow the Printhead Access procedure.
4. Disconnect PJ219 **(1)** and PJ514 **(2)**.
   Important: Do not remove or loosen the 3 screws marked with red on the mirror motor assembly.
5. Remove the 3 Phillips head screws **(3)** from the mirror motor.
6. Remove the mirror motor **(4)**.

Table 519. Mirror Motor Removal (continued)



(continued on next page)

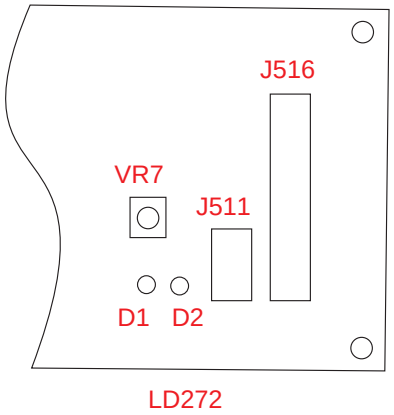
Installation

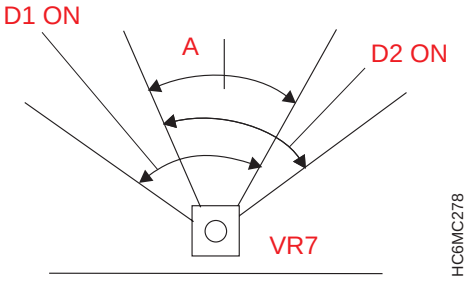
1. Reverse the removal procedure.
2. Power on the printer.
3. Perform the Mirror Motor Encoder Adjustment.
4. Perform the Mirror Motor Check Procedure.

Check Procedure

1. Run test prints to verify that no system reference codes are displayed and that print quality is good.

Table 519. Mirror Motor Removal (continued)





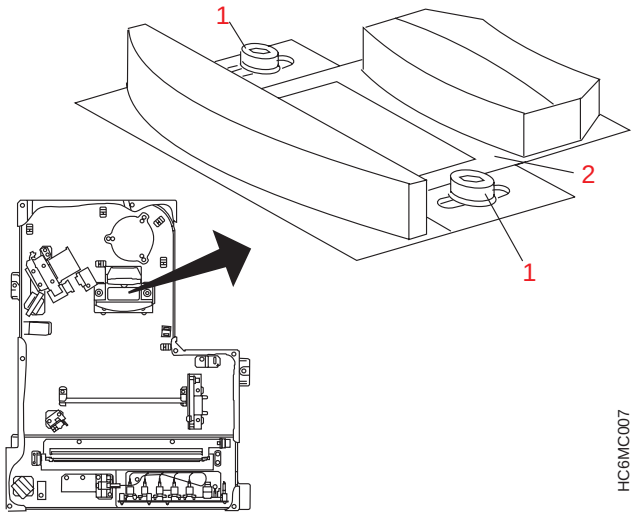
Mirror Motor Encoder Adjustment Procedure

1. Cover the return mirror with paper.
2. Run Adjustment Routine C0 and press ENTER to turn on the mirror motor.
3. On the LD272 Card, rotate VR7 left until LED D1 turns on. See LD272 Laser Diode Card for VR7 location.
4. Rotate VR7 right until LED D2 turns on.
5. Set VR7 to the mid point between the positions where the two LED's turned on.

F-Theta Lens

Table 520. F-Theta Lens Removal & Adjustment

Attention: BEFORE REMOVING the F-Theta lens, contact the next level of support. The lens should only be removed as the last option in a critical situation. Exact positioning of the lens is extremely important, and can only be achieved using a beam scanner. This is a factory adjustment only.



DANGER

<22> You will need a wrench and screwdriver to do this procedure. These tools can reflect the laser beam. Whenever these tools are used in the printhead, ensure that the printer is powered off.

Removal

1. Request that the system operator stop activity on the printer. Disable all host system attachments.
2. Shutdown and power off the printer.
3. Follow the Printhead Access procedure.
4. Scribe the position of the F-Theta lens before you remove. This simplifies the adjustment when installing the new F-Theta lens.
5. Remove 2 screws **(1)** and washers.
6. Remove the F-Theta lens assembly **(2)**.

Installation

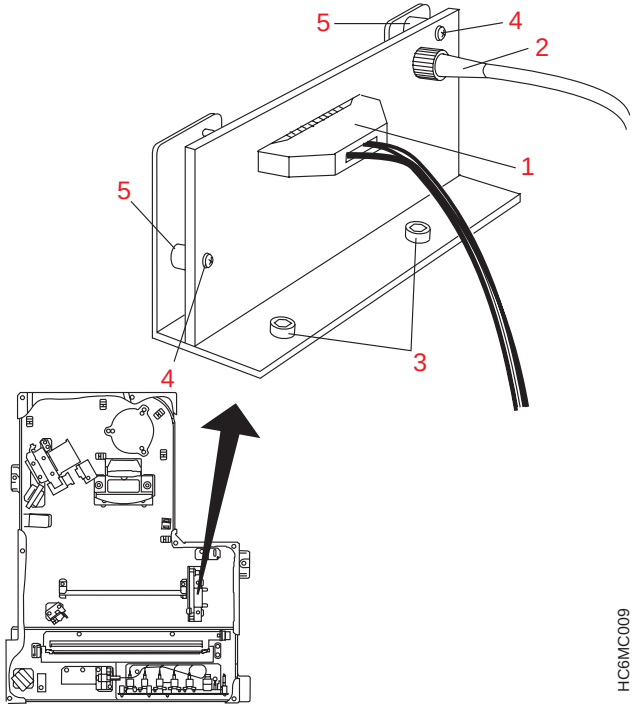
1. Reverse the removal procedure using the scribe lines to position the lens.
2. Power on the printer.

Adjustment

1. Do the procedures in Print Width and Print Skew, and adjust if necessary.

Beam Detect Card (BD171)

Table 521. Beam Detect Card Removal



(continued on next page)

Removal

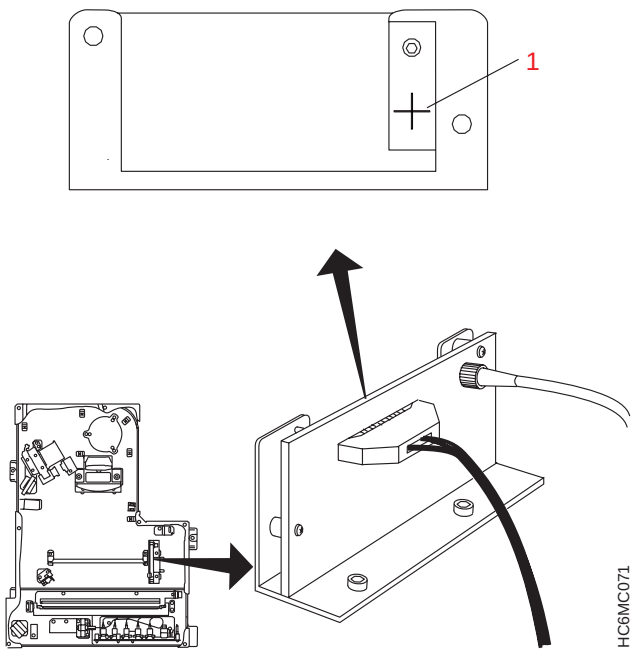
1. Request that the system operator stop activity on the printer. Disable all host system attachments.
2. Shutdown and power off the printer.
3. Follow the Printhead Access procedure.
4. Disconnect PJ501 **(2)** and PJ502 **(1)**.
5. Remove sensor cover. (not shown)
6. Remove the two screws **(3)**.
7. Remove the two screws **(4)** and the standoffs **(5)**.
8. Remove the card.

Installation

1. Reverse the removal procedure.
2. Power on the printer.
3. Perform the Beam Detect Card Check Procedure.

Table 522. Beam Detect Card Check & Adjustment

Note: Before performing this procedure, go to Checking the Printhead Interlock Switch.



DANGER

<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.

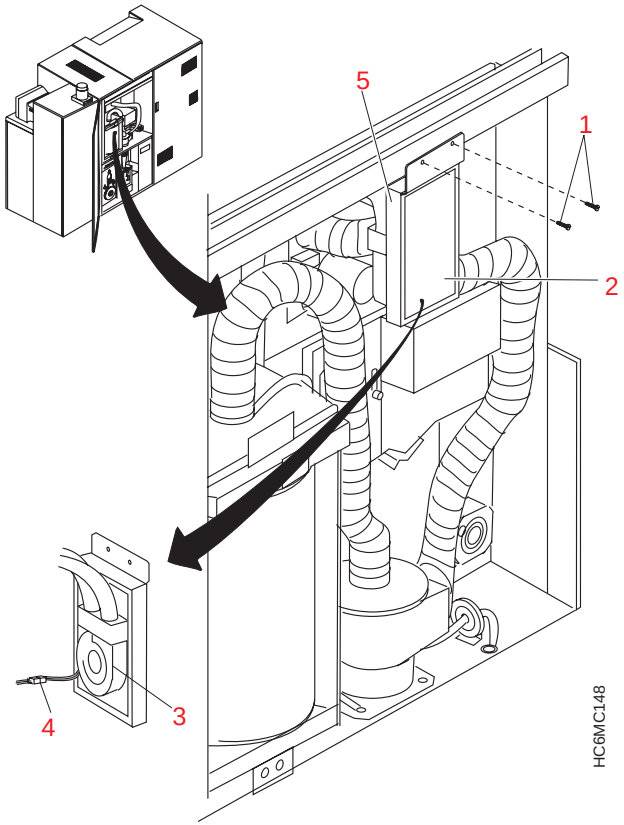
Check Procedure

1. Check for proper operation of the beam detect card as follows:
   a. Cover the return mirror with paper.
   b. Run diagnostic C0 to turn on the laser and the mirror motor.
   c. Ensure that beam is centered on the white line of the sensor cover **(1)**.
   d. If the beam is not centered on the white line, perform Beam Detect Card Adustment Procedure.
   e. Stop the diagnostics and remove the paper from the return mirror.
2. Check the horizontal registration to set the final position of the beam detect card. See the check procedure under Registration.

Adjustment Procedure

1. See STEP 5: Beam Detect Mirror Check. Do the Check procedure, and adjust the mirror if necessary.
2. Check the horizontal registration. See the check procedure under Registration.

Printhead Pressurizing Fan (B501) and Filter



Removal

1. Request that the system operator stop activity on the printer. Disable all host system attachments.
2. Shutdown and power off the printer.
3. Remove the center rear service cover.
4. Remove the filter **(2)**.
5. Remove the two screws **(1)** and remove the fan assembly **(5)**.
6. Disconnect the connector **(4)**.
7. Remove two screws (not shown) and remove the printhead pressurizing fan **(3)**.

Installation

1. Reverse the removal procedure.
2. Ensure the fan exit makes a good seal with the foam.
3. Ensure that the filter is clean and installed properly.

Check Procedure

1. Power on the printer.
2. Check for printhead pressurizing fan for rotation.

Printhead Check and Adjustment

This section provides procedures for adjusting the printhead using the laser alignment target and laser power tool.

Note: The Beam Power is different depending on which toner P/N is being used in the printer.

When You Should Use These Procedures

- You have just replaced a laser diode card.
- You are having trouble with the printable area or beam alignment or low printing power
- You are having beam detect errors
- You are concerned about the beam positions at every point in the printhead.
- You are changing to a different type of toner.

Sequence

The printhead adjustments are all related and you ***must*** perform them in the correct sequence. Before you make any adjustments, you must make the checks in the following sequence to locate the source of the problem.

1. Primary
   a. Fiber module alignment
   b. Mirror 1 alignment
   c. Mirror 2 alignment
   d. Beam detect mirror
   e. Resolution lens adjustment
2. Secondary
   a. Print width
   b. Print skew
   c. Registration
   d. Beam Offset
   e. Stroke width balancing
   f. Scan line spacing check.

Table 523. Preparation for Printhead Checks and Adjustments

Preparation

To prepare for the printhead checks and adjustments follow the steps below.

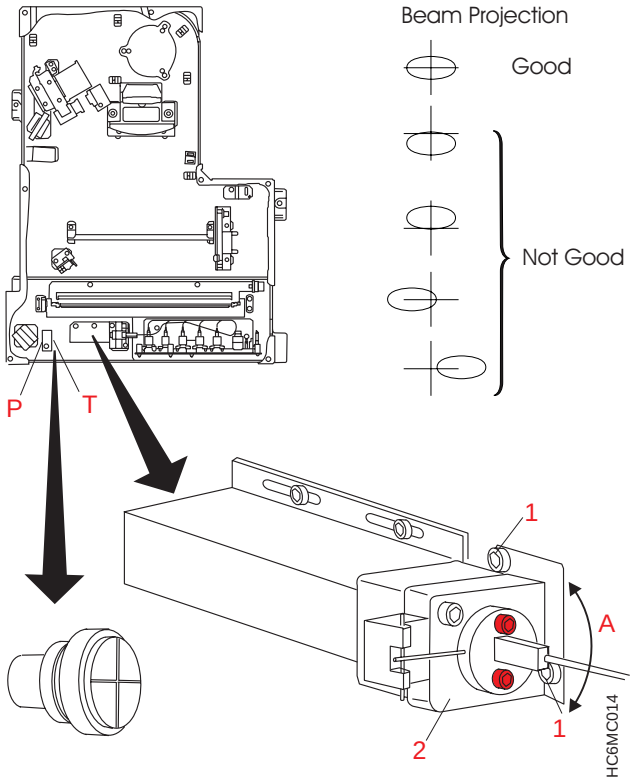
- **Step 1** Disable all host attachments. See the *Operator's Guide.*
- **Step 2** Shutdown and power off the printer. See Power Off Procedure.
- **Step 3** Follow the Printhead Access procedure.
- **Step 4** Go to Checking the Printhead Interlock Switch.
- **Step 5** Set the diagnostic function switch to **3**. See Exerciser Routines (Position 3).
- **Step 6** Cover the return mirror with paper.
- **Step 7** Power on the printer. See Power On Procedure.
- **Step 8** Check that the printhead fan is on and air is blowing on the LD272 card.

DANGER

<25>Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.

STEP 1: Fiber Module Alignment Check

Table 524. Fiber Module Alignment Check



DANGER

<25>Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.

IMPORTANT:

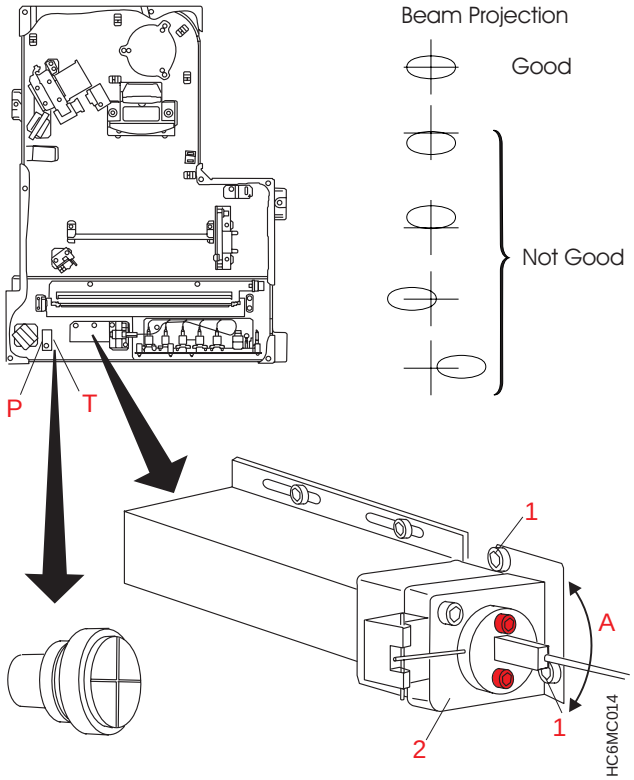
1. Ensure that you have completed the steps in Preparation for Printhead Checks & Adjustments before continuing with this procedure.
2. Ensure that you are wearing an ESD wrist strap for this procedure.

Fiber Module Check

1. Run adjustment procedure driver routine CA to turn on the laser diode. (for the center beam)
2. Install the target **T** at the right side of Lens 2 (L2).
3. Install a piece of paper **P** at the left side of Lens 2 (L2).
4. The beam should pass through the center of Lens 2 (L2), aligning on the cross of the target.
   a. If the beam passes through the center of Lens 2 (L2), go to STEP 2: M1 Mirror Check.
   b. If the beam does not pass through the center of Lens 2 (L2), perform the Fiber Module Adjustment.

(continued on next page)

Table 524. Fiber Module Alignment Check (continued)



Hint: Attach the maintenance panel extension cable to the maintenance panel and place the maintenance panel near you. This makes it easier to run the adjustment routine while you do the adjustment.

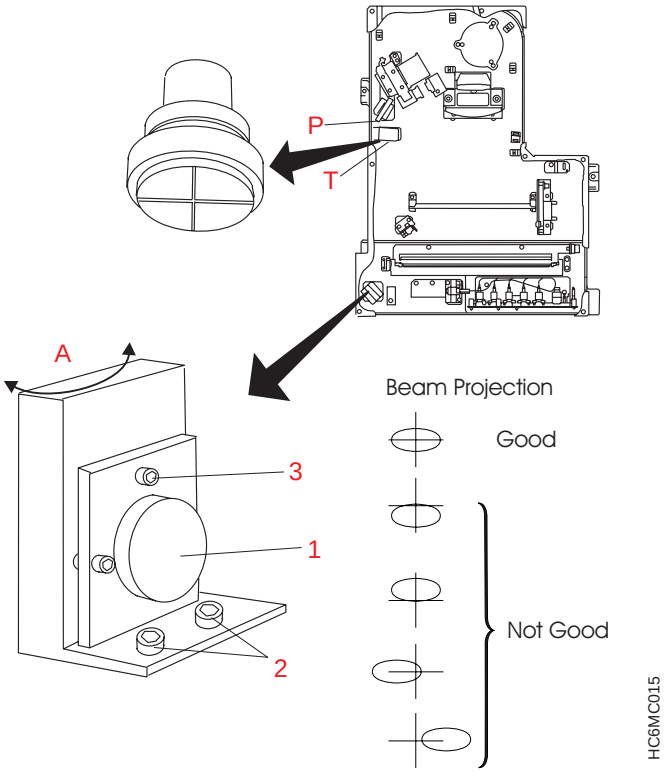
Fiber Module Adjustment

Note: Do not loosen or remove the two screws marked in red.

1. Loosen the hex head screws **(1)**.
2. Adjust the fiber module **(2)** in the direction of the arrow **(A)** until the beam passes through the center of the L2 lens.
3. When the beam passes through the center of Lens 2 (L2), go to STEP 2: M1 Mirror Check.

STEP 2: M1 Mirror Check

Table 525. M1 Mirror Check



(continued on next page)

DANGER

<25>Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.

IMPORTANT:

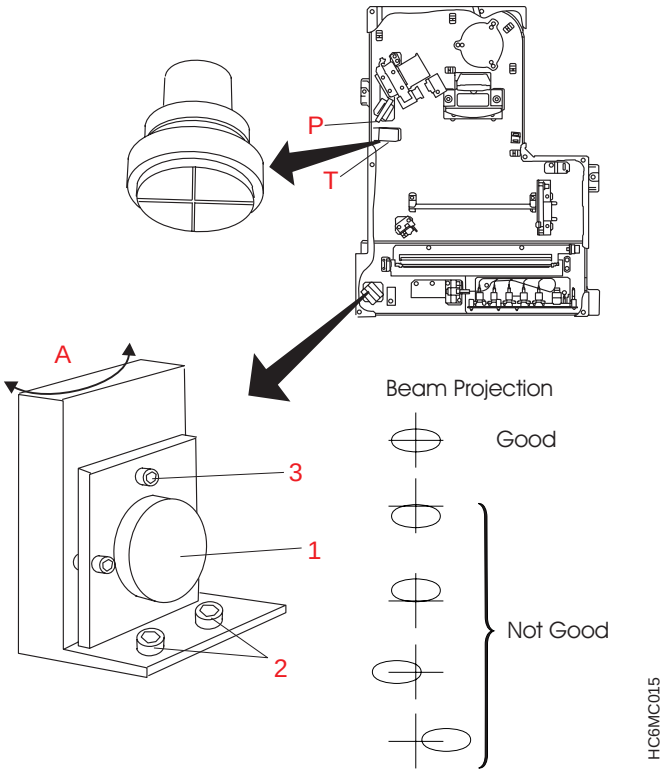
1. Ensure that you have completed the steps in Preparation for Printhead Checks & Adjustments before continuing with this procedure.

M1 Mirror Check

1. Adjustment procedure CA should still be running with the center beam on.
2. Install the target **T** at the bottom of Lens 3 (L3).
3. The beam should pass through the center of Lens 3 (L3), (aligns on the cross hairs of the target).
   a. If the beam passes through the center of Lens 3 (L3), go to STEP 3: M2 Mirror Check.
   b. If the beam does not pass through the center of Lens 3 (L3), perform the M1 Mirror Adjustment .

IMPORTANT: Do not remove or loosen the 2 hex bolts marked with red.

Table 525. M1 Mirror Check (continued)

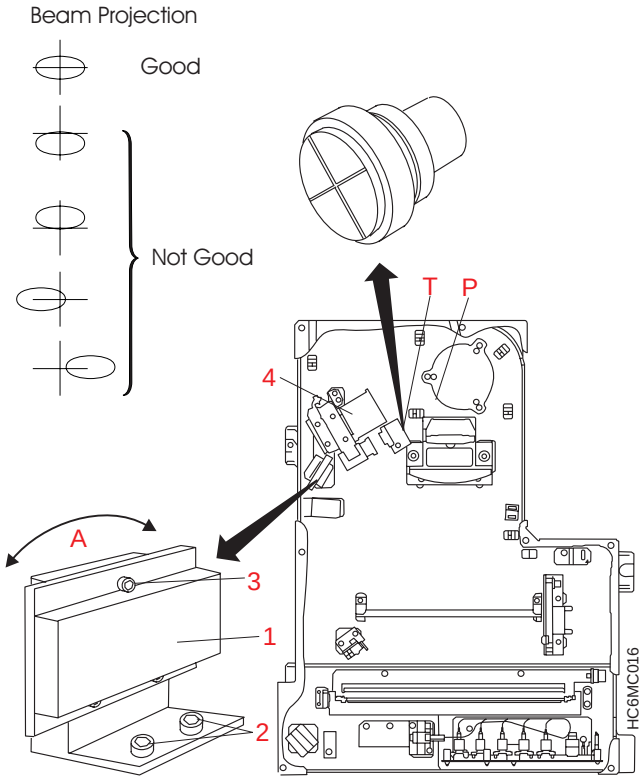


M1 Mirror Adjustment

1. Loosen the hex head screws **(2)** to rotate the mirror in the direction of the arrow **(A)**.
2. Adjust the mirror **(1)** in the vertical direction, by turning hex head screw **(3)**.
3. When the beam passes through the center of Lens 3 (L3), go to STEP 3: M2 Mirror Check.

STEP 3: M2 Mirror Check

Table 526. M2 Mirror Check



(continued on next page)

DANGER

<25>Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.

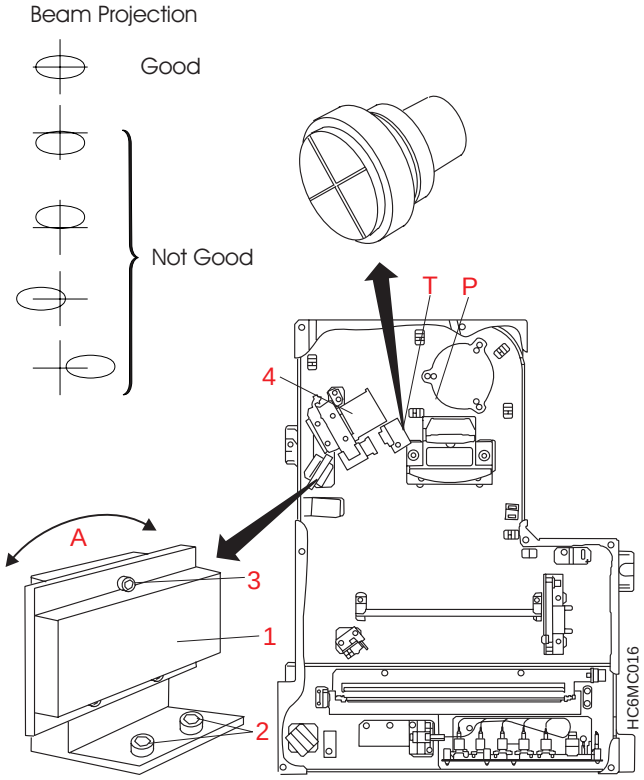
IMPORTANT:

1. Ensure that you have completed the steps in Preparation for Printhead Checks & Adjustments before continuing with this procedure.

M2 Mirror Check

1. Set the resolution switching lens **(4)** at the out (600 dpi) position. Move the lens using driver routine 3F.
2. Install the target in the right side opening of the Cylinder 1 Lens (CYL 1).
3. The beam should pass through the center of the Cylinder 1 Lens (CYL 1), (aligns on the cross hairs of the target).
   a. If the beam passes through the center of Cylinder 1 Lens, go to STEP 4: Beam Power Check.
   b. If the beam does not pass through the center of Cylinder 1 Lens, perform the M2 Mirror Adjustment.

Table 526. M2 Mirror Check (continued)

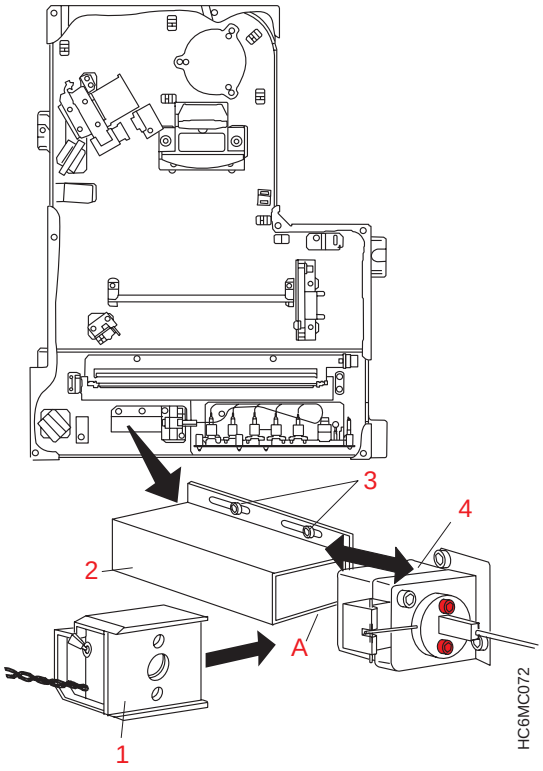


M2 Mirror Adjustment

1. Loosen the hex head screw **(2)** to rotate the mirror in the direction of the arrow.
2. Adjust the mirror **(1)** in the vertical direction, by turning hex head screw **(3)**.
3. When the beam passes through the center of Cylinder 1 Lens, go to STEP 4: Beam Power Check.

STEP 4: Beam Power Check

Table 527. Beam Power Check



(continued on next page)

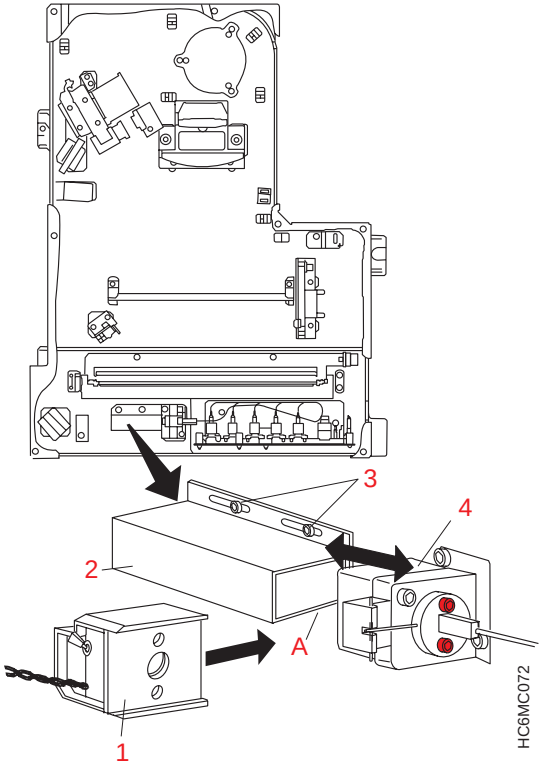
DANGER

<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.

IMPORTANT:

1. Ensure that you have completed the steps in Preparation for Printhead Checks & Adjustments before continuing with this procedure.
2. This procedure assumes that the laser is aligned. If you are not sure that the laser beam is aligned, repeat the laser alignment procedures, which are:
   - STEP 1: Fiber Module Alignment Check.
   - STEP 2: M1 Mirror Check.
   - STEP 3: M2 Mirror Check.
3. Ensure that you are wearing an ESD wrist strap for this procedure.
4. The laser power tool is required for use during this procedure.

Table 527. Beam Power Check (continued)



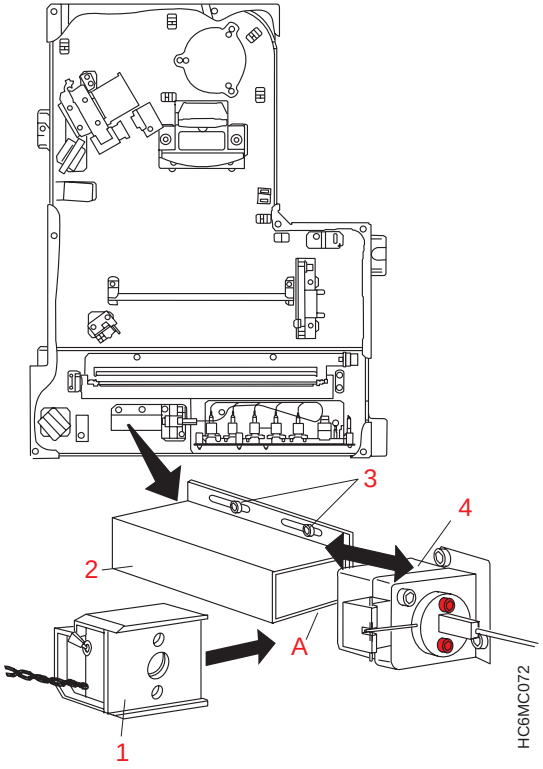
(continued on next page)

Beam Power Check

Note: Do not loosen or remove the two screws marked in red.

1. Loosen the hex head screws **(3)** to slide the channel cover **(2)** away from the fiber module.
2. Set the laser power tool to **High**.
3. Install the laser power tool **(1)** in position **(A)**, between the channel cover and the foam **(4)**.
4. Slide the channel cover **(2)** back into place and tighten the hex head screws **(3)**.
5. Reinstall the printhead cover with the meter leads from the laser power tool exiting from the bottom.

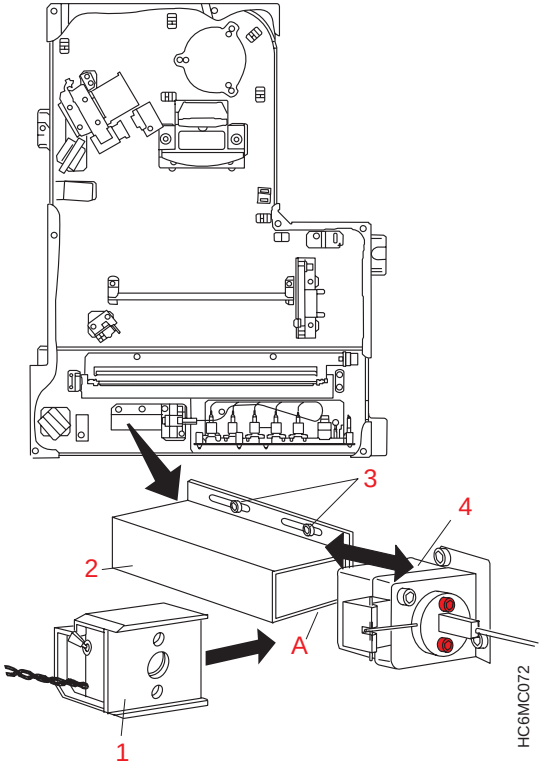
Table 527. Beam Power Check (continued)



6. The power of each beam will be measured separately. Use the adjustment routine shown below to turn on each beam.
   - Beam 1 (LD1) - adjustment routine C8
   - Beam 2 (LD2) - adjustment routine C9
   - Beam 3 (LD3) - adjustment routine CA
   - Beam 4 (LD4) - adjustment routine CB
   - Beam 5 (LD5) - adjustment routine CD
7. Measure and record the **High** power readings of each beam at position **A** (just after the fiber module).
8. If you are using **Toner P/N 1402828** go to step 9.If you are using **Toner P/N 1402717** go to step 11.
9. When using **Toner P/N 1402828**, check that the power reading at position **(A)** is 40 mV or more for each beam.
10. If the power reading at position **(A)** (just after the fiber module) is less than 40 mV or greater than 45 mV for any beam, go to Beam Power Adjustment A. If the difference between the highest and lowest voltage reading is greater than 2.5 mV, go to Beam Power Adjustment A.
11. When using **Toner P/N 1402717**, check that the power reading at position **(A)** is 30 mV ± 0.5 mV for each beam.
12. If the power reading at position **(A)** (just after the fiber module) is not 30 mV ± 0.5mV for any beam, go to Beam Power Adjustment A. If the difference between the highest and lowest voltage reading is greater than 1.0 mV, go to Beam Power Adjustment A.

Beam Power Adjustment A

Table 528. Beam Power Adjustment A



You are here because the power at **A** is less than 40 mV or greater than 45 mV for any beam, **when using Toner P/N 1402828**, or the power is not 30 mV ± 0.5 mV for any beam **when using Toner P/N 1402717**. The problem is one or more of the following:

- Adjustment of the laser diode is required
- A laser diode has failed
- The laser fiber module or fiber cables are damaged.

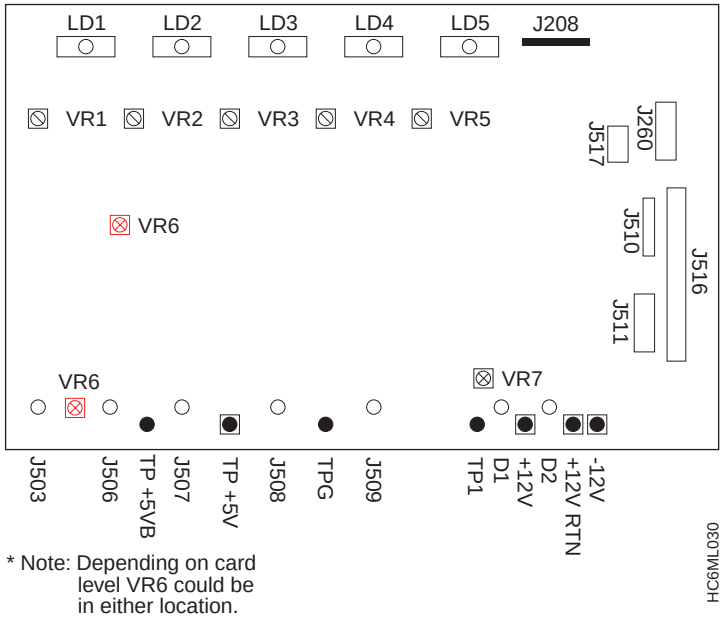
DANGER

<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.

1. **Important:** Ensure that you have completed the steps in Preparation for Printhead Checks & Adjustments before continuing with this procedure.
2. Loosen the hex head screws **(3)** to slide the cover **(2)** in the direction of the arrow.
3. Set the laser power tool to **High**.
4. Install the laser power tool **(1)** in position **(A)**, between the channel cover and the foam **(4)**.
5. Ensure that the beam is centered on the power tool sensor. (Turn on the beam using adjustment routine **CA**.)
6. Slide the channel cover **(2)** back into place and tighten the hex head screws **(3)**.
7. Ensure that all beams are turned OFF.

(continued on next page)

Table 528. Beam Power Adjustment A (continued)



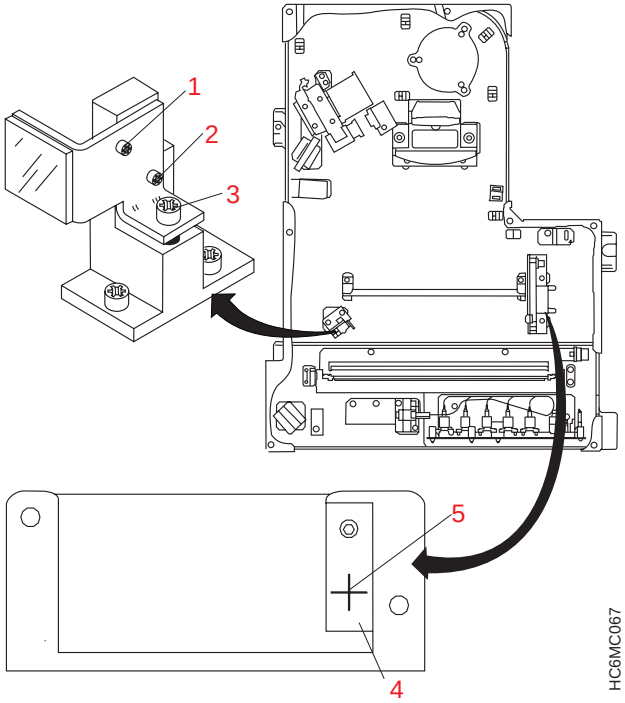
* Note: Depending on card level VR6 could be in either location.

8. For each beam that requires adjustment, turn the correct potentiometer on the laser diode card, *clockwise* to increase the power or *counterclockwise* to decrease the power.
   - Beam 1 (LD1) - potentiometer **VR1**
   - Beam 2 (LD2) - potentiometer **VR2**
   - Beam 3 (LD3) - potentiometer **VR3**
   - Beam 4 (LD4) - potentiometer **VR4**
   - Beam 5 (LD5) - potentiometer **VR5**

   A very small turn (*clockwise* or *counterclockwise*) will change the output power.
9. Reinstall the printhead cover with the meter leads from the laser power tool exiting from the bottom.
10. Run the appropriate adjustment routine for each beam that requires adjustment.
    - Beam 1 (LD1) - adjustment routine C8
    - Beam 2 (LD2) - adjustment routine C9
    - Beam 3 (LD3) - adjustment routine CA
    - Beam 4 (LD4) - adjustment routine CB
    - Beam 5 (LD5) - adjustment routine CD
11. Measure and record the **High** power readings of each beam at position **A** (just after the fiber module). The difference between the highest and lowest voltage reading should be less than 2.5 mV **for Toner P/N 1402828**, or less than 1.0 mV **for Toner P/N 1402717**.
12. If any beam requires more adjustment, repeat steps 7 through 11.
13. If a low power problem still exists when potentiometers VR1–VR5 are at the end of their range, install a new laser diode card (LD272) and fiber module assembly. Go to Laser Diode Card (LD272) & Fiber Module.

STEP 5: Beam Detect Mirror Check

Table 529. Beam Detect Mirror Check



Perform this check with the resolution switching lens in both resolution switching lens positions (lens in=480 DPI, lens out=600 DPI). Move the resolution switching lens by using driver routine 3F.

(continued on next page)

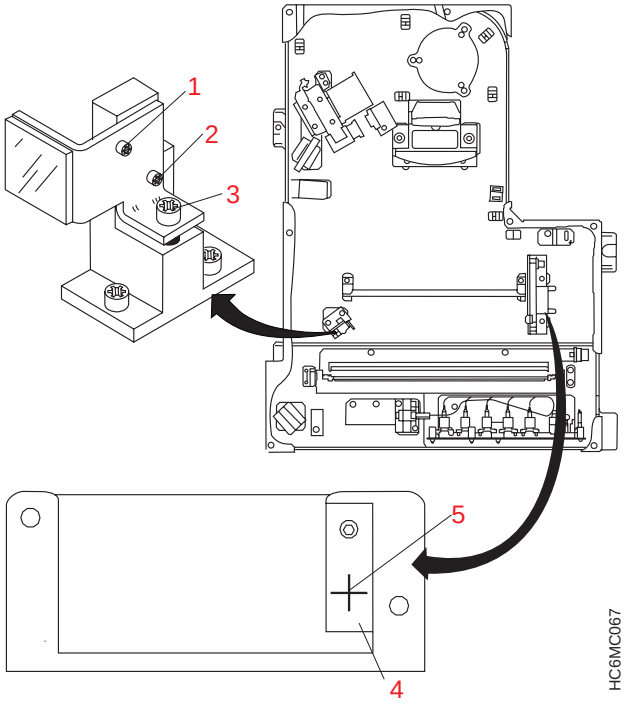
DANGER

<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.

Check Procedure

1. Ensure that you have completed the steps in Preparation for Printhead Checks & Adjustments before continuing with this procedure.
2. The C0 routine should be running. If the scanning mirror motor is not running, press **Enter** on the maintenance panel to turn on the mirror motor.
3. Observe the beam vertical alignment **(5)**. The beam should be centered vertically on the white line of the sensor cover **(4)**.
   - If the beam alignment is good at both resolutions, the alignment procedure is complete. If additional adjustments are necessary, go to Print Sample Adjustments for more information.
   - If the beam alignment is not correct, go to the Beam Detect Mirror Adjustment Procedure.

Table 529. Beam Detect Mirror Check (continued)

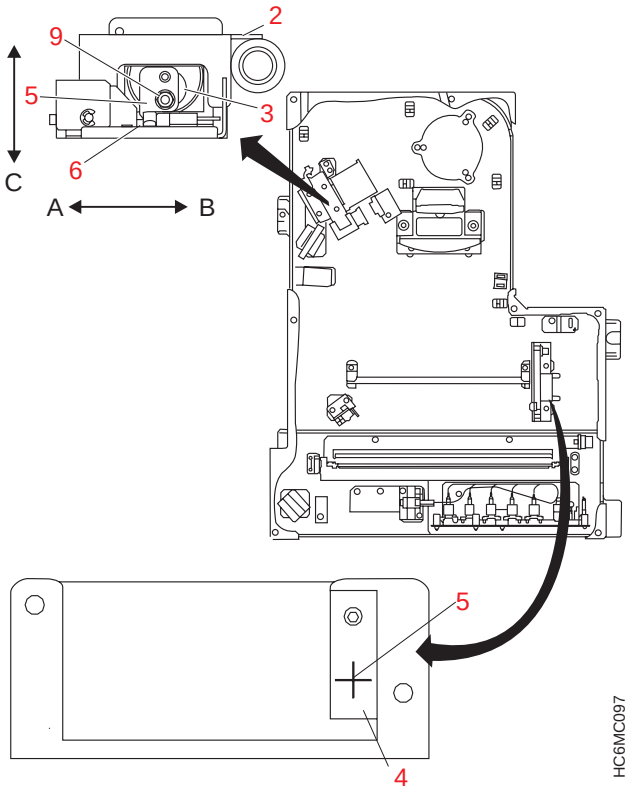


(continued on next page)

Adjustment Procedure

1. Ensure the resolution switching lens is in the up (600 DPI) position. (Driver Routine 3F moves the lens.)
2. Loosen the clamping screws **(1)** and **(2)** on the beam detect mirror assembly.
3. Adjust screw **(3)** until the beam is centered on the white line of the beam detect sensor cover **(4)** located on the Beam Detect card assembly.
4. Tighten screws **(1)** and **(2)** making sure that the beam does not move when you tighten the screws.

Table 529. Beam Detect Mirror Check (continued)



5. Move the resolution switching lens into the in (480 DPI) position using Driver Routine 3F.
6. Observe the beam vertical alignment on the Beam Detect Sensor. The beam should be centered vertically on the white line **(5)** of the sensor cover.
7. If the beam alignment is not good, adjust the position of the resolution switching lens.
8. Loosen the four hex head screws and screw **(6)** that hold the resolution switching lens mechanism to the casting.
9. Move the lens assembly **(2)** in the direction of the arrow so that the laser beam passes through the center of the lens assembly.
10. Loosen the locking screw.
    - Adjust the vertical positioning of the lens, by moving it **(9)** in the direction of the C arrow. The beam should be centered vertically on the white line of the beam detect sensor.
11. Run routine 3F to ensure that the resolution switching lens still moves freely without binding.
12. Perform a test print to check the print quality.

Completing Adjustment Procedure

1. Remove the paper from the Return Mirror and any foreign objects that may be left in the Printhead Assembly.
2. Replace the Printhead cover.
3. Go to Print Sample Adjustments for additional adjustments.

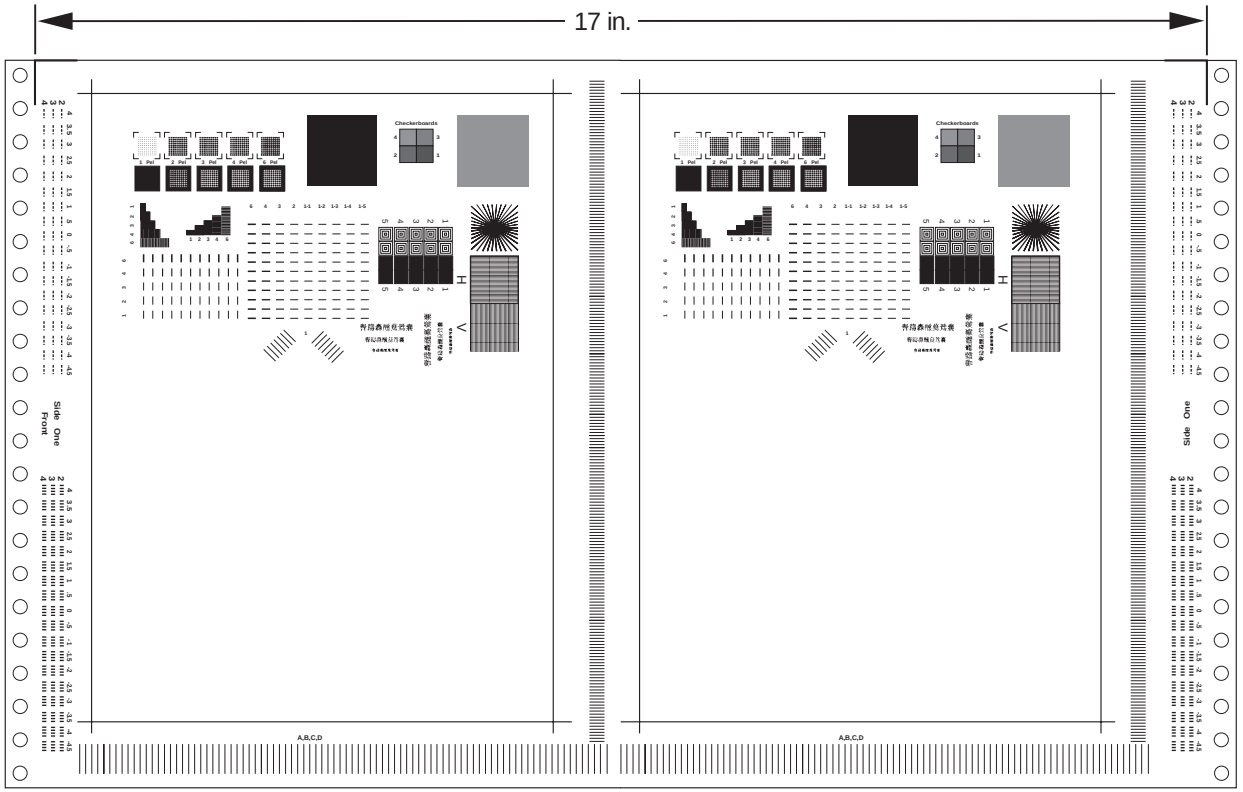
Print Sample Adjustments

Perform all of the procedures in this section.

Important Note: These procedures assume that the printhead is properly aligned.

Print Width

Table 530. Print Width



Important:

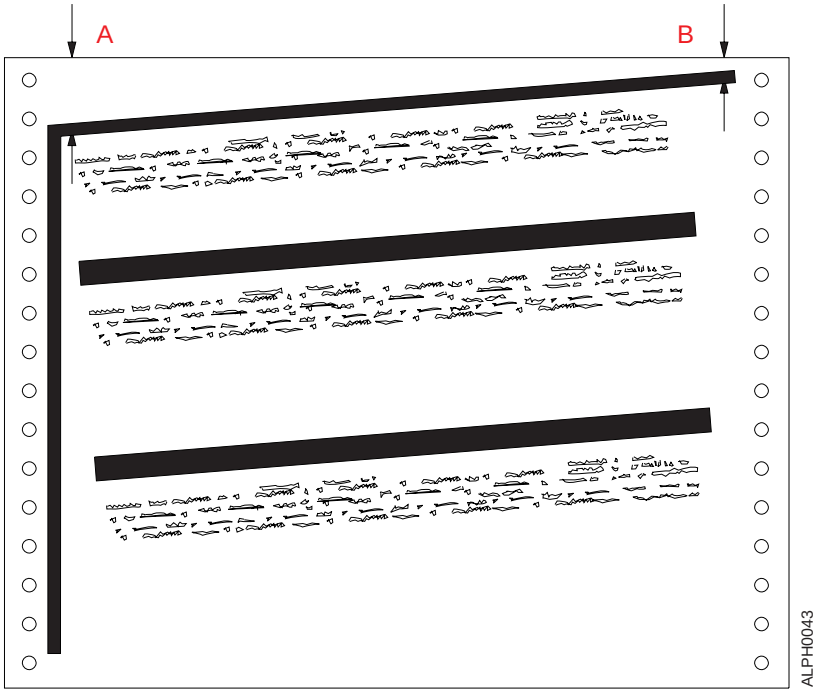
1. Ensure that an 18 inch form is loaded before you begin this procedure.
2. This procedure assumes that the printhead is properly aligned.

Check Procedure

1. Print an alternate print sample.
2. Measure the distance between the two short process direction lines located near the perforation of the print sample. It should measure exactly 17.0 inches on the unfused image.
3. If the length is incorrect, call level 2 support.

Print Skew

Table 531. Print Skew Check



Purpose

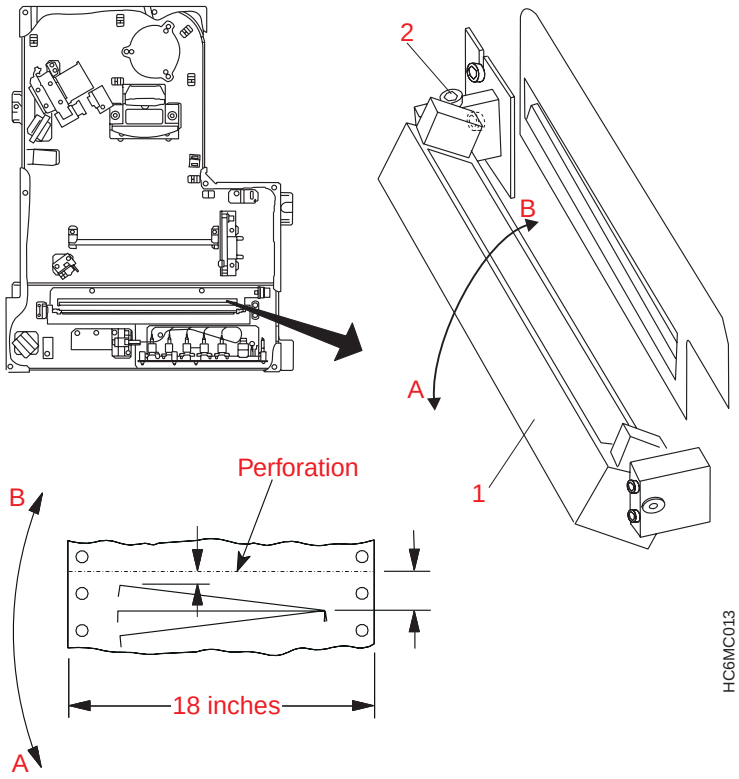
You are here to correct a condition where the scanned lines are not parallel with the perforations on the form.

Check

1. Run Primary print sample to print on the widest available form.
2. Measure the distance from the folding perforation to the leading edge of the wide black bar that runs the width of the print. Measure the distance at the front and rear of the printer. See points **A** and **B**.
3. If the difference between the 2 measurements is greater than 0.2 mm over 14 inches, go to Return Mirror Adjustment.

Return Mirror Adjustment:

Table 532. Return Mirror Adjustment



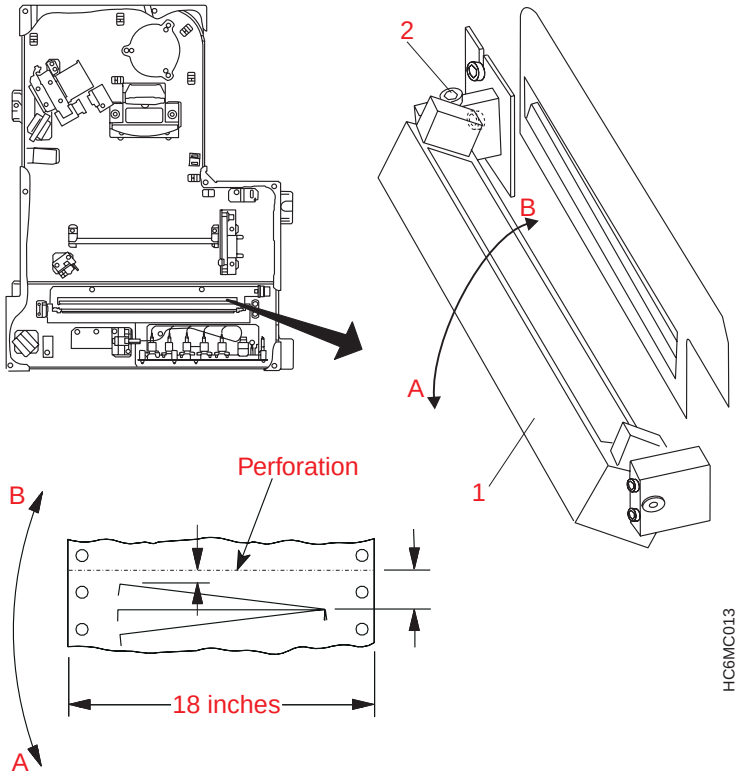
(continued on next page)

DANGER

<25>Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.

1. Request that the system operator stop activity on the printer system Disable all host attachments.
2. Shutdown and power off the printer.
3. Remove the printhead cover.
4. Loosen the 2 screws **(2)**.
5. Move the return mirror **(1)** as follows:
   - To rotate the print in the *counterclockwise* direction, move the front end of the return mirror **(1)** to the left (**A** direction).
   - To rotate the print in the *clockwise* direction, move the front end of the return mirror **(1)** to the right (**B** direction).

Table 532. Return Mirror Adjustment (continued)



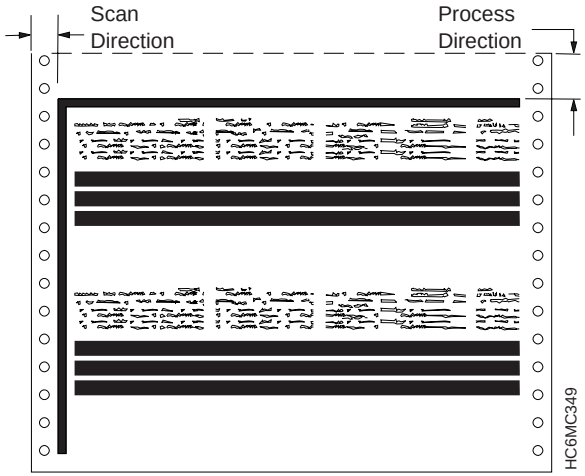
6. Install the printhead cover. Fasten it with only 2 screws at this time.
7. Power on the printer.
8. Run Primary print sample again and check the print skew.
9. Repeat this procedure as necessary.
10. Run Alternate print sample and check the print width. See Print Width.
11. Repeat this procedure as necessary.
12. Ensure that the 2 screws **(2)** are tightened.
13. Recheck the print skew, print width, and registration.
14. Go to Registration.

Registration

Table 533. Checking Registration

Purpose

- To adjust the printed image in the horizontal and vertical directions.
- The horizontal adjustment is in the scan direction
- The vertical adjustment is in the process direction



IMPORTANT: Registration must be checked and adjusted separately for each resolution used on the printer. Perform the registration check/adjustment for one resolution. Then change to the other resolution and repeat the check/adjustment. Refer to the Operator's Guide for information on how to change resolution.

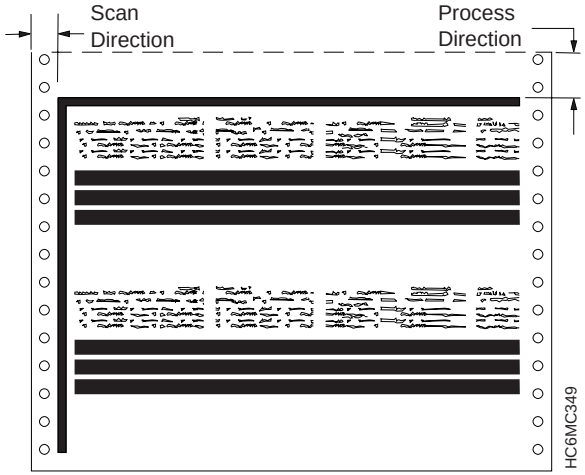
Special Tools

- Registration template (if available)

Factors Affecting Registration

1. Operator adjustment (**Adjust Print**) values
2. Tractor motor detent position
3. Return mirror position
4. Variation in the forms dimensions
5. Image skew
6. Print width
7. Acceleration and deceleration of the forms
8. Registration of a preprinted image on forms.

Table 533. Checking Registration (continued)

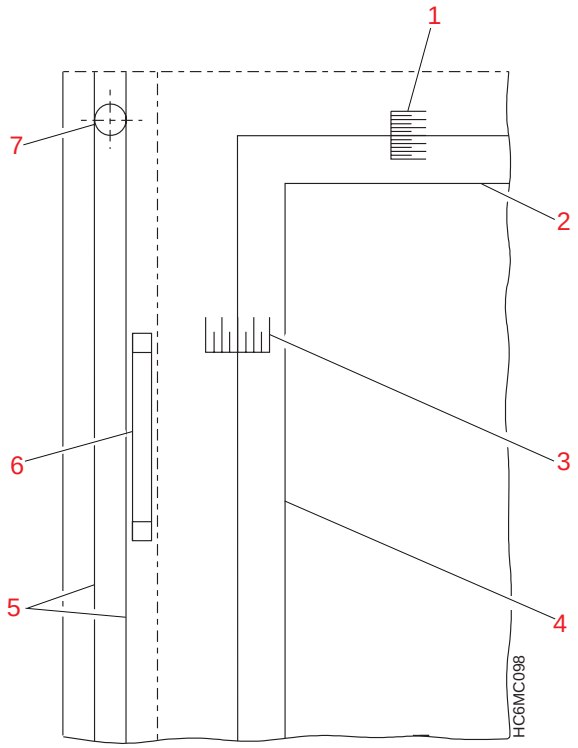


Check Procedure

1. Load the customer's most critical form.
2. If you have not performed the width check, go to Print Width Check Procedure.
3. Run Text 1 print sample and verify that the 3 copy marks at the perforation are printed.
4. Run Primary print sample.
5. Select a fused print sample and perform the registration checks to determine the amount of adjustment required.
   - If you are using a registration template to make this check, go to Step6, Checking Registration using the template.
   - If a template is not available, go to Step 10, Checking Registration using a scale.

(continued on next page)

Table 533. Checking Registration (continued)

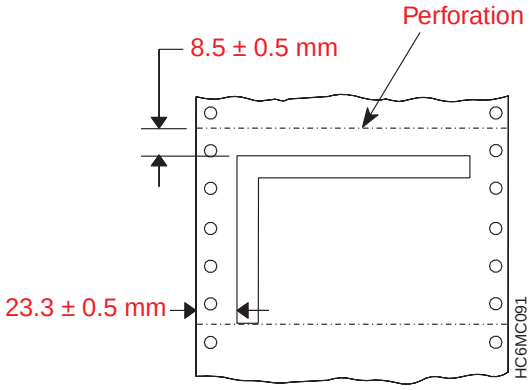


(continued on next page)

Checking Registration Using The Template

6. Align the small circle **(7)** at the top of the registration template with the first tractor hole (at the leading edge of the form) on the printed form.
7. While you keep the circle and tractor hole aligned, move the template so that all tractor holes fall inside the set of parallel lines **(5)**.
8. If the horizontal bar on the print sample does not align with the horizontal bar **(2)** on the template, a process direction adjustment is required. Go to Process Direction (Vertical) Adjustment.
9. If the vertical bar on the print sample does not align with the vertical bar **(4)** on the template, a scan direction adjustment is required. Go to Scan Direction (Horizontal) Adjustment.

Table 533. Checking Registration (continued)



Checking Registration Using A Scale

Keep These in Mind

- Measure to the same point each time you print Primary print samples.
- The process (vertical) print-start position, is measured from the perforation at the top of the form.
- The scan (horizontal) print-start position, is measured from the edge of the paper.

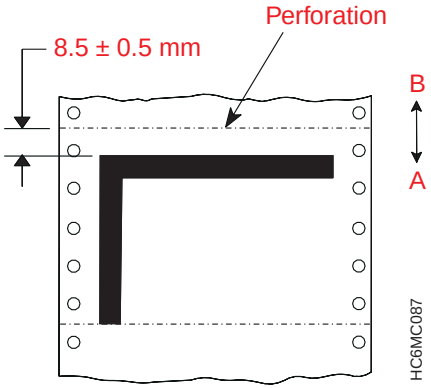
10. Check the process print-start position. The correct measurement from the horizontal bar on the print sample to the perforation at the top of the form is 8.5 ±0.5 mm (0.34 ±0.02 in.).
11. Check the scan print-start position. The correct measurement from the vertical bar to the edge of the paper is 23.3 ±0.5 mm (0.92 ±0.02 in.) .
12. If the measurement from the horizontal bar on the print sample to the perforation at the top of the form is not correct, a process direction adjustment is required. Go to Process Direction (Vertical) Adjustment.
13. If the measurement from the vertical bar to the edge of the paper is not correct, a scan direction adjustment is required. Go to Scan Direction (Horizontal) Adjustment.

Process Direction (Vertical) Adjustment

Table 534. Process Direction Adjustment

About the Factory Adjust Value

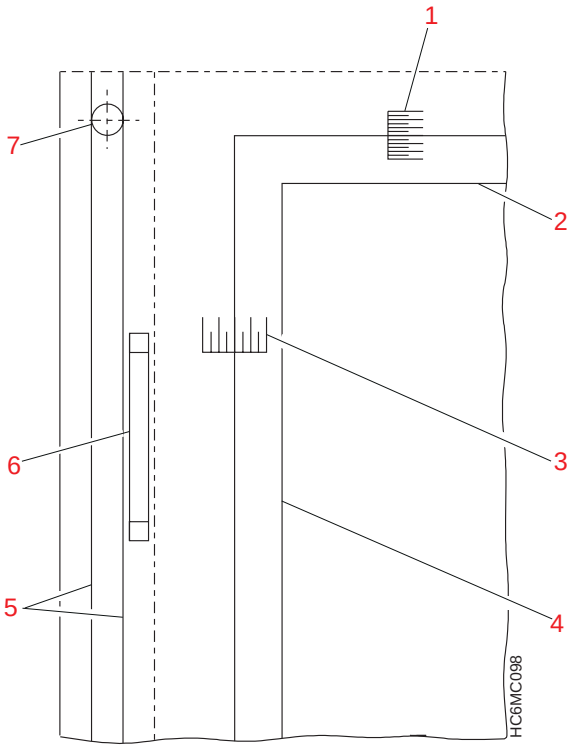
- The valid range of values is 0 to 60.
- Any number from 0 to 60 can be entered, but only the numbers in the table will change the registration. See Table 535 and Table 536.
- The default is 14.
- Increasing the value moves the image in the **A** direction.
- Decreasing the value moves the image in the **B** direction.



(continued on next page)

1. Log on in CE (service) mode and load the customer's most critical form.
2. First try to correct the process (vertical) registration by altering the ' Process Factory Adjust ' value using the Configure Printer operation on the Display/Touch Screen.
3. From the configuration pull-down menu, select **Configure Printer** and scroll down to ' Process Factory Adjust '.
4. Record the existing ' Process Factory Adjust ' values.
5. Determine the amount of adjustment that is necessary.
   - If you are using a registration template to make this adjustment, go to Step 6 Determing the adjustment using the template .
   - If a template is not available, go to Step 9, Determing the adjustment using a scale.

Table 534. Process Direction Adjustment (continued)



Determining the Amount of Adjustment Using the Template

Note: The template is designed for machines that print a 240 DPI. Therefore, text on the template is specifically for 240 DPI machines. You can use the template to adjust 480/600 DPI machines by using the procedure written in this manual in place of the text on the template.

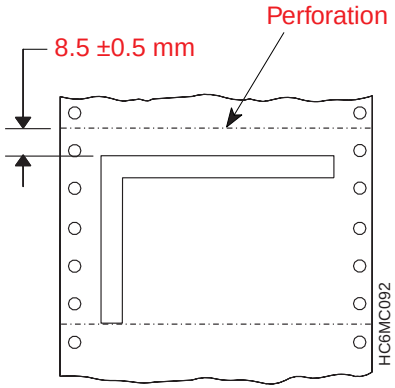
6. Use the scale **(1)** on the template. Each increment on the scale is equal to 6 print adjust units. Keep the template and print aligned.
7. Count the number of increments that the printed bar is off from the correct registration and multiply this value by 6.
   - If the printed bar was too close to the perforation, add the value to the existing ' Process Factory Adjust ' value and enter this total as the new value.
   - If the printed bar was too far from the perforation, subtract the value from the existing ' Process Factory Adjust ' value and enter this total as the new value.

   Notes:

   a. If necessary, review the instructions in the Configuring the System section of the *Operator's Guide*.

   b. A **Restart** is not required for the new ' Process Factory Adjust ' value.
8. Recheck the registration and go to Step 12.

Table 534. Process Direction Adjustment (continued)



Determining the Amount of Adjustment Using A Scale

9. Determine the ' Process Factory Adjust ' value required by measuring the amount and direction that the image must be moved to obtain the correct process (vertical) print-start position of 8.5 ±0.5 mm (0.34 ±0.02 in.) from the perforation at the top of the form.
10. Table 535 and Table 536 show the relationship between ' Process Factory Adjust ' values and the distance the image is moved from the default position.
    - Negative pel and mm values indicate how much closer to the leading edge of the form the image is moved.
    - Add or subtract the number of pels that the image must move from the existing value.
    - Enter this new value using the Configure Printer operation.

    Notes:

    a. If necessary, review the instructions in the Configuring the System section of the *Operator's Guide*.

    b. A **Restart** is not required for the new ' Process Factory Adjust ' value.
11. Recheck the registration and go to Step 12.

Table 535. Process Factory Adjust Offsets – 480 DPI

Value	Pels	mm		Value	Pels	mm
1	-25	-1.32		32	35	1.85
4	-20	-1.06		34	40	2.12
6	-15	-0.79		37	45	2.38
9	-10	-0.53		39	50	2.65
11	-5	-0.26		42	55	2.91
14	**0**	**0**		44	60	3.18
17	5	0.26		47	65	3.44
19	10	0.53		49	70	3.70
22	15	0.79		52	75	3.97
24	20	1.06		54	80	4.23
27	25	1.32		57	85	4.50
29	30	1.59		59	90	4.76

Table 536. Process Factory Adjust Offsets – 600 DPI

Value	Pels	mm		Value	Pels	mm
1	-25	-1.06		32	35	1.48
4	-20	-0.85		34	40	1.69
6	-15	-0.64		37	45	1.91
9	-10	-0.42		39	50	2.12
11	-5	-0.21		42	55	2.33
14	**0**	**0**		44	60	2.54
17	5	0.21		47	65	2.75
19	10	0.42		49	70	2.96
22	15	0.65		52	75	3.18
24	20	1.06		54	80	3.39
27	25	1.27		57	85	3.60
29	30	1.48		59	90	3.81

12. If you cannot obtain the correct adjustment, set the configuration value to 14, and continue with this procedure.
13. Perform the Tractor Motor (M105) Detent Position check. Adjust if necessary.

DANGER

<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.

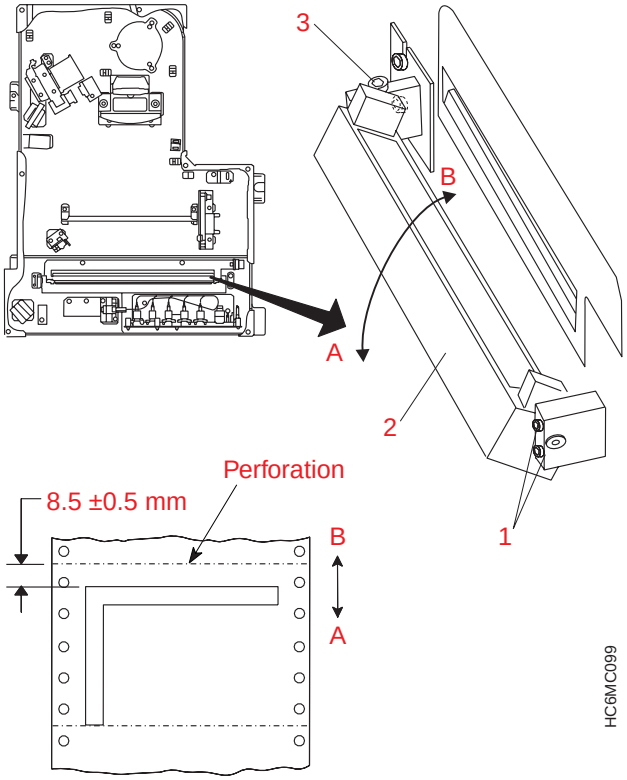
Note:

This procedure only addresses the return mirror position.

Use MAP 1011 to eliminate the other problems.

(continued on next page)

14. Request that the system operator stop all activity on the printer. Disable all host attachments.
15. Follow the Printhead Access procedure.
16. Ensure the resolution switching lens is in the out (600 dpi) position.



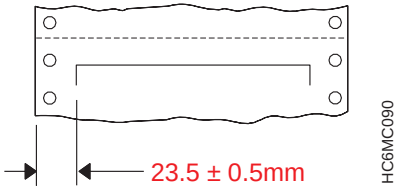
17. Loosen the 2 hex head screws **(1)**.
18. Loosen the locking screw **(3)**.
19. Move the return mirror **(2)** as follows:
    - If the vertical print start position is too high, move the mirror in the direction of **A**
    - If the vertical print start position is too low, move the mirror in the direction of **B**
20. Return the printhead cover to its operating position. It is not necessary to install all the fastening screws.
21. Run Primary print sample and recheck the vertical registration. Adjust for a process (vertical) print-start position of 8.5 ±0.5 mm (0.34 ±0.02 in.) from the perforation at the top of the form.
22. Repeat this procedure from step 17 as necessary.
23. Return the printhead to the operating condition.

Scan Direction (Horizontal) Adjustment

Table 537. Scan Direction (Horizontal) Adjustment

About the Factory Adjust Value

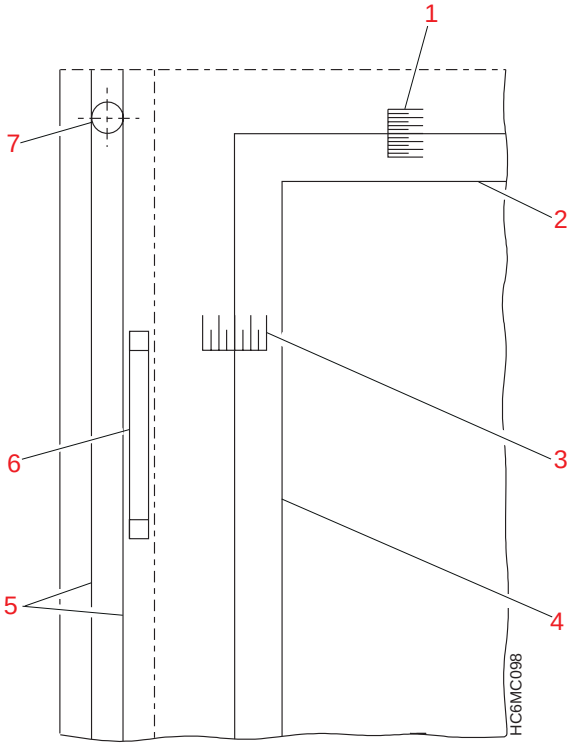
- The valid range of values is 0 to 100.
- Any number from 0 to 100 can be entered, but only the numbers in the table cause a change in the registration. See Table 538 and Table 539.
- The default is 40.
- Increasing the value moves the image closer to the rear of the printer.
- Decreasing the value moves the image closer to the front of the printer.



(continued on next page)

1. Log on in CE (service) mode and load the customer's most critical form.
2. First try to correct the process (vertical) registration by altering the 'Scan Factory Adjust' value using the Configure Printer operation on the Display/Touch Screen.
3. From the configuration pull-down menu, select **Configure Printer** and scroll down to 'Scan Factory Adjust'.
4. Record the existing 'Scan Factory Adjust' values.
5. Determine the amount of adjustment that is necessary.
   - If you are using a registration template to make this adjustment, go to Step 6 Determing the adjustment using the template .
   - If a template is not available, go to Step 9, Determing the adjustment using a scale.

Table 537. Scan Direction (Horizontal) Adjustment (continued)



(continued on next page)

Determining the Amount of Adjustment Using the Template

Note: The template is designed for machines that print a 240 DPI. Therefore, text on the template is specifically for 240 DPI machines. You can use the template to adjust 480/600 DPI machines by using the procedure written in this manual in place of the text on the template.

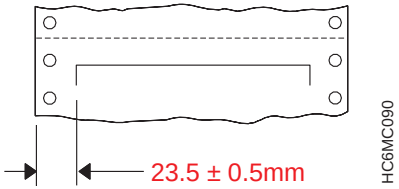
6. Use the scale **(1)** on the template. Each increment on the scale is equal to 6 print adjust units. Keep the template and print aligned.
7. Count the number of increments that the printed bar is off from the correct registration and multiply this value by 6.
   - If the printed bar was too close to the perforation, add the value to the existing 'Scan Factory Adjust' value and enter this total as the new value.
   - If the printed bar was too far from the perforation, subtract the value from the existing 'Scan Factory Adjust' value and enter this total as the new value.

   Notes:

   a. If necessary, review the instructions in the Configuring the System section of the *Operator's Guide*.

   b. A **Restart** is not required for the new 'Scan Factory Adjust' value.
8. Recheck the registration and go to Step 12.

Table 537. Scan Direction (Horizontal) Adjustment (continued)



Determining the Amount of Adjustment Using A Scale

9. Determine the 'Scan Factory Adjust' value required by measuring the amount and direction that the image must be moved to obtain the correct scan (horizontal) print-start position of 23.3 ±0.5 mm (0.92 ±0.02 in.) from the perforation at the top of the form.
10. Table 538 and Table 539 show the relationship between 'Scan Factory Adjust' values and the distance the image is moved from the default position.
    - Negative pel and mm values indicate how much closer to the left edge of the form the image is moved.
    - Add or subtract the number of pels that the image must move from the existing value.
    - Enter this new value using the Configure Printer operation.

    Notes:

    a. If necessary, review the instructions in the Configuring the System section of the *Operator's Guide*.

    b. A **Restart** is not required for the new 'Scan Factory Adjust' value.
11. Recheck the registration and go to Step 12.
12. If you cannot obtain the correct adjustment, set the configuration value to 40, and go to Step 23.

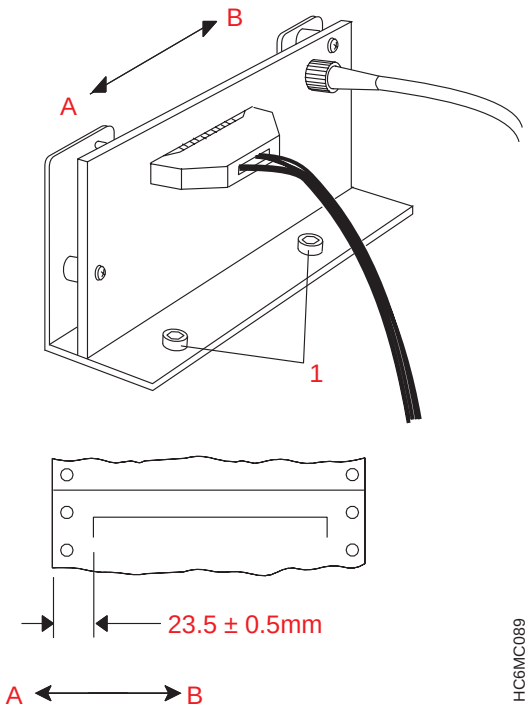
Table 538. Scan Factory Adjust Offsets – 480 DPI

Value	Pels	mm		Value	Pels	mm
0	-160	-8.5		52	48	2.5
4	-144	-7.6		56	64	3.4
8	-128	-6.8		60	80	4.2
12	-112	-5.9		64	96	5.1
16	-96	-5.1		68	112	5.9
20	-80	-4.2		72	128	6.8
24	-64	-3.4		76	144	7.6
28	-48	-2.5		80	160	8.5
32	-32	-1.7		84	176	9.4
36	-16	-0.85		88	192	10.2
40	**0**	**0**		92	208	11.0
44	16	0.85		96	224	11.9
48	32	1.7		100	240	12.7

Table 539. Scan Factory Adjust Offsets – 600 DPI

Value	Pels	mm		Value	Pels	mm
0	-160	-6.8		52	48	2.0
4	-144	-6.1		56	64	2.7
8	-128	-5.4		60	80	3.4
12	-112	-4.7		64	96	4.1
16	-96	-4.1		68	112	4.7
20	-80	-3.4		72	128	5.4
24	-64	-2.7		76	144	6.1
28	-48	-2.0		80	160	6.8
32	-32	-1.3		84	176	7.4
36	-16	-0.6		88	192	8.1
40	**0**	**0**		92	208	8.8
44	16	0.6		96	224	9.5
48	32	1.3		100	240	10.2

Scan Direction Adjustment (continued)



DANGER

<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.

23. Request that the system operator stop all activity on the printer. Disable all host attachments.
24. Follow the Printhead Access procedure.
25. Loosen, but do not remove, the 2 socket head screws **(1)** on the BD171 mount base.
26. To move the print in the **A** or **B** directions, move the BD171 an equal amount in the direction shown.
27. If the scan is not centered on the beam detect sensor, adjust the beam detect mirror. Follow the procedure in STEP 5: Beam Detect Mirror Check.
28. When complete, tighten the 2 screws **(1)**.
29. Return the printhead cover to its operating position. It is not necessary to install the fastening screws.
30. Run Primary print sample and recheck the horizontal registration.
31. Repeat this procedure from Step 25 as necessary.

Beam Offset Adjustment

Table 540. Beam Offset Adjustment

Purpose

The purpose of this adjustment is to have all five beams start printing at exactly the same point, (front to rear) on the page. If the scan lines of each beam do not start at the same point, print quality problems will occur (banding).

IMPORTANT: You must check and adjust the beam offset separately for each resolution used on the printer. Perform the adjustment for one resolution. Then change to the other resolution and repeat the check/adjustment. Refer to the Operator's Guide for information on how to change resolution. Perform this procedure for both Printer 1 and Printer 2.

1. Load 18-inch wide paper into the printer. The Alternate Print Sample used in this procedure is a 2-up print and the alignment marks used in this procedure are on the front edge of the print.
2. Set contrast on the Printer Control Panel to 4.
3. Disable host attachments.
4. Select **Analyze**, **Service Actions**, and then **CE password** on the Display/Touch Screen.

(continued on next page)

Example 1:

- If the correctly printed pattern for beam 2 were in the **2.5** position, you would add **2.5** to the existing adjustment value.

Example 2:

- If the correctly printed pattern for beam 2 were in the **-1.5** position, you would subtract **1.5** from the existing adjustment value.

5. Run 100 Alternate Test Prints.
   - Select **Print**.
   - Select **Print Samples**.
   - Select **Alternate**.
   - Select **How Many**.
   - Enter **100**.
   - Select **OK**.
   - Select **Print**.

   One hundred print samples will be printed.

See Figure 4.

6. Observe the unfused prints at the Buffer Arm area. When the beams are aligned correctly, the two white spaces**(1)** in the pattern should be of equal width and divide the pattern into four equal sections in the "0" position for all four beams (2, 3, 4 and 5).
   Note: Beam 1 is the reference beam and all the other beams are aligned to it.
7. If the white spaces are not positioned correctly in the "0" position, locate the position (4 to -4.5 for 600 DPI, 3 to -3 for 480 DPI) where the beams appear to be most closely aligned. Write down that position for beams 2, 3, 4 and 5.
8. Select **Configure**, then **Configure Printer**. Page down to **"Beam Offset Adjustment" for Printer 1**, beams 2, 3, 4 and 5. Note that "Beam 1" is grayed out, because beam 1 is the reference beam and is not adjusted.
   Note: A setting of **8.0** is the default setting.
9. Select the beam(s) to be changed.

Table 540. Beam Offset Adjustment (continued)

Notes:

a. Do not attempt to line up the edges of the lines. Center the lines instead.

b. Failure to select **OK** on the Printer Configuration screen will result in the new offsets not being saved.

c. Failure to have all four of the beams correctly aligned will result in "banding". "Banding" is the appearance of scan direction light and dark bands or streaks.

10. Add or subtract the appropriate number corresponding to the pattern that is most closely aligned for each beam, (as recorded in step 7), to each beam's offset adjustment value. This will bring the correctly-positioned white spaces into the "0" position.
11. After you have entered the desired numbers for all three beams, select **OK** on the Printer Configuration screen to save the changes.
12. Run three Alternate Print samples and check the position of the white spaces again. If they are not exactly correct in the **0** position, you can change the offset adjustment in 1/10th pel increments to get the white space position exact.
13. Set the contrast back to normal.
14. Go to PQE Stroke Width Settings.

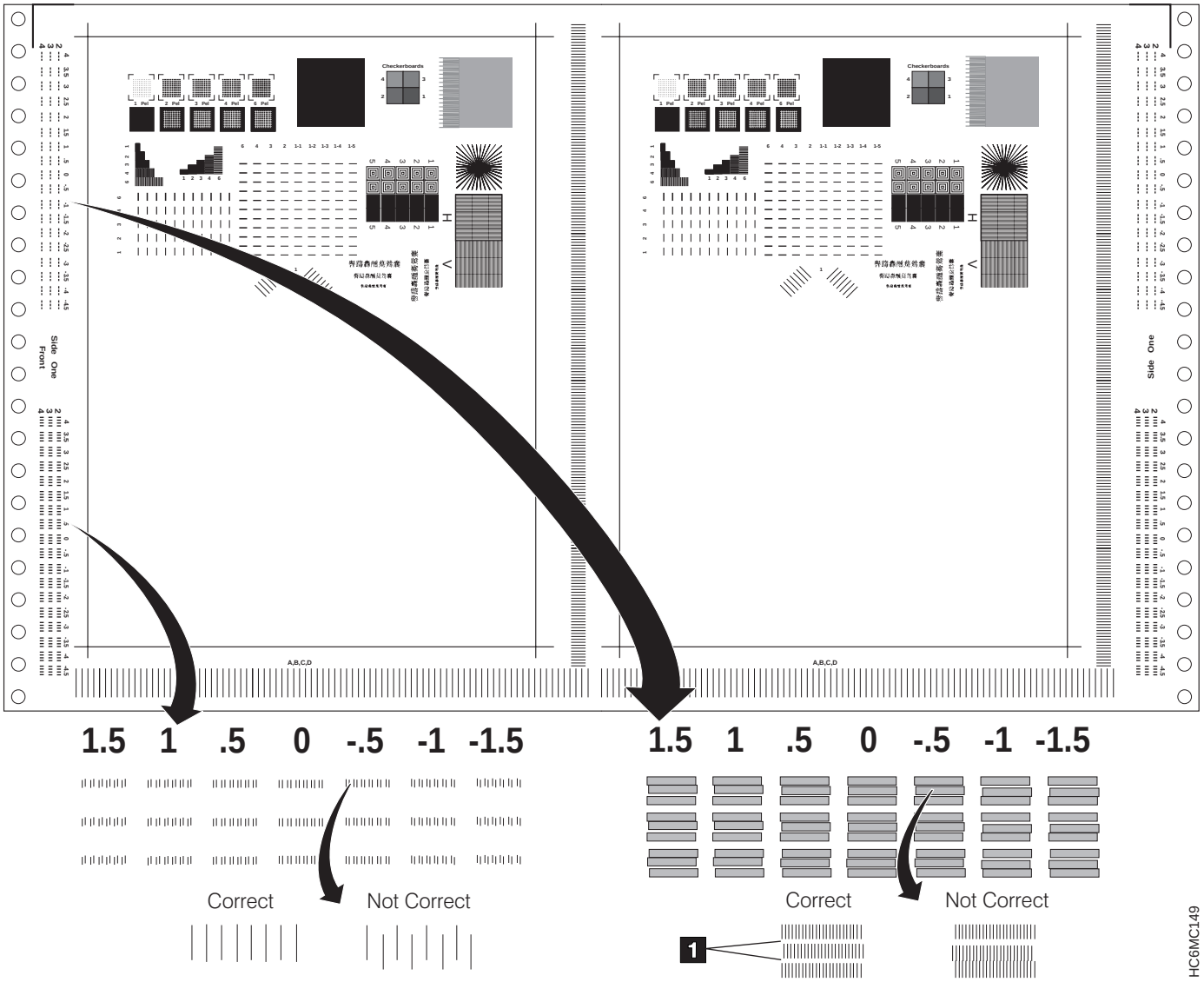
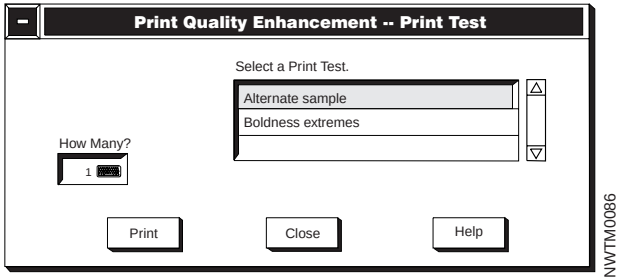


Figure 4. Alternate Print Sample Alignment Marks

PQE Stroke Width Settings

Table 541. PQE Stroke Width Settings

Note: There is no adjustment for stroke width. Ensure the PQE Settings are correct using the following procedure.



1. Power on the printer (see the *Operator's Guide*).
2. Select **Analyze** on the menu bar of the main window.
3. Select **Service Actions** on the menu that appears.
4. If you have not already entered your password as a customer engineer, the Password window appears.

   Select **Customer Engineer** in the Password window. Use the keyboard that appears to select your password, and then select the **OK** key. When your password is accepted, the Service Actions window reappears.

   Note: put the printer into Dual Simplex Mode by selecting **Configure Printer**
5. Select **Diagnostics** on the Service Actions menu.

   Note: If a preventive maintenance (PM) item is due, the PM window appears. Bypass the maintenance temporarily and close the PM window to complete the stroke width adjustment. After this adjustment, perform the appropriate PM procedures.
6. Select **Print Quality Enhancement (PQE)** on the menu that appears. The Print Quality Enhancement window appears.
7. Verify that the **Current vector** is **0** for all five beams. If not, set it to 0.
8. Set the **Vector boldness** for all five beams to **100%**.
9. Using beam 0, set the **horizontal high** and the **vertical high** value to **63**.
10. Using beam 0, set the **horizontal low** and **vertical low** values to **0**.
11. Press the **SAVE** key to save the PQE values.
12. Exit the Service screens.

Beam Spacing Check & Adjustment

Table 542. Beam Spacing Check & Adjustment

Attention:

The following adjustments MUST be within specification before you perform this procedure:

- PQE Stroke Width Settings
- Beam Power Adjustment A.

(continued on next page)

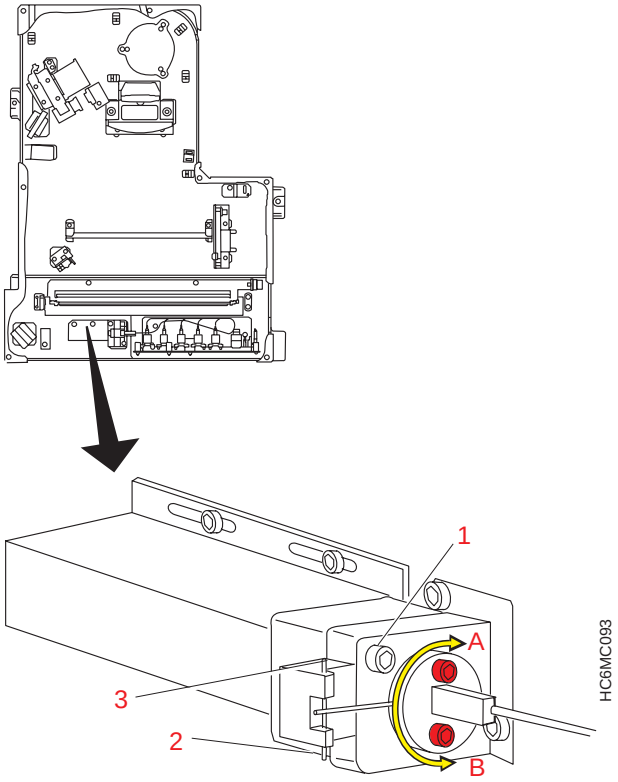
Check Procedure

1. Power on the printer.
2. Print several pages of the Alternate print sample.

See Beam Spacing Check Sample.

3. Observe the 2-pel on, 2-pel off pattern with a jewelers loupe.
4. Compare the pattern with those in Beam Spacing Check Sample.
5. If white or dark bands are present, go to Beam Spacing Adjustment Procedure.
   Note: Banding may also be caused by a defective mirror motor.

Table 542. Beam Spacing Check & Adjustment (continued)



DANGER

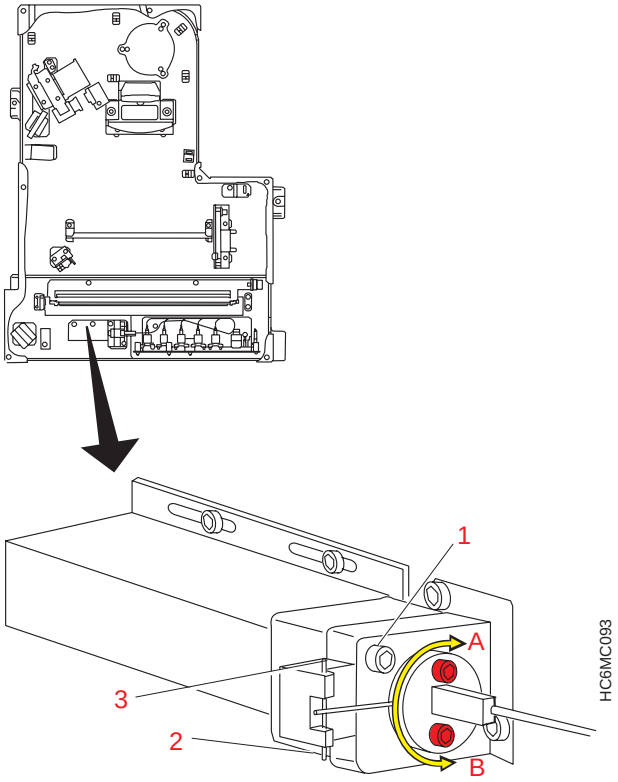
<25> Laser radiation is present when the printer is powered on. Avoid direct exposure to the laser beam. Keep all reflecting objects such as watches, jewelry, or shiny tools out of the path of the beam. Do not override the printhead cover interlock while the printer is powered on.

Adjustment Procedure

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Remove the printhead cover. See Printhead Access.
4. Loosen the fiber module rotation locking screw **(1)**.
5. If black bands were present and aligned with the reference marks, loosen set screw **(2)** 1/8th of a revolution.
6. Rotate the fiber module *counterclockwise* against the bottom of the set screw **(3)**, in the direction of arrow **B**, and tighten set screw **(2)**.

(continued on next page)

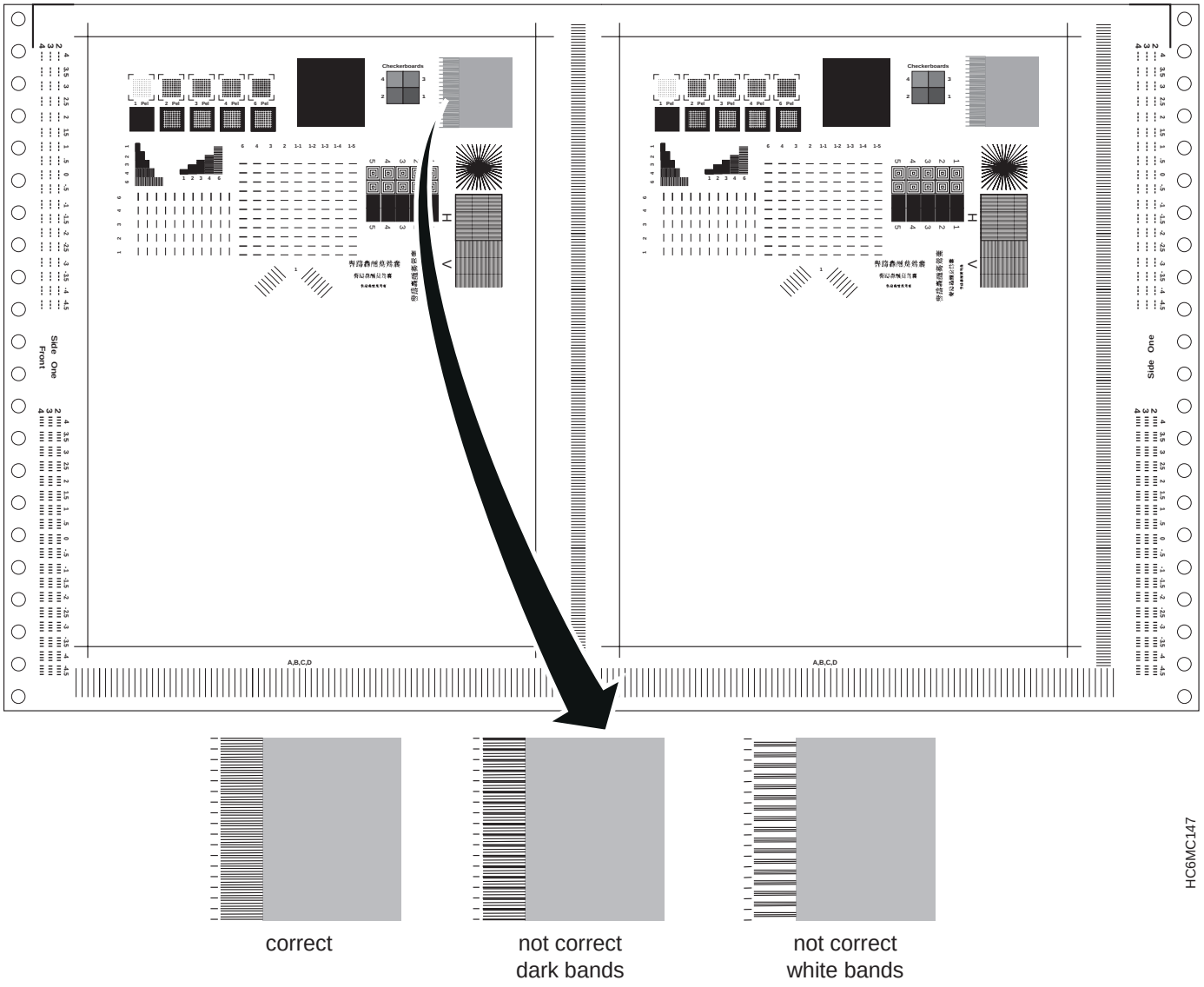
Table 542. Beam Spacing Check & Adjustment (continued)



Adjustment Procedure (cont'd)

7. If white bands were present and aligned with the reference marks, loosen set screw **(3)** 1/8th of a revolution.
8. Rotate the fiber module *clockwise*, in the direction of arrow **A**, against the top of the set screw **(2)** and tighten set screw **(3)**.
9. Tighten the locking screw **(1)** after each adjustment.
10. Install the printhead cover.
11. Power on the printer and run alternate test prints.
12. Repeat this procedure until minimum banding occurs.

Note: See Banding (Sample G7) in Print Quality Samples.



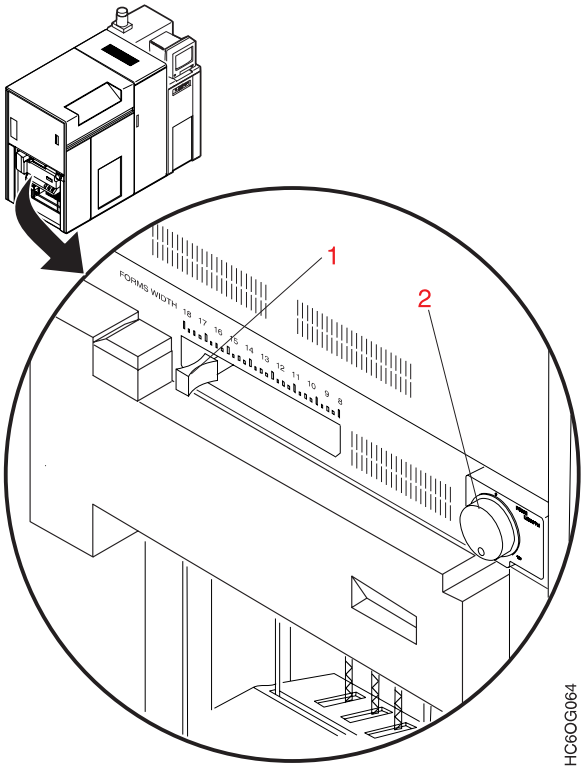
Beam Spacing Check

Stacker

Forms Length Adjustment 1848
Forms Length Screwshaft 1850
Forms Length Select Card (FL031) 1851
Forms Length Sensor Card (FL061) 1855
Forms Length Stacker Wire 1856
Forms Width Adjust 1857
Front Forms Width Guide 1858
Pendulum Motor (M804) and Drive Belt Assembly 1859
Pendulum Position Sensor (S809) 1861
Pendulum Static Brush 1862
Rear Finger Belts 1863
Rear Finger Belt Motor (M801) and Belt Drive 1866
Stacker Blower (B703) 1868
Stacker Control Panel Card (LP041) 1869
Stacker Gate Finger Belts 1870
Stacker Gate Finger Belt Motor (M802) and Drive Belt 1872
Stacker Gate Open Switch (S806) 1874
Stacker Gate Safety Switches (S801 and S802) 1875
Stacker Height Sensors (Front – S804 or D802, Rear – S803 or D801) 1877
Stacker Jam Sensor (D803 and S805) 1879
Stacker Table Belts 1880
Stacker Table Lower Limit Sensor (S808) 1882
Stacker Table Motor (M803) 1884
Stacker Table Upper Limit Sensor (S807) 1886
Stacker Table Upper Position 1888

Forms Length Adjustment

Table 543. Form Length Adjustment



Special Tools Required:

- Offset Phillips screwdriver

Adjustment

Note: The printer is powered on for this adjustment. This procedure included adjustments for:

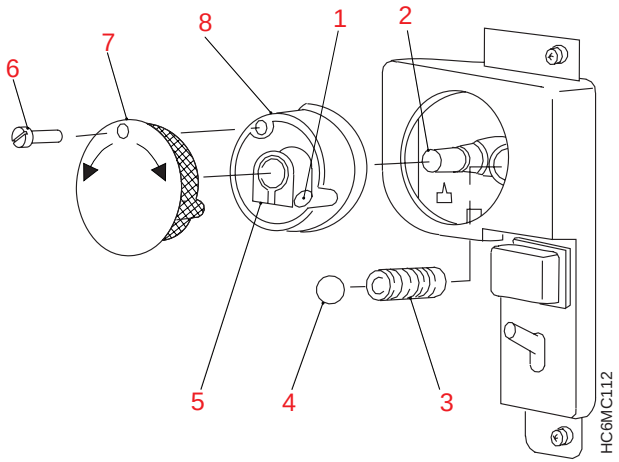
- Forms length mechanism
- Forms length select card
- Forms length sensor card

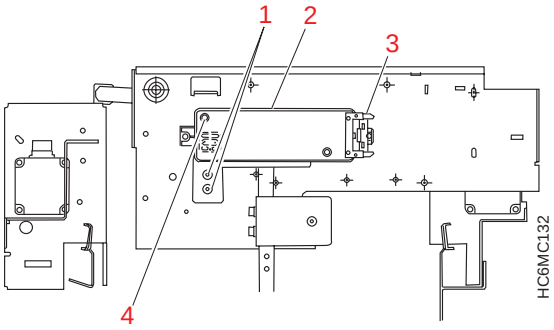
1. Changing the adjustment of the forms length select card requires that you check the adjustment of the forms length sensor card.

Check with the Forms Length Select Knob

1. Turn the knob **(2)** counterclockwise until you cannot turn it anymore.
2. Verify that the knob is beyond (counterclockwise) the 7-inch setting.
3. Turn the knob clockwise until you cannot turn it anymore.
4. Verify that the knob stops at or is beyond (clockwise) the 14-inch setting.

Table 543. Form Length Adjustment (continued)





(continued on next page)

Adjust with the Forms Length Select Knob

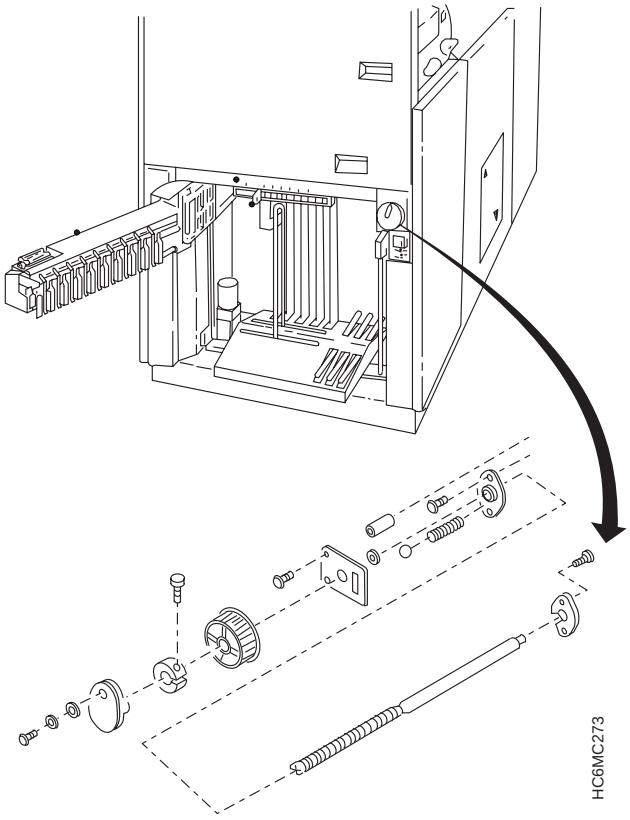
1. Turn the knob clockwise until you cannot turn it anymore.
2. Remove the knob cover **(7)** by removing screw **(6)**.
3. Loosen the screw **(1)**.
4. Loosen the collar **(5)** that holds the knob to the shaft.

Note: Do not rotate the shaft.

5. Rotate the knob clockwise so that the pointer is on 0 (zero) or slightly to the right.
6. Tighten the screw **(1)**.
7. Replace the knob cover **(7)**.
8. Perform the Forms Length Select Card (FL031) adjustment procedure.
9. Visually verify that you can see the red mark from the hole **(4)** on the forms length sensor card **(2)**.
10. If you cannot see the red mark from the hole, loosen the two screws **(1)** and adjust the card to the right or left.

Forms Length Screwshaft

Table 544. Forms Length Screwshaft



Removal

1. Adjust the forms length to 14 inches.
2. Open the left front cover.
3. Remove the Forms Length Sensor Card (FL061).
4. Remove the Forms Length Select Card (FL031).
5. Remove the two screws, the C-clip, and the bushing that supports the front end of the forms length screwshaft.
6. Remove the fuser right side cover.
7. Remove the two screws holding the screwshaft guide.
8. Remove the developer cover to provide a path for the screwshaft to exit.
9. Turn the screwshaft clockwise to remove it through the hole inside.

Installation

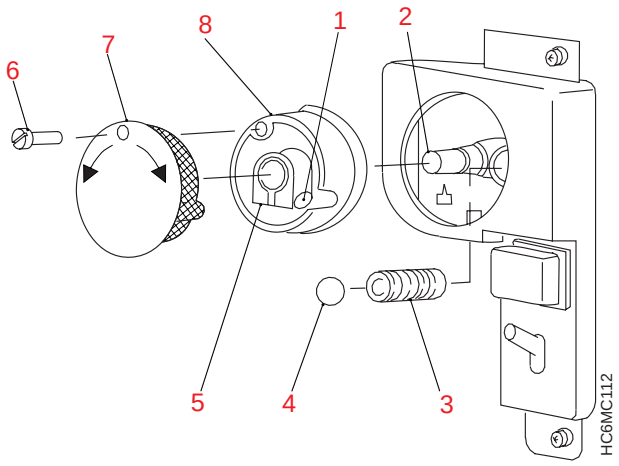
1. Reverse the removal procedure to install a new forms length screwshaft.

Check and Adjustment

1. Perform the Forms Length Sensor Card (FL061) and Forms Length Select Card (FL031) adjustment procedures.

Forms Length Select Card (FL031)

Table 545. Forms Length Select Card (FL031)



(continued on next page)

Special Tools Required:

- Molycoat G grease

Removal

1. Lower the stacker table.
2. Adjust the forms length selector to 14 inches.
   The screw **(6)** should be at the 12 o'clock position.
3. Request that the system operator stop activity on the printer. Disable all host attachments.
4. Shutdown and power off the printer.
5. Remove the screw **(6)** and washer.
6. Remove the forms length knob cover **(7)**.

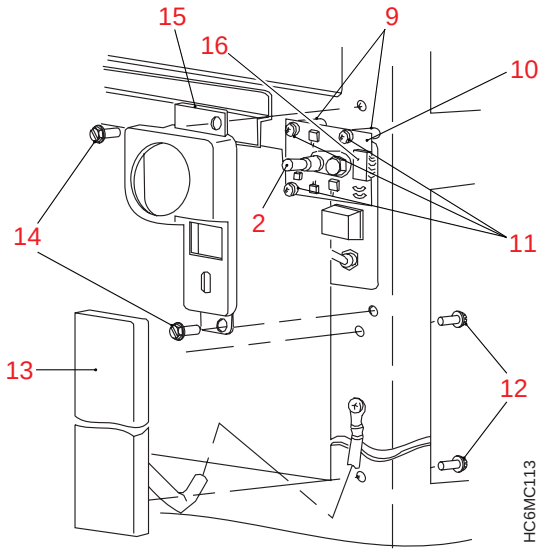
Note: Do not rotate the shaft **(2)** after the knob **(8)** is removed.

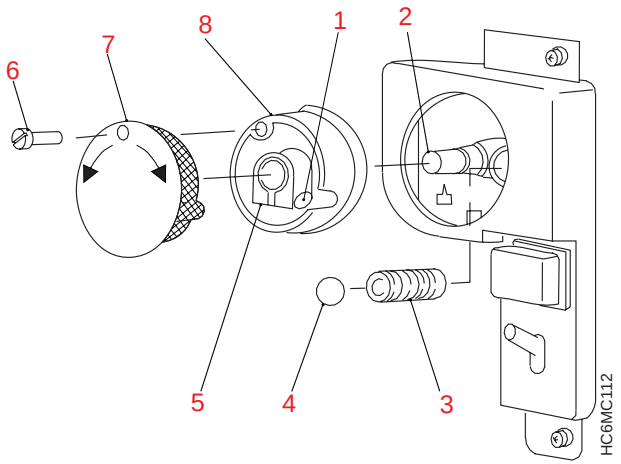
7. Loosen the screw **(1)**.
8. Remove the collar **(5)**.

Attention: A detent ball and spring are released during the next step. Be prepared to capture the ball.

9. Remove the knob **(8)** and capture the detent ball **(4)**
   The spring **(3)** remains in the recess.

Table 545. Forms Length Select Card (FL031) (continued)





(continued on next page)

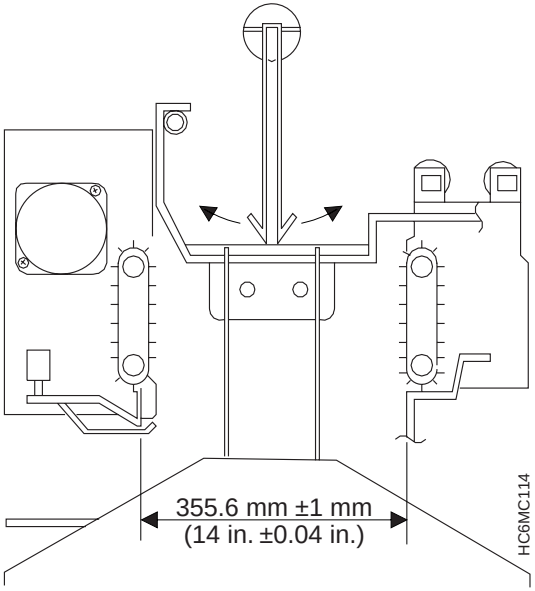
10. Remove the two screws **(12)** from the stacker front vertical cover **(13)** and remove the cover.
11. Remove the bezel **(15)** by removing the two screws **(14)**.
12. Disconnect connector PJ831 **(16)** at the forms length select card.
13. Remove the forms length select card **(10)** by removing the three screws **(11)** and the three standoffs **(9)**.

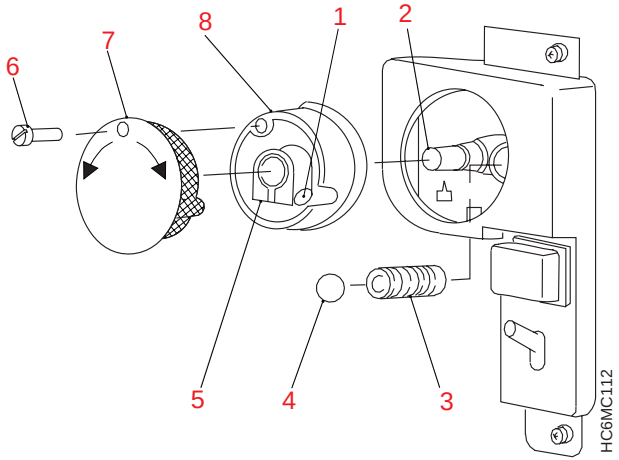
Installation

Note: Do not rotate the select shaft **(2)** until the collar **(5)** is installed and the screw **(1)** is tightened.

1. Reverse the removal procedure to install a new forms length select card.
2. Apply molycoat G grease to the detent ball **(4)** and spring **(3)**.

Table 545. Forms Length Select Card (FL031) (continued)





(continued on next page)

Check and Adjustment

1. Ensure that the forms select knob stops on the correct forms length and that it indicates the correct forms length for each forms length position (Forms Length Adjustment).

   By turning knob clockwise, set the forms length to the maximum length (14 inches).
2. Ensure that when the stacker length is set to 14 inches, the distance between the fences is 355.6 ±1 mm (14 ±0.04 in.).

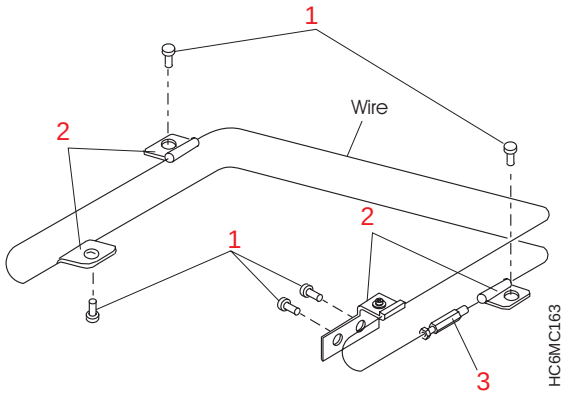
   A 1-inch thick stack of full-size forms may be used as a measure.
3. To adjust the 355.6 ±1 mm (14 ±0.04 in.) dimension, determine if it can be obtained by rotating the forms length knob away from the 14-inch position.

   If it can, go to step 4. If it cannot, go to step 5.

4. To adjust the forms length dimension by adjusting the knob, do the following:
   a. Rotate the forms length knob until the distance between the vertical fences is 355.6 ±1 mm (14 ±0.04 in.).
   b. Remove the knob cover **(7)**.
   c. Free the collar **(5)** that holds the knob to the shaft by loosening the screw **(1)**.

   Note: Do not rotate the select shaft **(2)**.
   d. Rotate the knob so that the pointer is on 0 (zero).
   e. Tighten the collar screw **(1)**.
   f. Replace the knob cover **(7)**.
   g. Continue at step 6.

Table 545. Forms Length Select Card (FL031) (continued)



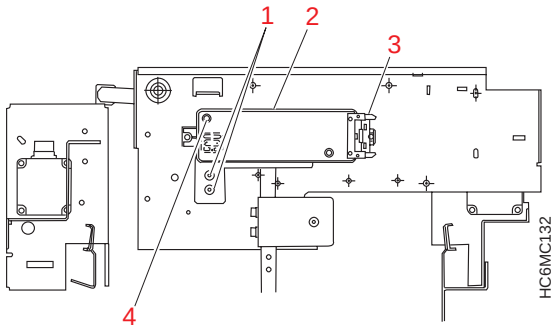
5. To set the forms length dimension by adjusting the forms length cable system, do the following:
   a. Ensure that the forms length select knob is set to 14 inches.

      Do not move the knob while you make this adjustment.
   b. Loosen the five screws **(1)** on the four clamps **(2)**.
   c. Slide the vertical fence along the wire until the 355.6 ±1 mm (14 ±0.04 in.) dimension is set.
   d. Tighten the clamps **(2)**.
6. Turn the forms length select knob counterclockwise past the 14-inch position, then turn it back to the 14-inch position.

   Check and adjust the gap between the fences again until the 355.6 ±1 mm (14 ±0.04 in.) dimension does not change.
7. Go to Forms Length Sensor Card (FL061) Check and Adjustment Procedure.

Forms Length Sensor Card (FL061)

Table 546. Forms Length Sensor Card (FL061)



Special Tools Required:

- Offset Phillips screwdriver

Removal

1. Lower the stacker table.
2. Request that the system operator stop activity on the printer. Disable all host attachments.
3. Shutdown and power off the printer.
4. Remove the stacker front cover.
5. Disconnect connector PJ830 **(3)** from the forms length sensor card **(2)**.
6. Remove the two screws **(1)** and remove the forms length sensor card **(2)**.

Installation

1. Reverse the removal procedure to install a new forms length sensor card.

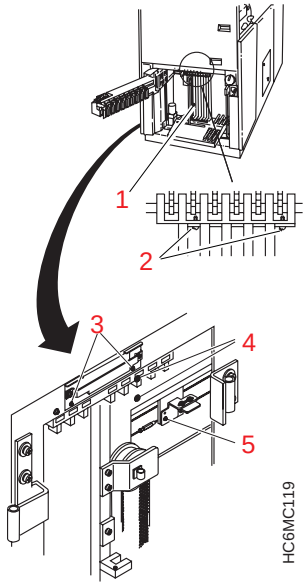
Check

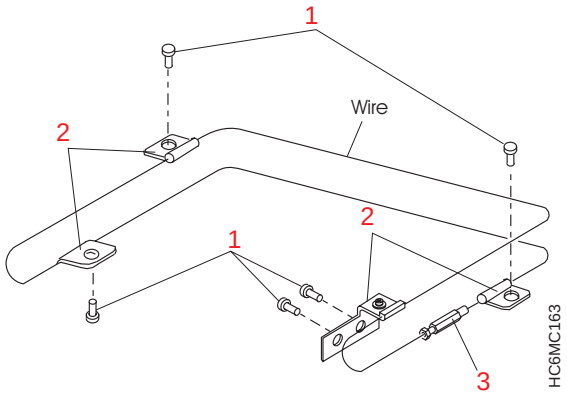
1. When the forms length knob stops on each of the 0, $^{1}/_{3}$, $^{1}/_{2}$, and $^{2}/_{3}$ positions, ensure that the correct LED indicator is lit on the stacker control panel

   Check each length from 7 to 14 inches.

Forms Length Stacker Wire

Table 547. Forms Length Stacker Wire





Special Tools Required:

- None

Removal

1. Move the forms width lever to 8 inches.
2. Remove the left front printer cover.
3. Remove the Forms Length Sensor Card (FL061).
4. Remove the two screws **(4)** and the stacker jam sensor assembly.
5. Open the right rear printer cover.
6. Disconnect the forms length stacker wire turnbuckle **(3)**.
7. Remove the five screws **(1)** holding the forms stacker length wire to the four slider assemblies **(2)**; remove the forms length stacker wire.

Installation

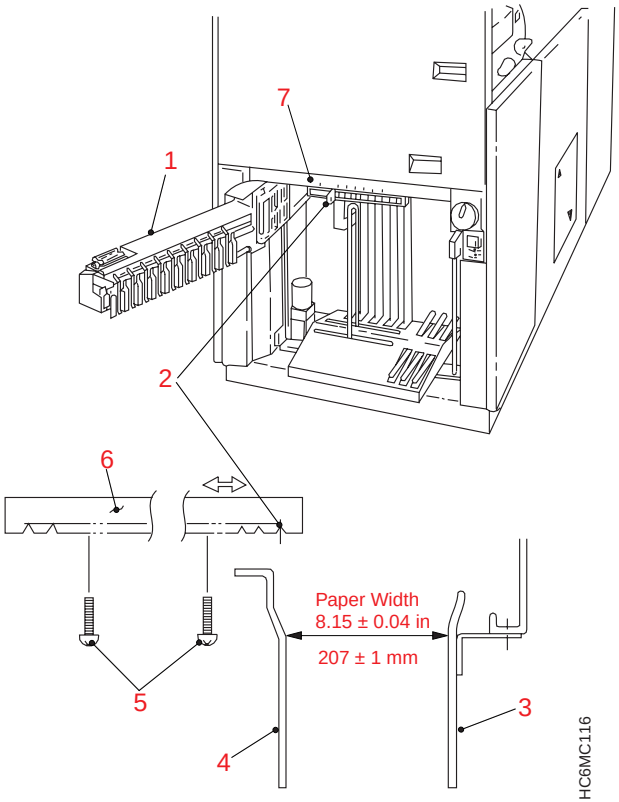
1. Reverse the removal procedure to install a new forms length stacker wire.

Check and Adjustment

1. Perform the Forms Length Sensor Card (FL061) and Stacker Jam Sensor (D803 and S805) adjustment procedures.

Forms Width Adjust

Table 548. Forms Width Adjust



Special Tools Required:

- 300-mm scale or 1-inch thick stack of forms

Check and Adjustment

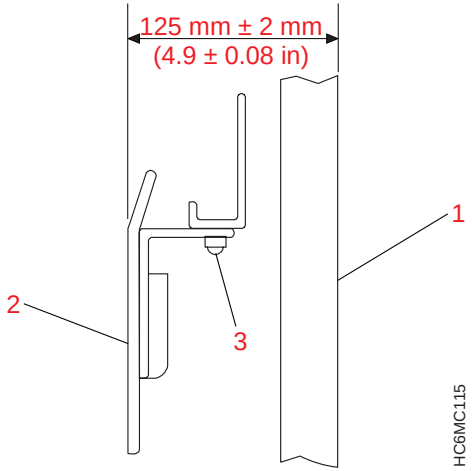
1. Lower the stacker table.
2. Request that the system operator stop activity on the printer. Disable all host attachments.
3. Shutdown and power off the printer.
4. Open the stacker gate **(1)**.
5. Move the forms width lever **(2)** to 8 inches.
6. Check the gap between the two width guides **(3)** and **(4)**.
   The gap should be 207 ± 1 mm (8.15 ±0.04 in.).

Note: If you use a 1-inch thick stack of forms, the dimension is 4 ±1 mm (0.15 ±0.04 in.) from the edge of the forms.

7. To adjust the gap, do the following:
   a. Loosen the two screws **(5)**.
   b. Slide the lever stop **(6)** to meet the 207 ±1 mm (8.15 ±0.04 in.) dimension.
   c. Tighten the two screws **(5)**.
   d. Loosen the three screws holding the graduated width scale **(7)**.
   e. Position the scale so that the 8-inch mark lines up with the lever.
8. Run print samples to verify that the stacker works correctly. See Print Pack.

Front Forms Width Guide

Table 549. Front Forms Width Guide



Special Tools Required:

- Scale

Check and Adjustment

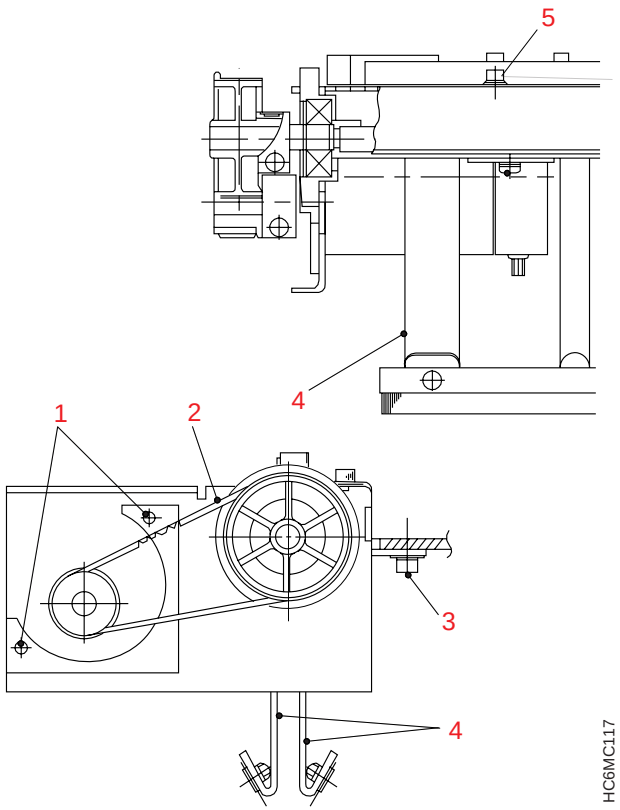
1. Remove the stacker front cover.
2. Sight across the front of the machine frame **(1)**.
3. Measure the distance to the left side (forms stack side) of the width guide **(2)** at the bottom.

   Adjust the top of the width guide to match.

   The dimension should be 125 ±2 mm (4.9 ±0.08 in.).
4. You can adjust the position of the front forms width guide after you loosen the two screws **(3)**.
5. Continue at Forms Width Adjust.

Pendulum Motor (M804) and Drive Belt Assembly

Table 550. Pendulum Motor (M804) and Drive Belt



(continued on next page)

Special Tools Required:

- Push-pull scale (0460870)

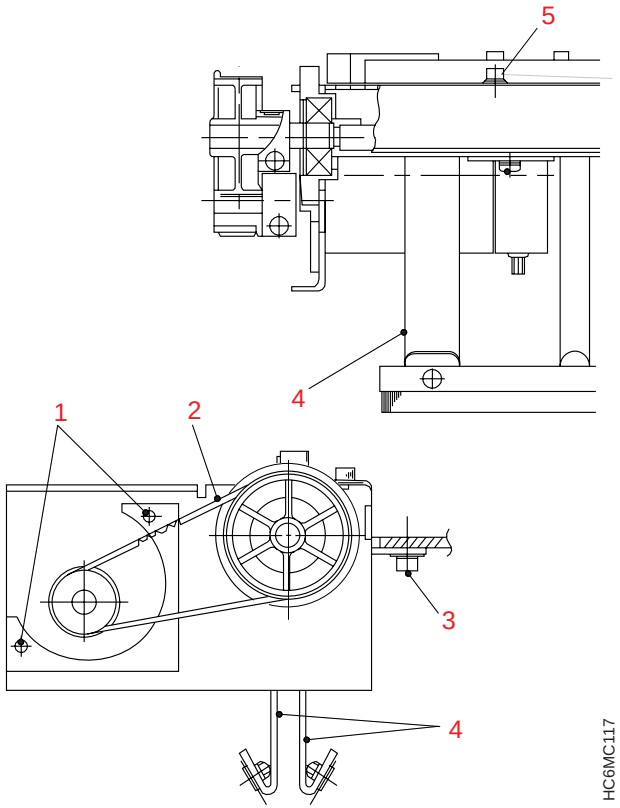
Removal

1. Lower the stacker gate.
2. Adjust the forms length and width selectors to their maximum settings.
3. Request that the system operator stop activity on the printer. Disable all host attachments.
4. Shutdown and power off the printer.
5. Remove the stacker front cover, stacker end cover, and fuser safety cover.
6. Allow the fuser to cool down for **30 minutes**.
7. Remove the hot roll.
8. Remove the backup roll.
9. Disconnect connectors P752 and P753.
10. Remove the fan cover by removing the two screws.
11. Remove the cooling fan holder and disconnect J727 and J729.

Attention: The pendulum assembly will drop during the next step. Be sure to support the assembly with one hand.

12. While you support the pendulum assembly, remove the two hex screws to remove the pendulum assembly.
13. At a clean work place, remove the motor and drive belt **(2)** by removing the two screws **(1)**.

Table 550. Pendulum Motor (M804) and Drive Belt (continued)



Installation

1. Reverse the removal procedure to install a new pendulum motor or drive belt

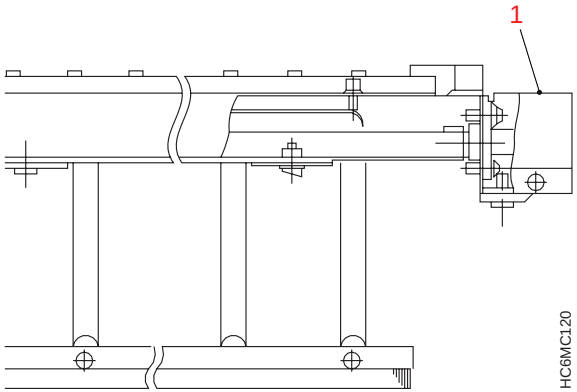
Check and Adjustment

1. Adjust the drive belt **(2)** to deflect 2 to 3 mm (0.08 to 0.12 in.) when 1 kg (2.2 lb) of force is applied to the center of the belt.
2. Recheck the drive belt after you run the pendulum motor.

   Ensure that the belt is tight.
3. Continue at Pendulum Position Sensor (S809) Check and Adjustment..

Pendulum Position Sensor (S809)

Table 551. Pendulum Position Sensor (S809)



Removal

1. Lower the stacker table.
2. Request that the system operator stop activity on the printer. Disable all host attachments.
3. Shutdown and power off the printer.
4. Remove the pendulum. (Pendulum Motor (M804) and Drive Belt Assembly)
5. Remove the two screws holding the sensor cover plate on the right side of the pendulum.
6. Remove the screw holding the sensor to the pendulum.

Installation

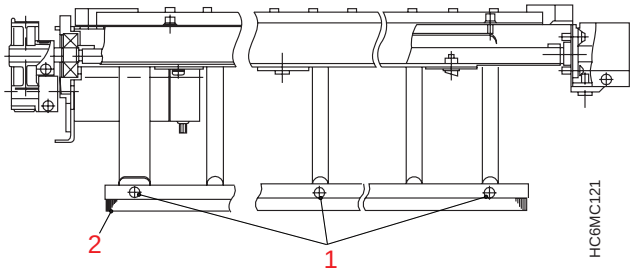
1. Reverse the removal procedure to install a new position sensor. Go to Pendulum Motor (M804) and Drive Belt Assembly for additional installation instructions.

Check and Adjustment

1. Ensure that the metal arm attached to the pendulum swing fin passes freely through the sensor.

Pendulum Static Brush

Table 552. Pendulum Static Brush



Removal

1. Set the forms length to 14 inches.
2. Lower the stacker table.
3. Request that the system operator stop activity on the printer. Disable all host attachments.
4. Shutdown and power off the printer.
5. Open the stacker gate.
6. Remove any forms from the fuser and stacker.
7. Remove the three screws **(1)** from either static brush **(2)** to remove it.

Installation

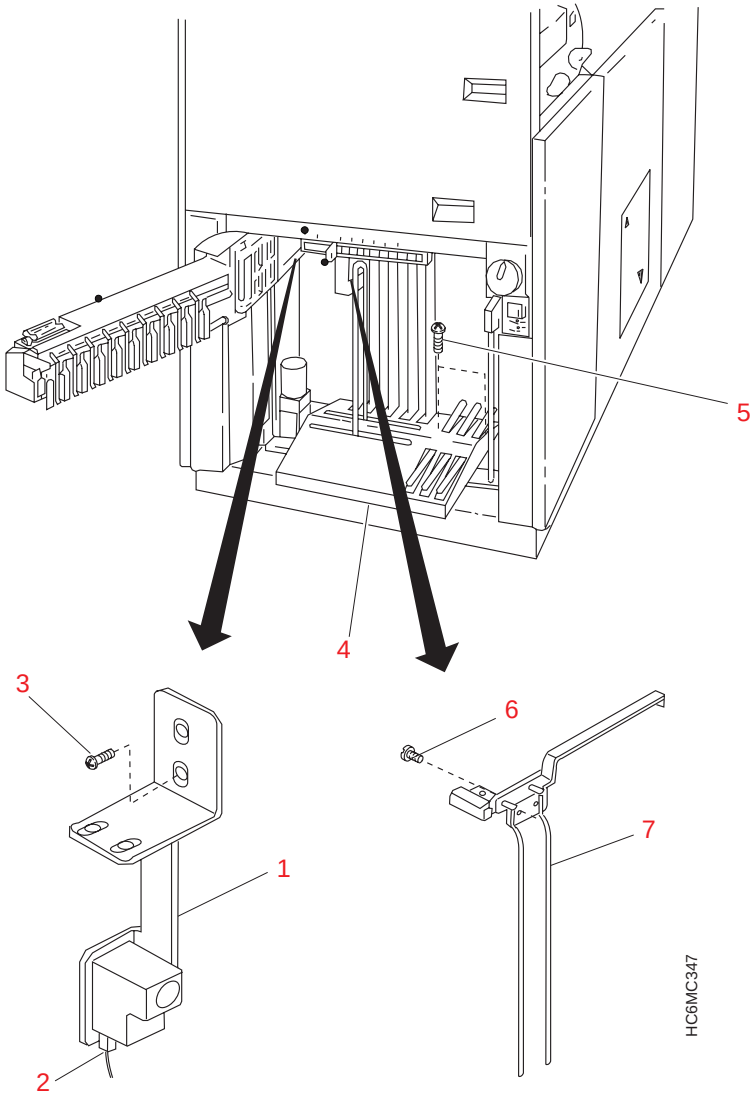
1. Reverse the removal procedure to install a new pendulum static brush.

Check and Adjustment

1. Ensure that the forms pass between the brushes when they are loaded.
2. Run Print Pack to verify that the forms are not damaged as they pass between the static brushes.

Rear Finger Belts

Table 553. Rear Finger Belts



(continued on next page)

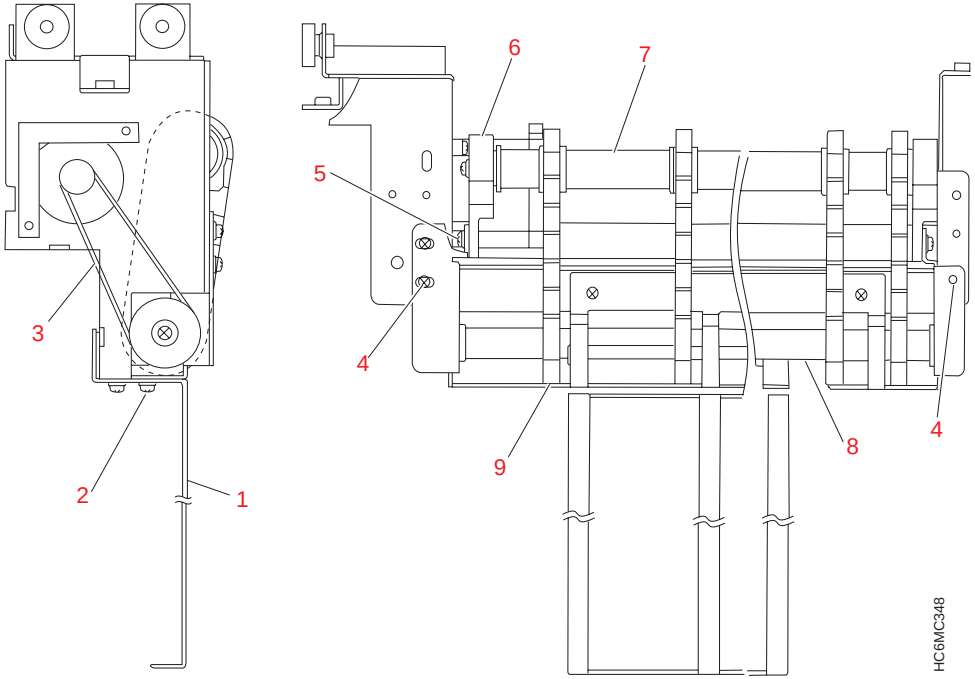
Special Tools Required:

- Push-pull scale (P/N 0460870)

Removal

1. Lower the stacker table.
2. Set the forms length to 14 inches.
3. Set the forms width to 8 inches.
4. Open the stacker gate.
5. Request that the system operator stop activity on the printer. Disable all host attachments.
6. Shutdown and power off the printer.
7. Remove the two screws **(6)** and remove the forms guide assembly **(7)**.
8. Remove the rear stacker height lamp assembly **(1)** by disconnecting PJ811 **(2)** and one screw **(3)**.
9. Set the forms width to 18 inches.
10. Remove the four screws **(5)**from the stacker table.

Table 553. Rear Finger Belts (continued)



Removal (cont'd)

11. Remove the four screws **(2)** to release the vertical forms fence **(1)**. The fence is attached to the bottom of the rear finger belt rack frame.
12. Remove the vertical forms fence and the stacker table.
13. Remove the three screws **(4)** that secure the rear finger belt rack.
14. Lower the right end; remove the V-belt **(3)** from the lower pulley; and remove the finger belt rack from the stacker.

Note: The shaft with the pulley is the lower shaft. The pulley end of this shaft in the rear.

15. At a clean work place, loosen the upper shaft **(7)** and the front pillow block **(6)** by loosening the two screws **(5)**.
16. Remove the two screws that hold the front bearing in the lower shaft **(8)**. Slide the lower shaft through the finger belts **(9)**.

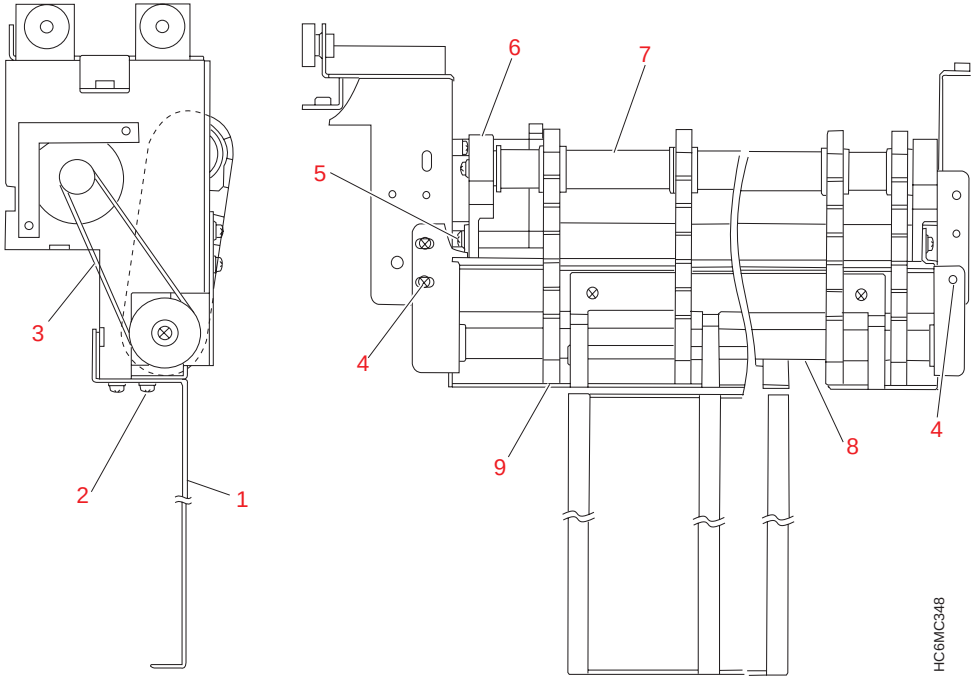
Installation (Belts)

1. Reverse the removal procedure to install a new set of belts.
   a. Install the new belts on the upper shaft.
   b. Install the lower shaft.
   c. To tighten the finger belts, tighten one of the two screws **(5)**. Rock the pillow block **(6)** on this screw to tighten the finger belts.

      Tighten the other screw **(5)**.

(continued on next page)

Table 553. Rear Finger Belts (continued)



Installation (Rack)

1. Install the stacker table using four screws.
2. Lift the vertical fence and lay it against the back wall of the stacker area, sliding the bottom into the lift.
3. Lift the finger belt rack into position in the stacker area; rest it on the vertical fence.
4. Start one screw **(4)** through the rear of the finger belt rack.
5. Lift the rear of the finger belt rack; install the V-belt in the groove on the pulley.

   Ensure that the V-belt is in each groove on each pulley.
6. Install the two remaining screws **(4)**.
7. Install the rear stacker height sensor assembly.
8. Reinstall the vertical fence and the stacker front cover.

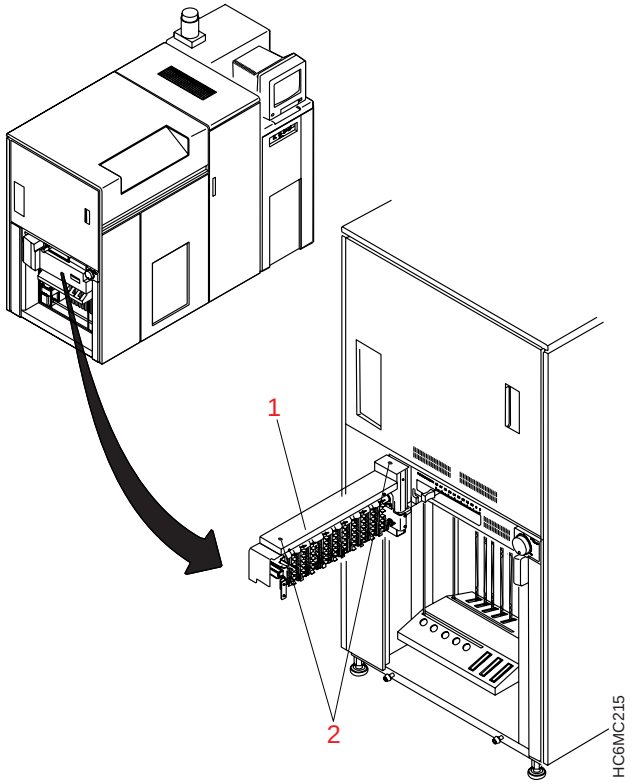
Check and Adjustment

1. Adjust the V-belt deflection of 2 to 3 mm (0.08 to 0.12 in.) when 1 kg (2.2 lb) of force is applied to the center of the belt between the pulleys.

   Ensure that the finger belts and the drive belts are tight and the finger belts do not damage the edge of the forms stack.
2. Ensure that the finger belts are tight and the upper shaft is parallel to the lower shaft.
3. Run Print Pack to verify the print quality.
4. Check the adjustment for the stacker height sensors (Stacker Height Sensors (Front – S804 or D802, Rear – S803 or D801)).

Rear Finger Belt Motor (M801) and Belt Drive

Table 554. Finger Belt Motor (M801) and Belt Drive



(continued on next page)

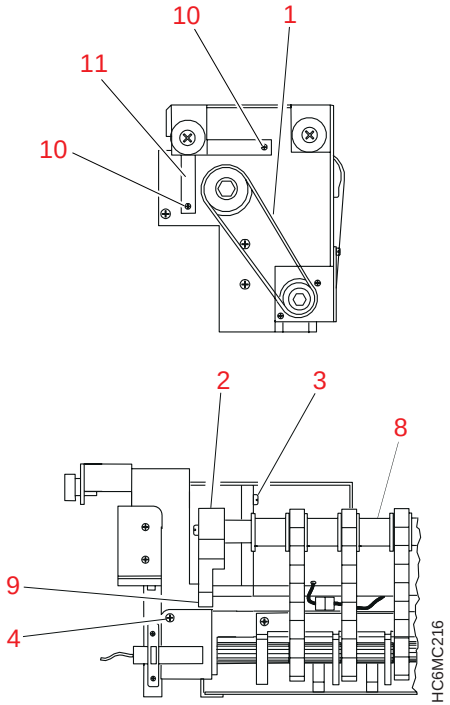
Special Tools Required:

- Push-pull scale (0460870)

Removal

1. Lower the stacker table.
2. Request that the system operator stop activity on the printer. Disable all host attachments.
3. Shutdown and power off the printer.
4. Disconnect connector PJ806.

Table 554. Finger Belt Motor (M801) and Belt Drive (continued)



5. Remove the two screws **(3)** to remove the rear finger belt motor .

   This also releases the gearbox and the motor bracket **(11)**.

Installation

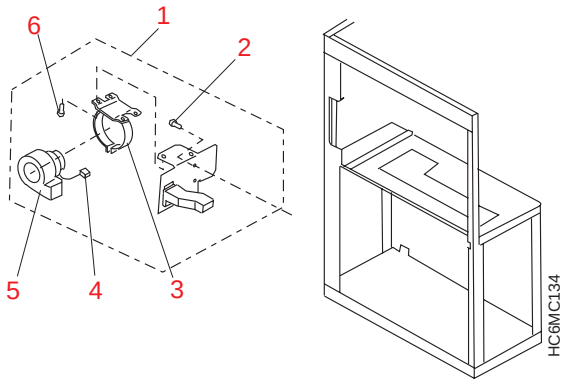
1. Reverse the removal procedure to install a new rear finger belt motor or drive belt.

Check and Adjustment

1. Adjust the motor belt tension to allow a belt deflection of 2 to 3 mm (0.08 to 0.12 in.) when 1 kg (2.2 lb) of force is applied to the center of the belt between the pulleys.
2. Run Print Pack to verify the rear stacker belt operation and print quality.

Stacker Blower (B703)

Table 555. Stacker Blower (B703)



Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Remove the stacker rear cover.
4. Disconnect connector P746 **(4)**.
5. Remove the two screws **(2)** to remove the stacker blower assembly **(1)**.
6. Remove the two screws **(6)** to remove the blower holder **(3)** and the stacker blower **(5)** from the blower assembly.

Installation

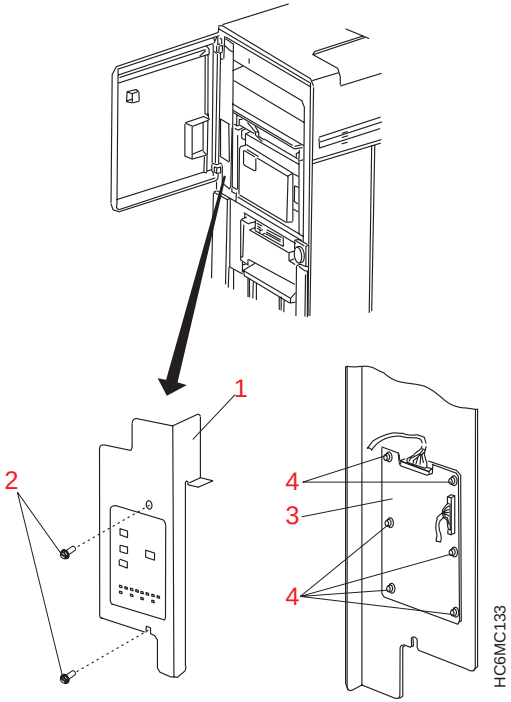
1. Reverse the removal procedure to install a new stacker blower.

Check and Adjustment

1. Run Print Pack to verify the print quality.

Stacker Control Panel Card (LP041)

Table 556. Stacker Control Panel Card (LP041)



Removal

1. Lower the stacker table.
2. Request that the system operator stop activity on the printer. Disable all host attachments.
3. Shutdown and power off the printer.
4. Remove the stacker control panel assembly **(1)** by removing the two screws **(2)**.
5. Disconnect connector PJ751.
6. Remove the stacker control panel card **(3)** by removing the six nuts **(4)**.

Installation

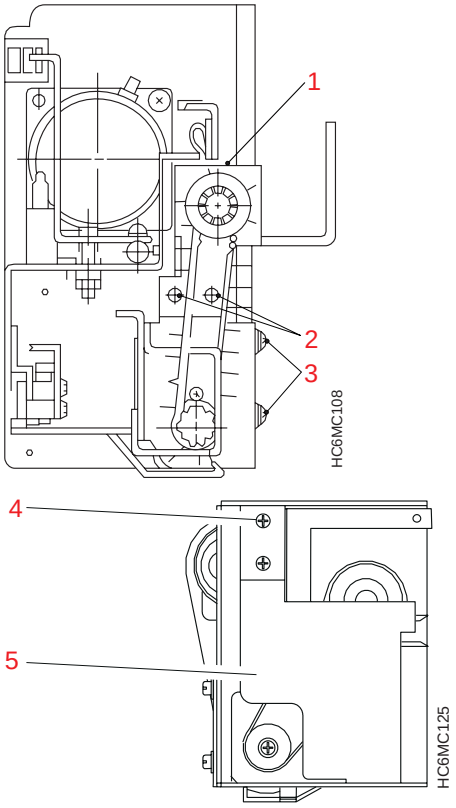
1. Reverse the removal procedure to install a new stacker control panel card.

Check

1. Ensure that stopping the forms length select knob on each of the 0, $^{1}/_{3}$, $^{1}/_{2}$, and $^{2}/_{3}$ positions causes a correct indication on the forms length indicator on the stacker control panel.

Stacker Gate Finger Belts

Table 557. Finger Belts



(continued on next page)

Special Tools Required:

- Push-pull scale (P/N 0460870)

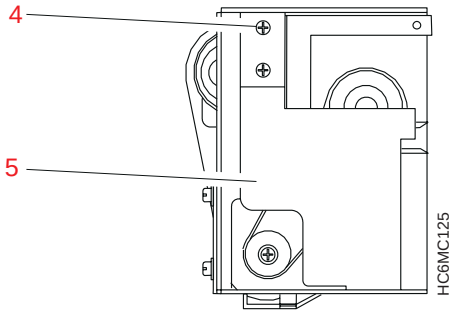
Removal

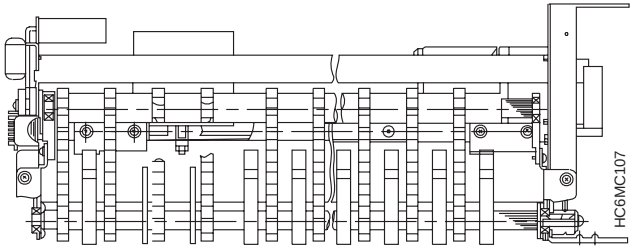
1. Lower the stacker table.
2. Request that the system operator stop activity on the printer. Disable all host attachments.
3. Shutdown and power off the printer.
4. Open the stacker gate and remove its cover.
5. Remove the four screws (two shown) **(3)** that secure the finger belt assembly to the stacker gate.
6. Remove the drive belt cover **(5)** by removing the screw **(4)**.
7. At a clean work place, remove the two screws **(2)** to free the pillow block **(1)**.
8. Remove the two screws that hold the rear bearing in the lower shaft.
9. Slide the lower shaft through the finger belts.
10. Slide the belts over the upper shaft and rear pillowblock.

Installation

1. Reverse the removal procedure to install a new set of finger belts.
2. Ensure that the tabs on the stacker gate safety bail are installed in the slots on the stacker gate frame.

Table 557. Finger Belts (continued)



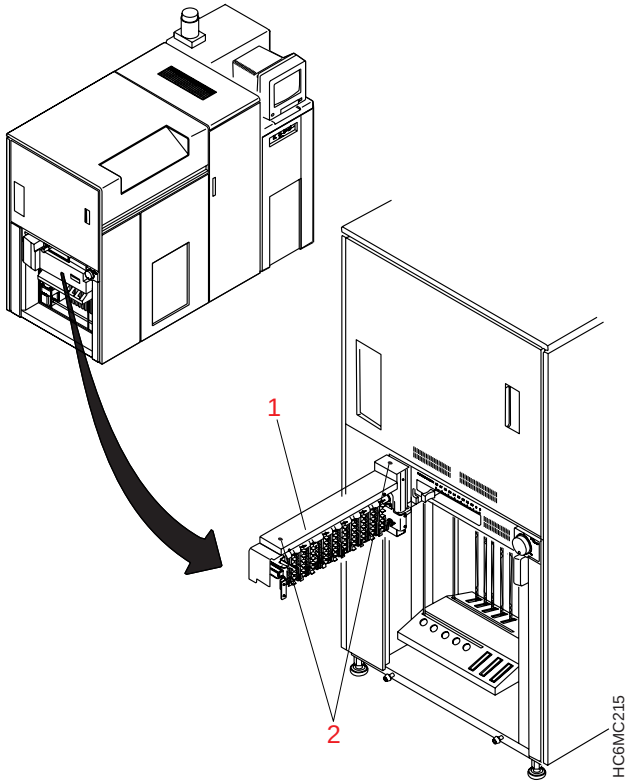


Check and Adjustment

1. Adjust the motor belt tension to allow a belt deflection of 2 to 3 mm (0.08 to 0.12 in.) when 1 kg (2.2 lb) of force is applied to the center of the belt between the pulleys.
2. Run Print Pack to verify the print quality.
3. Ensure that the finger belts do not damage the edge of the forms stack.
4. Ensure that the stacker safety switch is adjusted and drives the stacker table down when it is lifted (Stacker Gate Safety Switches (S801 and S802)).

Stacker Gate Finger Belt Motor (M802) and Drive Belt

Table 558. Stacker Gate Motor (M802) and Drive Belt



(continued on next page)

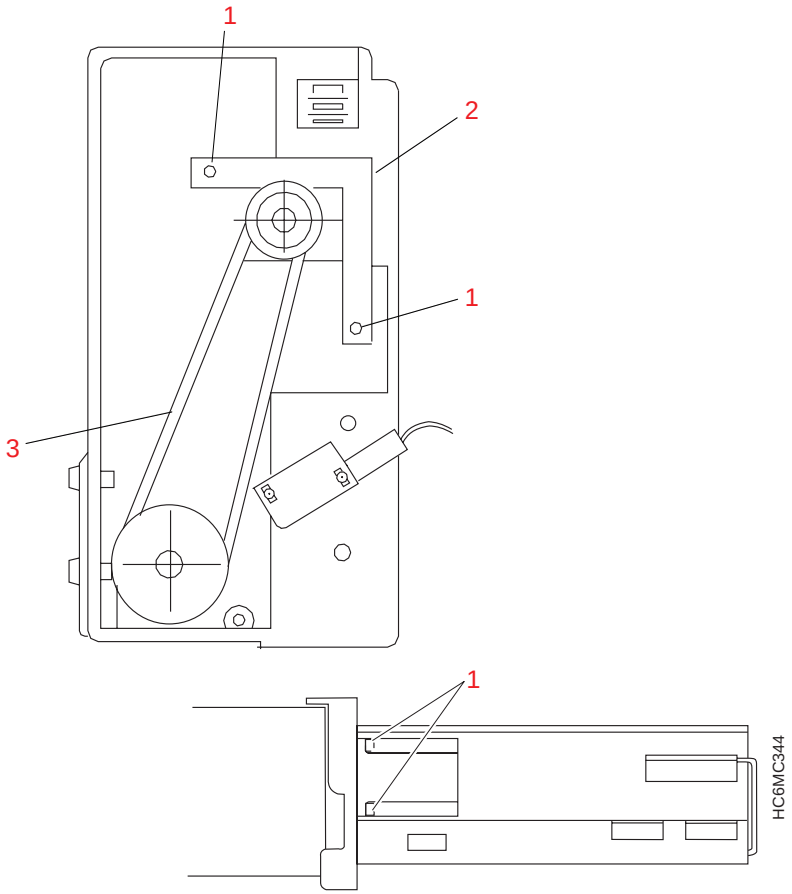
Special Tools Required:

- Push-pull scale (P/N 0460870)

Removal

1. Lower the stacker table.
2. Request that the system operator stop activity on the printer. Disable all host attachments.
3. Shutdown and power off the printer.
4. Remove the stacker gate cover **(1)** by removing the two screws **(2)**.

Table 558. Stacker Gate Motor (M802) and Drive Belt (continued)



5. Disconnect connector PJ807.
6. Remove the drive belt cover (not shown).
7. Remove the two screws **(1)** from the finger belt motor asm **(2)** to remove the gear box and the angle bracket .
   This also releases the drive belt **(3)**.

Installation

1. Reverse the removal procedure to install a new motor (M802) and drive belt.

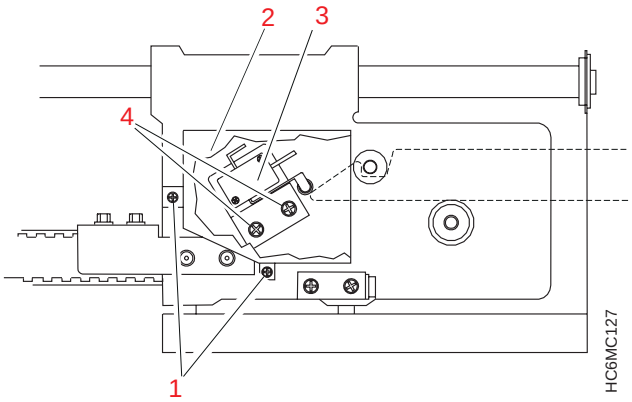
Attention: Ensure that the tabs on the stacker gate safety bail are inserted into the slots in the stacker gate frame to enable the stacker gate safety switch.

Check and Adjustment

1. Adjust the motor belt tension to allow a belt deflection of 2 to 3 mm (0.08 to 0.12 in.) when 1 kg (2.2 lb) of force is applied to the center of the belt between the pulleys.
2. Run Print Pack to verify the print quality.

Stacker Gate Open Switch (S806)

Table 559. Gate Open Switch



Removal

1. Lower the stacker table.
2. Request that the system operator stop activity on the printer. Disable all host attachments.
3. Shutdown and power off the printer.
4. Open the stacker gate.
5. Remove the screws **(1)** to remove the switch cover **(2)**, which is located on the latching side of the stacker gate.
6. Before you change the switch, ensure that the new switch is adjusted and functions correctly.
7. Remove the switch **(3)** by removing the two screws **(4)**.

Installation

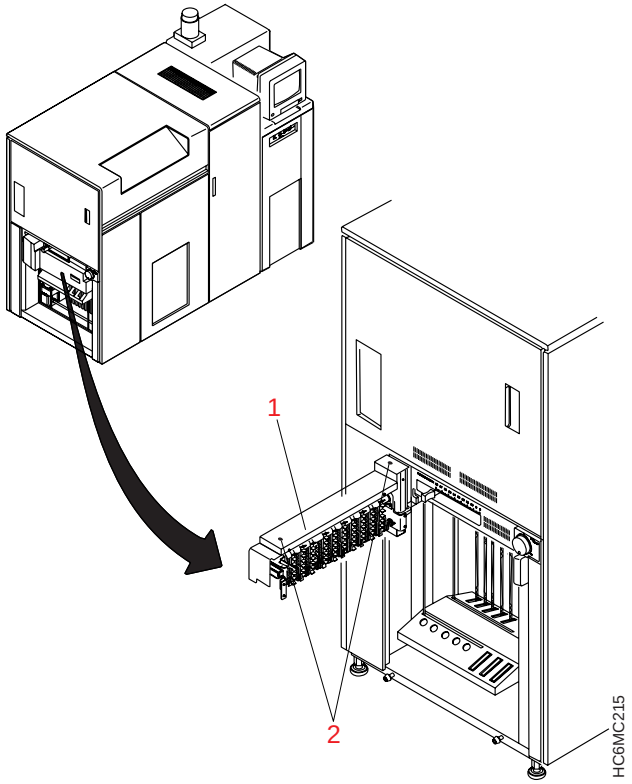
1. Reverse the removal procedure to install a new switch.

Check and Adjustment

1. Adjust the switch to close with 0.5 mm (0.020 in.) overthrow.

Stacker Gate Safety Switches (S801 and S802)

Table 560. Gate Safety Switches (S801 and S802)



(continued on next page)

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the stacker gate.
4. Remove the stacker gate cover **(1)** by removing the 2 screws **(2)**.

Table 560. Gate Safety Switches (S801 and S802) (continued)

5. Remove the finger belt assembly from the stacker gate (Stacker Gate Finger Belts).
6. Remove the belt plate and the safety switch behind the plate.
7. Remove the plate on the swinging side of the gate and the safety switch behind the plate.

Installation

1. Reverse the removal procedure to install a new stacker gate safety switch.
2. Ensure that the tabs on the safety bail are inserted into the slots in the finger belt frame.

Check and Adjustment

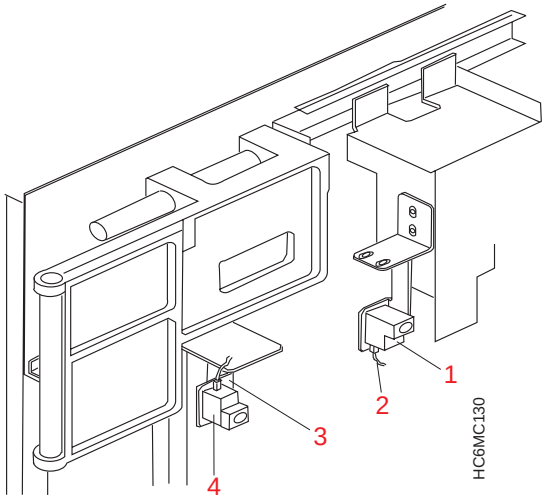
Note: You must completely assemble the stacker gate before you make this adjustment.

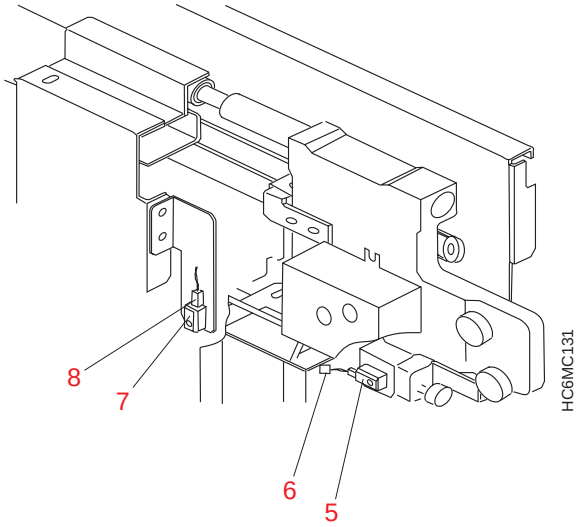
1. A notch is provided between the finger belts to adjust the switch while the stacker gate is open.

   Adjust the switch to close when the safety bail is lifted.
2. Power on the printer.
3. Ensure that the table drives down when the safety bail is lifted.

Stacker Height Sensors (Front – S804 or D802, Rear – S803 or D801)

Table 561. Stacker Height Sensors (Front and Rear)





Removal

1. Lower the stacker table.
2. Request that the system operator stop activity on the printer. Disable all host attachments.
3. Shutdown and power off the printer.
4. Disconnect connector PJ812 **(3)** to remove the front lamp **(4)**; disconnect connector PJ811 **(2)** to remove the rear lamp **(1)**.
5. Disconnect connector PJ814 **(6)** to remove the front sensor receiver **(5)**; disconnect connector PJ813 **(8)** to remove the rear sensor receiver **(7)**.
6. Remove the lamp **(4)** or **(1)** or receiver **(5)** or **(7)**. Do not remove the mounting bracket.

Installation

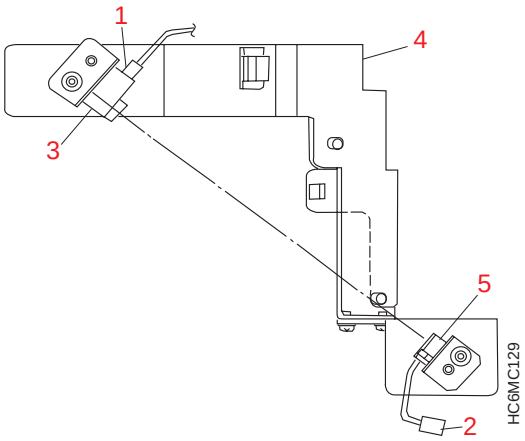
1. Reverse the removal procedure to install a new lamp or receiver.

Check and Adjustment

1. Carefully route the cables to prevent abrasion damage.
2. Ensure that the lamps are focused on the receivers.
3. Run Sensor Routine 8E to ensure that S804 and D802 work correctly.
4. Run Sensor Routine 8D to ensure that S803 and D801 work correctly.
5. Run the stacker table to both its upper and lower limits and select all forms lengths to ensure that the stacker works correctly.
6. Run print samples to verify that the stacker works correctly. See Print Pack.

Stacker Jam Sensor (D803 and S805)

Table 562. Jam Sensor (D803 an S805)



Removal

1. Lower the stacker table.
2. Request that the system operator stop activity on the printer. Disable all host attachments.
3. Shutdown and power off the printer.
4. Disconnect connector PJ815 **(1)** to remove the lamp **(3)**; disconnect connector PJ816 **(2)** to remove the receiver **(5)**.
5. Remove the lamp **(3)** or receiver **(5)**. Do not remove the mounting bracket.

Installation

1. Reverse the removal procedure to install a new lamp or receiver.

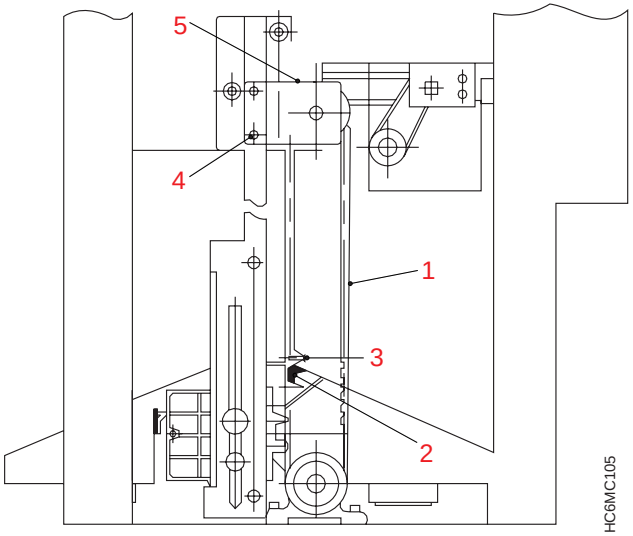
Check and Adjustment

1. Visually check that the lamp is focused on the receiver.
2. Run Sensor Routine 75 to ensure that the stacker jam sensor works correctly.
3. Run Print Pack to verify that the stacker works correctly.

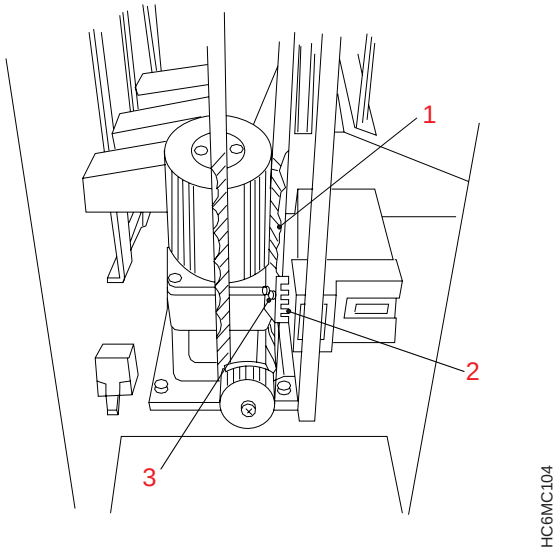
Stacker Table Belts

Table 563. Stacker Table Front and Rear Drive Belts

Front Belt



Rear Belt



Special Tools Required:

- Push-pull scale (P/N 0460870)

Removal

1. Lower the stacker table.

Attention: Lower the stacker table before you remove the belt clamp screws. The table will drop when the belt clamp is removed.

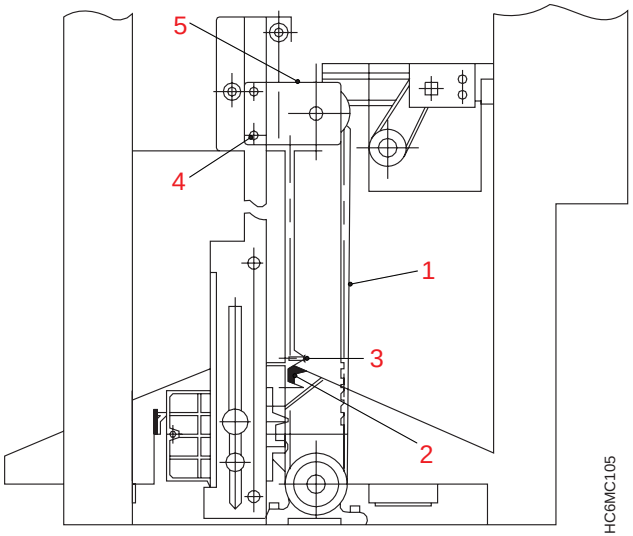
2. Request that the system operator stop activity on the printer. Disable all host attachments.
3. Shutdown and power off the printer.
4. Remove the stacker front cover to remove or adjust the front belt.
5. Remove the stacker belt back cover to remove or adjust the rear belt.
6. Release the belt tension by loosening the two bolts **(4)** that secure the pulley bracket **(5)**.
7. Remove the belt clamp **(2)** by loosening the two bolts **(3)**.

Note: To remove the rear belt, you must first remove the Stacker Table Motor (M803).

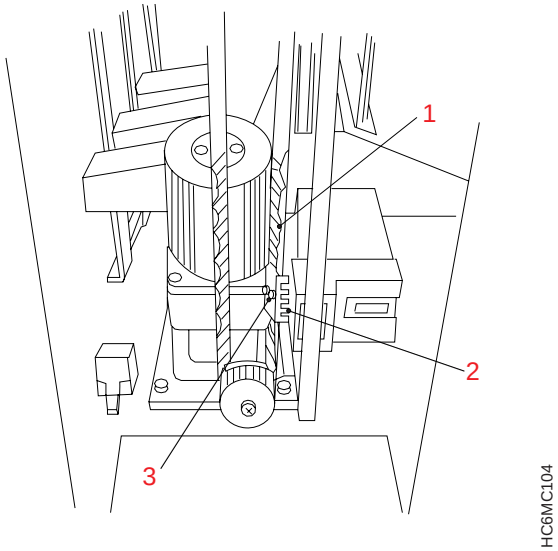
(continued on next page)

Table 563. Stacker Table Front and Rear Drive Belts (continued)

Front Belt



Rear Belt



Installation

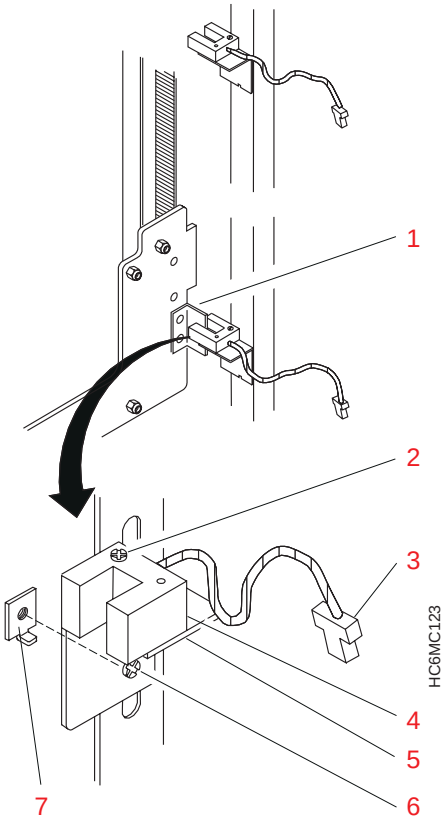
1. Reverse the removal procedure to install a new stacker belt, but do not replace the covers until you are told to do so.

Check and Adjustment

1. Ensure that the belt clamp **(2)** is secured by the two screws **(3)**
2. Pull up on the pulley bracket **(5)** to tighten the belt **(1)**. Adjust the belt tension to allow a belt deflection of 6.5 to 7.0 mm (0.250 to 0.270 in.) when 1.0 kg (2.2 lb) of force is applied to the center of the belt between the pulleys. Tighten the two screws **(4)**.
3. Replace the following:
   - Stacker belt cover
   - Stacker front cover
   - Fuser logic cover
4. Run Print Pack to verify that the stacker works correctly.

Stacker Table Lower Limit Sensor (S808)

Table 564. Lower Limit Sensor



(continued on next page)

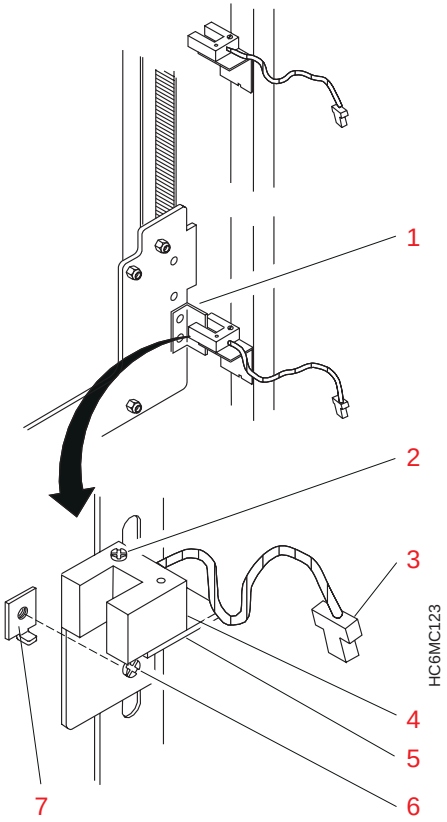
Removal

1. Raise the stacker table.
2. Request that the system operator stop activity on the printer. Disable all host attachments.
3. Shutdown and power off the printer.
4. Remove the stacker front cover.
5. Disconnect connector PJ818 **(3)**.
6. Remove the screw **(6)**, the sensor, and the mounting bracket **(5)** as an assembly. Be careful not to lose the nut plate **(7)**.
7. Remove the sensor **(4)** from the mounting bracket **(5)** by removing the screw **(2)**.

Installation

1. Reverse the removal procedure to install a new upper table limit sensor, but do not replace the stacker front cover at this time.

Table 564. Lower Limit Sensor (continued)



Check and Adjustment

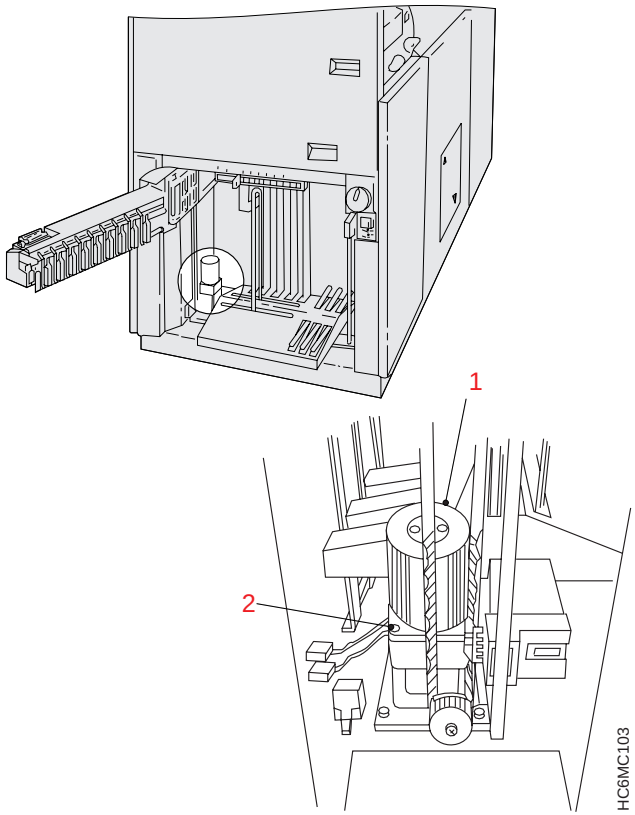
1. Power on the printer.
2. Ensure that the stacker table is level and parallel to the stacker floor with a gap of 5 mm (0.2 in.) between the table and the floor.
3. Move the stacker table up and down several times to ensure that the sensor limits the upward travel of the stacker table.

