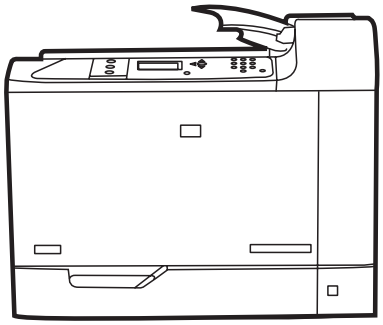
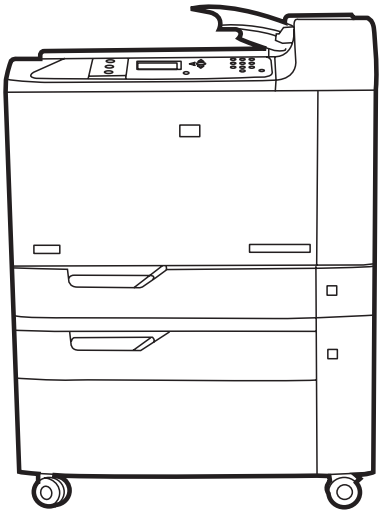
HP Color LaserJet CP6015 Series Printers

Service Manual

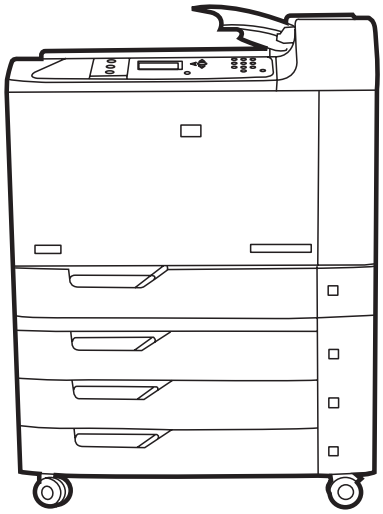
CP6015n
CP6015dn
CP6015de



CP6015x



CP6015xh



HP Color LaserJet CP6015 Series Printers
Service Manual



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Table of contents

1 Product basics

Quick access to product information 2
Product comparison 3
Product features 4
Product walkaround 7
Front view 7
HP Color LaserJet CP6015n, HP Color LaserJet CP6015dn, and HP Color LaserJet CP6015de 7
HP Color LaserJet CP6015x 8
HP Color LaserJet CP6015xh 8
Back view 9
Interface ports 10
Serial number and model number location 10
Supported operating systems 11

2 Control panel

Use the control panel 14
Control-panel layout 14
Interpreting control panel indicator lights 15
Control panel menus 16
Getting started basics 16
Menu hierarchy 17
Open the menus 17
Show Me How menu 18
Retrieve job menu 19
Information menu 20
Paper handling menu 21
Configure device menu 22
Printing menu 22
PCL sub-menu 22
Print Quality menu 24
System setup menu 29
Output Setup menu 35
I/O menu 38

Resets menu 43
Diagnostics menu 45
Service menu 49

3 Paper and print media
Supported paper and print media sizes 52
Supported paper types 56
Special paper or print media guidelines 58
Load paper and print media 59
Load Tray 1 59
Print envelopes 60
Load banner paper into Tray 1 60
Load Trays 2, 3, 4, or 5 60
Load standard-sized paper into Trays 2, 3, 4, or 5 60
Load undetectable standard-sized paper into Trays 2, 3, 4, and 5 62
Load custom-size paper into Tray 2, 3, 4, or 5 63
Load large-size paper into Tray 3, 4, or 5 64
Configure trays 66
Configure a tray when loading paper 66
Configure a tray to match print job settings 66
Configure a tray by using the Paper Handling menu 67
Automatic media type sensing (auto sense mode) 67
Auto-sense settings 67
Choose an output location 69
Standard output bin 69
Optional output accessories 69
3-bin stapler/stacker features 69
Booklet maker finisher features 69
Accessory walkaround 70
Configure the accessory operation mode 71
Select the operating mode at the control panel 71
Select the operating mode in the printer driver (Windows) 72
Select the operating mode in the printer driver (Mac OS X) 72

4 Manage and maintain the product
Information pages 74
HP Easy Printer Care 75
Open the HP Easy Printer Care software 75
HP Easy Printer Care software sections 75
Embedded Web server 78
Open the embedded Web server by using a network connection 78
Embedded Web server sections 79
Use HP Web Jetadmin software 81

Security features 82
Secure the embedded Web server 82
Secure Disk Erase 82
Data affected 82
Additional Information 83
Job storage 83
Lock the control-panel menus 83
Manage supplies 84
Print-cartridge storage 84
HP policy on non-HP print cartridges 84
HP fraud hotline and Web site 84
Replace supplies 85
Locate supplies 85
Supply replacement guidelines 85
Approximate replacement intervals for supplies 86
Change print cartridges 86
Change image drums 88
Install memory 91
Install DDR memory DIMMs 91
Enable memory for Windows 95
Install an HP Jetdirect or EIO print server card or EIO hard disk 96
Replace the staple cartridge 98
Replace saddle stitch staple cartridges in the booklet maker 100
Clean the product 103
Clean spilled toner 103
Clean the product exterior 103
Clean the product interior 103
Clean the 3X500 sheet input tray 105
Clean the IPTU 106
Upgrade the firmware 107
Determine the current firmware version 107
Download new firmware from the HP Web site 107
Transfer the new firmware to the product 107
Use FTP to upload the firmware through a browser 107
Use FTP to upgrade the firmware on a network connection using Microsoft Windows 108
Use HP Web Jetadmin to upgrade the firmware 108
Use MS-DOS commands to upgrade the firmware for USB connections 109
Upgrade the HP Jetdirect firmware 109
Set the real-time clock 111
Set the real-time clock 111

5 Theory of operation

Basic operation 114

Sequence of operation 114
Formatter system 116
Sleep mode 116
Resolution 117
Input/output 117
CPU 117
Memory 117
Hard disk 117
Random-access memory 117
DIMM slot 118
Firmware 118
Nonvolatile memory 118
PJL overview 118
PML 118
Control panel 118
Engine-control system 119
DC controller 120
Solenoids 120
Switches 121
Sensors 122
Motors and fans 123
Fuser control 125
Fuser temperature-control circuit 127
Fuser over-temperature protection 128
Fuser-failure detection 129
Fuser identification 129
Fuser-life detection 130
Relay-failure detection 130
Low-voltage power supply 130
Overcurrent/overvoltage protection 131
Safety 131
Voltage detection 131
Sleep (powersave) mode 131
High-voltage power supply 131
Laser/scanner system 134
Image-formation system 136
Image-formation process 137
Step 1: Pre-exposure 138
Step 2: Primary charging 138
Step 3: Laser-beam exposure 139
Step 4: Development 139
Step 5: Primary transfer 140
Step 6: Secondary transfer 140
Step 7: Separation 141

Step 8: Fusing 141
Step 9: ITB cleaning 142
Step 10: Drum cleaning 142
Print cartridge 143
Imaging drum 144
Developing roller engagement and disengagement 146
Intermediate transfer belt (ITB) unit 147
Primary-transfer-roller engagement and disengagement 148
ITB unit detection 149
Secondary-transfer-roller unit 151
Calibration 151
Color-misregistration contol 152
Image-stabilization control 153
Color-sensor control (duplex models only) 153
Gray-axis correction 155
Pickup, feed, and delivery system 156
Pickup-and-feed unit 159
Cassette pickup 161
Cassette paper-size and cassette-presence detection 161
Cassette lift operation 163
Cassette paper-level and paper-presence detection 164
Multifeed prevention 165
Multipurpose tray pickup 166
Multipurpose tray last-paper detection 167
Paper feed 168
Skew-feed prevention 169
Paper-type detection 170
Feed-speed control 171
Fusing and delivery unit 173
Loop control 173
Pressure-roller pressurization control 174
Duplexing unit 175
Duplexing reverse and feed control 176
Jam detection 177
Optional input trays 179
Paper-feeder pickup and feed operation 182

6 Removal and replacement

Removal and replacement strategy 186
Introduction 186
Required tools 187
Types of screws 187
Service approach 188

Before performing service 188
After performing service 188
Parts removal sequences 189
User-replaceable parts 190
Fuser 191
Transfer roller 194
Intermediate-transfer belt (ITB) 196
Tray-1 pickup and separation rollers 199
Tray-2, -3, -4, and -5 pickup rollers 201
Formatter 203
1 x 500-sheet input tray installation 206
3 x 500-sheet input tray installation 207
Tray 2 208
Trays 3, 4, and 5 208
Removal sequence 1 209
Secondary transfer unit 210
Multipurpose drive unit 215
Multipurpose-tray guide (Tray 1) unit 219
Cassette (Tray-2) pickup unit 220
Removal sequence 2 221
Rear-left cover 222
Rear-right cover 223
Rear cover 224
Low-voltage power supply unit 225
High-voltage power supply PCA (A) 226
Lifter drive unit 228
Removal sequence 2A 230
Fuser motor 230
Removal sequence 2B 231
Intermediate-transfer belt (ITB) motor 231
Removal sequence 2C 232
Face-down output bin 232
Left cover 233
Laser/scanner-fan duct 234
Removal sequence 2D 236
Print-cartridge driver PCA 236
Removal sequence 3 238
Rear-left cover 239
Face-down output bin 240
Left cover 241
High-voltage power supply PCA (B) 242
Formatter case 244
DC controller PCA 246
Removal sequence 3A 248

Environmental sensor 248
Removal sequence 4 249
Rear-left cover 250
Rear-right cover 251
Rear cover 252
Face-down output bin 253
Left cover 254
Print-cartridge driver PCA 255
Image-drum motor 257
Removal sequence 4A 259
Fuser fan 259
Removal sequence 4B 260
Print-cartridge feed motor (black) 260
Print-cartridge feed motor (yellow, magenta, and cyan) 261
Removal sequence 4C 262
Cartridge fan unit 262
Laser/scanner fan unit 263
Removal sequence 4D 264
Fuser power-supply unit 264
Primary-transfer-roller disengagement motor 265
Removal sequence 4 Sub-1 266
Print-cartridge drive unit (yellow and magenta) 267
Print-cartridge drive unit (cyan and black) 272
Print-cartridge interface PCA (cyan and black) 273
Main drive unit 274
Removal sequence 4 Sub-1A 276
Print-cartridge interface PCA (yellow and magenta) 276
Removal sequence 4 Sub-1B 277
Cartridge-fan duct 277
Removal sequence 5 278
Rear-left cover 279
Face-down output bin 280
Rear-upper cover 281
Control panel 282
Front-upper cover 284
Right-upper cover 285
Duplex switchback tray 286
Reverse cover 287
VOC fan 289
Duplexing reverse unit 290
Face-down delivery unit 291
Face-down cover 293
Removal sequence 5A 294
Scanner cover 294

Laser/scanner assembly (yellow and magenta) 295
Laser/scanner assembly (cyan and black) 297
Removal sequence 5B 299
Front door 299
Front-inner cover 300
Removal sequence 5C 301
Front-door assembly 301
Removal sequence 5D 302
Color-misregistration and image-density sensor unit 302
Removal sequence 5E 304
Pressure-release sensor unit 304
Removal sequence 6 305
Rear-left cover 306
Rear-right cover 307
Right-upper cover 307
Right-door assembly 308
Duplexing feed unit 310
Multipurpose-tray (Tray-1) pickup unit 312
Removal sequence 7 315
Thermopile unit 316
Front-lower cover 317
ITB duct 318
Optional input trays 319
1 x 500-sheet input tray 319
Right door 319
Lower-rear cover 321
Front-right cover 322
Right cover 323
Front-upper cover 324
Lower-left cover 325
Front-lower door 326
Box 327
Pickup unit 328
Input tray is not attached 328
Input tray is attached 329
Auto-close unit 331
Pickup motor 332
Paper-feeder driver PCA 333
3 x 500-sheet input tray 334
Right door 334
Lower-rear cover 334
Front-right cover 334
Right cover 334
Front-upper cover 334

Left cover 334
Pickup unit (middle cassette) 335
Pickup unit (lower cassette) 336
Pickup unit (upper cassette) 336
Input tray is not attached 336
Input tray is attached 337
Auto-close unit 339
Pickup motor 339
Paper-feeder driver PCA 339

7 Solve problems
Troubleshooting process 342
Determine the problem source 342
Pre-troubleshooting checklist 342
Troubleshooting checklist 343
Troubleshooting flowchart 344
Power subsystem 345
Power-on checks 345
Power-on troubleshooting overview 345
Tools for troubleshooting 347
Internal print-quality test pages 347
Diagnostics page 347
Configuration pages 348
Configuration page 348
HP embedded Jetdirect page 350
Embedded protocol page 351
Finding important information on the configuration pages 352
Solve performance problems 353
Solve connectivity problems 354
Solve direct-connect problems 354
Solve network connectivity problems 354
Solve network printing problems 354
Verify communication over the network 355
Control-panel message types 356
Control-panel messages 357
Event log messages 422
Print an event log 422
Show an event log 422
Sample event log 423
Clear the event log 423
Event log message 424
Paper-handling problems 428
Jams 428

Common causes of jams 428
Jam locations 429
Clear jams 429
Jam sensors 430
AREA 1: Jams in the output bin 431
AREA 2 and 3: Jams in the fuser and transfer area 433
AREA 4: Jams in the duplex area 440
AREA 5: Jams in Tray 2 and the internal paper path 445
AREA 6: Clear jams in Tray 1 449
Clear jams when printing banners 452
AREA 7: Jams in optional Trays 3, 4, and 5 455
AREA 8: Jams in the optional finishing devices 460
Clear staple jams 466
Jam recovery 470
Product feeds multiple sheets 471
Product pulls from incorrect tray 471
Product feeds incorrect page size 471
Paper does not feed automatically 472
Paper does not feed from Tray 2, 3, 4, or 5 472
Transparencies or glossy paper will not feed 473
Envelopes jam or will not feed in the product 473
Output is curled or wrinkled 474
Product will not duplex or duplexes incorrectly 474
Solve image-quality problems 476
Example print quality problems 476
Repetitive defects ruler 476
Overhead transparency defects 478
Print quality problems associated with the environment 478
Print quality problems associated with jams 478
Optimize and improve image quality 478
Use supported paper 479
Calibrate the product 479
Specify the correct paper type 479
Clean the fuser 480
Respond to control panel error messages 481
Clean the registration second transfer assembly 482
Use manual print modes 484
Print-quality-troubleshooting pages 485
Image-quality issues 487
Interface troubleshooting 493
Communication checks 493
EIO troubleshooting 493
Engine diagnostics 494
LED diagnostics 494

Understand lights on the formatter 494
HP Jetdirect LEDs 494
Heartbeat LED 495
Engine-test button 495
Diagnostics menu 496
Diagnostics mode 496
Diagnostics that put the engine into the special diagnostics mode 497
Diagnostic tests 497
Disable cartridge check 498
Paper-path sensors test 499
Paper-path test 501
Manual sensor test (special-mode test) 501
Manual sensor test 2 (special-mode test) 502
Component tests 503
Component test (special-mode test) 503
Print/stop test 507
Color-band test 507
Service mode functions 508
Service menu 508
Product resets 509
Restore factory-set defaults 509
Hard disk initialization 510
NVRAM initialization 510
Diagrams 511
Connectors 511
DC controller PCA 511
PCAs 511
Product base 514
1 x 500-sheet input tray 517
3 x 500-sheet input tray 517
IPTU 518
Sensors 518
Sensors 518
Product base 520
1 x 500-sheet input tray 522
3 x 500-sheet input tray 523
IPTU 524
Fans 525
Fans 525
Product base 526
Motors 526
Motors 526
Product base 528
1 x 500-sheet input tray 529

3 x 500-sheet input tray 530
IPTU 531
Solenoids 531
Solenoids 531
Product base 532
1 x 500-sheet input tray 532
3 x 500-sheet input tray 533
Switches 534
Switches 534
Product base 534
1 x 500-sheet input tray 535
3 x 500-sheet input tray 535
Block diagrams 537
Main assemblies 537
Main parts 540
PCAs 541
1 x 500-sheet input tray 542
3 x 500-sheet input tray 543
Intermediate paper-transfer unit (IPTU) 544
General timing chart 545
General circuit diagrams 545
Signals 550

8 Output accessories and intermediate paper-transfer unit (IPTU)

Theory of operation 580
Intermediate paper-transfer unit (IPTU) 580
Basic operation 580
Feed operation 582
Jam detection 582
3-bin stapler/stacker 583
Basic operation 583
Electrical circuitry 584
Feed drive system 584
Construction of the control system 585
Paper delivery path (stapler/stacker and booklet maker) 587
Intermediate-process output-bin assembly (stapler/stacker and booklet maker) 591
Stack job offset 591
Process output bin paper-stacking operation 593
Offset operation 593
Stack trailing-edge assist operation 594
Stack delivery operation 594
Staple operation (stapler/stacker and booklet maker) 595
Staple unit 598

Shift the staple unit 599
Stack operation (stapler/stacker and booklet maker) 601
Output bin operation 601
Shutter operation 603
Jam detection 604
Power supply 605
Power-supply route 605
Protection function 605
HP Booklet Maker/Finisher accessory 606
Basic operation 606
Basic operation of the stacker unit 606
Electrical circuitry of the stacker unit 606
Basic operation of the booklet maker unit 607
Electrical circuitry for the booklet maker unit 608
Feed drive system 608
Paper-delivery path (booklet maker only) 613
Basic operation for the booklet maker 614
Control of the inlet flappers 618
Control of paper movement 621
Alignment of paper 623
Control the phase of the crescent roller 625
Overview of folding 627
Control of stack movement 628
Fold the stack 628
Double folding a stack 631
Intermediate-process-tray assembly 632
Staple operation 633
Stapler unit 633
Stapling operation 634
Stitcher (stapler) unit 634
Stack operation 635
Jam detection 635
Detect jams in the stacker unit 636
Detect jams in the booklet maker unit 636
Power supply 637
Power-supply route for the stacker unit 637
Protective function for the stacker unit 638
Power-supply route for the booklet maker unit 638
Protective function for the booklet maker unit 638
Specifications 639
Accessory specifications 639
Stapler/stacker output-bin capacities 644
Booklet-maker output-bin capacities 645
Removal and replacement 646

Intermediate paper-transfer unit (IPTU) 646
IPTU 646
Reverse guide 648
Rear cover 649
Upper-guide assembly 652
Damper unit 653
Right-belt drive unit 654
Left-belt drive unit 657
Finisher-lock assembly 659
IPTU paper-feed motor 1 661
IPTU paper-feed motor 2 662
IPTU driver PCA 663
Booklet maker and stapler/stacker 664
Identify the booklet maker and stapler/stacker 664
Remove the booklet maker and stapler/stacker from the printer 665
External covers 668
Entrance lower-guide assembly 668
Front door 669
Rear cover 670
Front-foot cover 671
Rear-foot cover 671
Front inside-upper cover 672
Front inside-lower cover (booklet maker only) 673
Left-upper cover 674
Top door 676
Grate-shaped upper guide 678
Move output bins 1 and 2 679
Grate-shaped lower guide 681
PCA cover 682
Drive system 683
Stapler 683
Stapler assembly 685
Swing unit 688
Upper crossmember unit 692
Saddle unit (booklet maker only) 695
Saddle-stapler assembly (booklet maker only) 699
Positioning plate unit (inner side-plate assembly) (booklet maker only) 700
Document feed system 703
Operation-tray assembly 703
Output-bin 1 708
Output-bin 2 710
Upper output bin (stapler-stacker only) 712
Buffer rollers 713

Booklet-delivery output bin (booklet maker only) 714
Booklet-delivery output bin unit (booklet maker only) 715
Return roller unit 716
Pressure roller unit 718
Entrance upper guide unit 723
Upper-delivery guide (booklet maker only) 725
Inlet feed unit (stapler-stacker only) 726
Inlet feed unit (booklet maker only) 729
Paper-folding roller (booklet maker only) 732
Electrical system 737
Stacker controller PCA 737
Saddle-stitcher controller PCA (booklet maker only) 738
Solve problems 739
Intermediate paper-transfer unit (IPTU) 739
..... 739
Stapler/stacker and booklet maker 739
Individual component diagnostics 739
Manual sensor test 739
Component test 740
LED diagnostics 741
Diagrams 743
Cross sections 743
Sensors 746
Microswitches 750
Solenoids 752
Motors 754
Clutches 756
PCA 757
Variable resistors, LED, and check pins 760
Circuit diagrams 763
Adjustments 768
Adjust the alignment position 768
Adjust the staple position 768
Adjust the folding position to the stitch position (Booklet maker only) 770
Adjust the stitcher unit 773

9 Parts and diagrams

Order parts, accessories, and supplies 778
Order directly from HP 778
Order directly through the software 778
Customer self-repair parts 780
Customer self-repair parts 780
Service documentation 781

Part numbers 781
Accessories 781
Print cartridges 782
Image drums 782
Maintenance kits 782
Memory 782
Cables and interfaces 783
Printer 784
Printer unit 784
Printer parts 785
Input accessories 832
Input trays 832
Output accessories 850
Intermediate paper-transfer unit (IPTU) 850
Stapler/stacker and booklet-maker 858
Alphabetical parts list 926
Numerical parts list 952

Appendix A Service and support

Hewlett-Packard limited warranty statement 979
Print cartridge and image drum limited warranty statement 981
Color LaserJet Fuser Kit, Transfer Kit, and Roller Kit Limited Warranty Statement 982
Customer self repair warranty service 983
Customer support 984
Availability of support and service 985
HP maintenance agreements 985
On-site service agreements 985
Priority onsite service 985
Next-day onsite service 985
Weekly (volume) on-site service 985

Appendix B Product specifications

Physical specifications 988
Electrical specifications 989
Acoustic specifications 990
Environmental specifications 991

Appendix C Regulatory information

FCC regulations 994
Environmental product stewardship program 995
Protecting the environment 995
Ozone production 995
Power consumption 995

Paper use 995
Plastics 995
HP LaserJet print supplies 995
Return and recycling instructions 996
United States and Puerto Rico 996
Multiple returns (more than one cartridge) 996
Single returns 996
Shipping 996
Non-U.S. returns 996
Paper 996
Material restrictions 996
Disposal of waste equipment by users in private households in the European Union 997
Material Safety Data Sheet (MSDS) 997
For more information 998
Declaration of Conformity 999
Certificate of volatility 1000
Types of memory 1000
Volatile memory 1000
Non-volatile memory 1000
Hard-disk-drive memory 1000
Safety statements 1001
Laser safety 1001
Canadian DOC regulations 1001
VCCI statement (Japan) 1001
Power cord statement (Japan) 1001
EMI statement (Korea) 1001
Laser statement for Finland 1002
Substances Table (China) 1003

Index 1005

List of tables

Table 1-1 Product guides 2
Table 1-2 Product models 3
Table 1-3 Features 4
Table 2-1 Embedded Jetdirect and EIO <X> Jetdirect menus 38
Table 3-1 Supported paper and print media sizes 52
Table 3-2 Supported envelopes and postcards 53
Table 3-3 Supported paper and print media sizes for the optional HP 3-bin Stapler/Stacker and HP Booklet Maker/Finisher accessories 53
Table 3-4 Tray 1 paper information 56
Table 3-5 Trays 2, 3, 4, and 5 paper information 56
Table 3-6 3-bin stapler/stacker features 69
Table 3-7 Booklet-maker finisher features 69
Table 5-1 Sequence of operation 114
Table 5-2 Solenoids 121
Table 5-3 Switches 121
Table 5-4 Sensors 122
Table 5-5 Motors 123
Table 5-6 Fans 125
Table 5-7 Fuser components 126
Table 5-8 Converted DC voltages 131
Table 5-9 High-voltage power supply circuits 132
Table 5-10 Primary-transfer-roller engagement states 148
Table 5-11 ITB unit detection 149
Table 5-12 Image-stabilization controls 153
Table 5-13 Switches and sensors for the pickup, feed, and delivery system 156
Table 5-14 Motors and solenoids for the pickup, feed, and delivery system 158
Table 5-15 Main operations within the pickup-and-feed system 160
Table 5-16 Switch states for paper-size detection 162
Table 5-17 Duplexing-unit components 175
Table 5-18 Jams that the product detects 177
Table 5-19 Electrical components for the optional input trays 180
Table 7-1 Pre-troubleshooting checklist 342
Table 7-2 Troubleshooting flowchart 345
Table 7-3 Important information on the configuration pages 352

Table 7-4 Control-panel messages 357
Table 7-5 Causes and solutions for delivery delay jam 431
Table 7-6 Causes and solutions for fuser delivery delay jams 433
Table 7-7 Causes and solutions for wrapping jams 433
Table 7-8 Causes and solutions for fuser delivery stationary jams 433
Table 7-9 Causes and solutions for residual media jams 434
Table 7-10 Causes and solutions for pickup delay jams 2 434
Table 7-11 Causes and solutions for pickup stationary jam 435
Table 7-12 Causes and solutions for fuser delivery stationary jam 435
Table 7-13 Causes and solutions for duplexing reverse jams 1 440
Table 7-14 Causes and solutions for duplexing reverse jams 2 440
Table 7-15 Causes and solutions for duplexing repickup jams 1 440
Table 7-16 Causes and solutions for residual media jams 441
Table 7-17 Causes and solutions for duplexing repickup jams 2 441
Table 7-18 Causes and solutions for pickup delay jam 1: tray pickup 445
Table 7-19 Causes and solutions for pickup stationary jams 445
Table 7-20 Causes and solutions for pickup delay jam 1; MP-tray pickup 449
Table 7-21 Causes and solutions for pickup stationary jams 449
Table 7-22 Causes and solutions for pickup delay jam 455
Table 7-23 Causes and solutions for delivery delay jams 1 460
Table 7-24 Causes and solutions for delivery delay jams 2 461
Table 7-25 Causes and solutions for delivery stationary jams 461
Table 7-26 Communication check 493
Table 7-27 Paper-path sensors diagnostic tests 499
Table 7-28 N-media-sensor test values 500
Table 7-29 Manual sensor diagnostic tests 502
Table 7-30 Manual sensor test 2 diagnostic tests 502
Table 7-31 Component test details 504
Table 7-32 Sensors 518
Table 7-33 Fans 525
Table 7-34 Motors 526
Table 7-35 Solenoids 531
Table 7-36 Switches 534
Table 7-37 Input/output signals to and from DC Controller PCA 550
Table 8-1 Components of the IPTU 581
Table 8-2 IPTU components 582
Table 8-3 Motors for the stack job offset 592
Table 8-4 Sensors for the stack job offset 592
Table 8-5 Sensors used in stapling 596
Table 8-6 Motors used in stapling 596
Table 8-7 Output-bin-1-shift area sensor PCA 603
Table 8-8 Output-bin-2-shift area sensor PCA 603
Table 8-9 Sensors and paper sizes 618
Table 8-10 Solenoids and paper sizes 619

Table 8-11 Stapling and stacking specifications (stapler/stacker and booklet maker) 639
Table 8-12 Specifications for booklet making (Booklet maker only) 642
Table 8-13 Stapler/stacker output-bin capacities 644
Table 8-14 Booklet-maker output-bin capacities 645
Table 8-15 Manual sensor test letter designations 739
Table 8-16 Component test motors and solenoids 740
Table 8-17 LED 741
Table 8-18 Stapler/stacker cross-sectional view 743
Table 8-19 Booklet maker cross-sectional view highlighting the stapling/stacking paper path 744
Table 8-20 Booklet maker cross-sectional view highlighting the booklet-making paper path 745
Table 8-21 Sensors (booklet maker) 748
Table 8-22 Microswitches (stapler/stacker) 750
Table 8-23 Microswitches (booklet maker) 751
Table 8-24 Solenoids (stapler/stacker) 752
Table 8-25 Solenoids (booklet maker) 753
Table 8-26 Motors (stapler/stacker) 754
Table 8-27 Motors (booklet maker) 755
Table 8-28 Clutches (stapler/stacker) 756
Table 8-29 PCA (stapler/stacker) 757
Table 8-30 PCA (booklet maker) 759
Table 8-31 SW504 settings 772
Table 8-32 Do not use the following setting. 773
Table 9-1 Printer external covers and panels 787
Table 9-2 Printer front-door assembly 789
Table 9-3 Printer right-door assembly 791
Table 9-4 Printer internal components (1 of 7) 793
Table 9-5 Printer internal components (2 of 7) 795
Table 9-6 Printer internal components (3 of 7) 797
Table 9-7 Printer internal components (4 of 7) 799
Table 9-8 Printer internal components (5 of 7) 803
Table 9-9 Printer internal components (6 of 7) 805
Table 9-10 Printer internal components (7 of 7) 807
Table 9-11 Printer multi-purpose-drive assembly 809
Table 9-12 Printer lifter-drive assembly 811
Table 9-13 Printer cassette 813
Table 9-14 Printer cassette paper-pickup assembly 815
Table 9-15 Printer multi-purpose paper-pickup assembly 817
Table 9-16 Printer multi-purpose-tray assembly 819
Table 9-17 Printer multi-purpose-guide assembly 821
Table 9-18 Printer face-down paper-delivery assembly 823
Table 9-19 Printer duplexing-reverse assembly 825
Table 9-20 Printer duplexing-tray assembly 827
Table 9-21 Printer duplexing-feed assembly 829
Table 9-22 Printer PCA assembly location 831

Table 9-23 Input-tray main body (1x500-sheet) 835
Table 9-24 Input-tray main body (3x500-sheet) 839
Table 9-25 Input-tray auto-close assembly 843
Table 9-26 Input-tray cassette 845
Table 9-27 Input-tray paper-pickup assembly 847
Table 9-28 Input-tray PCA assembly 849
Table 9-29 Intermediate-feed main body 851
Table 9-30 Intermediate-feed lower-guide assembly 853
Table 9-31 Intermediate-feed upper-guide assembly 855
Table 9-32 PCA assembly 857
Table 9-33 External panels and covers (stapler/stacker) 861
Table 9-34 External panels and covers (booklet-maker) 863
Table 9-35 Finisher main body (stapler/stacker and booklet-maker) 869
Table 9-36 Output bin 1 (stack upper-tray assembly) (stapler/stacker) 873
Table 9-37 Output bin 1 (stack upper-tray assembly) (booklet-maker) 877
Table 9-38 Output bin 2 (stack lower-tray assembly) (stapler/stacker and booklet-maker) 881
Table 9-39 Top output bin (stack sub-tray assembly) (stapler/stacker) 883
Table 9-40 Operation-tray assembly (stapler/stacker and booklet-maker) 885
Table 9-41 Paper-feeder motor assembly (stapler/stacker and booklet-maker) 887
Table 9-42 Return-roller assembly (stapler/stacker and booklet-maker) 889
Table 9-43 Pressure-roller assembly (stapler/stacker and booklet-maker) 891
Table 9-44 Swing-guide assembly (stapler/stacker and booklet-maker) 893
Table 9-45 Entrance upper-guide assembly (stapler/stacker and booklet-maker) 895
Table 9-46 Staple assembly (stapler/stacker and booklet-maker) 897
Table 9-47 Saddle assembly (booklet-maker) 903
Table 9-48 Saddle-tray assembly (booklet-maker) 907
Table 9-49 Saddle-guide assembly (booklet-maker) 909
Table 9-50 Saddle-stapler assembly (booklet-maker) 911
Table 9-51 Saddle paper-feeder assembly (stapler/stacker) 913
Table 9-52 Saddle paper-feeder assembly (booklet-maker) 915
Table 9-53 Pass lower-guide assembly (booklet-maker) 917
Table 9-54 Inner side-plate assembly (booklet-maker) 919
Table 9-55 Saddle paper-delivery assembly (booklet-maker) 921
Table 9-56 Motor-mount assembly (booklet-maker) 923
Table 9-57 PCA assembly 925
Table 9-58 Alphabetical parts list 926
Table 9-59 Numerical parts list 952
Table B-1 Product dimensions 988
Table B-2 Product dimensions, with all doors and trays fully opened 988
Table B-3 Power requirements (HP Color LaserJet CP6015 Series) 989
Table B-4 Power consumption HP Color LaserJet CP6015 Series (average, in watts), ... 989
Table B-5 Sound power and pressure level (HP Color LaserJet CP6015 Series) 990