Attention: The magnet **(1)** that travels with the table motor drive belt must remain between the upper and lower sensors at all times. Printer damage can occur if one of the sensors is bypassed.

4. Install the stacker front cover.
5. Run Print Pack to verify that the stacker works correctly.

Stacker Table Motor (M803)

Table 565. Stacker Table Motor (M803)



(continued on next page)

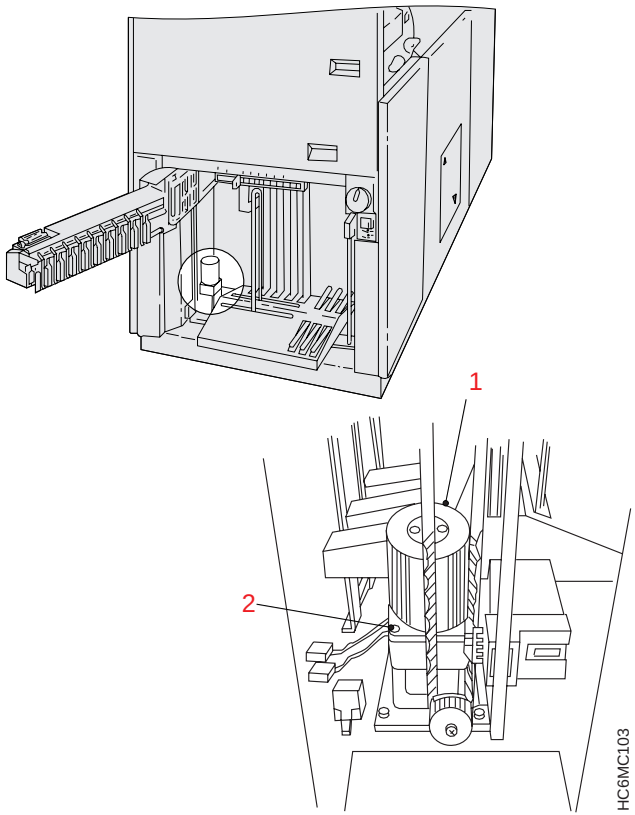
Removal

1. Lower the stacker table.
2. Move the forms length to 7 inches.
3. Request that the system operator stop activity on the printer. Disable all host attachments.
4. Shutdown and power off the printer.
5. The motor cover (not shown) behind the table motor protects the two motor control wires and limits access to two of the four motor screws **(2)**.

   To remove this cover, remove the three screws holding the side cover to the left of the motor. Slide this cover up.

   Loosen the two cover screws and slide the motor cover up and out of the stacker area.
6. Disconnect connectors PJ803 and PJ804 located behind the motor cover.
7. Disconnect the two motor control wires from the motor run capacitor.
   Note: The wires are located next to the table motor. The gray wire is attached to the connector nearest you.
8. Remove the four motor screws **(2)**.
9. Remove the table motor **(1)** from the gearbox.

Table 565. Stacker Table Motor (M803) (continued)



Installation

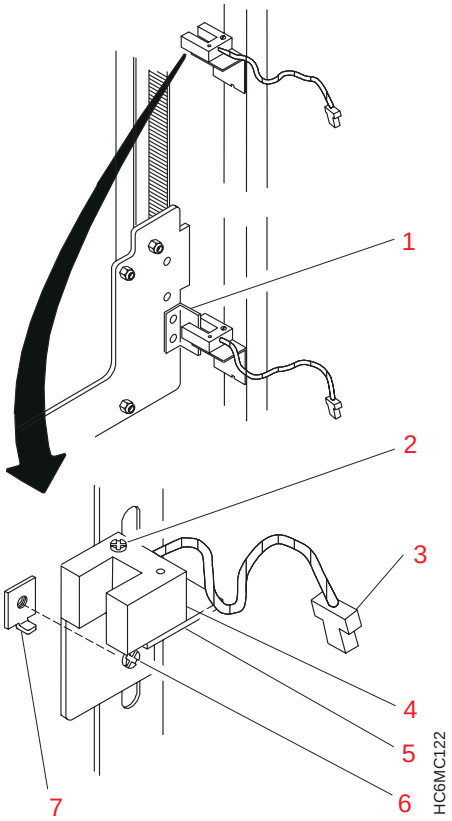
1. Reverse the removal procedure to install a new stacker motor.

Check and Adjustment

1. Ensure that the stacker table moves up and down correctly.

Stacker Table Upper Limit Sensor (S807)

Table 566. Upper Limit Sensor



(continued on next page)

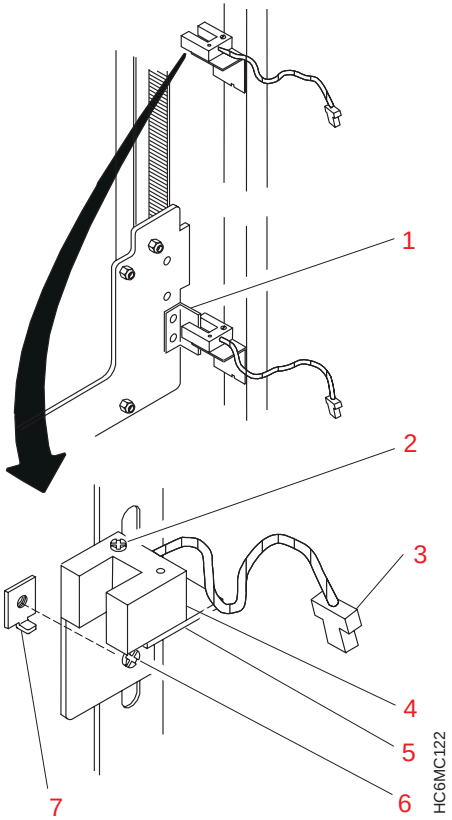
Removal

1. Lower the stacker table.
2. Request that the system operator stop activity on the printer. Disable all host attachments.
3. Shutdown and power off the printer.
4. Remove the stacker front cover.
5. Disconnect connector PJ817 **(3)**.
6. Remove the screw **(6)**, the sensor, and the mounting bracket **(5)** as an assembly. Be careful not to lose the nut plate **(7)**.
7. Remove the sensor **(4)** from the mounting bracket **(5)** by removing the screw **(2)**.

Installation

1. Reverse the removal procedure to install a new upper table limit sensor, but do not replace the stacker front cover at this time.

Table 566. Upper Limit Sensor (continued)



Check and Adjustment

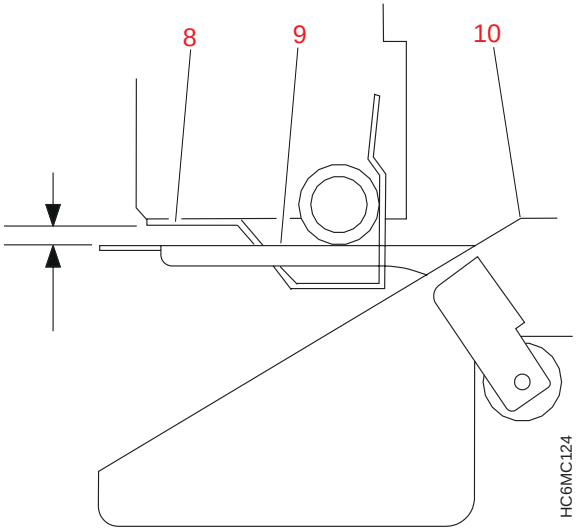
1. Power on the printer.
2. Ensure that the stacker table is level and parallel to the stacker floor with a gap of 5 mm (0.2 in.) between the table and the floor.
3. Move the stacker table up and down several times to ensure that the sensor limits the upward travel of the stacker table.

Attention: The magnet **(1)** that travels with the table motor drive belt must remain between the upper and lower sensors at all times. Printer damage can occur if one of the sensors is bypassed.

4. Install the stacker front cover.
5. Run Print Pack to verify that the stacker works correctly.

Stacker Table Upper Position

Table 567. Table Upper Position



(continued on next page)

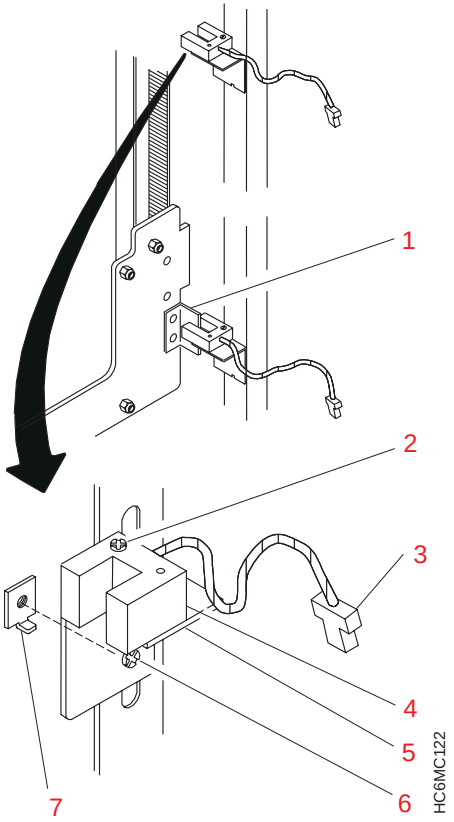
Special Tools Required:

- Scale

Check

1. Set the forms length to 7 inches.
2. Raise the stacker to its upper limit.
3. The clearance between the flat, continuous portion of the safety bail **(8)** and the table fingers **(9)** should be 8 +2/−1 mm (0.32 +0.08/−0.04 in.).

Table 567. Table Upper Position (continued)



Adjustment

1. Remove the stacker front cover.
2. Loosen the two screws **(6)** that hold the upper table limit sensor bracket **(5)**.
3. Slide the bracket and sensor up or down until the 8 +2/−1 mm (0.32 +0.08/−0.04 in.) dimension is met.
4. Tighten the screw **(6)**.

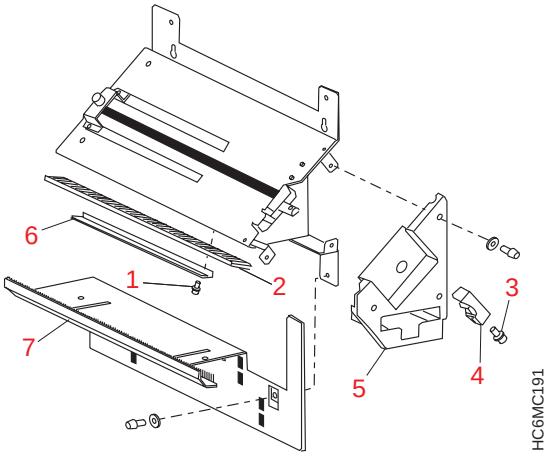
Attention: The magnet **(1)** that travels with the table motor drive belt must remain between the upper and lower sensors at all times. Printer damage can occur if one of the sensors is bypassed.

Transfer Station

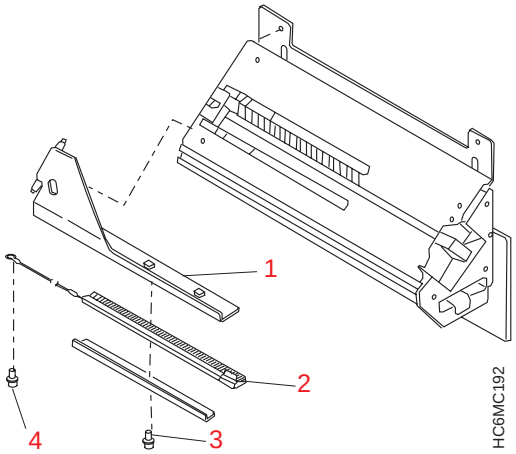
Chad Brushes 1891
End-of-Forms Sensor (S117) and Lamp (D101) 1893
Forms Width Sensor (PW111) 1894
Printer Control Panel (SW761) 1897
Retractor 1898
Retractor Motor (M103) 1903
Splicing Lever Sensor (S119) 1905
Tractors 1907
Tractor Belt 1912
Tractor Wire 1914
Tractor Jam Sensor 1918
Tractor Motor (M105) and Drive Belt 1919
Transfer Corona Shield 1921
Transfer Station Discharge Brush 1923
Transfer Station Sensor (S114) 1924

Chad Brushes

Table 568. Chad Brushes



Stationary Brush



Tracking Brush

(continued on next page)

Special Tools Required:

- Vacuum cleaner

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Remove any forms in the input area.

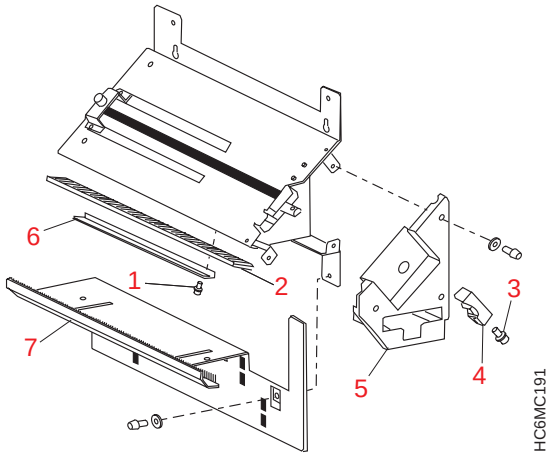
Stationary Brush:

1. Remove the upper input cover and the lower input cover.
2. Remove the ground strap from the brush assembly **(2)**.
3. Unscrew the bolt **(3)** and remove the splice handle **(4)**.
4. Remove the splicing lever sensor cover **(5)**.
5. Remove the three screws **(1)** to release the brush plate and the stationary brush **(2)**.

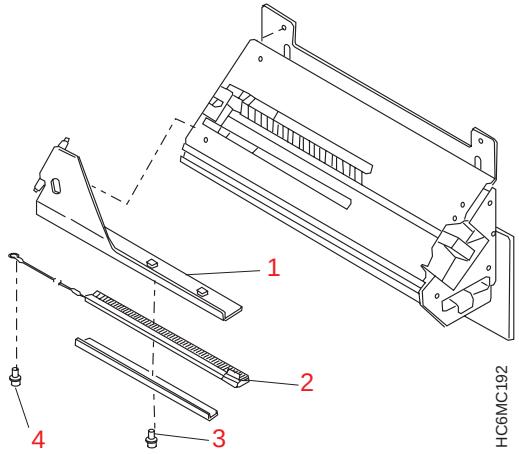
Tracking Brush:

1. Remove the screw **(4)** and disconnect the ground wire from the brush assembly **(2)**.
2. Remove the three screws **(3)** and remove the brush assembly **(2)** from the arm **(1)**.
3. Slide the tracking brush **(2)** out of the arm **(1)**.

Table 568. Chad Brushes (continued)



Stationary Brush



Tracking Brush

Installation

1. Reverse the removal procedure to install a new chad brush.

Adjustment

Stationary Brush:

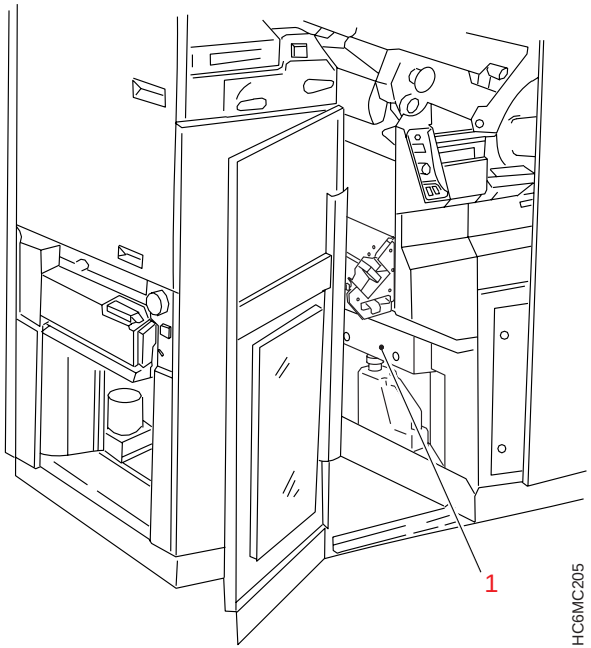
1. Place the stationary brush **(2)** against the screws **(1)**.
2. Center the brush in the opening.
3. Tighten the three screws **(1)**.

Tracking Brush:

1. Place the tracking brush **(2)** by matching its position to the stationary brush.
2. Ensure that the tracking brush is parallel to the stationary brush.
3. Tighten the three screws **(3)**.

End-of-Forms Sensor (S117) and Lamp (D101)

Table 569. End-of-Forms Sensor (S117)



Removal

1. Remove the forms from the input area.
2. Request that the system operator stop activity on the printer. Disable all host attachments.
3. Shutdown and power off the printer.
4. Remove the developer access cover.
5. Remove the input lower cover.
6. Disconnect connector PJ157 if you are removing the lamp.

   Disconnect connector PJ151 if you are removing the sensor **(1)**.

   These connectors are located under the input lower cover.
7. Loosen the clamp to remove the lamp or the sensor.

Installation

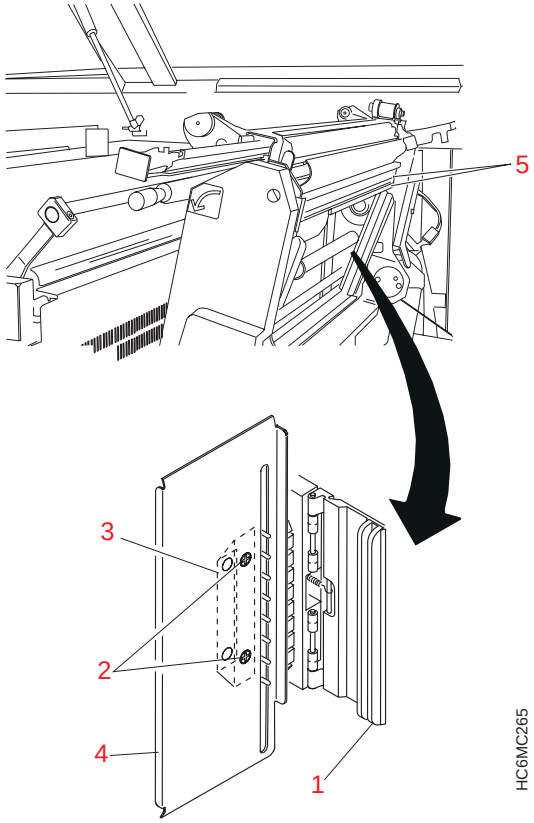
1. Reverse the removal procedure to install a new lamp or sensor.

Check and Adjustment

1. Ensure that the light is focused on the mirror and reflects on the sensor.
2. Run Sensor Routine 5D to ensure that the sensor is operating correctly.
3. Run primary print samples to ensure that print quality is correct.

Forms Width Sensor (PW111)

Table 570. Forms Width Sensor (PW111)



(continued on next page)

Special Tools Required:

- 0.15-mm (0.006-in.) thickness gauge

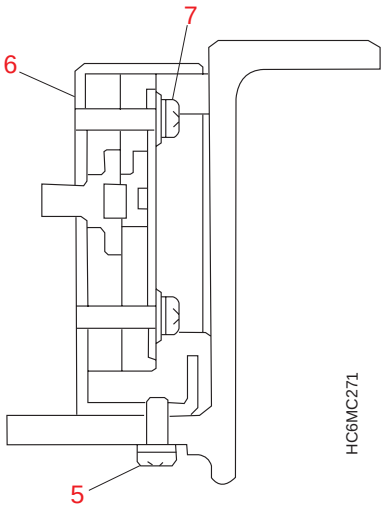
Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Remove the forms from the tractors.
4. Remove the two screws **(2)** to release the nut plate **(3)** and the forms guide **(4)** of the upper rear tractor.
5. Move the rear tractor to the widest forms setting.
6. Remove the two screws **(5)**.

Table 570. Forms Width Sensor (PW111) (continued)

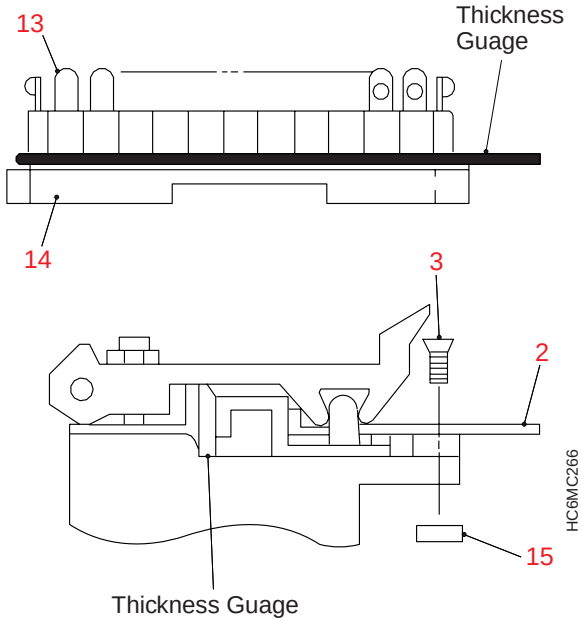
Note: During the next step, remove the cover and the card as a unit to provide protection for the card.

7. Disconnect connector PJ141/PJ140 from the forms width sensor card assembly **(6)**.
8. Remove the forms width sensor card by removing the two screws **(7)**.



Installation

1. Reverse the removal procedure to install a new forms width sensor.

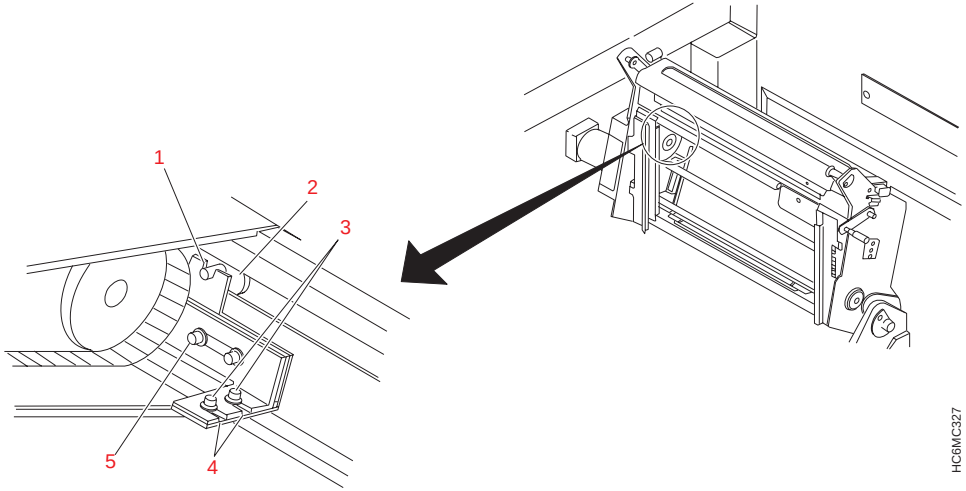


Check and Adjustment

1. Insert a 0.15-mm (0.006-in.) thickness gauge between the forms guide **(14)** and the tractor belt **(13)**.
2. Loosen the two screws **(3)** and move the forms guide against the thickness gauge.
3. Tighten the two screws **(3)**.

(continued on next page)

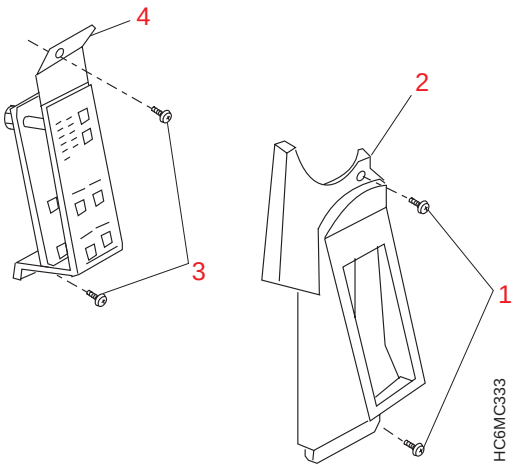
Table 570. Forms Width Sensor (PW111) (continued)



4. Install the sensor so that the magnet holder **(2)** is in the notch of the sensor guide plate **(1)**.
5. Ensure that the sensor guide wire moves freely and is not obstructed.
6. Power on the printer.
7. Run Sensor Routine 65 to ensure that the sensor is operating correctly.
8. Run Print Pack to verify print quality.

Printer Control Panel (SW761)

Table 571. Printer Control Panel (SW761)



Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Remove the transfer station front cover.
4. Remove the developer cover.
5. Remove the two screws **(1)** and remove the control panel cover **(2)**.
6. Remove the two screws **(3)** and remove the control panel **(4)**.
7. Disconnect connector PJ184 from the control panel.

Installation

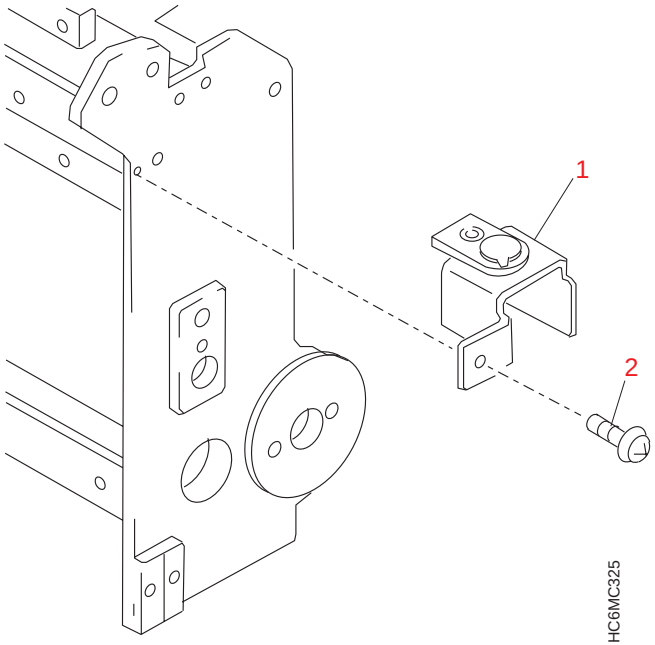
1. Reverse the remove procedure to install the printer control panel (SW761).
2. Power on the printer.

Check

1. Ensure that the Contrast, Forms Feed, and Forms Set functions on the control panel work correctly.
2. Run Print Pack to verify print quality.

Retractor

Table 572. Retractor



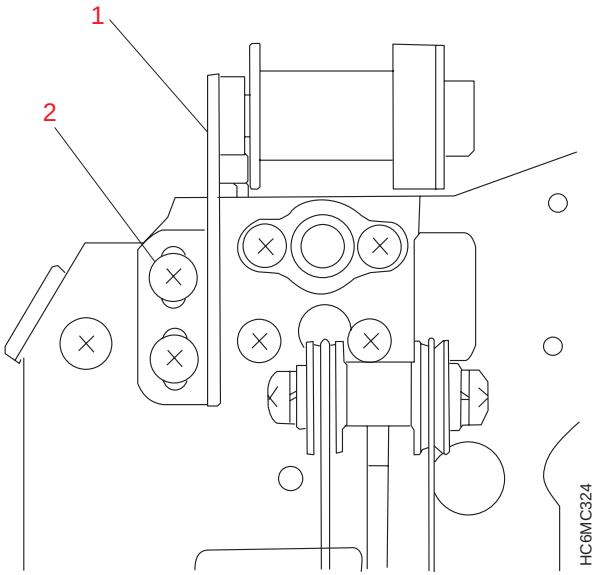
Special Tools Required:

- Gram gauge
- Forms tension gauge
- Drum gauge
- Drum shaft extension

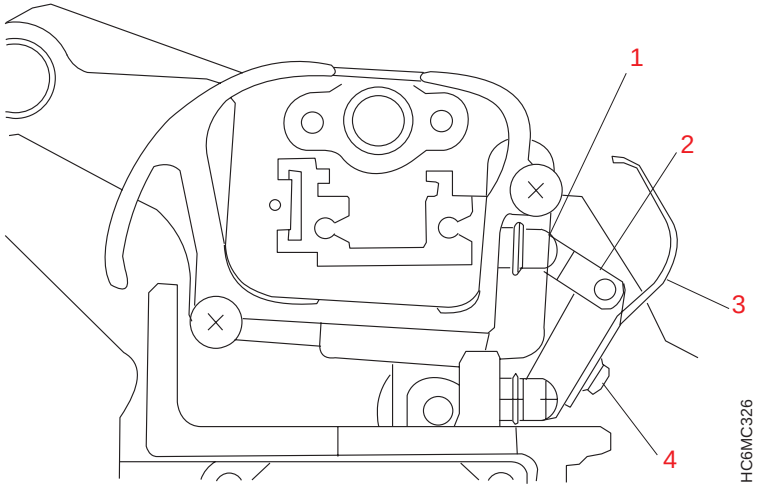
Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Remove the PC drum and the transfer corona.
4. Remove the transfer station cover.
5. Remove the screw **(2)** and remove the brush holder **(1)**.

Table 572. Retractor (continued)

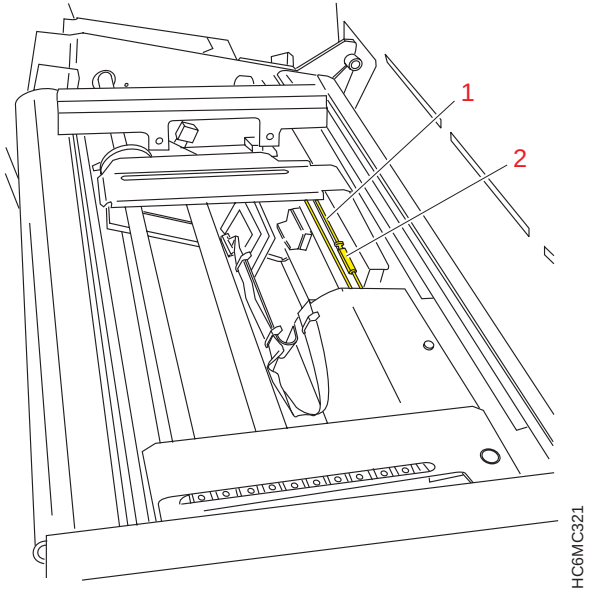


6. Remove the transfer corona shield.
7. Remove the screws **(2)** and remove the tape reel assembly **(1)**.



8. Remove the screws **(4)** and remove the path modifier **(3)**.
9. Remove the hex bolt **(1)** and remove the link assembly**(2)**.
10. Remove the retractor motor (M103).

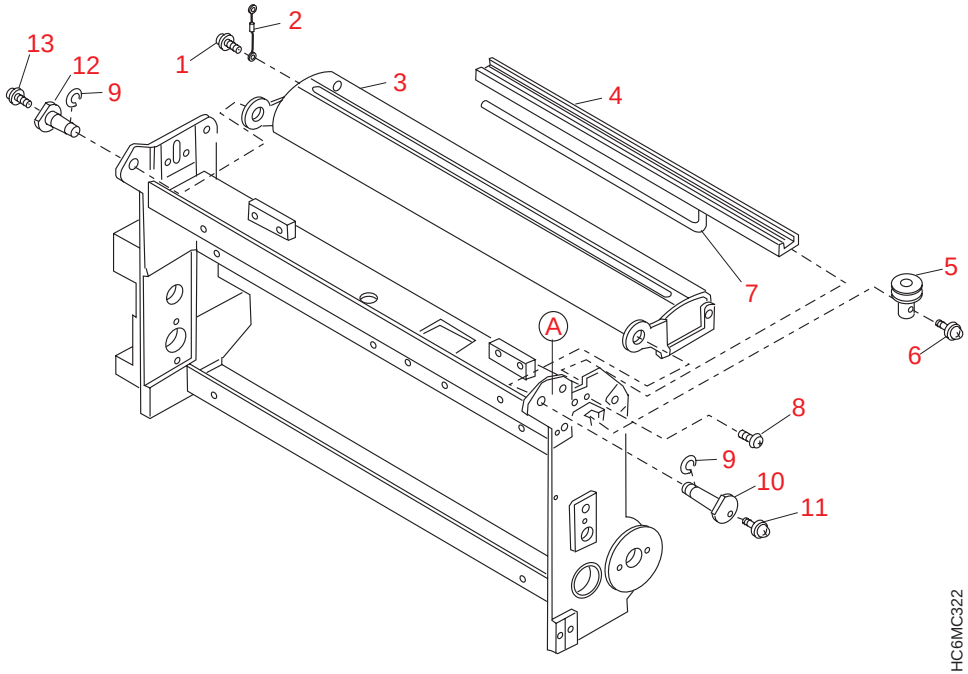
Table 572. Retractor (continued)



11. Remove the bolt **(2)** and remove the tractor wire **(1)**.

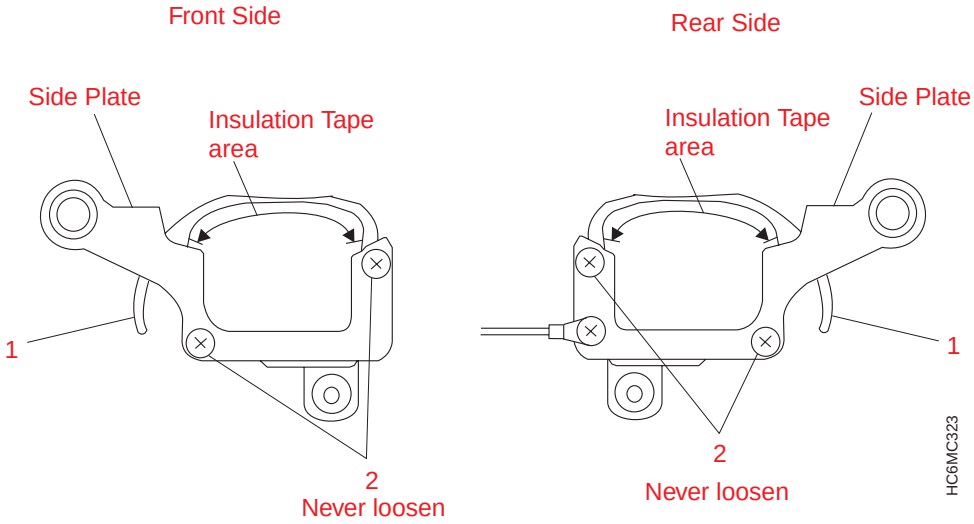
(continued on next page)

Table 572. Retractor (continued)



12. Remove the screw **(6)** and remove the pulley bearing **(5)**.
13. Remove the two E-clips **(9)**.
14. Remove the screw **(11)** and remove the front support shaft **(10)**.
15. Remove the screw **(13)** and remove the rear support shaft **(12)**.
16. Remove the four screws **(8)** and remove the retractor frame **(3)** and transfer corona rail **(4)**.
17. Remove the silicone tube **(7)** from the transfer corona rail **(4)**.
18. Remove the screw **(1)** and remove the ground cable **(2)** from the retractor frame **(3)**.

Table 572. Retractor (continued)



Important

Never loosen the screws **(2)** of the retractor frame **(1)**. These screws and the side plate are adjusted at the factory.

Installation

1. Reverse the removal procedure to install a retractor.

Adjustment

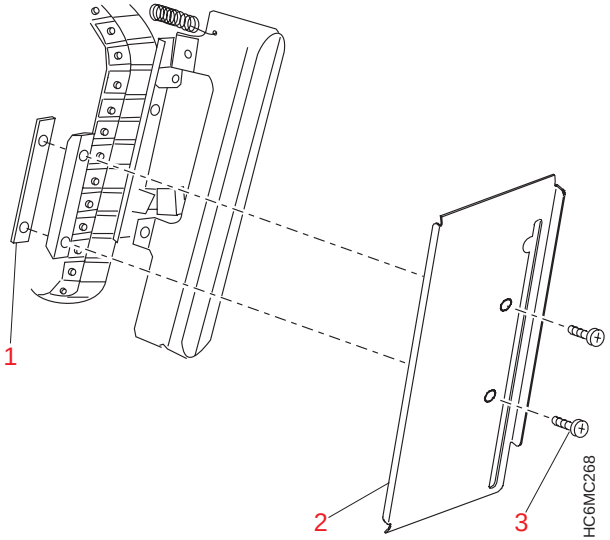
1. Adjust the position of the Retractor Motor (M103) as needed.
2. Adjust the gap between the PC drum and the retractor.
3. Adjust the position of the path modifier.
4. Adjust the forms width sensor as needed.

Verify

1. Power on the printer.
2. Verify that all parts are working properly.
3. Run Print Pack to verify print quality.

Retractor Motor (M103)

Table 573. Retractor Motor (M103)



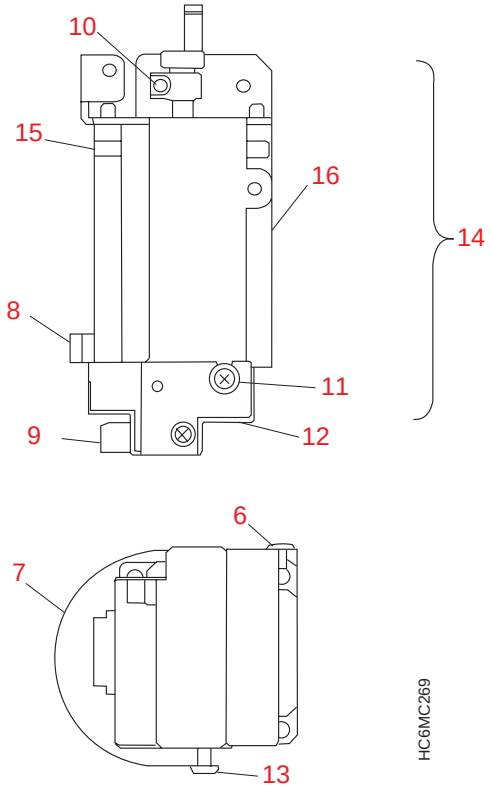
(continued on next page)

Removal

Attention: Be careful that screws and washers do not fall into the developer.

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Perform the PC Drum Removal procedure and store the drum it in a protective box.
4. Remove the forms.
5. Open the transfer station.
6. Remove the upper front tractor paper guide **(2)** by removing the two screws **(3)** on the nut plate **(1)**.

Table 573. Retractor Motor (M103) (continued)



7. Loosen the two screws **(6)** to remove the retractor motor cover **(7)** and disconnect connectors PJ136 **(8)** and PJ137 **(9)**.
8. Loosen the screw **(10)**.
9. Remove the screw **(11)** to remove the retractor sensor cover **(12)**.
10. Remove the two screws **(13)** to remove the retractor motor assembly **(14)**.
11. Remove the two screws **(15)** to remove the retractor motor **(16)**.

Installation

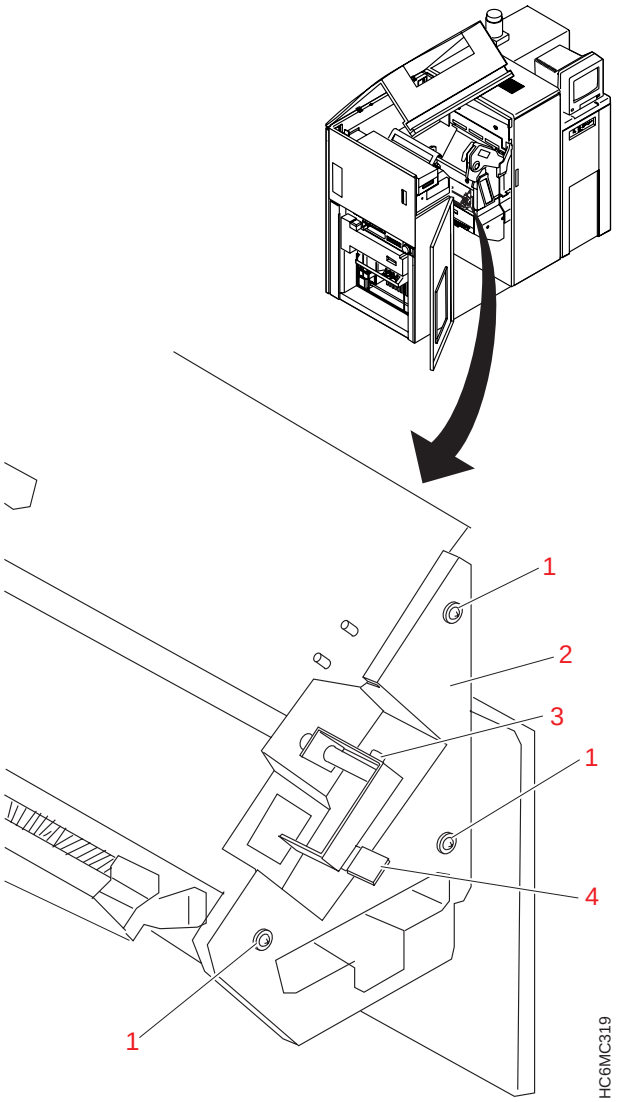
1. Reverse the removal procedure to install a new retractor motor.

Adjustment

1. Perform each procedure in Transfer Station Adjustments.

Splicing Lever Sensor (S119)

Table 574. Splicing Lever Sensor (S119)

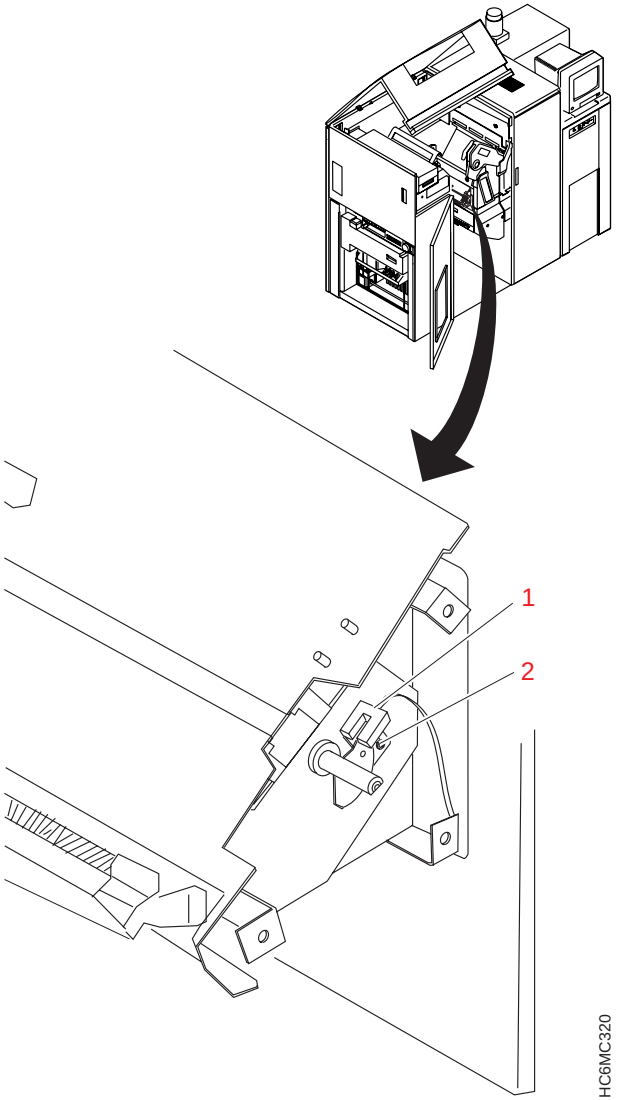


(continued on next page)

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Remove the screw **(3)** and remove the splice handle **(4)**.
4. Remove the three screws **(1)** on the splice lever sensor cover **(2)**.
5. Remove the splice lever sensor cover **(2)**.

Table 574. Splicing Lever Sensor (S119) (continued)



6. Disconnect connector PJ161 **(1)**.
7. Remove the screw **(2)** and switch **(1)**.

Installation

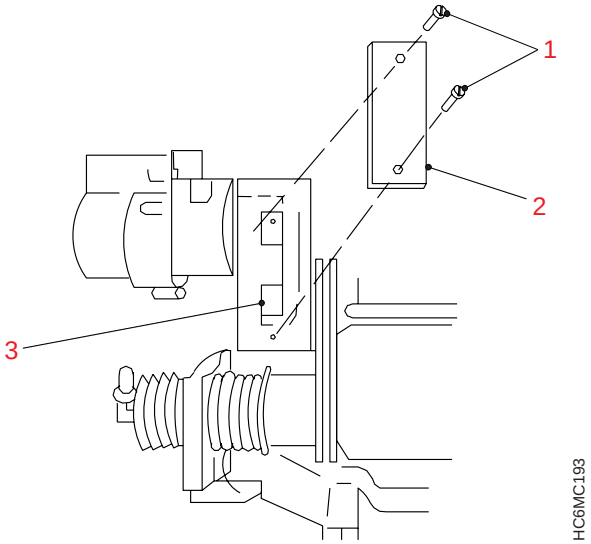
1. Reverse the removal procedure to install a splicing lever sensor.
2. Power on the printer.

Check

1. Run Sensor Routine 68.
2. Run Print Pack to verify print quality.

Tractors

Table 575. Tractors



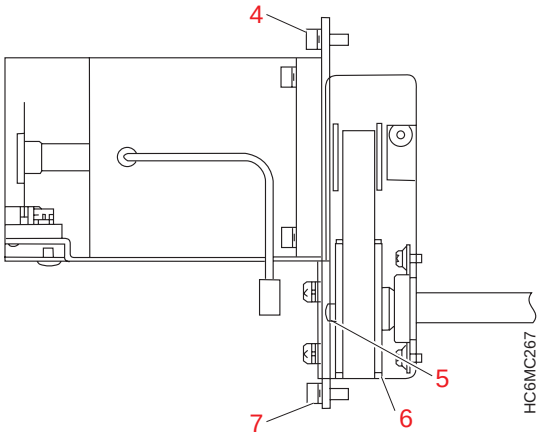
Special Tools Required:

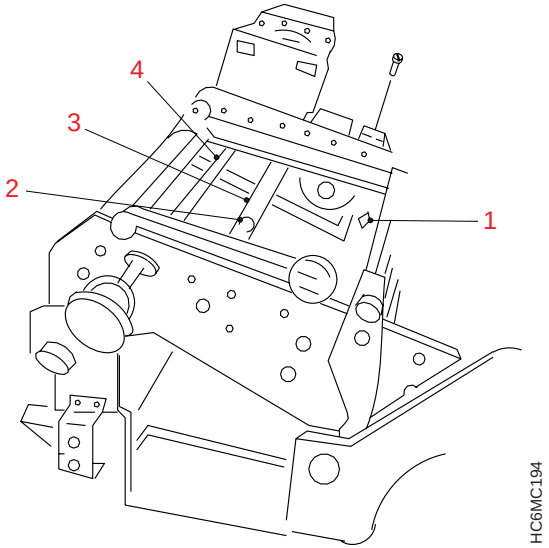
- Drum shaft extension (P/N 06F1025)
- Drum bag or protective box
- Lint-free cloth (P/N 2108930)
- 0.2 mm (0.008 in.) thickness gauge
- 0.3 mm (0.012 in.) thickness gauge

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Perform the PC Drum Removal procedure and store the drum it in a protective box.
4. Remove the transfer corona .
5. Remove the transfer station front cover (not shown) by removing the two screws inside the transfer station front plate.
6. Remove the two screws **(1)** and the belt cover plate **(2)**.
7. Remove the Tractor Motor (M105) and Drive Belt.

Table 575. Tractors (continued)



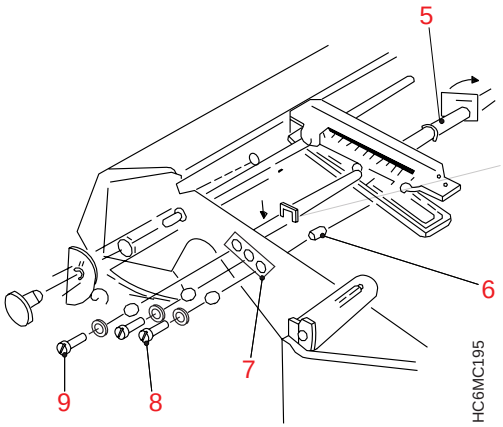


8. Remove the three screws **(4)** and **(7)** remove the tractor motor mounting plate.
9. Remove the screw **(5)** and remove the tractor drive gear **(6)** and key.

10. Place a disposable cloth below the rear tractor assembly area to prevent losing small parts.
11. Remove the clip **(2)**.

    Observe the position of the clip groove; the short portion of the shaft faces the front of the machine.
12. Slide the rear tractor to the narrowest forms setting.
13. Remove the two screws from the back side of the rear tractor assembly that hold the magnet holder **(1)**.

Table 575. Tractors (continued)

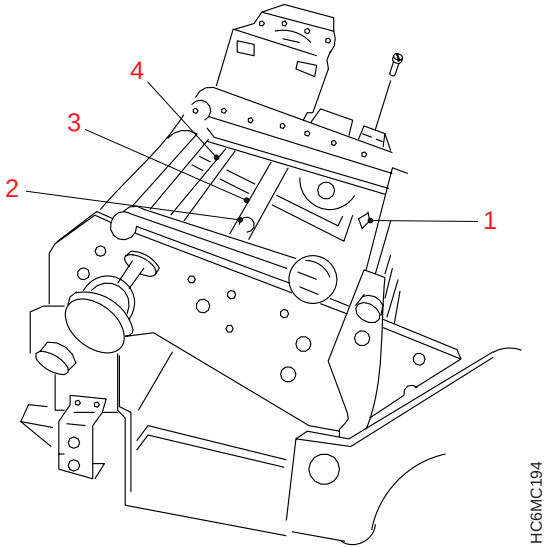


(continued on next page)

14. From the front of the printer, remove the two screws **(9)** to release the tractor guide shaft **(5)**.
15. Remove the spacer **(6)** by removing the screw **(8)**.

    Slide the front tractor toward the rear. Remove the plate **(7)**.
16. Remove the forms guide from the front tractor and place it over the top of the transfer station. (See Tractor Jam Sensor).

Table 575. Tractors (continued)



(continued on next page)

17. Slide the rear tractor assembly and magnet holder to the full width position.
18. Slide the drive shaft **(4)** and the tractor guide shaft **(3)** toward the front.
19. Slip the rear tractor off the drive shaft **(4)** and the tractor guide shaft **(3)**.

    Go to the Installation procedure if this is the only tractor you are replacing.
20. Slip the front tractor off the drive shaft and the tractor guide shaft if you are replacing the front tractor.

Installation

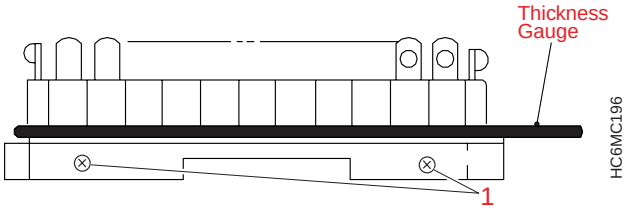
1. Reverse the removal procedure to install a new tractor.
   Note: Reinstall the tractor guide shaft **(3)** with the grove for the clip **(2)** facing the front of the printer.
2. Install forms in the forms input area of the printer.
3. Align the marks on the tractors to locate the tractors on the drive shaft and to maintain registration between the front and rear tractors.

Attention: Ensure that you do not damage the transfer corona shutter that is attached to the magnet holder.

Table 575. Tractors (continued)

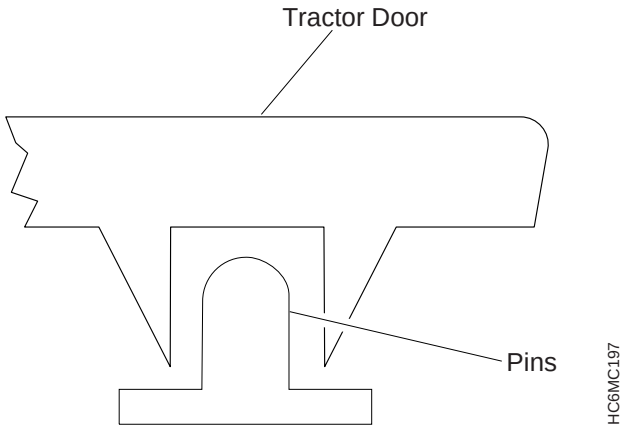
Adjustment

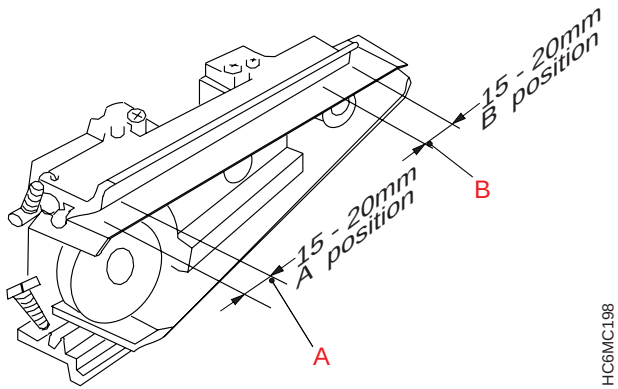
1. Check the adjustment of the guide plate by inserting a 0.2-mm (0.008-in.) thickness gauge between the guide plate and the tractor belt.



2. Align the tractor door so it is parallel to the forms feed pins on the tractor.

   Tighten the two tractor door mounting screws.





3. Adjust the upper tractor doors to a guide plate gap at **(A)** of 0.3 ±0.1 mm (0.012 ±0.004 in.).

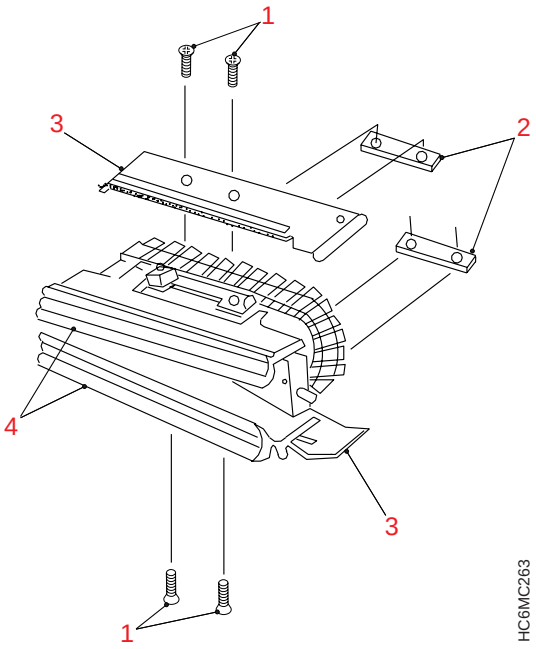
   The gap at **(B)** should be 0.6 ±0.1 mm (0.024 ±0.004 in.).
4. Feed the forms carefully to ensure that the forms length scales agree with the perforated lines on the forms (SeeTractor Motor (M105) Detent Position).
5. Power on the printer.
6. Go to Registration to check the process direction, print start position.

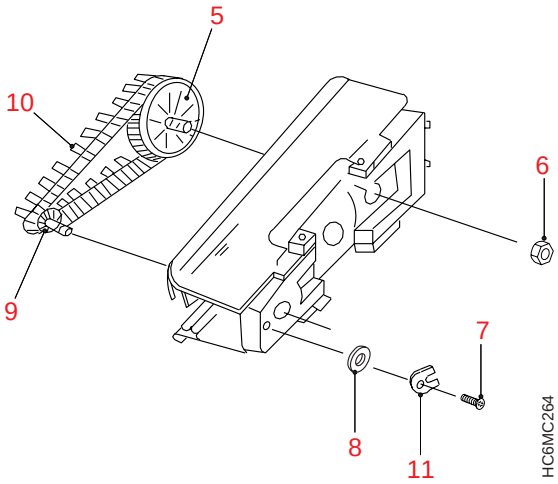
Check

1. Run Print Pack.

Tractor Belt

Table 576. Tractor Belt





(continued on next page)

Special Tools Required:

- 0.2 mm (0.008 in.) thickness gauge

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Remove the Tractors.
4. At a clean work place, open the tractor doors **(4)**.
5. Remove the two upper and two lower screws **(1)** and the two nut plates **(2)**; remove the two forms guides **(3)**.
6. Close the tractor doors.
7. Remove the screw **(7)**, the tight ring **(11)** and the bearing spacer **(8)**.
8. Remove the nut **(6)** and remove the driven pulley **(5)**.
9. Remove the drive pulley **(9)** and the tractor belt **(10)** as a unit.

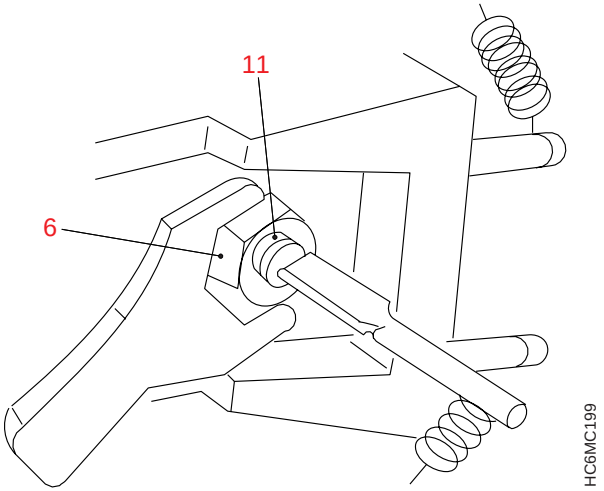
Installation

1. Reverse the removal procedure to install a new tractor belt.
2. Align the marks on the tractors to maintain the front and rear tractor teeth in registration.

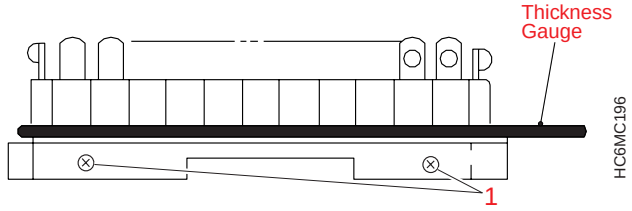
Table 576. Tractor Belt (continued)

Adjustment

1. Ensure that the forms length scales agree with the perforated lines on the forms (see Tractor Motor (M105) Detent Position).
2. Adjust the belt tension by turning the eccentric shaft **(11)** until the tractor belt deflects 1.5 to 3 mm (0.06 to 0.12 in.) when 1 kg (2.2 lb) of force is applied.
3. Keep the shaft **(11)** from turning while you tighten the lock nut **(6)**.
4. Check the belt tension again.



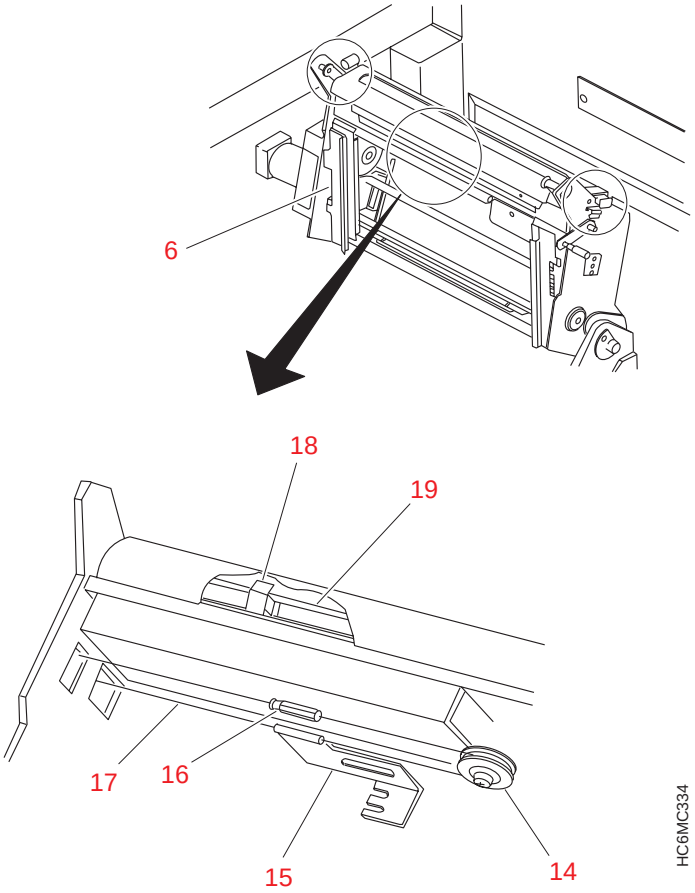
5. Adjust the position of the forms guide plate.
   a. Loosen the two screws **(1)**.
   b. Insert a 0.2-mm (0.008-in.) thickness gauge between each forms guide plate and tractor belt.
   c. Tighten the two screws **(1)** (Forms Width Sensor (PW111).
   d. Check the 0.2 mm gap again.



6. Power on the printer.
7. Go to Registration to check the process direction, print start position.

Tractor Wire

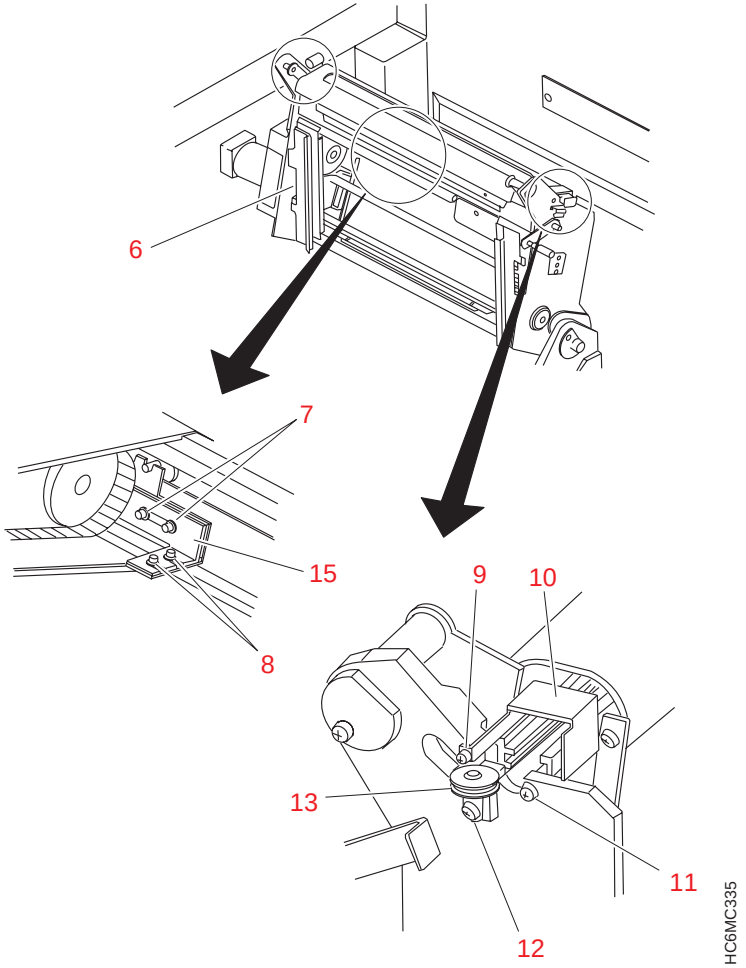
Table 577. Tractor Wire



Removal

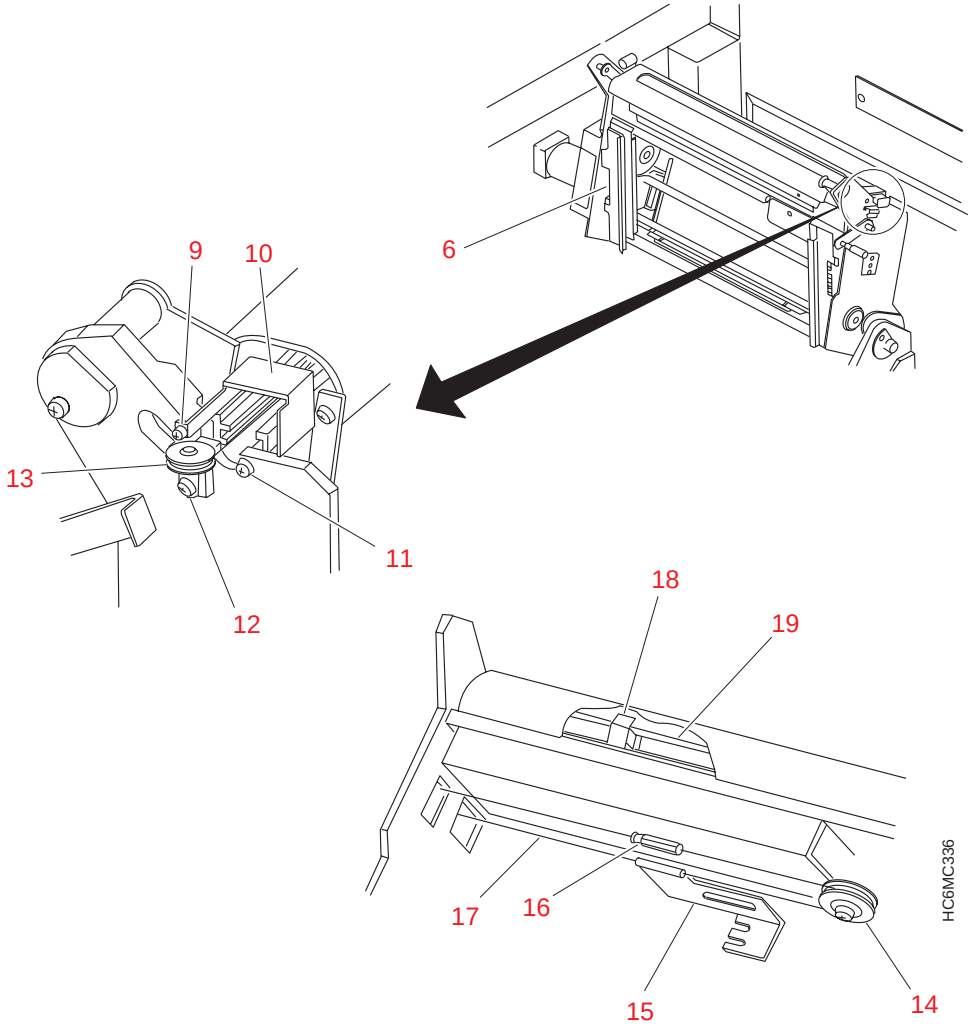
1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Remove the PC drum.
4. Open the transfer station.
5. Remove the transfer station cover.
6. Remove the screw and remove the transfer corona shield from the wire holder **(18)**.

Table 577. Tractor Wire (continued)



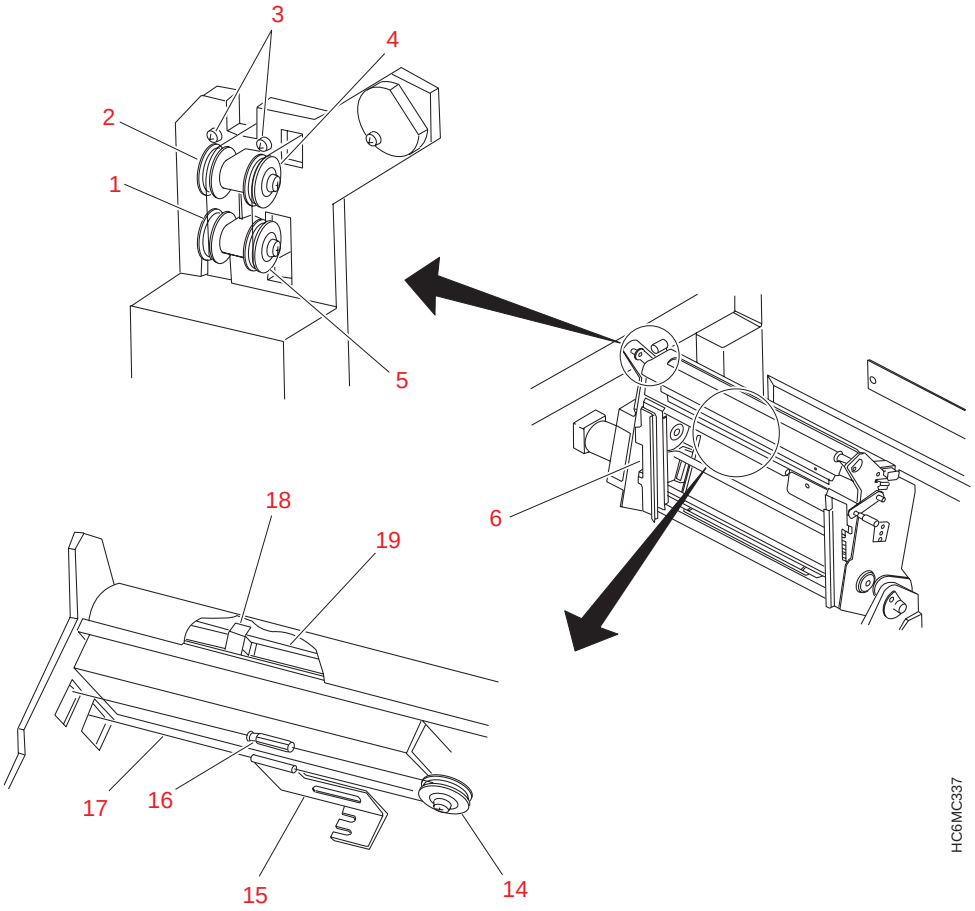
7. Remove the screw **(9)** and remove the brush assembly **(10)**.
8. Remove the four bolts **(7)** and **(8)** and remove the wire holder **(15)** from the rear of the tractor **(6)**.
9. Remove the screw **(12)** and remove the pulley bearing assembly **(13)**.

Table 577. Tractor Wire (continued)



10. Remove the screw **(11)** and remove the transfer corona rail assembly **(19)**.
11. Remove the wire holder **(18)** from the rail **(19)**.

Table 577. Tractor Wire (continued)



12. Unscrew the bolt **(16)** and remove the tractor wire **(17)** from the pulleys **(1)**, **(2)**, **(4)**, **(5)**, and **(14)**.

Installation

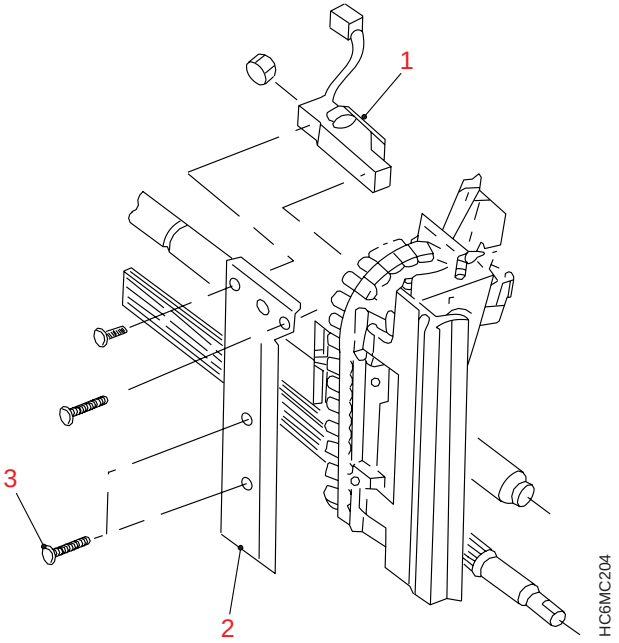
1. Reverse the removal procedure to install a tractor wire.

Check

1. Adjust the position of the Transfer Corona Shield as needed.
2. Check the position of the forms guide (See page 1895.)
3. Power on the printer.
4. Run Print Pack to verify print quality.

Tractor Jam Sensor

Table 578. Tractor Jam Sensor



Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the transfer station.
4. Open the input-side front tractor door.
5. Remove the two screws **(3)** to remove the forms guide **(2)**.

Note: The next step free two nuts.

6. Remove the two screws to remove the jam sensor **(1)**.
7. Disconnect connector PJ301 from the sensor.
8. Remove the jam sensor **(1)** from the forms width guide **(2)**.

Installation

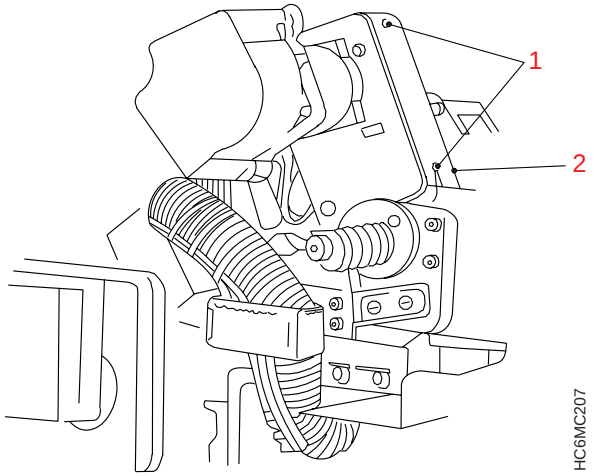
1. Reverse the removal procedure to install a new tractor jam sensor.

Check

1. Power on the printer.
2. Run Print Pack to verify print quality.

Tractor Motor (M105) and Drive Belt

Table 579. Tractor Motor (M105) and Drive Belt

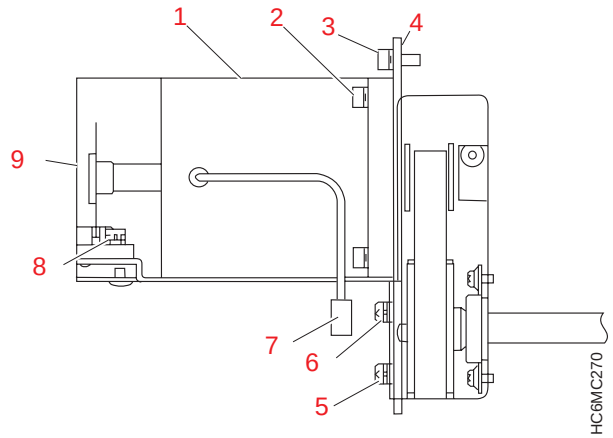


Special Tools Required:

- Push-pull scale (P/N 0460870)

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Remove the two screws **(1)** to remove the tractor motor cap **(2)**.

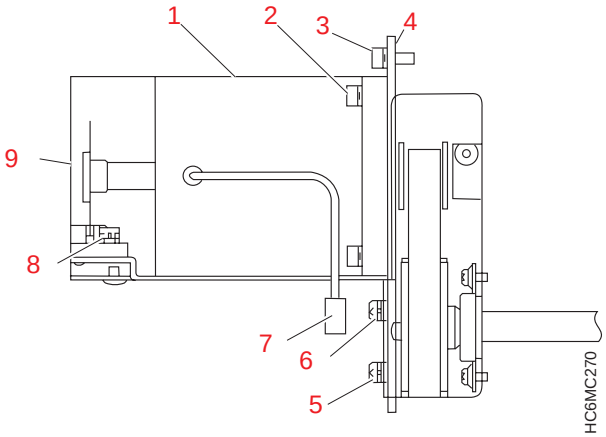


4. Disconnect connectors PJ139 **(8)** and PJ138 **(7)**.
5. Remove the two screws **(6)** to remove the tractor motor encoder sensor holder **(9)**.
6. Remove the three screws **(3)**, **(5)**.
7. Remove the tractor motor **(1)** and the tractor motor mounting plate **(4)**.
8. Remove the three screws **(2)** to remove the motor **(1)** from the motor plate **(4)**.

Note: Do not remove the encoder or the board from the motor.

(continued on next page)

Table 579. Tractor Motor (M105) and Drive Belt (continued)



Installation

1. Reverse the removal procedure to install a new tractor motor or drive belt.
2. Adjust the tractor motor belt so that the belt deflects 1 mm (0.04 in.) when 0.4 kg (0.88 lb) of force is applied.

Adjustment

1. Power on the printer.
2. Loosen the coupler.
3. Align the perforation with the correct forms length on the rear tractor door.

Note: The forms feed motor advances the forms in increments of $^{1}/_{6}$ inch.

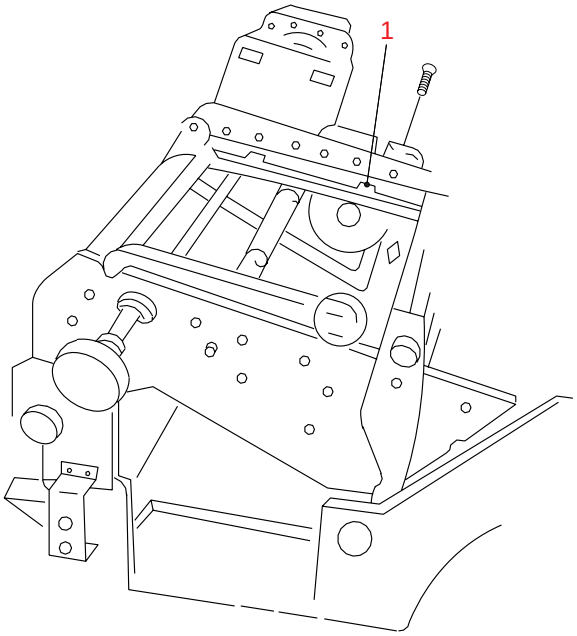
4. Tighten the coupler.
5. Advance the forms and ensure that the forms perforation stops at the correct alignment mark location on the rear tractor door.

Check

1. Go to Registration to check the process and scan print start positions.
2. Run Print Pack to verify print quality.

Transfer Corona Shield

Table 580. Transfer Corona Shield

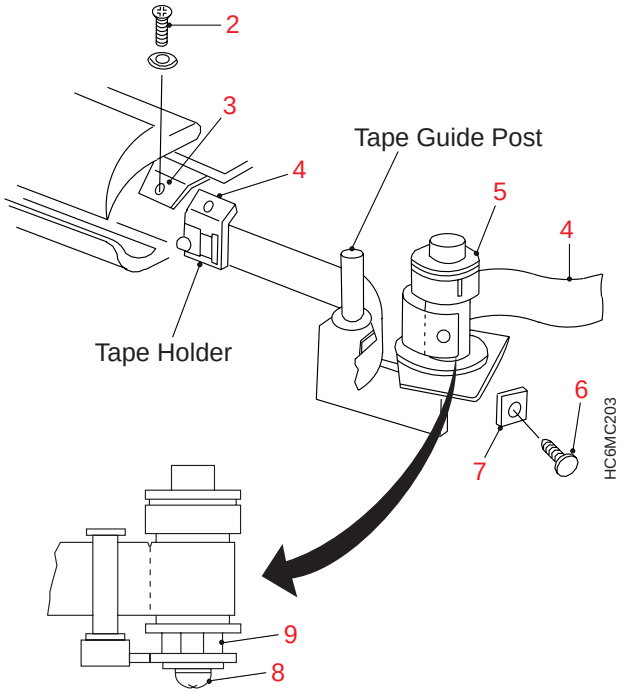


(continued on next page)

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Remove the forms.
4. Open the transfer station.
5. Move the rear tractor **(1)** to the widest forms setting.

Table 580. Transfer Corona Shield (continued)



6. Remove the screw **(2)** and the flat washer.
7. Remove the end of the transfer corona shield tape **(4)** from the tab **(3)**.
8. Unwind the tape **(4)** from the reel **(5)**.
9. Remove the screw **(6)** and the plate **(7)** to free the end of the tap from the reel **(5)**.

Installation

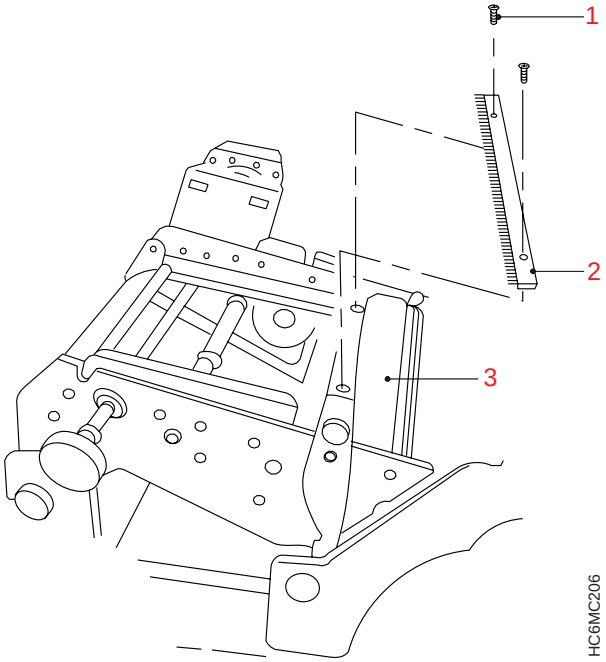
1. Reverse the removal procedure to install a new transfer corona shield tape.
2. Wind the new tape onto the reel **(5)** in a clockwise direction. Continue to wrap the tape around the real eight times.

Check and Adjustment

1. Ensure that the end piece of the tape does not touch the inside of the retractor.
2. While you adjust the forms width, ensure that the shield tape does not touch the transfer corona when the tractor is moved.
3. While you adjust the forms width, ensure that the transfer corona shield tape does not sag.
4. To tighten the corona shield tape, loosen screw **(8)** and turn the reel **(9)**, then tighten screw **(8)**.
5. Power on the printer.
6. Run Print Pack to verify print quality.

Transfer Station Discharge Brush

Table 581. Transfer Station Discharge Brush



Special Tools Required:

- Vacuum cleaner (P/N 9900735)

Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Remove the forms from the transfer station.
4. Remove the two screws **(1)** to remove the discharge brush **(2)** from the output side of the transfer station **(3)**.
5. Vacuum the paper dust from this area.

Installation

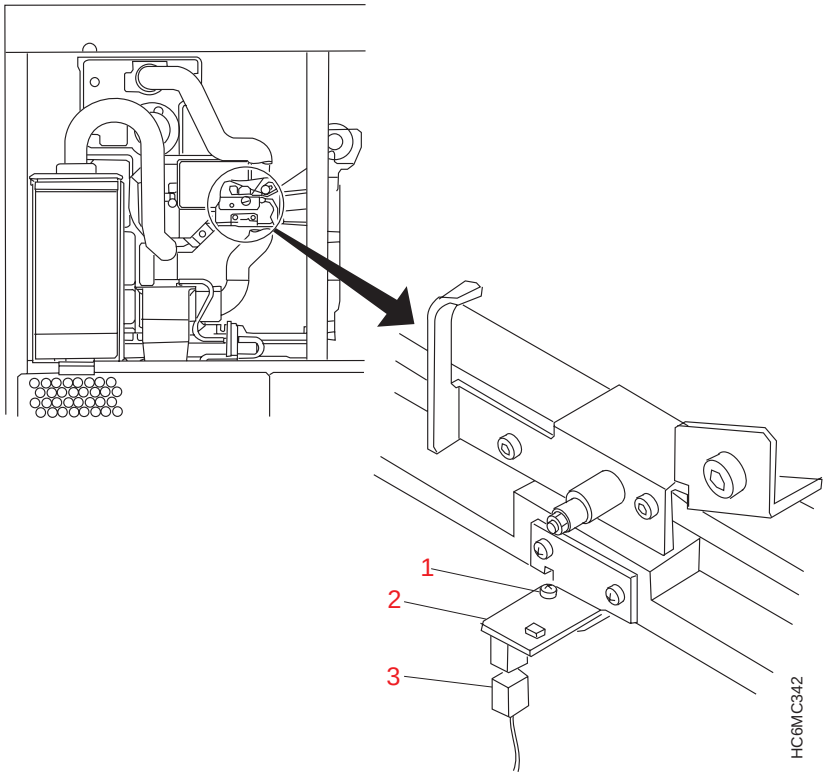
1. Reverse the removal procedure to install a new transfer station discharge brush.

Check and Adjustment

1. Ensure that any bend in the brush is straightened before you install it.
2. Ensure that the discharge brush is installed with the countersunk holes facing upward.

Transfer Station Sensor (S114)

Table 582. Transfer Station Sensor (S114)



Special Tools Required:

- Thickness Gauge

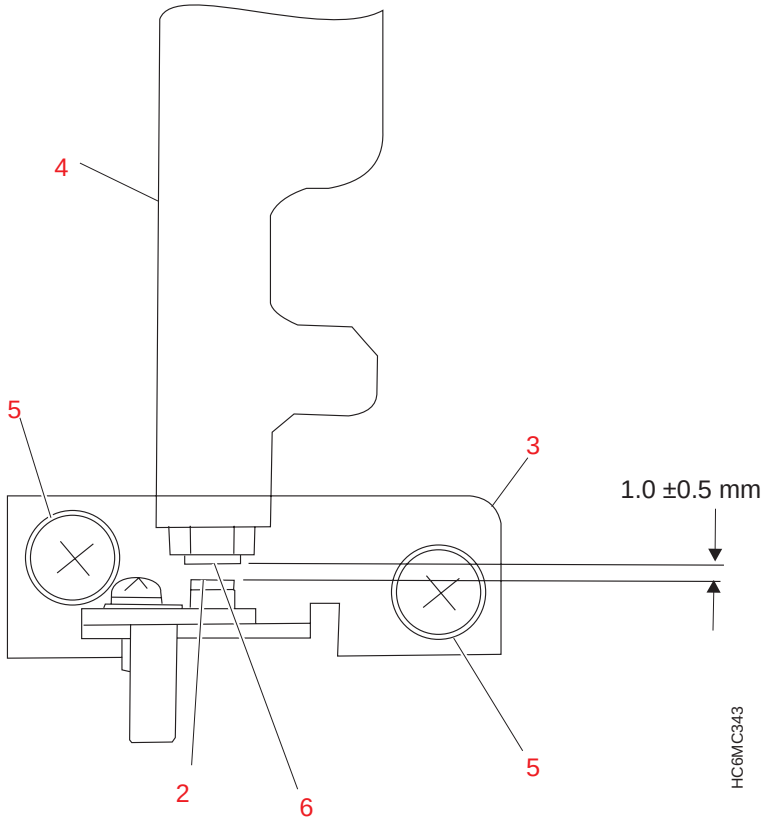
Removal

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the printer left rear cover.
4. Remove the rear process cover.
5. Open the transfer station.
6. Disconnect connector PJ149 **(3)**.
7. Remove the screw **(1)** to remove the transfer station open sensor **(2)**.

Installation

1. Reverse the removal procedure to install a new transfer station open sensor.

Table 582. Transfer Station Sensor (S114) (continued)



Check and Adjustment

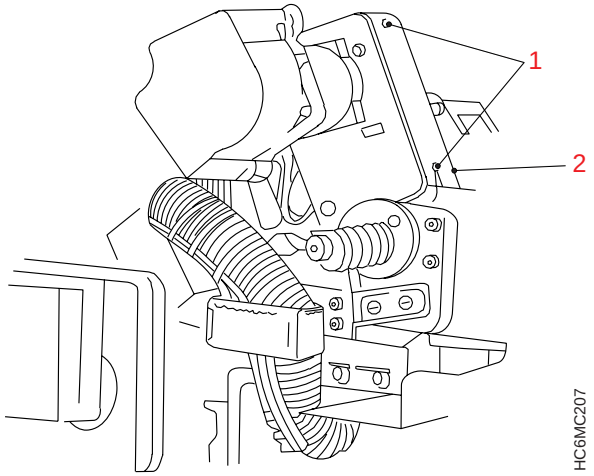
1. With the transfer station closed, check for a gap of 1.0 ±0.5 mm between the transfer station open sensor **(2)** and the magnet **(6)** on the transfer station rear latch **(4)**
   - If the gap is not correct, loosen the two screws **(5)** and adjust the gap for 1.0 ±0.5 mm while sliding the sensor bracket **(3)** up or down.
2. Run Sensor Routine 60 to check the operation of the transfer station open sensor (S114).
3. Run Print Pack to verify print quality.

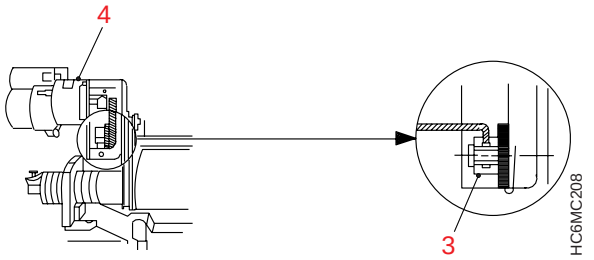
Transfer Station Adjustments

Tractor Motor (M105) Detent Position 1927
Retractor Motor Encoder Sensor (S113) 1929
Retractor to PC Drum Gap 1930
Path Modifier Assembly 1933

Tractor Motor (M105) Detent Position

Table 583. Tractor Motor (M105) Detent Position



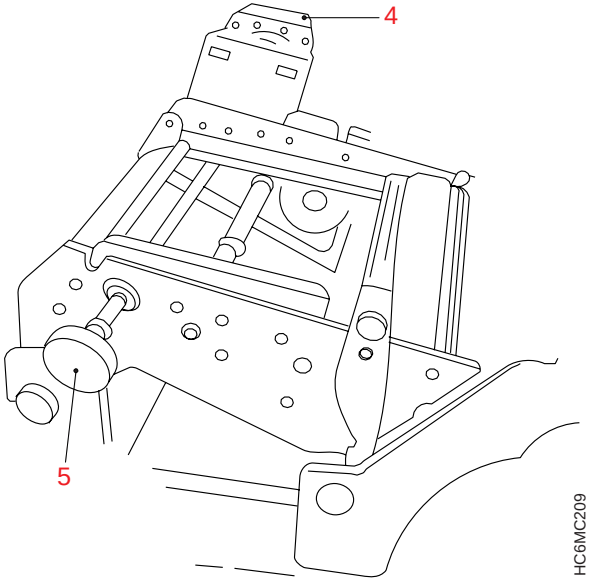


Adjustment

1. Load forms into the printer.
2. Request that the system operator stop activity on the printer. Disable all host attachments.
3. Shutdown and power off the printer.
4. Remove the two screws **(1)** to remove the belt cover **(2)**.
   The drive coupler **(3)** is located under this cover.
5. Loosen the drive coupler **(3)** on the motor shaft.
6. Power on the printer.

Note: The tractor motor **(4)** advances the forms in increments of $^{1}/_{6}$ inch.

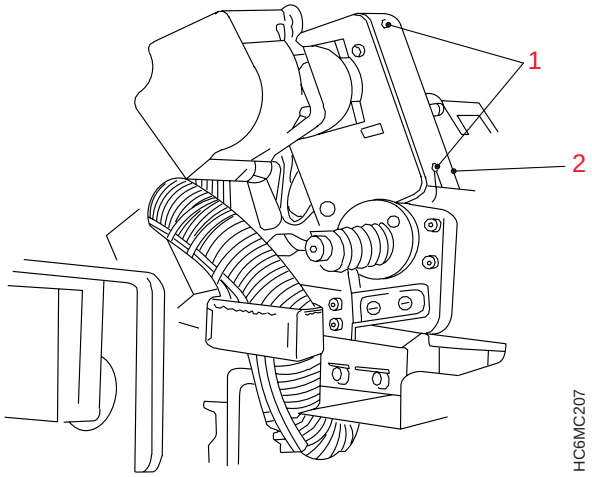
Table 583. Tractor Motor (M105) Detent Position (continued)

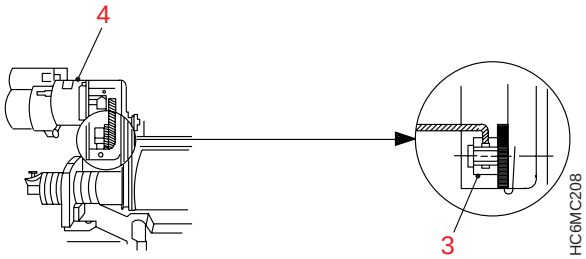


7.

Turn the forms drive shaft **(5)** to align a perforation on the forms within 2 mm (0.08 in.) of the correct alignment mark (for the forms size being used) on the forms length scale on the rear tractor door.

Ensure that the tractor jam sensor is covered by the forms.





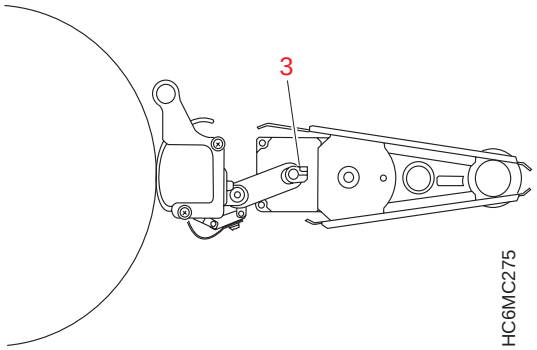
8. Tighten the drive coupler **(3)** on the motor shaft.
9. Reinstall the belt cover **(2)**.

Check

1. Go to Registration to check the process and scan direction, print start positions.
2. Run Print Pack to verify print quality.

Retractor Motor Encoder Sensor (S113)

Table 584. Retractor Motor Position Sensor (S113)



Adjustment

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Perform the PC Drum Removal procedure and store the drum in a protective box.
4. Move the rear tractor to the widest forms setting.
5. Open the transfer station to a level position.
6. Remove the retractor motor cover.
7. Run Driver Routine 11 to put the transfer station in the print position.
8. Run Driver Routine 11 to put the transfer station in the nonprint position.
9. Loosen the screw **(3)** to loosen the motor coupling.
10. Push the retractors away from the print position and tighten the screw **(3)**.

    The retractors are at full travel and in the nonprint position.

Note: The sensor card is located under the cover that is attached to the motor (not shown). The sensor is over the window on the disk when the retractors are in the print position. Make the adjustment while the sensor is opposite the window.

Retractor to PC Drum Gap

Table 585. Retractor to PC Drum Gap

Special Tools Required:

- Drum shaft extension (P/N 06F1025)
- Drum clearance gauge (P/N 06F1029)

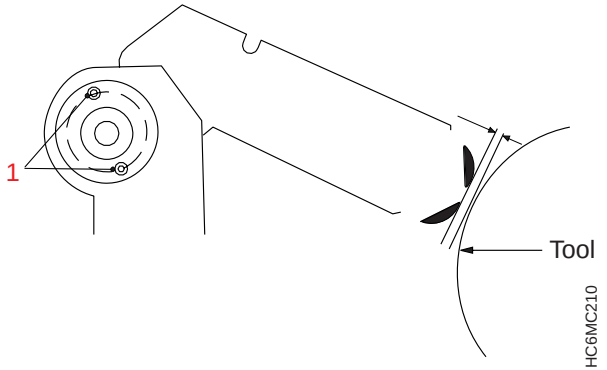
Check

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Do not do any of the following steps if you have already done them:
   a. Perform the PC Drum Removal procedure and store the drum in a protective box.
   b. Remove the PC front cover.
4. Set the diagnostic function switch to position **3**.
5. Power on the printer.
6. Install the Drum Clearance Gauge onto the drum shaft.

Attention: Rotate the drum clearance gauge away from the transfer station to avoid damaging the drum clearance gauge and the retractors.

7. Run Driver Routine 11 to bring the retractors to the print position.
8. Verify that the clearance between the upper retractor and the drum clearance gauge matches PC Drum & Developer Clearances/Gaps.

   In addition, the clearances measured at the front and at the rear should be within 0.1 mm (0.004 in.).
9. Run Driver Routine 11 to put the retractors in the nonprint position.



Adjustment

Note: The Retractor Motor Encoder Sensor (S113) must be correct before you begin this adjustment.

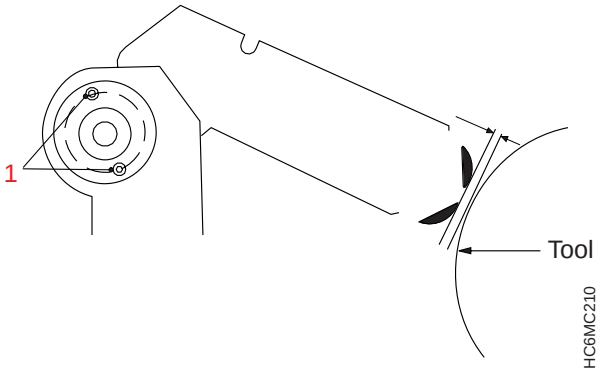
1. Remove the transfer station front cover.
2. Install the Drum Clearance Gauge onto the drum shaft.

Attention: Rotate the drum clearance gauge away from the transfer station to avoid damaging the drum clearance gauge and the retractors.

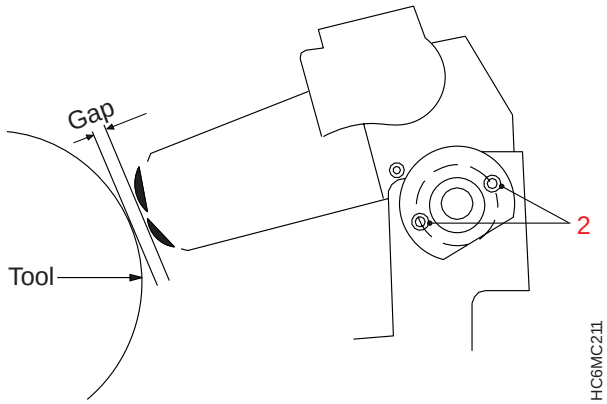
3. Set the diagnostic function switch to position **3**.
4. Loosen the two front screws **(1)**.
5. Power on the printer.

(continued on next page)

Table 585. Retractor to PC Drum Gap (continued)



6. Run Driver Routine 11 to put the retractors in the print position.
7. Place the indicator plunger on the high point of the upper retractor near the front end.
8. Slowly turn the eccentric that is located behind the lock collar until the gap between the upper retractor and the PC drum matches PC Drum & Developer Clearances/Gaps.
9. Tighten the two front screws **(1)**.

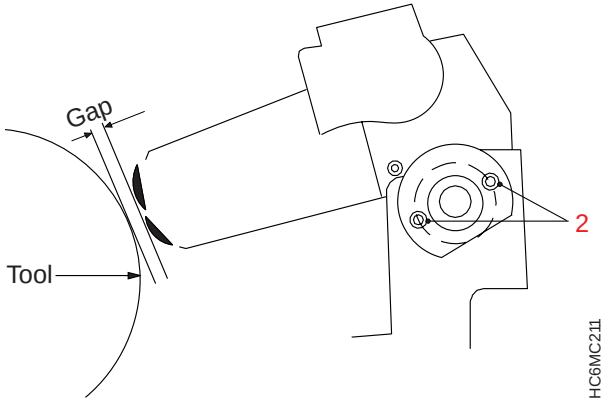


10. Loosen the two rear screws **(2)**.
11. Move the drum clearance gauge to the rear of the drum shaft.
12. Place the indicator plunger on the high point of the upper retractor.
13. Verify that the clearance between the upper retractor and the drum clearance gauge matches PC Drum & Developer Clearances/Gaps.

    In addition, the clearances measured at the front and at the rear should be within 0.1 mm (0.004 in.).
14. Slowly turn the eccentric that is located behind the lock collar until the gap between the upper retractor and the PD drum matches PC Drum & Developer Clearances/Gaps.
15. Run Driver Routine 11 to put the retractor in the nonprint position.

(continued on next page)

Table 585. Retractor to PC Drum Gap (continued)

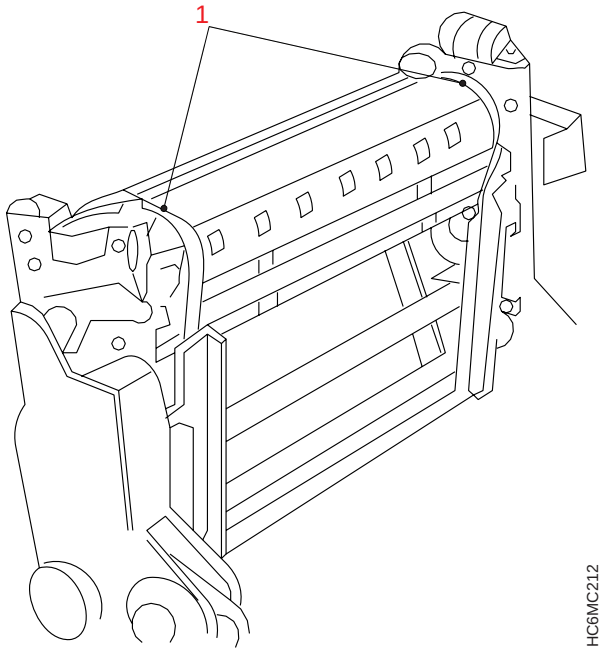


Reassembly

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Install the transfer station front cover.
4. Install the PC drum (PC Drum Removal).
5. Continue at Path Modifier Assembly and do the remaining adjustment in order.

Path Modifier Assembly

Table 586. Path Modifier Assembly



(continued on next page)

Special Tools Required:

- Gram gauge
- Forms tension gauge

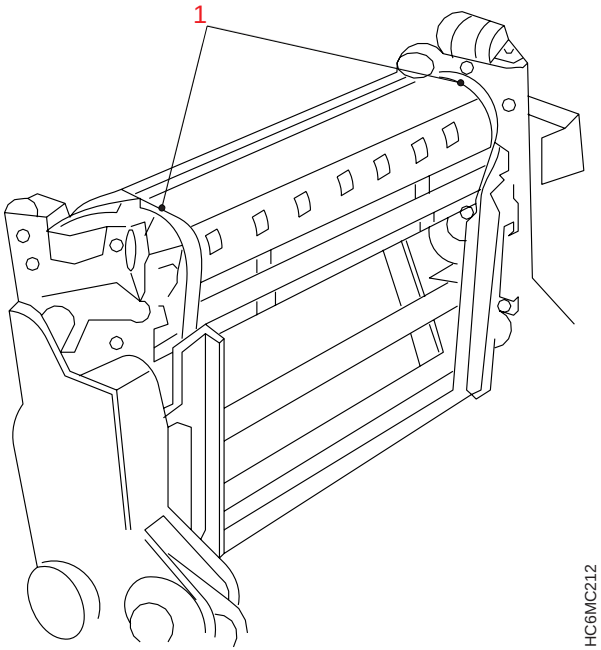
Check

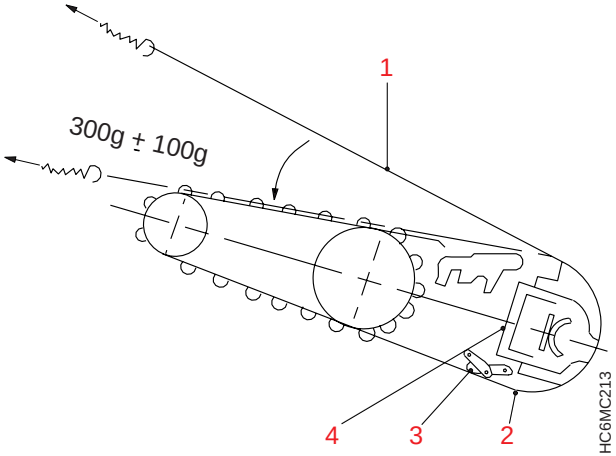
Attention: Do not bend or fold the forms tension gauge.

Do not allow the retractors to remain in the print position. The retractor motor will overheat.

1. Power on the printer.
2. Move the rear tractor to the widest forms width setting.
3. Open the transfer station.
4. Open the front tractor doors and place the forms tension gauge **(1)** onto the pins on the lower side of the front tractor and over the retractors.
5. Close the lower front tractor doors.
6. Close the transfer station.
7. Run Driver Routine 11 to put the retractor in the print position.
8. Attach the gram gauge to the last hole of the forms tension gauge at the upper side of the front tractor.

Table 586. Path Modifier Assembly (continued)





9. Begin to pull the gram gauge.

   While you apply 300 ±100 gm (10.6.8 ±3.5 oz) of tension, the holes in the forms tension gauge should become centered over the tractor pins

   You can lift the forms tension gauge off and on the tractor pins at this tensions without touching the pins.
10. Run Driver Routine 11 to put the retractor in the nonprint position.
11. Repeat this procedure for the rear tractor.

Adjustment

1. Loosen the two screws **(3)**.
2. Estimate the amount of travel that is required to achieve the alignment of the pins and the holes.

   Move the path modifier **(2)** in or out.
3. Tighten the two screws **(3)**.
4. Run Driver Routine 11 to put the retractors in the print position.
5. Check the alignment of the pins and the holes.
6. Continue to run Run Driver Routine 11 while you check the path modifier until you can lift the forms tension gauge with 300 grams of pressure without contacting the tractor pins.

Chapter 6. Parts Catalog

Printers Covered 1937
How to Use this Parts Catalog 1938
Mechanism Locators 1939
Catalog 1945
Assembly 1: Printer Covers 1946
Assembly 2: No Assembly 02 for this Printer 1952
Assembly 3: Service Access Covers 1954
Assembly 4: Process Hardware. 1958
Assembly 5: Process Hardware. 1960
Assembly 6: Corona and Erase Lamp Hardware 1964
Assembly 7: Cleaner Hardware 1966
Assembly 8: Charge Corona Hardware 1972
Assembly 9: Photoconductor Drum Hardware 1974
Assembly 10: No Assembly 10 for this Printer 1978
Assembly 11: Input Hardware. 1980
Assembly 12: Input Hardware. 1984
Assembly 13: Developer Hardware 1990
Assembly 14: Developer Hardware 1998
Assembly 15: Developer Hardware 2000
Assembly 16: Developer Hardware 2006
Assembly 17: Printhead. 2012
Assembly 18: No Assembly 18 for this Printer 2020
Assembly 19: No Assembly 19 for this Printer 2022
Assembly 20: No Assembly 20 for this Printer 2024
Assembly 21: Transfer Station 2026
Assembly 22: Transfer Station 2032
Assembly 23: Air System 2040
Assembly 24: Fuser Hardware 2046

© Copyright IBM Corp. 1999, 2000

Assembly 25: Preheat Platen, Back-up Roll Hardware 2052
Assembly 26: Oiler Hardware 2058
Assembly 27: Fuser Hardware - Hot Roll 2062
Assembly 28: Fuser Hardware - Tension Arm 2066
Assembly 29: Fuser Hardware - Scuff Roll 2070
Assembly 30: Fuser Hardware - Oil Pump & Fans 2072
Assembly 31: Fuser Hardware - Motors, Sensors & Fans 2074
Assembly 32: No Assembly 32 for this Printer 2082
Assembly 33: No Assembly 33 for this Printer 2084
Assembly 34: Stacker - Covers & Blower 2086
Assembly 35: Stacker - Sensors & Finger Belts 2090
Assembly 36: Stacker Table 2104
Assembly 37: Pendulum 2110
Assembly 38: Logic Cards 2114
Assembly 39: No Assembly 39 for this Printer 2120
Assembly 40: AC/DC Power Supply 400V 2122
Assembly 41: AC/DC Power Supply 200V 2124
Assembly 42: Control Unit Covers 2126
Assembly 43: Control Unit Covers and Display/Touch Screen 2128
Assembly 44: Control Unit Cards 2130
Assembly 45: Control Unit AC, DC Power Supply and Fans 2138
Assembly 46: Control Unit Power Control Asm, Attention Lamp 2140
Assembly 47: Control Unit, Controller, Type 7025 Model F50 2144
Assembly 48: Control Unit, Controller, Type 7043 Model 43P-140 2150
Assembly 49: Control Unit Cables 2156
Assembly 50: Buffer/Flipper (Duplex Printer) 2178
Assembly 51: Flipper for Urge Unit (H-Configuration) 2180
Assembly 52: Urge Units (Duplex Printer) 2182
Assembly 53: Kits and Their Quantities 2188

Printers Covered

This Parts Catalog covers the following:

- **Infoprint 3000 (Model - ES1) - Simplex Printing System**

  Identified in parts lists as :
  - "ES1"

- **Infoprint 3000 (Models - ED1/ED2) - Duplex Printing System**

  Identified in parts lists as:
  - "ED1/ED2"

- Duplex Printing Systems are identified in the parts lists as either :

  - "Duplex Printing System"
  - "Duplex Printer 1 and/or Duplex Printer 2"

How to Use this Parts Catalog

REF This entry in the Units column may or may not denote an assembly that is completely assembled on a preceding page. If the assembly does not appear on the preceding page, then all parts listed under that assembly listing must be ordered to make up that assembly. Quantities for such items are found in its next higher assembly.

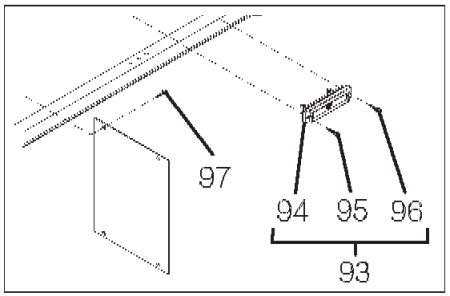
NP Non-Procurable in the Units column indicates that you cannot order this part and that the individual parts or the next higher assembly should be ordered.

NR Not Recommended in the Units column indicates that the part is procurable but not recommended for field replacement, and that the next higher assembly should be ordered.

AR As Required in the Units column indicates that the units per assembly are not the same for all machines.

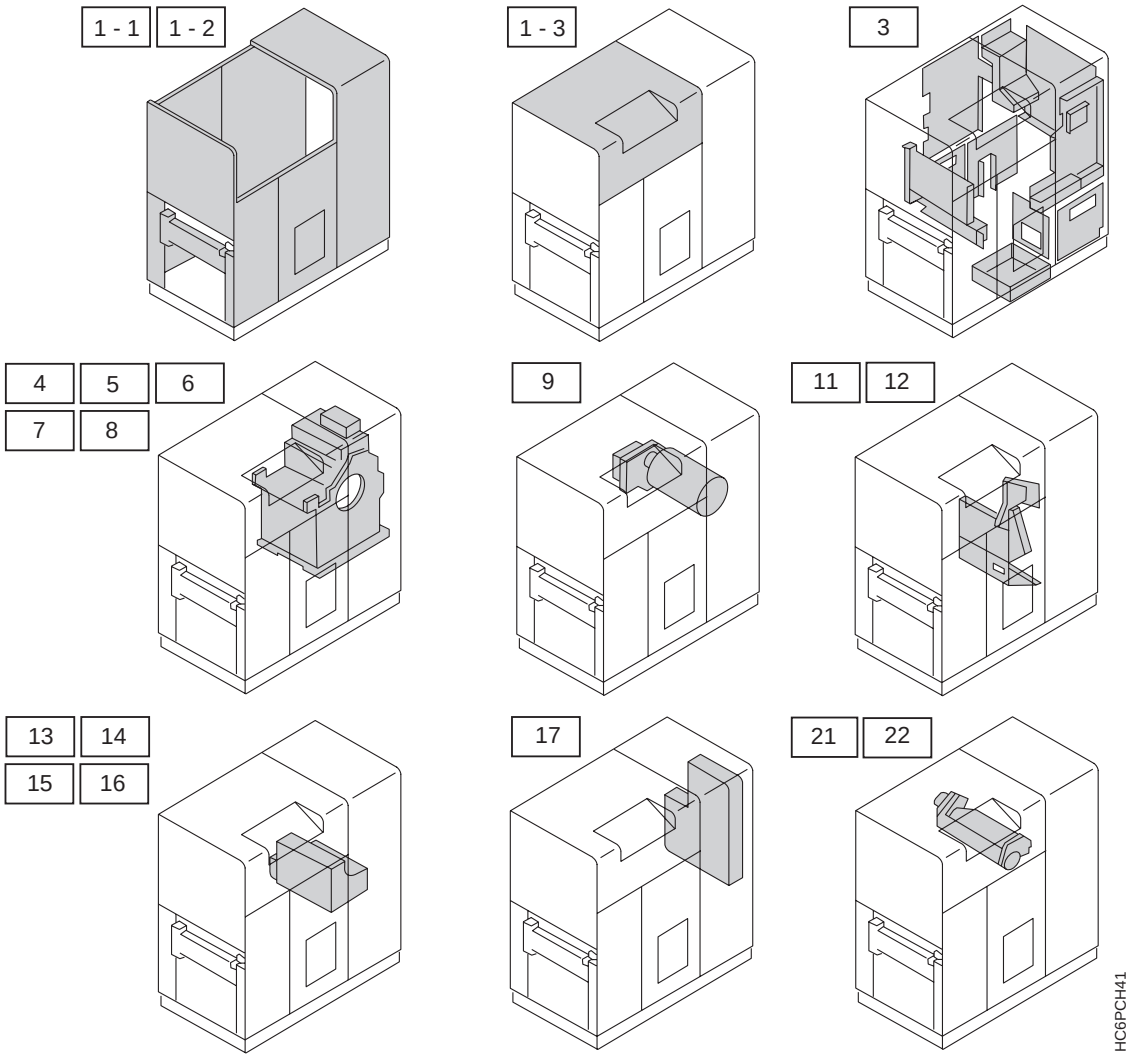
PP This entry in the description column indicates that the parts packet contains one or more of these parts.

Number (93) with bracket indicates assembly number.

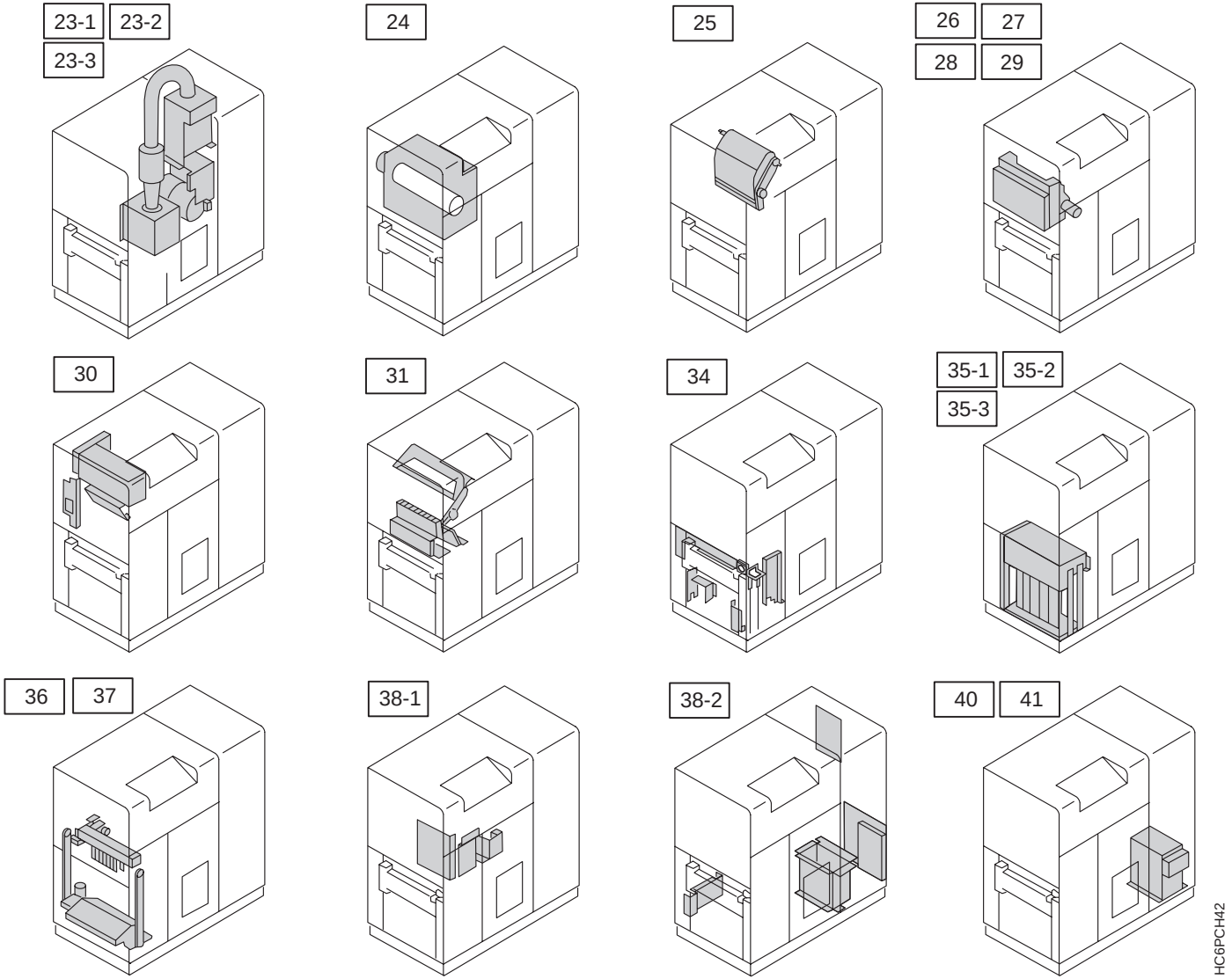


A10PC010

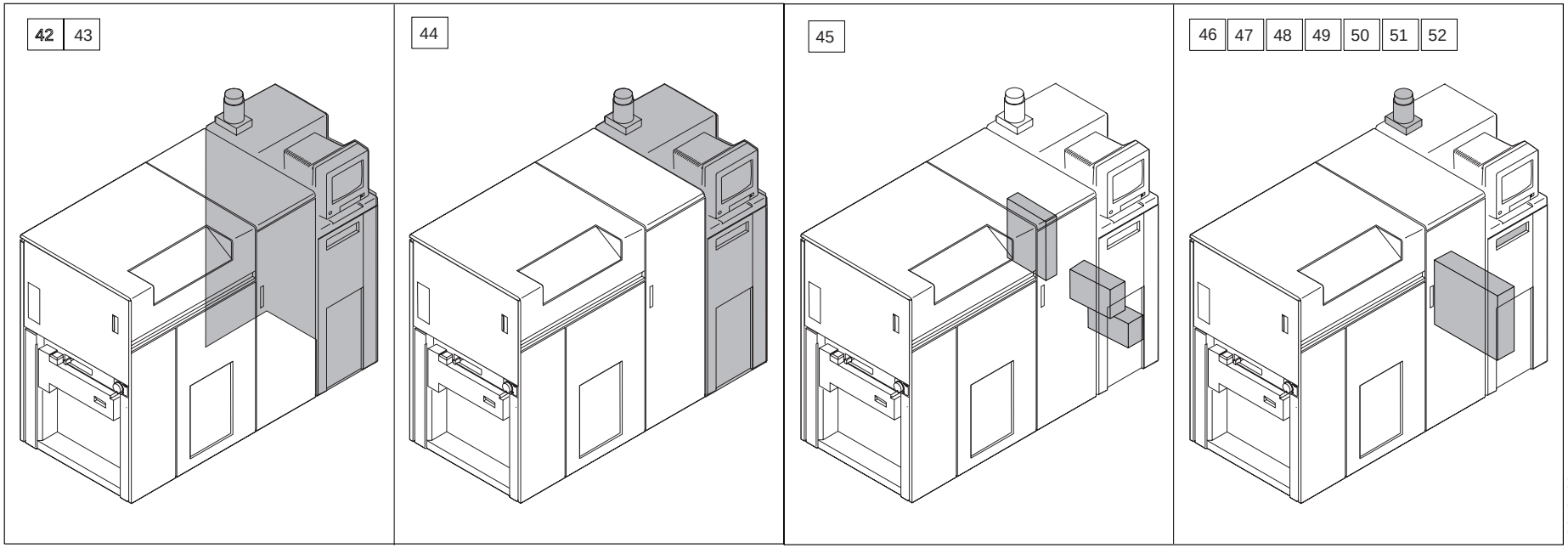
Mechanism Locators



Locator Number	Assembly Name	See Page...
1	Printer Covers	1946
3	Service Access Covers	1954
4	Process Hardware	1958
5	Process Hardware	1960
6	Preclean Corona and Erase Lamp Hardware	1964
7	Cleaner Hardware	1966
8	Charge Corona	1972
9	Photoconductor Drum Hardware	1974
11	Input Hardware	1980
12	Input Hardware	1984
13	Developer	1990
14	Developer	1998
15	Developer	2000
16	Developer	2006
17	Printhead	2012
21	Transfer Station	2026
22	Transfer Station	2032


23-1
23-2
23-3
24
25
26
27
28
29
30
31
34
35-1
35-2
35-3
36
37
38-1
38-2
40
41
HC6PCH42

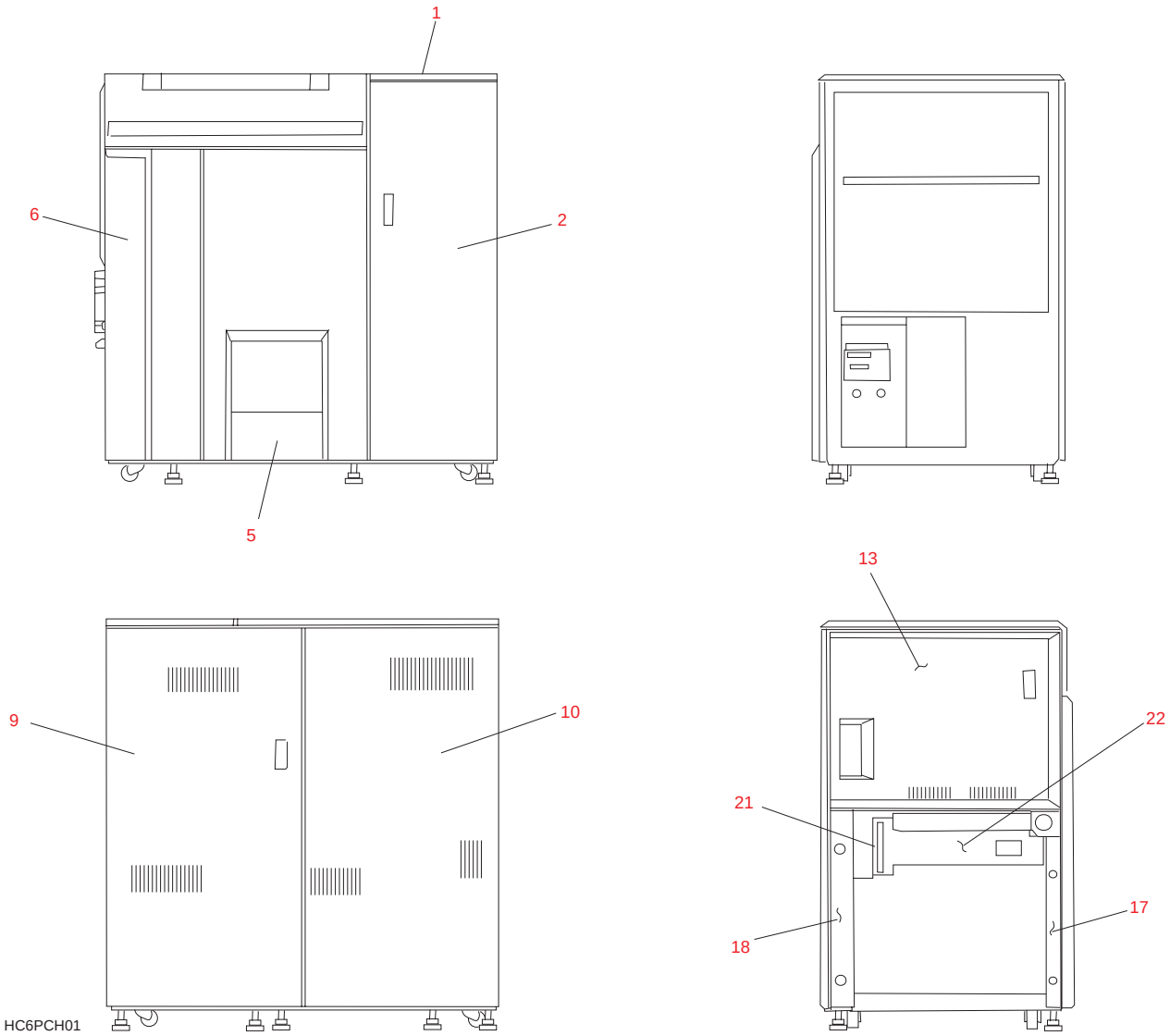
Locator Number	Assembly Name	See Page...
23	Air System	2040
24	Fuser Hardware	2046
25	Preheat Platen & Backup Roll Hardware	2052
26	Oiler Hardware	2058
27	Fuser Hardware - Hot Roll	2062
28	Fuser Hardware - Tension Arm	2066
29	Fuser Hardware - Scuff Roll	2070
30	Fuser Hardware - Oil Pump & Fans	2072
31	Fuser Hardware - Motor, Sensors & Fans	2074
34	Stacker - Covers & Blower	2086
35	Stacker - Sensors & Finger Belts	2090
36	Stacker Table	2104
37	Pendulum	2110
38	Logic Cards	2114
40	AC Power Supply, 400V	2122
41	AC Power Supply, 200V	2124


42
43
44
45
46
47
48
49
50
51
52
HC6PCH66

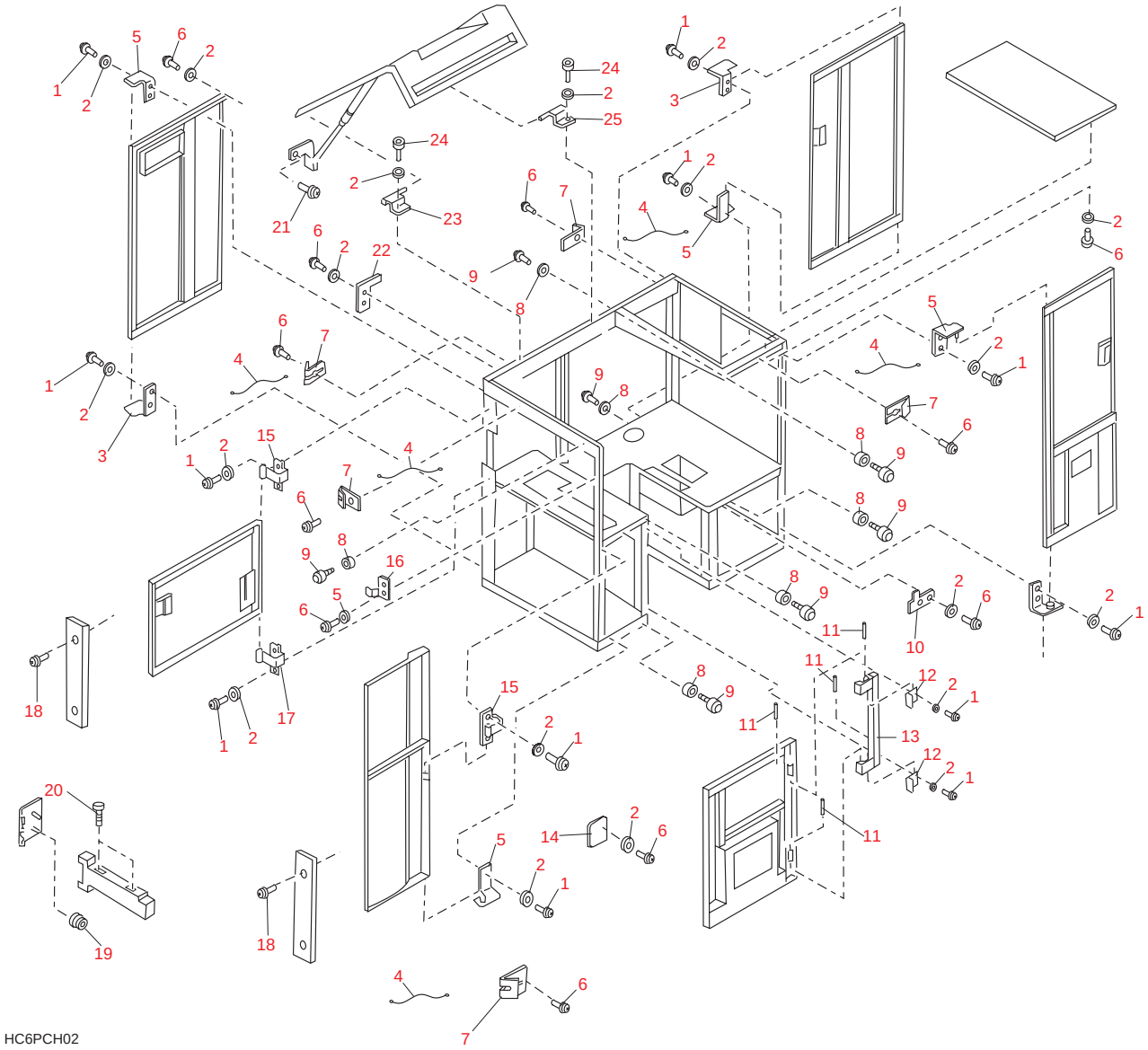
Locator Number	Assembly Name	See Page...
42	Control Unit Covers	2126
43	Control Unit Covers and Display/Touch Screen	2128
44	Control Unit Cards	2130
45	Control Unit AC, DC Power Supply and MIC Card	2138
46	Control Unit Power Control Asm, Attention Lamp	2140
47	Control Unit Controller, Type 7025 Model F50	2144
48	Control Unit Controller, Type 7043 Model 43P-140	2150
49	Control Unit Cables	2156
50	Buffer Flipper (Duplex Printer)	2178
51	Flipper for Urge Unit (H-Configuration)	2180
52	Urge Units (Duplex Printer)	2182
53	Kits and Their Quantities	2188
54	Installation Kits	2209

Catalog

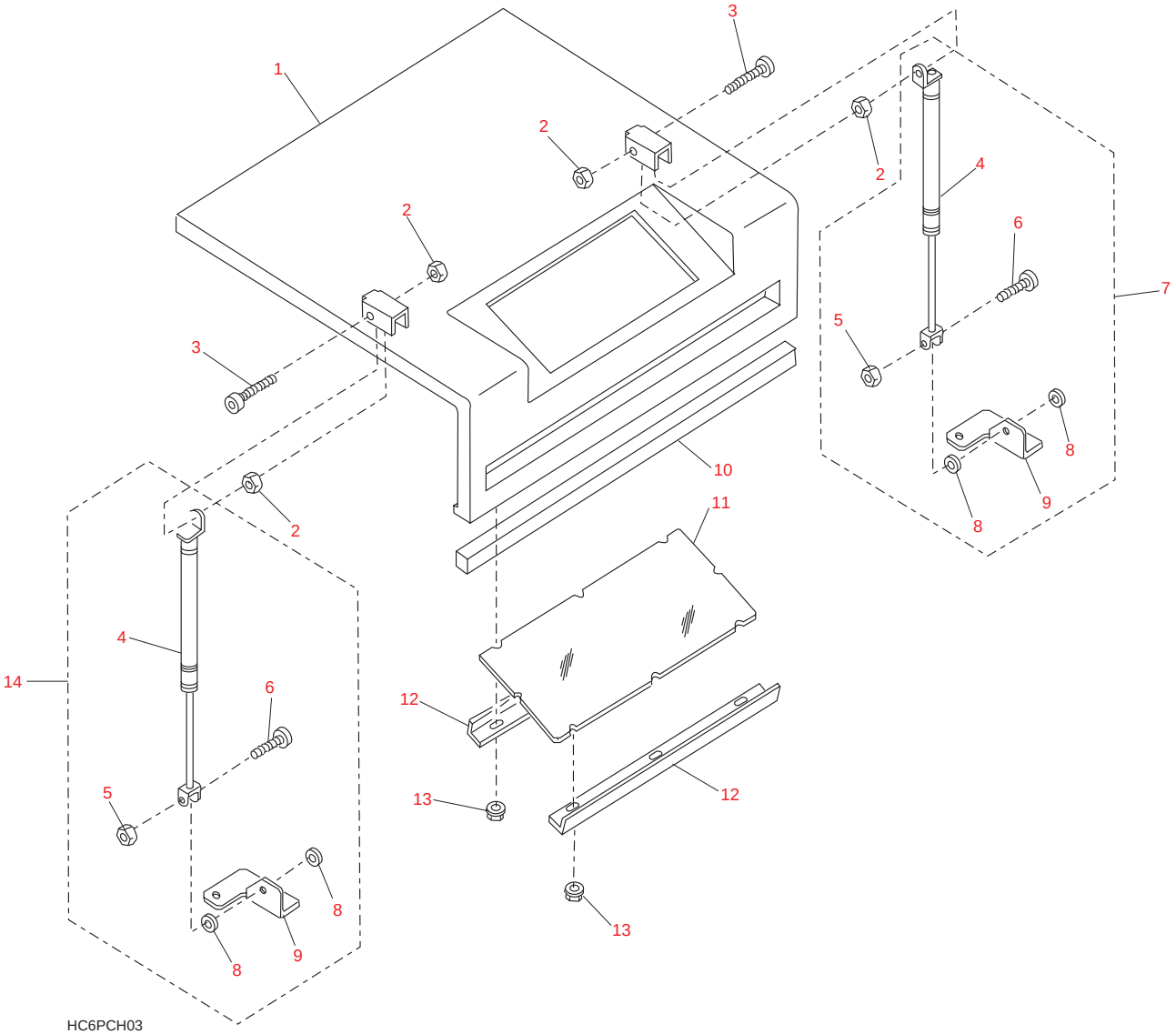
Assembly 1: Printer Covers



Asm–Index	Part Number	Units	Description
1–			Printer Covers (Sheet 1 of 3)
–1	38L0822	1	Cover Asm, Printer Right Top
–2	11L6054	1	Cover Asm, Printer Right Front
–5	11L6055	1	Cover Asm, Printer Center Front
–6	11L6056	1	Cover Asm, Printer Left Front
–9	38L0823	1	Cover Asm, Printer Left Rear
–10	38L0824	1	Cover Asm, Printer Right Rear
–13	38L0825	1	Cover Asm, Stacker End
–17	38L0826	1	Cover Asm, Stacker Right Side Lock
–18	38L0827	1	Cover Asm, Stacker Left Side Lock
–21	38L0828	1	Cover Asm, Stacker Gate Side
–22	38L0829	1	Cover, Stacker Gate


HC6PCH02

Asm–Index	Part Number	Units	Description
1–			Printer Covers (Sheet 2 of 3)
–1	06F0401	24	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 16 PP
–2	06F0417	38	Washer, Press PP
–3		NP-3	Hinge, Cover Asm
–4	11L6057	5	Wire, Cover Stop
–5		NP-4	Hinge, Cover Asm
–6	06F0401	20	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–7	11L6058	5	Hook, Cover Stop Wire
–8	06F0407	7	Nut, M5
–9		NP	Bolt, Rubber Cap
–10		NP-1	Catch, Rear Cover
–11		NP-4	Pin, Hinge
–12		NP-2	Base, Front Cover
–13		NP-1	Base, Link Guide Asm
–15		NP-2	Hinge, Cover Asm
–17		NP-2	Hinge, Cover Asm
–18		NP-4	Screw, Bind Hd M4 X 12
–19	06F0407	2	Nut, M4 Flange PP
–20		NP-3	Screw, Bind Hd M4 X 8
–21	06F0415	4	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 16 PP
–23		NP-1	Hinge, Top Cover Asm Left Side
–24	06F0415	4	Bolt, Hexagon Socket Hd with Star Wshr M5 X 16 PP
–25		NP-1	Hinge, Top Cover Asm Right Side
–	89H9677	1	Logo, IBM Cover (Not shown)
–	89H9768	4	Ring, Push-On (for IBM logo) (Not shown)

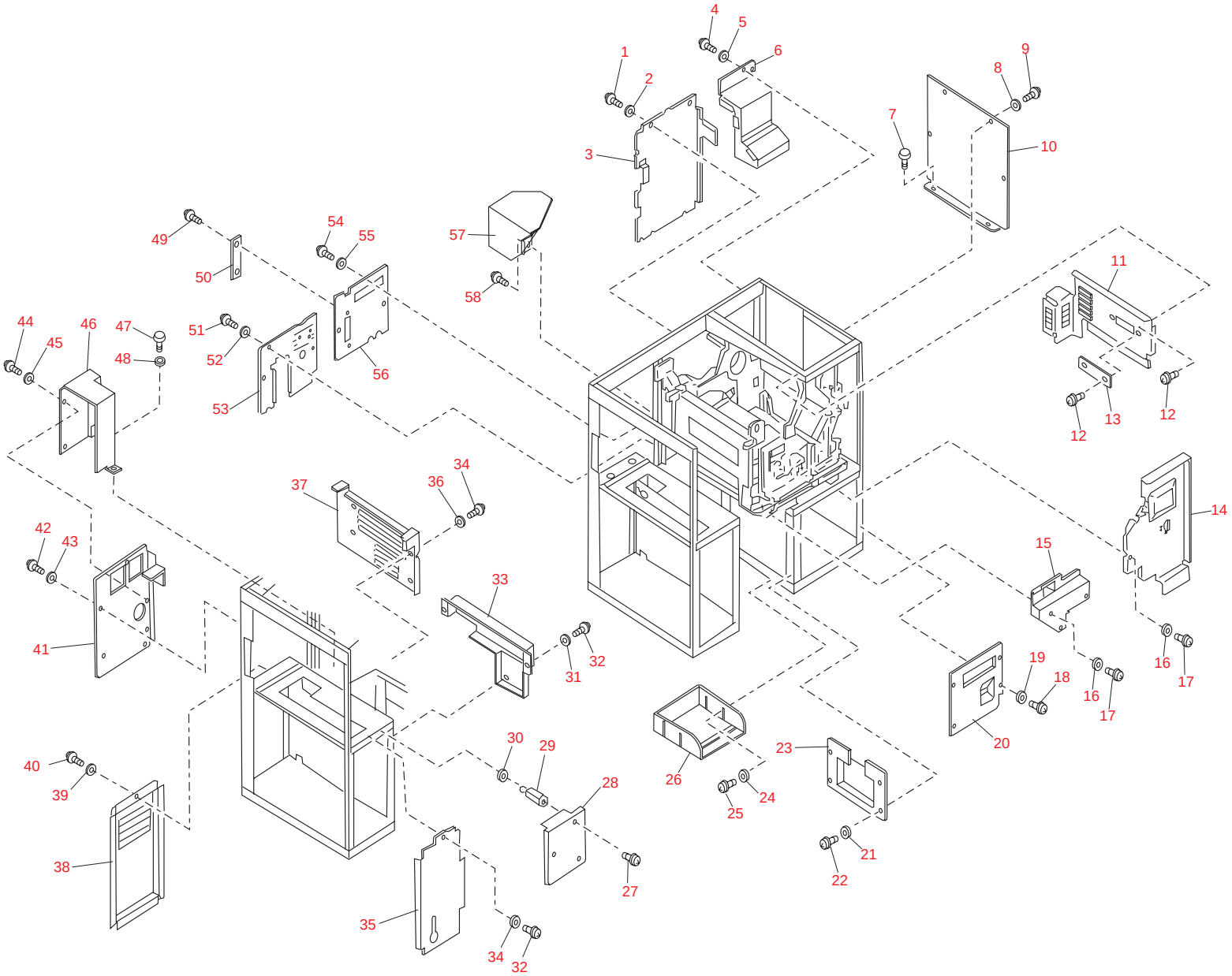

1
2
3
4
5
6
7
8
9
10
11
12
13
14
HC6PCH03

Asm–Index	Part Number	Units	Description
1–			Printer Covers (Sheet 3 of 3)
–1		NP-1	Cover, Printer Left Top
–2	06F0407	4	Nut, Lock M8 PP
–3		NP-2	Bolt, Hexagon Socket Hd M8 X 50
–4	63H6494	2	Spring, Gas
–5	06F0407	2	Nut, Lock M6 PP
–6		NP-2	Bolt, Hexagon Socket Hd M6 X 35
–7		NP-1	Balancer Asm, Left Top Cover Right
–8	06F0406	4	Washer, Special PP
–9		NP	
–10		NP	
–11		NP-1	Window, Top Cover
–12		NP	
–13	06F0407	6	Nut, Flange M4 PP
–14		NP-1	Balancer Asm, Left Top Cover Left

Assembly 2: No Assembly 02 for this Printer

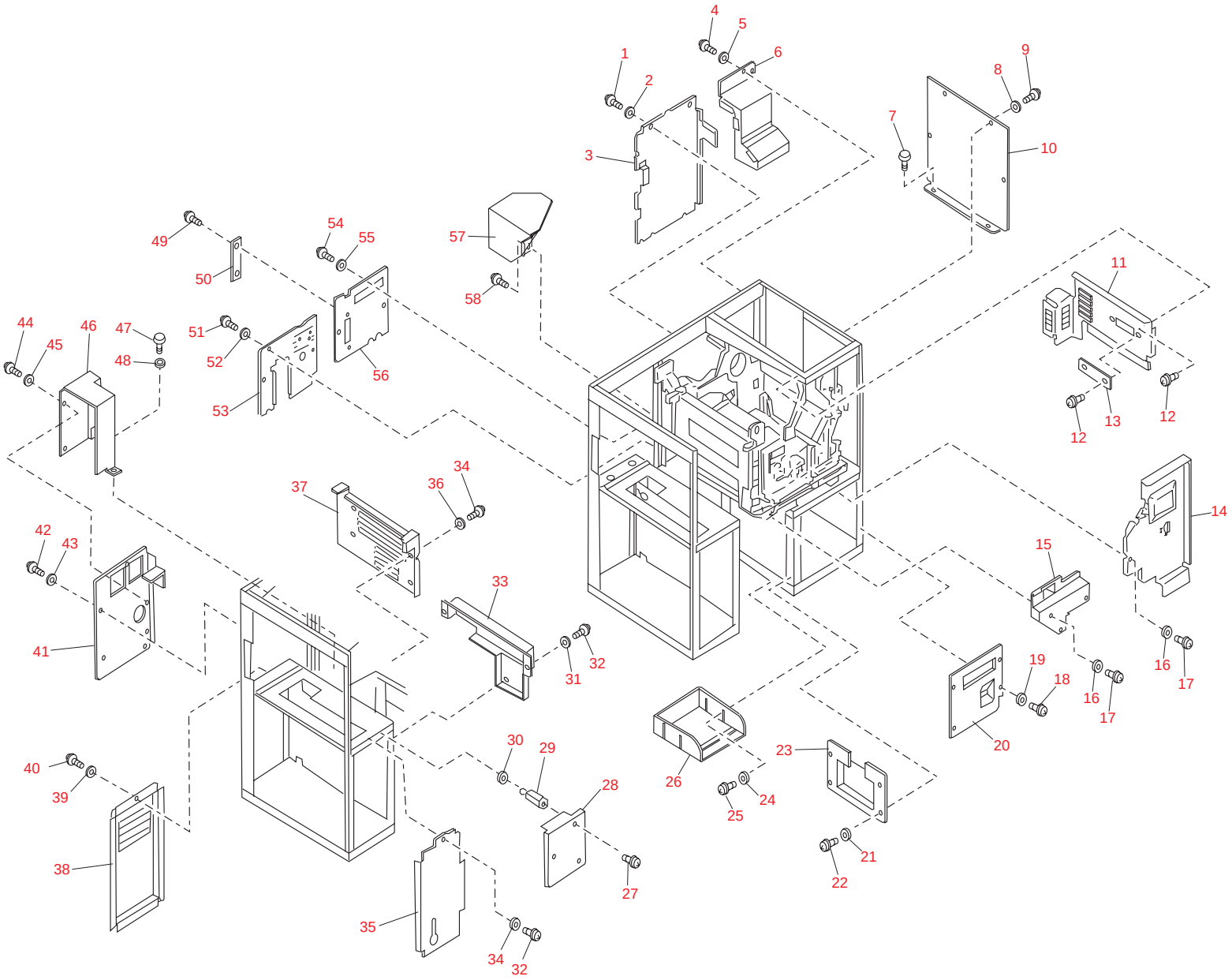
Asm–Index	Part Number	Units	Description
2–			Not Used

Assembly 3: Service Access Covers



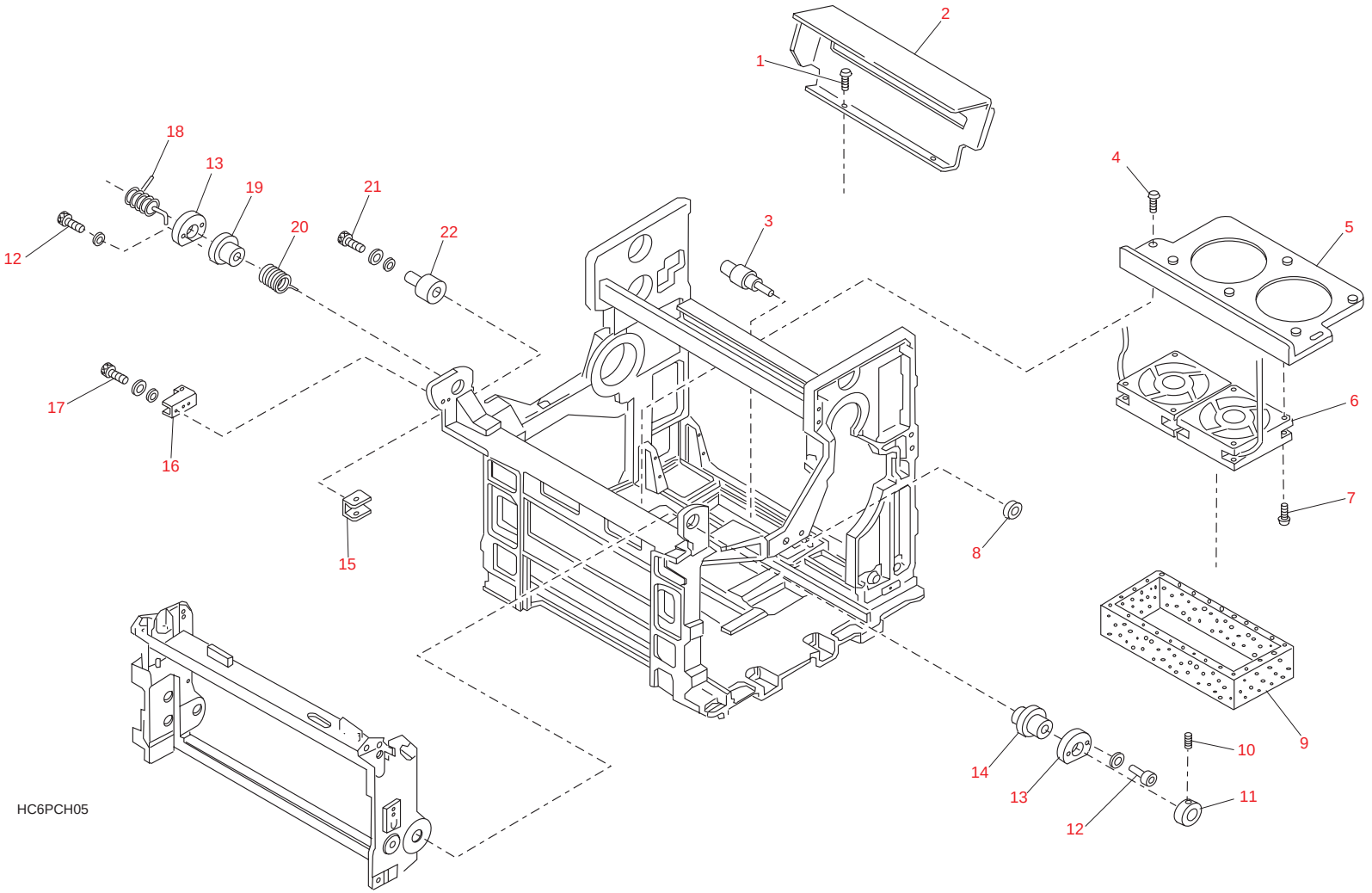
HC6PCH04

Asm–Index	Part Number	Units	Description
3–			Service Access Covers (Sheet 1 of 2)
–1	06F0401	5	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–2	06F0417	3	Washer, Press PP
–3		NP-1	Cover, Rear Process
–4	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–5	06F0417	2	Washer, Press PP
–6		NP-1	Cover, PR011
–7	06F0403	2	Bolt, Hexagon Socket Hd M5 X 10 PP
–8	06F0417	4	Washer, Press PP
–9	06F0420	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–10		NP-1	Cover, Service Right End
–11		NP-1	Cover, Erase Lamp
–12	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–14		NP-1	Cover, Drum
–15		NP-1	Cover, Developer
–16	06F0417	5	Washer, Press PP
–17	06F0401	8	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–18	06F0401	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–19	06F0417	4	Washer, Press PP
–20		NP-1	Cover, AC Power Supply
–21	06F0417	4	Washer, Press PP
–22	06F0401	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–23		NP-1	Cover, Input Bin Right Side
–24	06F0417	4	Washer, Press PP
–25	06F0401	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–26		NP-1	Bin, Input
–27		NP-3	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–28		NP-1	Cover, Fuser Front
–29		NP-3	Screw, Phillips Bind Hd M5 X 12 PP
–30		NP-3	Washer, FP


1
2
3
4
5
6
7
8
9
10
11
12
12
13
14
15
16
16
17
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
32
33
34
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
HC6PCH04

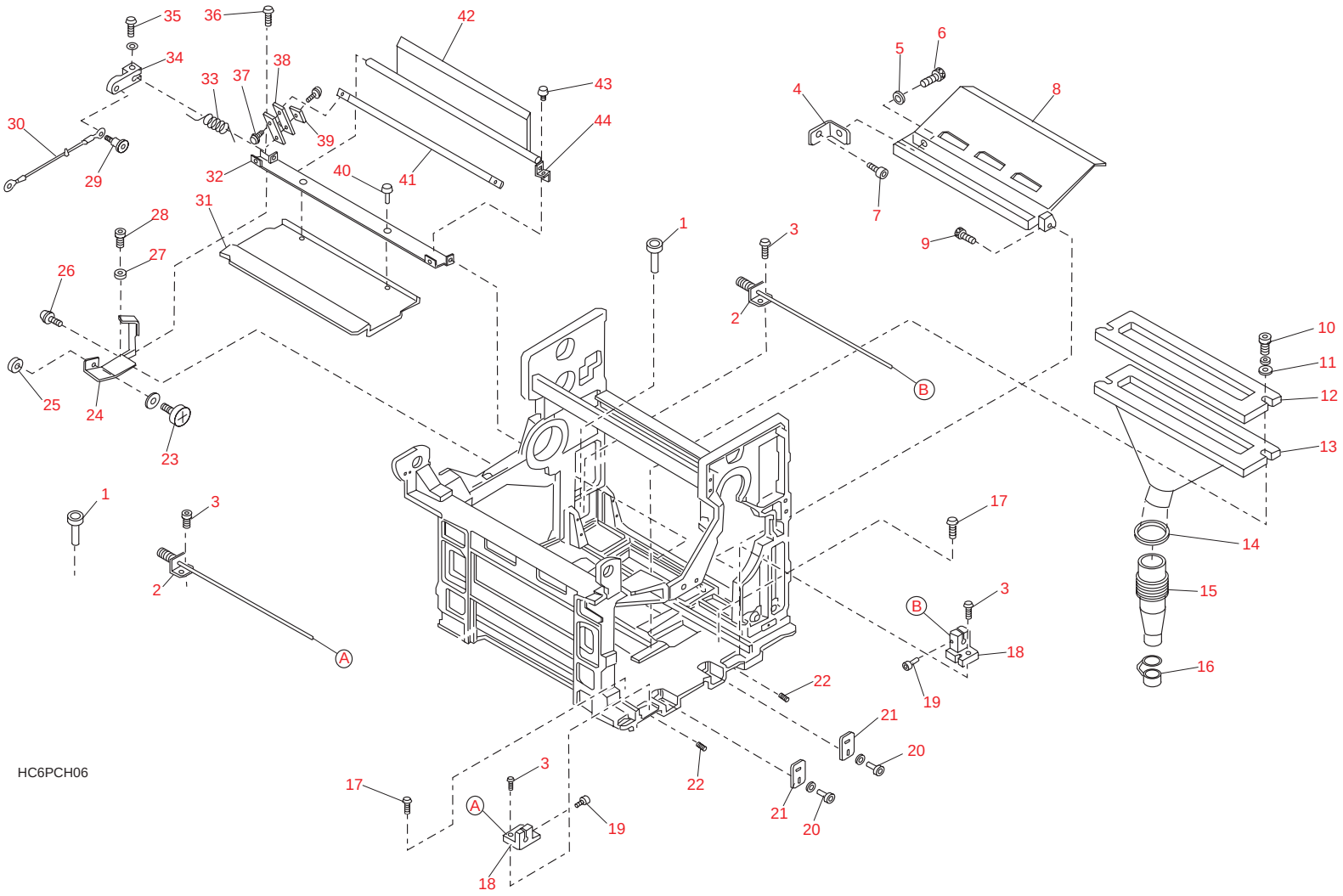
Asm–Index	Part Number	Units	Description
3–			Service Access Covers (Sheet 2 of 2)
–31	06F0417	3	Washer, Press PP
–32	06F0401	5	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–33		NP-1	Cover, Input Bin Left Side
–34	06F0401	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–35		NP	Cover, Stacker Height
–36	06F0417	4	Washer, Press PP
–37		NP-1	Cover
–38		NP-1	Cover, Fuser Lower Rear
–39	06F0417	1	Washer, Press PP
–40	06F0401	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–41		NP-1	Cover, Fuser Top Rear
–42	06F0401	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–43	06F0417	4	Washer, Press
–44		NP-2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–45	06F0405	2	Washer PP
–46		NP-1	Cover, Oil Tank
–47	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–48	06F0417	1	Washer, Press PP
–49	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–51	06F0401	7	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–52	06F0417	4	Washer, Press PP
–53		NP-1	Cover, Blower
–54	06F0401	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–55	06F0417	3	Washer, Press PP
–56		NP-1	Cover, Logic Card
–57		NP-1	Cover
–58	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP

Assembly 4: Process Hardware

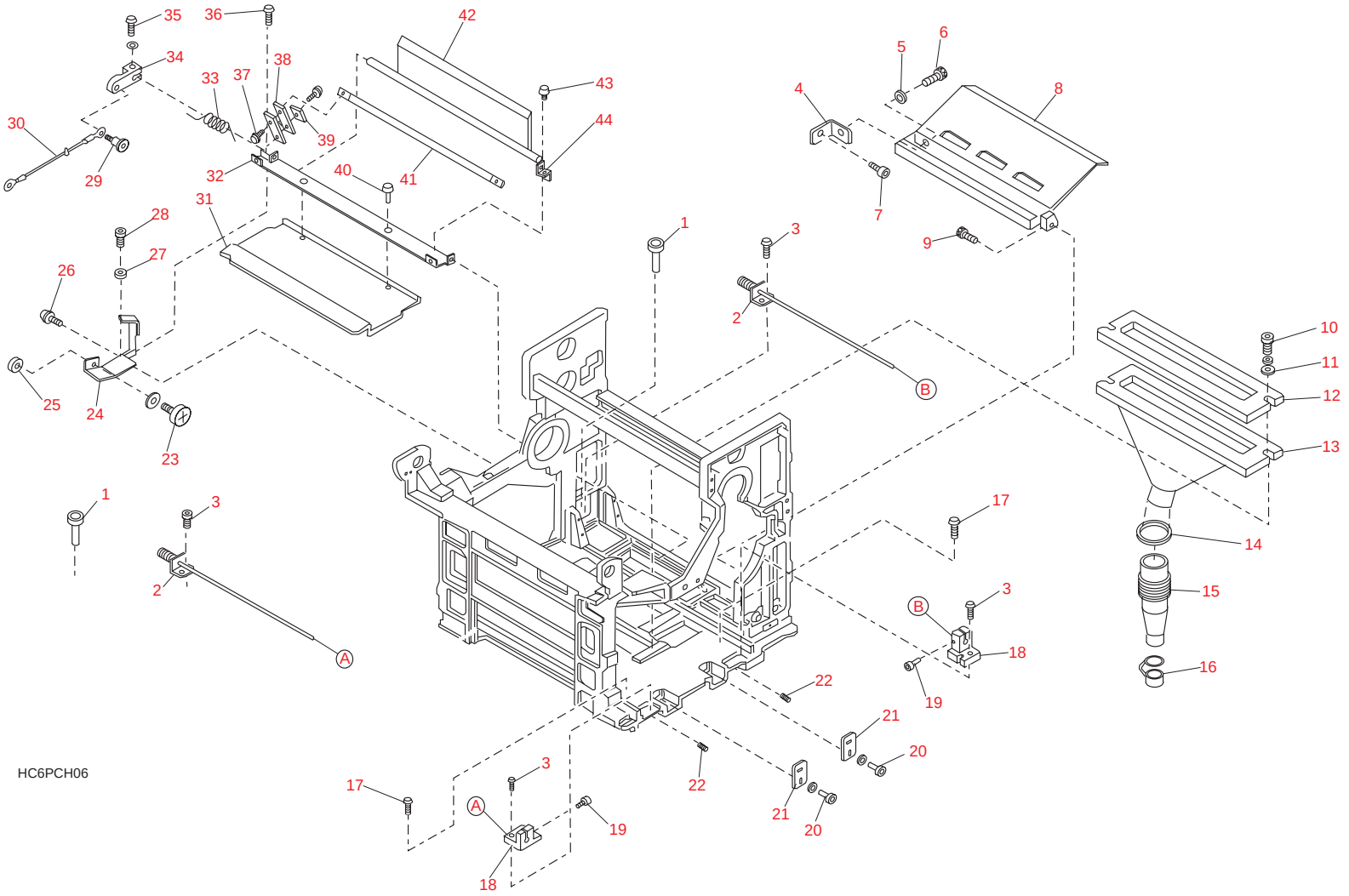


Asm–Index	Part Number	Units	Description
4–		NP	Process Hardware (Sheet 1 of 1)
–1	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–2		NP-1	Guide, Air
–3		NP-1	Stop, Transfer Station
–4	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–5		NP-1	Holder, Fan
–6	63H6561	2	Fan, Lower Front & Rear Developer Coooling (B102 & B103)
–7	06F0413	4	Screw, Bind Hd M4 X 45 PP
–8	06F0407	1	Nut, Lock M8 PP
–9		1	Seal, Air Duct
–10	06F0404	2	Screw, Hexagon Socket Hd Set M5 X 8 PP
–11		NP-1	Stop, Hinge Pin
–12	06F0403	4	Bolt, Hexagon Socket Hd M5 X 20 PP
–13		NP-2	Ring
–14		NP-1	Support, Transfer Front
–15		NP-1	
–16		NP-1	
–17	06F0403	2	Bolt, Hexagon Socket Hd M5 X 25 PP
–18		1	Spring, Transfer Station
–19		NP-1	Support, Transfer Rear
–20		1	Spring, Transfer Station
–21	06F0403	1	Bolt, Hexagon Socket Hd M5 X 38 PP
–22		NP-1	Shaft, Stop

Assembly 5: Process Hardware

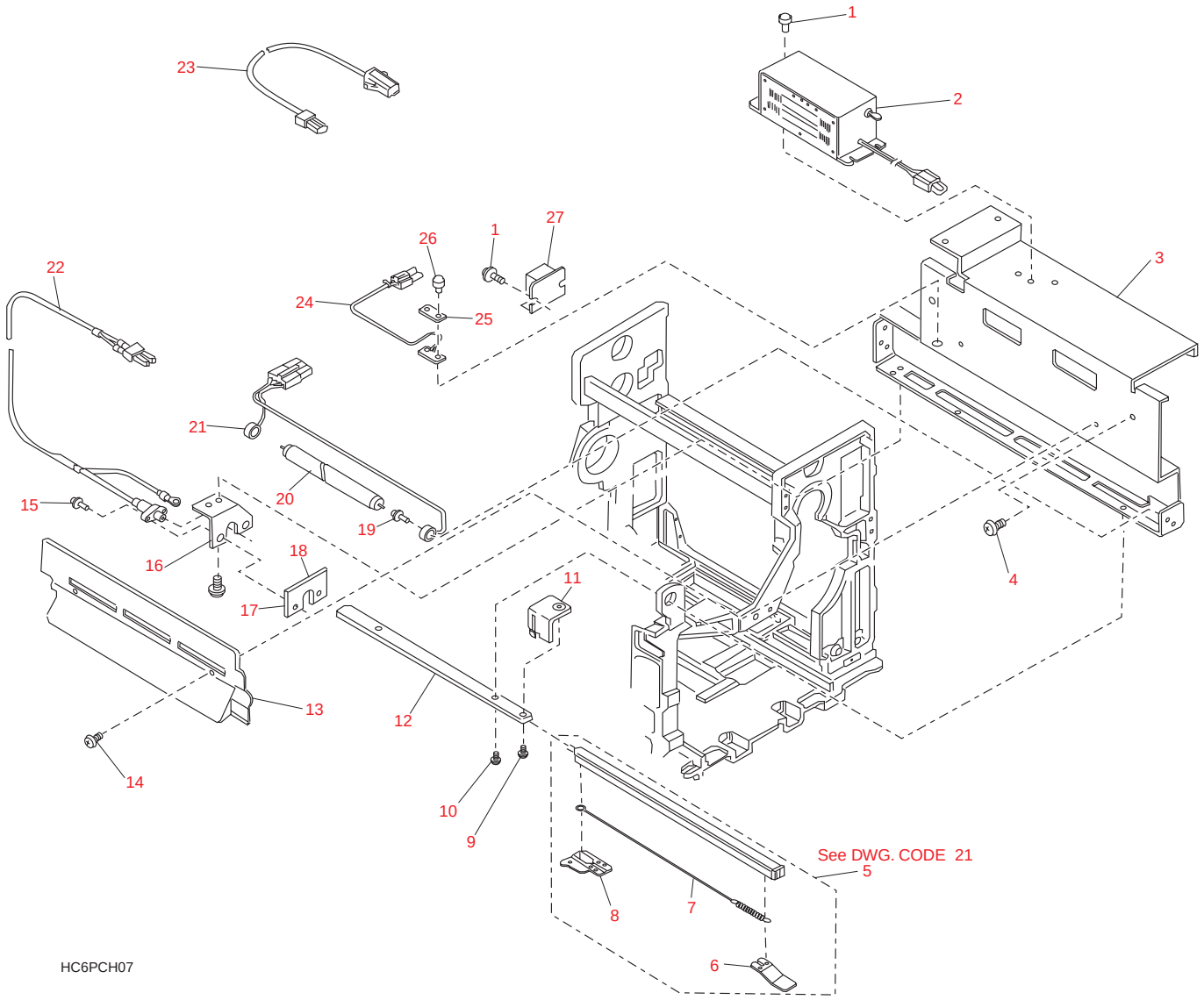


Asm–Index	Part Number	Units	Description
5–			Process Hardware (Sheet 1 of 2)
–1		NP-2	Screw, Developer Rear Adjustment
–2		NP-1	
–3	06F0411	8	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–5	06F0405	1	Washer PP
–6	06F0415	1	Bolt, Hexagon Socket Hd with Star Wshr M4 X 12 PP
–7	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–8		NP-1	Cover
–9	06F0415	1	Bolt, Hexagon Socket Hd with Star Wshr M5 X 12 PP
–10	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 16 pp
–11	06F0417	2	Washer Press PP
–12		1	Seal, Duct
–13		NP-1	
–14		NP-1	
–15		1	Hose, Developer Mix Drain
–16		NP-1	Cap, Developer Mix Drain
–17		NP-2	Screw, Developer Front Adjustment
–18		NP-2	Holder, Adjustment Shaft
–19	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr M4 X 20 PP
–20	06F0415	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 16 PP
–21		NP-2	Plate, Developer Front
–22		NP-2	Screw, Nylon Tip
–23	06F0212	1	Bearing
–24		NP-1	Stop, Light Shield
–25	06F0407	1	Nut, M6 PP
–26	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–27	06F0407	1	Nut, Lock M5 PP
–28	06F0415	1	Bolt, M5 X 16 PP
–29	30H6700	1	Screw, Shoulder


HC6PCH06
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
A
B

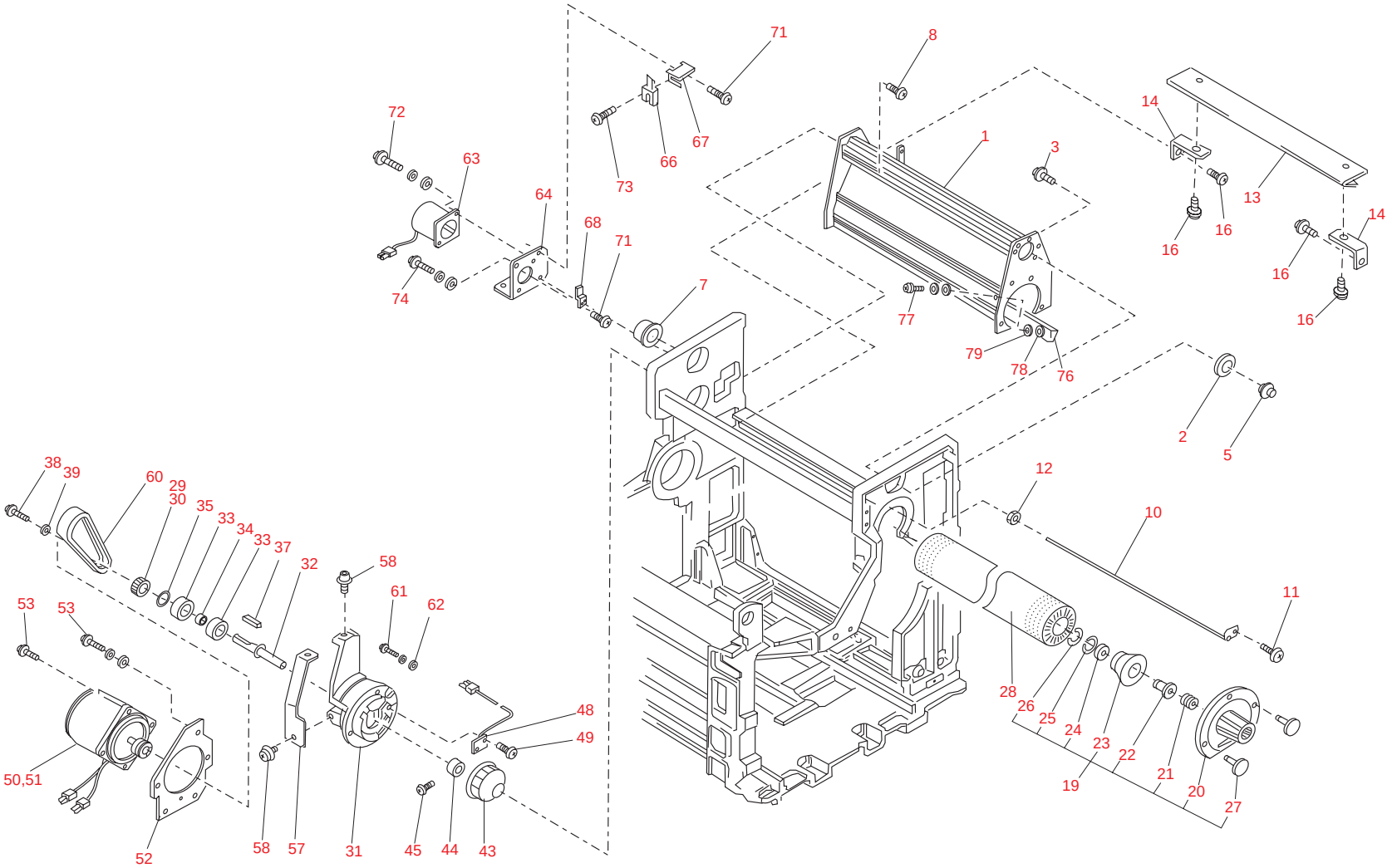
Asm–Index	Part Number	Units	Description
5–			Process Hardware (Sheet 2 of 2)
–30	06F0035	1	Wire Rope Asm
–31		NP-1	
–32		NP-1	
–33		1	Spring, Pre-measure
–34		NP-1	Lever
–35	06F0403	1	Bolt, Hexagon Socket Hd M5 X 20 PP
–36	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 25 PP
–38		NP-4	Plate, Spring
–39	06F0417	2	Washer, Clamp PP
–40	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–41		NP-1	
–42		NP-1	Shield, Light
–43	06F0411	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–44		NP-1	

Assembly 6: Corona and Erase Lamp Hardware



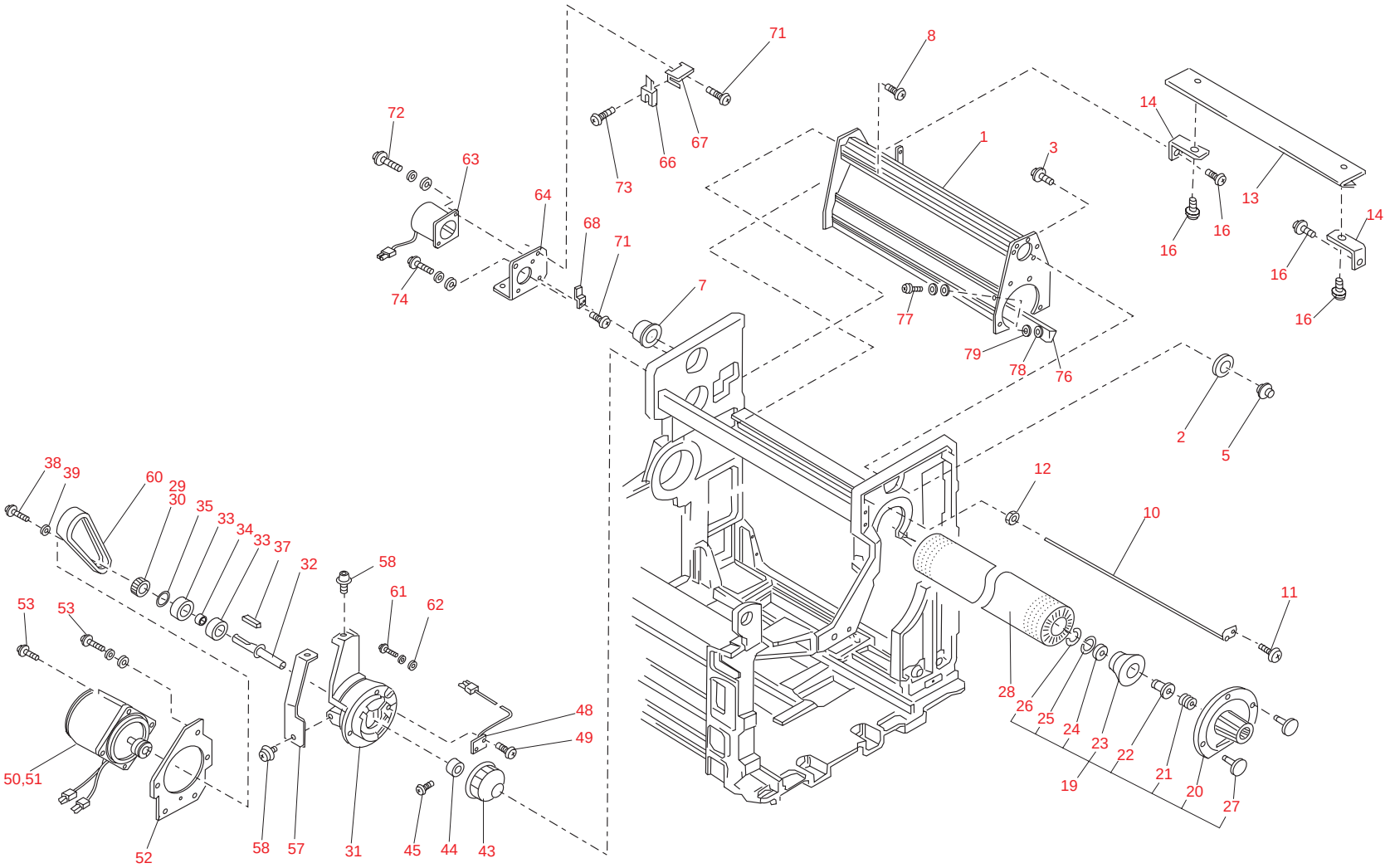
Asm–Index	Part Number	Units	Description
6–			Preclean Corona and Erase Lamp Hardware (Sheet 1 of 1)
–1	06F0411	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–2	45G1856	1	Power Supply, High Voltage
–3		NP-1	
–4	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–5	57G6505	1	Corona, Preclean Asm
–5	30H6765	1	Kit, Corona Rebuild
–6		NP-1	Cover
–7	30H6586	1	Wire, Corona
–8		NP-1	Cover
–9	06F0412	1	Screw, Flat Hd M4 X 8 PP
–10	06F0412	2	Screw, Flat Hd M4 X 6 PP
–11	06F1050	1	Brush, AC
–12		NP-1	
–13		NP-1	Cover, Erase Lamp
–14	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–15	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 16 PP
–16		NP-1	Holder, Connector
–17	06F0411	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–18		NP-1	Holder, Connector
–19	06F0402	2	Screw, Phillips Pan Hd M3 X 10 PP
–20	57G6508	1	Lamp, Erase (PL101)
–21		NP-1	Cable, Erase Lamp
–22	06F0045	1	Cable, High Voltage (Preclean)
–23	06F0090	1	Cable, High Voltage (Bias)
–24	24H9845	1	Sensor, Erase Lamp (S115)
–25		NP-1	Holder, Sensor
–26	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–27	57G6698	1	Starter, Erase Lamp (ST101)

Assembly 7: Cleaner Hardware



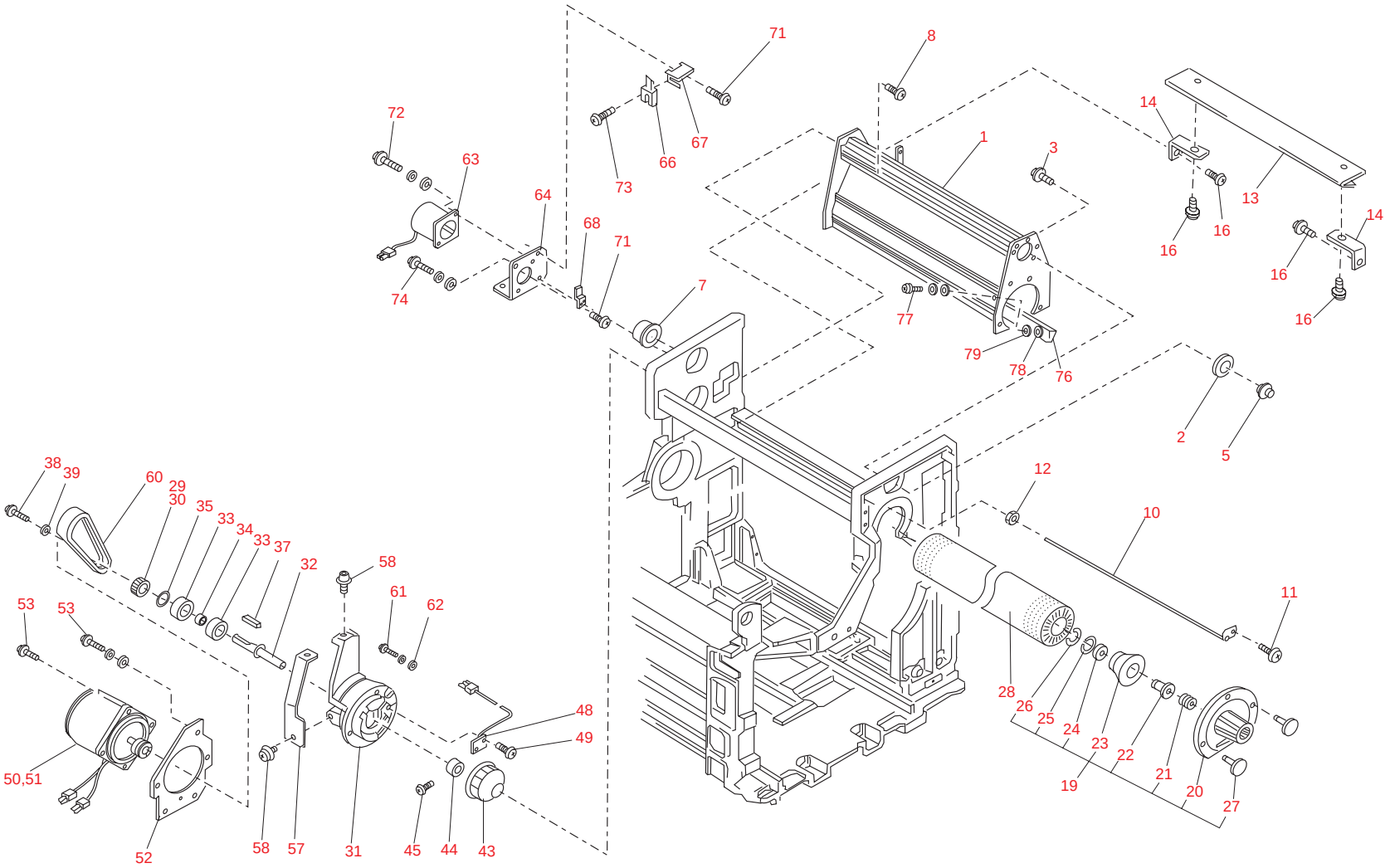
HC6PCH08

Asm–Index	Part Number	Units	Description
7–			Cleaner Hardware (Sheet 1 of 3)
–1		NP-1	Housing, Cleaner
–2	06F0483	1	Duct, Front Flange
–3	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr M5 X 12 PP
–5	06F0291	1	Cap, Air Duct
–7	06F0482	1	Duct, Rear Flange
–8	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr M5 X 12 PP
–10		NP-1	Shaft, Cleaner Brush Knock Off
–11	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–12	06F0407	1	Nut, Flange M3 PP
–13		NP-1	Skirt, Cleaner
–14		NP-1	
–16	06F0401	6	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–19	06F0289	1	Cap Asm, Cleaner Front
–20		NP-1	Cap, Front
–21	06F0288	1	Spring, Front Hub
–22		NP-1	
–23	06F0049	1	Cone, Driven Asm
–24		NP-1	Spacer
–25	06F0409	1	Ring, Retaining PP
–26	06F0409	1	Ring, Retaining PP
–27	06F1015	2	Bolt
–28	57G6462	1	Brush, Cleaner
–29	04H0780	1	Pulley, Cleaner Brush Driven 50Hz
–30	06F0285	1	Pulley, Cleaner Brush Driven 60 Hz


71
8
72
63
64
66
67
73
1
3
14
13
16
68
71
74
7
77
79
78
76
2
5
12
10
11
38
39
60
29
30
35
33
34
33
37
32
58
61
62
53
53
48
49
50,51
52
58
57
31
45
44
43
28
26
25
24
23
22
21
19
20
27

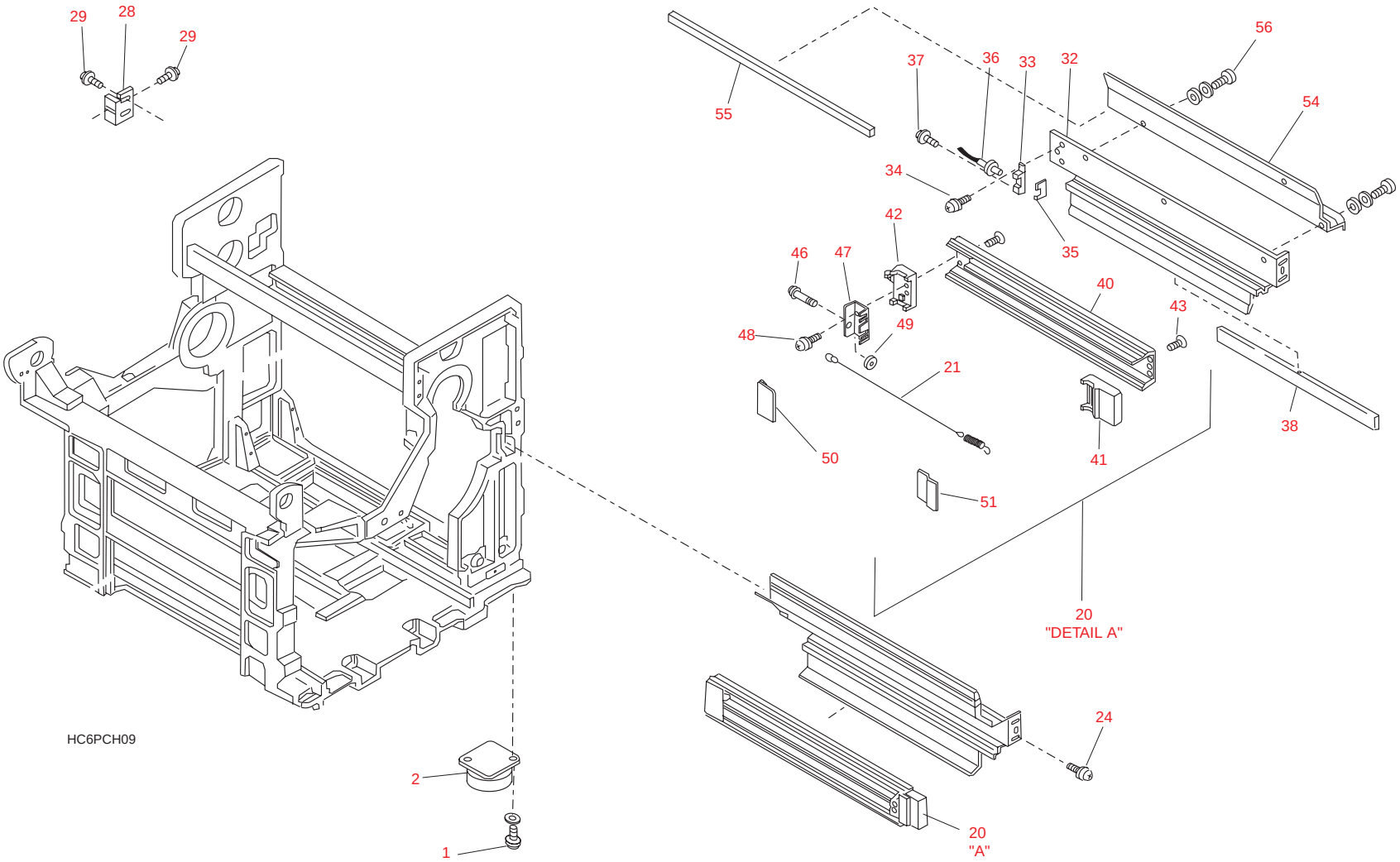
HC6PCH08

Asm–Index	Part Number	Units	Description
7–			Cleaner Hardware (Sheet 2 of 3)
–31		NP-1	Base, Cleaner Brush Motor Asm
–32	06F0488	1	Shaft, Cleaner Brush Drive
–33	06F0054	2	Bearing, Cleaner Rear Ball
–34		NP-1	Spacer
–35	06F0409	1	Ring, Retaining PP
–37	06F0408	1	Key 3 X 3 X 12 PP
–38	06F0415	1	Bolt, Hexagon Socket Hd with Star Wshr M5 X 16 PP
–39		1	Washer
–43	06F0383	1	Cone, Drive Asm
–44	06F0292	1	Ring, Tight
–45	06F0403	1	Bolt, Hexagon Socket Hd with Star Wshr M4 X 16 PP
–48	57G4448	1	Sensor, Cleaner Brush Rotation Asm (S104)
–49	06F0411	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–50	06F0051	1	Motor, Cleaner Brush (M108) 50 Hz
–51	06F0052	1	Motor, Cleaner Brush (M108) Asm 60 Hz
–52		NP-1	Plate, Cleaner Brush Motor
–53	06F0401	6	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–57		NP-1	Cover
–58	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–60	06F0053	1	Belt, Cleaner Brush Drive
–61	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 16 PP
–62	06F0417	2	Washer, Press PP
–63	63H6495	1	Motor, Cleaner Housing (M106)
–64		NP-1	Holder, Motor
–66	24L4883	1	Switch, Cleaner Housing (S103)


71
8
72
63
64
66
67
73
1
3
14
13
16
68
71
74
7
77
79
78
76
2
5
38
39
60
29
30
35
33
34
33
37
32
58
61
62
53
53
12
10
11
48
49
50,51
52
58
57
31
45
44
43
28
26
25
24
23
22
21
20
19
27
HC6PCH08

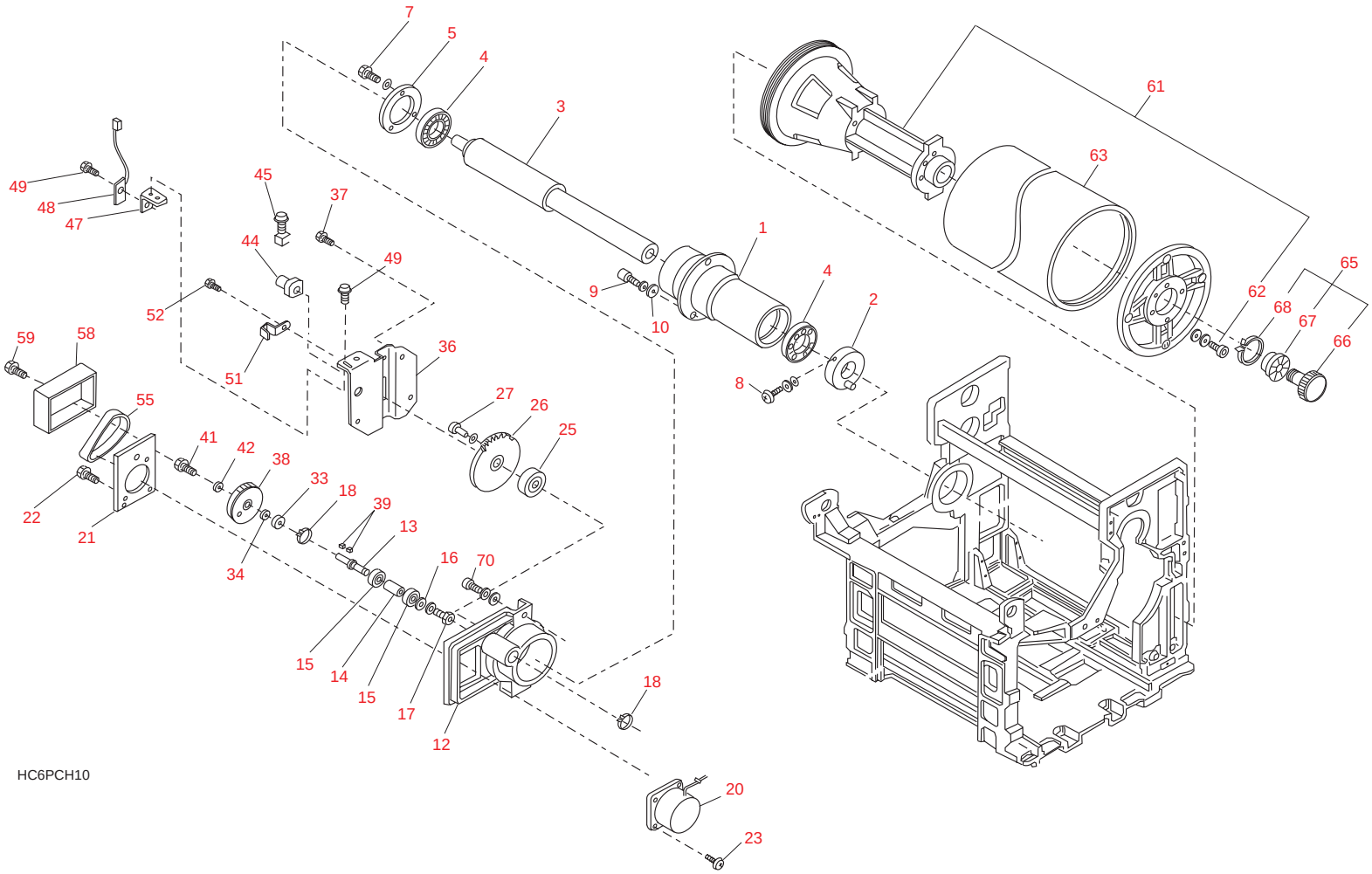
Asm–Index	Part Number	Units	Description
7–			Cleaner Hardware (Sheet 3 of 3)
–67		NP-1	
–68		NP-1	Plate, Sensor
–71	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 10 PP
–72	06F0403	2	Bolt, Hexagon Socket Hd M4 X 12 PP
–73	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 16 PP
–74	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–76		NP-1	
–77		NP-1	Screw
–78	06F0407	2	Nut, M4 PP
–79	06F0405	2	Washer, Bolt D5 PP

Assembly 8: Charge Corona Hardware

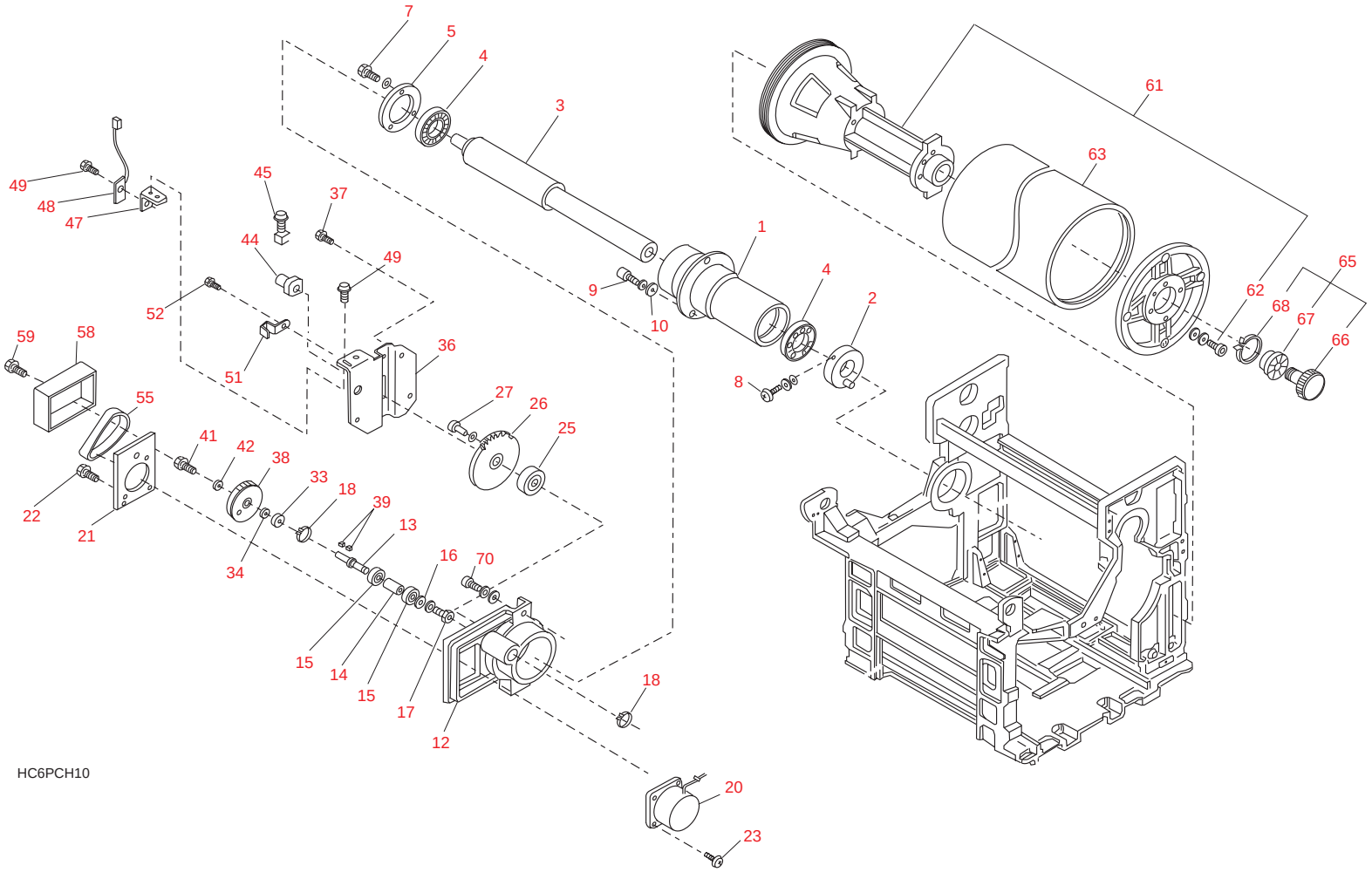


Asm–Index	Part Number	Units	Description
8–			Charge Corona Hardware (Sheet 1 of 1)
–1	06F0414	8	Bolt, Hexagon Socket Hd M6 X 12
–2	06F0507	4	Support, Shock Absorbing
–20	11L5201	1	Corona, Charge Asm
–21	30H6586	4	Wire, Charge Corona
–24	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 16 PP
–28		NP-1	
–29	06F0401	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–32		NP-1	
–33	06F0510	1	Holder, Charge Corona Connector
–34	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–35	06F0509	1	Plate, Connector Hold
–36	06F0043	1	Cable, High Voltage (Charge)
–37	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 10 PP
–38		NP-1	
–40		NP-1	Case, Charge Corona
–41	90H1036	1	Holder, Corona Wire (Front)
–42	90H1037	1	Holder, Corona Wire (Rear)
–43	49G9665	5	Screw, Flat Hd M3 X 5
–46		NP-1	
–47	90H1038	1	Terminal, Charge Corona
–48	06F0404	1	Screw, Bind Hd M3 X 4 (stainless) PP
–49	06F0478	1	Nut, Lock
–50	88F2435	1	Cover, Wire Holder
–51	88F2434	1	Cover, Wire Holder
–54		NP-1	
–55		NP-1	
–56	06F0413	2	Screw, Bind Hd M4 X 6 PP

Assembly 9: Photoconductor Drum Hardware



Asm–Index	Part Number	Units	Description
9–			Photoconductor Drum Hardware (Sheet 1 of 2)
–1		NP-1	
–2	06F0518	Q	Clamp Asm
–4	06F0038	2	Bearing Asm
–3	06F0517	1	Shaft, Drum
–5	06F0516	1	Retainer, Bearing
–7	06F0401	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 16 PP
–8	06F0414	1	Bolt, Hexagon Socket Hd M6 X 20 PP
–9	06F0414	3	Bolt, Hexagon Socket Hd M6 X 25 PP
–10	06F0406	3	Washer, Special PP
–12		NP-1	
–13	06F0299	1	Shaft, Idler
–14	06F0514	1	Spacer, Idler
–15	06F0037	2	Bearing Asm
–16	06F0417	1	Washer, Press PP
–17	06F0415	1	Bolt, Hexagon Socket Hd with Star Wshr M5 X 16 PP
–18		NP-2	
–20	63H6491	1	Motor, Drum (M107)
–21	06F0513	1	Holder, Motor
–22	06F0401	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 16 PP
–23	06F0403	2	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 20 PP
–25	06F0512	1	Spacer, Drum Gear
–26	06F0298	1	Gear, Drum Drive
–27	06F0403	3	Bolt, Hexagon Socket Hd M5 X 35 PP
–33	06F0302	1	Gear, Idler
–34	06F0523	1	Spacer, Idler
–36		NP-1	
–37	06F0401	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP

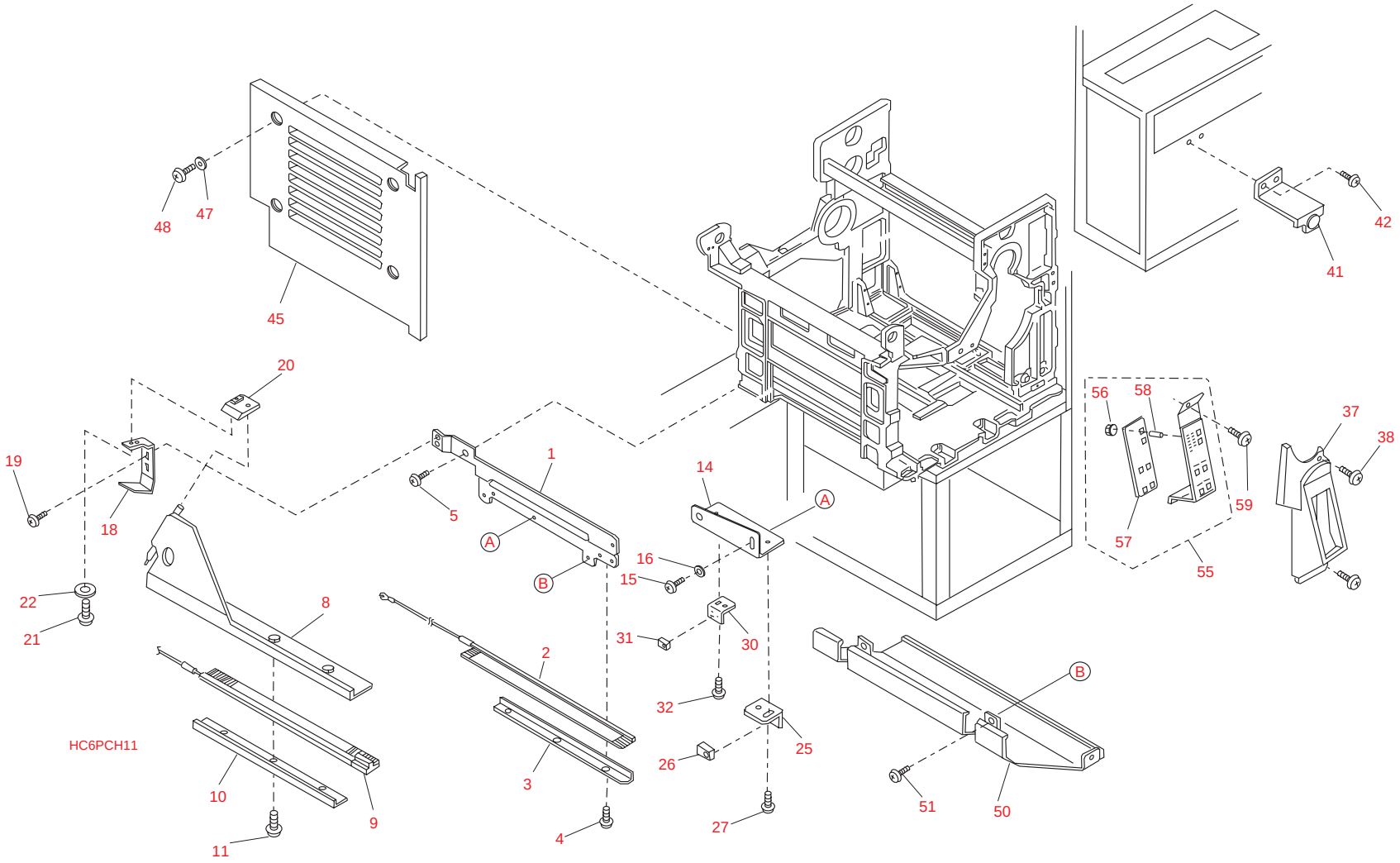

7
5
4
3
61
63
49
48
47
45
37
44
49
52
51
36
1
4
2
9
10
8
62
68
67
66
65
59
58
55
41
42
38
33
18
39
13
16
70
22
21
34
15
14
15
17
12
18
27
26
25
20
23
HC6PCH10

Asm–Index	Part Number	Units	Description
9–			Photoconductor Drum Hardware (Sheet 2 of 2)
–38		NP-1	
–39	06F0408	2	Key 4 X 4 X 10 PP
–41	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–42	06F0417	1	Washer, Press PP
–44	88F2610	1	Shaft, G
–45	06F0081	1	Brush, Carbon
–47		NP-1	
–48	63H6490	1	Sensor, Drum Rotation (S105)
–49	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 6 PP
–51		NP-1	
–52	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–55	06F0072	1	Belt, Timing
–58		NP-1	
–59	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–61	57G6761	1	Hub, Drum Drive
–62	06F0414	4	Bolt, Hexagon Socket Hd M6 X 25 PP
–63	63H6391	1	Drum, Selenium
–65	88F2613	1	Knob, Drum Asm
–66	06F0528	1	Knob, Drum
–67		NP-1	
–68	06F0526	1	Ring, Retaining
–70	06F0414	2	Bolt, Hexagon Socket Hd M6 X 25 PP

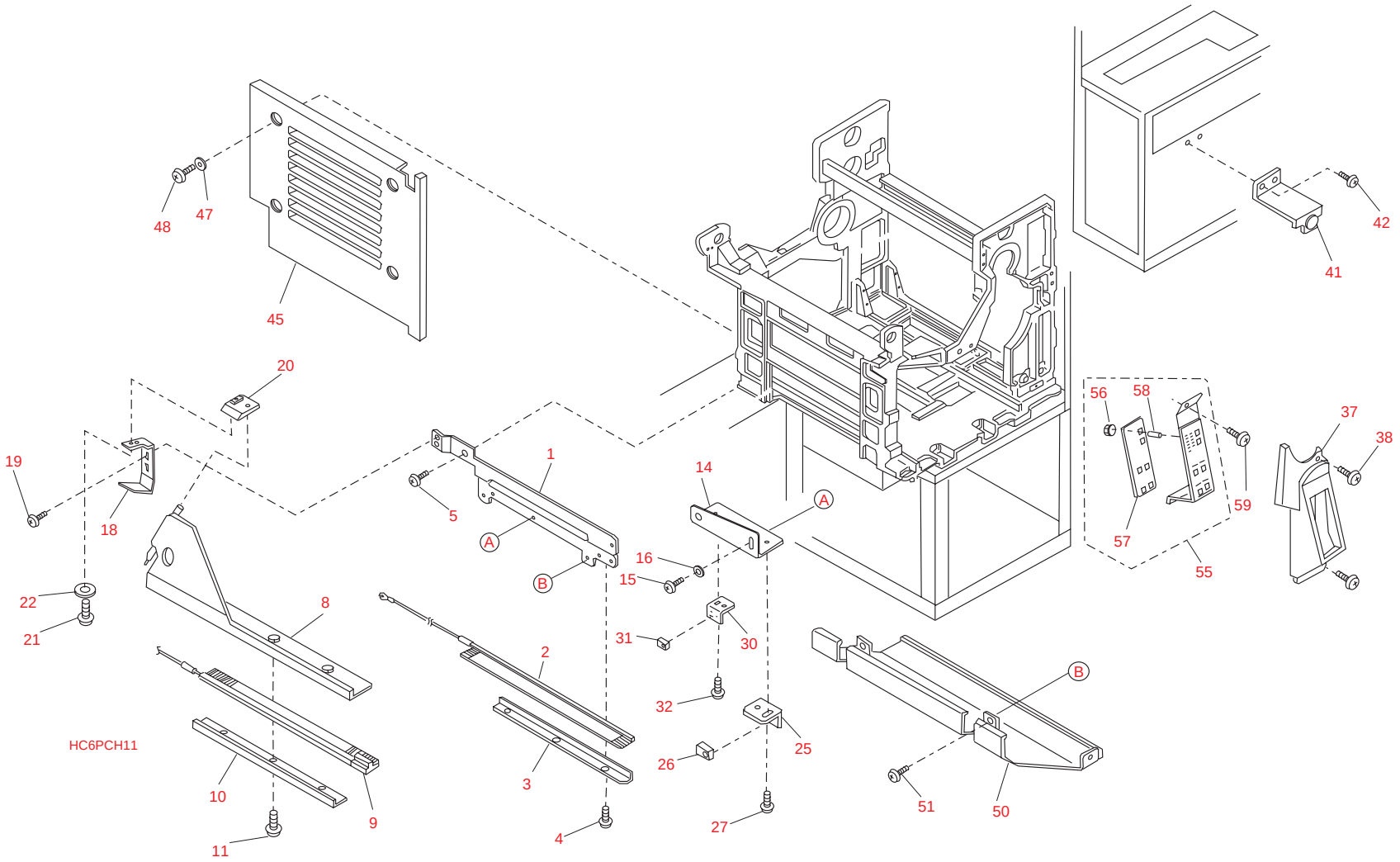
Assembly 10: No Assembly 10 for this Printer

Asm–Index	Part Number	Units	Description
10–			Not Used

Assembly 11: Input Hardware

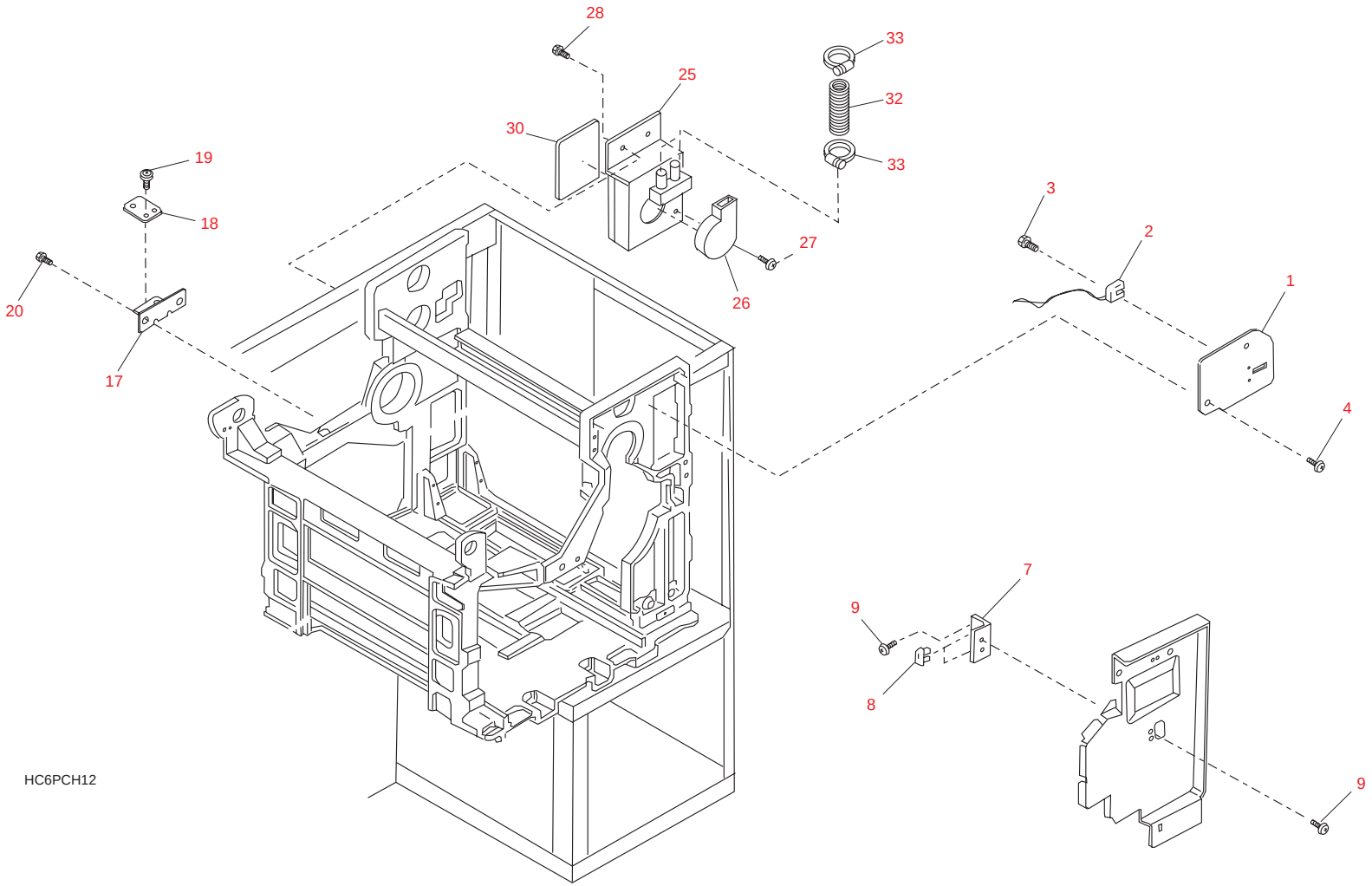


Asm–Index	Part Number	Units	Description
11–			Input Hardware (Sheet 1 of 2)
–1		NP-1	
–5	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–8		NP-1	
–9		1	Brush Asm
–10		NP-1	Plate
–11	06F0401	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 16 PP
–13		NP-1	Plate
–14		NP-1	Bracket
–15	06F0401	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–18		NP-1	Bracket, Hinge
–19	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–20		NP-1	Plate, Adjusting
–21	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 16 PP
–22	06F0417	2	Washer, Press PP
–25		NP-1	
–26	24H9844	1	Lamp, EOF Sensor (D101)
–27	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–30		NP-1	Bracket, EOF Sensor
–31	24H9845	1	Sensor, EOF (S117)
–32	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–34		1	Screw, Phillips Pan Hd Brass M5 X 12 PP
–35	06F0405	2	Washer, Toothed PP
–37		NP-1	Cover, Operator Panel
–38	06F0413	2	Screw, Bind Hd M5 X 10 PP

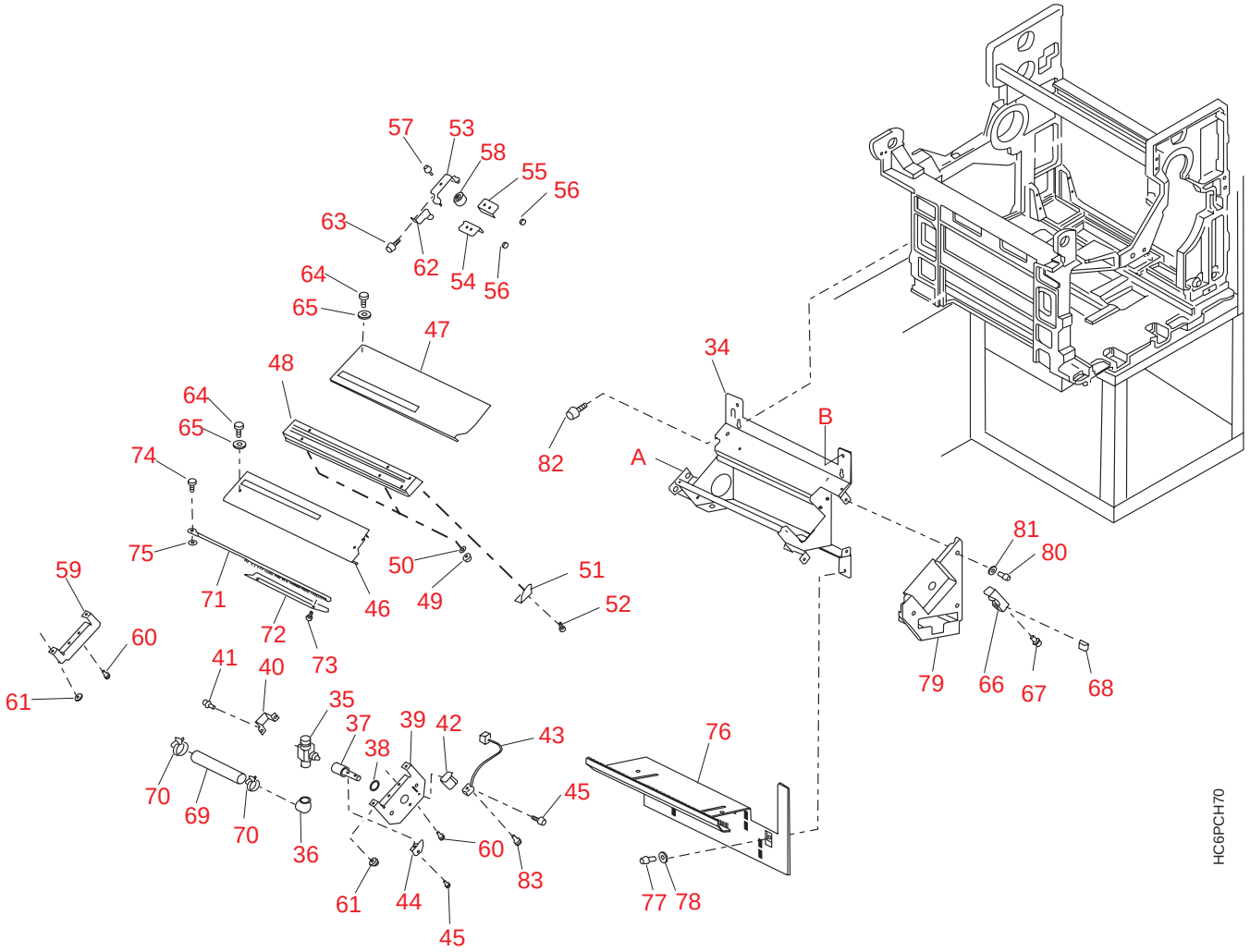

48
47
45
20
19
18
22
21
1
5
A
B
14
16
15
31
30
32
25
26
27
8
2
3
4
10
11
9
HC6PCH11
42
41
56
58
59
57
55
37
38
51
50

Asm–Index	Part Number	Units	Description
11–			Input Hardware (Sheet 2 of 2)
–41		NP-1	Bracket, Mirror
–42	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–45		NP-1	Cover
–50		NP-1	Cover
–51	06F0401	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–55		NP-1	
–56	06F0407	5	Nut, Flange M4 PP
–57	63H6479	1	Card, SW761
–58		NP-5	
–59	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP

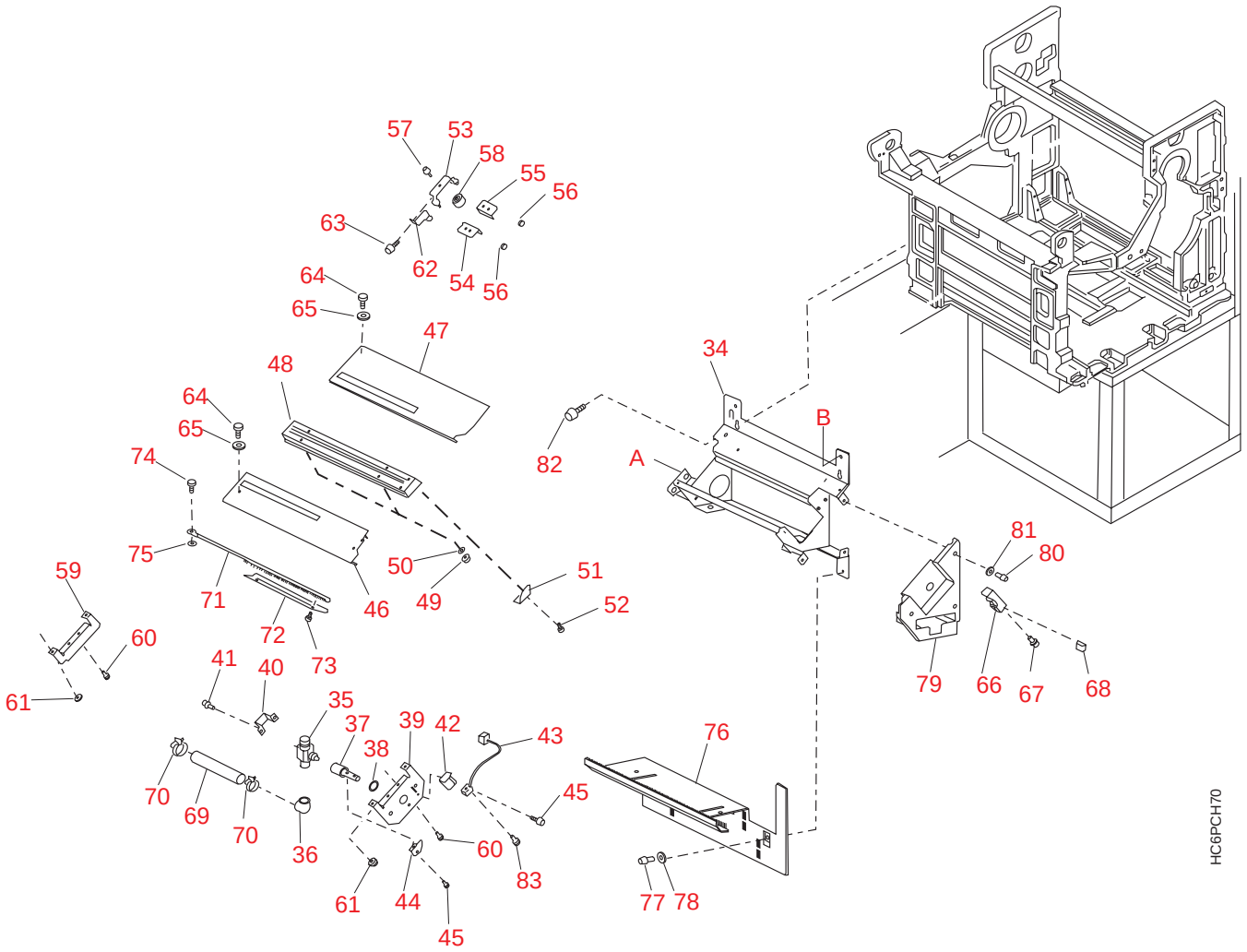
Assembly 12: Input Hardware



Asm–Index	Part Number	Units	Description
12–			Input Hardware (Sheet 1 of 3)
–1		NP-1	
–2	24L4883	1	Switch, Drum Cover Interlock (S118)
–3	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 16 PP
–4	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–7	88F2413	1	Holder, Brush
–8	06F1056	2	Brush
–9		NP-3	
–17		NP-1	
–18	63H6490	1	
–19	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 6 PP
–20	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–25		NP-1	
–26	11L5199	1	Fan, Printhead (B501)
–27	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 16 PP
–28	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–30	24L4877	1	Filter, Printhead Fan
–32		NP-2	
–33	06F0870	4	Ring, Clamp

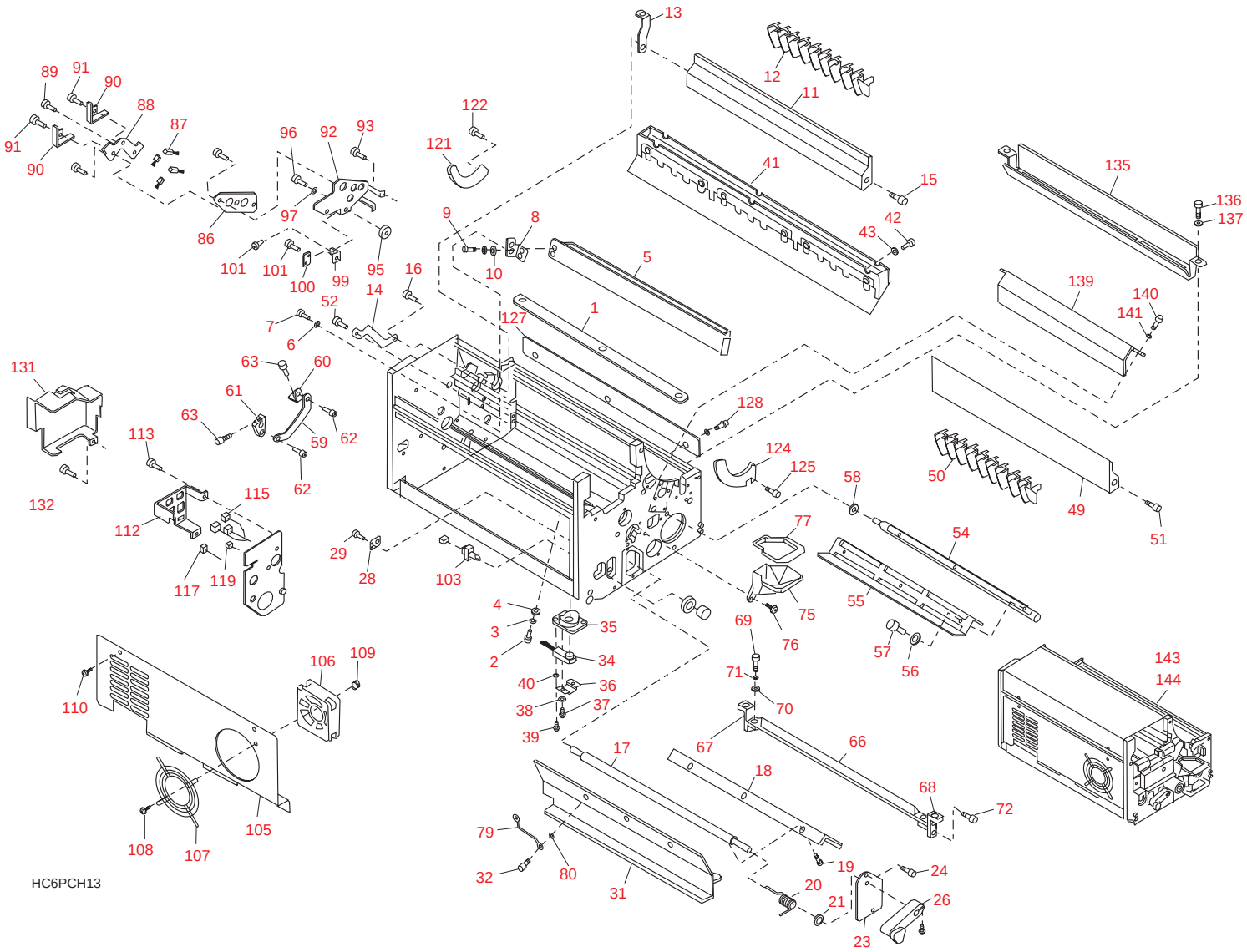

57
53
58
55
56
63
62
54
56
64
65
47
48
64
65
74
75
71
72
73
46
49
50
51
52
59
60
61
41
40
35
37
38
39
42
43
45
70
69
70
36
61
44
45
60
83
82
34
A
B
76
77
78
81
80
79
66
67
68
HC6PCH70

Asm–Index	Part Number	Units	Description
12–			Input Hardware, Splicing Station (Sheet 2 of 3)
–34		NP-1	Frame, Splicing Station
–35		1	Valve, Splicing Station
–36		NP-1	Screw, Pipe Joint
–37		NP-1	Shaft, Valve
–38	53F1884	1	Bearing, Nylon
–39		NP-1	Base Assembly, Valve Holder.
–40		NP-1	Clamp, Valve
–41	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–42		NP-1	Holder, Sensor
–43	38L0902	1	Sensor, Splicing Lever (S119)
–44		NP-1	Interrupter
–45	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–46		NP-1	Guide Assembly, Lower Paper
–47		NP-1	Guide Assembly, Upper Paper
–48		NP-1	Slot, Tape
–49	14H7813	6	Nut, Flange
–50		4	Washer
–51		NP-2	Cutter, Tape
–52	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–53		NP-1	Base, Slide
–54		NP-1	Plate Assembly, Guide
–55		NP-1	Plate Assembly, Guide
–56	14H7813	3	Nut, Flange

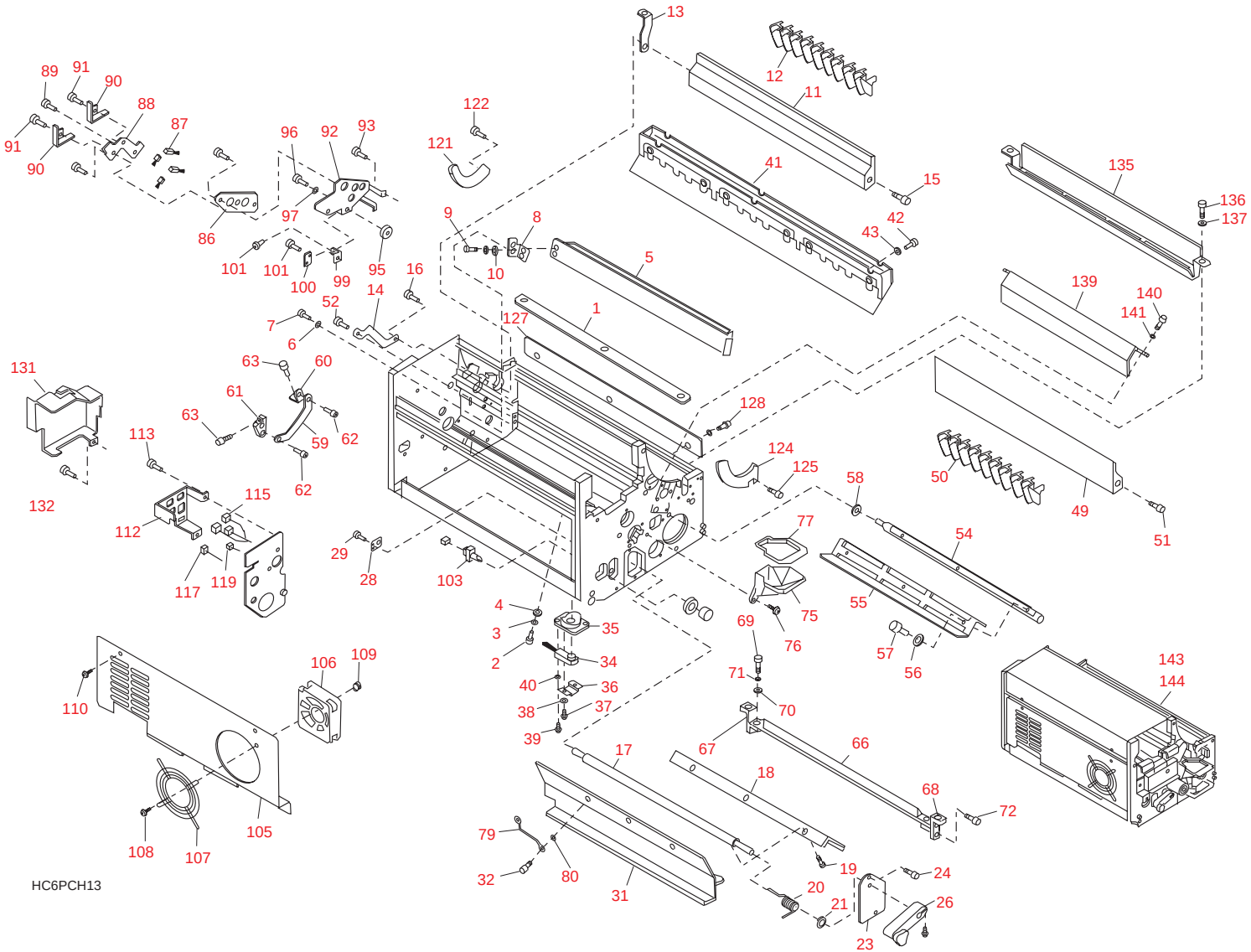

57
53
58
55
56
63
62
54
56
64
65
47
48
64
65
74
75
71
72
73
46
49
50
51
52
59
60
61
41
40
35
37
38
39
42
43
45
70
69
70
36
60
83
61
44
45
34
B
A
82
76
77
78
81
80
79
66
67
68
HC6PCH70

Asm–Index	Part Number	Units	Description
12–			Input Hardware, Splicing Station (Sheet 3 of 3)
–57		NP-1	Screw Assembly, Tractor Lock Knob
–58		NP-1	Base, Slide
–59		NP-1	Holder, Paper Guide
–60	06F0411	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–61	14H7813	4	Nut, Flange
–62		NP-1	Stopper, Tape
–63	06F0411	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–64	06F0411	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–65		2	Washer, VF
–66		1	Handle, Splice
–67	06F0415	1	Bolt, Socket Hd with Star Wshr & Wshr M4 X 10 PP
–68		1	Cap, Rubber
–69	88F2900	1	Hose, Splicing Station
–70	06F0734	2	Clamp, Hose
–71	90H1561	1	Brush Assembly, Splicing Station
–72		NP-1	Holder, Brush
–73	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 16 PP
–74		1	Screw, Phillips Pan Hd Brass with Star Wshr & Wshr M5 X 12 PP
–75		1	Washer, Toothed
–76		NP-1	Cover, Paper Pass
–77	06F0401	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–78		1	Washer, Press
–79		NP-1	Cover, Splicing Station
–80	06F0411	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–81		3	Washer, VF
–82	06F0401	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M6 X 16 PP
–83	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 16 PP

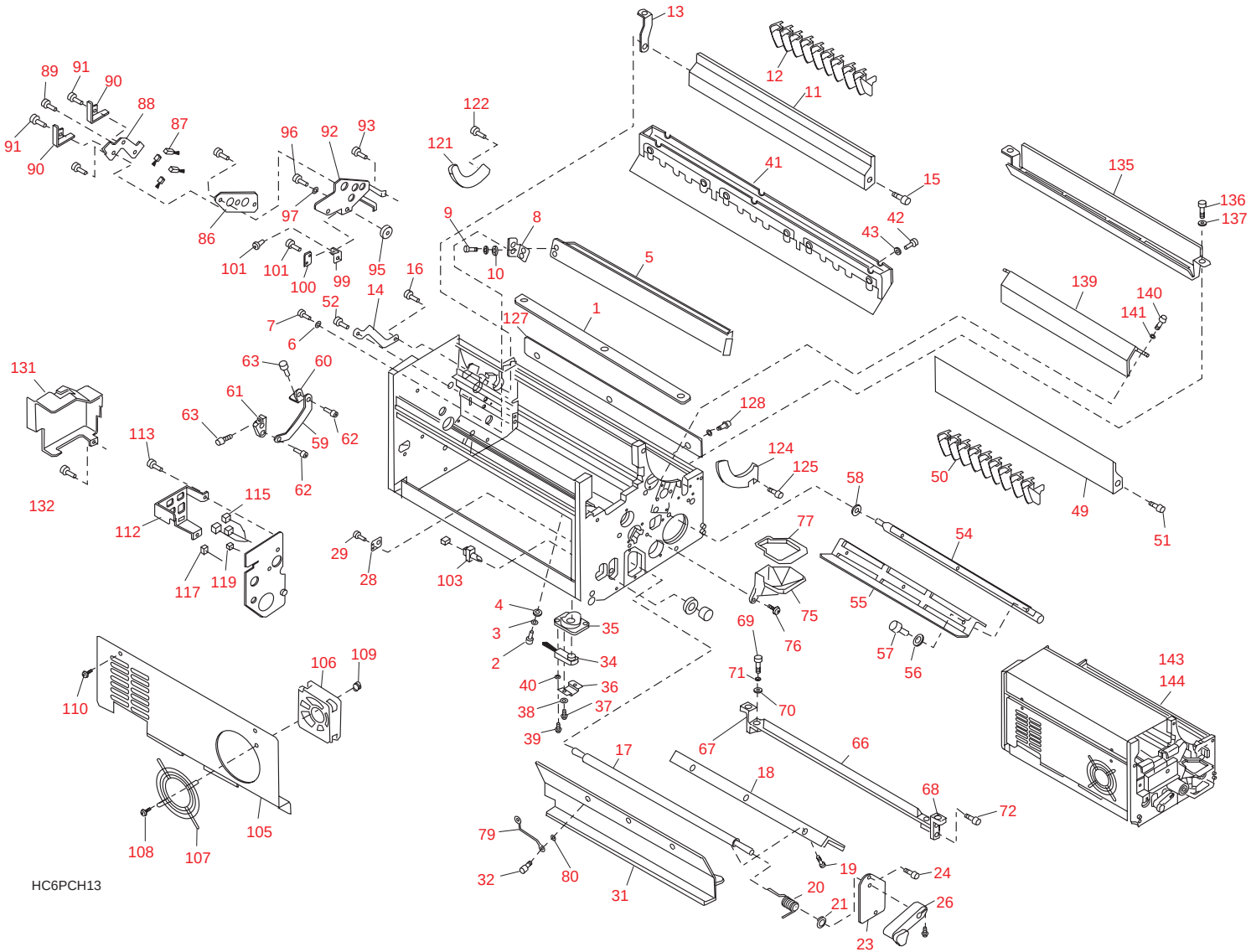
Assembly 13: Developer Hardware



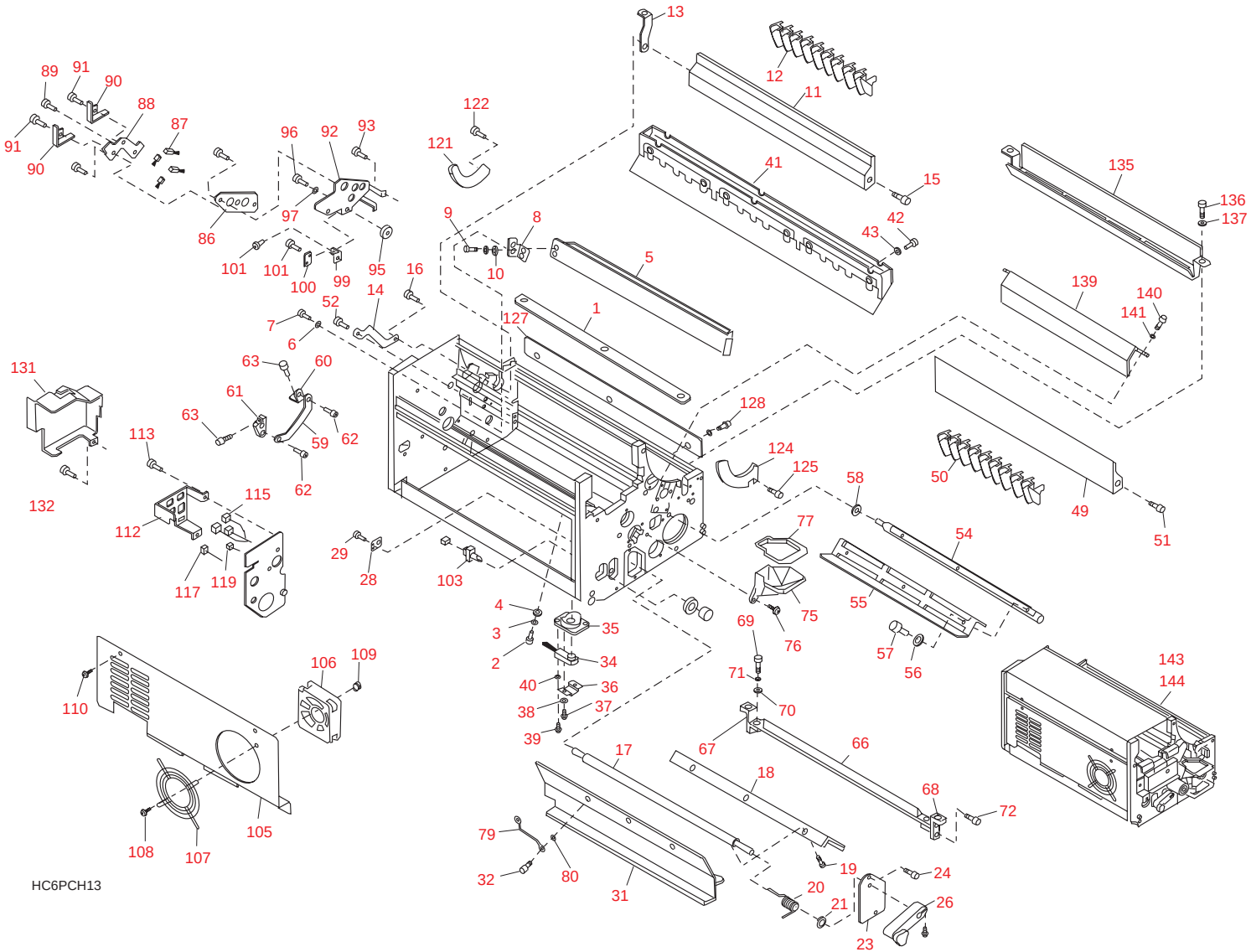
Asm–Index	Part Number	Units	Description
13–			Developer Hardware (Sheet 1 of 4)
–1		NP-1	
–2	57G4439	3	Bolt, Hexagon Socket Hd M3 X 6 (stainless)
–3	57G4438	3	Washer, Spring (stainless)
–4	06F0406	3	Washer, Bolt D4 (brass) PP
–5		NP-1	
–6	06F0406	4	Washer, Bolt D4 (brass) PP
–7	06F0403	4	Bolt, Hexagon Socket Hd M4 X 8 (stainless) PP
–8		NP-1	
–9		NP-2	
–10	06F0406	2	Washer, Bolt D4 (brass) PP
–11		NP-1	
–12		5-NP	
–13		NP-1	
–14		NP-1	
–15	06F0403	1	Bolt, Hexagon Socket Hd M5 X 20 PP
–16		NP-1	
–17		NP-1	
–18		NP-1	
–19	06F0401	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–20		NP-1	
–21		NP-1	
–23		NP-1	
–24	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–26	88F2507	1	Lever, Exhaust Asm
–28	63H6490	1	Sensor, Developer Drain Lever (S111)
–29	06F0411	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–31		NP-1	


HC6PCH13

Asm–Index	Part Number	Units	Description
13–			Developer Hardware (Sheet 2 of 4)
–32	06F0401	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–34	63H6489	1	Sensor, Toner Control (S107) for toner P/N 1402828
–34	02N7110	1	Sensor, Toner Control (S107) for toner P/N 1402717
–35		NP-1	
–36		NP-1	
–37	06F0402	2	Screw, Phillips Pan Hd (brass) M3 X 8 PP
–38	06F0406	2	Washer, Bolt D4 (brass) PP
–39	06F0403	2	Bolt, Hexagon Socket Hd M4 X 8 (stainless) PP
–40	06F0406	2	Washer, Bolt D4 (brass) PP
–41		NP-1	
–42	06F0403	3	Bolt, Hexagon Socket Hd M4 X 8 (stainless) PP
–43	06F0406	3	Washer, Bolt D4 (brass) PP
–49		NP-1	
–50		NP-5	
–51		NP-1	Bolt, Hexagon Socket Hd M5 X 20 PP
–52		NP-1	
–54		NP-1	
–55		NP-1	
–56	06F0406	3	Washer, Bolt D4 (brass) PP
–57	06F0403	3	Bolt, Hexagon Socket Hd M4 X 10 (stainless) PP
–58		NP-1	
–59		NP-1	
–60		NP-1	
–61	11L5318	1	Arm, Link
–62	30H6700	2	Screw, Shoulder
–63	06F0415	2	Bolt, Hexagon Socket Hd M4 X 12 PP
–66	11L5175	1	Doctor, Spring
–67		NP-1	
–68		NP-1	

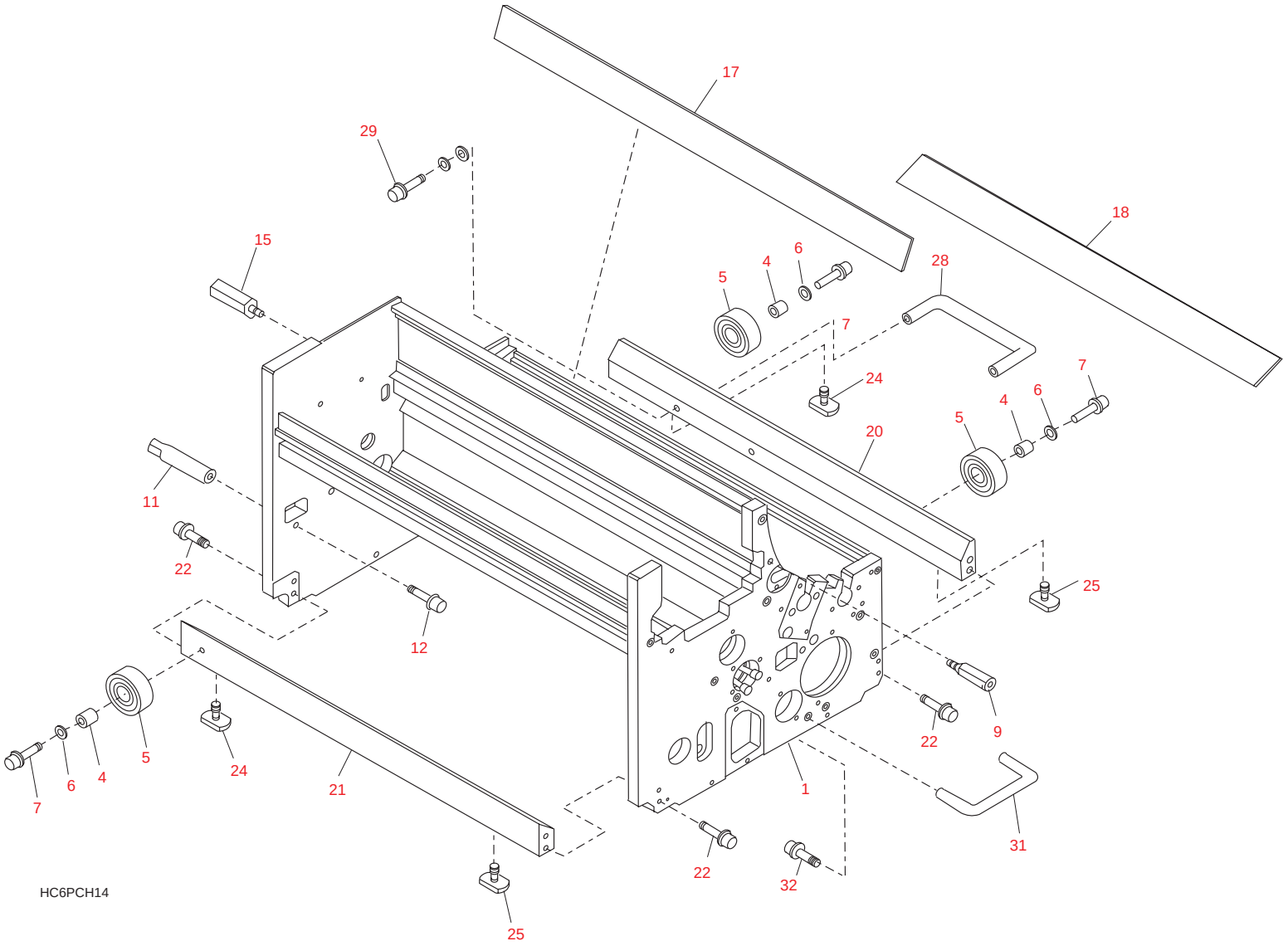

HC6PCH13

Asm–Index	Part Number	Units	Description
13–			Developer Hardware (Sheet 3 of 4)
–69		NP-2	
–70	06F0406	2	Washer, Bolt D3 (brass) PP
–71	57G4438	2	Washer, Spring (stainless)
–72	06F0404	4	Bolt, Hexagon Socket Hd M4 X 12 (stainless) PP
–75	88F2523	1	Inlet, Developer Mix
–76	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–77	88F2522	1	Cap, Developer Mix Inlet
–79		NP-1	
–80	06F0406	1	Washer, Toothed D5 PP
–86		NP-1	
–87	06F0081	4	Brush, Carbon
–88		NP-1	
–89	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–90	57G5957	2	Terminal, Bias
–91	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–92		NP-1	
–93	06F0401	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–95	88F2548	1	Pulley, Idler Asm
–95	88F2548	1	Idler, Pulley Asm
–96	06F0411	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–97	06F0405	1	Washer PP
–99		NP-1	
–100	63H6490	1	Sensor, Conveyor Roll Rotation (S110)
–101	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–103	06F0059	1	Switch, Developer Run (S109)
–105		NP-1	
–106	24H8035	1	Fan, Developer Cooling (B101)


HC6PCH13

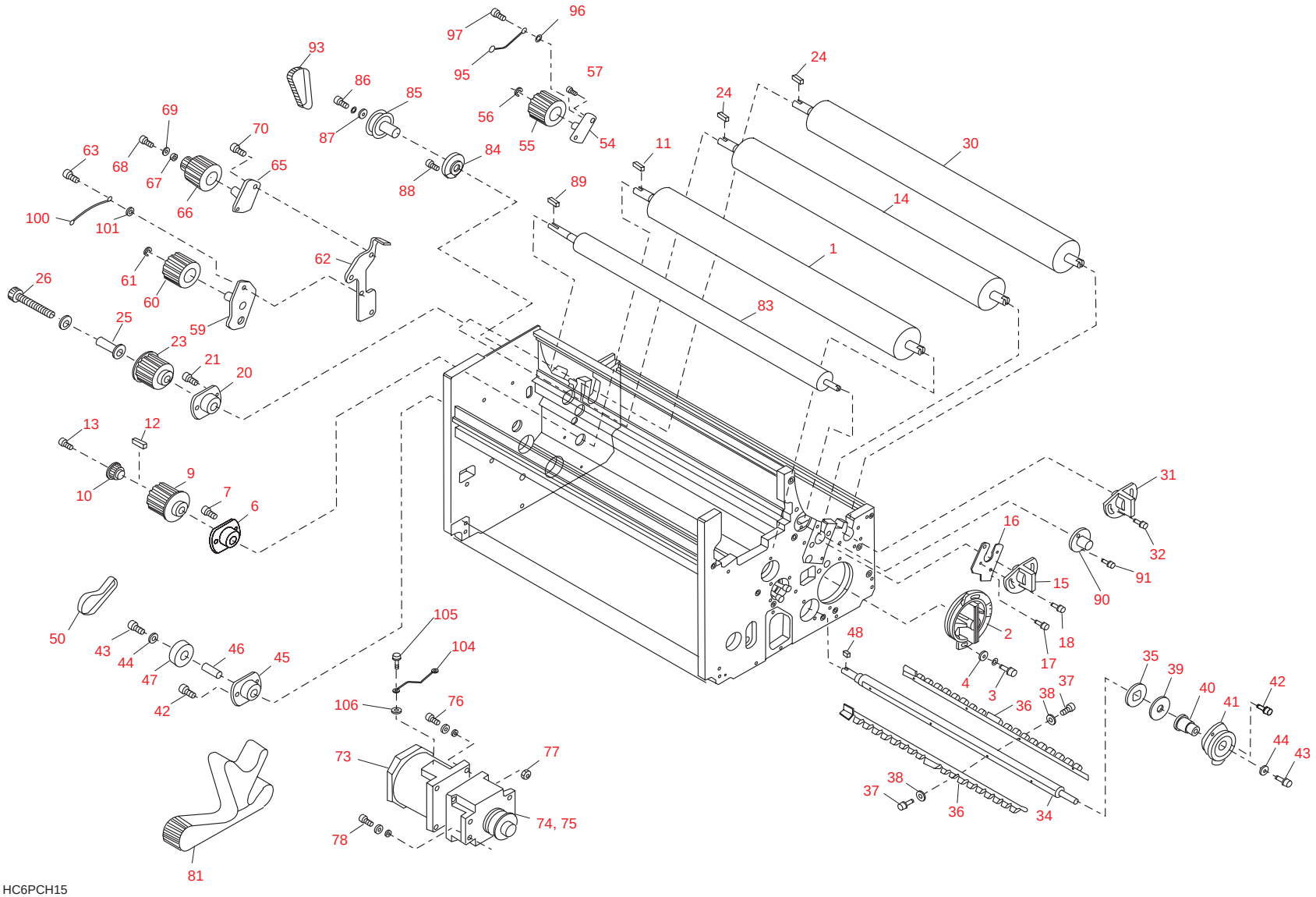
Asm–Index	Part Number	Units	Description
13–			Developer Hardware (Sheet 4 of 4)
–107	06F0569	1	Guard, Finger
–107	24H8191	1	Guard, Fan
–108	06F0413	2	Screw, Bind Hd M4 X 50 PP
–109	06F0407	2	Nut, Flanged M4 PP
–110	06F0411	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–112		NP-1	
–113	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–115		NP-1	
–117		NP-1	
–119		NP-1	
–121	63H6499	1	Drum, Seal (Developer)
–122	06F0411	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–124	63H6498	1	Seal, Drum (Developer)
–125	06F0411	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–127		NP-1	
–128	06F0404	3	Screw, Phillips Pan Hd M4 X 8 (brass) PP
–131		NP-1	
–132	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–135		NP-1	
–136	06F0403	2	Bolt, Hexagon Socket Hd M4 X 8 (stainless) PP
–137	06F0406	2	Washer, Bolt D4 (brass) PP
–139		NP-1	
–140	06F0403	2	Bolt, Hexagon Socket Hd M4 X 8 (stainless) PP
–141	06F0406	2	Washer, Bolt D4 (brass) PP
–143	11L6000	1	Developer Unit, 50 Hz
–144	11L5999	1	Developer Unit, 60 Hz

Assembly 14: Developer Hardware

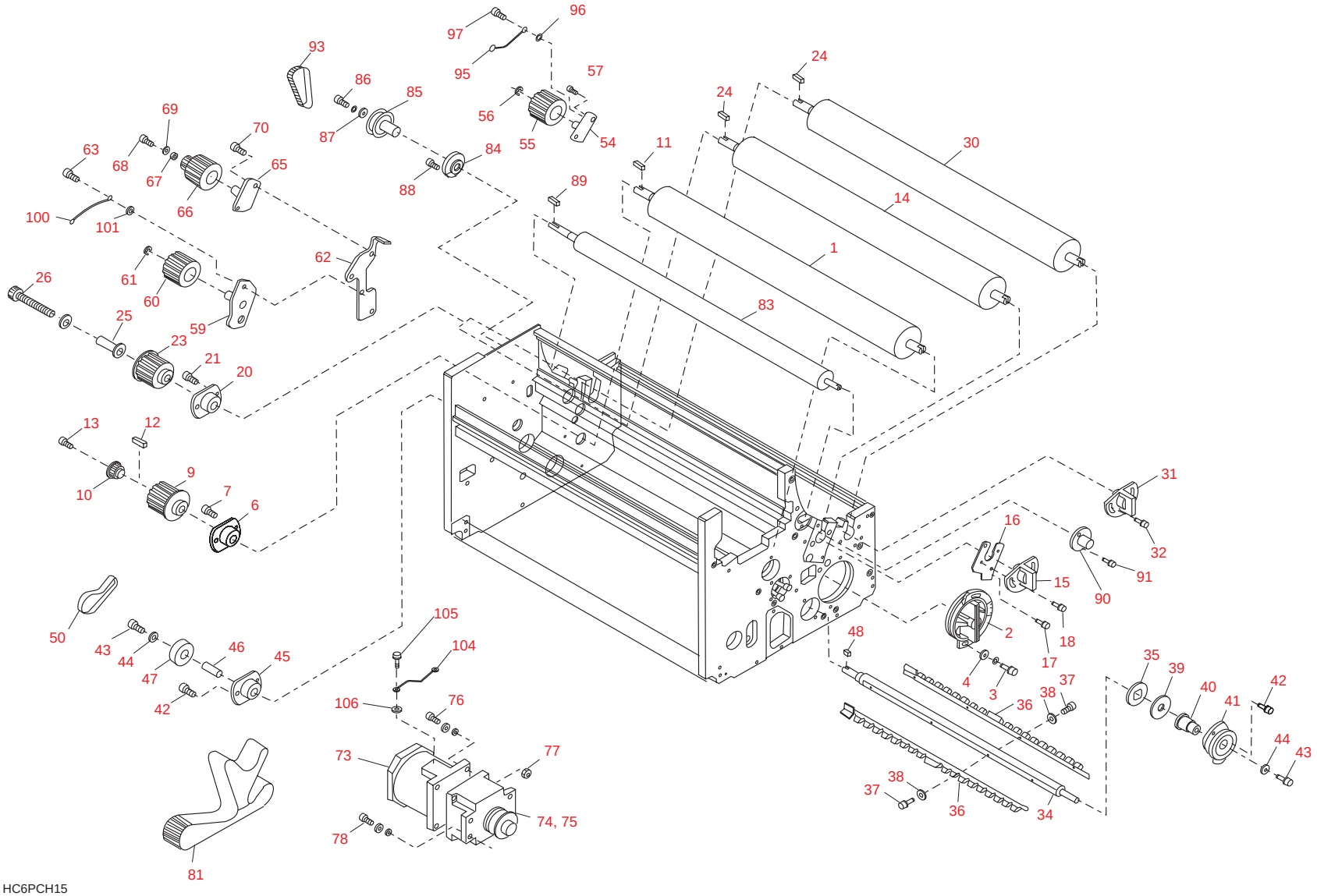


Asm–Index	Part Number	Units	Description
14–			Developer Hardware (Sheet 1 of 1)
–1		NP-1	
–4		NP-3	
–5	06F0079	1	Bearing, Ball
–6	06F0417	3	Washer, Press PP
–7	06F0415	3	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 30 PP
–9		NP-1	
–11		NP-2	
–12	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 30 PP
–15		NP-2	
–17		NP-1	
–18		NP-1	
–20		NP-1	
–21		NP-1	
–22	06F0415	8	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 30 PP
–24		NP-2	
–25		NP-2	
–28		NP-1	
–29	06F0403	2	Bolt, Hexagon Socket Hd M5 X 25 PP
–31		NP-1	
–32	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 16 PP

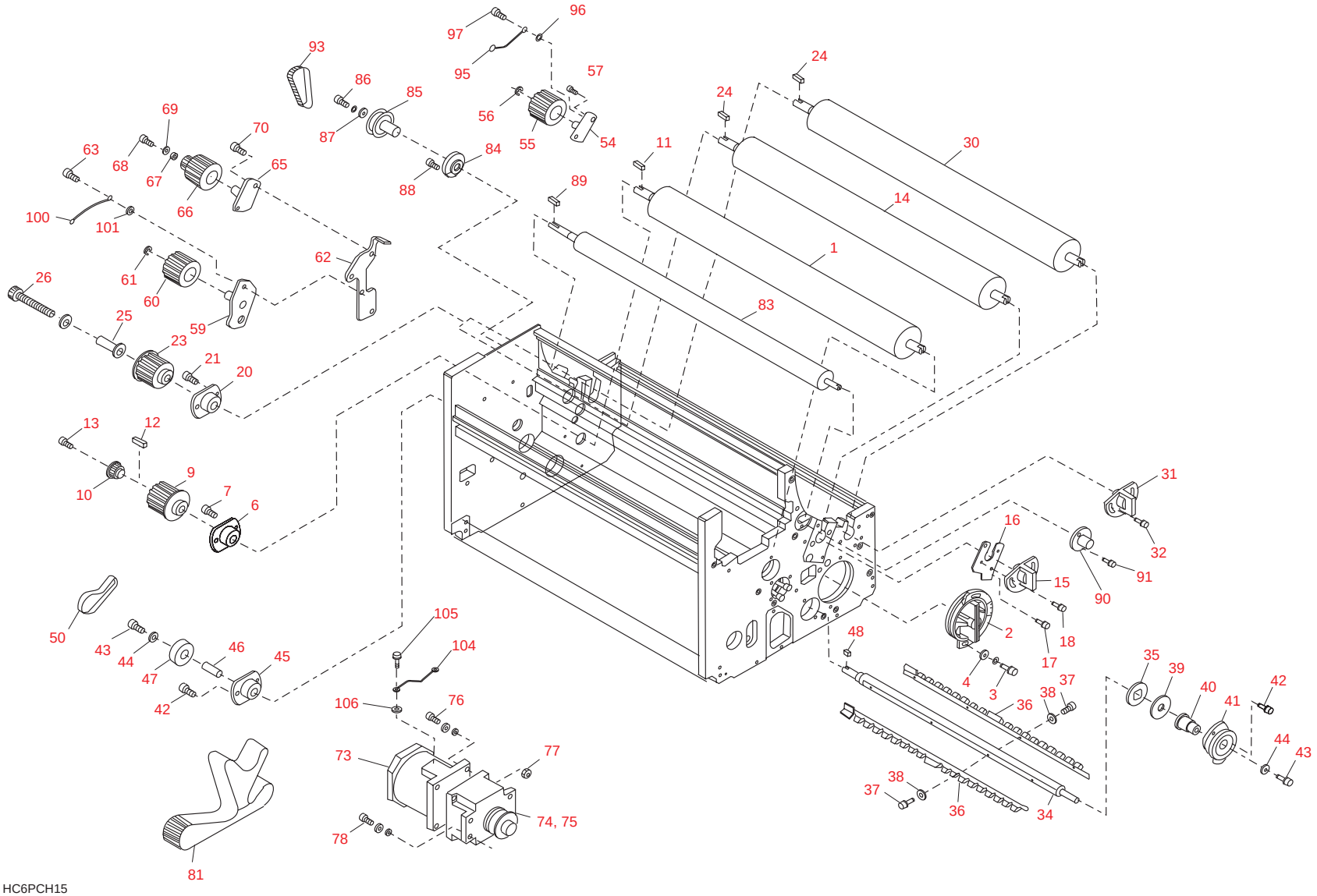
Assembly 15: Developer Hardware



Asm–Index	Part Number	Units	Description
15–			Developer Hardware (Sheet 1 of 3)
–1	63H6500	1	Roll, Conveyor
–2		NP-1	Flange, Conveyor Roll Front
–3		NP-2	
–4	06F0405	2	Washer, Bolt D6 PP
–6	63H6512	1	Flange, Conveyor Roll Rear
–7	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–9		NP-1	
–10		NP-1	
–11		NP-1	
–12	06F0408	1	Key, 4 X 4 X 10 PP
–13	06F0415	1	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 30 PP
–14	63H6502	1	Mag Roll B
–15		NP-1	
–16		NP-1	Bolt, Hexagon Socket Hd M6 X 25 PP
–17	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 10 PP
–18	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–20	63H6512	2	Flange Asm (Dev)
–21	06F0411	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–23		NP-2	
–24		NP-2	
–25		NP-2	
–26	06F0403	2	Bolt, Hexagon Socket Hd M5 X 38 PP
–30	63H6501	1	Mag Roll A
–31		NP-1	
–32	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–34	63H7095	1	Shaft, Developer Mixing Paddle
–35		NP-1	
–36	63H7094	2	Paddle, Developer Mixing

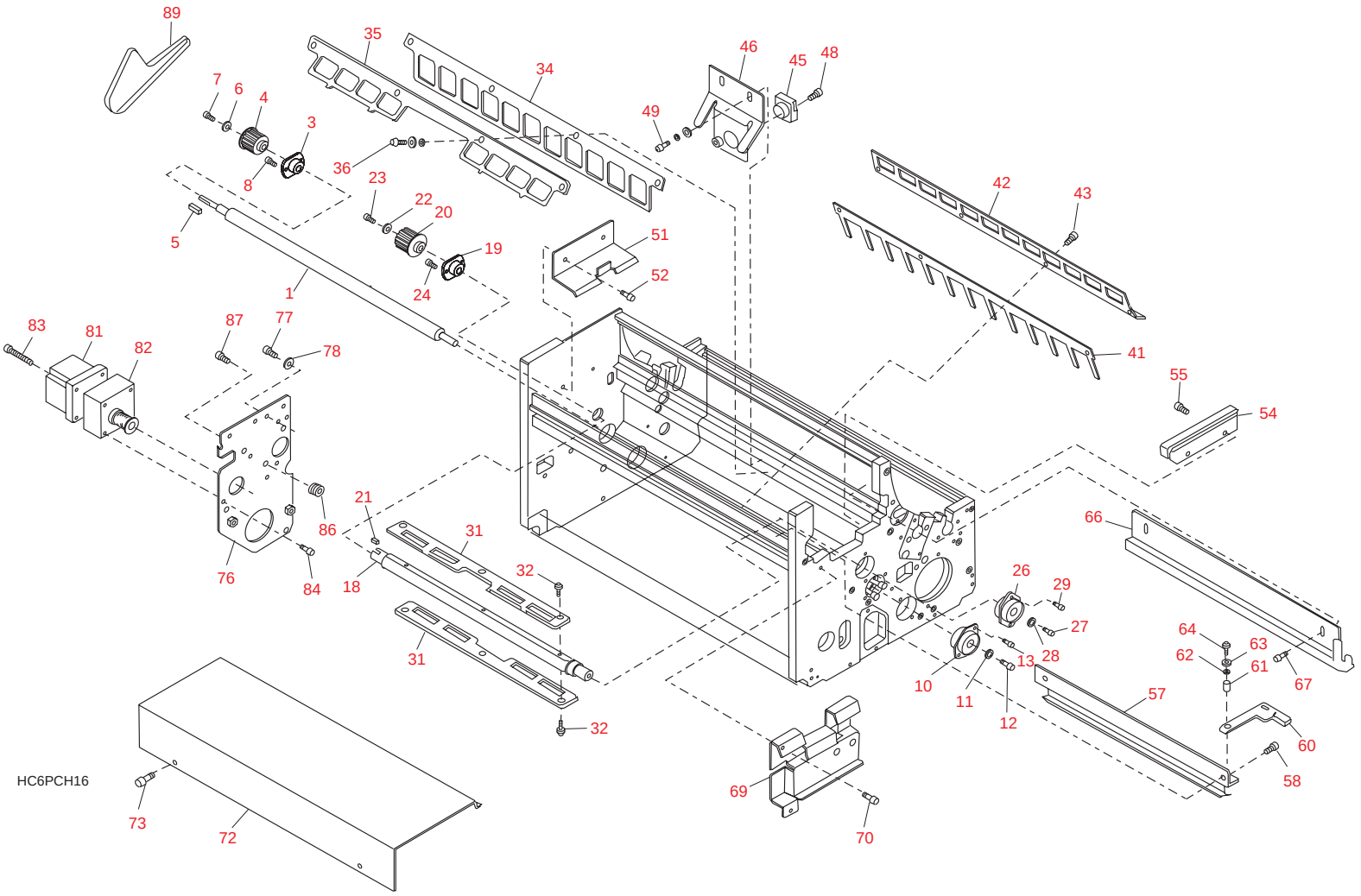

HC6PCH15
96
97
95
93
57
56
55
54
86
85
87
84
88
24
24
11
30
14
89
1
83
63
68
69
67
70
66
65
100
101
62
61
60
59
26
25
23
21
20
13
12
10
9
7
6
50
43
44
46
47
45
42
81
105
104
106
76
73
77
74, 75
78
31
32
91
90
16
15
2
18
17
48
4
3
36
38
37
35
39
40
41
42
44
43
38
37
36
34

Asm–Index	Part Number	Units	Description
15–			Developer Hardware (Sheet 2 of 3)
–37		NP-8	
–38	06F0406	8	Washer, D4 (brass) PP
–39		NP-1	
–40		NP-1	
–41	63H6511	1	Flange, Paddle Asm Front
–42	06F0411	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–43	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr M4 X 12 PP
–44	06F0405	2	Washer PP
–45	63H6510	1	Flange, Paddle Asm Rear
–46		NP-1	
–47	38L0833	1	Pulley, Mixing Paddle Drive
–48	06F0408	1	Key, 4 X 4 X 10 PP
–50	63H6515	1	Belt, Developer Mixing Paddle
–54		NP-1	
–55		NP-1	
–56		NP-1	
–57	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–59		NP-1	
–60	57G4409	1	Pulley, Idler Asm
–61		NP-1	
–62		NP-1	
–63	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–65		NP-1	
–66	63H6504	1	Pulley Asm, Scavenger Roll Idler
–67		NP-1	
–68	06F0411	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–69	06F0405	1	Washer PP
–70	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP

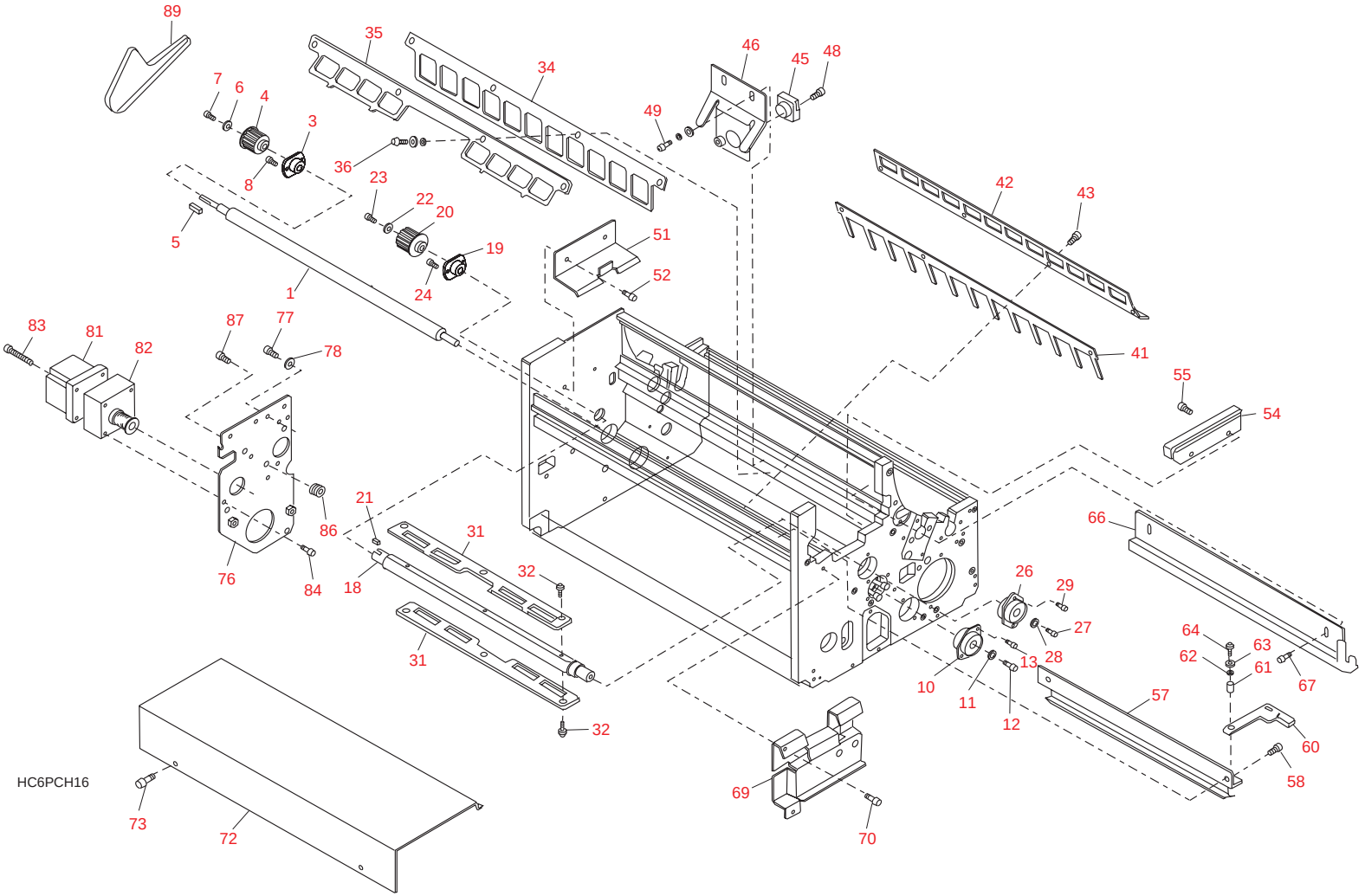

HC6PCH15
96
97
95
93
57
56
55
54
86
85
87
84
88
24
24
11
30
14
89
1
83
63
68
69
67
70
66
65
100
101
62
61
60
59
26
25
23
21
20
13
12
10
9
7
6
50
43
44
47
46
45
42
81
105
104
106
76
73
77
74, 75
78
31
32
91
90
16
15
18
17
2
4
3
48
36
38
37
35
39
40
41
42
44
43
34

Asm–Index	Part Number	Units	Description
15–			Developer Hardware (Sheet 3 of 3)
–73	57G2538	1	Motor, Mag Brush (M101)
–74	63H6505	1	Gearhead, Mag brush 50Hz Dev
–75	63H6506	1	Gearhead, Mag brush 60Hz Dev
–76	06F0414	3	Bolt, Hexagon Socket Hd M6 X 25 PP
–77	06F0407	3	Nut M6 PP
–78		NP-2	
–81	63H6514	1	Belt, Mag Brush Drive
–83	63H6509	1	Roll, Scavenger
–84		NP-1	
–85		NP-1	
–86	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 12 PP
–87	06F0405	1	Washer, PP
–88	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–89	06F0408	1	Key, 3 X 3 X 10 PP
–90		NP-1	
–91	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–93		1	Belt, Scavenger Drive
–95		NP-1	
–96	06F0406	1	Washer, Toothed D4 PP
–97	06F0411	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–100		NP-1	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–101	06F0406	1	Washer, D5 Toothed
–104		NP-1	
–105	06F0411	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–106	06F0406	1	Washer, Toothed D4 PP

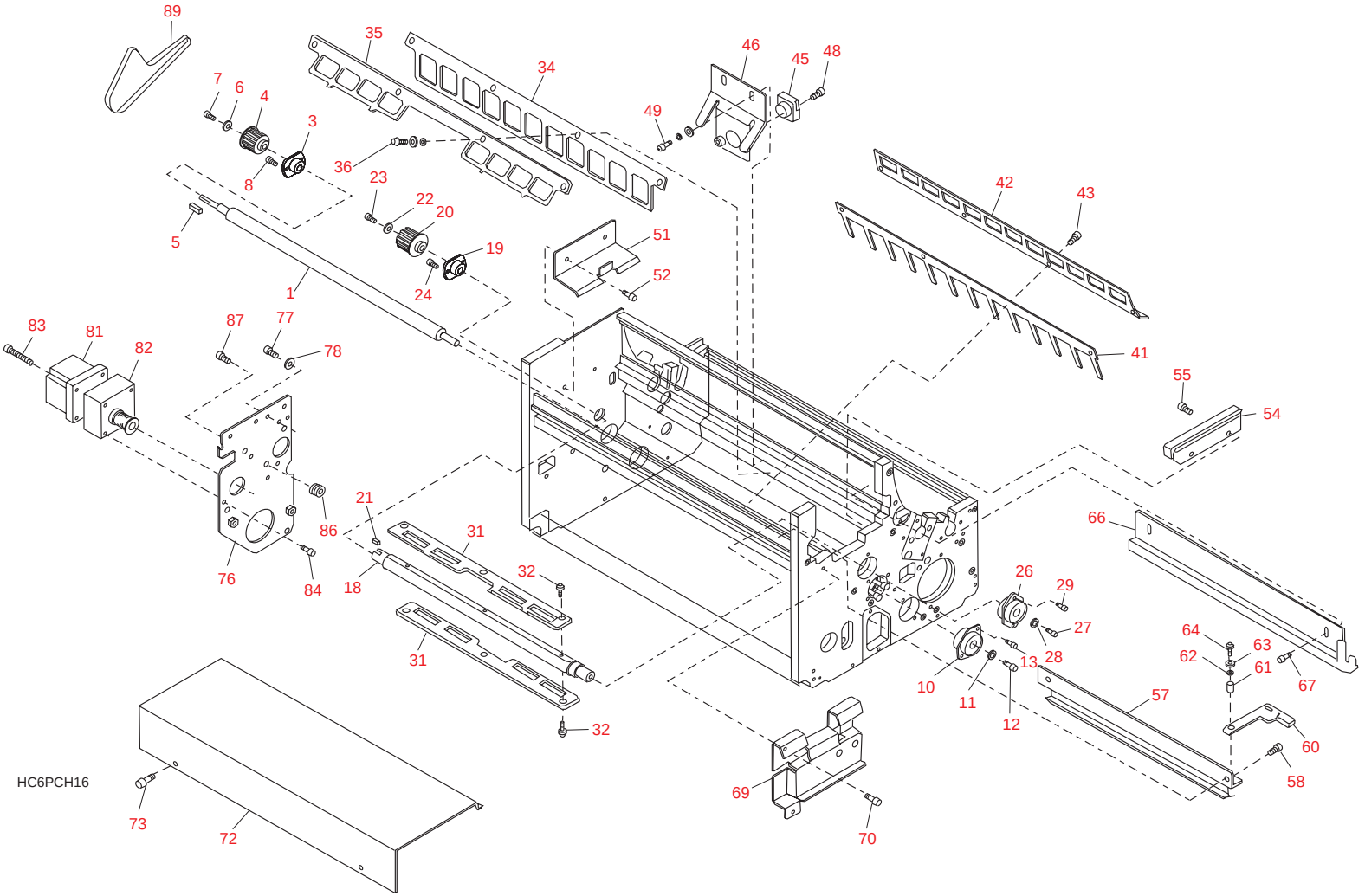
Assembly 16: Developer Hardware



Asm–Index	Part Number	Units	Description
16–			Developer Hardware (Sheet 1 of 3)
–1	63H6516	1	Roll, Toner Feed
–3	63H6512	1	Flange Asm
–4		NP-1	
–5	06F0408	1	Key, 4 X 4 X 10 PP
–6	06F0405	1	Washer PP
–7	06F0415	1	Bolt, Hexagon Socket Hd with Star Wshr M4 X 12 PP
–8	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–10	63H6513	1	Flange Asm
–11	06F0405	1	Washer PP
–12	06F0415	1	Bolt, Hexagon Socket Hd with Star Wshr M4 X 12 PP
–13	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–18		NP-1	
–19	63H6512	1	Flange Asm
–20	38L0834	1	Pulley, Toner Feed
–21	06F0408	1	Key, 4 X 4 X 10 PP
–22	06F0405	1	Washer PP
–23	06F0415	1	Bolt, Hexagon Socket Hd with Star Wshr M4 X 12 PP
–24	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–26	63H6513	1	Flange Asm
–27	06F0415	1	Bolt, Hexagon Socket Hd with Star Wshr M4 X 12 PP
–28	06F0405	1	Washer PP
–29	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–31		NP-2	
–32	06F0411	6	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–34		NP-1	
–35		NP-1	
–36	06F0404	4	Screw, Phillips Pan Hd M4 X 8 (brass) PP

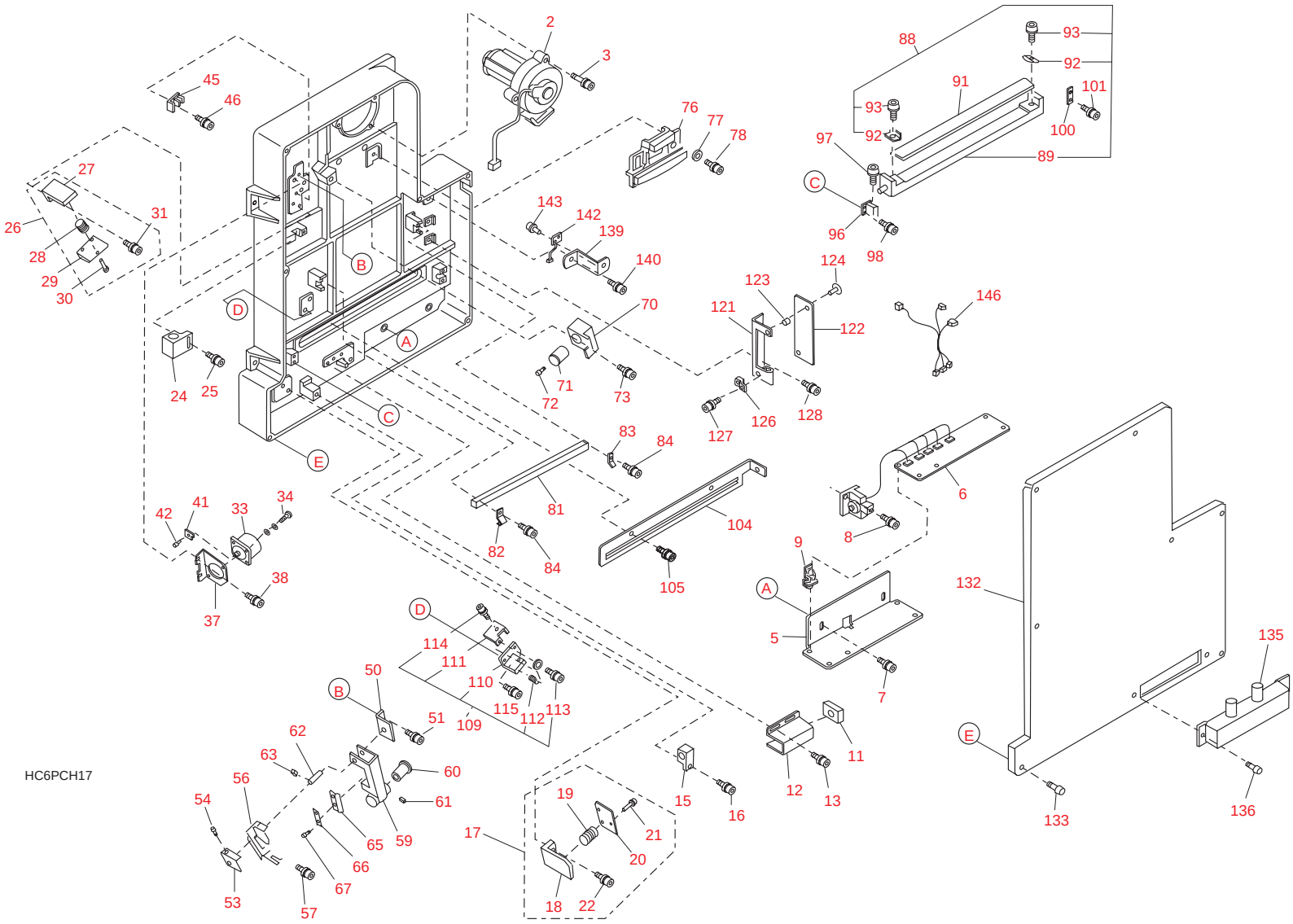

89
35
34
46
45
48
7
6
4
3
49
36
8
23
22
20
19
5
24
1
51
52
42
43
41
83
81
82
87
77
78
55
54
21
31
86
76
84
18
32
26
29
27
28
13
10
11
12
64
63
62
61
67
66
57
60
58
69
70
73
72
HC6PCH16

Asm–Index	Part Number	Units	Description
16–			Developer Hardware (Sheet 2 of 3)
–41		NP-1	• Flange and Bearing Asm
–42		NP-1	•
–43	06F0411	4	• Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–45	63H6517	1	Sensor, Toner Empty (S108)
–46		NP-1	
–48	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 10 PP
–49	06F0404	2	Screw, Phillips Pan Hd M4 X 18 (brass) PP
–51		NP-1	
–52	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–54		NP-1	
–55	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–57		NP-1	
–58	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–60		NP-1	
–61		NP-1	
–62		NP-1	
–63		NP-1	
–64	06F0411	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 16 PP
–66		NP-1	
–67	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–69		NP-1	
–70	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–72		NP-1	
–73	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–76		NP-1	
–77	06F0401	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–78	06F0417	4	Washer, Press PP

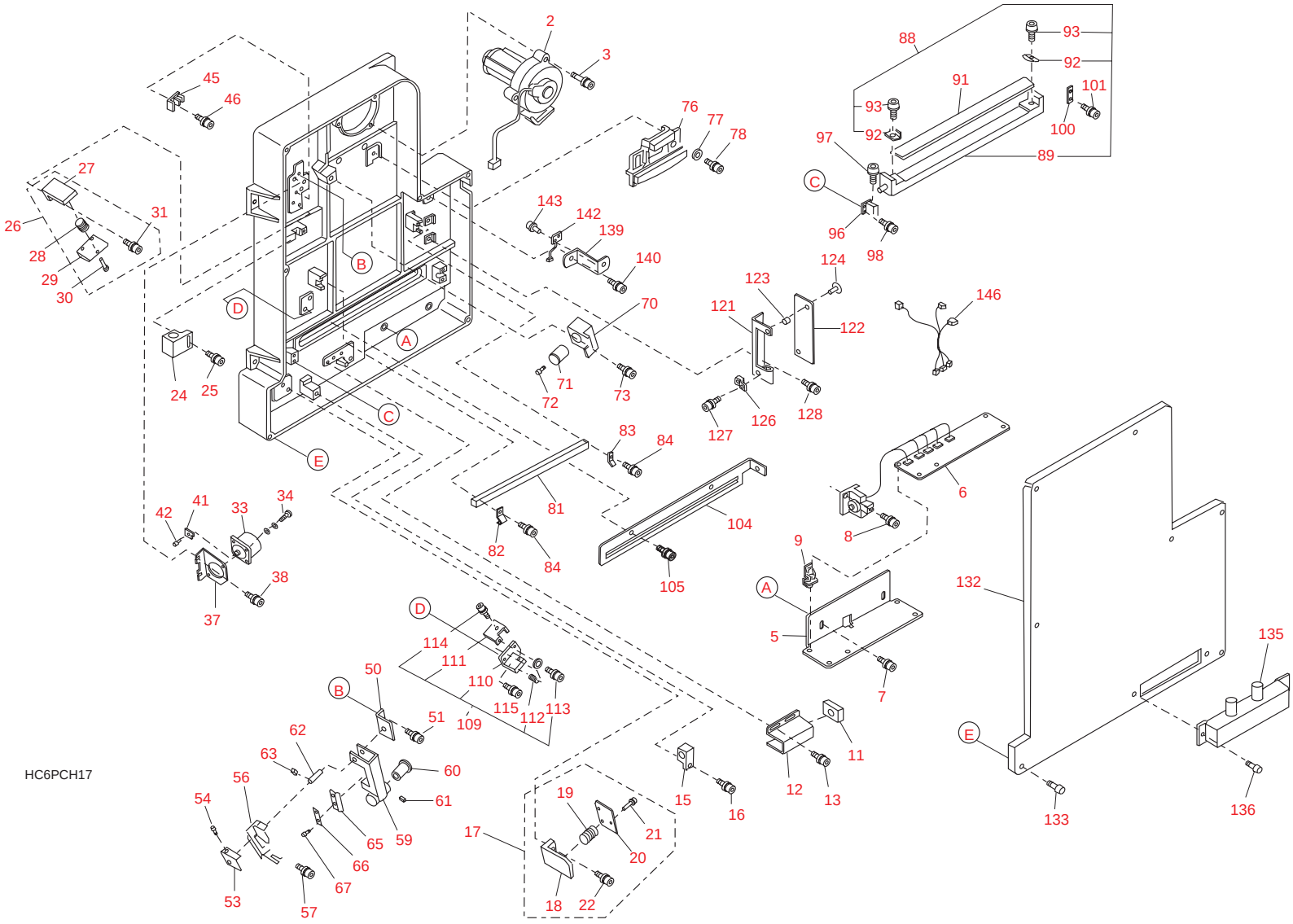

HC6PCH16
89
35
34
46
45
48
7
6
4
3
49
36
8
23
22
20
42
43
5
19
51
1
24
52
41
83
81
82
87
77
78
55
54
21
31
86
66
76
84
18
32
26
29
27
64
63
62
61
67
10
11
13
28
12
57
60
58
69
70
73
72

Asm–Index	Part Number	Units	Description
16–			Developer Hardware (Sheet 3 of 3)
–81	63H6520	1	Motor, Toner Feed (M102)
–82	63H6518	1	Gearhead, Toner Feed Mech Asm
–83		NP-4	
–84		NP-2	
–86		NP-1	
–87	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–89	63H6519	1	Belt, Toner Feed

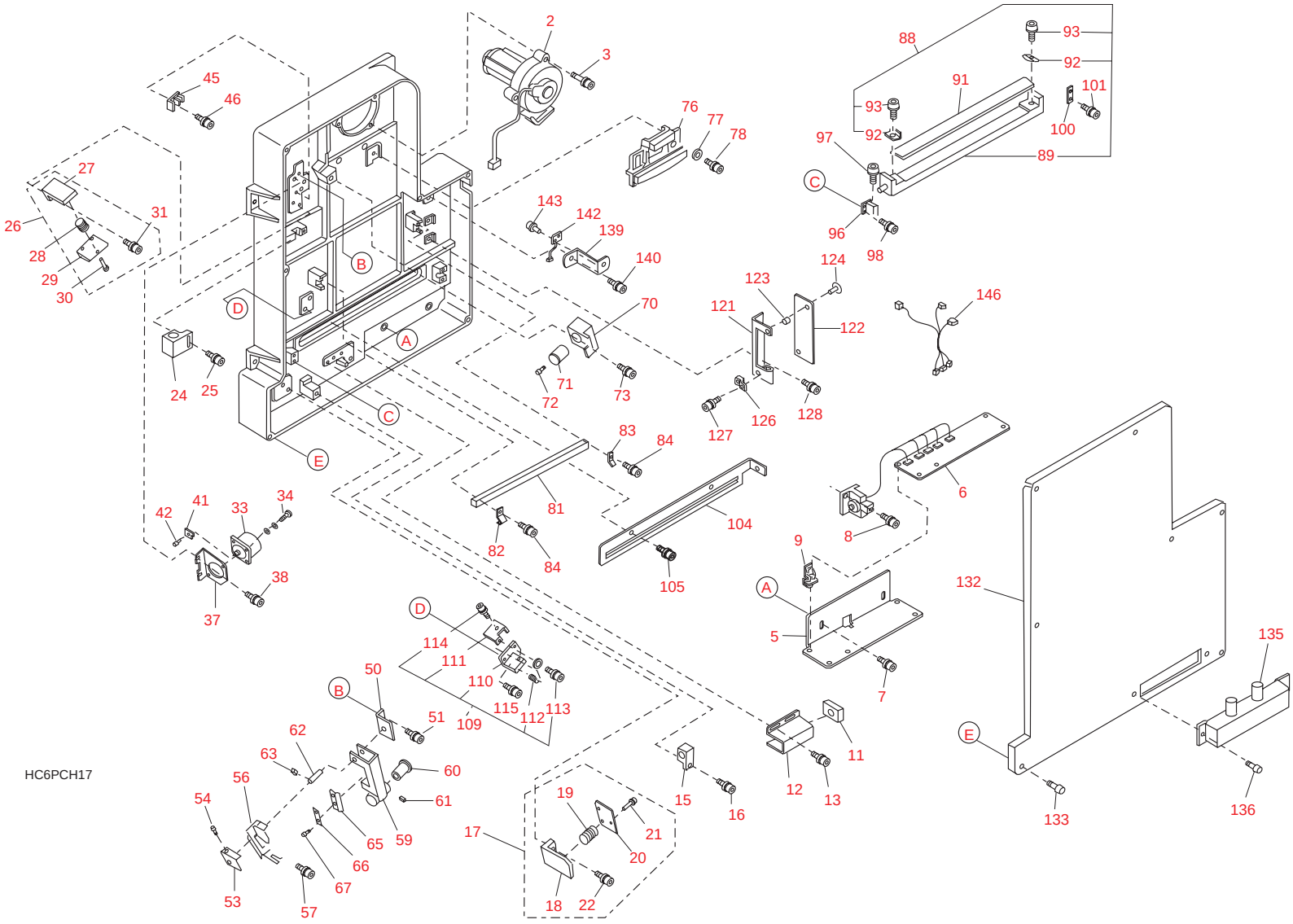
Assembly 17: Printhead



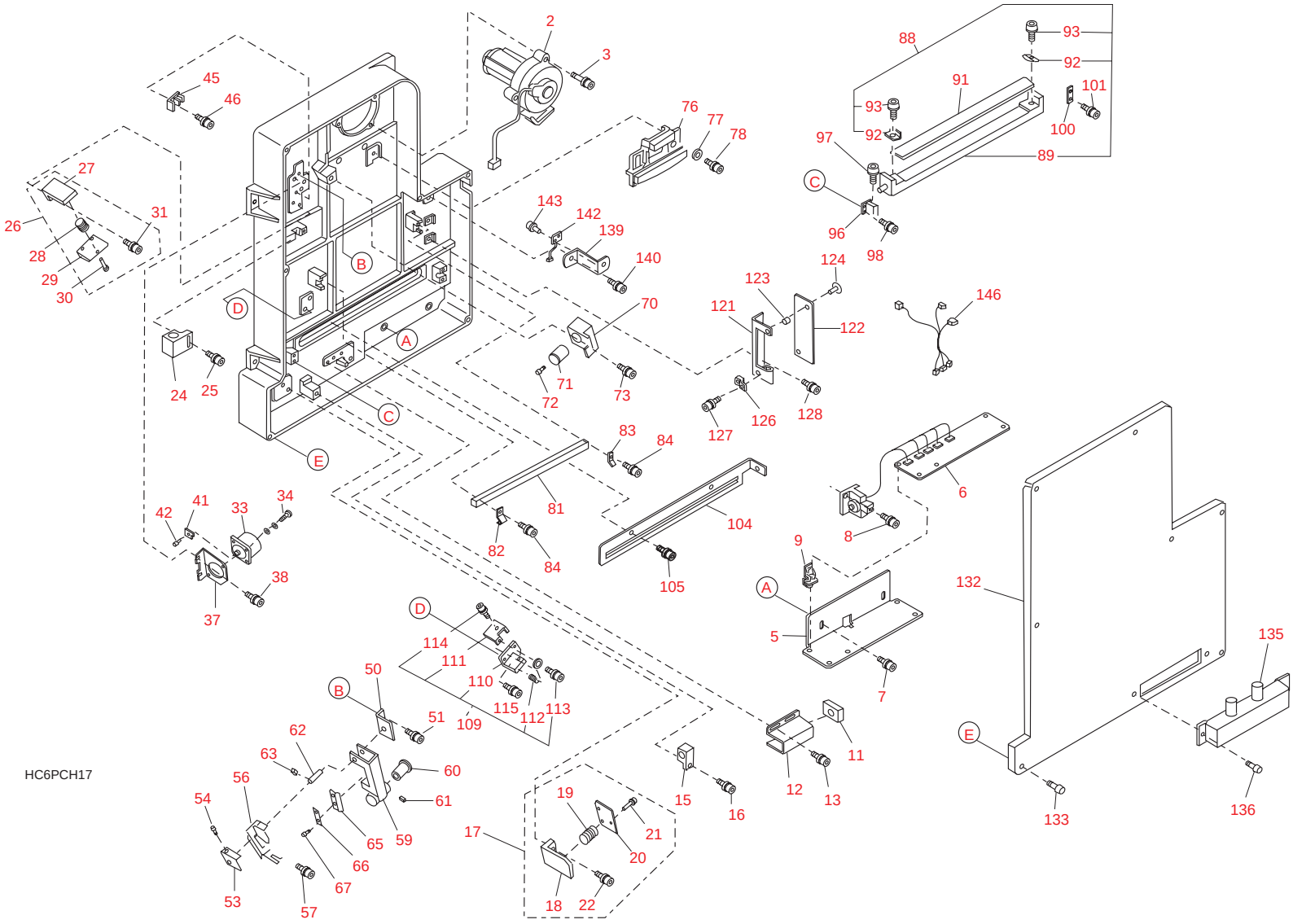
Asm–Index	Part Number	Units	Description
17–			Printhead (Sheet 1 of 4)
–2	63H6521	1	Motor, Mirror (M501)
–3	06F0401	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 40 PP
–5		NP-1	
–6	24L3322	1	Card, LD272 (Laser Diode)
–7	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 12 PP
–8	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 16 PP
–9		NP-6	
–11		NP-1	Foam
–12		NP-1	
–13	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 12 PP
–15		NP-1	Lens, L2
–16	06F0415	1	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 16 PP
–17		NP-1	Mirror, M1
–18		NP-1	Holder, Cylinder Asm
–19	88F2629	1	Spring, Mirror 1
–20		NP-1	
–21	88F2631	3	Screw, Adjust
–22	06F0411	2	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M4 X 16 PP
–24		NP-1	
–25	06F0403	1	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 20 PP
–26		NP-1	Mirror, M2
–27		NP-1	
–28	88F2629	1	Spring, Mirror 2
–29		NP-1	Holder
–30	88F2631	3	Screw, Adjust
–31	06F0411	2	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M4 X 16 PP
–33	30H6819	1	Motor, L2 Resolution Lens (M502)
–34		NP-2	


HC6PCH17
2
3
45
46
27
26
31
28
29
30
24
25
D
B
A
C
E
76
77
78
143
142
139
140
70
71
72
73
83
84
81
82
84
104
105
88
93
92
91
101
100
97
92
93
89
C
96
98
124
123
121
122
146
127
126
128
6
8
9
A
5
7
132
135
E
133
136
42
41
33
34
38
37
D
114
111
110
115
112
113
50
B
51
109
62
63
60
61
56
54
65
59
66
67
53
57
17
19
21
20
18
22
15
16
11
12
13

Asm–Index	Part Number	Units	Description
17–			Printhead (Sheet 2 of 4)
–37	30H6820	1	Holder, Motor
–38	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 12 PP
–41		NP-1	
–42	06F0415	1	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 12 PP
–45	30H6814	1	Sensor, Resolution Lens (S503)
–46	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 12 PP
–50		NP-1	
–51		NP-2	
–53		NP-1	
–54	06F0415	1	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M4 X 10 PP
–56		NP-1	
–57	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 12 PP
–59		NP-1	
–60		NP-1	
–61		NP-1	
–62		NP-1	
–63	88F3122	2	Ring, Retaining
–65		NP-1	
–66		NP-1	
–67	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–70		NP-1	
–71		NP-1	Lens, Cyl
–72	06F0415	1	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M4 X 10 PP
–73	06F0403	1	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 20 PP
–76		NP-1	Lens, F-Theta
–77	06F0417	2	Washer, Press PP


HC6PCH17
2
3
45
46
27
26
31
28
29
30
24
25
D
B
A
C
E
76
77
78
143
142
139
140
70
71
72
73
83
84
81
82
84
104
105
88
93
92
91
101
100
97
93
92
89
C
96
98
124
123
121
122
126
127
128
146
6
8
9
A
5
7
132
135
E
133
136
42
41
33
34
38
37
D
114
111
110
115
112
113
109
50
B
51
62
63
60
61
56
54
65
59
66
67
53
57
17
19
21
20
18
22
15
16
11
12
13

Asm–Index	Part Number	Units	Description
17–			Printhead (Sheet 3 of 4)
–78	06F0403	2	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 20 PP
–81		NP-1	Lens, Long
–82		NP-1	
–83		NP-1	
–84	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 12 PP
–88		NP-1	Mirror Asm, Return
–89		NP-1	Holder Asm, Return Mirror
–91		NP-1	
–92		NP-2	
–93	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 12 PP
–96	88F3389	1	Holder, Return Mirror
–97	06F0411	1	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M4 X 16 PP
–98	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 16 PP
–100	04H0804	1	Clamp, Return Mirror
–101	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 12 PP
–104		NP-1	
–105	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 12 PP
–109		NP-1	
–110		NP-1	
–111		NP-1	
–112		NP-1	
–113	06F0403	1	Bolt, Hexagon Socket Hd M3 X 20 PP
–114	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 12 PP
–115	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 16 PP
–121		NP-1	
–122	63H6480	1	Card, Beam Betect (BD171)


HC6PCH17
2
3
45
46
27
26
31
28
29
30
24
25
D
B
A
C
E
76
77
78
143
142
139
140
70
71
72
73
83
84
81
82
84
104
105
88
93
92
91
101
100
97
93
92
89
C
96
98
124
123
121
122
126
127
128
146
6
8
9
A
5
7
132
135
133
136
42
41
33
34
38
37
D
114
111
110
115
112
113
109
50
B
51
62
63
60
61
56
54
65
59
66
67
53
57
17
19
21
20
18
22
15
16
11
12
13

Asm–Index	Part Number	Units	Description
17–			Printhead (Sheet 4 of 4)
–123	06F0957	2	Collar
–124	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 16 PP
–126	08H7680	1	Holder, Sensor
–127	06F0411	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 10 PP
–128	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 16
–132		NP-1	Cover, Printhead
–133	06F0401	7	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 16 PP
–135		NP-1	Duct, Cooling
–136	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–139		NP-1	
–140	06F0415	1	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 12 PP
–142		1	Switch, Printhead Cover (S502)
–143	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 16 PP
–146		NP-1	

Assembly 18: No Assembly 18 for this Printer

Asm–Index	Part Number	Units	Description
18–			Not Used

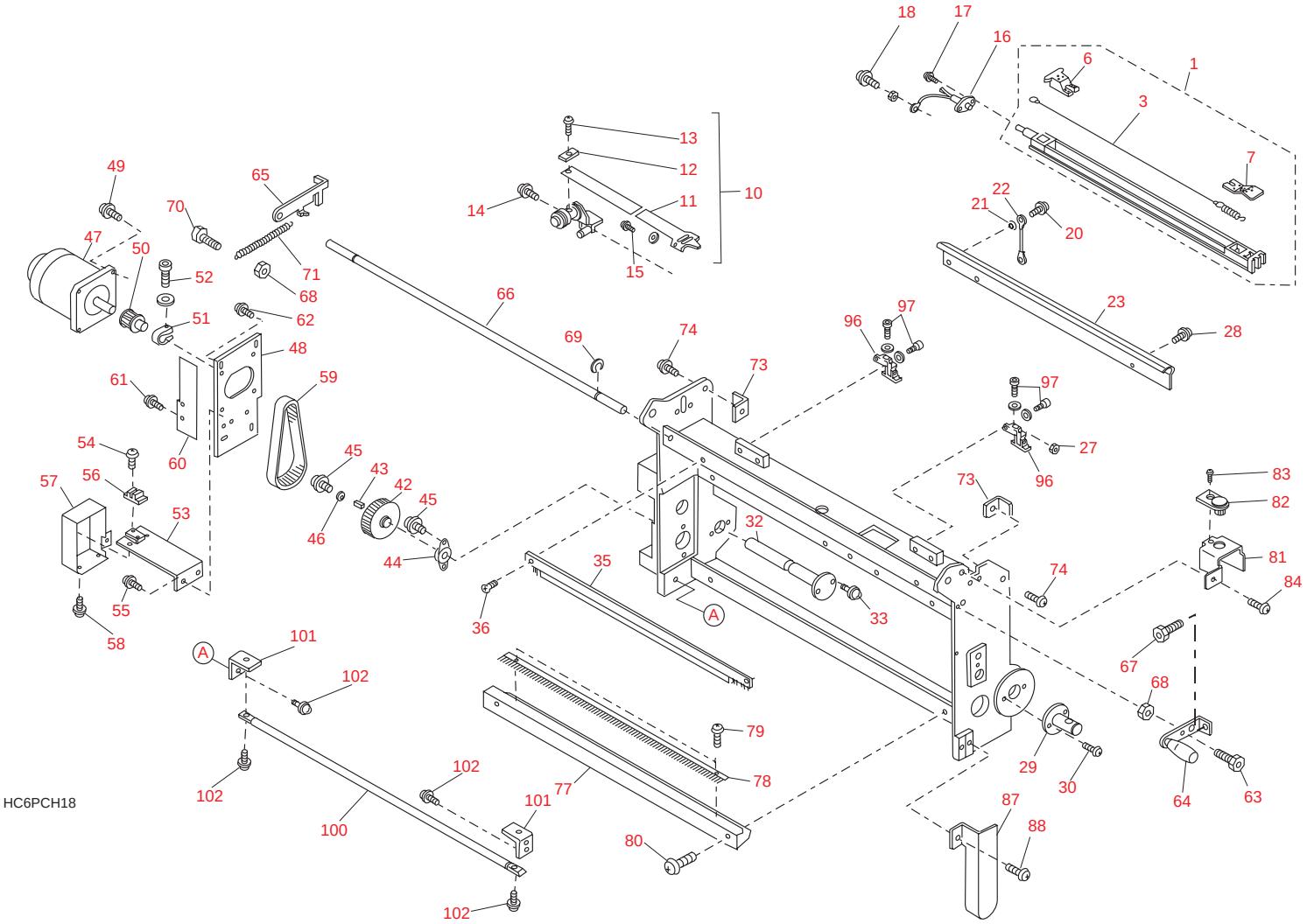
Assembly 19: No Assembly 19 for this Printer

Asm–Index	Part Number	Units	Description
19–			Not Used

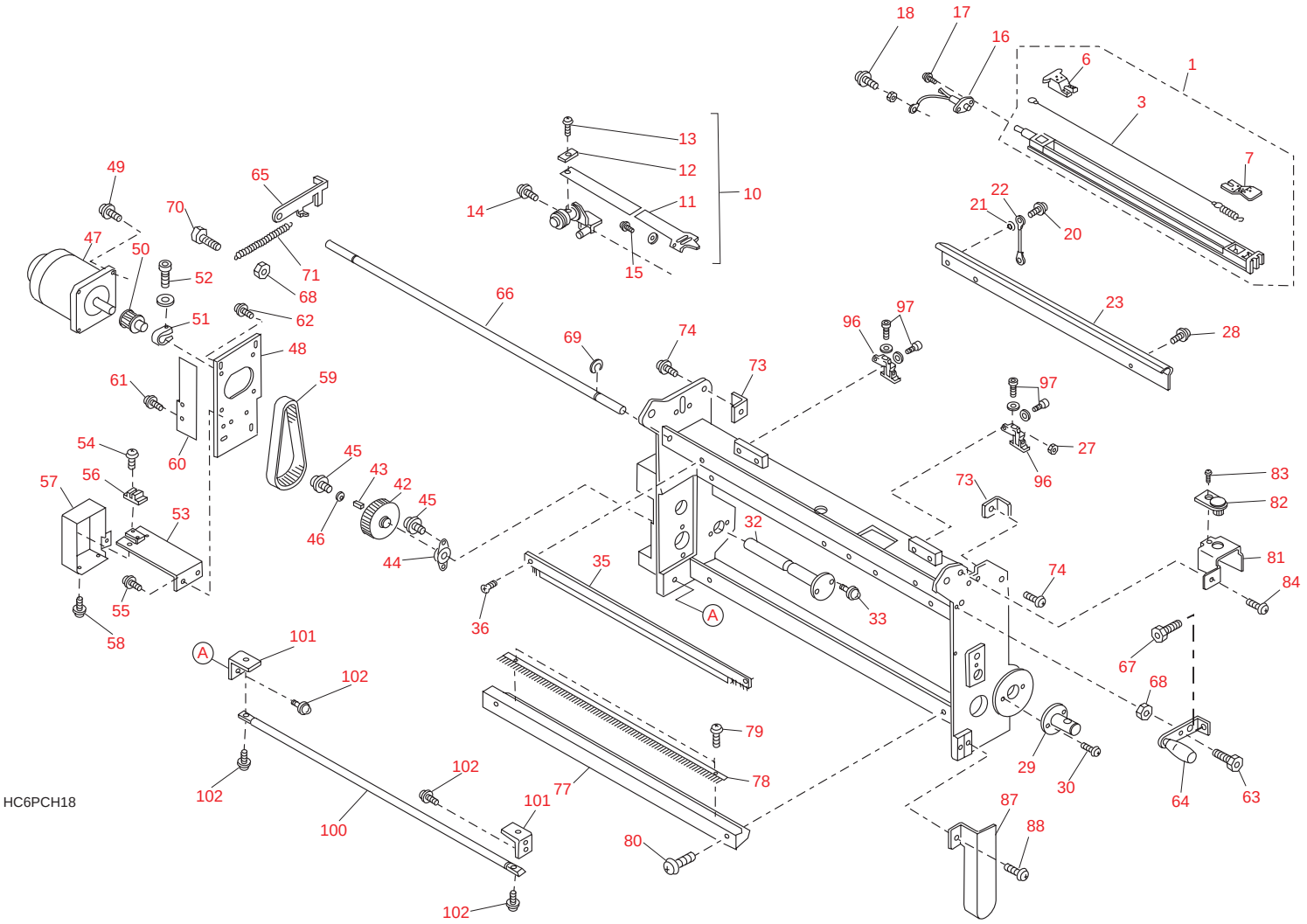
Assembly 20: No Assembly 20 for this Printer

Asm–Index	Part Number	Units	Description
20–			Not Used

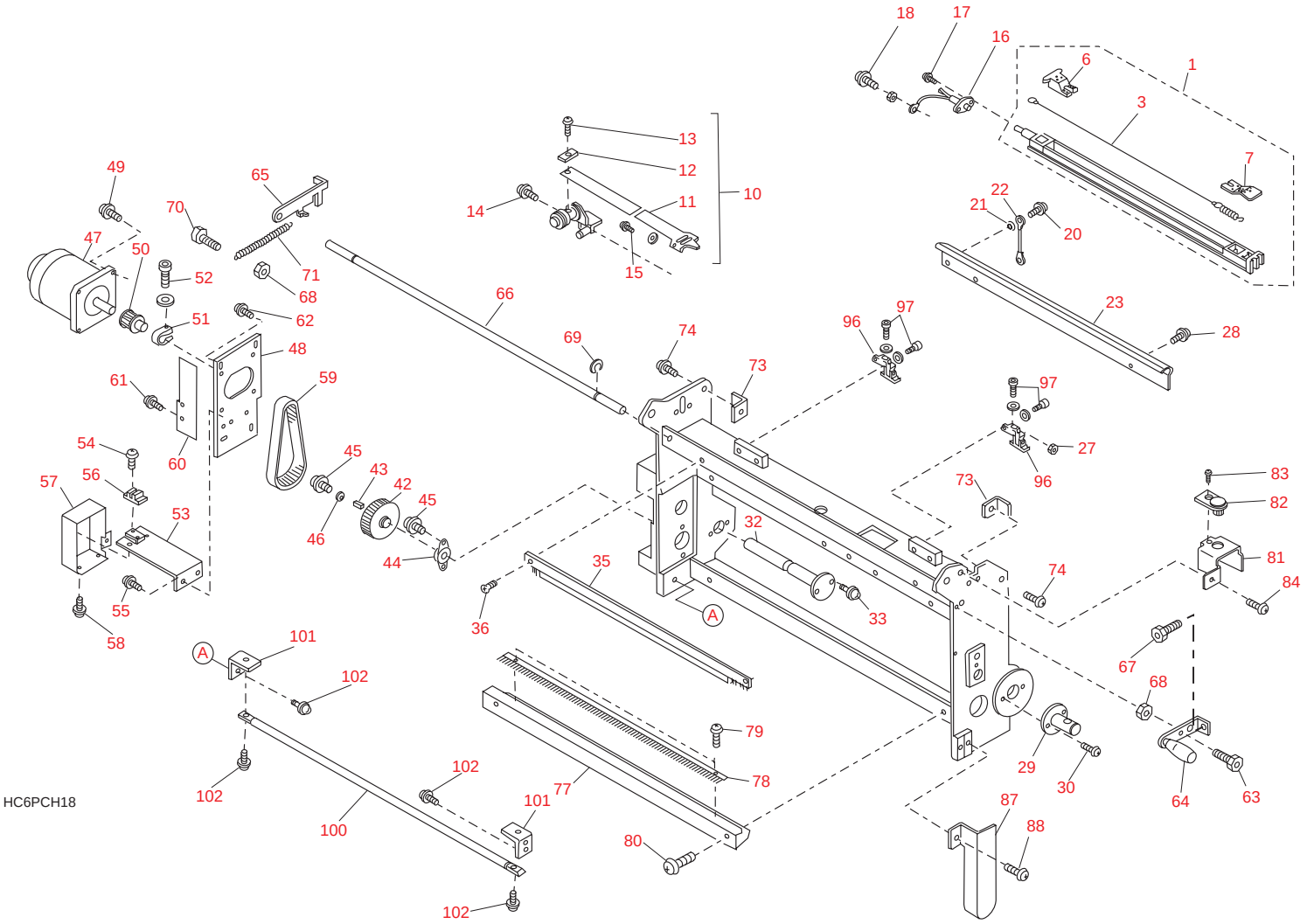
Assembly 21: Transfer Station



Asm–Index	Part Number	Units	Description
21–			Transfer Station (Sheet 1 of 3)
–1	57G6505	1	Corona, Transfer Asm
–3	30H6586	1	Wire, Corona
–6	88F1632	1	Cover, Terminal Rear
–7	88F1633	1	Cover, Terminal Front
–10		NP-1	
–11	06F0116	1	Tape, Corona
–12	06F0684	1	Stopper, Corona Tape
–13	06F0412	1	Screw, Phillips Flat Hd M3 X 4 PP
–14	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–15	06F0401	1	Screw, Phillips Pan Hd M3 X 5 PP
–16	53F1794	1	Cable, High Voltage Asm
–17	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 12 PP
–18	06F0411	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–20	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 6 PP
–21	06F0406	1	Washer, Toothed D3 PP
–22		NP-1	
–23		NP-2	
–27		NP-2	
–28		NP-2	
–29	06F0681	1	Shaft, Hinge Front
–30	06F0412	2	Screw, Flat Hd M5 X 8 PP
–32	06F0433	1	Shaft, Hinge Rear
–33	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 10 PP
–35	06F0106	1	Brush, Disharge Transfer
–36	06F0412	2	Screw, Flat Hd M3 X 8 PP
–42		NP-1	
–43		NP-1	
–44	53F1808	1	Bearing, Flange

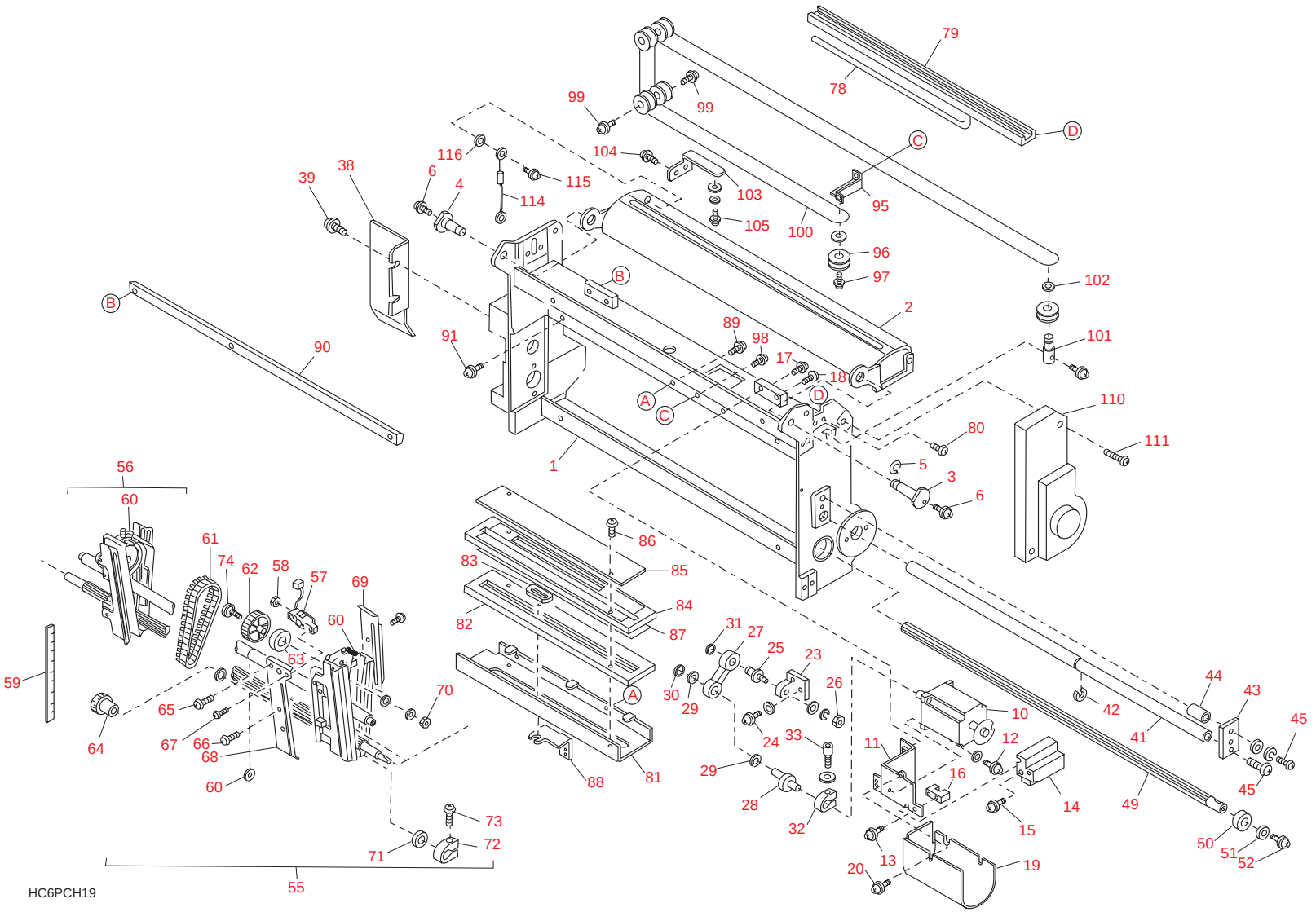

HC6PCH18
18
17
16
6
1
3
7
13
12
11
10
14
15
22
21
20
23
28
49
47
50
52
51
70
65
71
68
62
66
48
61
60
59
54
56
57
53
55
58
45
43
42
45
46
44
69
74
73
97
96
97
27
96
73
83
82
81
84
74
32
35
36
33
A
A
101
102
102
102
100
102
101
77
79
78
80
102
87
88
67
68
29
30
64
63

Asm–Index	Part Number	Units	Description
21–			Transfer Station (Sheet 2 of 3)
–45	06F0411	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–46		NP-1	
–47	63H6530	1	Motor, Tractor (M105)
–48		NP-1	
–49	06F0401	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 16 PP
–50	88F2741	1	Pulley, Drive
–51	06F0292	1	Ring, Clamping
–52	06F0403	1	Screw, Hexagon Hd M4 X 12 PP
–53		NP-1	
–54	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 10 PP
–55	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–56	30H6814	1	Sensor, Transfer Station Open (S114)
–57		NP-1	
–58	06F0413	2	Screw, Bind Hd M4 X 6 PP
–59	63H6531	1	Belt, Tractor Drive
–60		NP-1	
–61	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–62	06F0401	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 16 PP
–63	06F0403	1	Bolt, Hexagon Socket Hd M5 X 20 PP
–64		NP-1	Lever, Transfer Station Release
–65		NP-1	Latch, Transfer Station Rear
–66		NP-1	Shaft
–67	06F0415	1	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 12 PP
–68	06F0407	2	Nut, Lock M5 PP
–69		NP-2	
–70	06F0403	1	Bolt, Hexagon Socket Hd M5 X 30 PP
–71		NP-1	
–73	06F0695	2	Bracket, Mounting

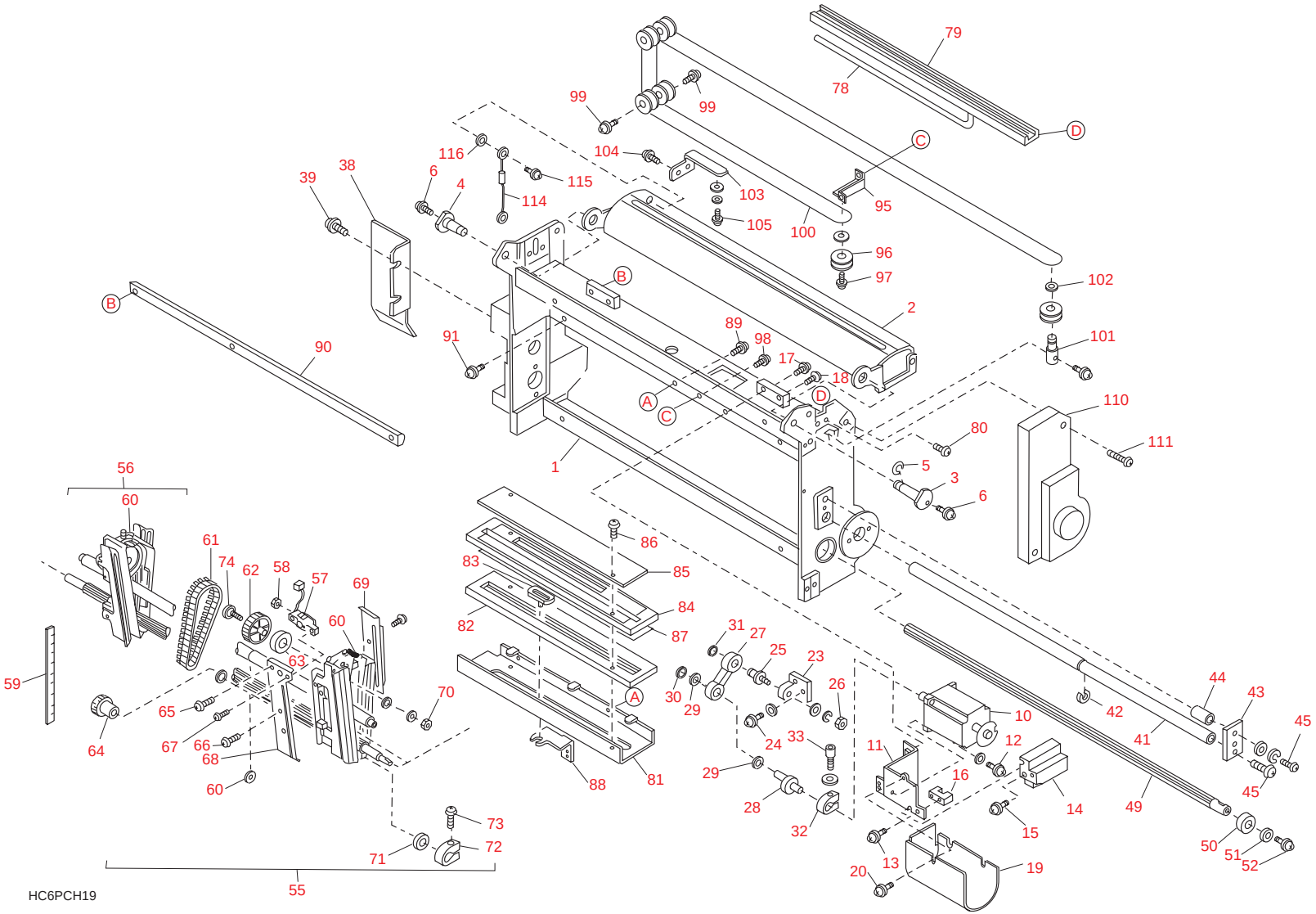

HC6PCH18
18
17
16
6
1
3
7
13
12
11
10
14
15
22
21
20
23
28
49
47
50
52
51
70
65
71
68
62
66
48
61
60
59
54
56
57
53
55
58
45
43
42
45
46
44
69
74
73
97
96
97
27
96
73
83
82
81
84
74
32
35
36
33
A
A
101
102
102
102
100
102
101
77
79
78
80
102
67
68
64
63
29
30
87
88

Asm–Index	Part Number	Units	Description
21–			Transfer Station (Sheet 3 of 3)
–74	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–77		NP-1	
–78	06F0106	1	Brush, Discharge Transfer
–79	06F0412	2	Screw, Flat Hd M3 X 8 PP
–80	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–81		NP-1	
–82	63H6532	1	Brush, Transfer Corona
–83	06F0412	1	Screw, Flat Hd M3 X 4 PP
–84	06F0411	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–87		NP-1	
–88	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 8 PP
–96	06F0330	2	Link Asm
–97	06F0403	4	Bolt, Hexagon Socket Hd M4 X 8 PP
–100		NP-1	
–101		NP-2	
–102	06F0411	6	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–	02N7499	1	Cable, Tractor Motor (Connectors PJ113, PJ114, PJ119, PJ126, PJ138, PJ309, PJ318, PJ321, PJ322, PJ323, PJ701)

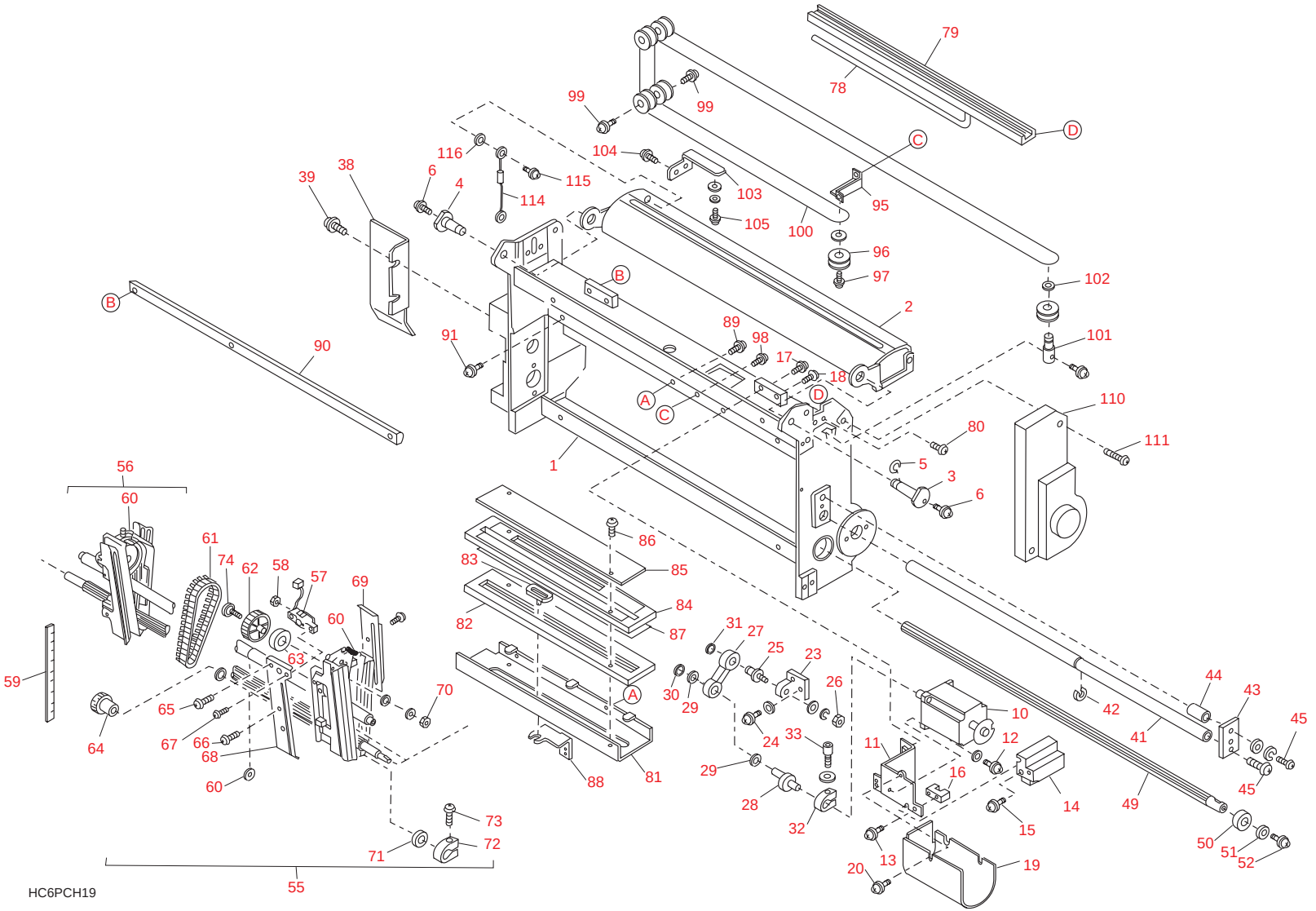
Assembly 22: Transfer Station



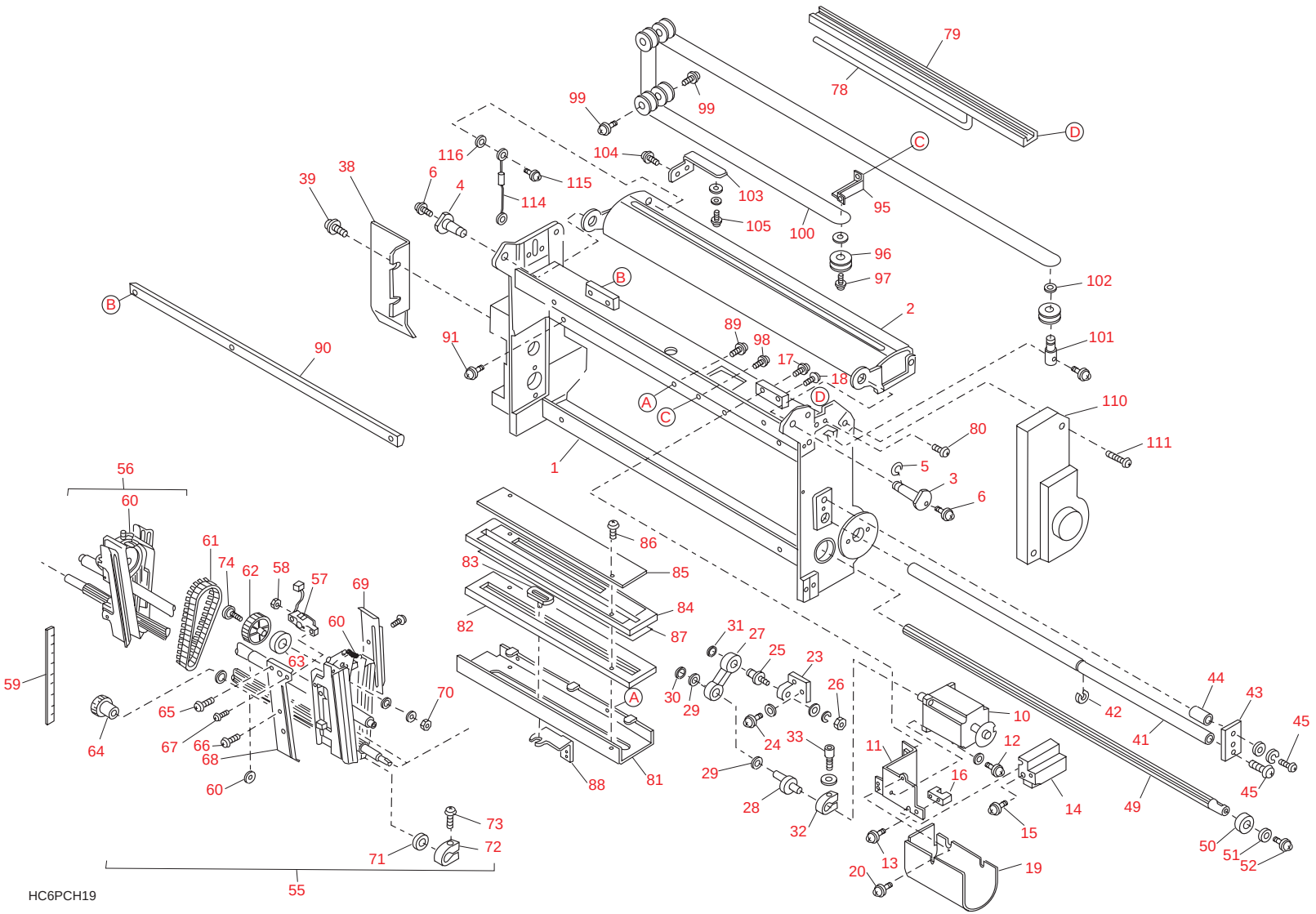
Asm–Index	Part Number	Units	Description
22–			Transfer Station (Sheet 1 of 4)
–1		NP-1	
–2	63H6527	1	Frame, Retractor Asm
–3		NP-1	
–4		NP-1	
–5		NP-1	
–6	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–10	63H6529	1	Motor, Retractor (M103)
–11		NP-1	
–12	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr M4 X 12 PP
–13	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 10 PP
–14		NP-1	
–15	06F0413	1	Screw, Bind Hd M4 X 6 PP
–16	30H6814	1	Sensor, Retractor Motor Encoder (S113)
–17	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 16 PP
–18	06F0413	1	Screw, Bind Hd M5 X 12 PP
–19		NP-1	
–20	06F0413	2	Screw, Bind Hd M4 X 8 PP
–23	88F2854	1	Block, Bearing
–24	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr M4 X 12 PP
–25		NP-1	
–26		NP-1	
–27	63H6528	1	Rod, Connecting
–28	06F0334	1	Shaft, Eccentric
–29		NP-2	
–30		NP-1	
–31	06F0409	1	Ring, Retaining PP
–32	06F0333	1	Ring, Clamping
–33	06F0403	1	Bolt, Hexagon Socket Hd M3 X 8 PP


HC6PCH19

Asm–Index	Part Number	Units	Description
22–			Transfer Station (Sheet 2 of 4)
–38		NP-1	
–39	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–41		NP-1	
–42		NP-1	
–43		NP-1	
–44		NP-1	
–45	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–46		NP-1	Screw, Phillips Pan Hd M5 X 35
–49		NP-1	
–50	06F0054	1	Bearing, Ball
–51		NP-1	
–52	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–55	63H6525	1	Tractor Asm, Front
–56	63H6526	1	Tractor Asm, Rear
–57	53F1795	1	Sensor, Tractor Jam Asm
–58		NP-1	Cable, Retractor Ground
–59		NP-1	
–60	06F0123	4	Spring
–61	06F0339	2	Belt, Tractor Asm
–62		NP-2	
–63	06F0037	2	Bearing, Ball
–64		NP-2	
–65	06F0412	1	Screw, Flat Hd M4 X 10 PP
–66		NP-8	
–67	06F0412	1	Screw, Flat Hd M3 X 6 PP
–68		NP-1	
–69		NP-1	
–70	06F0407	2	Nut M6 PP

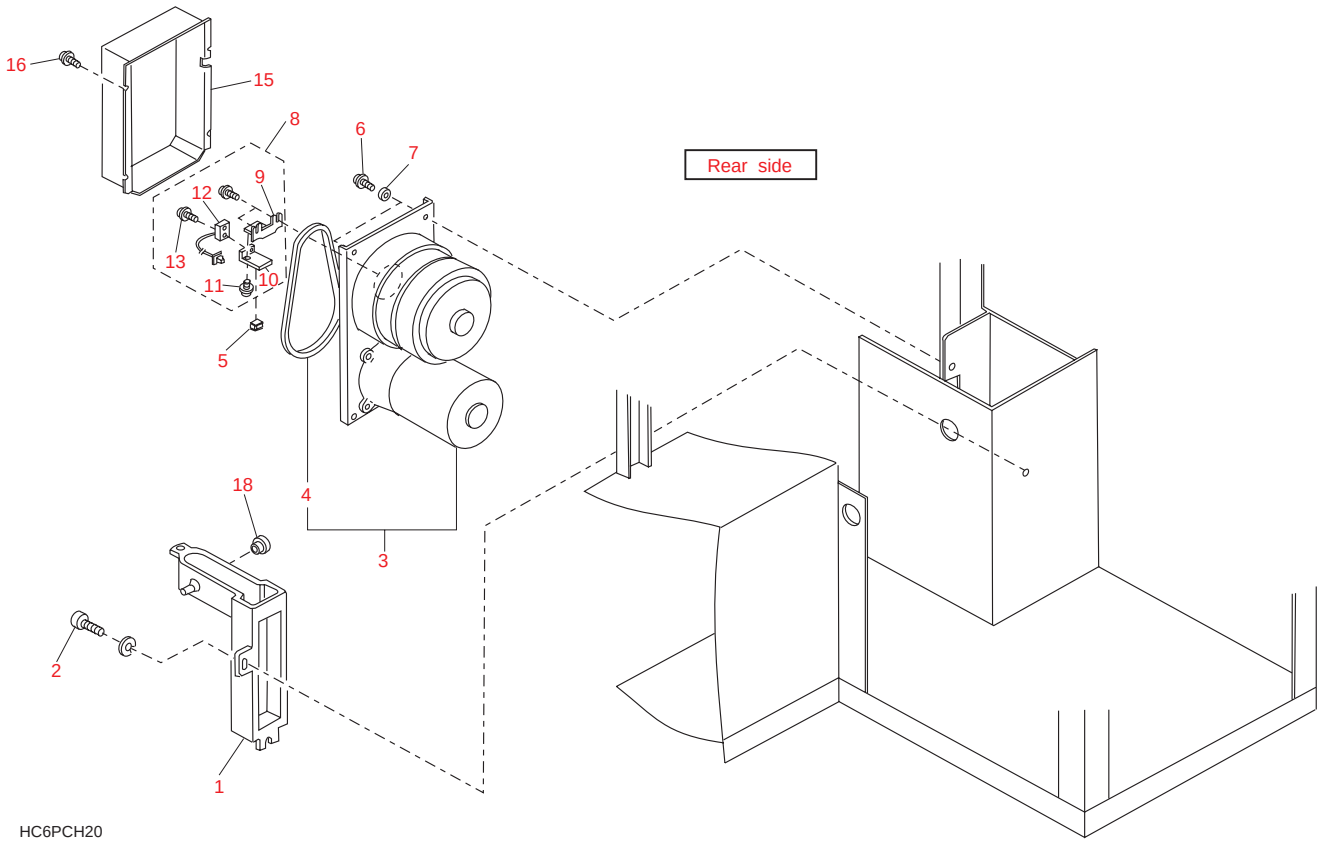

HC6PCH19

Asm–Index	Part Number	Units	Description
22–			Transfer Station (Sheet 3 of 4)
–71		NP-2	
–72		NP-2	
–73	06F0403	2	Bolt, Hexagon Socket Hd M4 X 12 PP
–74		NP-2	
–78		NP	
–79		NP-1	
–80	06F0411	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 16 PP
–81		NP-1	
–82		NP-1	
–83		NP-1	
–84		NP-1	
–85	63H6481	1	Card, PW111
–86	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 16 PP
–87		NP-1	
–88		NP-1	
–89	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 10 PP
–90		NP-1	
–91	06F0401	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–95		NP-1	
–96	53F1817	6	Bearing, Pulley
–97		NP-1	
–98	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 16 PP
–99	06F0401	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M6 X 16 PP
–100		1	Wire, Tractor Position
–101		NP-1	
–102		NP-1	
–103		NP-1	
–104	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP

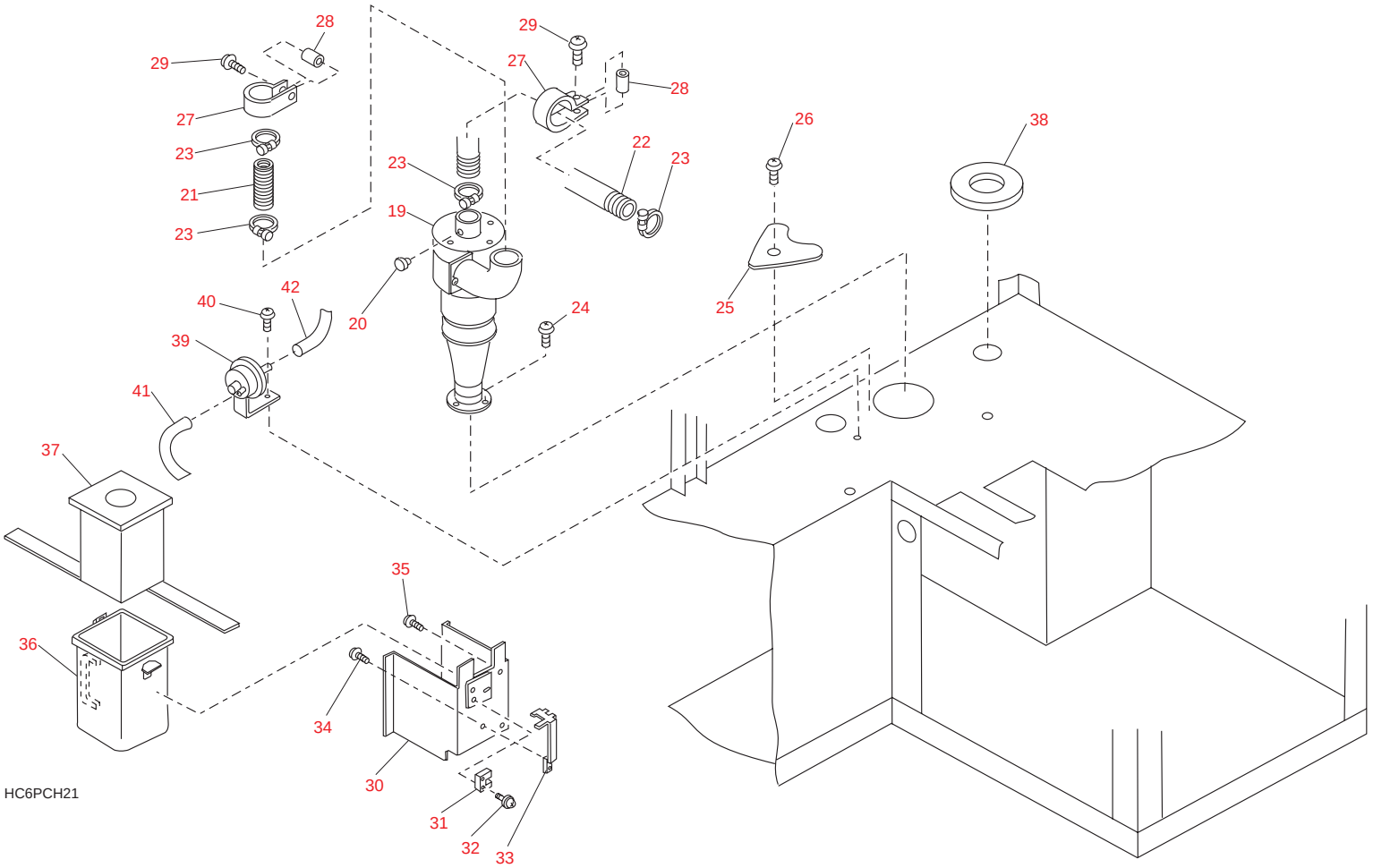

HC6PCH19

Asm–Index	Part Number	Units	Description
22–			Transfer Station (Sheet 4 of 4)
–105	06F0403	4	Bolt, Hexagon Socket Hd M4 X 8 PP
–110		NP-1	
–111	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–114		NP-1	
–115	06F0403	1	Bolt, Hexagon Socket Hd M4 X 8 PP
–116	06F0406	1	Washer, Toothed D4 PP
–	24L4861	1	Card Asm, Side 2 Verification Sensor—Duplex Only (not shown)
–	02N7498	1	Cable, Retractor Motor (Connectors PJ119, PJ136, PJ137, PJ139, PJ153)
–	02N7499	1	Cable, PW111 Card (Connectors PJ140, PJ155)

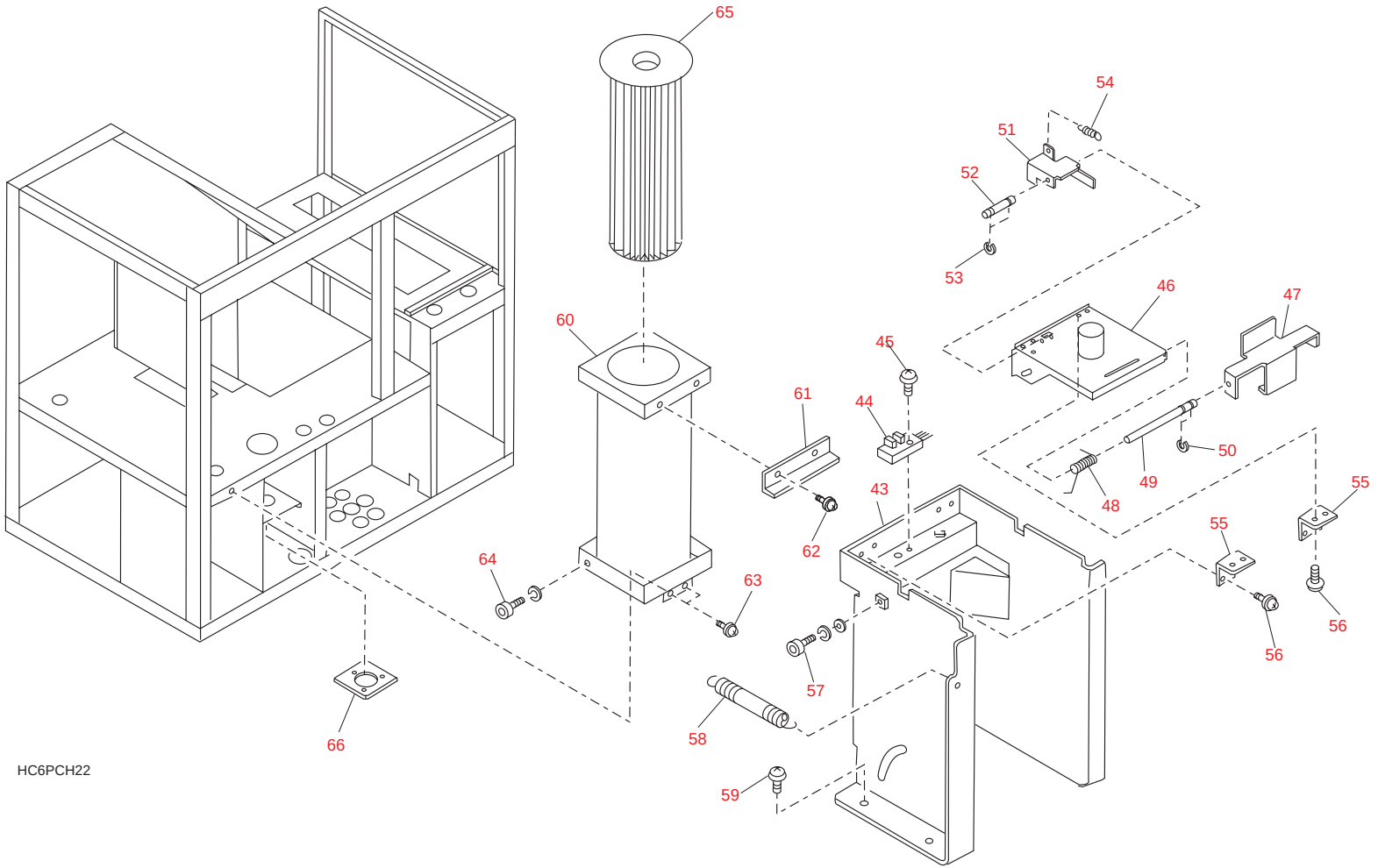
Assembly 23: Air System



Asm–Index	Part Number	Units	Description
23–			Air System (Sheet 1 of 3)
–1		NP-1	
–2	06F0415	3	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 16 PP
–3	63H6497	1	Motor, Cyclone Blower Asm (M104)
–4	53F1988	1	Belt, Cyclone Blower
–5	04H1119	1	Clamp, Cable
–6	06F0415	4	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 16 PP
–7	06F0417	4	Washer, Press PP
–8	88F2705	1	Sensor Asm, Cyclone Blower Rotation (S116)
–9	88F2706	1	Holder, Rotation Sensor
–10	88F2707	1	Holder, Rotation Sensor
–11	06F0415	1	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M4 X 10 PP
–12	53F1829	1	Sensor, Cyclone Blower Rotation (S116)
–13	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 6 PP
–15		NP-1	
–16	06F0411	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–18		NP-1	

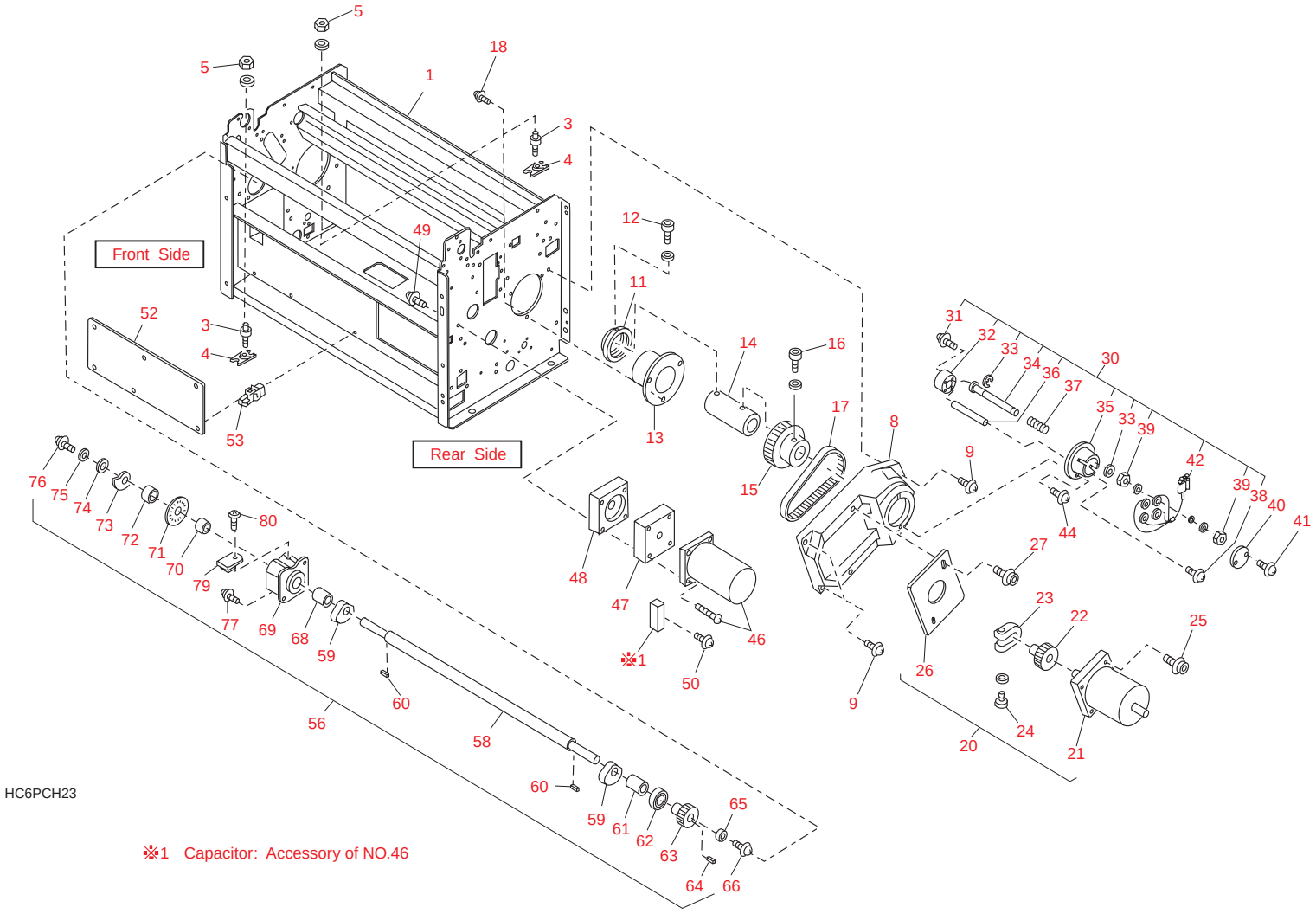

28
29
27
23
21
23
29
27
28
22
23
23
19
20
26
38
25
40
42
24
39
41
37
35
36
34
30
31
32
33
HC6PCH21

Asm–Index	Part Number	Units	Description
23–			Air System (Sheet 2 of 3)
–19		NP-1	
–20	06F0492	1	Cap, Sleeve
–21		NP-1	
–22	06F0342	1	Hose, Vacuum
–23	06F0463	4	Band, Wire
–24	06F0411	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–25		NP-1	
–26	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–27		NP-2	
–28		NP-2	
–29	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 25 PP
–30		NP-1	
–31	24L4883	1	Switch, Toner Collector (S101)
–32	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 16 PP
–33	06F0497	1	Arm, Toner Bag Sensor
–34	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–35	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–36	06F0297	1	Container, Toner Collector Bag
–37		1	Bag, Toner Collector (supplied with toner cartridge)
–38		NP-1	
–39	06F0055	1	Switch, Filter Pressure Asm (S102)
–40	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–41		NP-1	
–42	88F2713	1	Tube, Silicone