List of figures

Figure 1-1 Sample model and serial number label 10
Figure 3-1 3-bin stapler/stacker accessory 70
Figure 3-2 Booklet-maker finisher accessory 71
Figure 4-1 Supply item locations 85
Figure 4-2 Location of product components that require cleaning 104
Figure 4-3 Location of components that require cleaning 105
Figure 4-4 Location of IPTU components that require cleaning 106
Figure 5-1 Relationship between the main product systems 114
Figure 5-2 Engine-control system 119
Figure 5-3 DC controller block diagram 120
Figure 5-4 Fuser components 126
Figure 5-5 Fuser temperature-control circuit 127
Figure 5-6 Low-voltage power-supply circuit 130
Figure 5-7 High-voltage power supply circuits 132
Figure 5-8 Laser/scanner system 134
Figure 5-9 Image-formation system 136
Figure 5-10 Image-formation process 137
Figure 5-11 Pre-exposure 138
Figure 5-12 Primary charging 138
Figure 5-13 Laser-beam exposure 139
Figure 5-14 Development 139
Figure 5-15 Primary transfer 140
Figure 5-16 Secondary transfer 140
Figure 5-17 Separation 141
Figure 5-18 Fusing 141
Figure 5-19 ITB cleaning 142
Figure 5-20 Drum cleaning 142
Figure 5-21 Print-cartridge system 143
Figure 5-22 Imaging-drum system 145
Figure 5-23 Developing-roller engagement and disengagement control 146
Figure 5-24 ITB unit 147
Figure 5-25 Three states of primary-transfer-roller engagement and disengagement 149
Figure 5-26 Secondary-transfer-roller unit 151
Figure 5-27 Toner patterns for calibration 152

Figure 5-28 Color-sensor control 154
Figure 5-29 Gray-axis correction 155
Figure 5-30 Switches and sensors for the pickup, feed, and delivery system 156
Figure 5-31 Motors and solenoids for the pickup, feed, and delivery system 158
Figure 5-32 Three main units of the pickup, feed, and delivery system 159
Figure 5-33 Cassette-pickup mechanism 161
Figure 5-34 Cassette paper-size detection switches 162
Figure 5-35 Cassette lift mechanism 164
Figure 5-36 Paper-level-detection mechanism 165
Figure 5-37 Multifeed prevention 166
Figure 5-38 Multipurpose tray pickup mechanism 167
Figure 5-39 Multipurpose tray last-paper detection 168
Figure 5-40 Paper-feed mechanism 169
Figure 5-41 Skew-feed prevention 170
Figure 5-42 Media sensor unit 171
Figure 5-43 Loop-control mechanism 173
Figure 5-44 Pressure-roller pressurization control 174
Figure 5-45 Duplexing unit 175
Figure 5-46 Optional input trays 179
Figure 5-47 Signals for the input trays 180
Figure 5-48 Paper-feeder pickup and feed operation 182
Figure 6-1 Screwdrivers 187
Figure 6-2 Removal sequence 1 flowchart 209
Figure 6-3 Remove the secondary transfer unit (1 of 9) 210
Figure 6-4 Remove the secondary transfer unit (2 of 9) 210
Figure 6-5 Remove the secondary transfer unit (3 of 9) 211
Figure 6-6 Remove the secondary transfer unit (4 of 9) 211
Figure 6-7 Remove the secondary transfer unit (5 of 9) 212
Figure 6-8 Remove the secondary transfer unit (6 of 9) 212
Figure 6-9 Remove the secondary transfer unit (7 of 9) 213
Figure 6-10 Remove the secondary transfer unit (8 of 9) 213
Figure 6-11 Remove the secondary transfer unit (9 of 9) 214
Figure 6-12 Remove the multipurpose drive unit (1 of 7) 215
Figure 6-13 Remove the multipurpose drive unit (2 of 7) 215
Figure 6-14 Remove the multipurpose drive unit (3 of 7) 216
Figure 6-15 Remove the multipurpose drive unit (4 of 7) 216
Figure 6-16 Remove the multipurpose drive unit (5 of 7) 217
Figure 6-17 Remove the multipurpose drive unit (6 of 7) 217
Figure 6-18 Remove the multipurpose drive unit (7 of 7) 218
Figure 6-19 Remove the multipurpose-tray guide unit 219
Figure 6-20 Remove the cassette (Tray-2) pickup unit 220
Figure 6-21 Removal sequence 2 flowchart 221
Figure 6-22 Remove rear-left cover 222
Figure 6-23 Remove rear-right cover 223

Figure 6-24 Remove rear cover (1 of 2) 224
Figure 6-25 Remove rear cover (2 of 2) 224
Figure 6-26 Remove the low-voltage power supply unit 225
Figure 6-27 Remove the high-voltage power supply PCA (A) (1 of 3) 226
Figure 6-28 Remove the high-voltage power supply PCA (A) (2 of 3) 226
Figure 6-29 Remove the high-voltage power supply PCA (A) (3 of 3) 227
Figure 6-30 Remove the lifter drive unit (1 of 2) 228
Figure 6-31 Remove the lifter drive unit (2 of 2) 228
Figure 6-32 Unlocked position of the lifter drive unit (correct) 229
Figure 6-33 Locked position of the lifter drive unit (incorrect) 229
Figure 6-34 Remove the fuser motor 230
Figure 6-35 Remove the intermediate-transfer belt (ITB) motor 231
Figure 6-36 Remove face-down output bin 232
Figure 6-37 Remove left cover (1 of 2) 233
Figure 6-38 Remove left cover (2 of 2) 233
Figure 6-39 Remove the laser/scanner-fan duct (1 of 3) 234
Figure 6-40 Remove the laser/scanner-fan duct (2 of 3) 234
Figure 6-41 Remove the laser/scanner-fan duct (3 of 3) 235
Figure 6-42 Remove the print-cartridge driver PCA (1 of 3) 236
Figure 6-43 Remove the print-cartridge driver PCA (2 of 3) 236
Figure 6-44 Remove the print-cartridge driver PCA (3 of 3) 237
Figure 6-45 Removal sequence 3 flowchart 238
Figure 6-46 Remove rear-left cover 239
Figure 6-47 Remove face-down output bin 240
Figure 6-48 Remove left cover (1 of 2) 241
Figure 6-49 Remove left cover (2 of 2) 241
Figure 6-50 Remove the high-voltage power supply PCA (B) (1 of 3) 242
Figure 6-51 Remove the high-voltage power supply PCA (B) (2 of 3) 242
Figure 6-52 Remove the high-voltage power supply PCA (B) (3 of 3) 243
Figure 6-53 Remove the formatter case (1 of 3) 244
Figure 6-54 Remove the formatter case (2 of 3) 244
Figure 6-55 Remove the formatter case (3 of 3) 245
Figure 6-56 Remove the DC controller PCA (1 of 2) 246
Figure 6-57 Remove the DC controller PCA (2 of 2) 247
Figure 6-58 Remove the environmental sensors 248
Figure 6-59 Removal sequence 4 flowchart 249
Figure 6-60 Remove rear-left cover 250
Figure 6-61 Remove rear-right cover 251
Figure 6-62 Remove rear cover (1 of 2) 252
Figure 6-63 Remove rear cover (2 of 2) 252
Figure 6-64 Remove face-down output bin 253
Figure 6-65 Remove left cover (1 of 2) 254
Figure 6-66 Remove left cover (2 of 2) 254
Figure 6-67 Remove the print-cartridge driver PCA (1 of 3) 255

Figure 6-68 Remove the print-cartridge driver PCA (2 of 3) 255
Figure 6-69 Remove the print-cartridge driver PCA (3 of 3) 256
Figure 6-70 Remove the image-drum motor (1 of 3) 257
Figure 6-71 Remove the image-drum motor (2 of 3) 257
Figure 6-72 Remove the image-drum motor (3 of 3) 258
Figure 6-73 Remove the fuser fan 259
Figure 6-74 Remove the print-cartridge feed motor (black) 260
Figure 6-75 Remove the print-cartridge feed motor (yellow, magenta, and cyan) 261
Figure 6-76 Remove the cartridge fan unit (1 of 2) 262
Figure 6-77 Remove the cartridge fan unit (2 of 2) 262
Figure 6-78 Remove the laser/scanner fan unit (1 of 2) 263
Figure 6-79 Remove the laser/scanner fan unit (2 of 2) 263
Figure 6-80 Remove the fuser power-supply unit (1 of 2) 264
Figure 6-81 Remove the fuser power-supply unit (2 of 2) 264
Figure 6-82 Remove the primary-transfer-roller disengagement motor (1 of 2) 265
Figure 6-83 Remove the primary-transfer-roller disengagement motor (2 of 2) 265
Figure 6-84 Removal sequence 4 Sub-1 flowchart 266
Figure 6-85 Remove the print-cartridge drive unit (yellow and magenta) 267
Figure 6-86 Gear alignment (1 of 7) 268
Figure 6-87 Gear alignment (2 of 7) 268
Figure 6-88 Gear alignment (3 of 7) 269
Figure 6-89 Gear alignment (4 of 7) 269
Figure 6-90 Gear alignment (5 of 7) 270
Figure 6-91 Correct position of print-cartridge drive unit (6 of 7) 271
Figure 6-92 Incorrect position of print-cartridge drive unit (7 of 7) 271
Figure 6-93 Remove the print-cartridge drive unit (cyan and black) 272
Figure 6-94 Remove the print-cartridge interface PCA (cyan and black) 273
Figure 6-95 Remove the main drive unit (1 of 3) 274
Figure 6-96 Remove the main drive unit (2 of 3) 274
Figure 6-97 Print-cartridge interface PCA (yellow and magenta) 276
Figure 6-98 Remove the cartridge-fan duct 277
Figure 6-99 Removal sequence 5 flowchart 278
Figure 6-100 Remove rear-left cover 279
Figure 6-101 Remove face-down output bin 280
Figure 6-102 Remove rear-upper cover 281
Figure 6-103 Remove the control panel (1 of 2) 282
Figure 6-104 Remove the control panel (2 of 2) 283
Figure 6-105 Front-upper cover 284
Figure 6-106 Remove right-upper cover 285
Figure 6-107 Remove and replace the duplex switchback tray 286
Figure 6-108 Remove reverse cover (1 of 4) 287
Figure 6-109 Remove reverse cover (2 of 4) 287
Figure 6-110 Remove reverse cover (3 of 4) 288
Figure 6-111 Remove reverse cover (4 of 4) 288

Figure 6-112 Remove the VOC fan 289
Figure 6-113 Remove the duplexing reverse unit 290
Figure 6-114 Remove the face-down delivery unit (1 of 3) 291
Figure 6-115 Remove the face-down delivery unit (2 of 3) 291
Figure 6-116 Remove the face-down delivery unit (3 of 3) 292
Figure 6-117 Remove face-down cover 293
Figure 6-118 Remove the laser/scanner assembly (yellow and magenta) (1 of 3) 295
Figure 6-119 Remove the laser/scanner assembly (yellow and magenta) (2 of 3) 295
Figure 6-120 Remove the laser/scanner assembly (yellow and magenta) (3 of 3) 296
Figure 6-121 Remove the laser/scanner assembly (cyan and black) (1 of 3) 297
Figure 6-122 Remove the laser/scanner assembly (cyan and black) (2 of 3) 297
Figure 6-123 Remove the laser/scanner assembly (cyan and black) (3 of 3) 298
Figure 6-124 Remove front door 299
Figure 6-125 Remove front-inner cover 300
Figure 6-126 Remove front-door assembly 301
Figure 6-127 Remove the color-misregistration and image-density sensor unit (1 of 3) 302
Figure 6-128 Remove the color-misregistration and image-density sensor unit (2 of 3) 302
Figure 6-129 Remove the color-misregistration and image-density sensor unit (3 of 3) 303
Figure 6-130 Remove the pressure-release sensor unit (1 of 2) 304
Figure 6-131 Remove the pressure-release sensor unit (2 of 2) 304
Figure 6-132 Removal sequence 6 flowchart 305
Figure 6-133 Remove rear-left cover 306
Figure 6-134 Remove rear-right cover 307
Figure 6-135 Remove right-upper cover 307
Figure 6-136 Remove right-door assembly (1 of 4) 308
Figure 6-137 Remove right-door assembly (2 of 4) 308
Figure 6-138 Remove right-door assembly (3 of 4) 309
Figure 6-139 Remove right-door assembly (4 of 4) 309
Figure 6-140 Remove the duplexing feed unit (1 of 3) 310
Figure 6-141 Remove the duplexing feed unit (2 of 3) 310
Figure 6-142 Remove the duplexing feed unit (3 of 3) 311
Figure 6-143 Remove the multipurpose tray (1 of 5) 312
Figure 6-144 Remove the multipurpose tray (2 of 5) 312
Figure 6-145 Remove the multipurpose tray (3 of 5) 313
Figure 6-146 Remove the multipurpose tray (4 of 5) 313
Figure 6-147 Remove the multipurpose tray (5 of 5) 314
Figure 6-148 Removal sequence 7 flowchart 315
Figure 6-149 Remove the thermopile unit (1 of 2) 316
Figure 6-150 Remove the thermopile unit (2 of 2) 316
Figure 6-151 Remove front-lower cover 317
Figure 6-152 Remove the ITB duct (1 of 2) 318
Figure 6-153 Remove the ITB duct (2 of 2) 318
Figure 6-154 Remove the right door (1 of 2) 319
Figure 6-155 Remove the right door (2 of 2) 320

Figure 6-156 Remove the lower-rear cover (1 of 2) 321
Figure 6-157 Remove the lower rear cover (2 of 2) 321
Figure 6-158 Remove the front-right cover (1 of 2) 322
Figure 6-159 Remove the front-right cover (2 of 2) 322
Figure 6-160 Remove the right cover 323
Figure 6-161 Remove the front-upper cover 324
Figure 6-162 Remove the lower-left cover 325
Figure 6-163 Remove the front-lower cover (1 of 2) 326
Figure 6-164 Remove the front-lower cover (2 of 2) 326
Figure 6-165 Remove the box (1 of 2) 327
Figure 6-166 Remove the box (2 of 2) 327
Figure 6-167 Remove the pickup unit (1 of 3) 328
Figure 6-168 Remove the pickup unit (1 of 3) 329
Figure 6-169 Remove the pickup unit (2 of 3) 329
Figure 6-170 Remove the pickup unit (2 of 3) 330
Figure 6-171 Remove the auto-close unit (1 of 2) 331
Figure 6-172 Remove the auto-close unit (2 of 2) 331
Figure 6-173 Remove the pickup motor 332
Figure 6-174 Remove the paper-feeder driver PCA 333
Figure 6-175 Remove the pickup unit (middle cassette) (1 of 2) 335
Figure 6-176 Remove the pickup unit (middle cassette) (2 of 2) 335
Figure 6-177 Remove the pickup unit (upper cassette) (1 of 3) 336
Figure 6-178 Remove the pickup unit (upper cassette) (1 of 3) 337
Figure 6-179 Remove the pickup unit (upper cassette) (2 of 3) 337
Figure 6-180 Remove the pickup unit (upper cassette) (3 of 3) 338
Figure 7-1 Configuration page 349
Figure 7-2 HP embedded Jetdirect page 350
Figure 7-3 Embedded protocol page 351
Figure 7-4 Sample event log 423
Figure 7-5 Jam locations 429
Figure 7-6 Locations of Jam sensors 431
Figure 7-7 Paper-deck sensors 455
Figure 7-8 IPTU paper sensors 460
Figure 7-9 Print-quality troubleshooting procedure 485
Figure 7-10 Yellow print-quality troubleshooting page 486
Figure 7-11 Yellow comparison page 486
Figure 7-12 Black print-quality troubleshooting page 487
Figure 7-13 Engine-test button 495
Figure 7-14 Front and right door switch on the right side 498
Figure 7-15 Front-door switch on the left side 498
Figure 7-16 DC controller PCA 511
Figure 7-17 Cartridge driver PCA 511
Figure 7-18 Fuser control PCA 512
Figure 7-19 Duplexing driver PCA 512

Figure 7-20 Input-tray driver PCA 513
Figure 7-21 IPTU driver PCA 513
Figure 7-22 Product connector locations (1 of 6) 514
Figure 7-23 Product connector locations (2 of 6) 514
Figure 7-24 Product connector locations (3 of 6) 515
Figure 7-25 Product connector locations (4 of 6) 515
Figure 7-26 Product connector locations (5 of 6) 516
Figure 7-27 Product connector locations (6 of 6) 516
Figure 7-28 1 x 500-sheet input tray 517
Figure 7-29 3 x 500-sheet input tray (1 of 2) 517
Figure 7-30 3 x 500-sheet input tray (2 of 2) 518
Figure 7-31 IPTU 518
Figure 7-32 Product sensor locations (1 of 3) 520
Figure 7-33 Product sensor locations (2 of 3) 521
Figure 7-34 Product sensor locations (3 of 3) 522
Figure 7-35 1 x 500-sheet input-tray sensor locations 523
Figure 7-36 3 x 500-sheet input-tray sensor locations (1 of 2) 523
Figure 7-37 3 x 500-sheet input-tray sensor locations (2 of 2) 524
Figure 7-38 IPTU sensor locations 524
Figure 7-39 Product fan locations 526
Figure 7-40 Product motor locations (1 of 2) 528
Figure 7-41 Product motor locations (2 of 2) 529
Figure 7-42 1 x 500-sheet input tray motor locations 530
Figure 7-43 3 x 500-sheet input tray motor locations 530
Figure 7-44 IPTU motor locations 531
Figure 7-45 Product solenoid locations 532
Figure 7-46 1 x 500-sheet input-tray solenoid locations 533
Figure 7-47 3 x 500-sheet input-tray solenoid locations 533
Figure 7-48 Product switch locations 534
Figure 7-49 1 x 500-sheet input-tray switch locations 535
Figure 7-50 3 x 500-sheet input-tray switch locations (1 of 2) 535
Figure 7-51 3 x 500-sheet input-tray switch locations (2 of 2) 536
Figure 7-52 Main assemblies (1 of 2) 537
Figure 7-53 Main assemblies (2 of 2) 539
Figure 7-54 Main parts 540
Figure 7-55 PCAs 541
Figure 7-56 1 x 500-sheet input tray 542
Figure 7-57 3 x 500-sheet input tray 543
Figure 7-58 IPTU 544
Figure 7-59 General timing chart 545
Figure 7-60 General circuit diagram (1 of 4) 546
Figure 7-61 General circuit diagram (2 of 4) 546
Figure 7-62 General circuit diagram (3 of 4) 547
Figure 7-63 General circuit diagram (4 of 4) 548

Figure 8-1 Paper path of the IPTU 580
Figure 8-2 Signal flow in the IPTU 581
Figure 8-3 Motors and sensors of the IPTU 582
Figure 8-4 Basic operation of the stapler/stacker 583
Figure 8-5 Electrical circuitry of the stapler/stacker 584
Figure 8-6 Electrical circuitry of the stapler/stacker 584
Figure 8-7 Output bins of the stapler/stacker 585
Figure 8-8 Stacker controller PCA (1 of 2) 586
Figure 8-9 Stacker controller PCA (2 of 2) 587
Figure 8-10 Paper path when set to non-sort 588
Figure 8-11 Paper path for sizes other than A4, B5, or LTR 589
Figure 8-12 Paper path (1 of 5) 590
Figure 8-13 Paper path (2 of 5) 590
Figure 8-14 Paper path (3 of 5) 590
Figure 8-15 Paper path (4 of 5) 591
Figure 8-16 Paper path (5 of 5) 591
Figure 8-17 Motors and sensors for stack job offset 592
Figure 8-18 Stack job offset example 592
Figure 8-19 Process output bin 593
Figure 8-20 Job offset operation (1 of 2) 593
Figure 8-21 Job offset operation (2 of 2) 594
Figure 8-22 Stack trailing-edge assist operation 594
Figure 8-23 Stack delivery 595
Figure 8-24 Stapler unit 595
Figure 8-25 Staple location 596
Figure 8-26 Paper path for stapling 597
Figure 8-27 Rollers and sensors for stapling 597
Figure 8-28 Paper path 598
Figure 8-29 Shift process for the staple unit 598
Figure 8-30 Stapling operation (1 of 2) 599
Figure 8-31 Stapling operation (2 of 2) 599
Figure 8-32 Front 1-point stapling 600
Figure 8-33 Rear 1-point stapling 600
Figure 8-34 2-point stapling 601
Figure 8-35 Items detected by the area sensors (PS981, PS982, PS983) 602
Figure 8-36 Output-bin components 603
Figure 8-37 Shutter location 604
Figure 8-38 Jam detection sensors 605
Figure 8-39 Power-supply route 605
Figure 8-40 Stacker unit basics 606
Figure 8-41 Electrical circuitry of the stacker unit 607
Figure 8-42 Booklet maker unit basics 607
Figure 8-43 Electrical circuitry for the booklet maker unit 608
Figure 8-44 Feed drive for the stacker unit 608

Figure 8-45 Feed drive for the booklet maker unit 609
Figure 8-46 Components of the stacker unit control system (1 of 2) 610
Figure 8-47 Components of the stacker unit control system (2 of 2) 610
Figure 8-48 Components of the booklet-maker-unit control system 612
Figure 8-49 Components of the booklet-maker control system 613
Figure 8-50 Booklet-maker-unit paper path 614
Figure 8-51 Paper delivery for booklet maker 615
Figure 8-52 Alignment plates 615
Figure 8-53 Stitching the stack 616
Figure 8-54 Position the stack 617
Figure 8-55 Fold and deliver the stack 618
Figure 8-56 A3/279 mm x 432 mm 11 x 17 paper path (3 sheets) 619
Figure 8-57 B4/LGL paper path (3 sheets) 620
Figure 8-58 A4R/LTRR Paper Path (3 sheets) 620
Figure 8-59 Paper movement (1 of 3) 622
Figure 8-60 Paper movement (2 of 3) 622
Figure 8-61 Paper movement (3 of 3) 622
Figure 8-62 Paper alignment (1 of 8) 623
Figure 8-63 Paper alignment (2 of 8) 623
Figure 8-64 Paper alignment (3 of 8) 623
Figure 8-65 Paper alignment (4 of 8) 624
Figure 8-66 Paper alignment (5 of 8) 624
Figure 8-67 Paper alignment (6 of 8) 625
Figure 8-68 Paper alignment (7 of 8) 625
Figure 8-69 Paper alignment (8 of 8) 625
Figure 8-70 Crescent-roller process (1 of 4) 626
Figure 8-71 Crescent-roller process (2 of 4) 626
Figure 8-72 Crescent-roller process (3 of 4) 627
Figure 8-73 Crescent-roller process (4 of 4) 627
Figure 8-74 Movement of the stack 628
Figure 8-75 Stack sequence 628
Figure 8-76 Folding position (1 of 5) 629
Figure 8-77 Folding process (2 of 5) 629
Figure 8-78 Folding start position (3 of 5) 630
Figure 8-79 Folding start position (4 of 5) 630
Figure 8-80 Folding stop position (5 of 5) 630
Figure 8-81 Double-folding process (1 of 5) 631
Figure 8-82 Double-folding process (2 of 5) 631
Figure 8-83 Double-folding process (3 of 5) 631
Figure 8-84 Double-folding process (4 of 5) 632
Figure 8-85 Double-folding process (5 of 5) 632
Figure 8-86 Location of the staplers 633
Figure 8-87 Stapling operation (1 of 2) 633
Figure 8-88 Stapling operation (2 of 2) 634

Figure 8-89 Stitcher unit 635
Figure 8-90 Sequence of stitching 635
Figure 8-91 Rotation of the cam 635
Figure 8-92 Jams in the stacker unit 636
Figure 8-93 Jams in the booklet maker unit 637
Figure 8-94 Power-supply route for the stacker unit 637
Figure 8-95 Power supply route for the booklet maker unit 638
Figure 8-96 Stapling position 642
Figure 8-97 Staple and folding position 644
Figure 8-98 Remove IPTU 646
Figure 8-99 Remove IPTU 646
Figure 8-100 Correct placement of the IPTU (1 of 2) 647
Figure 8-101 Incorrect placement of the IPTU (2 of 2) 647
Figure 8-102 Remove the reverse guide 648
Figure 8-103 Remove the rear cover (1 of 4) 649
Figure 8-104 Remove the rear cover (2 of 4) 649
Figure 8-105 Remove the rear cover (3 of 4) 650
Figure 8-106 Remove the rear cover (4 of 4) 650
Figure 8-107 Reassemble the rear cover 651
Figure 8-108 Remove upper-guide assembly (1 of 2) 652
Figure 8-109 Remove upper-guide assembly (2 of 2) 652
Figure 8-110 Remove the damper unit 653
Figure 8-111 Remove the right-belt drive unit (1 of 6) 654
Figure 8-112 Remove the right-belt drive unit (2 of 6) 654
Figure 8-113 Remove the right-belt drive unit (3 of 6) 655
Figure 8-114 Remove the right-belt drive unit (4 of 6) 655
Figure 8-115 Remove the right-belt drive unit (5 of 6) 656
Figure 8-116 Remove the right-belt drive unit (6 of 6) 656
Figure 8-117 Remove the left-belt drive unit (1 of 3) 657
Figure 8-118 Remove the left-belt drive unit (2 of 3) 658
Figure 8-119 Remove the left-belt drive unit (3 of 3) 658
Figure 8-120 Remove the finisher-lock assembly (1 of 3) 659
Figure 8-121 Remove the finisher-lock assembly (2 of 3) 660
Figure 8-122 Remove the finisher-lock assembly (3 of 3) 660
Figure 8-123 Remove the IPTU paper-feed motor 1 661
Figure 8-124 Remove the IPTU paper-feed motor 2 662
Figure 8-125 Remove the IPTU driver PCA 663
Figure 8-126 Booklet maker and stapler/stacker (1 of 2) 664
Figure 8-127 Booklet maker and stapler/stacker (2 of 2) 664
Figure 8-128 Remove output accessory (1 of 5) 665
Figure 8-129 Remove output accessory (2 of 5) 665
Figure 8-130 Remove output accessory (3 of 5) 666
Figure 8-131 Remove output accessory (4 of 5) 666
Figure 8-132 Remove output accessory (5 of 5) 667

Figure 8-133 Remove entrance lower-guide assembly (1 of 2) 668
Figure 8-134 Remove entrance lower-guide assembly (2 of 2) 668
Figure 8-135 Remove the front door 669
Figure 8-136 Remove the rear cover (1 of 2) 670
Figure 8-137 Remove the rear cover (2 of 2) 670
Figure 8-138 Remove the front-foot cover 671
Figure 8-139 Remove the rear-foot cover 671
Figure 8-140 Remove the front inside-upper cover 672
Figure 8-141 Remove the front inside-lower cover (1 of 2) 673
Figure 8-142 Remove the front inside-lower cover (2 of 2) 673
Figure 8-143 Remove the left-upper cover (1 of 3) 674
Figure 8-144 Remove the left-upper cover (2 of 3) 675
Figure 8-145 Remove the left-upper cover (3 of 3) 675
Figure 8-146 Remove the top door (1 of 3) 676
Figure 8-147 Remove the top door (2 of 3) 676
Figure 8-148 Remove the top door (3 of 3) 677
Figure 8-149 Remove the grate-shaped upper guide 678
Figure 8-150 Move output bins (1 of 3) 679
Figure 8-151 Move output bins (2 of 3) 679
Figure 8-152 Move output bins (3 of 3) 680
Figure 8-153 Remove grate-shaped lower guide 681
Figure 8-154 Remove the PCA cover 682
Figure 8-155 Remove stapler (1 of 3) 683
Figure 8-156 Remove stapler (2 of 3) 684
Figure 8-157 Remove stapler (3 of 3) 684
Figure 8-158 Remove stapler assembly (1 of 5) 685
Figure 8-159 Remove stapler assembly (2 of 5) 685
Figure 8-160 Remove stapler assembly (3 of 5) 686
Figure 8-161 Remove stapler assembly (4 of 5) 686
Figure 8-162 Remove stapler assembly (5 of 5) 687
Figure 8-163 Remove the swing unit (1 of 6) 688
Figure 8-164 Remove the swing unit (2 of 6) 689
Figure 8-165 Remove the swing unit (3 of 6) 689
Figure 8-166 Remove the swing unit (4 of 6) 690
Figure 8-167 Remove the swing unit (5 of 6) 690
Figure 8-168 Remove the swing unit (6 of 6) 691
Figure 8-169 Remove the upper crossmember unit (1 of 5) 692
Figure 8-170 Remove the upper crossmember unit (2 of 5) 693
Figure 8-171 Remove the upper crossmember unit (3 of 5) 693
Figure 8-172 Remove the upper crossmember unit (4 of 5) 694
Figure 8-173 Remove the upper crossmember unit (5 of 5) 694
Figure 8-174 Remove the saddle unit (1 of 7) 695
Figure 8-175 Remove the saddle unit (2 of 7) 696
Figure 8-176 Remove the saddle unit (3 of 7) 696

Figure 8-177 Remove the saddle unit (4 of 7) 697
Figure 8-178 Remove the saddle unit (5 of 7) 697
Figure 8-179 Remove the saddle unit (6 of 7) 698
Figure 8-180 Remove the saddle unit (7 of 7) 698
Figure 8-181 Remove the saddle-stapler assembly 699
Figure 8-182 Remove the positioning plate unit (1 of 5) 700
Figure 8-183 Remove the positioning plate unit (2 of 5) 701
Figure 8-184 Remove the positioning plate unit (3 of 5) 701
Figure 8-185 Remove the positioning plate unit (4 of 5) 702
Figure 8-186 Remove the positioning plate unit (5 of 5) 702
Figure 8-187 Remove the operation-tray assembly (1 of 6) 704
Figure 8-188 Remove the operation-tray assembly (2 of 6) 704
Figure 8-189 Remove the operation-tray assembly (3 of 6) 705
Figure 8-190 Remove the operation-tray assembly (4 of 6) 705
Figure 8-191 Remove the operation-tray assembly (5 of 6) 706
Figure 8-192 Remove the operation-tray assembly (6 of 6) 707
Figure 8-193 Correct position of sheet 707
Figure 8-194 Remove output-bin 1 (1 of 3) 708
Figure 8-195 Remove output-bin 1 (2 of 3) 709
Figure 8-196 Remove output-bin 1 (3 of 3) 709
Figure 8-197 Remove output-bin 2 (1 of 3) 710
Figure 8-198 Remove output-bin 2 (2 of 3) 711
Figure 8-199 Remove output-bin 2 (3 of 3) 711
Figure 8-200 Remove the upper output bin 712
Figure 8-201 Remove buffer rollers 713
Figure 8-202 Remove booklet-delivery output bin (1 of 2) 714
Figure 8-203 Remove booklet-delivery output bin (2 of 2) 714
Figure 8-204 Remove the saddle-delivery output bin (1 of 3) 715
Figure 8-205 Remove the saddle delivery output bin (2 of 3) 715
Figure 8-206 Remove the saddle delivery output bin (3 of 3) 716
Figure 8-207 Remove the return roller unit (1 of 2) 717
Figure 8-208 Remove the return roller unit (2 of 2) 717
Figure 8-209 Remove the pressure roller unit (1 of 8) 718
Figure 8-210 Remove the pressure roller unit (2 of 8) 719
Figure 8-211 Remove the pressure roller unit (3 of 8) 719
Figure 8-212 Remove the pressure roller unit (4 of 8) 720
Figure 8-213 Remove the pressure roller unit (5 of 8) 720
Figure 8-214 Remove the pressure roller unit (6 of 8) 721
Figure 8-215 Remove the pressure roller unit (7 of 8) 721
Figure 8-216 Remove the pressure roller unit (8 of 8) 722
Figure 8-217 Remove the entrance upper guide unit (1 of 3) 723
Figure 8-218 Remove the entrance upper guide unit (2 of 3) 724
Figure 8-219 Remove the entrance upper guide unit (3 of 3) 724
Figure 8-220 Remove the upper-delivery guide 725

Figure 8-221 Remove the inlet feed unit (1 of 4) 726
Figure 8-222 Remove the inlet feed unit (2 of 4) 727
Figure 8-223 Remove the inlet feed unit (3 of 4) 727
Figure 8-224 Remove the inlet feed unit (4 of 4) 728
Figure 8-225 Remove the inlet feed unit (1 of 4) 729
Figure 8-226 Remove the inlet feed unit (2 of 4) 730
Figure 8-227 Remove the inlet feed unit (3 of 4) 730
Figure 8-228 Remove the inlet feed unit (4 of 4) 731
Figure 8-229 Remove the paper-folding roller (1 of 9) 732
Figure 8-230 Remove the paper-folding roller (2 of 9) 733
Figure 8-231 Remove the paper-folding roller (3 of 9) 733
Figure 8-232 Remove the paper-folding roller (4 of 9) 734
Figure 8-233 Remove the paper-folding roller (5 of 9) 734
Figure 8-234 Remove the paper-folding roller (6 of 9) 735
Figure 8-235 Remove the paper-folding roller (7 of 9) 735
Figure 8-236 Remove the paper-folding roller (8 of 9) 736
Figure 8-237 Remove the paper-folding roller (9 of 9) 736
Figure 8-238 Remove the stacker controller PCA 737
Figure 8-239 Remove the saddle-stitcher controller PCA 738
Figure 8-240 LEDs on the output accessories 741
Figure 8-241 Stapler/stacker cross-sectional view 743
Figure 8-242 Booklet maker cross-sectional view highlighting the stapling/stacking paper path 744
Figure 8-243 Booklet maker cross-sectional view highlighting the booklet-making paper path 745
Figure 8-244 Sensors (stapler/stacker) 746
Figure 8-245 Sensors (booklet maker) 748
Figure 8-246 Microswitches (stapler/stacker) 750
Figure 8-247 Microswitches (booklet maker) 751
Figure 8-248 Solenoids (stapler/stacker) 752
Figure 8-249 Solenoids (booklet maker) 753
Figure 8-250 Motors (stapler/stacker) 754
Figure 8-251 Motors (booklet maker) 755
Figure 8-252 Clutches (stapler/stacker) 756
Figure 8-253 PCA (stapler/stacker) 757
Figure 8-254 Stacker controller PCA 758
Figure 8-255 PCA (booklet maker) 758
Figure 8-256 Saddle-stitcher controller PCA 760
Figure 8-257 Stacker controller PCA switches 761
Figure 8-258 Saddle-stitcher controller PCA switches 761
Figure 8-259 Stapler/stacker stacker controller PCA circuit diagram (1 of 2) 763
Figure 8-260 Stacker controller PCA circuit diagram (2 of 2) 763
Figure 8-261 Saddle-stitcher controller PCA circuit diagram (1 of 2) 765
Figure 8-262 Saddle-stitcher controller PCA circuit diagram (2 of 2) 765
Figure 8-263 Saddle-stitcher controller PCA circuit diagram 766
Figure 8-264 SW4 settings 768

Figure 8-265 SW4 settings 769
Figure 8-266 SW504 settings 770
Figure 8-267 Mark the paper 770
Figure 8-268 Folding position adjustment (1 of 2) 771
Figure 8-269 Folding position adjustment (2 of 2) 771
Figure 8-270 Positive and negative width adjustment 772
Figure 8-271 Adjust the stitcher (1 of 6) 773
Figure 8-272 Adjust the stitcher (1 of 6) 773
Figure 8-273 Adjust the stitcher (2 of 6) 774
Figure 8-274 Adjust the stitcher (3 of 6) 774
Figure 8-275 Adjust the stitcher (5 of 6) 774
Figure 8-276 Adjust the stitcher (6 of 6) 775
Figure 9-1 Printer-unit major assemblies (1 of 2) 784
Figure 9-2 Printer-unit major assemblies (2 of 2) 785
Figure 9-3 Printer external covers and panels 786
Figure 9-4 Printer front-door assembly 788
Figure 9-5 Printer right-door assembly 790
Figure 9-6 Printer internal components (1 of 7) 792
Figure 9-7 Printer internal components (2 of 7) 794
Figure 9-8 Printer internal components (3 of 7) 796
Figure 9-9 Printer internal components (4 of 7) 798
Figure 9-10 Printer internal components (5 of 7) 802
Figure 9-11 Printer internal components (6 of 7) 804
Figure 9-12 Printer internal components (7 of 7) 806
Figure 9-13 Printer multi-purpose-drive assembly 808
Figure 9-14 Printer lifter-drive assembly 810
Figure 9-15 Printer cassette 812
Figure 9-16 Printer cassette paper-pickup assembly 814
Figure 9-17 Printer multi-purpose paper-pickup assembly 816
Figure 9-18 Printer multi-purpose-tray assembly 818
Figure 9-19 Printer multi-purpose-guide assembly 820
Figure 9-20 Printer face-down paper-delivery assembly 822
Figure 9-21 Printer duplexing-reverse assembly (duplex model) 824
Figure 9-22 Printer duplexing-tray assembly (duplex model) 826
Figure 9-23 Printer duplexing-feed assembly (duplex model) 828
Figure 9-24 Printer PCA assembly location 830
Figure 9-25 Input-tray units (1x500-sheet and 3x500-sheet) 832
Figure 9-26 Input-tray main body (1x500-sheet) 834
Figure 9-27 Input-tray main body (3x500-sheet) 838
Figure 9-28 Input-tray auto-close assembly 842
Figure 9-29 Input-tray cassette 844
Figure 9-30 Input-tray paper-pickup assembly 846
Figure 9-31 Input-tray PCA assembly 848
Figure 9-32 Intermediate-feed main body 850

Figure 9-33 Intermediate-feed lower-guide assembly 852
Figure 9-34 Intermediate-feed upper-guide assembly 854
Figure 9-35 PCA assembly 856
Figure 9-36 Stapler/stacker unit 858
Figure 9-37 Booklet-maker (multi-function finisher) whole unit 859
Figure 9-38 External panels and covers (stapler/stacker) 860
Figure 9-39 External panels and covers (booklet-maker) 862
Figure 9-40 Finisher main body (1 of 5) (stapler/stacker and booklet-maker) 864
Figure 9-41 Finisher main body (2 of 5) (stapler/stacker and booklet-maker) 864
Figure 9-42 Finisher main body (3 of 5) (stapler/stacker and booklet-maker) 865
Figure 9-43 Finisher main body (4 of 5) (stapler/stacker and booklet-maker) 867
Figure 9-44 Finisher main body (5 of 5) (stapler/stacker and booklet-maker) 868
Figure 9-45 Output bin 1 (stack upper-tray assembly) (1 of 2) (stapler/stacker) 871
Figure 9-46 Output bin 1 (stack upper-tray assembly) (2 of 2) (stapler/stacker) 872
Figure 9-47 Output bin 1 (stack upper-tray assembly) (1 of 2) (booklet-maker) 874
Figure 9-48 Output bin 1 (stack upper-tray assembly) (2 of 2) (booklet-maker) 876
Figure 9-49 Output bin 2 (stack lower-tray assembly) (1 of 2) (stapler/stacker and booklet-maker) 878
Figure 9-50 Output bin 2 (stack lower-tray assembly) (2 of 2) (stapler/stacker and booklet-maker) 880
Figure 9-51 Top output bin (stack sub-tray assembly) (stapler/stacker) 882
Figure 9-52 Operation-tray assembly (1 of 2) (stapler/stacker and booklet-maker) 883
Figure 9-53 Operation-tray assembly (2 of 2) (stapler/stacker and booklet-maker) 884
Figure 9-54 Paper-feeder motor assembly (stapler/stacker and booklet-maker) 886
Figure 9-55 Return-roller assembly (stapler/stacker and booklet-maker) 888
Figure 9-56 Pressure-roller assembly (stapler/stacker and booklet-maker) 890
Figure 9-57 Swing-guide assembly (stapler/stacker and booklet-maker) 892
Figure 9-58 Entrance upper-guide assembly (stapler/stacker and booklet-maker) 894
Figure 9-59 Staple assembly (stapler/stacker and booklet-maker) 896
Figure 9-60 Saddle assembly (1 of 4) (booklet-maker) 898
Figure 9-61 Saddle assembly (2 of 4) (booklet-maker) 898
Figure 9-62 Saddle assembly (3 of 4) (booklet-maker) 899
Figure 9-63 Saddle assembly (4 of 4) (booklet-maker) 902
Figure 9-64 Saddle-tray assembly (booklet-maker) 906
Figure 9-65 Saddle-guide assembly (booklet-maker) 908
Figure 9-66 Saddle-stapler assembly (booklet-maker) 910
Figure 9-67 Saddle paper-feeder assembly (stapler/stacker) 912
Figure 9-68 Saddle paper-feeder assembly (booklet-maker) 914
Figure 9-69 Pass lower-guide assembly (booklet-maker) 916
Figure 9-70 Inner side-plate assembly (booklet-maker) 918
Figure 9-71 Saddle paper-delivery assembly (booklet-maker) 920
Figure 9-72 Motor-mount assembly (booklet-maker) 922
Figure 9-73 PCA assembly 924

1 Product basics

- Quick access to product information
- Product comparison
- Product features
- Product walkaround
- Supported operating systems

Quick access to product information

Use the following Web sites to find information about the product:

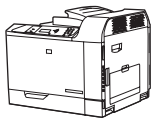
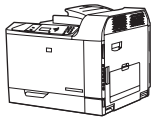
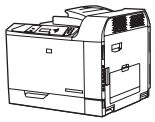
- www.hp.com/support/cljcp6015

Table 1-1 Product guides

Guide	Description
Getting Started Guide	Provides step-by-step instructions for installing and setting up the product.
User Guide	Provides detailed information for using the product and for problem solving. Available on the product CD or in **Program Group** if the software is installed on a computer.
HP Easy Printer Care	To check the product status and settings, and to view problem solving information and online documentation, use HP Easy Printer Care. You must have performed a recommended software installation in order to use HP Easy Printer Care. See the user guide for more information about software installation.
HP ToolboxFX (HP Color LaserJet CP6015 Series Printer)	To check the product status and settings, and to view problem solving information and online documentation, use HP ToolboxFX. You must have performed a recommended software installation in order to use HP ToolboxFX. See the user guide for more information about software installation.
Online Help	Provides information about options that are available in the printer drivers. To view a Help file, open the online Help through the printer driver.

Product comparison

Table 1-2 Product models

Model	Features
HP Color LaserJet CP6015n 	• 100-sheet multipurpose input tray (Tray 1) • 500-sheet input tray (Tray 2) • HP Jetdirect embedded print server for connecting to a 10/100Base-TX network • 512 megabytes (MB) of random access memory (RAM)
HP Color LaserJet CP6015dn 	• 100-sheet multipurpose input tray (Tray 1) • 500-sheet input tray (Tray 2) • HP Jetdirect embedded print server for connecting to a 10/100Base-TX network • 512 megabytes (MB) of random access memory (RAM) • Duplexer
HP Color LaserJet CP6015de 	• 100-sheet multipurpose input tray (Tray 1) • 500-sheet input tray (Trays 2) • HP Jetdirect embedded print server for connecting to a 10/100Base-TX network • 512 megabytes (MB) of random access memory (RAM) • Duplexer • Meets ENERGY STAR® guidelines, Version 1.0
HP Color LaserJet CP6015x 	• 100-sheet multipurpose input tray (Tray 1) • Two 500-sheet input trays (Trays 2 and 3) • HP Jetdirect embedded print server for connecting to a 10/100Base-TX network • 512 megabytes (MB) of random access memory (RAM) • Duplexer
HP Color LaserJet CP6015xh 	• 100-sheet multipurpose input tray (Tray 1) • Four 500-sheet input trays (Trays 2, 3, 4, and 5) • HP Jetdirect embedded print server for connecting to a 10/100Base-TX network • 512 megabytes (MB) of random access memory (RAM) • Duplexer • 40 gigabyte (GB) hard drive.

Product features

Table 1-3 Features

Speed and throughput	• Print up to 40 pages per minute (ppm) on letter-size paper and 41 ppm on A4-size paper. • Less than 11 seconds to print the first page • Recommended maximum monthly print volume of 4,000 to 17,000 pages • A 835 megahertz (MHz) microprocessor • Banner printing • Duplex at speed
Resolution	• 600 dots per inch (dpi) with Image Resolution Enhancement technology 4800 for optimum overall imaging • 1200 x 600 dpi for detailed line work and small text
Memory	• Models HP Color LaserJet CP6015n, HP Color LaserJet CP6015dn, and HP Color LaserJet CP6015de have 512 MB of random-access memory (RAM), expandable to 1 gigabyte (GB) by using 200-pin small outline dual inline memory modules (SODIMM) that support 128, 256, or 512 MB of RAM. Models HP Color LaserJet CP6015x and HP Color LaserJet CP6015xh have 512 MB of RAM, expandable to 1 GB. • Memory Enhancement technology (MEt) automatically compresses data to use RAM more efficiently.
User interface	• Four-line graphical display on the control panel • An embedded Web server to gain access to support and order supplies (for network-connected products) • HP Easy Printer Care software (a Web-based status and troubleshooting tool) • Internet-enabled supply-ordering capabilities through HP Easy Printer Care software and embedded Web server
Paper-handling	• **Input** ◦ **Tray 1 (multipurpose tray):** A multipurpose tray for paper, transparencies, labels, banner media, envelopes, and other paper types. See Supported paper types on page 56 for a list of paper types. The tray holds up to 100 sheets of paper, 50 transparencies, or 10 envelopes. See Supported paper and print media sizes on page 52. ◦ **Trays 2, 3, 4, and 5:** 500-sheet trays. These trays automatically detect common paper sizes and allow printing on custom-size paper. Tray 2 supports up to 279 x 432 mm (11 x 17 inches) and A3 paper sizes, and Trays 3, 4, and 5 support sizes up to 305 x 457 mm (12 x 18 inches), and SRA3. See Supported paper and print media sizes on page 52 for a list of supported paper sizes. For a list of supported paper types, see Supported paper types on page 56. ◦ **Duplex printing:** Provides automatic two-sided printing (printing on both sides of the paper). Not available on the HP Color LaserJet CP6015n model. This model cannot be upgraded to auto duplex.

Table 1-3 Features (continued)

	The paper size range for automatic duplex printing is 175 mm to 320 mm (6.9 to 12.6 inches) x 210 mm to 457 mm (8.3 to 18 inches). The media weight range is 60–220 g/m^2 (16-58 lb). • **Output** ◦ **Standard output bin:** The standard output bin is located on the top of the product. This bin can hold up to 500 sheets of paper. The product has a sensor that indicates when the bin is full. ◦ **Optional 3-bin stapler/stacker:** Provides job separation in multiple output bins, convenient stapling (up to 50-sheet jobs), job offset capability, and additional output capacity. The stacker has three bins: a 100-sheet bin, a 500-sheet bin, and a 1000-sheet bin. ◦ **Optional booklet maker finisher:** Provides convenient stapling (up to 50-sheet jobs), saddle-stitching (up to 15-sheet booklets), single-sheet v-folding, job separation and offset capability, as well as additional output capacity. The booklet maker finisher has three bins: two 1000-sheet bins and one bin that can hold up to 25 saddle-stitched booklets. **NOTE:** The output bin capacities are based on 75 g/m^2 (20 lb) paper. Heavier paper decreases the capacity.
Languages and fonts	• HP Printer Control Language (PCL) 6 • HP Universal Printer Driver (UPD) PCL 5 • HP UPD postscript (PS) • Printer Management Language • 93 internal TrueType fonts scalable in HP PCL drivers. 93 internal scalable fonts in HP Postscript level 3 emulation (Euro symbols built in). Additional font solutions available via third-party flash memory products.
Print cartridges/image drums (4 of each)	• Two-part toner/imaging system • Black print cartridges print up to 16,500 pages; Cyan, Magenta, or Yellow print cartridges print up to 21,000 pages each. Based on ISO standards. • Image drums print up to 35,000 pages at 5% coverage • Authentic HP print cartridge detection • Automatic toner strip remover
Supported operating systems	• Microsoft® Windows® 2000, Windows® XP, and Windows Vista™ • Macintosh OS X, V10.2.8 , V10.3, V10.4, V10.5, and later • Novell NetWare • Unix® • Linux
Connectivity	• Local area network (LAN) connector (RJ-45) for the embedded HP Jetdirect print server • Two enhanced input/output (EIO) slots • USB 2.0 connection

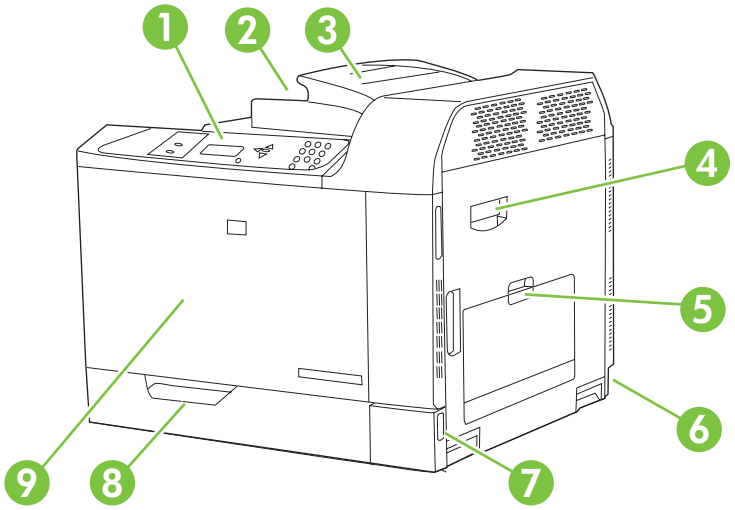
Table 1-3 Features (continued)

Environmental features	• Sleep setting saves energy • High content of recyclable components and materials
Security features	• Secure Disk Erase • Security lock (optional) • Job retention • User PIN authentication for stored jobs • IPv6 security

Product walkaround

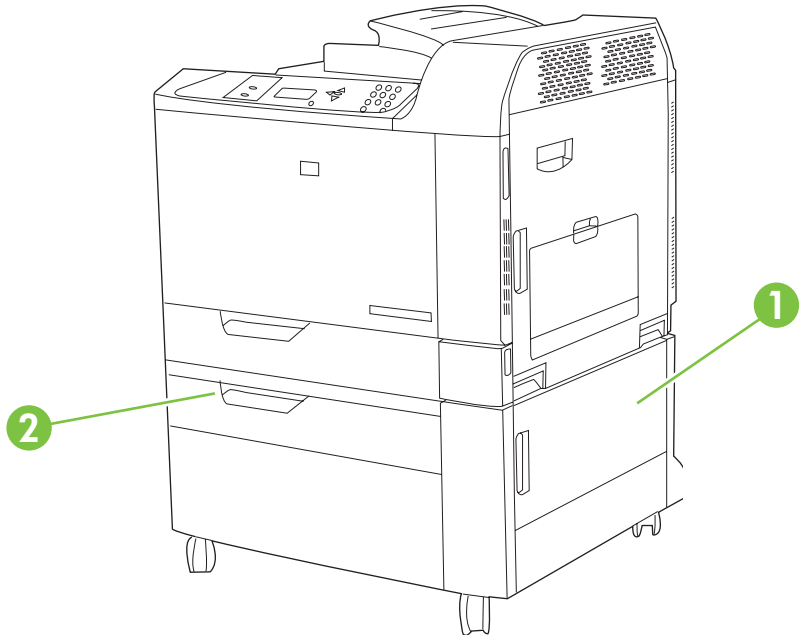
Front view

HP Color LaserJet CP6015n, HP Color LaserJet CP6015dn, and HP Color LaserJet CP6015de



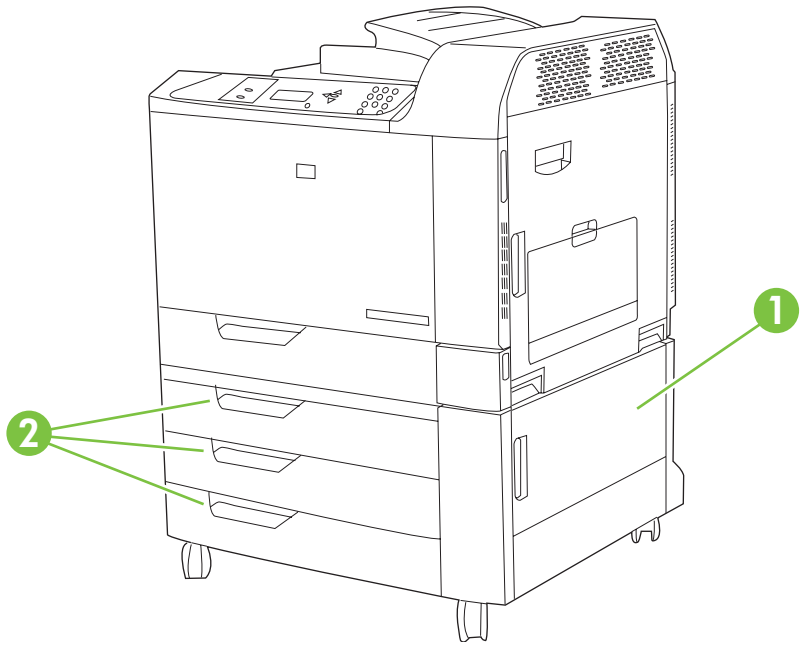
1	Control-panel display
2	Output bin (holds approximately 500 sheets of paper)
3	Duplex switchback tray (HP Color LaserJet CP6015dn and HP Color LaserJet CP6015de only)
4	Right door (provides access for clearing paper jams and replacing parts)
5	Tray 1 (100-sheet multi-purpose tray)
6	Power connection
7	On/Off switch
8	Tray 2 (500-sheet input tray)
9	Front cover (provides access to the print cartridges and image drums)

HP Color LaserJet CP6015x



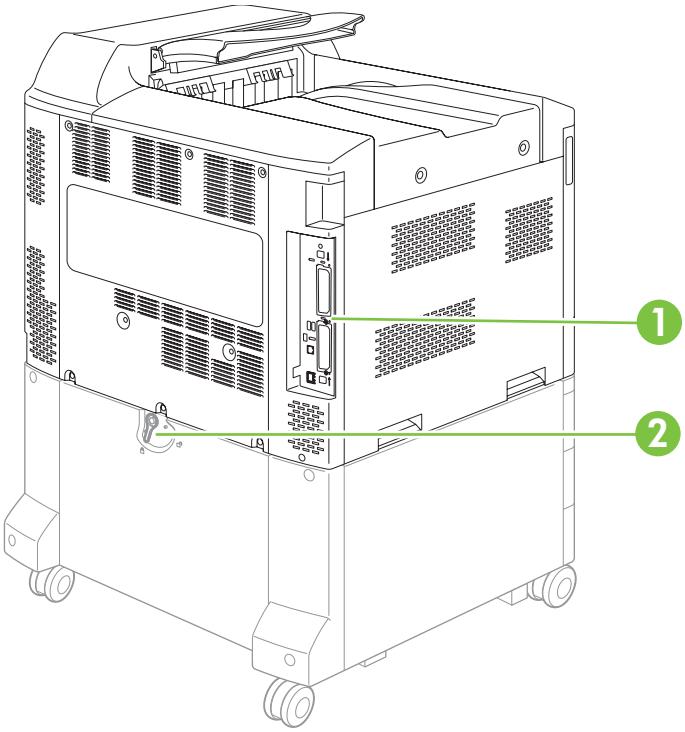
1	Lower right door
2	Tray 3 (500-sheet input tray)

HP Color LaserJet CP6015xh



1	Lower right door
2	Trays 3, 4, and 5 (500-sheet input trays)

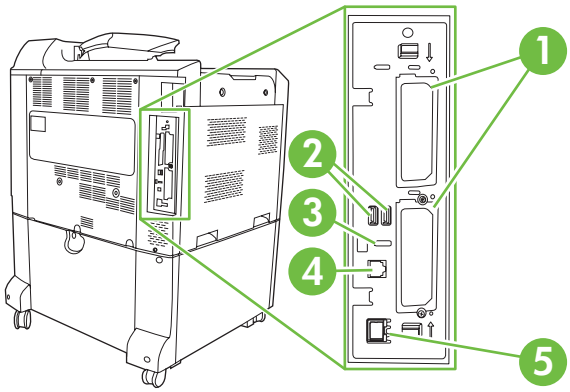
Back view



1	Interface ports
2	Lock lever for additional input bins (HP Color LaserJet CP6015x and HP Color LaserJet CP6015xh only)

Interface ports

The product has up to 4 ports (2 standard) for connecting to a computer or a network. The ports are at the left, rear corner of the product.

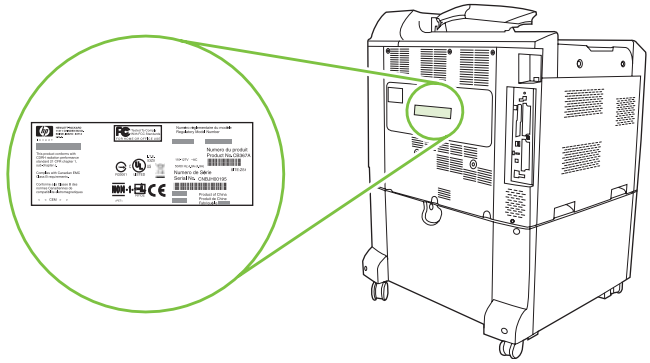


1	Two EIO interface expansion slots
2	Access port for Kensington lock
3	USB 2.0 port
4	Network connection (embedded HP Jetdirect print server)

Serial number and model number location

The model number and serial number are listed on identification labels located on the rear of the product. The serial number contains information about the country/region of origin, the product version, production code, and the production number of the product.

Figure 1-1 Sample model and serial number label



Model name	Model number
HP Color LaserJet CP6015n	Q3931A
HP Color LaserJet CP6015dn	Q3932A
HP Color LaserJet CP6015de	Q3935A
HP Color LaserJet CP6015x	Q3933A
HP Color LaserJet CP6015xh	Q3934A

Supported operating systems

The product supports the following operating systems:

- Windows XP (32-bit and 64-bit)
- Windows Server 2003 (32-bit and 64-bit)
- Windows 2000
- Windows Vista
- Mac OS X V10.2.8, V10.3, V10.4 and later

2 Control panel

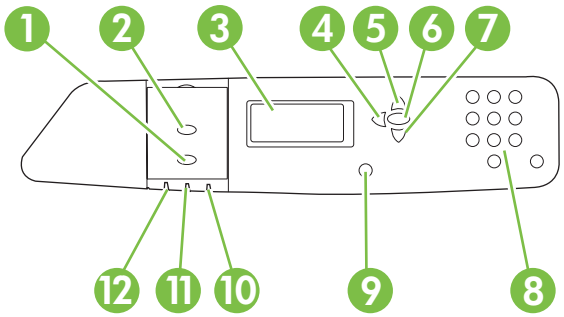
- Use the control panel
- Control panel menus
- Menu hierarchy
- Show Me How menu
- Retrieve job menu
- Information menu
- Paper handling menu
- Configure device menu
- Diagnostics menu
- Service menu

Use the control panel

The control panel has a text display that provides access to all product functions. Use the buttons and numeric keypad to control jobs and the product status. The lights indicate overall product status.

Control-panel layout

The control panel includes a text display, job-control buttons, a numeric keypad, and three light-emitting diode (LED) status lights.



1	Stop button	Halts the current job, presents a choice to resume or cancel the current job, clears paper from the product, and clears any continuable errors that are associated with the halted job. If the product is not printing a job, pressing Stop pauses the product.
2	Menu button	Opens and closes menus.
3	Display	Shows status information, menus, help information, and error messages.
4	Back arrow (⮌) button	Navigates backward in nested menus.
5	Up arrow (▲) button	Navigates menus and text, and increases the values of numerical items in the display.
6	Checkmark (✓) button	Makes selections, resumes printing after continuable errors, and overrides a non-HP print cartridge.
7	Down arrow (▼) button	Navigates menus and text, and decreases the values of numerical items in the display.
8	Numeric keypad	Allows you to type numeric values for PINs and other numeric values.
9	Help (?) button	Provides detailed information about product messages or menus.
10	Attention light	The Attention light indicates that the product has a condition that requires intervention. Examples include an empty paper tray or an error message on the display.
11	Data light	The Data light indicates that the product is receiving data.
12	Ready light	The Ready light indicates that the product is ready to begin processing any job.

Interpreting control panel indicator lights

Indicator	On	Off	Flashing
Ready (green)	Product is online (able to accept and process data).	Product is offline or is turned off.	Product is attempting to stop printing and go offline.
Data (green)	Processed data is present in the product, but more data is needed to complete the job.	Product is not processing or receiving data.	Product is processing and receiving data.
Attention (amber)	A critical error has occurred. Product requires attention.	No conditions exist that require attention.	An error has occurred. Product requires attention.

Control panel menus

You can perform most routine printing tasks from the computer through the printer driver or software application. This is the most convenient way to control the product, and will override the product control-panel settings. See the help files associated with the software.

You can also control the product by changing settings in the product's control panel. Use the control panel to access features not supported by the printer driver or software application, and to configure trays for paper size and type.

Getting started basics

- Enter the menus by pressing the Menu button.
- Select a menu item by using the checkmark button ✓.
- Use the up or down arrows ▲▼ to navigate through the menus. In addition to menu navigation, the up and down arrows can increase and decrease numerical value selections. Hold down the up or down arrows to scroll faster.
- The back button ⮌ allows you to move back in menu selections as well as select numerical values when configuring the product.
- Exit all menus by pressing Menu.
- If no key is pressed for 60 seconds, the product returns to the **Ready** state.