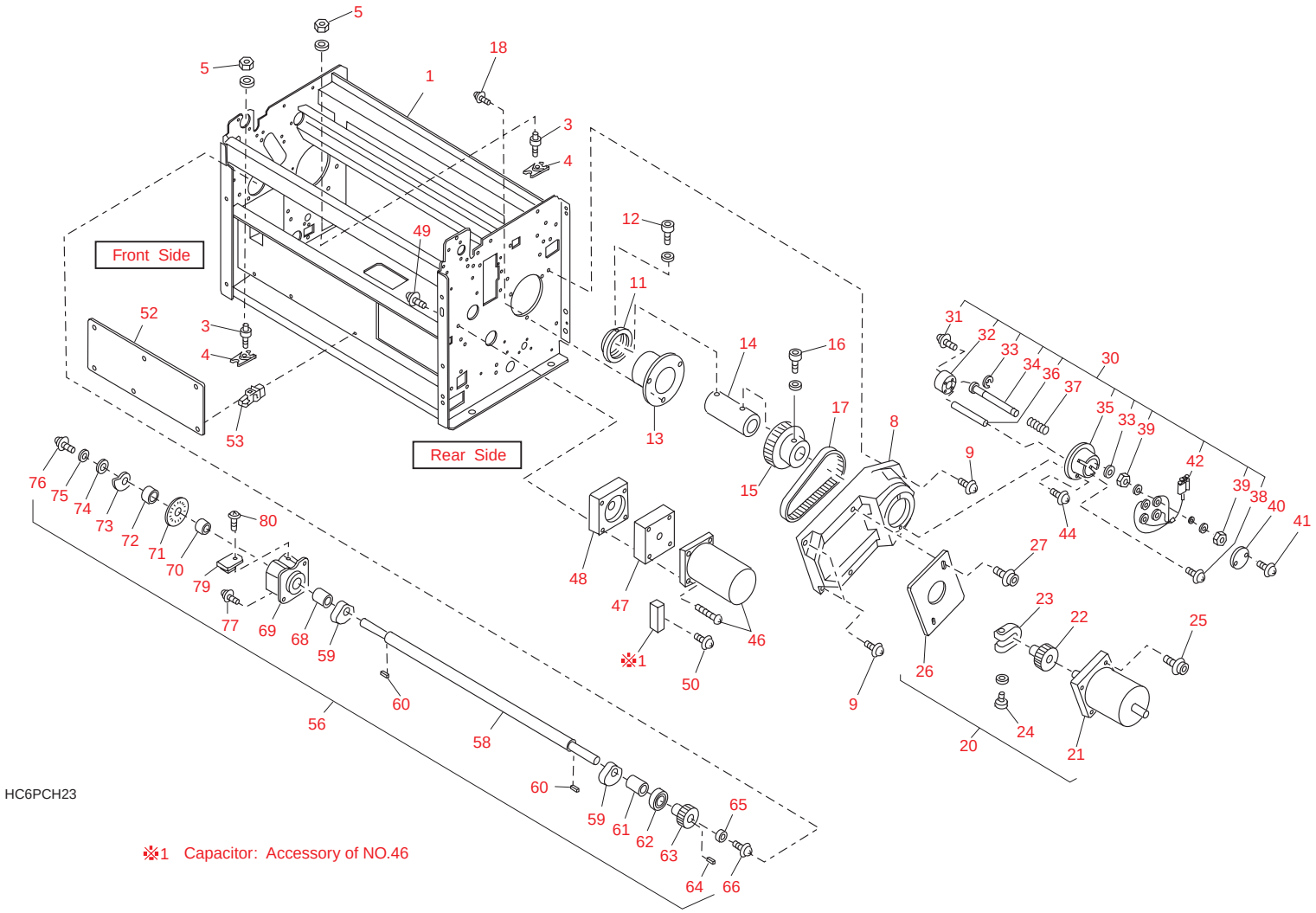

65
54
51
52
53
46
47
60
45
44
61
50
49
48
43
55
55
64
63
62
56
56
57
58
66
59
HC6PCH22

Asm–Index	Part Number	Units	Description
23–			Air System (Sheet 3 of 3)
–43		NP-1	Enclosure, Fine Filter
–44	63H6496	1	Switch, Fine Filter (S106)
–45	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–46		NP-1	Cover, Fine Filter
–47		NP-1	Latch, Fine Filter Cover
–48		NP-1	Spring, Hinge
–49		NP-1	Pin, Hinge
–50		NP-2	Ring, Retaining
–51		NP-1	Plate, Sensor
–52		NP-1	Pin, Latch
–53		NP-2	Ring, Retaining
–54		NP-1	Spring
–55		NP-2	Hinge, Cover
–56	06F0411	8	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–57	06F0403	1	Bolt, Hexagon Socket Hd M4 X 8 PP
–58		NP-1	Spring
–59	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–60		NP-1	Case, Fine Filter
–61		NP-1	Catch, Latch
–62	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–63	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–64	06F0403	1	Bolt, Hexagon Socket Hd M4 X 8 PP
–65	1402826	1	Filter, Fine
–66		NP-1	Seal, Toner Collector Bag

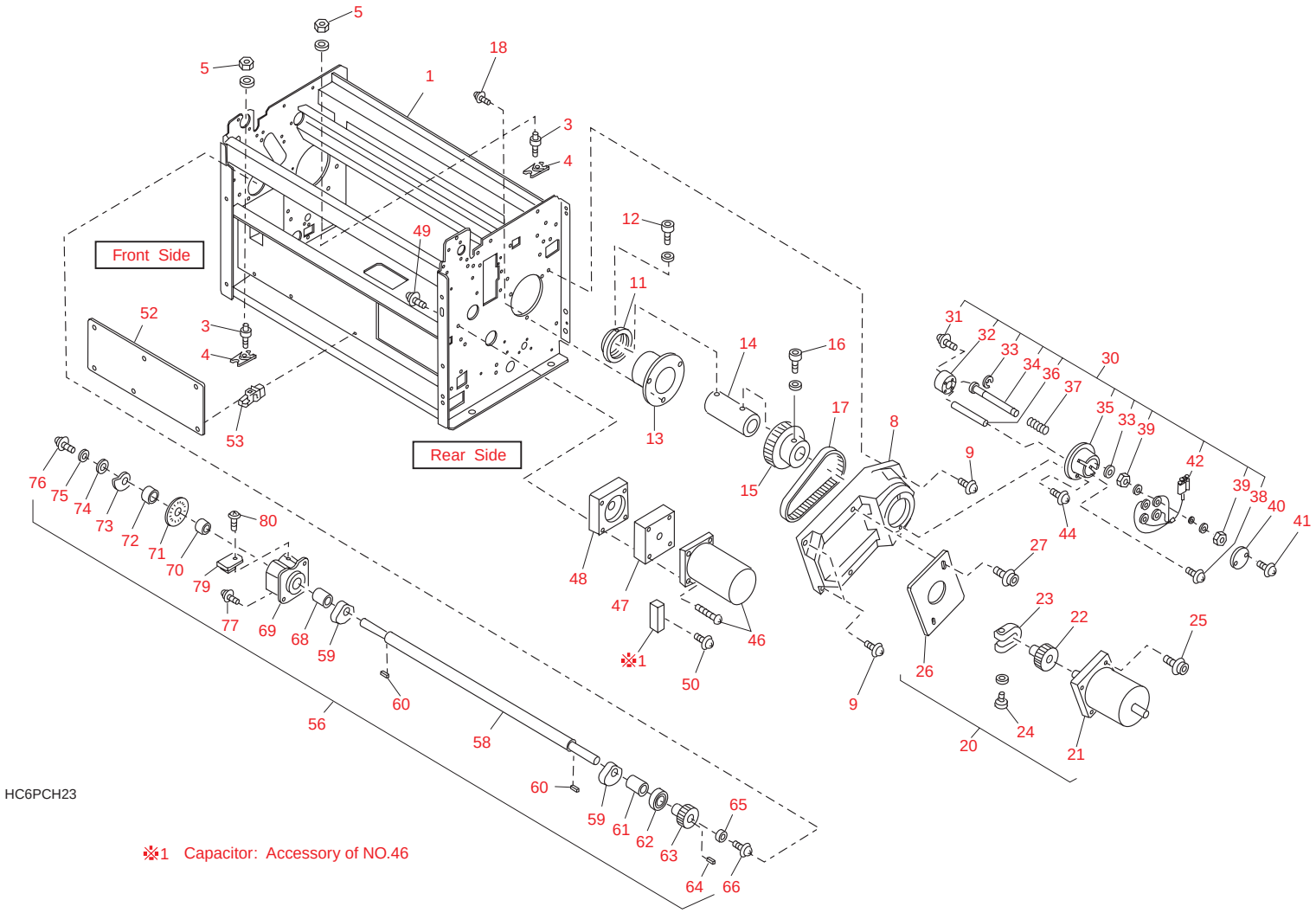
Assembly 24: Fuser Hardware



Asm–Index	Part Number	Units	Description
24–			Fuser Hardware (Sheet 1 of 3)
–			
–1		NP-1	
–3		NP-2	
–4	06F0754	2	Foot, Jack
–5	06F0407	2	Nut, Lock M10 PP
–8	63H6542	1	Housing, Mechanical Drive Asm
–9	06F0401	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 16 PP
–11	06F0149	1	Collar, Fuser Roll Drive
–12	06F0403	2	Bolt, Hexagon Socket Hd M5 X 12 PP
–13	63H6543	1	Holder, Mechanical Shaft Asm
–14		NP-1	
–15		NP-1	
–16	06F0403	2	Bolt, Hexagon Socket Hd M5 X 12 PP
–17		NP-1	
–18	06F0415	3	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 16 PP
–20		NP-1	
–21	63H6544	1	Motor, Hot Roll (M703)
–22	38L0734	1	Pulley, Hot Roll Motor
–23	06F0292	1	Ring, Tight
–24	06F0415	1	Bolt, Hexagon Socket Hd with Star Wshr M4 X 12 PP
–25	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 12 PP
–26		NP-1	
–27	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 12 PP
–30		NP-1	
–31	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 40 PP
–32	88F2943	1	Holder, Lamp

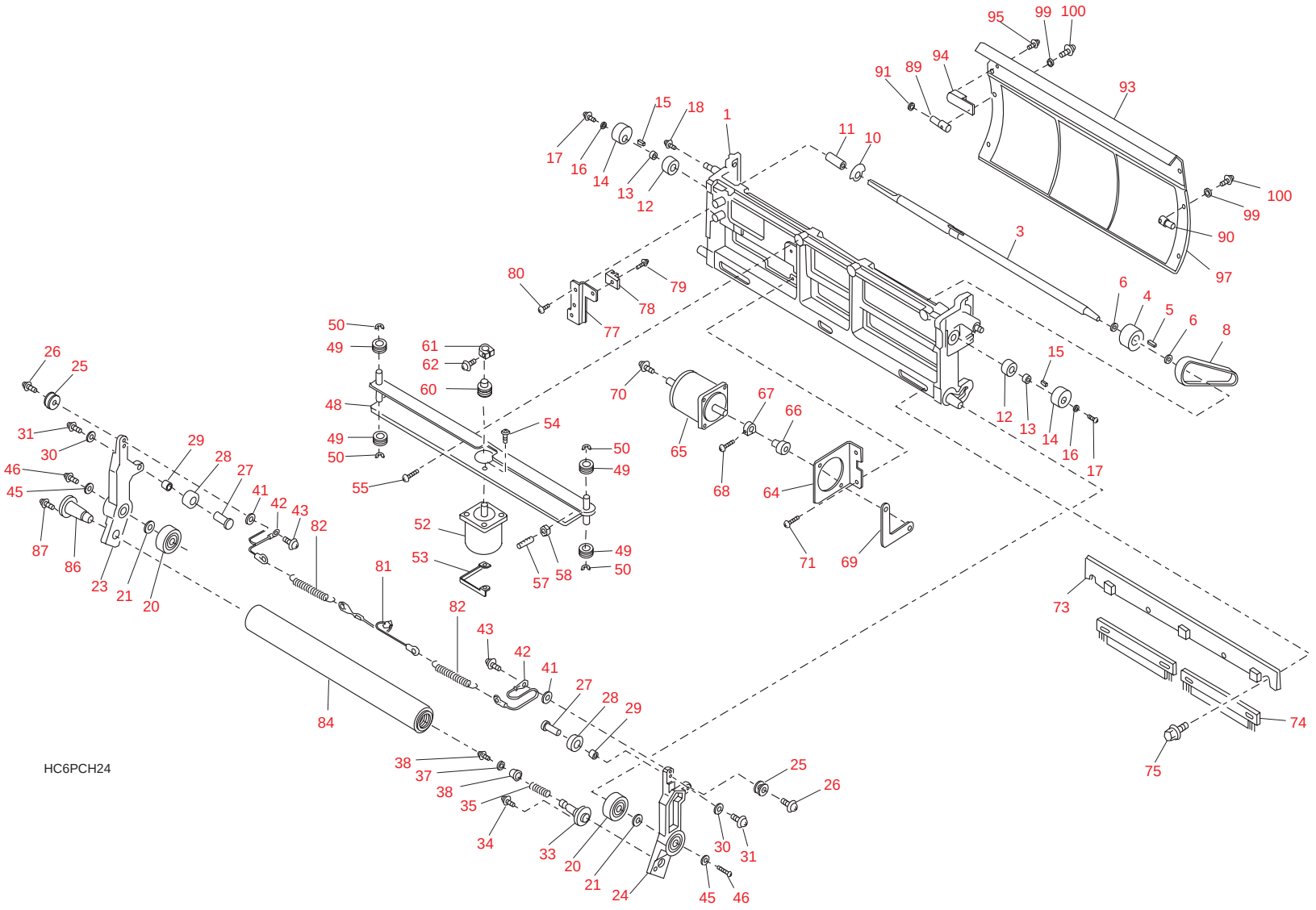

Front Side
Rear Side
HC6PCH23
※1 Capacitor: Accessory of NO.46

Asm–Index	Part Number	Units	Description
24–		NP	Fuser Hardware (Sheet 2 of 3)
–33		NP-8	
–34	63H6541	4	Contact, Mechanical Slide Asm
–35	88F2940	1	Receptacle, Hot Roll Lamp
–36		NP-2	
–37	06F0420	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–38	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 25 PP
–39		NP-8	
–40	11L5317	1	Cover, Lamp Holder
–41	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 10 PP
–42		NP-1	
–44	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–46	53F1962	1	Motor, Backup Roll (M701)
–47	06F0147	1	Gearhead, Backup Roll
–48		NP-1	
–49	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 16 PP
–50	06F0411	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–52	63H6484	1	Card, DV071
–53	08H7678	6	Holder
–56		NP-1	
–58		NP-1	
–59		NP-2	
–60	06F0408	2	Key, 4 X 4 X10 PP
–61		NP-1	
–62	06F0079	1	Bearing, Ball
–63	06F0150	1	Gear, Lift
–64	06F0408	1	Key, 4 X 4 X 10 PP

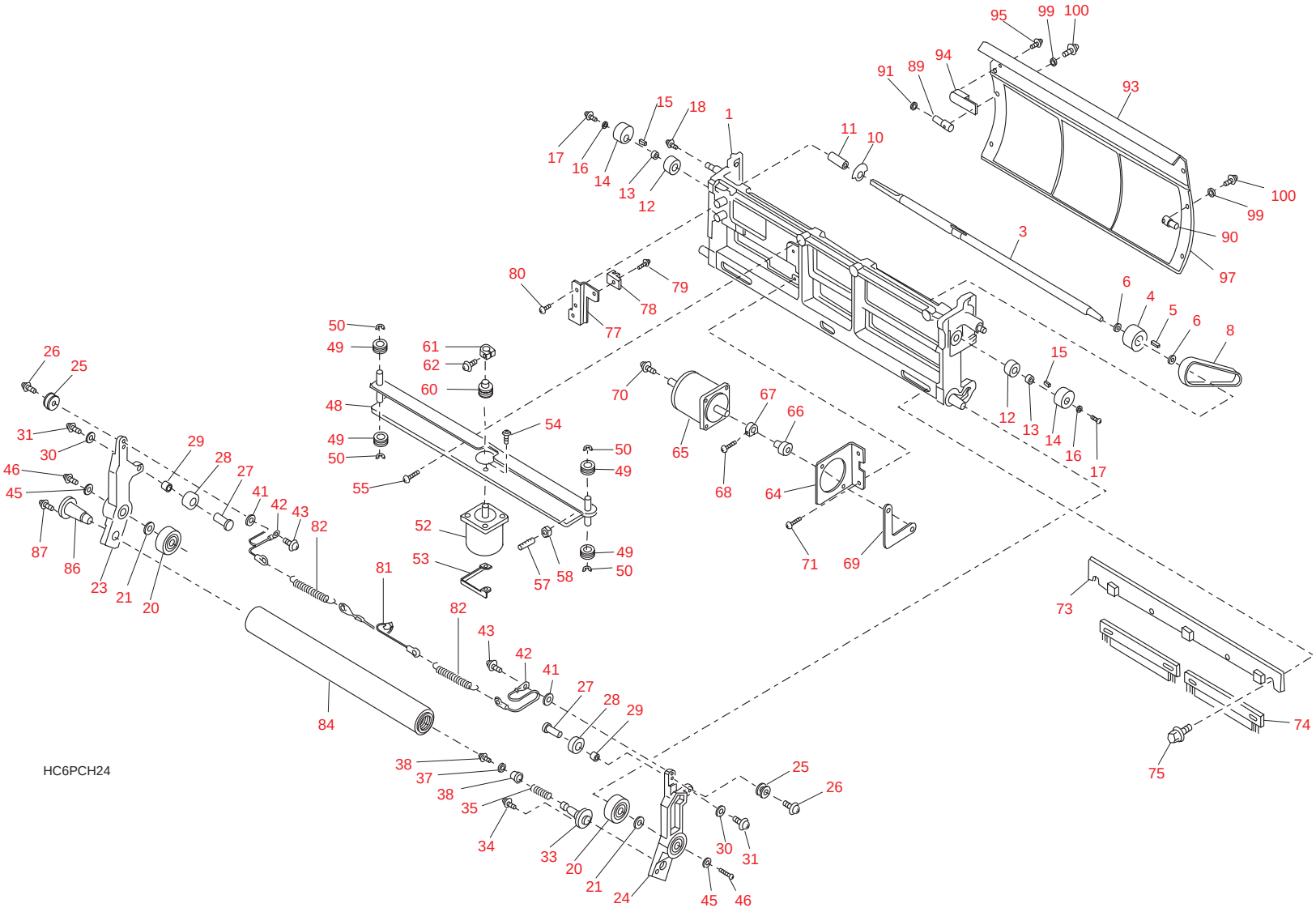

Front Side
Rear Side
HC6PCH23
※1 Capacitor: Accessory of NO.46

Asm–Index	Part Number	Units	Description
24–		NP	Fuser Hardware (Sheet 3 of 3)
–65	06F0406	1	Washer, Special PP
–66	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–68		NP-1	
–69		NP-1	
–70		NP-1	
–71		NP-1	
–72		NP-1	
–73		NP-1	
–74	88F1647	1	Spacer
–75	04H1117	1	Washer
–76	06F0415	1	Bolt, Hexagon Socket Hd with Star Wshr M5 X 12 PP
–77	90H1298	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 20
–77	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–79	63H6562	1	Sensor, Backup Roll Lift Motor Position (S624)
–80	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 12 PP

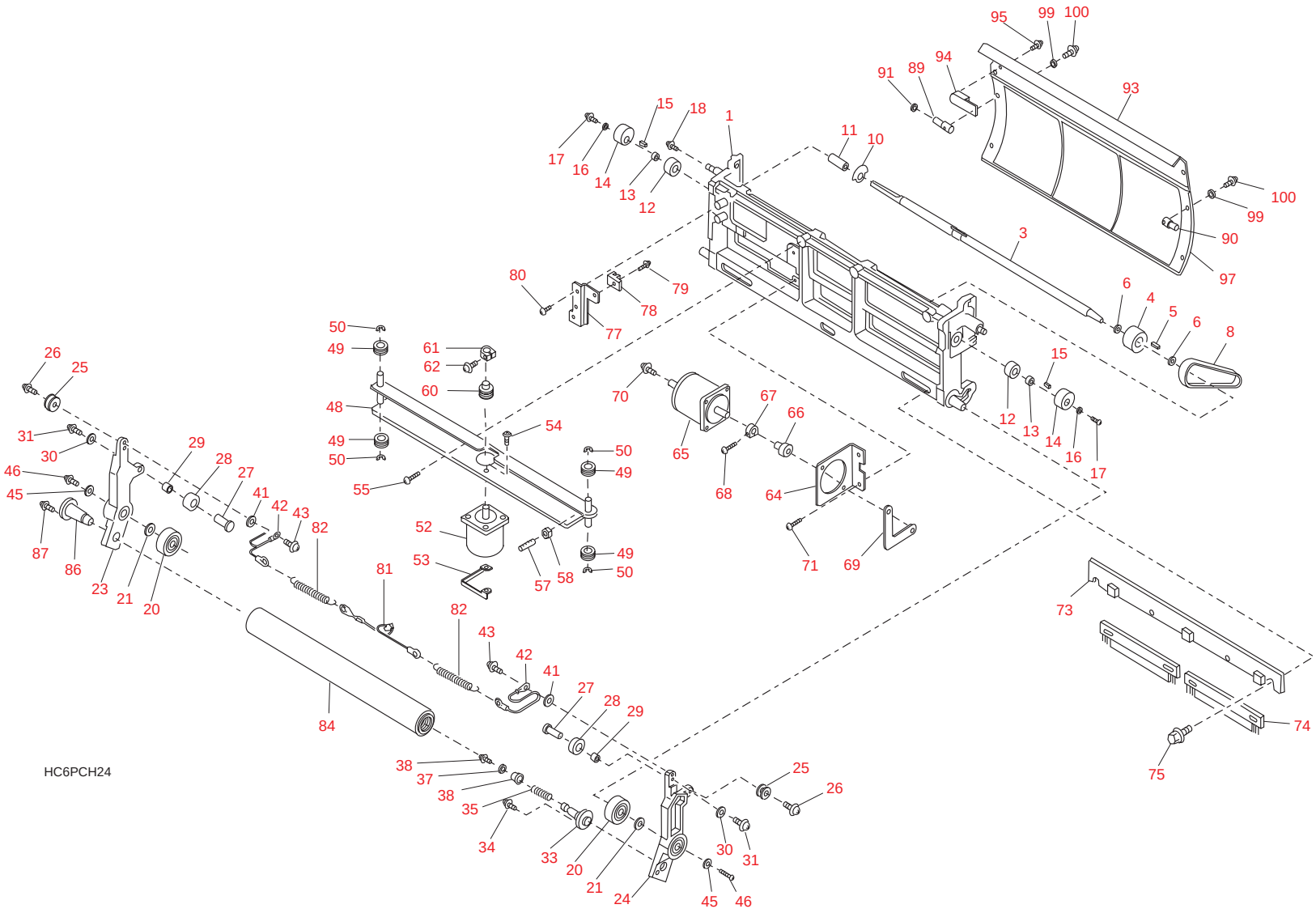
Assembly 25: Preheat Platen, Back-up Roll Hardware



Asm–Index	Part Number	Units	Description
25–			Preheat Platen, Back-up Roll Hardware (Sheet 1 of 3)
–1		NP-1	
–3		NP-1	
–4		NP-1	
–5		NP-1	
–6	90H2420	2	Ring, Retaining
–8	63H6533	1	Belt, Backup Roll Lift Motor
–10		NP-1	
–11	90H2412	1	Spacer
–12	90H2406	2	Bearing, Ball
–13		NP-2	
–14		NP-2	
–15	90H2416	2	Key 4 X 4 X 8
–16	06F0405	2	Washer PP
–17	06F0411	2	Screw, Phillips Pan Hd with Star Wshr M4 X 12 PP
–18	06F0413	1	Screw, Bind Hd M4 X 8 PP
–20	06F0134	2	Bearing, Ball
–21	06F0775	2	Spacer
–23		NP-1	Arm, Steering Front
–24		NP-1	Arm, Steering Rear
–25	53F1817	2	Bearing
–26		NP-2	
–27		NP-2	
–28	90H2406	2	Bearing, Ball
–29		NP-2	
–30	06F0405	2	Washer PP
–31	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M4 X 12 PP
–33		NP-1	
–34	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 16 PP

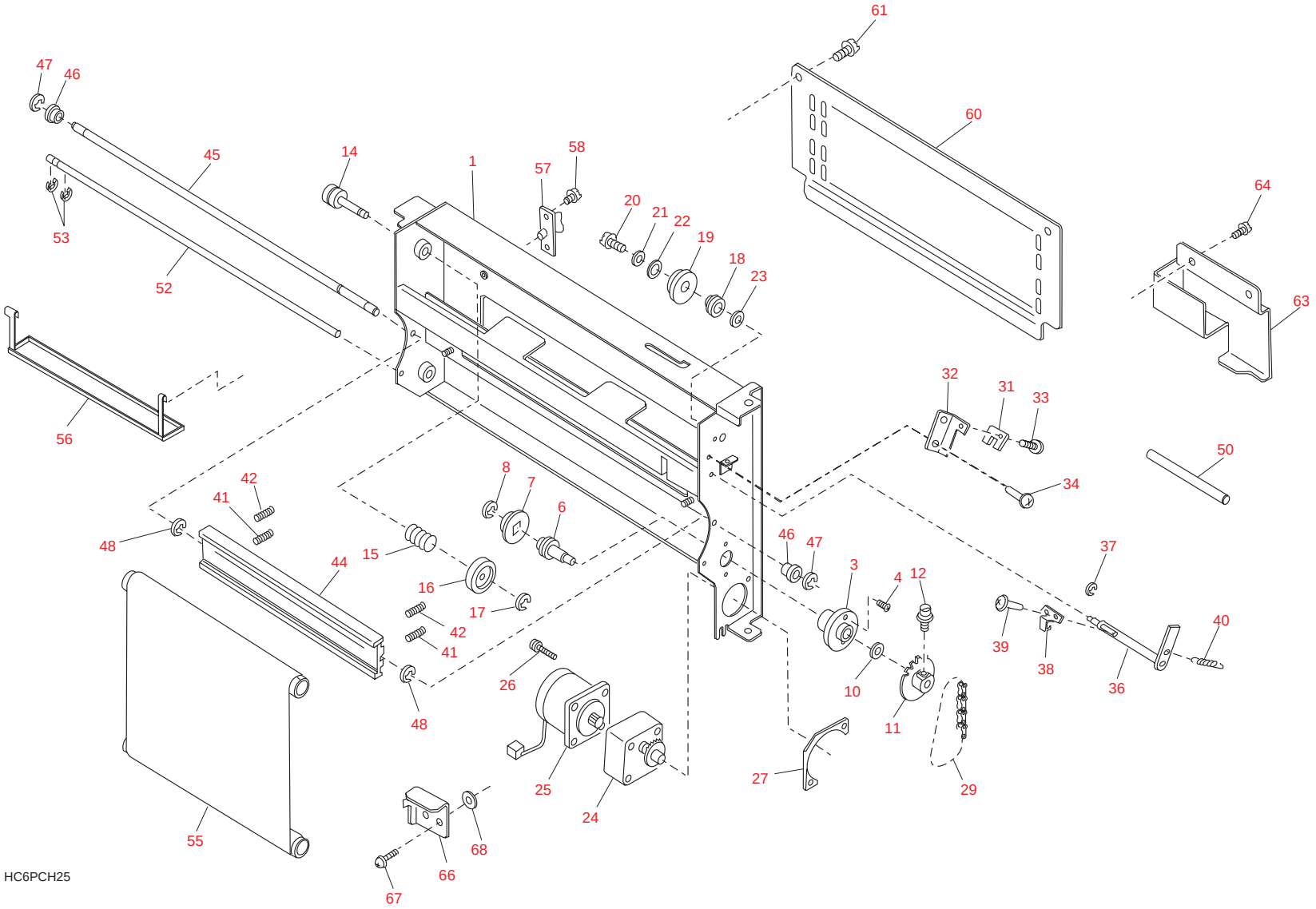

HC6PCH24

Asm–Index	Part Number	Units	Description
25–			Preheat Platen, Backup Roll Hardware (Sheet 2 of 3)
–35	88F3128	1	Spring, Pressure
–36	88F3129	1	Collar
–37	90H2417	1	Washer, BR
–38	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 16 PP
–41	06F1158	2	Washer, FP
–42	63H6536	2	Wire, Steering Control
–43	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–45		NP-2	
–46	06F0412	2	Screw, Flat Hd M5 X 12 PP
–48		NP-1	
–49		NP-1	
–50	88F3122	4	E-Clip
–52	63H6537	1	Motor, Steering (M705)
–53		NP-1	
–54	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 16 PP
–55	06F0401	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 16 PP
–57		NP-2	
–58	06F0407	2	Nut, M5 PP
–60		NP-1	
–61	06F0292	1	Ring, Tight
–62	06F0403	1	Bolt, Hexagon Socket Hd with Star Wshr M5 X 16 PP
–64		NP-1	
–65	63H6534	1	Motor, Backup Roll Lift (M610)
–66		NP-1	
–67		NP-1	
–68	06F0403	1	Bolt, Hexagon Socket Hd with Star Wshr M4 X 16 PP
–69	90H1108	1	Plate, Nut
–70	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 16 PP

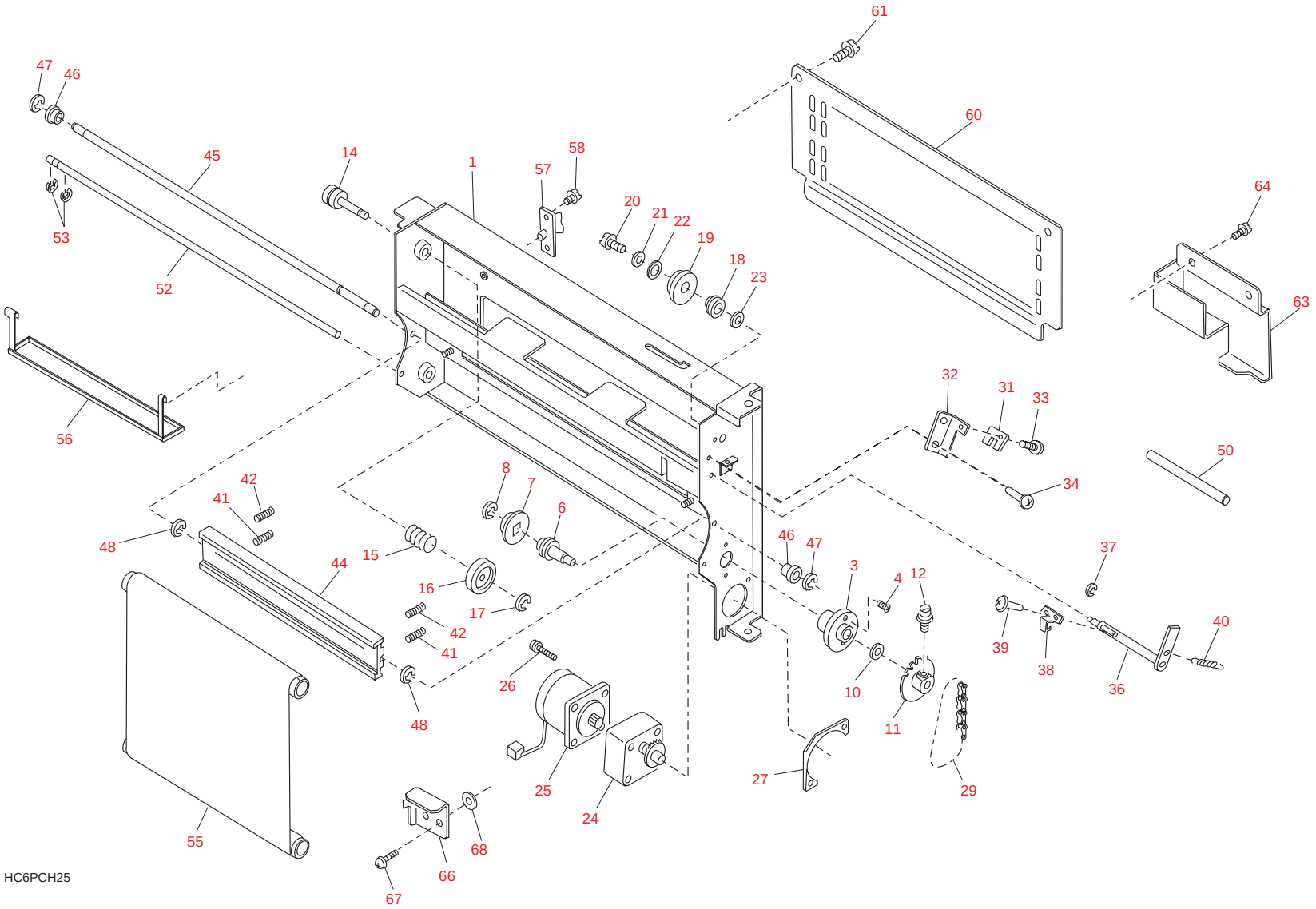

HC6PCH24

Asm–Index	Part Number	Units	Description
25–			Preheat Platen, Back-up Roll Hardware (Sheet 3 of 3)
–71	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 12 PP
–73		NP-1	
–74	57G6513	2	Brush, Discharge
–75	06F0415	2	Bolt, Hexagon Socket Hd Star Wshr & Wshr M5 X 12 PP
–77		NP-1	
–78	30H6814	1	Sensor, Backup Roll Lift (S712)
–79	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 12 PP
–80	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–81	63H6535	1	Wire, Steering Control
–82		NP-2	
–84	11L5996	1	Roll, Backup
–86		NP-1	
–87	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 16 PP
–89		NP-4	
–90		NP-4	
–91	06F0409	4	Ring, Retaining PP
–93		NP-1	
–94	63H6538	1	Sensor, Skew
–95	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 12 PP
–97	63H6539	1	Platen, Preheat
–99	88F3136	8	Washer, VF
–100	06F0411	8	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 16 PP

Assembly 26: Oiler Hardware

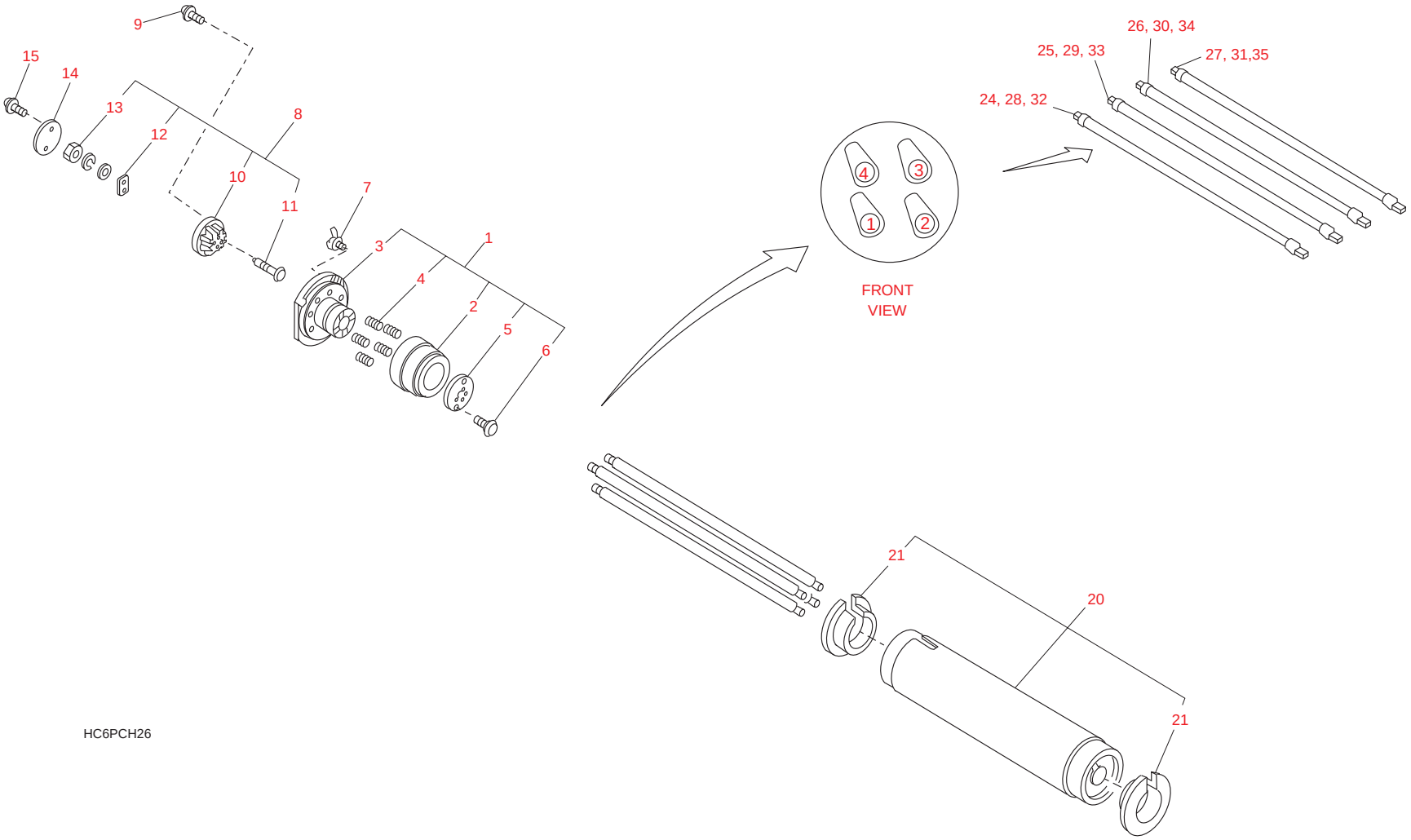


Asm–Index	Part Number	Units	Description
26–			Oiler Hardware (Sheet 1 of 2)
–1		NP-1	
–3	06F0806	1	Flange
–4	06F0412	2	Screw, Flat Hd M4 X 12 PP
–6		NP-1	
–7	02N6876	1	Cap, Oiler Belt
–8		NP-1	
–10	06F0405	1	Washer, Bolt D8 PP
–11	06F0358	1	Sprocket
–12	06F0411	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 16 PP
–14	24H8167	2	Arm Asm
–15	06F0361	2	Spring, Felt Drive
–16		NP-2	
–17		NP-2	
–18		NP-1	
–19	02N6876	1	Cap, Oiler Belt
–20	06F0413	1	Screw, Bind Hd M4 X 12 PP
–21	06F0405	1	Washer, Spring D4 PP
–22	88F3361	1	Washer, Point
–23	06F0417	1	Washer, Wave
–24	06F0164	1	Head, Gear Asm
–25	06F0163	1	Motor, Oiler Belt (M706)
–26	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 40 PP
–27		NP-1	
–29	06F0357	1	Chain, Oiler Belt Drive
–31	24L4883	1	Sensor, Oiler Belt End (S711)
–32		NP-1	
–33	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 16 PP
–34	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP

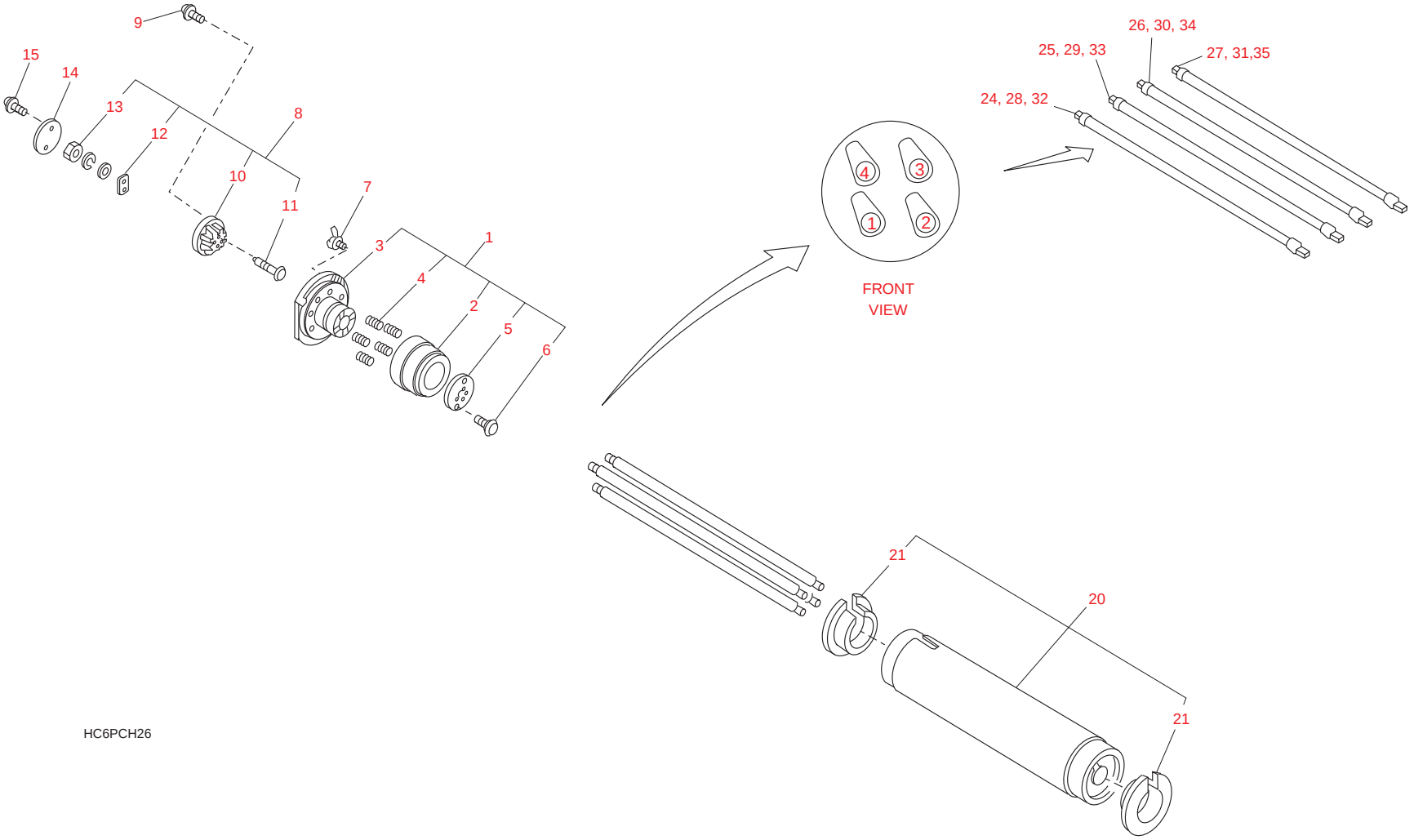

61
60
64
63
47
46
45
53
52
14
1
58
57
20
21
22
19
18
23
56
32
31
33
34
50
8
7
6
42
41
48
15
16
17
44
46
47
3
4
12
37
39
38
36
40
10
11
26
25
24
27
29
55
66
68
67
HC6PCH25

Asm–Index	Part Number	Units	Description
26–			Oiler Hardware (Sheet 2 of 2)
–36		NP-1	
–37		NP-1	
–38		NP-1	
–39	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–40		NP-1	
–41	57G6853	2	Spring, Compression
–42	57G6852	2	Spring, Compression
–44	63H6540	1	Port Asm, Oil
–45		NP-1	
–46		NP-2	
–47		NP-2	
–48	88F3122	2	Ring, Retaining
–50		NP-1	
–52		NP-1	
–53		NP-2	
–55	1402827	1	Belt, Oiler
–56	24L3376	1	Pan, Oil
–57	06F0811	1	Fastener Asm
–58	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–60		NP-1	
–61	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–63		NP-1	
–64	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–66		NP-1	
–67	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–68		NP-2	

Assembly 27: Fuser Hardware - Hot Roll

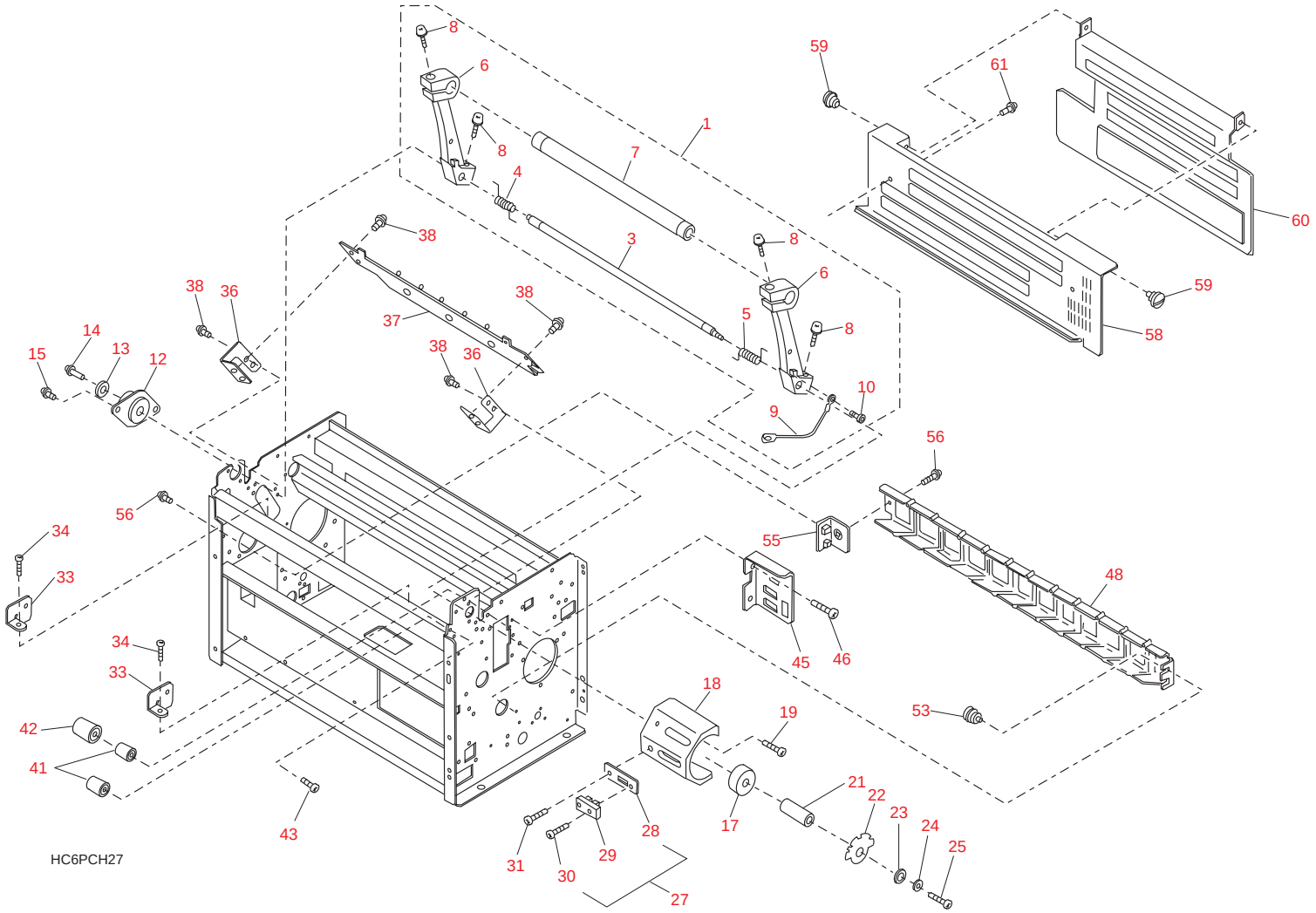


Asm–Index	Part Number	Units	Description
27–			Fuser Hardware - Hot Roll (Sheet 1 of 2)
–1	88F2498	1	Shaft Asm, Hot Roll
–2	06F1069	1	Bearing Asm-Front, Hot Roll
–3	88F3424	1	Shaft, Flange
–4	88F2949	6	Spring, Compression
–5	88F2950	1	Plate, Guide Lamp
–6	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–7		NP-3	
–8		NP-1	
–9	06F0411	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–10	88F2951	1	Housing, Lamp
–11	53F1983	4	Pin
–12	88F2952	1	Plate, Terminal
–13		NP-4	
–14	11L5317	1	
–15	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 10 PP
–20	63H6393	1	Roll, Hot 180/220
–21		NP-2	
–24	24L3393	1	Hot Roll Lamp 1 (US/Canada 60 Hz) 230 Volt
–25	24L3394	1	Hot Roll Lamp 2 (US/Canada 60 Hz) 230 Volt
–26	24L3395	1	Hot Roll Lamp 3 (US/Canada 60 Hz) 230 Volt
–27	24L3396	1	Hot Roll Lamp 4 (US/Canada 60 Hz) 230 Volt
–28	24L3397	1	Hot Roll Lamp 1 (Europe 50 Hz) 240 Volt
–29	24L3398	1	Hot Roll Lamp 2 (Europe 50 Hz) 240 Volt
–30	24L3399	1	Hot Roll Lamp 3 (Europe 50 Hz) 240 Volt

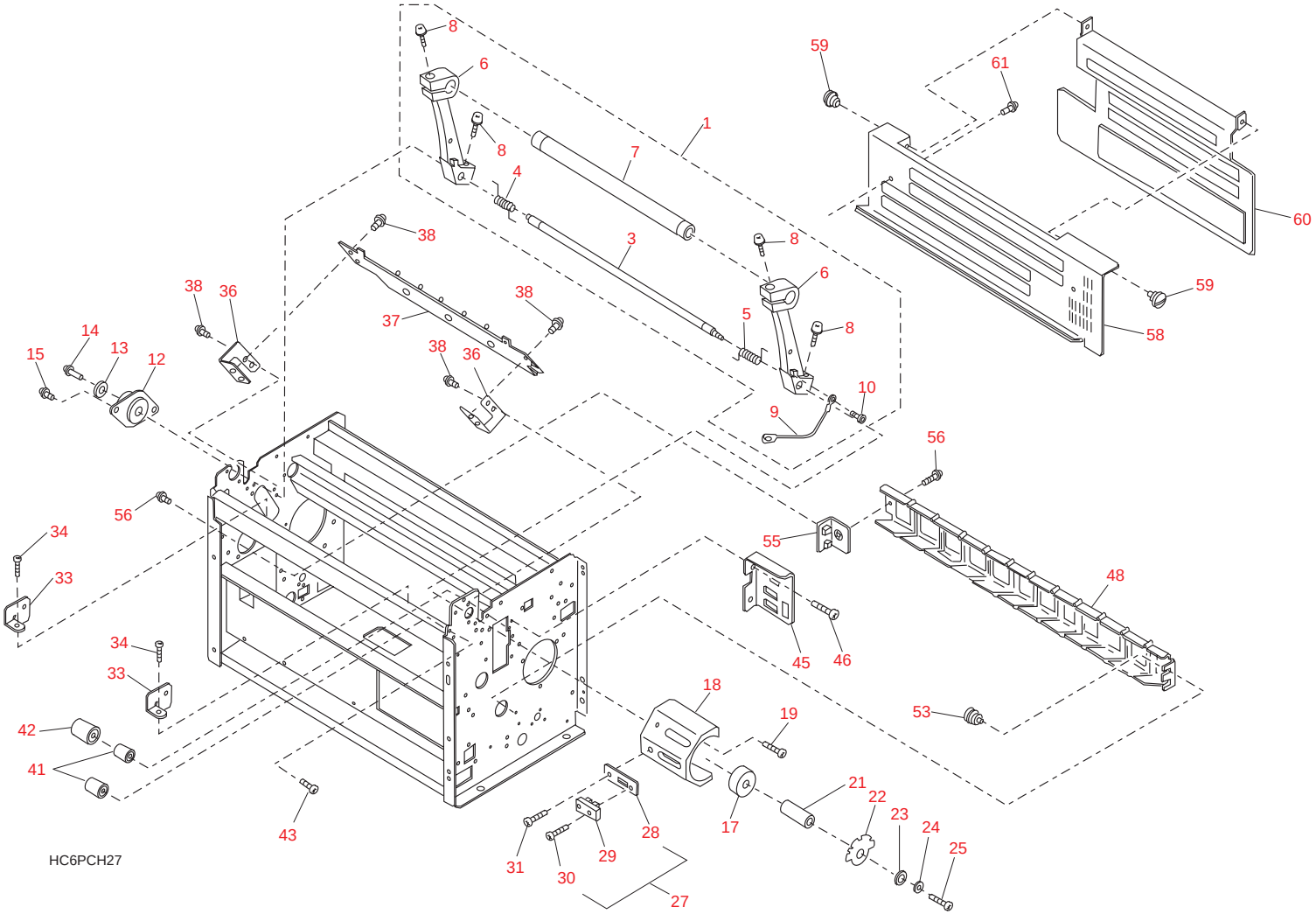

9
15
14
13
12
8
10
11
7
3
1
4
2
5
6
4
3
1
2
FRONT
VIEW
26, 30, 34
25, 29, 33
27, 31,35
24, 28, 32
21
20
21
HC6PCH26

Asm–Index	Part Number	Units	Description
27–			Fuser Hardware - Hot Roll (Sheet 2 of 2)
–31	24L4843	1	Hot Roll Lamp 4 (Europe 50 Hz) 240 Volt
–32	24L4844	1	Hot Roll Lamp 1 (Japan 50/60 Hz) 220 Volt
–33	24L4845	1	Hot Roll Lamp 2 (Japan 50/60 Hz) 220 Volt
–34	24L4846	1	Hot Roll Lamp 3 (Japan 50/60 Hz) 220 Volt
–35	24L4847	1	Hot Roll Lamp 4 (Japan 50/60 Hz) 220 Volt

Assembly 28: Fuser Hardware - Tension Arm

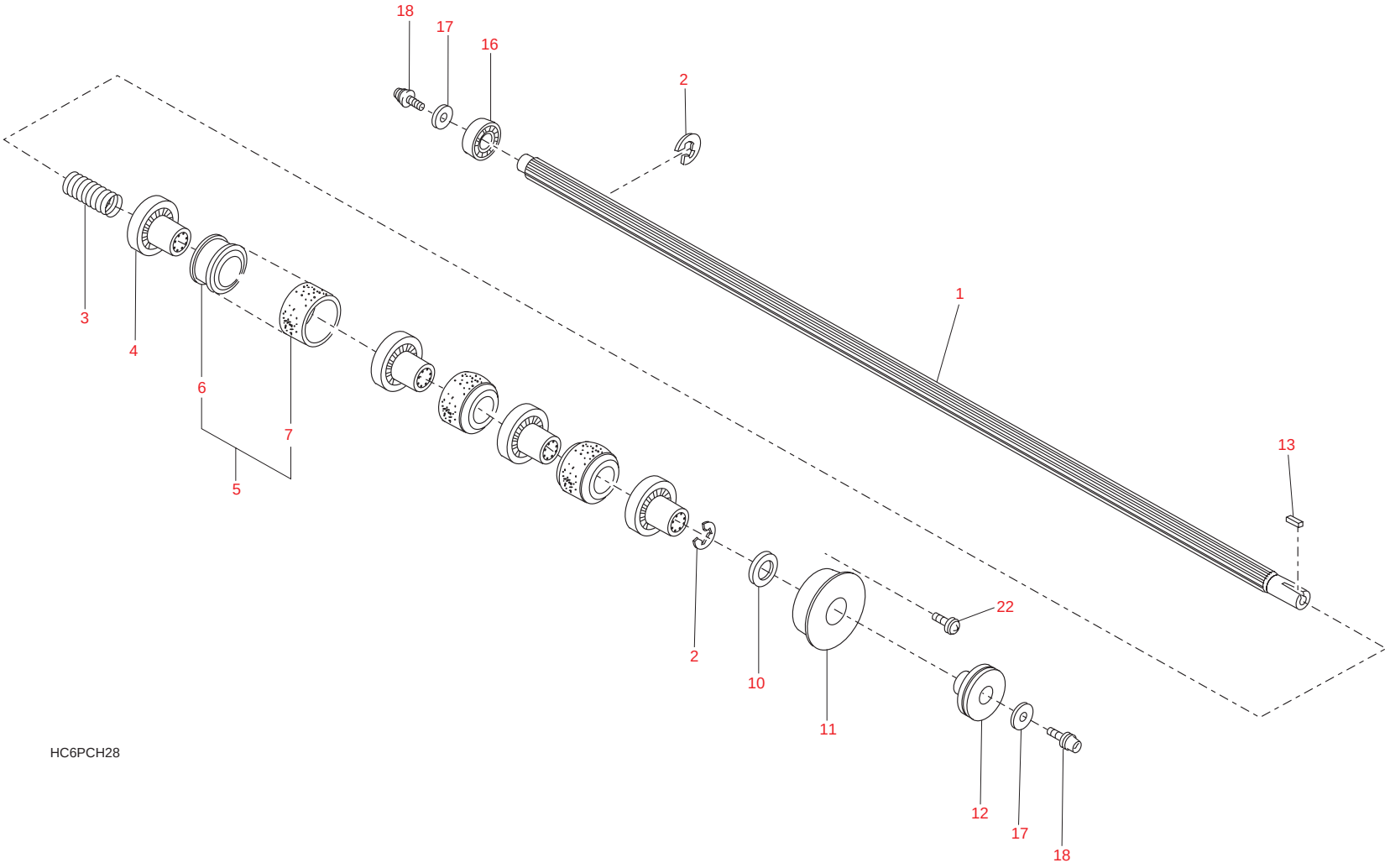


Asm–Index	Part Number	Units	Description
28–			Fuser Hardware (Sheet 1 of 2)
–1		NP-1	
–3		NP-1	
–4	63H6595	1	Spring, Tension Arm Front
–5	63H6596	1	Spring, Tension Arm Rear
–6		NP-2	
–7		NP-1	
–8	06F0411	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 16 PP
–9	11L5164	4	Cable, Ground
–10	06F0411	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 16 PP
–12	53F1808	1	Flange, Bearing
–13		NP-1	
–14	06F0411	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–15	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–17	06F0054	1	Bearing, Ball
–18		NP-1	
–19	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–21		NP-1	
–22		NP-1	
–23	06F0405	1	Washer PP
–24	06F0405	1	Washer PP
–25	06F0411	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–27		NP-3	
–28		NP-3	
–29	90H2407	3	Sensor, Tension Arm Encoder (S708, S709, S710)
–30	06F0411	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–31	06F0411	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–33		NP-2	
–34	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP


HC6PCH27

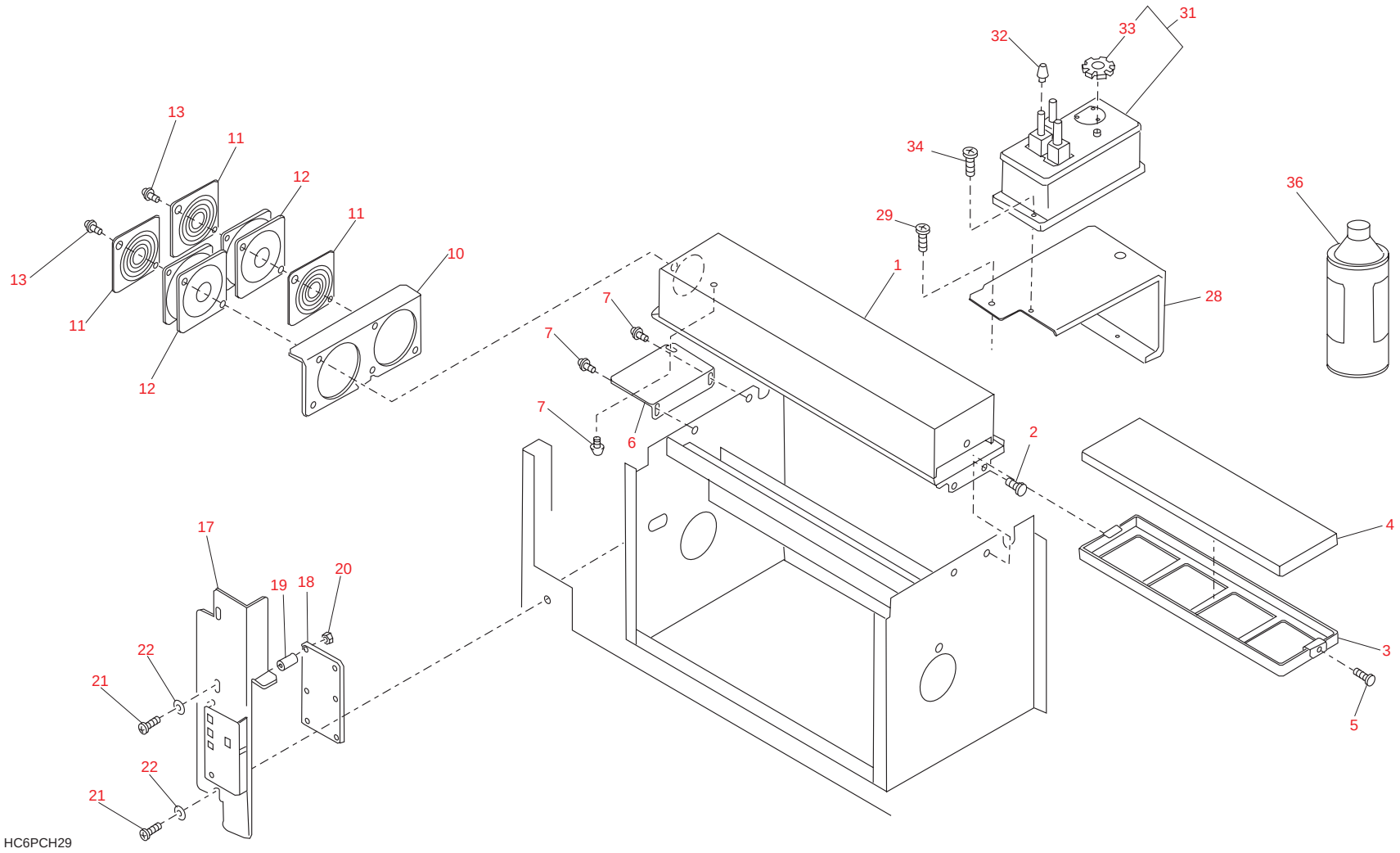
Asm–Index	Part Number	Units	Description
28–		NP	Fuser Hardware (Sheet 2 of 2)
–36		NP-2	
–37		NP-1	
–38	06F0411	8	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–41		NP-2	
–42		NP-1	
–43	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–45		NP-1	
–46	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–48		NP-1	
–49		NP-1	
–53	53F1961	2	Screw, Shoulder
–55		NP-1	
–56	06F0401	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–58		NP-1	
–59	53F1961	2	Screw, Shoulder
–60		NP-1	
–61	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP

Assembly 29: Fuser Hardware - Scuff Roll



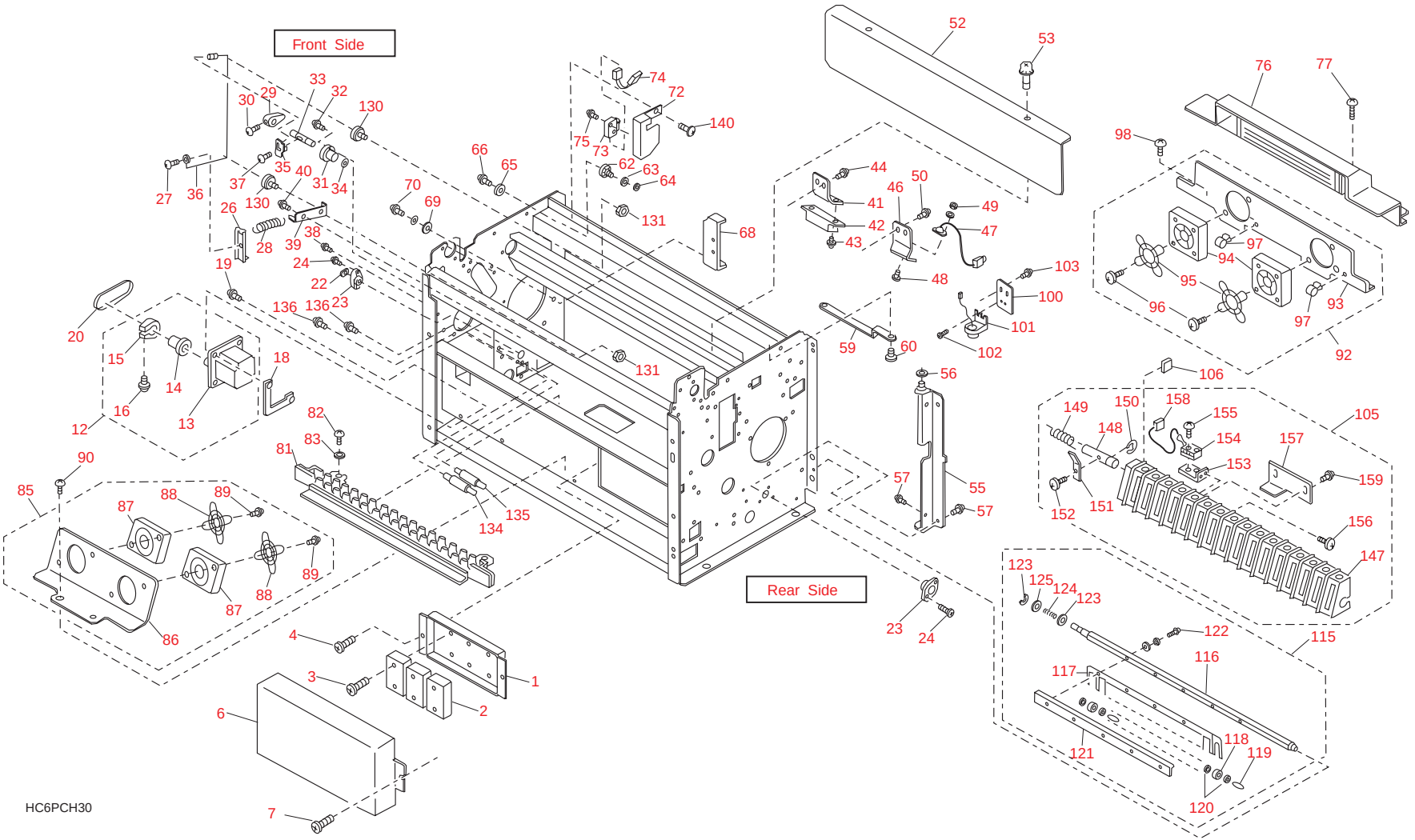
Asm–Index	Part Number	Units	Description
29–			Fuser Hardware (Sheet 1 of 1)
–1		NP-1	
–2		NP-2	
–3	06F0366	1	Spring, Scuff Roll Tension
–4	06F0156	18	Hub, Scuff Roll
–5	88F2976	17	Tire Asm, Scuff Roll
–6	06F0155	17	Wheel, Scuff Roll
–7	06F0154	17	Tire, Rubber Scuff Roll
–10	06F0405	1	Washer, Bolt D10 PP
–11	63H6557	1	Bearing
–12		NP-1	
–13		NP-1	
–16	06F0054	1	Bearing, Ball
–17	88F3186	2	Washer
–18	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–22	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 10 PP

Assembly 30: Fuser Hardware - Oil Pump & Fans

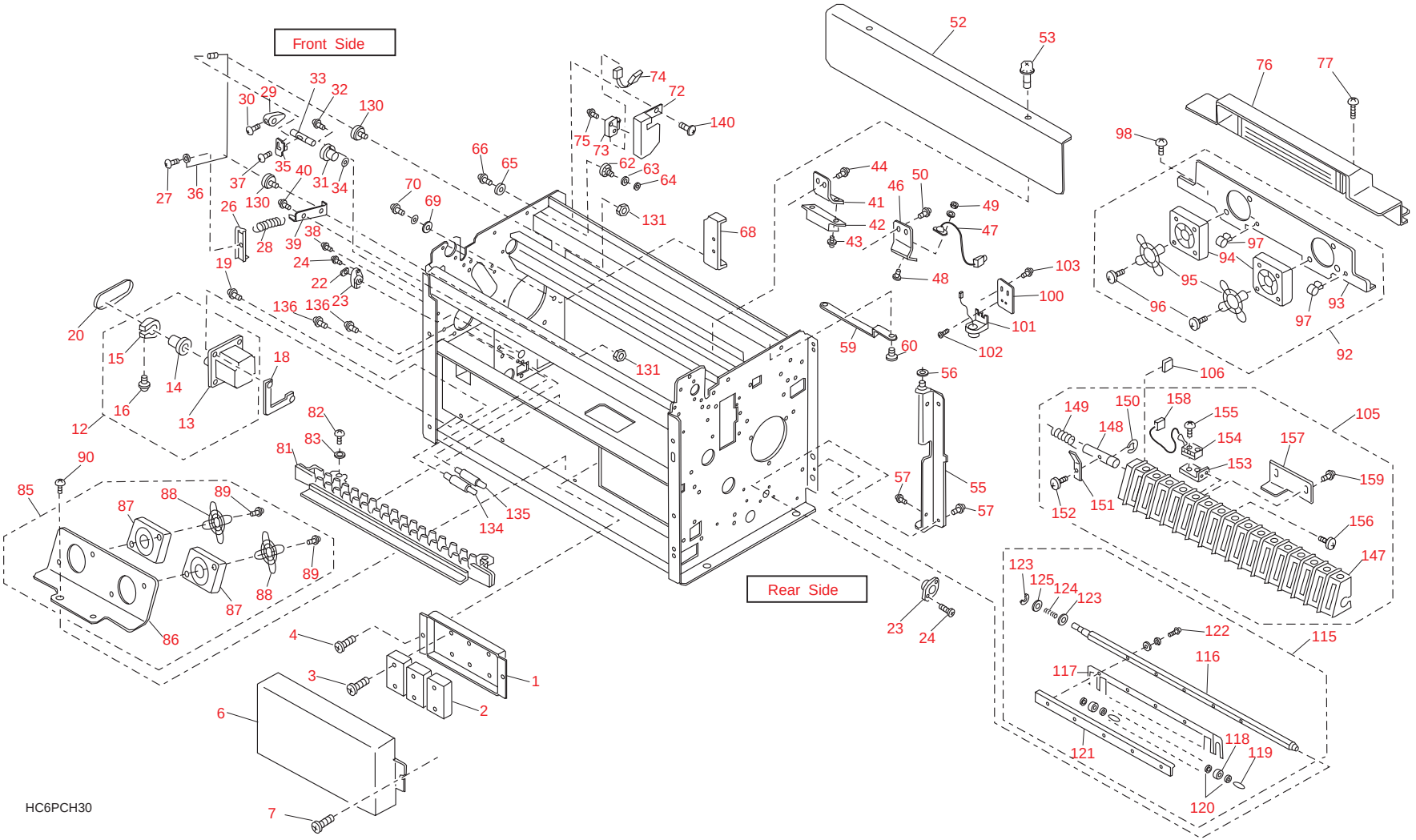


Asm–Index	Part Number	Units	Description
30–			Fuser Hardware (Sheet 1 of 1)
–1		NP-1	Filter Asm, Fuser
–2	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–3		NP-1	
–4	57G6510	1	Filter, Fuser
–5	06F0413	1	Screw, Bind Hd M4 X 8 PP
–6		NP-1	
–7	06F0401	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–10		NP-1	
–11	11L5200	3	Guard, Finger
–12	24H8035	2	Fan, Fuser Exhaust (B701, B702)
–13	06F0413	4	Screw, Bind Hd M4 X 50 PP
–17		NP-1	
–18	24L3334	1	Card, Stacker Control (LP041)
–19		NP-6	
–20	06F0407	6	Nut, Flange PP
–21	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–22	06F0417	2	Washer, Press PP
–28		NP-1	
–29	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–31	57G6825	1	Pump Asm, Oil (includes Oil Empty Sensor S702)
–32	88F3041	3	Fitting
–33	88F3043	1	Cap, Oil Reservoir
–34	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 16 PP
–36		NP-1	

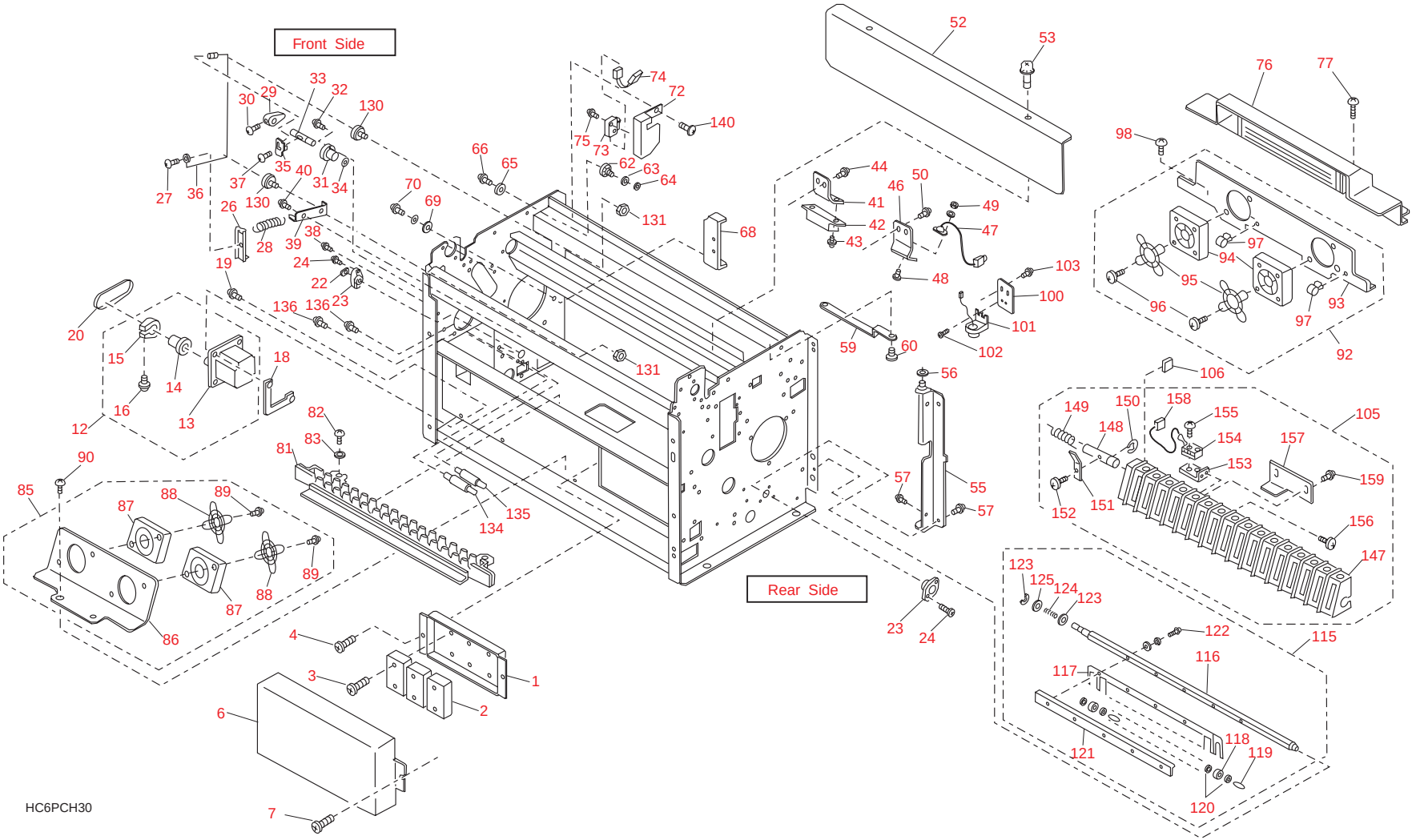
Assembly 31: Fuser Hardware - Motors, Sensors & Fans



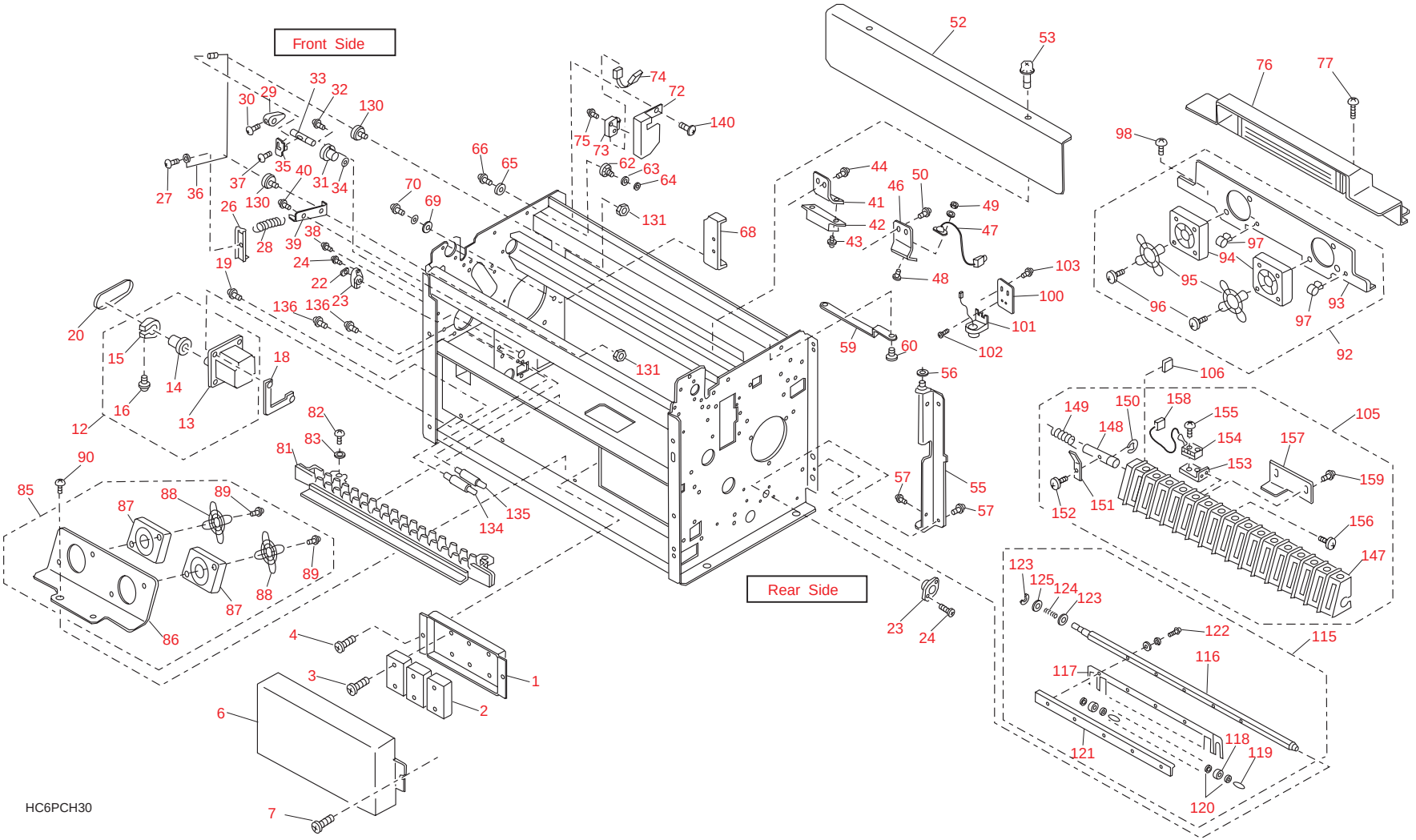
Asm–Index	Part Number	Units	Description
31–			Fuser Hardware (Sheet 1 of 4)
–1		NP-1	
–2	06F0172	3	Relay, Solid State (SR601, SR602, SR603)
–3	06F0411	6	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–4	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–6		NP-1	
–7	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–12		NP-1	Motor Asm, Scuff Roll
–13	63H6558	1	Motor, Scuff Roll (M704)
–14		NP-1	Pulley, Scuff Roll Motor
–15		NP-1	
–16	06F0415	1	Bolt, Hexagon Socket Hd with Star Wshr M4 X 12 PP
–18		NP-1	
–19	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 16 PP
–20	63H6559	1	Belt, Scuff Roll Drive
–22		NP-1	
–23	06F0848	6	Bearing, Plastic
–24	06F0411	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–26		NP-1	
–27	06F0411	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–28	06F0369	1	Spring, Return
–29	06F0868	1	Lever, Scuff Roll Release
–30	06F0415	1	Bolt, Hexagon Socket Hd with Star Wshr M4 X 12 PP
–31	06F0862	1	Flange
–32	06F0412	2	Screw, Flat Hd M4 X 12 PP
–33		NP-1	
–34	06F0409	1	Ring, Retaining PP
–35		NP-1	
–36		NP-1	Wire, Scuff Roll Release


Front Side
Rear Side
HC6PCH30

Asm–Index	Part Number	Units	Description
31–			Fuser Hardware (Sheet 2 of 4)
–37	06F0415	1	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M4 X 10 PP
–38	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr M4 X 12 PP
–39		NP-1	
–40	06F0411	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–41		NP-1	
–42	53F1960	1	Sensor, Hot Roll Temperature Control (S701)
–43	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 6 PP
–44	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–46		NP-1	
–47	63H6560	1	Sensor, Hot Roll Over Temperature (S705)
–48	06F0412	2	Screw, Flat Hd M3 X 6 PP
–49	06F0407	2	Nut, M3 PP
–50	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–52		NP-1	
–53	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–55		NP-1	
–56	24H8029	1	Washer, Thrust
–57	06F0401	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–59		NP-1	
–60	30H6700	1	Screw, Shoulder
–62	06F0865	1	Shaft, Guide Roller
–63		NP-1	
–64		NP-1	
–65	06F0417	1	Washer, Press PP
–66	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–68		NP-1	
–69	06F0417	2	Washer, Press PP
–70	06F0413	2	Screw, Bind Hd M5 X 12 PP


Front Side
Rear Side
HC6PCH30

Asm–Index	Part Number	Units	Description
31–			Fuser Hardware (Sheet 3 of 4)
–72		NP-1	
–73	06F0143	1	Switch, Oiler Belt End (S711)
–74		NP-1	
–75	06F0413	2	Screw, Bind Hd M3 X 12 PP
–76		NP-1	
–77	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–81		NP-1	
–82	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M4 X 10 PP
–83	88F3186	2	Washer
–85		NP-1	
–86		NP-1	
–87	63H6561	2	Fan, Paper Cooling (B704, B706)
–88	24L4548	2	Guard, Finger
–89		NP-4	Screw, Bind Hd M4x35
–90	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 12 PP
–92		NP-1	
–93		NP-1	
–94	63H6561	2	Fan, Paper Cooling (B705, B707)
–95	24L4548	2	Guard, Finger
–96		NP-4	Screw, Bind Hd M4x35
–97	24L4902	3	Clamp, Cable
–98	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 12 PP
–100		NP-3	
–101	24H8225	3	Sensor Asm, Thermistor (S621, S622, S623)
–102	88F1626	6	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 8 PP
–103	06F0411	6	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–105		NP-1	
–106	24L4866	1	Cap, Blue Operator


Front Side
Rear Side
HC6PCH30

Asm–Index	Part Number	Units	Description
31–			Fuser Hardware (Sheet 4 of 4)
–115		NP-1	Shaft Assembly, Pressure Roller
–116		NP-1	Shaft, Pressure Roller
–117	04H1103	1	Spring, Roller
–118	06F0153	17	Roller, Pressure
–119	06F0863	17	Pin, Pressure Roller
–120		NP-34	Washer, D5
–121		NP-1	Holder, Spring
–122		NP-6	Screw, Bind Hd M4x18
–123		NP-2	Ring, Retaining
–124	88F2483	1	Spring, Pressure Roller Shaft
–125		NP-1	Washer, Delurine
–130	06F0212	2	Bearing, Scuff Roll Release
–131	06F0407	2	Nut, Lock M6
–134		NP-1	Shaft, Paper Guide
–135		NP-1	Shaft, Paper Guide
–136	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–140	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–147		NP-1	Guide, Paper
–148		NP-1	Shaft, Sensor Arm
–149	24L4906	1	Spring, Wrap Switch
–150		NP-1	Ring, Retaining
–151		NP-1	Arm, Sensor
–152	06F0411	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–153		NP-1	Holder, Sensor
–154	04H0277	1	Sensor, Fuser Wrap (S617)
–155	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 16 PP
–156	06F0411	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–157		NP-1	Cover, Wrap Switch
–158		NP-1	Cable, Wrap Switch
–159	06F0413	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 6 PP

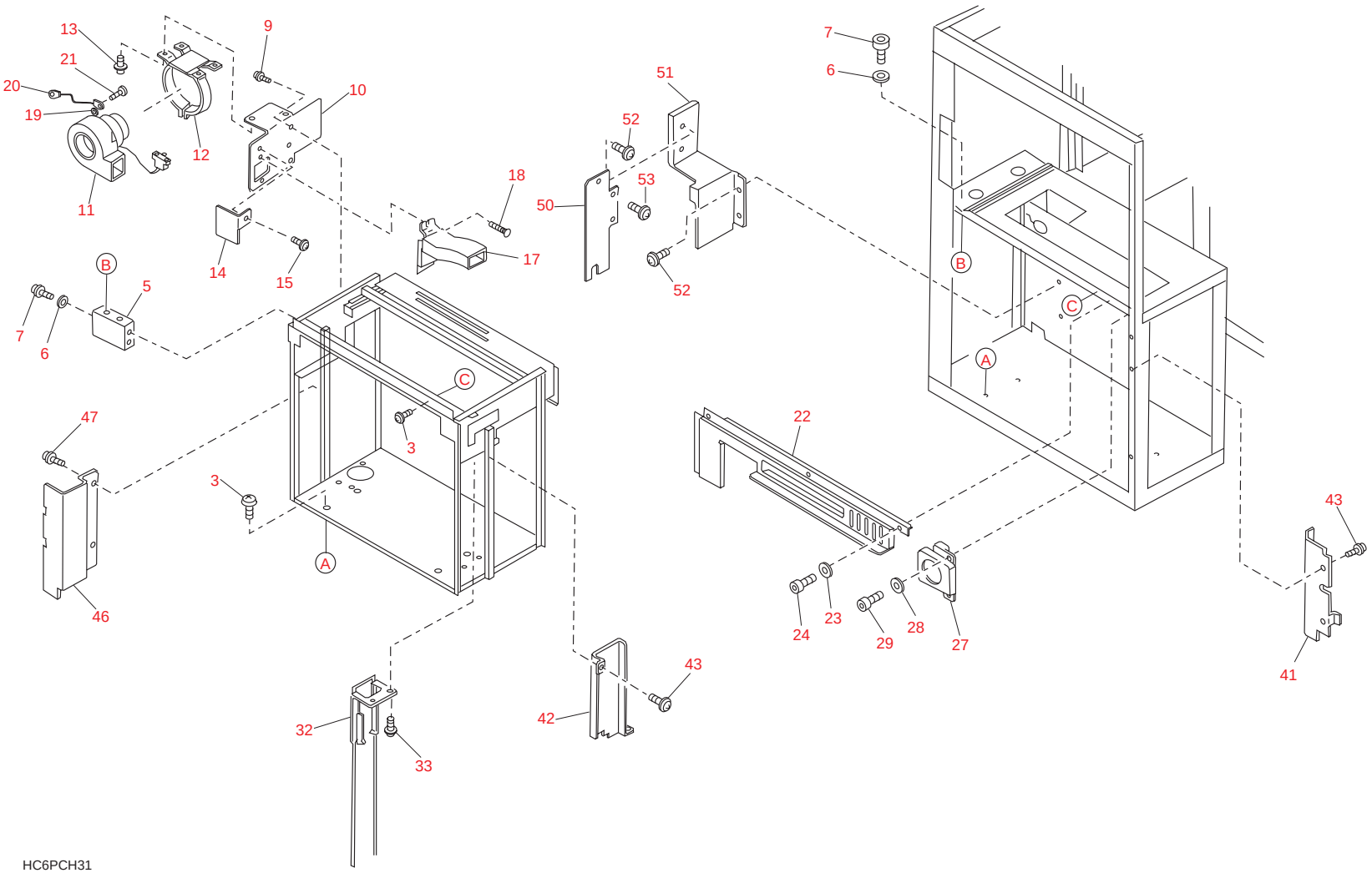
Assembly 32: No Assembly 32 for this Printer

Asm–Index	Part Number	Units	Description
32–			Not Used

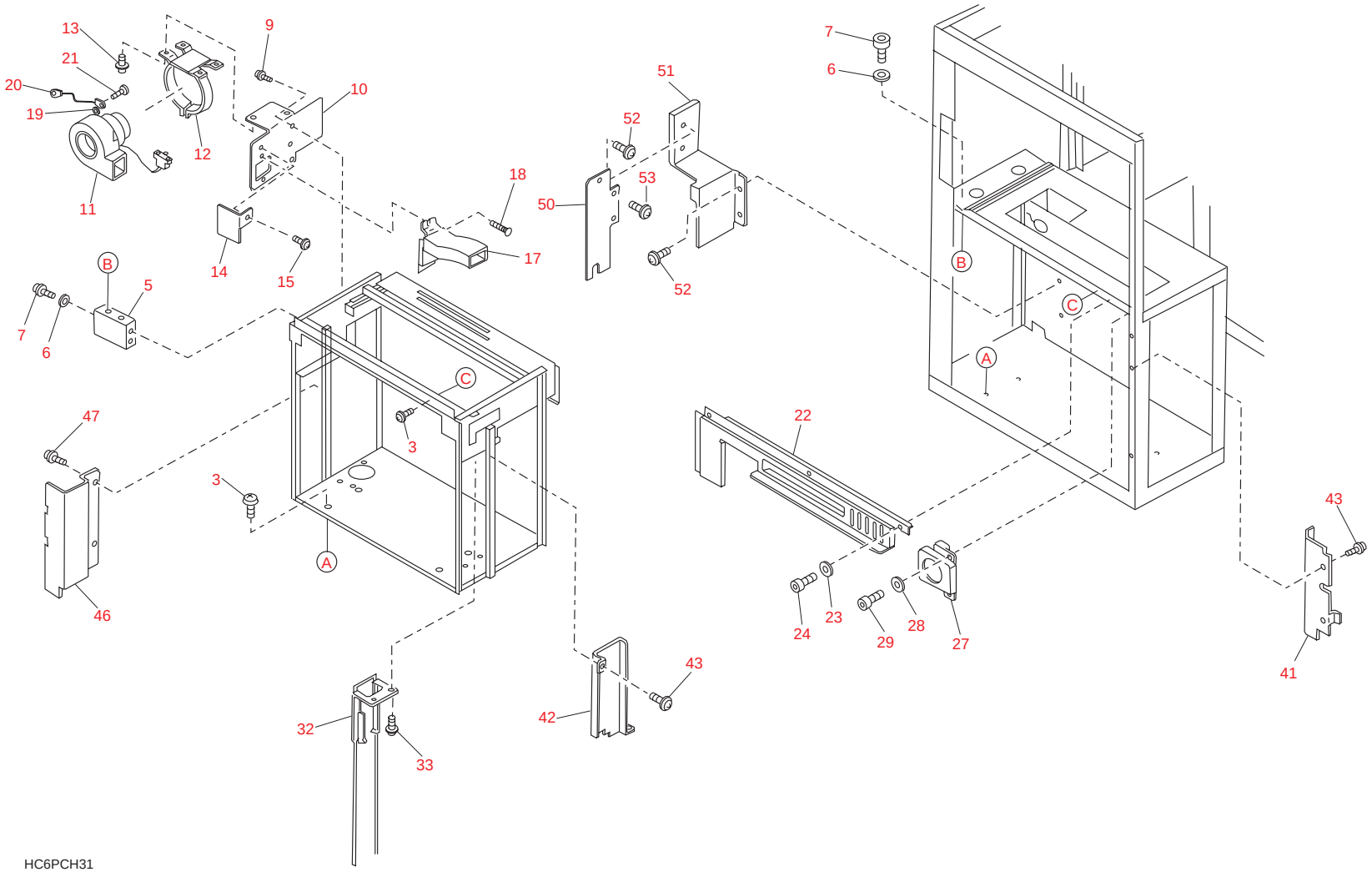
Assembly 33: No Assembly 33 for this Printer

Asm–Index	Part Number	Units	Description
33–			Not Used

Assembly 34: Stacker - Covers & Blower

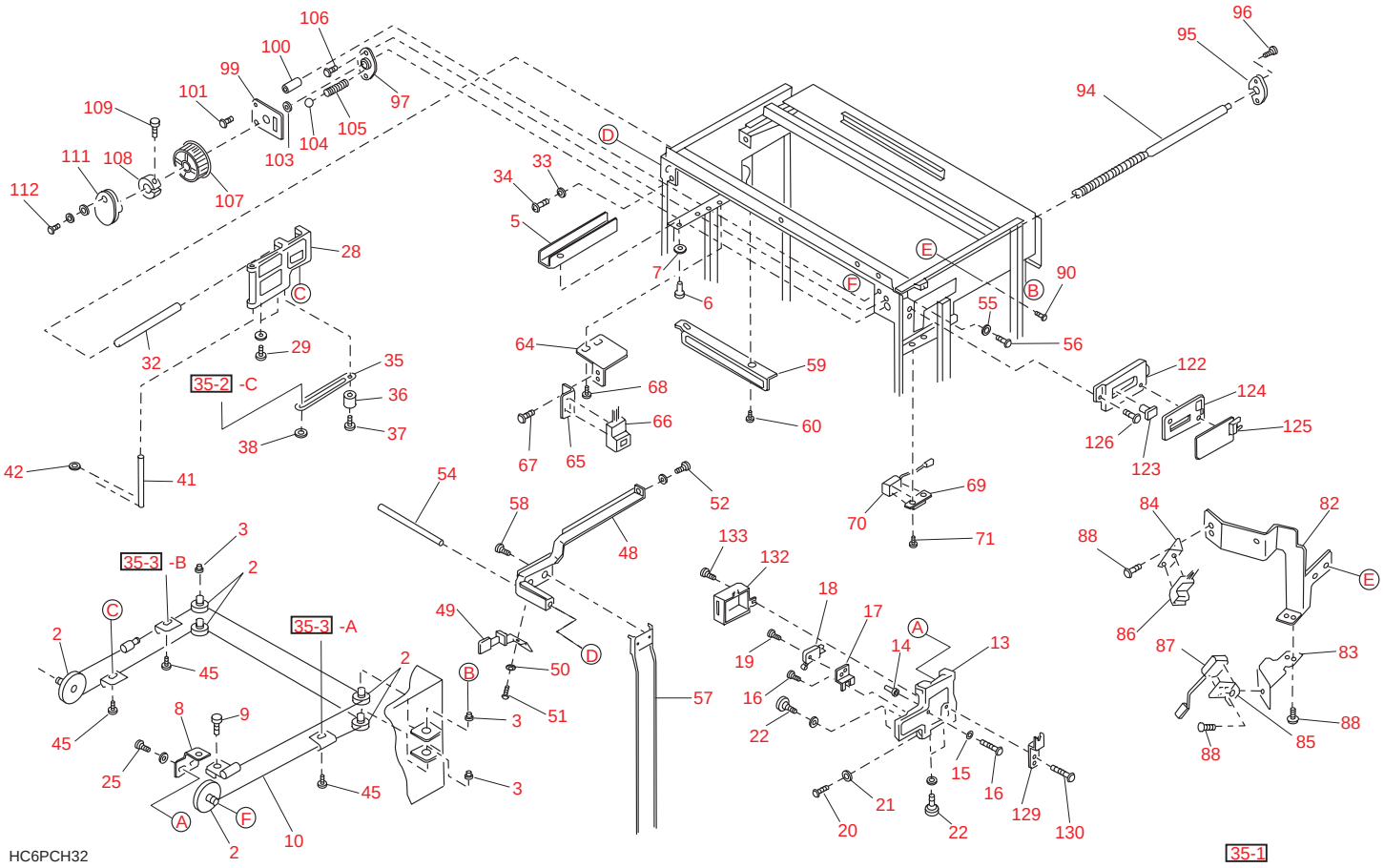


Asm–Index	Part Number	Units	Description
34–			Stacker (Sheet 1 of 2)
–3	06F0401	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–5		NP-1	
–6	06F0417	4	Washer, Press PP
–7	06F0415	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–9	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–10		NP-1	
–11	53F1965	1	Blower, Stacker Cooling Asm (B703)
–12		NP-1	
–13	06F0411	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–14		NP	
–15	06F0411	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–17		NP-1	Duct, Cooling
–18	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–19	06F0406	1	Washer, External Tooth D3 PP
–20		NP-1	Wire, Ground
–21	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 6 PP
–22		NP	
–23	06F0417	2	Washer, Press PP
–24	06F0401	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 16 PP
–27		NP-1	
–28		NP-1	Washer, FP
–29	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–32		NP-1	
–33	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–41		NP-1	Cover, Pendulum Right

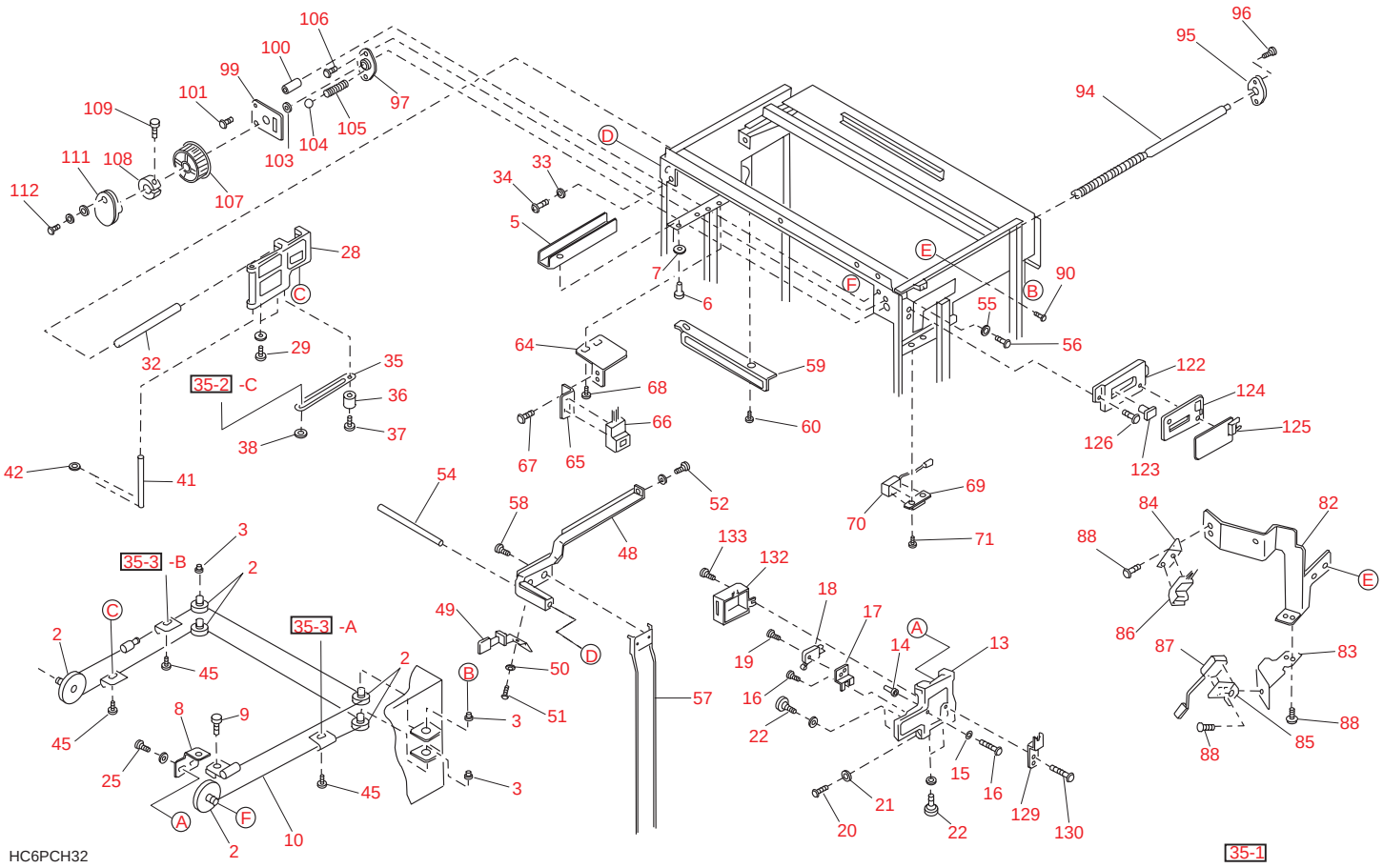

13
9
21
20
10
19
12
11
18
14
15
17
50
51
52
53
52
7
6
B
5
7
6
C
3
47
3
A
46
22
B
C
A
43
24
23
29
28
27
41
43
42
32
33
HC6PCH31

Asm–Index	Part Number	Units	Description
34–			Stacker (Sheet 2 of 2)
–42		NP-1	Cover, Belt Right
–43	06F0401	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–46		NP-1	Cover, Belt Left
–47	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–50		NP-1	Cover
–51		NP-1	Cover
–52	06F0401	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–53	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP

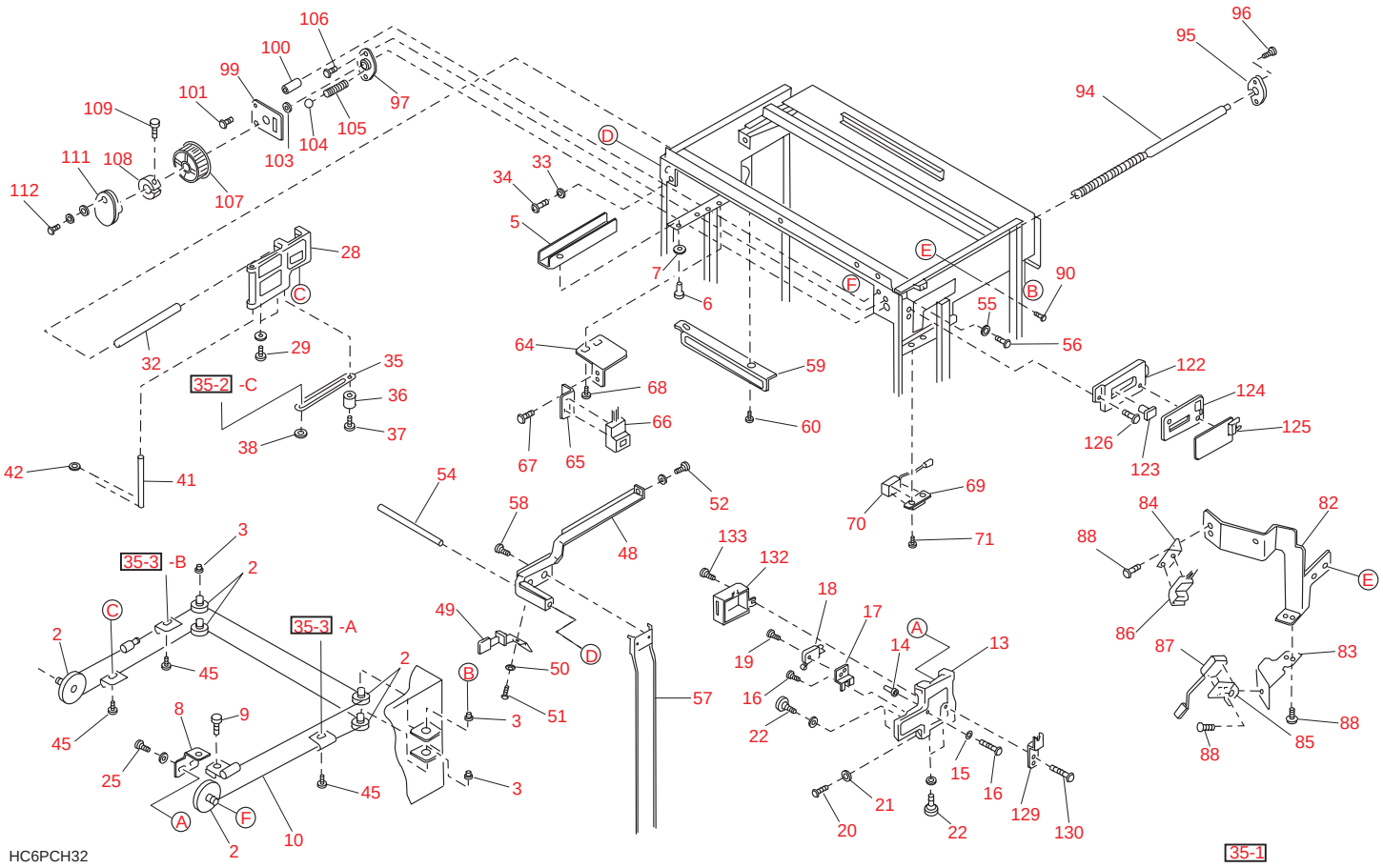
Assembly 35: Stacker - Sensors & Finger Belts



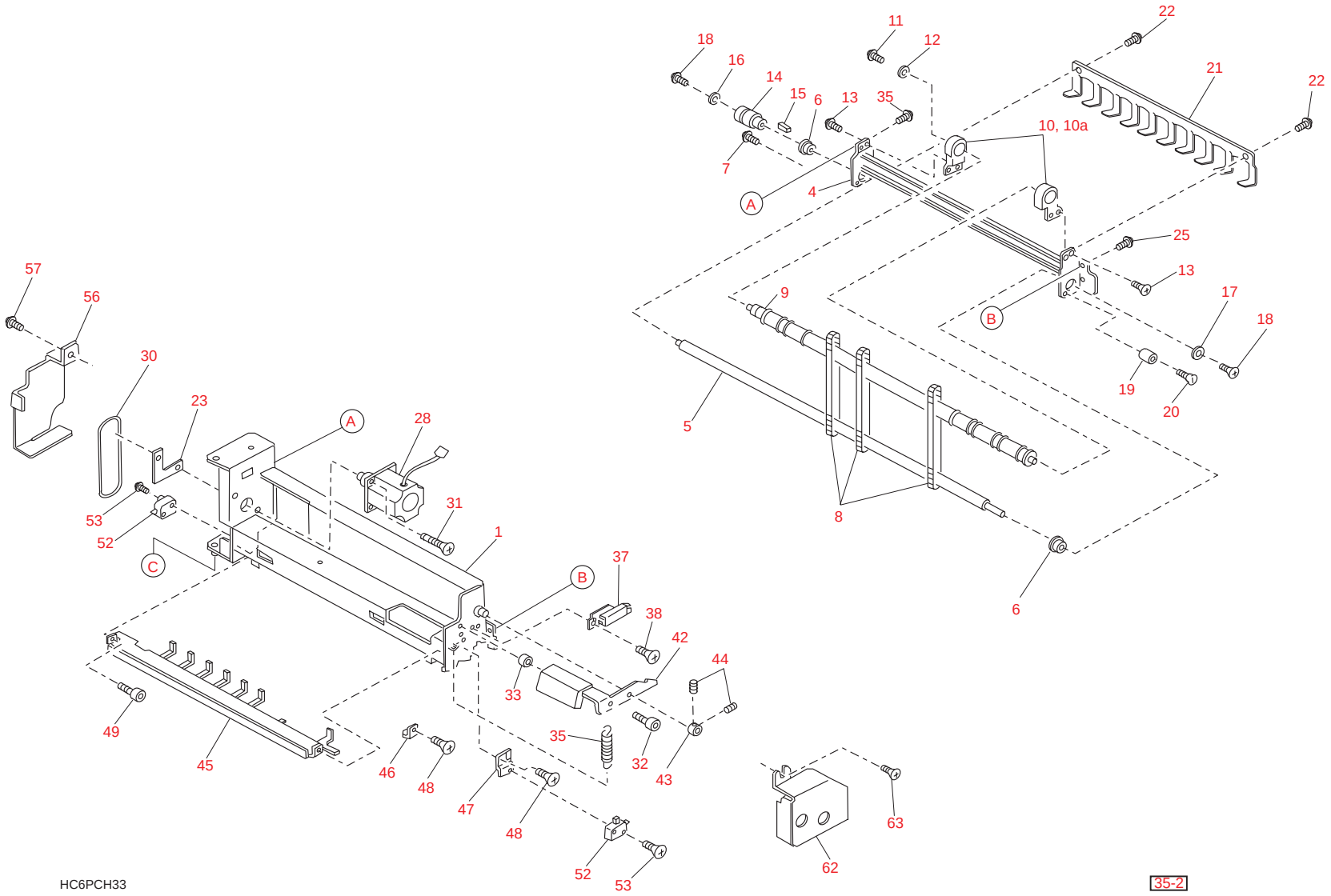
Asm–Index	Part Number	Units	Description
35–			Stacker - Sensors & Finger Belts (Sheet 1 of 7)
–2	06F0212	6	Bearing Asm
–3		NP-4	Nut, Flange
–5		NP-1	
–6	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 12 PP
–7	06F0417	2	Washer, Press PP
–8		NP	
–9	06F0415	1	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 12 PP
–10		1	Cable, Stacker
–13		NP	
–14		NP-1	
–15		NP-1	
–16	06F0411	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–17		NP-1	
–18	06F0207	1	Switch, Stacker Gate (S704)
–19	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 16 PP
–20		NP	
–21	06F0407	1	Nut, Lock M5 PP
–22	06F0214	4	Bearing, Plastic
–25	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr M4 X 12 PP
–28		NP-1	
–29	06F0214	2	Bearing, Plastic
–32		NP-1	
–33		1	Washer, Press PP
–34	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–35		NP-1	
–36		NP-1	
–37	06F0413	1	Screw, Bind Hd M4 X 16 PP
–38		NP-1	


HC6PCH32
35-1
35-2 -C
35-3 -A
35-3 -B

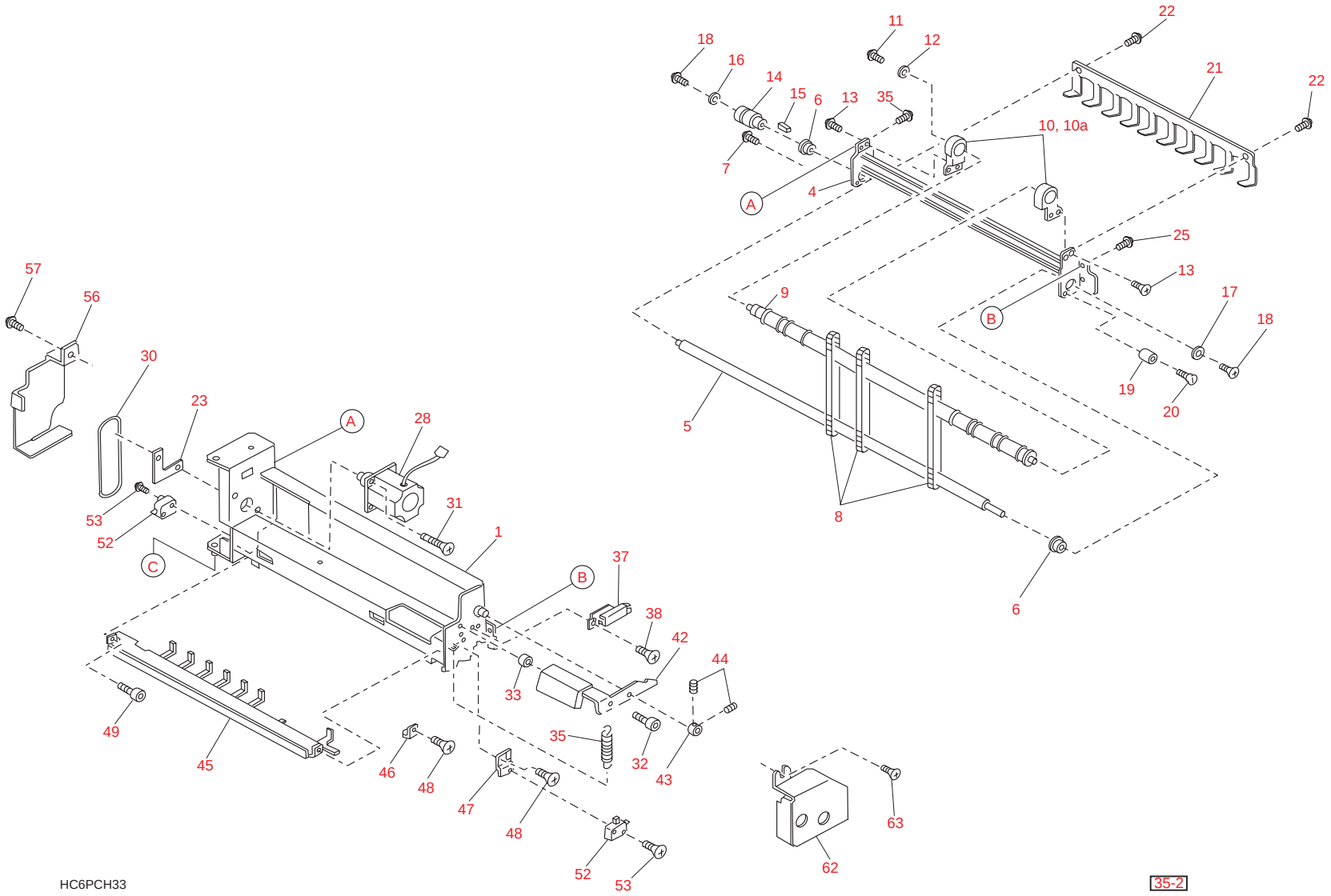
Asm–Index	Part Number	Units	Description
35–			Stacker - Sensors & Finger Belts (Sheet 2 of 7)
–41		NP-1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–42		NP-2	Ring, Retaining
–45	06F0415	3	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 12 PP
–48		NP-1	
–49		NP-1	
–50	06F0405	2	Washer PP
–51	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–52	06F0214	1	Bearing, Plastic
–54		NP-1	
–55	06F0417	1	Washer, Press PP
–56	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–57		NP-1	
–58	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–59		NP-1	
–60	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–64		NP-1	
–65		NP-1	
–66	24H9844	1	Lamp, Stacker Front Height Sensor (D802)
–67	06F0411	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–68	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–69		NP-1	
–70	24H9845	1	Sensor, Stacker Front Height (S804)
–71	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–82		NP-2	
–83		NP-1	
–84		NP-1	
–85		NP-2	
–86	24H9844	1	Lamp, Stacker Jam (D803)


HC6PCH32
35-1
35-2 -C
35-3 -B
35-3 -A

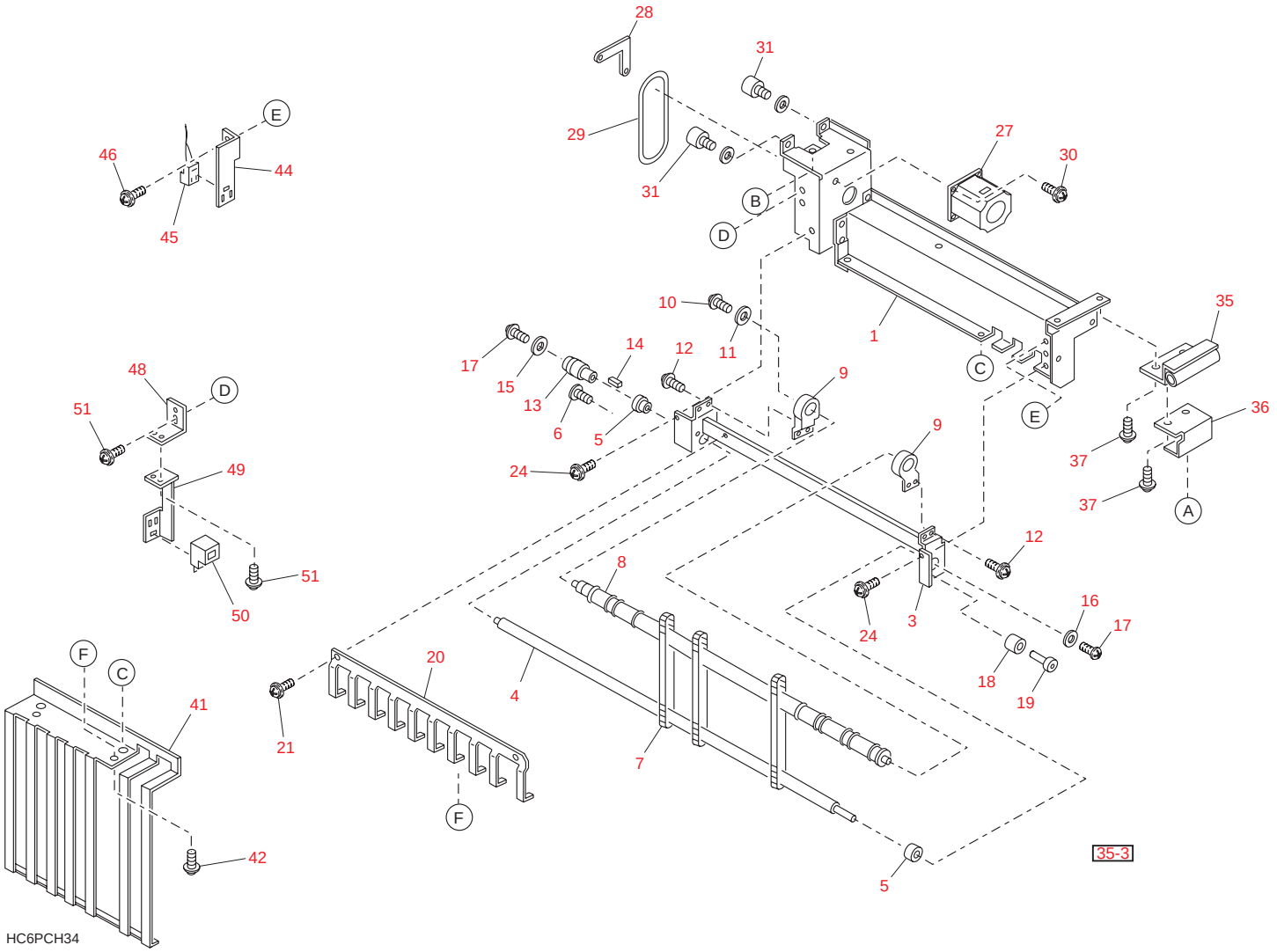
Asm–Index	Part Number	Units	Description
35–			Stacker - Sensors & Finger Belts (Sheet 3 of 7)
–87	24H9845	1	Sensor, Stacker Jam (S805)
–88	06F0411	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–90	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–94		NP-1	
–95		NP-1	
–96	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 16 PP
–97		NP-1	
–99	06F0023	1	Card, FL031
–100		NP-3	
–101	06F0402	3	Screw, Phillips Pan Hd M4 X 16 PP
–103		NP-1	Ring, Retaining
–104		1	Ball, Forms Length Knob
–105		1	Spring, Forms Length Knob
–106	06F0412	2	Screw, Flat Hd M4 X 8 PP
–107		1	Knob, Forms Length
–108		NP-1	
–109	06F0403	1	Bolt, Hexagon Socket Hd with Star Wshr M4 X 16 PP
–111		1	Cap, Forms Length Knob
–112	06F0403	1	Bolt, Hexagon Socket Hd M3 X 8 PP
–122		NP-1	
–123		NP-1	
–124		NP-1	
–125	57G6529	1	Card, FL061
–126	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 16 PP
–129		NP-1	
–130	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–132		NP-1	Cover
–133	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP


11
22
18
12
16
21
14
22
15
6
13
35
10, 10a
7
A
4
25
13
9
B
17
18
19
20
5
8
6
57
56
30
23
A
28
53
31
52
1
C
37
B
38
42
44
33
49
35
32
43
45
46
48
47
48
52
53
63
62
HC6PCH33
35-2

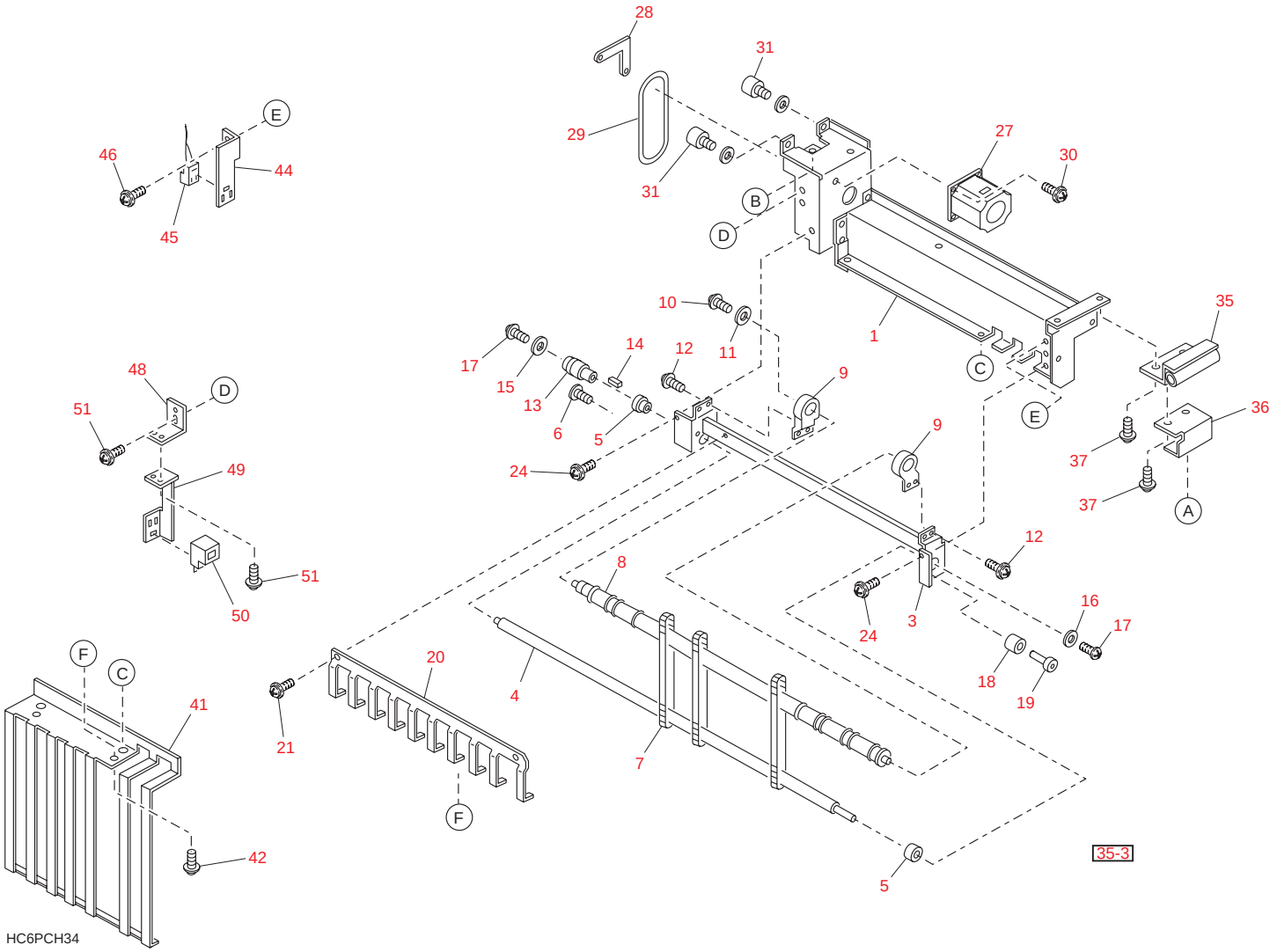
Asm–Index	Part Number	Units	Description
35–			Stacker - Sensors & Finger Belts (Sheet 4 of 7)
–1		NP-1	Frame Asm, F Belt
–4		NP-1	Frame Asm, FB
–5		NP-1	Shaft, BD L
–6	88F3224	2	Bearing, Ball
–7		NP-2	Screw, Bind Hd M4 X 6
–8	06F0220	7	Belt, Stacker Finger
–9		NP-1	Shaft Asm, BD U
–10		NP-2	Holder Asm, BB
–10A	90H2792	2	Bearing
–11		NP-1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12
–12		NP-1	Washer, FP
–13		NP-4	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8
–14		NP-1	Pulley, B Driven
–15		NP-1	Key 3 X 3 X 10
–16		NP-1	Washer
–17		NP-1	Washer, FP
–18		NP-2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 16
–19	06F1049	1	Tube, Rubber
–20		NP-1	Screw, Shoulder
–21		NP-1	Finger, F
–22		NP-2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8
–25		NP-4	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8
–28	63H6567	1	Motor, Gate Finger Belt Drive (M802)
–29		NP-1	Nut, TM Plate


HC6PCH33
35-2

Asm–Index	Part Number	Units	Description
35–			Stacker - Sensors & Finger Belts (Sheet 5 of 7)
–30	63H6568	1	Belt, Gate Finger Drive
–31		NP-2	Bolt, Hexagon Socket Hd with Star Wshr M4 X 16
–32		NP-1	Bolt, Hexagon Socket Hd M4 X 16
–33		NP-1	Nut M4
–35	88F3260	1	Spring
–37		NP-1	Guide, BB
–38		NP-2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8
–42		NP-1	Lever Asm, Latch
–43		NP-1	Stopper, Lever
–44		NP-2	Screw, Socket Hd Set M4 X 6
–45		NP-1	Finger, S
–46		NP-1	Holder, Finger
–47		NP-1	Holder, Micro SW
–48		NP-3	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8
–49		NP-1	Bolt, Hexagon Socket Hd M4 X 8
–52	06F0206	2	Switch, Stacker Safety (S801, S802)
–53		NP-4	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 20
–56		NP-1	Cover, V Belt
–57		NP-1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8
–62		NP-1	Cover, P Gate SW
–63		NP-1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8

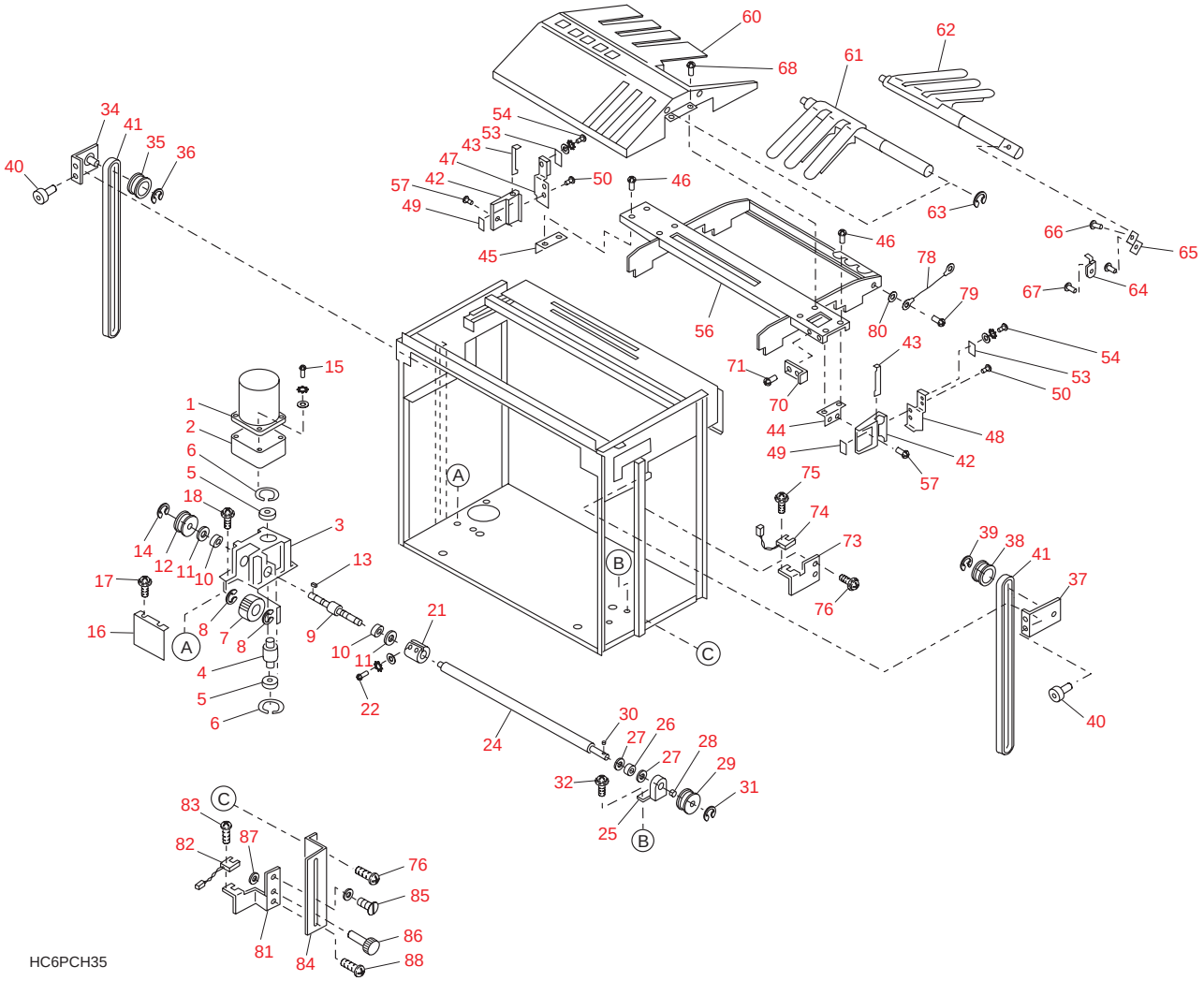

28
31
29
31
27
30
B
D
E
46
44
45
10
11
1
C
35
17
15
13
6
5
14
12
9
48
D
51
49
51
50
24
9
36
37
37
A
12
8
24
3
16
17
18
19
20
4
21
7
F
C
41
42
F
5
35-3
HC6PCH34

Asm–Index	Part Number	Units	Description
35–			Stacker - Sensors & Finger Belts (Sheet 6 of 7)
–1		NP-1	Frame Asm, R Belt
–3		NP-1	Frame Asm, RB
–4		NP-1	Shaft, BD L
–5	88F3224	2	Bearing, Ball
–6		NP-2	Screw, Bind Hd M4 X 6
–7	06F0220	7	Belt, Stacker Rear Finger
–8		NP-1	Shaft Asm, BD U
–9		NP-2	Holder Asm, BB
–10		NP-1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12
–11		NP-1	Washer, FP
–12		NP-4	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8
–13		NP-1	Pulley, B Driven
–14		NP-1	Key 3 X 3 X 10
–15		NP-1	Washer
–16		NP-1	Washer, FP
–17		NP-2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 16
–18	06F1049	1	Tube, Rubber
–19		NP-1	Screw, Shoulder
–20		NP-1	Finger, R U
–21		NP-2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8
–24		NP-3	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8
–27	63H6569	1	Motor, Rear Finger Belt Drive (M801)
–28		NP-1	Plate, TM Nut
–29	63H6568	1	Belt, Rear Finger Drive
–30		NP-2	Bolt, Hexagon Socket Hd with Star Wshr M4 X 12
–31	06F0214	2	Bearing, Plastic
–35		NP-1	Holder, Asm RR Belt
–36		NP-1	Holder, RR Wire

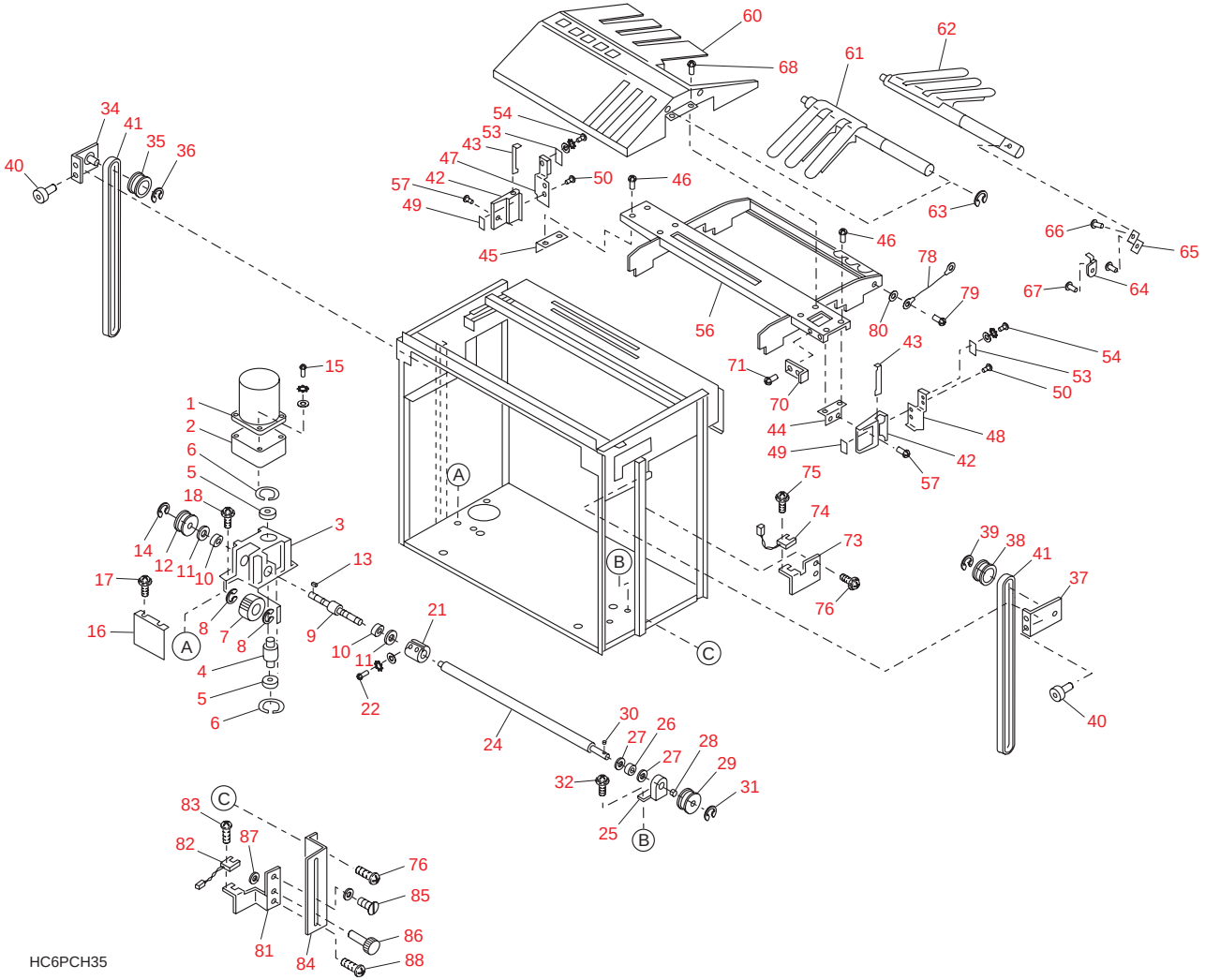

28
31
29
31
27
30
E
46
44
45
B
D
10
11
1
35
17
15
13
6
5
14
12
9
C
E
48
D
51
49
51
50
24
9
36
37
37
A
12
8
24
3
16
17
18
19
20
4
21
7
F
C
41
42
F
5
35-3
HC6PCH34

Asm–Index	Part Number	Units	Description
35–			Stacker - Sensors & Finger Belts (Sheet 7 of 7)
–37		NP-4	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12
–41		NP-1	Finger, R
–42		NP-4	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8
–44		NP-1	Holder, HD Sensor RR
–45	24H9845	1	Sensor, Stacker Rear Height (S803)
–46		NP-1	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8
–48		NP-1	Holder, HD Sensor RL
–49		NP-1	Holder, HD Sensor RL
–50	24H9844	1	Lamp, Stacker Rear Height (D801)
–51		NP-2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8

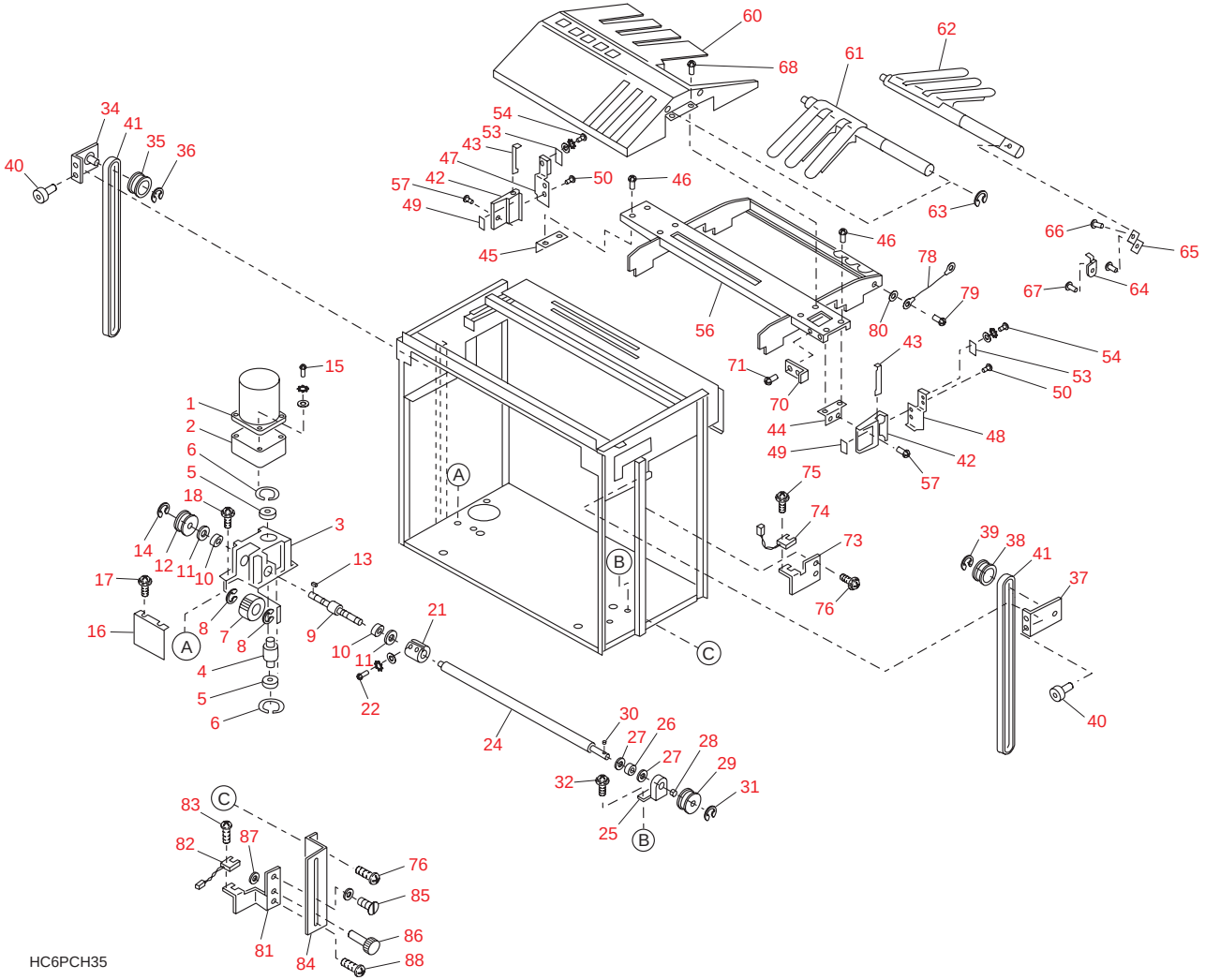
Assembly 36: Stacker Table



Asm–Index	Part Number	Units	Description
36–			Stacker Table (Sheet 1 of 3)
–1	06F0195	1	Motor, Stacker Table (M803)
–2	06F0196	1	Gearhead, Stacker Table Motor
–3		NP-1	
–4	06F0969	1	Gear, Worm
–5	88F3299	2	Bearing, Ball
–6		NP-2	
–7	06F0968	1	Gear
–8		NP-2	
–9	06F0967	1	Shaft, Stacker Table Drive
–10	06F0200	2	Bearing, Ball
–11		NP-2	
–12	06F0962	1	Pulley
–13	06F0408	1	Key 4 X 4 X 10 PP
–14		NP-1	
–15	06F0414	2	Bolt, Hexagon Socket Hd M6 X 60 PP
–16		NP-1	
–17	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–18	06F0415	3	Bolt, Hexagon Socket with Star Wshr & Wshr M5 X 16 PP
–21	06F0964	1	Coupling
–22	06F0415	2	Bolt, Socket Hd with Star Wshr M5 X 16 PP
–24		NP-1	
–25		NP-1	
–26	06F0199	1	Bearing, Ball
–27		NP-2	
–28	06F0963	1	Spacer
–29	06F0962	1	Pulley
–30	06F0408	1	Key 4 X 4 X 10
–31		NP-1	

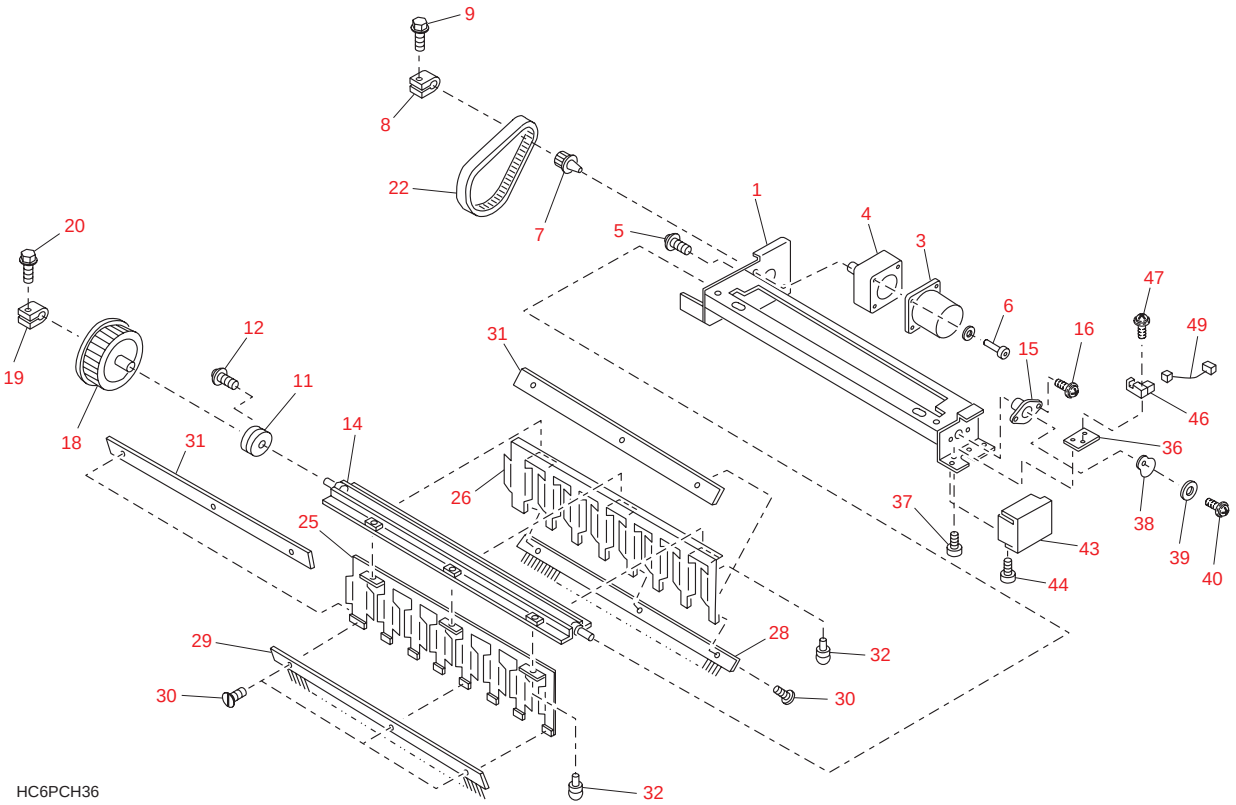

HC6PCH35

Asm–Index	Part Number	Units	Description
36–			Stacker Table (Sheet 2 of 3)
–32	06F0415	2	Bolt, Hexagon Socket with Star Wshr & Wshr M5 X 16 PP
–34		NP-1	
–35	06F0197	1	Pulley, Table Asm
–36		NP-1	
–37		NP-1	
–38	06F0197	1	Pulley Asm, Table
–39		NP-1	
–40	06F0415	4	Bolt, Hexagon Socket with Star Wshr & Wshr M5 X 16 PP
–41	63H6563	2	Belt, Timing (Stacker)
–42		2	Guide, Cable
–43	06F0380	2	Guide, Table
–44	06F0978	1	Holder, Table (RH)
–45	06F0977	1	Holder, Table (LH)
–46	06F0411	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–47	06F0976	1	Base, Belt Clamper (LH)
–48		NP-1	Base, Belt Clamper (RH)
–49	06F0973	2	Plate, Nut
–50	06F0411	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 16 PP
–53	06F0972	1	Clamper, Belt
–54	06F0403	4	Bolt, Hexagon Socket Hd M4 X 12 PP
–56		NP-1	
–57	06F0411	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–60		NP-1	
–61		NP-1	
–62		NP-1	
–63		NP-2	
–64	06F0992	2	Holder, Table
–65	06F0991	1	Holder, Table

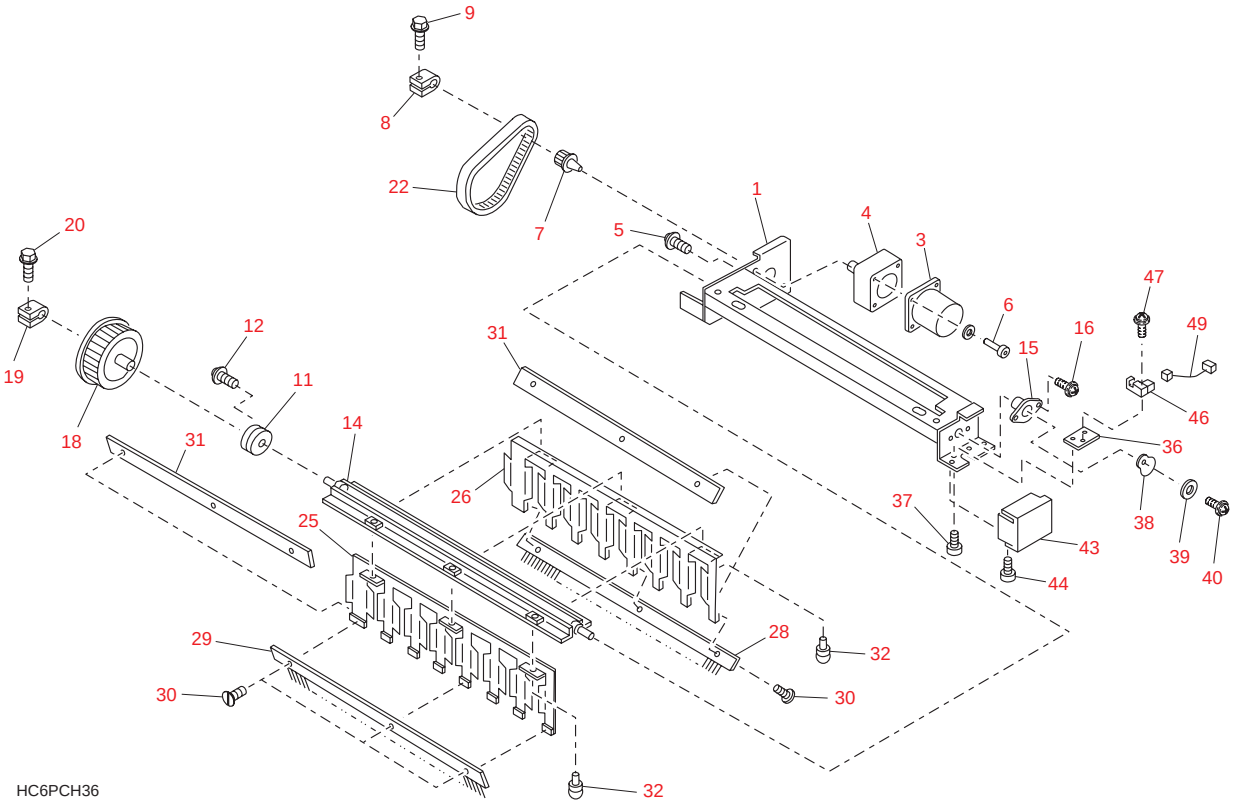

HC6PCH35

Asm–Index	Part Number	Units	Description
36–			Stacker Table (Sheet 3 of 3)
–66	06F0415	2	Bolt, Hexagon Socket Hd with Star Wshr & Wshr M4 X 10 PP
–67	06F0214	2	Bearing, Plastic
–68	06F0411	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–70		NP-1	
–71	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–73		NP-1	
–74	24L4883	1	Sensor, Stacker Upper Limit (S807)
–75	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 16 PP
–76	06F0401	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–78	88F3295	1	Cable, Ground Wire
–79	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–80	06F0406	2	Washer, External Tooth D4 PP
–81		NP-1	
–82	24L4883	1	Sensor, Stacker Lower Limit (S808)
–83	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 16 PP
–84		NP-1	
–85	30H6700	1	Screw, Shoulder
–86	06F0984	1	Bolt, Clamp
–87		NP-1	
–88	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP

Assembly 37: Pendulum

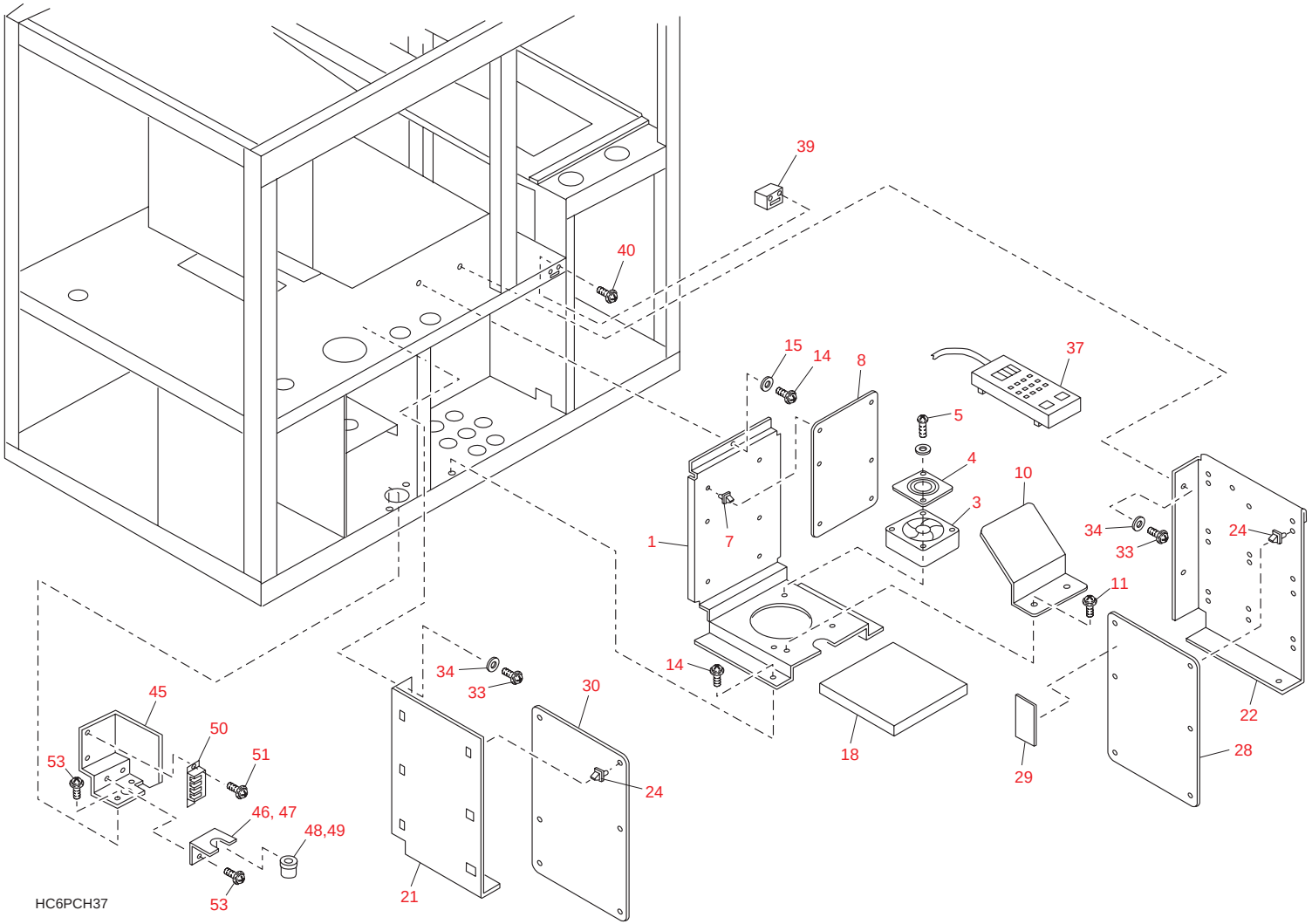


Asm–Index	Part Number	Units	Description
37–			Pendulum (Sheet 1 of 2)
–1		NP-1	
–3	63H6520	1	Motor, Pendulum (M804)
–4	63H6564	1	Gearhead, Pendulum Motor
–5	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–6		NP-2	
–7	06F0687	1	Pulley, Drive
–8	06F0292	1	Ring, Tight
–9	06F0403	1	Bolt, Hexagon Socket Hd with Star Wshr M4 X 16 PP
–11	65F6158	1	Bearing, Ball
–12	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–14		NP-1	
–15	06F0848	6	Bearing, Plastic
–16	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–18	06F0996	1	Pulley, Driven
–19	06F0292	1	Ring, Tight
–20	06F0403	1	Bolt, Hexagon Socket Hd with Star Wshr M4 X 16 PP
–22	06F0111	1	Belt, Pendulum Timing
–25	63H6565	1	Plate, Pendulum (Stacker)
–26	63H6566	1	Plate, Pendulum (Stacker)
–28	06F0223	1	Brush, Pendulum Rear Discharge
–29	06F0224	1	Brush, Pendulum Front Discharge
–30	06F0412	6	Screw, Flat Hd M3 X 8 PP
–31	88F3209	2	Plate, Nut
–32	06F0411	6	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–36		NP-1	
–37	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–38		NP-1	

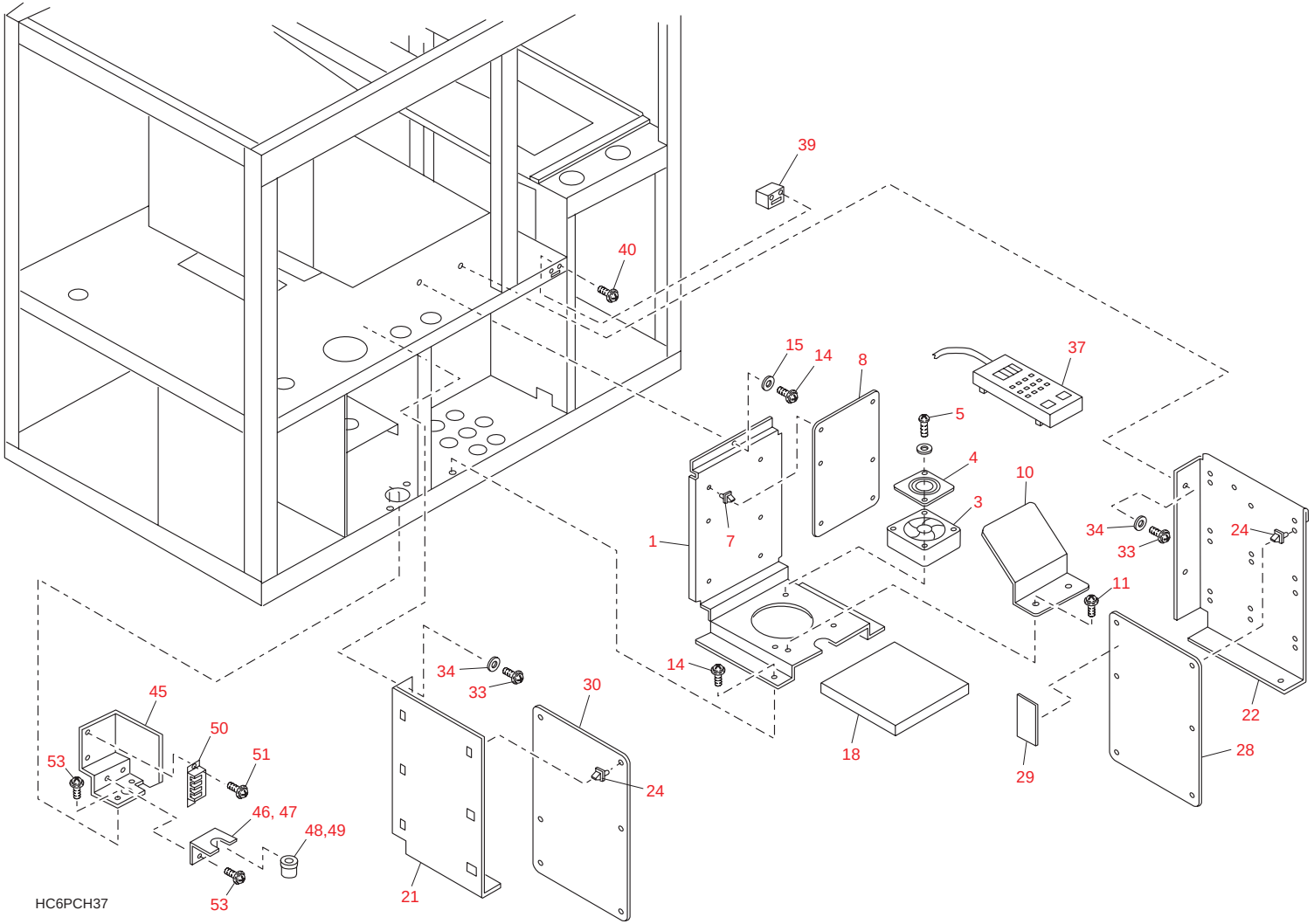

9
8
22
7
5
1
4
3
6
47
49
16
15
46
36
38
39
40
43
44
37
20
19
12
11
18
31
14
31
26
25
29
30
28
32
30
32
HC6PCH36

Asm–Index	Part Number	Units	Description
37–			Pendulum (Sheet 2 of 2)
–39	88F3186	1	Washer, VF
–40	06F0415	1	Bolt, Hexagon Socket Hd with Star Wshr M4 X 12 PP
–43		NP-1	
–44	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–46	30H6814	1	Sensor, Pendulum Position (S809)
–47	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 12 PP
–49		NP-1	Screw, Phillips Pan Hd M3 X 6 PP

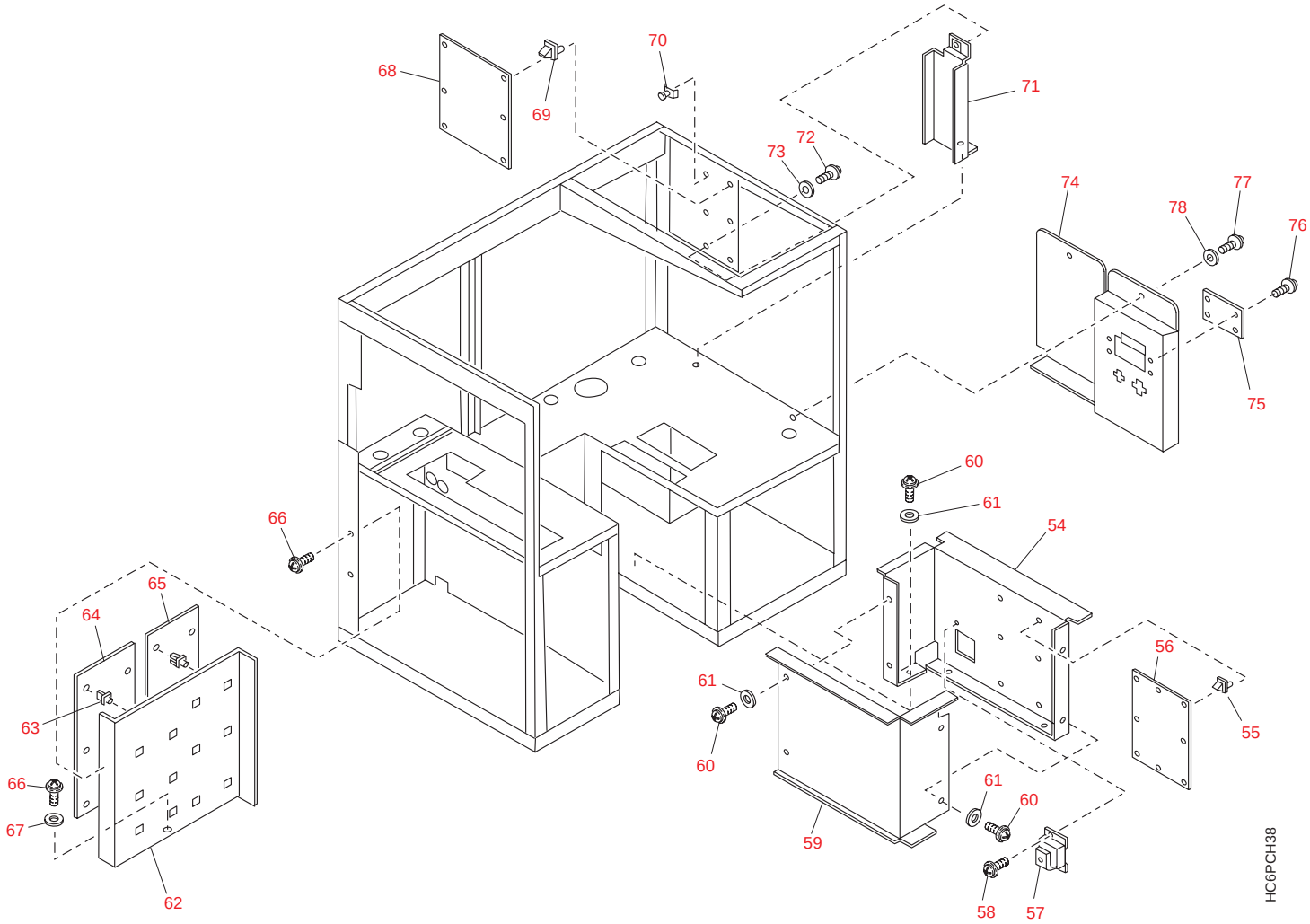
Assembly 38: Logic Cards



Asm–Index	Part Number	Units	Description
38–			Logic Cards (Sheet 1 of 3)
–1		NP-1	
–3	24H8035	1	Fan, Logic Card (B301)
–4		NP-1	Guard, Finger
–5	06F0411	2	Screw, Phillips Pan Hd with Star Wshr M4 X 45 PP
–7	30H6860	6	Holder, Card
–8	63H6477	1	Card, DV061
–10		NP-1	Guide, Air
–11	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 PP
–14	06F0401	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–15	06F0417	1	Washer, Press PP
–18	63H6487	1	Filter, Logic Card
–21		NP-1	
–22		NP-1	
–24	30H6860	14	Holder, Card
–28	63H6472	1	Card, CP261 **Note:** When ordering a new CP261 Card, also order the EPROM kit to go with the card. Replace the EPROM that is already installed on the new card.
–28	02N7850	1	EPROM, CP261
–28	01P4657	1	Card, CP471 **(Required for machines with Enhanced Toner Loading)**.**Note:** When ordering a new CP471 Card, also order the EPROM kit to go with the card. Replace the EPROM that is already installed on the new card.
–28	01P6556	1	EPROM, CP471


39
40
15
14
8
37
5
4
10
3
1
7
34
33
24
11
14
34
33
30
45
50
51
53
46, 47
48,49
53
21
24
18
29
22
28
HC6PCH37

Asm–Index	Part Number	Units	Description
38–			Logic Cards (Sheet 2 of 3)
–29		1	Battery
–29	63H6473	1	Card, MB071
–30	63H6475	1	Card, PC561
–33	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–34	06F0417	1	Washer,Press PP
–37	53F1778	1	Panel Asm, Maintenance
–39	06F0028	1	Usage Meter
–40	06F0413	2	Screw, Bind Hd M3 X 6 PP
–45		NP-1	Holder, TB (A)
–46		NP-1	Holder
–47		NP-1	Holder
–48		1	Strain Relief, Power Cord
–49		1	Strain Relief, Power Cord
–50	24L4914	1	Block, Terminal
–51	06F0411	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–53	06F0401	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP

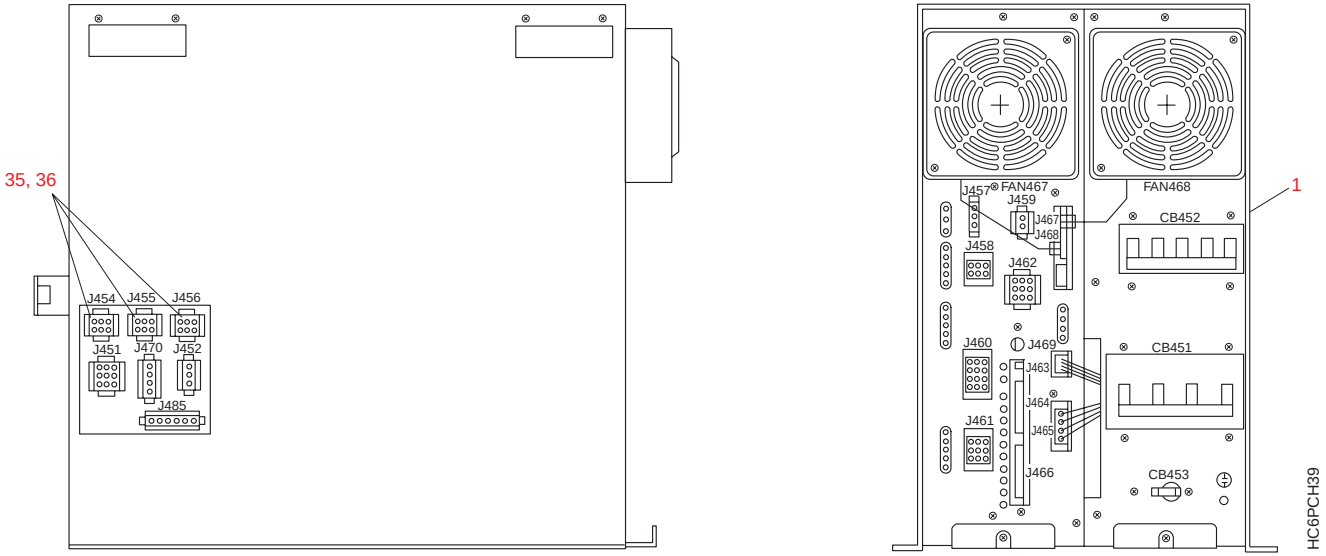

68
69
70
71
72
73
74
75
76
77
78
60
61
54
66
65
64
63
66
67
62
61
60
59
61
60
58
57
56
55
HC6PCH38

Asm–Index	Part Number	Units	Description
38–			Logic Cards (Sheet 3 of 3)
–54		NP-1	
–55	30H6860	8	Holder, Card
–56	63H6478	1	Card, DV101
–57		NP-1	Cover, Connector
–58	06F0401	2	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–59		NP-1	Cover
–60	06F0401	7	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–61	06F0417	7	Washer, Press PP
–62		NP-1	
–63	30H6860	14	Holder, Card
–64	63H6483	1	Card, DV081
–65	63H6474	1	Card, FU041
–66	06F0401	3	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–67	06F0417	1	Washer, Press PP
–68	63H6476	1	Card, PR011
–69	30H6860	6	Holder, Card
–70		NP-3	Standoff, Card
–71		NP-1	Guide, Cable
–72	06F0401	1	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–73	06F0417	1	Washer,Press PP
–74		NP-1	
–75	02N7496	1	Card, IF491
–76	06F0411	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 PP
–77	06F0401	4	Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 PP
–78	06F0417	2	Washer, Press PP

Assembly 39: No Assembly 39 for this Printer

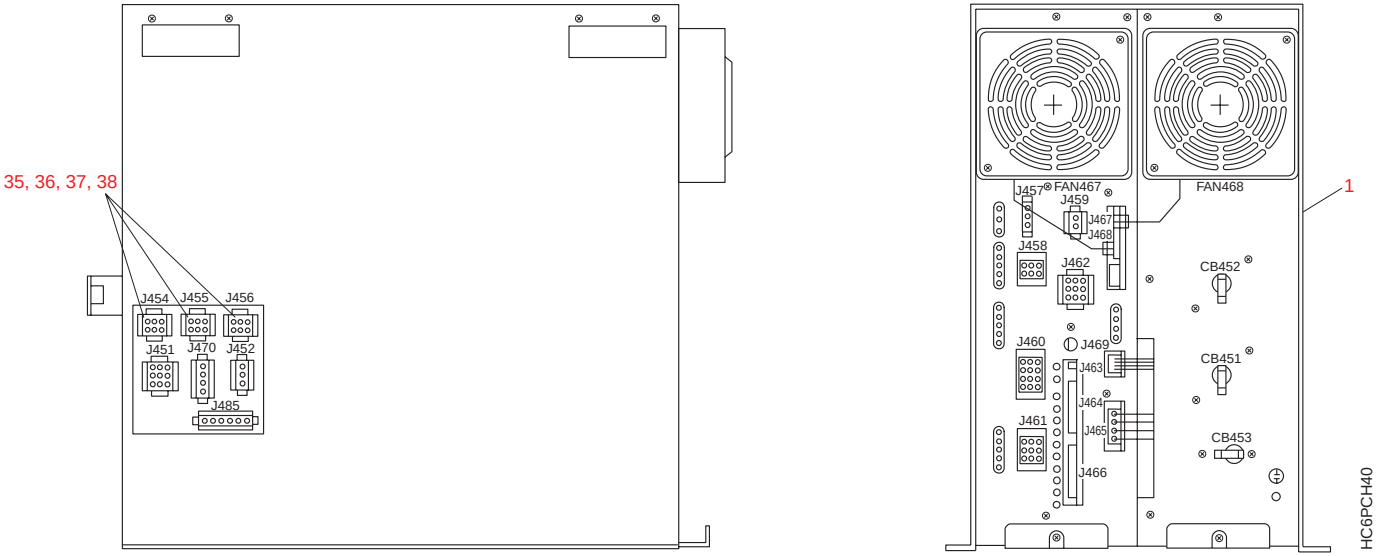
Asm–Index	Part Number	Units	Description
39–			Not Used

Assembly 40: AC/DC Power Supply 400V



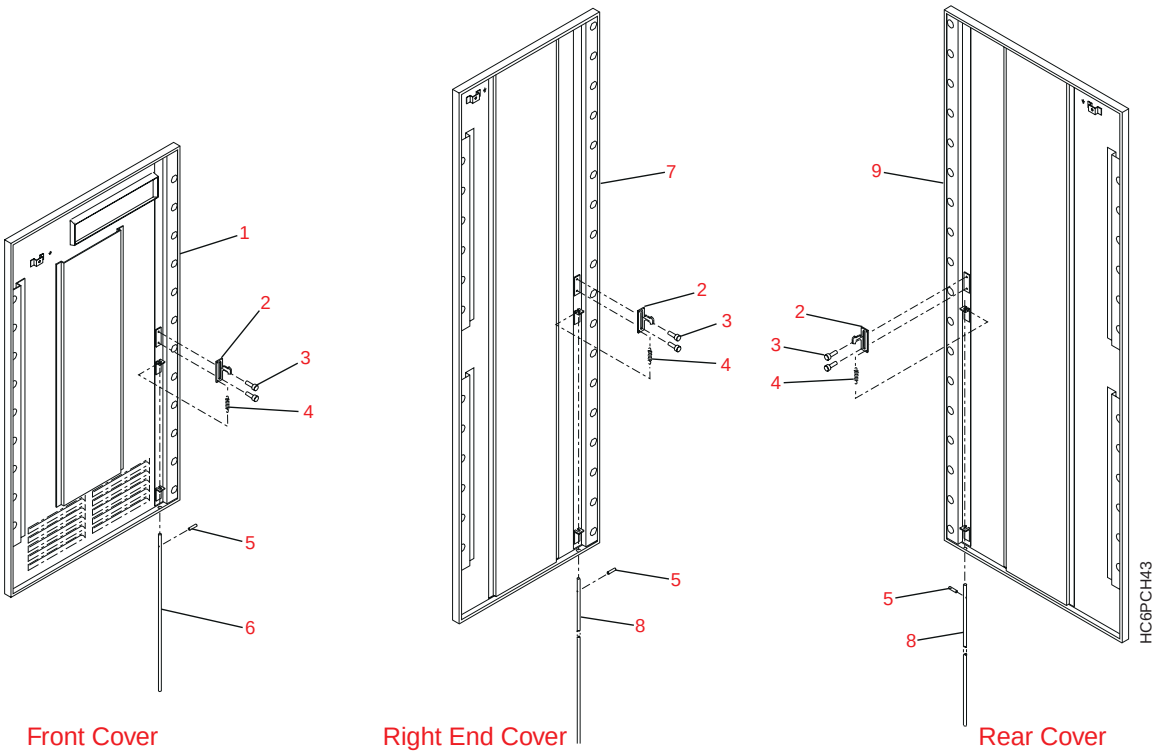
Asm–Index	Part Number	Units	Description
40–			AC/DC Power Supply 400V (Sheet 1 of 1)
–1	63H6486	1	Power Supply, AC (PE 50Hz)
–35		1	Connector Kit, 400V Voltage Jumper
–36		1	Connector Kit, 415V Voltage Jumper

Assembly 41: AC/DC Power Supply 200V



Asm–Index	Part Number	Units	Description
41–			AC/DC Power Supply 200V (Sheet 1 of 1)
–1	63H6485	1	Power Supply (PA60Hz, PJ50Hz, PJ60Hz)
–35		1	Connector Kit, 200V Voltage Jumper
–36		1	Connector Kit, 220V Voltage Jumper
–37		1	Connector Kit, 230V Voltage Jumper
–38		1	Connector Kit, 240V Voltage Jumper

Assembly 42: Control Unit Covers



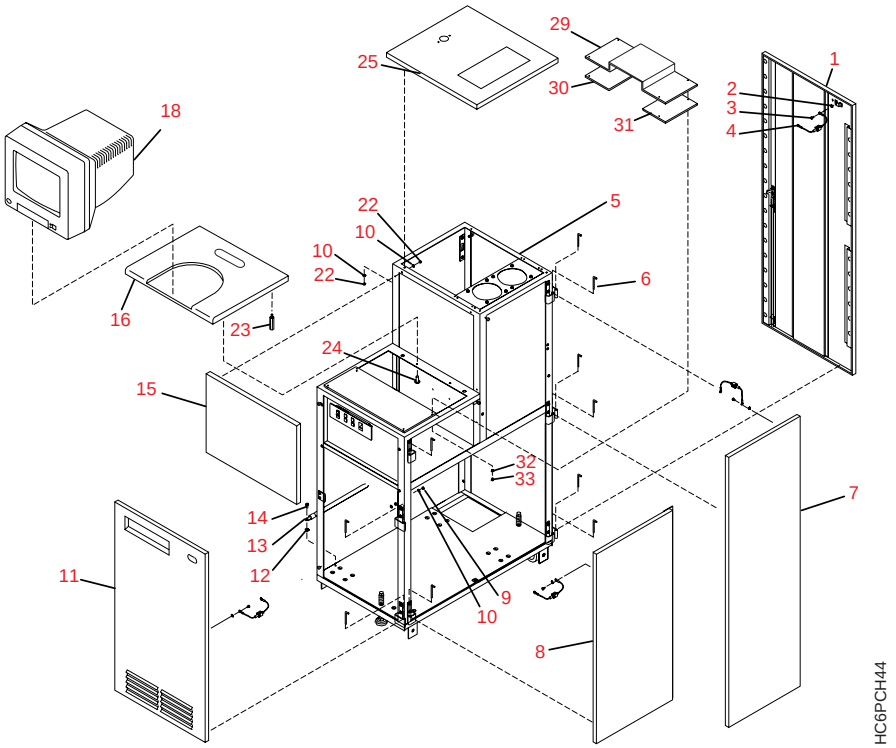
Front Cover

Right End Cover

Rear Cover

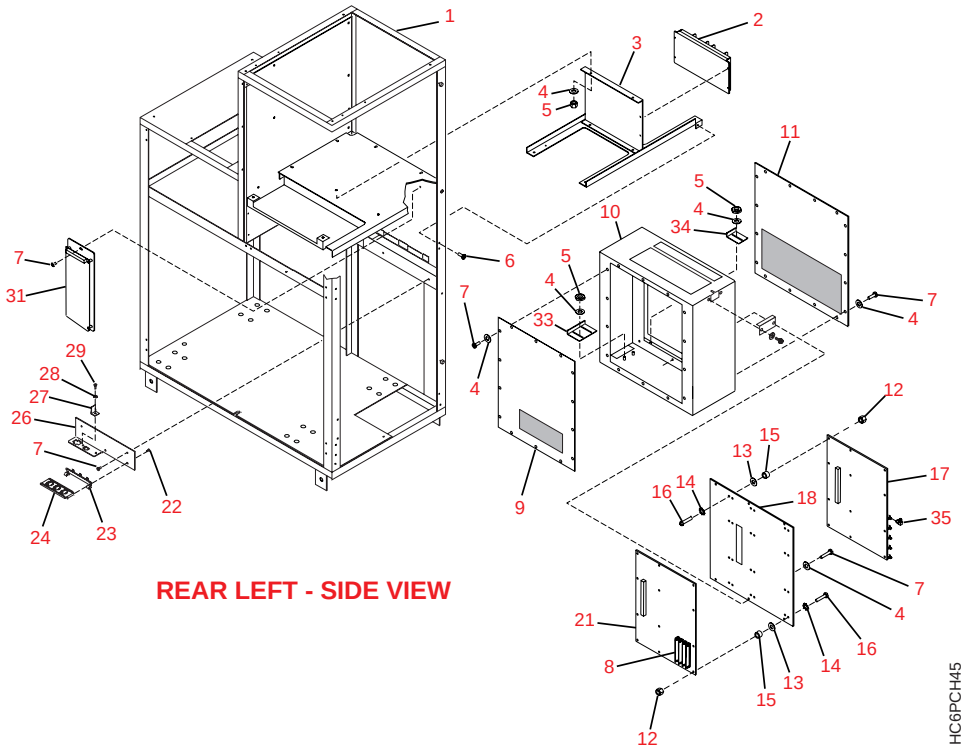
Asm–Index	Part Number	Units	Description
42–			Control Unit Covers (Sheet 1 of 1)
–1	63H6574	1	Cover, Front Asm
–2	30H2989	2	• Latch, Bracket
–3	53F1667	2	• Screw, Shoulder
–4	53F1609	1	• Spring
–5	1693629	1	• Pin
–6	11L6063	1	• Rod
–7	63H6458	1	Cover, Right End Asm
–8	11L6067	1	• Rod
–9	63H6456	1	Cover, Rear Asm

Assembly 43: Control Unit Covers and Display/Touch Screen



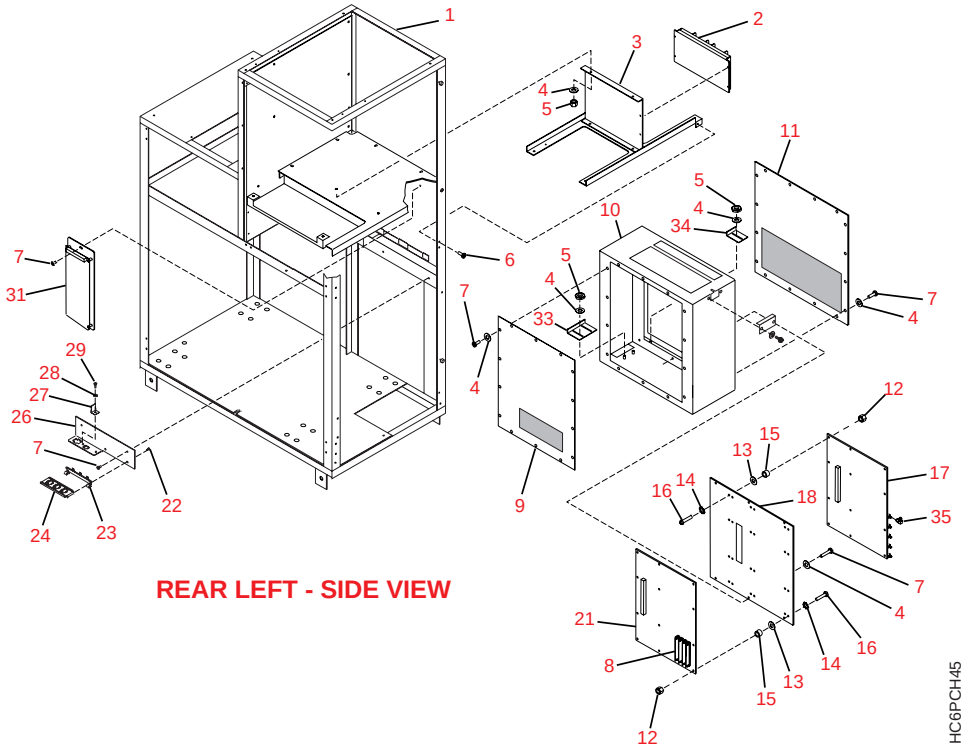
Asm–Index	Part Number	Units	Description
43–			Control Unit Covers and CRT (Sheet 1 of 1)
–1	63H6456	1	Cover Asm, Rear (See Asm 42 for Detail)
–2	1622346	2	Washer, Star
–3	53F1665	4	Screw
–4	81X0295	3	Cable, Ground
–5		NP	
–6	53F1607	10	Pin, Cover Hinge
–7	63H6458	1	Cover Asm, Right End Rear (See Asm 42 for Detail)
–8	11L5989	1	Cover, Left End Front
–9	1622393	1	Nut
–10	1622304	3	Washer
–11	63H6574	1	Cover Asm, Front (See Asm 42 for Detail)
–12	1622348	1	Washer, Star
–13	45G2091	1	Cable, Ground
–14	1621862	1	Screw, M6 X 10
–15	30H6880	1	Cover, Top Middle
–16	30H6520	1	Shelf, (For CU without the Display Touch Screen)
–16	11L6066	1	Shelf, (Required for Display Touch Screen)
–18	90H1744	1	Display Touch Screen Model G52
–22	1622403	8	Nut
–23	30H6521	2	Stud
–24	53F1663	2	Screw, M5 X 8
–25	63H6460	1	Cover, Top Rear
–29		NP	Bracket, Shelf Support
–30		NP	Spacer, Left Support
–31		NP	Spacer, Right Support

Assembly 44: Control Unit Cards



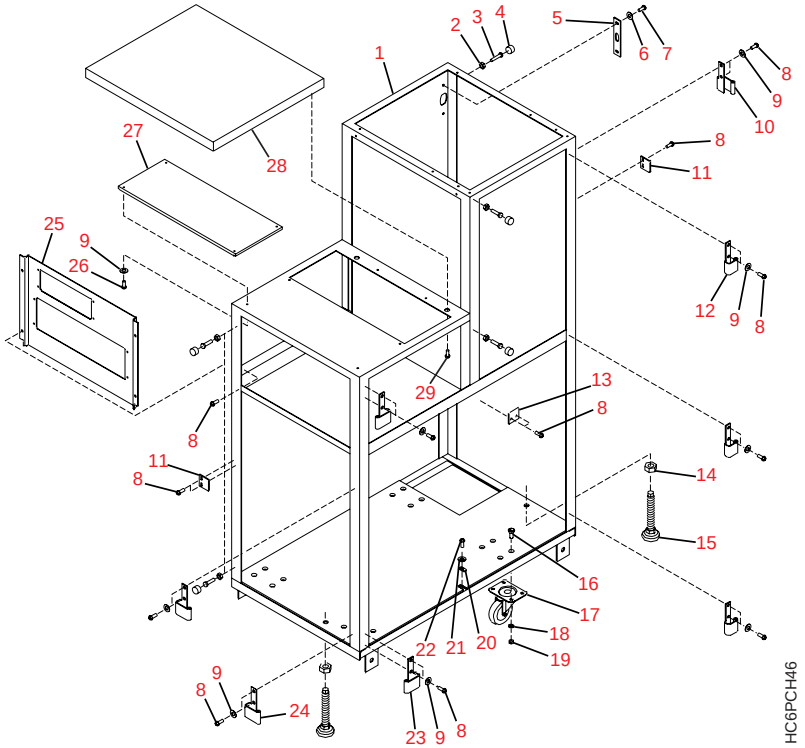
REAR LEFT - SIDE VIEW

Asm–Index	Part Number	Units	Description
44–			Control Unit Cards (MIC & PQE) (Sheet 1 of 4)
–1		NP	
–2	25F9401	1	Tailgate
–3		NP	
–4	1622304	35	Washer
–5	1622403	3	Nut
–6	30H3100	10	Screw, M5 X 10
–7	53F1665	38	Screw, M4 X 8
–8	90H2627	2	Memory Card for MIC
–9		NP	
–10		NP	
–11		NP	
–12	89H9835	24	Nut, 4-40 w/washer
–13	1622303	24	Washer, Flat
–14	0338169	24	Washer, Lock
–15	30H2817	24	Standoff
–16	0438551	24	Screw, 4-40 x .625
–17	24L4913	1	Card, PQE
–18	30H6782	1	Plate, Mounting
–21	89H9831	1	Card, MIC
–22	53F1663	2	Screw
–23	4586927	1	Spring
–24	85X6837	1	Retainer, Remote BUS TAG
–25		NP	
–26	30H6837	1	Bracket

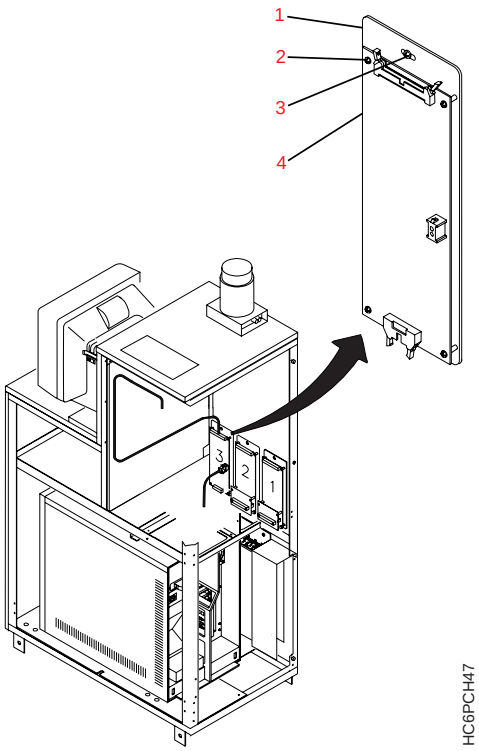


REAR LEFT - SIDE VIEW

Asm–Index	Part Number	Units	Description
44–			Control Unit Cards (Sheet 2 of 4)
–27		NP	
–28		NP	
–29		NP	
–31	11L5251	1	Card, Coupled Interface (Feature 4710)
–31	49G6111	1	Card, Common Ground Isolation (Feature 4720)
–33	30H6798	1	Bracket, Cable
–34	30H6799	1	Bracket, Cable
–35	89H9762	1	Cable Adapter, 90° (not shown)

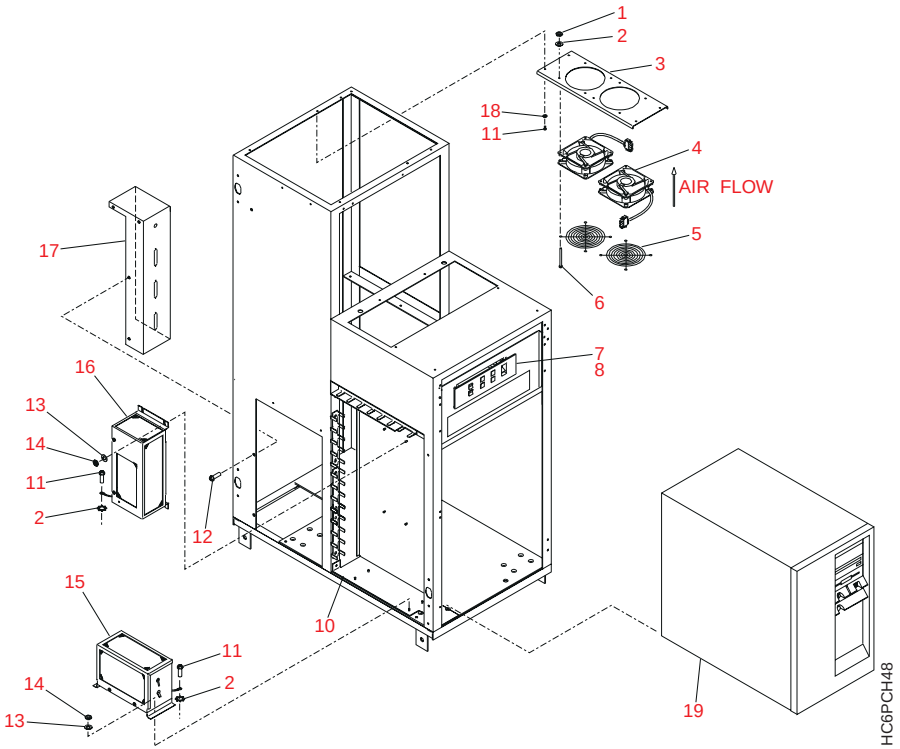

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
HC6PCH46

Asm–Index	Part Number	Units	Description
44–			Control Unit Hardware (Sheet 3 of 4)
–1		NP	
–2	1622403	6	Nut
–3	45G2064	6	Screw, M4 X 15
–4	45G2063	6	Bumper
–5	30H3033	3	Plate, Mounting
–6	1622306	6	Washer
–7	1621594	6	Screw, Hex Hd M6 X 10
–8	30H3100	26	Screw, M5 X 10
–9	1622276	20	Washer
–10	30H2957	3	Hinge, Rear
–11	30H2985	1	Plate, Latch
–12	30H2959	3	Hinge, Right Side
–13	30H2986	1	Plate, Side Latch
–14	1622408	2	Nut, M12
–15	53F1678	2	Screw, Jack
–16	1621342	16	Screw, M6 X 20
–17	81X0280	4	Caster
–18	1622321	16	Washer
–19	1622437	16	Nut
–20	30H3075	1	Bracket, Door Stop
–21	1622304	1	Washer
–22	53F1665	1	Screw
–23	30H2958	2	Hinge, Left Side
–24	30H2956	2	Hinge, Front
–25		NP	
–26	1622276	4	Screw, M5 X 12
–27		NP-1	
–28		NP-1	
–29		NP-1	


1
2
3
4
3
2
1
HC6PCH47

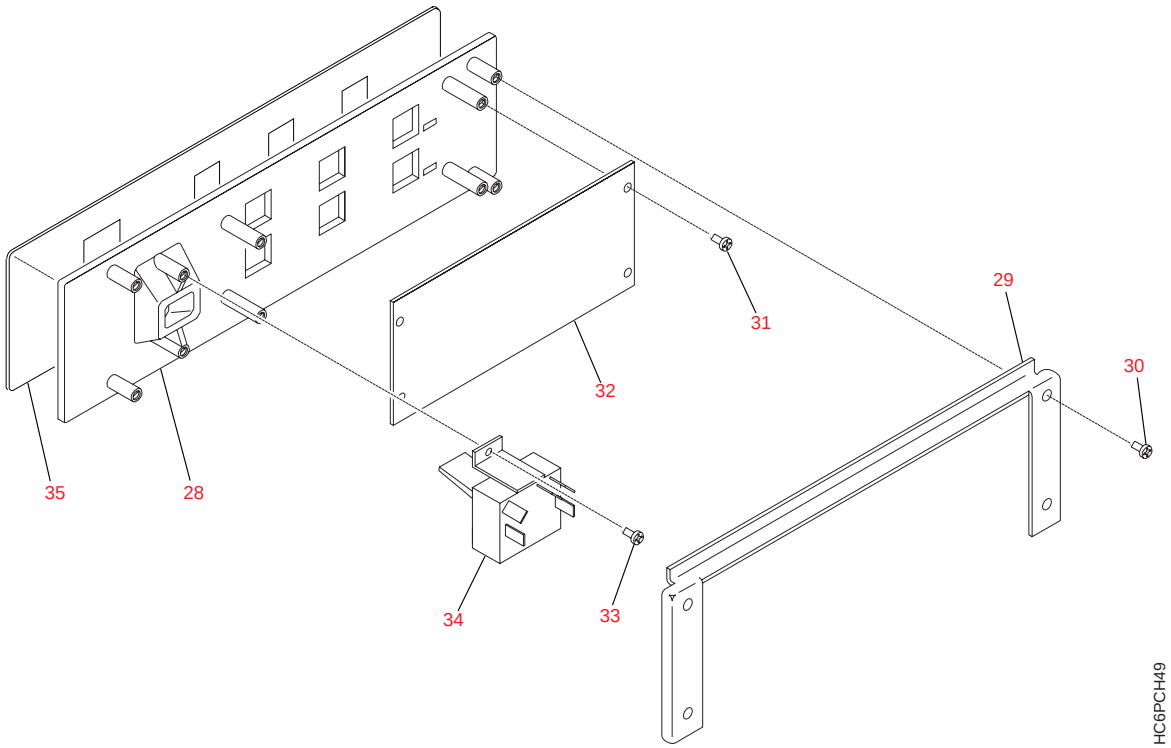
Asm–Index	Part Number	Units	Description
44–			Control Unit (Side1/Side2) (Sheet 4 of 4)
–1		NP	Plate, Card Mounting, Side1/Side 2
–2	06F0402	4	Screw, Phillips Pan Head M3x8 PP
–3	53F1665	1	Screw, Phillips Pan Head M4x8
–4	11L5278	1	Card, Side 1/Side 2 Verification Control

Assembly 45: Control Unit AC, DC Power Supply and Fans

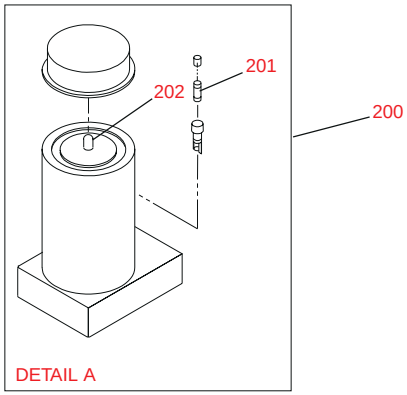


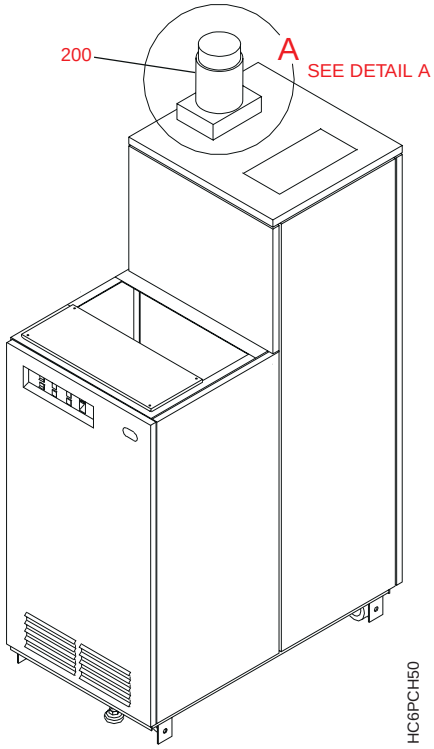
Asm–Index	Part Number	Units	Description
45–			Control Unit AC, DC Power Supply, and Fans (Sheet 1 of 1)
–1	1622403	1	Nut
–2	1622346	1	Washer
–3		NP	
–4	2179914	2	Fan
–5	4511305	2	Guard
–6	1621071	8	Screw, M4 X 60
–7		NP	Power Control Asm. (See assembly 46–32 or 46–34.
–8	0091610	4	Screw, Mounting
–10		NP	
–11	53F1665	8	Screw, M4 X 8
–12		NP	
–13	1622305	4	Washer
–14	1622404	1	Nut
–15	30H6719	1	Power Supply, AC Asm
–16	30H2868	1	Power Supply, DC Asm
–17		NP	
–18	1622304	1	Washer
–19		REF	Controller

Assembly 46: Control Unit Power Control Asm, Attention Lamp



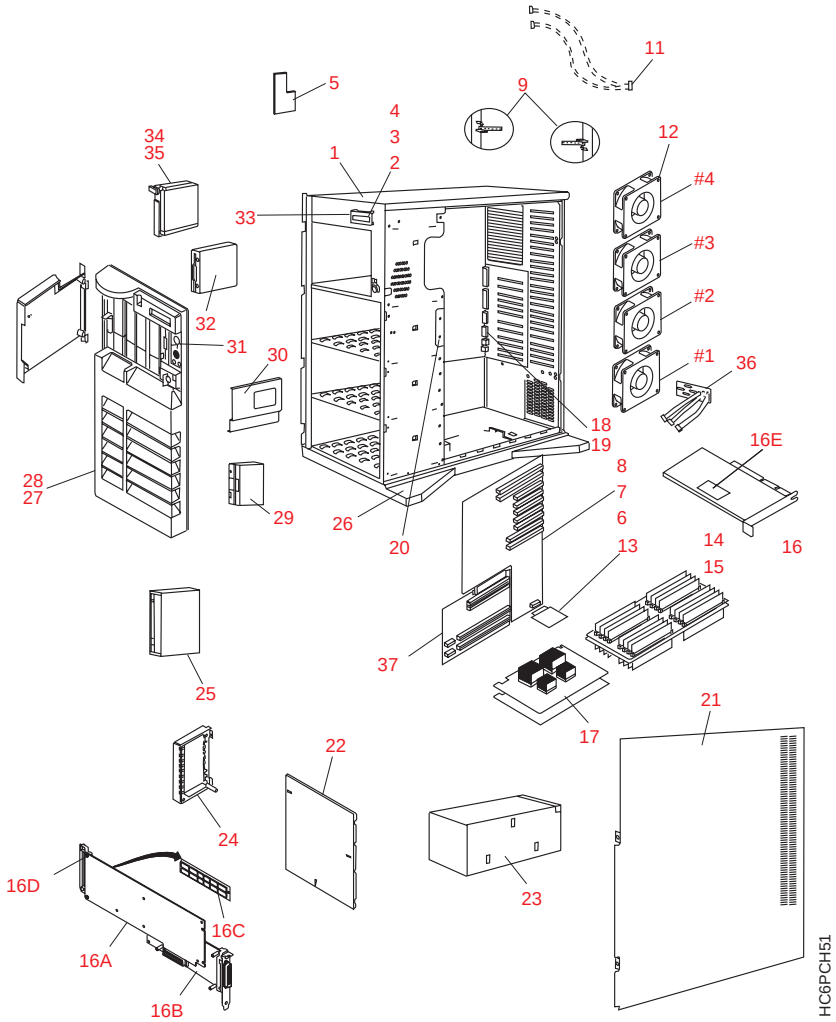
Asm–Index	Part Number	Units	Description
46–			Control Unit Power Control Panel (Sheet 1 of 2)
–28	45G1751	1	Bezel
–29		NP	
–30	91610	4	Screw
–31	91610	4	Screw
–32	45G1741	1	Card, Power Control
–33	91610	2	Screw
–34	8492368	1	Switch, UEPO
–35	45G1753	1	Overlay, English
–35	45G1755	1	Overlay, French
–35	45G1757	1	Overlay, German
–35	45G1759	1	Overlay, Italian
–35	45G1761	1	Overlay, Spanish
–35	30H2974	1	Overlay, Portuguese Brazil
–35	30H6654	1	Overlay, Chinese Traditional
–35	30H6656	1	Overlay, Chinese Simplified


201
202
200
DETAIL A

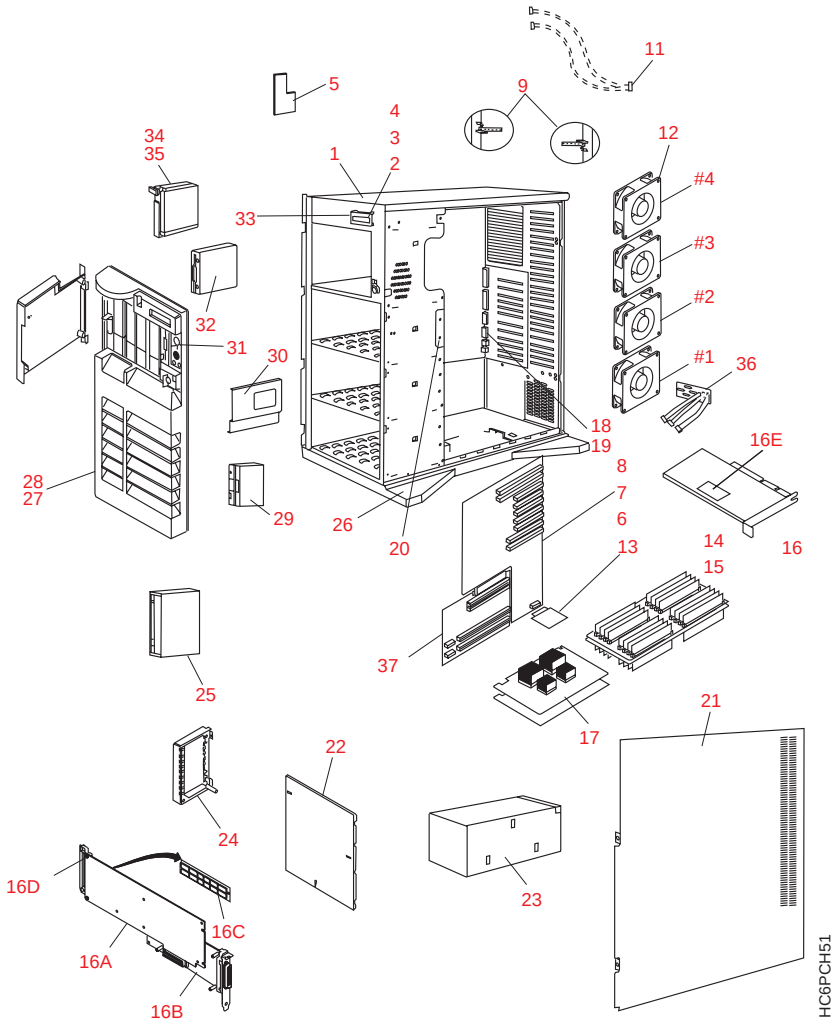

200
A
SEE DETAIL A
HC6PCH50

Asm–Index	Part Number	Units	Description
46–			Control Unit Attention Lamp (Sheet 2 of 2)
–200	88F3689	1	Light, Attention Asm
–201	855251	1	Fuse, 5A
–202	2129665	1	Bulb

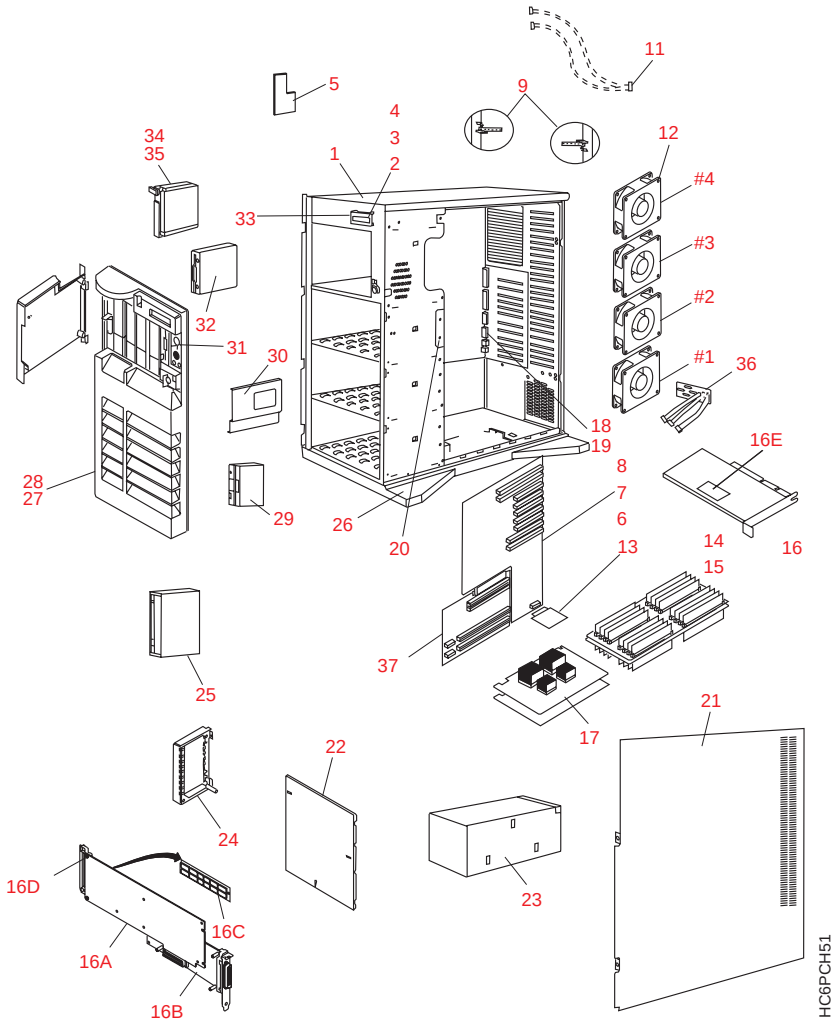
Assembly 47: Control Unit, Controller, Type 7025 Model F50



Asm–Index	Part Number	Units	Description
47–			Control Unit Controller, Type 7025 Model F50 (Sheet 1 of 3)
–1		NP	Chassis Asm
–2	73H0898	1	EMC Clip
–3	06H7082	1	Display Panel
–4	93H1816	1	Cable, display
–5	93H2922	1	Operator Panel Control Asm
–6	03N3297	1	Planar, I/O
–7	06H7697	13	Standoff
–8	33F8354	1	Battery
–9	73H3520	1	CPU Lever
–9	73H3525	1	Lever, front
–9	73H3529	1	Lever, rear
–11	93H6280	1	Cable, EPO
–12	73H3577	1	Fan, #1
–12	40H1424	1	Fan, #2
–12	40H1433	2	Fan, #3 and #4
–13	08L0442	1	Service Processor
–14	03N4173	1	Memory Card
–15	07L7729	16	32MB Memory Modules
–15	93H4702	2	128MB Memory Modules
–16	94H1038	1	Card, Token Ring (slot 6 or 8)
–16	73H3405	1	Card, FDDI (slot 6 or 8)
–16	08L0895	1	Card, GXT120P Graphics Adapter (slot 3)
–16	09L2061	1	Card, SSA Adapter (Slot 1)

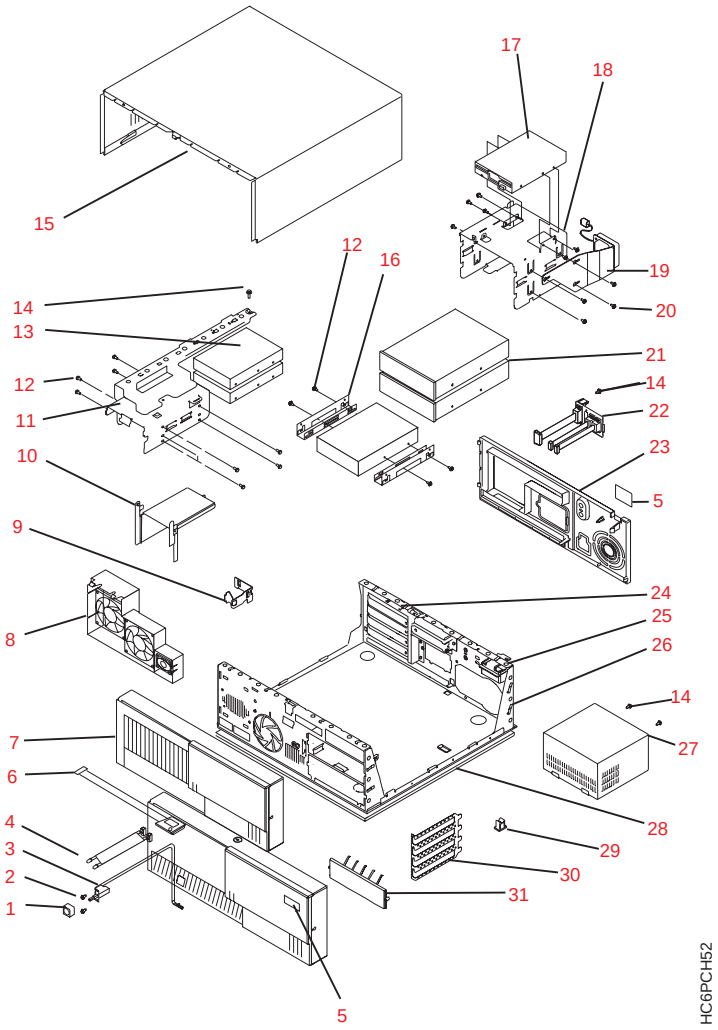

11
5
9
4
3
2
1
12
34
35
#4
33
#3
#2
#1
36
32
31
30
18
19
16E
8
28
27
7
6
29
26
20
14
16
13
15
37
25
17
21
22
24
16D
23
16C
16A
16B
HC6PCH51

Asm–Index	Part Number	Units	Description
47–			Control Unit Controller, Type 7025 Model F50 (Sheet 2 of 3)
–16	94H0823	1	Card, Ethernet (10/100 Base T) (Slot 6 or 8)
–16A	39H8084	1	Card, ARTIC Coprocessor (Slot 6 or 8))
–16B	12K0150	1	Card, ESCON Adapter (Plugs into the ARTIC Coprocessor)
–16B	12K0159	1	Card, Parallel Channel Adapter (Plugs into the ARTIC Coprocessor)
–16C	70F9973	1	SIMM, 4 MB (Memory for ARTIC Coprocessor Card)
–16D		NP	Retainer, ESCON Coprocessor Card
–16E	89H5651	6	DRAM, 16 MB (Only installed on SSA adapter card)
–17	93H9018	1	CPU Card, 332 MHZ (1-way)
–18	93H3144	1	EMC Gasket, I/O Connectors
–19	93H3145	1	EMC Gasket, Ext SSA Connectors
–20	93H6321	1	SSA Backplane
–21		NP	Door, right side
–22		NP	Cover, Planar
–23	93H9789	1	Power Supply
–24		NP	Bracket, Adapter Card
–25	97H7796	1	32X CD ROM
–26	11H8156	1	Pedestal and Wheel
–27	93H9868	1	Cover, Front (IBM)
–	60G1066	1	Cable, token ring adapter (RJ to D-shell)
–	53F3930	1	Cable, token ring (20 foot)
–	00G2380	1	Plug, Ethernet 10/100 BaseT Wrap

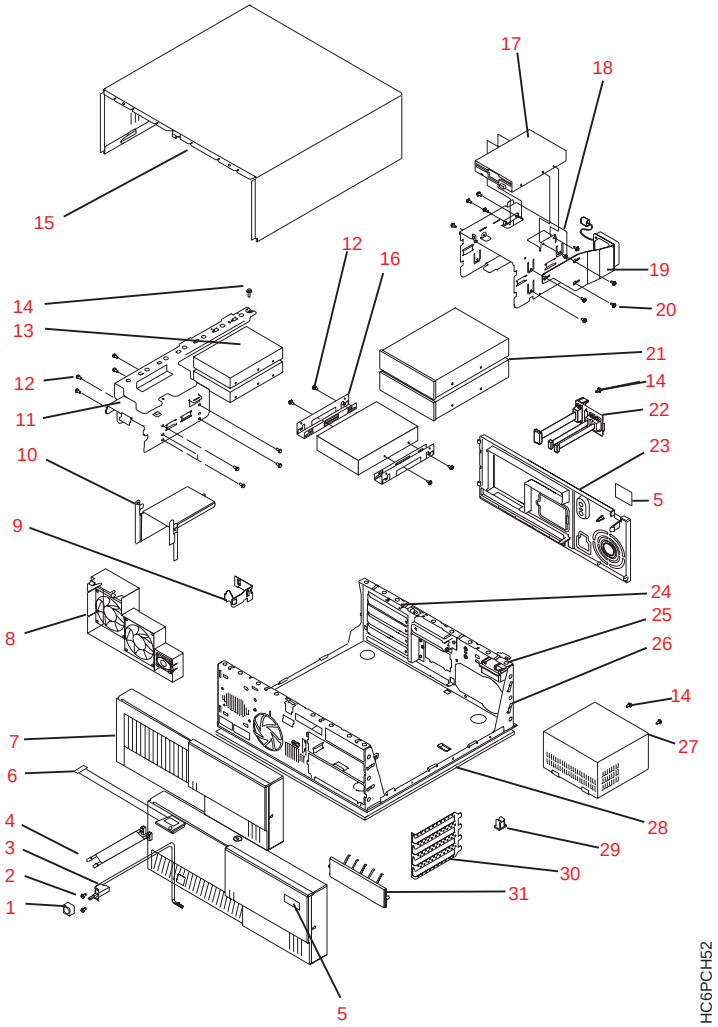

11
5
9
4
3
2
1
12
34
35
#4
33
#3
#2
#1
36
32
31
30
18
19
16E
8
28
27
7
6
29
26
20
14
16
13
15
37
25
17
21
22
24
16D
23
16C
16A
16B
HC6PCH51

Asm–Index	Part Number	Units	Description
47–			Control Unit Controller, Type 7025 Model F50 (Sheet 3 of 3)
–28	93H4297	1	Logo
–29	93F2361	1	Diskette Drive
–30	06H2792	1	Plate Assembly
–31	73H0870	1	Bezel, Op Panel
–32	59H3481	1	Tape Drive, 4mm
–33	07L7600	1	Bracket, Display Panel
–34		1	Disk Drive, (With microcode) * - Install in Bay C1 * Check Hard Drive for FRU number. The FRU number on the Hard Drive is required to receive the correct code.
–35	06H8631	1	Disk Drive Carrier
–37	07L9718	1	Card, System
–	42H1296	1	Keyboard (Not shown)

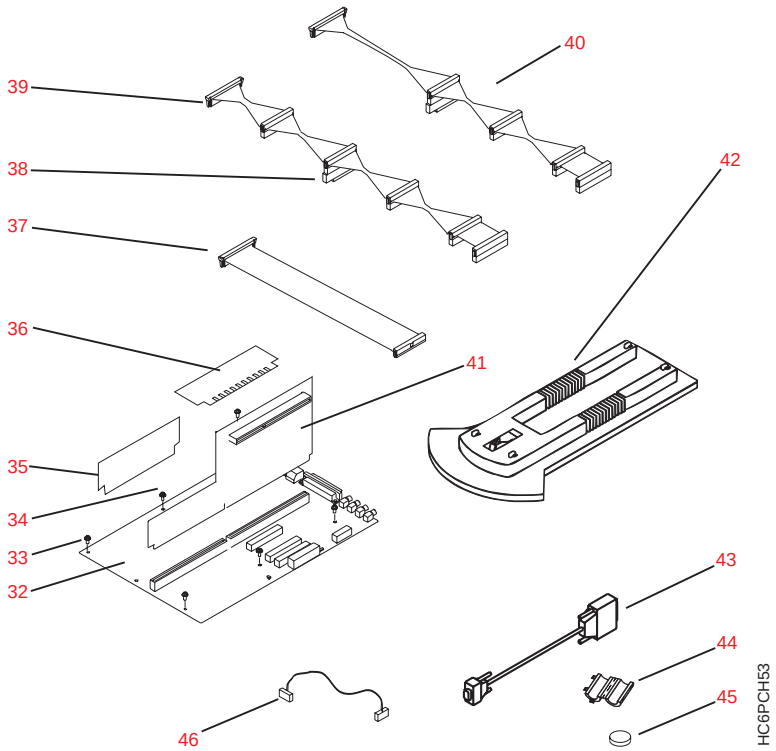
Assembly 48: Control Unit, Controller, Type 7043 Model 43P-140



Asm–Index	Part Number	Units	Description
48–			Control Unit Controller, Type 7043 Model 43P-140 (Sheet 1 of 3)
–	07L6923	1	Cover Assembly (Includes index items 11, 15, 18, 24, 26, 28, and 30)
–1	11H6764	1	Power Button
–2	33G3907	2	Screw
–3	73H0438	1	Power Switch Assembly
–4	93H9162	1	Power-On and disk activity light Asm.
–5	94H0550	1	Logo
–6	07L7649	1	Operator Panel Circuit Asm (items 48–6 and 48–7 are supplied as an assembly)
–7	07L7649	1	Bezel, front (Keylock and keys) (items 48–6 and 48–7 are supplied as an assembly)
–8	40H7584	1	Fan and Speaker Asm
–9	93H1819	1	Bracket, operator panel
–10		NP-1	
–11		NP	Bracket, disk drive (Included in the Cover Assembly, P/N 07L6923)
–12	27F4212	4	Screw, disk drive (6-32)
–13		1	Disk Drive (With microcode) * * Check Hard Drive for FRU number. The FRU number on the Hard Drive is required to receive the correct code.
–14	27F4212	4	Screw, M3.5
–15		NP	Cover, top (Included in the Cover Assembly, P/N 07L6923)
–16	88G2216	1	Bracket, disk drive mounting
–17	93F2361	1	Diskette Drive
–18		NP	Bracket (Included in the Cover Assembly, P/N 07L6923)
–19	93H1817	1	Fan Asm
–20	33G3907	12	Screw, M3
–21	97H7796	1-2	32X CD ROM
–22	93H5982	1	Cable and bracket Asm.
–23	06H8488	1	Panel, rear
–24		NP	PCI Bulkhead (Included in the Cover Assembly, P/N 07L6923)
–25	06H6706	1	Latch, top cover

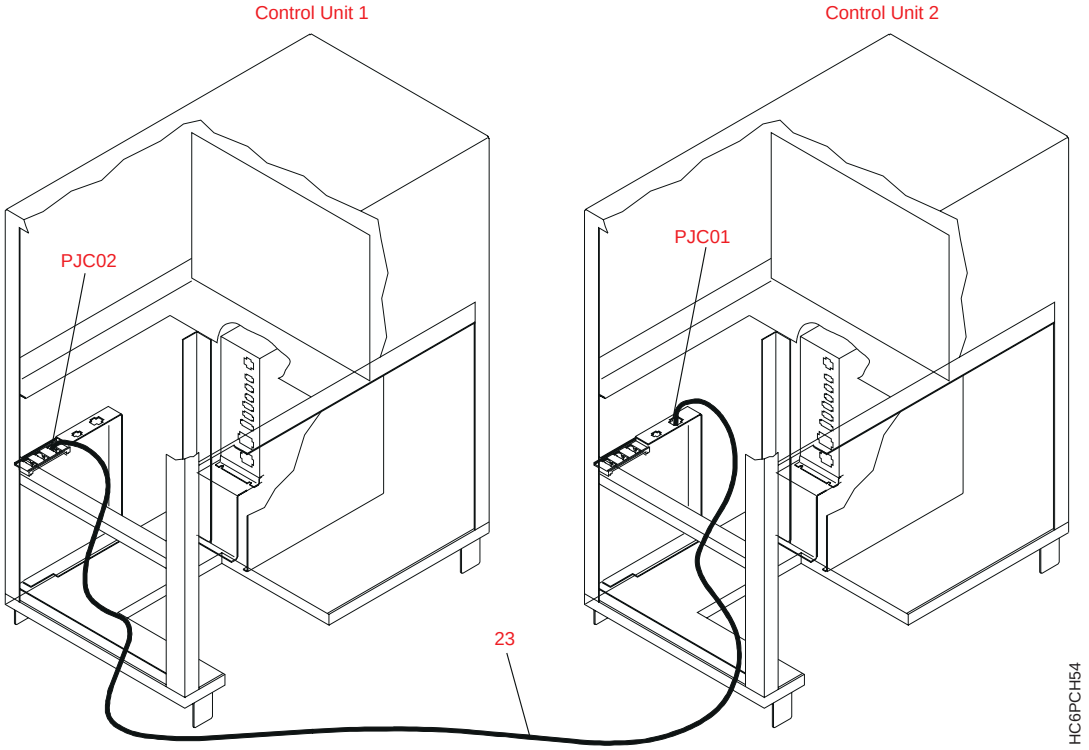

17
18
15
12
16
19
14
20
13
21
12
14
11
22
23
10
5
9
24
25
8
26
14
7
27
6
28
4
29
3
30
2
31
1
5
HC6PCH52

Asm–Index	Part Number	Units	Description
48–			Control Unit Controller, Type 7043 Model 43P-140 (Sheet 2 of 3)
–26		NP	Chassis (Included in the Cover Assembly, PN 40H5854)
–27	40H7566	1	Power Supply (With Power Factor Correction)
–28		NP	Panel, bottom (Included in the Cover Assembly, PN 40H5854)
–29	93H4574	5	Cable tie (adhesive base)
–30		NP	Shield, EMC (Included in the Cover Assembly, PN 40H5854)
–31	12H0649	1	Panel, bay

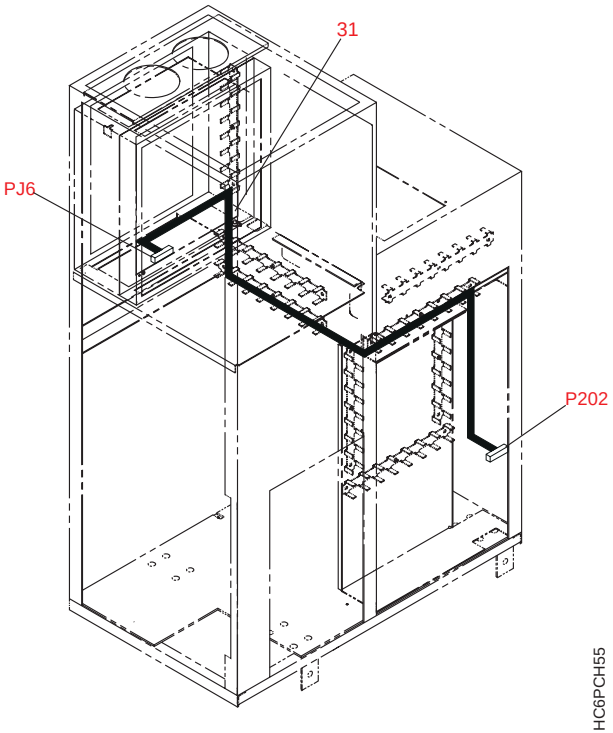

40
39
38
42
37
36
41
35
34
33
32
43
44
45
46
HC6PCH53

Asm–Index	Part Number	Units	Description
48–			Control Unit Controller, Type 7043 Model 43P-140 (Sheet 3 of 3)
–32	11K0383	1	Planar, 233 Mhz
–33	27F4212	6	Screw
–34	39H8697	1	Standoff, hex
–35	42H2774	2	Memory, 64MB DIMM
–35	93H6823	1	Memory, 128MB (DIMM)
–36	09L2061	1	Card, SSA adapter (Slot 3)
–36	39H8084	1	Card, ARTIC Coprocessor (Plugs into ESCON or Parallel Channel Adapter)
–36	70F9973	1	SIMM, 4 MB (Memory for ARTIC card)
–36	12K0150	1	Card, ESCON Adapter (Slot 2 or 4)
–36	12K0159	1	Card, Parallel Channel Adapter (Slot 2 or 4)
–36	24L3771	1	Card Asm, Parallel Channel Adapter (Slot 2 or 4) includes 4MB SIMM & ARTIC Coprocessor
–36	94H0823	1	Card, Ethernet (10/100 BaseT)
–36	94H1038	1	Card, Token Ring
–36	08L0895	1	Card, GTX120P graphics adapter
–36	73H3405	1	Card, FDDI (Slot 2 or 4)
–37	93H1821	1	Cable, diskette drive
–38	92F2565	1	Interposer
–39	73H0435	1	Cable Asm, SSA
–40	93H6151	1	Cable Asm, Ultra SSA (Optional)
–41	73H4532	1	Card, Riser
–42	11H6955	1	Base
–43	40H6328	2	Converter, serial port 9 to 25–pin
–44	11H2168	1	Toroid Kit, display cable
–45	33F8354	1	Battery
–46	65G8850	1	Cable, CD-ROM audio
–	76H5084	1	Mouse (3 button) (Not shown)

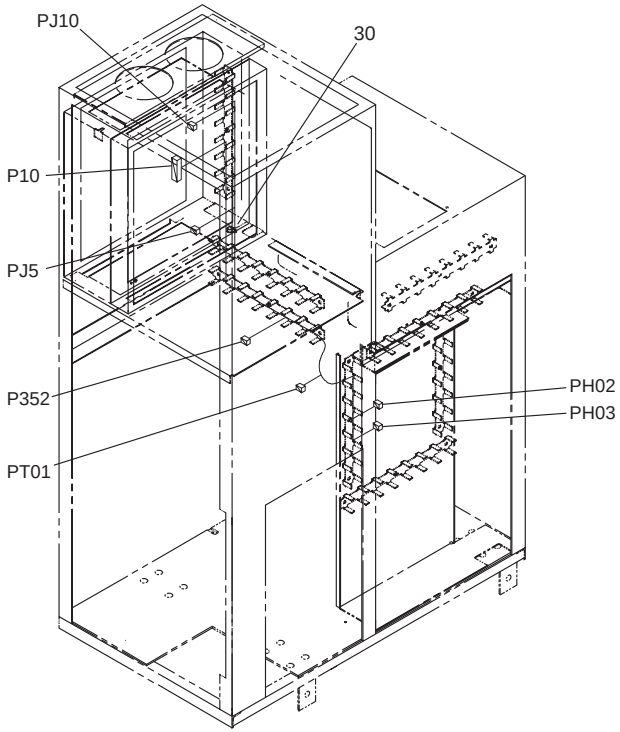
Assembly 49: Control Unit Cables

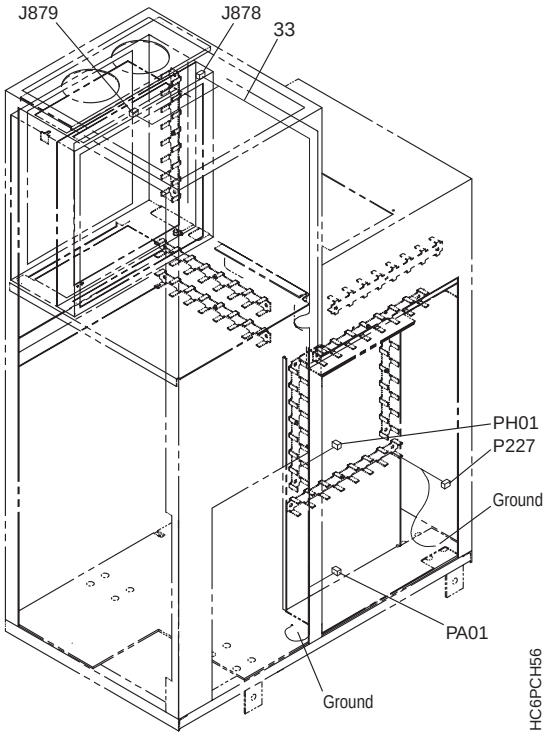


Asm–Index	Part Number	Units	Description
49–			Control Unit Cables (Sheet 1 of 11)
–23	45G1727	1	Cable, Remote Power

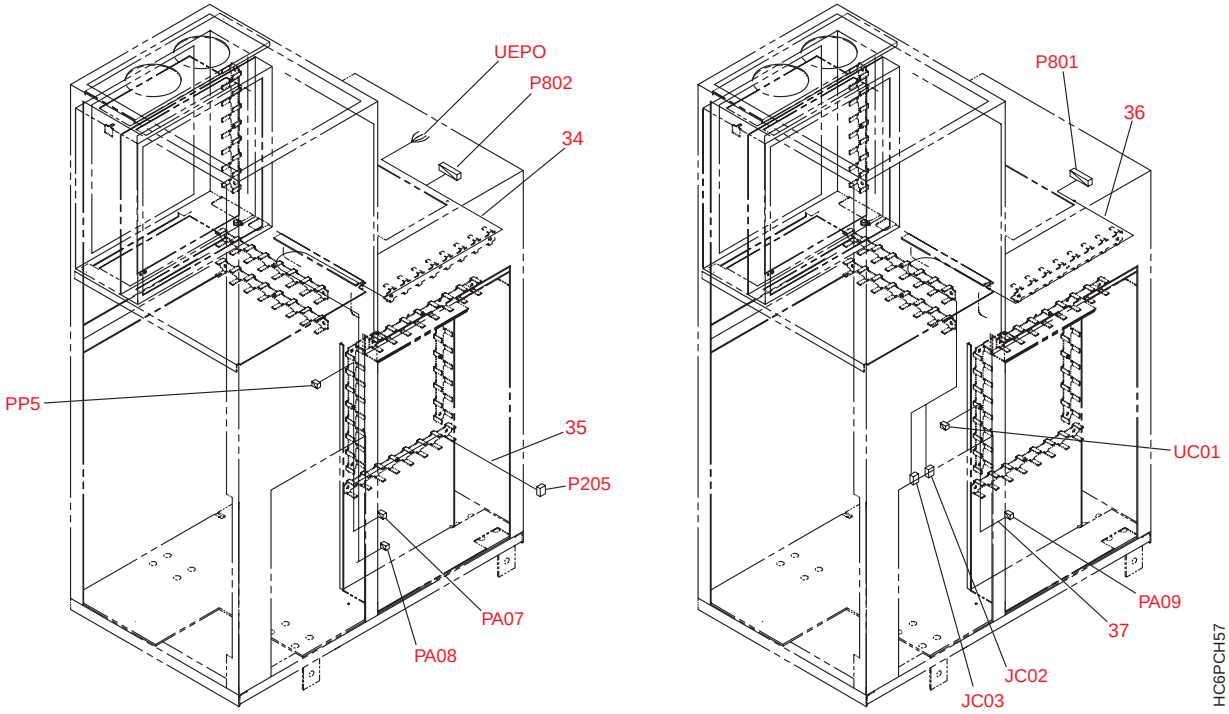

31
PJ6
P202
HC6PCH55

Asm–Index	Part Number	Units	Description
49–			Control Unit Cables (Sheet 2 of 11)
–31	30H6939	1	Cable, Printer Interface

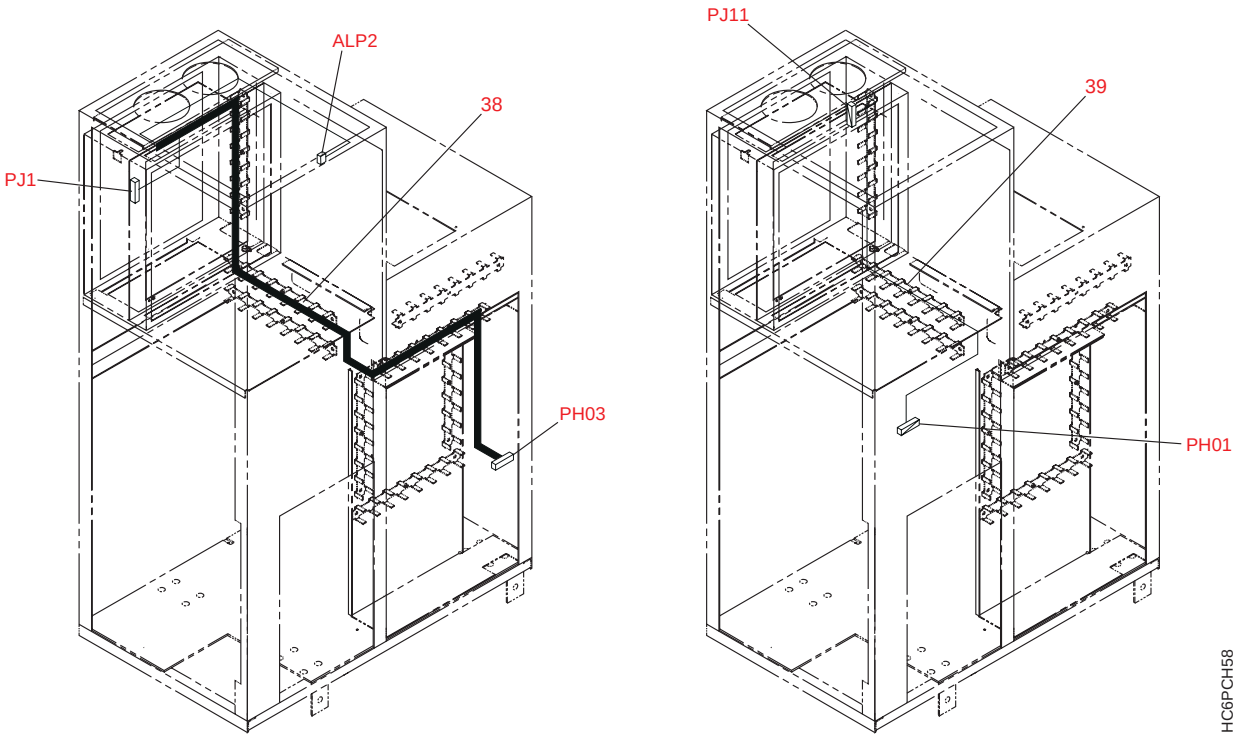

PJ10
30
P10
PJ5
P352
PT01
PH02
PH03


J879
J878
33
PH01
P227
Ground
PA01
Ground
HC6PCH56

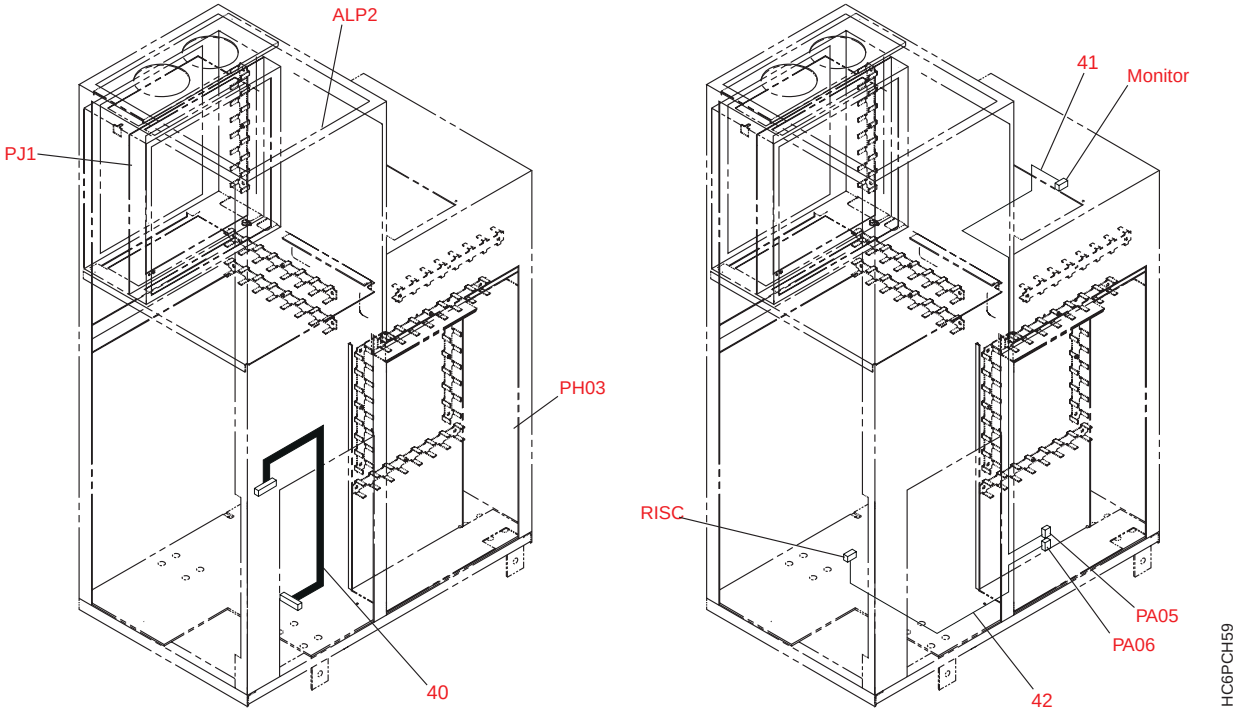
Asm–Index	Part Number	Units	Description
49–			Control Unit Cables (Sheet 3 of 11)
–30	30H6942	1	Cable, DC Power
–33	11L6062	1	Cable, AC Power


UEPO
P802
34
PP5
35
P205
PA07
PA08
P801
36
UC01
PA09
37
JC02
JC03
HC6PCH57

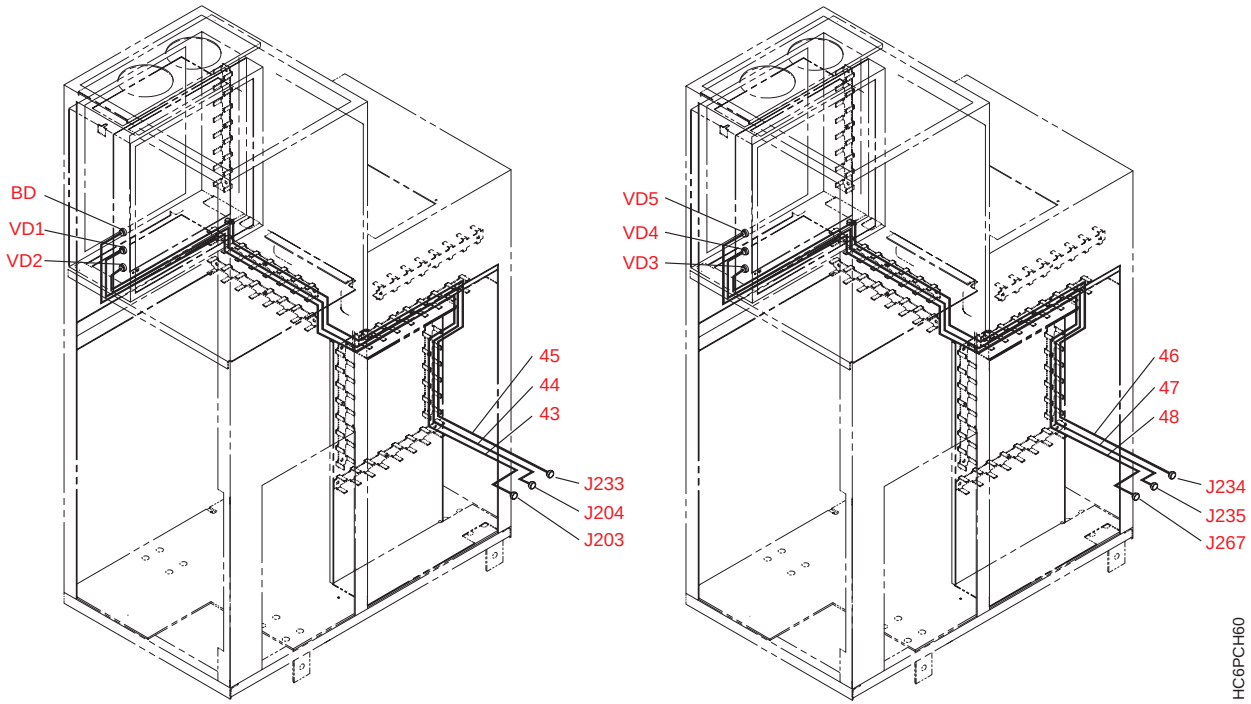
Asm–Index	Part Number	Units	Description
49–			Control Unit Cables (Sheet 4 of 11)
–34	30H6935	1	Cable, UEPO
–35	30H6936	1	Cable, Power Control
–36	30H6938	1	Cable, Power Control
–37	30H6944	1	Cable, Power Control


ALP2
38
PJ1
PH03
PJ11
39
PH01
HC6PCH58

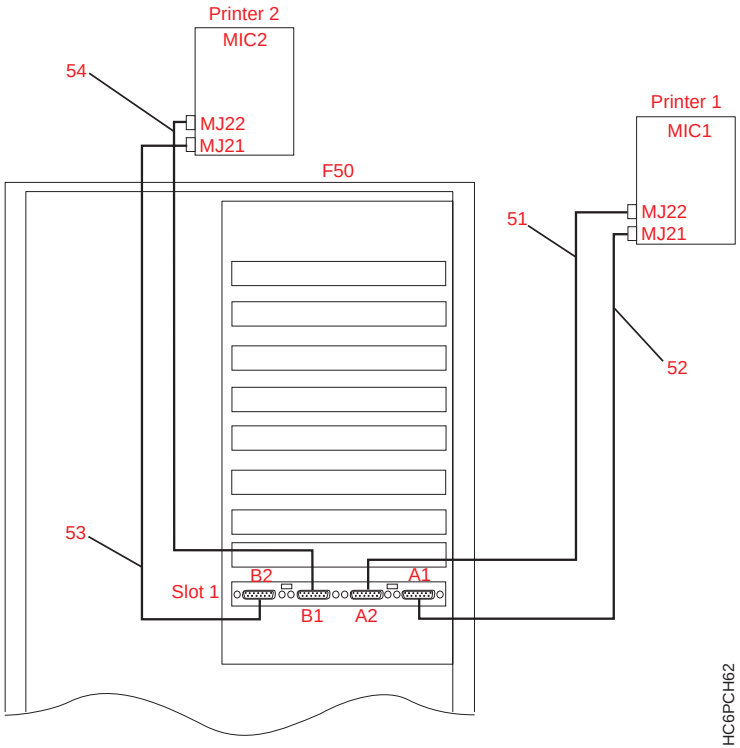
Asm–Index	Part Number	Units	Description
49–			Control Unit Cables (Sheet 5 of 11)
–38	30H6943	1	Cable, Operator Alert
–39	30H6941	1-3	Cable, Pre/postprocessor to MIC


ALP2
PJ1
PH03
40
41
Monitor
RISC
PA05
PA06
42
HC6PCH59

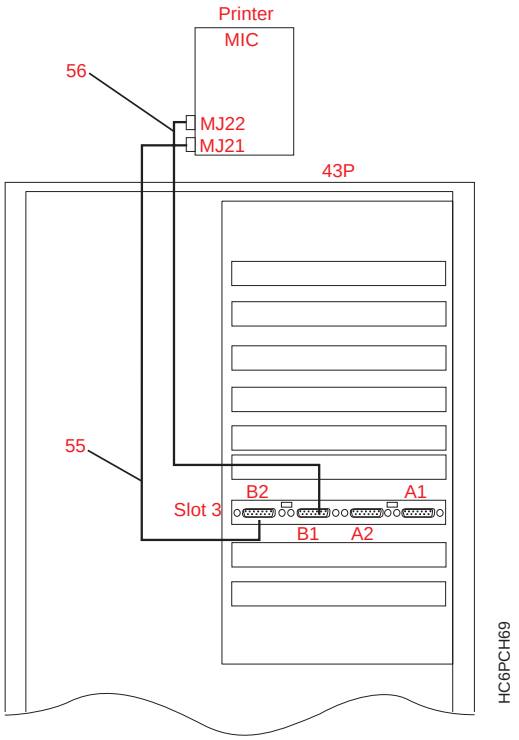
Asm–Index	Part Number	Units	Description
49–			Control Unit Cables (Sheet 6 of 11)
–40	30H6947	1-3	Cable, Pre/post to Tailgate
–41	45G1728	1	Cable, Display/Touch Screen
–42	24H8004	1	Cable, AC Power to RS/6000


BD
VD1
VD2
45
44
43
J233
J204
J203
VD5
VD4
VD3
46
47
48
J234
J235
J267
HC6PCH60

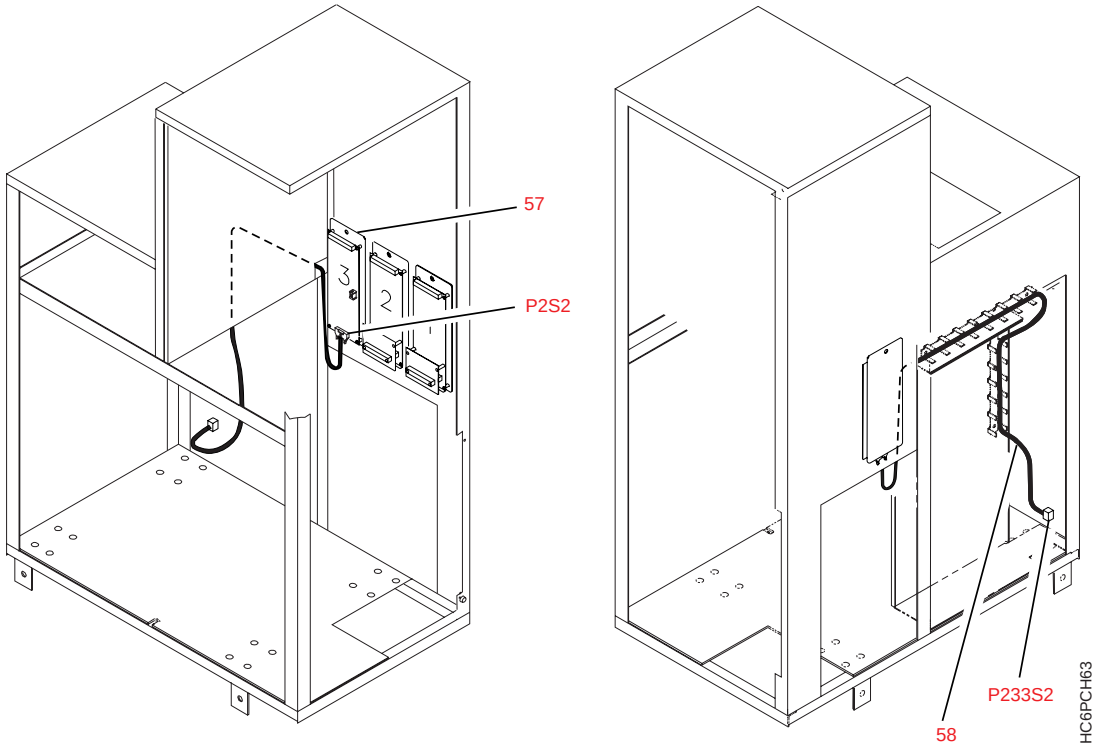
Asm–Index	Part Number	Units	Description
49–			Control Unit Cables (Sheet 7 of 11)
–43	89H9938	1	Cable, Beam Detect Coax
–44	89H9933	1	Cable, VD1 Coax
–45	89H9934	1	Cable, VD2 Coax
–46	89H9935	1	Cable, VD3 Coax
–47	89H9936	1	Cable, VD4 Coax
–48	89H9937	1	Cable, VD5 Coax


Printer 2
MIC2
54
MJ22
MJ21
Printer 1
MIC1
F50
51
MJ22
MJ21
52
53
Slot 1
B2
A1
B1
A2
HC6PCH62

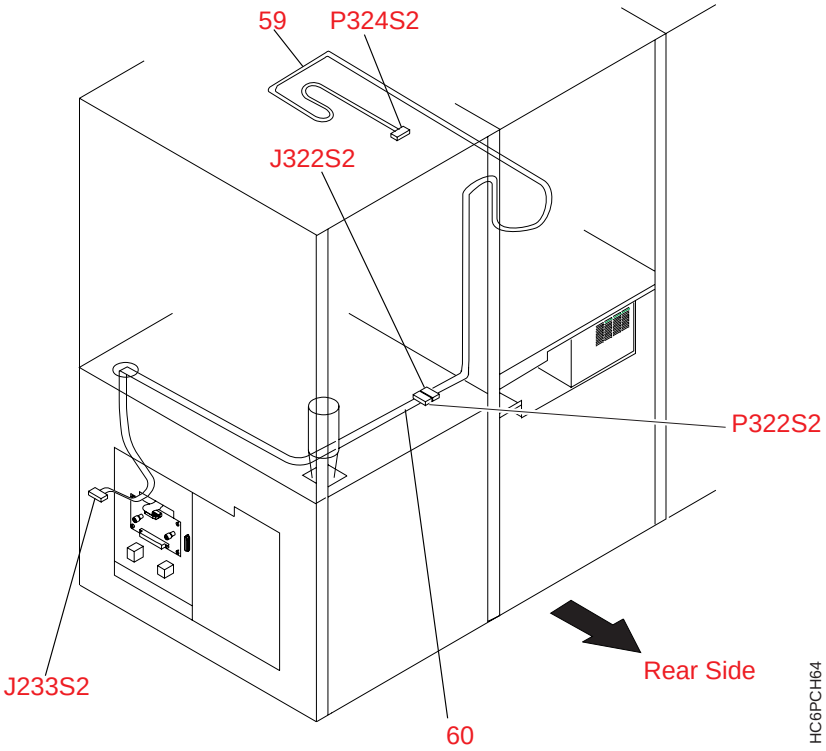
Asm–Index	Part Number	Units	Description
49–			Control Unit Cables (Sheet 8 of 11)
–51	32H1466	1	Cable (10 m), SSA , RISC Printer 2 to Printer 1 MIC MJ22
–52	32H1466	1	Cable (10 m), SSA , RISC Printer 2 to Printer 1 MIC MJ21
–53	32H1465	1	Cable (2.5 m), SSA, RISC slot 1 to MIC MJ21
–54	32H1465	1	Cable (2.5 m), SSA, RISC slot 1 to MIC MJ22


Printer
MIC
56
MJ22
MJ21
43P
55
B2
A1
Slot 3
B1
A2
HC6PCH69

Asm–Index	Part Number	Units	Description
49–			Control Unit Cables (Sheet 9 of 11)
–55	32H1465	1	Cable (2.5 m), SSA, RISC slot 1 to MIC MJ21
–56	32H1465	1	Cable (2.5 m), SSA, RISC slot 1 to MIC MJ22

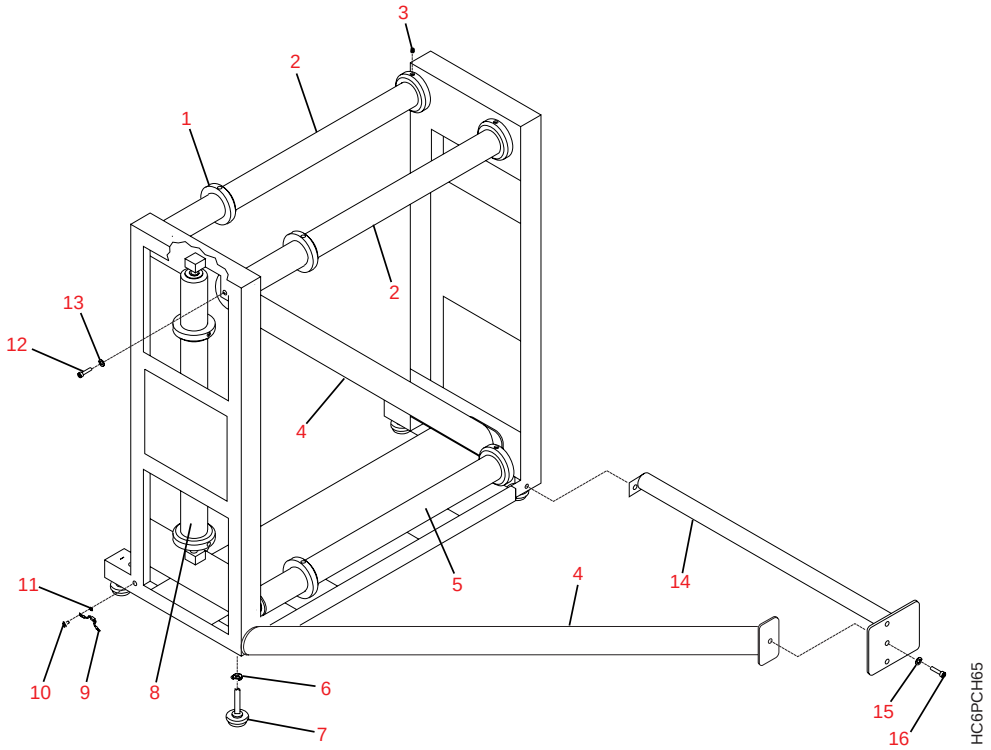

57
P2S2
P233S2
58
HC6PCH63

Asm–Index	Part Number	Units	Description
49–			Control Unit Cables (Sheet 10 of 11)
–57		NP	Plate, Card Mounting
–58	89H9838	1	Cable, P2S2 to P233S2
–	30H6941	1	Cable, J07 (on MIC) to J1 (on side 2 control card)


59
P324S2
J322S2
P322S2
J233S2
Rear Side
60
HC6PCH64

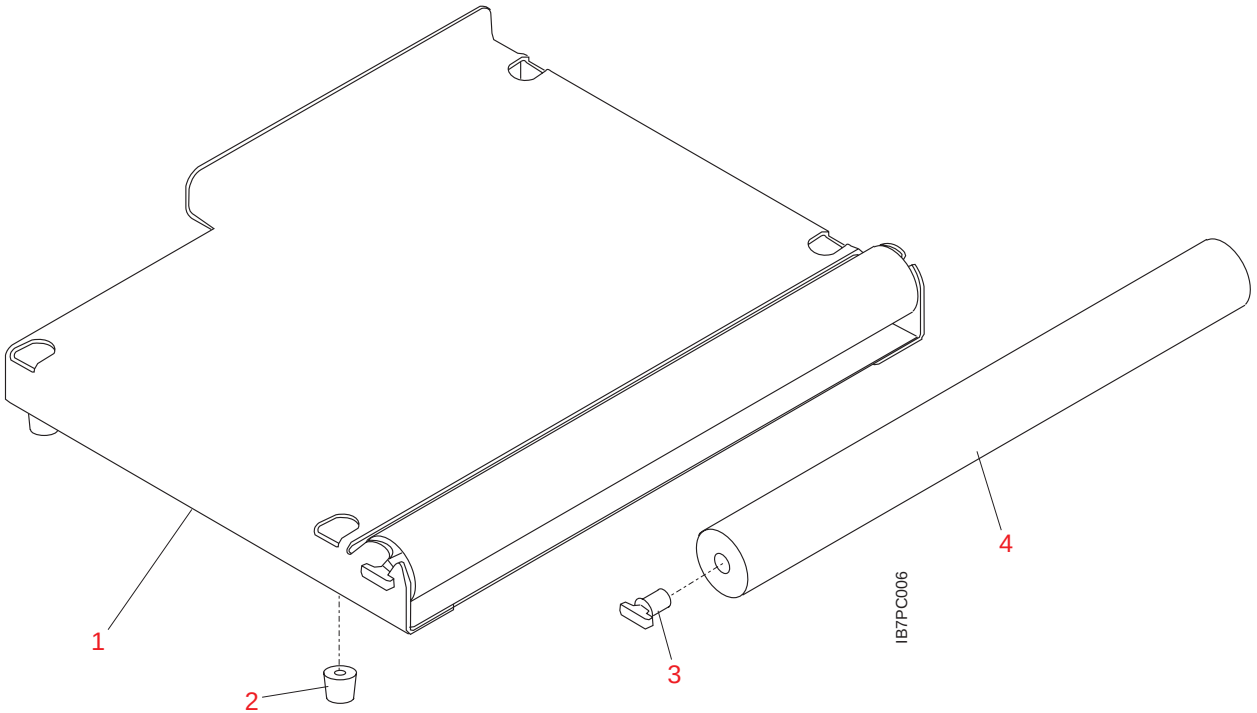
Asm–Index	Part Number	Units	Description
49–			Control Unit Cables (Sheet 11 of 11)
–59	24L4858	1	Cable, J322S2 to P324S2
–60	24L4859	1	Cable, P233S2 to P322S2

Assembly 50: Buffer/Flipper (Duplex Printer)



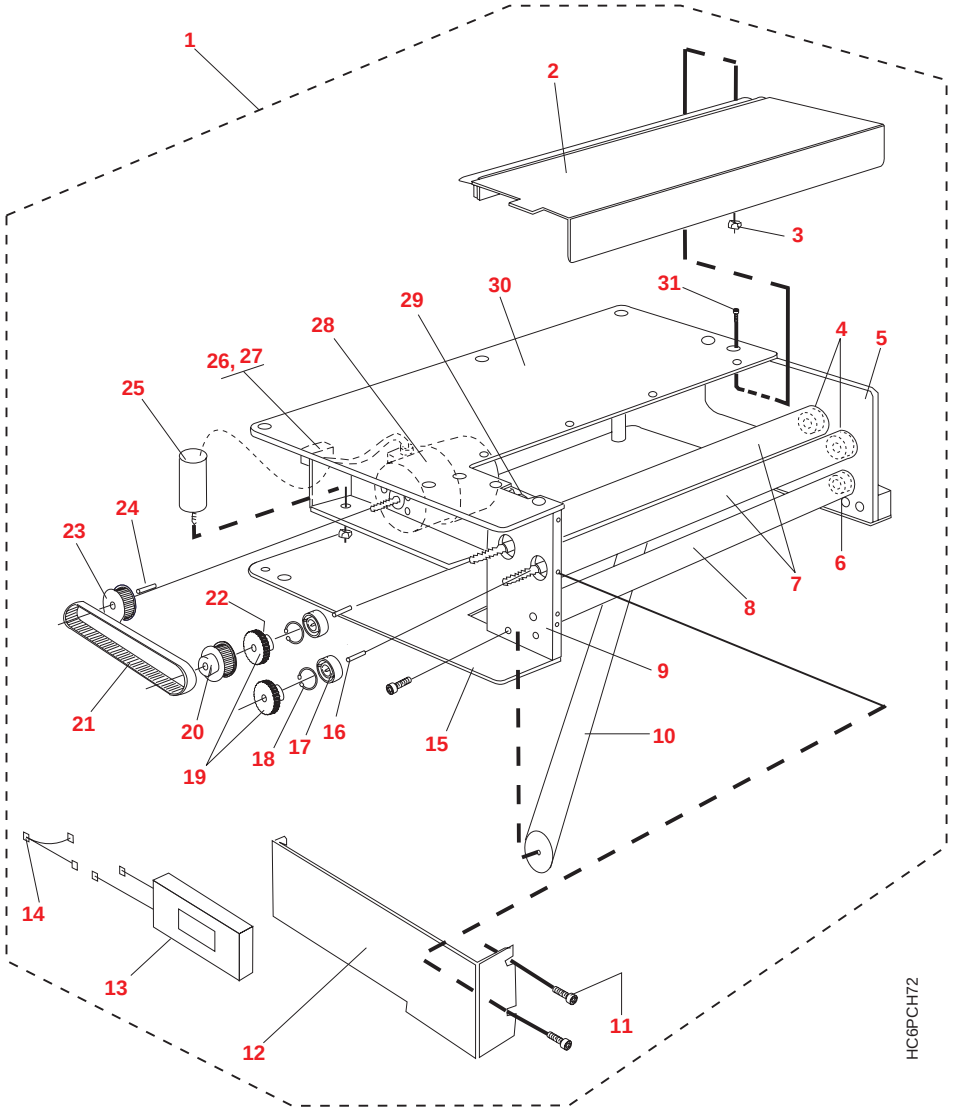
Asm–Index	Part Number	Units	Description
50–			Buffer Flipper (Sheet 1 of 1)
–	45G2026	1	Buffer Flipper Asm
–1	45G2047	8	Collar, Roller
–2	45G2049	2	Bar, Cross
–3	45G2059	8	Screw, Set
–4	45G2043	2	Tube Weldment
–5	45G2053	1	Roller, Horizontal Asm
–6	24107	4	Nut, Lock
–7	45G2048	4	Screw, Leveling Jack
–8	45G2051	1	Roller, Vertical Asm
–9	45G2045	1	Cable, Safety Ground Asm
–10	53F1663	1	Screw
–11	1622347	1	Washer, Helical Spring
–12	1621519	12	Screw, Socket Head Cap M5 X 12
–13	1622319	12	Washer, Lock
–14	57G6598	1	Support Bar
–15	1622319	1	Washer, Lock
–16	1621519	1	Screw, Socket Head Cap M5 X 12

Assembly 51: Flipper for Urge Unit (H-Configuration)

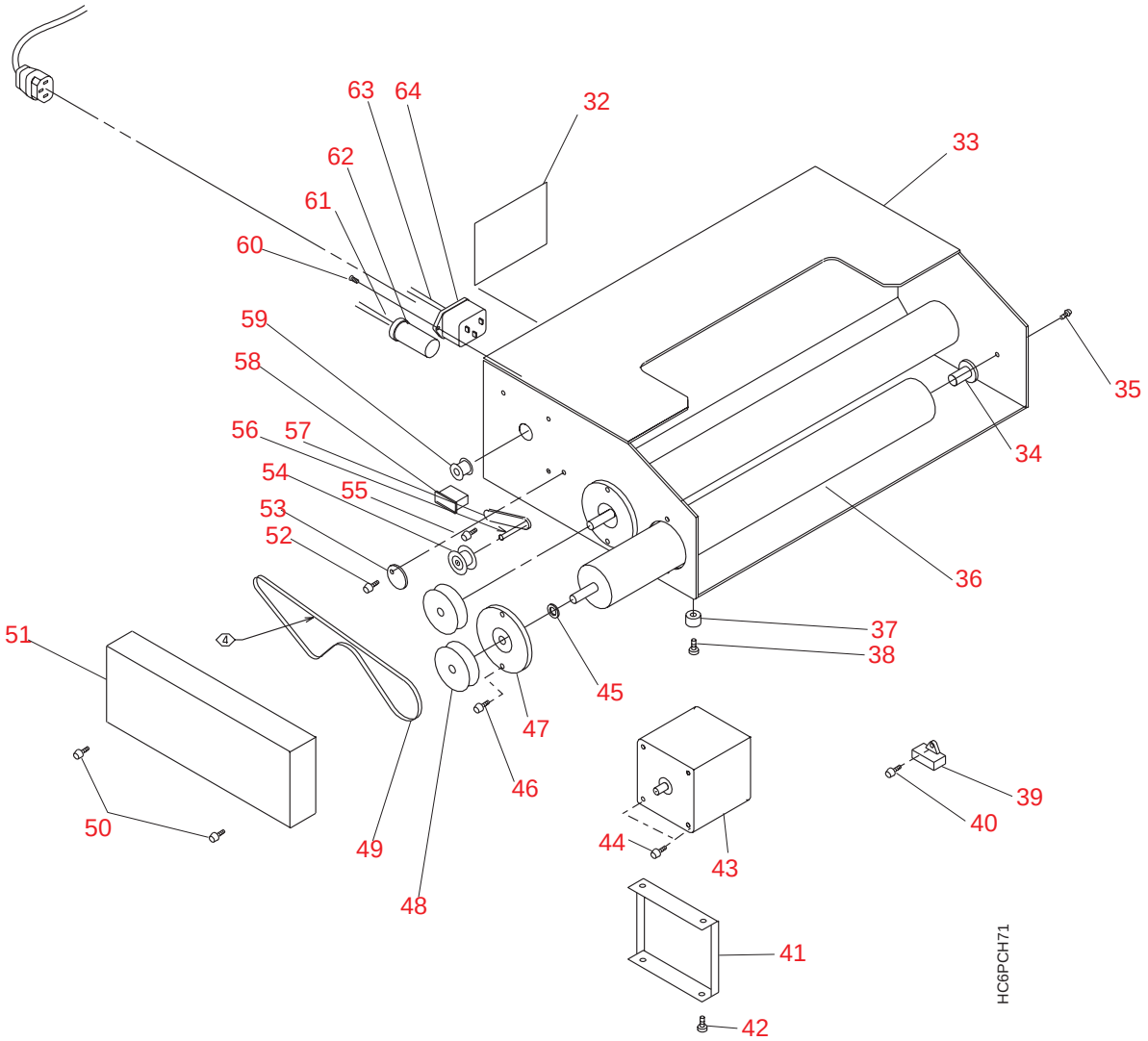


Asm–Index	Part Number	Units	Description
51–			Flipper (Sheet 1 of 1)
–	02N6110	1	Flipper Assembly
–1	02N8458	1	Chassis
–2	1621511	4	Cap Screw
–3	02N6113	2	Shaft, Retainer
–4	02N6112	1	Roller

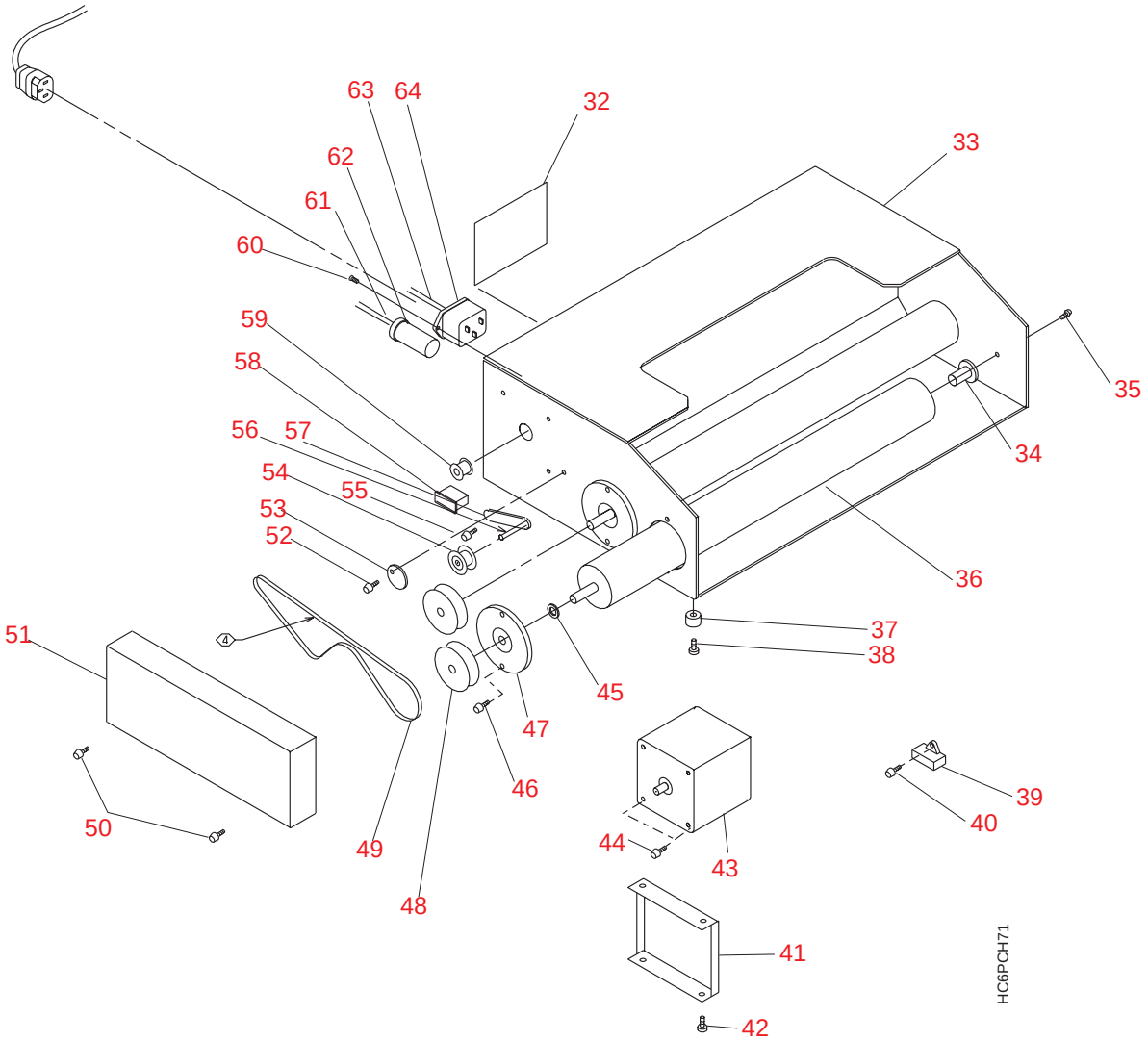
Assembly 52: Urge Units (Duplex Printer)



Asm–Index	Part Number	Units	Description
52–			Urge Unit - Pearl White, Hinged Top (Sheet 1 of 3)
–1		NP-1	Urge Unit - Pearl White, Hinged Top Asm
–2	05L5449	1	Cover
–3	05L5450	4	Nut
–4	13J3742	2	Bearing, Ball
–5		NP-1	Bracket, Rear
–6	05L5443	2	Bearing, Ball
–7	05L6749	2	Roll, Drive
–8	05L5442	1	Guide
–9		NP-1	Bracket, Front
–10	05L5441	1	Bar
–11		NP-2	Screw
–12		NP-1	Plate, End
–13	05L5971	1	Power Cord with switch assembly
–14	90H1655	1	Power Cord, Y assembly
–15		NP-1	Plate, lower
–16	13J6714	2	Key, Shaft
–17	45F3904	4	Bearing, Ball
–18	45F4590	4	Clip, C
–19	45F4593	2	Gear
–20	45F4592	1	Pulley
–21	2129658	1	Belt, Urge Unit
–22	71H2461	2	Screw, set
–23	05L5440	1	Pulley
–24	13J6714	1	Key, Shaft
–25	45F5166	1	Capacitor, 2.5 mfd
–26	57G6489	1	Cover, Plug
–27	45F4589	1	Plug
–28	45F4351	1	Motor
–29	05L5448	1	Mat, Rubber
–30		NP-1	Plate, top
–31	71H2467	4	Screw


63
64
32
62
33
61
60
59
58
35
56
57
34
54
55
53
52
36
51
37
38
45
47
46
50
49
48
44
43
39
40
41
42
HC6PCH71

Asm–Index	Part Number	Units	Description
52–			Urge Unit - Black, Fixed Top (Sheet 2 of 3)
–32		NP-1	Label
–33		NP-1	Housing
–34	24L3306	2	Stud
–35	1621321	2	Screw
–36	24L3297	2	Roller
–37		NP-4	Bumper
–38	1621510	4	Screw
–39	63H7088	1	Capacitor
–40	53F1665	1	Screw
–41		NP-1	Cover
–42	1621510	2	Screw
–43	24L3308	1	Motor
–44	25627	4	Screw
–45	63H7096	2	Spacer
–46	25627	4	Screw
–47	24L3307	2	Flange
–48	24L3299	2	Pulley
–49	24L3304	1	Belt
–50	1621204	4	Screw


63
64
32
33
62
61
60
59
58
35
56
57
34
54
55
53
52
36
51
37
38
45
47
46
50
49
48
44
43
39
40
41
42
HC6PCH71

Asm–Index	Part Number	Units	Description
52–			Urge Unit - Black, Fixed Top (Sheet 3 of 3)
–51		NP-1	Cover
–52	1622529	1	Screw
–53		NP-1	Cam
–54	24L3302	1	Pulley
–55	1621519	1	Screw
–56		NP-1	Clip
–57	24L3305	1	Idler Arm
–58	57G6491	1	Switch
–59	24L3301	1	Pulley
–60	1621286	2	Screw
–61		NP-1	Cable
–62	24L4916	1	Fuse
–63		NP-1	Cord
–64	57G6493	1	Connector
–65		NP-2	Washer
–66	53F1664	2	Screw

Assembly 53: Kits and Their Quantities

Asm–Index	Part Number	Units	Description
53–			Kits and Their Quantities (Sheet 1 of 20)
–	06F0401		Screw Kit
–		10	• Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 6
–		5	• Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 10
–		5	• Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 12
–		5	• Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 16
–		5	• Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 25
–		5	• Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 10
–		20	• Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12 This part can also be ordered in Kit 06F0420
–		10	• Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 16
–		5	• Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 25
–		5	• Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 40

Asm–Index	Part Number	Units	Description
53–			Kits and Their Quantities (Sheet 2 of 20)
–	06F0402		Screw Kit
–		3	• Screw, Phillips Pan Hd M3 X 5
–		3	• Screw, Phillips Pan Hd M3 X 6
–		3	• Screw, Phillips Pan Hd M3 X 8
–		3	• Screw, Phillips Pan Hd M3 X 10
–		3	• Screw, Phillips Pan Hd M3 X 12
–		3	• Screw, Phillips Pan Hd M3 X 14
–		3	• Screw, Phillips Pan Hd M3 X 16
–		3	• Screw, Phillips Pan Hd M3 X 28
–		3	• Screw, Phillips Pan Hd M3 X 35
–		3	• Screw, Phillips Pan Hd M4 X 5
–		3	• Screw, Phillips Pan Hd M4 X 10
–		3	• Screw, Phillips Pan Hd M4 X 12
–		3	• Screw, Phillips Pan Hd M4 X 14
–		3	• Screw, Phillips Pan Hd M4 X 16
–		3	• Screw, Phillips Pan Hd M4 X 30
–		3	• Screw, Phillips Pan Hd M4 X 35
–		3	• Screw, Phillips Pan Hd M4 X 60
–		3	• Screw, Phillips Pan Hd M5 X 10
–		3	• Screw, Phillips Pan Hd M5 X 30
–		3	• Screw, Phillips Pan Hd M5 X 60
–		3	• Screw, Phillips Pan Hd M6 X 50

Asm–Index	Part Number	Units	Description
53–			Kits and Their Quantities (Sheet 3 of 20)
–	06F0403		Bolt Kit
–		3	• Bolt, Socket Hd M3 X 8
–		3	• Bolt, Socket Hd M3 X 12
–		3	• Bolt, Socket Hd M3 X 16
–		3	• Bolt, Socket Hd M3 X 20
–		3	• Bolt, Socket Hd M3 X 25
–		3	• Bolt, Socket Hd M4 X 8
–		3	• Bolt, Socket Hd M4 X 10
–		3	• Bolt, Socket Hd M4 X 12
–		3	• Bolt, Socket Hd M4 X 16
–		3	• Bolt, Socket Hd M4 X 20
–		3	• Bolt, Socket Hd M4 X 30
–		3	• Bolt, Socket Hd M5 X 8
–		3	• Bolt, Socket Hd M5 X 10
–		3	• Bolt, Socket Hd M5 X 12
–		3	• Bolt, Socket Hd M5 X 20
–		3	• Bolt, Socket Hd M5 X 25
–		3	• Bolt, Socket Hd M5 X 30
–		3	• Bolt, Socket Hd M5 X 35
–		3	• Bolt, Socket Hd M5 X 38
–		3	• Bolt, Socket Hd M5 X 45

Asm–Index	Part Number	Units	Description
53–			Kits and Their Quantities (Sheet 4 of 20)
–	06F0404		Bolt, Screw Kit
–		5	• Screw, Pan Head Brass M3 X 5
–		5	• Screw, Pan Head Brass M4 X 8
–		5	• Screw, Pan Head Brass M4 X 10
–		5	• Screw, Pan Head Brass M5 X 8
–		5	• Screw, Bind Head Stainless M3 X 4
–		5	• Screw, Shoulder M3 X 4
–		5	• Bolt, Wing M5 X 15
–		5	• Screw, Knurling M5 X 15
–		5	• Bolt Socket Head Stainless M4 X 8
–		5	• Bolt Socket Head Stainless M4 X 12
–		5	• Bolt Socket Head Stainless M5 X 12
–		5	• Bolt Socket Head Stainless M5 X 16
–		5	• Screw, Fixing
–		5	• Screw, Sum

Asm–Index	Part Number	Units	Description
53–			Kits and Their Quantities (Sheet 5 of 20)
–	06F0405		Washer Kit
–		5	• Washer, Plane D3
–		15	• Washer, Plane D4
–		15	• Washer, Plane D5
–		10	• Washer, Plane D6
–		5	• Washer, Plane D8
–		5	• Washer, Plane D10
–		5	• Washer, Plane D12
–		10	• Washer, Spring D3
–		10	• Washer, Spring D4
–		10	• Washer, Spring D5
–		5	• Washer, Spring D6
–		5	• Washer, Spring D8
–		5	• Washer, Spring D10
–	06F0406		Washer Kit
–		5	• Washer, Plane Brass D3
–		5	• Washer, Plane Brass D4
–		5	• Washer, Plane Brass D5
–		5	• Washer, Plane Stainless D3
–		5	• Washer, Toothed Outer D3
–		5	• Washer, Toothed Outer Zinc Plated D4
–		10	• Washer, Toothed Outer D4
–		10	• Washer, Toothed Outer D5
–		5	• Washer, Toothed Outer D6
–		5	• Washer, Toothed Inner D3
–		5	• Washer, FP (No. 1)
–		5	• Washer, FP (No. 5)
–		5	• Washer, Special

Asm–Index	Part Number	Units	Description
53–			Kits and Their Quantities (Sheet 6 of 20)
–	06F0407		Nut Kit
–		5	• Nut, M3
–		5	• Nut, M4
–		5	• Nut, M5
–		5	• Nut, M6
–		5	• Nut, M10
–		5	• Nut, Lock M3
–		5	• Nut, Lock M4
–		5	• Nut, Lock M5
–		5	• Nut, Lock M6
–		5	• Nut, Lock M8
–		5	• Nut, Lock M10
–		5	• Nut, Flange M3
–		5	• Nut, Flange M4
–	06F0408		Key Kit
–		5	• Key 2.5 X 8
–		5	• Key 3 X 3 X 10
–		5	• Key 3 X 3 X 12
–		5	• Key 4 X 4 X 10

Asm–Index	Part Number	Units	Description
53–			Kits and Their Quantities (Sheet 7 of 20)
–	06F0409		Ring Kit
–		5	• Ring, Retaining D6
–		5	• Ring, Retaining D8
–		5	• Ring, Retaining D10
–		5	• Ring, Retaining D12
–		5	• Ring, Retaining D22
–		5	• Ring, Retaining D26
–		5	• Ring, Retaining D28
–		5	• Ring, Retaining D30
–		5	• Ring, Retaining D32
–		5	• Ring, Retaining D35
–		5	• Ring, Retaining D42

Asm–Index	Part Number	Units	Description
53–			Kits and Their Quantities (Sheet 8 of 20)
–	06F0410		Miscellaneous Fastener Kit
–		5	• Clip, Nylon No. 3N
–		5	• Clip, Nylon No. 4N
–		5	• Clip, Nylon No. 5N
–		5	• Clip, Nylon No. 6N
–		5	• Clip, Nylon No. 7N
–		5	• Clip, Nylon No. 8N
–		5	• Clip, Nylon No. 9N
–		5	• Clip, Nylon No. 10N
–		5	• Clip, Nylon No. 11N
–		5	• Clip, Nylon No. 12N
–		5	• Clip, Nylon No. 18N
–		5	• Stand
–		5	• Retainer
–		5	• Receptacle
–		5	• Spring
–		5	• Head
–		5	• Eyelet

Asm–Index	Part Number	Units	Description
53–			Kits and Their Quantities (Sheet 9 of 20)
–	06F0411		Screw Kit
–		20	• Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 This part can also be ordered in Kit 06F0420
–		5	• Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 10
–		20	• Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 This part can also be ordered in Kit 06F0420
–		5	• Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 16
–		5	• Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 25
–		5	• Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 40
–		5	• Screw, Phillips Pan Hd with Star Wshr M4 X 45
–	06F0412		Screw Kit
–		3	• Screw, Phillips Flat Hd M1.6 X 3
–		3	• Screw, Phillips Flat Hd M3 X 4
–		3	• Screw, Phillips Flat Hd M3 X 6
–		3	• Screw, Phillips Flat Hd M3 X 8
–		3	• Screw, Phillips Flat Hd M3 X 10
–		3	• Screw, Phillips Flat Hd M3 X 12
–		3	• Screw, Phillips Flat Hd M4 X 6
–		3	• Screw, Phillips Flat Hd M4 X 8
–		3	• Screw, Phillips Flat Hd M4 X 10
–		3	• Screw, Phillips Flat Hd M4 X 12
–		3	• Screw, Phillips Flat Hd M5 X 8
–		3	• Screw, Phillips Flat Hd M5 X 12

Asm–Index	Part Number	Units	Description
53–			Kits and Their Quantities (Sheet 10 of 20)
–	06F0413		Screw Kit
–		3	• Screw, Phillips Bind Hd M3 X 6
–		3	• Screw, Phillips Bind Hd M3 X 8
–		3	• Screw, Phillips Bind Hd M3 X 10
–		3	• Screw, Phillips Bind Hd M3 X 12
–		3	• Screw, Phillips Bind Hd M3 X 16
–		3	• Screw, Phillips Bind Hd M3 X 20
–		3	• Screw, Phillips Bind Hd M4 X 6
–		3	• Screw, Phillips Bind Hd M4 X 8
–		3	• Screw, Phillips Bind Hd M4 X 10
–		3	• Screw, Phillips Bind Hd M4 X 12
–		3	• Screw, Phillips Bind Hd M4 X 14
–		3	• Screw, Phillips Bind Hd M4 X 16
–		3	• Screw, Phillips Bind Hd M4 X 20
–		3	• Screw, Phillips Bind Hd M4 X 40
–		3	• Screw, Phillips Bind Hd M4 X 45
–		3	• Screw, Phillips Bind Hd M4 X 50
–		3	• Screw, Phillips Bind Hd M5 X 8
–		3	• Screw, Phillips Bind Hd M5 X 10
–		3	• Screw, Phillips Bind Hd M5 X 12
–		3	• Screw, Phillips Bind Hd M6 X 14

Asm–Index	Part Number	Units	Description
53–			Kits and Their Quantities (Sheet 11 of 20)
–	06F0414		Bolt Kit
–		3	• Bolt, Socket Hd M6 X 12
–		3	• Bolt, Socket Hd M6 X 14
–		3	• Bolt, Socket Hd M6 X 20
–		3	• Bolt, Socket Hd M6 X 25
–		3	• Bolt, Socket Hd M6 X 30
–		3	• Bolt, Socket Hd M6 X 40
–		3	• Bolt, Socket Hd M6 X 60
–		3	• Bolt, Socket Hd M8 X 20
–		3	• Bolt, Socket Hd M8 X 25
–		3	• Bolt, Socket Hd M8 X 30
–		3	• Bolt, Socket Hd M8 X 40
–	06F0415		Bolt Kit
–		5	• Bolt, Socket Hd with Star Wshr M4 X 12
–		5	• Bolt, Socket Hd with Star Wshr M4 X 18
–		5	• Bolt, Socket Hd with Star Wshr M4 X 20
–		5	• Bolt, Socket Hd with Star Wshr M5 X 12
–		10	• Bolt, Socket Hd with Star Wshr M5 X 16
–		5	• Bolt, Socket Hd with Star Wshr & Wshr M4 X 10
–		5	• Bolt, Socket Hd with Star Wshr & Wshr M4 X 16
–		5	• Bolt, Socket Hd with Star Wshr & Wshr M5 X 12
–		5	• Bolt, Socket Hd with Star Wshr & Wshr M5 X 16
–		5	• Bolt, Socket Hd with Star Wshr & Wshr M5 X 20
–		5	• Bolt, Socket Hd with Star Wshr & Wshr M5 X 30

Asm–Index	Part Number	Units	Description
53–			Kits and Their Quantities (Sheet 12 of 20)
–	06F0416		Screw Kit
–		10	• Screw, Set M3 X 5
–		5	• Screw, Set M4 X 4
–		5	• Screw, Set M4 X 5
–		5	• Screw, Set M4 X 6
–		5	• Screw, Set M4 X 8
–		5	• Screw, Set M4 X 10
–		5	• Screw, Set M4 X 12
–		10	• Screw, Set M4 X 16
–		10	• Screw, Set M5 X 8
–	06F0417		Washer Kit
–		5	• Washer, Press (No. 1)
–		20	• Washer, Press (No. 2) This part can also be ordered in Kit 06F0420
–		5	• Washer, VF
–		10	• Washer
–		5	• Washer, Shaft Clamp
–		5	• Washer, Opt
–		5	• Washer, BR
–		5	• Washer, Wave
–		5	• Spring, Cone
–		5	• Washer, Polyester
–		1	• Washer, A
–		1	• Washer, Shaft Clamp
–		1	• Washer, Thrust
–		1	• Washer, BB

Asm–Index	Part Number	Units	Description
53–			Kits and Their Quantities (Sheet 13 of 20)
–	06F0418		Ring Kit
–		5	• Ring, Retaining D3
–		5	• Ring, Retaining D4
–		5	• Ring, Retaining D5
–		10	• Ring, Retaining D6
–		5	• Ring, Retaining D7
–		5	• Ring, Retaining D8
–		5	• Ring, Retaining D9
–		5	• Ring, Retaining D10
–		5	• Ring, Retaining D11
–		5	• Ring, Retaining D13
–		5	• Ring, Retaining D16
–		5	• Ring, Retaining Zinc Plated D7-9
–	06F0419		Clamp, Wrap Kit
–		10	• Clamp, Cable No. 05
–		5	• Clamp, Cable No. 10
–		5	• Clamp, Cable No. 15
–		5	• Clamp, Cable No. 20
–		5	• Clamp, Cable No. 28
–		5	• Clamp, Cable No. 05-L
–		5	• Clamp, Cable No. 05-H
–		5	• Clamp, Cable No. 07-H
–		20	• Wrap, Tie No. 1
–		20	• Wrap, Tie No. 2
–		5	• Wrap, Tie No. 3

Asm–Index	Part Number	Units	Description
53–			Kits and Their Quantities (Sheet 14 of 20)
–	06F0420		• Screw, Washer Kit
–		50	• • Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 8 This part can also be ordered in Kit 06F0411
–		50	• • Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12 This part can also be ordered in Kit 06F0411
–		50	• • Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 8 This part can also be ordered in Kit 06F0401
–		50	• • Washer, Press (No. 2) This part can also be ordered in Kit 06F0417
–	06F0429		• Terminals, 0.2–0.5mm Through 2.63–6.64mm AWG

Asm–Index	Part Number	Units	Description
53–			Kits and Their Quantities (Sheet 15 of 20)
–	06F1031		Pins and Sockets 14–18, 18–22 AWG
–	06F1032		Contacts and Extraction Tool, for Amp Circular Connectors, Pins and Sockets 16–18, 20–24 AWG
–	06F1033		Contacts and Extraction Tool, for Amp Mic Connectors, Pins and Sockets 160–12, 14–20, 18–24 AWG
–	06F1034		Contacts and Extraction Tool, for Amp Mic Connectors, Sockets 0.5–0.27mm AWG
–	06F1035		Contacts, for Amp El Connectors, Sockets 18–24 AWG
–	06F1036		Contacts, for Berg Connectors, PV Terminals 18–20, 22–26 AWG
–	06F1037		Contacts, for Berg Connectors, Mini PV Terminals 22–26 AWG
–	06F1038		Contacts and Extraction Tool, for Elco Connectors, Sockets 22–28 AWG
–	06F1039		Fasteners, for Amp Fasteners Terminals 18, 20–24, 10–12, 14, 18–22 AWG, Adapters and Sleeves

Asm–Index	Part Number	Units	Description
53–			Kits and Their Quantities (Sheet 16 of 20)
–	38L0807	1	Maintenance Library Mulit-volume, printed set of Infoprint 3000 documentation.
–	30H2769		Miscellaneous Fastener Kit
–		1	• Nylon Clip (5N)
–		3	• Nylon Clip (6N)
–		5	• Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 12
–		2	• Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 12
–		3	• Band, Bundling (Cable Tie)
–		2	• Shaft Clamper
–		2	• Screw, Phillips Pan Hd with Star Wshr & Wshr M4 X 25
–		2	• Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 6
–		1	• Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 12
–			•
–		1	• Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 12
–		4	• Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 12
–		1	• Washer, Shaft Clamper
–		1	• Washer, Special
–		1	• Clamp, Cable
–		2	• Screw, Phillips Pan Hd with Star Wshr & Wshr M5 X 16
–		2	• Screw, Shoulder

Asm–Index	Part Number	Units	Description
53–			Kits and Their Quantities (Sheet 17 of 20)
–	88F1626		Miscellaneous Fastener Kit
–		1	• Bolt, Hexagon Socket Hd M3 X 6
–		1	• Screw, Phillips Flat Hd M3 X 6
–		1	• Bolt, Hexagon Socket Hd M3 X 10
–		1	• Screw, Phillips Bind Hd M3 X 4
–		1	• Screw, Phillips Flat Hd M3 X 16
–		1	• Bolt, Hexagon Socket Hd M3 X 16
–		1	• Bolt, Hexagon Socket Hd M3 X 18
–		1	• Screw, Phillips Pan Hd with Star Wshr & Wshr M3 X 8
–		1	• Bolt, Hexagon Socket Hd M4 X 38
–		2	• Pan Hd M4 X 6
–		1	• Pan Hd M4 X 8
–		1	• Pan Hd M4 X 40
–		1	• Screw, Phillips Bind Hd M4 X 25
–		1	• Screw, Set, Hexagon Socket Hd M4 X 8
–		1	• Pan Hd M4 X 6
–		1	• Pan Hd M4 X 18
–		1	• Screw, Phillips Pan Hd M5 X 8
–		2	• Bolt, Hexagon Socket Hd with Star Wshr & Wshr M5 X 10
–		1	• Bolt, Hexagon Socket Hd M5 X 40
–		1	• Screw, Phillips Bind Hd M5 X 6
–		1	• Screw, Phillips Bind Hd M5 X 20
–		1	• Bolt, Hexagon Socket Hd M5 X 10

Asm–Index	Part Number	Units	Description
53–			Kits and Their Quantities (Sheet 18 of 20)
–	88F1626		Miscellaneous Fastener Kit, Continued
–		2	• Bolt, Hexagon Socket Hd M5 X 16
–		1	• Screw, Phillips Flat Hd M5 X 10
–		1	• Bolt, Hexagon Socket Hd M5 X 18
–		1	• Screw, Phillips Pan Hd M6 X 16
–		1	• Screw, Phillips Bind Hd M6 X 16
–		1	• Screw, Phillips Pan Hd with Star Wshr & Wshr M6 X 12
–		1	• Bolt, Hexagon Socket Hd M6 X 16
–		1	• Bolt, Hexagon Socket Hd M8 X 32
–		1	• Bolt, Hexagon Socket Hd M10 X 16
–		1	• Screw, Set, Hexagon Socket Hd M5 X 16

Asm–Index	Part Number	Units	Description
53–			Kits and Their Quantities (Sheet 19 of 20)
–	88F1627		Miscellaneous Fastener Kit
–		1	• Nut, Flange
–		2	• Ring, Retaining
–		2	• E-Clip
–		1	• E-Ring
–		1	• Nut, M8
–		1	• Nut, Brass M4
–		1	• Screw, Phillips Pan Hd., Brass M5 X 10
–		1	• Pin, D3 X 14
–		1	• Key, 3 X 3 X 8
–		1	• Key, 4 X 4 X 15

Asm–Index	Part Number	Units	Description
53–			Kits and Their Quantities (Sheet 20 of 20)
–	88F3569		Miscellaneous Fastener Kit
–		2	• Screw, M3 X 30
–		2	• Screw, M3 X 16
–		2	• Screw, M3 X 20
–		2	• Screw, M4 X 8 Flat Hd
–		5	• Washer, Flat M3
–		5	• Washer, Flat M4
–		5	• Washer, Lock M3
–		5	• Washer, Lock M4
–		5	• Washer, Star M4
–		2	• Nut, M3
–		5	• Screw, M5 X 8
–		5	• Screw, M4 X 6
–		5	• Screw, M4 X 8
–		2	• Screw, M4 X 45
–		5	• Screw, M3 X 8
–		5	• Screw, 6/32 X .5 in.
–		2	• Nut, M4Sims
–		1	• Bolt, Hexagon Socket Head M3 X 12
–		2	• Bolt, Hexagon Socket Head M4 X 10
–		2	• Screw, Phillips Pan Head M3 X 13
–		2	• Screw, Phillips Pan Head M4 X 16
–		2	• Screw, Phillips Pan Head M4 X 12
–		1	• Washer, Flat
–		1	• Washer, Lock

Assembly 54: Installation Kits

Asm–Index	Part Number	Units	Description
54–		NP	Installation Kit
–	845762	AR	Label, This Machine Wired for _____ V
–	5756324	AR	Label, Channel Address
–	6226855	AR	Label, Phase Rotation
–	24L3337	AR	Label, Laser Radiation
–	24L3339	AR	Label, Do Not Reuse Waste Toner
–	24L3343	AR	Label, Paper Weight in Stacker Can Exceed 20 Kg
–	24L3345	AR	Label, Hazard-Area Trained Service Personnel only
–	24L3345	AR	Label, Fast-Moving Paper
–		AR	Label, Laser Power
–	1621544	AR	Bolt, M8 X 16
–	30H3032	AR	Stud
–	65F6190	AR	Knob
–	5756348	AR	Holder
–	57G4379	AR	Filter, Oil Tank
–		AR	Label, Toner/Developer
–	57G6582	AR	Nut, CU Attach
–	7320140	AR	Washer

Chapter 7. Preventive Maintenance

Types of Preventive Maintenance 2212
Operator Maintenance 2213
Service Maintenance 2214
Entering the CE Mode 2217
Using the PM Log 2218
Service Tasks – PM Procedures 2220
1.5 Mft Procedure. 2222
3 Mft Procedure. 2224
6 Mft Procedure. 2226
9 Mft Procedure. 2228
12 Mft Procedure 2229
18 Mft Procedure 2231
Specially Tracked Parts. 2232
PM Checklist 2234

© Copyright IBM Corp. 1999, 2000

Types of Preventive Maintenance

Two types of scheduled preventive maintenance (PM) are performed on an Infoprint 3000:

- *Operator Maintenance* – tasks, which the operator performs.
- *Service Maintenance* – tasks, which the service representative performs at regular intervals, that are based on the number of feet of forms printed. Usually called preventive maintenance (PM).

Operator Maintenance

Operators are responsible for cleaning printer parts, replacing printer supplies, and checking print quality. These tasks are summarized below and are described in more detail in the *Infoprint 3000 Operator's Guide*.

Cleaning Tasks

The operator is responsible for cleaning:

- The corona wires on a daily basis.
- The forms path and forms input bin on a daily basis.
- The oiler belt on a weekly basis.

Print Quality Check

The operator is responsible for checking the print quality regularly. Each day, the operator should do the following.

1. Check for the following defects:
   - Background
   - Black spots
   - Poor fusing (such as the print rubbing off)
   - Print streaks
   - Uneven print
   - Voids.
2. Perform simple corrective actions (see the *InfoPrint 3000 Operator's Guide*).
3. Save any print-quality-defect samples for the service representative.

Replacement Tasks

The customer is responsible for ordering and replacing the following supply items at the indicated intervals. A message appears on the Display/Touch Screen when replacement is necessary.

Developer mix	850 kft at 112 PPM (pages per minute)
Fine filter	1.2 Mft (average) In the scheduled maintenance procedures, 1 kft is 1000 linear feet of printed forms, and 1 Mft is 1000000 linear feet of printed forms.
Forms	As required
Fuser oil	800 kft per liter (average)
Oiler belt	Approximately every 1.2 Mft at 112 PPM
Toner	As required
Toner-collector bag	After third add toner

Service Maintenance

Table 587. Service Maintenance Fast Path

Follow these steps when you perform preventive (service) maintenance:

1. Determine which PM procedures are due (Service Tasks – PM Procedures).
2. Order parts if necessary.
3. Do the procedure (Table 591).
4. Reset the counter (Changing a PM Counter).

Each step is explained at the section indicated.

You, the service representative, are responsible for performing preventive maintenance (PM) on the printer at regular intervals. The purpose of PM is to avoid sudden failures of mechanical parts and print-quality problems that are not detected by the machine.

Preventive maintenance consists of the following.

- Replacing parts that are predicted to wear out after a specified amount of use
- Cleaning and checking other heavy-use areas of the printer
- Looking for worn or damaged parts.

Usage of the printer, or of a part, is measured by the number of feet of forms that are passed through the printer. Counters that you can reset individually when you replace a part or perform scheduled maintenance, record this usage.

You should schedule various maintenance procedures according to total usage and the estimated life of parts. As the counters approach preselected usage levels or the end-of-life estimates for parts, a reminder of preventive maintenance due appears on the Preventive Maintenance Log window. The reminder appears when you enter the CE (service) mode.

You should perform preventive maintenance within ±150 kft of the scheduled interval or end-of-life estimate for a part. For example, you should perform the first set of preventive maintenance tasks when the usage level reaches 1.5 Mft. Therefore, you will see a PM reminder when the usage counter reaches 1.35 Mft (1.5 Mft minus 150 kft).

PM Schedule

Table 588 shows the cycle of preventive maintenance procedures for 36 Mft of machine usage. This schedule of procedures repeats every 36 Mft.

Table 599 shows the cycle that is repeated for 288 Mft of machine usage.

Performing PM On Schedule: **On schedule** is within ±150 kft of the scheduled intervals. Find the appropriate print count in first column of the table. Perform the procedures that are indicated by the Xs, in that row.

Performing PM Off Schedule: **Off schedule** means, at a usage level between two scheduled intervals. In this case, perform the procedures that are indicated by the later of the two intervals, even though one or more of the procedures are not actually due. This may require discarding a part that was recently installed. You may choose to leave that part alone, but you will have to replace it between scheduled procedures some time in the future.

Table 588. Preventive Maintenance Checklist

Print Count (Mft)	1.5 Mft	3 Mft	6 Mft	9 Mft	12 Mft	18 Mft		Print Count (Mft)	1.5 Mft	3 Mft	6 Mft	9 Mft	12 Mft	18 Mft
1.5	X							19.5	X					
3.0	X	X						21.0	X	X				
4.5	X							22.5	X					
6.0	X	X	X					24.0	X	X	X		X	
7.5	X							25.5	X					
9.0	X	X		X				27.0	X	X		X		
10.5	X							28.5	X					
12.0	X	X	X		X			30.0	X	X	X			
13.5	X							31.5	X					
15.0	X	X						33.0	X	X				
16.5	X							34.5	X					
18.0	X	X	X	X		X		36.0	X	X	X	X	X	X

Entering the CE Mode

Table 589. Entering CE Mode

To enter CE Mode

1. Select **Service Actions** on the **Analyze** pull down menu.
   a. On the menu bar of the Display/Touch Screen main window, select **Analyze**.
   b. Select **Service Actions** on the pull down menu that appears.
   c. A **Password Keypad** window appears. Enter the current CE password, and select the **OK** key. When your password is accepted, the **Service Actions** window appears.

      If preventive maintenance is due, the **Preventive Maintenance Log** window also appears with a pop-up **PM Due** window. This pop-up window indicates which services are due. Select the **Cancel** button to close the **PM Due** window.

      If preventive maintenance is not due, but you wish to perform a preventive maintenance procedure or to change the PM Log, see Using the PM Log.
2. You may now do the following:
   a. Select an action in the **Service Actions** window.
   b. To close the **Service Actions** window, select the **Logoff** button in the **Service Actions** window.

   To change the CE level password, see Password.

Using the PM Log

Table 590. Using the Preventive Maintenance Log

The preventive maintenance (PM) log is a cumulative indicator of printer usage (rolls, brushes, and so on) with projections of when PM is due. You can use the log to do the following:

- Check the usage of various printer areas
- Anticipate when PM will be due
- Set the PM counters for special situations, such as the installation of a new part
- Record completed PM.

To use the PM log, do the following:

1. Select **Logs** on the Service Actions menu bar.
2. Select **PM Logs** on the menu that appears. The Preventive Maintenance Log window appears with the following information:
   - Item (for example, “3 Mft,” “Hot Roll”)
   - Units
     - Used
     - Remaining
     - % Remaining
   - Days Left (estimated)
3. Use this information to identify printer areas that need planned maintenance or parts that need replacement.

Changing a PM Counter

To change a PM counter, do the following:

1. Select the item in the log window.
2. Select the **Change** button. The Change Preventive Maintenance Data window shows the PM counter values for that item. These are the values when the last change occurred.
3. Select the counter you want to change. A numeric key pad appears along with function keys to control the position of the cursor in the pad’s data field:

Counter	Description
Interval	Time between PMs – available for specially tracked parts.
Interval Warning	Controls when a PM due warning message appears.
Units PM Performed On	Adjusts the “Feet Used” field – do not use.

4. Select the new PM value to appear in the data field.
5. Select the **OK** key. The Change Preventive Maintenance Data window reappears with the new value.
6. If the new value is correct, select the **OK** button. The Preventive Maintenance Log window reappears. If the new value is not correct, repeat steps 1 to 6.

(continued on next page)

Recording the Completed PM

To record that preventive maintenance is completed, do the following.

Note: Selecting the **Completed** button resets the “Feet Used” counter to zero for the items.

1. Select the item in the log window.
2. Select the **Completed** button.

Table 590. Using the Preventive Maintenance Log (continued)

Selecting OK

If you select the **OK** button, the window closes, and any PM changes you have made are accepted.

Selecting Cancel

If you select the **Cancel** button, the window is closed without accepting any changes.

Service Tasks – PM Procedures

This section contains the steps for performing the following:

- 1.5 Mft Procedure
- 3 Mft Procedure
- 6 Mft Procedure
- 9 Mft Procedure
- 12 Mft Procedure
- 18 Mft Procedure

See Table 591 for a list of the tasks you will be performing at each of the PM intervals.

General Instructions

Keep the following items in mind as you do the PM procedures:

- Always use clean materials to clean around the photoconductor (PC) drum, developer, cleaner, or coronas.
- Use a clean, lint-free cloth and water for cleaning the coronas.
- Handle the PC drum with extreme care; avoid touching the surface of the PC with your skin or hands.
- Some PM procedures require a vacuum cleaner that is approved for use with toner.
- Some PM procedures ask you to use the maintenance panel to check the operation of the printer sensors. See Exerciser Routines (Position 3).

Note: If your customer uses Postprocessing equipment, stacker parts such as finger belts and static brushes do not require replacement. In this case, do NOT order stacker parts. Order only what your printer requires.

In addition to the replacement of PM parts there are Specially Tracked Parts. Refer to this section for additional service tasks.

Table 591. Service PM Tasks by Interval

	Check	Clean	Replace
1.5 Mft Procedure	Cooling Fan Operation Corona Asm (all) Developer Front & Rear Seals Erase Lamp Contacts	Charge Corona Asm Developer Doctor Blade Erase Lamp Filter Preheat Platen	Cleaner Brush
3 Mft Procedure	Stacker Finger Belts	Corona Asm (all) Logic Area Filter Optical Sensors (all) Printhead Fan Filter	
6 Mft Procedure	Scuff Roll Drive Belt Sensor Margin Transfer Station Discharge Brush	AC power Supply Cooling Fan	Corona Wires Fuser Filter
9 Mft Procedure	Scuff Pressure Rollers		Scuff Roll Tire Rubbers Stacker Finger Belts
12 Mft Procedure	Erase Lamp Hot Roll Lamp	**Clean & Lubricate** Hot Roll Bearings Hot Roll Drive Gears	Hot Roll Front Collar Hot Roll Drive Collar Ozone Filter (if feat 911 installed) Pendulum Static Brush
18 Mft Procedure		Scuff Pressure Rollers	

1.5 Mft Procedure

Table 592. 1.5 Mft Preventive Maintenance

Part	Check	Clean	Replace
Cleaner Brush			X
Cooling Fan Operation	X		
Charge Corona Asm		X	
Corona Assemblies (all)	X		
Developer, including Doctor Blade		X	
Developer Front and Back Seals	X	X	
Erase Lamp Contacts	X		
Erase Lamp Filter		X	
Preheat Platen		X	

Estimated Time Required:

- 1.5 hours

Parts to Order:

- Cleaner Brush

Special Tools and Supplies Required:

- Cleaner housing brush (P/N 06F1027)
- Cleaning solvent (P/N 57G2493)
- Isopropyl alcohol (P/N 2200200)
- Lint-free cloth (P/N 2108930)
- Vacuum cleaner (P/N 9900735)

(continued on next page)

1.5 Mft Preventive Maintenance (continued)

Do the following:

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Open the fuser cover and oiler belt gate. Allow the printer to cool for 20 minutes, or more, before you work in the fuser area.
4. Perform the PC Drum Removal procedure and store it in a protective bag.
5. Remove the Cleaner Brush and discard it. Perform the Cleaner Housing Cleaning procedure.
6. Clean loose toner and dust from the erase lamp filter with a clean dry cloth.
7. Remove the Charge Corona assembly.
8. Use a cloth that is moistened with water to clean the charge corona housing and wires. Ensure that the housing is dry before reinstalling the corona in the printer.
9. Check the Preclean Corona and Transfer Corona. Clean them, if necessary.
10. Clean loose toner and mix from the exterior of the developer, from the doctor blade, and from the lower seal.
11. Inspect and clean the developer front and rear seals.
12. When the fuser area is sufficiently cool: use the preheat platen scraper to clean the groove in the preheat platen. Cleaning this groove is important to maintaining good fusing. **Be careful not to scratch the preheat platen.**

    If necessary, use a cloth moistened with Isopropyl alcohol or cleaning solvent to clean toner from the preheat platen.
13. Install a new cleaner brush.
14. Carefully reinstall the drum.
15. Power on the printer.
16. Check the operation of the cooling fans.
17. Reset the 1.5 Mft PM counter to 0 (Recording the Completed PM).
18. Print a set of print samples:
    a. Select **Print** on the Service Actions menu bar.
    b. Select **Print Log** on the menu that appears.
    c. Select **Print Pack** on the menu that appears.
    d. Select the **Print** button.

    Check the print samples for print-quality problems. Save these prints for reference during the next PM.
19. Reset the error log bookmark.
    a. Select **Logs** on the Service Actions menu bar.
    b. Select **Error Log** on the menu that appears.
    c. Select the top error line in the error log.
    d. Select **Bookmark**.

3 Mft Procedure

Table 593. 3 Mft Preventive Maintenance

Part	Check	Clean	Replace
Corona Assemblies (all)		X	
Logic Gate Filter		X	
Optical Sensors (all)		X	
Printhead Fan Filter		X	
Stacker Finger Belts	X		

Estimated Time Required:

- 1.0 hour

Parts to Order:

- None

Special Tools and Supplies Required:

- Corona brush (P/N 06F0423)
- Lint-free cloth (P/N 2108930)
- Vacuum cleaner (P/N 9900735)

(continued on next page)

3 Mft Preventive Maintenance (continued)

Do the following:

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Set the forms length to 14 inches.
3. Lower the stacker table.
4. Shutdown and power off the printer.
5. Remove the coronas. (1556).
6. Clean the corona wires using the corona brush.
7. Use a cloth that is moistened with water to clean the corona housings.
8. Reinstall the coronas when the housings are dry.
9. Check the Stacker Gate Finger Belts and Rear Finger Belts for wear. Replace them if necessary.
10. Use a lint-free cloth and vacuum cleaner to clean all optical sensors:
    - Skew sensor
    - Stacker height detect sensors (1877)
    - Stacker jam sensor (1879)
    - EOF sensor and lamp
    - Tractor jam sensor.
11. Vacuum the logic area filter.
    a. Remove the logic area cover.
    b. Remove the filter by sliding it toward the rear of the printer.
12. Vacuum the printhead fan filter.
13. Power on the printer.
14. Reset the 3Mft PM counter to 0 (Recording the Completed PM).
15. Print a set of print samples:
    a. Select **Print** on the Service Actions menu bar.
    b. Select **Print Log** on the menu that appears.
    c. Select **Print Pack** on the menu that appears.
    d. Select the **Print** button.

    Check the print samples for print-quality problems. Save these prints for reference during the next PM.
16. Reset the error log bookmark.
    a. Select **Logs** on the Service Actions menu bar.
    b. Select **Error Log** on the menu that appears.
    c. Select the top error line in the error log.
    d. Select **Bookmark**.

6 Mft Procedure

Table 594. 6 Mft Preventive Maintenance

Part	Check	Clean	Replace
AC power Supply Cooling Filter		X	
Corona Wires			X
Fuser Filter			X
Scuff Roll Drive Belt	X		
Sensor Margin	X		
Transfer Station Discharge Brush	X		

Estimated Time Required:

- 2.0 hours

Parts to Order:

- Corona wires
- Fuser filter

Special Tools and Supplies Required:

- Lint-free cloth (P/N 2108930)
- Vacuum cleaner (P/N 9900735).

(continued on next page)

6 Mft preventive Maintenance (continued)

Do the following:

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Clean the filter for the ac power supply cooling fan.
4. Replace the fuser filter.
5. Check the transfer station discard brush for damage. Replace it on a future call if necessary.
6. Remove the coronas. (1556).
7. Remove the corona wires in the transfer, charge, and preclean coronas.
8. Use a cloth that is moistened with water to clean the corona housings.
9. Perform the Charge Corona Wire Replacment procedure.
10. Reinstall the coronas when the housings are dry.
11. Check the scuff roll drive belt for wear, replace if necessary.
12. Power on the printer.
13. Perform the Optical Sensor Margin Tests (Position 9).
14. Reset the 6 Mft PM counter to 0 (Recording the Completed PM).
15. Print a set of print samples:
    a. Select **Print** on the Service Actions menu bar.
    b. Select **Print Log** on the menu that appears.
    c. Select **Print Pack** on the menu that appears.
    d. Select the **Print** button.

    Check the print samples for print-quality problems. Save these prints for reference during the next PM.
16. Reset the error log bookmark.
    a. Select **Logs** on the Service Actions menu bar.
    b. Select **Error Log** on the menu that appears.
    c. Select the top error line in the error log.
    d. Select **Bookmark**.

9 Mft Procedure

Table 595. 9 Mft Preventive Maintenance

Part	Check	Clean	Replace
Scuff Pressure Rollers	X		
Scuff Roll Tire Rubbers			X
Stacker Finger Belts			X

Estimated Time Required:

- 2.0 hours

Parts to Order:

- Scuff roll tire rubbers
- Stacker finger belts

Special Tools and Supplies Required:

- None

Do the following:

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Set the forms length to 14 inches.
3. Lower the stacker table.
4. Shutdown and power off the printer.
5. Check the Scuff Pressure Rollers for unusual wear or toner buildup.
6. Install new scuff roll tire rubbers.
7. Replace the Stacker Gate Finger Belts and Rear Finger Belts.
8. Power on the printer.
9. Reset the 9 Mft PM counter to 0 (Recording the Completed PM).
10. Print a set of print samples:
    a. Select **Print** on the Service Actions menu bar.
    b. Select **Print Log** on the menu that appears.
    c. Select **Print Pack** on the menu that appears.
    d. Select the **Print** button.

    Check the print samples for print-quality problems. Save these prints for reference during the next PM.
11. Reset the error log bookmark.
    a. Select **Logs** on the Service Actions menu bar.
    b. Select **Error Log** on the menu that appears.
    c. Select the top error line in the error log.
    d. Select **Bookmark**.

12 Mft Procedure

Table 596. 12 Mft Preventive Maintenance

Part	Check	Clean & Lubricate	Replace
Erase Lamp	X		
Hot Roll Bearings		X	
Hot Roll Front Collar			X
Hot Roll Drive Collar			X
Hot Roll Drive Gears		X	
Hot Roll Lamps	X		
Ozone Filter (if feature 9911 is installed)			X
Pendulum Static Brushes			X

Estimated Time Required:

- 2.0 hours

Parts to Order:

- Hot Roll Front Collar
- Hot Roll Drive Collar
- Ozone Filter
- Pendulum Static Brush

Special Tools and Supplies Required:

- Krytox 238AC grease (P/N 65F6223)

(continued on next page)

12 Mft Preventive Maintenance (continued)

Do the following:

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. To cool the fuser:
   a. Open the stacker end cover.
   b. Open and lock the fuser oiler-belt gate.

   Attention: Oil and other contaminants from the fuser oiler belt can damage clothing. While you work in this area, place used forms over the oiler-belt gate.
4. Install a new Pendulum Static Brush.

Do steps 5 through 7 when the fuser area is cool enough to work on.

For detailed instructions on performing steps 5 and 6, see Hot Roll Drive Assembly Removal & Lubrication.

Attention: Do not mix the Krytox grease and the IBM grease in the next two steps. Mixing them reduces the effectiveness of the lubricants.

5. Lubricate the following hot roll components with Krytox 283AC grease:
   - Rear hot roll hub and bearing assembly
   - Rear flange and bearing assembly.
6. Lubricate the hot roll drive gears with IBM SBB grease number 3.
7. Reassemble the hot roll drive and install the following new parts:
   a. Hot roll drive collar (1692)
   b. Hot roll front collar.
8. Replace the ozone filter (if feature 9911 is installed).
9. Check the hot roll lamps. (1700)
10. Check the erase lamp. (1662)
11. Power on the printer.
12. Reset the 12 Mft PM counter to 0 (Recording the Completed PM).
13. Print a set of print samples:
    a. Select **Print** on the Service Actions menu bar.
    b. Select **Print Log** on the menu that appears.
    c. Select **Print Pack** on the menu that appears.
    d. Select the **Print** button.

    Check the print samples for print-quality problems. Save these prints for reference during the next PM.
14. Reset the error log bookmark.
    a. Select **Logs** on the Service Actions menu bar.
    b. Select **Error Log** on the menu that appears.
    c. Select the top error line in the error log.
    d. Select **Bookmark**.

18 Mft Procedure

Table 597. 18 Mft Preventive Maintenance

Part	Check	Clean	Replace
Scuff Pressure Rollers			X

Estimated Time Required:

- 1.0 hour

Parts to Order:

- Scuff pressure rollers

Special Tools and Supplies Required

- None

Do the following:

1. Request that the system operator stop activity on the printer. Disable all host attachments.
2. Shutdown and power off the printer.
3. Install the following new parts:
   a. Scuff Pressure Rollers.
4. Power on the printer.
5. Reset the 18Mft PM counter to 0 (Recording the Completed PM).
6. Print a set of print samples:
   a. Select **Print** on the Service Actions menu bar.
   b. Select **Print Log** on the menu that appears.
   c. Select **Print Pack** on the men that appears.
   d. Select the **Print** button.

   Check the print samples for print-quality problems. Save these prints for reference during the next PM.
7. Reset the error log bookmark.
   a. Select **Logs** on the Service Actions menu bar.
   b. Select **Error Log** on the menu that appears.
   c. Select the top error line in the error log.
   d. Select **Bookmark**.

Specially Tracked Parts

In addition to the parts checked, cleaned, and replaced at regular PM intervals, some parts are specially tracked. Table 598 lists those parts and the optimum PM interval for each. See the Parts Catalog for the correct part numbers.

Table 598. Service Tasks for Specially Tracked Parts

Hot Roll

PM Schedule: 3 Mft

Estimated Time Required: 1.0 hour

Activity: Replace

See Hot Roll and Collars for details on how to install the hot roll.

Reset the PM counter to 0 (Recording the Completed PM). **IMPORTANT:** You must also reset the Hot Roll print count to "**0**". See Read From or Write to Memory (Position 2)for the procedure to WRITE into memory address FF16 and FF17. This will reset the oiler algorithm to correctly oil the new Hot Roll. Failure to reset this count will result in reduced Hot Roll life.

Hot Roll Motor Brushes

PM Schedule: 60 Mft

Estimated Time Required: 1.0 hour

Activity: Replace

See Hot Roll Drive Motor (M703) for details on how to install the hot roll motor brushes.

Reset the PM counter to 0 (Recording the Completed PM).

Backup Roll

PM Schedule: 3 Mft

Estimated Time Required: 0.5 hour

Activity: Replace

See Backup Roll for details on how to install the backup roll.

Check the backup roll discharge brush for damage; replace it on a future call if necessary.

Reset the PM counter to 0 (Recording the Completed PM). **IMPORTANT:** You must also reset the Backup Roll print count to "**0**". See Read From or Write to Memory (Position 2) for the procedure to WRITE into memory address FF18 and FF19. Failure to reset this count will result in reduced Backup Roll life.

PM Checklist

Table 599. Preventive Maintenance Checklist

Print Count (Mft)	1.5 Mft	3 Mft	6 Mft	9 Mft	12 Mft	18 Mft
1.5	X					
3.0	X	X				
4.5	X					
6.0	X	X	X			
7.5	X					
9.0	X	X		X		
10.5	X					
12.0	X	X	X		X	
13.5	X					
15.0	X	X				
16.5	X					
18.0	X	X	X	X		X
19.5	X					
21.0	X	X				
22.5	X					
24.0	X	X	X		X	
25.5	X					
27.0	X	X		X		
28.5	X					

Table 599. Preventive Maintenance Checklist (continued)

Print Count (Mft)	1.5 Mft	3 Mft	6 Mft	9 Mft	12 Mft	18 Mft
30.0	X	X	X			
31.5	X					
33.0	X	X				
34.5	X					
36.0	X	X	X	X	X	X
37.5	X					
39.0	X	X				
40.5	X					
42.0	X	X	X			
43.5	X					
45.0	X	X		X		
46.5	X					
48.0	X	X	X		X	
49.5	X					
51.0	X	X				
52.5	X					
54.0	X	X	X	X		X
55.5	X					
57.0	X	X				
58.5	X					

Table 599. Preventive Maintenance Checklist (continued)

Print Count (Mft)	1.5 Mft	3 Mft	6 Mft	9 Mft	12 Mft	18 Mft
60.0	X	X	X		X	
61.5	X					
63.0	X	X		X		
64.5	X					
66.0	X	X	X			
67.5	X					
69.0	X	X				
70.5	X					
72.0	X	X	X	X	X	X
73.5	X					
75.0	X	X				
76.5	X					
78.0	X	X	X			
79.5	X					
81.0	X	X		X		
82.5	X					
84.0	X	X	X		X	
85.5	X					
87.0	X	X				
88.5	X					

Table 599. Preventive Maintenance Checklist (continued)

Print Count (Mft)	1.5 Mft	3 Mft	6 Mft	9 Mft	12 Mft	18 Mft
90.0	X	X	X	X		X
91.5	X					
93.0	X	X				
94.5	X					
96.0	X	X	X		X	
97.5	X					
99.0	X	X		X		
100.5	X					
102.0	X	X	X			
103.5	X					
105.0	X	X				
106.5	X					
108.0	X	X	X	X	X	X
109.5	X					
111.0	X	X				
112.5	X					
114.0	X	X	X			
115.5	X					
117.0	X	X		X		
118.5	X					

Table 599. Preventive Maintenance Checklist (continued)

Print Count (Mft)	1.5 Mft	3 Mft	6 Mft	9 Mft	12 Mft	18 Mft
120.0	X	X	X		X	
121.5	X					
123.0	X	X				
124.5	X					
126.0	X	X	X	X		X
127.5	X					
129.0	X	X				
130.5	X					
132.0	X	X	X		X	
133.5	X					
135.0	X	X		X		
136.5	X					
138.0	X	X	X			
139.5	X					
141.0	X	X				
142.5	X					
144.0	X	X	X	X	X	X
145.5	X					
147.0	X	X				
148.5	X					

Table 599. Preventive Maintenance Checklist (continued)

Print Count (Mft)	1.5 Mft	3 Mft	6 Mft	9 Mft	12 Mft	18 Mft
150.0	X	X	X			
151.5	X					
153.0	X	X		X		
154.5	X					
156.0	X	X	X		X	
157.5	X					
159.0	X	X				
160.5	X					
162.0	X	X	X	X		X
163.5	X					
165.0	X	X				
166.5	X					
168.0	X	X		X		
169.5	X					
171.0	X	X		X		
172.5	X					
174.0	X	X	X			
175.5	X					
177.0	X	X				
178.5	X					

Table 599. Preventive Maintenance Checklist (continued)

Print Count (Mft)	1.5 Mft	3 Mft	6 Mft	9 Mft	12 Mft	18 Mft
180.0	X	X	X	X	X	X
181.5	X					
183.0	X	X				
184.5	X					
186.0	X	X	X			
187.5	X					
189.0	X	X		X		
190.5	X					
192.0	X	X	X		X	
193.5	X					
195.0	X	X				
196.5	X					
198.0	X	X	X	X		X
199.5	X					
201.0	X	X				
202.5	X					
204.0	X	X	X		X	
205.5	X					
207.0	X	X		X		
208.5	X					

Table 599. Preventive Maintenance Checklist (continued)

Print Count (Mft)	1.5 Mft	3 Mft	6 Mft	9 Mft	12 Mft	18 Mft
210.0	X	X	X			
211.5	X					
213.0	X	X				
214.5	X					
216.0	X	X	X	X	X	X
217.5	X					
219.0	X	X				
220.5	X					
222.0	X	X	X			
223.5	X					
225.0	X	X		X		
226.5	X					
228.0	X	X	X		X	
229.5	X					
231.0	X	X				
232.5	X					
234.0	X	X	X	X		X
235.5	X					
237.0	X	X				
238.5	X					

Table 599. Preventive Maintenance Checklist (continued)

Print Count (Mft)	1.5 Mft	3 Mft	6 Mft	9 Mft	12 Mft	18 Mft
240.0	X	X	X		X	
241.5	X					
243.0	X	X		X		
244.5	X					
246.0	X	X	X			
247.5	X					
249.0	X	X				
250.5	X					
252.0	X	X	X	X	X	X
253.5	X					
255.0	X	X				
256.5	X					
258.0	X	X	X			
259.5	X					
261.0	X	X		X		
262.5	X					
264.0	X	X	X		X	
265.5	X					
267.0	X	X				
268.5	X					

Table 599. Preventive Maintenance Checklist (continued)

Print Count (Mft)	1.5 Mft	3 Mft	6 Mft	9 Mft	12 Mft	18 Mft
270.0	X	X	X	X		X
271.5	X					
273.0	X	X				
274.5	X					
276.0	X	X	X		X	
277.5	X					
279.0	X	X		X		
280.5	X					
282.0	X	X	X			
283.5	X					
285.0	X	X				
286.5	X					
288.0	X	X	X	X	X	X

Installation Procedures

Introduction 2247
How to Use the Installation Procedures Sections 2248
Installation Responsibilities 2249
Space Requirements 2253
Space Requirements Simplex Printers 2254
Space Requirements Duplex Systems 2255
Temperature and Humidity Requirements 2258
Power Requirements 2259
Branch Circuit CB Turned Off Check 2261
Branch Circuit CB Turned On Check 2262
Verify the Shipment 2263
Installing a Simplex Printer or Duplex System Printer 2 2263
Check the Printer and Control Unit for Damage 2263
Remove the Packing Tape 2265
Remove the Input Bin 2267
Connect the AC Power Cord 2268
Level the Printer 2272
Check the DIP Switch Settings 2277
Check the Voltage Jumpers 2278
Install the Foam Light Shield in the Simplex Printer or the Duplex System Printer 2 2279
Install the Controller in the Control Unit 2281
Install the Mouse 2287
Install the Display/Touch Screen on the Control Unit 2288
Install the Operator Alert Assembly on the Control Unit 2290
Change the Fuser Oil Filter Screen 2292
Attach the Control Unit Cables to the Printer 2293
Power On the Printer In Diagnostic Mode 2297
Check the Drum Gaps and Install the PC Drum 2301

© Copyright IBM Corp. 1999, 2000

Check the Toner Control Program . . . 2307
Check the Printhead Alignment . . . 2307
Installation of Side 1/Side 2 Verification . . . 2308
Installation Procedures . . . 2309
Attach the Control Unit Frame to the Printer . . . 2322
Continue the Installation Procedures . . . 2325
Installing a Duplex System Printer 1 . . . 2326
Installing Additional Duplex System Hardware . . . 2328
Install the Foam Light Shield in the Duplex System Printer 1 . . . 2329
Install the Buffer/Flipper Unit . . . 2331
Adjust the Collars . . . 2334
Inline Configuration . . . 2335
Left-Angle Configuration . . . 2336
Install the Urge Unit (Hinged-Top, Pearl White Unit Only) . . . 2337
Install the Urge Unit (Fixed-Top Black Unit Only) . . . 2340
Install the Remote Power Cable . . . 2341
Install the MIC SSA Cable . . . 2342
Configure and Test Printer/System Operations . . . 2343
Set the Power Switches and Power On the System . . . 2344
For a Simplex Printer . . . 2344
For a Duplex System . . . 2345
Install the Microcode . . . 2346
Special Features Passwords . . . 2346
Configuring the System . . . 2346
Configure the Printer - Simplex System . . . 2347
Configure the Printer - Duplex System . . . 2348
Configure the Attachments . . . 2351
Configure the Pre/Postprocessors . . . 2351
Configuration for Side 1/Side 2 Verification Checking . . . 2352
Define Forms . . . 2353
Verify Printer Operation . . . 2354

Print Sample Adjustments 2357
Save the Configuration Settings 2357
Test the Operator Alert Assembly 2358
Install the Host Attachment Cables 2359
Make the Printer System Ready for Use 2365
Install Features 2365
Complete the Installation 2366
Install Labels 2366
Discontinue Use 2371
Relocate the Printer 2376
Reinstall the Printer 2377

Introduction

The information in this section describes how to install, relocate, and discontinue IBM Infoprint 3000 Printers.

A simplex printer (one printer engine and control unit) is delivered from the factory. A duplex system (two printer engines and control units) is delivered from the factory. There is no difference between Printer 1 and Printer 2.

Be sure to read and understand all the information in this document.

DANGER

<1-14> Switch off printer power and unplug the printer power cord before connecting or disconnecting a communication port, a teleport, or any other attachment connector.

DANGER

<12> During an electrical storm, do not handle channel cables, connectors, or power cords.

How to Use the Installation Procedures Sections

If you are installing a simplex printer, do the following:

1. Read the complete Introduction.
2. Complete section Installing a Simplex Printer or Duplex System Printer 2.
3. Complete section Configure and Test Printer/System Operations.

If you are installing a duplex system, do the following:

1. Read the complete Introduction.
2. Complete section Installing a Simplex Printer or Duplex System Printer 2.
3. Complete section Installing a Duplex System Printer 1.
4. Complete section Installing Additional Duplex System Hardware.
5. Complete section Configure and Test Printer/System Operations.

Installation Responsibilities

Before and during the installation process you and the customer have activities you need to complete to ensure a smooth, timely installation. The following table lists the activities that must be performed and the party responsible for performing the activity, which are marked (**R**). The party responsible for verifying that the activity was completed correctly is marked (**V**).

Activity	Customer	Customer Engineer
Before Installation		
Complete a site planning worksheet [1]	R	
Review the Temperature and Humidity Requirements and Space Requirements for the printer	R	V
Ensure that the following conditions are met: • The receiving area and the route to the planned location for the printer must have no obstacles that might interfere with moving the printer • Halls and doorways must be wider than the printer: 930 mm (36.7 in.) • Hall corners and angles must be large enough to permit the printer to turn • Ramps must have an incline of no more than 10° • Elevators and elevator doors must be large enough to accommodate the printer and the people who are moving it • The floor where the printer is installed must be within 1° of level • The approved electrical outlet must have the correct power and must be accessible to the power cable • If the printer is to be installed on a raised floor, the access hole in the raised floor must be adequate for both the host attachment cables and the power cable **Attention:** The paper path must be clear of the following: – Any cables that come through the access hole – Cabling to or from Pre/Postprocessing devices	R	V
Ensure that a forklift is available at the site	R	
Complete the configuration worksheet	R	

Activity	Customer	Customer Engineer
Ensure that the correct software programs are installed on the host system	R	V
Ensure that supplies have been ordered	R	V
Ensure that the correct host attachment cables are available	R	V
Ensure that the printer and control unit are safely moved to the installation area	R	
Verify that the customer's electrical supply is compatible with the power supply for the simplex printer or duplex system		R
Ensure that the phases are correct for the ac power		R
Installation		
Verify that you have the tools required: • The printer tool kits, which include: – Level (P/N 4832403) – Line cord wrench (P/N 88F3334) (U.S./Canada only) – Laser power tool (P/N 06F0250) • Other special tools: – Leveling pad wrench (P/N 8309875) – Electrostatic voltmeter (ESV) (P/N 03F5634) – Wrap plugs/blocks for each host attachment type – Laser alignment target (P/N 24L3377)		R
Install the parts and supplies necessary for installation		R
Configure the controller microcode		R
Connect the coaxial cables, power control interface cable, interface signal cable, and the ac power cord.		R

Activity	Customer	Customer Engineer
Connect the host attachment cables to the control unit and to the host system		R
Install any features that were not installed in the factory, using the appropriate service codes: • Host Attachment features • Pre/Postprocessing Interface features		R
Verify that the Operator's Guide was included in the ship group: Infoprint 3000 Operator's Guide, S544-5564		R
Perform Operator Training		R

Notes:

1. The customer's responsibilities for preinstallation are covered in detail in the Infoprint 3000 Introduction and Planning Guide, G544-5563.

Space Requirements

Verify that the customer has allowed enough service space at the planned location for the printer.

For a simplex printer, see Space Requirements Simplex Printers.

For a duplex system, see the figures in Space Requirements Duplex Systems for the proper configuration.

Notes:

1. All dimensions are the **minimum** that is required for service access. For a duplex system, the distance between Printer 1 and 2 is limited by the length of the signal and power cables that connect the printers. Contact your next level of support if you have any questions.
2. The **power cable** for the printer requires a 152 mm (6 in.) square hole in the raised floor. The cable exit point from the printer is 533 mm (21 in.) from the right rear corner of the printer. (The distance of 533 mm (21 in.) does not include the control unit on the rear edge of the frame.)
3. The **cable access** cutout for the host attachment cables requires a 200 mm (8 in.) square hole in the raised floor. The access hole should be located as far as possible to the rear of the printer to allow enough clearance for the paper path that runs below the printer.

Space Requirements Simplex Printers

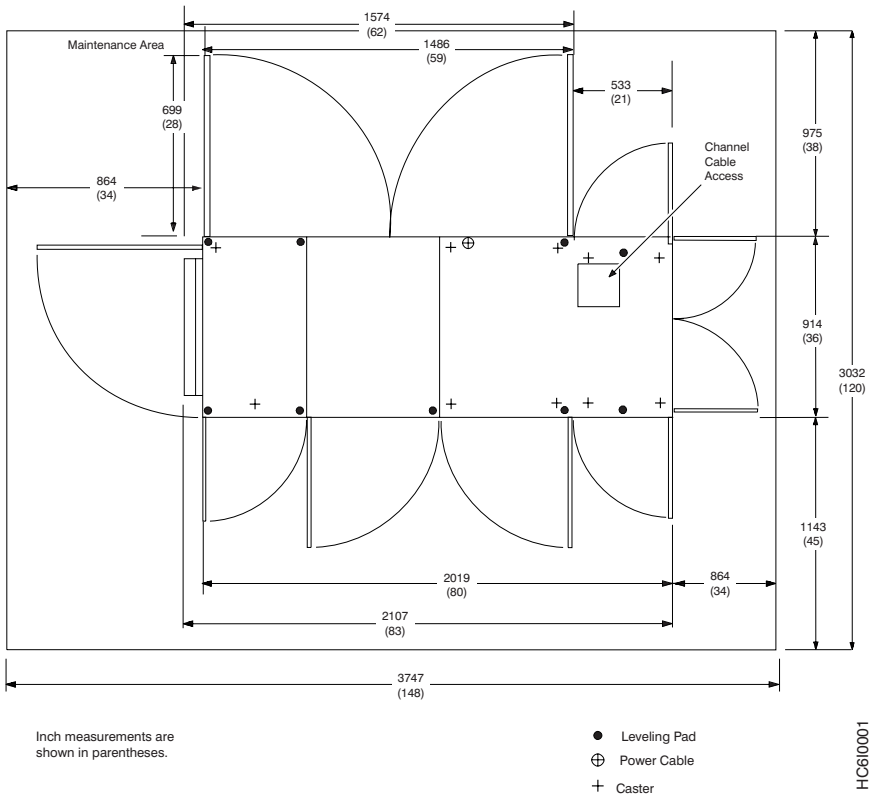


Figure 5. Service-Space Requirements - Simplex Printer

Space Requirements Duplex Systems

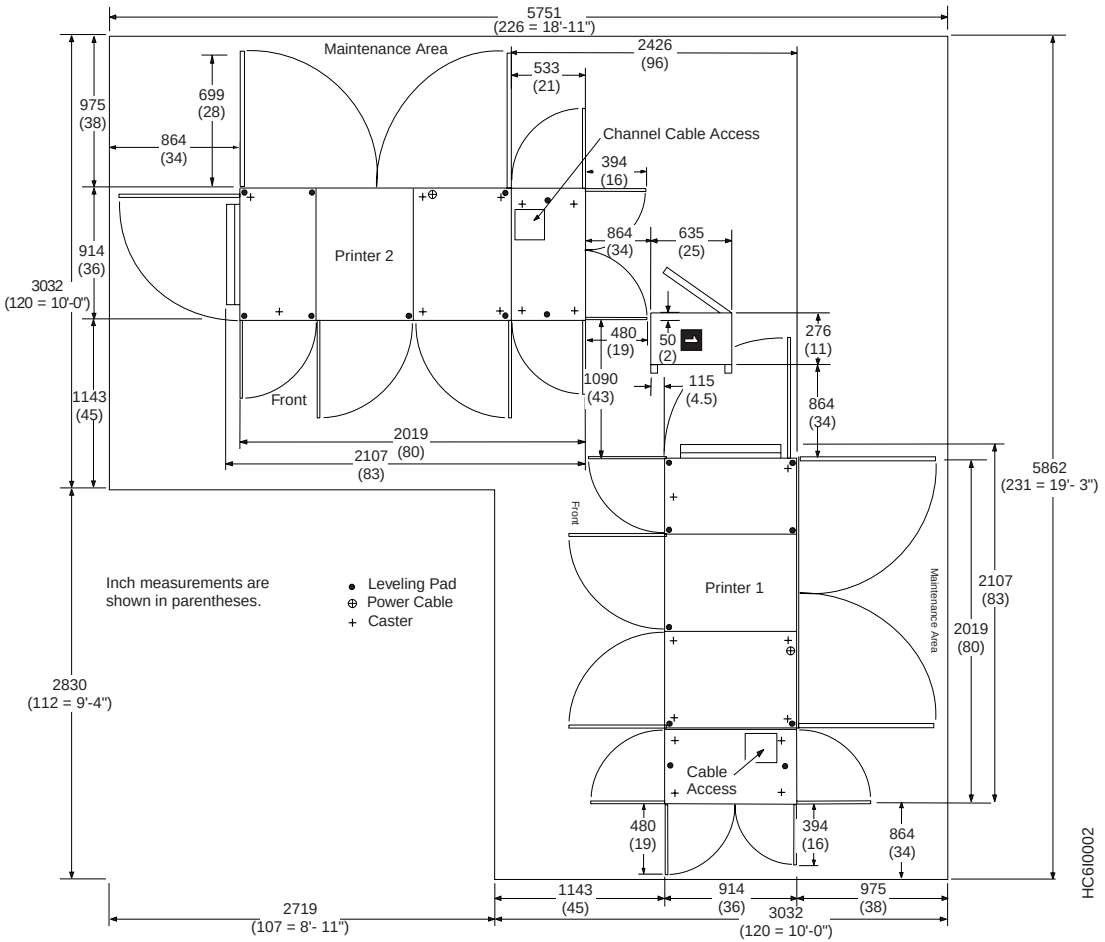


Figure 6. Service-Space Requirements - Duplex System (Left Angle Configuration)

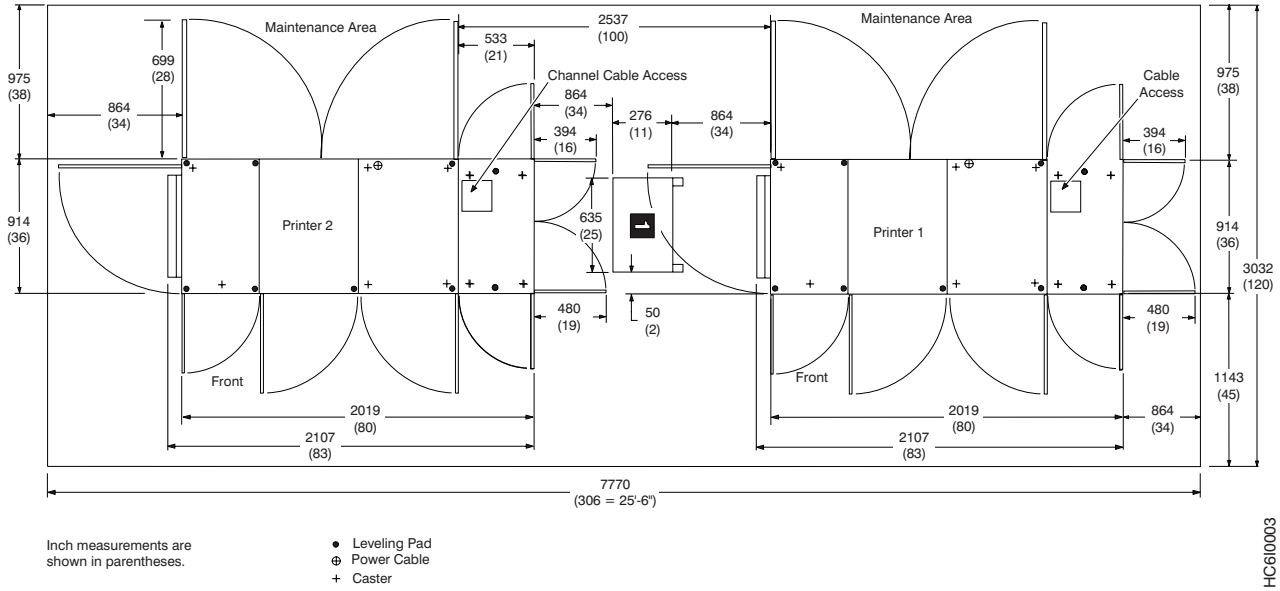


Figure 7. Service-Space Requirements - Duplex System (Inline Configuration)

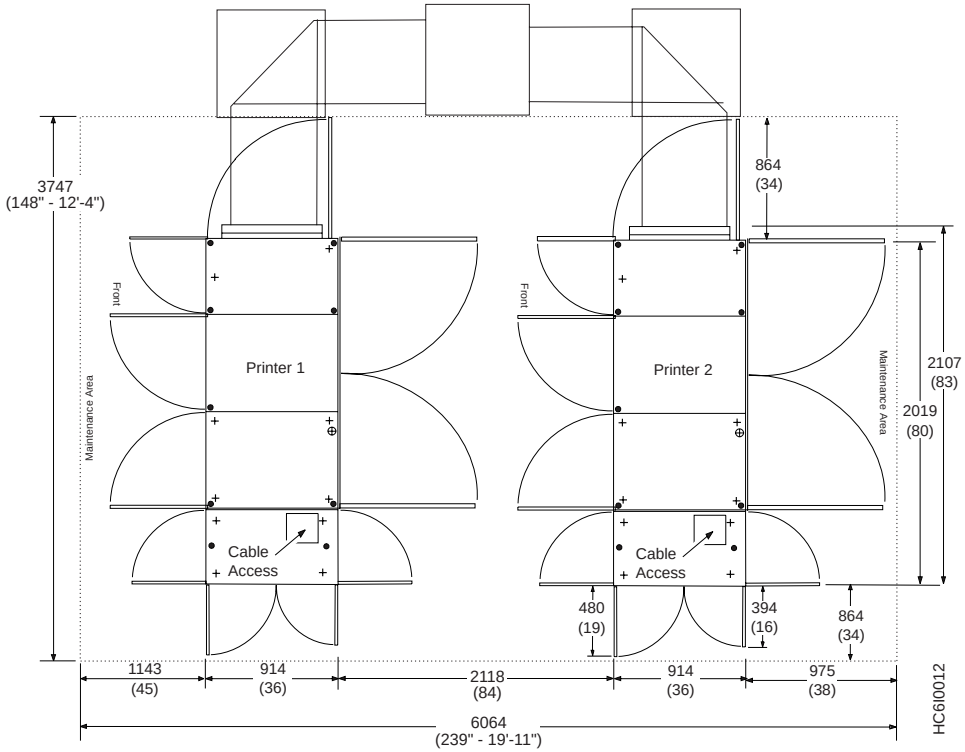


Figure 8. Service-Space Requirements - Duplex System (’H’ Configuration)

Temperature and Humidity Requirements

Verify with the customer that the required environmental range has been considered during the planning of the simplex printer site or duplex system.

The required operating environment is:

- Temperature: 18° to 24°C (65° to 75°F)
- Humidity: 40% to 60%

Ensure that the customer understands the possible reliability and service consequences of the following:

- Dust and other contamination may adversely affect printer performance.
- High or low extremes of temperature and relative humidity affect the paper. Paper exposed to these conditions, can cause paper jams and degraded print quality.
- High usage at high temperature may result in degraded print quality.

Power Requirements

The Infoprint 3000 operates on 3-phase power, 50 or 60 Hz.

The customer installation must provide a means by which power to the simplex printer or both printers in a duplex system can be disconnected. The means of disconnection can be by either:

- An easily accessible, compatible plug and receptacle installed near the equipment
- A dedicated, readily accessible, circuit breaker that breaks all live poles.

Through internal wiring, it is possible to adapt the printer to the following 3-phase voltages (phase-to-phase):

60 Hz (±1.2 Hz) U.S., Canada requires a dedicated electrical outlet with 60-ampere service:

Phase to Phase		Phase to Ground/Neutral	
Nominal Voltage	**Voltage Limits (±10%)**	**Nominal Voltage**	**Voltage Limits (±10%)**
208	187–229	120	108–132
220	198–242	127	114–140
230	207–252	133	120–147
240	216–264	140	126–154

50 Hz (±1.0 Hz) Europe, World Trade requires a dedicated electrical outlet with 25-ampere service:

Phase to Phase		Phase to Ground/Neutral	
Nominal Voltage	**Voltage Limits (±10%)**	**Nominal Voltage**	**Voltage Limits (±10%)**
380	342–418	220	198–242
400	360–440	230	207–253
415	373–456	240	216–264

50/60 Hz (±1.0 Hz) Japan requires a dedicated electrical outlet with 60-ampere service:

Phase to Phase		Phase to Ground/Neutral	
Nominal Voltage	**Voltage Limits (±10%)**	**Nominal Voltage**	**Voltage Limits (±10%)**
200	180–220	115	100–130

Attention

Do not connect the simplex printer or duplex system to any 380-415 V, 50 Hz IT power distribution (impedance grounded neutral) system. Connection to an IT system with the present configuration may:

- Violate applicable national or international regulations
- Damage machine components.

Branch Circuit CB Turned Off Check

Follow these electrical-safety procedures:

1. Have the customer turn off the branch circuit CB.
2. Check that the voltage from the power receptacle to the building ground is less than 1.0 V ac. (Start with the meter scale that is correct for normal line voltage checks.)

   If measured voltages are less than 1.0 V ac, the receptacle is safe to touch.
3. Measure the phase-to-phase voltage and the phase-to-ground voltage. Voltages should be less than 1.0 V ac.
4. Measure the phase-to-neutral voltage (if present) and the neutral-to-ground voltage (if present). Voltages should be less than 1.0 V ac.
5. If the power receptacle is mounted to a metal case, measure the resistance from the ground pin to the metal case. The resistance should be less than 1 ohm.

Branch Circuit CB Turned On Check

1. Have the customer turn on the CB that supplies voltage to the receptacle.
2. Measure the voltages from the receptacle to the ground pin. A voltage reading of less than 1.0 V ac shows a safe condition.
3. Measure the voltages from the ground pin and neutral pin (if present) to all phases, and measure the voltages from phase-to-phase. Ensure that the voltages agree with the tables on the Power Requirements.

Complete the following **GROUNDED NEUTRAL VERIFICATION** test:

1. Verify that the *customer-supplied* printer power circuit breaker is **Off**. Ensure that the circuit breaker is rated at 60 ampere (25 A for 380/400/415 V).
2. Use a standard voltmeter to verify the following.
   - Phase-to-phase voltage at the printer connection point is **Off**.
   - Voltage from the safety ground (green wire) to the neutral connection is **zero** (or less than 1.0 V ac).
   - Impedance from the safety ground to the neutral connection is less than **1** Ω.

Only after the tests are verified and voltage ranges are safe, can the simplex printer or duplex system be connected to ac power and powered on.

Verify the Shipment

Before you proceed with unpacking and installing the printer, compare the shipping manifest to the sales order to verify that the correct printing system was delivered.

If the correct printing system was delivered to the customer, take an inventory of all the parts supplied.

Installing a Simplex Printer or Duplex System Printer 2

This section covers the mechanical and electrical installation of a simplex printer or Printer 2 in a duplex system.

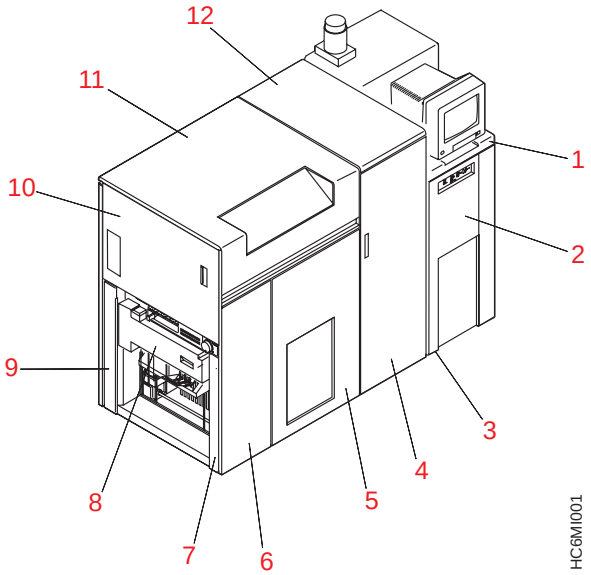
If you are installing a duplex system, there is no difference between Printer 1 and Printer 2.