Menu hierarchy

The following tables list the hierarchies of each menu.

Open the menus

Press Menu.

Press the up arrow ▲ or down arrow ▼ button to navigate the listings.

Press the checkmark button ✓ to select the appropriate option.

The following top-level menus are available:

- **SHOW ME HOW**. See Show Me How menu on page 18 for more information.
- **RETRIEVE JOB**. See Retrieve job menu on page 19 for more information.
- **INFORMATION**. See Information menu on page 20 for more information.
- **PAPER HANDLING**. See Paper handling menu on page 21 for more information.
- **CONFIGURE DEVICE**. See Configure device menu on page 22 for more information.
- **DIAGNOSTICS**. See Diagnostics menu on page 45 for more information.
- **SERVICE**. See Service menu on page 49 for more information.

Show Me How menu

The **SHOW ME HOW** menu prints a page that provides more information about the product.

To display: Press Menu, and then select **SHOW ME HOW**.

Item	Explanation
PRINT HELP GUIDE	Prints a page that shows links to additional help on the Web.

Retrieve job menu

The **RETRIEVE JOB** menu allows you to view listings of all stored jobs.

To display: Press Menu, and then select **RETRIEVE JOB**.

Item	Sub-item	Options	Description
USER <X>			Each user who has stored jobs is listed by name. Select the appropriate user name to see a list of stored jobs.
	ALL PRIVATE JOBS		This message is displayed if a user has stored jobs that require a PIN.
	<JOB NAME>		Each job is listed by name.
		PRINT	Select this option to print a stored job. When printing a private job, the user is prompted to enter a PIN.
		COPIES	The number of copies of the job to be printed. The default is 1.
		DELETE	Select this option to delete a stored job. When deleting a private job, the user is prompted to enter a PIN.

Information menu

Use the **INFORMATION** menu to access and print specific product information.

To display: press Menu, and then select **INFORMATION**.

Item	Description
PRINT MENU MAP	Prints the control-panel menu map, which shows the layout and current settings of the control-panel menu items.
PRINT CONFIGURATION	Prints the product configuration pages, which show the printer settings and installed accessories.
PRINT SUPPLIES STATUS PAGE	Prints the estimated remaining life for the supplies; reports statistics on total number of pages and jobs processed, serial number, page counts, and maintenance information.
SUPPLIES STATUS	Displays the status of the print cartridges, image drums, fuser kit, roller kit, and transfer kit in a scrollable list.
PRINT USAGE PAGE	Prints a count of all paper sizes that have passed through the product; lists whether they were simplex, duplex, monochrome, or color; and reports the page count.
PRINT COLOR USAGE JOB LOG	Prints the color-use statistics for the printer.
PRINT DEMO	Prints a demonstration page.
PRINT RGB SAMPLES	Prints color samples for different RGB values. Use the samples as a guide for matching printed colors.
PRINT CMYK SAMPLES	Prints color samples for different CMYK values. Use the samples as a guide for matching printed colors.
PRINT FILE DIRECTORY	Prints the name and directory of files stored in the product.
PRINT PCL FONT LIST	Prints the available PCL fonts.
PRINT PS FONT LIST	Prints the available PS fonts.

Paper handling menu

Use this menu to configure input trays by size and type. It is important to correctly configure the trays with this menu before you print for the first time.

To display: Press Menu, and then select **PAPER HANDLING**.

NOTE: If you have used other HP LaserJet product models, you might be accustomed to configuring Tray 1 to **First** mode or **Cassette** mode. On HP Color LaserJet CP6015 Series printers, setting Tray 1 to **ANY SIZE** and **ANY TYPE** is equivalent to **First** mode. Setting Tray 1 to a setting other than **ANY SIZE** or **ANY TYPE** is equivalent to **Cassette** mode.

Menu item	Value	Description
TRAY 1 SIZE	A list of available sizes appears.	Allows you to configure the paper size for Tray 1. The default is **ANY SIZE**. See Supported paper and print media sizes on page 52 for a complete list of available sizes.
TRAY 1 TYPE	A list of available types appears.	Allows you to configure the paper type for Tray 1. The default is **ANY TYPE**. See Supported paper types on page 56 for a complete list of available types.
TRAY X SIZE X = 2 or optional 3, 4, or 5	A list of available sizes appears.	Allows you to configure the paper size for Tray 2 or optional Trays 3, 4, or 5. The default size is **LETTER** or **A4**, depending on your country/region. The paper size is detected by the guides in the tray. See Supported paper and print media sizes on page 52 for a complete list of available sizes.
TRAY X TYPE X = 2 or optional 3, 4, or 5	A list of available types appears.	Allows you to configure the paper type for Tray 2 or optional Trays 3, 4, or 5. The default is **PLAIN**. See Supported paper types on page 56 for a complete list of available types.

Configure device menu

The **CONFIGURE DEVICE** menu allows you to change the default printing settings, adjust the print quality, change the system configuration and I/O options, and reset the default settings.

Printing menu

These settings affect only jobs without identified properties. Most jobs identify all of the properties and override the values set from this menu.

To display: Press Menu, select **CONFIGURE DEVICE**, and then select **PRINTING**.

Menu item	Values	Description
COPIES	Range: 1 - 32000	Allows you to set the default number of copies for print jobs. The default number is **1**.
DEFAULT PAPER SIZE	A list of available sizes appears.	Allows you to set the default paper size.
DEFAULT CUSTOM PAPER SIZE • **UNIT OF MEASURE** • **X DIMENSION** • **Y DIMENSION**		Allows you to set the default size for any custom print job. The default unit of measure is MILLIMETERS.
OVERRIDE A4/LETTER	**NO** **YES**	Allows you to set the product to print an A4 job on letter-size paper when no A4 paper is loaded. The default is **YES**.
MANUAL FEED	**OFF** **ON**	The default is **OFF**. Setting it to **ON** makes MANUAL FEED the default for jobs that do not select a tray. You can override this setting in the printer driver.
COURIER FONT	**REGULAR** **DARK**	Allows you to select a version of the Courier font. The default is **REGULAR**.
WIDE A4	**NO** **YES**	Allows you to change the printable area of A4 paper so that eighty 10-pitch characters may be printed on a single line. The default is **NO**.
PRINT PS ERRORS	**OFF** **ON**	Allows you to select to print PS error pages. The default is **OFF**.
PRINT PDF ERRORS	**OFF** **ON**	Allows you to select to print PDF error pages. The default is **OFF**.

PCL sub-menu

This menu configures settings for the printer control language.

To display: Press Menu, select **CONFIGURE DEVICE**, select **PRINTING**, and then select **PCL SUBMENU**.

Item	Description
FORM LENGTH	Sets vertical spacing from 5 to 128 lines for default paper size.
ORIENTATION	Allows you to select default page orientation to portrait or landscape.
FONT SOURCE	Selects the font source.
FONT NUMBER	The product assigns a number to each font and lists the numbers on the PCL font list. The range is 0 to 999.
FONT PITCH	Selects the font pitch. This item might not appear, depending on the font selected. The range is 0.44 to 99.99.
SYMBOL SET	Selects any one of several available symbol sets at the product control panel. A symbol set is a unique grouping of all the characters in a font. PC-8 or PC-850 is recommended for line-draw characters.
APPEND CR TO LF	Select **YES** to append a carriage return to each line-feed that is encountered in backward-compatible PCL jobs (pure text, no job control). Some environments indicate a new line by only the line-feed control code. Use this option to append the required carriage return to each line feed.
SUPPRESS BLANK PAGES	When generating your own PCL, extra form feeds are included that would cause a blank page to be printed. Select **YES** for form feeds to be ignored if the page is blank.
MEDIA SOURCE MAPPING	The PCL5 **MEDIA SOURCE MAPPING** command selects an input tray by a number that maps to the various available trays and feeders.

Print Quality menu

To display: Press Menu, select **CONFIGURE DEVICE**, and then select **PRINT QUALITY**.

Item	Sub-item	Values	Description
ADJUST COLOR	**HIGHLIGHTS** • **CYAN DENSITY** • **MAGNETA DENSITY** • **YELLOW DENSITY** • **BLACK DENSITY**	Range from **+5** to **–5**. Default is **0**.	Adjust the darkness or lightness of highlights on a printed page. Lower values represent lighter highlights on a printed page, and higher values represent darker highlights on a printed page.
	MIDTONES • **CYAN DENSITY** • **MAGNETA DENSITY** • **YELLOW DENSITY** • **BLACK DENSITY**	Range from **+5** to **–5**. Default is **0**.	Adjust the darkness or lightness of midtones on a printed page. Lower values represent lighter midtones on a printed page, and higher values represent darker midtones on a printed page.
	SHADOWS • **CYAN DENSITY** • **MAGNETA DENSITY** • **YELLOW DENSITY** • **BLACK DENSITY**	Range from **+5** to **–5**. Default is **0**.	Adjust the darkness or lightness of shadows on a printed page. Lower values represent lighter shadows on a printed page, and higher values represent darker shadows on a printed page.
	RESTORE COLOR VALUES		Restore the color settings by resetting the density values of each color.
SET REGISTRATION			Setting the registration shifts the margin alignment to center the image on the page from top to bottom and from left to right. You can also align the image on the front with the image printed on the back.
	PRINT TEST PAGE		Print a test page for setting the registration.
	SOURCE	**ALL TRAYS** **TRAY 1** **TRAY 2** **TRAY <X>** (X = 3, 4, or 5)	Select the source input tray for printing the **SET REGISTRATION** test page.
	ADJUST TRAY <X> • **X1 SHIFT** • **X2 SHIFT** • **Y SHIFT**	Shift from -20 to 20 along the X or Y axes. **0** is the default.	Perform the alignment procedure for each tray. When it creates an image, the product scans across the page from side to side as the sheet feeds from top to bottom into the product. The scan direction is referred to as X. X1 is the scan direction for the first side of a 2-sided page. X2 is the scan direction for the second side of a 2-sided page. The feed direction is referred to as Y.

Item	Sub-item	Values	Description
AUTO SENSE MODE	**TRAY 1 SENSING**	**FULL SENSING** **EXPANDED SENSING** **TRANSPARENCY ONLY**	Sets the sensing option for Tray 1 for paper types using **AUTO SENSE** mode. When **FULL SENSING** is selected, the product recognizes plain paper, heavy paper, glossy paper, tough paper, and transparencies. The product's media sensor senses every page. When **EXPANDED SENSING** is selected, the product recognizes plain paper, heavy paper, glossy paper, tough paper, and transparencies. It senses the first page only other than transparencies for which is sensed every page. All trays (1-5) have this capability. When **TRANSPARENCY ONLY** is selected, the product recognizes only overhead transparency and non-overhead transparency types.
	TRAY <X> SENSING	**EXPANDED SENSING** **TRANSPARENCY ONLY**	Sets the sensing option for Tray 2 and optional Trays 3, 4, and 5 for paper types using **AUTO SENSE** mode. When **EXPANDED SENSING** is selected, the product recognizes plain paper, glossy paper, tough paper, and transparencies. It senses the first page only other than transparencies for which is sensed every page. All trays (1-5) have this capability. When **TRANSPARENCY ONLY** is selected, the product recognizes only overhead transparency and non-overhead transparency types.
ADJUST PAPER TYPES • **<TYPE>** — List of paper types			Sometimes you may need to adjust the product for a particular paper type or environment in order to improve print quality. To override the factory-default print-mode settings for a specific paper type, select it and apply any of the three adjustments described below. In addition, you can map non-HP media types to a different print mode, although this is not recommended.
	BEST GLOSS MODE	**OFF** (default) **ON**	Turn this setting **ON** to maintain stable gloss mode performance. This setting decreases the print speed.
	RESISTANCE MODE	**NORMAL** (default) **UP** **DOWN**	**NORMAL** is the default setting. The **UP** setting raises the secondary transfer bias. Use this setting if you are seeing faded images or scattered toner on certain paper types. These problems might be worse on the second side of a printed duplex page. These problems occur more often in high-temperature and high-humidity environments, or with coated paper. Use the **DOWN** setting if you are using light weight or thin media in a low-temperature and low-humidity environment and you are experiencing highly mottled, distorted, or grainy images, or

Item	Sub-item	Values	Description
			images with toner missing. This setting reduces the secondary transfer bias.
	DISCHARGE MODE	**NORMAL** (default) **ON**	Select **ON** if you are seeing clumps of toner or toner spatter on print jobs. These problems can occur in low-temperature and low-humidity environments, with lightweight or thin paper. The problems might happen more frequently with duplex jobs.
	PRINT MODES	**AUTO SENSE MODE** (default) **NORMAL** **TRANSPARENCY MODE** **<ADDITIONAL PRINT MODES>**	Allows you to change the print mode for non-HP paper types, which can affect print quality. When **AUTO SENSE MODE** is enabled, the product media sensor picks the best print mode.
RESTORE MODES			Use this feature to return all paper type-mode settings to the factory-default settings.
OPTIMIZE	**PAPER CURL**	**NORMAL** (default) **REDUCED**	To help reduce paper curl, set this option to **REDUCED**. This decreases full speed to 10 PPM (instead of 40 ppm) and 3/4 speed to 7.5 ppm (instead of 30 ppm).
	PRE-ROTATION	**OFF** (default) **ON**	Set this feature to **ON** if horizontal streaks appear on pages. Using this feature increases the warm-up time for the product.
	FUSER TEMP	**NORMAL** (default) **ALTERNATE 1** **ALTERNATE 2** **ALTERNATE 3**	Reduces the temperature of the fuser to prevent a hot offset. If you are seeing a faint image of the page repeated at the bottom of the page or on the following page, you should first make sure the Paper Type and Print Mode settings are correct for the type of paper you are using. If you continue to see ghost images on your print jobs, set the Fuser Temp feature to one of the Alternate settings. Try the Alternate 1 setting first and see if it solves the problem. If you continue to see the problem, try Alternate 2 and then Alternate 3. With the Alternate 2 and Alternate 3 settings you may see an extra delay between jobs.
	TRAY 1	**NORMAL** (default) **ALTERNATE**	If you are seeing marks on the back side of the paper when printing from Tray 1, set the mode to **ALTERNATE**. This increases the frequency of the cleaning cycle.
	GLOSS MODE	**NORMAL** (default) **HIGH**	Chosen when stable high gloss is required. Set this feature to **HIGH** for glossy print jobs, such as photos, if you notice the gloss finish decreasing after the first page is printed. This setting reduces the performance for all paper types.
	LIGHT MEDIA	**AUTO** (default) **ON**	Prevents the fuser from wrapping with light paper. Set this feature to **ON** if you are frequently seeing Fuser Delay Jam or Fuser Wrap Jam messages,

Item	Sub-item	Values	Description
			especially when printing on lightweight paper or on jobs with heavy toner coverage.
	MEDIA TEMP	**NORMAL** (default) **REDUCED**	Set this feature to **REDUCED** if you are having problems with paper sticking together in the output bin.
	ENVIRONMENT	**OFF** (default) **ON**	Optimizes performance in extreme low-temperature environments. Set this feature to **ON** if the product is operating in a low-temperature environment and you are having problems with print quality such as blisters in the printed image.
	LINE VOLTAGE	**OFF** (default) **ON**	Optimizes performance in low-voltage conditions. Set this feature to **ON** if the product is operating in a low-voltage environment and you are having problems with print quality such as blisters in the printed image.
	CLEANING FREQUENCY	**NORMAL** (default) **ALTERNATE**	Set this feature to **ALTERNATE** if you are seeing defects in the printed output that repeat at 38 mm (1.5 inch) intervals. This feature increases the frequency at which the C roller is cleaned. Setting this feature to Alternate might also reduce printing speed and increase the frequency of consumable replacement.
	D-BLADE BIAS	**NORMAL** (default) **ALTERNATE**	Set this feature to **ALTERNATE** if you are seeing short white vertical lines in the printed output. The Alternate setting might also cause dark spots in the printed output, so be sure to test this setting on a few print jobs.
	WASTE BIN	**NORMAL** (default) **ALTERNATE**	Try setting this feature to **ALTERNATE** if you are seeing lengthwise toner streaks in your printed output, especially in jobs with low toner coverage.
	BACKGROUND	**OFF** (default) **ON**	Select **ON** if pages are printing with a shaded background. Using this feature can reduce gloss levels.
	HEAVY MODE	**30 PPM** (default) **24 PPM**	The default setting is **30 PPM**. Select the **24 PPM** option to reduce the speed and improve fusing on heavy paper.
	TRACKING CONTROL	**ON** (default) **OFF**	Improves color stability by adjusting the bias voltage. This setting should remain **ON**.
	RESTORE OPTIMIZE		Use this feature to return all the settings in the Optimize menu to the factory-default values.
QUICK CALIBRATE NOW			Performs a partial product calibration.
FULL CALIBRATE NOW			Performs all product calibrations.

Item	Sub-item	Values	Description
CALIBRATE NEUTRALS	**CALIBRATION SOURCE**	**TRAY 1 <SIZE/TYPE>** **TRAY 2 <SIZE/TYPE>** **TRAY <X> <SIZE/ TYPE>**	This menu item affects the toner mixture in order to optimize neutral colors for color print jobs. A special sensor measures color on three specially printed pages from a selected tray and adjusts the color parameters. This corrects for too much or too little cyan, magenta, yellow, or black toner, which improves color consistency. Choose the source tray, paper type, and paper size for the calibration page. To run calibration on different paper types, load the desired paper type in a tray, select this menu item, and then specify the loaded tray.
	CALIBRATION TYPE	**<TYPE>**	This item is available only if the selected tray type is set to ANY TYPE.
	CALIBRATION SIZE	**<SIZE>**	This item is available only if the selected tray size is set to ANY SIZE or ANY CUSTOM.
	UNIT OF MEASURE	**INCHES** **MILLIMETERS**	The unit of measure to describe a custom paper size. This item is available only if the selected paper size is set to CUSTOM.
	X DIMENSION		The X dimension of the custom paper size. This item is available only if the selected paper size is set to CUSTOM.
	Y DIMENSION		The Y dimension of the custom paper size. This item is available only if the selected paper size is set to CUSTOM.
AUTO CALIBRATE NEUTRALS		**ON** **OFF**	This menu item controls whether the **CALIBRATE NEUTRALS** process is performed automatically. If you select **ON**, the product performs the calibration automatically whenever environmental conditions indicate that it is required. Three calibration pages are printed. You can recycle these pages when the calibration is complete.
RESOLUTION		**Image REt 4800** (default) **1200x600 dpi**	Sets the resolution at which the product prints. The default value is Image REt 4800. Try the 1200x600 dpi setting to improve printing for detailed line work or small text.
EDGE CONTROL		**OFF** **LIGHT** **NORMAL** (default) **MAXIMUM**	The Edge Control setting determines how edges are rendered. Edge control has two components: adaptive halftoning and trapping. Adaptive halftoning increases edge sharpness. Trapping reduces the effect of color-plane misregistration by overlapping the edges of adjacent objects slightly. • **OFF** turns off both trapping and adaptive halftoning. • **LIGHT** sets trapping at a minimal level, and adaptive halftoning is on.

Item	Sub-item	Values	Description
			• **NORMAL** is the default trapping setting. Trapping is at a medium level and adaptive halftoning is on. • **MAXIMUM** is the most aggressive trapping setting. Adaptive halftoning is on.
PROCESS CLEANING PAGE			Allows you to create and process a cleaning page for cleaning excess toner off the pressure roller in the fuser. When the cleaning process runs, a blank page is printed. This page can be discarded.

System setup menu

Use the **SYSTEM SETUP** menu to change product- configuration defaults such as sleep mode, product personality (language), and jam recovery.

To display: Press Menu, select **CONFIGURE DEVICE**, and then select **SYSTEM SETUP**.

Item	Sub-item	Values	Description
DATE/TIME	**DATE**	**----/[MMM]/[YY] YEAR=** **[YYYY]/---/[DD] MONTH=** **[YYYY]/[MMM]/-- DAY=**	Allows you to set the correct date.
	DATE FORMAT	**YYYY/MMM/DD** **MMM/DD/YYYY** **DD/MMM/YYYY**	Allows you to choose the order in which the year, month, and day appear in the date.
	TIME	**--:[MM] [PM] HOUR=** **[HH]:-- [PM] MINUTE=** **[HH]:[MM] -- AM/PM=**	Allows you to select from various configurations for the **TIME** format. Different wizards appear depending on the **TIME FORMAT** selected.
	TIME FORMAT	**12 HOUR** **24 HOUR**	Allows you to select **12 HOUR** or **24 HOUR** format.
JOB STORAGE LIMIT		**Continuous value** Range: 1–100 Default = 32	Allows you to specify the number of Quick Copy jobs that can be stored on the product. The default value is 32. The maximum allowed value is 100.
JOB HELD TIMEOUT		**OFF** **4 HOURS** **1 DAY** **1 WEEK**	Allows you to set the amount of time that Quick Copy jobs are kept before being automatically deleted from the queue. This menu item only appears when a hard disk is installed. The default value is **OFF**.
SHOW ADDRESS		**AUTO** **OFF**	This item determines whether the product's IP address is shown on the display with the **READY** message. The default is **OFF**.

Item	Sub-item	Values	Description
RESTRICT COLOR USE		**ENABLE COLOR** **COLOR IF ALLOWED** **DISABLE COLOR**	Disables or restricts color use. The default is **ENABLE COLOR**. To use the **COLOR IF ALLOWED** setting, set up user permissions through the embedded Web server, HP Easy Printer Care, or Web Jetadmin. See Embedded Web server on page 78, HP Easy Printer Care on page 75, or Use HP Web Jetadmin software on page 81.
COLOR/BLACK MIX		**AUTO** **MOSTLY COLOR PAGES** **MOSTLY BLACK PAGES**	This menu item establishes how the product switches from color to monochrome (black and white) mode for maximum performance and print cartridge life. **AUTO** resets the product to the factory default setting. The default is **AUTO**. Select **MOSTLY COLOR PAGES** if nearly all of your print jobs are color with high page coverage. Select **MOSTLY BLACK PAGES** if you print mostly monochrome print jobs, or a combination of color and monochrome print jobs.
TRAY BEHAVIOR			Use this menu to control how the product handles paper trays and related prompts at the control panel.
	USE REQUESTED TRAY	**EXCLUSIVELY** **FIRST**	**USE REQUESTED TRAY** handles jobs that have specified a specific input tray. Two options are available: • **EXCLUSIVELY**: The device never selects a different tray when the user has indicated that a specific tray should be used, even if that tray is empty. This is the factory default setting. • **FIRST**: The device can pull from another tray if the specified tray is empty, even though the user specifically indicated a tray for the job.
	MANUALLY FEED PROMPT	**ALWAYS** **UNLESS LOADED**	This option controls whether a manual feed message should appear when the type or size for a job does not match the specified tray and the device pulls from the

Item	Sub-item	Values	Description
			multipurpose tray instead. Two options are available: • **ALWAYS**: A prompt always appears before using the multipurpose tray. This is the factory default setting. • **UNLESS LOADED**: A message appears only if the multipurpose tray is empty.
	PS DEFER MEDIA	**ENABLE** **DISABLED**	This option affects how paper is handled when printing from an Adobe PS print driver. • **ENABLED** uses HP's paper handling model. • **DISABLED** uses the Adobe PS paper handling model.
	SIZE/TYPE PROMPT	**DISPLAY** **DO NOT DISPLAY**	This option controls whether the tray configuration message appears whenever a tray is closed. Two options are available: • **DISPLAY**: This option shows the tray configuration message when a tray is closed. You can configure the tray settings directly from this message. • **DO NOT DISPLAY**: This option prevents the tray configuration message from automatically appearing.
	USE ANOTHER TRAY	**ENABLE** **DISABLE**	This option turns on or off the control-panel prompt to select another tray when the specified tray is empty. Two options are available: • **ENABLE**: When this option is selected, the user is prompted either to add paper to the selected tray or to choose a different tray. This is the factory default setting. • **DISABLE**: When this option is selected, the user is not given the option of selecting a different tray. The device prompts the user to add paper to the tray that was initially selected.
	DUPLEX BLANK PAGES	**AUTO** **YES**	This option controls how the device handles two-sided jobs

Item	Sub-item	Values	Description
			(duplexing). Two options are available: • **AUTO** enables Smart Duplexing, which instructs the device not to process both sides if the second side is blank. This can improve print speed. • **YES** disables Smart Duplexing and forces the duplexer to flip the sheet of paper even if it is printed on only one side. This might be preferable for certain jobs that use paper types such as letterhead or prepunched paper.
	IMAGE ROTATION	**LEFT TO RIGHT** **RIGHT TO LEFT** **ALTERNATE**	This option allows an image from an optional output accessory to be rotated 180 degrees, so that staples can be placed in the upper corner (usually narrow format devices).
SLEEP DELAY		**1 MINUTE** **15 MINUTES** **30 MINUTES** **45 MINUTES** **60 MINUTES** **90 MINUTES** **2 HOURS** **4 HOURS**	Reduces power consumption when the product has been inactive for the selected period. The default is **60 MINUTES**.
WAKE TIME	<DAY OF THE WEEK>	**OFF** **CUSTOM**	Allows you to configure the daily wake time for the product to avoid warm-up or calibration time. Select a day of the week and then select **CUSTOM**. Set the wake time for that day, and then choose whether the wake time should be applied to all days of the week.
OPTIMUM SPEED/ENERGY USAGE		**FASTER FIRST PAGE** **SAVE ENERGY** **SAVE MOST ENERGY**	Sets the fuser cooling behavior. If **FASTER FIRST PAGE** is selected, power to the fuser is not turned off between jobs. This causes no impact to the first-page-out time. If **SAVE ENERGY** is selected, power to the fuser is turned off after 55 minutes of idle time. This

Item	Sub-item	Values	Description
			causes minimal impact to the first-page-out time. If **SAVE MOST ENERGY** is selected, power to the fuser is turned off after each job. This causes the most impact to the first-page-out time.
DISPLAY BRIGHTNESS		Range is 1 through 10.	Sets the brightness of the control panel display. The default is **5**.
PERSONALITY		**AUTO** **PCL** **PDF** **PS**	Sets the default personality to automatic switching, PCL, PDF, or PS modes. The default is **AUTO**.
CLEARABLE WARNINGS		**JOB** **ON**	Sets whether a warning is cleared on the control panel or when another job is sent. The default is **ON**.
AUTO CONTINUE		**OFF** **ON**	Determines product behavior when the system generates an Auto Continuable error. The default is **ON**.
REPLACE SUPPLIES		**STOP AT LOW** **STOP AT OUT** **OVERRIDE AT OUT 1** **OVERRIDE AT OUT 2**	Sets product behavior when a cartridge is low. The default is **STOP AT LOW**. This option allows the product to continue printing until a color supply is exhausted. When the product is set to **STOP AT OUT**, printing pauses until the color supply is replaced. The product displays an “Order supplies” message when a supply is running low and a “Replace supplies” message when a supply has been depleted. To ensure optimal print quality, HP recommends replacing a supply when the “Replace supplies” message is displayed. Replacing the supply at this point can help prevent waste of media or other supplies when one supply begins producing poor print quality. The Override options allow the product to continue using color supplies, such as print cartridges, the image drum, the image transfer kit, the roller kit, and the image fuser kit, that have reached their recommended replacement points.

Item	Sub-item	Values	Description
			CAUTION: Using an Override option may result in unsatisfactory print quality and unavailability of certain features (such as toner remaining information). **CAUTION:** All print defects or supply failures incurred when an HP supply is used in Override mode are not considered defects in materials or workmanship under the HP Print Cartridge and Image Drum Limited Warranty Statement. For Warranty information, see Print cartridge and image drum limited warranty statement on page 981. The Override options can be enabled or disabled at any time and do not have to be re-enabled for each color supply. The product automatically continues printing when a color supply reaches its recommended replacement point. The message, “Replace supply Override in use,” displays on the control panel while a color supply is used in Override mode. When the color supply is replaced with a new one, Override mode is deactivated until another color supply reaches its recommended replacement point. **OVERRIDE AT OUT 1** allows printing to continue when a color supply is out, but displays a warning. Printing stops if there is a risk of damage to product components. **OVERRIDE AT OUT 2** allows printing to continue when the color supply is out, but displays a warning message. Printing is not stopped even if there is a risk of damage to product components.
SUPPLY INFORMATION	**PAGES REMAINING** **ORDER MESSAGES** **LEVEL GAUGE**	**ON** **OFF**	
ORDER AT		RANGE=0-100%	The user can set the supply percentage remaining at which the **ORDER AT** message appears. The default is 5%.
COLOR SUPPLY OUT		**STOP** **AUTOCONTINUE BLACK**	Sets the **COLOR SUPPLY OUT** product behavior when a color supply is empty. When the product is set to **AUTOCONTINUE BLACK** , the product continues

Item	Sub-item	Values	Description
			printing with black toner only. The default is **STOP**.
JAM RECOVERY		**AUTO** **OFF** **ON**	Sets whether the product will attempt to reprint pages after a jam. The default is **AUTO**.
LANGUAGE		A listing of available languages appears.	Sets the default language. The default language is **ENGLISH**.

Output Setup menu

This menu and associated sub-items displays only when an optional output accessory is attached to the product.

To display: Press Menu, select **CONFIGURE DEVICE**, and then select **OUTPUT SETUP**.

Item	Sub-item	Values	Description
OUTPUT SETUP			This menu appears when the HP 3-bin Stapler/Stacker Accessory or the HP Booklet Maker/Finisher Accessory is attached.
MULTIFUNC FINISHER or **MBM-3 BIN STAPLER**	**OPERATION MODE**	**MAILBOX** **STACKER**	Allows you to set the default operation mode. **MAILBOX** assigns a user or group of users to each output bin. **STACKER** treats all of the output bins as a single large bin. When one bin gets full, jobs are automatically routed to the next bin.
	STAPLES	**NONE** **ONE LEFT ANGLED** **ONE RIGHT ANGLED** **TWO LEFT** **TWO RIGHT** **TWO TOP**	Sets the default staple selection for documents sent to the device when no staple value is specified.
	STAPLES OUT	**STOP** **CONTINUE**	Sets the default behavior when a job specifies stapling and the stapler is out of staples. **STOP** stops printing if the stapler runs out of staples. **CONTINUE** allows a job to continue printing even when the device is out of staples.
	OFFSET	**OFF** **ON**	Turns the job offset feature on or off. When job offset is on, each copy of a job is shifted to one side in the output bin in order to keep

Item	Sub-item	Values	Description
			each copy separate from the others.
	A4/LETTER STAPLE	**NORMAL** **ALTERNATE 1** **ALTERNATE 2**	Controls the speed of the print engine to prevent paper jams by using the stapler buffer. With the **NORMAL**, the engine speed is normal, and the stapler buffer is used. If the **ALTERNATE 1** setting is enabled, and the engine is in Autosense Mode, the engine slows down to prevent jams. If the product is NOT in Autosense Mode, the engine performs at normal speed, using the stapler buffer. If the **ALTERNATE 2** setting is enabled, the engine always slows down to prevent jams, never using the stapler buffer.
	FOLD LTR-R & A4 - R	**–4.0 mm** **–3.5 mm** **–3.0 mm** **–2.5 mm** **–2.0 mm** **–1.5 mm** **–1.0 mm** **–0.5 mm** **0.0 mm** **0.5 mm** **1.0 mm** **1.5 mm** **2.0 mm** **2.5 mm** **3.0 mm** **3.5 mm** **4.0 mm**	Adjusts the fold line for Letter and A4 size paper (booklet maker only).
	FOLD LEGAL & JISB4	**–4.0 mm** **–3.5 mm** **–3.0 mm**	Adjusts the fold line for Legal and JIS B4 size paper (booklet maker only).