Check the Printer and Control Unit for Damage

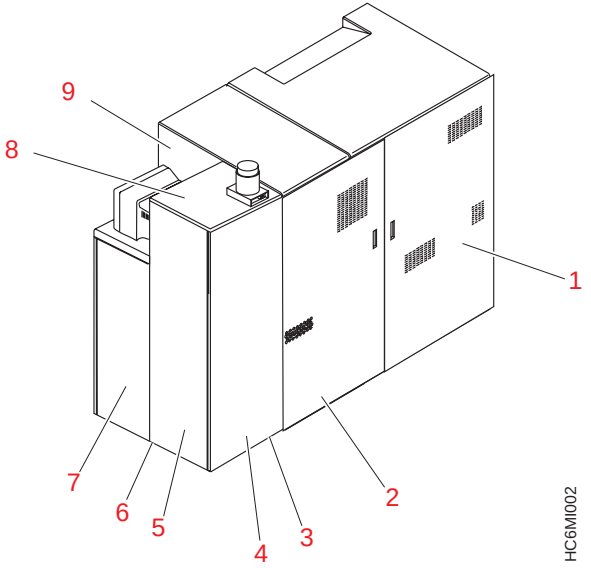
1. Ensure that the printer in its final position.
2. Compare the machine to the sales order.

The following drawings show the locations of the front and rear machine covers on the printer and the control unit.

Table 600. Checking the Printer and Control Unit



1. Check all the front and top covers for any shipping damage.
   - **(1)** Control unit shelf
   - **(2)** Control unit front cover
   - **(3)** Cover latch release
   - **(4)** Printer right front cover
   - **(5)** Printer center front cover
   - **(6)** Printer left front cover
   - **(7)** Stacker lower right end cover
   - **(8)** Stacker gate cover
   - **(9)** Stacker lower left end cover
   - **(10)** Stacker end cover
   - **(11)** Printer left top cover
   - **(12)** Printer right top cover

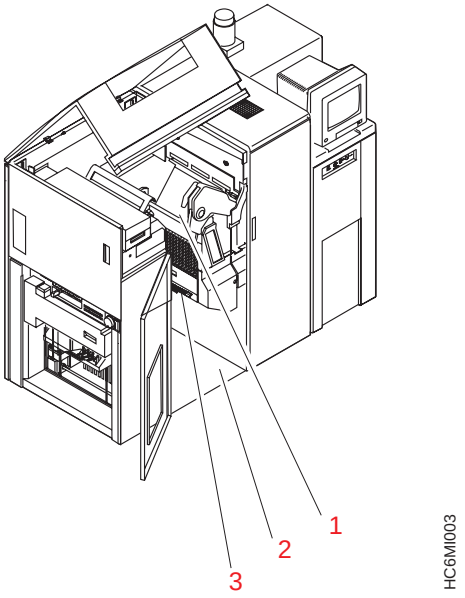


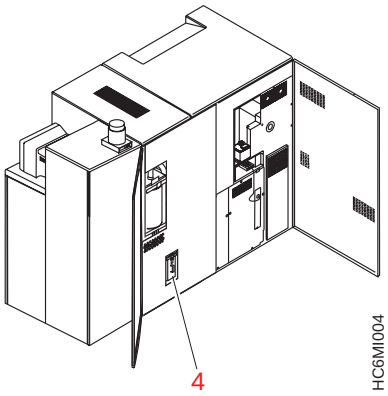
2. Check the printer rear covers and control unit covers for damage.
   - **(1)** Printer right rear cover
   - **(2)** Printer left rear cover
   - **(3)** Cover latch release
   - **(4)** Control unit rear cover
   - **(5)** Control Unit right side cover
   - **(6)** Cover latch release
   - **(7)** Control Unit left side cover
   - **(8)** Control Unit top cover
   - **(9)** Printer right end cover
3. Remove all film on the windows.
4. Open both control unit side covers **(5)** and **(7)**.

Remove the Packing Tape

Use the following procedure to unpack the control unit and the printer:

Table 601. Removing the Packing Tape

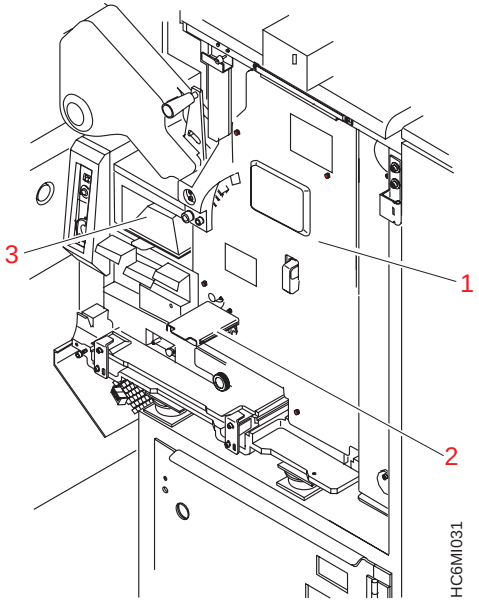


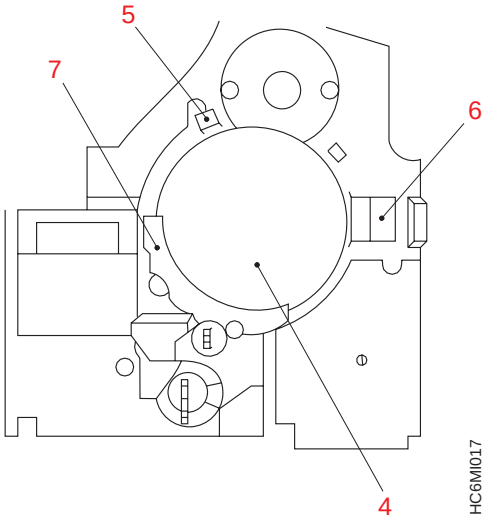


(continued on next page)

1. Remove the tape and packing materials while you hold the ground straps and cables from the control unit.
2. Remove the tape on the two front covers (right front and center front).
3. Open the stacker gate cover.
4. Remove the tape from the stacker area.
5. Remove the silica gel packages from under the stacker and discard them.
   Note: A SRC D71D will result if any obstructions prevent the stacker table from moving to it's lowest position.
6. If necessary, remove the photoconductor drum (PC drum) box from the input bin.
7. Remove the silica gel packages that are taped to the box that contains the drum, and discard them.
8. Remove the silica gel packages from the input bin area **(2)**, and discard them.
9. If necessary, remove tape from the following areas:
   - **(1)** Transfer station
   - **(2)** Input bin area
   - **(3)** Developer drain hose
   - **(3)** Mix bottle
   - **(4)** Toner-collector

Table 601. Removing the Packing Tape (continued)



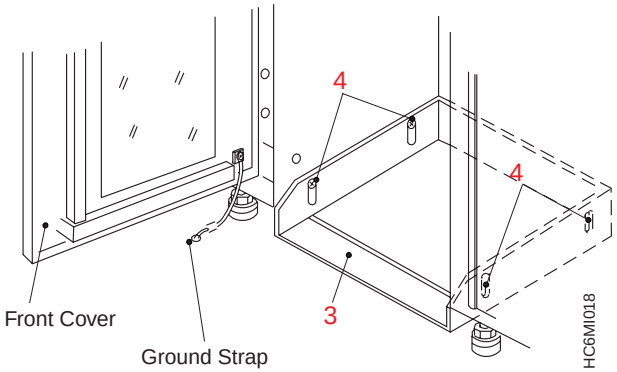


10. Open the stacker end cover and remove the tape on the hot roll shield.
11. Remove the tape and protective cover on the stacker control panel.
12. Open the left front cover.
13. Remove the screws from the left service cover and remove the tape from the backup roll arm.
14. Open the printer's right front cover.
15. Remove the foam and tape on the preheat platen.
16. Remove the 4 screws from the drum cover and then remove the cover **(1)**.
17. If necessary, remove tape from the developer inlet **(2)**.
18. Remove the tape from the toner cartridge **(3)**.

19. Remove the sheet of plastic **(4)** inside the drum area. Ensure that all the tape that holds the plastic is removed.
20. Remove any tape that holds the pre-clean corona **(5)**, and the charge corona **(6)**.
21. Remove any adhesive tape from the developer area **(7)**.

Remove the Input Bin

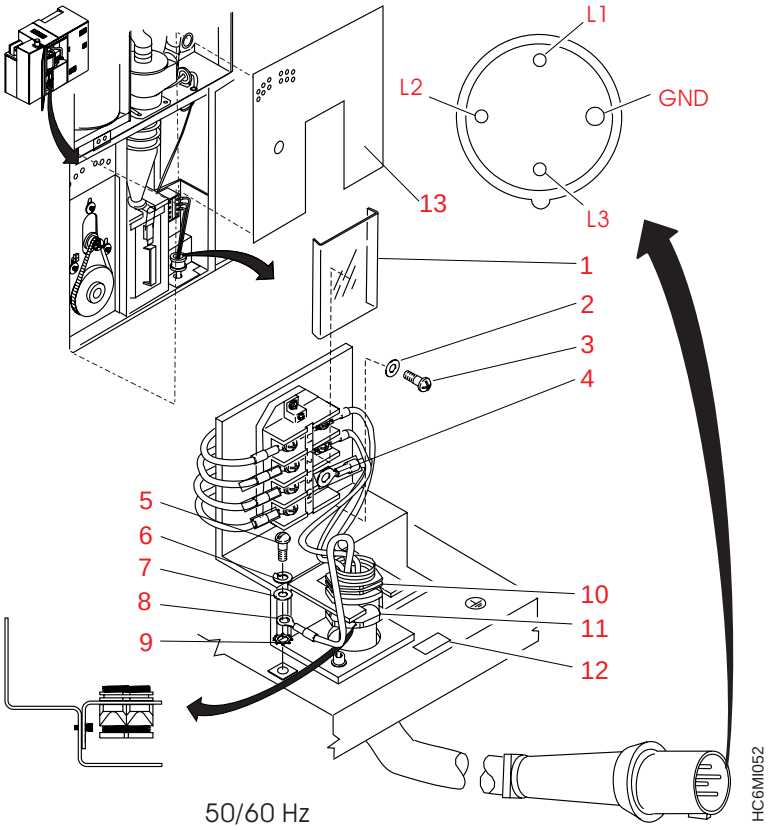
Table 602. Removing the Input Bin



1. Remove 4 screws **(4)** and remove the input bin **(3)**.
2. Save the screws and washers for later use.

Connect the AC Power Cord

Table 603. Connecting the AC Power Cord



50-60 Hz Power Cord Connection (U.S./Canada)

(continued on next page)

1. Open the left rear cover and the right rear cover.
2. Remove the cyclone blower cover **(13)**.
3. Remove the 2 screws and plate that cover the power cord access opening. Save the screws for reinstallation. Save the plate in case it is needed for relocating the printer.
4. Locate the power cord.
5. Pull the power cord through the power cord access opening.
6. Slide the strain relief **(11)** over the top of the wiring onto the power cord. Loosen the strain relief to install it; tighten it after you install it. The strain relief is located in the same box as the developer mix.

Note: The insulation on the power cord should extend a minimum of 13 mm (0.5 in.) beyond the strain relief.

7. Use the 2 screws to attach the strain relief bracket to the printer power cord access opening (60-Hz printers only).
8. Remove the clear plastic terminal block cover **(1)**.
9. Use Table 604 and Table 605 to connect the terminals from the power cord **(4)** to the terminal block as shown.

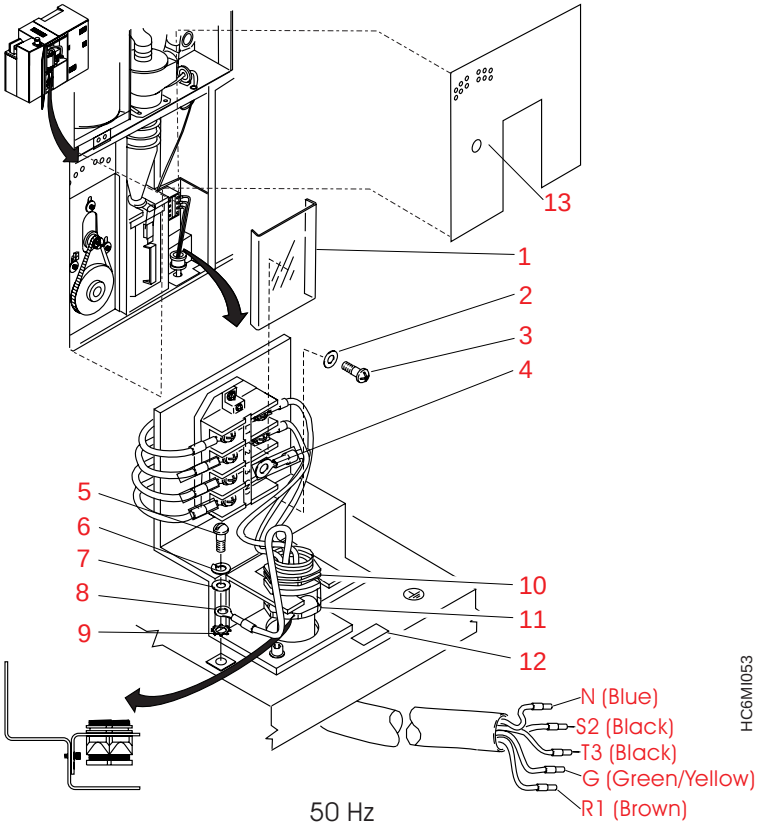
Table 604. 3-Wire Power Cord to Terminal Block Connections & Green Wire Ground

Power Cord 50/60 Hz	Printer Terminal Block
R1	L1
S2	L2
T3	L3
Green/Yellow wire **(8)**	Frame ground

Table 605. 4-Wire Power Cord to Terminal Block Connections

Power Cord 50 Hz 380 V, 400 V, 415 V	Printer Terminal Block
R1	L1
S2	L2
T3	L3
N	N1 (neutral)
Green/Yellow wire	Frame ground

Connecting the AC Power Cord (continued)



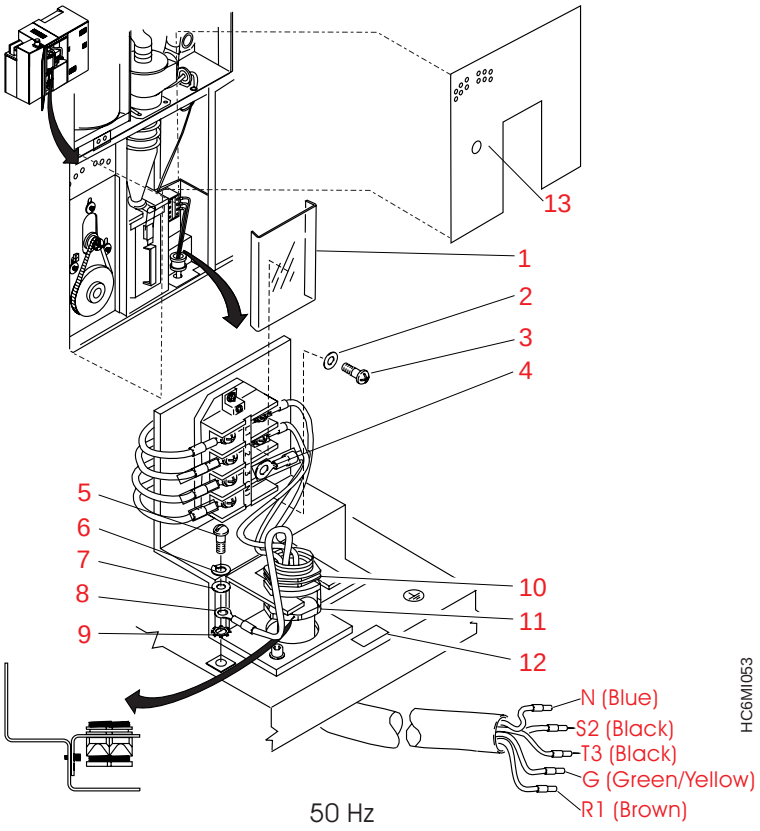
50 Hz Power Cord Connection (World Trade)

(continued on next page)

10. Hand tighten the strain relief **(11)** onto the power cord. Tighten the strain relief an additional ¼ turn with the line cord wrench (P/N 88F3334).
11. Tighten the strain relief clamp nut **(10)** with the line cord wrench.
12. Install the power cord ground wire to the printer ground in the following order:
    a. Star washer **(9)**
    b. Ground lug **(8)**
    c. Flat washer **(7)**
    d. Lock washer **(6)**
    e. Screw **(5)**

Note: The purpose of the next step is to ensure that the individual wires in the line cord are properly crimped.

13. Use a standard voltmeter to ensure that the following conditions exist:
    - There is continuity between the power plug ground pin and the printer frame where the ground lug **(8)** connects.
    - There is continuity between the phase (and neutral on World Trade printers) pins in the power plug and corresponding screw in the terminal block.
14. Reinstall the plastic cover **(1)** onto the terminal block.
    Note: Ensure that the power cord for the printer is free of twists.

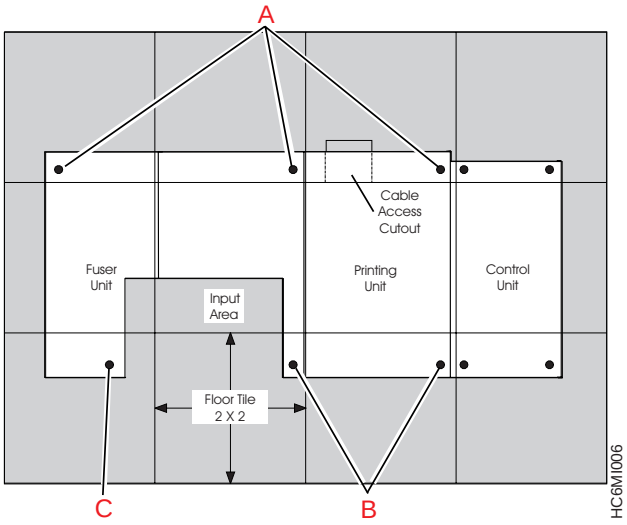


50 Hz Power Cord Connection (World Trade)

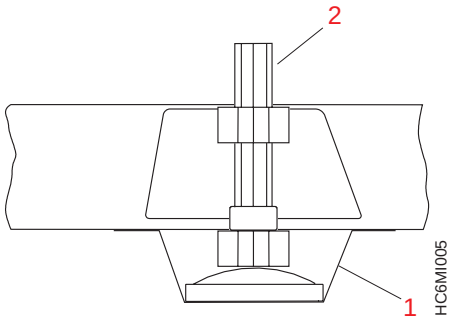
15. Locate the voltage label (P/N 845762) and write the voltage value on the label. Then install this label **(12)** next to the power cord access opening.
16. Install the ozone filter (if the printer has feature 9911) in the opening to the vacuum blower. The filter must cover the vacuum blower ground wire connection screw and should be placed as far as possible to the rear of the printer. See “Air System” in *Removals and Adjustments*.
17. Do not reinstall the blower cover at this time.

Level the Printer

Table 606. Leveling the Printer



Printer position on 2 X 2 floor tiles



Removing the Adhesive Tape

(continued on next page)

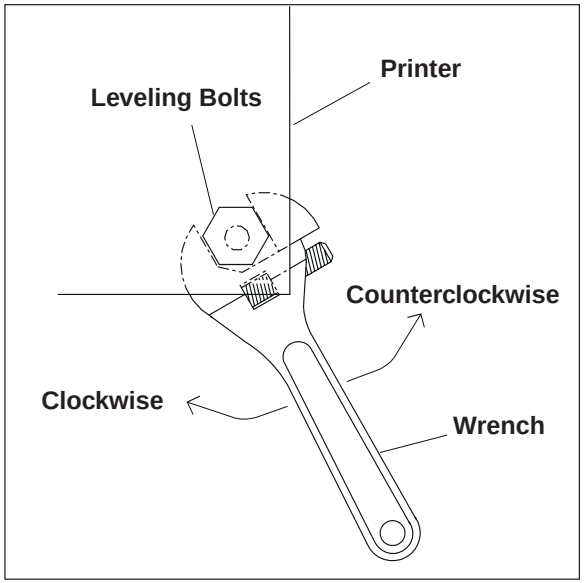
Reminder

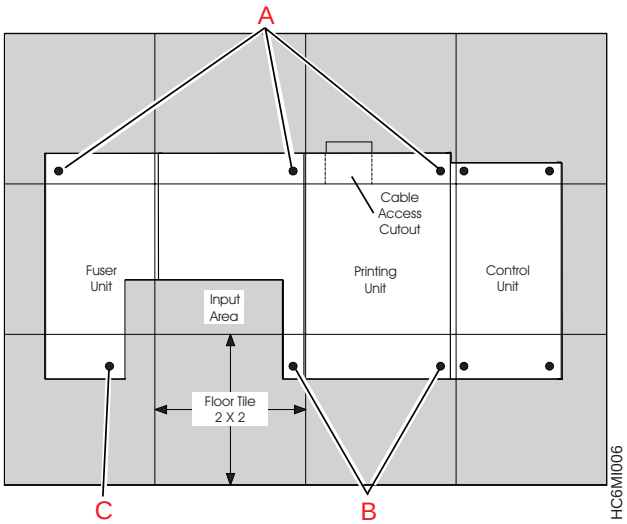
Remember that floor tiles with cutouts in them must be placed under the printer to allow for the power cord, channel cables, and any Pre/Postprocessing equipment connections. Also, be sure to position these cables so they do not interfere with the paper path underneath the machine.

1. Locate the printer on the raised floor tiles so that as many leveling pads as possible are in the *corners* of the tiles. This reduces the deflection or flexing of the tiles. Avoid floor cut outs and ventilation holes in any of the load bearing tiles.

   Use additional raised floor supports under the leveling pads that are not located at the corner of a floor tile.
2. Remove the adhesive tape **(1)** that holds the leveling bolts **(2)** in place.

Table 606. Leveling the Printer (continued)





(continued on next page)

3. Lower the 7 leveling pads until all the leveling pads just touch the floor.

   Use a pencil or permanent marker to mark the front of each leveling pad bolt, so that you know when one revolution is complete.

Hint

Turning clockwise raises the printer.

Turning counterclockwise lowers the printer.

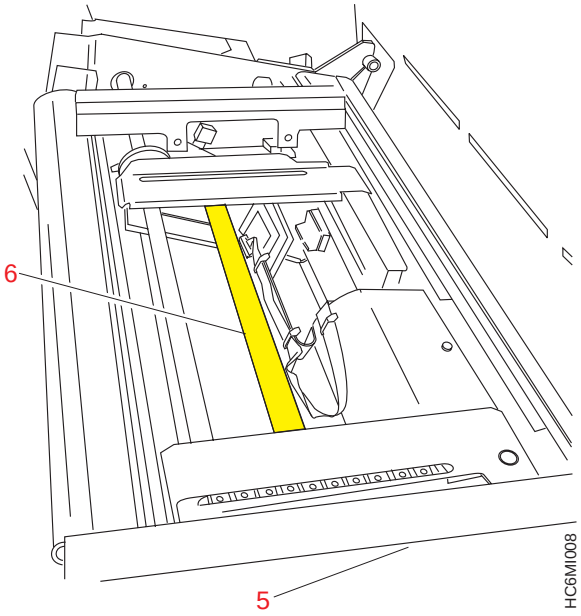
Depending on how level the floor is, each caster may vary 2 to 5 mm (0.08 to 0.20 in.) above the floor.

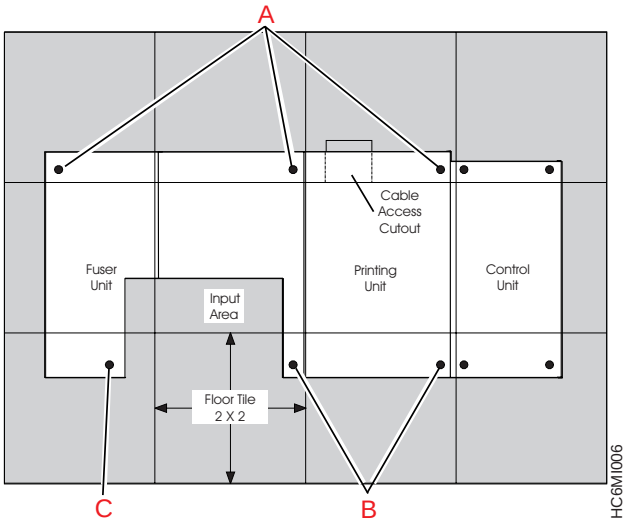
4. Now raise the printer by turning all leveling pads **(A)**, **(B)**, and **(C)** one complete revolution.
5. Ensure that all casters are off the floor.

Note: Avoid raising the printer too high, as it will become difficult to attach the control unit. When you have raised all of the casters off the floor, consider lowering the printer to level it.

6. Use the level (P/N 4832403) to perform the leveling procedure.

Table 606. Leveling the Printer (continued)

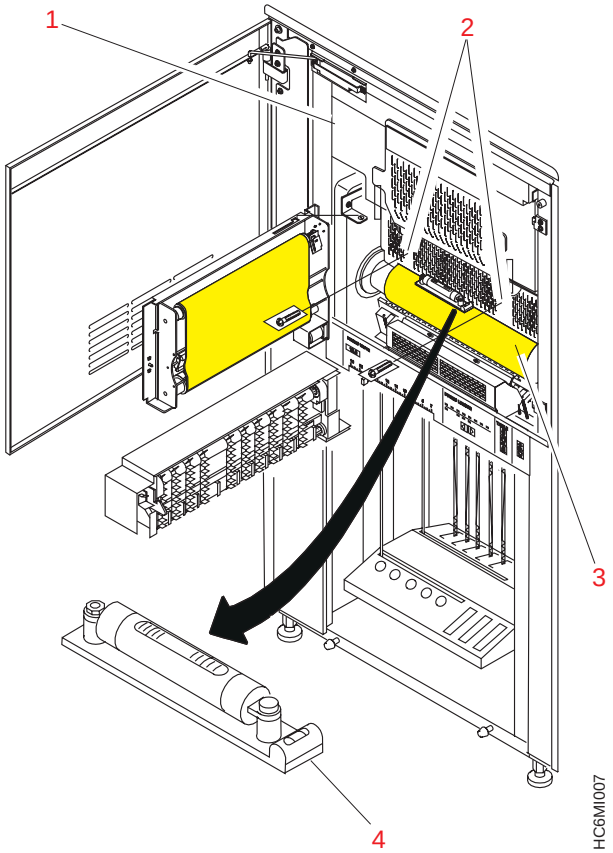




(continued on next page)

7. Ensure that the transfer station **(5)** is closed.
8. Place the level on the tractor guide shaft **(6)**. Ensure that the groove in the level is correctly seated on the tractor guide shaft.
9. Adjust the **(B)** and **(C)** leveling pads equal amounts until the tractor guide is level. That is, adjust all **(B)** and **(C)** leveling pads, one quarter of a turn and then view the level. Do not level the printer by adjusting just one leveling pad at a time.
10. Open the stacker end cover.
11. Open the oiler-belt gate.

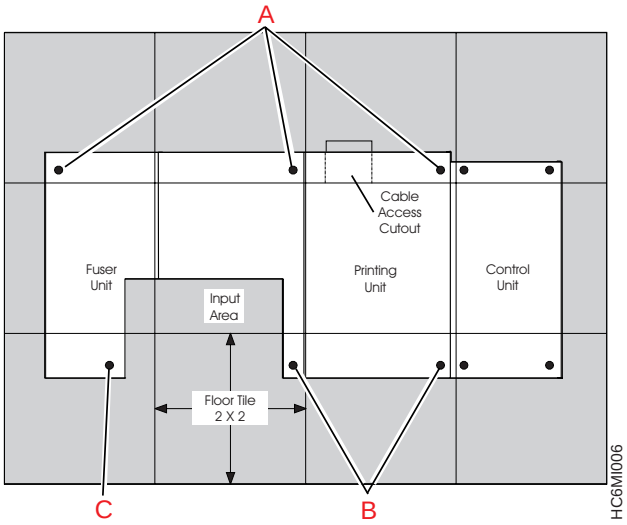
Table 606. Leveling the Printer (continued)



(continued on next page)

12. Remove the 2 screws **(2)** (this requires a stubby screwdriver). Remove the hot roll shield **(1)**.
13. Place a single thickness of paper on top of the hot roll **(3)** to protect it; then place the level on top of the paper. Ensure that the groove in the level is correctly seated on the hot roll.

Table 606. Leveling the Printer (continued)



14. Adjust the **(C)** leveling pad equal amounts until the hot roll is level.
15. Repeat steps 8 through 14 until the tractor guide shaft **(6)**, and the hot roll **(3)** are level.
16. If you cannot level the printer, without the casters touching the floor, begin the leveling procedure again. In step 4, raise all leveling pads 1.5 or 2 revolutions instead of 1 revolution.
17. Wait to install the hot roll shield **(1)**.
18. Rotate all casters outward so that they do not block the paper path under the printer. Ensure that there is nothing else under the printer that would block the paper path.

Check the DIP Switch Settings

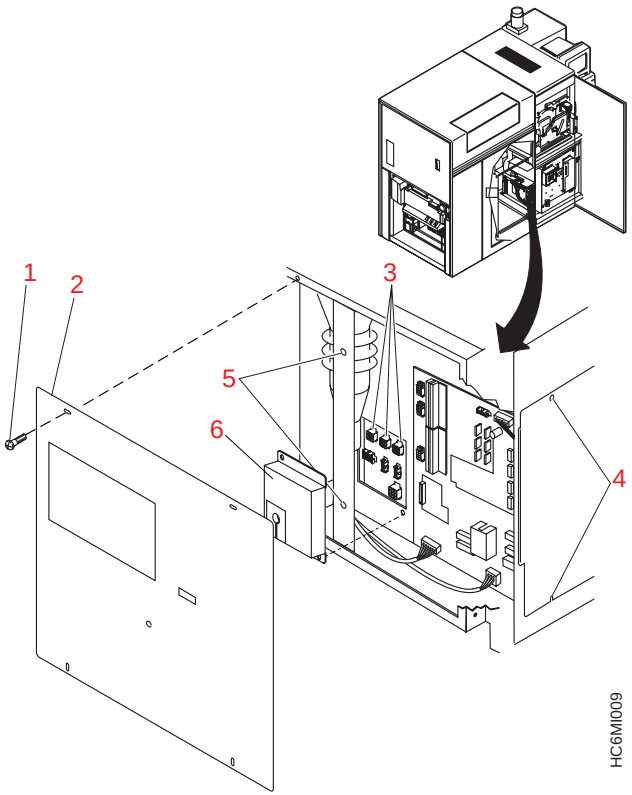
1. Remove the fuser logic cover.
2. Check the switch settings on FU041 Card.

   The DIP switch (S2) settings on the FU041 card should all be on. The rotary switch S1 should be set to 1 (one).
3. Reinstall the fuser logic cover.
4. Check the switch settings on the CPxxx Card: (location reference 1453)
   - Set DIP switch SW7–1 to **Off**. This indicates that a splicing station is installed.
   - Set DIP switch SW7–2 to **Off** when the **EPROM is 0037 (any level) or 0016 level is K/C or higher**. This allows fuser parameters to be controlled using **Define Forms**.
   - Set all other positions for DIP switch SW7 to **On**.
   - Set DIP switch SW8–1 to **On** for 50-Hz printers; set SW8–1 to **Off** for 60-Hz printers.
     – For machines with Enhanced Toner Loading (Connector PJ251 present near IF491 Card): Set SW8–3 to **OFF**.
     – For machines without Enhanced Toner Loading: Set SW8–3 to **ON**.
   - Set all other DIP switch SW8 positions to **On**.
5. Check that SW1 on the MB071 Card is set to position 1.

Check the Voltage Jumpers

To check the voltage on the printer power supply, do the following:

Table 607. Checking the Voltage Jumpers

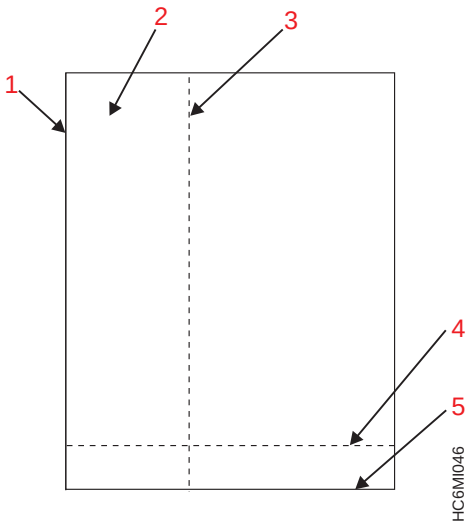


Voltage Jumper Plugs

1. Verify the customer's power settings at the power source before you continue.
2. Remove the 4 screws to remove the developer cover.
3. Remove the 4 screws **(1)** (only one is shown) to remove the right side cover of the input bin **(2)**.
4. Remove the 4 screws **(4)** (only two are shown) to remove the power supply cover.
5. Remove the 4 screws **(5)** (only two are shown) to remove the DV101 card cover.
6. Remove the 2 screws to remove the inner cover **(6)**.
7. Ensure that all the correct voltage jumper plugs **(3)** are installed. The voltage values are written on the plugs.
   Note: If the customer's voltages change, install different voltage jumper plugs, which are in the installation kit.
8. If necessary, change the voltage jumper plugs. See the installation kit.
9. Reinstall the inner cover **(6)**.
10. Reinstall the DV101 Card Cover.
11. Reinstall the Power Supply Cover.
12. Reinstall the input bin right side cover.
13. Reinstall the developer cover.
14. Do not reinstall the Input Bin on Printer 2 of a duplex system.
15. On a Simplex Printer or Printer 1 of a duplex system, reinstall Input Bin only if you are not installing a Preprocessor device.

Install the Foam Light Shield in the Simplex Printer or the Duplex System Printer 2

Table 608. Installing the Foam Light Shield (Simplex Printer or Duplex Printer 2)

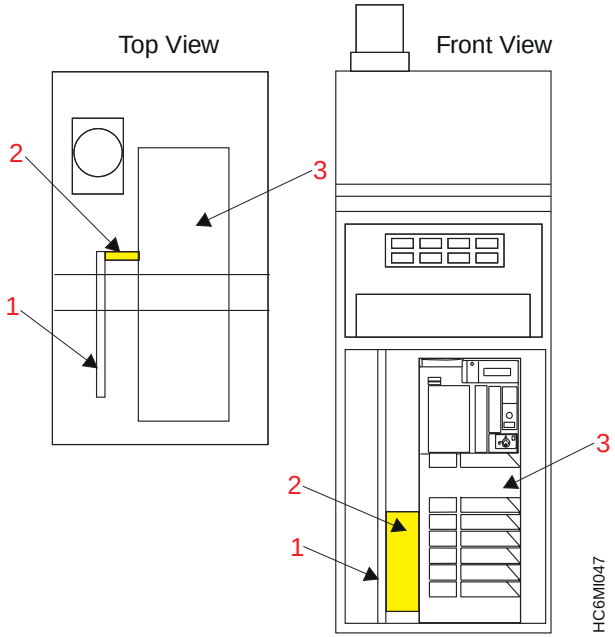


Foam Light Shield

(continued on next page)

1. Open the control unit front cover.
2. Open both control unit side covers.
3. Locate the new foam light shield (IBM P/N 24L3330).
4. Separate the foam shield at both precut perforation lines **(3)** and **(4)**. Keep section **(2)** only and discard the other pieces. This will leave adhesive only on edge **(1)** of the foam piece.
5. Remove the paper from the adhesive side **(1)** of the foam.

Table 608. Installing the Foam Light Shield (Simplex Printer or Duplex Printer 2) (continued)



Foam Light Shield Installation

6. Working from the right side of the control unit, attach the adhesive side of the foam piece **(2)** to the rear edge of the vertical bulkhead **(1)**, leaving approximately 1.0 inch of clearance between the bottom of the foam piece and the floor of the control unit as shown in both the front and the top view. This will allow the controller base to slide under the foam piece.

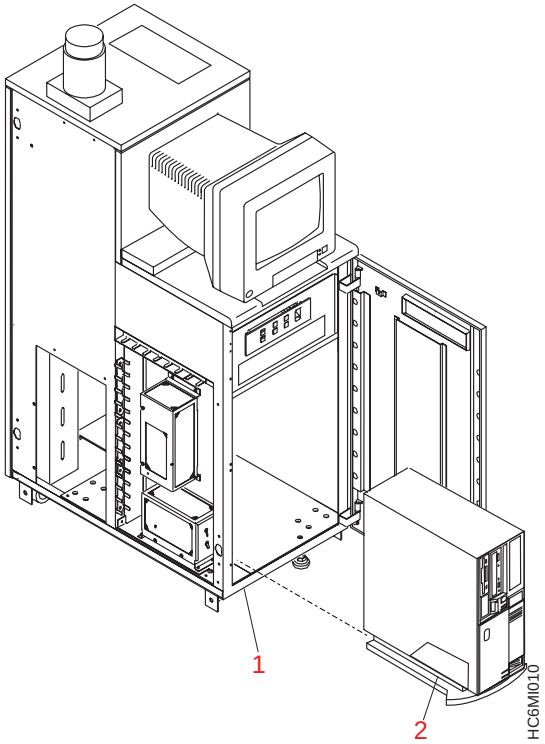
Install the Controller in the Control Unit

Two different RS/6000 controller types can be installed in the control unit: 7025 and 7043. If the controller is a **RS/6000 7043**, go to RS/6000 Controller Type 7043 Installation. If the controller is a **RS/6000 7025**, go to Controller Type 7025 Model F50 Installation.

If the controller is already installed, do the following:

- Check the controller cables for proper connection.
- Ensure that the **Mode** switch is set to Normal.
- Ensure that the voltage switch is set to 230 V.
- Ensure that the **Power** switch is set to On.
- Go to Install the Mouse.

Table 609. Installing the Controller in the Control Unit



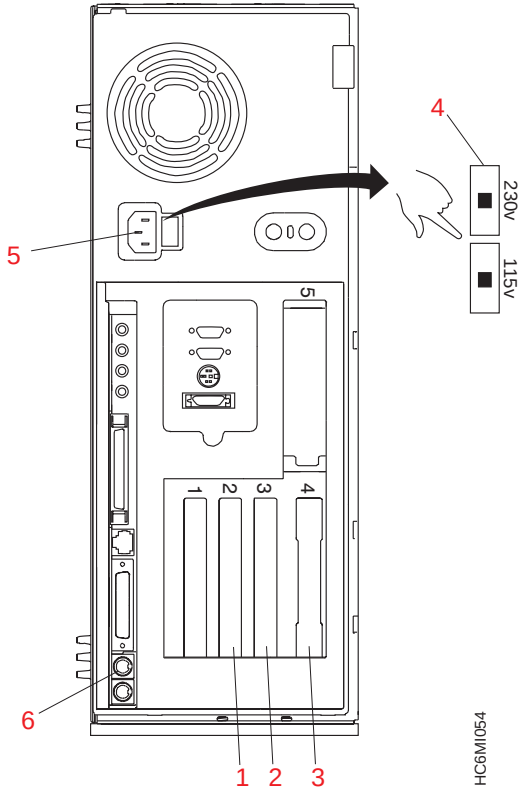
Controller RS/6000 7043

(continued on next page)

RS/6000 Controller Type 7043 Installation

1. Install the base on the 7043 controller.
2. Open the control unit front cover.
3. Open both control unit side covers.
4. Lower the leveling pad at the front of the control unit so that it does not stick out from the floor of the control unit.
5. Lift the rear of the controller **(2)** and place it in the control unit **(1)**.
6. Close the control unit front cover.
7. With the front door closed, go to the right side of the control unit and push the controller toward the front of the control unit so that there is room for cabling at the rear of the controller.

Table 609. Installing the Controller in the Control Unit (continued)



Controller RS/6000 7043 Connectors

(continued on next page)

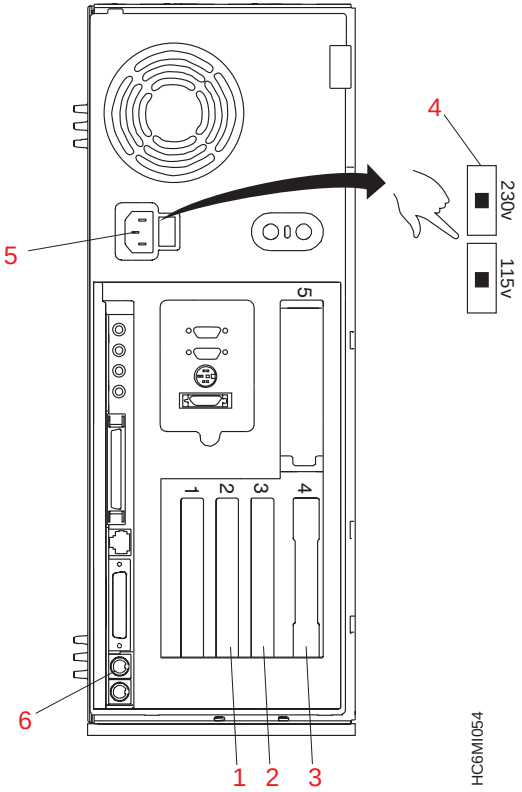
Note: It is easier to do the following cable connection steps if you move the back end of the controller slightly toward the outside of the control unit frame.

8. If a parallel channel adapter card, is installed in adapter card slot 2 **(1)** or slot 4 **(3)**, plug the **Y** cable from the channel tailgate into the connector on the adapter card. If two parallel channels are installed, the **Y** cable should be attached to the upper tailgate assembly. This will be configured as channel **A** if two parallel channels are installed in the controller.

Note: The Select/Bypass switch on the single end of the **Y** cable must be in the **Select (S)** position, not in the **Bypass (B)** position. The Select/Bypass switch is located at the controller end of the **Y** cable. If this switch is in the Bypass position, the host is never able to select the printer to print a job. The host receives I/O condition code 3, CC=3, for Select In returned.

9. If a parallel channel adapter card is installed in adapter card slot 4 **(3)**, plug the **Y** cable from the channel tailgate into the adapter card connector. If two parallel channels are installed, the **Y** cable is attached to the lower tailgate assembly. This is configured as channel **B** if two parallel channels are in the controller.

Table 609. Installing the Controller in the Control Unit (continued)



Controller RS/6000 7043 Connectors

(continued on next page)

10. Plug the SSA-to-MIC cables (P/N 32H1465) into connectors B1 and B2 on the adapter card in adapter card slot 3 **(2)**. (There are multiple pairs of connectors on this card. Use only the pair at the bottom of the card.)

> **Important Note**
> Do not coil the SSA cable or place it close to any ac power source. This can cause SSA errors.

11. The MIC ends of these cables are installed on MIC card connectors PJMJ21 and PJMJ22.

    It does not matter which of the B1/B2 cables are connected to PJMJ21 and PJMJ22.

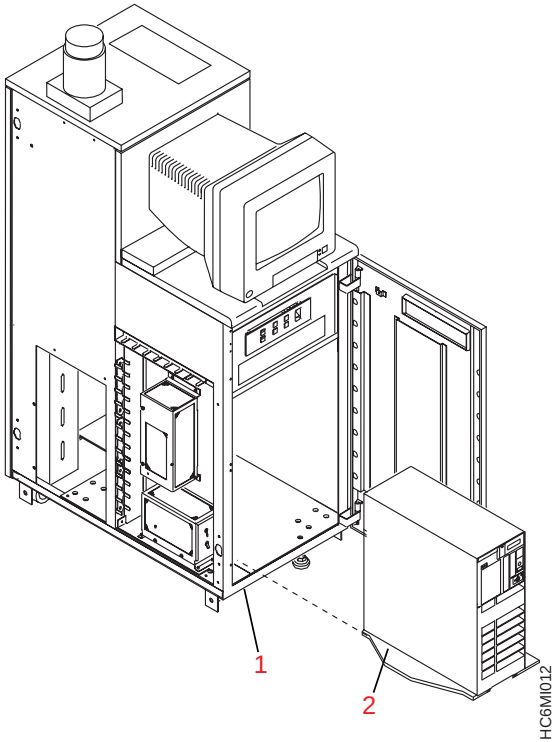
12. Connect the power cable. One end attaches to JA06 on the ac control box, and the other end connects to **(5)** on the back of the controller.

Attention: Ensure that the Voltage switch **(4)**, at the right side of the power connector is set to the 230 V. (The switch is set to 230 V when it is pushed downward and you can see **230** on the switch.) Also ensure that the voltage switch cover is in place. Powering on the controller from a 230 V power source with the voltage switch set to 115 V will cause permanent damage to the controller power supply.

13. Connect the mouse to the controller at connector that is labeled “Mouse”. The mouse is inside the control unit.

Note: The mouse is *not* used to operate the controller or the Display/Touch Screen monitor. However, you must install it for the control unit to operate correctly.

14. Go to Install the Display/Touch Screen on the Control Unit.



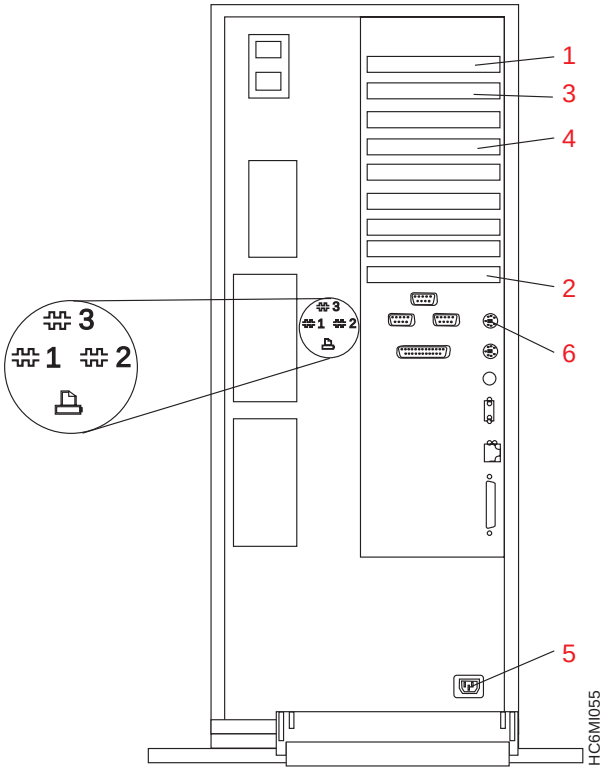
Controller 7025-F50 Installation

(continued on next page)

RS/6000 Controller Type 7025 Model F50 Installation

Note: When you move the 7025-F50, lift up on the front handle. You then can roll it forward or backward on the rollers that are built into the rear of the system base.

1. Open the control unit front cover.
2. Open both control unit side covers.
3. Lower the leveling pad at the front of the control unit so that it does not stick out from the floor of the control unit.
4. Roll the controller to the front of the control unit frame. The rear of the controller should be facing the front of the control unit frame.
5. Lift the rear of the controller **(2)** and place it on the front edge of the control unit floor **(1)**
6. Push on the front of the controller and slide it into the control unit.
7. Close the control unit front cover.



Controller 7025-F50 Connectors

8. Plug the 2 SSA to MIC cables (P/N 32H1465) into connector B1 and B2 on the adapter card in Slot 1 **(2)**.
9. Plug the MIC ends of these cables into MIC card connector PJM21 and PJM22 that is located in the top of the printer 2 control unit.

   It does not matter which of the B1/B2 cables is connected to PJM21 and PJM22.

   If this is a simplex printer, go to step 11.
10. Plug the SSA to Printer 1 cables (P/N 32H1466) into connectors A1 and A2 on the adapter card in Slot 1 **(2)**.
11. Plug the host attachment cables into the connectors on the adapter card in Slot 6 **(4)** or slot 8 **(3)**

Important Note

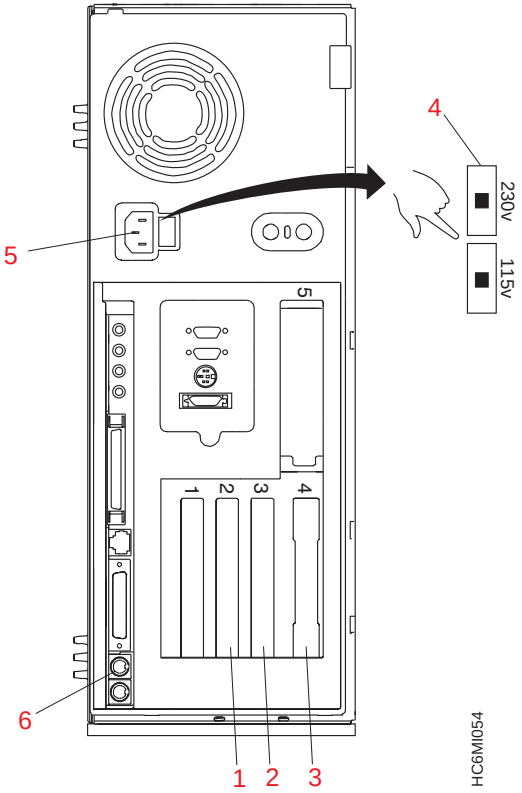
Do not coil the SSA cable or place it close to any ac power source. This can cause SSA errors.

Ensure that the hex spacers and cable retention screws are tightly secured. There must be a good connection at both the controller and the MIC end of the SSA cable.

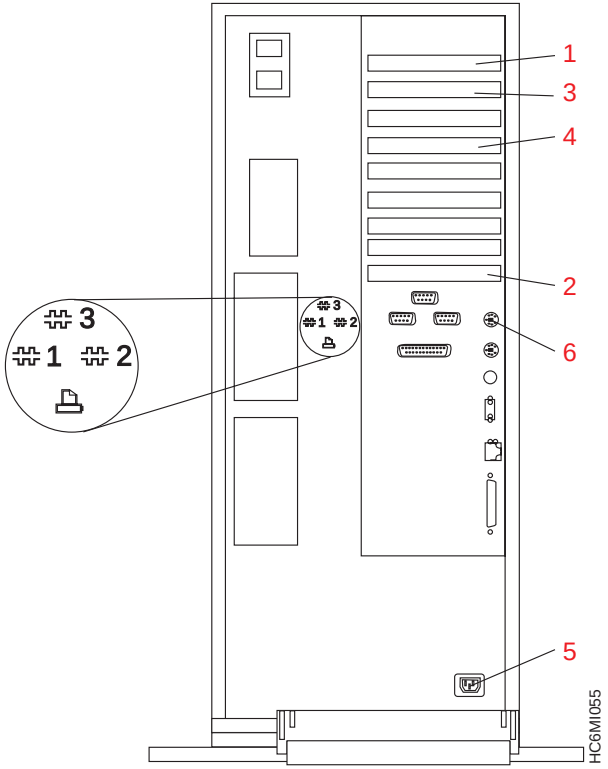
12. Connect the power cable. Attach one end to JA06 on the ac control box and connect the other end **(1)** to the back of the controller **(5)**.
13. Ensure that the RS/6000 **Power** switch is in the **On** position.

Install the Mouse

Table 610. Installing the Mouse



Controller RS/6000 7043 Connectors



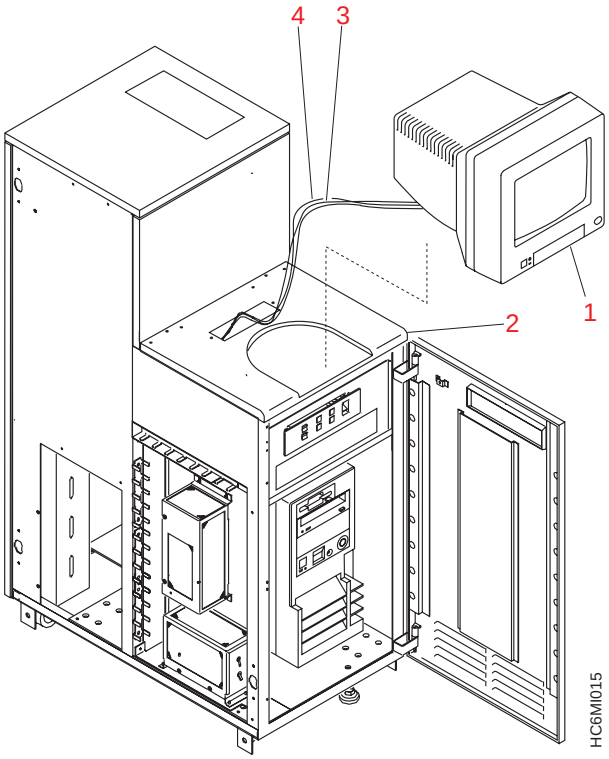
Controller 7025-F50 Connectors

1. Connect the mouse to the controller at connector that is labeled “Mouse” **(6)**. The mouse is inside the control unit.

Note: The mouse is not used to operate the controller or the Display/Touch Screen monitor. However, you must install it for the control unit to operate correctly.

Install the Display/Touch Screen on the Control Unit

Table 611. Installing the Display/Touch Screen

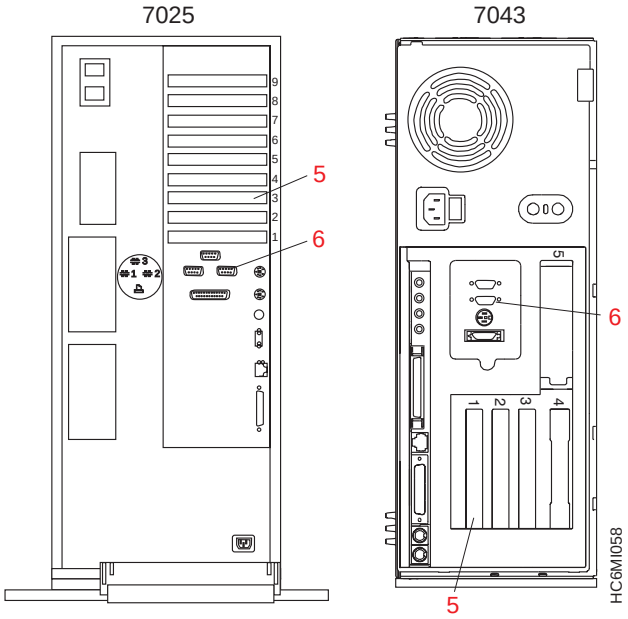


Display/Touch Screen and Shelf

(continued on next page)

1. If the display base is not already installed, attach it to the bottom of the display with the screw already in the bottom of the monitor.
2. Discard the power cord that comes with the Display/Touch Screen monitor if one is supplied.
3. Discard the 9- to 25-pin connector that comes with the Display/Touch Screen monitor.
4. Set the Display/Touch Screen monitor **(1)** onto the control unit shelf **(2)**.
5. Thread the signal cables **(3)** and **(4)** through the cable access hole in the top of the Display/Touch Screen shelf and down to the rear of the controller.
6. Locate the power cord that is attached to JA05 of the ac control box. Thread the loose end of the power cord up through the cable access hole as in step 5 and attach it to the back of the monitor.

Table 611. Installing the Display/Touch Screen (continued)



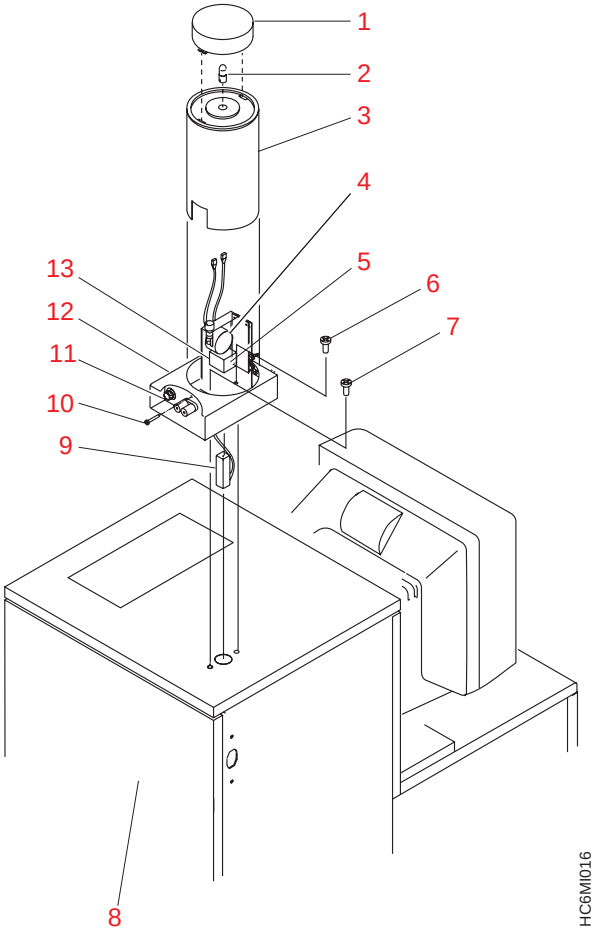
Display/Touch Screen Controller Connections

7. Plug the following cables into the back of the controller:
   - 15-pin Display/Touch Screen cable into connector slot 3 **(5)**
   - 9-pin cable into Serial Port 2 **(6)**.

   Note: The 9-pin connector must be connected to Serial Port 2 (not Serial Port 1) or the Display/Touch Screen monitor will not work.

Install the Operator Alert Assembly on the Control Unit

Table 612. Installing the Operator Alert Assembly



Operator Alert Assembly

(continued on next page)

1. Open the open the rear cover of the control unit **(8)**.
2. Start the screws (P/N 53F1663) **(6)** and **(7)** into the control unit approximately 3 turns.
3. Thread the operator alert cable **(9)** through the large hole in the top cover.
4. To install the operator alert base **(12)**, do the following:
   Note: Examine the underside of the base. It has keyhole slots for the mounting screws. Be sure to position this assembly so that the controls are facing the *back* of the printer.
   a. Place the keyhole slot in the base **(12)** over the front **(6)** and rear **(7)** screws. Slide the base **(12)** to the front of the printer.

      Carefully raise the sleeve **(3)** to gain access to screws **(6)** and **(7)**.
   b. Tighten the mounting screws **(6)** and **(7)**.
   Note: Be careful not to cut any wires when you lower the sleeve onto the base.
   c. Install the sleeve **(3)** with the slot to the rear.
   d. Install the screw **(10)**. If necessary to start the screw, rotate the sleeve slightly.
   e. Connect the ALP2 **(9)** connector to the ALJ2 connector that is located under the top cover of the control unit.
5. Close the rear cover of the control unit **(8)**.
6. If the customer prefers, attention alerts can be relayed to a remote operator's terminal or other device, see External Contacts .

Table 612. Installing the Operator Alert Assembly (continued)

External Contacts

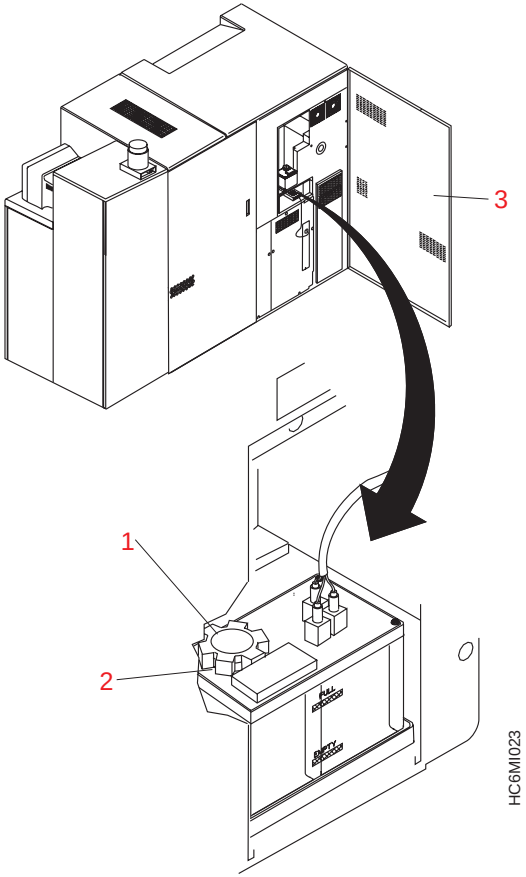
The operator alert assembly comes with a set of external contacts to allow an alert signal of the customer's choice to be attached. The posts accept standard dual or single banana plugs and leads terminated with spade lugs or stripped and bare.

The recommended voltage for the post is 12 V dc at a maximum current of 5 ampere. The contacts have a 5-A fuse.
There is no voltage present at the binding post. The customer is responsible for supplying power to run any external device.

The two contacts of the binding post are shorted together with the closing of a relay contact. The relay is turned on only when the lamp or alarm is operating during an error condition. The relay is reset or turned off in the same manner the operator alert lamp is reset.

Change the Fuser Oil Filter Screen

Table 613. Changing the Fuser Oil Filter Screen

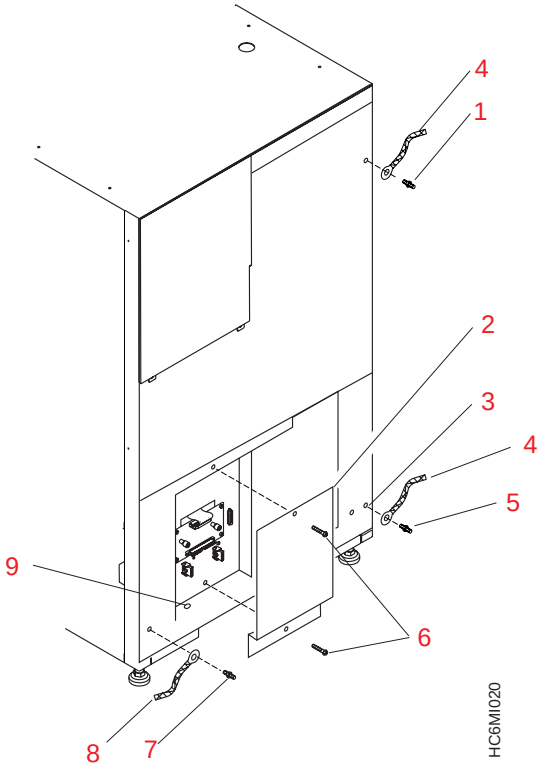


Fuser Oil Filter Screen

1. Open the printer right rear cover **(3)**.
2. Remove the fuser oil filler cap **(1)**.
3. Remove the white fuser oil filter screen **(2)** with a screwdriver.
4. Replace the fuser oil filter screen with the screen (P/N 57G4379) that is located in the installation kit.

Attach the Control Unit Cables to the Printer

Table 614. Attaching the Control Unit Cables to the Printer



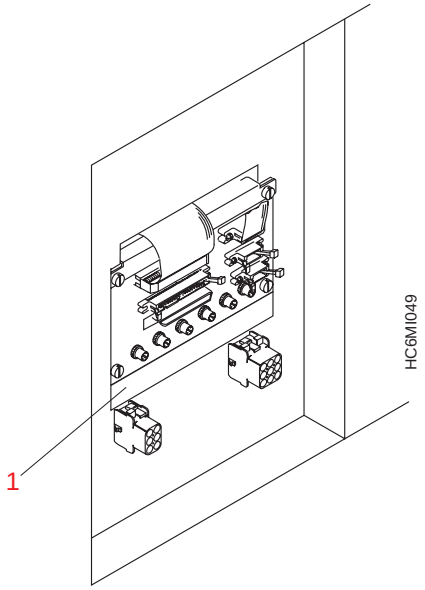
Cable Access Cover Removal

(continued on next page)

To attach the control unit cables to the printer, do the following:

1. Remove the 2 screws **(6)** on the printer to remove the cable access cover **(2)**.
2. Reinstall the 2 screws **(6)**.
3. Store the cable access cover in the control unit.

Table 614. Attaching the Control Unit Cables to the Printer (continued)

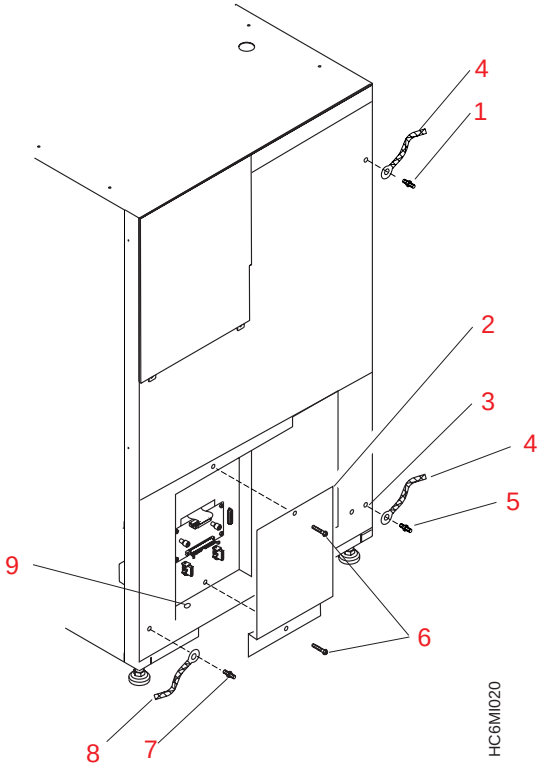


Connector Label

4. Install the connector label (P/N 24L3323) **(1)**.
5. Move the control unit so that it is close to the right side of the printer frame.

(continued on next page)

Table 614. Attaching the Control Unit Cables to the Printer (continued)



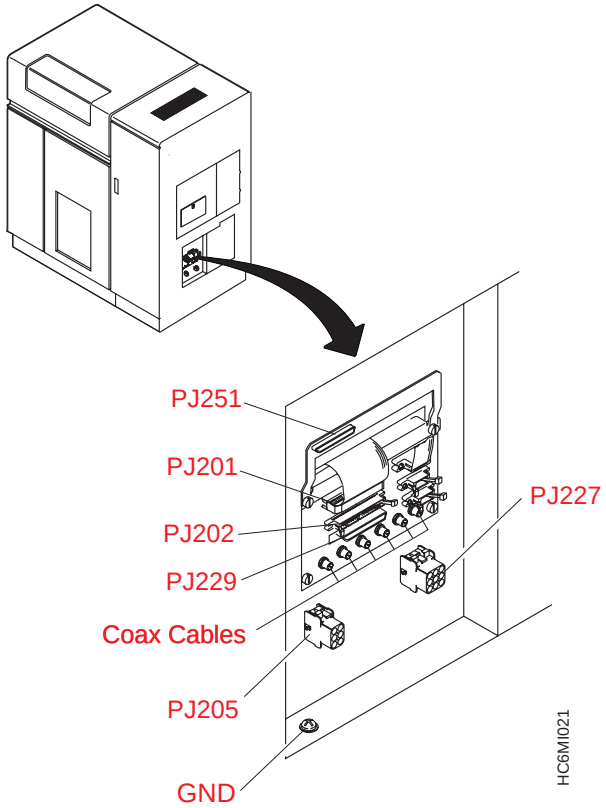
(continued on next page)

6. Install the upper ground strap **(4)** and double-threaded shoulder stud **(1)** (P/N 30H3032).

Note: The shorter end of the shoulder stud goes into the printer.

7. Locate the ground straps **(8)** and **(4)** that are attached to the bottom of the control unit. Attach the free ends to the printer with star washers and double-threaded studs (P/N 30H3032) **(7)** and **(5)** respectively.

Table 614. Attaching the Control Unit Cables to the Printer (continued)



Location of the Control Unit Interface Connections

8. Install the cables from the control unit to the printer. Connect the cables in the following order:
   a. Six coax cables (J203, J204, J233, J234, J235, J267).
   b. One 50-pin flat ribbon cable (J202)
   c. One 9-pin Mate-N-Lock connector (PJ205)
   d. One 6-pin Mate-N-Lock connector (PJ227)
   e. One 36-pin connector (PJ229)
   f. One ground wire (GND)
   g. One 14-pin connector (PJ251)

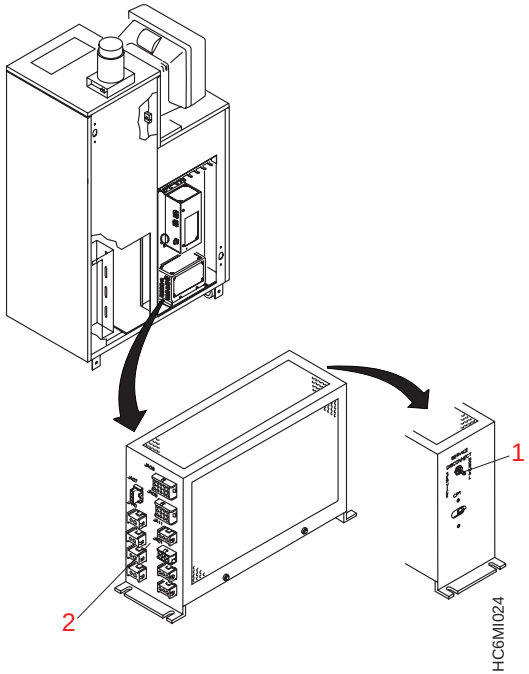
Notes:

1. A stacker disable plug is not required if you are installing a postprocessing device. The configuration will cause the stacker to drive down when required.
2. You will level and attach the control unit to the printer in a later step.

Power On the Printer In Diagnostic Mode

To check the ac power phases, use the following procedure:

Table 615. Powering on the Printer in Diagnostic Mode

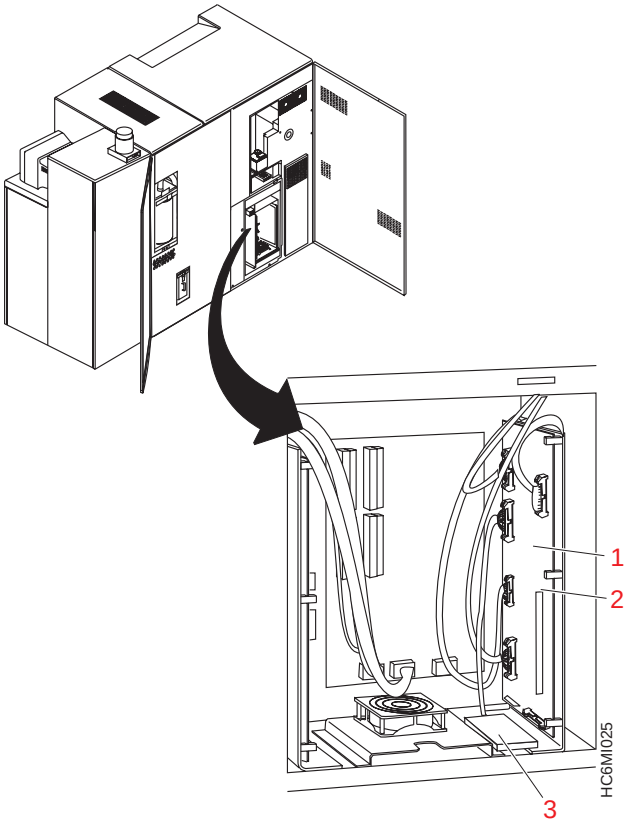


Voltage Selection Jumper – Control Unit

(continued on next page)

1. Ensure that the service disconnect switch **(1)** on the ac control box in the control unit is in the **Printer** (Normal) position.
2. Ensure that the voltage selection jumper (P/N 45G1952) on the ac control box **(2)** is plugged correctly as follows:
   - Plug JA02 for input line voltage = 240 V ac
   - Plug JA03 for input line voltage = 220/230 V ac
   - Plug JA04 for input line voltage = 200/208 V ac
3. Ensure that the customer has turned off the branch circuit CB.
4. Plug the power cord into the receptacle.
5. Have the customer turn on the branch circuit CB.
6. Check at the terminal block for phase to phase voltage.
7. Turn on the main printer breakers, which are located behind the printer right front cover.
8. Set the **Unit Emergency** switch on the control unit power control panel to the **Power Enable** position.
9. Open the printer center rear cover.

Table 615. Powering on the Printer in Diagnostic Mode (continued)

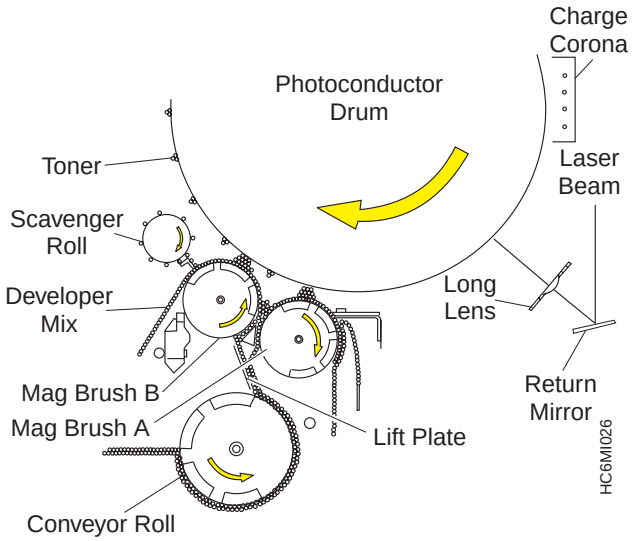


CPxxx Card Location and Digital Switch

(continued on next page)

10. Locate the diagnostic function switch (thumbwheel) **(2)** on the CPxxx Card and change it to **3**. This position is used for diagnostic functions. It allows you to power up the printer in diagnostic mode.
11. Set the **Printer Local/Remote** switch to “Local” (see Table 630 or Table 631) and press the appropriate **Printer Power On** switch. Do not power on the control unit.
12. Locate the maintenance panel **(3)** at the rear of the printer. Remove the cover and pull out the maintenance panel.

Table 615. Powering on the Printer in Diagnostic Mode (continued)



Mag Brush Rolls Rotation

(continued on next page)

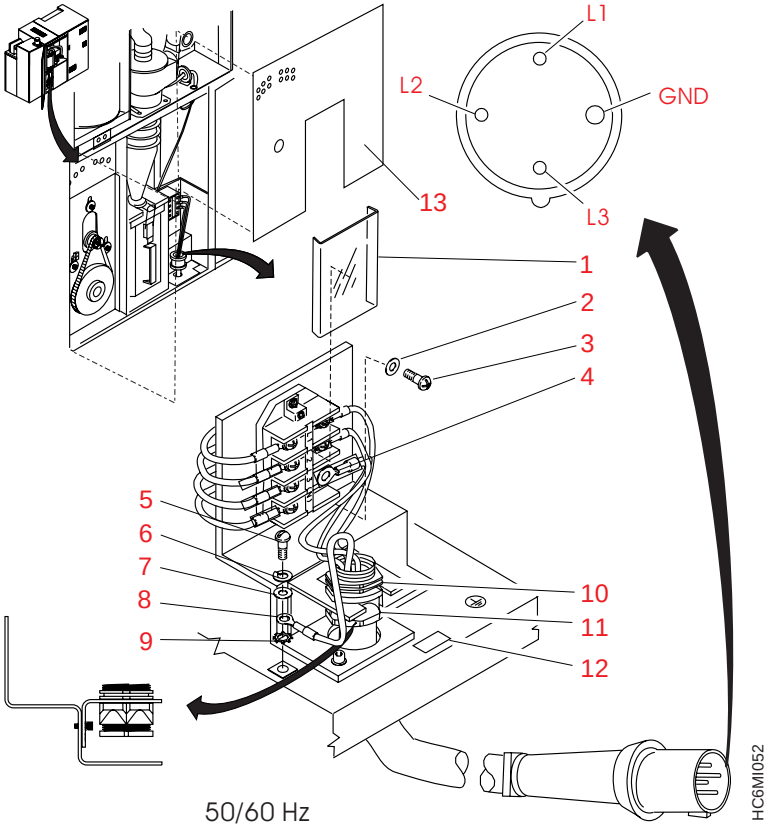
13. Run Driver Routine 09 from the maintenance panel. This test operates the mag brush motor for 5 seconds.
    a. If the mag brush rolls rotate in the directions shown sin the figure, go to step 15.

       — OR —

    b. If the mag brush rolls do not rotate as shown in the figure, press the appropriate **Printer Power Off if in Local** switch on the power control panel. This shows that the customer's ac phasing is not correct.

    Note: If the printer phases are incorrect, have the customer correct the power connection to the printer.
14. Repeat step 11 through step 13 to verify the power phases and that the mag brush rolls rotate in the correct direction.
15. Press the appropriate **Printer Power Off if in Local** switch on the power control panel.
16. Install the phase rotation label that shows RECEPTACLE (P/N 6226855) on the customer's power receptacle.

Table 615. Powering on the Printer in Diagnostic Mode (continued)



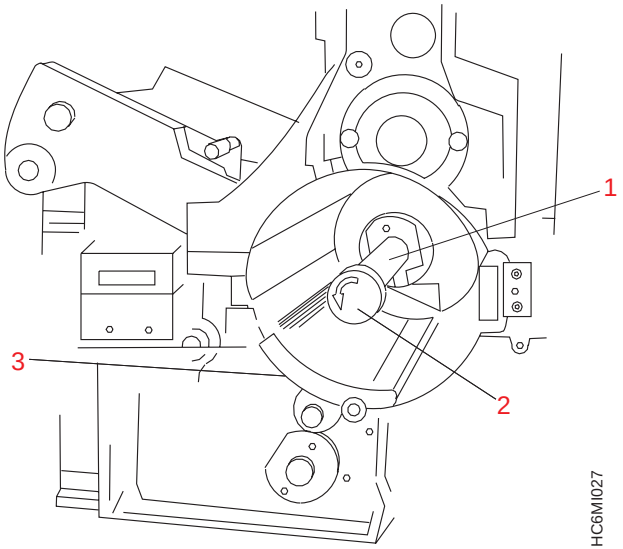
50-60 Hz Power Cord Connection

17. Reinstall the blower cover **(13)**.

Check the Drum Gaps and Install the PC Drum

Note: You removed the drum cover in step 16.

Table 616. Checking the Drum Gaps and Installing the PC Drum



PC Drum Installation

(continued on next page)

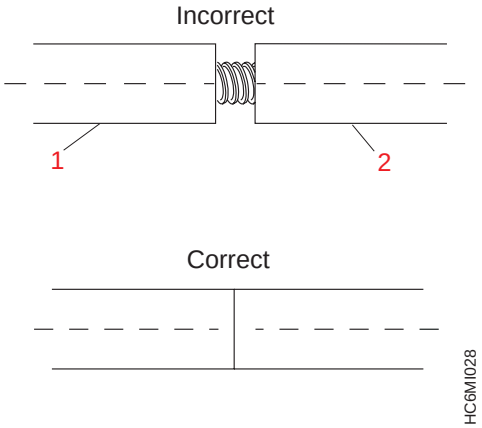
1. Remove the developer front seal **(3)** if it is installed.
2. Remove the drum knob **(1)** from the end of the drum shaft **(2)**.
3. Use a lint-free cloth to clean the drum shaft inside the printer.

Attention: Ensure that you check the gaps from the developer to the PC drum tool before you install the drum. The drum is very expensive to replace.

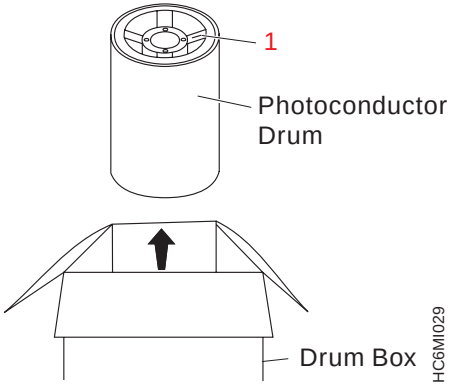
4. Perform the PC Drum & Developer Clearances/Gaps checks and adjust procedures.
5. Run driver routine 11 from the maintenance panel to load the retractor.
6. Use a lint-free cloth to clean the threads and the shaft on the PC drum shaft extension.

Attention: Dirt particles may damage the threads and make removal of the PC drum shaft extension difficult.

Table 616. Checking the Drum Gaps and Installing the PC Drum (continued)



Photoconductor Drum Shaft Extension



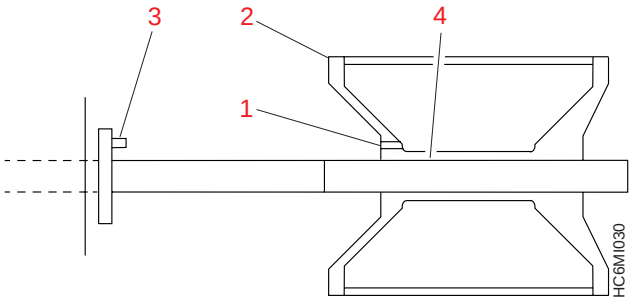
PC Drum Pin Location Hole

7. Hand-tighten the PC drum shaft extension **(2)** to the PC drum shaft **(3)**.

Attention: Do not touch the photoconductor drum surface; handle the drum from the inside only and wear plastic gloves. The PC drum is easily scratched and is sensitive to all contaminants, including saliva and fingerprints. Do not expose the photoconductor drum to light for more than 5 minutes.

8. Remove the photoconductor drum from the storage box and save the box for use when you are servicing, relocating, or discontinuing the printer.
9. Use a pencil or a permanent marker to mark the spoke on the drum **(1)** where the pin is located.

Table 616. Checking the Drum Gaps and Installing the PC Drum (continued)



Photoconductor Drum and Pin Location

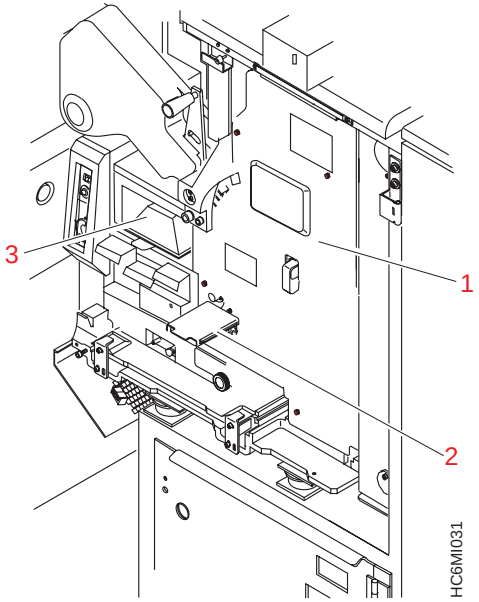
10. Hold the PC drum **(2)** from the inside and insert the PC drum onto the PC drum shaft extension **(4)**.
11. Align the PC drum hole **(1)** in the PC drum **(2)** with the pin **(3)**.
12. Slide the PC drum **(2)** toward the rear of the printer frame until the PC drum hole **(1)**slides over the pin **(3)**.
13. Remove the PC drum shaft extension. Store it in the control unit **(5)**, or where other tools are stored.
14. Reinstall the drum knob.
15. Reinstall the front seal/gauge.
16. Locate label Caution (P/N 24H3337). Install the label on the printhead casting.

Hint

When you install the front seal, use a small screwdriver or pointed object to gently push the foam in and around the 2 magnetic rolls. If the foam seal is not snugly in place, developer mix will spill out during operation.

(continued on next page)

Table 616. Checking the Drum Gaps and Installing the PC Drum (continued)

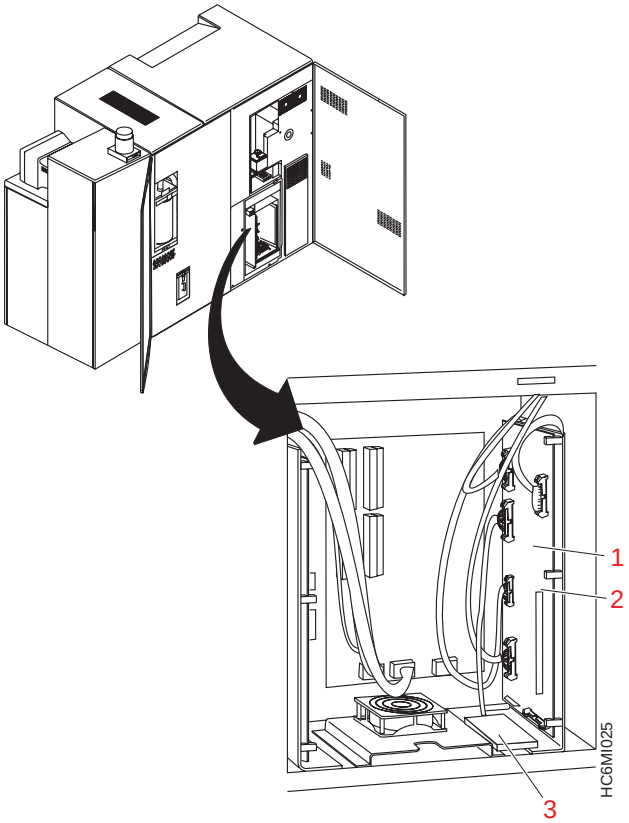


Drum Cover Reinstallation

(continued on next page)

17. Reinstall the PC drum cover **(1)** and install the 4 screws.

Table 616. Checking the Drum Gaps and Installing the PC Drum (continued)

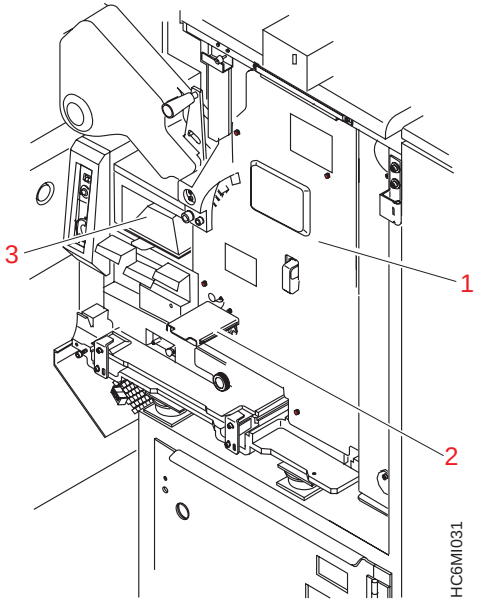


CPxxx Card Location and Digital Switch

(continued on next page)

18. Change the diagnostic function switch (thumbwheel) on the CPxxx Card to **5**.
19. Set the **Printer Local/Remote** switch to Local and press the **Printer Power On if in Local** switch.
20. Set address FE10 to 00. See Write Memory Address (Position 5).
21. Change the diagnostic function switch (thumbwheel) on the CPxxx Card to **0**.
22. Toggle the reset switch on the CPxxx Card.

Table 616. Checking the Drum Gaps and Installing the PC Drum (continued)



23. Install the developer mix **(2)**. See “Change Developer Mix” in the *Operator’s Guide*.

Notes:

1. Use the developer mix that is sent with each machine; it matches the mix counter. If you install new mix, adjust the toner control card.
2. Install toner only when the `ADD TONER` message appears on an Out of Supplies window. See the *Operator’s Guide*.

Check the Toner Control Program

Ensure that the toner control program value is set correctly. See Read From or Write to Toner Control Program Memory (Position 2).

Ensure that the developer mix values are correct, **For Developer Mix P/N 1402829**:

- FF08 = 50
- FF09 = 08

For Developer Mix P/N 1402718:

- FF08 = D0
- FF09 = 10

Check the Printhead Alignment

1. Perform the entire Printhead Check and Adjustment procedure. See STEP 1: Fiber Module Alignment Check.

Installation of Side 1/Side 2 Verification

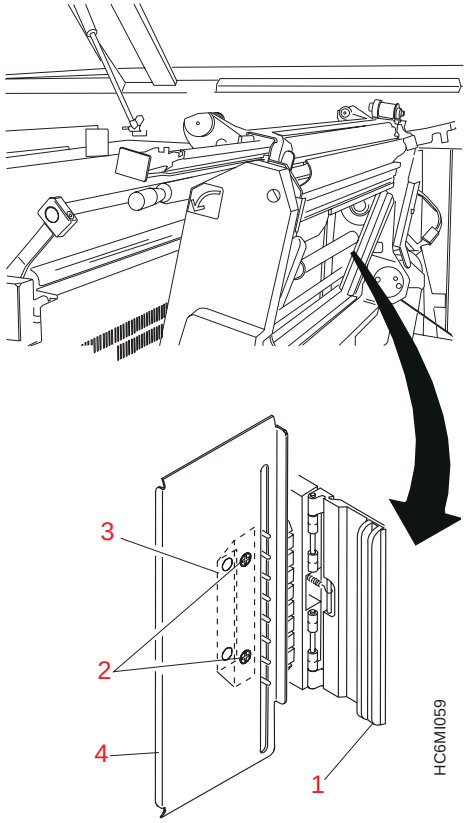
If you are installing Printer 2 of a Duplex Printing System, continue with this procedure. Otherwise, continue at Attach the Control Unit Frame to the Printer.

Table 617. Side 1/Side 2 Verification Bill of Material # 24L3389

Part Number	Quantity	Description
04H0451	6	M3 x 10 Screw
04H0739	1	Registration Template
1621193	2	M4 x 16 Screw (slotted screw)
1622302	4	Washer
11L5278	1	Side 1/Side 2 Verification Control Card
24L3391	1	Tractor Pin Guide Plate
24L3392	1	Motor Cover
24L4858	1	Cable - printer rear to interface
24L4859	1	Cable - Verification Card/Sensor
24L4861	1	Card/Sensor Assembly
30H6941	1	Cable - Verification Control Card To MIC
45G1838	1	Mounting Plate
46F5867	4	Slip-in Cable Clamps (only 2 are used)
53F1665	1	M4 x 8 Screw
5420242	9	Cable ties (only 7 are used)
88F3423	5	Cable Clamp
89H9838	1	Cable - Printer Interface
90H1029	1	Interface Connector Bracket

Installation Procedures

Table 618. Side 1/Side 2 Sensor Card & Cable



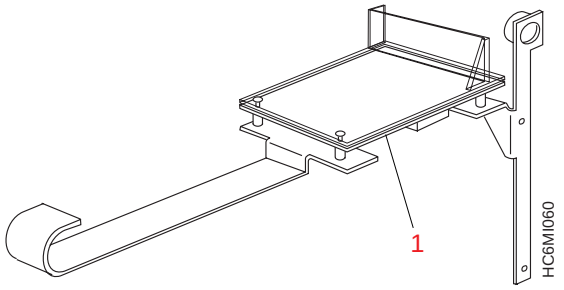
(continued on next page)

Card/Sensor Installation

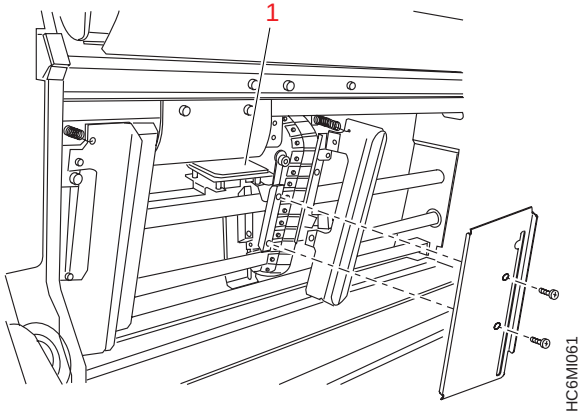
1. Open the Printer 2 top cover.
2. Open the transfer station.
3. Open the lower rear tractor cover **(1)**.
4. To remove the tractor pin guide plate **(4)** and nut plate **(3)**, remove the two screws **(2)**.

Note: The plate will not be reused but retain the two screws.

Table 618. Side 1/Side 2 Sensor Card & Cable (continued)



Card/Sensor Assembly



Card/Sensor Assembly Positioning

(continued on next page)

5. Position the card/sensor assembly **(1)** so that the holes in the bracket are aligned with the holes in the tractor assembly.

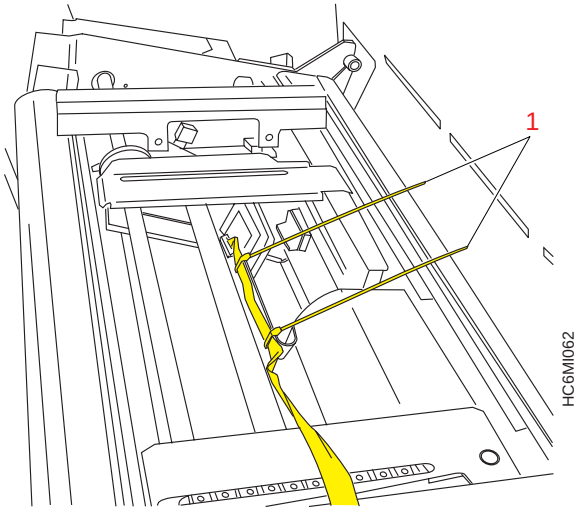
Hint

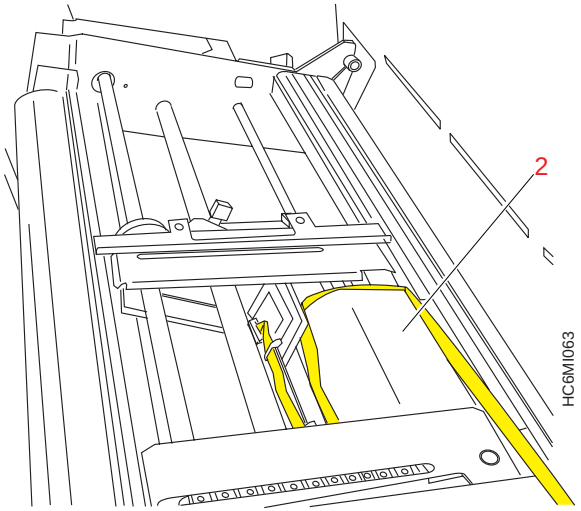
It may be easier to line up the card/sensor assembly with the top screw without installing the new tractor guide plate. Once the assembly hole is lined up, remove the screw and install the plate.

6. Holding the card/sensor assembly in place, and using the two screws removed in step 4, install the new tractor guide plate.

Note: Position the card/sensor assembly so that the tractor pin assembly does not block the sensor. Ensure that the tractor cover does not bind on any tractor pins or the tractor guide plate.

Table 618. Side 1/Side 2 Sensor Card & Cable (continued)



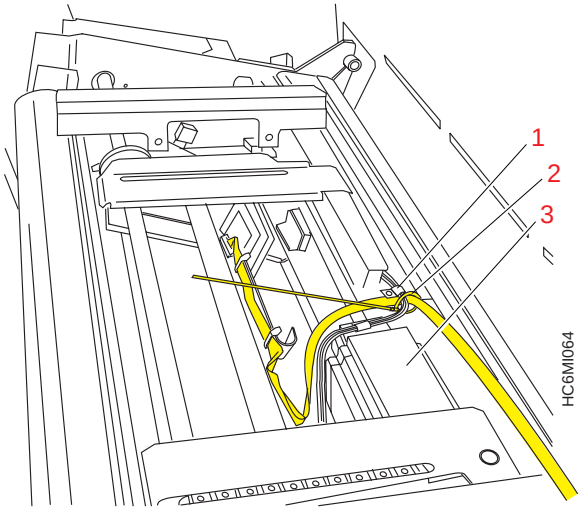


Routing the Verification Card Cable

1. The verification card cable (P/N 24L4859) has a preformed fold. Locate the fold closest to connector P324S2, and connect the cable to the card.
2. Route the cable over the bracket.
3. Secure it in place using two cable ties **(1)**.
4. Remove the excess cable tie material.
5. Slide the tractor assembly all the way toward the front of the printer.
6. Route the cable over the tractor motor cover **(2)**.

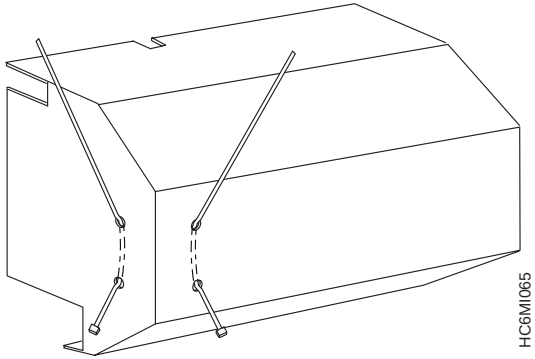
   It is important that the cable have just enough length to allow for the full range of movement of the tractor assembly.
7. Fold or mark the cable to coincide with the right most edge of the transfer motor cover.

Table 618. Side 1/Side 2 Sensor Card & Cable (continued)

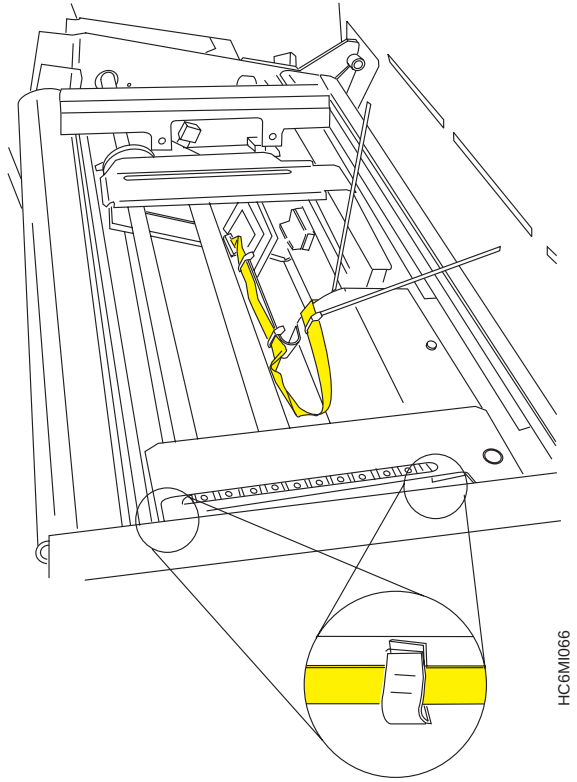


8. Remove the two screws in the tractor motor cover **(3)**.
9. Remove the cable clamp **(1)** securing the tractor motor cable.
10. Route the verification cable under the motor cable.
11. Reinstall the cable clamp **(1)**.
12. Attach a cable tie **(2)** to hold the tractor motor cable and verification cable together. (The cable tie should be loose.)
13. Remove the excess cable tie material.

Table 618. Side 1/Side 2 Sensor Card & Cable (continued)

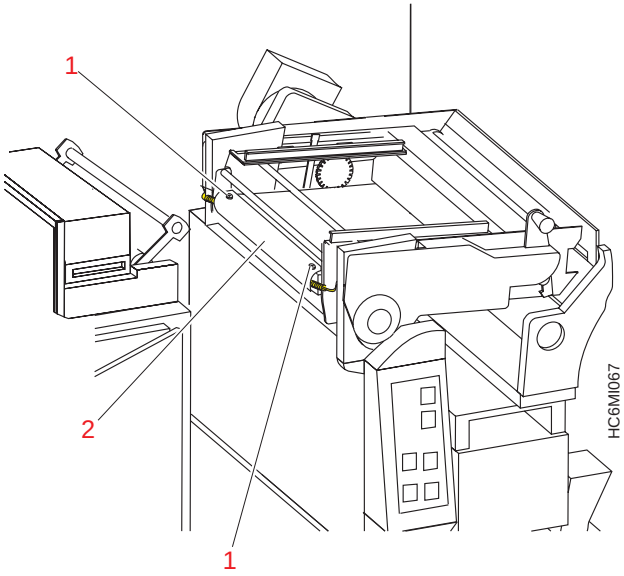


14. Insert a cable tie in each pair of holes in the motor cover.
15. Install the new motor cover, using the screws that were removed in step 8.
16. Secure the cable to the motor cover with the two cable ties you just installed through the motor cover. (Check that there is enough slack in the cable before tightening the ties.)



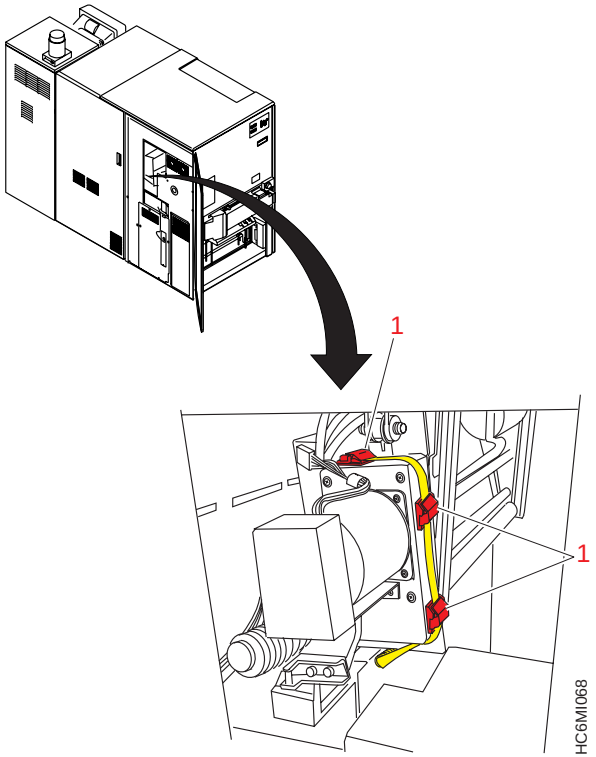
17. Install the two slip-in cable clamps on the transport assembly and slip the cable in place.

Table 618. Side 1/Side 2 Sensor Card & Cable (continued)

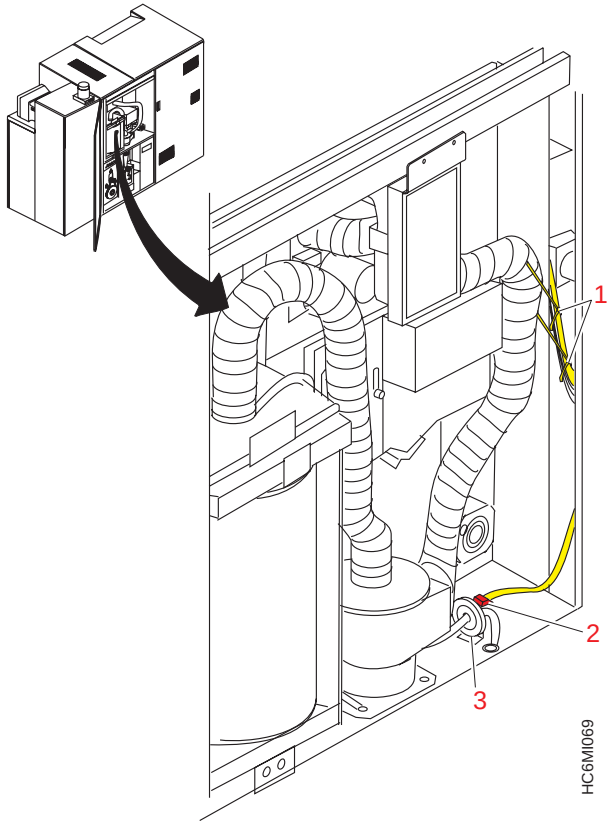


18. Remove the two screws **(1)** in the transfer station guide plate **(2)** and rotate the plate clockwise.
19. Route the cable along the edge of the transport assembly. (Expose equal amount of the corrugated plastic cable cover on either side of the guide plate.)
20. Rotate the guide plate back into place and secure it with the two screws.

Table 618. Side 1/Side 2 Sensor Card & Cable (continued)

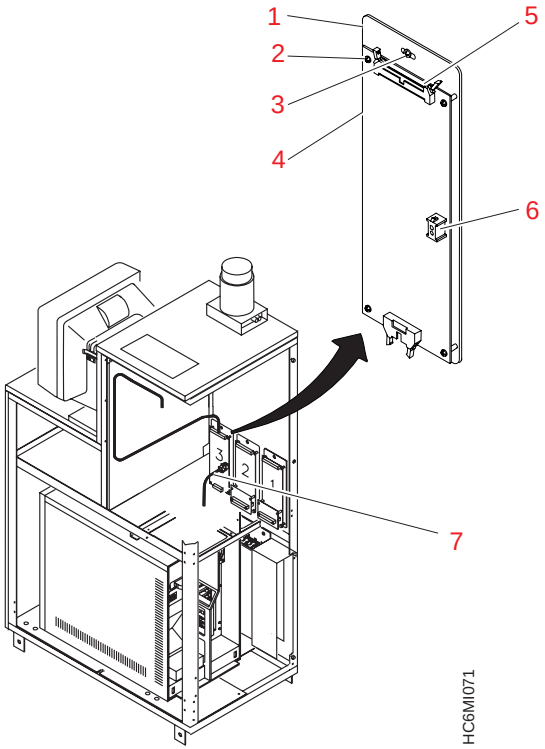


21. Open the printer rear covers.
22. Remove the left service cover.
23. Install three snap cable clamps **(1)** on the rear of the transport assembly, and route the cable as shown.



24. Route the cable downward, toward the filter pressure switch **(3)**, along the wiring harness.
25. Secure the cable to the wiring harness using two cable ties **(1)**.
26. Secure the cable to the printer frame (near the filter pressure switch) with a snap cable clamp **(2)**.

Table 618. Side 1/Side 2 Sensor Card & Cable (continued)



Verification Control Card & Cable

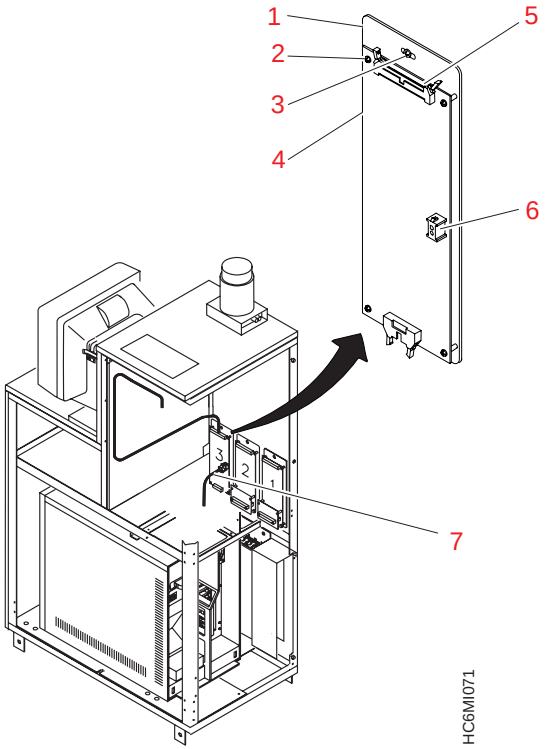
Note: The verification control card is an ESD-sensitive part. Ensure that you follow the procedures for handling static sensitive devices.

1. Remove the control unit rear cover.
2. Remove the control unit side cover.

Notes on the Verification Control Card Position

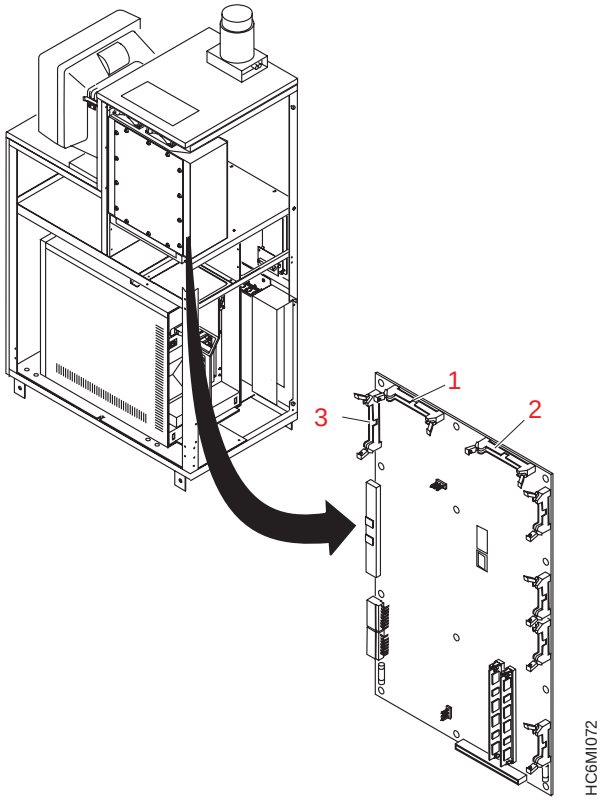
- The verification control card must be in Pre/Post Port 3.
- If another card is installed in Port 3, you must move it to another port.
- If all three ports are occupied, you must move one Pre/Post card to an open port in Printer 1.
- If you must relocate a card, ensure that you note the new location so that you can update the configuration information.

Table 618. Side 1/Side 2 Sensor Card & Cable (continued)



3. If necessary, relocate the card installed in Pre/Post Port 3.
4. Attach the verification control card **(4)** to the card mounting plate **(1)** (P/N 45G1838) with four screws (P/N 04H0451) and four flat washers (P/N 1622302).
5. Attach the card mounting plate to the vertical frame of the control unit in the Pre/Post Port 3 position with one screw **(3)** (P/N 53F1665).
6. Plug connector P3S2 **(7)** into the control card J3 **(6)**. This connector is bundled in the cable raceway next to Pre/Post Port 3.
7. Remove the side access cover of the MIC box.
8. Plug one end of the verification control card/MIC cable (P/N 30H6941) into connector J1 **(2)** on the verification control card.
9. Route the verification control card/MIC cable through the hole in the bottom of the MIC box.

Table 618. Side 1/Side 2 Sensor Card & Cable (continued)



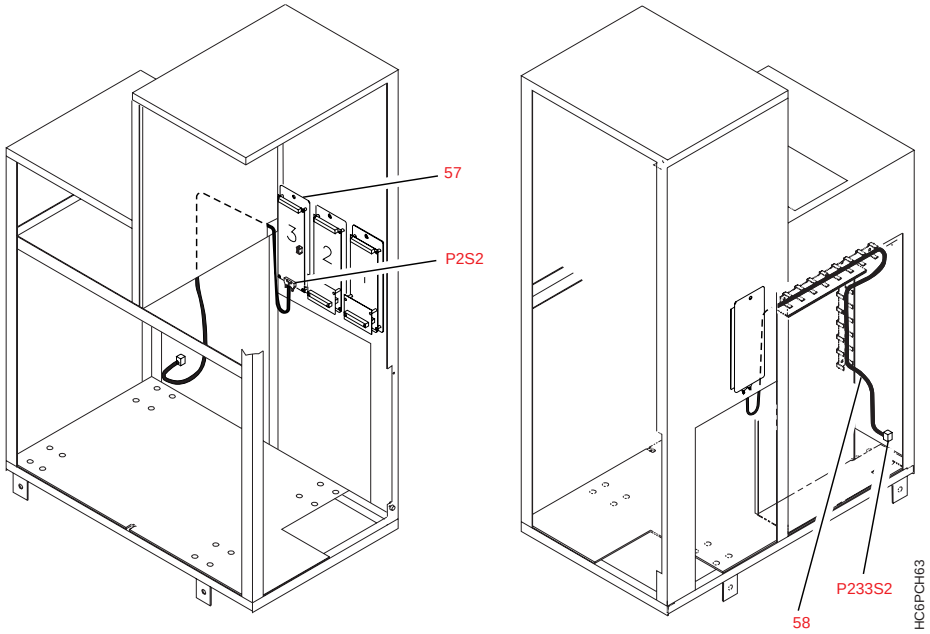
10. Plug the other end of the verification card/MIC cable into the MIC card at connector MJ07 **(2)**.

If another cable is attached to this connector, move the cable to the connector corresponding to the Pre/Post Port where you relocated the card.

- Pre/Post Port 1 connects to MIC connector MJ11 **(3)**.
- Pre/Post Port 2 connects to MIC connector MJ09 **(1)**.

11. Secure the cable in the cable raceway using existing cable clamps.
12. Install the MIC box side access cover.

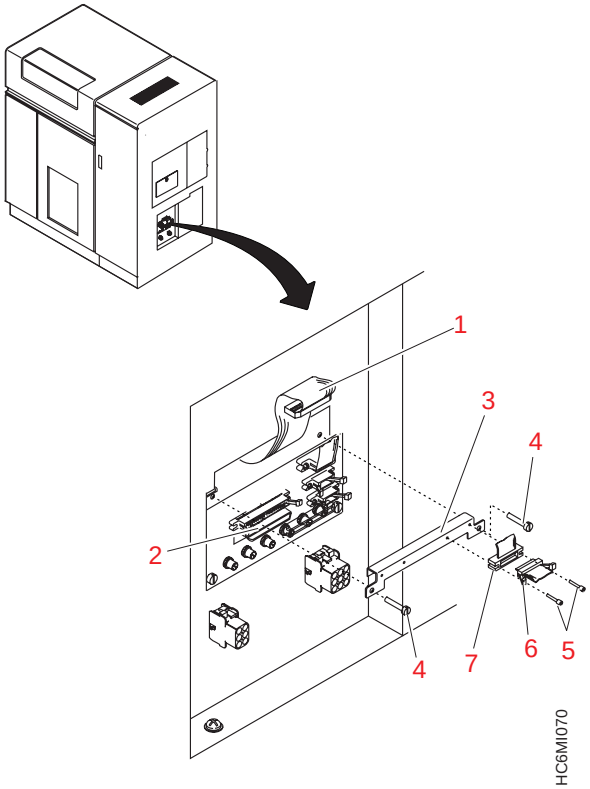
Table 618. Side 1/Side 2 Sensor Card & Cable (continued)



Printer to Control Unit Cable Installation

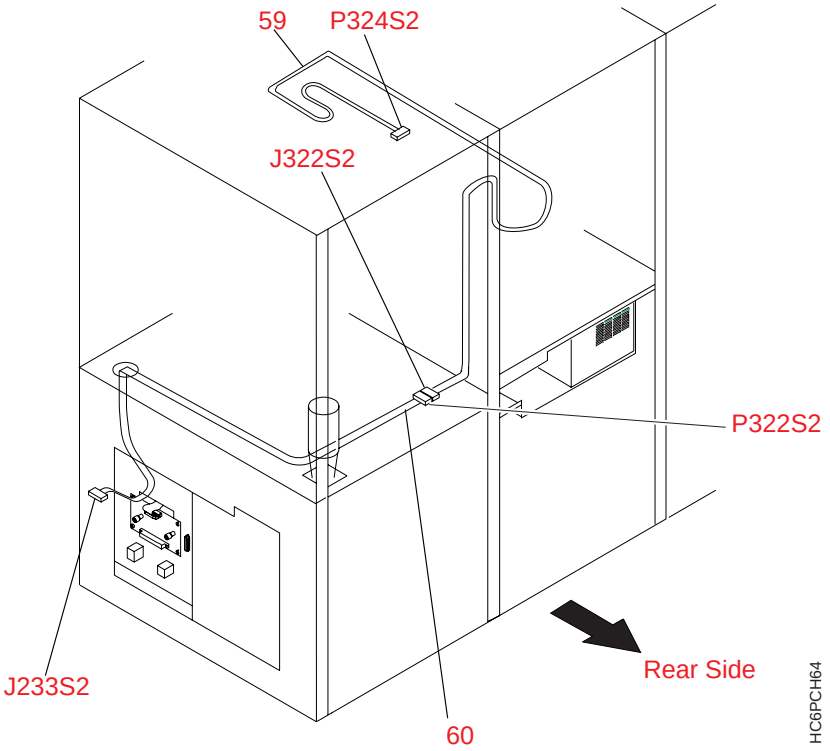
1. Detach the control unit from the printer.
2. Plug connector P2S2 of the printer interface cable (P/N 89H9838) into the verification control card.
3. Route the printer interface cable from the verification control card to the printer interface area as shown.
4. Secure the cable in the cable tray.
   Note: Control unit cable connector J233S2 should hang freely near the printer interface area.

Table 618. Side 1/Side 2 Sensor Card & Cable (continued)



5. Disconnect the cable **(1)** plugged into the interface card connector **(2)**.
6. Remove and discard the top two interface board mounting screws **(4)**.
7. From inside the printer frame, route the J233S2 connector end of the verification card/printer interface cable (P/N 24L4858) through an opening between the top of the interface card and the internal end cover of the printer.
8. Install the new interface connector bracket **(3)** (P/N 90H1029) with two screws **(4)** (P/N 1621193).
9. Plug the cable **(1)** into the interface card connector **(2)**.
10. Attach the connector J233S2 **(7)** to the interface connector bracket **(3)** using two screws **(5)** (P/N 04H0451).
11. In the control unit, locate connector P233S2 **(6)** and plug it into J233S2 on the printer interface area.

Table 618. Side 1/Side 2 Sensor Card & Cable (continued)

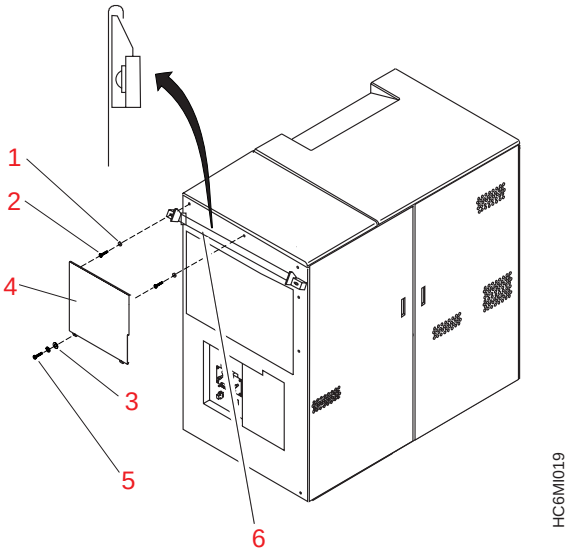


12. Route the P322S2 connector end of cable **(60)** (P/N 24L4858) from the printer interface area under the printhead and along the printer frame.
13. Connect P322S2 to J322S2.
14. Attach the control unit and the printer.
15. Reinstall and close all covers.

Attach the Control Unit Frame to the Printer

Note: All screws, star washers, flat washers, nuts, single shoulder stud bolts, and double threaded shoulder stud are shipped in the installation kit.

Table 619. Attaching the Control Unit to the Printer



Printer Right End Cover

1. SHUTDOWN AND POWER OFF THE PRINTER.
2. Install the bracket **(6)** (P/N 63H6470) with the 2 screws **(2)** (P/N 45G2064) and washers **(1)** onto the right end of the printer frame.
3. Lower the right end cover **(4)** into position so that the lip on the inside of the cover (P/N 63H6469) fits over the bracket **(6)** as shown.
4. Secure the lower front of the right end cover with the screw **(5)** (P/N 45G2064), and washer **(3)**.
5. Align the holes in the control unit with the studs that are installed in steps 6 and 7.
6. Align the front of the control unit with the front of the printer.

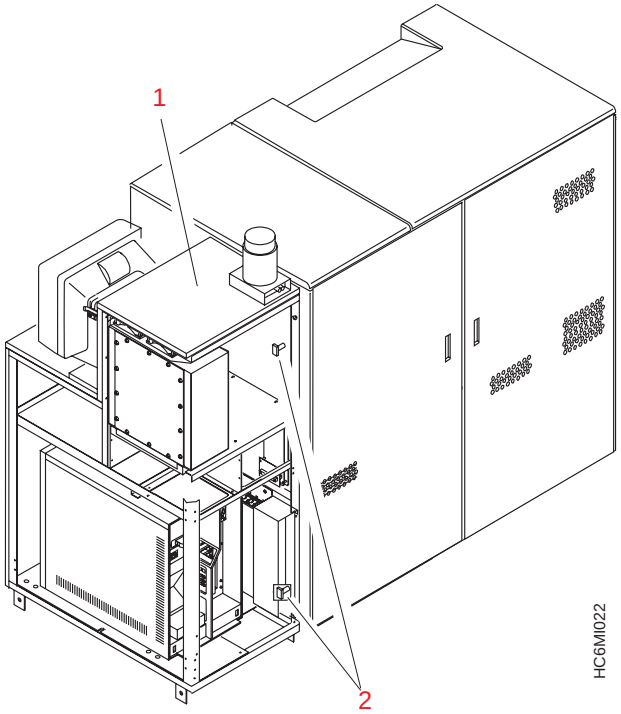
Notes:

a. It may be necessary to adjust the leveling pads for the best cover alignment.

b. For installation in Japan, install the two plastic cups under the leveling pads.

Attention: Ensure that the cables are not pinched when the control unit is closed.

Table 619. Attaching the Control Unit to the Printer (continued)

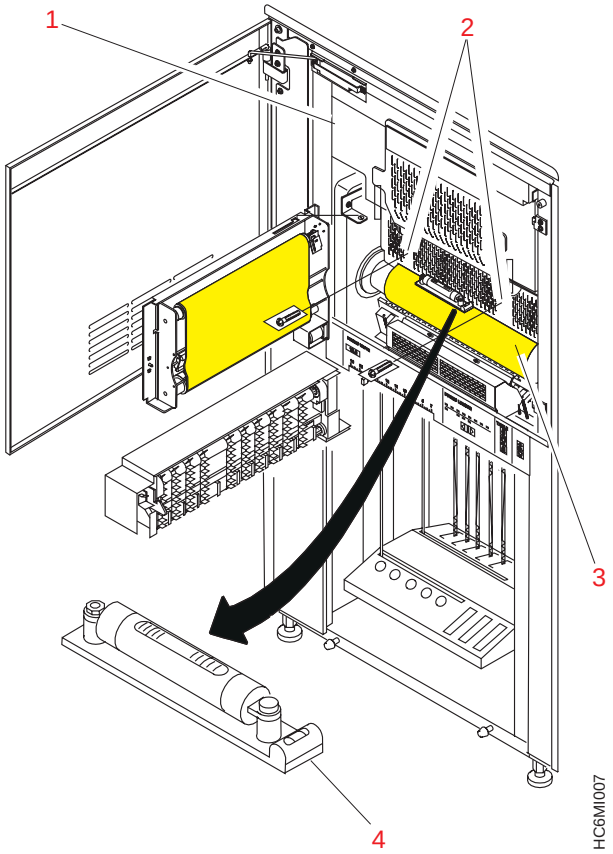


Control Unit

(continued on next page)

7. Join the rear of the control unit to the printer by using the 2 knobs **(2)** (P/N 65F6190) to screw onto the studs in the printer frame.
8. Join the front of the control unit to the printer in the same way. Screw the knob onto the stud in the lower front corner of the printer.
9. Ensure that the printer is still level. See step 8 through step 14.

Table 619. Attaching the Control Unit to the Printer (continued)



10. When the printer is level, remove the paper from the hot roll **(3)**.
11. Reinstall the hot roll shield **(1)** and 2 screws **(2)**.

Continue the Installation Procedures

If you are installing a simplex printer, go to Configure and Test Printer/System Operations.

If you are installing a duplex system, go to Installing a Duplex System Printer 1.

Installing a Duplex System Printer 1

This section covers the mechanical and electrical installation of Printer 1 in a duplex system. You will be using most of the procedures that are described in Installing a Simplex Printer or Duplex System Printer 2.

If you are installing a duplex system, there is no difference between Printer 1 and Printer 2. The DIP Switch S8 positions must be correctly set. You will do this in section Check the DIP Switch Settings.

Complete the procedures in Table 620 before you proceed with the other activities that are unique to Printer 1.

Table 620. Installing Printer 1

Check the Printer and Control Unit for Damage	Follow all of the procedure steps in Check the Printer and Control Unit for Damage.
Remove the Packing Tape	Follow all of the procedure steps in Remove the Packing Tape.
Remove the Input Bin	Follow all of the procedure steps in Remove the Input Bin.
Connect the AC Power Cord	Follow all of the procedure steps in Connect the AC Power Cord.
Level the Printer	Follow all of the procedure steps in Level the Printer.
Check the Voltage Jumpers	Follow all of the procedure steps in Check the Voltage Jumpers.
Install the Operator Alert Assembly on the Control Unit	Follow all of the procedure steps in Install the Operator Alert Assembly on the Control Unit.
Attach the Control Unit Cables to the Printer	Follow all of the procedure steps in Attach the Control Unit Cables to the Printer.
Change the Fuser Oil Filter Screen	Follow all of the procedure steps in Change the Fuser Oil Filter Screen.
Install the Labels	Follow all of the procedure steps in Install Labels.
Power On the Printer	Follow all of the procedure steps in Power On the Printer In Diagnostic Mode.
Install PC Drum	Follow all of the procedure steps in Check the Drum Gaps and Install the PC Drum.

Table 620. Installing Printer 1 (continued)

Check Toner Control Program	Ensure that the toner control program value is set correctly. See Read From or Write to Toner Control Program Memory (Position 2).
Check Printhead Alignment	Perform the entire Printhead Check and Adjustment.
Continue the Installation Procedures	Go to Installing Additional Duplex System Hardware.

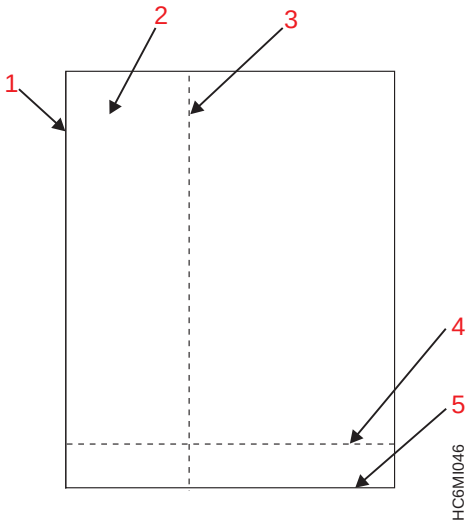
Installing Additional Duplex System Hardware

This section covers additional hardware items that are required for the installation of a duplex system.

Go to Configure and Test Printer/System Operations after you complete the steps in this section.

Install the Foam Light Shield in the Duplex System Printer 1

Table 621. Installing the Foam Light Shield (Duplex Printer 1)

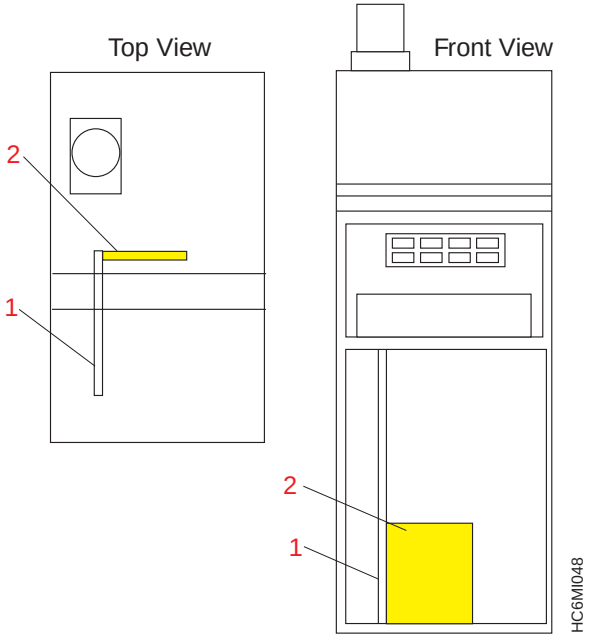


Foam Light Shield

(continued on next page)

1. Open the control unit front cover.
2. Open both control unit side covers.
3. Locate the new foam light shield (IBM P/N 24L3330).
4. Remove the paper from the adhesive sides **(1)** and **(5)** of the foam.

Table 621. Installing the Foam Light Shield (Duplex Printer 1) (continued)

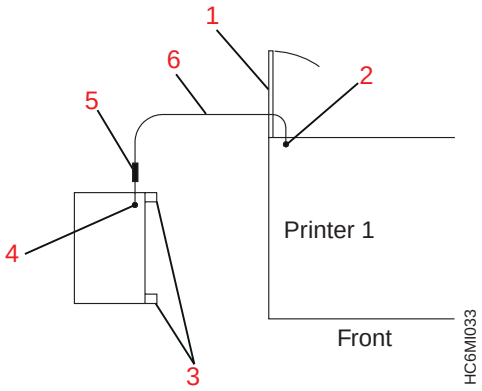


Foam Light Shield Installation

5. Working from the right side of the control unit, attach the adhesive sides of the whole foam shield **(2)** to the floor of the control unit and rear edge of the vertical bulkhead **(1)** as shown in both the front and top view.

Install the Buffer/Flipper Unit

Table 622. Installing the Buffer/Flipper Unit



Buffer/Flipper Ground Wire Insulation

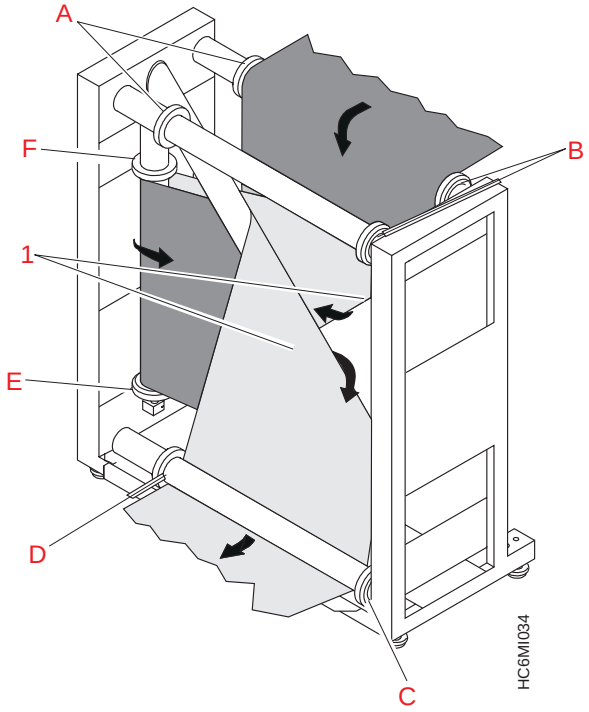
(continued on next page)

The Buffer/Flipper and the printers run best when the forms that are leaving the flipper line up with the tractors of Printer 2. To achieve this alignment, do the following:

1. Carefully position the Buffer/Flipper in the footprint area that is shown in the figure:
   - Inline configuration (see page 2255)
   - Left-angle configuration (see page 2256)
   - 'H' configuration (see page 2257)

   Ensure that the Buffer/Flipper feet **(3)** always face the left end of Printer 1.

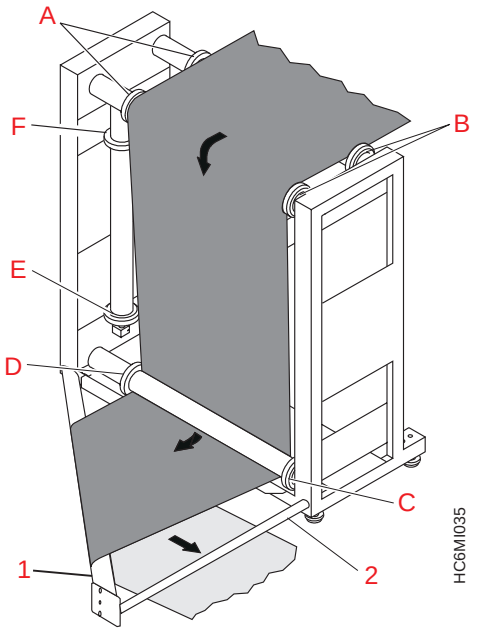
Table 622. Installing the Buffer/Flipper Unit (continued)



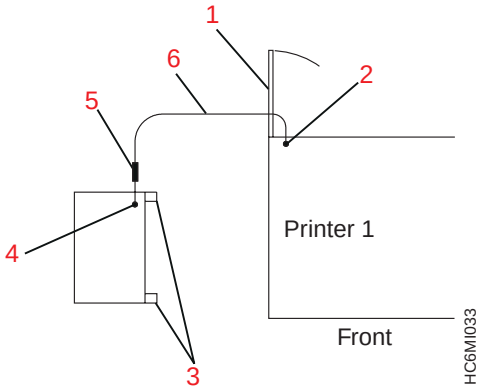
(continued on next page)

2. For the left-angle configuration, remove the longer of the two cross bars **(1)**, inside the Buffer/Flipper frame.

Table 622. Installing the Buffer/Flipper Unit (continued)



Threaded Left-Angle Configuration



(continued on next page)

3. Install the bar **(1)** as shown.
4. Install the support bar **(2)** (P/N 57G6598) from the frame to the end of the cross bar just installed.

5. Connect the Buffer/Flipper ground wire **(6)** (P/N 45G2045) to Printer 1 with the screw and lock washer **(2)** that connect the printer ground strap to the printer frame.

Note: The Buffer/Flipper ground disconnect **(5)** should be closer to the Buffer/Flipper than to the printer.

6. Connect the ground wire to the Buffer/Flipper with the screw and lock washer **(4)** that is provided on the Buffer/Flipper for this purpose.

Adjust the Collars

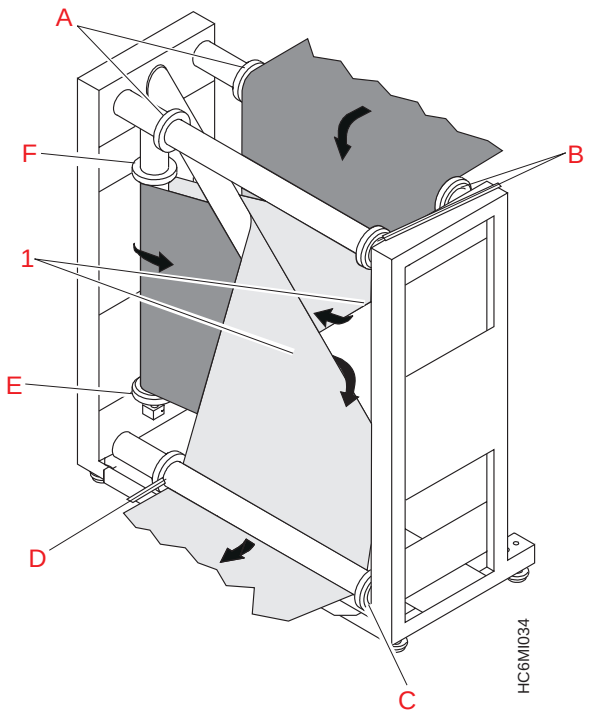
Use Table 623 to position the collars on the Buffer/Flipper. Measure from the front edge of the bar to the inside edge of the collar.

Table 623. Measurements for Collar Positions in Millimeters (Inches)

Collar	Inline	Left Angle
A	518 (20.4)	635 (25)
B	48 (1.9)	166 (6.5)
C	38 (1.5)	166 (6.5)
D	508 (20)	635 (25)
E*	173 (2.9)	173 (2.9)
F*	617 (24.3)	617 (24.3)
Note: * Measure from bottom of the Buffer/Flipper frame, not from the floor.		

Inline Configuration

Table 624. The Buffer/Flipper Unit Inline Configuration

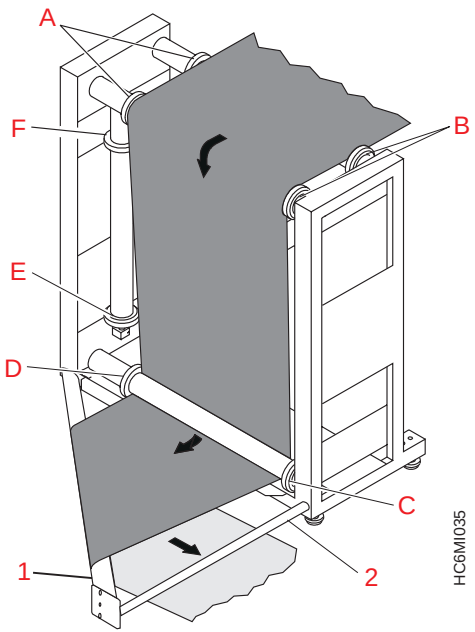


Threaded Inline Configuration

As the form enters the flipper, its rear edge should run close to collar **A**, slightly above collar **E**, and slightly to the rear of collar **C**.

Left-Angle Configuration

Table 625. The Buffer/Flipper Unit Left-Angle Configuration



Threaded Left-Angle Configuration

As the form enters the flipper, its rear edge should run close to collar **A**. As the form leaves the 45° bar **(1)**, the edge should line up with the tractors of Printer 2.

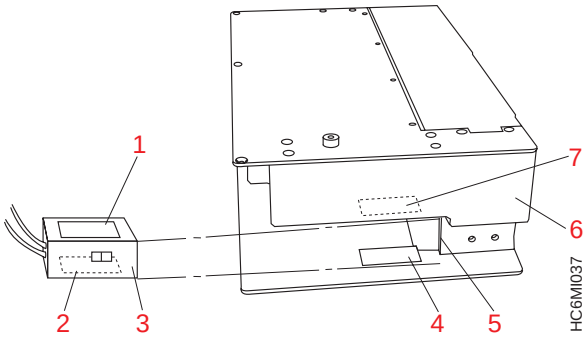
Install the Urge Unit (Hinged-Top, Pearl White Unit Only)

For the Fixed-Top Black Urge Unit, go to Install the Urge Unit (Fixed-Top Black Unit Only).

Notes:

1. Some preprocessing devices require a second urge unit and supply that urge unit with the preprocessing device. If two urge units are used: install the two-roll urge unit that is supplied with the duplex system in Printer 2, and the one supplied with the preprocessing device in Printer 1. If only one urge unit is required, install it in Printer 2.

Table 626. Installing a Two-Roll Urge Unit



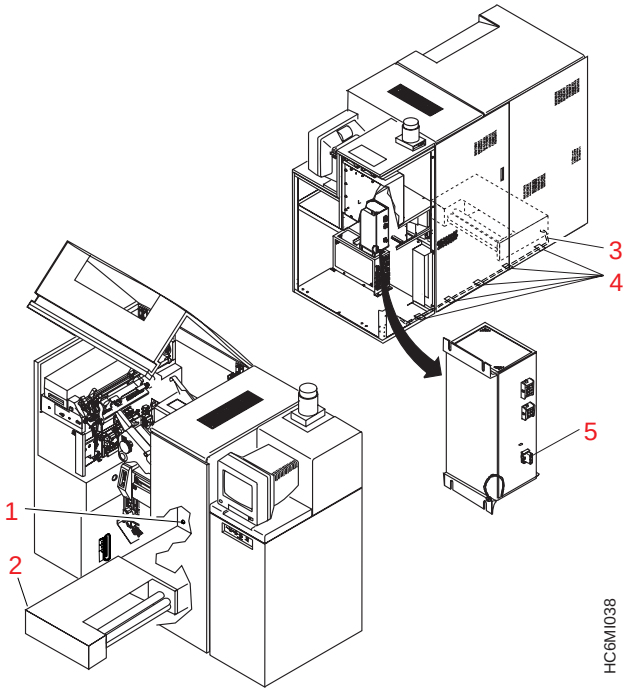
Power Switch Box, Two-Roll Urge Unit

1. Power Off the printer.
2. Locate the urge unit power switch box **(3)**.
3. Locate the velcro strips. The switch box is mounted to the urge unit with velcro strips.
4. To determine where to place the velcro strips, hold the switch box flush with the surface **(6)** of the urge unit. The right side of the switch box should be touching the edge **(5)**.
5. Separate the two halves of the velcro and place the 2 looped halves in positions **(4)** and **(7)** on the urge unit.
6. Place the 2 hooked halves in positions **(1)** and **(2)** on the switch box.
7. Surround the switch box with a piece of paper so that the two hooked halves of the velcro cannot come in contact with the looped halves.
8. Position the switch box between the looped halves of the velcro. The switch box is correctly positioned when the switch is flush with surface **(6)** and the right side of the switch box is touching edge **(5)**.
9. When the switch box is in the correct position, remove the piece of paper and allow the velcro strips to connect.

Attention: Do not allow the velcro strips to connect to each other when the switch is not correctly positioned. The urge unit will have to be disassembled to remove the switch box and reposition it.

(continued on next page)

Table 626. Installing a Two-Roll Urge Unit (continued)



Two-Roll Urge Unit

10. There are two cables that come out of the switch box. Plug the short cable into the jack on the back side of the urge unit.
11. Install the urge unit **(2)** in the input area with the rolls on the right side.
12. Install 5 cable clamps **(4)** (P/N 2513269) to the under side of the printer frame.
13. Route the power cord **(3)** of the urge unit through the clamps.
14. Locate the Y cable (P/N 90H1655).
15. Disconnect the PJH01 connector **(5)** from the DC power box in the control unit.
16. Plug the PJH01 connector of the Y cable into the JH01 connector on the DC power box.
17. Plug the JPH01 connector of the Y cable into the PH01 plug that was removed from the DC power box in step 15.
18. Plug the ac power cord from the urge unit (that is labeled JN01) into the P/N01 connector on the Y cable.
19. Set the urge unit power switch to On.

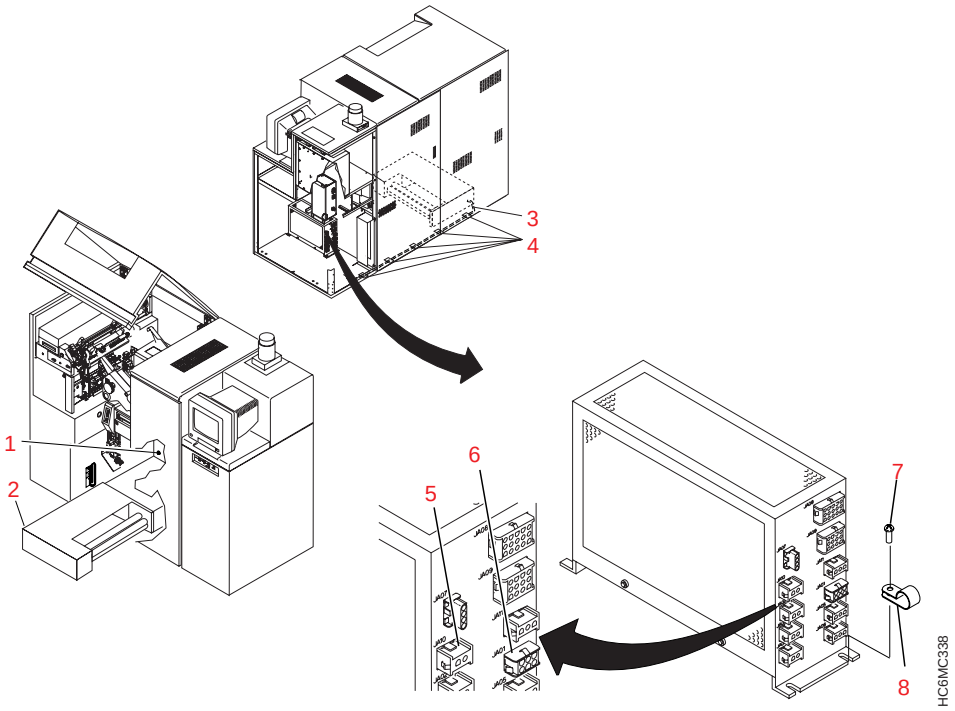
Install the Urge Unit (Fixed-Top Black Unit Only)

For the Hinged-Top Pearl White Urge Unit, go to Install the Urge Unit (Hinged-Top, Pearl White Unit Only).

Notes:

1. Some preprocessing devices require a second urge unit and supply that urge unit with the preprocessing device. If two urge units are used: install the two-roll urge unit that is supplied with the duplex system in Printer 2, and the one supplied with the preprocessing device in Printer 1. If only one urge unit is required, install it in Printer 2.

Table 627. Installing an Urge Unit #2



Urge Unit #2

1. Power Off the printer.
2. Slide the urge unit **(2)** into the printer input area.
3. Install five cable clamps **(4)**
4. Route the power cord **(3)** of the urge unit through the clamps.
5. Secure the clamp by removing screw **(8)** from the base of the ac control box and then replacing the screw through the clamp.
6. Remove the adapter cable from the urge unit power cord if connector JA10 is present in the ac control box. Plug the power cord of the urge unit into the connector JA10 **(5)** on the ac control box. If connector JA10 is not present on the ac control box, use the adapter cable that comes with the urge unit power cord.

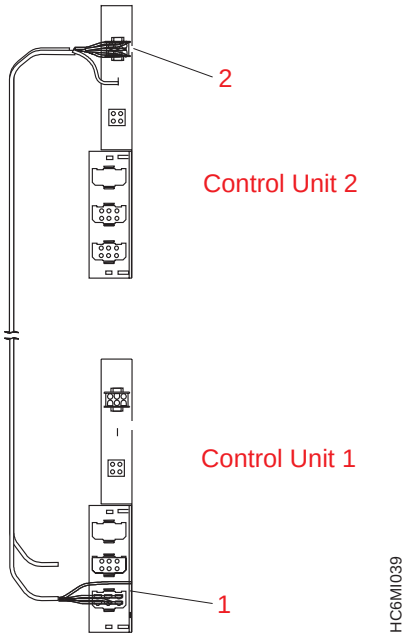
   To use the adapter, do the following:

   - Disconnect the PJA01 connector on the ac control box.
   - Connect the JA01P connector of the adapter to the JA01 connector on the ac control box.
   - Connect the PA01J connector of the adapter to the PA01 connector that was unplugged from the ac control box.

(continued on next page)

Install the Remote Power Cable

Table 628. Installing the Remote Power Cable



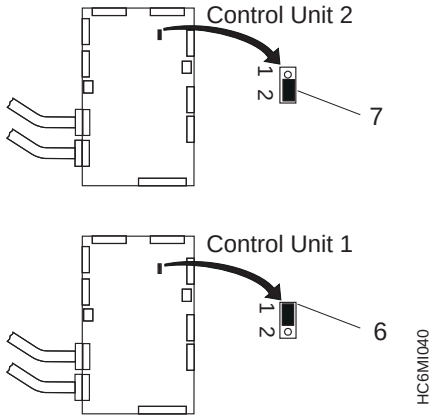
Remove Power Cable Connection

Note: If you are installing a duplex system on a raised floor, you can place the remote power cable and the MIC SSA cable together to save time.

1. Ensure that the printer is powered off and the power cord is disconnected.
2. Install the remote power cable (P/N 45G1727) from the control unit attached to Printer 1 (PJC02 tailgate connector) **(2)** to the control unit attached to Printer 2 (PJC01 tailgate connector) **(1)**.
3. Attach the 2 power cable ground wires to their respective lugs.

Install the MIC SSA Cable

Table 629. Installing the MIC SSA Cable



Control Unit 2 MIC to Control Unit 1 MIC Cable

1. Ensure that the printer is powered off and the power cord is disconnected.
2. Locate the SSA cables (P/N 32H1466) that have already been plugged into the controller SSA adapter card.
3. Plug the MIC ends of these cables into MIC card connector PJM21 and PJM22 that is located in printer 1.

   It does not matter which of the A1/A2 cables is connected to PJM21 and PJM22.
4. Verify that the address on the MIC card in the control unit attached to Printer 2 is jumpered for control unit 2 **(7)** (pins 2 and 3).
5. Verify that the MIC card address on the MIC card in the control unit attached to Printer 1 is jumpered for control unit 1 **(6)** (pins 1 and 2).
6. Go to Configure and Test Printer/System Operations.

Configure and Test Printer/System Operations

This section covers all procedures that require the printer, and host system attached control unit to be powered on for either a simplex printer or duplex system installation.

Set the Power Switches and Power On the System

For a Simplex Printer

1. Ensure that the printer is powered off and the power cord is disconnected.
2. Ensure that the diagnostic function switch (thumbwheel) on the CPxxx card is set to “0”.
3. Set the switches on the power control panel (L = Local, R = Remote) according to your needs for each of the following procedures in this section.
4. Press the **Control Unit Power On** pushbutton on the power control panel to power on the system.

Table 630. Power Control Panel Switches for a Simplex Printer

Condition	CU	Prt
Power on printer and control unit	L	R
Power on printer only	L	L

The first condition, **Power on printer and control unit,** is the recommended switch setting for a new installation. The other setting is used during troubleshooting, maintenance procedures, and initial bring up.

For a Duplex System

1. Ensure that the printer is powered off and the power cord is disconnected.
2. Ensure that the diagnostic function switch (thumbwheel) on the CPxxx card is set to “0”.
3. Set the switches on the power control panel (L = Local, R = Remote) according to your needs for each of the following procedures in this section.
4. Press the **Control Unit Power On** pushbutton on the Printer 2 control unit power control panel to power on the system.

Table 631. Power Control Panel Switches for a Duplex System

Condition	CU 2	Prt 2	CU 1	Prt 1
Power on both printers and both control units	L	R	R	R
Power on printer 2 and control unit 2	L	R	L	R
Power on printer 1 and control unit 1	L	R	L	R
Power on printer 2 only	L	L	L	R
Power on printer 1 only	L	R	L	L

The first condition, **Power on both printers and both control units**, is the recommended switch setting for a new installation. The other settings are used during troubleshooting and maintenance procedures.

Important

The control unit serial number for the printer must be entered into the “Machine Sequence” field before you perform ANY **Restart** or **Shutdown** procedure. After the first **Restart** or **Shutdown**, it is not possible to change the “Machine Sequence” values.

Install the Microcode

Locate any microcode installation instructions and follow those instructions to install any microcode update that may have been shipped with the system.

Special Features Passwords

You must install and enable any **special features** before you proceed.

Locate the “Special Features” Installation Instructions shipped with the printer and install and enable the customer-ordered printhead resolution (600 or 480 DPI or 480/600 DPI).

If the Enhanced Toner Loading System hardware is present, install and enable F4940 using password *77eagle.*

Configuring the System

Use the “Configuration Worksheets” prepared by the customer and the procedures in the *Infoprint 3000 Introduction and Planning Guide*. These worksheets cover the following areas:

- Configure Printer - separate sections for simplex and duplex systems
- Configure Attachments - common section for both simplex and duplex systems
- Configure Pre/Postprocessors - common section for both simplex and duplex systems
- Define Forms - common section for both simplex and duplex systems

Configure the Printer - Simplex System

For a simplex system, only one set of printer configuration values must be established.

1. Note the value for the “Printer Counter” on the **Printer Status** Display/Touch Screen window.
2. Select **Configure** on the menu bar of the Display/Touch Screen main window.
3. Select **Configure Printer** on the pull down menu that appears.
4. Use the “Configuration Worksheets” prepared by the customer to enter all of the configuration values. Leave the default values shown if the customer has not provided input.

   Notes:

   a. Compare the value in the Usage Counter (that is located at the rear of the printer) to the previously noted “Printer Counter” value on the **Printer Status** window. If they are different, set the “Printer Counter” configuration item value to match the Usage Counter value.

   b. Ensure that the “Date and Time” values are set properly.

   c. Enter the “Machine Sequence” found on the right rear of the control unit frame.

   Reminder

   When you install postprocessing devices, the stacker, BTS, and offsetter configuration values must be set in **Configure Printer**. (The as-shipped default values are not applicable.)

5. After you set the configuration items, select the **OK** pushbutton.
6. A **Restart** window will appear. Defer the required Restart procedure until you have completed all the configuration work.
7. Go to Configure the Attachments.

Configure the Printer - Duplex System

If you are installing a duplex system and the customer intends to use both **Duplex** and **Dual-Simplex** modes, you must establish three sets of Configure Printer data. One set for **Duplex** mode, and one set each for Printer 1 **Simplex** mode and Printer 2 **Simplex** mode.

A duplex system is shipped with the Configure Printer configuration item “Printer Mode” set for **Duplex** mode.

1. Set Printer 1 to Printer 2 Distance.

   Before you can load and thread forms through a duplex system, determine the length of the physical forms path between the transfer station on Printer 1 and the transfer station on Printer 2. That value then must be set in the configuration item “Length of Forms Between Transfer Points”.

   Note: The distance measurement need only be approximate. The printer increment for moving forms is always a multiple of the forms length (measured from perforation to perforation). This is derived from the “Forms Length” setting for the defined form being loaded.

   ### Inline Installation

   a. Measure the inline distance *d* between the two printer frames and determine the configuration value from Table 632.

Table 632. Configuration Value for Inline Installation

Distance (in.)	Value to Set
d = 52	315
d < 52	315 − (52 − *d*)
d > 52	315 + (*d* − 52)
Note: Default value = 315.	

Left-Angle Installation

a. Load the forms with the **Thread/Align Forms** procedure (see the *Operator's Guide*).

b. If the alignment mark on the forms, stops short of the alignment mark in Printer 2 do the following.

   Count how many times *n* you must press the **Feed Paper** button in Printer 2 to align the marks.

   Multiply *n* by the forms length *L* (in inches) and add 315 to get the configuration value:

   Value to Set = 315 + (*L* × *n*).

c. When you have loaded the forms, if the alignment mark on the paper stops beyond the alignment mark in Printer 2 do the following.

   Count how many complete forms *N* are between the two alignment marks.

   Multiply *N* by the forms length *L* (in inches) and subtract this amount from 315 to get the configuration value:

   Value to Set = 315 − (*L* × *N*).

2. Note the value for the "Printer Counter" (for both Printer 1 and Printer 2) on the **Printer Status** Display/Touch Screen window.
3. Select **Configure** on the menu bar of the Display/Touch Screen main window.
4. Select the **Configure Printer** on the pull down menu that appears.
5. Use the "Configuration Worksheets" prepared by the customer to enter all of the Configure Printer configuration values. Leave the default values shown if the customer has not provided input.

Notes:

a. For duplex systems, the “Length of Forms Between Transfer Points” value was generated in step 1.
b. Compare the value in the Usage Counter (located at the rear of the printer) to the previously noted “Printer Counter” value on the **Printer Status** window. If they are different, set the “Printer Counter” configuration item value to match the Usage Counter value. For duplex systems this must be done for both printers.
c. Ensure that the “Date and Time” values are set properly.
d. Enter the “Machine Sequence” found on the right rear of the control unit frame.

Important

You must enter the control unit serial number for each printer into the “Machine Sequence” fields before you perform ANY **Restart** or **Shutdown** procedure. After the first **Restart** or **Shutdown**, it is not possible to change the “Machine Sequence” values.

Reminder

When you are installing postprocessing devices, you must set the stacker, BTS, and offsetter configuration values in **Configure Printer**. (The as-shipped default values are not applicable.)

6. After you set the configuration items, select the **OK** pushbutton.
7. A **Restart** window will appear. Defer the required Restart procedure until all system configuration work is completed.

Configure the Attachments

1. Select **Configure Attachments** on the **Configure** pull down menu.
2. Use the “Configuration Worksheets” prepared by the customer (see the *Introduction and Planning Guide*) to enter all of the configuration values for all of the installed attachment types. Leave the default values shown if the customer has not provided input.
3. After you set the configuration items, select the **OK** button.
4. A **Restart** window will appear. Defer the required Restart procedure until you have completed all system configuration work.

Configure the Pre/Postprocessors

1. Select **Configure Pre/Postprocessors** on the **Configure** pull down menu.
2. Use the “Configuration Worksheets” prepared by the customer (see the *Infoprint 3000 Introduction and Planning Guide*) to enter all of the pre/postprocessor configuration values. Leave the default values shown if the customer has not provided input.
3. After you set the configuration items, select the **OK** button.
4. A **Restart** window will appear. Follow the restart procedures to make all of the printer, attachments, and preprocessor configuration items you have entered active.

Configuration for Side 1/Side 2 Verification Checking

1. Ensure that the printer has been configured as a duplex printer.
   a. On the Display/Touch Screen menu, bar select **Configure**.
   b. On the **Configure** pull down menu that appears, select **Configure Printer**.
   c. Select the **Printer Mode** configuration item.
   d. Change to Duplex if required.
   e. Select **OK** pushbutton.
   f. Select the **Restart** pushbutton on the restart prompting window.
2. On the Display/Touch Screen menu bar, select **Configure**.
3. On the **Configure** pull down menu that appears, select **Configure Pre/Post**.
4. If you relocated a Pre/Post interface card earlier, select its name from the list.
   a. Change the configuration information for the relocated device.
      1) Set **Port** to the port number to which the card was relocated.
   b. Select **OK** to exit the menu.
5. In the **Select a Processor** box on the Configure Pre/Post window, select **Side2Verify**.
6. Change the configuration information as follows:
   a. Set **Port** to 3.
   b. Set **Enabled** to Yes.

   Note: You cannot change the Printer Number, Pre/Post Characteristics, and Pre/Post Type configurations.
7. Select **OK** to exit the menu.

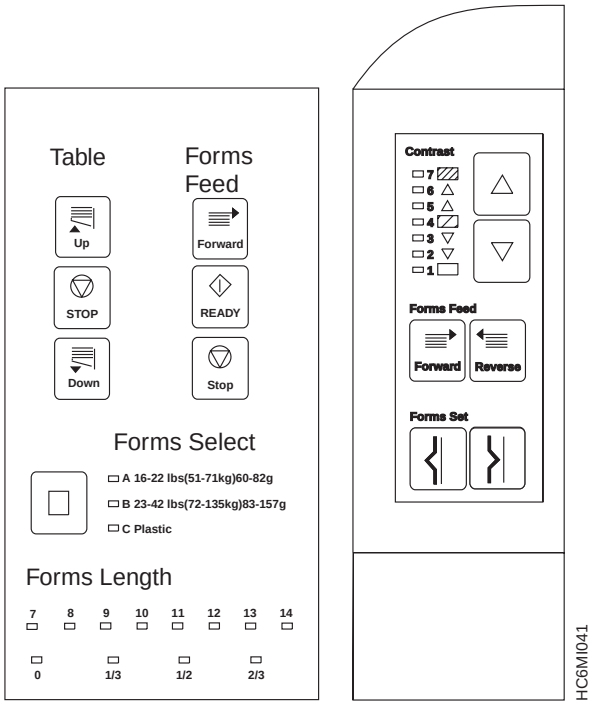
Define Forms

Forms that the customer intends to use must be defined to the system before they can be loaded into the printer.

1. Select **Configure** on the menu bar of the Display/Touch Screen main window.
2. Select **Define Forms** on the pull down menu that appears.
3. Use the “Define Forms Worksheets” prepared by the customer (see the *Introduction and Planning Guide*) to enter all of the required entries for each Form Name the customer defined. If the customer has another Infoprint 3000 at a code level of v9.2 or higher, you can use a “Save Forms” diskette from that printer to restore the values to the newly installed printer. See Disk Operations for the procedure.

Verify Printer Operation

Table 633. Verifying Printer Operation



Stacker Control Panel (left) and Printer control Panel (SW721) (right)

Note: If you are installing a duplex system, do the following procedures to *both* printers in the duplex printing system.

1. On the printer control panel (SW721), set **Contrast** to position **4**. With microcode level 9.7 or higher, ensure that the 'contrast' item in Configure Printer is set to 4.
2. On the stacker control panel set **Forms Select** to position **A**. With microcode level 9.7 or higher, ensure that the 'oil rate' item in Configure Printer is set to 50.
3. Install the Pre/Postprocessing Interface Test Card to test and verify all (up to 3) pre/postprocessing interfaces in each control unit. For information about using the test card, see Pre/Postprocessor Diagnostics.
   Note: If the customer is using pre/postprocessing equipment in the configuration, you may need to install that equipment before you load forms in the next step.
4. Enable any pre/postprocessing equipment that you have installed.

Table 633. Verifying Printer Operation (continued)

Level the Tension Arm

5. Remove the extension of the tension arm springs from both front and rear of the tension arm.
6. Using the level (tool P/N 4832403), ensure that the tension arm is level, when the tension arm is held in the down position.
7. It can be adjusted by loosening the two screws at the front of the tension arm.

(See Tension Arm Encoder Sensors (S708, S709 & S710))

Align the Fuser Frame

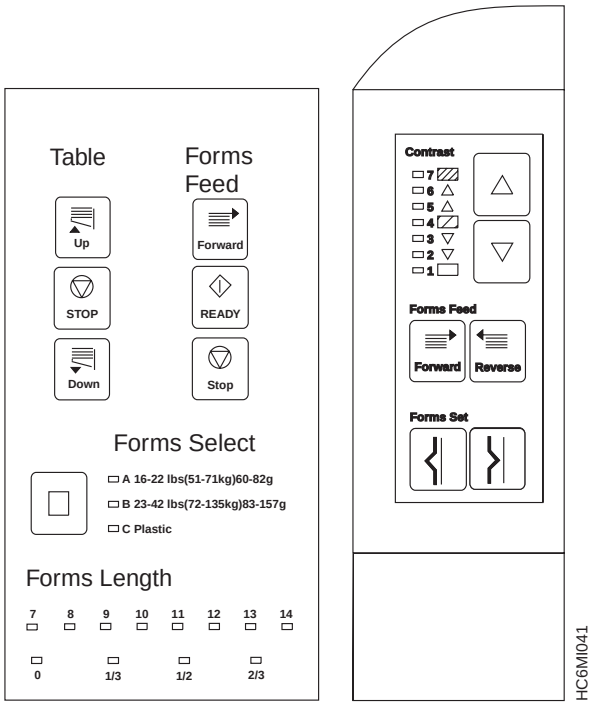
8. With the tension arm springs still detached, load paper through the transfer station, until the leading edge of the paper is close to the tension arm
9. Hold the paper straight and see if the leading edge of the paper is the same distance from the tension arm the entire width of the paper.

(continued on next page)

Align the Fuser Frame(cont'd)

10. If the leading edge is not the same distance from the tension arm for the entire width:
    a. Loosen the 4 screws holding the fuser frame in place a the front of the printer.
    b. Loosen the right screw of the fuser frame at the rear of the printer.
    c. Move the fuser frame until the paper is the same distance from the tension arm the entire width of the paper.
    d. Tighten the 5 fuser frame screws.
11. Reinstall the tension arm springs.

Table 633. Verifying Printer Operation (continued)



12. Load forms in the simplex printer or duplex system, according to the *Operator's Guide*, if it is not already done.
13. Run some Print Samples.
14. Check and adjust the following as necessary:
    - D706 errors
    - Registration
    - Light print
    - Other obvious printing quality problems
    - In a duplex system, you may have to adjust the contrast setting in one of the printers, to balance the contrast between the two printers.

For more information, see the "Print Quality Symptom Table" in MAP 1000.

Hint

Light print or D706 errors can occur as a result of Mirror 1 moving during shipping or relocation. Perform only the STEP 2: M1 Mirror Check.

If the D706 error still occurs, use the MAPs to correctly identify the source of the problem. Low laser beam power can be identified by using the check procedure in STEP 4: Beam Power Check

Print Sample Adjustments

Perform the Print Sample Adjustments.

Save the Configuration Settings

1. Locate the **Configuration** diskette that came with the installation package. (You can use any regular DOS formatted diskette.)
2. Install the **Configuration** diskette in the diskette drive.
   a. Select **Analyze** from the menu bar on the TOP of the screen.
   b. Select **Service Actions**.
   c. Press **Enter** on the Keyboard screen.
   d. Select **Disk Operations**.
   e. Select **Back Up Disk**.
   f. Make sure that the diskette is installed correctly in the diskette drive, and select **OK**.
   g. When the configuration backup operation is complete, exit the menu, and exit the Service Actions menu.
   h. Leave the **Configuration** diskette in the diskette drive.

Test the Operator Alert Assembly

Note: If you are installing a duplex system, do the following procedures to both printers.

1. Open the stacker gate to create an error. The operator alert light should flash, and the alarm should sound.
2. Adjust the alarm volume as required.
3. Touch the display touch screen. The alarm should stop, and the light should continue to flash.
4. Close the stacker gate.
5. Press **Ready**. The light should turn off.

Install the Host Attachment Cables

Table 634. Installing the Host Attachment Cables

Notes:

1. The printer supports five types of attachments: System/370 parallel channel, ESCON serial channels, Ethernet networks, Token Ring, and FDDI networks. Determine which attachments the customer has ordered and follow the instructions accordingly.
2. If the customer has ordered two attachments of the same kind, the controller will automatically configure the attachment that is connected to slot 2 as attachment **A**. The attachment that is connected to slot 4 will automatically configure as attachment **B**.
3. The 7025 Model F50 controller will automatically configure the attachment that is connected to slot 6 as attachment **A**. The attachment that is connected to slot 8, will automatically configure as attachment **B**.

(continued on next page)

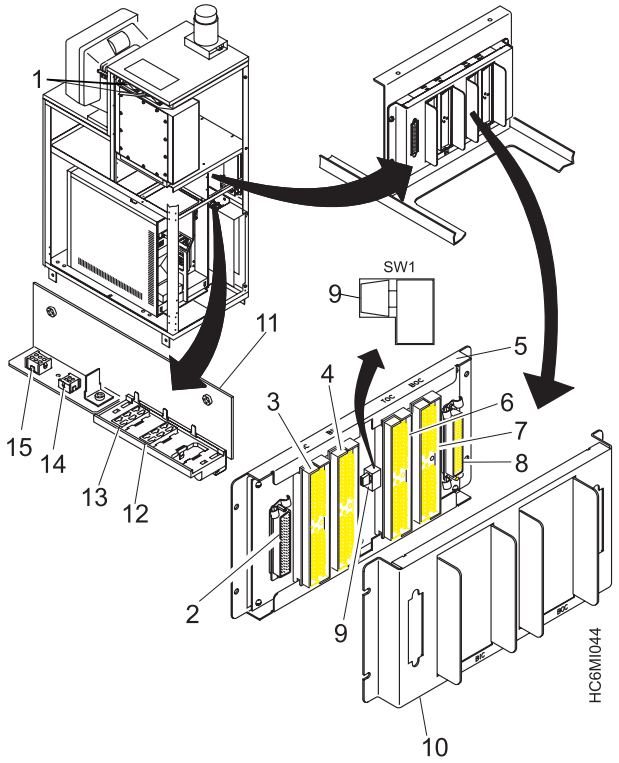
DANGER

<1-14> Switch off printer power and unplug the printer power cord before connecting or disconnecting a communication port, a teleport, or any other attachment connector.

1. Shutdown and power off the printer. See the Shutdown Procedure.
2. Determine which host attachment adapter cards are located in the controller. Determine in which adapter card slot the cards are located.
3. Perform Wrap tests on all host attachment cards before you connect to the Host system. See “Attachment Diagnostics” for procedures.
4. Work with the Channel/Network Administrator to ensure that it is OK to connect the cables to the Printer.

Attention: Do not connect the cables until the Channel/Network Administrator is ready. Failure to have the channel or network disabled before you attach cables could result in system problems, destruction of information, or a severe impact on system availability.

Table 634. Installing the Host Attachment Cables (continued)



Bus and Tag Interface Card

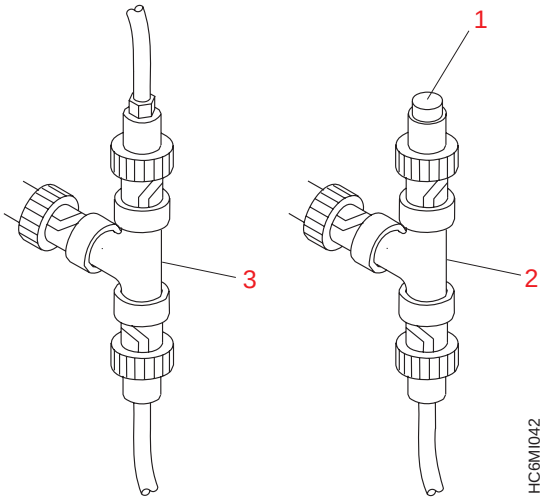
(continued on next page)

Connecting parallel channel cables (if required):

5. Before you install the tailgate assembly to the tailgate frame, remove the screws and cover **(10)**.
6. Set the priority switch **(9)** to the position required by the customer (either HIGH priority (up) or low priority (down) on the channel).
7. Locate the parallel channel tailgate connector slots.
8. Locate the BUS IN cable and the TAG IN cable.
   Note: The connectors are keyed for correct seating.
9. Insert the BUS IN cable connector into the BUS IN slot **(4)**.
10. Insert the TAG IN cable connector into the TAG IN slot **(3)**.
11. Attach the terminators to the BUS OUT slot **(7)** and the TAG OUT slot **(6)** if this is the last control unit in the chain. If it is not the last control unit, attach the BUS OUT and TAG OUT cable connectors to the correct slots.
12. Connect the channel remote power control cable. Select either the channel A PJC02 **(13)** or channel B PJC03 **(12)** plug depending on the customer requirement.
13. Install the remote enable/disable cable (RM1) on the mechanism interface card connector PJJ2 if this customer option is requested.

Note: Cable connectors of the same color should never be connected together. For example, the light gray cable end goes into the dark gray receptacle, and the dark gray cable end goes into the light gray receptacle.

Cable End	Cable Color	Receptacle Color
TAG OUT	Light gray	Dark gray
BUS OUT	Light gray	Dark gray
TAG IN	Dark gray	Light gray
BUS IN	Dark gray	Light gray



Thin Coax Network Connection

Connecting ESCON channel cables (if required):

14. Wrap the customer-provided ESCON channel cable around the cylinder of the cable retention bracket 2 revolutions. Attach it to the ESCON channel card connector at the back of the controller.

Connecting Ethernet network cables (if required):

Note: All cables must meet IEEE 802.3 requirements. Work with the network administrator to ensure that it is OK to connect the printer to Ethernet network.

15. **Thick Coax (10BASE5)**

    Attach the customer-supplied thick coax cable to the 15-position Ethernet connector on the controller.

16. **Thin Coax (10BASE2)**

    Attach the customer-supplied cable with a “T” BNC connector to the BNC Ethernet connector on the controller. **Note:** If this is **NOT** the last device on the Ethernet segment, connect the cable from the next Ethernet device to the other side of the “T” connector **(3)** as shown.

    If this is the last device on the Ethernet segment, connect a 50-ohm terminator **(1)** to the “T” connector **(2)** as shown.

17. **Twisted Pair (10BASET)**

    If desired, attach the extension cable (P/N 02G7434) to the 15-position D-shell Ethernet connector on the controller. Attach the transceiver (P/N 43G0278) to either the end of the extension cable or directly to the 15-position D-shell Ethernet connector on the controller.

    Attach the customer-supplied RJ45 unshielded twisted-pair cable to the transceiver.

Connecting Token Ring Cable (if required):

18. Locate the token ring cable (P/N 53F3930).
19. Attach one end of the cable to the token ring adapter card connectors that are located at the rear of the controller.
20. Attach the other end of the cable to the token ring network.

FDDI Cable Handling

The following use, handling, and installing requirements must be maintained, or you will damage the fiber cable:

24. Do not walk on the cable.
25. Do not pinch the cable between the door and frame.
26. Do not cause tight bends in the cable. Bending the cable too tight will cause increased attenuation of the signal and the breaking of the fiber.
27. Ensure that a bend does not occur at the connector.
28. Lay the FDDI cable flat. Ensure that the cable does not twist or have knots.

(continued on next page)

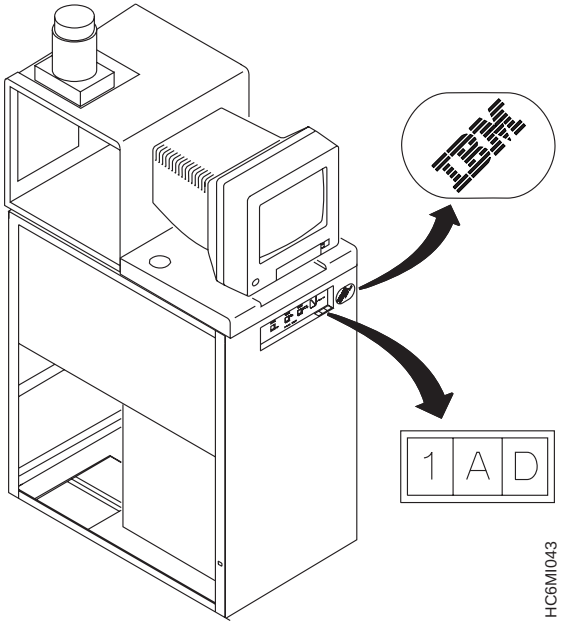
Connecting FDDI Cable (if required):

21. Locate the FDDI cable (P/N 19G4867).
22. Attach one end of the cable to the FDDI adapter card connector that is located at the rear of the controller. Check the receptacle and plug for keys and push the cable connector into the receptacle until it clicks.
23. Attach the other end of the cable to the network.

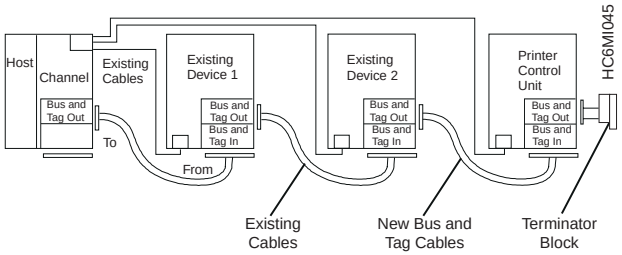
FDDI Connector Maintenance

FDDI connectors require the following procedures:

29. Keep all connectors clean by using dust caps on the cable connectors and a wrap plug on the adapter card when not in use.
30. To clean the connector, wipe the connector end with a dust-free cloth and isopropyl alcohol. Let the connector dry before you connect it.



Location of the Channel Address Holder



Bus and Tag Connections

Install the channel address holder (If required):

31. Install the channel address holder (P/N 5756324), and the correct channel address (P/N 5756348) on the control unit front cover. For duplex systems, this is the control unit that is attached to Printer 2.

Install the IBM Logo

32. Install the IBM logo.

Make the Printer System Ready for Use

1. Plug in the printer ac line cord.
2. Power on the printer.
3. Select **Options** on the Display/Touch Screen main window.
4. Select **Enable/Disable Attachments** on the pull down menu that appears. Enable the installed host attachments.

Install Features

Ensure that the printer is completely installed before you install features.

If the customer has ordered any features that were not installed in the factory, install them now. Use the correct service code for feature installation.

Complete the Installation

1. Give one copy each of the *Operator's Guide* and the *Forms Design Reference for: Continuous Forms Advanced Function Printers* to the customer.
2. Reinstall the control unit side cover or close the two control unit side covers on the printers. Connect the ground strap and retention chain before you latch this cover.
3. Reinstall any remaining printer covers and control unit covers.
4. Remove protective covering on printer cover windows.

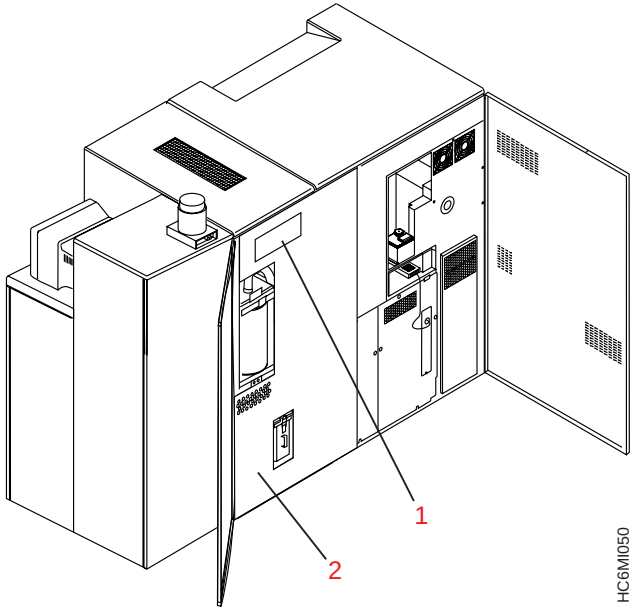
Install Labels

The labels are in the installation kit. Locate and apply the label for the appropriate language as indicated by the illustrations.

Hint

Sometimes there is more than one language per sheet of labels. Install the correct labels for your country.

Table 635. Installing Labels and the IBM Logo

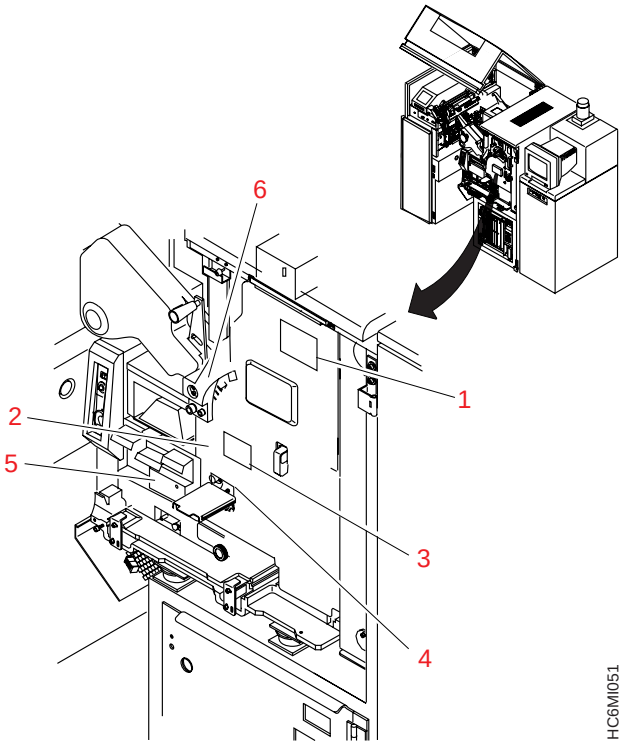


Label Installation (Rear View)

(continued on next page)

1. Locate the IBM logo (P/N 89H9677) and the four push-on clips (P/N 89H9768). Install the logo on the upper front cover.
2. **(1)** Caution (P/N 24H3337)
3. **(2)** Do Not Reuse Waste Toner (P/N 24L3339).

Table 635. Installing Labels and the IBM Logo (continued)

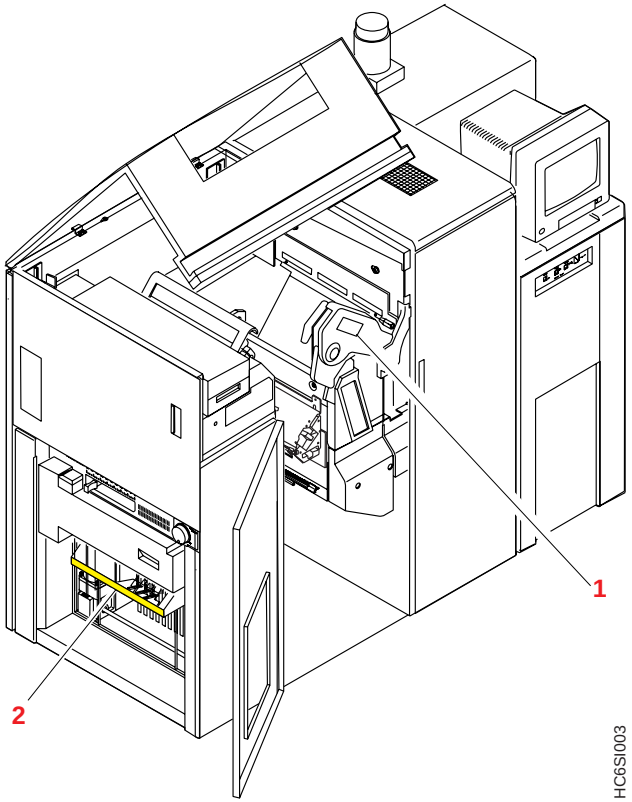


Process Area Label Installation

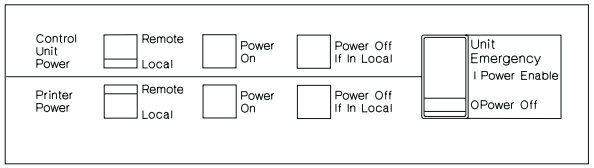
(continued on next page)

4. **(1)** Caution (P/N 24H3337)
5. **(2)** Do Not Reuse Waste Toner (P/N 24L3339)
6. **(3)** Hazardous Area (P/N 24H3341)
7. **(5)** Toner/Developer (P/N 11L6064 or P/N 02N7600)
   - Ensure that the toner and developer mix P/Ns on the label match the P/N of the toner and developer mix being used in the printer.
8. **(6)** IBM Model Number and Serial Number
   Note: Ensure that the printer serial number label matches the control unit serial number. The control unit serial number is located on the back of the control unit.

Table 635. Installing Labels and the IBM Logo (continued)



Label Installation (Front View)



Power Control Panel

(continued on next page)

9. **(1)** Caution - Fast Moving Paper (P/N 24L3345)
10. **(2)** Caution - Paper weight in stacker can exceed 20 kg (P/N 24L3343).

11. Install the language overlay on the Power Control Panel. Peel the protective layer off the adhesive on the back of the overlay and carefully press the overlay into position on the Power Control Panel.

Table 636. Power Control Panel Overlay

Language	Part Number
English	45G1753
French	45G1755
German	45G1757
Italian	45G1759
Spanish	45G1761

Discontinue Use

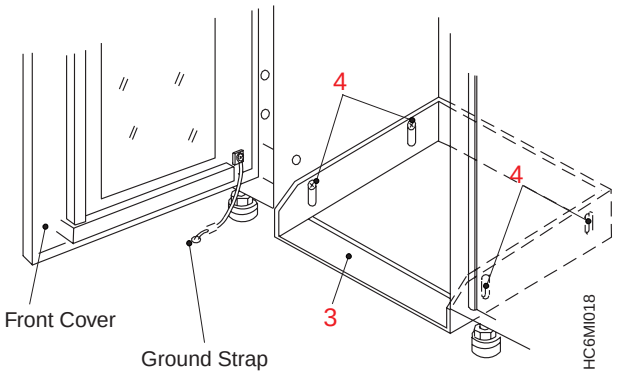
Note: A relocation and discontinuance kit (Feature 4050) and a forklift are required to complete this procedure. Do not attempt to discontinue or relocate a printer without obtaining a kit. You may order Feature 4050 and request the proper kit be sent for your printer, or contact your next level of support for the proper kit part number. Ensure that the proper kit is used, because you may be held responsible for any damage if the wrong kit is used.

When You Discontinue a Duplex System:

A step marked with a **(2)** requires the procedure to be done on **both** printers.

Table 637. Discontinuing Use

1. **Disable all enabled host attachments**.
2. Verify that the host attachments communication mediums are offline or that the host is stopped.
3. Read the developer mix usage.
4. Drain the developer mix (2) and write the usage on the mix bottle.
5. Lower the stacker table (2).
6. Ensure that you set the stacker gate to the 7.5 position (2).
7. Perform the **Shutdown** procedure by using the Display/Touch Screen.



(continued on next page)

8. **Power Off** the printer system.
9. Disconnect the printer ac power cord from the power outlet (2).
10. Disconnect the host attachment cables from the control unit.
11. Restore host attachment communication mediums, if required.
12. If System/370 Parallel Channels or ESCON Channels are installed, remove the associated tailgate assemblies.
13. Remove the paper from the printer (2).
14. Install the input bin and attach the shipping brace on the front of the input area.

Table 637. Discontinuing Use (continued)

Note: If you are disposing of the printer, remove the CPxxx Card. This card contains a nickel-cadmium battery. Return this card to IBM as part of the IBM card-return program or dispose of it in accordance with federal, state, and local government regulations.

15. Remove the PC drum and place it in the PC drum bag and place the entire unit in the drum storage box (2).

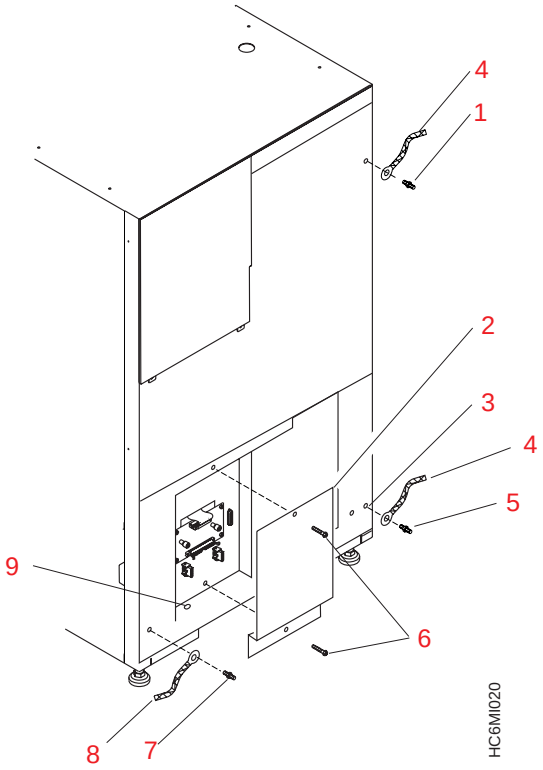
Note: You MUST return all used drums to IBM through the used part return (UPR) procedure.

16. Tape a sheet of protective plastic inside the drum area to cover the developer (2).
17. Disconnect and remove the ac power cord connectors from the terminal block on the power supply in the printer, and store the power cord inside the spare parts box (2).
18. Install the yellow plate over the power cord access opening. See step 3 (2).
19. Remove the knobs that hold the control unit to the printer (2).
20. Move the control unit away from the printer (2).

(continued on next page)

21. Disconnect the cables between the control unit and the printer (2):
    a. Six coax cables (J203, J204, J233, J234, J235 and J267)
    b. One 50-pin flat ribbon cable (J202)
    c. One 9-pin Mate-N-Lock connector (PJ205)
    d. One 6-pin Mate-N-Lock connector (PJ227)
    e. One 20-pin flat ribbon cable (PJ232)
    f. One 36-pin cable (PJ229).
    g. One 10-pin cable (PJ251) if Enhanced Toner Loading is installed.
22. For duplex systems:
    a. Disconnect the cable from Control Unit 2 MIC card connector PJJ08 to Control Unit 1 MIC card connector PJJ08.
    b. Disconnect the cable from Control Unit 2 tailgate connector PJC01 to Control Unit 1 tailgate connector PJC02.
23. Tape all control unit cables to the control unit front-left frame member.

Table 637. Discontinuing Use (continued)



24. Install the cable access cover on the right end of the printer.
25. Remove the operator alert assembly and place it in the packaging that is provided in the relocation kit (2). See steps 1 through 5.
26. Remove the controller from the control unit and pack it in a separate container. If this is an Infoprint 3000 printer with the C20 controller, do not remove the controller.
27. Disconnect the mouse from the controller. Put it in a plastic bag and tape it to the floor of the control unit.
28. Remove the Display/Touch Screen monitor and pack it in a separate container.
29. Disconnect the pre/postprocessor interface cables from the control unit, if any are installed (2).
30. Remove the printer right end cover and place it in the box of spare parts.
31. Raise the leveling pads as far as possible to prevent damage to the pads during relocation or shipment (2).

(continued on next page)

Table 637. Discontinuing Use (continued)

32. Tape the leveling pads on the printer (2).
33. Tape the following areas on the printer (2):
    a. Toner cartridge holder
    b. Developer drain hose
    c. Hot roll shield
    d. Stacker table
    e. Stacker gate
    f. Developer mix cover.
34. Close and tape all external covers (2).
35. Ensure that you return the ship group tools with the printer. See *Tools* in the Maintenance Library (2).
36. Place the box with the spare parts, developer mix, and tools on top of the printer (2). (If this is a multi-printer installation and there is only one set of tools, the tools stay with the remaining printers.)
37. Use the materials in the relocation and discontinuance kit to package the printer and control unit. Kit (2) includes a packaging procedure.

Relocate the Printer

Use this procedure for moves within a building, where you can roll the printer to the new location on the casters.

When you use the following procedure to relocate a duplex system, note that a step marked with a **(2)** requires the procedure to be done on both printers.

Table 638. Relocating the Printer

1. **Disable all enabled host attachments**.
2. Perform the **Shutdown** procedure.
3. **Power off** the printer system.
4. Disconnect the printer ac power cord from the power outlet (2).
5. Remove the PC Drum from the printer (2).
6. Disconnect the host attachment cables from the control unit (for duplex systems, this is the control unit that is attached to Printer 2).
7. Disconnect pre/postprocessing device cables from the control unit (2).
8. Move the control unit away from the printer (2).
9. Disconnect the cables between the control unit and the printer (2):
   a. Six coax cables (J203, J204, J233, J234, J235 and J267)
   b. One 50-pin flat ribbon cable (J202)
   c. One 9-pin Mate-N-Lock connector (PJ205)
   d. One 6-pin Mate-N-Lock connector (PJ227)
   e. One 20-pin flat ribbon cable (PJ232)
   f. One 36-pin cable (PJ229).
10. For duplex systems:
    a. Disconnect the cable from Control Unit 2 MIC card connector PJJ08 to Control Unit 1 MIC card connector PJJ08.
    b. Disconnect the cable from Control Unit 2 tailgate connector PJC01 to Control Unit 1 tailgate connector PJC02.

Attention: For moves outside of the building, or when it is necessary to load the printer onto a padded van or lift it by a forklift, the printer must be fully packed.

Reinstall the Printer

When you use the following procedure to reinstall a duplex system, note that a step marked with a **(2)** requires the procedure to be done on **both** printers.

To reinstall the printer:

1. Follow the instructions under Level the Printer (2).
2. Follow the instructions under Attach the Control Unit Frame to the Printer (and Installing a Duplex System Printer 1 for a duplex system).
3. Follow the instructions under Power On the Printer In Diagnostic Mode.
4. Follow the instructions under Check the Drum Gaps and Install the PC Drum (2).
5. Follow the instructions under Install the Buffer/Flipper Unit.
6. Follow the instructions under Install the Urge Unit (Hinged-Top, Pearl White Unit Only).
7. Follow the instructions under step 1 “Set Printer 1 to Printer 2 Distance”.
8. Follow the instructions under Verify Printer Operation.
9. Follow the instructions under Install the Host Attachment Cables (2).
10. Check the “RPQs and Features” for any additional installation instructions.

Tools

Infoprint 3000 Tools 2379
Branch Office Tools 2381
Features Tools 2381
Items from the CE Catalog 2382
Tool Usage Descriptions 2383

© Copyright IBM Corp. 1999, 2000

Infoprint 3000 Tools

For Infoprint 3000 printers, order:

- Laser alignment tool (P/N 24L3377)
- Tool set (P/N 24L3387)
- Developer rail assembly (P/N 38L0835)
- Pre/postprocessing interface test card (P/N 45G2033)
- Tool set (P/N 57G6639)

Other Infoprint 3000 tools:

- The registration template P/N 04H0739 is useful, but not required.

Tool set P/N 24L3387:

- Brush, cleaner housing (P/N 06F1027)
- Brush, corona cleaning (P/N 06F0423)
- Extension, drum shaft (P/N 06F1025)
- Gauge, drum clearance (P/N 06F1029)
- Gauge, forms tension (P/N 88F1613)
- Laser power tool (P/N 06F0250)
- Scraper, preheat platen (P/N 06F1028)

(continued on next page)

Tool set P/N 57G6639:

Note: This tool kit is also used for Infoprint 4000.

- Bag, drum (P/N 06F0258) - 2
- Block, ESV probe (P/N 06F0256)
- Cable, maintenance panel (P/N 65F6227)
- Cable, pre/postprocessing interface test card (P/N 45G2088)
- Cord, RISC controller power extension (P/N 45G2081)
- Gauge, doctor/scraper, 1.0 mm (P/N 45G2039) - 2
- Gauge, doctor/scraper, 0.9 mm (P/N 45G2040) - 2
- Gauge, laser gap (P/N 45G2090)*
- Gauge, doctor/scraper, 0.8 mm (P/N 45G2080) - 2
- Grease, Krytox 283AC (P/N 65F6223)

Tool set P/N 57G6639: (continued)

- Laser alignment tool, single beam (P/N 57G6642)*
- Laser power tool support (P/N 57G6641)*
- Level (P/N 4832403)
- Plug, coupled interface wrap (P/N 45G2036)
- Plug, intelligent interface wrap (P/N 45G2037)
- Plug, MIC PJ1 wrap (P/N 45G2082)
- Plug, MIC PJ2-PJ3-PJ12 wrap (P/N 45G2084)
- Plug, MIC PJ6 wrap (P/N 45G2083)
- Plug, printer power jumper P205 (P/N 45G2038)
- Tube pressure gauge (P/N 06F0257)
- Union, BD/VD coax (P/N 45G2085)
- Wrench, line cord (P/N 88F3334); U.S. and Canada only

* This tool is not used on Infoprint 3000.

Null modem cable (Shipped with the printer) Used when servicing the controller.

- P/N 62H4857

Communications Diskette (Shipped with the printer) Used when servicing the controller.

- P/N 90H1644

Branch Office Tools

- Gauge, pressure (P/N 03F5635)
- Power supply, 115 V ac, 60 Hz only (P/N 06F1904); or two 9-volt batteries
- Voltmeter, electrostatic (ESV), and probe (P/N 03F5634)
- AFCCU interface extension cable (P/N 24L3328)

Features Tools

The following tools are supplied when the associated attachment feature is ordered by the customer:

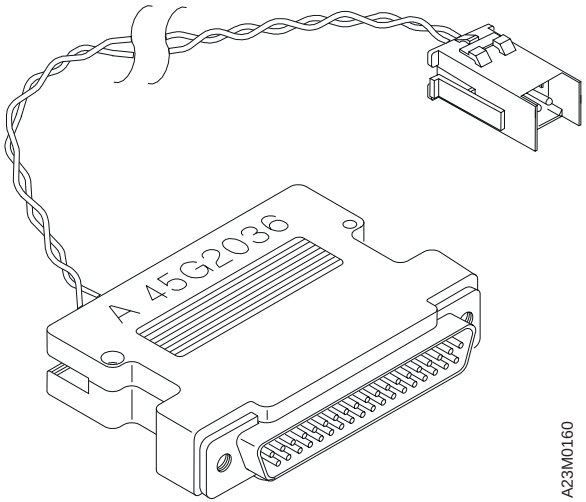
- Block, parallel channel bus wrap (P/N 8575337)
- Block, parallel channel tag wrap (P/N 8575338)
- Plug, ESCON (serial) channel wrap (P/N 5605670)
- Plug, Ethernet thin coax (10Base2) wrap (P/N 02G7433)
- Plug, Ethernet thick coax (10Base5) wrap (P/N 71F1167)

Items from the CE Catalog

- Alcohol, isopropyl (P/N 2200200)
- Cloth, lint-free (P/N 2108930)
- Extractor, pin (P/N 2108398)
- Gauge, gram (P/N 450459) - EMEA only
- Gloves, plastic (P/N 2200041)
- Grease
  - IBM No. 23 (P/N 9900692)
  - IBM SBB No. 3 (P/N 1665927)
  - Molycoat G (P/N 357830)
- Magnetic tip No. 2 (P/N 9900721)
- Pliers, gas (P/N 9900064)
- Pliers, retaining ring (P/N 1864854)
- Scale, push-pull (P/N 0460870)
- Screwdriver, ratching (P/N 56X2974)
- Screwdriver, short (P/N 9900713)
- Cleaner, Toner (P/N 57G2493)
- Tape, thread-sealant (P/N 0596763)
- Vacuum cleaner (P/N 9900735)
- Wrench, leveling pad (P/N 8309875)
- Wrench, hex
  - 1.5 mm (P/N 9900717)
  - 2.0 mm (P/N 9900716)
  - 2.5 mm (P/N 9900715)

Tool Usage Descriptions

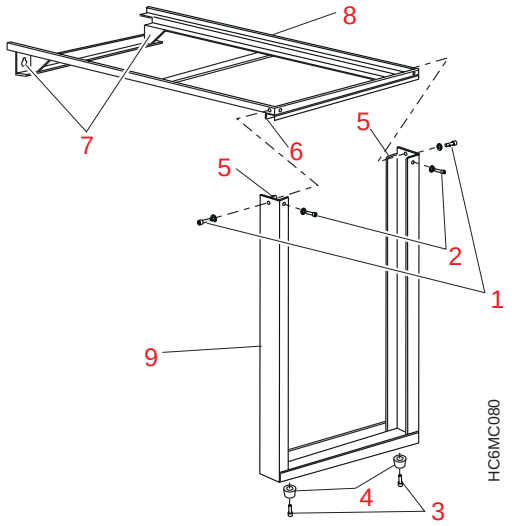
Coupled Interface Wrap Plug



Use wrap plug P/N 45G2036 (marked **A**) with the pre/postprocessing interface to (4710 interface cards only) isolate problems between an Infoprint 3000 and an attached pre- or postprocessor.

See Pre/Postprocessor Diagnostics for more information.

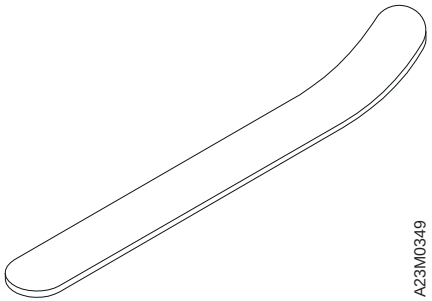
Developer Rail Assembly



Use the developer rail assembly P/N 38L0835 when the developer is removed from the printer.

See Developer for more information.

Doctor/Scraper Gauge

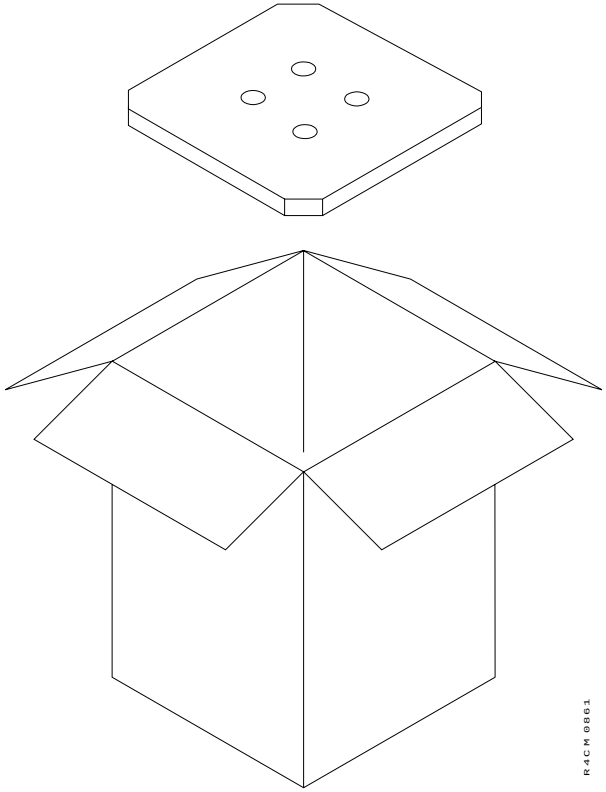


The doctor/scraper gauge is a non-magnetic feeler gauge with the correct dimension for setting the mag brush to doctor blade gap and scraper blade gap.

Two of each doctor/scraper gauge are included:

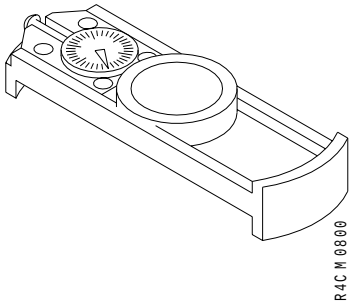
- 1.0 mm, P/N 45G2039
- 0.9 mm, P/N 45G2040
- 0.8 mm, P/N 45G2080

Drum Box



The photoconductor drum is shipped in a special PC drum box. Use this box to store the drum whenever it is removed from the printer. If the original box is lost or damaged, order a new one using P/N 12F1404.

Drum Clearance Gauge



Attention

The drum clearance gauge is a high-precision tool that is easily damaged.

The drum clearance gauge (P/N 06F1029) is a casting that simulates the diameter of the PC drum. A dial indicator attached to the casting is used to measure the gap between the PC drum and several parts of the printer.

Use the drum clearance gauge to check or adjust the clearance of parts around the PC drum. The gauge fits on the drum center shaft.

Reading the Indicator

The indicator has a plunger or movable drive rod, and two scales. Each scale has a dial and a needle.
(continued on next page)

Large Dial:

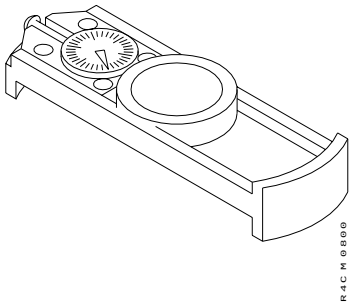
The full travel of the plunger is 10 mm. Each sweep of the large dial is 1 mm. Each increment or mark on the dial is 0.01 mm. Thus, the distance between 0 and 10 on the large dial equals 0.1 mm of plunger travel.

Read the scales separately. Add the values from each scale. The Calibrating the Gauge section provides an example.

Small Dial:

The small dial keeps track of the whole millimeters that have been indicated. The full travel of the plunger is equal to the one revolution of the needle, or 10 mm. Each number on the small dial is equal to 1 mm of travel at the plunger. The distance between the 0 and the 1 on the small dial is also 1 mm.

Note: The maximum range of the drum clearance gauge is 8.0 mm.



(continued on next page)

Calibrating the Gauge

Perform a calibration before each use.

1. Depress the plunger by using a rigid straightedge, such as a 1-mm thickness gauge. Stop the plunger at a plane created by the machined flat located in front of the radius of the casting.

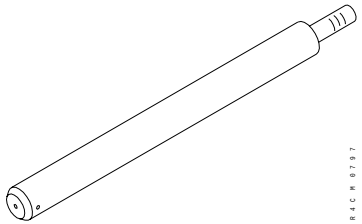
   To prevent an incorrect reading, do not allow the straightedge to contact the radius on the casting. The straightedge should touch only the machined flat.
2. Notice the number on the tool casting. For example, assume that the number is 3.40. This number is called the “calibration value” and is used *only* to calibrate the drum clearance gauge.
   - **Do not** use the calibration value for measuring or making adjustments.
   - Do use the calibration value to recheck the drum clearance gauge after all printer measurements are taken to verify that the drum clearance gauge is still calibrated and the adjustments made are accurate.
3. With the plunger held down to the machined flat, turn the large dial until the pointer is on the decimal part of the calibration value. For this example, the small scale reads 3 for 3 mm; the large scale reads 40 for 0.40 mm. The drum clearance gauge is calibrated when it is set to the calibration value.

Measuring

1. Disable the attachments.
2. Perform the Shutdown Procedure.
3. Power off the printer.
4. Remove the PC drum and store it in the drum box. See PC Drum Removal.
5. Remove the drum shaft extension used in removing the drum.
   Note: While the extension is mounted on the drum shaft, the weight of the extension reduces the clearance between the drum and the mag brush. Do not measure this clearance with the extension installed.
6. Clean the area that will be measured and the drum shaft by using disposable, lint-free cloths to remove all the toner and developer mix.
   Note: Continue to check the plunger for developer mix that is attracted to the plunger.
7. Install the drum clearance gauge.
8. Bring the plunger into contact with any part of the printer.
   a. Lift the indicator plunger with a thickness gauge or fingertip.
   b. Rotate the drum clearance gauge toward the area to be measured.
   c. Release the plunger. Do not hit the plunger against any printer parts.
9. Stop rotating the drum clearance gauge at the lowest numeric reading. Read the two dials. Add the two values to get the total value.
10. Subtract 5.0 from the total value.
11. Compare the remainder to the specified value. See PC Drum & Developer Clearances/Gaps.
12. Measure the values at the front and rear of the PC drum shaft.
13. Some steps must be performed before *and* after taking the readings:
    - Recheck the calibration of the drum clearance gauge.
    - Continually clean developer mix from the plunger of the indicator.
    - Recheck dimensions after tightening any adjustment or mounting screws.

Drum Shaft Extension

CAUTION:
<58> Drum shaft threads are sharp. To avoid cutting yourself, do not use excessive pressure when wiping the threads.

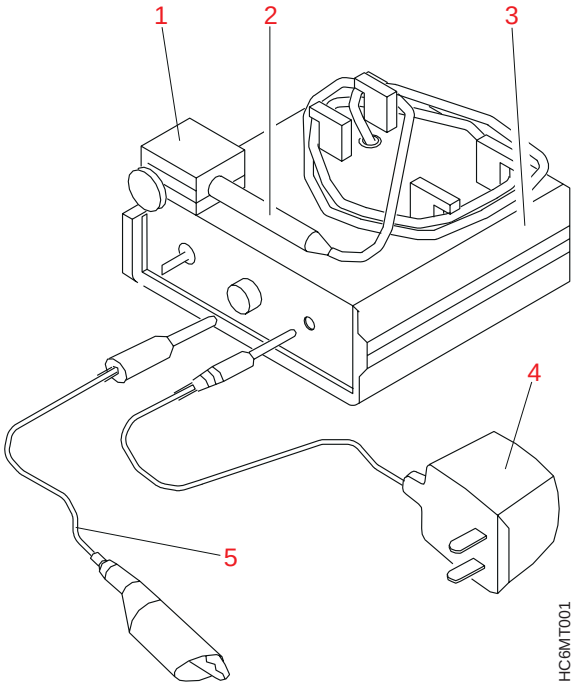


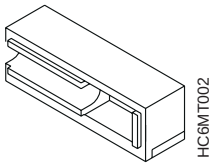
1. Remove the PC drum cover.
2. Lower the scavenger roll lever.
3. Turn the drum knob counterclockwise to remove it.

> **Attention**
> Toner on the drum shaft or drum shaft threads can cause the drum to jam. Be especially careful to clean any toner from the shaft or threads that may have fallen there during cleaning of the cleaner housing.

4. Clean the shaft extension (P/N 06F1025) and the drum shaft with a clean cloth.
5. Mount the shaft extension onto the drum shaft and turn the shaft extension clockwise until it is seated.
   Note: In order not to jam the shaft extension threads, do not seat the extension too tightly.
6. Carefully remove the PC drum. See PC Drum Removal.

Electrostatic Voltmeter (ESV) and Probe





See Electrostatic Voltmeter Adjustment Procedure for instructions on zeroing the voltmeter and using the electrostatic voltmeter (P/N 03F5634) and probe.

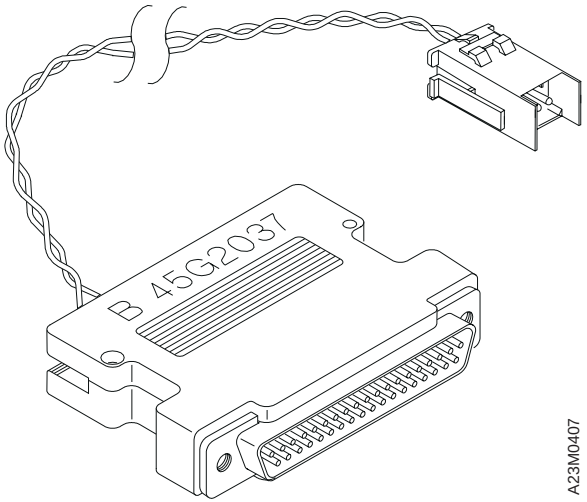
AFCCU Interface Extension Cable

The extension cable (P/N 24L3328) is provided to allow you to move the control unit away from the printer a greater distance than is possible with the standard cables, while performing service operations.

1. Always power off the printer before you connect or disconnect this cable.
2. Do not power on the printer unless the ground wire is attached to the printer.

Note: Connector PJ233S2 is for Side 1/Side 2 verification and will only be used on Printer 2. Connector PJ232 (if present in the printer) is not used.

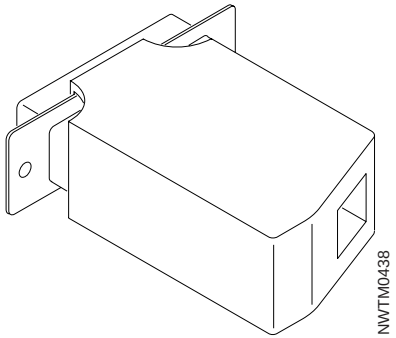
Intelligent Interface Wrap Plug



Use wrap plug P/N 45G2037 (marked **B**) with the advanced function postprocessing interface (for 4720 interface cards only) to isolate problems between the Infoprint 3000 Advanced Function Printer and an attached postprocessor.

See Pre/Postprocessor Diagnostics for more information .

Ethernet Thick Coax (10Base5) Wrap Plug

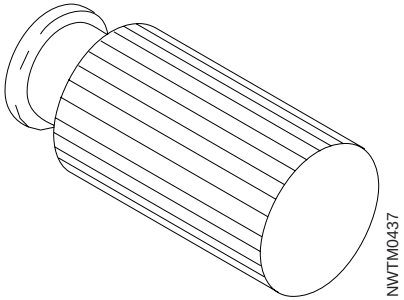


Use this 15-pin plug (P/N 71F1167) to check the input and output circuits of the Ethernet card via the 15-pin D-shell connector on the card.

1. Disable the Ethernet attachment.
2. Unplug the Ethernet cable or transceiver from the 15-pin connector at the rear of the controller.
3. Install the wrap plug on the 15-pin Ethernet connector on the rear of the RISC controller.

For more information, see Ethernet Tests in *Diagnostics*.

Ethernet Thin Coax (10Base2) Wrap Plug

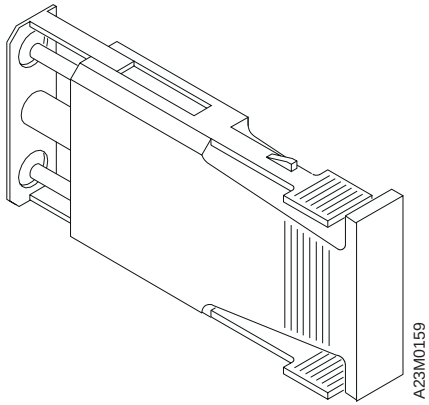


Use this coax plug (P/N 02G7433) to check the input and output circuits of the Ethernet card via the coax connector on the card.

1. Disable the Ethernet attachment.
2. Unplug the Ethernet cable from the coax connector at the rear of the controller.
3. Install the wrap plug on the Ethernet coax connector on the rear of the RISC controller.

For more information, see Ethernet Tests in *Diagnostics*.

ESCON (Serial) Channel Wrap Plug

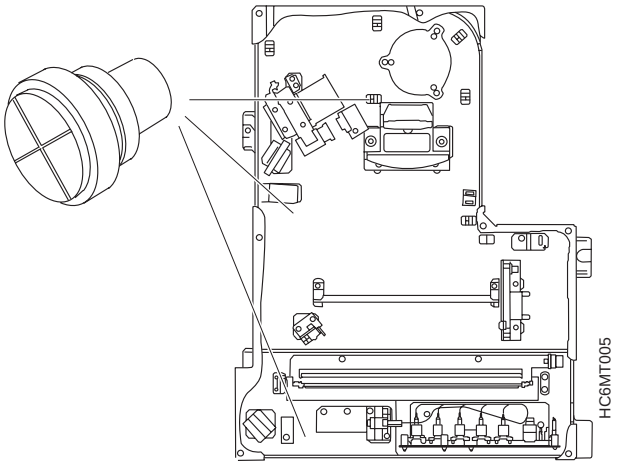


Use this fiber-optic plug (P/N 5605670) to check the input and output circuits of the serial channel card.

1. Perform a Shutdown Procedure.
2. Set the RISC controller power switch to Off.
3. Install the wrap plug on the ESCON channel connector on the rear of the RISC controller.

See ESCON Channel Tests for more information.

Laser Alignment Tool

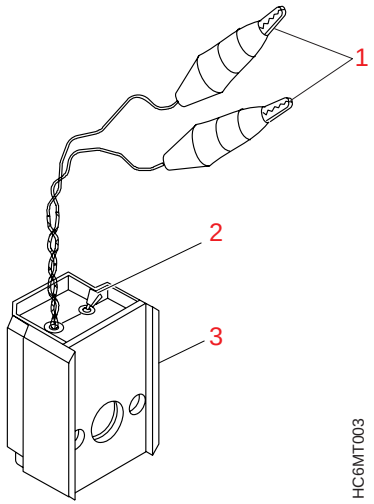


Use this tool (P/N 24L3377) to ensure that the laser beam is aligned through the center of the lenses.

The Printhead Check and Adjustment explains the procedure for using the laser alignment tool.

When you are finished, protect the tool from scratches before you store it.

Laser Power Tool



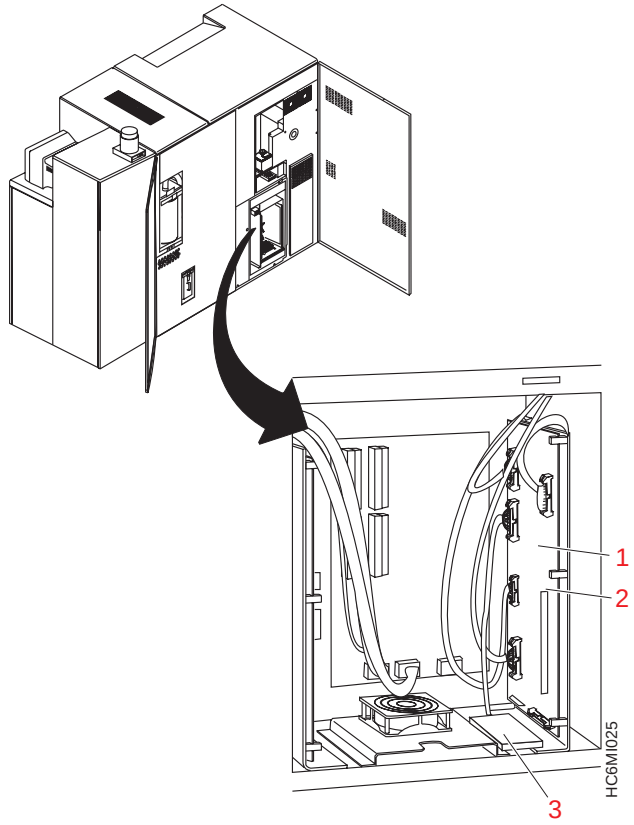
The laser power tool **(3)** (P/N 06F0250) is designed for use only with the red light of a laser. (The tool maybe labeled N305967A)

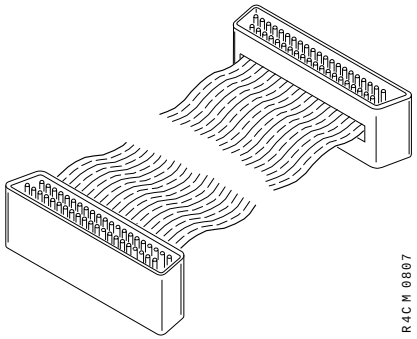
Note: The Infoprint 4000 Laser Power Tool will not work on the Infoprint 3000.

Procedure

1. Connect the laser power tool leads **(1)** to a digital multimeter.
   Note: Ensure that the probe tips do not touch each other or the printer.
2. Set the multimeter for a full-scale reading of 2 V dc.
3. Set the power selection switch **(2)** to HIGH.
4. You will read the beam power in millivolts (mV).
5. See STEP 4: Beam Power Check for more information.

Maintenance Panel and Extension Cable





Maintenance Panel

The maintenance panel **(3)** is located in the rear center of the printer. It has a 4-digit LED display and a hexadecimal key pad.

See Printer Diagnostics for instructions on how to use the panel.

To access the maintenance panel, do the following:

1. Open the right rear cover of the printer.
2. Remove the logic cover.
3. Remove the maintenance panel.

Reverse these steps to put the maintenance panel away.

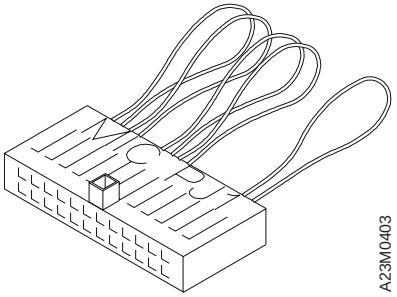
Extension Cable

The extension cable (P/N 65F6227) is provided so you can move the maintenance panel close to the place where you are working. The cable **(4)** normally is stored in the control unit with other special tools. The cable connectors are keyed so that they cannot be installed incorrectly.

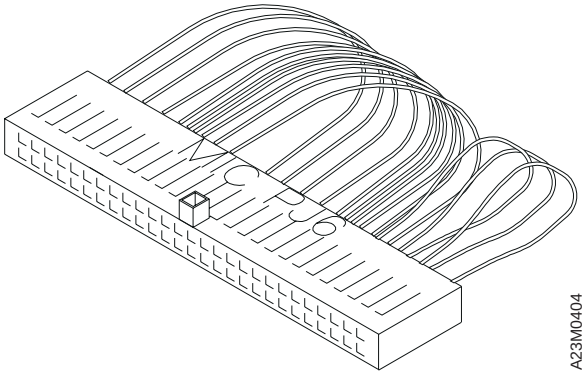
- Always power off the printer before you connect or disconnect the extension cable.
- Do not attach the panel to a vertical surface, such as a cover. The magnets are not strong enough to hold the panel, and they may scratch the paint.

MIC Wrap Plugs

Use these plugs to run the mechanism interface card (MIC) isolation wrap test:

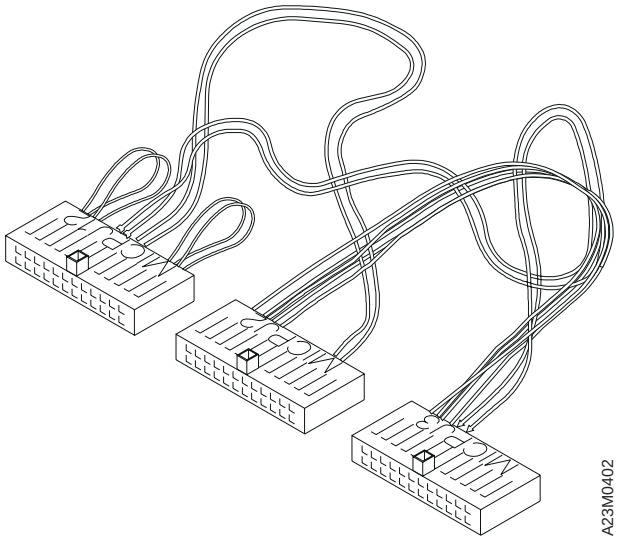


Wrap plug PJ1 (P/N 45G2082)

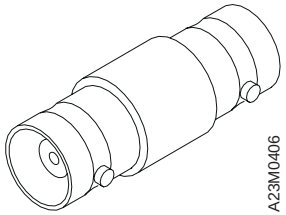


Wrap plug PJ6 (P/N 45G2083)

Always power off the printer before you install or remove these tools. All of them must be installed before you run the test.



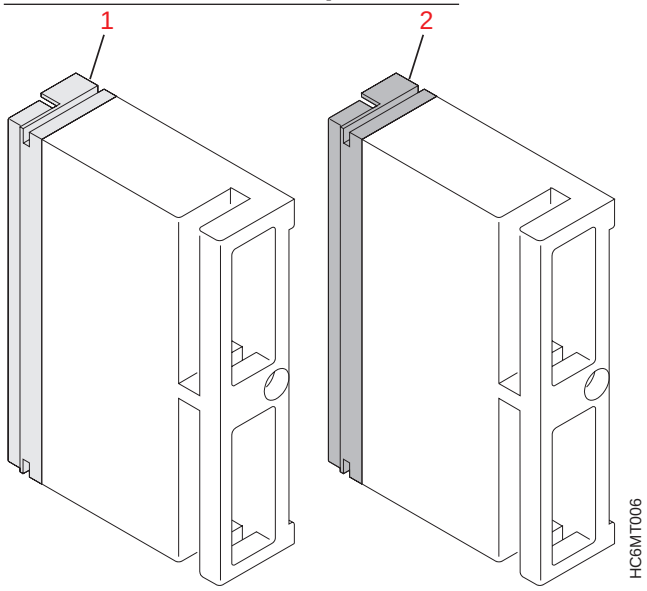
Wrap plug PJ2-PJ3-PJ12 (P/N 45G2084)



BD/VD coax union (P/N 45G2085)

For more information, see Mechanism Interface Card (MIC) Isolation Wrap Test.

Parallel Channel Wrap Blocks

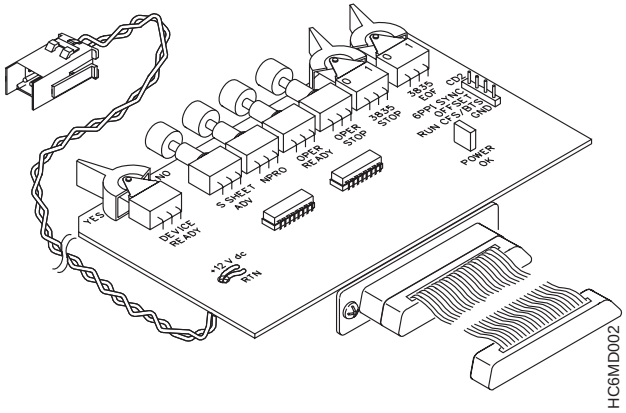


Use wrap block P/N 8575337 **(1)** for the bus connector and wrap block P/N 8575338 **(2)** for the tag connector to check the input and output circuits of the parallel channel at the channel tailgate. Both blocks must be installed.

1. Perform a Shutdown Procedure.
2. Set the RISC controller power switch to Off.
3. Install P/N 8575337 on the parallel channel bus in-connector (BIC) on the channel tailgate, and install P/N 8575338 on the parallel channel tag in-connector (TIC) on the channel tailgate.

See Parallel Channel Tests for more information.

Pre/Postprocessing Interface Test Card and Cable

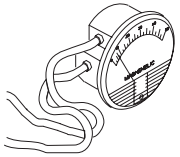


Use the pre/postprocessing interface test card (P/N 45G2033) for diagnosing problems that can be caused by either the printer or a pre/postprocessing device. Install the card in place of the pre/postprocessing device. Then, if the printer operates correctly, you can assume that the problem is in the pre/postprocessing device.

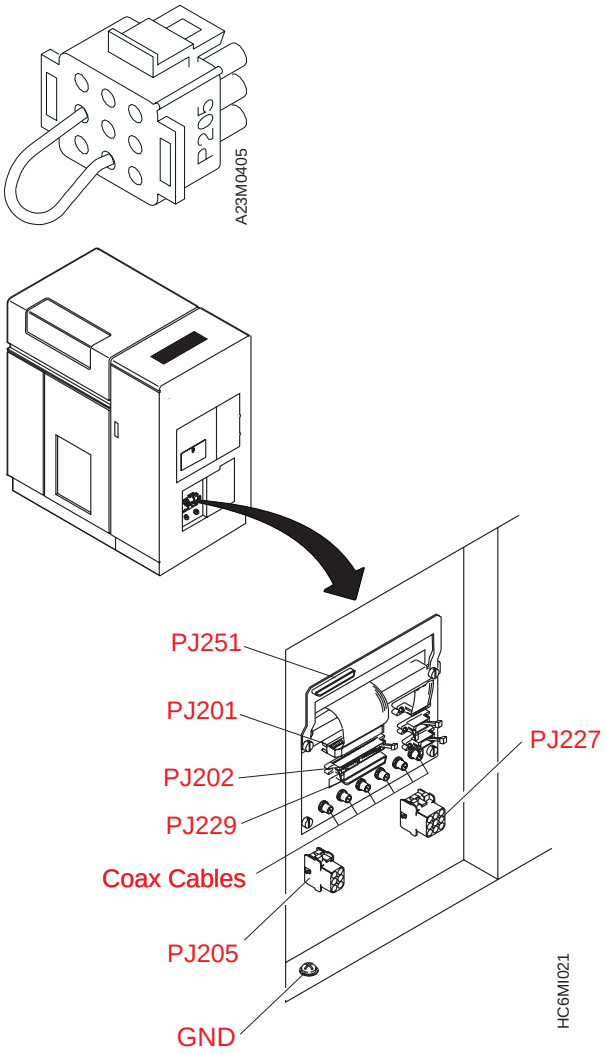
See Pre/Postprocessor Diagnostics for information about using the test card.

Attention: Use the pre/postprocessing interface test card only with the 4710 interface card, not with the intelligent advanced function postprocessing 4720 interface card.

Pressure Gauge



1. Position the pressure gauge (P/N 03F5635) so that the face is vertical.
2. Turn the screw at the base of the needle until the needle points to 0.
3. Take pressure readings only when the face of the gauge is vertical.

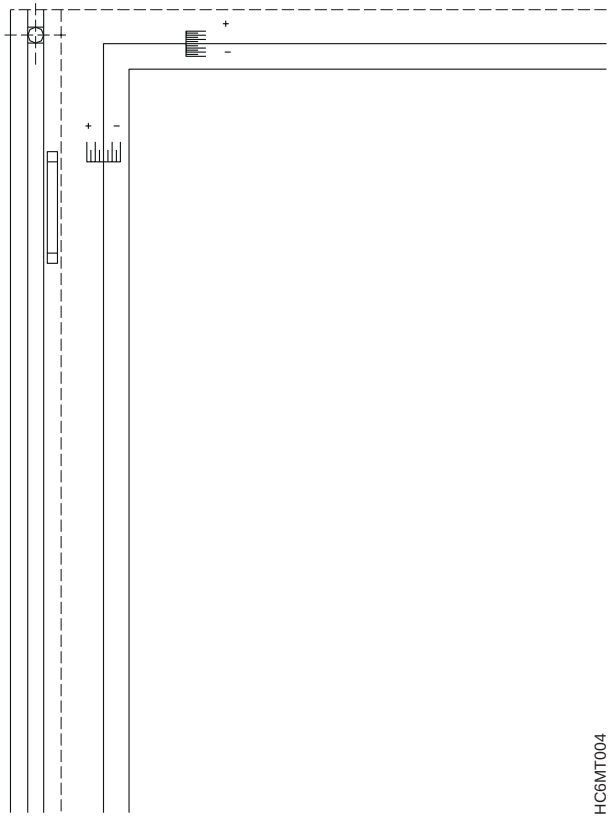


Printer Power Jumper Plug

Use the printer power jumper plug (P/N 45G2038) to run the printer in stand-alone mode (that is, not connected to the control unit):

1. Perform a Shutdown Procedure.
2. Set the printer power switch on the power control panel to Off.
3. Rotate the control unit away from the printer.
4. Disconnect all cables from the control unit at the printer tailgate.
5. Install the printer power jumper plug on connector PJ205 on the printer tailgate (it is keyed for unique positioning).
6. Open the right front cover of the printer.
7. Remove the ac power supply cover.
8. Press the switch to power-on the printer in stand-alone mode.
9. Reverse these steps to reconnect the printer to the control unit.

Registration Template



Use the registration template (P/N 04H0739) to check print registration. It provides an alternate method (rather than using a scale) to determine if the process and scan direction print registration is correct.

The procedure to use this tool is described under Registration.

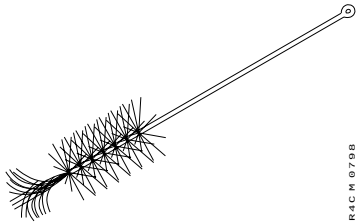
Vacuum Cleaner

The printer should be cleaned only with a vacuum cleaner approved for toner applications. P/N 9900735 is an acceptable cleaner for Infoprint 3000 use. It is listed in the “General CE Tools Reference Summary,” S131-0075.

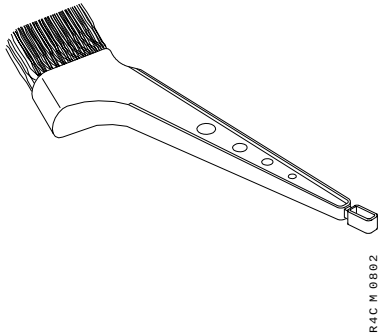
Before you use the vacuum cleaner, do the following:

1. Disable the channels.
2. Power off the printer.

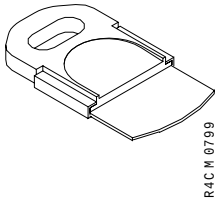
Miscellaneous Tools



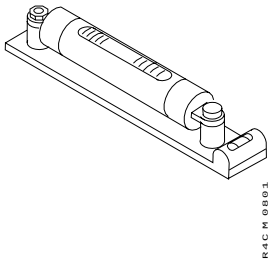
Cleaner Housing Brush



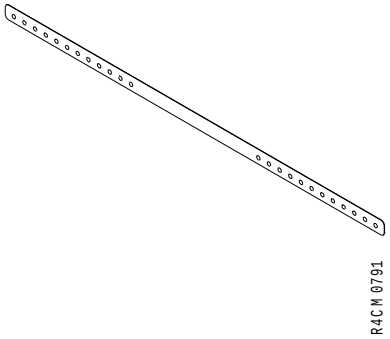
Corona Cleaning Brush



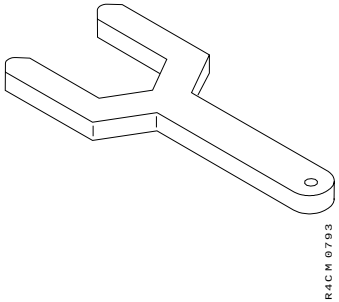
Preheat Platen Scraper



Level



Forms Tension Gauge



Line Cord Wrench

Search Index

Special Characters

(+/- 12V) voltage distribution - CD84 1408
(+24VE) voltage distribution - CD85 1409
(+24VF) voltage distribution - CD86 1410
(+24VH) voltage distribution - CD87 1411
(+5 V) voltage distribution - CD80 1404
(+5 V) voltage distribution - CD81 1405
(+5 V) voltage distribution - CD82 1406
(+5 V) voltage distribution - CD83 1407
(+5VM/+12VM) voltage distribution - CD88 1412
(24VD) power supply (fans)- CD89 1413

Numerics

1.5 Mft procedure 2222
12 Mft procedure 2229
18 Mft procedure 2231
3 Mft procedure 2224
6 Mft procedure 2226
6 PPI sync voltage test 1092
7025 F50- BD01 1418
7025 Model F50, removal 1541
7043 43P- BD02 1419
7043 Model 43P-140, removal 1537
9 Mft procedure 2228

A

AC circuits
  AC distribution to hot roll lamps - WD16 1263
  AC distribution to preheat platen - WD17 1264
  AC motors (M101, M104 & M108) - WD13 1261
  AC power control (duplex) - WD11 1259
  AC power control (simplex) - WD10 1258
  backup roll motor (M701) - WD15/2B 1262
  control unit AC control box (duplex) - WD09 1257
  control unit AC control box (simplex) - WD08 1256
  control unit AC power control (duplex) - WD07 1255
  control unit AC power control (simplex) - WD06 1254
  low voltage power supply, MIC, PQE & fans - WD05 1253
  printer AC power supply - WD01 1251
  printer AC power supply - WD03 1252
  printer power supply - power on/off - WD12 1260
  stacker cooling blower (M703) - WD15/2B 1262
AC circuits *(continued)*
  stacker table motor M803 - WD15/1B 1262
  toner feed motor (M102) - WD30 1273
AC control box, control unit - removal 1515
ac control box, location 1457, 1458
AC/DC power tables 1248
  DC output 1248
  over temperature protection 1249
AC distribution to hot roll lamps - WD16 1263
AC distribution to preheat platen - WD17 1264
AC input/output tables
  input 1247
AC input table 1247
AC motors (M101, M104 & M108) - WD13 1261
AC power control (duplex) - WD11 1259
AC power control (simplex) - WD10 1258
ac power cord
  50/60 Hz 3-wire 2268
  50 Hz 4-wire 2268, 2270
  continuity check, U.S. 2270
  continuity check, World Trade 2270
  danger 2268, 2270
  install 2268
  warning 2268
ac power cord, install 2268
AC power supply, printer - WD01 1251

© Copyright IBM Corp. 1999, 2000

AC power supply, printer - WD03 1252
AC power supply, removal 1757
access, printhead 1775
action code (sense byte 2) 1221
actions, service 1064
activation test, printer 1082
adapting voltages 2259
address/data bus networks - WD46 1289
address values, memory 1116
adjustment routines 1176
  drum surface voltage 1179
  increase toner concentration 1180
  laser diode, C0 1178
  laser diode, C1 1178
  laser diode (LD1), C8 1181
  laser diode (LD2), C9 1182
  laser diode (LD3), CA 1182
  laser diode (LD4), CB 1183
  laser diode (LD5), CD 1183
adjustments
  backup roll discharge brush 1672
  beam detect card (BD171) 1797
  beam power A 1810
  chad brushes 1892
  charge corona cleaning brush 1562
  charge corona to PC drum gap 1564
  cleaner brush drive cone 1500
  cleaner brush rotation sensor 1506
  cleaner housing switch 1509
  conveyor roll lift plate 1600
  conveyor roll rotation sensor 1604
  cyclone blower drive belt 1489
  cyclone blower rotation sensor 1494
  D801 1877
  D802 1877
adjustments *(continued)*
  developer seal plate 1596
  drum revolution sensor 1648
  electrostatic voltmeter (ESV) 1574
  fiber module alignment 1802
  FL031 1853
  forms length 1848
  forms width 1857
  forms width sensor 1895
  front forms width guide 1858
  front stacker height 1877
  laser diode card, LD272 1782
  M1 mirror 1804
  M105 - detent position 1927
  M2 mirror 1806
  M706 1716
  M801 1867
  M802 1873
  M804 1860
  mag brush angles 1623
  mag brush belt 1609
  mag brush bias voltage 1571
  mixing paddle belt 1625
  oiler belt end switch 1714
  oiler belt motor 1716
  oiler gate interlock 1717
  path modifier assembly 1933
  pc drum surface voltage 1574
  pendulum drive belt 1860
  pendulum motor 1860
  preclean corona voltage 1573
  printhead, preparation 1800
  printhead cover switch 1780
  PW111 1895
  rear stacker height 1877
  registration, process direction 1825
adjustments *(continued)*
  resolution lens motor, M502 1787
  resolution lens sensor, S503 1789
  retractor motor encoder sensor 1929
  retractor to PC drum gap 1930
  return mirror 1819
  S101 1486
  S103 1509
  S104 1506
  S105 1648
  S113 1929
  S116 1494
  S621 1709
  S622 1709
  S623 1709
  S704 1717
  S707 1741
  S711 1714
  S801, removal 1876
  S802, removal 1876
  S803 1877
  S804 1877
  S806 1874
  S807 1887
  S808 1883
  scavenger roll belt 1629
  scuff roll motor 1736
  scuff roll release cable 1738
  skew sensor 1741
  skirt 1513
  stacker control card 1853
  stacker gate finger belt motor 1873
  stacker gate finger belts 1871
  stacker gate open switch 1874
  stacker gate safety switch 1876
  stacker rear finger belt motor 1867

adjustments *(continued)*
stacker rear finger belts 1865
stacker table drive belts 1881
stacker table lower limit sensor 1883
stacker table upper limit sensor 1887
toner collector assembly 1484
toner collector switch 1486
toner control 1631, 1632, 1633
toner feed belt 1638
tractor belt 1913
tractor motor - detent position 1927
tractors 1911
transfer corona voltage 1570
vertical registration 1825
AFCCU interface extension cable, desc 2389
air system
cyclone blower, removal 1491
cyclone blower, rotation sense - CD55 1379
cyclone blower drive belt 1488
cyclone blower motor 1490
cyclone blower motor - thermal sense - CD54 1378
cyclone blower motor rotation - CD55 1379
cyclone blower rotation sensor 1493
cyclone pressure check 1495
filter pressure - CD14 1340
filter pressure switch, removal 1487
fine filter case, removal 1481
fine filter switch (S106) 1482
M104 - thermal sense - CD54 1378
M104, rotation sense - CD55 1379
S102 - CD14 1340
S116 - CD55 1379
air system *(continued)*
toner collector, removal 1483
toner collector switch , removal 1485
alarm, operator alert, location 1457
alarm test 1082
ALCD1 - WD68/1A/1B 1311
alert assembly, attach 2290
ALJ2 - WD68/1A 1311
ALJ2, location 1458
ALP2 - WD68/1A 1311
ALP2, location 1458
alternate print sample 1104
arm, link (11L5318) (-61) 1993
arm, toner bag sensor (06F0497) (-20) 2043
arm asm (24H8167) (-14) 2059
ARTIC coprocessor, parts 2147, 2155
assemblies
hot roll drive, lubrication 1691
hot roll drive, removal 1690
oil port, check 1719
scuff pressure roller, location 1431
scuff pressure roller shaft, location 1433
scuff roller shaft, location 1433
toner collector, adjust 1484
toner collector, removal 1483
attachment data trace 1097
attachment diagnostics 1073
attachment link trace 1097
attention light test 1082

B

B101 - WD43/1A 1286
B101, location 1428
B101, parts 1995
B102 - WD43/1A 1286
B102, location 1429
B102, parts 1959
B103 - WD43/2A 1286
B103, location 1429
B103, parts 1959
B301 - WD43/1A 1286
B301, location 1453
B301, parts 2115
B467, location 1450
B468, location 1450
B501 - WD43/2A 1286
B501, location 1446
B501, removal 1798
B701 - WD44/1B 1287
B701, location 1435
B701, parts 2073
B701, removal 1687
B702 - WD44/1B 1287
B702, location 1435
B702, parts 2073
B702, removal 1687
B703, location 1442
B703, parts 2087
B703, removal 1868
B704 - WD44/1A 1287
B704, location 1433
B704, parts 2079
B704, removal 1725
B705 - WD44/1A 1287
B705, location 1431
B705, parts 2079
B705, removal 1726
B706 - WD44/1A 1287
B706, location 1433

B706, parts 2079
B706, removal 1725
B707 - WD44/2A 1287
B707, location 1431
B707, parts 2079
B707, removal 1726
B708 - WD44/1B 1287
B708, location 1435
backing up disk 1094
backup roll 2232
backup roll, location 1434
backup roll, parts 2057
backup roll, removal 1670
backup roll discharge brush, adjust 1672
backup roll discharge brush, removal 1672
backup roll encoder - WD52/2A 1296
backup roll encoder (DV071 & FU041 cards) - WD52 1296
backup roll encoder, removal 1673
backup roll lift encoder, location 1437
backup roll lift motor - CD26 1351
backup roll lift motor (M610) routine 1147
backup roll lift motor, removal 1675
backup roll lift motor (S624), routine 1174
backup roll lift motor drive belt, removal 1677
backup roll lift motor encoder - CD26 1351
backup roll lift motor M610 - WD37/1B 1280
backup roll lift motor M610, location 1437
backup roll lift motor timing adjustment 1194
backup roll lift position sensor, removal 1683
backup-roll motor - CD23 1348
backup-roll motor - open/close mechanism - CD24 1349
backup roll motor - WD15/2B 1262
backup-roll motor (M701) driver routine 1139
backup roll motor, removal 1684
backup roll motor M701, location 1435
backup roll position encoder, location 1433
backup-roll position sensor - CD24 1349
backup roll position sensor S624 - WD37/2B 1280
backup roll position sensor S712, location 1434
backup roll print count 1116
backup roll timing values 1193
band, wire (06F0463) (-5) 2043
bar code print sample 1103
base (11H6955) (-42) 2155
base, belt clamper (LH) (88F3290) (-47) 2107
basic test, ESCON channel 1075
basic test, parallel channel 1074
battery (33F8354) (-45) 2155
battery (33F8354) (-8) 2145
battery, CPxxx card (-29) 2117
BD, location 1461
BD171, location 1454, 1771
BD171, parts 2017
BD171 beam detect card, adjustment 1797
BD171 beam detect card, check 1797
BD171 beam detect card, removal 1796
beam detect - WD28 1271
beam detect (BD171), adjustment 1797
beam detect (BD171), check 1797
beam detect (BD171), removal 1796
beam detect card BD171, location 1454, 1771
beam detect mirror, location 1454, 1771
beam scanning position driver routine 1146
beam spacing check 1843
bearing, 12 mm X 20 mm OD (63H6557) (-11) 2071
bearing (53F1817) (-25) 2053
bearing (53F1991) (-27) 2033
bearing, ball (06F0037) (-63) 2035
bearing, ball (06F0054) (-16) 2071
bearing, ball (06F0054) (-17) 2067
bearing, ball (06F0054) (-50) 2035
bearing, ball (06F0079) (-62) 2049
bearing, ball (06F0134) (-20) 2053
bearing, ball (6201VVCM) (06F0199) (-26) 2105
bearing, ball (6202 DDU) (06F0079) (-5) 1999
bearing, ball (6202VVCM) (06F0200) (-10) 2105
bearing, ball (6204VVCM) (88F3299) (-5) 2105
bearing, ball (65F6158) (-11) 2111
bearing, ball (88F3224) (-5) 2101
bearing, ball (88F3224) (-6) 2097
bearing, ball (90H2406) (-12) 2053

bearing, ball (90H2406) (-28) 2053
bearing, cleaner rear ball (06F0054) (-33) 1969
bearing, flange (53F1808) (-44) 2027
bearing, nylon (53F1884) (-7) 1987
bearing, plastic (06F0214) (-22) 2091
bearing, plastic (06F0214) (-29) 2091
bearing, plastic (06F0214) (-52) 2093
bearing, plastic (06F0214) (-67) 2109
bearing, plastic (06F0848) (-15) 2111
bearing, plastic (06F0848) (-23) 2075
bearing, plastic (63F0214) (-31) 2101
bearing, pulley (53F1817) (-96) 2037
bearing, scuff roll release (06F0212) (-130) 2081
bearing asm (06F0037) (-15) 1975
bearing asm (06F0038) (-4) 1975
bearing asm (06F0212) (-2) 2091
bearing asm-front, hot roll (06F1069) (-2) 2063
belt, backup roll lift motor (63H6533) (-8) 2053
belt, cleaner brush drive (06F0053) (-60) 1969
belt, cyclone blower (53F1988) (-4) 2041
belt, developer mixing paddle (63H6515) (-50) 2003
belt, gate finger drive (63H6568) (-30) 2099
belt, mag brush drive (63H6514) (-81) 2005
belt, oiler (1401817) (-55) 2061
belt, pendulum timing (06F0111) (-22) 2111
belt, rear finger drive (63H6568) (-29) 2101
belt, scuff roll drive (63H6559) (-20) 2075
belt, stacker finger (06F0220) (-8) 2097
belt, stacker rear finger (06F0220) (-7) 2101
belt, timing (06F0072) (-55) 1977
belt, timing (stacker) (63H6563) (-41) 2107
belt, toner feed (63H6519) (-89) 2011
belt, tractor asm (06F0339) (-61) 2035
belt, tractor drive (63H6531) (-59) 2029
belts
backup roll lift motor, parts 2053
backup roll lift motor drive, removal 1677
cleaner brush, adjust 1504
cleaner brush, removal 1503
cleaner brush drive, parts 1969
cyclone blower, parts 2041
cyclone blower drive, adjustment 1489
cyclone blower drive, location 1448
cyclone blower drive, removal 1488
developer mixing paddle, location 1425
drum drive, adjustment 1648
drum drive, removal 1645
drum timing, parts 1977
hot roll drive, location 1435
mag brush, adjust 1609
mag brush, location 1425
mag brush, removal 1608
mag brush drive, parts 2005
mixing paddle, adjust 1625
belts *(continued)*
mixing paddle, removal 1625
oiler, parts 2061
pendulum drive, adjust 1860
pendulum drive, parts 2111
pendulum drive, removal 1859
rear finger drive, parts 2101
scavenger roll, adjust 1629
scavenger roll, location 1425
scavenger roll, removal 1629
scuff roll, parts 2075
scuff roll drive, removal 1736
scuff roller drive, location 1433
stacker finger, parts 2097
stacker gate finger 1441
stacker gate finger, adjust 1871
stacker gate finger, parts 2099
stacker gate finger, removal 1870
stacker rear finger, adjust 1865
stacker rear finger, location 1440
stacker rear finger, parts 2101
stacker rear finger, removal 1863
stacker table, parts 2107
stacker table drive, adjust 1881
stacker table drive, removal 1880
toner feed, adjust 1638
toner feed, location 1425
toner feed, parts 2011
toner feed, removal 1637
tractor, adjust 1913
tractor, removal 1912
tractor asm, parts 2035
tractor motor, location 1445
bezel (45G1751) (-28) 2141
bezel, front (07L7649) (-7) 2151
bezel, op panel (73H0870) (-31) 2149

bias contact plate, location 1426
bias contacts, removal 1597
blade, doctor, location 1427
block, bearing (88F2854) (-23) 2033
block, terminal (24L4914) (-50) 2117
bloom improvement adjustments 1194
blower, stacker cooling asm (53F1965) (-11) 2087
blower cover, location 1584, 1585
blowers
B703, location 1442
B703, removal 1868
cyclone, removal 1491
cyclone drive belt, adjustment 1489
cyclone drive belt, removal 1488
stacker, removal 1868
stacker cooling, location 1442
bolt (06F1015) (-27) 1967
bolt, clamp (06F0984) (-86) 2109
bolt, hexagon socket hd M3 X 6 (stainless) (57G4439) (-2) 1991
bolt, hexagon socket hd M6 X 12 (06F0414) (-1) 1973
bookmark in service logs 1066, 1067
bracket (30H6837) (-26) 2131
bracket, cable (30H6798) (-33) 2133
bracket, cable (30H6799) (-34) 2133
bracket, disk drive mounting (88G2216) (-16) 2151
bracket, display panel (40H3126) (-33) 2149
bracket, door stop (30H3075) (-20) 2135
bracket, mounting (06F0695) (-73) 2029
bracket, operator panel (93H1819) (-9) 2151
branch circuit CB check 2261
branch circuit CB, turn off 2261
phase-to-ground voltage, measure 2261
phase-to-neutral voltage, check 2261
phase-to-phase voltage, measure 2261
voltage, receptacle to building ground 2261
voltage, receptacle to ground pin 2262
branch circuit CB turned on check 2262
branch office tools 2381
brush (06F1056) (-8) 1985
brush, AC (06F1050) (-11) 1965
brush, carbon (06F0081) (-45) 1977
brush, carbon (06F0081) (-87) 1995
brush, cleaner (57G6462) (-28) 1967
brush, discharge (57G6513) (-74) 2057
brush, discharge transfer (06F0106) (-78) 2031
brush, disharge transfer (06F0106) (-35) 2027
brush, pendulum front discharge (06F0224) (-27) 2111
brush, pendulum rear discharge (06F0223) (-28) 2111
brush, transfer corona (63H6532) (-82) 2031
brush assembly, splicing station (90H1561) (-63) 1989
buffer/flipper, install 2331
buffer flipper(45G2026) 2179
building ground 2261
bulb (2129665) (-202) 2143
bumper (45G2063) (-4) 2135
BUR position encoder sensor (S712) routine 1165
BUR position sensor (S712) routine 1164
BUS IN connector, location 1463
BUS OUT connector, location 1463
bytes (sense), interpretation of 1211

C

C701, location 1435
C702 capacitor, location 1442
cable (10 m), SSA , RISC printer 2 to printer 1 MIC MJ21 (32H1466) 2171
cable (10 m), SSA , RISC printer 2 to printer 1 MIC MJ22 (32H1466) 2171
cable (2.5 m), SSA , RISC slot 1 to MIC MJ21 (32H1465) 2171, 2173
cable (2.5 m), SSA , RISC slot 1 to MIC MJ22 (32H1465) 2171, 2173
cable, ac power control unit (11L6062) 2161
cable, AC power to RS/6000 (24H8004) (42) 2167
cable, BD coax (89H9938) (43) 2169
cable, CD ROM audio (65G8850) (-46) 2155
cable, dc power control unit (30H6942) 2161
cable, diskette drive (93H1821) (-37) 2155
cable, display (93H1816) (-4) 2145
cable, display/touch screen (45G1728) (41) 2167
cable, EPO (93H6280) (-11) 2145
cable, ground (11L5164) (-9) 2067

cable, ground (45G2091) (-13) 2129
cable, ground (81X0295) (-4) 2129
cable, ground wire (88F3295) (-78) 2109
cable, high voltage (bias) (06F0090) (-23) 1965
cable, high voltage (charge) (06F0043) (-36) 1973
cable, high voltage (preclean) (06F0045) (-22) 1965
cable, high voltage asm (53F1794) (-16) 2027
cable, J07 (on MIC) to J1 (on side 2 control card) (30H6941) 2175
cable, J322S2 to P324S2 (24L4858) 2177
cable, operator alert (30H6943) (38) 2165
cable, P233S2 to P322S2 (24L4859) 2177
cable, P2S2 to P233S2 (89H9838) 2175
cable, power control, control unit (30H6936) 2163
cable, power control, control unit (30H6938) 2163
cable, power control, control unit (30H6944) 2163
cable, pre/postprocessor to MIC (30H6943) (39) 2165
cable, pre/postprocessor to tailgate (30H6947) (40) 2167
cable, printer interface (30H6939) (-31) 2159
cable, remote power (45G1727) (-23) 2157
cable, retractor ground (06F0690) (-58) 2035
cable, retractor motor, (02N7498) 2039
cable, retractor motor, (02N7499) 2039
cable, token ring (20 foot) (53F3930) 2147
cable, token ring adapter (RJ to D-shell) (60G1066) 2147
cable, tractor motor (02N7499) 2031
cable, UEPO control unit (30H6935) 2163
cable, VD1 coax (89H9933) (44) 2169
cable, VD2 coax (89H9934) (45) 2169
cable, VD3 coax (89H9935) (46) 2169
cable, VD4 coax (89H9936) (47) 2169
cable, VD5 coax (89H9937) (48) 2169
cable adapter, 90° (89H9762) (-35) 2133
cable and bracket asm (93H5982) (-22) 2151
cable asm, (SSA) (73H0435) (-39) 2155
cable asm, (Ultra SSA) (93H6151) (-40) 2155
cable tie (93H4574) (-29) 2153
cap, air duct (06F0291) (-5) 1967
cap, developer mix inlet (88F2522) (-100) 1995
cap, oil reservoir (88F3043) (-33) 2073
cap, oiler belt (02N6876) (-19) 2059
cap, oiler belt (02N6876) (-7) 2059
cap, sleeve (06F0492) (-2) 2043
cap asm, cleaner front (06F0289) (-19) 1967
capacitors
  C701, location 1435
  C702, location 1442
card, ARTIC coprocessor (39H8084) (-16) 2147
card, ARTIC Coprocessor (39H8084) (36) 2155
card, beam detect BD171 (63H6480) (-122) 2017
card, common ground isolation (Feature 4720) (49G6111) (-31) 2133
card, coupled interface (feature 4710) (11L5251) (-31) 2133
card, CP261 (63H6472) (-28) 2115
card, CP471 (01P4657) (-28) 2115
card, CPU 332 MHZ (93H9018) (-17) 2147
card, DV061 (63H6477) (-38) 2115
card, DV071 (63H6484) (-52) 2049
card, DV081 (63H6483) (-20) 2119
card, DV101 (63H6478) (-3) 2119
card, ESCON adapter (12K0150) (-16B) 2147
card, ESCON adapter (12K0150) (36) 2155
card, Ethernet (10/100 Base T) (94H0823) (-16) 2147
card, Ethernet 10/100 BaseT (94H0823) (36) 2155
card, FDDI (73H3405) (-16) 2145
card, FDDI (73H3405) (36) 2155
card, FL031 (06F0023) (-99) 2095
card, FL061 (57G6529) (-125) 2095
card, FU041 (63H6474) (-21) 2119
card, GTX120P graphics adapter (08L0895) (36) 2155
card, GXT110P graphics adapter (08L0895) (-16) 2145
card, IF491 (02N7496) (-36) 2119

card, LD272 (laser diode) (24L3322) (-6) 2013
card, MB071 (63H6473) (-29) 2117
card, MIC (89H9831) (-21) 2131
card, parallel channel adapter (12K0159) (-16B) 2147
card, parallel channel adapter (12K0159) (36) 2155
card, parallel channel asm (08J6472) (36) 2155
card, PC561 (63H6475) (-30) 2117
card, power control (45G1741) (-32) 2141
card, PQE (24L4913) (-17) 2131
card, PR011 (63H6476) (-28) 2119
card, riser (73H4532) (-41) 2155
card, side 1/side 2 verification control (11L5278) (-4) 2137
card, SSA adapter (09L2061) (-16) 2145
card, SSA adapter (09L2061) (36) 2155
card, stacker control (LP041) (24L3334) (-18) 2073
card, SW761 (63H6479) (-57) 1983
card, system (07L9718) (-37) 2149
card, token ring (94H1038) (-16) 2145
card, token ring (94H1038) (36) 2155
card/sensor asm, S1/S2 Verify (24L4861) 2039
cards
BD171, location 1454, 1771
BD171, parts 2017
BD171 beam detect , adjustment 1797
BD171 beam detect, check 1797
BD171 beam detect, removal 1796
cards *(continued)*
beam detect (BD171), adjustment 1797
beam detect (BD171), check 1797
beam detect (BD171), removal 1796
beam detect BD171, location 1454, 1771
card, CP261, parts 2115
card, CP471, parts 2115
coupled interface 4710, parts 2133
coupled interface 4720, parts 2133
CP261/CP471, removal 1760
CP261/CP471 EPROM, removal 1762
CPxxx, locations
CP261 1471
CP471 1471
diagnostic function switch 1471
MASWA 1471
MASWB 1471
MASWC 1471
PJ325 1471
PJ326 1471
PJ327 1471
PJ328 1471
PJ329 1471
PJ330 1471
PJ331 1471
PJ332 1471
PJ333 1471
PJ334 1471
PJ340 1471
PJ348 1471
CPxxx printer control, location 1453
DV061, locations
CB1 1472
cards *(continued)*
DV061, locations *(continued)*
CB1 - WD24-1/2A 1266
CB2 1472
CB2 - WD24-1/2A 1266
CB2 - WD30/1B 1273
CB3 1472
CB3 - WD24-1/2A 1266
CB4 1472
CB4 - WD24-1/2A 1266
PJ302 1472
PJ303 1472
PJ304 1472
PJ305 1472
PJ306 1472
PJ307 1472
PJ309 1472
PJ310 1472
PJ311 1472
PJ312 1472
PJ313 1472
PJ315 1472
PJ321 1472
PJ322 1472
PJ323 1472
DV061, parts 2115
DV061, removal 1764
DV061 stepper motor driver, location 1453
DV071, locations
CB1 1473
CB1 - WD39/1A 1282
CB2 1473
CB3 1473
CB3 - WD42/1A 1285
CB4 1473

cards *(continued)*
CB4 - WD42/1A 1285
CB5 1473
CB5 - WD51/2A 1295
PJ606 1473
PJ607 1473
PJ608 1473
PJ609 1473
PJ616 1473
PJ617 1473
PJ618 1473
PJ626 1473
PJ627 1473
PJ628 1473
PJ629 1473
VR1 1473
VR2 1473
DV071, parts 2049
DV071, removal 1685
DV071 fuser/stacker driver, location 1437
DV081, locations
CB1 1474
CB1 - WD24-2/2A 1267
CB1 - WD39/1B 1282
CB2 - WD24-2/2A 1267
CB2 - WD39/2B 1282
K1 1474
K2 1474
K3 1474
K4 1474
K5 1474
PJ601 1474
PJ602 1474
PJ603 1474
PJ604 1474
cards *(continued)*
DV081, locations *(continued)*
PJ605 1474
PJ621 1474
PJ622 1474
PJ623 1474
PJ624 1474
PJ625 1474
DV081, parts 2119
DV081, removal 1764
DV081 fuser/stacker driver, location 1442
DV101, locations
CB1 1475
CB1 - WD24-2/2A 1267
CB2 1475
CB2 - WD24-2/2A 1267
K1 1475
K2 1475
K3 1475
K4 1475
K5 1475
PJ308 1475
PJ316 1475
PJ317 1475
PJ319 1475
PJ320 1475
PJ324 1475
PJ342 1475
PJ343 1475
DV101, parts 2119
DV101, removal 1764
DV101 ac motor driver, location 1452
EP process PR011, location 1447
eprom, CP261, parts 2115
eprom, CP471, parts 2115
cards *(continued)*
ESCON card, removal 1550
FL031, adjust 1853
FL031, parts 2095
FL031, removal 1851
FL031, routine 1166
FL031 forms length fraction control, location 1438, 1439
FL061, check 1855
FL061, parts 2095
FL061, removal 1855
FL061, routine 1166
FL061 forms length control, location 1438
form width sensor, routine 1161
forms length control FL061, location 1438
forms length fraction, parts 2095
forms length fraction control FL031, location 1438, 1439
forms length select, adjust 1853
forms length select, parts 2095
forms length select, removal 1851
forms length sensor, check 1855
forms length sensor, removal 1855
forms length sensor, routine 1166
FU041, locations
CB1 1476
CB1 - WD50/1A 1294
PJ631 1476
PJ632 1476
PJ633 1476
PJ634 1476
PJ635 1476
PJ636 1476
PJ637 1476

cards *(continued)*
PJ638 1476
S1 1476
S2 1476
FU041, parts 2119
FU041 fuser control, location 1442
fuser control, removal 1685
fuser/stacker driver DV071, location 1437
fuser/stacker driver DV081, location 1442
IF491, location 1456
laser diode card, adjustment 1782
laser diode card, removal 1781
laser diode LD272, location 1454
laser driver LD272, location 1771
LD272, adjustment 1782
LD272, location 1454, 1771
LD272, locations
LD1 1477
LD2 1477
LD3 1477
LD4 1477
LD5 1477
PJ260 1477
PJ503 1477
PJ506 1477
PJ507 1477
PJ508 1477
PJ509 1477
PJ510 1477
PJ511 1477
PJ516 1477
PJ517 1477
VR1 1477
VR2 1477
cards *(continued)*
LD272, locations *(continued)*
VR3 1477
VR4 1477
VR5 1477
LD272, parts 2013
LD272, removal 1781
locations, logic card area 1453
locations, MIC 1460
locations, pre/post cards 1462
LP041, check 1869
LP041, location 1435
LP041, parts 2073
LP041, routine 1170
LP041 stacker control, location 1441
MB071, location 1453
MB071, parts 2117
MB071, replacement 1763
mechanical interface, location 1460
mechanism interface, removal 1522
mechanism interface memory, removal 1524
MIC, location 1460
parallel channel card, removal 1553
PC561, locations
CB1 - WD54/2A 1298
CB2 - WD55/1B 1299
PJ335 1477
PJ336 1477
PJ337 1477
PJ338 1477
PJ339 1477
PJ344 1477
PJ345 1477
PC561, parts 2117
PC561, removal 1764
cards *(continued)*
PC561 paper path control, location 1453
power control panel, location 1457
PQE, location 1461
PQE, locations 1461
PQE, removal 1532
PR011, locations
CB1 1478
CB2 1478
PJ101 1478
PJ102 1478
PJ103 1478
PJ104 1478
PJ105 1478
PJ107 1478
PJ108 1478
PR011, parts 2119
PR011, removal 1764
PR011 EP process, location 1447
pre/post processing, removal 1534
print quality enhancement, location 1461
printer control panel- CD02 1328
printer control panel (SW721) routine 1162
printer control panel SW761, location 1430
PW111, parts 2037
PW111, routine 1161
S1/S2 verify, parts 2039
side 1/2 verify control, removal 1535
side 1/side 2 control, parts 2137
skew sensor, location 1431
stacker control, check 1869
stacker control LP041, location 1441

cards *(continued)*
stacker control panel, routine 1170
stacker length select, routine 1166
SW761 - CD01 1328
SW761, location 1430
SW761, parts 1983
caster (81X0280) (-17) 2135
CB451 - WD01/1A 1251
CB451 - WD03/1A 1252
CB451, location 1450
CB452 - WD01/1B 1251
CB452 - WD03/1B 1252
CB452, location 1450
CB453 - WD01/1A 1251
CB453 - WD03/1A 1252
CB453, location 1450
CB454, location 1450
CB463, location 1450
CD ROM (97H7796) (-21) 2151
CD ROM (97H7796) (-25) 2147
CD-ROM drive, location 1465, 1469
CD25 -hot roll motor 1350
CD64 - mirror motor (M501) 1388
CD66 - beam detect 1390
CE mode 2217
CE password 1063
CH1, location 1449
CH2, location 1449
CH3, location 1449
CH4, location 1449
CH5, location 1449
CH6, location 1449
chad brushes, adjust 1892
chad brushes, removal 1891
chain, oiler belt drive (06F0357) (-29) 2059
changing a PM counter 1068, 2218
channel A attach - BD04-1 1421
channel B attach - BD04-2 1422
channel priority switch SW1, location 1463
channel tailgate, location 1463
channel tailgate cover, loction 1463
charge corona - CD60 1384
charge corona, location 1429
charge corona, removal 1557
charge corona asm, parts 1973
charge corona cleaning brush, adjustment 1562
charge corona cleaning brushes, removal 1562
charge corona driver routine 1133
charge corona to drum gap 1564
check, print-quality 2213
check, toner control 2307
check, voltage jumpers 2278
checking pre/postprocessing interface signals 1089
checking pre/postprocessing interface voltages 1092
checklist, PM 2214
checks
beam detect card (BD171) 1797
beam power 1808
cyclone pressure 1495
cylinder lens CYL1 1791
D803 1879
DC power supply, control unit-measurements 1518
developer 1591
fiber module alignment 1801
FL061 1855
checks *(continued)*
forms length sensor card 1855
lens L2 1784
lens L3 1785
LP041 1869
M1 mirror 1803
M2 mirror 1805
mag brush angles 1623
oil port assembly 1719
print skew 1818
print width 1817
printhead, preparation 1800
printhead cover switch 1780
registration 1822
S805 1879
stacker control card 1869
stacker jam sensor 1879
circuit breaker 2259
circuit breakers
CB1
DV061 1472
DV071 1473
DV081 1474
DV101 1475
FU041 1476
PR011 1478
CB2
DV061 1472
DV071 1473
DV081 1474
DV101 1475
PR011 1478
CB3
DV061 1472
DV071 1473

circuit breakers *(continued)*
CB4
DV061 1472
DV071 1473
CB451 - WD01/1A 1251
CB451 - WD03/1A 1252
CB451, location 1450
CB452 - WD01/1B 1251
CB452 - WD03/1B 1252
CB452, location 1450
CB453 - WD01/1A 1251
CB453 - WD03/1A 1252
CB453, location 1450
CB454, location 1450
CB5
DV071 1473
CP1, location 1458
forms length - CD53 1377
laser driver circuit breaker - CD63 1387
PR011 - CD90 1414
ST sensor - CD91 1415
circuit diagrams
CD01 - retractor motor 1327, 1328
CD03 - tractor motor and encoder 1329
CD04 - upper tractor jams sensor 1330
CD05 - forms width hall sensor 1331
CD06 - forms width sensor circuit breaker 1332
CD07 - end of forms sensor (S117) 1333
CD08 - transfer station open sensor (S114) 1334
CD09 - tension arm encoder 1335
circuit diagrams *(continued)*
CD10 - skew sensor encoder 1336
CD11 - steering motor 1337
CD12 - drum motor and overcurrent detection 1338
CD13 - drum rotation sensor (S105) 1339
CD14 - filter pressure switch (S102) 1340
CD15- fine filter switch (S106) 1341
CD16 - developer drain lever switch (S111) 1342
CD17 - developer run switch (S109) 1343
CD18 - scuff roll motor 1344
CD19 - oiler belt motor and driver 1345
CD20 - oil pumps and driver 1346
CD21 - oiler belt end switch (S711) 1347
CD22 - oiler gate open switch (S704) 1347
CD23 - backup-roll motor and thermal sense 1348
CD24 - backup-roll motor - open/close mechanism & position sensor 1349
CD26 - backup roll lift motor (M610), position sensor 1351
CD27 - hot roll temperature control sensor (S701) 1352
CD28 - preheat platen 1353
CD29 - fuser oil empty sensor (S702) 1354
CD30 - hot roll over-temperature 1355
circuit diagrams *(continued)*
CD31 - hot roll temperature control thermistors 1356
CD33 - hot roll drive motor (M703) and overcurrent detection 1357
CD34 - hot roll lamp 1 1358
CD35 - hot roll lamp 2 1359
CD36 - hot roll lamp 3 1360
CD37 - hot roll lamp 4 1361
CD38 - erase lamp starter and detection 1362
CD39 - stacker jam sensor 1363
CD40 - pendulum motor (M804) 1364
CD41 - pendulum motor (M804) control 1365
CD42 - pendulum motor (M804), positioning 1366
CD43 - finger belt motors (M801 & M802) 1367
CD44 - stacker table motor (M803) and thermal sense 1368
CD45 - stacker height sensors 1369
CD46 - stacker gate safety switches (S713 & S714) 1370
CD47 - stacker table limit switches 1371
CD48 - stacker forms length hall sensor 1372
CD49 - stacker rear finger belt motor (M801) 1373
CD50 - stacker front finger belt motor (M801) 1374
CD51 - stacker gate open switch (S712) 1375
CD52 - stacker control panel (LP041) 1376

circuit diagrams *(continued)*
CD53 - forms length circuit breaker 1377
CD54 - cyclone blower motor (M104) & thermal sense 1378
CD55 - cyclone blower motor (M104) & rotation sense 1379
CD56 - cleaner brush motor and rotation sensor 1380
CD57 - cleaner brush drive and thermal 1381
CD58 - cleaner housing motor drive &position control 1382
CD59 - scuff roll motor (M704) 1383
CD60 - charge corona 1384
CD61 - transfer corona 1385
CD62 - preclean corona 1386
CD63 - laser driver circuit breaker 1387
CD64 - mirror motor 1388
CD65 - printhead 1389
CD66 - beam detect 1390
CD67 - video data 1391
CD68 - resolution switching lens postion sensor (S502) 1392
CD69 - pc drum cover interlock 1393
CD70 - mag brush bias 1394
CD71 - mag brush motor (M101) and conveyor roll rotation sensor (S110) 1395
CD72 - mag brush motor (M101) & thermal sense 1396
CD73 - toner control sensor & toner feed motor 1397
CD74 - toner collector switch (S101) 1398
circuit diagrams *(continued)*
CD75 - toner empty sensor (S108) 1399
CD76 - toner feed motor (M102) 1400
CD77 - operator alert 1401
CD78 - printer remote power circuit 1402
CD79 - printer 1 remote power circuit 1403
CD80 - (+5 V) voltage distribution 1404
CD81 - (+5 V) voltage distribution 1405
CD82 - (+5 V) voltage distribution 1406
CD83 - (+5 V) voltage distribution 1407
CD84 - (+/- 12V) voltage distribution 1408
CD85 - (+24VE) voltage distribution 1409
CD86 - (+24VF) voltage distribution 1410
CD87 - (+24VH) voltage distribution 1411
CD88 - (+5VM/+12VM) voltage distribution 1412
CD89 - (24VD) power supply (fans) 1413
CD90 - PR011 sensor circuit breaker 1414
CD91 - ST sensor circuit breaker 1415
CD92 - ST sensor circuit breaker 1416
circuit diagrams *(continued)*
CD93 - splicing station 1416
circuit protector CP1, location 1458
clamp, cable (04H1119) (-5) 2041
clamp, hose (06F0734) (-62) 1989
clamp, return mirror (04H0804) (-100) 2017
clamp asm (06F0518) (-2) 1975
clamper, belt (06F0972) (-53) 2107
cleaner brush, parts 1967
cleaner brush, removal 1498
cleaner brush drive belt, adjust 1504
cleaner brush drive belt, removal 1503
cleaner brush drive cone, adjust 1500
cleaner brush drive cone, removal 1500
cleaner brush driven cone, removal 1501
cleaner brush motor - CD56 1380
cleaner brush motor (M108) driver routine 1130, 1131
cleaner brush motor, removal 1503
cleaner brush motor, thermal sense - CD57 1381
cleaner brush motor M108, location 1446
cleaner brush rotation sensor - CD56 1380
cleaner brush rotation sensor - WD54/2B 1298
cleaner brush rotation sensor, adjust 1506
cleaner brush rotation sensor, removal 1505
cleaner brush rotation sensor (S104) routine 1152

cleaner brush rotation sensor S104, location 1447
cleaner housing, cleaning 1511
cleaner housing motor - CD58 1382
cleaner housing motor - WD33/2B 1276
cleaner housing motor (M106) driver routine 1130
cleaner housing motor, removal 1507
cleaner housing motor M106, location 1446
cleaner housing position sensor S103, location 1447
cleaner housing position switch - CD58 1382
cleaner housing position switch - WD54/1B 1298
cleaner housing position switch (S103) routine 1153
cleaner housing switch, adjust 1509
cleaner housing switch, removal 1509
cleaner mechanism
  brush 1498
  brush drive belt, removal 1503
  brush drive cone, adjust 1500
  brush drive cone, removal 1500
  brush driven cone, removal 1501
  brush motor - CD56 1380
  brush motor, removal 1503
  brush motor, thermal sense - CD57 1381
  brush rotation sensor - CD56 1380
  brush rotation sensor, adjust 1506
  brush rotation sensor, removal 1505
  cleaner housing motor - CD58 1382
  cleaner housing position switch - CD58 1382
cleaner mechanism *(continued)*
  housing cleaning 1511
  housing motor, removal 1507
  housing motor switch, adjust 1509
  housing motor switch, removal 1509
  locations, rear (1) 1446
  locations, rear (2) 1448
  M106 - CD58 1382
  M108 - CD56 1380
  M108, thermal sense - CD57 1381
  S103 - CD58 1382
  S104 - CD56 1380
  S104, adjust 1506
  S104, removal 1505
  skirt, adjust 1513
  skirt, removal 1513
cleaner skirt, adjust 1513
cleaner skirt, removal 1513
cleaning brushes, corona 1562
cleaning task 2213
clear memory (position 8) 1195
collar (06F0957) (-123) 2019
collar (88F3129) (-36) 2055
collar, hot roll drive (06F0149) (-11) 2047
collector assembly, removal 1483
completing PM 1068
components, printhead 1771
concurrent mode 1201
cone, driven asm (06F0049) (-23) 1967
configuration distance 2348
configuration values, setting 2346
configure attachments 2351
configure pre/postprocessors 2351
configure printer, duplex 2348
configure printer, simplex 2347
configuring internal control unit trace 1098
configuring the system 2346
connector layouts 1242
  AMP 1244
  ELCO 1244
  MATE-N-LOCK 1242
  polarized 1244
connectors
  ALCD1 - WD68/1A/1B 1311
  ALJ2 - WD68/1A 1311
  ALJ2, location 1458
  ALP2 - WD68/1A 1311
  ALP2, location 1458
  BD, location 1461
  BUS IN, location 1463
  BUS OUT, location 1463
  CH1, location 1449
  CH2, location 1449
  CH3, location 1449
  CH4, location 1449
  CH5, location 1449
  CH6, location 1449
  display/touch screen (serial port S2), location 1464, 1468
  display/touch screen (slot 1), location 1468
  display/touch screen (slot 3), location 1464
  Ethernet, location 1464, 1468
  Ethernet twisted pair, location 1464, 1468
  external SCSI interface terminator, location 1464, 1468
  host attachment card (slot 2), location 1468

connectors *(continued)*
host attachment card (slot 4), location 1468
host attachment card (slot 6), location 1464
host attachment card (slot 8), location 1464
JA02 - WD08/2A 1256
JA02 - WD09/2A 1257
JA03 - WD08/2A 1256
JA03 - WD09/2A 1257
JA04 - WD08/2A 1256
JA04 - WD09/2A 1257
JH01 - WD05/2A 1253
JH01A - WD05/2A 1253
JN01 - WD61/1A 1304
keyboard, location 1464, 1468
MJ01, location 1460
MJ02, location 1460
MJ03, location 1460
MJ04 - WD69/1B 1312
MJ04, location 1460
MJ06, location 1460
MJ07, location 1460
MJ09, location 1460
MJ10, location 1460
MJ11, location 1460
MJ21 - WD64/2A 1307
MJ21 - WD65/1A/2A 1308
MJ21, location 1460
MJ22 - WD64/1A 1307
MJ22 - WD65/1A/2A 1308
MJ22, location 1460
mouse, location 1464, 1468
P/P1 - WD70/1B 1313
P/P1 - WD71/1B 1314
connectors *(continued)*
P/P2 - WD70/1B 1313
P/P2 - WD71/1B 1314
P/P3 - WD70/1B 1313
P/P3 - WD71/1B 1314
P2S2 - WD72/1B 1315
P3S2 - WD72/1B 1315
parallel port, location 1464, 1468
PH01 - WD05/2A 1253
PH01A - WD05/2A 1253
PJ10, location 1461
PJ1003 - WD13/1B 1261
PJ101 - WD27/1A 1270
PJ101 - WD35/2B 1278
PJ101 - WD36/2A 1279
PJ101, location 1478
PJ102 - WD34/1B 1277
PJ102 - WD35/2B 1278
PJ102, location 1478
PJ103 - WD26/1A/2B 1269
PJ103, location 1478
PJ104 - WD13/2B 1261
PJ104 - WD25/1A 1268
PJ104 - WD34/1B 1277
PJ104 - WD54/1A/2A 1298
PJ104, location 1478
PJ105 - WD13/2B 1261
PJ105 - WD24-1/1A/2A 1266
PJ105 - WD24-2/1B/2A 1267
PJ105, location 1478
PJ106 - WD13/1B 1261
PJ106, location 1425
PJ107 - WD27/2A 1270
PJ107, location 1478
PJ108 - WD43/2B 1286
PJ108, location 1478
connectors *(continued)*
PJ112 - WD47-1/1B 1290
PJ112, location 1428
PJ113 - WD30/1B 1273
PJ113 - WD43/1A 1286
PJ113, location 1425
PJ114 - WD43/1A 1286
PJ114, location 1448
PJ115 - WD26/1A/2B 1269
PJ115, location 1429, 1449
PJ116 - WD26/1A 1269
PJ116, location 1429, 1449
PJ117 - WD13/1A 1261
PJ117, location 1425
PJ118 - WD13/1A 1261
PJ118, location 1425
PJ119 - WD31/1A 1274
PJ119, location 1448
PJ120 - WD13/2A 1261
PJ120, location 1446
PJ121 - WD30/1A 1273
PJ121, location 1425
PJ122 - WD33/1B 1276
PJ122, location 1446
PJ123 - WD13/1A 1261
PJ123, location 1448
PJ124 - WD13/1B 1261
PJ124, location 1448
PJ125 - WD54/1B 1298
PJ125, location 1443
PJ126 - WD34/1A 1277
PJ126, location 1445
PJ127 - WD43/1A 1286
PJ127, location 1429
PJ128 - WD43/2A 1286
PJ128, location 1429

connectors *(continued)*
PJ129 - WD43/1A 1286
PJ129, location 1428
PJ130 - WD13/1B 1261
PJ130 - WD47-1/2B 1290
PJ130, location 1426
PJ131 - WD54/2B 1298
PJ131, location 1426
PJ132 - WD47-1/2A 1290
PJ132, location 1428
PJ133 - WD47-1/1B 1290
PJ133, location 1426
PJ134 - WD13/2B 1261
PJ134, location 1446
PJ135 - WD25/1B 1268
PJ135, location 1446
PJ136 - WD31/1A 1274
PJ136, location 1443
PJ137 - WD31/1B 1274
PJ137, location 1443
PJ138 - WD32/1A 1275
PJ138, location 1445
PJ139 - WD32/1B 1275
PJ139, location 1445
PJ140 - WD55/1A 1299
PJ140, location 1443
PJ141 - WD55/1A 1299
PJ141, location 1443
PJ142 - WD25/1A 1268
PJ142, location 1446
PJ143 - WD54/2B 1298
PJ143, location 1426
PJ144 - WD54/2B 1298
PJ144, location 1428
PJ145 - WD47-1/1B 1290
PJ145, location 1448
connectors *(continued)*
PJ146 - WD54/1B 1298
PJ146, location 1447
PJ147 - WD34/1B 1277
PJ147, location 1445
PJ148 - WD54/1B 1298
PJ148, location 1447
PJ149 - WD54/1B 1298
PJ149, location 1445
PJ150 - WD47-2/2B 1291
PJ150, location 1448
PJ151 - WD47-2/1B 1291
PJ151, location 1429, 1443
PJ153 - WD31/2B 1274
PJ153 - WD32/1B 1275
PJ153, location 1448
PJ155 - WD55/1B 1299
PJ156 - WD54/1B 1298
PJ156, location 1429, 1449
PJ157 - WD47-2/1B 1291
PJ157, location 1443
PJ159 - WD25/1A/1B 1268
PJ159, location 1447
PJ160 - WD47-1/2B 1290
PJ161, location 1443
PJ175 - WD54/2B 1298
PJ175, location 1447
PJ184 - WD53/1B 1297
PJ184, location 1430
PJ185 - WD26/1B 1269
PJ185, location 1426
PJ201 - WD46/1B 1289
PJ201 - WD66/1A 1309
PJ201 - WD67/1A 1310
PJ201, location 1456
PJ202 - WD46/1B 1289
connectors *(continued)*
PJ202 - WD66/1B 1309
PJ202 - WD67/1B 1310
PJ202, location 1456
PJ203 - WD28/2B 1271
PJ203, location 1456
PJ204 - WD27/1B 1270
PJ204, location 1456
PJ205 - WD12/1A 1260
PJ205, location 1456
PJ208, location 1477
PJ219 - WD35/1B 1278
PJ227 - WD05/1A/1B 1253
PJ227 - WD08/1A 1256
PJ227 - WD09/1A 1257
PJ227, location 1456
PJ228 - WD77-1/1B 1320
PJ228 - WD77-2/1B 1321
PJ228, location 1456
PJ229 - WD77-1/1B 1320
PJ229 - WD77-2/1B 1321
PJ229, location 1456
PJ230, location 1456
PJ232, location 1456
PJ233 - WD27/1B 1270
PJ233, location 1456
PJ233S2 - WD72/1B 1315
PJ233S2, location 1456
PJ234 - WD27/1B 1270
PJ234, location 1456
PJ235 - WD27/2B 1270
PJ235, location 1456
PJ251 - WD78/1A 1322
PJ251, location 1456
PJ258 - WD36/2A 1279
PJ258, location 1455, 1772

connectors *(continued)*
PJ259 - WD36/1B 1279
PJ259, location 1455, 1772
PJ260 - WD36/2A 1279
PJ260, location 1477
PJ267 - WD27/2B 1270
PJ267, location 1456
PJ280 - WD35/2B 1278
PJ301 - WD55/1A 1299
PJ301, location 1444
PJ302 - WD30/2B 1273
PJ302 - WD31/2A 1274
PJ302 - WD32/2A 1275
PJ302 - WD34/1A 1277
PJ302 - WD46/1B 1289
PJ302, location 1472
PJ303 - WD24-1/1B 1266
PJ303 - WD24-2/1A 1267
PJ303 - WD38/2A 1281
PJ303, location 1472
PJ304 - WD24-1/1B 1266
PJ304 - WD24-2/1A 1267
PJ304 - WD37/2B 1280
PJ304 - WD42/1A 1285
PJ304 - WD58/2A 1302
PJ304, location 1472
PJ305 - WD24-1/1A 1266
PJ305 - WD24-2/2A 1267
PJ305 - WD58/2A 1302
PJ305, location 1472
PJ306 - WD24-1/1A 1266
PJ306 - WD24-2/1A/2A 1267
PJ306 - WD58/1A 1302
PJ306, location 1472
PJ307, location 1472
PJ308 - WD36/1B 1279
connectors *(continued)*
PJ308, location 1475
PJ309 - WD32/1A 1275
PJ309 - WD38/1A 1281
PJ309, location 1472
PJ310 - WD24-1/1A 1266
PJ310, location 1472
PJ311 - WD24-1/2A 1266
PJ311, location 1472
PJ312 - WD24-1/2A 1266
PJ312, location 1472
PJ313 - WD24-1/1A 1266
PJ313 - WD24-2/1B/2A 1267
PJ313, location 1472
PJ314 - WD24-1/2A 1266
PJ314 - WD24-2/1A 1267
PJ315 - WD24-1/2A 1266
PJ315 - WD24-2/2A 1267
PJ315, location 1472
PJ316 - WD24-1/1A 1266
PJ316 - WD24-2/2A 1267
PJ316 - WD35/2A 1278
PJ316, location 1475
PJ317 - WD24-1/1A 1266
PJ317 - WD24-2/2A 1267
PJ317, location 1475
PJ318 - WD25/2A 1268
PJ318, location 1453
PJ319 - WD35/1A 1278
PJ319, location 1475
PJ320 - WD13/2A 1261
PJ320 - WD33/1A 1276
PJ320 - WD35/1A 1278
PJ320 - WD36/1A 1279
PJ320 - WD47-2/1B 1291
PJ320, location 1475
connectors *(continued)*
PJ321 - WD34/1A 1277
PJ321, location 1472
PJ322 - WD31/1A 1274
PJ322, location 1472
PJ322S2 - WD72/1B 1315
PJ323 - WD25/2A 1268
PJ323 - WD30/1B 1273
PJ323, location 1472
PJ324 - WD33/1B 1276
PJ324, location 1475
PJ324S2 - WD72/1B 1315
PJ325 - WD16/1A 1263
PJ325 - WD46/1A 1289
PJ325 - WD58/2A 1302
PJ325, location 1471
PJ326 - WD46/1A 1289
PJ326, location 1471
PJ327 - WD46/1A 1289
PJ327 - WD66/1A 1309
PJ327 - WD67/1A 1310
PJ327, location 1471
PJ328 - WD29/1A/1B 1272
PJ328, location 1471
PJ329 - WD30/2A 1273
PJ329 - WD31/2A 1274
PJ329 - WD32/2A 1275
PJ329 - WD34/1A 1277
PJ329 - WD38/2B 1281
PJ329 - WD46/1A 1289
PJ329, location 1471
PJ330 - WD16/2A 1263
PJ330, location 1471
PJ331, location 1471
PJ332 - WD77-1/1A 1320
PJ332 - WD77-2/1A 1321

connectors *(continued)*
PJ332, location 1471
PJ333 - WD24-1/1B 1266
PJ333 - WD24-2/1B 1267
PJ333, location 1471
PJ334 - WD47-1/2B 1290
PJ334 - WD57/1A 1301
PJ334 - WD58/1B 1302
PJ334, location 1471
PJ335 - WD46/1A 1289
PJ335, location 1477
PJ336 - WD34/1B 1277
PJ336 - WD35/2B 1278
PJ336 - WD46/1A 1289
PJ336, location 1477
PJ337 - WD13/1B 1261
PJ337 - WD31/2B 1274
PJ337 - WD32/1B 1275
PJ337 - WD47-1/1A 1290
PJ337 - WD47-2/2A 1291
PJ337 - WD54/2A 1298
PJ337, location 1477
PJ338 - WD55/1B 1299
PJ338, location 1477
PJ339 - WD53/1A 1297
PJ339, location 1477
PJ340, location 1471
PJ341 - WD43/1B 1286
PJ341, location 1453
PJ342 - WD13/1A 1261
PJ342, location 1475
PJ343 - WD13/1A/2A 1261
PJ343, location 1475
PJ344 - WD13/1B/2B 1261
PJ344 - WD24-1/1A/2A 1266
PJ344 - WD24-2/1B/2B 1267
connectors *(continued)*
PJ344, location 1477
PJ345 - WD13/2A 1261
PJ345 - WD33/1A 1276
PJ345 - WD35/1A 1278
PJ345 - WD36/1A 1279
PJ345 - WD46/1A 1289
PJ345 - WD47-2/1B 1291
PJ345, location 1477
PJ348 - WD78/1A 1322
PJ348, location 1471
PJ3S2 - WD05/2B 1253
PJ448 - WD29/1A/1B 1272
PJ448, location 1453
PJ451 - WD01/2A 1251
PJ451 - WD03/2A 1252
PJ451, location 1452
PJ452 - WD01/2A 1251
PJ452 - WD03/2A 1252
PJ452 - WD13/1A 1261
PJ452, location 1452
PJ453 - WD01/1B 1251
PJ453 - WD03/1B 1252
PJ453, location 1450
PJ454 - WD01/1B 1251
PJ454 - WD03/1B 1252
PJ454, location 1452
PJ455 - WD01/2B 1251
PJ455 - WD03/2B 1252
PJ455, location 1452
PJ456 - WD01/2B 1251
PJ456 - WD03/2B 1252
PJ456, location 1452
PJ457 - WD24-1/1A 1266
PJ457, location 1450
PJ458 - WD24-1/1A 1266
connectors *(continued)*
PJ458 - WD24-2/2A 1267
PJ458 - WD35/2A 1278
PJ458, location 1450
PJ459 - WD24-1/2A 1266
PJ459, location 1450
PJ460 - WD24-1/2A 1266
PJ460, location 1451
PJ461 - WD24-1/1A 1266
PJ461, location 1451
PJ462 - WD12/1A 1260
PJ462, location 1451
PJ464 - WD16/2A 1263
PJ464, location 1451
PJ465, location 1451
PJ466, location 1451
PJ467, location 1451
PJ468, location 1451
PJ469, location 1451
PJ470 - WD01/2A 1251
PJ470 - WD03/2A 1252
PJ470, location 1452
PJ485 - WD01/1A 1251
PJ485 - WD03/1A 1252
PJ485, location 1452
PJ5, location 1461
PJ501 - WD28/2A 1271
PJ501, location 1455, 1772
PJ502 - WD28/1A 1271
PJ502, location 1455, 1772
PJ503 - WD27/1B 1270
PJ503, location 1477
PJ505 - WD43/2A 1286
PJ505, location 1430, 1447
PJ506 - WD27/1B 1270
PJ506, location 1477

connectors *(continued)*
PJ507 - WD27/1B 1270
PJ507, location 1477
PJ508 - WD27/2B 1270
PJ508, location 1477
PJ509 - WD27/2B 1270
PJ509, location 1477
PJ510 - WD28/1A 1271
PJ510, location 1477
PJ511 - WD27/2A 1270
PJ511, location 1477
PJ513, location 1455, 1772
PJ514 - WD35/1B 1278
PJ514, location 1455, 1772
PJ515, location 1430
PJ516 - WD27/1A 1270
PJ516 - WD35/2B 1278
PJ516 - WD36/2A 1279
PJ516, location 1477
PJ517 - WD27/2B 1270
PJ517, location 1477
PJ601 - WD24-1/1A 1266
PJ601 - WD24-2/1A 1267
PJ601 - WD58/1A 1302
PJ601, location 1474
PJ6014 - WD57/1B 1301
PJ6015 - WD57/1B 1301
PJ6015, location 1435
PJ6016 - WD57/1B 1301
PJ6016, location 1435
PJ6017 - WD57/2B 1301
PJ6017, location 1435
PJ6018 - WD37/1B 1280
PJ6018, location 1437
PJ6019 - WD37/1B 1280
PJ6019, location 1437

connectors *(continued)*
PJ602 - WD24-1/1A 1266
PJ602 - WD24-2/2A 1267
PJ602 - WD37/1B 1280
PJ602, location 1474
PJ6020 - WD37/1B 1280
PJ6020, location 1437
PJ603 - WD15/1B/2B 1262
PJ603, location 1474
PJ604 - WD16/1B 1263
PJ604, location 1474
PJ605 - WD15/1A 1262
PJ605 - WD16/1B 1263
PJ605 - WD39/2B 1282
PJ605 - WD41/1B 1284
PJ605 - WD45/1A/2B 1288
PJ605 - WD46/2B 1289
PJ605, location 1474
PJ606 - WD24-1/1B 1266
PJ606 - WD24-2/1A 1267
PJ606 - WD37/2B 1280
PJ606 - WD42/1A 1285
PJ606 - WD58/1A/2A 1302
PJ606, location 1473
PJ607 - WD44/2B 1287
PJ607, location 1473
PJ608 - WD37/2A 1280
PJ608 - WD39/1A 1282
PJ608 - WD40/2A 1283
PJ608 - WD42/2A 1285
PJ608 - WD46/1B 1289
PJ608, location 1473
PJ609 - WD17/1A 1264
PJ609 - WD37/2A 1280
PJ609 - WD40/1A 1283
PJ609 - WD46/2B 1289

connectors *(continued)*
PJ609 - WD48/1A 1292
PJ609 - WD52/2A 1296
PJ609 - WD56/1B 1300
PJ609 - WD58/2B 1302
PJ609, location 1473
PJ611 - WD16/2B 1263
PJ611, location 1435
PJ612 - WD16/2B 1263
PJ612, location 1433
PJ613 - WD16/2B 1263
PJ613, location 1435
PJ616 - WD17/1A 1264
PJ616 - WD48/1B 1292
PJ616 - WD56/1A 1300
PJ616 - WD58/1B 1302
PJ616, location 1473
PJ617 - WD37/1B 1280
PJ617 - WD40/1B 1283
PJ617 - WD42/2B 1285
PJ617 - WD48/1B 1292
PJ617 - WD52/1A 1296
PJ617 - WD58/1B/2A 1302
PJ617, location 1473
PJ618 - WD49/1A 1293
PJ618 - WD51/1A/2A 1295
PJ618, location 1473
PJ621 - WD41/1B 1284
PJ621, location 1474
PJ622 - WD45/1B 1288
PJ622, location 1474
PJ623 - WD15/1B 1262
PJ623 - WD58/1A 1302
PJ623, location 1474
PJ624 - WD39/1B 1282
PJ624, location 1474

connectors *(continued)*
PJ625 - WD39/2B 1282
PJ625, location 1474
PJ626 - WD40/2B 1283
PJ626, location 1473
PJ627 - WD42/1B 1285
PJ627, location 1473
PJ628 - WD37/1B 1280
PJ628, location 1473
PJ629 - WD39/1A 1282
PJ629, location 1473
PJ631 - WD16/1A 1263
PJ631 - WD46/1A 1289
PJ631 - WD58/2A 1302
PJ631, location 1476
PJ632 - WD48/2A 1292
PJ632, location 1476
PJ633 - WD37/2A 1280
PJ633 - WD39/2A 1282
PJ633 - WD40/2A 1283
PJ633 - WD42/2A 1285
PJ633 - WD46/1A 1289
PJ633, location 1476
PJ634 - WD50/1A 1294
PJ634, location 1476
PJ635, location 1476
PJ636 - WD15/1A 1262
PJ636 - WD16/1A 1263
PJ636 - WD39/2A 1282
PJ636 - WD41/1B 1284
PJ636 - WD45/1A 1288
PJ636 - WD46/2A 1289
PJ636, location 1476
PJ637 - WD17/1B 1264
PJ637 - WD37/2A 1280
PJ637 - WD40/1A 1283
connectors *(continued)*
PJ637 - WD46/2A 1289
PJ637 - WD48/1A 1292
PJ637 - WD52/2B 1296
PJ637 - WD56/1B 1300
PJ637 - WD58/2A 1302
PJ637, location 1476
PJ638 - WD24-1/2A 1266
PJ638 - WD24-2/1B 1267
PJ638, location 1476
PJ640 - WD48/1B 1292
PJ640, location 1433
PJ645 - WD58/1B 1302
PJ645, location 1431
PJ646 - WD15/2B 1262
PJ646, location 1436
PJ652 - WD15/2B 1262
PJ652, location 1436
PJ672 - WD58/1A 1302
PJ672, location 1442
PJ682 - WD58/2A 1302
PJ682, location 1434
PJ701 - WD38/1B 1281
PJ701, location 1436
PJ702, location 1434
PJ704 - WD40/1B 1283
PJ704, location 1431
PJ705 - WD40/1B 1283
PJ705, location 1434
PJ706 - WD48/1B 1292
PJ706, location 1434
PJ708 - WD56/1A 1300
PJ708, location 1436
PJ709 - WD56/1A 1300
PJ709, location 1436
PJ710 - WD56/2A 1300
connectors *(continued)*
PJ710, location 1436
PJ711 - WD48/1B 1292
PJ711, location 1431
PJ712 - WD40/2B 1283
PJ712, location 1437
PJ714, location 1434
PJ715 - WD58/1B 1302
PJ715, location 1436
PJ716 - WD17/2A 1264
PJ716, location 1436
PJ717 - WD17/1B 1264
PJ717, location 1436
PJ719 - WD58/1B 1302
PJ719, location 1436
PJ723 - WD41/1A 1284
PJ723, location 1431
PJ724 - WD44/1B 1287
PJ724, location 1436
PJ725 - WD48/2A 1292
PJ725, location 1436
PJ726 - WD44/1A 1287
PJ726, location 1434
PJ727 - WD44/1A 1287
PJ727, location 1431
PJ728 - WD44/1A 1287
PJ728, location 1434
PJ729 - WD44/2A 1287
PJ729, location 1431
PJ730 - WD44/1B 1287
PJ730, location 1436
PJ731 - WD44/1B 1287
PJ731, location 1436
PJ732 - WD24-1/1A 1266
PJ732 - WD44/2A 1287
PJ732, location 1436

connectors *(continued)*
PJ745 - WD45/1B 1288
PJ745, location 1436
PJ746 - WD15/2B 1262
PJ746, location 1442
PJ747, location 1442
PJ751 - WD50/1B 1294
PJ751, location 1436, 1441
PJ752 - WD42/1B 1285
PJ752, location 1441
PJ753 - WD42/2B 1285
PJ753, location 1434
PJ754 - WD42/2B 1285
PJ754, location 1438
PJ803 - WD15/1B 1262
PJ803, location 1441
PJ804 - WD15/1B 1262
PJ804, location 1441
PJ805 - WD39/1B/2B 1282
PJ805, location 1442
PJ806 - WD39/2B 1282
PJ806, location 1439
PJ807 - WD39/1B 1282
PJ807, location 1439
PJ811 - WD48/2A 1292
PJ811, location 1441
PJ812 - WD48/2A 1292
PJ812, location 1441
PJ813 - WD49/2B 1293
PJ813, location 1439
PJ814 - WD49/2B 1293
PJ814, location 1438, 1439
PJ815 - WD49/2B 1293
PJ815, location 1439
PJ816 - WD49/2B 1293
PJ816, location 1438
connectors *(continued)*
PJ817 - WD49/1B 1293
PJ817, location 1438
PJ818 - WD49/1B 1293
PJ818 location 1438
PJ819 - WD48/2A 1292
PJ819 location 1440
PJ820 - WD48/2A 1292
PJ820, location 1442
PJ821 - WD49/1B 1293
PJ821, location 1438
PJ830 - WD51/2B 1295
PJ830, location 1438
PJ831 - WD51/1B 1295
PJ831, location 1438
PJA01 - WD08/1A 1256
PJA01 - WD09/1A 1257
PJA01, location 1458
PJA02, location 1458
PJA03, location 1458
PJA04, location 1458
PJA05 - WD08/1B 1256
PJA05 - WD09/1B 1257
PJA05, location 1458
PJA06 - WD08/1B 1256
PJA06 - WD09/1B 1257
PJA06, location 1458
PJA07 - WD08/2B 1256
PJA07 - WD09/2B 1257
PJA07, location 1459
PJA08 - WD08/1B 1256
PJA08 - WD09/1B 1257
PJA08, location 1459
PJA09 - WD08/2B 1256
PJA09 - WD09/2B 1257
PJA09, location 1459
connectors *(continued)*
PJA10 - WD08/1A 1256
PJA10 - WD09/1A 1257
PJA10, location 1459
PJA11 - WD08/1A 1256
PJA11 - WD09/1A 1257
PJA11, location 1459
PJB01 - WD06/1B 1254
PJB01 - WD07/1B 1255
PJB01, location 1457
PJB02 - WD06/1A 1254
PJB02 - WD07/1A 1255
PJB02, location 1457
PJC01 - WD10/1B 1258
PJC01 - WD11/1B 1259
PJC02 - WD10/1B 1258
PJC02 - WD11/1B 1259
PJC03 - WD10/2B 1258
PJC03 - WD11/2B 1259
PJC3 - WD08/2A 1256
PJC3 - WD09/2A 1257
PJF01 - WD70/1A 1313
PJF01 - WD71/1A 1314
PJF02 - WD70/1A 1313
PJF02 - WD71/1A 1314
PJF03 - WD70/1A 1313
PJF03 - WD71/1A 1314
PJF04 - WD70/1B 1313
PJF04 - WD71/1B 1314
PJF05 - WD70/1B 1313
PJF05 - WD71/1B 1314
PJF06 - WD70/1B 1313
PJF06 - WD71/1B 1314
PJH01 - WD05/1A 1253
PJH01, location 1459
PJH02 - WD05/1A/2A 1253

connectors *(continued)*
PJH02, location 1459
PJH03 - WD05/1A/2A 1253
PJH03, location 1459
PJJ05 - WD05/2B 1253
PJJ1 - WD68/1B 1311
PJJ1 - WD70/1A 1313
PJJ1 - WD71/1A 1314
PJJ1 - WD72/1A 1315
PJJ1 - WD76/1B 1319
PJJ10 - WD05/2B 1253
PJJ11 - WD70/1A 1313
PJJ11 - WD71/1A 1314
PJJ12 - WD75/1B 1318
PJJ2 - WD75/1A 1318
PJJ3 - WD75/2A 1318
PJJ6 - WD66/1B 1309
PJJ6 - WD67/1B 1310
PJJ6 - WD76/1A 1319
PJJ7 - WD70/1A 1313
PJJ7 - WD71/1A 1314
PJJ7 - WD72/1A 1315
PJJ878 - WD05/1A 1253
PJJ879 - WD05/1A 1253
PJJ9 - WD70/1A 1313
PJJ9 - WD71/1A 1314
PJMJ07 - WD72/1A 1315
PJMJ10 - WD05/1B 1253
PJMJ12 - WD78/1B 1322
PJT01 - WD05/1B 1253
PJT01 - WD73/1B 1316
PJT01 - WD74/1B 1317
PN01 - WD05/2A 1253
power, location 1465, 1468
SCSI I/O to MIC card (slot 3), location 1469
connectors *(continued)*
serial port S1, location 1465, 1469
serial port S3, location 1465
SSA (A1, A2, B1, B2) (Slot 1), location 1465
SSA (A1, A2, B1, B2) (Slot 4), location 1465
SSA (A1, A2, B1, B2) (Slot 9), location 1465
SSA disk drive (top & bottom), location 1465
tablet, location 1469
TAG IN, location 1463
TAG OUT, location 1463
VD1, location 1461
VD2, location 1461
VD3, location 1461
VD4, location 1461
VD5, location 1461
Y cable, location 1463
contact, mech slide asm (63H6541) (-34) 2049
container, toner collector bag (06F0297) (-28) 2043
contorl cards, removal 1764
control unit
7025 Model F50, removal 1541
7043 Model 43P-140, removal 1537
AC Control Box, removal 1515
DC power supply, measurements 1518
DC power supply, removal 1517
display touch screen, removal 1519
locations, channel I/O connections 1463
locations, front 1457
control unit *(continued)*
locations, left side 1458
locations, MIC 1460
locations, PQE Card 1461
locations, pre/post cards 1462
mechanism interface card, removal 1522
mechanism interface card memory, removal 1524
operator alert assembly, removal 1526
parallel channel tailgate, removal 1529
power control panel, removal 1531
PQE card, removal 1532
pre/post processing card, removal 1534
side 1/2 verify control card, removal 1535
control unit, attach (600 DPI) 2322
control unit (controller to MIC) - WD64 1307
control unit AC control box (duplex) - WD09 1257
control unit AC control box (simplex) - WD08 1256
control unit AC power control (duplex) - WD07 1255
control unit AC power control (simplex) - WD06 1254
control unit display/touch screen - WD60 1303
control unit front cover, location 1582
control unit left side cover, location 1582
control unit rear cover, location 1582

control unit right side cover, location 1582
control unit shelf, location 1582
control unit top cover, location 1582
control unit trace, configure 1098
control unit trace, internal 1097
controller, 7025 F50
3-character display, location 1465
adapter card slot 1 SSA, location 1466
adapter card slot 2, location 1464, 1466
adapter card slot 4 SSA, location 1466
adapter card slot 5, location 1464, 1466
adapter card slot 7, location 1464, 1466
adapter card slot 9 SSA, location 1466
CD-ROM drive, location 1465
diskette drive 3.5-inch, location 1465
display/touch screen (serial port S2) connector, location 1464
display/touch screen (slot 3), location 1466
display/touch screen (slot 3) connector, location 1464
Ethernet connector, location 1464
Ethernet twisted pair connector, location 1464
external SCSI interface terminator, location 1464
host attachment card (slot 6), location 1466
controller, 7025 F50 *(continued)*
host attachment card (slot 6) connector, location 1464
host attachment card (slot 8), location 1466
host attachment card (slot 8) connector, location 1464
keyboard connector, location 1464
label, CPU speed/type, location 1465
label, serial number, location 1465
locations, bays 1467
locations, cards 1466, 1470
locations, front & back 1464
memory card, location 1466
mouse connector, location 1464
parallel port connector, location 1464
power connector, location 1465
power on LED , location 1465
processor card, location 1466
reset button, location 1464
serial port S1 connector, location 1465
serial port S3 connector, location 1465
SSA (A1, A2, B1, B2) (Slot 1) connector, location 1465
SSA (A1, A2, B1, B2) (Slot 4) connector, location 1465
SSA (A1, A2, B1, B2) (Slot 9) connector, location 1465
SSA disk drive (top & bottom) connector, location 1465
switch, power on/off push-button, location 1465
controller, 7043 43P-140
adapter card slot 1, location 1470
controller, 7043 43P-140 *(continued)*
adapter card slot 2, location 1470
adapter card slot 3, location 1470
adapter card slot 4, location 1470
adapter card slot 5, location 1468, 1470
audio ports, location 1469
CD-ROM drive, location 1469
DIMM module, location 1470
diskette drive 3.5-inch, location 1469
display, location 1469
display/touch screen (serial port S2) connector, location 1468
display/touch screen (slot 1) connector, location 1468
display/touch screen (slot 3) connector, location 1469
Ethernet connector, location 1468
Ethernet twisted pair connector, location 1468
external SCSI interface terminator, location 1468
host attachment card (slot 2) connector, location 1468
host attachment card (slot 4) connector, location 1468
keyboard connector, location 1468
label, CPU speed/type, location 1469
label, serial number, location 1469
locations, front & back 1468
mouse connector, location 1468
parallel port connector, location 1468
power connector, location 1468
power on LED , location 1469
processor card, location 1470
reset button, location 1468

controller, 7043 43P-140 *(continued)*
serial port S1 connector, location 1469
switch, power on/off push-button, location 1469
switch, voltage, location 1469
tablet connector, location 1469
controller, install 2281
controller, location 1457
conversion, hex-to-decimal 1234
converter, serial port 9 to 25 pin (40H6328) (-43) 2155
conveyor roll & lift plate, removal 1599, 1600, 1601, 1602
conveyor roll, location 1426, 1427
conveyor roll lift plate, adjust 1600
conveyor roll rotation sensor - CD71 1395
conveyor roll rotation sensor , removal 1603
conveyor roll rotation sensor - WD54/2B 1298
conveyor roll rotation sensor, adjust 1604
conveyor roll rotation sensor (S110) routine 1155
conveyor roll rotation sensor S110, location 1426
corona, charge asm (11L5201) (-20) 1973
corona, transfer asm (57G6505) (-1) 2027
coronas
charge - CD60 1384
charge, driver routine 1133
charge, location 1429
coronas *(continued)*
charge, removal 1557
charge asm, parts 1973
charge cleaning brush, adjustment 1562
charge cleaning brushes, removal 1562
charge corona to PC drum gap 1564
cleaning brushes 1562
high voltage - WD26 1269
high voltage power supply 1568
mag brush bias voltage 1571
preclean - CD62 1386
preclean, driver routine 1133
preclean, location 1429
preclean, parts 1965
preclean, removal 1559
preclean cleaning brush, removal 1563
preclean corona voltage 1573
preclean wire, parts 1965
shield, transfer, location 1444
transfer - CD61 1385
transfer, driver routine 1134
transfer, location 1429, 1444
transfer, removal 1559
transfer asm, parts 2027
transfer cleaning brush, removal 1563
transfer corona shield, removal 1921
transfer corona voltage 1570
transfer wire, parts 2027
counters
changing 2218
PM log 2218
recording completed PM 2218
coupled interface wrap plug, desc 2383
coupled interface wrap test 1085
coupled pre-postprocessor interface wrap plug 'A' - WD73 1316
coupling (06F0964) (-21) 2105
cover, front (93H9868) (-27) 2147
cover, front asm (63H6574) (-1) 2127
cover, lamp holder (11L5317) (-40) 2049
cover, left end front (11L5989) (-8) 2129
cover, rear asm (63H6456) (-9) 2127
cover, right end asm (63H6458) 2127
cover, terminal front (88F1633) (-7) 2027
cover, terminal rear (88F1632) (-6) 2027
cover, top (40H5854) (-15) 2151
cover, top middle (30H6880) (-15) 2129
Cover, Top Rear (30H6679) (-25) 2129
cover, wire holder (88F2434) (-51) 1973
cover, wire holder (88F2435) (-50) 1973
cover asm, front (63H6574) (-11) 2129
cover asm, rear (63H6456) (-1) 2129
cover asm, right end rear (63H6458) (-7) 2129
covers
blower, location 1584, 1585
control unit left side, location 1582
control unit rear, location 1582
control unit right side, location 1582
control unit shelf, location 1582
control unit top, location 1582
developer front, location 1583
drum, location 1583
erase lamp, location 1585
fuser front, location 1585

covers *(continued)*
fuser lower rear, location 1584
fuser top rear, location 1584
input bin left, location 1585
input bin right, location 1585
logic card, location 1584
oil assembly, location 1584
power supply, location 1583
PR011, location 1584
printer center front, location 1582
printer left front, location 1582
printer left rear, location 1582
printer left top, location 1582
printer right end, location 1582, 1585
printer right front, location 1582
printer right rear cover location 1582
printer right top, location 1582
rear process, location 1584
stacker end, location 1582
stacker gate, location 1582
stacker height, location 1585
stacker lower left end, location 1582
stacker lower right end, location 1582
transfer station, location 1583
transfer station rear, location 1585
covers, check for shipping damage 2264
CP1, location 1458
CP261/CP471, removal 1760
CP261/CP471 EPROM, removal 1762
CPxxx printer control, location 1453
current vector 1842
cyclon blower drive belt, removal 1488
cyclone assembly, location 1448
cyclone blower, removal 1491
cyclone blower drive belt, location 1448
cyclone blower motor - thermal sense - CD54 1378
cyclone blower motor (M104) driver routine 1129
cyclone blower motor, removal 1490
cyclone blower motor, rotation sense - CD55 1379
cyclone blower motor M104, location 1448
cyclone blower rotation (S116) 1152
cyclone blower rotation sensor - WD47-2/2B 1291
cyclone blower rotation sensor S116, location 1448
CYL1, location 1454, 1771
CYL1, removal 1790
cylinder lens CYL1, check 1791
cylinder lens CYL1, location 1454, 1771
cylinder lens CYL1, removal 1790

D

D101 - WD47-2/1B 1291
D101, parts 1981
D101 EOF sensor lamp, location 1443
D801 - CD45 1369
D801 - WD48/2B 1292
D801, adjust 1877
D801, parts 2103
D801, removal 1877
D801 stacker rear height sensor lamp, location 1441
D802 - CD45 1369
D802 - WD48/2B 1292
D802, adjust 1877
D802, parts 2093
D802, removal 1877
D802 stacker front height sensor lamp, location 1441
D803 - CD39 1363
D803 - WD49/2B 1293
D803, check 1879
D803, parts 2093
D803, removal 1879
D803 stacker jam sensor lamp, location 1439
damage checks, control unit 2263
damage checks, printer 2263
DC circuits 1265
address/data bus networks - WD46 1289
backup roll encoder (DV071 & FU041 cards) - WD52 1296
backup roll lift motor M610 - WD37 1280
backup roll position sensor S624 - WD37 1280
beam detect - WD28 1271
cleaner housing motor M106 - WD33 1276
control unit (controller to MIC) - WD64 1307
coupled pre-postprocessor interface wrap plug 'A' - WD73 1316
cyclone blower rotation sensor S116 - WD47-2 1291
DC Fans- WD43 1286
DC Fans- WD44 1287
display/touch screen, control unit - WD60 1303
drum motor M107 - WD34 1277
EOF sensor S117 - WD47-2 1291

DC circuits 1265 *(continued)*
erase lamp and usage meter - WD25 1268
finger belt motor M801 - WD39 1282
finger belt motor M802 - WD39 1282
forms path sensors (DV071 & FU041 cards) - WD56 1300
forms path sensors (PW111 & PC561 cards) - WD55 1299
fuser and stacker sensors (DV071 & FU041) - WD48 1292
fuser sensors - WD57 1301
fuser sensors - WD58 1302
high voltage to coronas - WD26 1269
hot roll drive motor M703 - WD38 1281
laser drvier - WD27 1270
maintenance panel - WD29 1272
MIC control unit 2 to MIC control unit 1 - WD65 1308
MIC to coupled pre/postprocessor interface - WD70 1313
MIC to intelligent postprocessor - WD71 1314
MIC to operator alert assembly - WD68 1311
MIC to printer control cable (1 of 2) - WD66 1309
MIC to printer control cable (2 of 2) - WD67 1310
MIC wrap plugs (PJJ1 and PJJ6) - WD76 1319
mirror motor M501 - WD35 1278
motor M105 - WD32 1275
oil pumps L701, L702 & L703 - WD45 1288
DC circuits 1265 *(continued)*
oiler belt motor M706 - WD41 1284
parallel channel signal - tailgate to controller (1 of 2) - WD62 1305
parallel channel signal - tailgate to controller (2 of 2) - WD63 1306
pendulum home position sensor S809 - WD42 1285
pendulum motor M804 - WD42 1285
postprocessor interface wrap plug 'B' - WD74 1317
PQE - WD69 1312
pre and postprocessing printer circuitry - WD77 1320, 1322
printer DC power distribution - WD24 1266
resolution switching lens motor M502 - WD36 1279
retractor motor M103 - WD31 1274
scuff roll drive motor M704 - WD39 1282
side 1/side 2 verify to MIC - WD72 1315
stacker sensors (DV071 card) - WD49 1293
stacker switch panel (forms length cards) - WD51 1295
stacker switch panel (LP041 & FU041 card) - WD50 1294
steering motor M705 - WD40 1283
switches and sensors (PC561 card) - WD53 1297
switches and sensors (PR011 card) - WD54 1298
tractor motor encoder S112 - WD32 1275
DC circuits 1265 *(continued)*
urge unit (duplex) - WD61 1304
wrap cable (PJJ2, PJJ3 and PJJ12), MIC - WD75 1318
DC fans - WD43 1286
DC fans - WD44 1287
DC output table 1248
DC power supply, control unit - measurements 1518
DC power supply, control unit - removal 1517
DC power supply, removal 1758
DC voltage measurements, printer 1759
define forms 2353
definitions
service tasks 2214
detail report, EREP 1209
details in service logs 1066
developer
bias contacts, removal 1597
checks 1591
conveyor roll & lift plate, removal 1599, 1600, 1601, 1602
conveyor roll. parts 2001
conveyor roll lift plate, adjust 1600
conveyor roll rotation sensor - CD71 1395
conveyor roll rotation sensor, adjust 1604
conveyor roll rotation sensor, removal 1603
drain lever sensor, removal 1592
drain lever switch - CD16 1342
front seal assembly, removal 1593
idler pulley A, removal 1605
idler pulley B, removal 1606

developer *(continued)*
locations, front 1427
locations, rear 1425
locations, side 1428
M101 - CD71 1395
M101, removal 1610
M101, thermal sense - CD72 1396
M102 - CD73 1397
M102, removal 1639
mag brush A, removal 1614
mag brush angles, adjust 1623
mag brush angles, check 1623
mag brush B, removal 1615
mag brush belt, adjust 1609
mag brush belt, removal 1608
mag brush bias - CD70 1394
mag brush drive belt, parts 2005
mag brush motor - CD71 1395
mag brush motor, removal 1610
mag brush motor, thermal sense - CD72 1396
mag brush rolls, removal 1612, 1613, 1614, 1615, 1616, 1617, 1618, 1619, 1620, 1621, 1622, 1623, 1624
mag roll A, parts 2001
mag roll B, parts 2001
mixing paddle belt, adjust 1625
mixing paddle belt, removal 1625
rail assembly 1589
rear seal, removal 1594
removal 1587
run switch - CD17 1343
run switch, removal 1595
S107 - CD73 1397
S107, removal 1634
S108, removal 1635
developer *(continued)*
S109 - CD17 1343
S109, removal 1595
S110 - CD71 1395
S111 - CD16 1342
S111, removal 1592
scavenger roll, parts 2005
scavenger roll, removal 1626, 1627, 1628
scavenger roll belt, adjust 1629
scavenger roll belt, removal 1629
scavenger roll idler pulley, removal 1630
seal plate, adjust 1596
seal plate, removal 1596
toner control, adjust 1631, 1632, 1633
toner control sensor - CD73 1397
toner control sensor, removal 1634
toner empty sensor, removal 1635
toner feed, parts 2011
toner feed belt, adjust 1638
toner feed belt, removal 1637
toner feed motor- CD73 1397
toner feed motor, removal 1639
toner feed roll, parts 2007
toner feed roller, removal 1641, 1642, 1643
developer, checks 1591
developer, removal 1587
developer bias driver routine 1134
developer cooling fan - WD43/1A 1286
developer cooling fan, location 1428
developer drain hose, location 1452
developer drain lever, location 1427
developer drain lever sensor, removal 1592
developer drain lever switch - CD16 1342
developer drain lever switch - WD54/2B 1298
developer drain lever switch (S111) routine 1157
developer drain lever switch S111, location 1427, 1430
developer front cover, location 1583
developer front seal assembly, removal 1593
developer idler pulley A, removal 1605
developer idler pulley B, removal 1606
developer mix inlet, location 1427
developer mix setting 1116
developer mixing paddle belt, location 1425
developer rail assembly 1589
developer rail assembly, desc 2383
developer rear seal, removal 1594
developer run switch, parts 1995
developer run switch, removal 1595
developer run switch (S109) routine 1157
developer run switch- WD47-1/1B 1290
developer run switch S109, location 1427, 1430
developer seal front, location 1427
developer seal plate, adjust 1596
developer seal plate, location 1427
developer seal plate, removal 1596
developer seal rear, location 1427
developer unit, 50 Hz (11L6000) (-1) 1997

developer unit, 60 Hz (11L5999) (-2) 1997
diagnostic function switch 1108
  functions 1110
  position descriptions 1110
  settings 1110
diagnostic function switch, location 1471
diagnostics
  attachment 1073
  concurrent mode 1201
  Display/Touch Screen 1059
  EREP program 1207
  general info 1072
  host-supported 1207
  how to run 1072
  mechanism 1080
  online 1201
  pre/postprocessor 1083
  printer 1107
  service 1072
  standalone 1202
DIP switch settings, (B1J11) 2277
disconnecting power 2259
discontinuance 2371
disk, backing up 1094
disk, restoring 1094
disk drive (-13) 2151
disk drive, (with microcode) * (7025-F50) (-34) 2149
disk drive carrier (06H8631) (-35) 2149
disk operations 1094
diskette drive (93F2361) (-17) 2151
diskette drive (93F2361) (-29) 2149
diskette drive 3.5-inch, location 1465, 1469
display control panel, location 1457
display panel (06H7082) (-3) 2145
display touch screen , removal 1519
display/touch screen - WD60 1303
Display/Touch Screen, diagnostics 1059
display touch screen, install 2288
display/touch screen, location 1457
display/touch screen (serial port S2) connector, location 1464, 1468
display/touch screen (slot 1) connector, location 1468
display/touch screen (slot 3) connector, location 1464
Display/Touch Screen, using 1059
Display/Touch Screen main window 1060
display touch screen model G52, (90H1744) (-18) 2129
distance, configuration 2348
doctor, spring (11L5175) (-66) 1993
doctor blade, location 1427
doctor/scraper gauge, desc 2384
DRAM, 16 MB (Only installed on SSA adapter card) (89H5651) (-16E) 2147
driver routines 1125
  backup roll lift motor 1147
  backup-roll motor (M701) 1139
  beam scanning position 1146
  charge corona 1133
  cleaner brush motor (M108) 1130, 1131
  cleaner housing motor (M106) 1130
  cyclone blower motor (M104) 1129
  developer bias 1134
  drum motor (M107) 1131
  E1XX error codes 1230
driver routines 1125 *(continued)*
  erase lamp (PL101) 1133
  error codes 1231, 1232, 1233
  fuser 1143
  hot roll motor (M703) 1139, 1140
  laser 1144
  left finger belt motor (M801) 1138
  mag brush motor (M101) 1132
  mirror motor (M501) 1129
  Oil Pump 1 (L701) 1141
  oil pump 2 (L702) 1142
  oil pump 3 (L703) 1142
  oiler-belt motor (M706) 1140
  paper cooling fans 1144
  pendulum motor (M804) 1136, 1137
  preclean corona 1133
  preheat platen driver routine 1143
  resolution lens motor (M502) 1146
  retractor motor (M103) 1136
  right finger belt motor (M802) 1138
  scuff roll motor (M704) 1141
  stacker table motor (M803) 1137
  steering motor (M705) 1138
  toner feed motor (M102) 1132
  toner supply low signal 1144
  tractor motor (M105) 1134
  transfer corona 1134
drum, selenium (63H6391) (-63) 1977
drum box, desc 2384
drum clearance gauge, desc 2385
drum cover, location 1583
drum cover interlock (24L4883) (-2) 1985
drum cover interlock switch S118, location 1430
drum ground brush, location 1446

drum motor - WD34/2A 1277
drum motor (M107) driver routine 1131
drum motor and overcurrent detection - CD12 1338
drum motor M107, location 1445
drum revolution sensor (S105) routine 1155
drum rotation sensor - CD13 1339
drum rotation sensor - WD34/2A 1277
drum rotation sensor S105, location 1445
drum shaft extension, desc 2388
drum surface voltage adjustment routine 1179
drum surface voltage adjustment routine C7 1181
duct, front flange (06F0483) (-2) 1967
duct, rear flange (06F0482) (-7) 1967
duplex printer 1 installation 2326
duplex printer 2 installation 2263
DV061, parts 2115
DV061, removal 1764
DV061 stepper motor driver, location 1453
DV071, location 1437
DV071, parts 2049
DV071, removal 1685
DV081, parts 2119
DV081, removal 1764
DV081 fuser/stacker driver card, location 1442
DV101, parts 2119
DV101, removal 1764
DV101 ac motor driver, location 1452

E

E-clip (88F3122) (-49) 2055
E0, change loop count 1121
E0XX codes 1224
E1XX error codes 1230, 1231, 1232, 1233
E2, set buzzer on or off 1122
E4, read memory address 1123
E5, set optical sensor margin check on or off 1124
electrostatic probe 1575
electrostatic voltmeter, desc 2388
electrostatic voltmeter (ESV), adjustment 1574
EMC clip(73H0898) (-2) 2145
encoders
  backup roll, removal 1673
  backup roll lift, location 1437
  backup roll position, location 1433
  S624, location 1437
  S708 - CD09 1335
  S708 - WD56/1A 1300
  S709 - WD56/1A 1300
  S710 - WD56/2A 1300
  S712, removal 1673
  tension arm - CD09 1335
  tension arm, location 1435
  tension arm 1 - WD56/1A 1300
  tension arm 2 - WD56/1A 1300
  tension arm 3 - WD56/2A 1300
end of forms sensor - CD07 1333
end-of-forms sensor, removal 1893
enhanced toner loading to mic - WD78 1322
entering CE or service mode 2217
entering password 2217
environmental range, recommended 2258
EOF LED, location 1429
EOF sensor - WD47-2/1B 1291
EOF sensor, parts 1981
EOF sensor (S117) routine 1158
EOF sensor lamp D101, location 1443
EOF sensor S117, location 1430, 1444
EP process card PR011, location 1447
EPO (emergency power off) 2297
eprom, CP261 (02N7850) (-28) 2115
eprom, CP471 (01P6556) (-28) 2115
erase lamp - CD38 1362
erase lamp - WD25 1268
erase lamp (57G6508) (-20) 1965
erase lamp, location 1430
erase lamp (PL101) driver routine 1133
erase lamp cover, location 1585
erase lamp sensor - CD38 1362
erase lamp sensor - WD54/1B 1298
erase lamp sensor, removal 1664
erase lamp sensor (S115) routine 1158
erase lamp sensor S115, location 1444
erase lamp starter - CD38 1362
erase lamp starter - WD25 1268
erase lamp starter, removal 1666
erase lamp starter ST101, location 1447
EREP
  detail report 1209
  program 1207
  summary report 1208
error codes
  driver routine 1231, 1232, 1233
  E0XX 1224

error codes *(continued)*
E1XX 1230, 1231, 1232, 1233
SRC cross-references 1224
error log 1066
long 1070
long filtered 1071
printing multiple copies 1071
short 1071
short filtered 1071
ESCON adapter, parts 2147, 2155
ESCON card, removal 1550
ESCON channel basic test 1075
ESCON channel wrap plug 2390
ESCON channel wrap test 1075
ESV 1575
Ethernet, 10/100 Base T, parts 2147
Ethernet 10/100 BaseT, parts 2155
Ethernet connector, location 1464, 1468
Ethernet test results 1079
Ethernet tests 1077
Ethernet thick coax (10Base5) wrap plug 2389
Ethernet thin coax (10Base2) wrap plug 2390
Ethernet twisted pair connector, location 1464, 1468
Europe, voltage adaptation for 2259
exerciser
driver 1125
run options 1120
sensor 1152
exerciser routines, running 1119
extension cable, maintenance panel 2392
external SCSI interface terminator, location 1464, 1468

F

F-Theta, location 1454, 1771
F-Theta lens, removal 1795
fan, #1 (73H3577) (-12) 2145
fan, #2 (40H1424) (-12) 2145
fan, #3 and #4 (40H1433) (-12) 2145
fan (2179914) (-4) 2139
fan, developer cooling (B101) (24H8035) (-106) 1995
fan, fuser exhaust (B701, B702) (24H8035) (-12) 2073
fan, logic card (B301) (24H8035) (-3) 2115
fan, lower front & rear developer coooling (B102 & B103) (63H6561) (-6) 1959
fan, paper cooling (B704, B706) (63H6561) (-87) 2079
fan, paper cooling (B705, B707) (63H6561) (-94) 2079
fan, printhead (11L5199) (-26) 1985
fan and speaker asm (40H7584) (-8) 2151
fan asm (93H1817) (-19) 2151
fans
B101 - WD43/1A 1286
B101, location 1428
B101, parts 1995
B102 - WD43/1A 1286
B102, location 1429
B102, parts 1959
B103 - WD43/2A 1286
B103, location 1429
B103, parts 1959
B301 - WD43/1A 1286
B301, parts 2115
fans *(continued)*
B301 logic area, location 1453
B467, location 1450
B468 location 1450
B501 - WD43 1286
B501, location 1446
B501, parts 1985
B501, removal 1798
B701 - WD44/1B 1287
B701, location 1435
B701, parts 2073
B701, removal 1687
B702 - WD44/1B 1287
B702, location 1435
B702, parts 2073
B702, removal 1687
B703, parts 2087
B704 - WD44/1A 1287
B704, location 1433
B704, parts 2079
B704, removal 1725
B705, driver routine 1144
B705, location 1431
B705, parts 2079
B705, removal 1726
B706 - WD44/1A 1287
B706, location 1433
B706, parts 2079
B706, removal 1725
B707, driver routine 1144
B707, location 1431
B707, parts 2079
B707, removal 1726
B708 - WD44/1B 1287
B708, location 1435

fans *(continued)*
developer cooling (B101) - WD43/1A 1286
developer cooling, location 1428
developer cooling, parts 1995
front developer (B102) - WD43/1A 1286
fuser exhaust - WD44/1B 1287
fuser exhaust, parts 2073
fuser exhaust B701, location 1435
fuser exhaust B702, location 1435
fuser exhaust fans, removal 1687
logic area (B301) - WD43/1A 1286
logic area, parts 2115
logic area B301, location 1453
paper cooling , driver routine 1144
paper cooling - WD44/1A/2A 1287
paper cooling, parts 2079
paper cooling B705, location 1431
paper cooling B707, location 1431
paper cooling fan (B704), location 1433
paper cooling fan (B706), location 1433
paper cooling fans, removal 1725, 1726
power supply B467, location 1450
power supply B468, location 1450
printer interface IF491, location 1456
printhead (B501) - WD43/2A 1286
printhead, location 1446
printhead, parts 1985
printhead B501, removal 1798
rear developer (B103) - WD43/2A 1286
S108, driver routine 1144
fans *(continued)*
stacker cooling, parts 2087
toner supply low signal, driver routine 1144
fast path 2214
FDDI, parts 2145, 2155
FDDI test results 1079
FDDI tests 1078
feature tools 2381
features, installation 2365
fiber module, location 1454, 1771
filter, fine (1402826) (-30) 2045
filter, fuser (57G6510) (-4) 2073
filter, logic card (63H6487) (-18) 2115
filter in service logs 1066
filter pressure switch - CD14 1340
filter pressure switch, location 1448
filter pressure switch (S102) routine 1154
filter pressure switch- WD47-1/1B 1290
filters
fine, location 1446
fine, parts 2045
fine, removal 1480
fuser, location 1431
fuser, parts 2073
logic area, parts 2115
logic fan, location 1453
printhead fan, removal 1798
fine, location 1446
fine filter in place S106, location 1447
fine filter,removal 1480
fine filter sensor - WD54/1B 1298
fine filter switch (S106) - CD15 1341
fine filter switch (S106) routine 1154
finger belt motors - CD43 1367
finger belt motors- WD39/1B/2B 1282
fitting (88F3041) (-32) 2073
FL031, adjust 1853
FL031, location 1438, 1439
FL031, parts 2095
FL031, removal 1851
FL061, check 1855
FL061, location 1438
FL061, parts 2095
FL061, removal 1855
flange (06F0806) (-3) 2059
flange (06F0862) (-31) 2075
flange, bearing (53F1808) (-12) 2067
flange, paddle asm front (63H6511) (-41) 2003
flange, paddle asm rear (63H6510) (-45) 2003
flange and bearing asm (90H2555) (-41) 2009
flange asm (63H6513) (-26) 2007
flange asm (dev) (63H6512) (-20) 2001
flipper(02N6110) 2181
foot, jack (06F0754) (-4) 2047
form width sensor board (PW111) routine 1161
form width sensor PW111, location 1444
forms length adjustment 1848
forms length circuit breaker - CD53 1377
forms length control card FL061, location 1438
forms length fraction control card FL031, location 1438, 1439
forms length screw shaft, removal 1850
forms length select card, adjust 1853

forms length select card, removal 1851
forms length sensor card, check 1855
forms length sensor card (FL061), routine 1166
forms length sensor card, removal 1855
forms length stacker wire, removal 1856
forms path sensors (DV071 & FU041 cards) - WD56 1300
forms path sensors (PW111 & PC561 cards) - WD55 1299
forms width adjustment 1857
forms width guide adjustment 1858
forms width hall sensor - CD05 1331
forms width sensor - CD06 1332
forms width sensor, adjust 1895
forms width sensor, removal 1894
forms width sensor cb - CD06 1332
frame, retractor asm (63H6527) (-2) 2033
front stacker height sensor, adjust 1877
front stacker height sensor, removal 1877
front stacker height sensor (S804) routine 1173
FU041, parts 2119
FU041 fuser control card, location 1442
fuse, 5A (855251) (-201) 2143
fuser
B701, removal 1687
B702, removal 1687
B704, removal 1725
B705, removal 1726
B706, removal 1725
B707, removal 1726
backup roll, removal 1670
fuser *(continued)*
backup roll discharge brush, adjust 1672
backup roll discharge brush, removal 1672
backup roll encoder, removal 1673
backup roll lift motor, removal 1675
backup roll lift motor drive belt, removal 1677
backup roll lift position sensor, removal 1683
backup roll motor, removal 1684
DV071, parts 2049
DV071, removal 1685
exhaust fans, removal 1687
fuser control card, removal 1685
fuser oil empty - CD29 1354
fuser wrap sensor, removal 1688
hot roll & collars, removal 1692
hot roll drive asm, lubrication 1691
hot roll drive asm, removal 1690
hot roll drive collar, removal 1695
hot roll drive motor, removal 1696
hot roll front hub, removal 1698
hot roll lamp end cap, removal 1704
hot roll lamp receptacle contacts, removal 1706
hot roll lamps, removal 1700
hot roll over-temperature sensor , removal 1712
hot roll temperature control - CD27 1352
hot roll temperature sensor, removal 1711
hot roll thermistors , removal 1708
L701 - CD20 1346
fuser *(continued)*
L701, removal 1720
L702 - CD20 1346
L702, removal 1720
L703 - CD20 1346
L703, removal 1720
locations, end 1431
locations, front 1433
locations, rear 1435
locations, right side 1437
M610, removal 1675
M701, removal 1684
M703, removal 1696
M704 - CD18 1344
M704 - CD59 1383
M704, adjust 1736
M704, removal 1736
M705, removal 1747
M706, adjust 1716
M706, removal 1715
oil port assembly, check 1719
oil pumps, removal 1720
oiler belt end switch - CD21 1347
oiler belt end switch, adjust 1714
oiler belt end switch, removal 1713
oiler belt motor, adjust 1716
oiler belt motor- CD19 1345
oiler belt motor, removal 1715
oiler gate interlock, adjust 1717
oiler gate interlock, removal 1717
oiler gate open switch - CD22 1347
oiler pan, install 1718
paper cooling fans, removal 1725, 1726
preheat platen - CD28 1353

fuser *(continued)*
preheat platen, AC distribution - WD17 1264
preheat platen, removal 1727
preheat platen lift plate asm, removal 1728
relays, removal 1745
S617 - CD18 1344
S617, removal 1688
S621, adjust 1709
S621, removal 1708
S622, adjust 1709
S622, removal 1708
S623, adjust 1709
S623, removal 1708
S624, removal 1683
S701, removal 1711
S702 - CD29 1354
S704 - CD22 1347
S704, adjust 1717
S704, removal 1717
S705, removal 1712
S707, adjust 1741
S707, removal 1739
S711 - CD21 1347
S711, adjust 1714
S711, removal 1713
S712, removal 1673
scuff pressure rollers, removal 1730
scuff roll - CD59 1383
scuff roll, parts 2071
scuff roll, removal 1734
scuff roll motor, adjust 1736
scuff roll motor, removal 1736
scuff roll motor drive belt, removal 1736
fuser *(continued)*
scuff roll release cable, adjust 1738
scuff roll release cable, removal 1737
scuff roller pressure check 1732
skew sensor, adjust 1741
skew sensor, removal 1739
SR601, removal 1745
SR602, removal 1745
SR603, removal 1745
steering motor, removal 1747
thermistors , adjust 1709
wrap sensor- CD18 1344
fuser and stacker sensors (DV071 & FU041) - WD48 1292
fuser control card, removal 1685
fuser driver routine 1143
fuser exhaust fan B701, location 1435
fuser exhaust fan B702, location 1435
fuser exhaust fans - WD44/1B 1287
fuser exhaust fans, removal 1687
fuser filter, location 1431
fuser front cover, location 1585
fuser lower rear cover, location 1584
fuser oil empty sensor - CD29 1354
fuser oil filter screen, change 2292, 2326
fuser sensors - WD57 1301
fuser sensors - WD58 1302
fuser/stacker driver card DV071, location 1437
fuser/stacker driver card DV081, location 1442
fuser top rear cover, location 1584
fuser wrap sensor - WD48/1B 1292
fuser wrap sensor, removal 1688
fuser wrap sensor (S617) routine 1164
fuser wrap switch, location 1432

G

gap adjustments
charge corona to drum 1564
mag brush to PC, adjust 1623
pc drum 1658
retractor to PC drum gap, adjust 1930
gasket, EMC (93H3144) (-18) 2147
gasket, EMC (93H3145) (-19) 2147
gauges
doctor/scraper 2384
drum clearance 2385
pressure 2395
gear (06F0968) (-7) 2105
gear, drum drive (06F0298) (-26) 1975
gear, idler (06F0302) (-33) 1975
gear, lift (06F0150) (-63) 2049
gear, worm (06F0969) (-4) 2105
gearhead, asm oiler belt motor (06F0164) (-24) 2059
gearhead, backup roll (06F0147) (-47) 2049
gearhead, mag brush 50Hz Dev (63H6505) (-74) 2005
gearhead, mag brush 60Hz Dev (63H6506) (-75) 2005
gearhead, pendulum (63H6564) (-4) 2111
gearhead, stacker table motor (06F0196) (-2) 2105
gearhead, toner feed mech asm (63H6518) (-82) 2011
gray print sample 1106

ground, drum 1657
ground pin 2262
grounded neutral verification test 2262
GTX120P, parts 2155
guard (4511305) (-5) 2139
guard, fan (24H8191) (-107) 1997
guard, finger (06F0569) (-107) 1997
guard, finger (11L5200) (-11) 2073
guide, table (06F0380) (-43) 2107
GXT110P, parts 2145

H

hard drive, replacement 1545
hexadecimal-to-decimal conversion 1234
high voltage connector CH1, location 1449
high voltage connector CH2, location 1449
high voltage connector CH3, location 1449
high voltage connector CH4, location 1449
high voltage connector CH5, location 1449
high voltage connector CH6, location 1449
high voltage power supply 1568
locations, rear 1449
high voltage power supply, location 1430
high voltage power supply HV101, location 1449
high voltage to coronas - WD26 1269
hinge, front (30H2956) (-24) 2135
hinge, left side (30H2958) (-23) 2135
hinge, rear (30H2957) (-10) 2135
hinge, right side (30H2959) (-12) 2135
holder (08H7678) (-53) 2049
holder, brush (88F2413) (-7) 1985
holder, card (30H6860) (-19) 2119
holder, card (30H6860) (-2) 2119
holder, card (30H6860) (-24) 2115
holder, card (30H6860) (-29) 2119
holder, card (30H6860) (-7) 2115
holder, charge corona connector (06F0510) (-33) 1973
holder, corona wire (front) (90H1036) (-41) 1973
holder, corona wire (rear) (90H1037) (-42) 1973
holder, lamp (88F2943) (-32) 2047
holder, mechanical shaft asm (63H6543) (-13) 2047
holder, motor (06F0513) (-21) 1975
holder, motor (30H6820) (-37) 2015
holder, return mirror (88F3389) (-96) 2017
holder, rotation sensor L (88F2706) (-9) 2041
holder, rotation sensor U (88F2707) (-10) 2041
holder, sensor (08H7680) (-126) 2019
holder, table (06F0991) (-65) 2107
holder, table (06F0992) (-64) 2107
holder, table (LH) (06F0977) (-45) 2107
holder, table (RH) (06F0978) (-44) 2107
Hook, Cover Stop Wire (11L6058) (-7) 1949
hose, splicing station (88F2900) (-61) 1989
hose, vacuum (06F0342) (-4) 2043
host attachment card (slot 2) connector, location 1468
host attachment card (slot 4) connector, location 1468
host attachment card (slot 6) connector, location 1464
host attachment card (slot 8) connector, location 1464
hot roll 2232
hot roll & collars, removal 1692
hot roll, location 1432
hot roll, parts 2063
hot roll drive asm, lubrication 1691
hot roll drive asm, removal 1690
hot roll drive belt, location 1435
hot roll drive collar, removal 1695
hot roll drive motor & overcurrent detection - CD33 1357
hot roll drive motor - WD38/1B 1281
hot roll drive motor, removal 1696
hot roll front hub, removal 1698
hot roll lamp 1 - CD34 1358
hot roll lamp 1 (Europe 50 Hz) 240 Volt (24L3397) (-28) 2063
hot roll lamp 1 (US/Canada 60 Hz) 230 Volt (24L3393) (-24) 2063
hot roll lamp 1(Japan 50/60 Hz) 220 Volt (24L4844) (-32) 2065
hot roll lamp 2 - CD35 1359
hot roll lamp 2 (Europe 50 Hz) 240 Volt (24L3398) (-29) 2063
hot roll lamp 2 (Japan 50/60 Hz) 220 Volt (24L4845) (-33) 2065
hot roll lamp 2 (US/Canada 60 Hz) 230 Volt (24L3394) (-25) 2063

hot roll lamp 3 - CD36 1360
hot roll lamp 3 (Europe 50 Hz) 240 Volt (24L3399) (-30) 2063
hot roll lamp 3 (Japan 50/60 Hz) 220 Volt (24L4846) (-34) 2065
hot roll lamp 3(US/Canada 60 Hz) 230 Volt (24L3395) (-26) 2063
hot roll lamp 4 - CD37 1361
hot roll lamp 4 (Europe 50 Hz) 240 Volt (24L4843) (-31) 2065
hot roll lamp 4 (Japan 50/60 Hz) 220 Volt (24L4847) (-35) 2065
hot roll lamp 4 (US/Canada 60 Hz) 230 Volt (24L3396) (-27) 2063
hot roll lamp end cap, removal 1704
hot roll lamp receptacle contacts, removal 1706
hot roll lamps, location 1433
hot roll lamps, removal 1700
hot roll motor (M703) driver routine 1139, 1140
hot roll motor brushes 2232
hot roll motor M703, location 1435
hot roll over-temp sensor S705, location 1432
hot roll over-temperature - CD30 1355
hot roll over-temperature sense - CD30 1355
hot roll over temperature sensor - WD58/1B 1302
hot roll over-temperature sensor, removal 1712
hot roll print count 1116
hot roll temperature control sensor - CD27 1352
hot roll temperature control sensor - WD58/2A 1302
hot roll temperature control sensor, removal 1711
hot roll temperature control sensor S701, location 1432
hot roll temperature control thermistors - CD31 1356
hot roll thermistor 1 - WD57/1B 1301
hot roll thermistor 2 - WD57/1B 1301
hot roll thermistor 3 - WD57/2B 1301
hot roll thermistor S621, location 1432
hot roll thermistor S622, location 1432
hot roll thermistor S623, location 1432
housing, lamp (88F2951) (-10) 2063
housing, mechanical drive asm (63H6542) (-8) 2047
hub, drum drive (57G6761) (-61) 1977
hub, scuff roll (06F0156) (-4) 2071
HV101, location 1449
HVPS, location 1430
HVPS HV101, location 1449

I

IBM logo 2367
idler, pulley asm (88F2548) (-95) 1995
IF491, location 1456
IF491, parts 2119
impedance grounded neutral 2260
inlet, developer mix (88F2523) (-75) 1995
input bin, remove 2267
input bin left cover, location 1585
input bin right cover, location 1585
install ozone filter 2271
installation
  CE responsibilities 2249
  customer responsibilities 2249
  tools required 2251
installation, features 2365
installation, label 2366
  caution 2368
  do not reuse waste toner 2368
  hazardous area 2368
  IBM model and serial number 2368
  toner developer 2368
  toner fill 2368
instructions for PM procedures 2220
intelligent interface wrap plug, desc 2389
intelligent interface wrap test 1084
intelligent postprocessor interface wrap plug 'B' - WD74 1317
interface card (IF491), removal 1520
interface signals, checking pre/postprocessing 1089
interface test, printer 1082
interface test card, pre/postprocessing 1087
interface voltages, checking pre/postprocessing 1092
interface wrap test, coupled 1085
interface wrap test, intelligent 1084
interlock switch (S118), removal 1656
interlocks
  laser 1767
internal control unit trace 1097
interposer (92F2565) (-38) 2155
interpretation of sense bytes 1211
IT power distribution 2260

J

JA02 - WD08/2A 1256
JA02 - WD09/2A 1257
JA03 - WD08/2A 1256
JA03 - WD09/2A 1257
JA04 - WD08/2A 1256
JA04 - WD09/2A 1257
Japan, voltage adaptation for 2260
JH01 - WD05/2A 1253
JH01A - WD05/2A 1253
JN01 - WD61/1A 1304
jumper plug, printer power 2396
jumpers, voltage check 2278

K

key 4 X 4 X 10 (06F0408) (-30) 2105
key 4 X 4 X 8 (90H2416) (-15) 2053
keyboard (7025-F50 (82G3278) 2149
keyboard connector, location 1464, 1468
kit, corona rebuild (30H6765) (-5) 1965
knob, drum (06F0528) (-66) 1977
knob, drum asm (88F2613) (-65) 1977

L

L2 lens, location 1454, 1771
L3 lens, location 1454, 1771
L301 - WD25 1268
L701 - CD20 1346
L701 - WD45/1B 1288
L701, driver routine 1141
L701, location 1435
L701, removal 1720
L702 - CD20 1346
L702 - WD45/1B 1288
L702, driver routine 1142
L702, location 1435
L702, removal 1720
L703 - CD20 1346
L703 - WD45/2B 1288
L703, driver routine 1142
L703, location 1435
L703, removal 1720
label installation 2366
  caution 2368
  do not reuse waste toner 2368
  hazardous area 2368
  IBM model and serial number 2368
  toner developer 2368
  toner fill 2368
lamp, EOF sensor (D101) (24H9844) (26) 1981
lamp, EOF Sensor (S117) (24H9845) (26) 1981
lamp, erase (57G6508) (-20) 1965
lamp, stacker front height sensor(D802) (24H9844) (-66) 2093
lamp, stacker height detect rear (D801) (24H9844) (-50) 2103
lamp, stacker jam (D803) (24H9844) (-86) 2093
lamps
  D101 - WD47-2/1B 1291
  D101, parts 1981
  D101 EOF sensor, location 1443
  D801, parts 2103
  D801 stacker rear height sensor, location 1441
  D802 stacker front height sensor, location 1441
lamps *(continued)*
  D803 stacker jam sensor, location 1439
  EOF sensor D101, location 1443
  erase - WD25 1268
  erase, driver routine 1133
  erase, location 1430
  erase, parts 1965
  erase, removal 1662
  erase, sensor removal 1664
  erase, starter removal 1666
  erase lamp starter, parts 1965
  fuser, parts 2063
  hot roll, AC distribution - WD16 1263
  hot roll, location 1433
  hot roll, parts 2063
  hot roll, removal 1700
  hot roll 1 - CD34 1358
  hot roll 2 - CD35 1359
  hot roll 3 - CD36 1360
  hot roll 4 - CD37 1361
  PL101 - CD38 1362
  PL101, driver routine 1133
  PL101, location 1430, 1444
  PL101, parts 1965
  PL101, removal 1662
  ST101 - CD38 1362
  ST101, parts 1965
  stacker, front height sensor, parts 2093
  stacker front height sensor D802 , location 1441
  stacker height detect rear, parts 2103
  stacker jam sensor, parts 2093
  stacker jam sensor D803 , location 1439

lamps *(continued)*
stacker rear height sensor D801 , location 1441
laser
interlock 1767
laser alignment tool, desc 2391
laser alignment tool, P/N 24L3377 2379
laser beam path, printhead 1773
laser diode (LD1) adjustment routine 1181
laser diode (LD1–LD5) adjustment routine 1178
laser diode (LD2) adjustment routine 1182
laser diode (LD3) adjustment routine 1182
laser diode (LD4) adjustment routine 1183
laser diode (LD5) adjustment routine 1183
laser diode card, adjustment 1782
laser diode card, removal 1781
laser diode card LD272, location 1454
laser diode routine 1144
laser driver - WD27 1270
laser driver card LD272, location 1771
laser driver circuit breaker - CD63 1387
laser power tool, desc 2391
latch, bracket (30H2989) (-2) 2127
latch, top cover (06H6706) (-25) 2151
LD272, adjustment 1782
LD272, location 1454, 1771
LD272, parts 2013
LD272, removal 1781
LEDs
D801 - WD48/2B 1292
LEDs *(continued)*
D802 - WD48/2B 1292
D803 - WD49/2B 1293
EOF, location 1429
P157A, location 1429
stacker height - WD48/2B 1292
stacker jam - WD49/2B 1293
left finger belt motor (M801) driver routine 1138
lens 2, location 1454, 1771
lens 3, location 1454, 1771
lens L2, check 1784
lens L2, removal 1783
lens L3, check 1785
lens L3, removal 1785
lenses
CYL1, location 1454, 1771
cylinder CYL1, location 1454, 1771
cylinder CYL1, removal 1790
cylinder lens CYL1, check 1791
F-Theta, location 1454, 1771
F-Theta, removal 1795
L2, check 1784
L2, location 1454, 1771
L2, removal 1783
L3, location 1454, 1771
L3, removal 1785
lens 2, location 1454, 1771
lens 3, location 1454, 1771
lens L3, check 1785
long, location 1454, 1771
resolution switching, location 1455, 1772
leveling the printer 2272
lever, CPU (73H3520) (-9) 2145
lever, exhaust asm (88F2507) (-26) 1991
lever, front (73H3525) (-9) 2145
lever, rear (73H3529) (-9) 2145
lever, scuff roll release (06F0868) (-29) 2075
levers
developer drain, location 1427
light, attention, test 1082
light, attention asm (88F3689) (-200) 2143
light, operator alert, location 1457
link asm (06F0330) (-96) 2031
locations
7025 F50, bays 1467
7025 F50, cards 1466
7025 F50, front & back 1464
7043 43P-140, cards 1470
7043 43P-140, front & back 1468
AC/DC power supply front 1450
AC/DC power supply left 1452
cleaner mechanism rear (1) 1446
cleaner mechanism rear (2) 1448
control unit front 1457
control unit left 1458
CPxxx 1471
developer front 1427
developer rear 1425
developer side 1428
drum 1429
DV061 1472
DV071 1473
DV081 1474
DV101 1475
external covers 1582
FU041 1476

locations *(continued)*
fuser, end 1431
fuser end 1431
fuser front 1433
fuser rear 1435
fuser right side 1437
HVPS rear 1449
LD272 1477
locations, channel I/O connections 1463
logic card area 1453
MIC 1460
PC561 1477
PQE Card 1461
PR011 1478
pre/post cards 1462
printer interface 1456
printhead 1454, 1771
service covers 1583
stacker end view (1) 1439
stacker end view (2) 1441
stacker front 1438
stacker rear 1442
transfer station front 1443
transfer station rear 1445
log, PM 2218
logic area fan - WD43/1A 1286
logic card cover, location 1584
logic fan filter, location 1453
logo (93H4297) (-28) 2149
logo (94H0550) (-5) 2151
logo, IBM 2367
logs
bookmark 1066, 1067
details 1066
error 1066
logs *(continued)*
filter 1066
MPSRC (definition) 1067
PM 1068
print 1069, 1070
printing multiple copies 1071
sense data 1066
service 1065
summary 1067
long error log 1070
long filtered error log 1071
long lens, location 1454, 1771
loop test, MIC 1080
low voltage power supply, MIC, PQE & fans - WD05 1253
LP041, check 1869
LP041, location 1435
LP041, parts 2073
LP041 stacker control card, location 1441