Item	Sub-item	Values	Description
		–2.5 mm	
		–2.0 mm	
		–1.5 mm	
		–1.0 mm	
		–0.5 mm	
		0.0 mm	
		0.5 mm	
		1.0 mm	
		1.5 mm	
		2.0 mm	
		2.5 mm	
		3.0 mm	
		3.5 mm	
		4.0 mm	
	FOLD 11X17 & A3	**–4.0 mm**	Adjusts the fold line for Legal and 11x17 and A3 size paper (booklet maker only).
		–3.5 mm	
		–3.0 mm	
		–2.5 mm	
		–2.0 mm	
		–1.5 mm	
		–1.0 mm	
		–0.5 mm	
		0.0 mm	
		0.5 mm	
		1.0 mm	
		1.5 mm	
		2.0 mm	
		2.5 mm	
		3.0 mm	
		3.5 mm	
		4.0 mm	

I/O menu

Items on the I/O (input/output) menu affect the communication between the product and the computer. If the product contains an HP Jetdirect print server, you can configure basic networking parameters by using this submenu. You can also configure these and other parameters through HP Web Jetadmin or the embedded Web server.

To display: Press Menu, select **CONFIGURE DEVICE**, and then select **I/O**.

Item	Sub-item	Values	Description
I/O TIMEOUT		**15 SECONDS** Range: 5 - 300	Allows you to set the product **I/O TIMEOUT** in seconds. Use this setting to adjust timeout for the best performance. If data from other ports appears in the middle of your print job, increase the timeout value.
EMBEDDED JETDIRECT MENU	See the next table for a list of options.		

Table 2-1 Embedded Jetdirect and EIO <X> Jetdirect menus

Item	Sub-item	Values	Description
TCP/IP	**ENABLE**	**OFF**	**OFF**: Disable the TCP/IP protocol.
		ON	**ON***: Enable the TCP/IP protocol.
	HOST NAME		An alphanumeric string, up to 32 characters, used to identify the product. This name is listed on the HP Jetdirect configuration page. The default host name is NPIxxxxxx, where xxxxxx is the last six digits of the LAN hardware (MAC) address.
	IPV4 SETTINGS	**CONFIG METHOD** • **BOOTP** • **DHCP** • **AUTO IP** • **MANUAL**	Specifies the method that TCP/IPv4 parameters will be configured on the HP Jetdirect print server. Use BootP (Bootstrap Protocol) for automatic configuration from a BootP server. Use DHCP (Dynamic Host Configuration Protocol) for automatic configuration from a DHCPv4 server. If selected and a DHCP lease exists, **DHCP RELEASE** and **DHCP RENEW** menus are available to set DHCP lease options. Use Auto IP for automatic link-local IPv4 addressing. An address in the form 169.254.x.x is assigned automatically. Use the **MANUAL SETTINGS** menu to configure TCP/IPv4 parameters.
		DEFAULT IP • **AUTO IP** • **LEGACY**	Specify the IP address to default to when the print server is unable to obtain an IP address from the network during a forced TCP/IP reconfiguration (for example, when manually configured to use BootP or DHCP). **AUTO IP**: A link-local IP address 169.254.x.x is set.

Table 2-1 Embedded Jetdirect and EIO <X> Jetdirect menus (continued)

Item	Sub-item	Values	Description
			LEGACY: The address 192.0.0.192 is set, consistent with older HP Jetdirect products.
		DHCP RELEASE • **NO** • **YES**	This menu appears if **CONFIG METHOD** was set to **DHCP** and a DHCP lease for the print server exists. **NO***: The current DHCP lease is saved. **YES**: The current DHCP lease and the leased IP address are released.
		DHCP RENEW • **NO** • **YES**	This menu appears if **CONFIG METHOD** was set to **DHCP** and a DHCP lease for the print server exists. **NO***: The print server does not request to renew the DHCP lease. **YES**: The print server requests to renew the current DHCP lease.
		MANUAL SETTINGS • **IP ADDRESS** • **SUBNET MASK** • **SYSLOG SERVER** • **DEFAULT GATEWAY** • **IDLE TIMEOUT**	(Available only if **CONFIG METHOD** is set to **MANUAL**) Configure parameters directly from the printer control panel: **IP ADDRESS**: The unique IP address of the printer, where n is a value from 0 to 255. **SUBNET MASK**: The subnet mask for the printer, where m is a value from 0 to 255. **SYSLOG SERVER**: The IP address of the syslog server used to receive and log syslog messages. **DEFAULT GATEWAY**: The IP address of the gateway or router used for communications with other networks. **IDLE TIMEOUT**: The time period, in seconds, after which an idle TCP print data connection is closed (default is 270 seconds, 0 disables the timeout).
		PRIMARY DNS	Specify the IP address (n.n.n.n) of a Primary DNS Server.
		SECONDARY DNS	Specify the IP address (n.n.n.n) of a Secondary Domain Name System (DNS) Server.
	IPV6 SETTINGS	**ENABLE** • **OFF** • **ON**	Use this item to enable or disable IPv6 operation on the print server. **OFF***: IPv6 is disabled. **ON**: IPv6 is enabled.
		ADDRESS • **MANUAL SETTINGS** • **ADDRESS**	Use this item to manually configure an IPv6 address. Use the **MANUAL SETTINGS** menu to enable and manually configure a TCP/ IPv6 address. Select **ENABLE** and choose **ON** to enable manual configuration, or **OFF** to disable manual configuration. **ADDRESS**: Use this item to type a 32 hexadecimal digit IPv6 node address that uses the colon hexadecimal syntax.

Table 2-1 Embedded Jetdirect and EIO <X> Jetdirect menus (continued)

Item	Sub-item	Values	Description
		DHCPV6 POLICY • **ROUTER SPECIFIED** • **ROUTER UNAVAILABLE** • **ALWAYS**	**ROUTER SPECIFIED**: The stateful auto-configuration method to be used by the print server is determined by a router. The router specifies whether the print server obtains its address, its configuration information, or both from a DHCPv6 server. **ROUTER UNAVAILABLE**: If a router is not available, the print server should attempt to obtain its stateful configuration from a DHCPv6 server. **ALWAYS**: Whether or not a router is available, the print server always attempts to obtain its stateful configuration from a DHCPv6 server.
		PRIMARY DNS	Use this item to specify an IPv6 address for a primary DNS server that the print server should use.
		SECONDARY DNS	Use this item to specify an IPv6 address for a secondary DNS server that the print server should use.
	PROXY SERVER		Specifies the proxy server to be used by embedded applications in the product. A proxy server is typically used by network clients for Internet access. It caches Web pages, and provides a degree of Internet security, for those clients. To specify a proxy server, enter its IPv4 address or fully-qualified domain name. The name can be up to 255 octets. For some networks, you might need to contact your Internet Service Provider (ISP) for the proxy server address.
	PROXY PORT		Type the port number used by the proxy server for client support. The port number identifies the port reserved for proxy activity on your network, and can be a value from 0 to 65535.
IPX/SPX	**ENABLE**	**OFF**	**OFF**: Disable the IPX/SPX protocol.
		ON	**ON***: Enable the IPX/SPX protocol.
	FRAME TYPE	**AUTO** **EN_8023** **EN_II** **EN_8022** **EN_SNAP**	Selects the frame-type setting for your network. **AUTO**: Automatically sets and limits the frame type to the first one detected. **EN_8023**, **EN_II**, **EN_8022**, and **EN_SNAP**are frame-type selections for Ethernet networks
APPLETALK	**ENABLE**	**OFF**	**OFF**: Disable the AppleTalk protocol.
		ON	**ON***: Enable the AppleTalk protocol.
DLC//LLC	**ENABLE**	**OFF**	**OFF**: Disable the DLC/LLC protocol.
		ON	**ON***: Enable the DLC/LLC protocol.
SECURITY	**PRINT SEC PAGE**	**YES** **NO**	**YES**: Prints a page that contains the current security settings on the HP Jetdirect print server. **NO***: A security settings page is not printed.

Table 2-1 Embedded Jetdirect and EIO <X> Jetdirect menus (continued)

Item	Sub-item	Values	Description
	SECURE WEB	**HTTPS REQUIRED** **HTTP/HTTPS OPTIONAL**	For configuration management, specify whether the embedded Web server will accept communications using HTTPS (Secure HTTP) only, or both HTTP and HTTPS. **HTTPS REQUIRED**: For secure, encrypted communications, only HTTPS access is accepted. The print server will appear as a secure site. **HTTP/HTTPS OPTIONAL**: Access using either HTTP or HTTPS is permitted.
	IPSEC	**KEEP** **DISABLE**	Specify the IPsec or Firewall status on the print server. **KEEP**: IPsec/Firewall status remains the same as currently configured. **DISABLE**: IPsec/Firewall operation on the print server is disabled.
	RESET SECURITY	**NO** **YES**	Specify whether the current security settings on the print server will be saved or reset to factory defaults. **NO***: The current security settings are maintained. **YES**: Security settings are reset to factory defaults.
DIAGNOSTICS	**EMBEDDED TESTS**	**EXECUTE**	This menu provides tests to help diagnose network hardware or TCP/IP network connection problems. Embedded tests help to identify whether a network fault is internal or external to the product. Use an embedded test to check hardware and communication paths on the print server. After you select and enable a test and set the execution time, you must select **EXECUTE** to initiate the test. Depending on the execution time, a selected test runs continuously until either the product is turned off, or an error occurs and a diagnostic page is printed.
		LAN HW TEST	**CAUTION:** Running this embedded test will erase your TCP/IP configuration. This test performs an internal loopback test. An internal loopback test will send and receive packets only on the internal network hardware. There are no external transmissions on your network. Select **YES** to choose this test, or **NO** to not choose it.
		HTTP TEST	This test checks operation of HTTP by retrieving predefined pages from the product, and tests the embedded Web server. Select **YES** to choose this test, or **NO** to not choose it.
		SNMP TEST	This test checks operation of SNMP communications by accessing predefined SNMP objects on the product. Select **YES** to choose this test, or **NO** to not choose it.
		DATA PATH TEST	This test helps to identify data path and corruption problems on an HP postscript level 3 emulation

Table 2-1 Embedded Jetdirect and EIO <X> Jetdirect menus (continued)

Item	Sub-item	Values	Description
			product. It sends a predefined PS file to the product, However, the test is paperless; the file will not print. Select **YES** to choose this test, or **NO** to not choose it.
		SELECT ALL TESTS	Select this item to run all the embedded tests. Select **YES** to run all tests, or select **NO** to not run all tests.
		EXECUTION TIME [H]	Use this item to specify the length of time (in hours) that an embedded test will be run. You can select a value from 1 to 60 hours. If you select zero (0), the test runs indefinitely until an error occurs or the product is turned off. Data gathered from the HTTP, SNMP, and Data Path tests is printed after the tests have completed.
		EXECUTE	**NO***: Do not initiate the selected tests. **YES**: Initiate the selected tests.
	PING TEST		This test is used to check network communications. This test sends link-level packets to a remote network host, then waits for an appropriate response.
		DEST TYPE	Specify whether the target device is an IPv4 or IPv6 node.
		DEST IPV4	Type the IPv4 address.
		DEST IPV6	Type the IPv6 address.
		PACKET SIZE	Specify the size of each packet, in bytes, to be sent to the remote host. The minimum is 64 (default) and the maximum is 2048.
		TIMEOUT	Specify the length of time, in seconds, to wait for a response from the remote host. The default is 1 and the maximum is 100.
		COUNT	Specify the number of ping test packets to send for this test. Select a value from 1 to 100. To configure the test to run continuously, select 0.
		PRINT RESULTS	If the ping test was not set for continuous operation, you can choose to print the test results. Select **YES** to print results. If you select **NO** (default), results are not printed.
		EXECUTE	Specify whether to initiate the ping test. Select **YES** to initiate the test, or **NO** to not run the test.
	PING RESULTS		Use this item to view the ping test status and results using the control panel display.
		PACKETS SENT	Shows the number of packets (0 - 65535) sent to the remote host since the most recent test was initiated or completed.
		PACKETS RECEIVED	Shows the number of packets (0 - 65535) received from the remote host since the most recent test was initiated or completed.

Table 2-1 Embedded Jetdirect and EIO <X> Jetdirect menus (continued)

Item	Sub-item	Values	Description
		PERCENT LOST	Shows the percent of ping test packets that were sent with no response from the remote host since the most recent test was initiated or completed.
		RTT MIN	Shows the minimum detected roundtrip- time (RTT), from 0 to 4096 milliseconds, for packet transmission and response.
		RTT MAX	Shows the maximum detected roundtrip- time (RTT), from 0 to 4096 milliseconds, for packet transmission and response.
		RTT AVERAGE	Shows the average round-trip-time (RTT), from 0 to 4096 milliseconds, for packet transmission and response.
		PING IN PROGRESS	Shows whether a ping test is in progress. **YES** indicates a test in progress, and **NO** indicates that a test completed or was not run.
		REFRESH	When viewing the ping test results, this item updates the ping test data with current results. Select **YES** to update the data, or **NO** to maintain the existing data. However, a refresh automatically occurs when the menu times out or you manually return to the main menu.
LINK SPEED		**AUTO** **10T HALF**: 10 Mbps, half-duplex operation. **10T FULL**: 10 Mbps, full-duplex operation. **100TX HALF**: 100 Mbps, half-duplex operation. **100TX FULL**: 100 Mbps, full-duplex operation. **100TX AUTO**: Limits auto-negotiation to a maximum link speed of 100 Mbps. **1000TX FULL**: 1000 Mbps, full-duplex operation.	The link speed and communication mode of the print server must match the network. The available settings depend on the product and installed print server. Select one of the following link configuration settings: **CAUTION:** If you change the link setting, network communications with the print server and network device might be lost. **AUTO***: The print server uses auto-negotiation to configure itself with the highest link speed and communication mode allowed. If auto-negotiation fails, either 100TX HALF or 10TX HALF is set depending on the detected link speed of the hub/switch port. (A 1000T half-duplex selection is not supported.)
PRINT PROTOCOLS			Use this item to print a page that lists the configuration of the following protocols: IPX/SPX, Novell NetWare, AppleTalk, DLC/LLC.

Resets menu

The **RESETS** menu allows you to reset factory settings, disable and enable sleep mode, and update the product after new supplies are installed.

To display: Press Menu, select **CONFIGURE DEVICE**, and then select **RESETS**.

Item	Values	Description
RESTORE FACTORY SETTINGS		Allows you to clear the page buffer, remove all perishable personality data, reset the printing environment, and return all default settings to factory defaults.
RESET CALIBRATION		Resets calibration values on the formatter.
SLEEP MODE	**OFF** **LOW** **HIGH**	If **SLEEP MODE** is **OFF**, the product will never enter power save mode and no asterisk will appear next to any item when the user enters the menu item **SLEEP DELAY**. The **LOW** setting has a shorter wake-up time than the **HIGH** setting. The default setting is either **LOW** or **HIGH**, depending on your country/region.

Diagnostics menu

The **DIAGNOSTICS** menu allows you to run tests that can help you identify and solve problems with the product.

To display: Press Menu and then select **DIAGNOSTICS**.

Item	Sub-item	Values	Description
PRINT EVENT LOG			Prints a report containing the last 50 entries in the product's event log, starting with the most recent.
SHOW EVENT LOG			Displays the last 50 events, starting with the most recent.
PQ TROUBLESHOOTING			Prints a page that includes instructions, pages for each color, a demo page, and a configuration page. These pages can help isolate print-quality problems.
PRINT DIAGNOSTICS PAGE			Prints a page that can assist in diagnosing product problems.
DISABLE CARTRIDGE CHECK			This item allows you to remove a print cartridge to help determine which cartridge is the source of a problem.
PAPER PATH SENSORS			Performs a test on each of the product's sensors to determine if they are working correctly and displays the status of each sensor.
PAPER PATH TEST			Tests the paper-handling features of the product, such as the configuration of the trays.
	PRINT TEST PAGE		Generates a page for testing the paper-handling features. You must define the path for the test in order to test specific paper paths.
	SOURCE	**ALL TRAYS** **TRAY 1** **TRAY 2** (Additional trays are shown, if applicable.)	Specifies whether the test page is printed from all trays or from a specific tray.
	DESTINATION	**ALL BINS** (Additional bins are shown, if applicable.)	Appears if there is an optional output accessory connected to the product. Selects the output option for the test page. You can send the test page to all output bins or only to a specific bin.
	DUPLEX	**OFF** **ON**	Determines whether the duplexer is included in the test.

Item	Sub-item	Values	Description
	COPIES	**1** **10** **50** **100** **500**	Determines how many pages should be sent from the specified source as part of the test.
FINISHING PAPER PATH TEST			This item only appears if there is an optional stapler/stacker or booklet maker connected to the product. Tests the paper-handling features on the output accessory.
	STACK	**DESTINATION BIN** **MEDIA SIZE** **MEDIA TYPE** **COPIES** **DUPLEX** **PRINT TEST PAGE**	Sets up the options for testing the stapler/stacker or booklet maker paper path. After setting up all of the options, select **PRINT TEST PAGE** to run the test.
	STAPLES	**FINISHING OPTIONS** **DESTINATION BIN** **MEDIA SIZE** **MEDIA TYPE** **COPIES** **DUPLEX** **PRINT TEST PAGE**	Sets up the options for testing the stapler/stacker or booklet maker stapling functions. After setting up all of the options, select **PRINT TEST PAGE** to run the test.
	BOOKLET MAKER (booklet maker only)	**MEDIA SIZE** **MEDIA TYPE** **COPIES** **DUPLEX** **PRINT TEST PAGE**	Sets up the options for testing the booklet-making functions of the booklet maker. After setting up all of the options, select **PRINT TEST PAGE** to run the test.
MANUAL SENSOR TEST			Performs tests to determine whether the paper path sensors are operating correctly.
MANUAL SENSOR TEST 2			Performs additional tests to determine whether the paper path sensors are operating correctly.
COMPONENT TEST	**TRANSFER MOTORS** **BELT ONLY** **IMAGE DRUM MOTORS**		Activate individual parts independently to isolate noise, leaking, and other hardware issues.

Item	Sub-item	Values	Description
	BLACK LASER SCANNER		
	CYAN LASER SCANNER		
	MAGENTA LASER SCANNER		
	YELLOW LASER SCANNER		
	FUSER MOTOR		
	FUSER PRESSURE RELEASE MOTOR		
	BLACK ALIENATION MOTOR		
	CYAN ALIENATION MOTOR		
	MAGENTA ALIENATION MOTOR		
	YELLOW ALIENATION MOTOR		
	ITB CONTACT/ALIENATION		
	PAPER TRANSPORT MOTOR		
	TRAY 1 PICKUP SOLENOID		
	TRAY 2 PICKUP MOTOR		
	TRAY 2 PICKUP SOLENOID		
	TRAY 3 PICKUP MOTOR		
	TRAY 3 PICKUP SOLENOID		
	TRAY 4 PICKUP MOTOR		
	TRAY 4 PICKUP SOLENOID		
	TRAY 5 PICKUP MOTOR		
	TRAY 5 PICKUP SOLENOID		
	DUPLEXER REVERSE MOTOR		
	DUPLEXER REFEED MOTOR		
	REPEAT	**ONCE** (default) **CONTINUOUS**	Allows the user to specify the number of times the device sequences. To terminate the test at any time the user can press Stop.
PRINT/STOP TEST		Range is 0 - 60,000 milliseconds. The default is 0.	Isolates print quality faults more accurately by stopping the product in mid-print cycle, which allows you to see where the image begins to degrade. This causes a jam message that might need to be manually cleared. A service representative should perform this test.
COLOR BAND TEST	**PRINT TEST PAGE**		Prints a color band test page that is used to identify arcing in the high-voltage power supply.

Item	Sub-item	Values	Description
	COPIES	Range is 1 to 30. The default value is 1.	Allows the user to determine how many copies of the internal page are printed.
FINISHER TESTS			If the optional stapler/stacker or booklet maker is installed, this menu runs tests on specific sensors and components. Different values are displayed, based on the accessory installed.
	MANUAL SENSOR TEST	**READ ALL ONCE** **CONTINUOUS READING**	Initiates a diagnostic test of the sensors on the stapler/stacker or booklet maker.
	COMPONENT TESTS	**M1 - DELIVER MOTOR** (booklet maker only) **M2 - FOLDING MOTOR** (booklet maker only) **M3 - GUIDE MOTOR** (booklet maker only) **M4 - GUIDE PLATE MOTOR** (booklet maker only) **M9 - INLET MOTOR** (booklet maker only) **M31 - ENTRANCE MOTOR** **M36 - SWING MOTOR** **M37 - TRAY 1 MOTOR** **M38 - TRAY 2 MOTOR** **M39 - PROCESS MOTOR** **SL1 - FLAPPER 1 SOLENOID** (booklet maker only) **SL2 - FLAPPER 2 SOLENOID** (booklet maker only) **SL4 - BOOKLET SOLENOID** (booklet maker only) **SL5 - SWITCH SOLENOID** (booklet maker only) **SL31 - ROLLER 1A SOLENOID** **SL32 - BUFFER SOLENOID** **SL33 - OUTPUT SOLENOID** **SL34 - GUIDE SOLENOID**	Activates a diagnostic test for the selected motor or solenoid.

Service menu

The SERVICE menu is locked and requires a PIN for access. This menu is intended for use by authorized service personnel. See Service mode functions on page 508.

3 Paper and print media

- Supported paper and print media sizes
- Supported paper types
- Special paper or print media guidelines
- Load paper and print media
- Configure trays
- Choose an output location

Supported paper and print media sizes

NOTE: To obtain best print results, select the appropriate paper size and type in your print driver before printing.

Table 3-1 Supported paper and print media sizes

Size	Dimensions	Tray 1	Tray 2	Trays 3, 4, 5
Letter	216 x 279 mm (8.5 x 11 in)	✓	✓[1]	✓[1]
Letter Rotated	279 x 216 mm (11 x 8.5 in)	✓	✓[1]	✓[1]
Legal	216 x 356 mm (8.5 x 14 in)	✓	✓[1]	✓[1]
A4	210 x 297 mm (8.27 x 11.69 in)	✓	✓[1]	✓[1]
A4 Rotated	297 x 210 mm (11.69 x 8.27 in)	✓	✓[1]	✓[1]
Executive	184 x 267 mm (7.24 x 10.51 in)	✓	✓[1]	✓[1]
Executive (JIS)	216 x 330 mm (8.5 x 13 in)	✓	✓	✓
A3	297 x 420 mm (11.69 x 16.54 in)	✓	✓[1]	✓[1]
A5	148 x 210 mm (5.83 x 8.27 in)	✓	✓[1]	✓[1]
11 x 17	279 x 432 mm (11 x 17 in)	✓	✓[1]	✓[1]
12 x 18	305 x 457 mm (12 x 18 in)	✓		✓
B4 (JIS)	257 x 364 mm (10.12 x 14.33 in)	✓	✓[1]	✓[1]
RA3	305 x 430 mm (12 x 16.93 in)	✓		✓
SRA3	320 x 450 mm (12.6 x 17.7 in)	✓		✓
B5 (JIS)	182 x 257 mm (7.17 x 10.12 in)	✓	✓[1]	✓[1]
8k	270 x 390 mm (10.63 x 15.35 in)	✓	✓	✓
16k	195 x 270 mm (7.68 x 10.63 in)	✓	✓	✓
8K	260 x 368 mm (10.2 x 14.5 in)	✓	✓	✓
16K	184 x 260 mm (7.2 x 10.2 in)	✓	✓	✓
8K	273 x 394 mm (10.7 x 15.5 in)	✓	✓	✓
16K	197 x 273 mm (7.75 x 10.7 in)	✓	✓	✓
Banner	99 to 320 mm x up to 915 mm (4 to 12.6 x up to 36 in)	✓		
Custom	148 x 210 mm to 297 x 432 mm (5.8 x 8.2 to 11.7 x 17 in)[2]		✓	
Custom	148 x 210 mm to 297 x 457 mm (5.8 x 8.2 to 12.6 x 18 in)[3]			✓

[1] Tray automatically detects paper size.

[2] Standard sizes within the custom range for Tray 2 are: 8.5 x 13, RA4, SRA4, 8K (270 x 390), 8K (260 x 368), 8K (7.75 x 10.75), 16K (195 x 270), 16K (184 x 260), and 16K (7.75 x 10.75)

[3] Standard sizes within the custom range for Trays 3, 4, and 5 are: 8.5 x 13, RA4, SRA4, 8K (270 x 390), 8K (260 x 368), 8K (7.75 x 10.75), 16K (195 x 270), 16K (184 x 260), 16K (7.75 x 10.75), RA3, SRA3 , and 12 x 18

Table 3-2 Supported envelopes and postcards

Size	Dimensions	Tray 1	Trays 2, 3, 4, 5
Envelope #9	98 x 225 mm (3.88 x 8.88 in)	✓	
Envelope #10	105 x 241 mm (4.13 x 9.49 in)	✓	
Envelope DL	110 x 220 mm (4.33 x 8.66 in)	✓	
Envelope C5	162 x 229 mm (6.93 x 9.84 in)	✓	
Envelope B5	176 x 250 mm (6.7 x 9.8 in)	✓	
Envelope C6	162 x 114 mm (6.4 x 4.5 in)	✓	
Envelope Monarch	98 x 191 mm (3.9 x 7.5 in)	✓	
Post Card	100 x 148 mm (3.94 x 5.83 in)[1]	✓	
Double Post Card	148 x 200 mm (5.83 x 7.87 in)	✓	
Postcard (US)	88.9 x 139.7 mm (3.5 x 5.5 in)[1]		
Postcard (European)	105 x 148 mm (4.13 x 5.83 in)[1]	✓	
US Index Cards	102 x 152 mm (4 x 6 in), 127 x 177 mm (5 x 7 in), and 127 x 203 mm (5 x 8 in)	✓	

[1] Weights greater than 160 g/m^2 may not perform well, but will not harm the product.

The following paper sizes are supported with the optional HP 3-bin Stapler/Stacker and HP Booklet Maker/Finisher accessories.

Table 3-3 Supported paper and print media sizes for the optional HP 3-bin Stapler/Stacker and HP Booklet Maker/ Finisher accessories

Size	Dimensions	Stacking[2]	Angled staple (left-angled)	Angled staple (right-angled)	Two staples (top or side)	Folding	Saddle stitch
Letter	216 x 279 mm (8.5 x 11 in)	✓	✓	✓	✓		
Letter Rotated	279 x 216 mm (11 x 8.5 in)	✓	✓	✓		✓[1]	✓[1]
Legal	216 x 356 mm (8.5 x 14 in)	✓	✓	✓		✓[1]	✓[1]
A4	210 x 297 mm (8.27 x 11.69 in)	✓	✓	✓	✓		
A4 Rotated	297 x 210 mm (11.69 x 8.27 in)	✓	✓	✓		✓[1]	✓[1]
Executive	184 x 267 mm (7.24 x 10.51 in)	✓					
Executive (JIS)	216 x 330 mm (8.5 x 13 in)	✓					
A3	297 x 420 mm (11.69 x 16.54 in)	✓	✓	✓	✓	✓[1]	✓[1]

Table 3-3 Supported paper and print media sizes for the optional HP 3-bin Stapler/Stacker and HP Booklet Maker/ Finisher accessories (continued)

Size	Dimensions	Stacking[2]	Angled staple (left-angled)	Angled staple (right-angled)	Two staples (top or side)	Folding	Saddle stitch
A5	148 x 210 mm (5.83 x 8.27 in)	✓					
A6	105 x 148 mm (4.13 x 5.83 in)	✓					
Statement	140 x 216 mm (5.5 x 8.5 in)	✓					
11 x 17 (Ledger)	279 x 432 mm (11 x 17 in)	✓	✓	✓	✓	✓[1]	✓[1]
12 x 18	305 x 457 mm (12 x 18 in)	✓					
B4 (JIS)	257 x 364 mm (10.12 x 14.33 in)	✓	✓	✓	✓	✓[1]	✓[1]
RA3	305 x 430 mm (12 x 16.93 in)	✓					
SRA3	320 x 450 mm (12.6 x 17.7 in)	✓					
B5 (JIS)	257 x 182 mm (10.12 x 7.17 in)	✓					
B6 (JIS)	(128 x 182 mm) (5.04 x 7.2 in)	✓					
8K	270 x 390 mm (10.63 x 15.35 in)	✓					
16K	195 x 270 mm (7.68 x 10.63 in)	✓					
8K	260 x 368 mm (10.2 x 14.5 in)	✓					
16K	184 x 260 mm (7.2 x 10.2 in)	✓					
8K	273 x 393.7 mm (10.75 x 15.5 in)	✓					
16K	196.8 x 273 mm (7.75 x 10.75 in)	✓					
Banner	(99 to 320 x up to 915 mm) (12.9 x 36 in)	✓					
Envelope 9#	98.4 x 225.4 mm (3.88 x 8.88 in)	✓					
Envelope 10#	104.77 x 241.3 mm (4.12 x 9.5 in)	✓					
Envelope DL	110 x 220 mm (4.33 x 8.66 in)	✓					
Envelope C5	162 x 229 mm (6.38 x 9.02 in)	✓					

Table 3-3 Supported paper and print media sizes for the optional HP 3-bin Stapler/Stacker and HP Booklet Maker/ Finisher accessories (continued)

Size	Dimensions	Stacking[2]	Angled staple (left-angled)	Angled staple (right-angled)	Two staples (top or side)	Folding	Saddle stitch
Envelope B5	176 x 250 mm (6.93 x 9.84 in)	✓					
Envelope C6	114 x 162 mm (4.49 x 6.38 in)	✓					
Envelope Monarch	98.42 x 190.5 mm (3.88 x 7.5 in)	✓					
Double Post Card	148 x 200 mm (5.83 x 7.87 in)	✓					

[1] Booklet maker only

[2] Stacking uses bins 1, 2, and 3 in the stapler/stacker, or bins 1 and 2 in the booklet maker.