M

M1 mirror, location 1454, 1771
M101 - CD71 1395
M101 - WD13/2B 1261
M101, location 1425
M101, parts 2005
M101, removal 1610
M101, thermal sense - CD72 1396
M102 - CD76 1400
M102 - WD30/1A 1273
M102, location 1425
M102, parts 2011
M102, removal 1639
M103 - CD01 1327
M103 - WD31/1B 1274
M103, parts 2033
M103, removal 1903
M103 retractor motor, location 1443
M104 - thermal sense - CD54 1378
M104 - WD13/1B 1261
M104, parts 2041
M104, removal 1490
M104, rotation sense - CD55 1379
M104 cyclone blower motor, location 1448
M105 - CD03 1329
M105 - WD32/1A 1275
M105, parts 2029
M105, removal 1919
M105 detent position, adjust 1927
M105 tractor motor, location 1445
M106 - CD58 1382
M106 - WD33/2B 1276
M106, parts 1969
M106, removal 1507
M106 cleaner housing motor, location 1446
M107 - WD34/2A 1277
M107, parts 1975
M107 drum motor, location 1445
M108 - CD56 1380
M108 - WD13/2B 1261
M108, parts 1969
M108, removal 1503
M108, thermal sense - CD57 1381
M108 cleaner brush motor, location 1446
M2 mirror, location 1454, 1771
M501 - CD64 1388
M501 - WD35/1B 1278

M501, parts 2013
M501, removal 1792
M501 mirror motor, location 1455, 1772
M502 - WD36/1B 1279
M502, adjustment 1787
M502, parts 2013
M502, removal 1786
M502 resolution lens motor, location 1455, 1772
M610 - CD26 1351
M610 - WD37/1B 1280
M610, location 1437
M610, parts 2055
M610, removal 1675
M701 - CD23 1348
M701 - WD15/2B 1262
M701, location 1435
M701, parts 2049
M701, removal 1684
M703 - CD33 1357
M703 - WD15/2B 1262
M703 - WD38/1B 1281
M703, location 1435
M703, parts 2047
M703, removal 1696
M704 - CD18 1344
M704 - CD59 1383
M704 - WD39/1A 1282
M704, adjust 1736
M704, location 1433
M704, parts 2075
M704, removal 1736
M705 - CD11 1337
M705 - WD40/2B 1283
M705, location 1437
M705, parts 2055
M705, removal 1747
M706 - CD19 1345
M706 - WD41/2A 1284
M706, adjust 1716
M706, location 1431
M706, parts 2059
M706, removal 1715
M801 - CD43 1367
M801 - CD49 1373
M801 - CD50 1374
M801 - WD39/2B 1282
M801, parts 2101
M801 stacker rear finger belt motor, location 1439
M802 - CD43 1367
M802 - WD39/1B 1282
M802, adjust 1873
M802, parts 2097
M802, removal 1872
M802 stacker gate finger belt motor, location 1439
M803 - WD15/1B 1262
M803, parts 2105
M803, removal 1884
M803, thermal sense - CD44 1368
M803 stacker table motor, location 1441
M804 - CD40 1364
M804 - WD42/1B 1285
M804, adjust 1860
M804, control - CD41 1365
M804, parts 2111
M804, positioning - CD42 1366
M804, removal 1859
M804 pendulum motor, location 1441
M902 - WD61/1B 1304
machine component damage 2260
mag brush A, location 1425, 1427
mag brush A, removal 1614
mag brush angles, check 1623
mag brush B, location 1425, 1427
mag brush B, removal 1615
mag brush belt, adjust 1609
mag brush belt, location 1425
mag brush belt, removal 1608
mag brush bias - CD70 1394
mag brush bias voltage 1571
mag brush gaps, adjust 1623
mag brush motor - CD71 1395
mag brush motor, location 1425
mag brush motor (M101) driver routine 1132
mag brush motor, removal 1610
mag brush motor, thermal sense - CD72 1396
mag brush rolls, removal 1612, 1613, 1614, 1615, 1616, 1617, 1618, 1619, 1620, 1621, 1622, 1623, 1624
mag roll A (63H6501) (-30) 2001
mag roll B (63H6502) (-14) 2001
main power input, location 1448
maintenance
  operator cleaning 2213
  operator print-quality check 2213
  operator replacements 2213
  service tasks 2214
maintenance panel 1107
  adjustment routines 1177
  driver routines 1125, 1127
  error codes 1231, 1232, 1233
  routines (by part ID) 1184, 1185, 1186, 1187, 1188

maintenance panel 1107 *(continued)*
run options 1120
sensor routines 1148, 1149, 1152
maintenance panel - WD29 1272
maintenance panel, desc 2392
maintenance panel, location 1453
maintenance panel, parts 2117
MASWA, location 1471
MASWB, location 1471
MASWC, location 1471
MB071, location 1453
MB071, parts 2117
MB071, replacement 1763
mechanical interface card, location 1460
mechanism diagnostics 1080
mechanism interface card, removal 1522
mechanism interface card memory, removal 1524
mechanism interface trace 1097
memory
backup roll print count 1116
backup roll timing values 1193
clear (position 8) 1195
developer mix setting 1116
oil feed rate 1116
oiler belt cycle time 1116
page counter 1117
read from or write to 1112
reading from 1113
steering control changes 1117
steering gain 1117
steering motor rotation 1116
steering motor skew data 1116
toner control program 1118
memory *(continued)*
toner empty counter 1117
values in addresses 1116
writing to 1114
memory, 128MB (DIMM) (93H6823) (-35) 2155
memory, 64MB DIMM (42H2774) (-35) 2155
memory card (03N4173) (-14) 2145
memory card for MIC (90H2627) (-8) 2131
memory module, 128MB (93H4702) (-15) 2145
memory module, 32MB (07L7729) (-15) 2145
meter - ESV, desc 2388
meter (usage), location 1453
meter, usage parts 2117
MIC - BD03 1420
MIC card
basic test 1080
isolation wrap test 1204
LED display, reading 1080
loop test 1080
MIC card, location 1460
MIC control unit 2 to MIC control unit 1 - WD65 1308
MIC display, location 1460
MIC side 2 verification test 1197
MIC to coupled pre/postprocessor interface - WD70 1313
MIC to intelligent postprocessor - WD71 1314
MIC to MIC SCSI cable 2342
MIC to operator alert assembly - WD68 1311
MIC to printer control cable (1 of 2) - WD66 1309
MIC to printer control cable (2 of 2) - WD67 1310
MIC wrap cable (PJJ2, PJJ3 and PJJ12) - WD75 1318
MIC wrap plugs 2393
MIC wrap plugs (PJJ1 and PJJ6) - WD76 1319
microcode, installation 2346
microcode, updating 1094
microcode update 1547
mirror motor - CD64 1388
mirror motor - WD35/1B 1278
mirror motor (M501) driver routine 1129
mirror motor, removal 1792
mirror motor M501, location 1455, 1772
mirror motor rotation sensor - WD35/1B 1278
mirrors
beam detect, location 1454, 1771
M1, location 1454, 1771
M2, location 1454, 1771
return, location 1455, 1772
mix auger shaft, location 1427
mixing paddle belt, adjust 1625
mixing paddle belt, removal 1625
mixing paddle pulley, location 1426
MJ01, location 1460
MJ02, location 1460
MJ03, location 1460
MJ04 - WD69/1B 1312
MJ04, location 1460
MJ06, location 1460
MJ07, location 1460
MJ09, location 1460

MJ10, location 1460
MJ11, location 1460
MJ21 - WD64/2A 1307
MJ21 - WD65/1A/2A 1308
MJ21, location 1460
MJ22 - WD64/1A 1307
MJ22 - WD65/1A/2A 1308
MJ22, location 1460
mode, CE or service 2217
modify backup roll lift motor open/close timing (position 5) 1193
modify steering servo (position 5) 1191
motor, backup roll (M701) (04H0866) (-46) 2049
motor, backup roll lift (M610) (63H6534) (-65) 2055
motor, cleaner brush (M108) 50 Hz (06F0051) (-50) 1969
motor, cleaner brush (M108) Asm 60 Hz (06F0052) (-51) 1969
motor, cleaner housing (M106) (63H6495) (-63) 1969
motor, cyclone blower asm (M104) (63H6497) (-3) 2041
motor, drum (M107) (63H6491) (-20) 1975
motor, gate finger belt drive (M802) (63H6567) (-28) 2097
motor, hot roll (M703) (63H6544) (-21) 2047
motor, L2 resolution lens (M502) (30H6819) (-33) 2013
motor, mag brush (M101) (57G2538) (-73) 2005
motor, mirror (M501) (63H6521) (-2) 2013
motor, oiler belt (M706) (06F0163) (-25) 2059
motor, pendulum (M804) (63H6520) (-3) 2111
motor, rear finger belt drive (M801) (63H6569) (-27) 2101
motor, retractor (M103) (63H6529) (-10) 2033
motor, scuff roll (M704) (63H6558) (-13) 2075
motor, stacker table (M803) (06F0195) (-1) 2105
motor, steering (M705) (63H6537) (-52) 2055
motor, toner feed (M102) (63H6520) (-81) 2011
motor, tractor (M105) (63H6530) (-47) 2029
motor test 1086
motor voltage test 1092
motors
backup-roll & thermal sense - CD23 1348
backup roll - WD15 1262
backup roll, driver routine 1139
backup roll, location 1435
backup roll, parts 2049
backup roll, removal 1684
backup roll lift - CD26 1351
backup roll lift - WD37/1B 1280
backup roll lift, driver routine 1147
backup roll lift, parts 2055
backup roll lift M610, location 1437
backup roll lift motor, removal 1675
backup-roll open/close mechanism - CD24 1349
motors *(continued)*
cleaner brush - CD56 1380
cleaner brush , parts 1969
cleaner brush - WD13/2B 1261
cleaner brush, driver routine 1130, 1131
cleaner brush, removal 1503
cleaner brush, thermal sense - CD57 1381
cleaner brush M108, location 1446
cleaner housing - CD58 1382
cleaner housing - WD33/2B 1276
cleaner housing, parts 1969
cleaner housing, removal 1507
cleaner housing M106, location 1446
cyclone blower - WD13/1B 1261
cyclone blower, driver routine 1129
cyclone blower, parts 2041
cyclone blower, removal 1490
cyclone blower, rotation sense - CD55 1379
cyclone blower M104, location 1448
cyclone blower motor - thermal sense - CD54 1378
drum - CD12 1338
drum - WD34/2A 1277
drum, driver routine 1131
drum, parts 1975
drum M107, location 1445
finger belt - WD39/1B/2B 1282
finger belts - CD43 1367
gate finger belt, adjust 1873
gate finger belt, removal 1872
hot roll, driver routine 1139, 1140
hot roll, parts 2047

motors *(continued)*
hot roll drive & overcurrent detection - CD33 1357
hot roll drive - WD38/1B 1281
hot roll drive, removal 1696
hot roll M703, location 1435
left finger belt, driver routine 1138
M101 - CD71 1395
M101 - WD13/2B 1261
M101, driver routine 1132
M101, location 1425
M101, parts 2005
M101, removal 1610
M101, thermal sense - CD72 1396
M102 - CD73 1397
M102 - CD76 1400
M102 - WD30/1A 1273
M102, driver routine 1132
M102, location 1425
M102, parts 2011
M102, removal 1639
M103 - CD01 1327
M103 - WD31/1B 1274
M103, driver routine 1136
M103, parts 2033
M103, removal 1903
M103 retractor, location 1443
M104 - thermal sense - CD54 1378
M104 - WD13/1B 1261
M104, driver routine 1129
M104, parts 2041
M104, removal 1490
M104, rotation sense - CD55 1379
M104 cyclone blower, location 1448
M105 - CD03 1329
M105 - detent position, adjust 1927
motors *(continued)*
M105 - WD32/1A 1275
M105, driver routine 1134
M105, parts 2029
M105, removal 1919
M105 tractor, location 1445
M106 - CD58 1382
M106 - WD33/2B 1276
M106, parts 1969
M106, removal 1507
M106 cleaner housing, location 1446
M107 - CD12 1338
M107 - WD34/2A 1277
M107, driver routine 1131
M107, parts 1975
M107, removal 1645
M107 drum, location 1445
M108 - CD56 1380
M108 - WD13/2B 1261
M108, driver routine 1130, 1131
M108, parts 1969
M108, removal 1503
M108, thermal sense - CD57 1381
M108 cleaner brush, location 1446
M501 - CD64 1388
M501 - WD35/1B 1278
M501, driver routine 1129
M501, location 1455, 1772
M501, parts 2013
M501, removal 1792
M502 - WD36/1B 1279
M502, adjustment 1787
M502, driver routine 1146
M502, location 1455, 1772
M502, parts 2013
M502, removal 1786
motors *(continued)*
M610 - CD26 1351
M610 - WD37/1B 1280
M610, driver routine 1147
M610, location 1437
M610, parts 2055
M610, removal 1675
M701 & thermal sense - CD23 1348
M701 - WD15 1262
M701, driver routine 1139
M701, location 1435
M701, parts 2049
M701, removal 1684
M701 open/close mechanism - CD24 1349
M703 - CD33 1357
M703 - WD15/2B 1262
M703 - WD38/1B 1281
M703, driver routine 1139, 1140
M703, location 1435
M703, parts 2047
M703, removal 1696
M704 1736
M704 - CD18 1344
M704 - CD59 1383
M704 - WD39/1A 1282
M704, driver routine 1141
M704, location 1433
M704, parts 2075
M705 - CD11 1337
M705 - WD40/2B 1283
M705, driver routine 1138
M705, location 1437
M705, parts 2055
M705, removal 1747
M706 - CD19 1345

motors *(continued)*
M706 - WD41/2A 1284
M706, adjust 1716
M706, driver routine 1140
M706, location 1431
M706, parts 2059
M706, removal 1715
M801 - CD43 1367
M801 - CD49 1373
M801 - CD50 1374
M801 - WD39/2B 1282
M801, adjust 1867
M801, driver routine 1138
M801, parts 2101
M801, removal 1866
M801 stacker rear finger belt, location 1439
M802 - CD43 1367
M802 - WD39/1B 1282
M802, adjust 1873
M802, driver routine 1138
M802, parts 2097
M802, removal 1872
M802 stacker gate finger belt, location 1439
M803 - WD15/1B 1262
M803, driver routine 1137
M803, parts 2105
M803, removal 1884
M803, thermal sense - CD44 1368
M803 stacker table, location 1441
M804 - CD40 1364
M804 - WD42/1B 1285
M804, adjust 1860
M804, control - CD41 1365
M804, driver routine 1136, 1137
motors *(continued)*
M804, parts 2111
M804, positioning - CD42 1366
M804, removal 1859
M804 pendulum, location 1441
M902 - WD61/1B 1304
mag brush - WD13/2B 1261
mag brush, driver routine 1132
mag brush, location 1425
mag brush, parts 2005
mag brush, removal 1610
mag brush, thermal sense - CD72 1396
mag brush motor - CD71 1395
mirror, driver routine 1129
mirror, parts 2013
mirror, removal 1792
mirror M501, location 1455, 1772
mirror motor - CD64 1388
mirror motor - WD35/1B 1278
oiler belt - CD19 1345
oiler belt - WD41/2A 1284
oiler belt, adjust 1716
oiler belt, driver routine 1140
oiler belt, parts 2059
oiler belt, removal 1715
oiler belt M706, location 1431
pendulum - CD40 1364
pendulum - WD42/1B 1285
pendulum, adjust 1860
pendulum, control - CD41 1365
pendulum, driver routine 1136, 1137
pendulum, parts 2111
pendulum, positioning - CD42 1366
pendulum, removal 1859
pendulum M804, location 1441
motors *(continued)*
rear finger belt, adjust 1867
rear finger belt, removal 1866
rear finger belt drive, parts 2101
resolution lens, adjustment 1787
resolution lens, driver routine 1146
resolution lens, parts 2013
resolution lens, removal 1786
resolution lens M502, location 1455, 1772
resolution switching lens - WD36/1B 1279
retractor, driver routine 1136
retractor, parts 2033
retractor, removal 1903
retractor M103, location 1443
retractor motor - CD01 1327
retractor motor - WD31/1B 1274
right finger belt, driver routine 1138
scuff roll - CD18 1344
scuff roll - CD59 1383
scuff roll, adjust 1736
scuff roll, driver routine 1141
scuff roll, parts 2075
scuff roll, removal 1736
scuff roll drive - WD39/1A 1282
scuff roll M704, location 1433
stacker cooling blower - WD15/2B 1262
stacker front finger belt - CD50 1374
stacker gate finger belt drive 2097
stacker gate finger belt M802, location 1439
stacker rear finger belt - CD49 1373
stacker rear finger belt M801, location 1439

motors *(continued)*
stacker table - WD15/1B 1262
stacker table, driver routine 1137
stacker table, parts 2105
stacker table, removal 1884
stacker table, thermal sense - CD44 1368
stacker table M803, location 1441
steering , removal 1747
steering, driver routine 1138
steering, parts 2055
steering M705, location 1437
steering motor - CD11 1337
steering motor - WD40/2B 1283
toner feed - CD73 1397
toner feed - WD30/1A 1273
toner feed, driver routine 1132
toner feed, parts 2011
toner feed, removal 1639
toner feed M102, location 1425
toner feed motor - CD76 1400
tractor - CD03 1329
tractor - detent position, adjust 1927
tractor - WD32/1A 1275
tractor, driver routine 1134
tractor, parts 2029
tractor, removal 1919
tractor M105, location 1445
urge unit - WD61/1B 1304
mouse, (3 button) (76H5084) 2155
mouse connector, location 1464, 1468
MP021 2117
MP201, location 1453
MPSRC (definition) 1067
multiple copies, printing 1071

N

normal print (position 0) 1111
nut (1622393) (-9) 2129
nut (1622403) (-1) 2139
nut (1622403) (-2) 2135
nut (1622403) (-22) 2129
nut (1622403) (-5) 2131
nut (1622404) (-14) 2139
nut (1622437) (-19) 2135
nut (89H9835) (-12) 2131
nut, flange (14H7813) (-29) 1987
nut, flange (14H7813) (-39) 1987
nut, flange (14H7813) (-47) 1989
nut, lock (06F0478) (-49) 1973
nut, lock M6 (06F0407) (-131) 2081
nut, M12 (1622408) (-14) 2135
Nut, M5 (06F0407) (-8) 1949

O

offset test 1086
offset voltage test 1092
oil assembly cover, location 1584
oil empty sensor - WD48/2B 1292
oil empty sensor S702, location 1436
oil feed rate 1116
oil pan, install 1718
oil port assembly, check 1719
Oil Pump 1 (L701) driver routine 1141
oil pump 1 L701, location 1435
oil pump 2 (L702) driver routine 1142
oil pump 2 L702, location 1435
oil pump 3 (L703) driver routine 1142
oil pump 3 L703, location 1435
oil pump asm, parts 2073
oil pumps, removal 1720
oil pumps and driver - CD20 1346
oil pumps L701, L702 & L703 - WD45 1288
oiler belt cycle time 1116
oiler belt drive chain, location 1431
oiler belt end sensor S711, location 1432
oiler belt end switch - CD21 1347
oiler belt end switch - WD48/1B 1292
oiler belt end switch, adjust 1714
oiler belt end switch, removal 1713
oiler belt end switch (S711) routine 1171
oiler belt motor - CD19 1345
oiler belt motor - WD41/2A 1284
oiler belt motor, adjust 1716
oiler-belt motor (M706) driver routine 1140
oiler belt motor, removal 1715
oiler belt motor M706, location 1431
oiler empty sensor (S702) routine 1172
oiler gate interlock, adjust 1717
oiler gate interlock, removal 1717
oiler gate open switch - CD22 1347
oiler gate open switch - WD48/1B 1292
oiler gate open switch (S704) routine 1171
oiler gate open switch S704, location 1432
online diagnostics 1201
operator alarm volume control, locations 1458
operator alert - CD77 1401
operator alert, test 2358

operator alert accessory contacts, locations 1458
operator alert alarm, location 1457
operator alert assembly, attach 2290
operator alert assembly, removal 1526
operator alert light, location 1457
operator maintenance
definition 2213
print-quality check 2213
replacement tasks 2213
tasks 2213
operator panel ckt asm (07L7649) (-6) 2151
operator panel control asm (93H2922) (-5) 2145
optical sensor margin tests (position 9) 1196
over temperature protection 1249
overall print quality 1102
overlay, chinese simplified (30H6656) (-35) 2141
overlay, chinese traditional (30H6654) (-35) 2141
overlay, english (45G1753) (-35) 2141
overlay, french (45G1755) (-35) 2141
overlay, german (45G1757) (-35) 2141
overlay, italian (45G1759) (-35) 2141
overlay, portuguese brazil (30H2974) (-35) 2141
overlay, spanish (45G1761) (-35) 2141
ozone filter, install 2271

P

P/P1 - WD70/1B 1313
P/P1 - WD71/1B 1314
P/P2 - WD70/1B 1313
P/P2 - WD71/1B 1314
P/P3 - WD70/1B 1313
P/P3 - WD71/1B 1314
P157A, location 1429
P229, stacker disable plug 2296
P2S2 - WD72/1B 1315
P3S2 - WD72/1B 1315
paddle, developer mixing (63H7094) (-36) 2001
page counter 1117
pan, oil (24L3376) (-56) 2061
panel, bay (12H0649) (-31) 2153
panel, display control, location 1457
panel, power control, location 1457
panel, rear (06H8488) (-23) 2151
panel asm, maintenance (53F1778) (-37) 2117
paper cooling fan B705, location 1431
paper cooling fan B707, location 1431
paper cooling fans - WD44/1A/2A 1287
paper cooling fans, removal 1725, 1726
paper cooling fans driver routine 1144
parallel channel adapter, parts 2147, 2155
parallel channel basic test 1074
parallel channel card, removal 1553
parallel channel signal - tailgate to controller (1 of 2) - WD62 1305
parallel channel signal - tailgate to controller (2 of 2) - WD63 1306
parallel channel tailgate, removal 1529
parallel channel wrap blocks 2394
parallel channel wrap test 1074
parallel port connector, location 1464, 1468
parts, tracked 2232
password 1063
password, entering 2217
password, special features 2346
path modifier, location 1443
path modifier assembly, adjust 1933
PC drum
belt, parts 1977
cleaning 1654
cover interlock switch, removal 1656
drive belt, adjustment 1648
drive belt, removal 1645
drum box 2384
drum ground 1657
drum rotation sensor - CD13 1339
drum shaft extension, desc 2388
gap clearance values 1658
installation 1652
laser interlock 1767
locations, front 1429
M107 - CD12 1338
motor (M107), removal 1645
motor and overcurrent detection - CD12 1338
parts 1975, 1977
pc drum cover interlock - CD69 1393
removal 1649
revolution sensor, adjustment 1648
rotation sensor, removal 1645
S105 - CD13 1339
sensor (S105), adjustment 1648
sensor (S105), removal 1645
surface voltage, adjustment 1574
PC drum, install 2301
process measurements 2302
doctor blade gap 2302

PC drum, install 2301 *(continued)*
lower retractor 2302
lower seal 2302
mag brush 2302
scavenger roll 2302
upper retractor 2302
pc drum, installation 1652
pc drum, removal 1649
pc drum cleaning 1654
pc drum cover interlock - CD69 1393
PC drum cover interlock switch - WD54/1B 1298
PC drum cover interlock switch (S118) routine 1156
PC561, parts 2117
PC561, removal 1764
PC561 paper path control, location 1453
pedestal and wheel (11H8156) (-26) 2147
pendulum home position sensor - WD42/2B 1285
pendulum home position sensor, S809, location 1440
pendulum motor - CD40 1364
pendulum motor - WD42/1B 1285
pendulum motor, control - CD41 1365
pendulum motor (M804) driver routine 1136, 1137
pendulum motor, positioning - CD42 1366
pendulum motor, removal 1859
pendulum motor,adjust 1860
pendulum motor M804, location 1441
pendulum position sensor, removal 1861
pendulum position sensor (S809) routine 1169
pendulum static brush, removal 1862
performing PM off-schedule 2214
performing PM procedures 2220
PH01 - WD05/2A 1253
PH01A - WD05/2A 1253
phase-to-ground voltage 2261
phase-to-neutral voltage 2261
phase to phase 2259
phase-to-phase voltage 2261
pin (1693629) (-5) 2127
pin (53F1983) (-11) 2063
pin, cover hinge (53F1607) (-6) 2129
pin, pressure roller (06F0863) (-119) 2081
PJ10, location 1461
PJ1003 - WD13/1B 1261
PJ101 - WD27/1A 1270
PJ101 - WD35/2B 1278
PJ101 - WD36/2A 1279
PJ101, location 1478
PJ102 - WD34/1B 1277
PJ102 - WD35/2B 1278
PJ102, location 1478
PJ103 - WD26/1A/2B 1269
PJ103, location 1478
PJ104 - WD13/2B 1261
PJ104 - WD25/1A 1268
PJ104 - WD34/1B 1277
PJ104 - WD54/1A/2A 1298
PJ104, location 1478
PJ105 - WD13/2B 1261
PJ105 - WD24-1/1A/2A 1266
PJ105 - WD24-2/1B/2A 1267
PJ105, location 1478
PJ106 - WD13/1B 1261
PJ106, location 1425
PJ107 - WD27/2A 1270
PJ107, location 1478
PJ108 - WD43/2B 1286
PJ108, location 1478
PJ112 - WD47-1/1B 1290
PJ112, location 1428
PJ113 - WD30/1B 1273
PJ113 - WD43/1A 1286
PJ113, location 1425
PJ114 - WD43/1A 1286
PJ114, location 1448
PJ115 - WD26/1A/2B 1269
PJ115, location 1429, 1449
PJ116 - WD26/1A 1269
PJ116, location 1429, 1449
PJ117 - WD13/1A 1261
PJ117, location 1425
PJ118 - WD13/1A 1261
PJ118, location 1425
PJ119 - WD31/1A 1274
PJ119, location 1448
PJ120 - WD13/2A 1261
PJ120, location 1446
PJ121 - WD30/1A 1273
PJ121, location 1425
PJ122 - WD33/1B 1276
PJ122, location 1446
PJ123 - WD13/1A 1261
PJ123, location 1448
PJ124 - WD13/1B 1261
PJ124, location 1448
PJ125 - WD54/1B 1298
PJ125, location 1443
PJ126 - WD34/1A 1277

PJ126, location 1445
PJ127 - WD43/1A 1286
PJ127, location 1429
PJ128 - WD43/2A 1286
PJ128, location 1429
PJ129 - WD43/1A 1286
PJ129, location 1428
PJ130 - WD13/1B 1261
PJ130 - WD47-1/2B 1290
PJ130, location 1426
PJ131 - WD54/2B 1298
PJ131, location 1426
PJ132 - WD47-1/2A 1290
PJ132, location 1428
PJ133 - WD47-1/1B 1290
PJ133, location 1426
PJ134 - WD13/2B 1261
PJ134, location 1446
PJ135 - WD25/1B 1268
PJ135, location 1446
PJ136 - WD31/1A 1274
PJ136, location 1443
PJ137 - WD31/1B 1274
PJ137, location 1443
PJ138 - WD32/1A 1275
PJ138, location 1445
PJ139 - WD32/1B 1275
PJ139, location 1445
PJ140 - WD55/1A 1299
PJ140, location 1443
PJ141 - WD55/1A 1299
PJ141, location 1443
PJ142 - WD25/1A 1268
PJ142, location 1446
PJ143 - WD54/2B 1298
PJ143, location 1426
PJ144 - WD54/2B 1298
PJ144, location 1428
PJ145 - WD47-1/1B 1290
PJ145, location 1448
PJ146 - WD54/1B 1298
PJ146, location 1447
PJ147 - WD34/1B 1277
PJ147, location 1445
PJ148 - WD54/1B 1298
PJ148, location 1447
PJ149 - WD54/1B 1298
PJ149, location 1445
PJ150 - WD47-2/2B 1291
PJ150, location 1448
PJ151 - WD47-2/1B 1291
PJ151, location 1429, 1443
PJ153 - WD31/2B 1274
PJ153 - WD32/1B 1275
PJ153, location 1448
PJ155 - WD55/1B 1299
PJ156 - WD54/1B 1298
PJ156, location 1429, 1449
PJ157 - WD47-2/1B 1291
PJ157, location 1443
PJ159 - WD25/1A/1B 1268
PJ159, location 1447
PJ160 - WD47-1/2B 1290
PJ161, location 1443
PJ175 - WD54/2B 1298
PJ175, location 1447
PJ184 - WD53/1B 1297
PJ184, location 1430
PJ185 - WD26/1B 1269
PJ185, location 1426
PJ201 - WD46/1B 1289
PJ201 - WD66/1A 1309
PJ201 - WD67/1A 1310
PJ201, location 1456
PJ202 - WD46/1B 1289
PJ202 - WD66/1B 1309
PJ202 - WD67/1B 1310
PJ202, location 1456
PJ203 - WD28/2B 1271
PJ203, location 1456
PJ204 - WD27/1B 1270
PJ204, location 1456
PJ205 - WD12/1A 1260
PJ205, location 1456
PJ208, location 1477
PJ219 - WD35/1B 1278
PJ227 - WD05/1A/1B 1253
PJ227 - WD08/1A 1256
PJ227 - WD09/1A 1257
PJ227, location 1456
PJ228 - WD77-1/1B 1320
PJ228 - WD77-2/1B 1321
PJ228, location 1456
PJ229 - WD77-1/1B 1320
PJ229 - WD77-2/1B 1321
PJ229, location 1456
PJ230, location 1456
PJ232, location 1456
PJ233 - WD27/1B 1270
PJ233, location 1456
PJ233S2 - WD72/1B 1315
PJ233S2, location 1456
PJ234 - WD27/1B 1270
PJ234, location 1456
PJ235 - WD27/2B 1270
PJ235, location 1456
PJ251 - WD78/1A 1322
PJ251, location 1456

PJ258 - WD36/2A 1279
PJ258, location 1455, 1772
PJ259 - WD36/1B 1279
PJ259, location 1455, 1772
PJ260 - WD36/2A 1279
PJ260, location 1477
PJ267 - WD27/2B 1270
PJ267, location 1456
PJ280 - WD35/2B 1278
PJ301 - WD55/1A 1299
PJ301, location 1444
PJ302 - WD30/2B 1273
PJ302 - WD31/2A 1274
PJ302 - WD32/2A 1275
PJ302 - WD34/1A 1277
PJ302 - WD46/1B 1289
PJ302, location 1472
PJ303 - WD24-1/1B 1266
PJ303 - WD24-2/1A 1267
PJ303 - WD38/2A 1281
PJ303, location 1472
PJ304 - WD24-1/1B 1266
PJ304 - WD24-2/1A 1267
PJ304 - WD37/2B 1280
PJ304 - WD42/1A 1285
PJ304 - WD58/2A 1302
PJ304, location 1472
PJ305 - WD24-1/1A 1266
PJ305 - WD24-2/2A 1267
PJ305 - WD58/2A 1302
PJ305, location 1472
PJ306 - WD24-1/1A 1266
PJ306 - WD24-2/1A/2A 1267
PJ306 - WD58/1A 1302
PJ306, location 1472
PJ307, location 1472
PJ308 - WD36/1B 1279
PJ308, location 1475
PJ309 - WD32/1A 1275
PJ309 - WD38/1A 1281
PJ309, location 1472
PJ310 - WD24-1/1A 1266
PJ310, location 1472
PJ311 - WD24-1/2A 1266
PJ311, location 1472
PJ312 - WD24-1/2A 1266
PJ312, location 1472
PJ313 - WD24-1/1A 1266
PJ313 - WD24-2/1B/2A 1267
PJ313, location 1472
PJ314 - WD24-1/2A 1266
PJ314 - WD24-2/1A 1267
PJ315 - WD24-1/2A 1266
PJ315 - WD24-2/2A 1267
PJ315, location 1472
PJ316 - WD24-1/1A 1266
PJ316 - WD24-2/2A 1267
PJ316 - WD35/2A 1278
PJ316, location 1475
PJ317 - WD24-1/1A 1266
PJ317 - WD24-2/2A 1267
PJ317, location 1475
PJ318 - WD25/2A 1268
PJ318, location 1453
PJ319 - WD35/1A 1278
PJ319, location 1475
PJ320 - WD13/2A 1261
PJ320 - WD33/1A 1276
PJ320 - WD35/1A 1278
PJ320 - WD36/1A 1279
PJ320 - WD47-2/1B 1291
PJ320, location 1475
PJ321 - WD34/1A 1277
PJ321, location 1472
PJ322 - WD31/1A 1274
PJ322, location 1472
PJ322S2 - WD72/1B 1315
PJ323 - WD25/2A 1268
PJ323 - WD30/1B 1273
PJ323, location 1472
PJ324 - WD33/1B 1276
PJ324, location 1475
PJ324S2 - WD72/1B 1315
PJ325 - WD16/1A 1263
PJ325 - WD46/1A 1289
PJ325 - WD58/2A 1302
PJ325, location 1471
PJ326 - WD46/1A 1289
PJ326, location 1471
PJ327 - WD46/1A 1289
PJ327 - WD66/1A 1309
PJ327 - WD67/1A 1310
PJ327, location 1471
PJ328 - WD29/1A/1B 1272
PJ328, location 1471
PJ329 - WD30/2A 1273
PJ329 - WD31/2A 1274
PJ329 - WD32/2A 1275
PJ329 - WD34/1A 1277
PJ329 - WD38/2B 1281
PJ329 - WD46/1A 1289
PJ329, location 1471
PJ330 - WD16/2A 1263
PJ330, location 1471
PJ331, location 1471
PJ332 - WD77-1/1A 1320
PJ332 - WD77-2/1A 1321
PJ332, location 1471

PJ333 - WD24-1/1B 1266
PJ333 - WD24-2/1B 1267
PJ333, location 1471
PJ334 - WD47-1/2B 1290
PJ334 - WD57/1A 1301
PJ334 - WD58/1B 1302
PJ334, location 1471
PJ335 - WD46/1A 1289
PJ335, location 1477
PJ336 - WD34/1B 1277
PJ336 - WD35/2B 1278
PJ336 - WD46/1A 1289
PJ336, location 1477
PJ337 - WD13/1B 1261
PJ337 - WD31/2B 1274
PJ337 - WD32/1B 1275
PJ337 - WD47-1/1A 1290
PJ337 - WD47-2/2A 1291
PJ337 - WD54/2A 1298
PJ337, location 1477
PJ338 - WD55/1B 1299
PJ338, location 1477
PJ339 - WD53/1A 1297
PJ339, location 1477
PJ340, location 1471
PJ341 - WD43/1B 1286
PJ341, location 1453
PJ342 - WD13/1A 1261
PJ342, location 1475
PJ343 - WD13/1A/2A 1261
PJ343, location 1475
PJ344 - WD13/1B/2B 1261
PJ344 - WD24-1/1A/2A 1266
PJ344 - WD24-2/1B/2B 1267
PJ344, location 1477
PJ345 - WD13/2A 1261
PJ345 - WD33/1A 1276
PJ345 - WD35/1A 1278
PJ345 - WD36/1A 1279
PJ345 - WD46/1A 1289
PJ345 - WD47-2/1B 1291
PJ345, location 1477
PJ348 - WD78/1A 1322
PJ348, location 1471
PJ3S2 - WD05/2B 1253
PJ448 - WD29/1A/1B 1272
PJ448, location 1453
PJ451 - WD01/2A 1251
PJ451 - WD03/2A 1252
PJ451, location 1452
PJ452 - WD01/2A 1251
PJ452 - WD03/2A 1252
PJ452 - WD13/1A 1261
PJ452, location 1452
PJ453 - WD01/1B 1251
PJ453 - WD03/1B 1252
PJ453, location 1450
PJ454 - WD01/1B 1251
PJ454 - WD03/1B 1252
PJ454, location 1452
PJ455 - WD01/2B 1251
PJ455 - WD03/2B 1252
PJ455, location 1452
PJ456 - WD01/2B 1251
PJ456 - WD03/2B 1252
PJ456, location 1452
PJ457 - WD24-1/1A 1266
PJ457, location 1450
PJ458 - WD24-1/1A 1266
PJ458 - WD24-2/2A 1267
PJ458 - WD35/2A 1278
PJ458, location 1450
PJ459 - WD24-1/2A 1266
PJ459, location 1450
PJ460 - WD24-1/2A 1266
PJ460, location 1451
PJ461 - WD24-1/1A 1266
PJ461, location 1451
PJ462 - WD12/1A 1260
PJ462, location 1451
PJ464 - WD16/2A 1263
PJ464, location 1451
PJ465, location 1451
PJ466, location 1451
PJ467, location 1451
PJ468, location 1451
PJ469, location 1451
PJ470 - WD01/2A 1251
PJ470 - WD03/2A 1252
PJ470, location 1452
PJ485 - WD01/1A 1251
PJ485 - WD03/1A 1252
PJ485, location 1452
PJ5, location 1461
PJ501 - WD28/2A 1271
PJ501, location 1455, 1772
PJ502 - WD28/1A 1271
PJ502, location 1455, 1772
PJ503 - WD27/1B 1270
PJ503, location 1477
PJ505 - WD43/2A 1286
PJ505, location 1430, 1447
PJ506 - WD27/1B 1270
PJ506, location 1477
PJ507 - WD27/1B 1270
PJ507, location 1477
PJ508 - WD27/2B 1270
PJ508, location 1477

PJ509 - WD27/2B 1270
PJ509, location 1477
PJ510 - WD28/1A 1271
PJ510, location 1477
PJ511 - WD27/2A 1270
PJ511, location 1477
PJ513 - WD27/2B 1270
PJ513, location 1455, 1772
PJ514 - WD35/1B 1278
PJ514, location 1455, 1772
PJ515, location 1430
PJ516 - WD27/1A 1270
PJ516 - WD35/2B 1278
PJ516 - WD36/2A 1279
PJ516, location 1477
PJ517 - WD27/2B 1270
PJ517, location 1477
PJ601 - WD24-1/1A 1266
PJ601 - WD24-2/1A 1267
PJ601 - WD58/1A 1302
PJ601, location 1474
PJ6014 - WD57/1B 1301
PJ6015 - WD57/1B 1301
PJ6015, location 1435
PJ6016 - WD57/1B 1301
PJ6016, location 1435
PJ6017 - WD57/2B 1301
PJ6017, location 1435
PJ6018 - WD37/1B 1280
PJ6018, location 1437
PJ6019 - WD37/1B 1280
PJ6019, location 1437
PJ602 - WD24-1/1A 1266
PJ602 - WD24-2/2A 1267
PJ602 - WD37/1B 1280
PJ602, location 1474
PJ6020 - WD37/1B 1280
PJ6020, location 1437
PJ603 - WD15/1B/2B 1262
PJ603, location 1474
PJ604 - WD16/1B 1263
PJ604, location 1474
PJ605 - WD15/1A 1262
PJ605 - WD16/1B 1263
PJ605 - WD39/2B 1282
PJ605 - WD41/1B 1284
PJ605 - WD45/1A/2B 1288
PJ605 - WD46/2B 1289
PJ605, location 1474
PJ606 - WD24-1/1B 1266
PJ606 - WD24-2/1A 1267
PJ606 - WD37/2B 1280
PJ606 - WD42/1A 1285
PJ606 - WD58/1A/2A 1302
PJ606, location 1473
PJ607 - WD44/2B 1287
PJ607, location 1473
PJ608 - WD37/2A 1280
PJ608 - WD39/1A 1282
PJ608 - WD40/2A 1283
PJ608 - WD42/2A 1285
PJ608 - WD46/1B 1289
PJ608, location 1473
PJ609 - WD17/1A 1264
PJ609 - WD37/2A 1280
PJ609 - WD40/1A 1283
PJ609 - WD46/2B 1289
PJ609 - WD48/1A 1292
PJ609 - WD52/2A 1296
PJ609 - WD56/1B 1300
PJ609 - WD58/2B 1302
PJ609, location 1473
PJ611 - WD16/2B 1263
PJ611, location 1435
PJ612 - WD16/2B 1263
PJ612, location 1433
PJ613 - WD16/2B 1263
PJ613, location 1435
PJ616 - WD17/1A 1264
PJ616 - WD48/1B 1292
PJ616 - WD56/1A 1300
PJ616 - WD58/1B 1302
PJ616, location 1473
PJ617 - WD37/1B 1280
PJ617 - WD40/1B 1283
PJ617 - WD42/2B 1285
PJ617 - WD48/1B 1292
PJ617 - WD52/1A 1296
PJ617 - WD58/1B/2A 1302
PJ617, location 1473
PJ618 - WD49/1A 1293
PJ618 - WD51/1A/2A 1295
PJ618, location 1473
PJ621 - WD41/1B 1284
PJ621, location 1474
PJ622 - WD45/1B 1288
PJ622, location 1474
PJ623 - WD15/1B 1262
PJ623 - WD58/1A 1302
PJ623, location 1474
PJ624 - WD39/1B 1282
PJ624, location 1474
PJ625 - WD39/2B 1282
PJ625, location 1474
PJ626 - WD40/2B 1283
PJ626, location 1473
PJ627 - WD42/1B 1285
PJ627, location 1473

PJ628 - WD37/1B 1280
PJ628, location 1473
PJ629 - WD39/1A 1282
PJ629, location 1473
PJ631 - WD16/1A 1263
PJ631 - WD46/1A 1289
PJ631 - WD58/2A 1302
PJ631, location 1476
PJ632 - WD48/2A 1292
PJ632, location 1476
PJ633 - WD37/2A 1280
PJ633 - WD39/2A 1282
PJ633 - WD40/2A 1283
PJ633 - WD42/2A 1285
PJ633 - WD46/1A 1289
PJ633, location 1476
PJ634 - WD50/1A 1294
PJ634, location 1476
PJ635, location 1476
PJ636 - WD15/1A 1262
PJ636 - WD16/1A 1263
PJ636 - WD39/2A 1282
PJ636 - WD41/1B 1284
PJ636 - WD45/1A 1288
PJ636 - WD46/2A 1289
PJ636, location 1476
PJ637 - WD17/1B 1264
PJ637 - WD37/2A 1280
PJ637 - WD40/1A 1283
PJ637 - WD46/2A 1289
PJ637 - WD48/1A 1292
PJ637 - WD52/2B 1296
PJ637 - WD56/1B 1300
PJ637 - WD58/2A 1302
PJ637, location 1476
PJ638 - WD24-1/2A 1266
PJ638 - WD24-2/1B 1267
PJ638, location 1476
PJ640 - WD48/1B 1292
PJ640, location 1433
PJ645 - WD58/1B 1302
PJ645, location 1431
PJ646 - WD15/2B 1262
PJ646, location 1436
PJ652 - WD15/2B 1262
PJ652, location 1436
PJ672 - WD58/1A 1302
PJ672, location 1442
PJ682 - WD58/2A 1302
PJ682, location 1434
PJ701 - WD38/1B 1281
PJ701, location 1436
PJ702, location 1434
PJ704 - WD40/1B 1283
PJ704, location 1431
PJ705 - WD40/1B 1283
PJ705, location 1434
PJ706 - WD48/1B 1292
PJ706, location 1434
PJ708 - WD56/1A 1300
PJ708, location 1436
PJ709 - WD56/1A 1300
PJ709, location 1436
PJ710 - WD56/2A 1300
PJ710, location 1436
PJ711 - WD48/1B 1292
PJ711, location 1431
PJ712 - WD40/2B 1283
PJ712, location 1437
PJ714, location 1434
PJ715 - WD58/1B 1302
PJ715, location 1436
PJ716 - WD17/2A 1264
PJ716, location 1436
PJ717 - WD17/1B 1264
PJ717, location 1436
PJ719 - WD58/1B 1302
PJ719, location 1436
PJ723 - WD41/1A 1284
PJ723, location 1431
PJ724 - WD44/1B 1287
PJ724, location 1436
PJ725 - WD48/2A 1292
PJ725, location 1436
PJ726 - WD44/1A 1287
PJ726, location 1434
PJ727 - WD44/1A 1287
PJ727, location 1431
PJ728 - WD44/1A 1287
PJ728, location 1434
PJ729 - WD44/2A 1287
PJ729, location 1431
PJ730 - WD44/1B 1287
PJ730, location 1436
PJ731 - WD44/1B 1287
PJ731, location 1436
PJ732 - WD24-1/1A 1266
PJ732 - WD44/2A 1287
PJ732, location 1436
PJ745 - WD45/1B 1288
PJ745, location 1436
PJ746 - WD15/2B 1262
PJ746, location 1442
PJ747, location 1442
PJ751 - WD50/1B 1294
PJ751, location 1436, 1441
PJ752 - WD42/1B 1285
PJ752, location 1441

PJ753 - WD42/2B 1285
PJ753, location 1434
PJ754 - WD42/2B 1285
PJ754, location 1438
PJ803 - WD15/1B 1262
PJ803, location 1441
PJ804 - WD15/1B 1262
PJ804, location 1441
PJ805 - WD39/1B/2B 1282
PJ805, location 1442
PJ806 - WD39/2B 1282
PJ806, location 1439
PJ807 - WD39/1B 1282
PJ807, location 1439
PJ811 - WD48/2A 1292
PJ811, location 1441
PJ812 - WD48/2A 1292
PJ812, location 1441
PJ813 - WD49/2B 1293
PJ813, location 1439
PJ814 - WD49/2B 1293
PJ814, location 1438, 1439
PJ815 - WD49/2B 1293
PJ815, location 1439
PJ816 - WD49/2B 1293
PJ816, location 1438
PJ817 - WD49/1B 1293
PJ817, location 1438
PJ818 - WD49/1B 1293
PJ818, location 1438
PJ819 - WD48/2A 1292
PJ819, location 1440
PJ820 - WD48/2A 1292
PJ820, location 1442
PJ821 - WD49/1B 1293
PJ821, location 1438
PJ830 - WD51/2B 1295
PJ830, location 1438
PJ831 - WD51/1B 1295
PJ831, location 1438
PJA01 - WD08/1A 1256
PJA01 - WD09/1A 1257
PJA01, location 1458
PJA02, location 1458
PJA03, location 1458
PJA04, location 1458
PJA05 - WD08/1B 1256
PJA05 - WD09/1B 1257
PJA05, location 1458
PJA06 - WD08/1B 1256
PJA06 - WD09/1B 1257
PJA06, location 1458
PJA07 - WD08/2B 1256
PJA07 - WD09/2B 1257
PJA07, location 1459
PJA08 - WD08/1B 1256
PJA08 - WD09/1B 1257
PJA08, location 1459
PJA09 - WD08/2B 1256
PJA09 - WD09/2B 1257
PJA09, location 1459
PJA10 - WD08/1A 1256
PJA10 - WD09/1A 1257
PJA10, location 1459
PJA11 - WD08/1A 1256
PJA11 - WD09/1A 1257
PJA11, location 1459
PJB01 - WD06/1B 1254
PJB01 - WD07/1B 1255
PJB01, location 1457
PJB02 - WD06/1A 1254
PJB02 - WD07/1A 1255
PJB02, location 1457
PJC01 - WD10/1B 1258
PJC01 - WD11/1B 1259
PJC02 - WD10/1B 1258
PJC02 - WD11/1B 1259
PJC03 - WD10/2B 1258
PJC03 - WD11/2B 1259
PJC3 - WD08/2A 1256
PJC3 - WD09/2A 1257
PJF01 - WD70/1A 1313
PJF01 - WD71/1A 1314
PJF02 - WD70/1A 1313
PJF02 - WD71/1A 1314
PJF03 - WD70/1A 1313
PJF03 - WD71/1A 1314
PJF04 - WD70/1B 1313
PJF04 - WD71/1B 1314
PJF05 - WD70/1B 1313
PJF05 - WD71/1B 1314
PJF06 - WD70/1B 1313
PJF06 - WD71/1B 1314
PJH01 - WD05/1A 1253
PJH01, location 1459
PJH02 - WD05/1A/2A 1253
PJH02, location 1459
PJH03 - WD05/1A/2A 1253
PJH03, location 1459
PJJ05 - WD05/2B 1253
PJJ1 - WD68/1B 1311
PJJ1 - WD70/1A 1313
PJJ1 - WD71/1A 1314
PJJ1 - WD72/1A 1315
PJJ1 - WD76/1B 1319
PJJ10 - WD05/2B 1253
PJJ11 - WD70/1A 1313
PJJ11 - WD71/1A 1314

PJJ12 - WD75/1B 1318
PJJ2 - WD75/1A 1318
PJJ3 - WD75/2A 1318
PJJ6 - WD66/1B 1309
PJJ6 - WD67/1B 1310
PJJ6 - WD76/1A 1319
PJJ7 - WD70/1A 1313
PJJ7 - WD71/1A 1314
PJJ7 - WD72/1A 1315
PJJ878 - WD05/1A 1253
PJJ879 - WD05/1A 1253
PJJ9 - WD70/1A 1313
PJJ9 - WD71/1A 1314
PJMJ07 - WD72/1A 1315
PJMJ10 - WD05/1B 1253
PJMJ12 - WD78/1B 1322
PJT01 - WD05/1B 1253
PJT01 - WD73/1B 1316
PJT01 - WD74/1B 1317
PL101 - CD38 1362
PL101 - WD25 1268
PL101, location 1430, 1444
PL101, parts 1965
PL101 erase lamp, removal 1662
planar, 233 Mhz (11K0383) (-32) 2155
planar, I/O (03N3297) (-6) 2145
plate, card mounting, side1/side 2 2137
plate, connector hold (06F0509) (-35) 1973
plate, guide lamp (88F2950) (-5) 2063
plate, latch (30H2985) (-11) 2135
plate, mounting (30H3033) (-5) 2135
plate, mounting (30H6782) (-18) 2131
plate, nut (06F0973) (-49) 2107
plate, nut (88F3209) (-31) 2111
plate, nut (90H1108) (-69) 2055
plate, pendulum (stacker) (63H6565) (-25) 2111
plate, pendulum (stacker) (63H6566) (-26) 2111
plate, side latch (30H2986) (-13) 2135
plate, terminal (88F2952) (-12) 2063
plate assembly (06H2792) (-30) 2149
platen, preheat (63H6539) (-97) 2057
platen, preheat, location 1432
plates
  bias contact, location 1426
  developer seal, location 1427
plug, Ethernet 10/100 BaseT wrap (00G2380) 2147
pm
  changing a counter 2218
  checklist 2214
  log 2218
  performing off-schedule 2214
  procedures
    1.5 Mft 2222
    12 Mft 2229
    18 Mft 2231
    3 Mft 2224
    6 Mft 2226
    9 Mft 2228
    backup roll 2232
    general instructions 2220
    hot roll 2232
    hot roll motor brushes 2232
    performing 2220
  recording completed 2218
  service schedule (checklist) 2214
  specially tracked parts 2232
PM, completing 1068
PM counter, changing 1068
PM log 1068
PN01 - WD05/2A 1253
port asm, oil (65H6540) (-44) 2061
position 0, normal print 1111
position 5, modify backup roll lift motor open/close timing 1193
position 5, modify steering servo 1191
position 5, read memory address string 1189
position 5, write memory address 1190
position 8, clear memory 1195
position 9, optical sensor margin tests 1196
postprocessor print sample 1106
power
  AC supply, removal 1757
  control panel switch settings, duplex 1753
  control panel switch settings, simplex 1753
  DC supply, removal 1758
  power off procedure 1755
  power on procedure 1754
  printer DC voltage measurements 1759
  supply access 1756
power button (11H6764) (-1) 2151
power connector, location 1465, 1468
power control asm (-7) 2139
power control panel, control unit - removal 1531
power control panel, location 1457
power control panel card, location 1457
power control panel switch settings 1753

power off local switch, printer SW44, location 1457
power off procedure 1755
power off switch CU SW34, location 1457
power on 2297
power-on and disk activity asm. (93H9162) (-4) 2151
power on procedure 1754
power on switch CU SW33, location 1457
power on switch printer SW43, location 1457
power receptacle 2261
power requirements
  3-phase 2259
  50 Hz 2259
  60 ampere 2259
  60 Hz 2259
  adapting voltages 2259
  circuit breaker 2259
  disconnecting 2259
  European configuration 2259
  IT power distribution system 2260
  Japan configuration 2260
  U.S. configuration 2259
  voltage ranges 2262
  World Trade configuration 2259
power supplies
  AC, removal 1757
  AC control box (duplex), control unit - WD09 1257
  ac control box, location 1457
  AC control box (simplex), control unit - WD08 1256
  AC/DC locations, front 1450
power supplies *(continued)*
  AC/DC locations, left 1452
  AC power control (duplex), control unit - WD07 1255
  AC power control (simplex), control unit - WD06 1254
  access 1756
  DC, location 1459
  DC, removal 1758
  DC power supply, control unit - measurements 1518
  DC power supply, control unit - removal 1517
  DC voltage measurements 1759
  high voltage, location 1430
  high voltage, removal 1568
  high voltage to coronas - WD26 1269
  HV101, location 1449
  HVPS, location 1430
  HVPS HV101, location 1449
  low voltage - WD05 1253
  power control (duplex), AC - WD11 1259
  power control (simplex), AC - WD10 1258
  power control panel, control unit - removal 1531
  power distribution, printer DC - WD24 1266
  printer AC - WD01 1251
  printer AC - WD03 1252
power supply (40H7566) (-27) 2153
power supply (93H9789) (-23) 2147
power supply, AC asm (30H6719) (-15) 2139
power supply, AC/DC (PA 60Hz, PJ 50Hz, PJ 60Hz) (63H6485) (-1) 2125
power supply, AC/DC (PE 50Hz) (63H6486) (-1) 2123
power supply, DC asm (30H2868) (-16) 2139
power supply (fans), (24VD) - CD89 1413
power supply, high voltage (45G1856) (-2) 1965
power supply cover, location 1583
power supply DC, location 1459
power supply fan B467, location 1450
power supply fan B468, location 1450
power switch assembly (73H0438) (-3) 2151
power switches 2344
PQE - WD69 1312
PQE card, location 1461
PQE card, removal 1532
PR011, location 1447
PR011, parts 2119
PR011, removal 1764
PR011 cover, location 1584
PR011 sensor circuit breaker - CD90 1414
pre and postprocessing printer circuitry - WD77 1320
pre/post processing card, removal 1534
pre/postprocessing interface signals, checking 1089
pre/postprocessing interface test card 1087
pre/postprocessing interface test card and cable 2395

pre/postprocessing interface voltages, checking 1092
pre/postprocessing tailgate, location 1459
pre/postprocessing tailgate connectors, location 1459
pre/postprocessor diagnostics 1083
preclean corona - CD62 1386
preclean corona (57G6505) (-5) 1965
preclean corona, location 1429
preclean corona, removal 1559
preclean corona cleaning brush, removal 1563
preclean corona driver routine 1133
preclean corona voltage 1573
preheat platen - CD28 1353
preheat platen, location 1432
preheat platen, parts 2057
preheat platen, removal 1727
preheat platen driver routine 1143
preheat platen lift plate asm, removal 1728
preheat platen over temperature sensor - WD58/1B 1302
preparing to read from or write to memory 1112
pressure check, cyclone 1495
pressure gauge 2395
preventive maintenance
  definition 2212
  description 2214
  fast path 2214
  types 2212
primary print sample 1102
print 1069
print log 1070
print pack 1070
print quality check 2213
print quality enhancement
  beam offset 1838
  current vector 1842
  stroke width adjustment 1842
  vector boldness 1842
print quality enhancement card, location 1461
print sample adjustments 2357
print sample terms 1101
print samples 1100
print skew, check 1818
print width, check 1817
printer 1 remote power circuit, CD79 1403
printer activation test 1082
printer and control unit installation 2263
  damage checks 2263
printer center front cover, location 1582
printer control panel (SW721) routine 1162
printer control panel card - CD02 1328
printer control panel card SW761, location 1430
printer control panel SW761 - WD53/1B/2B 1297
printer DC power distribution - WD24 1266
printer diagnostics 1107
printer interface card IF491, location 1456
printer interface test 1082
printer left front cover, location 1582
printer left rear cover, location 1582
printer left top cover, location 1582
printer power jumper plug 2396
printer power supply - power on/off - WD12 1260
printer remote power circuit - CD78 1402
printer right end cover, install (600 DPI) 2322
printer right end cover, location 1582, 1585
printer right front cover, location 1582
printer right rear cover, location 1582
printer right top cover, location 1582
printer status window 1062
printhead
  access 1775
  AFCCU interface extension cable 2389
  B501, parts 1985
  BD171, parts 2017
  BD171 beam detect card , adjustment 1797
  BD171 beam detect card, check 1797
  BD171 beam detect card, removal 1796
  beam detect - CD66 1390
  beam detect - WD28 1271
  beam detect card (BD171), adjustment 1797
  beam detect card (BD171), check 1797
  beam detect card (BD171), removal 1796
  beam detect card, parts 2017
  beam power A, adjustment 1810
  beam power check 1808

printhead *(continued)*
check & adjustment, preparation 1800
check & adjustment, sequence 1799
check and adjustment 1799
circuit diagram - CD65 1389
cleaning procedure 1777
components 1771
cover interlock switch 1768
cover switch, adjustment 1780
cover switch, check 1780
cover switch, removal 1779
cylinder lens CYL1, check 1791
cylinder lens CYL1, removal 1790
do's and don'ts 1774
F-Theta lens, removal 1795
fan, parts 1985
fan B501, location 1446
fiber module, location 1454, 1771
fiber module, removal 1781
fiber module alignment, adjustment 1802
fiber module alignment, check 1801
laser alignment tool 2391
laser beam path 1773
laser diode card, adjustment 1782
laser diode card, removal 1781
laser driver - WD27 1270
laser driver circuit breaker - CD63 1387
laser interlock 1767
laser power tool 2391
LD272, parts 2013
lens L2, check 1784
lens L2, removal 1783
lens L3, check 1785
printhead *(continued)*
lens L3, removal 1785
locations 1454, 1771
M1 mirror, adjustment 1804
M1 mirror check 1803
M2 mirror, adjustment 1806
M2 mirror check 1805
M501, parts 2013
M502, parts 2013
mirror motor - CD64 1388
mirror motor, parts 2013
mirror motor, removal 1792
print skew, check 1818
print width, check 1817
printhead cover switch, parts 2019
registration template 2397
resolution lens motor, adjustment 1787
resolution lens motor, parts 2013
resolution lens motor, removal 1786
resolution lens sensor, adjustment 1789
resolution lens sensor, parts 2015
resolution lens sensor, removal 1788
resolution switching lens postion sensor - CD68 1392
return mirror, adjustment 1819
S502, parts 2019
S503, parts 2015
safety 1767
video data - CD67 1391
printhead - CD65 1389
printhead, location 1430
printhead alignment (multiple beam) 2307
printhead cover interlock switch, routine 1175
printhead cover switch, adjustment 1780
printhead cover switch, check 1780
printhead cover switch, removal 1779
printhead cover switch S502, location 1455, 1772
printhead fan - WD43/2A 1286
printhead fan, location 1446
printhead fan, removal 1798
printhead power print sample 1106
printing multiple log copies 1071
pulley (06F0962) (-29) 2105
pulley, drive (06F0687) (-6) 2111
pulley, drive (88F2741) (-50) 2029
pulley, driven (04H0212) (-18) 2111
pulley, hot roll motor (38L0734) (-22) 2047
pulley, idler asm (57G4409) (-60) 2003
pulley, idler asm (88F2548) (-95) 1995
pulley, mixing paddle drive (38L0833) (-47) 2003
pulley, table asm (06F0197) (-35, -38) 2107
pulley, toner feed (38L0834) (-20) 2007
pulley asm, scavenger roll idler (63H6504) (-66) 2003
pulleys
developer idler A, removal 1605
developer idler B, removal 1606
mixing paddle, location 1426
scavenger roll, location 1426
scavenger roll idler, removal 1630
toner feed, location 1426
toner paddle, location 1426

pump asm, oil (57G6825) (-31) 2073
pumps
L701, location 1435
L702, location 1435
L703, location 1435
push-button, display power on/off, location 1457
PW111, (63H6481) (-85) 2037
PW111, adjust 1895
PW111, removal 1894
PW111 form width sensor, location 1444

R

read from or write to memory 1112
read memory address string (position 5) 1189
reading from memory 1113
reading the MIC LED display 1080
rear process cover, location 1584
rear stacker height sensor, adjust 1877
rear stacker height sensor, removal 1877
rear stacker height sensor (S803 & D801), routine 1172
receptacle 2262
receptacle, hot roll lamp (88F2940) (-52) 2049
recording completed PM 2218
recording PM as completed 1068
registration 1821
checking 1822
checking with scale 1824
checking with template 1823
factors affecting 1821
registration 1821 *(continued)*
process direction, adjustment 1825
special tools 1821
vertical, adjustment 1825
registration template 2397
reinstallation 2377
relay, solid state (SR601, SR602, SR603) (06F0172) (-3) 2075
relays
SR601, location 1437
SR602, location 1437
SR603, location 1437
relocation 2376
reminder, PM due 2214
remote/local switch CU SW32, location 1457
remote/local switch printer SW42, location 1457
remote power cable 2341
remote power circuit, printer - CD78 1402
remote power circuit, printer 1 - CD79 1403
removals
7025 Model F50 1541
7043 Model 43P-140 1537
AC Control Box 1515
AC power supply 1757
B701 1687
B702 1687
B703 1868
B704 1725
B705 1726
B706 1725
B707 1726
backup roll 1670
removals *(continued)*
backup roll discharge brush 1672
backup roll encoder 1673
backup roll lift motor 1675
backup roll lift motor drive belt 1677
backup roll lift position sensor 1683
backup roll motor, removal 1684
beam detect card (BD171) 1796
bias contacts 1597
chad brushes 1891
charge corona 1557
charge corona cleaning brushes 1562
cleaner brush 1498
cleaner brush, removal 1503
cleaner brush drive cone 1500
cleaner brush driven cone 1501
cleaner brush rotation sensor 1505
cleaner housing, removal 1509
conveyor roll & lift plate 1599, 1600, 1601, 1602
conveyor roll rotation sensor 1603
CP261/CP471 1760
CP261/CP471 EPROM 1762
cyclone blower 1491
cyclone blower drive belt 1488
cyclone blower motor 1490
cyclone blower rotation sensor 1493
cylinder lens CYL1 1790
D801 1877
D802 1877
D803 1879
DC power supply 1758
DC power supply, control unit 1517
developer drain lever sensor 1592
developer front seal assembly 1593
developer idler pulley A 1605

removals *(continued)*
developer idler pulley B 1606
developer rear seal 1594
developer run switch 1595
developer seal plate 1596
display touch screen 1519
drum cover interlock switch 1656
drum motor 1645
drum rotation sensor 1645
DV061 1764
DV071 1685
DV081 1764
DV101 1764
end-of-forms sensor 1893
erase, removal 1662
erase lamp 1664
erase lamp starter 1666
ESCON card 1550
F-Theta lens 1795
filter pressure switch 1487
fine filter 1480
fine filter case 1481
FL031 1851
FL061 1855
forms length screw shaft 1850
forms length sensor card 1855
forms length stacker wire 1856
forms width sensor 1894
front stacker height 1877
fuser control card 1685
fuser exhaust fans 1687
high voltage supply 1568
hot roll & collars 1692
hot roll drive asm 1690
hot roll drive collar 1695
hot roll drive motor 1696

removals *(continued)*
hot roll front hub 1698
hot roll lamp end cap 1704
hot roll lamp receptacle contacts 1706
hot roll lamps 1700
hot roll over-temperature sensor 1712
hot roll temperature control sensor 1711
L701 1720
L702 1720
L703 1720
laser diode card, LD272 1781
lens L2 1783
lens L3 1785
M101 1610
M102 1639
M103 1903
M104 1490
M105 1919
M107 1645
M108, removal 1503
M610 1675
M701 1684
M703 1696
M704, adjust 1736
M704, removal 1736
M705 1747
M706 1715
M801 1866
M802 1872
M803 1884
M804 1859
mag brush A 1614
mag brush B 1615
mag brush belt 1608

removals *(continued)*
mag brush motor 1610
mag brush rolls 1612, 1613, 1614, 1615, 1616, 1617, 1618, 1619, 1620, 1621, 1622, 1623, 1624
MB071 1763
mechanism interface card 1522
mechanism interface card memory 1524
mirror motor, M501 1792
mixing paddle belt 1625
oil pumps 1720
oiler belt end switch 1713
oiler belt motor 1715
oiler gate interlock 1717
operator alert assembly 1526
paper cooling fans 1725, 1726
parallel channel card 1553
parallel channel tailgate 1529
pc drum 1649
PC561 1764
pendulum drive belt 1859
pendulum motor 1859
pendulum position sensor 1861
pendulum static brush 1862
PL101, removal 1662
power control panel, control unit 1531
PQE card 1532
PR011 1764
pre/post processing card 1534
preclean corona 1559
preclean corona cleaning brush 1563
preheat platen 1727
preheat platen lift plate asm 1728
printhead cover switch, S502 1779
PW111 1894

removals *(continued)*
rear stacker height 1877
resolution lens motor, M502 1786
resolution lens sensor, S503 1788
retractor motor 1903
S101 1485
S102 1487
S103, removal 1509
S104 1505
S105 1645
S106, fine filter switch 1482
S107 1634
S108 1635
S109 1595
S110 1603
S111 1592
S115 1664
S116 1493
S117 1893
S118 1656
S621 1708
S622 1708
S623 1708
S624 1683
S701 1711
S704 1717
S705 1712
S707 1739
S711 1713
S712 1673
S801, removal 1875
S802, removal 1875
S803 1877
S804 1877
S805 1879
S806 1874
removals *(continued)*
S807 1886
S808 1882
S809 1861
scavenger roll 1626, 1627, 1628
scavenger roll belt 1629
scavenger roll idler pulley 1630
scuff pressure rollers 1730
scuff roll 1734
scuff roll motor 1736
scuff roll motor drive belt 1736
scuff roll release cable 1737
side 1/2 verify control card 1535
skew sensor 1739
skirt 1513
solid state relays 1745
SR601 1745
SR602 1745
SR603 1745
ST101 1666
stacker blower 1868
stacker control card 1851
stacker gate finger belt motor 1872
stacker gate finger belts 1870
stacker gate open switch 1874
stacker gate safety switch 1875
stacker jam sensor 1879
stacker rear finger belt motor 1866
stacker rear finger belts 1863
stacker table drive belts 1880
stacker table lower limit sensor 1882
stacker table motor 1884
stacker table upper limit sensor 1886
steering motor 1747
toner collector assembly 1483
toner collector switch 1485
removals *(continued)*
toner control sensor 1634
toner empty sensor 1635
toner feed belt 1637
toner feed motor 1639
toner feed roller 1641, 1642, 1643
tractor belt 1912
tractor jam sensor 1918
tractor motor 1919
tractors 1907
transfer corona 1559
transfer corona cleaning brush 1563
transfer corona shield 1921
transfer station discharge brush 1923
transfer station sensor (S114) 1924
remove boxes 2265
remove packing tape 2265
replacement tasks 2213
report, EREP detail 1209
report, EREP summary 1208
reset switch 1109
resolution lens motor, adjustment 1787
resolution lens motor (M502) routine 1146
resolution lens motor, removal 1786
resolution lens motor M501, location 1772
resolution lens motor M502, location 1455
resolution lens position sensor, routine 1175
resolution lens sensor, adjustment 1789
resolution lens sensor, removal 1788
resolution lens sensor S503, location 1455, 1772

resolution switching lens, location 1455, 1772
resolution switching lens motor - WD36/1B 1279
resolution switching lens position sensor - WD36/2A 1279
resolution switching lens postion sensor - CD68 1392
restore disk 1094
restore forms 1095
retainer, bearing (06F0516) (-5) 1975
retainer, remote BUS TAG (85X6837) (-24) 2131
retractor, location 1444
retractor motor - CD01 1327
retractor motor - WD31/1B 1274
retractor motor (M103) driver routine 1136
retractor motor, removal 1903
retractor motor encoder sensor - adjust 1929
retractor motor encoder sensor S113, location 1444
retractor motor M103, location 1443
retractor to PC drum gap, adjust 1930
retractors 2302
  lower 2302
  upper 2302
return mirror, adjustment 1819
return mirror, location 1455, 1772
right finger belt motor (M802) driver routine 1138
ring, clamp (06F0870) (-4) 1985
ring, clamping (06F0292) (-51) 2029
ring, clamping (06F0333) (-32) 2033
ring, retaining (06F0526) (-68) 1977
ring, retaining (88F3122) (-48) 2061
ring, retaining (88F3122) (-63) 2015
ring, retaining (90H2420) (-6) 2053
ring, tight (06F0292) (-19) 2111
ring, tight (06F0292) (-23) 2047
ring, tight (06F0292) (-44) 1969
ring, tight (06F0292) (-61) 2055
ring, tight (06F0292) (-7) 2111
rod (11L6063) (-6) 2127
rod (11L6067) (-8) 2127
rod, connecting (63H6528) (-27) 2033
roll, backup (11L5996) (-84) 2057
roll, conveyor (63H6500) (-1) 2001
roll, hot 180/220 (63H6393) (-20) 2063
roll, scavenger (63H6509) (-83) 2005
roll, toner feed (63H6516) (-1) 2007
roller, pressure (06F0153) (-118) 2081
rolls
  backup, location 1434
  conveyor, location 1427
  hot, location 1432
  scavenger, location 1427
routine options
  E0, change loop count 1121
  E2, set buzzer on or off 1122
  E4, read memory address 1123
  E5, set optical sensor margin check on or off 1124
RS/6000 controller
  7025 Model F50, removal 1541
  7043 Model 43P-140, removal 1537
  automatic tests 1200
  concurrent mode 1201
  ESCON card, removal 1550
  ESD precautions 1536
  from the laptop 1201, 1202
RS/6000 controller *(continued)*
  hard drive, replacement 1545
  locations, 7025 F50 bays 1467
  locations, 7025 F50 cards 1466
  locations, 7025 F50 front & back 1464
  locations, 7043 43P-140 cards 1470
  locations, 7043 43P-140 front & back 1468
  microcode update 1547
  online diagnostics 1201
  parallel channel card, removal 1553
  removal procedures 1536
  replacement procedures 1536
  SMS Screen 1203
run CFS/BTS voltage test 1092
run options 1120
running diagnostics 1072, 1119
running traces 1096

S

S1/S2 verify card, parts 2039
S101 - CD74 1398
S101 - WD47-1/1B 1290
S101, parts 2043
S101 toner collector switch, location 1448
S102 - CD14 1340
S102 - WD47-1/1B 1290
S102, location 1448
S102, parts 2043
S103 - CD58 1382
S103 - WD54/1B 1298
S103, parts 1969
S103, removal 1509

S103 cleaner housing position sensor, location 1447
S104 - CD56 1380
S104 - WD54/2B 1298
S104, adjust 1506
S104, parts 1969
S104, removal 1505
S104 cleaner brush rotation sensor, location 1447
S105 - CD13 1339
S105 - WD34/2B 1277
S105, parts 1977
S105 drum rotation sensor, location 1445
S106 - CD15 1341
S106 - WD54/1B 1298
S106, parts 2045
S106, removal 1482
S106 fine filter in place sensor, location 1447
S107 - WD47-1/2A 1290
S107, location 1428
S107, parts 1993
S107, removal 1634
S108 - CD75 1399
S108 - WD47-1/1B 1290
S108, location 1428
S108, removal 1635
S109 - CD17 1343
S109 - WD47-1/1B 1290
S109, location 1427, 1430
S109, parts 1995
S109, removal 1595
S110 - CD71 1395
S110 , removal 1603
S110 - WD54/2B 1298
S110, location 1426
S110, parts 1995
S111 - CD16 1342
S111 - WD54/2B 1298
S111, location 1427, 1430
S111, parts 1991
S111, removal 1592
S112 - CD03 1329
S112 - WD32/1B 1275
S112 tractor motor encoder sensor, location 1445
S113 - adjust 1929
S113 - WD31/1B 1274
S113, parts 2033
S113 retractor motor encoder sensor, location 1444
S114 - CD08 1334
S114 - WD54/1B 1298
S114, parts 2029
S114, removal 1924
S114 transfer station open sensor, location 1445
S115 - CD38 1362
S115 - WD54/1B 1298
S115, parts 1965
S115, removal 1664
S115 erase lamp sensor, location 1444
S116 - CD55 1379
S116 - WD47-2/1B 1291
S116, adjustment 1494
S116, parts 2041
S116, removal 1493
S116 cyclone blower rotation sensor, location 1448
S117 - CD07 1333
S117 - WD47-2/1B 1291
S117, location 1430
S117, parts 1981
S117, removal 1893
S117 EOF sensor, location 1444
S118 - CD69 1393
S118 - WD54/1B 1298
S118, location 1430
S118, parts 1985
S118, removal 1656
S119, parts 1987
S119 splicing lever sensor, location 1444
S501 - WD35/1B 1278
S502 - CD68 1392
S502 - WD27/2B 1270
S502, adjustment 1780
S502, check 1780
S502, location 1455, 1772
S502, parts 2019
S502, removal 1779
S503 - WD36/2A 1279
S503, adjustment 1789
S503, location 1455, 1772
S503, parts 2015
S503, removal 1788
S617 - CD18 1344
S617 , parts 2081
S617 - WD48/1B 1292
S617, location 1432
S617, removal 1688
S621 - CD31 1356
S621 - WD57/1B 1301
S621, adjust 1709
S621, location 1432
S621, parts 2079
S621, removal 1708

S622 - CD31 1356
S622 - WD57/1B 1301
S622, adjust 1709
S622, location 1432
S622, parts 2079
S622, removal 1708
S623 - CD31 1356
S623 - WD57/2B 1301
S623, adjust 1709
S623, location 1432
S623, parts 2079
S623, removal 1708
S624 - CD26 1351
S624 - WD37/2B 1280
S624, location 1437
S624, parts 2051
S624, removal 1683
S701 - WD58/2A 1302
S701, location 1432
S701, parts 2077
S701, removal 1711
S702 - CD29 1354
S702 - WD48/2B 1292
S702, location 1436
S702, parts 2073
S704 - CD22 1347
S704 - WD48/1B 1292
S704, adjust 1717
S704, location 1432
S704, parts 2091
S704, removal 1717
S705 - WD58/1B 1302
S705, location 1432
S705, parts 2077
S705, removal 1712
S707 - CD10 1336
S707 - WD40/2B 1283
S707, adjust 1741
S707, removal 1739
S708 - CD09 1335
S708 - WD56/1A 1300
S708, adjust 1750
S708, location 1436
S708, parts 2067
S709 - WD56/1A 1300
S709, adjust 1750
S709, location 1436
S709, parts 2067
S710 - WD56/2A 1300
S710, adjust 1750
S710, location 1436
S710, parts 2067
S711 - CD21 1347
S711 - WD48/1B 1292
S711, adjust 1714
S711, location 1432
S711, parts 2059, 2079
S711, removal 1713
S712 - CD24 1349
S712 - WD52/2A 1296
S712, location 1434
S712, parts 2057
S712, removal 1673
S713 - WD58/1B 1302
S801 - CD46 1370
S801 - WD48/2B 1292
S801, adjust 1876
S801, parts 2099
S801, removal 1875
S802 - CD46 1370
S802 - WD48/2B 1292
S802, adjust 1876
S802, parts 2099
S802, removal 1875
S802 stacker gate safety switch, location 1440
S803 - CD45 1369
S803 - WD49/2B 1293
S803, adjust 1877
S803, parts 2103
S803, removal 1877
S803, stacker rear height sensor receiver, location 1440
S804 - CD45 1369
S804 - WD49/2B 1293
S804, adjust 1877
S804, parts 2093
S804, removal 1877
S804, stacker front height sensor receiver, location 1438, 1440
S805 - CD39 1363
S805 - WD49/2B 1293
S805, check 1879
S805, parts 2095
S805, removal 1879
S805, stacker jam sensor receiver, location 1438, 1440
S806 - CD51 1375
S806 - WD49/1B 1293
S806, adjust 1874
S806, removal 1874
S806 stacker gate open switch, location 1440
S807 - CD47 1371
S807 - WD49/1B 1293
S807, adjust 1887
S807, parts 2109
S807, removal 1886

S807, stacker table upper limit sensor, location 1438
S808 - CD47 1371
S808 - WD49/1B 1293
S808, adjust 1883
S808, parts 2109
S808, removal 1882
S808, stacker table upper limit sensor, location 1438
S809 - WD42/2B 1285
S809, parts 2113
S809, pendulum home position sensor, location 1440
S809, removal 1861
safety
  laser interlock 1767
  stacker gate switches 1875, 1876
samples, print 1100
save configuration settings 2357
save forms 1095
scavenger roll, location 1427
scavenger roll, removal 1626, 1627, 1628
scavenger roll belt, adjust 1629
scavenger roll belt, location 1425
scavenger roll belt, removal 1629
scavenger roll idler pulley, removal 1630
scavenger roll pulley, location 1426
scavenger roll wiper, location 1427
screw (0438551) (-16) 2131
screw (27F4212) (-33) 2155
screw (33G3907) (-2) 2151
screw (53F1663) (-22) 2131
screw (53F1665) (-22) 2135
screw (53F1665) (-3) 2129
screw (91610) (-30) 2141
screw (91610) (-31) 2141
screw (91610) (-33) 2141
screw, adjust (88F2631) (-21) 2013
screw, adjust (88F2631) (-30) 2013
screw, disk drive (27F4212) (-12) 2151
screw, flat hd M3 X 5 (49G9665) (-43) 1973
screw, hex hd M6 X 10 (1621594) (-7) 2135
screw, jack (53F1678) (-15) 2135
screw, M3 (33G3907) (-20) 2151
screw, M3.5 (27F4212) (-14) 2151
screw, M4 X 15 (45G2064) (-3) 2135
screw, M4 X 60 (1621071) (-6) 2139
screw, M4 X 8 (53F1665) (-11) 2139
screw, M4 X 8 (53F1665) (-7) 2131
screw, M5 X 10 (30H3100) (-6) 2131
screw, M5 X 10 (30H3100) (-8) 2135
screw, M5 X 12 (1622276) (-26) 2135
screw, M5 X 8 (53F1663) (-24) 2129
screw, M6 X 10 (1621862) (-14) 2129
screw, M6 X 20 (1621342) (-16) 2135
screw, mounting (0091610) (-8) 2139
screw, shoulder (30H6700) (-29) 1961
screw, shoulder (30H6700) (-60) 2077
screw, shoulder (30H6700) (-62) 1993
screw, shoulder (30H6700) (-85) 2109
screw, shoulder (53F1667) (-3) 2127
screw, shoulder (53F1961) (-53) 2069
screw, shoulder (53F1961) (-59) 2069
SCSI I/O to MIC card connector, location 1469
scuff pressure roll asm, location 1431
scuff pressure roll release cable, location 1433
scuff pressure roller shaft asm 1433
scuff pressure rollers, removal 1730
scuff roll, parts 2071
scuff roll, removal 1734
scuff roll drive motor- WD39/1A 1282
scuff roll motor - CD18 1344
scuff roll motor - CD59 1383
scuff roll motor, adjust 1736
scuff roll motor (M704) driver routine 1141
scuff roll motor, removal 1736
scuff roll motor drive belt, removal 1736
scuff roll motor M704, location 1433
scuff roll release cable, adjust 1738
scuff roll release cable, removal 1737
scuff roller drive belt 1433
scuff roller shaft asm 1433
seal, drum (developer) (63H6498) (-124) 1997
seal, drum (Developer) (63H6499) (-121) 1997
seals
  developer front, location 1427
  developer rear, location 1427
sense bytes
  action code 1221
  format 0 1212
  format 1 1213
  format 2 1214
  format 3 1215
  format 4 1217
  format information 1211
  interpretation 1211
  sense byte 0 1220
  sense byte 1 1220
  sense byte 2 1221

sense bytes *(continued)*
sense byte 3 1223
sense byte 5 1211
sense data in service logs 1066
sensor
margin tests 1196
pendulum position sensor (S809) 1169
printer control panel (SW721) 1162
stacker table lower limit switch (S808) 1168
tension arm encoder board 1160
sensor, backup roll lift (S712) (30H6814) (-78) 2057
sensor, backup roll lift motor position (63H6562) (-79) 2051
sensor, cleaner brush rotation asm (S104) (57G4448) (-48) 1969
sensor, conveyor roll rotation (S110) (63H6490) (-100) 1995
sensor, cyclone blower rotation (S116) (53F1829) (-12) 2041
sensor, developer drain lever (S111) (63H6490) (-28) 1991
sensor, drum rotation (S105) (63H6490) (-48) 1977
sensor, erase lamp (24H9845) (-24) 1965
sensor, fuser wrap S617 (04H0277) (-154) 2081
sensor, hot roll over temperature (S705) (63H6560) (-47) 2077
sensor, hot roll temperature control (S701) (53F1960) (-42) 2077
sensor, jam (S805) (24H9845) (-87) 2095
sensor, oiler belt end S711 (24L4883) (-31) 2059
sensor, pendulum position (S809) (30H6814) (-46) 2113
sensor, resolution lens (S503) (30H6814) (-45) 2015
sensor, retractor motor encoder (S113) (30H6814) (-16) 2033
sensor, skew (63H6538) (-94) 2057
sensor, splicing lever (38L0902) (-16) 1987
sensor, stacker front height (S804) (24H9845) (-70) 2093
sensor, stacker height detect (S803) (24H9845) (-45) 2103
sensor, stacker lower limit (S808) (24L4883) (-82) 2109
sensor, stacker upper limit (S807) (24L4883) (-74) 2109
sensor, tension arm encoder (S708, S709, & S710) (90H2407) (-27) 2067
sensor, toner control (02N7110) (-34) 1993
sensor, toner control (63H6489) (-34) 1993
sensor, toner empty (63H6517) (-45) 2009
sensor, tractor jam asm (53F1795) (-57) 2035
sensor, transfer station open (S114) (30H6814) (-56) 2029
sensor asm, cyclone blower rotation (S116) (88F2705) (-8) 2041
sensor asm, thermistor (S621, S622, S623) (24H8225) (-101) 2079
sensor routines 1152
sensor routines 1152 *(continued)*
backup roll lift motor 1174
BUR position encoder (S712) 1165
BUR position sensor (S712) 1164
cleaner brush rotation (S104) 1152
cleaner housing position switch (S103) 1153
conveyor roll rotation sensor (S110) 1155
cyclone blower rotation sensor (S116) 1152
developer drain lever switch (S111) 1157
developer run switch (S109) 1157
drum rotation sensor (S105) 1155
EOF sensor (S117) 1158
erase lamp sensor (S115) 1158
exerciser routines 1152
filter pressure switch (S102) 1154
fine filter switch (S106) 1154
form width sensor card (PW111) 1161
forms length sensor card (FL061) 1166
front stacker height sensor (S804 & D802) 1173
fuser wrap sensor (S617) 1164
oiler belt end switch (S711) 1171
oiler empty sensor (S702) 1172
oiler gate open switch (S704) 1171
optical margin check 1124
optical margin test 1196
PC drum cover interlock switch (S118) 1156
printhead cover interlock switch 1175
rear stacker height sensor (S803 & D801) 1172

sensor routines 1152 *(continued)*
resolution lens position 1175
retractor motor encoder (S113) 1174
skew sensor (S707) 1163
splicing lever sensor (S119) 1163
stacker control panel (LP041) 1170
stacker gate open switch (S806) 1167
stacker gate safety switch (S801 & S802) 1167
stacker jam sensor (S805 & D803) 1166
stacker length select card (FL031) 1166
stacker table upper limit switch (S807) 1168
toner collector (S101) 1153
toner empty sensor (S108) 1156
tractor motor encoder (S112) 1173
transfer station open sensor (S114) 1159
upper tractor jam sensor 1159
sensors
(S809), routine 1169
backup roll encoder - WD52/2A 1296
backup roll lift, parts 2057
backup roll lift motor, routine 1174
backup roll lift motor position, parts 2051
backup roll lift position, removal 1683
backup roll position - WD37/2B 1280
backup roll position S712, location 1434
backup-roll positon - CD24 1349
BUR position, routine 1164
BUR position encoder, routine 1165
sensors *(continued)*
cleaner brush rotation - WD54/2B 1298
cleaner brush rotation, adjust 1506
cleaner brush rotation, parts 1969
cleaner brush rotation, removal 1505
cleaner brush rotation, routine 1152
cleaner brush rotation S104, location 1447
cleaner brush rotation sensor- CD56 1380
cleaner housing position S103, location 1447
conveyor roll rotation - CD71 1395
conveyor roll rotation , parts 1995
conveyor roll rotation - WD54/2B 1298
conveyor roll rotation, adjust 1604
conveyor roll rotation, removal 1603
conveyor roll rotation, routine (S110) 1155
conveyor roll rotation S110, location 1426
cyclone blower motor rotation - CD55 1379
cyclone blower rotation - WD47-2/2B 1291
cyclone blower rotation, parts 2041
cyclone blower rotation, routine 1152
cyclone blower rotation sensor, adjustment 1494
cyclone blower rotation sensor, removal 1493
cyclone blower S116, location 1448
D101 - WD47-2/1B 1291
D101, parts 1981
sensors *(continued)*
D801 - CD45 1369
D801 - WD48/2B 1292
D801, adjust 1877
D801, removal 1877
D801, routine 1172
D802 - CD45 1369
D802 - WD48/2B 1292
D802, adjust 1877
D802, removal 1877
D802, routine 1173
D803 - CD39 1363
D803 - WD49/2B 1293
D803, check 1879
D803, removal 1879
D803, routine 1166
developer drain lever, removal 1592
drum revolution, adjustment 1648
drum rotation - CD13 1339
drum rotation, parts 1977
drum rotation, removal 1645
drum rotation, routine 1155
drum rotation- WD34/2A 1277
drum rotation S105, location 1445
end of forms - CD07 1333
end-of-forms, removal 1893
EOF , location 1444
EOF - WD47-2/1B 1291
EOF, location 1430
EOF, parts 1981
EOF, routine 1158
erase lamp - WD54/1B 1298
erase lamp, parts 1965
erase lamp, removal 1664
erase lamp, routine 1158
erase lamp S115, location 1444

sensors *(continued)*
filter pressure switch, routine 1154
fine filter - WD54/1B 1298
fine filter in place S106, location 1447
fine filter switch, routine 1154
form width PW111, location 1444
front stacker height, adjust 1877
front stacker height, removal 1877
front stacker height, routine 1173
fuser oil empty - CD29 1354
fuser wrap - CD18 1344
fuser wrap - WD48/1B 1292
fuser wrap, removal 1688
fuser wrap, routine 1164
hot roll over-temp S705, location 1432
hot roll over temperature, parts 2077
hot roll over-temperature, removal 1712
hot roll over temperature sensor - WD58/1B 1302
hot roll over-temperature sensor- CD30 1355
hot roll temperature control - CD27 1352
hot roll temperature control , removal 1711
hot roll temperature control - WD58/2A 1302
hot roll temperature control, location 1432
hot roll temperature control, parts 2077
mirror motor rotation - WD35/1B 1278
oil empty - WD48/2B 1292
oil empty, parts 2073
sensors *(continued)*
oil empty S702, location 1436
oiler belt end, parts 2059
oiler belt end S711, location 1432
oiler empty, routine 1172
pendulum home position - WD42/2B 1285
pendulum home position S809, location 1440
pendulum position, parts 2113
pendulum position, removal 1861
pendulum position, routine 1169
preheat platen over temperature sensor - WD58/1B 1302
PW111, adjust 1895
PW111, removal 1894
PW111 form width, location 1444
rear stacker height, adjust 1877
rear stacker height, removal 1877
rear stacker height, routine 1172
resolution lens, adjustment 1789
resolution lens, parts 2015
resolution lens, removal 1788
resolution lens position sensor, routine 1175
resolution lens S503, location 1455, 1772
resolution switching lens position - WD36/2A 1279
resolution switching lens postion sensor - CD68 1392
retractor motor encoder - adjust 1929
retractor motor encoder, parts 2033
retractor motor encoder, routine 1174
retractor motor encoder S113, location 1444
sensors *(continued)*
S101, routine 1153
S102, routine 1154
S103 cleaner housing position, location 1447
S104 - CD56 1380
S104 - WD54/2B 1298
S104, adjust 1506
S104, parts 1969
S104, removal 1505
S104, routine 1152
S104 cleaner brush rotation, location 1447
S105 - CD13 1339
S105 - WD34/2A 1277
S105, adjustment 1648
S105, parts 1977
S105, removal 1645
S105, routine 1155
S105 drum rotation, location 1445
S106 - WD54/1B 1298
S106, routine 1154
S106 fine filter in place, location 1447
S107 - CD73 1397
S107 - WD47-1/2A 1290
S107, location 1428
S107, parts 1993
S107, removal 1634
S108 - CD75 1399
S108 - WD47-1/1B 1290
S108, location 1428
S108, parts 2009
S108, removal 1635
S108, routine 1156
S109, routine 1157
S110 - CD71 1395

sensors *(continued)*
S110 - WD54/2B 1298
S110, location 1426
S110, parts 1995
S110, removal 1603
S110, routine 1155
S111, removal 1592
S111, routine 1157
S112 - CD03 1329
S112 - WD32/1B 1275
S112, routine 1173
S112 tractor motor encoder, location 1445
S113 - adjust 1929
S113 - WD31/1B 1274
S113, parts 2033
S113, routine 1174
S113 retractor motor encoder, location 1444
S114 - CD08 1334
S114 - WD54/1B 1298
S114, parts 2029
S114, removal 1924
S114, routine 1159
S114 transfer station open, location 1445
S115 - CD38 1362
S115 - WD54/1B 1298
S115, parts 1965
S115, routine 1158
S115 erase lamp, location 1444
S115,removal 1664
S116 - CD55 1379
S116 - WD47-2/2B 1291
S116, adjustment 1494
S116, parts 2041
sensors *(continued)*
S116, removal 1493
S116, routine 1152
S116 cyclone blower rotation, location 1448
S117 - CD07 1333
S117 - WD47-2/1B 1291
S117, location 1430, 1444
S117, parts 1981
S117, removal 1893
S117, routine 1158
S119, parts 1987
S119, routine 1163
S119 splicing lever, location 1444
S501 - WD35/1B 1278
S502 - CD68 1392
S502 - WD27/2B 1270
S503 - WD36/2A 1279
S503, adjustment 1789
S503, location 1455, 1772
S503, parts 2015
S503, removal 1788
S503, routine 1175
S617 - CD18 1344
S617 - WD48/1B 1292
S617, removal 1688
S617, routine 1164
S624 - CD26 1351
S624 - WD37/2B 1280
S624, parts 2051
S624, removal 1683
S624, routine 1174
S701 - CD27 1352
S701 - WD58/2A 1302
S701, location 1432
S701, parts 2077
sensors *(continued)*
S701, removal 1711
S702 - CD29 1354
S702 - WD48/2B 1292
S702, location 1436
S702, parts 2073
S702, routine 1172
S705 - CD30 1355
S705 - WD58/1B 1302
S705, location 1432
S705, parts 2077
S705, removal 1712
S707 - CD10 1336
S707 - WD40/2B 1283
S707, adjust 1741
S707, removal 1739
S707, routine 1163
S708 - CD09 1335
S708, adjust 1750
S708, location 1436
S708, parts 2067
S709, adjust 1750
S709, location 1436
S709, parts 2067
S710, adjust 1750
S710, location 1436
S710, parts 2067
S711, location 1432
S711, parts 2059
S712 - CD24 1349
S712, location 1434
S712, parts 2057
S712, routine 1164, 1165
S713 - WD58/1B 1302
S803 - CD45 1369
S803 - WD49/2B 1293

sensors *(continued)*
S803, adjust 1877
S803, parts 2103
S803, removal 1877
S803, routine 1172
S803, stacker rear height sensor receiver, location 1440
S804 - CD45 1369
S804 - WD49/2B 1293
S804, adjust 1877
S804, parts 2093
S804, removal 1877
S804, routine 1173
S804, stacker front height sensor receiver, location 1438, 1440
S805 - CD39 1363
S805 - WD49/2B 1293
S805, check 1879
S805, parts 2095
S805, removal 1879
S805, routine 1166
S805, stacker jam sensor receiver, location 1438, 1440
S807, adjust 1887
S807, parts 2109
S807, removal 1886
S807, routine 1168
S807, stacker table upper limit, location 1438
S808, adjust 1883
S808, parts 2109
S808, removal 1882
S808, stacker table upper limit, location 1438
S809 - WD42/2B 1285
S809, parts 2113
S809, removal 1861
S809 pendulum home position, location 1440
sensor, forms width - CD05 1331
skew, adjust 1741
skew, parts 2057
skew, removal 1739
skew, routine 1163
skew sensor - CD10 1336
skew sensor - WD40/2B 1283
splicing lever, parts 1987
splicing lever, routine 1163
splicing lever sensor S119, location 1444
stacker, front height, parts 2093
stacker front height sensor receiver S804, location 1438, 1440
stacker height - CD45 1369
stacker height - WD49/2B 1293
stacker height detect, parts 2103
stacker height LED - WD48/2B 1292
stacker jam - CD39 1363
stacker jam - WD49/2B 1293
stacker jam, parts 2095
stacker jam LED - WD49/2B 1293
stacker jam sensor, routine 1166
stacker jam sensor receiver S805, location 1438, 1440
stacker lower limit, parts 2109
stacker rear height sensor receiver S803, location 1440
stacker table lower limit, adjust 1883
stacker table lower limit, removal 1882
stacker table upper limit, adjust 1887
stacker table upper limit, removal 1886
stacker table upper limit, routine 1168
stacker table upper limit 808, location 1438
stacker table upper limit S807, location 1438
stacker upper limit, parts 2109
tension arm encoder, adjust 1750
tension arm encoder, location 1436
tension arm encoder, parts 2067
toner collector, routine 1153
toner control - CD73 1397
toner control, parts 1993
toner control, removal 1634
toner control S107, location 1428
toner control sensor - WD47-1/2A 1290
toner empty - CD75 1399
toner empty, parts 2009
toner empty, removal 1635
toner empty S108, location 1428
toner empty sensor - WD47-1/1B 1290
toner empty sensor, routine 1156
tractor jam, parts 2035
tractor motor encoder - CD03 1329
tractor motor encoder - WD32/1B 1275
tractor motor encoder, routine 1173
tractor motor encoder S112, location 1445
transfer station jam, removal 1918
transfer station open - CD08 1334

sensors *(continued)*
transfer station open - WD54/1B 1298
transfer station open, parts 2029
transfer station open, routine 1159
transfer station open S114, location 1445
upper tractor jam - CD04 1330
upper tractor jam - WD55/1A 1299
upper tractor jam, location 1444
upper tractor jam, routine 1159
sensors (S101, S102, S107, S108, & S109) - WD47 1290
serial port S1 connector, location 1465, 1469
serial port S3 connector, location 1465
service actions 1064
service disconnect switch, location 1459
service logs 1065
service maintenance
entering the CE or service mode 2217
general instructions for procedures 2220
procedures 2220
schedule 2214
tasks for specially tracked parts 2232
service password 1063
service processor (08L0442) (-13) 2145
setting configuration values 2346
shaft, cleaner brush drive (06F0488) (-32) 1969
shaft, developer mixing paddle (63H7095) (-34) 2001
shaft, drum (06F0517) (-6) 1975
shaft, eccentric (06F0334) (-28) 2033
shaft, flange (88F3424) (-3) 2063
shaft, G (88F2610) (-44) 1977
shaft, guide roller (06F0865) (-62) 2077
shaft, hinge front (06F0681) (-29) 2027
shaft, hinge rear (06F0433) (-32) 2027
shaft, idler (06F0299) (-13) 1975
shaft, stacker table drive (06F0967) (-9) 2105
shaft asm, hot roll (88F2498) (-1) 2063
shafts
forms length screw, removal 1850
mix auger, location 1427
scuff pressure roller asm, location 1433
scuff roller asm, location 1433
toner feed, location 1427
toner paddle, location 1428
shelf, (11L6066) (-16) 2129
shelf, (30H6520) (-16) 2129
shipping brace, remove 2267
short error log 1071
short filtered error log 1071
shutdown procedure 1072
side 1 / side 2 diagnostics 1197
side 1 / side 2 sensor test 1199
side 1/2 verify control card, removal 1535
side 1/side 2 verify to MIC - WD72 1315
side 2 verification test 1197
signals, checking pre/postprocessing interface 1089
SIMM, 4MB (70F9973) 2155
SIMM, 4MB (70F9973) (-16C) 2147
SIMM 1, location 1460
SIMM 2, location 1460
simplex printer or duplex printer 2 installation 2263
skew sensor - CD10 1336
skew sensor - WD40/2B 1283
skew sensor, adjust 1741
skew sensor, removal 1739
skew sensor (S707) routine 1163
skew sensor card, location 1431
SMS Screen 1203
space requirements 2253
duplex system (H configuration) 2257
duplex system (inline configuration) 2255
simplex printer 2254
spacer (06F0775) (-21) 2053
spacer (06F0963) (-28) 2105
spacer (88F1647) (-74) 2051
spacer (90H2412) (-11) 2053
spacer, drum gear (06F0513) (-25) 1975
spacer, idler (06F0514) (-14) 1975
spacer, idler (06F0523) (-34) 1975
special features passwords 2346
specially tracked parts 2232
backup roll 2232
definition 2232
hot roll 2232
hot roll motor brushes 2232
splicing lever sensor, parts 1987
splicing lever sensor (S119) routine 1163
splicing lever sensor S191, location 1444
splicing station - CD93 1416
spring (06F0123) (-60) 2035

spring (4586927) (-23) 2131
spring (53F1609) (-4) 2127
spring (88F3260) (-35) 2099
spring, compression (57G6852) (-42) 2061
spring, compression (57G6853) (-41) 2061
spring, compression (88F2949) (-4) 2063
spring, felt drive (06F0361) (-15) 2059
spring, front hub (06F0288) (-21) 1967
spring, gas (63H6494) (-4) 1951
spring, mirror 1 (88F2629) (-19) 2013
spring, mirror 2 (88F2629) (-28) 2013
spring, pressure (88F3128) (-35) 2055
spring, pressure roller shaft (88F2483) (-124) 2081
spring, return (06F0369) (-28) 2075
spring, roller (04H1103) (-117) 2081
spring, scuff roll tension (06F0366) (-3) 2071
spring, tension arm front (63H6595) (-4) 2067
spring, tension arm rear (63H6596) (-5) 2067
spring, wrap switch (24L4906) (-149) 2081
sprocket (06F0358) (-11) 2059
SR601 - WD17/1A 1264
SR601, location 1437
SR601, parts 2075
SR601, removal 1745
SR602 - WD17/1A 1264
SR602, location 1437
SR602, parts 2075
SR602, removal 1745
SR603 - WD17/2A 1264
SR603, location 1437
SR603, parts 2075
SR603, removal 1745
SRC079C 780
SRC104 126
SRC113 129
SRC114 135
SRC115 138
SRC116 142
SRC117 145
SRC118 148
SRC119 151
SRC11E 168
SRC121 172
SRC122 177
SRC131 179
SRC132 187
SRC133 194
SRC134 208
SRC135 222
SRC136 227
SRC137 233
SRC13A 236
SRC13B 242
SRC141 247
SRC142 250
SRC143 253
SRC144 256
SRC145 259
SRC146 262
SRC152 265
SRC156 268
SRC157 273
SRC161 277
SRC162 292
SRC163 294
SRC164 299
SRC171 308
SRC172 312
SRC174 323
SRC175 329
SRC176 339
SRC177 343
SRC17A 348
SRC17B 351
SRC211 354
SRC212 361
SRC213 367
SRC221 371
SRC222 377
SRC223 382
SRC224 391
SRC225 399
SRC226 404
SRC22A 408
SRC231 412
SRC232 417
SRC233 425
SRC234 429
SRC235 436
SRC236 447
SRC241 450
SRC243 455
SRC251 460
SRC252 465
SRC253 471
SRC254 475
SRC256 476
SRC264 480
SRC266 483
SRC281 488

SRC282 494
SRC284 498
SRC286 502
SRC287 505
SRC288 508
SRC28A 511
SRC28B 514
SRC28C 518
SRC28D 522
SRC28E 527
SRC28F 531
SRC291 535
SRC294 539
SRC295 542
SRC296 546
SRC297 549
SRC298 554
SRC299 558
SRC29C 562
SRC29D 566
SRC29E 570
SRC29F 574
SRC611 686
SRC621 686
SRC622 686
SRC623 686
SRC624 686
SRC625 686
SRC626 686
SRC631 686
SRC632 686
SRC633 686
SRC634 686
SRC635 686
SRC651 686
SRC652 686
SRC653 686
SRC654 686
SRC655 686
SRC656 686
SRC666 686
SRC782 693
SRC783 698
SRC785 702
SRC786 706
SRC787 709
SRC788 713
SRC789 717
SRC78A 721
SRC78B 726
SRC791 730
SRC792 737
SRC793 741
SRC794 746
SRC795 751
SRC796 756
SRC797 764
SRC798 768
SRC799 776
SRC841 783
SRC842 783
SRCD095 797
SRCD096 786
SRCD204 783
SRCD20A 783
SSA (A1, A2, B1, B2) (Slot 1) connector, location 1465
SSA (A1, A2, B1, B2) (Slot 4) connector, location 1465
SSA (A1, A2, B1, B2) (Slot 9) connector, location 1465
SSA adapter, parts 2145, 2155
SSA backplane (93H6321) (-20) 2147
SSA disk drive (top & bottom) connector, location 1465
ST sensor circuit breaker - CD91 1415
ST sensor circuit breaker - CD92 1416
ST101 - CD38 1362
ST101 - WD25 1268
ST101, location 1447
ST101, parts 1965
ST101, removal 1666
stacker
B703, removal 1868
blower, removal 1868
control card, check 1869
control panel (LP041) - CD52 1376
D801 - CD45 1369
D801, adjust 1877
D801, removal 1877
D802 - CD45 1369
D802, adjust 1877
D802, removal 1877
D803, check 1879
D803, removal 1879
finger belt, parts 2097
finger belts - CD43 1367
FL031, adjust 1853
FL031, parts 2095
FL031, removal 1851
FL061, check 1855
FL061, parts 2095
FL061, removal 1855
forms length adjustment 1848
forms length fraction card, parts 2095
forms length screw shaft, removal 1850
forms length select card, adjust 1853

stacker *(continued)*
forms length select card, parts 2095
forms length select card, removal 1851
forms length sensor card, check 1855
forms length sensor card, removal 1855
forms length stacker wire, removal 1856
forms width, adjust 1857
front finger belt motor - CD50 1374
front forms width guide, adjust 1858
front stacker height, adjust 1877
front stacker height, removal 1877
gate finger belt motor, adjust 1873
gate finger belt motor, removal 1872
gate finger belts, adjust 1871
gate finger belts, removal 1870
gate open switch, adjust 1874
gate open switch, removal 1874
gate safety switch, adjust 1876
gate safety switch, removal 1875
gate safety switches - CD46 1370
height sensors - CD45 1369
jam sensor, check 1879
jam sensor, removal 1879
locations, end 1439, 1441
locations, front 1438
locations, rear 1442
lower limit sensor, adjust 1883
lower limit sensor, removal 1882
LP041, check 1869
LP041, parts 2073
M801 - CD43 1367
M801 - CD49 1373
M801 - CD50 1374
stacker *(continued)*
M801, adjust 1867
M801, removal 1866
M802 - CD43 1367
M802, adjust 1873
M802, removal 1872
M803, parts 2105
M803, removal 1884
M803, thermal sense - CD44 1368
M804 - CD40 1364
M804, adjust 1860
M804, control - CD41 1365
M804, parts 2111
M804, positioning - CD42 1366
M804, removal 1859
pendulum drive belt, parts 2111
pendulum motor - CD40 1364
pendulum motor, adjust 1860
pendulum motor, control - CD41 1365
pendulum motor, parts 2111
pendulum motor, positioning - CD42 1366
pendulum motor, removal 1859
pendulum position sensor, parts 2113
pendulum position sensor, removal 1861
pendulum static brush, removal 1862
rear finger belt motor - CD49 1373
rear finger belt motor, adjust 1867
rear finger belt motor, removal 1866
rear finger belts, adjust 1865
rear finger belts, removal 1863
rear stacker height, adjust 1877
rear stacker height, removal 1877
S801 - CD46 1370
S801, adjust 1876
stacker *(continued)*
S801, removal 1875
S802 - CD46 1370
S802, adjust 1876
S802, removal 1875
S803 - CD45 1369
S803, adjust 1877
S803, removal 1877
S804 - CD45 1369
S804, adjust 1877
S804, removal 1877
S805, check 1879
S805, removal 1879
S806 - CD51 1375
S806, adjust 1874
S806, removal 1874
S807 - CD47 1371
S807, adjust 1887
S807, removal 1886
S808 - CD47 1371
S808, adjust 1883
S808, removal 1882
S809, parts 2113
S809, removal 1861
stacker forms length hall sensor - CD48 1372
stacker gate open - CD51 1375
stacker jam - CD39 1363
stacker table motor, parts 2105
table belt, parts 2107
table drive belts, adjust 1881
table drive belts, removal 1880
table limit switch - CD47 1371
table motor, removal 1884
table motor, thermal sense - CD44 1368

stacker *(continued)*
upper limit sensor, adjust 1887
upper limit sensor, removal 1886
stacker blower, removal 1868
stacker control card, check 1869
stacker control card LP041, location 1441
stacker control panel (LP041) - CD52 1376
stacker control panel (LP041) routine 1170
stacker cooling blower, location 1442
stacker disable plug (P229) 2296
stacker end cover, location 1582
stacker forms length hall sensor - CD48 1372
stacker front finger belt motor - CD50 1374
stacker front height sensor lamp D802 , location 1441
stacker front height sensor receiver S804, location 1438, 1440
stacker gate 1441
stacker gate cover, location 1582
stacker gate finger belt motor M802, location 1439
stacker gate finger belts 1441
stacker gate open switch - WD49/1B 1293
stacker gate open switch, adjust 1874
stacker gate open switch, removal 1874
stacker gate open switch (S806) - CD51 1375
stacker gate open switch (S806), routine 1167
stacker gate open switch S806, location 1440
stacker gate safety switch 1- WD48/2B 1292
stacker gate safety switch 2- WD48/2B 1292
stacker gate safety switch routine 1167
stacker gate safety switch S802, location 1440
stacker gate safety switches - CD46 1370
stacker height cover, location 1585
stacker height LED - WD48/2B 1292
stacker height sensor - WD49/2B 1293
stacker height sensors - CD45 1369
stacker jam LED - WD49/2B 1293
stacker jam sensor - WD49/2B 1293
stacker jam sensor (S805 & D803) ,routine 1166
stacker jam sensor lamp D803 , location 1439
stacker jam sensor receiver S805, location 1438, 1440
stacker length select card (FL031), routine 1166
stacker lower left end cover, location 1582
stacker lower right end cover, location 1582
stacker rear finger belt motor - CD49 1373
stacker rear finger belt motor M801 , location 1439
stacker rear finger belts, location 1440
stacker rear height sensor lamp D801 , location 1441
stacker rear height sensor receiver S803, location 1440
stacker sensors (DV071 card) - WD49 1293
stacker switch panel (forms length cards) - WD51 1295
stacker switch panel (LP041 & Fu041 card) - WD50 1294
stacker table limit switches - CD47 1371
stacker table lower limit switch - WD49/1B 1293
stacker table lower limit switch (S808) routine 1168
stacker table motor - WD15/1B 1262
stacker table motor (Mm803) driver routine 1137
stacker table motor, thermal sense - CD44 1368
stacker table motor M803, location 1441
stacker table upper limit sensor, S808, location 1438
stacker table upper limit sensor S807, location 1438
stacker table upper limit switch - WD49/1B 1293
stacker table upper limit switch (S807) routine 1168
standalone diagnostics 1202
standoff (30H2817) (-15) 2131
standoff, hex (39H8697) (-34) 2155
standoff, planar (06H7697) (-7) 2145
starter, erase lamp (57G6698) (-3) 1965
starter, erase lamp removal 1666
steering control changes 1117

steering gain 1117
steering motor - CD11 1337
steering motor - WD40/2B 1283
steering motor, location 1437
steering motor (M705) driver routine 1138
steering motor, removal 1747
steering motor rotation 1116
steering motor skew data 1116
stopper, corona tape (06F0684) (-12) 2027
stud (30H6521) (-23) 2129
summary log 1067
summary report, EREP 1208
surface voltage, PC drum 1574
SW1, location 1460
SW1 channel priority switch, location 1463
SW32 - WD06/1A 1254
SW32 - WD07/1A 1255
SW32, location 1457
SW33 - WD06/1A 1254
SW33 - WD07/1A 1255
SW33, location 1457
SW34 - WD06/1A 1254
SW34 - WD07/1A 1255
SW34, location 1457
SW42, location 1457
SW43 - WD06/2A 1254
SW43 - WD07/2A 1255
SW43, location 1457
SW44 - WD06/2A 1254
SW44 - WD07/2A 1255
SW44, location 1457
SW761- CD02 1328
SW761, parts 1983
SW761 printer control panel card, location 1430
switch, cleaner housing (S103) 24L4883) (-66) 1969
switch, developer run (06F0059) (-103) 1995
switch, filter pressure asm (S102) (06F0055) (-35) 2043
switch, fine filter S106 (63H6496) (-2) 2045
switch, oiler belt end (S711) (06F0143) (-73D) 2079
switch, printhead cover (S502) () (-142) 2019
switch, stacker gate (S704) (06F0207) (-18) 2091
switch, stacker safety (S801, S802) (06F0206) (-52) 2099
switch, toner collector (S101) (24L4883) (-16) 2043
switch, UEPO (8492368) (-34) 2141
switches
  CB463, location 1450
  channel priority SW1, location 1463
  cleaner housing , parts 1969
  cleaner housing, adjust 1509
  cleaner housing, removal 1509
  cleaner housing position - CD58 1382
  cleaner housing position - WD54/1B 1298
  cleaner housing position, routine 1153
  CU power off SW34, location 1457
  CU power on SW33, location 1457
  CU remote/local SW32, location 1457
switches *(continued)*
  developer drain lever - CD16 1342
  developer drain lever - WD54/1B 1298
  developer drain lever, routine 1157
  developer drain lever S111, location 1427, 1430
  developer run - CD17 1343
  developer run - WD47-1/1B 1290
  developer run, parts 1995
  developer run, removal 1595
  developer run, routine 1157
  developer run S109, location 1427, 1430
  diagnostic function 1108
  diagnostic function, location 1471
  drum cover, removal 1656
  drum cover interlock, parts 1985
  drum cover interlock S118, location 1430
  filter pressure - CD14 1340
  filter pressure - WD47-1/1B 1290
  filter pressure, location 1448
  filter pressure, removal 1487
  filter pressusre, parts 2043
  fine filter - CD15 1341
  fine filter, parts 2045
  fine filter, removal 1482
  fuser wrap, location 1432
  fuser wrap, parts 2081
  MASWA, location 1471
  MASWB, location 1471
  MASWC, location 1471
  oiler belt end - CD21 1347
  oiler belt end - WD48/1B 1292
  oiler belt end, adjust 1714

switches *(continued)*
oiler belt end, parts 2079
oiler belt end, removal 1713
oiler belt end, routine 1171
oiler gate interlock, adjust 1717
oiler gate interlock, removal 1717
oiler gate open - WD48/1B 1292
oiler gate open, routine 1171
oiler gate open S704, location 1432
oiler gate open switch - CD22 1347
pc drum cover - CD69 1393
PC drum cover interlock - WD54/1B 1298
PC Drum cover interlock switch, routine 1156
printer power off local SW44, location 1457
printer power on SW43, location 1457
printer remote/local SW42, location 1457
printhead cover, adjustment 1780
printhead cover, check 1780
printhead cover, operation 1768
printhead cover, parts 2019
printhead cover, removal 1779
printhead cover interlock switch, routine 1175
printhead cover S502, location 1455, 1772
reset 1109
S1 service disconnect, location 1459
S101 - CD74 1398
S101 - WD47-1/1B 1290
S101, adjustment 1486
S101, parts 2043
switches *(continued)*
S101, removal 1485
S101 toner collector, location 1448
S102 - CD14 1340
S102 - WD47-1/1B 1290
S102, location 1448
S102, parts 2043
S102, removal 1487
S103 - CD58 1382
S103 - WD54/1B 1298
S103, adjust 1509
S103, parts 1969
S103, removal 1509
S103, routine 1153
S106 - CD15 1341
S106, parts 2045
S106, removal 1482
S109 - CD17 1343
S109 - WD47-1/1B 1290
S109, location 1427, 1430
S109, parts 1995
S109, removal 1595
S111 - CD16 1342
S111 - WD54/2B 1298
S111, location 1427, 1430
S118 - CD69 1393
S118 - WD54/1B 1298
S118, location 1430
S118, parts 1985
S118, removal 1656
S118, routine 1156
S502, adjustment 1780
S502, check 1780
S502, location 1455, 1772
S502, parts 2019
S502, removal 1779
switches *(continued)*
S502, routine 1175
S617, location 1432
S617, parts 2081
S704 - CD22 1347
S704 - WD48/1B 1292
S704, adjust 1717
S704, location 1432
S704, parts 2091
S704, removal 1717
S704, routine 1171
S711 - CD21 1347
S711 - WD48/1B 1292
S711, adjust 1714
S711, parts 2079
S711, removal 1713
S711, routine 1171
S801 - CD46 1370
S801 - WD48/2B 1292
S801, adjust 1876
S801, parts 2099
S801, removal 1875
S801, routine 1167
S802 - CD46 1370
S802 - WD48/2B 1292
S802, adjust 1876
S802, parts 2099
S802, removal 1875
S802, routine 1167
S802 stacker gate safety, location 1440
S806 - CD51 1375
S806 - WD49/1B 1293
S806, adjust 1874
S806, removal 1874
S806, routine 1167

switches *(continued)*
S806 stacker gate open, location 1440
S807 - CD47 1371
S807 - WD49/1B 1293
S808 - CD47 1371
S808 - WD49/1B 1293
service disconnect, location 1459
stacker gate, parts 2091
stacker gate open - CD51 1375
stacker gate open - WD49/1B 1293
stacker gate open, adjust 1874
stacker gate open, removal 1874
stacker gate open (S806), routine 1167
stacker gate open S806, location 1440
stacker gate safety - CD46 1370
stacker gate safety, adjust 1876
stacker gate safety, parts 2099
stacker gate safety, removal 1875
stacker gate safety, routine 1167
stacker gate safety 1- WD48/2B 1292
stacker gate safety 2 - WD48/2B 1292
stacker gate safety S802, location 1440
stacker table limit - CD47 1371
stacker table lower limit - WD49/1B 1293
stacker table upper limit - WD49/1B 1293
SW1 channel priority, location 1463
SW32 - WD06/1A 1254
SW32 - WD07/1A 1255
SW32, location 1457
switches *(continued)*
SW33 - WD06/1A 1254
SW33 - WD07/1A 1255
SW33, location 1457
SW34 - WD06/1A 1254
SW34 - WD07/1A 1255
SW34, location 1457
SW42, location 1457
SW43 - WD06/2A 1254
SW43 - WD07/2A 1255
SW43, location 1457
SW44 - WD06/2A 1254
SW44 - WD07/2A 1255
SW44, location 1457
toner collector - CD74 1398
toner collector, adjustment 1486
toner collector, parts 2043
toner collector, removal 1485
toner collector S101, location 1448
toner colletor - WD47-1/1B 1290
UEPO - WD06/2A 1254
UEPO - WD07/2A 1255
UEPO, location 1457
unit emergency power off, location 1457
switches and sensors (PC561 card) - WD53 1297
switches and sensors (PR011 card) - WD54 1298

T

TAG IN connector, location 1463
TAG OUT connector, location 1463
tailgate, 480/600 DPI (25F9401) (-2) 2131
tailgate, channel, location 1463
tape, corona (06F0116) (-11) 2027
tape drive, 4mm (59H3481) (-32) 2149
TB101 - WD01/1A 1251
TB101 - WD03/1A 1252
TB451 - WD01/1A 1251
TB451 - WD03/1A 1252
TB902 - WD61/1B 1304
template, registration 2397
tension arm encoder - CD09 1335
tension arm encoder, adjust 1750
tension arm encoder, location 1435
tension arm encoder 1 - WD56/1A 1300
tension arm encoder 2 - WD56/1A 1300
tension arm encoder 3 - WD56/2A 1300
tension arm encoder board routine 1160
tension arm encoder sensor S708, location 1436
tension arm encoder sensor S709, location 1436
tension arm encoder sensor S710, location 1436
terminal, charge corona (90H1038) (-47) 1973
terms, print sample 1101
test card, pre/postprocessing interface 1087
test prints
alternate 1104
bar code 1103
gray 1106
overall print quality 1102
postprocessor 1106
primary 1102
print 1069
printhead power 1106

test prints *(continued)*
printing 1100
terms 1101
text 1 1106
text 2 1106
white 1106
tests
6 PPI sync voltage 1092
adjustment routines 1177
alarm 1082
attention light 1082
coupled interface wrap 1085
driver routines 1127
ESCON channel basic 1075
ESCON channel wrap 1075
Ethernet 1077
FDDI 1078
intelligent interface wrap 1084
MIC basic 1080
MIC isolation wrap 1204
MIC loop 1080
MIC side 2 verification test 1197
motor 1086
motor voltage 1092
offset 1086
offset voltage 1092
optical sensor margin 1196
parallel channel basic 1074
parallel channel wrap 1074
pre/postprocessor 1083
printer activation 1082
printer interface 1082
run CFS/BTS voltage 1092
sensor routines 1148, 1149
side 2 verification test 1197
system (host) 1207
tests *(continued)*
Token ring 1076
text 1 print sample 1106
text 2 print sample 1106
thermal sense, backup-roll motor - CD23 1348
thermistors
hot roll, parts 2079
hot roll 1 - WD57/1B 1301
hot roll 2 - WD57/1B 1301
hot roll 3 - WD57/2B 1301
hot roll S621, location 1432
hot roll S622, location 1432
hot roll S623, location 1432
hot roll temperature control - CD31 1356
S621 - CD31 1356
S621 - WD57/1B 1301
S621, adjust 1709
S621, location 1432
S621, parts 2079
S621, removal 1708
S622 - CD31 1356
S622 - WD57/1B 1301
S622, adjust 1709
S622, location 1432
S622, parts 2079
S622, removal 1708
S623 - CD31 1356
S623 - WD57/2B 1301
S623, adjust 1709
S623, location 1432
S623, parts 2079
S623, removal 1708
tire, rubber scuff roll (06F0154) (-7) 2071
tire asm, scuff roll (88F2976) (-5) 2071
token ring, parts 2145, 2155
Token ring test results 1079
Token ring tests 1076
toner
collector, removal 1483
collector switch, removal 1485
filter pressure switch 1487
toner cartridge holder, location 1428
toner collector, location 1448
toner collector switch - CD74 1398
toner collector switch (S101) routine 1153
toner collector switch S101, location 1448
toner colletor switch- WD47-1/1B 1290
toner control, adjust 1631, 1632, 1633
toner control, check 2307
toner control program, memory 1118
toner control sensor - CD73 1397
toner control sensor - WD47-1/2A 1290
toner control sensor, removal 1634
toner control sensor S107, location 1428
toner empty counter 1117
toner empty sensor - CD75 1399
toner empty sensor - WD47-1/1B 1290
toner empty sensor, removal 1635
toner empty sensor (S108) routine 1156
toner empty sensor S108, location 1428
toner feed belt, adjust 1638
toner feed belt, location 1425
toner feed belt, removal 1637
toner feed motor - CD76 1400
toner feed motor - WD30/1A 1273
toner feed motor- CD73 1397

toner feed motor (M102) driver routine 1132
toner feed motor, removal 1639
toner feed motor M102, location 1425
toner feed pulley, location 1426
toner feed roller, removal 1641, 1642, 1643
toner feed shaft, location 1427
toner paddle pulley, location 1426
toner paddle shaft, location 1428
toner supply low signal routine 1144
tool set P/N 24L3387 2379
tool set P/N 57G6639 2380
tools
  AFCCU interface extension cable 2389
  coupled interface 2383
  developer rail assembly 2383
  doctor/scraper gauge 2384
  drum clearance gauge 2385
  drum shaft extension 2388
  electrostatic voltmeter 2388
  ESCON channel wrap 2390
  Ethernet thick coax wrap plug 2389
  Ethernet thin coax wrap plug 2390
  intelligent interface wrap plug 2389
  laser alignment 2391
  laser power 2391
  maintenance panel 2392
  maintenance panel extension 2392
  MIC wrap plugs 2393
  parallel channel wrap blocks 2394
  pre/postprocessing interface test card 2395
  registration template 2397
  vacuum cleaner 2397
toroid kit, display cable(-44) 2155
traces
  attachment data 1097
  attachment link 1097
  configuring 1098
  how to run 1096
  mechanism interface 1097
tracked parts 2232
tractor asm, front (63H6525) (-55) 2035
tractor asm, rear (63H6526) (-56) 2035
tractor belt, adjust 1913
tractor belt, removal 1912
tractor jam sensor, removal 1918
tractor jam sensor, upper - CD04 1330
tractor motor - WD32/1A 1275
tractor motor, location 1445
tractor motor (M105) driver routine 1134
tractor motor, removal 1919
tractor motor and encoder - CD03 1329
tractor motor detent position, adjust 1927
tractor motor encoder sensor (S112), routine 1173
tractor motor encoder sensor S112, location 1445
tractor motor M105, location 1445
tractors, adjust 1911
tractors, removal 1907
transfer corona - CD61 1385
transfer corona, location 1429, 1444
transfer corona, removal 1559
transfer corona cleaning brush, removal 1563
transfer corona driver routine 1134
transfer corona shield, location 1444
transfer corona shield, removal 1921
transfer corona voltage 1570
transfer station
  chad brushes, adjust 1892
  chad brushes, removal 1891
  discharge brush, removal 1923
  end-of-forms sensor, removal 1893
  forms width sensor, adjust 1895
  forms width sensor, removal 1894
  jam sensor, removal 1918
  locations, front 1443
  locations, rear 1445
  M103, removal 1903
  M105, removal 1919
  M105 detent position, adjust 1927
  path modifier assembly, adjust 1933
  PW111, adjust 1895
  PW111, removal 1894
  retractor motor, removal 1903
  retractor motor encoder sensor, adjust 1929
  retractor to PC drum gap, adjust 1930
  S113 - adjust 1929
  S114 - CD08 1334
  S117, removal 1893
  sensor (S114), removal 1924
  tractor belt, adjust 1913
  tractor belt, removal 1912
  tractor motor, removal 1919
  tractor motor and encoder - CD03 1329
  tractor motor detent position, adjust 1927
  tractors, adjust 1911
  tractors, removal 1907
  transfer corona shield, removal 1921

transfer station *(continued)*
transfer station open sensor - CD08 1334
upper tractor jam sensor- CD04 1330
transfer station cover, location 1583
transfer station discharge brush, removal 1923
transfer station open S114, location 1445
transfer station open sensor - CD08 1334
transfer station open sensor - WD54/1B 1298
transfer station open sensor (S114) routine 1159
transfer station rear cover, location 1585
tube, rubber (06F1049) (-18) 2101
tube, rubber (06F1049) (-19) 2097
tube, silicone (88F2713) (-38) 2043

U

UEPO - WD06/2A 1254
UEPO - WD07/2A 1255
UEPO, location 1457
unit emergency power off switch, location 1457
updating microcode 1094
upper tractor jam, location 1444
upper tractor jam sensor - WD55/1A 1299
upper tractor jam sensor routine 1159
urge unit 2183
urge unit (duplex) - WD61 1304
urge unit (high speed), install 2337
urge unit, install 2340
urge unit motor - WD61/1B 1304
usage meter - WD25 1268
usage meter (06F0038) (-39) 2117
using PM log 2218

V

vacuum cleaner 2397
vacuum hose, transfer corona, location 1448
VD1, location 1461
VD2, location 1461
VD3, location 1461
VD4, location 1461
VD5, location 1461
vector boldness 1842
verify printer operation 2354
print pack (all print samples) 2356
video data- CD67 1391
voltage adjustments
mag brush bias 1571
PC drum surface 1574
preclean corona voltage 1573
transfer corona voltage 1570
voltage check 2278
voltage distribution, (+/- 12V) - CD84 1408
voltage distribution, (+24VE) - CD85 1409
voltage distribution, (+24VF) - CD86 1410
voltage distribution, (+24VH) - CD87 1411
voltage distribution, (+5V) - CD80 1404
voltage distribution, (+5V) - CD81 1405
voltage distribution, (+5V) - CD82 1406
voltage distribution, (+5V) - CD83 1407
voltage distribution, (+5VM/+12VM) - CD88 1412
voltage ranges 2262
voltages, checking pre/postprocessing interface 1092

W

washer (04H1117) (-75) 2051
washer (1622276) (-9) 2135
washer (1622304) (-10) 2129
washer (1622304) (-18) 2139
washer (1622304) (-21) 2135
washer (1622304) (-4) 2131
washer (1622305) (-13) 2139
washer (1622306) (-6) 2135
washer (1622321) (-18) 2135
washer (1622346) (-2) 2139
washer (88F3186) (-17) 2071
washer (88F3186) (-83) 2079
washer, backup roll (90H2417) (-37) 2055
washer, flat (1622303) (-13) 2131
washer, FP (06F1158) (-41) 2055
washer, point (88F3361) (-22) 2059
washer, spring (stainless) (57G4438) (-2) 1995
washer, spring (stainless) (57G4438) (-3) 1991
washer, star (0338169) (-14) 2131
washer, star (1622346) (-2) 2129
washer, star (1622348) (-12) 2129
washer, thrust (24H8029) (-56) 2077
washer, VF (88F3136) (-99) 2057

washer, VF (88F3186) (-39) 2113
washer, wave (06F0417) (-23) 2059
wheel, scuff roll (06F0155) (-6) 2071
white print sample 1106
window, Display/Touch Screen
main 1060
window, printer status 1062
wipers
scavenger roll, location 1427
wire, charge corona (30H6586)
(-21) 1973
wire, corona (30H6586) (-3) 2027
wire, preclean corona (30H6586)
(-7) 1965
wire, steering control (63H6535)
(-81) 2057
wire, steering control (63H6536)
(-42) 2055
Wire Rope Asm (06F0035) (-30) 1963
wiring diagrams
AC circuits 1250
DC circuits 1265
introduction 1240
WD01 - printer AC power
supply 1251
WD03 - printer AC power
supply 1252
WD05 - low voltage power supply,
MIC, PQE & fans 1253
WD06 - control unit AC power control
(simplex) 1254
WD07 - control unit AC power control
(duplex) 1255
WD08 - control unit AC Control box
(simplex) 1256
wiring diagrams *(continued)*
WD09 - control unit AC control box
(duplex) 1257
WD10 - AC power control
(simplex) 1258
WD11 - AC power control
(duplex) 1259
WD12 - printer power supply - power
on/off 1260
WD13 - AC motors (M101, M104 &
M108) 1261
WD15 - backup roll motor M701 1262
WD15 - M803 1262
WD15 -stacker cooling blower
(M703) 1262
WD16 - AC distribution to hot roll
lamps 1263
WD17 - AC distribution to preheat
platen 1264
WD24 - printer DC power
distribution 1266
WD25 - erase lamp and usage
meter 1268
WD26 - high voltage to coronas 1269
WD27 - laser driver 1270
WD28 - beam detect 1271
WD29 - maintenance panel 1272
WD30 - toner feed motor
(M102) 1273
WD31 - retractor motor M103 1274
WD32 - motor M105 1275
WD33 - cleaner housing motor
M106 1276
WD34 - drum motor M107 1277
WD35 - mirror motor M501 1278
wiring diagrams *(continued)*
WD36 - resolution switching lens motor
M502 1279
WD37 - backup roll lift motor
M610 1280
WD37 - backup roll position sensor
S624 1280
WD38 - hot roll drive motor
M703 1281
WD39 - finger belt motor M801 1282
WD39 - finger belt motor M802 1282
WD39 - scuff roll drive motor
M704 1282
WD40 - steering motor M705 1283
WD41 - oiler belt motor M706 1284
WD42 - pendulum home position
sensor S809 1285
WD42 - pendulum motor M804 1285
WD43 - DC Fans 1286
WD44 - DC Fans 1287
WD45 - oil pumps L701, L702 &
L703 1288
WD46 - address/data bus
networks 1289
WD47-2 - cyclone blower rotation
sensor S116 1291
WD47-2 - EOF sensor S116 1291
WD48 - fuser and stacker sensors
(DV071 &FU041) 1292
WD49 - stacker sensors (DV071
card) 1293
WD50 - stacker switch panel (LP041 &
FU041 card) 1294
WD51 - stacker switch panel (forms
length cards) 1295

wiring diagrams *(continued)*
WD52 - backup roll encoder (DV071 & FU041 cards) 1296
WD53 - switches and sensors (PC561 card) 1297
WD54 - switches and sensors (PR011 card) 1298
WD55 - forms path sensors (PW111 & PC561 cards) 1299
WD56 - forms path sensors (DV071 & FU041 cards) 1300
WD57 - fuser sensors 1301
WD58 - fuser sensors 1302
WD60 - control unit display/touch screen 1303
WD61 - urge unit (duplex) 1304
WD62 - parallel channel signal - tailgate to controller (1 of 2) 1305
WD63 - parallel channel signal - tailgate to controller (2 of 2) 1306
WD64 - control unit (controller to MIC) 1307
WD65 - MIC control unit 2 to MIC control unit 1 1308
WD66 - MIC to printer control cable (1 of 2) 1309
wiring diagrams *(continued)*
WD67 - MIC to printer control cable (2 of 2) 1310
WD68 - MIC to operator alert assembly 1311
WD69 - PQE 1312
WD70 - MIC to coupled pre/postprocessor interface 1313
WD71 - MIC to intelligent postprocessor 1314
WD72 - side 1/side 2 verify to MIC 1315
WD73 - coupled pre-postprocessor interface wrap plug 'A' 1316
WD74 - intelligent postprocessor interface wrap plug 'B' 1317
WD75 - MIC wrap cable (PJJ2, PJJ3 and PJJ12) 1318
WD76 - MIC wrap plugs (PJJ1 and PJJ6) 1319
WD77 - pre and postprocessing printer circuitry 1320
WD78 - enhanced toner loading to mic 1322
world trade, voltage adaptation for 2259
wrap blocks, parallel channel 2394
wrap plug, Ethernet thick coax 2389
wrap plugs
coupled interface 2383
ESCON channel wrap 2390
Ethernet thick coax 2389
Ethernet thin coax 2390
intelligent interface 2389
MIC 2393
parallel channel 2394
printer power jumper 2396
wrap test, coupled interface 1085
wrap test, ESCON channel 1075
wrap test, intelligent interface 1084
wrap test, MIC isolation 1204
wrap test, parallel channel 1074
write memory address (position 5) 1190
write to or read from memory 1112
writing to memory 1114

Y

Y cable connector, location 1463

Z

zoning grids, landscape 1241

Part Number Index

Part Number	Asm–Index	Page
0091610	45–8	2139
00G2380	47–	2147
01P4657	38–28	2115
01P6556	38–28	2115
02N6110	51–	2181
02N6112	51–4	2181
02N6113	51–3	2181
02N6876	26–19	2059
02N6876	26–7	2059
02N7110	13–34	1993
02N7496	38–75	2119
02N7498	22–	2039
02N7499	21–	2031
02N7499	22–	2039
02N7850	38–28	2115
02N8458	51–1	2181
0338169	44–14	2131
03N3297	47–6	2145
03N4173	47–14	2145
0438551	44–16	2131
04H0277	31–154	2081
04H0780	7–29	1967
04H0804	17–100	2017
04H1103	31–117	2081
04H1117	24–75	2051
04H1119	23–5	2041
05L5440	52–23	2183
05L5441	52–10	2183
05L5442	52–8	2183
05L5443	52–6	2183
05L5448	52–29	2183
05L5449	52–2	2183
05L5450	52–3	2183
05L5971	52–13	2183
05L6749	52–7	2183
06F0023	35–99	2095
06F0028	38–39	2117
06F0035	5–30	1963
06F0037	22–63	2035
06F0037	9–15	1975
06F0038	9–4	1975
06F0043	8–36	1973
06F0045	6–22	1965
06F0049	7–23	1967
06F0051	7–50	1969
06F0052	7–51	1969
06F0053	7–60	1969
06F0054	22–50	2035
06F0054	28–17	2067
06F0054	29–16	2071
06F0054	7–33	1969
06F0055	23–39	2043
06F0059	13–103	1995
06F0072	9–55	1977
06F0079	14–5	1999
06F0079	24–62	2049
06F0081	13–87	1995
06F0081	9–45	1977
06F0090	6–23	1965
06F0106	21–35	2027

© Copyright IBM Corp. 1999, 2000

Part Number	Asm–Index	Page
06F0106	21–78	2031
06F0111	37–22	2111
06F0116	21–11	2027
06F0123	22–60	2035
06F0134	25–20	2053
06F0143	31–73	2079
06F0147	24–47	2049
06F0149	24–11	2047
06F0150	24–63	2049
06F0153	31–118	2081
06F0154	29–7	2071
06F0155	29–6	2071
06F0156	29–4	2071
06F0163	26–25	2059
06F0164	26–24	2059
06F0172	31–2	2075
06F0195	36–1	2105
06F0196	36–2	2105
06F0197	36–35	2107
06F0197	36–38	2107
06F0199	36–26	2105
06F0200	36–10	2105
06F0206	35–52	2099
06F0207	35–18	2091
06F0212	31–130	2081
06F0212	35–2	2091
06F0212	5–23	1961
06F0214	35–22	2091
06F0214	35–29	2091
06F0214	35–31	2101
06F0214	35–52	2093
06F0214	36–67	2109
06F0220	35–7	2101
06F0220	35–8	2097
06F0223	37–28	2111
06F0224	37–29	2111
06F0285	7–30	1967
06F0288	7–21	1967
06F0289	7–19	1967
06F0291	7–5	1967
06F0292	21–51	2029
06F0292	24–23	2047
06F0292	25–61	2055
06F0292	37–19	2111
06F0292	37–8	2111
06F0292	7–44	1969
06F0297	23–36	2043
06F0298	9–26	1975
06F0299	9–13	1975
06F0302	9–33	1975
06F0330	21–96	2031
06F0333	22–32	2033
06F0334	22–28	2033
06F0339	22–61	2035
06F0342	23–22	2043
06F0357	26–29	2059
06F0358	26–11	2059
06F0361	26–15	2059
06F0366	29–3	2071
06F0369	31–28	2075
06F0380	36–43	2107
06F0383	7–43	1969
06F0401	1–1	1949
06F0401	1–6	1949
06F0401	11–11	1981
06F0401	11–15	1981

Part Number	Asm–Index	Page
06F0401	11–19	1981
06F0401	11–21	1981
06F0401	11–27	1981
06F0401	11–32	1981
06F0401	11–42	1983
06F0401	11–5	1981
06F0401	11–51	1983
06F0401	11–59	1983
06F0401	12–19	1985
06F0401	12–20	1985
06F0401	12–28	1985
06F0401	12–3	1985
06F0401	12–4	1985
06F0401	12–73	1989
06F0401	12–77	1989
06F0401	12–82	1989
06F0401	12–83	1989
06F0401	13–113	1997
06F0401	13–19	1991
06F0401	13–24	1991
06F0401	13–32	1993
06F0401	13–76	1995
06F0401	13–93	1995
06F0401	15–57	2003
06F0401	15–63	2003
06F0401	15–70	2003
06F0401	15–86	2005
06F0401	16–48	2009
06F0401	16–77	2009
06F0401	16–87	2011
06F0401	17–133	2019
06F0401	17–143	2019
06F0401	17–3	2013
06F0401	17–46	2015
06F0401	21–14	2027
06F0401	21–15	2027
06F0401	21–17	2027
06F0401	21–20	2027
06F0401	21–33	2027
06F0401	21–49	2029
06F0401	21–54	2029
06F0401	21–55	2029
06F0401	21–61	2029
06F0401	21–62	2029
06F0401	21–74	2031
06F0401	21–80	2031
06F0401	21–88	2031
06F0401	22–104	2037
06F0401	22–13	2033
06F0401	22–17	2033
06F0401	22–39	2035
06F0401	22–45	2035
06F0401	22–52	2035
06F0401	22–6	2033
06F0401	22–91	2037
06F0401	22–98	2037
06F0401	22–99	2037
06F0401	23–13	2041
06F0401	23–26	2043
06F0401	23–29	2043
06F0401	23–32	2043
06F0401	23–35	2043
06F0401	23–59	2045
06F0401	23–63	2045
06F0401	24–31	2047
06F0401	24–44	2049

Part Number	Asm–Index	Page
06F0401	24–49	2049
06F0401	24–66	2051
06F0401	24–80	2051
06F0401	24–9	2047
06F0401	25–34	2053
06F0401	25–38	2055
06F0401	25–54	2055
06F0401	25–55	2055
06F0401	25–79	2057
06F0401	25–87	2057
06F0401	25–95	2057
06F0401	26–26	2059
06F0401	26–33	2059
06F0401	28–34	2067
06F0401	28–56	2069
06F0401	3–1	1955
06F0401	3–12	1955
06F0401	3–17	1955
06F0401	3–18	1955
06F0401	3–22	1955
06F0401	3–25	1955
06F0401	3–32	1957
06F0401	3–34	1957
06F0401	3–4	1955
06F0401	3–40	1957
06F0401	3–42	1957
06F0401	3–47	1957
06F0401	3–51	1957
06F0401	3–54	1957
06F0401	3–58	1957
06F0401	30–2	2073
06F0401	30–21	2073
06F0401	30–29	2073
06F0401	30–34	2073
06F0401	30–7	2073
06F0401	31–155	2081
06F0401	31–43	2077
06F0401	31–44	2077
06F0401	31–50	2077
06F0401	31–57	2077
06F0401	31–66	2077
06F0401	34–21	2087
06F0401	34–24	2087
06F0401	34–29	2087
06F0401	34–3	2087
06F0401	34–43	2089
06F0401	34–47	2089
06F0401	34–52	2089
06F0401	34–9	2087
06F0401	35–19	2091
06F0401	35–34	2091
06F0401	35–56	2093
06F0401	35–58	2093
06F0401	35–68	2093
06F0401	36–75	2109
06F0401	36–76	2109
06F0401	36–83	2109
06F0401	36–88	2109
06F0401	37–47	2113
06F0401	38–14	2115
06F0401	38–33	2117
06F0401	38–53	2117
06F0401	38–58	2119
06F0401	38–60	2119
06F0401	38–66	2119
06F0401	38–72	2119

Part Number	Asm–Index	Page
06F0401	38–77	2119
06F0401	4–1	1959
06F0401	4–4	1959
06F0401	5–10	1961
06F0401	5–26	1961
06F0401	5–36	1963
06F0401	5–40	1963
06F0401	5–7	1961
06F0401	53–	2189
06F0401	6–14	1965
06F0401	6–15	1965
06F0401	6–4	1965
06F0401	7–16	1967
06F0401	7–53	1969
06F0401	7–58	1969
06F0401	7–61	1969
06F0401	7–73	1971
06F0401	7–74	1971
06F0401	8–24	1973
06F0401	8–29	1973
06F0401	8–37	1973
06F0401	9–22	1975
06F0401	9–37	1975
06F0401	9–41	1977
06F0401	9–49	1977
06F0401	9–52	1977
06F0401	9–59	1977
06F0401	9–7	1975
06F0402	13–37	1993
06F0402	35–101	2095
06F0402	44–2	2137
06F0402	53–	2190
06F0402	6–19	1965

Part Number	Asm–Index	Page
06F0403	13–136	1997
06F0403	13–140	1997
06F0403	13–15	1991
06F0403	13–39	1993
06F0403	13–42	1993
06F0403	13–57	1993
06F0403	13–7	1991
06F0403	14–29	1999
06F0403	15–26	2001
06F0403	17–113	2017
06F0403	17–25	2013
06F0403	17–73	2015
06F0403	17–78	2017
06F0403	21–52	2029
06F0403	21–63	2029
06F0403	21–70	2029
06F0403	21–97	2031
06F0403	22–105	2039
06F0403	22–115	2039
06F0403	22–33	2033
06F0403	22–73	2037
06F0403	23–57	2045
06F0403	23–64	2045
06F0403	24–12	2047
06F0403	24–16	2047
06F0403	25–62	2055
06F0403	25–68	2055
06F0403	3–7	1955
06F0403	35–109	2095
06F0403	35–112	2095
06F0403	36–54	2107
06F0403	37–20	2111
06F0403	37–9	2111

Part Number	Asm–Index	Page
06F0403	4–12	1959
06F0403	4–17	1959
06F0403	4–21	1959
06F0403	5–35	1963
06F0403	53–	2191
06F0403	7–45	1969
06F0403	7–72	1971
06F0403	9–23	1975
06F0403	9–27	1975
06F0404	13–128	1997
06F0404	13–72	1995
06F0404	16–36	2007
06F0404	16–49	2009
06F0404	4–10	1959
06F0404	53–	2192
06F0404	8–48	1973
06F0405	11–35	1981
06F0405	13–97	1995
06F0405	15–4	2001
06F0405	15–44	2003
06F0405	15–69	2003
06F0405	15–87	2005
06F0405	16–11	2007
06F0405	16–22	2007
06F0405	16–28	2007
06F0405	16–6	2007
06F0405	25–16	2053
06F0405	25–30	2053
06F0405	26–10	2059
06F0405	26–21	2059
06F0405	28–23	2067
06F0405	28–24	2067
06F0405	29–10	2071
06F0405	3–45	1957
06F0405	35–50	2093
06F0405	5–5	1961
06F0405	53–	2193
06F0405	7–79	1971
06F0406	1–8	1951
06F0406	13–10	1991
06F0406	13–137	1997
06F0406	13–141	1997
06F0406	13–38	1993
06F0406	13–4	1991
06F0406	13–40	1993
06F0406	13–43	1993
06F0406	13–56	1993
06F0406	13–6	1991
06F0406	13–70	1995
06F0406	13–80	1995
06F0406	15–101	2005
06F0406	15–106	2005
06F0406	15–38	2003
06F0406	15–96	2005
06F0406	21–21	2027
06F0406	22–116	2039
06F0406	24–65	2051
06F0406	34–19	2087
06F0406	36–80	2109
06F0406	53–	2193
06F0406	9–10	1975
06F0407	1–13	1951
06F0407	1–19	1949
06F0407	1–2	1951
06F0407	1–5	1951
06F0407	1–8	1949

Part Number	Asm–Index	Page
06F0407	11–56	1983
06F0407	13–109	1997
06F0407	15–77	2005
06F0407	21–68	2029
06F0407	22–70	2035
06F0407	24–5	2047
06F0407	25–58	2055
06F0407	30–20	2073
06F0407	31–131	2081
06F0407	31–49	2077
06F0407	35–21	2091
06F0407	4–8	1959
06F0407	5–25	1961
06F0407	5–27	1961
06F0407	53–	2194
06F0407	7–12	1967
06F0407	7–78	1971
06F0408	15–12	2001
06F0408	15–48	2003
06F0408	15–89	2005
06F0408	16–21	2007
06F0408	16–5	2007
06F0408	24–60	2049
06F0408	24–64	2049
06F0408	36–13	2105
06F0408	36–30	2105
06F0408	53–	2194
06F0408	7–37	1969
06F0408	9–39	1977
06F0409	22–31	2033
06F0409	25–91	2057
06F0409	31–34	2075
06F0409	53–	2195
06F0409	7–25	1967
06F0409	7–26	1967
06F0409	7–35	1969
06F0410	53–	2196
06F0411	12–27	1985
06F0411	12–41	1987
06F0411	12–45	1987
06F0411	12–52	1987
06F0411	12–60	1989
06F0411	12–63	1989
06F0411	12–64	1989
06F0411	12–80	1989
06F0411	13–101	1995
06F0411	13–110	1997
06F0411	13–122	1997
06F0411	13–125	1997
06F0411	13–132	1997
06F0411	13–29	1991
06F0411	13–89	1995
06F0411	13–91	1995
06F0411	13–96	1995
06F0411	15–105	2005
06F0411	15–17	2001
06F0411	15–18	2001
06F0411	15–21	2001
06F0411	15–32	2001
06F0411	15–42	2003
06F0411	15–68	2003
06F0411	15–7	2001
06F0411	15–88	2005
06F0411	15–91	2005
06F0411	15–97	2005
06F0411	16–13	2007

Part Number	Asm–Index	Page
06F0411	16–24	2007
06F0411	16–29	2007
06F0411	16–32	2007
06F0411	16–43	2009
06F0411	16–52	2009
06F0411	16–55	2009
06F0411	16–58	2009
06F0411	16–64	2009
06F0411	16–67	2009
06F0411	16–70	2009
06F0411	16–73	2009
06F0411	16–8	2007
06F0411	17–124	2019
06F0411	17–127	2019
06F0411	17–136	2019
06F0411	17–22	2013
06F0411	17–31	2013
06F0411	17–67	2015
06F0411	17–97	2017
06F0411	21–102	2031
06F0411	21–18	2027
06F0411	21–45	2029
06F0411	21–84	2031
06F0411	22–111	2039
06F0411	22–80	2037
06F0411	22–86	2037
06F0411	22–89	2037
06F0411	23–16	2041
06F0411	23–24	2043
06F0411	23–34	2043
06F0411	23–40	2043
06F0411	23–45	2045
06F0411	23–56	2045
06F0411	23–62	2045
06F0411	24–38	2049
06F0411	24–41	2049
06F0411	24–50	2049
06F0411	24–77	2051
06F0411	25–100	2057
06F0411	25–17	2053
06F0411	25–43	2055
06F0411	25–80	2057
06F0411	26–12	2059
06F0411	26–34	2059
06F0411	26–39	2061
06F0411	26–58	2061
06F0411	26–61	2061
06F0411	26–64	2061
06F0411	26–67	2061
06F0411	27–15	2063
06F0411	27–6	2063
06F0411	27–9	2063
06F0411	28–10	2067
06F0411	28–14	2067
06F0411	28–15	2067
06F0411	28–19	2067
06F0411	28–25	2067
06F0411	28–30	2067
06F0411	28–31	2067
06F0411	28–38	2069
06F0411	28–43	2069
06F0411	28–46	2069
06F0411	28–61	2069
06F0411	28–8	2067
06F0411	29–18	2071
06F0411	29–22	2071

Part Number	Asm–Index	Page
06F0411	3–49	1957
06F0411	31–103	2079
06F0411	31–136	2081
06F0411	31–140	2081
06F0411	31–152	2081
06F0411	31–156	2081
06F0411	31–19	2075
06F0411	31–24	2075
06F0411	31–27	2075
06F0411	31–3	2075
06F0411	31–4	2075
06F0411	31–40	2077
06F0411	31–53	2077
06F0411	31–7	2075
06F0411	31–77	2079
06F0411	34–13	2087
06F0411	34–15	2087
06F0411	34–18	2087
06F0411	34–33	2087
06F0411	34–53	2089
06F0411	35–126	2095
06F0411	35–130	2095
06F0411	35–133	2095
06F0411	35–16	2091
06F0411	35–51	2093
06F0411	35–60	2093
06F0411	35–67	2093
06F0411	35–71	2093
06F0411	35–88	2095
06F0411	35–90	2095
06F0411	35–96	2095
06F0411	36–17	2105
06F0411	36–46	2107
06F0411	36–50	2107
06F0411	36–57	2107
06F0411	36–68	2109
06F0411	36–71	2109
06F0411	36–79	2109
06F0411	37–12	2111
06F0411	37–16	2111
06F0411	37–32	2111
06F0411	37–37	2111
06F0411	37–44	2113
06F0411	37–5	2111
06F0411	38–11	2115
06F0411	38–5	2115
06F0411	38–51	2117
06F0411	38–76	2119
06F0411	5–3	1961
06F0411	5–43	1963
06F0411	53–	2197
06F0411	6–1	1965
06F0411	6–17	1965
06F0411	6–26	1965
06F0411	7–11	1967
06F0411	7–49	1969
06F0411	7–71	1971
06F0411	8–34	1973
06F0412	21–13	2027
06F0412	21–30	2027
06F0412	21–36	2027
06F0412	21–79	2031
06F0412	21–83	2031
06F0412	22–65	2035
06F0412	22–67	2035
06F0412	25–46	2055

Part Number	Asm–Index	Page
06F0412	26–4	2059
06F0412	31–32	2075
06F0412	31–48	2077
06F0412	35–106	2095
06F0412	37–30	2111
06F0412	53–	2197
06F0412	6–10	1965
06F0412	6–9	1965
06F0413	11–38	1981
06F0413	13–108	1997
06F0413	21–58	2029
06F0413	22–15	2033
06F0413	22–18	2033
06F0413	22–20	2033
06F0413	25–18	2053
06F0413	26–20	2059
06F0413	30–13	2073
06F0413	30–5	2073
06F0413	31–159	2081
06F0413	31–70	2077
06F0413	31–75	2079
06F0413	35–37	2091
06F0413	38–40	2117
06F0413	4–7	1959
06F0413	53–	2198
06F0413	8–56	1973
06F0414	15–76	2005
06F0414	36–15	2105
06F0414	53–	2199
06F0414	8–1	1973
06F0414	9–62	1977
06F0414	9–70	1977
06F0414	9–8	1975
06F0414	9–9	1975
06F0415	1–21	1949
06F0415	1–24	1949
06F0415	12–67	1989
06F0415	13–63	1993
06F0415	14–12	1999
06F0415	14–22	1999
06F0415	14–32	1999
06F0415	14–7	1999
06F0415	15–13	2001
06F0415	15–43	2003
06F0415	16–12	2007
06F0415	16–23	2007
06F0415	16–27	2007
06F0415	16–7	2007
06F0415	17–101	2017
06F0415	17–105	2017
06F0415	17–114	2017
06F0415	17–115	2017
06F0415	17–128	2019
06F0415	17–13	2013
06F0415	17–140	2019
06F0415	17–16	2013
06F0415	17–38	2015
06F0415	17–42	2015
06F0415	17–54	2015
06F0415	17–57	2015
06F0415	17–7	2013
06F0415	17–72	2015
06F0415	17–8	2013
06F0415	17–84	2017
06F0415	17–93	2017
06F0415	17–98	2017

Part Number	Asm–Index	Page
06F0415	21–67	2029
06F0415	22–12	2033
06F0415	22–24	2033
06F0415	23–11	2041
06F0415	23–2	2041
06F0415	23–6	2041
06F0415	24–18	2047
06F0415	24–24	2047
06F0415	24–25	2047
06F0415	24–27	2047
06F0415	24–76	2051
06F0415	25–31	2053
06F0415	25–70	2055
06F0415	25–71	2057
06F0415	25–75	2057
06F0415	31–16	2075
06F0415	31–30	2075
06F0415	31–37	2077
06F0415	31–38	2077
06F0415	31–82	2079
06F0415	31–90	2079
06F0415	31–98	2079
06F0415	34–7	2087
06F0415	35–25	2091
06F0415	35–45	2093
06F0415	35–6	2091
06F0415	35–9	2091
06F0415	36–18	2105
06F0415	36–22	2105
06F0415	36–32	2107
06F0415	36–40	2107
06F0415	36–66	2109
06F0415	37–40	2113
06F0415	5–19	1961
06F0415	5–20	1961
06F0415	5–28	1961
06F0415	5–6	1961
06F0415	5–9	1961
06F0415	53–	2199
06F0415	7–3	1967
06F0415	7–38	1969
06F0415	7–8	1967
06F0415	9–17	1975
06F0416	53–	2200
06F0417	1–2	1949
06F0417	11–22	1981
06F0417	14–6	1999
06F0417	16–78	2009
06F0417	17–77	2015
06F0417	23–7	2041
06F0417	26–23	2059
06F0417	3–16	1955
06F0417	3–19	1955
06F0417	3–2	1955
06F0417	3–21	1955
06F0417	3–24	1955
06F0417	3–31	1957
06F0417	3–36	1957
06F0417	3–39	1957
06F0417	3–43	1957
06F0417	3–48	1957
06F0417	3–5	1955
06F0417	3–52	1957
06F0417	3–55	1957
06F0417	3–8	1955
06F0417	30–22	2073

Part Number	Asm–Index	Page
06F0417	31–65	2077
06F0417	31–69	2077
06F0417	34–23	2087
06F0417	34–6	2087
06F0417	35–55	2093
06F0417	35–7	2091
06F0417	38–15	2115
06F0417	38–34	2117
06F0417	38–61	2119
06F0417	38–67	2119
06F0417	38–73	2119
06F0417	38–78	2119
06F0417	5–11	1961
06F0417	5–39	1963
06F0417	53–	2200
06F0417	7–62	1969
06F0417	9–16	1975
06F0417	9–42	1977
06F0418	53–	2201
06F0419	53–	2201
06F0420	24–37	2049
06F0420	3–9	1955
06F0420	53–	2202
06F0429	53–	2202
06F0433	21–32	2027
06F0463	23–23	2043
06F0478	8–49	1973
06F0482	7–7	1967
06F0483	7–2	1967
06F0488	7–32	1969
06F0492	23–20	2043
06F0497	23–33	2043
06F0507	8–2	1973
06F0509	8–35	1973
06F0510	8–33	1973
06F0512	9–25	1975
06F0513	9–21	1975
06F0514	9–14	1975
06F0516	9–5	1975
06F0517	9–3	1975
06F0518	9–2	1975
06F0523	9–34	1975
06F0526	9–68	1977
06F0528	9–66	1977
06F0569	13–107	1997
06F0681	21–29	2027
06F0684	21–12	2027
06F0687	37–7	2111
06F0695	21–73	2029
06F0734	12–70	1989
06F0754	24–4	2047
06F0775	25–21	2053
06F0806	26–3	2059
06F0811	26–57	2061
06F0848	31–23	2075
06F0848	37–15	2111
06F0862	31–31	2075
06F0863	31–119	2081
06F0865	31–62	2077
06F0868	31–29	2075
06F0870	12–33	1985
06F0957	17–123	2019
06F0962	36–12	2105
06F0962	36–29	2105
06F0963	36–28	2105
06F0964	36–21	2105

Part Number	Asm–Index	Page
06F0967	36–9	2105
06F0968	36–7	2105
06F0969	36–4	2105
06F0972	36–53	2107
06F0973	36–49	2107
06F0976	36–47	2107
06F0977	36–45	2107
06F0978	36–44	2107
06F0984	36–86	2109
06F0991	36–65	2107
06F0992	36–64	2107
06F0996	37–18	2111
06F1015	7–27	1967
06F1031	53–	2203
06F1032	53–	2203
06F1033	53–	2203
06F1034	53–	2203
06F1035	53–	2203
06F1036	53–	2203
06F1037	53–	2203
06F1038	53–	2203
06F1039	53–	2203
06F1049	35–18	2101
06F1049	35–19	2097
06F1050	6–11	1965
06F1056	12–8	1985
06F1069	27–2	2063
06F1158	25–41	2055
06H2792	47–30	2149
06H6706	48–25	2151
06H7082	47–3	2145
06H7697	47–7	2145
06H8488	48–23	2151
06H8631	47–35	2149
07L6923	48–	2151
07L7600	47–33	2149
07L7649	48–6	2151
07L7649	48–7	2151
07L7729	47–15	2145
07L9718	47–37	2149
08H7678	24–53	2049
08H7680	17–126	2019
08L0442	47–13	2145
08L0895	47–16	2145
08L0895	48–36	2155
09L2061	47–16	2145
09L2061	48–36	2155
11H2168	48–44	2155
11H6764	48–1	2151
11H6955	48–42	2155
11H8156	47–26	2147
11K0383	48–32	2155
11L5164	28–9	2067
11L5175	13–66	1993
11L5199	12–26	1985
11L5200	30–11	2073
11L5201	8–20	1973
11L5251	44–31	2133
11L5278	44–4	2137
11L5317	24–40	2049
11L5317	27–14	2063
11L5318	13–61	1993
11L5989	43–8	2129
11L5996	25–84	2057
11L5999	13–144	1997
11L6000	13–143	1997

Part Number	Asm–Index	Page
11L6054	1–2	1947
11L6055	1–5	1947
11L6056	1–6	1947
11L6057	1–4	1949
11L6058	1–7	1949
11L6062	49–33	2161
11L6063	42–6	2127
11L6066	43–16	2129
11L6067	42–8	2127
12H0649	48–31	2153
12K0150	47–16B	2147
12K0150	48–36	2155
12K0159	47–16B	2147
12K0159	48–36	2155
13J3742	52–4	2183
13J6714	52–16	2183
13J6714	52–24	2183
1402826	23–65	2045
1402827	26–55	2061
14H7813	12–49	1987
14H7813	12–56	1987
14H7813	12–61	1989
1621071	45–6	2139
1621204	52–50	2185
1621286	52–60	2187
1621321	52–35	2185
1621342	44–16	2135
1621510	52–38	2185
1621510	52–42	2185
1621511	51–2	2181
1621519	50–12	2179
1621519	50–16	2179
1621519	52–55	2187
1621544	54–	2210
1621594	44–7	2135
1621862	43–14	2129
1622276	44–26	2135
1622276	44–9	2135
1622303	44–13	2131
1622304	43–10	2129
1622304	44–21	2135
1622304	44–4	2131
1622304	45–18	2139
1622305	45–13	2139
1622306	44–6	2135
1622319	50–13	2179
1622319	50–15	2179
1622321	44–18	2135
1622346	43–2	2129
1622346	45–2	2139
1622347	50–11	2179
1622348	43–12	2129
1622393	43–9	2129
1622403	43–22	2129
1622403	44–2	2135
1622403	44–5	2131
1622403	45–1	2139
1622404	45–14	2139
1622408	44–14	2135
1622437	44–19	2135
1622529	52–52	2187
1693629	42–5	2127
2129658	52–21	2183
2129665	46–202	2143
2179914	45–4	2139
24107	50–6	2179

Part Number	Asm–Index	Page
24H8004	49–42	2167
24H8029	31–56	2077
24H8035	13–106	1995
24H8035	30–12	2073
24H8035	38–3	2115
24H8167	26–14	2059
24H8191	13–107	1997
24H8225	31–101	2079
24H9844	11–26	1981
24H9844	35–50	2103
24H9844	35–66	2093
24H9844	35–86	2093
24H9845	11–31	1981
24H9845	35–45	2103
24H9845	35–70	2093
24H9845	35–87	2095
24H9845	6–24	1965
24L3297	52–36	2185
24L3299	52–48	2185
24L3301	52–59	2187
24L3302	52–54	2187
24L3304	52–49	2185
24L3305	52–57	2187
24L3306	52–34	2185
24L3307	52–47	2185
24L3308	52–43	2185
24L3322	17–6	2013
24L3334	30–18	2073
24L3337	54–	2210
24L3339	54–	2210
24L3343	54–	2210
24L3345	54–	2210
24L3345	54–	2210
24L3376	26–56	2061
24L3393	27–24	2063
24L3394	27–25	2063
24L3395	27–26	2063
24L3396	27–27	2063
24L3397	27–28	2063
24L3398	27–29	2063
24L3399	27–30	2063
24L3771	48–36	2155
24L4548	31–88	2079
24L4548	31–95	2079
24L4843	27–31	2065
24L4844	27–32	2065
24L4845	27–33	2065
24L4846	27–34	2065
24L4847	27–35	2065
24L4858	49–59	2177
24L4859	49–60	2177
24L4861	22–	2039
24L4866	31–106	2079
24L4877	12–30	1985
24L4883	12–2	1985
24L4883	23–31	2043
24L4883	26–31	2059
24L4883	36–74	2109
24L4883	36–82	2109
24L4883	7–66	1969
24L4902	31–97	2079
24L4906	31–149	2081
24L4913	44–17	2131
24L4914	38–50	2117
24L4916	52–62	2187
25627	52–44	2185

Part Number	Asm–Index	Page
25627	52–46	2185
25F9401	44–2	2131
27F4212	48–12	2151
27F4212	48–14	2151
27F4212	48–33	2155
30H2769	53–	2204
30H2817	44–15	2131
30H2868	45–16	2139
30H2956	44–24	2135
30H2957	44–10	2135
30H2958	44–23	2135
30H2959	44–12	2135
30H2974	46–35	2141
30H2985	44–11	2135
30H2986	44–13	2135
30H2989	42–2	2127
30H3032	54–	2210
30H3033	44–5	2135
30H3075	44–20	2135
30H3100	44–6	2131
30H3100	44–8	2135
30H6520	43–16	2129
30H6521	43–23	2129
30H6586	21–3	2027
30H6586	6–7	1965
30H6586	8–21	1973
30H6654	46–35	2141
30H6656	46–35	2141
30H6700	13–62	1993
30H6700	31–60	2077
30H6700	36–85	2109
30H6700	5–29	1961
30H6719	45–15	2139
30H6765	6–5	1965
30H6782	44–18	2131
30H6798	44–33	2133
30H6799	44–34	2133
30H6814	17–45	2015
30H6814	21–56	2029
30H6814	22–16	2033
30H6814	25–78	2057
30H6814	37–46	2113
30H6819	17–33	2013
30H6820	17–37	2015
30H6837	44–26	2131
30H6860	38–24	2115
30H6860	38–55	2119
30H6860	38–63	2119
30H6860	38–69	2119
30H6860	38–7	2115
30H6880	43–15	2129
30H6935	49–34	2163
30H6936	49–35	2163
30H6938	49–36	2163
30H6939	49–31	2159
30H6941	49–	2175
30H6941	49–39	2165
30H6942	49–30	2161
30H6943	49–38	2165
30H6944	49–37	2163
30H6947	49–40	2167
32H1465	49–53	2171
32H1465	49–54	2171
32H1465	49–55	2173
32H1465	49–56	2173
32H1466	49–51	2171

Part Number	Asm–Index	Page
32H1466	49–52	2171
33F8354	47–8	2145
33F8354	48–45	2155
33G3907	48–2	2151
33G3907	48–20	2151
38L0734	24–22	2047
38L0807	53–	2204
38L0822	1–1	1947
38L0823	1–9	1947
38L0824	1–10	1947
38L0825	1–13	1947
38L0826	1–17	1947
38L0827	1–18	1947
38L0828	1–21	1947
38L0829	1–22	1947
38L0833	15–47	2003
38L0834	16–20	2007
38L0902	12–43	1987
39H8084	47–16A	2147
39H8084	48–36	2155
39H8697	48–34	2155
40H1424	47–12	2145
40H1433	47–12	2145
40H6328	48–43	2155
40H7566	48–27	2153
40H7584	48–8	2151
42H1296	47–	2149
42H2774	48–35	2155
4511305	45–5	2139
4586927	44–23	2131
45F3904	52–17	2183
45F4351	52–28	2183
45F4589	52–27	2183
45F4590	52–18	2183
45F4592	52–20	2183
45F4593	52–19	2183
45F5166	52–25	2183
45G1727	49–23	2157
45G1728	49–41	2167
45G1741	46–32	2141
45G1751	46–28	2141
45G1753	46–35	2141
45G1755	46–35	2141
45G1757	46–35	2141
45G1759	46–35	2141
45G1761	46–35	2141
45G1856	6–2	1965
45G2026	50–	2179
45G2043	50–4	2179
45G2045	50–9	2179
45G2047	50–1	2179
45G2048	50–7	2179
45G2049	50–2	2179
45G2051	50–8	2179
45G2053	50–5	2179
45G2059	50–3	2179
45G2063	44–4	2135
45G2064	44–3	2135
45G2091	43–13	2129
49G6111	44–31	2133
49G9665	8–43	1973
53F1607	43–6	2129
53F1609	42–4	2127
53F1663	43–24	2129
53F1663	44–22	2131
53F1663	50–10	2179

Part Number	Asm–Index	Page
53F1664	52–66	2187
53F1665	43–3	2129
53F1665	44–22	2135
53F1665	44–3	2137
53F1665	44–7	2131
53F1665	45–11	2139
53F1665	52–40	2185
53F1667	42–3	2127
53F1678	44–15	2135
53F1778	38–37	2117
53F1794	21–16	2027
53F1795	22–57	2035
53F1808	21–44	2027
53F1808	28–12	2067
53F1817	22–96	2037
53F1817	25–25	2053
53F1829	23–12	2041
53F1884	12–38	1987
53F1960	31–42	2077
53F1961	28–53	2069
53F1961	28–59	2069
53F1962	24–46	2049
53F1965	34–11	2087
53F1983	27–11	2063
53F1988	23–4	2041
53F3930	47–	2147
5756324	54–	2210
5756348	54–	2210
57G2538	15–73	2005
57G4379	54–	2210
57G4409	15–60	2003
57G4438	13–3	1991
57G4438	13–71	1995
57G4439	13–2	1991
57G4448	7–48	1969
57G5957	13–90	1995
57G6462	7–28	1967
57G6489	52–26	2183
57G6491	52–58	2187
57G6493	52–64	2187
57G6505	21–1	2027
57G6505	6–5	1965
57G6508	6–20	1965
57G6510	30–4	2073
57G6513	25–74	2057
57G6529	35–125	2095
57G6582	54–	2210
57G6598	50–14	2179
57G6698	6–27	1965
57G6761	9–61	1977
57G6825	30–31	2073
57G6852	26–42	2061
57G6853	26–41	2061
59H3481	47–32	2149
60G1066	47–	2147
6226855	54–	2210
63H6391	9–63	1977
63H6393	27–20	2063
63H6456	42–9	2127
63H6456	43–1	2129
63H6458	42–7	2127
63H6458	43–7	2129
63H6460	43–25	2129
63H6472	38–28	2115
63H6473	38–29	2117
63H6474	38–65	2119

Part Number	Asm–Index	Page
63H6475	38–30	2117
63H6476	38–68	2119
63H6477	38–8	2115
63H6478	38–56	2119
63H6479	11–57	1983
63H6480	17–122	2017
63H6481	22–85	2037
63H6483	38–64	2119
63H6484	24–52	2049
63H6485	41–1	2125
63H6486	40–1	2123
63H6487	38–18	2115
63H6489	13–34	1993
63H6490	12–18	1985
63H6490	13–100	1995
63H6490	13–28	1991
63H6490	9–48	1977
63H6491	9–20	1975
63H6494	1–4	1951
63H6495	7–63	1969
63H6496	23–44	2045
63H6497	23–3	2041
63H6498	13–124	1997
63H6499	13–121	1997
63H6500	15–1	2001
63H6501	15–30	2001
63H6502	15–14	2001
63H6504	15–66	2003
63H6505	15–74	2005
63H6506	15–75	2005
63H6509	15–83	2005
63H6510	15–45	2003
63H6511	15–41	2003
63H6512	15–20	2001
63H6512	15–6	2001
63H6512	16–19	2007
63H6512	16–3	2007
63H6513	16–10	2007
63H6513	16–26	2007
63H6514	15–81	2005
63H6515	15–50	2003
63H6516	16–1	2007
63H6517	16–45	2009
63H6518	16–82	2011
63H6519	16–89	2011
63H6520	16–81	2011
63H6520	37–3	2111
63H6521	17–2	2013
63H6525	22–55	2035
63H6526	22–56	2035
63H6527	22–2	2033
63H6528	22–27	2033
63H6529	22–10	2033
63H6530	21–47	2029
63H6531	21–59	2029
63H6532	21–82	2031
63H6533	25–8	2053
63H6534	25–65	2055
63H6535	25–81	2057
63H6536	25–42	2055
63H6537	25–52	2055
63H6538	25–94	2057
63H6539	25–97	2057
63H6540	26–44	2061
63H6541	24–34	2049
63H6542	24–8	2047

Part Number	Asm–Index	Page
63H6543	24–13	2047
63H6544	24–21	2047
63H6557	29–11	2071
63H6558	31–13	2075
63H6559	31–20	2075
63H6560	31–47	2077
63H6561	31–87	2079
63H6561	31–94	2079
63H6561	4–6	1959
63H6562	24–79	2051
63H6563	36–41	2107
63H6564	37–4	2111
63H6565	37–25	2111
63H6566	37–26	2111
63H6567	35–28	2097
63H6568	35–29	2101
63H6568	35–30	2099
63H6569	35–27	2101
63H6574	42–1	2127
63H6574	43–11	2129
63H6595	28–4	2067
63H6596	28–5	2067
63H7088	52–39	2185
63H7094	15–36	2001
63H7095	15–34	2001
63H7096	52–45	2185
65F6158	37–11	2111
65F6190	54–	2210
65G8850	48–46	2155
70F9973	47–16C	2147
70F9973	48–36	2155
71H2461	52–22	2183
71H2467	52–31	2183
7320140	54–	2210
73H0435	48–39	2155
73H0438	48–3	2151
73H0870	47–31	2149
73H0898	47–2	2145
73H3405	47–16	2145
73H3405	48–36	2155
73H3520	47–9	2145
73H3525	47–9	2145
73H3529	47–9	2145
73H3577	47–12	2145
73H4532	48–41	2155
76H5084	48–	2155
81X0280	44–17	2135
81X0295	43–4	2129
845762	54–	2210
8492368	46–34	2141
855251	46–201	2143
85X6837	44–24	2131
88F1626	31–102	2079
88F1626	53–	2205
88F1626	53–	2206
88F1627	53–	2207
88F1632	21–6	2027
88F1633	21–7	2027
88F1647	24–74	2051
88F2413	12–7	1985
88F2434	8–51	1973
88F2435	8–50	1973
88F2483	31–124	2081
88F2498	27–1	2063
88F2507	13–26	1991
88F2522	13–77	1995

Part Number	Asm–Index	Page
88F2523	13–75	1995
88F2548	13–95	1995
88F2548	13–95	1995
88F2610	9–44	1977
88F2613	9–65	1977
88F2629	17–19	2013
88F2629	17–28	2013
88F2631	17–21	2013
88F2631	17–30	2013
88F2705	23–8	2041
88F2706	23–9	2041
88F2707	23–10	2041
88F2713	23–42	2043
88F2741	21–50	2029
88F2854	22–23	2033
88F2900	12–69	1989
88F2940	24–35	2049
88F2943	24–32	2047
88F2949	27–4	2063
88F2950	27–5	2063
88F2951	27–10	2063
88F2952	27–12	2063
88F2976	29–5	2071
88F3041	30–32	2073
88F3043	30–33	2073
88F3122	17–63	2015
88F3122	25–50	2055
88F3122	26–48	2061
88F3128	25–35	2055
88F3129	25–36	2055
88F3136	25–99	2057
88F3186	29–17	2071
88F3186	31–83	2079
88F3186	37–39	2113
88F3209	37–31	2111
88F3224	35–5	2101
88F3224	35–6	2097
88F3260	35–35	2099
88F3295	36–78	2109
88F3299	36–5	2105
88F3361	26–22	2059
88F3389	17–96	2017
88F3424	27–3	2063
88F3569	53–	2208
88F3689	46–200	2143
88G2216	48–16	2151
89H5651	47–16E	2147
89H9677	1–	1949
89H9762	44–35	2133
89H9768	1–	1949
89H9831	44–21	2131
89H9835	44–12	2131
89H9838	49–58	2175
89H9933	49–44	2169
89H9934	49–45	2169
89H9935	49–46	2169
89H9936	49–47	2169
89H9937	49–48	2169
89H9938	49–43	2169
90H1036	8–41	1973
90H1037	8–42	1973
90H1038	8–47	1973
90H1108	25–69	2055
90H1298	24–77	2051
90H1561	12–71	1989
90H1655	52–14	2183

Part Number	Asm–Index	Page
90H1744	43–18	2129
90H2406	25–12	2053
90H2406	25–28	2053
90H2407	28–29	2067
90H2412	25–11	2053
90H2416	25–15	2053
90H2417	25–37	2055
90H2420	25–6	2053
90H2627	44–8	2131
90H2792	35–10A	2097
91610	46–30	2141
91610	46–31	2141
91610	46–33	2141
92F2565	48–38	2155
93F2361	47–29	2149
93F2361	48–17	2151
93H1816	47–4	2145
93H1817	48–19	2151
93H1819	48–9	2151
93H1821	48–37	2155
93H2922	47–5	2145
93H3144	47–18	2147
93H3145	47–19	2147
93H4297	47–28	2149
93H4574	48–29	2153
93H4702	47–15	2145
93H5982	48–22	2151
93H6151	48–40	2155
93H6280	47–11	2145
93H6321	47–20	2147
93H6823	48–35	2155
93H9018	47–17	2147
93H9162	48–4	2151
93H9789	47–23	2147
93H9868	47–27	2147
94H0550	48–5	2151
94H0823	47–16	2147
94H0823	48–36	2155
94H1038	47–16	2145
94H1038	48–36	2155
97H7796	47–25	2147
97H7796	48–21	2151

Part Number: 01P6937

Printed in the United States of America
on recycled paper containing 10%
recovered post-consumer fiber.

01P6937