Supported paper types

Table 3-4 Tray 1 paper information

Type	Specifications	Quantity	Driver settings	Paper orientation
Paper and cardstock, standard sizes	Range: 60 g/m^2 (16 lb) bond to 220 g/m^2 (58 lb) bond	Maximum stack height: 10 mm (0.6 in) Equivalent to 100 sheets of 75 g/m^2 (20 lb) bond.	Plain or unspecified	Load preprinted or prepunched paper facing down, with the bottom edge leading into the tray, or toward the front of the product
Envelopes	Less than 60 g/m^2 (16 lb) bond to 90 g/m^2 (24 lb) bond	Up to 10 envelopes	Envelope	Short edge leading, flap toward the back of the product, facing up
Labels	Maximum 0.23 mm (0.009 in) thick	Maximum stack height: 10 mm (0.6 in)	Labels	Side to be printed on facing down
Transparencies	Minimum 0.13 mm (0.005 in) thick	Maximum stack height: 10 mm (0.6 in)	Transparencies	Side to be printed on facing down
Heavy	0.13 mm (0.005 in) thick	Maximum stack height: 10 mm (0.6 in)	Light glossy, glossy, or heavy glossy	Side to be printed on facing down
Glossy	Range: 75 g/m^2 (20 lb) bond to 220 g/m^2 (58 lb) bond	Maximum stack height: 10 mm (0.6 in)	Light glossy, glossy, or heavy glossy	Side to be printed on facing down
Photo media	60 g/m^2 (16 lb) bond to 220 g/m^2 (58 lb) bond	Maximum stack height: 10 mm (0.6 in)	Light glossy, glossy, or heavy glossy	Side to be printed on facing down
Cut sheet paper	60 g/m^2 (16 lb) bond to 220 g/m^2 (58 lb) bond	Maximum stack height: 10 mm (0.6 in)	Plain or unspecified	Side to be printed on facing down
Tough paper	60 g/m^2 (16 lb) bond to 220 g/m^2 (58 lb) bond	Maximum stack height: 10 mm (0.6 in)	HP Tough paper	Side to be printed on facing down
Banner paper	Range: 75 g/m^2 (20 lb) bond to 220 g/m^2 (58 lb) bond	Maximum stack height: 10 mm (0.6 in)	Plain or unspecified	Side to be printed on facing down

△ **CAUTION:** Do not use banner media heavier than 120 g/m^2 with the optional 3–bin stapler/stacker or the optional booklet maker finisher. Heavy banner media is not supported for these products.

Table 3-5 Trays 2, 3, 4, and 5 paper information

Type	Specifications	Quantity	Driver Settings	Paper orientation
Paper and cardstock, standard sizes	Range: 60 g/m^2 (16 lb) bond to 220 g/m^2 (58 lb) bond	500 sheets of 75 g/m^2 (20 lb) bond.	Plain or unspecified	Load preprinted or prepunched paper facing up, with the top toward the front of the tray or toward the left-hand side of the tray.
Labels	Maximum 0.13 mm (0.005 in) thick	Maximum stack height: 54 mm (2.1 in)	Labels	Side to be printed on facing up
Transparencies	Minimum 0.13 mm (0.005 in) thick	Maximum stack height: 54 mm (2.1 in)	Transparencies	Side to be printed on facing up

Table 3-5 Trays 2, 3, 4, and 5 paper information (continued)

Type	Specifications	Quantity	Driver Settings	Paper orientation
Heavy	0.13 mm (0.005 in) thick	Maximum stack height: 54 mm (2.1 in)	Light glossy, glossy, or heavy glossy	Side to be printed on facing up
Glossy	Range: 75 g/m^2 (20 lb) bond to 220 g/m^2 (58 lb) bond	Maximum stack height: 54 mm (2.1 in)	Light glossy, glossy, or heavy glossy	Side to be printed on facing up
Photo media	60 g/m^2 (16 lb) bond to 220 g/m^2 (58 lb) bond	Maximum stack height: 54 mm (2.1 in)	Light glossy, glossy, or heavy glossy	Side to be printed on facing up
Cut sheet paper	60 g/m^2 (16 lb) bond to 220 g/m^2 (58 lb) bond	Maximum stack height: 54 mm (2.1 in)	Plain or unspecified	Side to be printed on facing up
Tough paper	60 g/m^2 (16 lb) bond to 220 g/m^2 (58 lb) bond	Maximum stack height: 54 mm (2.1 in)	HP Tough paper	Side to be printed on facing up

Trays 2, 3, 4, and 5 capacity: 54 mm (2.126 in) height or 500 sheets of paper, whichever is less. Supported media types include: Cut sheet paper, labels, OHT, glossy paper, glossy film, photo media, and tough paper. Basis Weight: 60-220 g/m^2 (16-58 lb).

Duplex printing: Provides automatic two-sided printing (printing on both sides of the paper). Not available on the HP Color LaserJet CP6015n model, which cannot be upgraded to duplex printing. The paper size range for automatic duplex printing is 175 to 320 mm (6.9 to 12.6 in) x 210 to 457 mm (8.3 to 18 in). The media weight range is 60 to 220 g/m^2 (16 to 58 lb)

NOTE: HP Color Laser Presentation Paper, Glossy (Q2546A, Q2547A) is not supported with this product. Using this type of paper can cause a fuser jam that might require the replacement of the fuser. Two recommended alternatives are HP Color LaserJet Presentation Paper, Soft Gloss (Q6541A) and HP Color LaserJet Brochure Paper, Glossy (Q6611A, Q6610A).

NOTE: For a complete list of specific HP-brand paper that this product supports, go to www.hp.com/sbso/product/supplies.

Special paper or print media guidelines

This product supports printing on special media. Use the following guidelines to obtain satisfactory results. When using special paper or print media, be sure to set the type and size in your print driver to obtain the best print results.

△ **CAUTION:** HP LaserJet printers use fusers to bond dry toner particles to the paper in very precise dots. HP laser paper is designed to withstand this extreme heat. Using inkjet paper not designed for this technology could damage your printer.

Media type	Do	Do not
Envelopes	• Store envelopes flat. • Use envelopes where the seam extends all the way to the corner of the envelope. • Use peel-off adhesive strips that are approved for use in laser printers.	• Do not use envelopes that are wrinkled, nicked, stuck together, or otherwise damaged. • Do not use envelopes that have clasps, snaps, windows, or coated linings. • Do not use self-stick adhesives or other synthetic materials.
Labels	• Use only labels that have no exposed backing between them. • Use Labels that lie flat. • Use only full sheets of labels.	• Do not use labels that have wrinkles or bubbles, or are damaged. • Do not print partial sheets of labels.
Transparencies	• Use only transparencies that are approved for use in laser printers. • Place transparencies on a flat surface after removing them from the product.	• Do not use transparent print media not approved for laser printers.
Letterhead or preprinted forms	• Use only letterhead or forms approved for use in laser printers.	• Do not use raised or metallic letterhead.
Heavy paper	• Use only heavy paper that is approved for use in laser printers and meets the weight specifications for this product.	• Do not use paper that is heavier than the recommended media specification for this product unless it is HP paper that has been approved for use in this product.
Glossy or coated paper	• Use only glossy or coated paper that is approved for use in laser printers.	• Do not use glossy or coated paper designed for use in inkjet products.

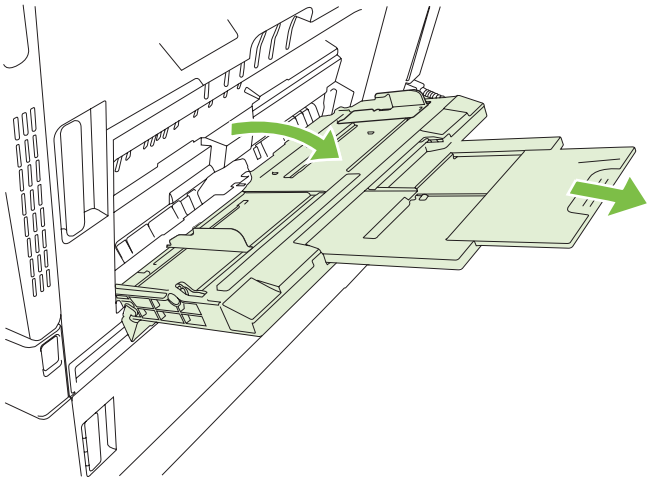
Load paper and print media

You can load different media in the trays and then request media by type or size by using the control panel.

Load Tray 1

△ **CAUTION:** To avoid jams, never add or remove paper from Tray 1 during printing.

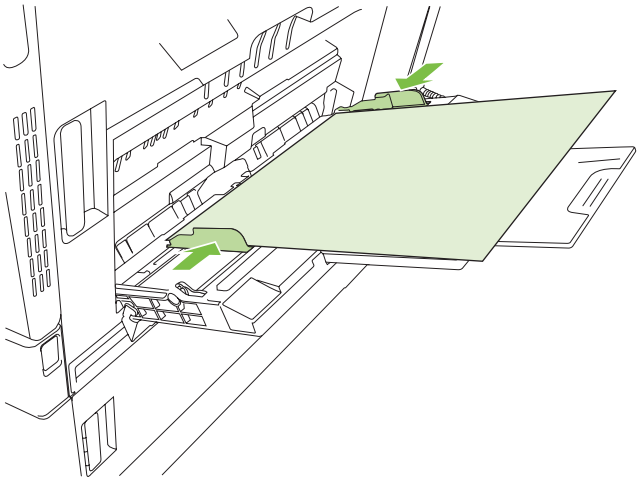
1. Open Tray 1.



2. Set the side guides to the correct width, and pull out the tray extensions to support paper.
3. Load paper in the tray with the side to be printed on face down and the top of the paper or non-postage end facing the front of the printer.

NOTE: For Letter Rotated and A4 Rotated sizes, place the side to be printed on face down, with the top of the page facing into the printer.

4. Make sure the stack fits under the tabs on the guides and does not exceed the load-level indicators.
5. Adjust the side guides so that they lightly touch the paper stack but do not bend it.



Print envelopes

If your software does not automatically format an envelope, specify **Landscape** for page orientation in your software program or printer driver. Use the following guidelines to set margins for return and destination addresses on Commercial #10 or DL envelopes:

Address type	Left margin	Top margin
Return	15 mm (0.6 in)	15 mm (0.6 in)
Destination	102 mm (4 in)	51 mm (2 in)

For envelopes of other sizes, adjust the margin settings accordingly.

Load banner paper into Tray 1

You can print banners from 457 mm (18 in) to 915 mm (36 in) in length and from 99 mm (4 in) to 320 mm (12.6 in) in width.

△ **CAUTION:** Do not use banner media heavier than 120 g/m^2 with the optional 3–bin stapler/stacker or the optional booklet maker finisher. Heavy banner media is not supported for these products.

Load Trays 2, 3, 4, or 5

Trays 2, 3, 4, and 5 each hold up to 500 sheets of standard paper or a 54 mm (2.13 in) stack of labels or other thick paper.

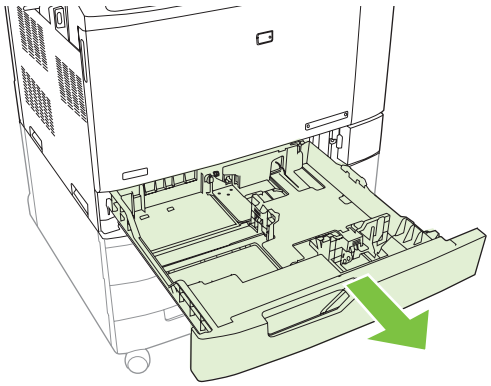
Load standard-sized paper into Trays 2, 3, 4, or 5

The product automatically detects the following standard sizes of paper in the 500-sheet trays: Letter, Letter Rotated, Legal, Executive, 11x17, A3, A4, A4 Rotated, A5, B4 (JIS), and B5 (JIS).

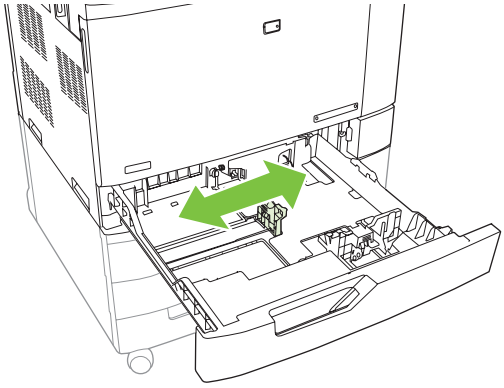
△ **CAUTION:** Do not print envelopes or unsupported sizes of paper from the 500-sheet trays. Print on these types of paper only from Tray 1.

1. Slide the tray from the product.

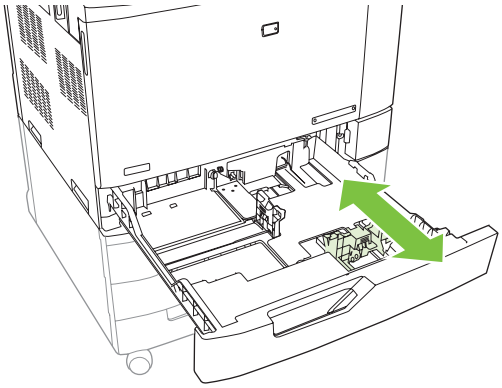
NOTE: Do not open the input tray while it is in use. Doing so can cause jams in the product.



2. Adjust the paper-width guide by squeezing the adjustment latch and sliding the guide to the size of the paper being used.

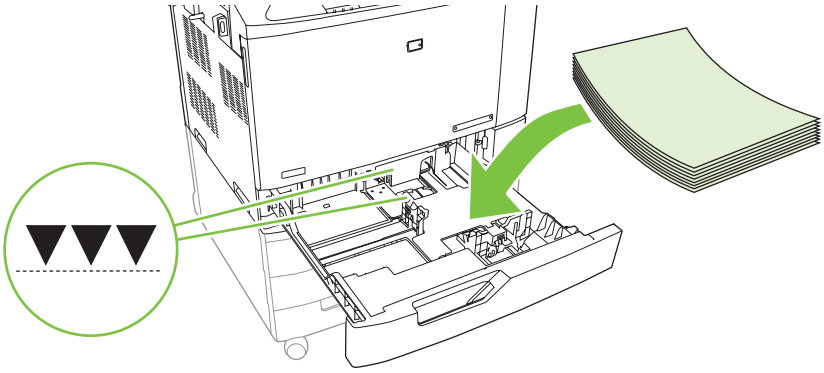


3. Adjust the paper-length guide by squeezing the adjustment latch and sliding the guide to the size of the paper being used.



4. Load paper into the tray face up. Check the paper to verify the guides lightly touch the stack, but do not bend it.

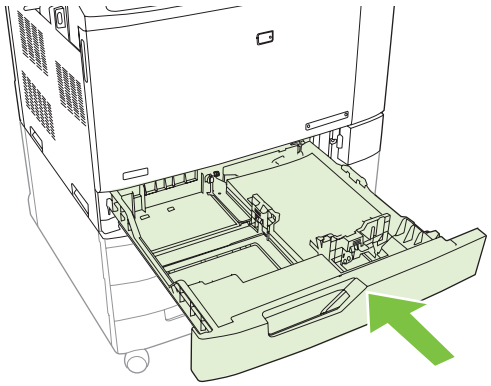
NOTE: To prevent jams, do not overfill the input tray. Be sure the top of the stack is below the tray full indicator.



NOTE: For best performance, fill the tray completely without splitting the ream of paper. Splitting the ream can cause a multifeed problem. The capacity of the paper tray can vary. For example, if you are using 75 g/m^2 (20 lb) paper, the tray holds a full ream of 500 sheets. If the media is heavier, the tray will not hold a full ream. Do not overfill the tray.

NOTE: If the tray is not adjusted correctly, an error message might appear or the media might jam.

5. Slide the tray into the product. The control panel shows the tray's media type and size. If the configuration is not correct, press the checkmark button ✓ on the control panel. If the configuration is correct, press the back arrow ⮌.



Load undetectable standard-sized paper into Trays 2, 3, 4, and 5

The following undetectable standard-sized media is supported in the 500-sheet trays:

- Executive (JIS) (8.5 x 13)
- 12 x 18 (Trays 3, 4, or 5 only)
- B4 (ISO)
- RA3 (Trays 3, 4, or 5 only)

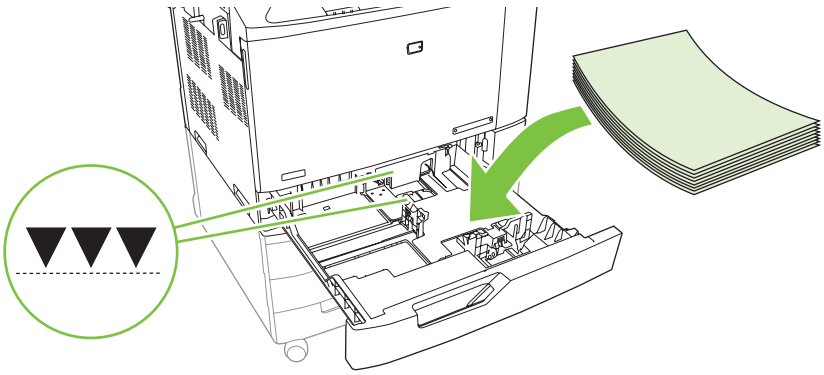
- SRA3 (Trays 3, 4, or 5 only)
- B5 (ISO)
- RA4
- SRA4
- 8K 270 x 390 mm
- 16K 195 x 270 mm
- 8K 260 x 368 mm
- 16K 184 x 260 mm
- 8K 273 x 394 mm
- 16K 197 x 273 mm

△ **CAUTION:** Do not print envelopes or unsupported sizes of paper from the 500-sheet trays. Print on these types of paper only from Tray 1. Do not overfill the input tray or open it while it is in use. Doing so can cause paper jams.

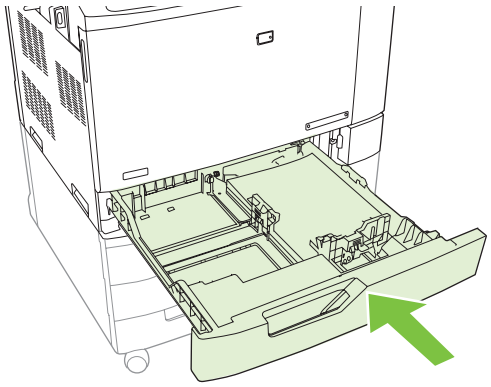
Load custom-size paper into Tray 2, 3, 4, or 5

To use custom media, change the size setting on the control panel to **CUSTOM** and set the unit of measure, X dimension, and Y dimension. See Configure a tray to match print job settings on page 66 for more information.

1. Slide open the tray from the product.
2. Load the print media as described in steps 2 through 4 of the “Load detectable (standard-size) media into Tray 2, 3, 4, or 5” section. Then proceed to step 3 in this procedure.

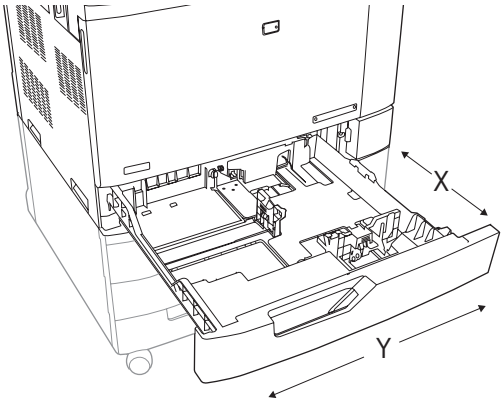


3. Slide the tray into the product. The control panel shows the tray type and size configuration. To specify custom dimensions, or if the type is not correct, press the checkmark button ✓ when the control panel prompts to change the size or type.



4. Select **CUSTOM**, and then input the X and Y dimensions of the custom paper size.

NOTE: Refer to the label in the paper tray, or to the figure below, to determine the X and Y dimensions.

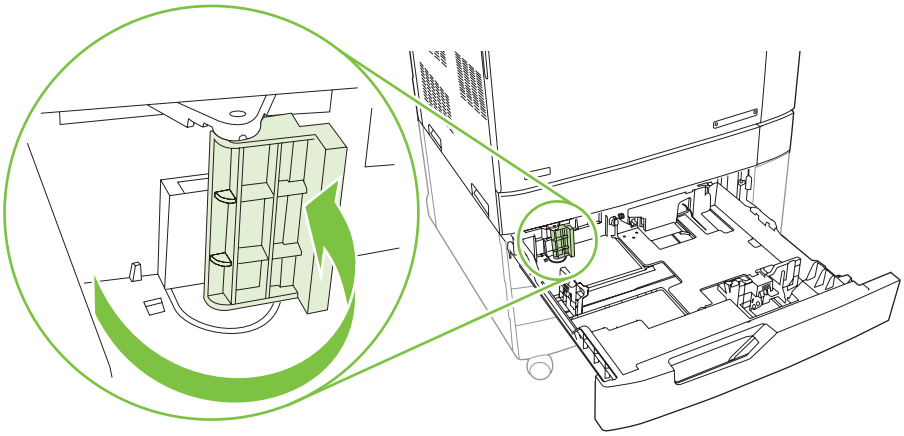


5. If the configuration is correct, press the back arrow ⮌.

Load large-size paper into Tray 3, 4, or 5

Use the following instructions if you are loading 11x17, RA3, SRA3, or 12 x 18-sized paper into Tray 3, 4, or 5.

1. Slide open Tray 3, 4, or 5.
2. Adjust the paper width guide by squeezing the adjustment latch and sliding the guide to the size of the paper being used.
3. Load the paper into the tray.
4. Move the paper stop lever to the correct position for the paper being used.



- For SRA3-sized paper, rotate the lever all the way to the left.
- For A3- or 11x17-sized paper, rotate the lever down into the center position.
- For RA3- or 12x18-sized paper, rotate the lever all the way to the right.

5. Slide the tray into the product. The control panel shows the tray's media type and size. If the configuration is not correct, press the checkmark button ✓. If the configuration is correct, press the back arrow ⮌.

Configure trays

The product automatically prompts you to configure a tray for type and size in the following situations:

- When you load paper into the tray
- When you specify a particular tray or media type for a print job through the printer driver or a software program and the tray is not configured to match the print-job's settings

The following message appears on the control panel:**Tray <X> [type] [size] To change size or type press the checkmark button ✓. To accept settings press the back arrow ⮌.**

NOTE: The prompt does not appear if you are printing from Tray 1 and it is configured for **ANY CUSTOM** and **ANY TYPE**.

NOTE: If you have used other HP LaserJet product models, you might be accustomed to configuring Tray 1 to **First** mode or **Cassette** mode. For this product, setting Tray 1 size to **ANY CUSTOM** is equivalent to **First** mode. Setting size for Tray 1 to a setting other than **ANY CUSTOM** is equivalent to **Cassette** mode.

Configure a tray when loading paper

1. Load paper in the tray. Close the tray if you are using Tray 2, 3, 4, or 5.
2. The tray configuration message appears.
3. Press the back arrow ⮌ to accept the detected size, or press the checkmark button ✓ to choose a different paper size.
4. If you are modifying the tray configuration, press the down arrow ▼ to highlight the correct size, and then press the checkmark button ✓.

   NOTE: The product automatically detects most paper sizes in Trays 2, 3, 4, and 5.

5. If you are modifying the tray configuration, press the down arrow ▼ to highlight the correct type, and then press the checkmark button ✓.

Configure a tray to match print job settings

1. In the software program, specify the source tray, the paper size, and the paper type.
2. Send the job to the product.

   If the tray needs to be configured, the **LOAD TRAY X <TYPE> <SIZE>** message appears.
3. Load the tray with the specified type and size of paper, and then close the tray. Press the down arrow ▼ to highlight the correct size, or highlight **CUSTOM**.

   To specify a custom size, first press the down arrow ▼ to highlight the correct unit of measure. Then use the numeric keypad to set the X and Y dimensions.
4. When the **TRAY<X> SIZE=<SIZE>** message appears, press the checkmark button ✓ to confirm the size.
5. When the **TRAY<X> TYPE=<TYPE>** message appears, press the checkmark button ✓ to confirm the type and continue with the job.

Configure a tray by using the Paper Handling menu

You can also configure the trays for type and size without a prompt from the product.

1. Press Menu.
2. Press the down arrow ▼ to highlight **PAPER HANDLING**, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight the size or type setting for the desired tray, and then press the checkmark button ✓.
4. Press the up arrow ▲ or the down arrow ▲ to highlight the size or type. If you select a custom size, select the unit of measure, and then use the numeric keypad to set the X dimension and the Y dimension.
5. Press the checkmark button ✓ to save your selection.
6. Press the back arrow ⮌.
7. Press the back arrow ⮌ again.

Automatic media type sensing (auto sense mode)

The automatic media type sensor functions only when that tray is configured to ANY TYPE. Configuring a tray to any other type, such as Bond or Glossy, deactivates the media sensor in that tray.

The HP Color LaserJet CP6015 Series printers can automatically classify many paper types into one of the following categories:

- Plain
- Transparency
- Glossy
- Glossy film (tough paper)
- Heavy

For more control, a specific type must be selected in the job or configured in a tray.

Auto-sense settings

Full sensing

- The product recognizes plain and heavy paper, transparencies, glossy paper, and tough paper.
- The product stops every page to sense the type.
- This is the slowest mode.
- Only available for Tray 1

Expanded sensing (default)

- The product recognizes plain and heavy paper, transparencies, glossy paper, and tough paper.
- Each time the product begins a print job, it stops the first page to sense the type.

- The product assumes that the second and all subsequent pages are of the same media type as the first page.
- This is the second-fastest mode, and is useful for using stacks of the same media type.
- Available for all trays

Transparency only

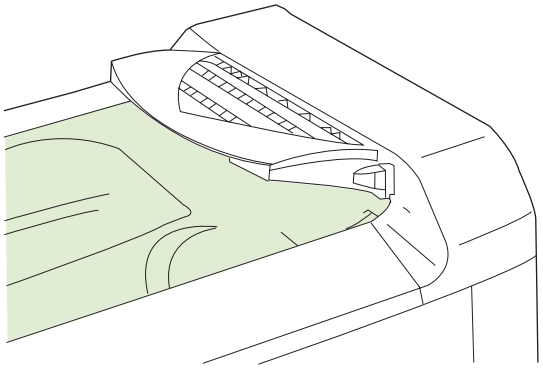
- The product does not stop any pages for sensing but distinguishes between transparencies (Transparency mode) and paper (Normal mode).
- This is the fastest mode and is useful for high-volume printing in Normal mode.
- This mode is active automatically all the time in all trays even if one of the other two modes is selected.

For more information about setting these options, see Print Quality menu on page 24

Choose an output location

Standard output bin

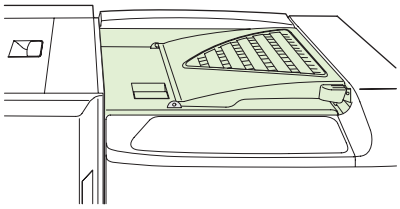
The product has a standard output bin for printed pages.



When you send print jobs to the product from a computer, the output is routed to the standard output bin or to one of the output bins on the optional 3-bin stapler/stacker or booklet maker finisher.

Optional output accessories

An optional stapler/stacker or booklet maker can be installed with the product. When an accessory is installed, an output accessory bridge is also added on top of the product in order to route the print jobs to the accessory output bins.



3-bin stapler/stacker features

Table 3-6 3-bin stapler/stacker features

Job offset	Each copy of a job is shifted to one side in the output bin in order to keep each copy separate from the others. (Supported paper sizes: A3, A4, A4 rotated, A5, B4, B5, Ledger, Legal, Letter, Letter rotated, Statement.)
Two operation modes	Mailbox Mode assigns each bin to a user or group of users, and Stacker Mode uses all three output bins for all print jobs — when one bin is full, jobs are routed to the next bin.
Stapler	Built-in stapler staples jobs up to 50 sheets in size. Pages can be stapled in one position at the front, in one position at the back, or at two positions at the side or top.
Large-capacity output bins	The stacker has three bins: a 100-sheet bin, a 500-sheet bin, and a 1000-sheet bin.

Booklet maker finisher features

Table 3-7 Booklet-maker finisher features

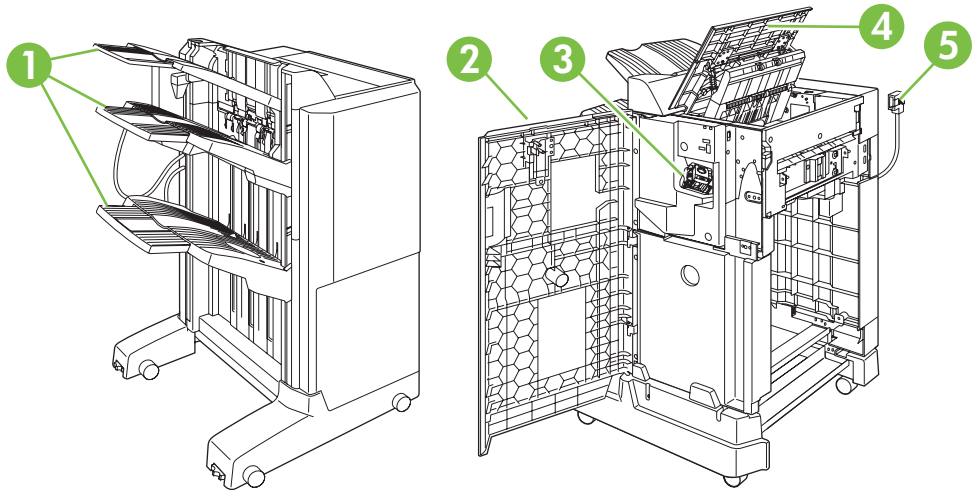
Booklet-making	The booklet-making feature staples and folds print jobs of 2 to 15 pages into a booklet.

Table 3-7 Booklet-maker finisher features (continued)

Folding	Single-sheet print jobs can be automatically folded in the center.
Job offset	Each copy of a job is shifted to one side in the output bin in order to keep each copy separate from the others. (Supported paper sizes: A3, A4, A4 rotated, A5, B4, B5, Ledger, Legal, Letter, Letter rotated, Statement.)
Two operation modes	Mailbox Mode assigns each bin to a user or group of users, and Stacker Mode uses both output bins for all print jobs — when the top bin is full, jobs are routed to the next bin.
Stapler	Built-in stapler staples jobs up to 50 sheets in size. Pages can be stapled in one position at the front, in one position at the back, or at two positions at the side or top.
Large-capacity output bins	The stacker has three bins: two 1000-sheet bins and one bin that can hold up to 25 saddle-stitched booklets.

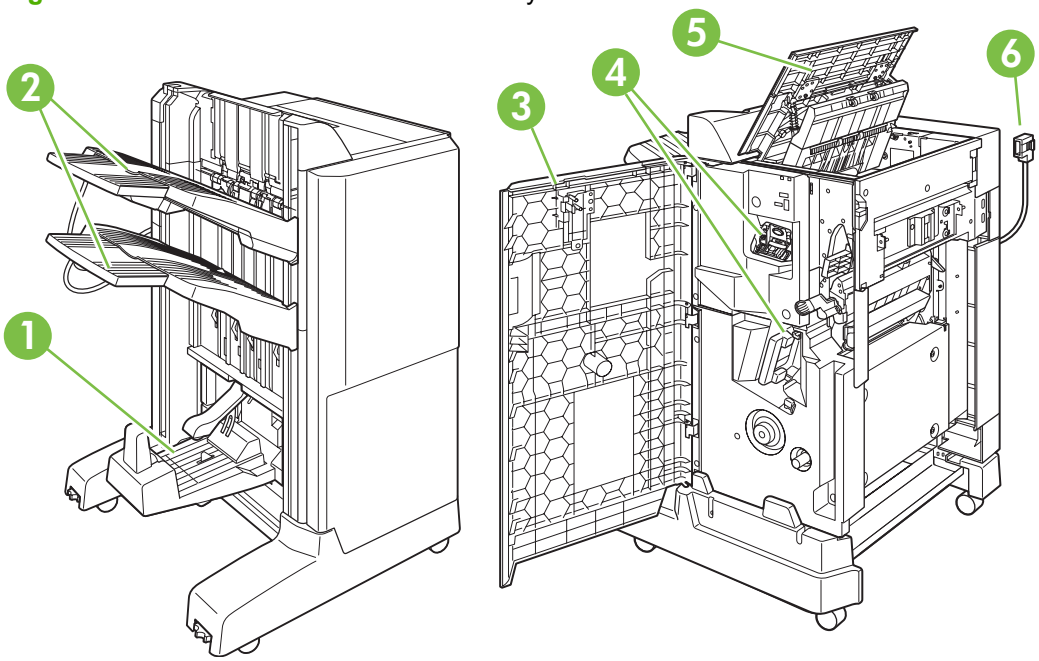
Accessory walkaround

Figure 3-1 3-bin stapler/stacker accessory



1	Output bins
2	Front door
3	Stapler unit
4	Top cover
5	Connection cable

Figure 3-2 Booklet-maker finisher accessory



1	Booklet output bin
2	Stacking output bins
3	Front door
4	Stapler units
5	Top cover
6	Connection cable

Configure the accessory operation mode

Select the operating mode at the control panel

You can set the operating mode for the 3-bin stapler/stacker or the booklet maker finisher at the product control panel.

1. At the control panel, press Menu.
2. Press the down arrow ▼ to highlight the **CONFIGURE DEVICE** menu, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight the **MBM-3 BIN STAPLER** menu or **MULTIFUNCT FINISHER**, and then press the checkmark button ✓.

4. Press the down arrow ▼ to highlight **OPERATION MODE**, and then press the checkmark button ✓.

5. Select the operation mode that you want to use.

   - When Mailbox Mode is used, each bin is assigned to a user or group of users. Every time a user sends a print job, the job is routed to the assigned bin.
   - When Stacker Mode is used and the optional 3-bin stapler/stacker is installed, the three bins act as a single bin. When one bin is full, jobs are automatically routed to the next bin. When Stacker Mode is used and the booklet maker finisher is installed, the two upper bins act as a single bin, and the third bin is reserved for booklets.

NOTE: Use the product embedded Web server to assign output bins to users or groups of users. For more information see Embedded Web server on page 78

Select the operating mode in the printer driver (Windows)

1. Click the **Start** button, point to **Settings**, and then click **Printers** (for Windows 2000) or **Printers and Faxes** (for Windows XP).
2. Right-click the HP product icon, and then click **Properties** or **Printing Preferences**.
3. Click the **Device Settings** tab.
4. Perform one of the following actions:

   For automatic configuration: under **Installable Options**, click **Update Now** in the **Automatic Configuration** list.

   -or-

   For manual configuration: under **Installable Options**, select the appropriate operation mode in the **Accessory Output Bin** list.

5. Click **Apply** to save the settings.

Select the operating mode in the printer driver (Mac OS X)

1. In the **Apple** menu, click **System Preferences**.
2. In the **System Preferences** box, click **Print and Fax**.
3. Click **Set Up Printers**. A **Printer List** displays.
4. Select the HP product, and then click **Show Info** on the **Printers** menu.
5. Select the **Installable Options** panel.
6. In the **Accessory Output Bins** list, select correct accessory.
7. In the **Mailbox Mode** list, select the appropriate operational mode, and then click **Apply Changes**.

4 Manage and maintain the product

- Information pages
- HP Easy Printer Care
- Embedded Web server
- Use HP Web Jetadmin software
- Security features
- Manage supplies
- Replace supplies
- Clean the product
- Upgrade the firmware
- Set the real-time clock

Information pages

Information pages provide details about the product and its current configuration. Use the following procedure to print the information pages.

1. Press Menu.
2. Press the down arrow ▼ to highlight INFORMATION, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight the required information, and then press the checkmark button ✓ to print.

For more information about the available information pages, see Information menu on page 20.

HP Easy Printer Care

Open the HP Easy Printer Care software

Use one of the following methods to open the HP Easy Printer Care software:

- On the **Start** menu, select **Programs**, select **Hewlett-Packard**, select **HP Easy Printer Care**, and then click **Start HP Easy Printer Care**.
- In the Windows system tray (in the lower-right corner of the desktop), double-click the HP Easy Printer Care icon.
- Double-click the desktop icon.

HP Easy Printer Care software sections

HP Easy Printer Care software can provide information about multiple HP products that are on your network as well as any products that are directly connected to your computer. Some of the items that are in the following table might not be available for every product.

The Help button (**?**) in the upper-right corner of each page provides more detailed information about the options on that page.

Section	Options
Device List tab When you open the software, this is the first page that appears. **NOTE:** To return to this page from any tab, click **My HP Printers** in the left side of the window.	• **Devices** list: Shows the products that you can select. **NOTE:** The product information appears either in list form or as icons, depending on the setting for the **View as** option. • The information on this tab includes current alerts for the product. • If you click a product in the list, the HP Easy Printer Care opens the **Overview** tab for that product.
Compatible Printers	Provides a list of all the HP products that support HP Easy Printer Care software.
Find Other Printers window Add more products to the **My HP Printers** list	Click the **Find Other Printers** link in the **Devices** list to open the **Find Other Printers** window. The **Find Other Printers** window provides a utility that detects other network printers so that you can add them to the **My HP Printers** list and then monitor those products from your computer.
Overview tab Contains basic status information for the device	• **Device Status** section: This section shows product-identification information and the product status. It indicates product-alert conditions, such as an empty print cartridge. After you correct a problem with the product, click the refresh button in the upper-right corner of the window to update the status. • **Supplies Status** section: Shows detailed supplies status, such as the percentage of toner remaining in the print cartridge and the status of the paper that is loaded in each tray. • **Supplies Details** link: Opens the supplies status page to view more detailed information about product supplies, ordering information, and recycling information.

Section	Options
Support tab Provides links to support information	• **Device Status** section: This section shows product-identification information and the product status. It indicates product-alert conditions, such as an empty print cartridge. After you correct a problem with the product, click the refresh button in the upper-right corner of the window to update the status. • **Device Management** section: Provides links to information about HP Easy Printer Care, to advanced product settings, and to product usage reports. • **Troubleshooting and Help**: Provides links to tools that you can use to resolve problems, to online product support information, and to online HP experts.
Settings tab Configure product settings, adjust print-quality settings, and find information about specific product features **NOTE:** This tab is not available for some products.	• **About**: Provides general information about this tab. • **General**: Provides information about the product, such as the model number, serial number, and the settings for date and time, if they are available. • **Information Pages**: Provides links to print the information pages that are available for the product. • **Capabilities**: Provides information about product features, such as duplexing, the available memory, and the available printing personalities. Click **Change** to adjust the settings. • **Print Quality**: Provides information about print-quality settings. Click **Change** to adjust the settings. • **Trays / Paper**: Provides information about the trays and how they are configured. Click **Change** to adjust the settings. • **Restore Defaults**: Provides a way to restore the product settings to the factory defaults. Click **Restore** to restore the settings to the defaults.
HP Proactive Support **NOTE:** This item is available from the **Overview** and **Support** tabs.	When enabled, HP Proactive Support routinely scans your printing system to identify potential problems. Click the **more info** link to configure how frequently the scans occur. This page also provides information about available updates for product software, firmware, and HP printer drivers. You can accept or decline each recommended update.
Supplies Ordering button Click the **Supplies Ordering** button on any tab to open the **Supplies Ordering** window, which provides access to online supplies ordering. **NOTE:** This item is available from the **Overview** and **Support** tabs.	• Ordering list: Shows the supplies that you can order for each product. To order a certain item, click the **Order** check box for that item in the supplies list. You can sort the list by product, or by the supplies that need to be ordered the soonest. The list contains supplies information for every product that is in the **My HP Printers** list. • **Shop Online for Supplies** button: Opens the HP SureSupply Web site in a new browser window. If you have checked the **Order** check box for any items, the information about those items can be transferred to the Web site, where you will receive information on options for purchasing your selected supplies. • **Print Shopping List** button: Prints the information for the supplies that have the **Order** check box selected.
Alert Settings link **NOTE:** This item is available from the **Overview** and **Support** tabs.	Click **Alert Settings** to open the Alert Settings window, in which you can configure alerts for each product. • Alerting is on or off: Activates or deactivates the alerts feature. • **Printer Alerts**: Select the option to receive alerts for critical errors only, or for any error. • **Job Alerts**: For products that support it, you can receive alerts for specific print jobs.
Color Access Control	Use this feature to permit or restrict color printing.

Section	Options
NOTE: This item is available only for HP color products that support Color Access Control. **NOTE:** This item is available from the **Overview** and **Support** tabs.	

Embedded Web server

Use the embedded Web server to view product status, configure product network settings, and to manage printing functions from your computer instead of from the product control panel. The following are examples of what you can do using the embedded Web server:

NOTE: When the product is directly connected to a computer, use the HP Easy Printer Care to view the product status instead of the embedded Web server.

- View product status information.
- Determine the remaining life for all supplies and order new ones.
- View and change tray configurations.
- View and change the product control-panel menu configuration.
- View and print internal pages.
- Receive notification of product and supplies events.
- View and change network configuration.

To use the embedded Web server, you must have Microsoft Internet Explorer 5.01 or later or Netscape 6.2 or later for Windows, Mac OS, and Linux (Netscape only). Netscape Navigator 4.7 is required for HP-UX 10 and HP-UX 11. The embedded Web server works when the product is connected to an IP-based network. The embedded Web server does not support IPX-based product connections. You do not have to have Internet access to open and use the embedded Web server.

When the product is connected to the network, the embedded Web server is automatically available.

NOTE: For complete information about using the embedded Web server, see the *Embedded Web Server User Guide*, which is on the CD that came with the product.

Open the embedded Web server by using a network connection

1. In a supported Web browser on your computer, type the product IP address or host name in the address/URL field. To find the IP address or host name, print a configuration page. See Information pages on page 74.

   NOTE: After you open the URL, you can bookmark it so that you can return to it quickly in the future.

2. The embedded Web server has the following tabs that contain settings and information about the product:

   - **Information** tab
   - **Settings** tab
   - **Networking** tab

   See Embedded Web server sections on page 79 for more information about each tab.

Embedded Web server sections

Tab or section	Options
Information tab Provides product, status, and configuration information	• **Device Status**: Shows the product status and shows the life remaining of HP supplies, with 0% indicating that a supply is empty. The page also shows the type and size of print paper set for each tray. To change the default settings, click **Change Settings**. • **Configuration Page**: Shows the information found on the configuration page. • **Supplies Status**: Shows the life remaining of HP supplies, with 0 percent indicating that a supply is empty. This page also provides supplies part numbers. To order new supplies, click **Shop for Supplies** in the **Other Links** area on the left side of the window. • **Event log**: Shows a list of all product events and errors. • **Usage page**: Shows a summary of the number of pages the product has printed, grouped by size and type. • **Diagnostics page**: Allows you to name the product, show the company name, assign an asset number to the product, and name the primary contact who manages the product. An HP-authorized support person might ask for this information. • **Device Information**: Shows the product network name, address, and model information. To customize these entries, click **Device Information** on the **Settings** tab. • **Control Panel**: Shows messages from the control panel, such as **Ready** or **Sleep mode on**. • **Print**: Allows you to send print-ready jobs to the product.
Settings tab Provides the ability to configure the product from your computer	• **Configure Device**: Allows you to configure product default settings. This page contains the traditional menus found on the control-panel display. • **E-mail Server**: Network only. Used in conjunction with the **Alerts** page to set up e-mail alerts. • **Alerts**: Network only. Allows you to set up to receive e-mail alerts for various product and supplies events. • **AutoSend**: Allows you to configure the product to send automated e-mails regarding product configuration and supplies to specific e-mail addresses. • **Security**: Allows you to set a password that must be entered to gain access to the **Settings** and **Networking** tabs. Enable and disable certain features of the embedded Web server. • **Edit Other Links**: Allows you to add or customize a link to another Web site. This link is displayed in the **Other Links** area on all embedded Web server pages. • **Device Information**: Allows you to name the product and assign an asset number to it. Enter the name and e-mail address for the primary contact who will receive information about the product. • **Language**: Allows you to determine the language in which to display the embedded Web server information. • **Date & Time**: Allows time synchronization with a network time server.

Tab or section	Options
	• **Wake Time**: Allows you to set or edit a wake time for the product to become ready. • **Restrict Color**: Allows you to permit or restrict color printing. You can specify permissions for individual users or for jobs that are sent from specific software programs. **NOTE:** The **Settings** tab can be password-protected. If this product is on a network, always consult with the system administrator before changing settings on this tab.
Networking tab Provides the ability to change network settings from your computer	Network administrators can use this tab to control network-related settings for the product when it is connected to an IP-based network. This tab does not appear if the product is directly connected to a computer, or if the product is connected to a network using anything other than an HP Jetdirect print server. **NOTE:** The **Networking** tab can be password-protected.
Other links Contains links that connect you to the Internet	• **HP Instant Support™**: Connects you to the HP Web site to help you find solutions to product problems. • **Shop for Supplies**: Connects to the HP SureSupply Web site, where you will receive information on options for purchasing original HP supplies, such as print cartridges and paper. • **Product Support**: Connects to the support site for the product, from which you can search for help regarding various topics. • **Show Me How**: Connects to information that demonstrates specific tasks for the product. **NOTE:** You must have Internet access in order to use any of these links. If you use a dial-up connection and did not connect when you first opened the embedded Web server, you must connect before you can visit these Web sites. Connecting might require that you close the embedded Web server and reopen it.

Use HP Web Jetadmin software

HP Web Jetadmin is a Web-based software solution for remotely installing, monitoring, and troubleshooting network-connected peripherals. The intuitive browser interface simplifies cross-platform management of a wide range of devices, including HP and non-HP devices. Management is proactive, allowing network administrators the ability to resolve issues before users are affected. Download this free, enhanced-management software at www.hp.com/go/webjetadmin_software.

To obtain plug-ins to HP Web Jetadmin, click **plug-ins**, and then click the **download** link that is next to the name of the plug-in that you want. The HP Web Jetadmin software can automatically notify you when new plug-ins are available. On the **Product Update** page, follow the directions to automatically connect to the HP Web site.

If installed on a host server, HP Web Jetadmin is available to any client through a supported Web browser, such as Microsoft Internet Explorer 6.0 for Windows or Netscape Navigator 7.1 for Linux. Browse to the HP Web Jetadmin host.

NOTE: Browsers must be Java-enabled. Browsing from an Apple PC is not supported.

Security features

This section explains important security features that are available for the product:

- Secure the embedded Web server
- Secure Disk Erase
- Lock the control-panel menus

Secure the embedded Web server

Assign a password for access to the embedded Web server so that unauthorized users cannot change the product settings.

1. Open the embedded Web server. See Embedded Web server on page 78.
2. Click the **Settings** tab.
3. On the left side of the window, click **Security**.
4. Type the password next to **New Password**, and type it again next to **Verify Password**.
5. Click **Apply**. Make note of the password and store it in a safe place.

Secure Disk Erase

To protect deleted data from unauthorized access on the product hard drive, use the Secure Disk Erase feature in the HP Web Jetadmin software. This feature can securely erase print jobs from the hard drive.

Secure Disk Erase offers the following levels of disk security:

- **Non-Secure Fast Erase**. This is a simple file-table erase function. Access to the file is removed, but actual data is retained on the disk until it is overwritten by subsequent data-storage operations. This is the fastest mode. Non-Secure Fast Erase is the default erase mode.
- **Secure Fast Erase**. Access to the file is removed, and the data is overwritten with a fixed identical character pattern. This is slower than Non-Secure Fast Erase, but all data is overwritten. Secure Fast Erase meets the U.S. Department of Defense 5220-22.M requirements for the clearing of disk media.
- **Secure Sanitizing Erase**. This level is similar to the Secure Fast Erase mode. In addition, data is repetitively overwritten by using an algorithm that prevents any residual data persistence. This mode will impact performance. Secure Sanitizing Erase meets the U.S. Department of Defense 5220-22.M requirements for the sanitization of disk media.

Data affected

Data affected (covered) by the Secure Disk Erase feature includes temporary files that are created during the print process, stored jobs, proof and hold jobs, disk-based fonts, disk-based macros (forms), address books, and HP and third-party applications.

NOTE: Stored jobs will be securely overwritten only when they have been deleted through the **RETRIEVE JOB** menu on the product after the appropriate erase mode has been set.

This feature will not impact data that is stored on flash-based product non-volatile RAM (NVRAM) that is used to store default settings, page counts, and similar data. This feature does not affect data that is

stored on a system RAM disk (if one is used). This feature does not impact data that is stored on the flash-based system boot RAM.

Changing the Secure Disk Erase mode does not overwrite previous data on the disk, nor does it immediately perform a full-disk sanitization. Changing the Secure Disk Erase mode changes how the product cleans up temporary data for jobs after the erase mode has been changed.

Additional Information

For additional information about the HP Secure Disk Erase feature, see the HP support flyer or go to www.hp.com/go/webjetadmin.

Job storage

To securely print a private job, use the personal job feature. The job can only be printed when the correct PIN is entered at the control panel.

Lock the control-panel menus

To prevent someone from changing the product configuration, you can lock the control-panel menus. This prevents unauthorized users from changing the configuration settings such as the SMTP server. The following procedure describes how to restrict access to the control-panel menus by using the HP Web Jetadmin software. (See Use HP Web Jetadmin software on page 81.)

1. Open the HP Web Jetadmin program.
2. Open the **DEVICE MANAGEMENT** folder in the drop-down list in the **Navigation** panel. Navigate to the **DEVICE LISTS** folder.
3. Select the product.
4. In the **Device Tools** drop-down list, select **Configure**.
5. Select **Security** from the **Configuration Categories** list.
6. Type a **Device Password**.
7. In the **Control Panel Access** section, select **Maximum Lock**. This prevents unauthorized users from gaining access to configuration settings.

Manage supplies

Use genuine HP print cartridges for the best printing results.

Print-cartridge storage

Do not remove the print cartridge from its package until you are ready to use it.

△ **CAUTION:** To prevent damage to the print cartridge, do not expose it to light for more than a few minutes.

HP policy on non-HP print cartridges

Hewlett-Packard Company cannot recommend the use of non-HP print cartridges, either new or remanufactured.

NOTE: Any damage caused by a non-HP print cartridge is not covered under the HP warranty and service agreements.

To install a new HP print cartridge, see Change print cartridges on page 86. To recycle the used cartridge, follow the instructions included with the new cartridge.

HP fraud hotline and Web site

Call the HP fraud hotline (1-877-219-3183, toll-free in North America) or go to www.hp.com/go/anticounterfeit when you install an HP print cartridge and the control-panel message says the cartridge is non-HP. HP will help determine if the cartridge is genuine and take steps to resolve the problem.

Your print cartridge might not be a genuine HP print cartridge if you notice the following:

- You are experiencing a high number of problems with the print cartridge.
- The cartridge does not look like it usually does (for example, the packaging differs from HP packaging).

Replace supplies

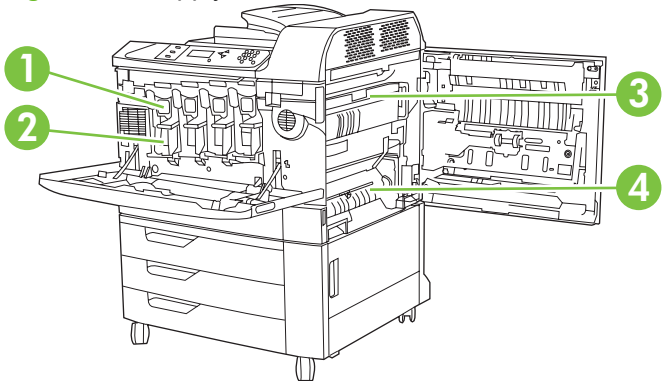
When you use genuine HP supplies, the product automatically notifies you when supplies are nearly depleted. The notification to order supplies allows ample time to order new supplies before they need to be replaced.

Locate supplies

Supplies are identified by their labeling and their blue plastic handles.

The following figure illustrates the location of each supply item.

Figure 4-1 Supply item locations



1	Print cartridges
2	Image drums
3	Fuser
4	Transfer unit
5	Transfer roller

Supply replacement guidelines

To facilitate the replacement of supplies, keep the following guidelines in mind when setting up the product.

- Allow sufficient space in the front and on the right side of the product for removing supplies.
- The product should be located on a flat, sturdy surface.

For instructions on installing supplies, see the installation guides provided with each supply item or see more information at www.hp.com/go/cljcp6015_software. When you connect, select **Solve a Problem**.

△ **CAUTION:** Hewlett-Packard recommends the use of genuine HP products in this product. Use of non-HP products may cause problems requiring service that is not covered by the Hewlett-Packard extended warranty or service agreements.

Approximate replacement intervals for supplies

The following table lists the estimated replacement intervals for supplies and the control panel messages that prompt when to replace each item. Usage conditions and print patterns may cause results to vary.

Item	Printer message	Page count	Approximate time period
Print cartridges	**REPLACE <COLOR> CARTRIDGE**	Black: 16,500 pages[1] Cyan, magenta, or yellow: 21,000 pages [1]	Black: 3 months Cyan, magenta, or yellow: 4 months
Image drums	**REPLACE <COLOR> DRUM**	35,000 pages[1]	
Image transfer kit	**REPLACE TRANSFER KIT**	150,000 pages[2]	36 months
Image fuser kit	**REPLACE FUSER KIT**	100,000 pages	25 months
Roller kit	**REPLACE ROLLER KIT**	150,000 pages	36 months
Stapler cartridge	**REPLACE STAPLE CARTRIDGE**	5000 staples	
Booklet maker staple cartridges	**REPLACE STAPLE CARTRIDGES 2 AND 3**	2,000 booklets	

[1] Cartridge yield figures are based on ISO standard testing.

[2] Approximate life is based on 4,000 pages per month.

Change print cartridges

When a print cartridge approaches the end of its useful life, the control panel displays a message recommending that you order a replacement. The product can continue to print using the current print cartridge until the control panel displays a message instructing you to replace the cartridge.

The product uses four colors and has a different print cartridge for each color: black (K), magenta (M), cyan (C), and yellow (Y).

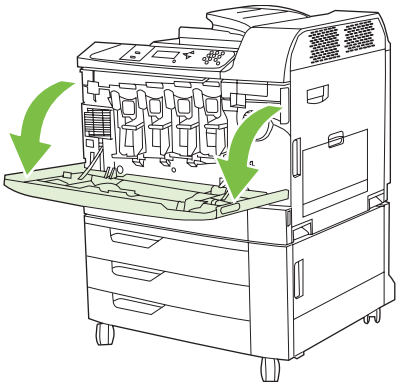
Replace a print cartridge when the control panel displays a **REPLACE <COLOR> CARTRIDGE** message. The control panel display will also indicate the color that should be replaced (if a genuine HP cartridge is currently installed). Replacement instructions are included in the print-cartridge box.

△ **CAUTION:** If toner gets on clothing, wipe it off with a dry cloth and wash the clothes in cold water. Hot water sets toner into fabric.

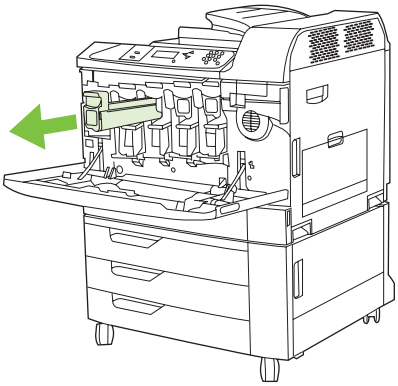
NOTE: Information about recycling used print cartridges is on the print-cartridge box.

Replace print cartridges

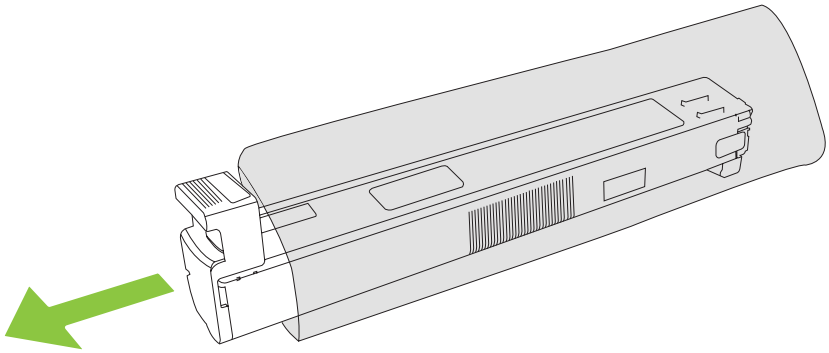
1. Grasp the grips on the sides of the front door and pull down to open.



2. Grasp the handle of the used print cartridge and pull out to remove.

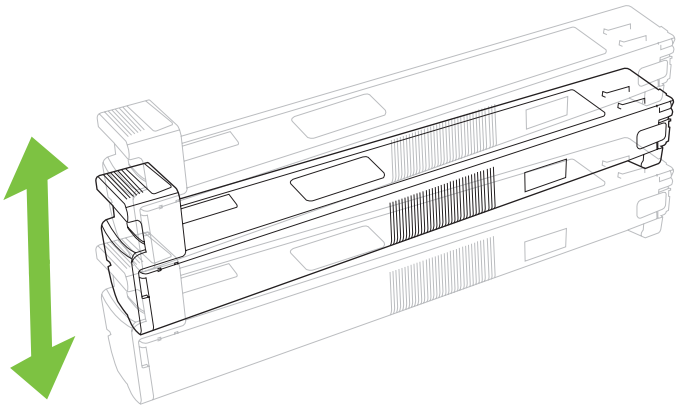


3. Store the used print cartridge in a protective bag. Information about recycling used print cartridges is on the print-cartridge box.
4. Remove additional print cartridges in the same manner.
5. Remove the new print cartridge from its protective bag.

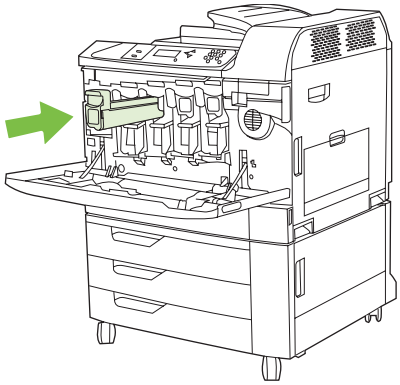


NOTE: Store the protective bag in a secure place for future use.

6. Hold both sides of the cartridge and shake up and down 5-6 times.

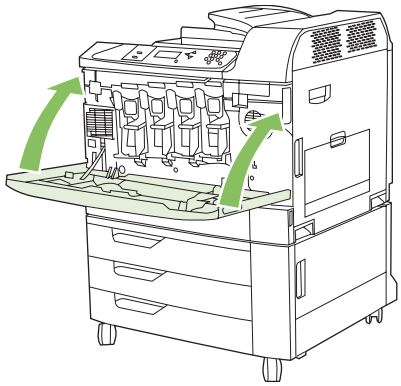


7. Align the print cartridge with its slot and insert the print cartridge until it clicks into place.



8. Insert additional print cartridges in the same manner.

9. Grasp the grips on the sides of the front door and lift up to close.



To recycle the used print cartridge, follow the instructions included with the new print cartridge.

Change image drums

When an image drum approaches the end of its useful life, the control panel displays a message recommending that you order a replacement. The product can continue to print using the current image drum until the control panel displays a message instructing you to replace the image drum.

The product uses four colors and has a different image drums for each color: black (K), magenta (M), cyan (C), and yellow (Y).

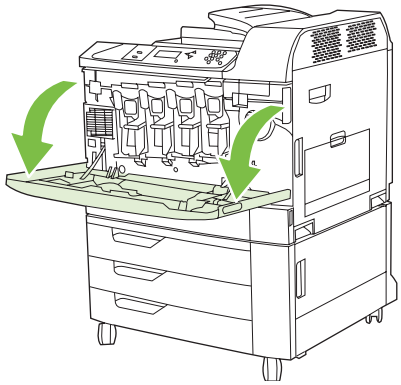
Replace an image drum when the control panel displays **REPLACE <COLOR> DRUM** message. The control-panel display also indicates the color that should be replaced (if a genuine HP cartridge is currently installed). Replacement instructions are included in the image drum box.

NOTE: If toner gets on clothing, wipe it off with a dry cloth and wash the clothes in cold water. Hot water sets toner into fabric.

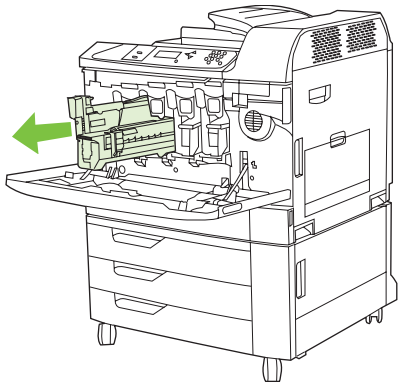
NOTE: Information about recycling used image drums is on the image drum box.

Replace image drums

1. Grasp the grips on the sides of the front door and pull down to open.



2. With one hand, lift and slowly pull the used image drum out of the product. Grasp the blue handle with your other hand when accessible.

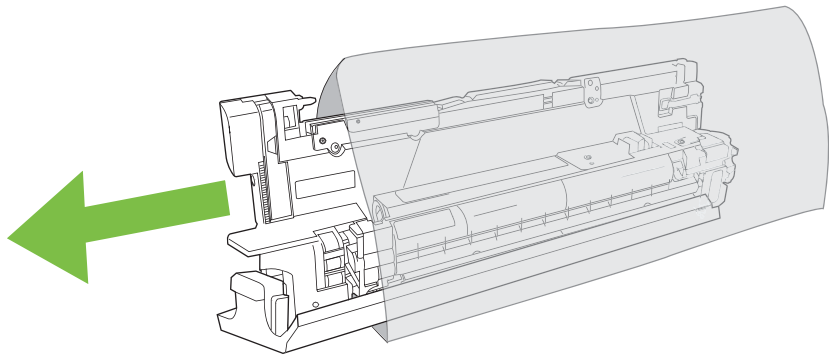


NOTE: If reusing the same image drum, do not touch the green cylinder on the bottom of the drum because it can damage the drum.

3. Store the used image drum in a protective bag. Information about recycling used image drums is on the image drum box.

4. Remove additional image drums in the same manner.

5. Remove the new image drum from its protective bag.

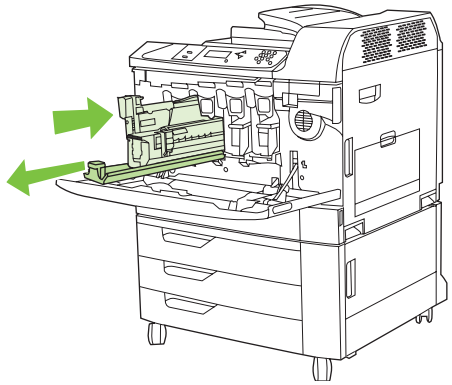


NOTE: Store protective bag in a secure place for future use.

NOTE: Do not shake the image drum.

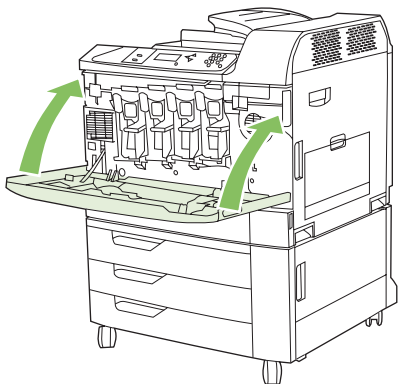
NOTE: Do not touch the green cylinder on the bottom of the image drum because it can damage the drum.

6. Align the image drum with the correct slot and insert the image drum until it clicks into place. The gray protective cover on the bottom of the drum automatically slides off as the image drum is inserted. You can discard this cover.



7. Insert additional image drums in the same manner.

8. Grasp the grips on the sides of the front door and lift up to close.



To recycle the used image drum, follow the instructions included with the new image drum.

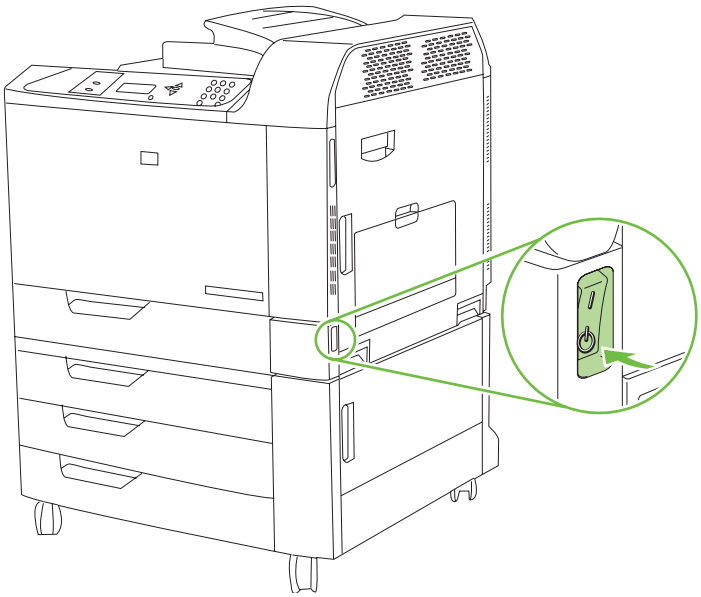
Install memory

You can install more memory for the product by adding a dual inline memory module (DIMM).

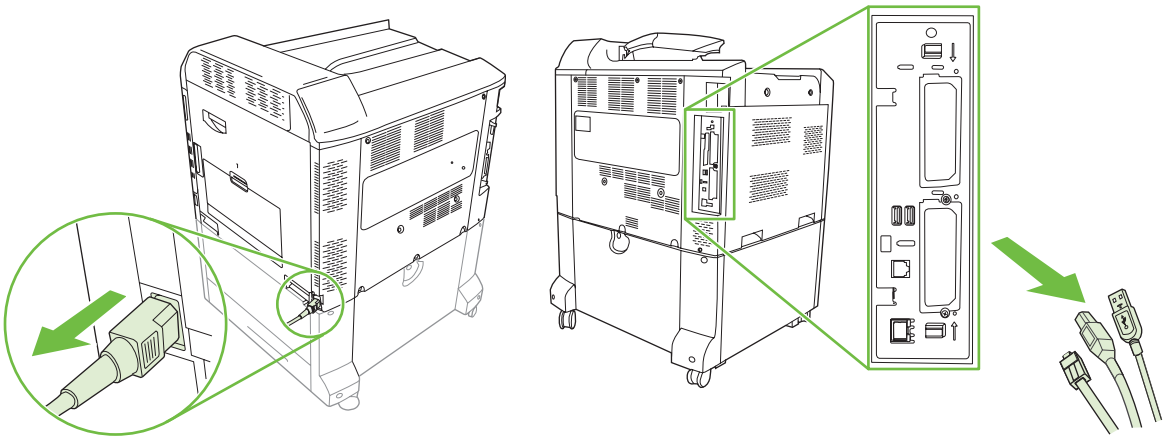
△ **CAUTION:** Static electricity can damage DIMMs. When handling DIMMs, either wear an antistatic wrist strap, or frequently touch the surface of the DIMM antistatic package and then touch bare metal on the product.

Install DDR memory DIMMs

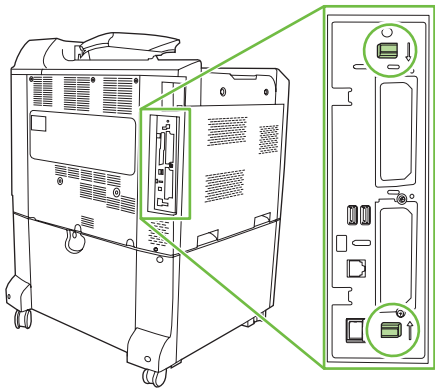
1. Turn the product off.



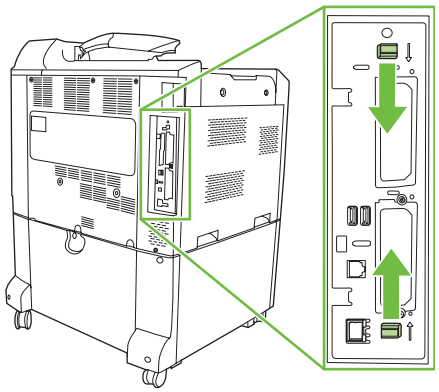
2. Disconnect all power and interface cables.



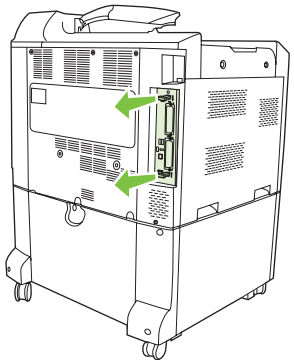
3. Locate the black formatter pressure release tabs on the formatter board in the rear of the product.



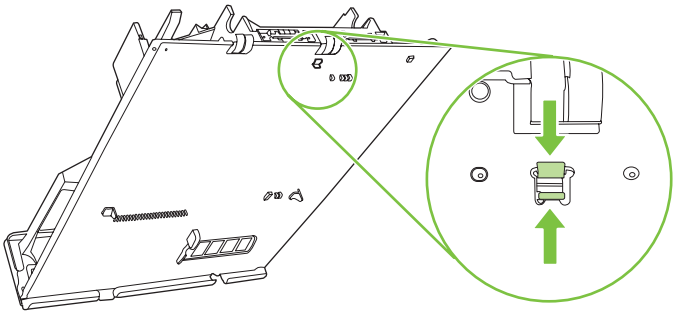
4. Gently press the black tabs toward each other.



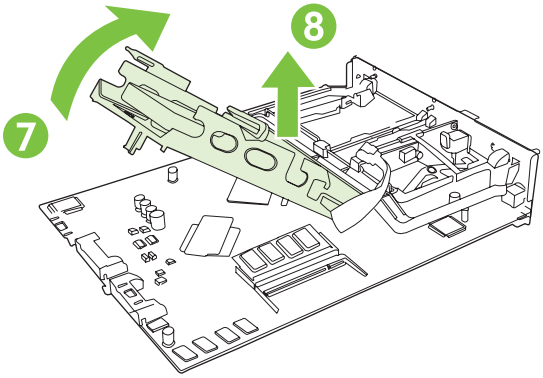
5. Gently pull on the black tabs to pull the formatter board from the product. Place the formatter board on a clean, flat, grounded surface.



6. If you are adding a DIMM to slot 2, locate the hard disk release tab on the bottom of the formatter board, and then pinch the tab to release the end of the hard disk assembly.

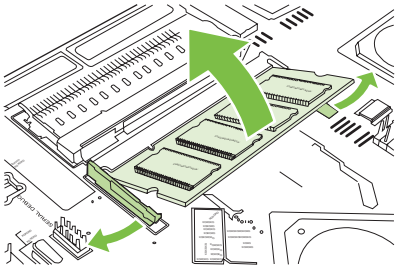


7. Rotate the end of the hard disk assembly upward until you can disengage the hinge tabs at the other end.

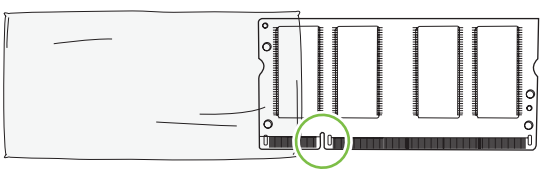


8. Leaving the hard disk assembly plugged in, lay it to the side to allow space to add or replace the DIMM in slot 2.

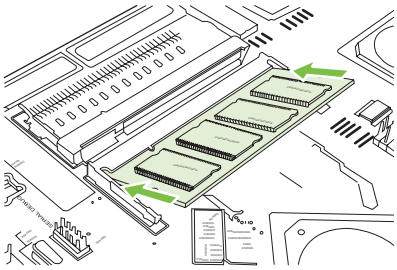
9. To replace a DIMM that is currently installed in either slot, spread the latches apart on each side of the DIMM, lift the DIMM up at an angle, and pull it out.



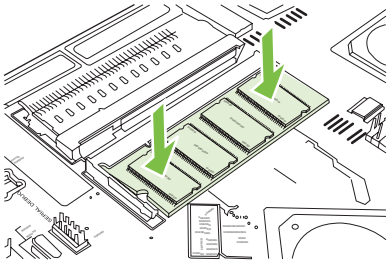
10. Remove the new DIMM from the antistatic package. Locate the alignment notch on the bottom edge of the DIMM.



11. Holding the DIMM by the edges, align the notch on the DIMM with the bar in the DIMM slot at an angle and firmly press the DIMM into the slot until it is fully seated. When installed correctly, the metal contacts are not visible.



12. Push down on the DIMM until both latches engage the DIMM.

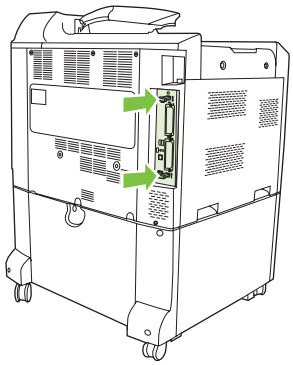


NOTE: If you have difficulty inserting the DIMM, make sure the notch on the bottom of the DIMM is aligned with the bar in the slot. If the DIMM still does not go in, make sure you are using the correct type of DIMM.

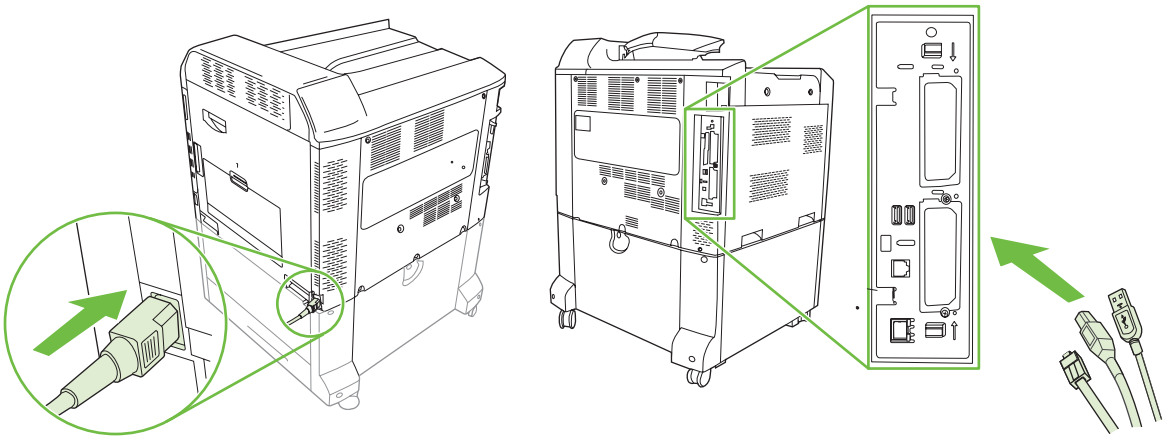
13. If you had moved the hard disk assembly to access slot 2, re engage the hinge taps, and snap the release tab back into place on the formatter board.

14. Align the formatter board in the tracks at the bottom of the slot, and then slide the board back into the product. Be sure the pressure release tabs snap back into place.

NOTE: To prevent damage to the formatter board, ensure the formatter board is aligned in the tracks.



15. Reconnect the power cable and interface cables, and turn the product on.



16. To enable the new memory, see the following section.

Enable memory for Windows

1. **Windows XP and Windows Server 2003 (using the default Start menu view)**: Click **Start**, click **Settings**, and then click **Printers and Faxes**.

   -or-

   Windows 2000, Windows XP, and Windows Server 2003 (using the Classic Start menu view): Click **Start**, click **Settings**, and then click **Printers**.

   -or-

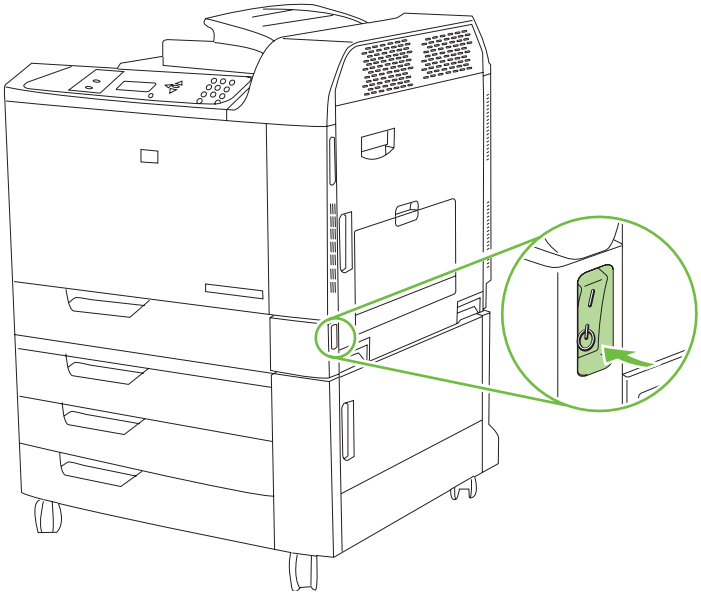
   Windows Vista: Click **Start**, click **Control Panel**, and then in the category for **Hardware and Sound** click **Printer**.

2. Right-click the driver icon, and then select **Properties**.
3. Click the **Device Settings** tab.
4. Expand the area for **Installable Options**.
5. Next to **Printer Memory**, select the total amount of memory that is installed.
6. Click **OK**.

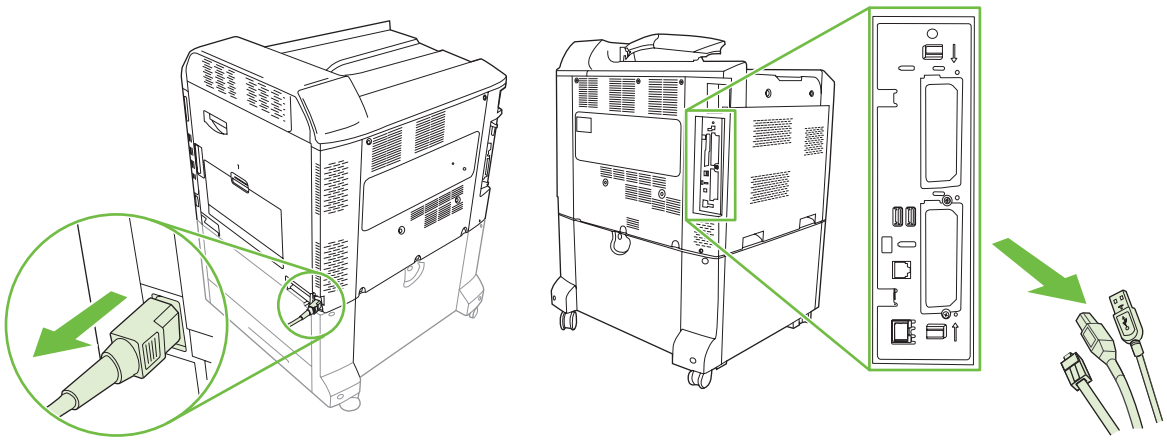
Install an HP Jetdirect or EIO print server card or EIO hard disk

This product is equipped with two external I/O (EIO) slots. For example, you can install an additional HP Jetdirect print server card or a hard disk in the available slots.

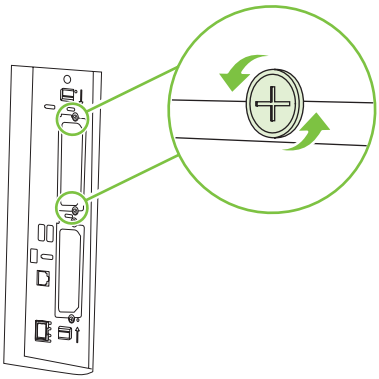
1. Turn the product off.



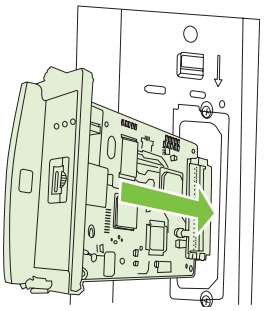
2. Disconnect all power and interface cables.



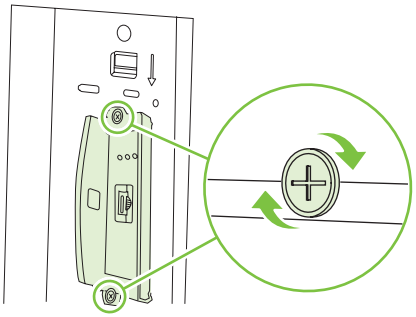
3. Locate an open EIO slot. Loosen and remove the two retaining screws holding the cover for the EIO slot, and then remove the cover. You will not need these screws and the cover again. They can be discarded.



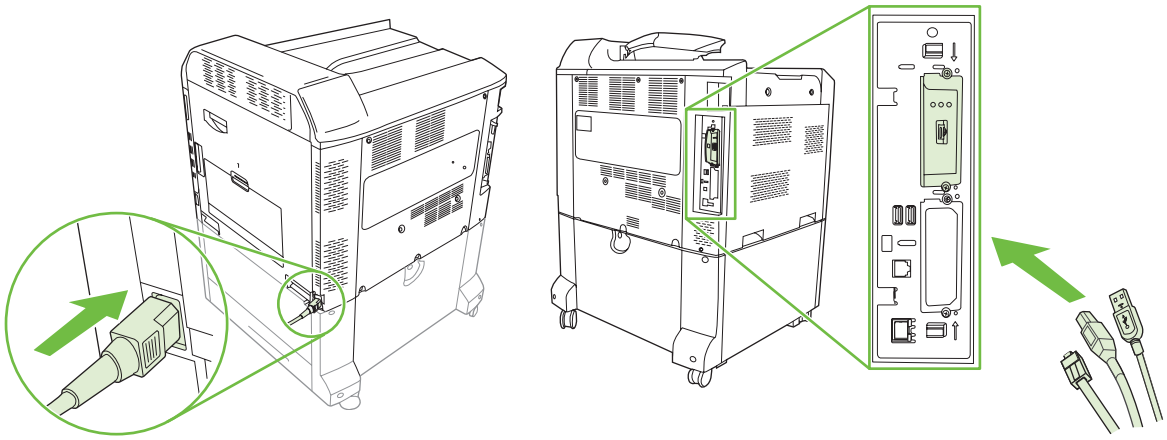
4. Firmly insert the HP Jetdirect print server card into the EIO slot.



5. Insert and tighten the retaining screws that came with the print server card.



6. Reconnect the power cable and remaining interface cables, and turn the product on.



7. Print a configuration page. An HP Jetdirect configuration page that contains network configuration and status information should also print.

   If it does not print, turn the product off, and then uninstall and reinstall the print server card to ensure that it is completely seated in the slot.

8. Perform one of these steps:

   - Choose the correct port. See the computer or operating system documentation for instructions.
   - Reinstall the software, choosing the network installation this time.

Replace the staple cartridge

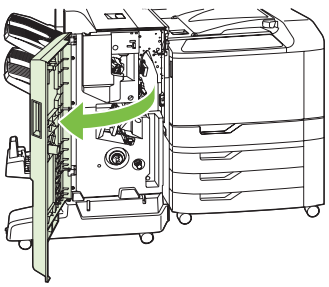
If the optional HP 3-bin Stapler/Stacker Accessory or HP Booklet Maker/Finisher Accessory runs out of staples while it is stapling a print job, the product automatically stops, if set to stop when out. If the product is set to continue when out, the product will continue to print without stapling.

NOTE: Only replace the staple cartridge unit when the stapler/stacker or booklet maker has run out of staples. Removing the staple cartridge at other times can cause an error to occur.

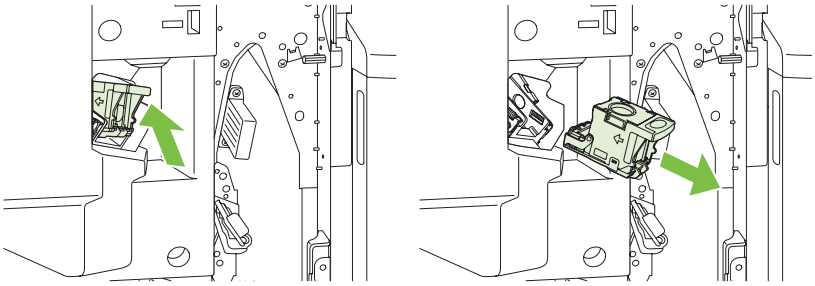
NOTE: When the stapler/stacker or booklet maker runs out of staples, the stapler unit will return to its default position automatically.

Replace the staple cartridge

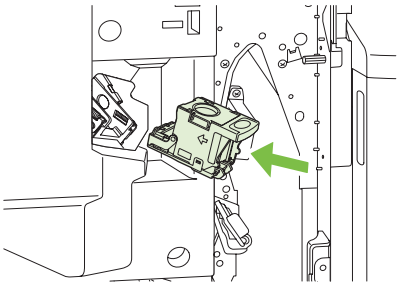
1. Open the front door of the booklet maker or stapler/stacker.



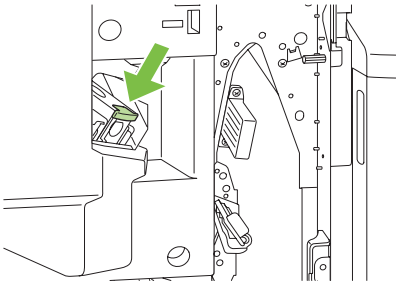
2. Push up to on the staple cartridge to remove it from the booklet maker or stapler/stacker.



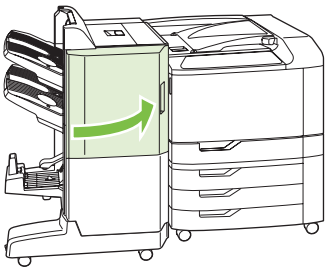
3. Insert the replacement staple cartridge unit into the stapler unit.



4. Push the staple cartridge unit into the stapler unit until it clicks into position.

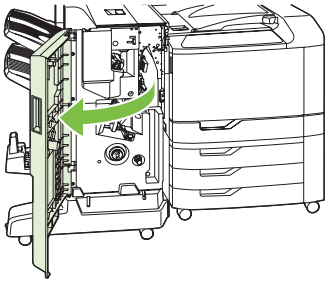


5. Close the front door.

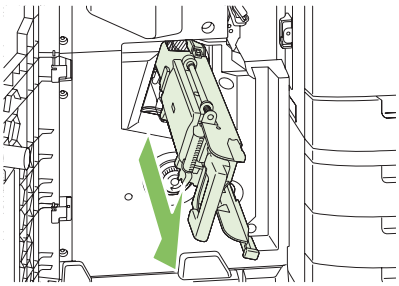


Replace saddle stitch staple cartridges in the booklet maker

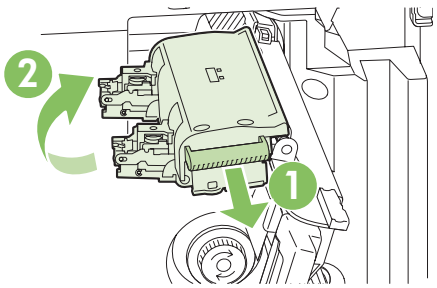
1. Open the front door of the booklet maker.



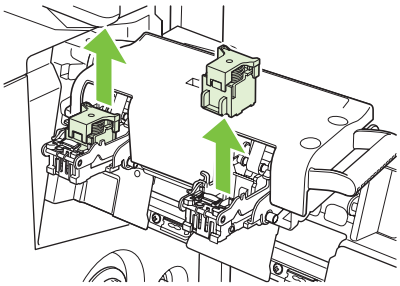
2. Grasp the blue handle and pull the staple carriage out of the booklet maker.



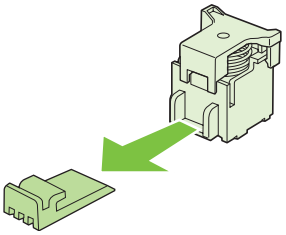
3. Grasp the small blue handle on the staple cartridge unit and pull it toward you, then swing the staple cartridge unit into an upright position.



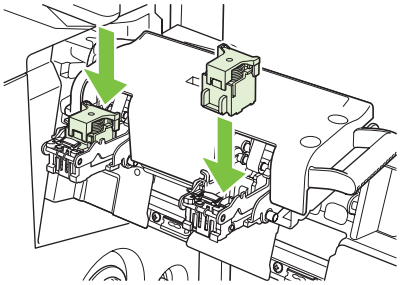
4. Grasp the edges of each staple cartridge and pull up firmly to remove the staple cartridges from the staple cartridge unit.



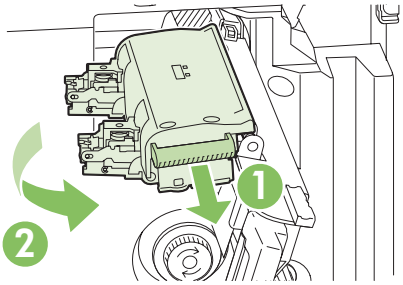
5. Unpack the new cartridges and remove the plastic packing lock from each one.



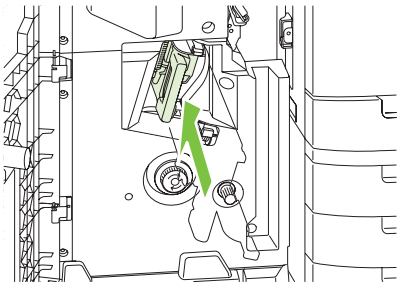
6. Hold the new cartridges so that the arrows on the cartridges align with the arrows on the staple cartridge unit and insert them into the unit.



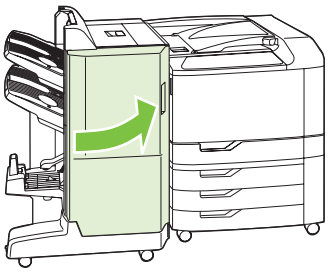
7. Pull the handle of the staple cartridge unit toward you and rotate it downward to its original position. Lock it into position by pushing in the handle.



8. Push the staple carriage back into the booklet maker finisher.



9. Close the front door of the booklet maker.



Clean the product

Over time, particles of toner and paper accumulate inside the product. This can cause print-quality problems during printing. Cleaning the product eliminates or reduces these problems.

Clean the paper path and print-cartridge areas every time that you change the print cartridge or whenever print-quality problems occur. As much as possible, keep the device from dust and debris.

Clean spilled toner

If you get any toner on your clothes or hands, wash them in *cold* water. Hot water will set the toner into the fabric.

Clean the product exterior

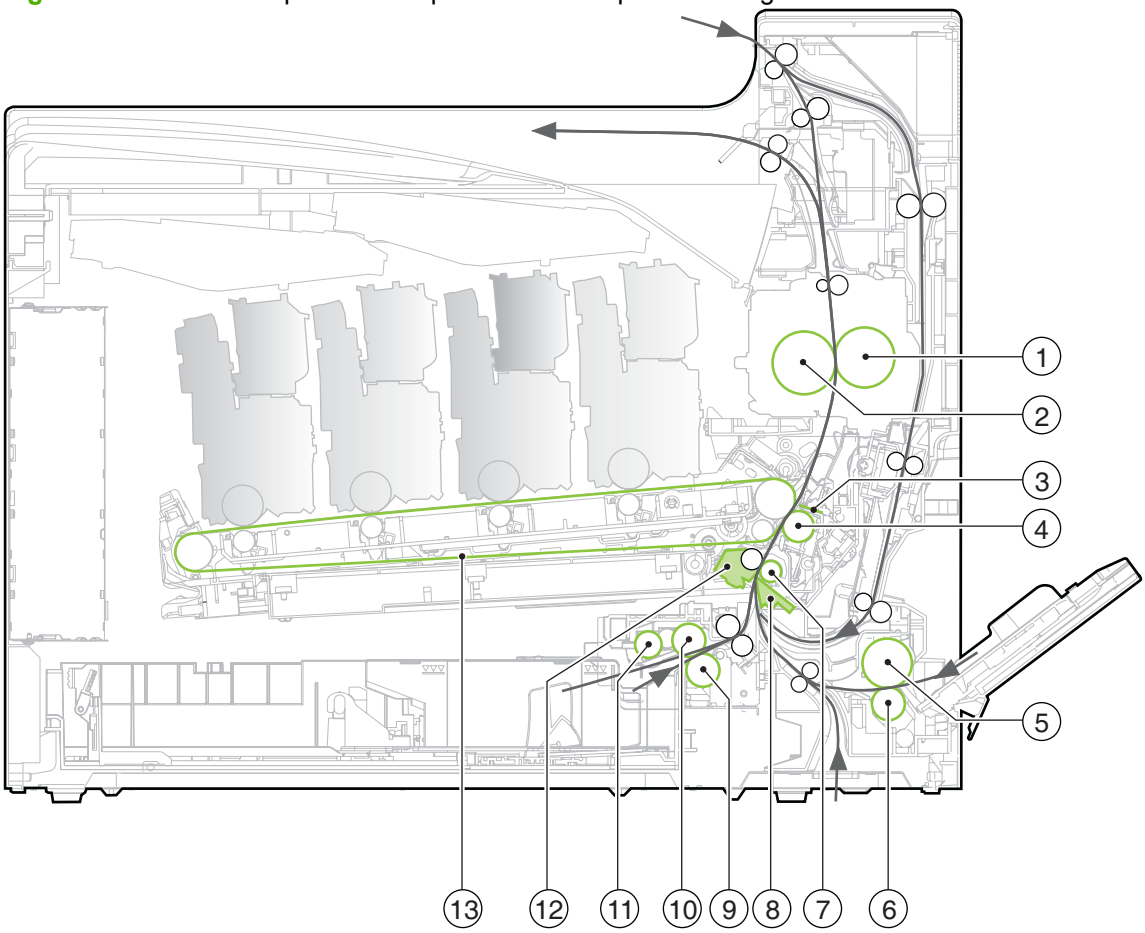
Use a soft, damp, lint-free cloth to wipe dust, smudges, and stains off of the exterior of the device.

Clean the product interior

Component	Cleaning method
Guide for media path	Wipe with a lint-free cloth. If dirt cannot be removed, dampen the lint-free cloth with alcohol.
Pickup roller, separation roller, feed roller, MP tray pickup roller, MP tray separation roller, registration roller	Wipe with a lint-free cloth. If dirt cannot be removed, dampen the lint-free cloth with alcohol.
Static charge eliminator	Clean with the brush that is attached to the upper left of the right cover inside.

NOTE: When the secondary transfer roller unit is opened, do not touch the ITB or media sensor unit in the ITB unit, while cleaning the component.

Figure 4-2 Location of product components that require cleaning

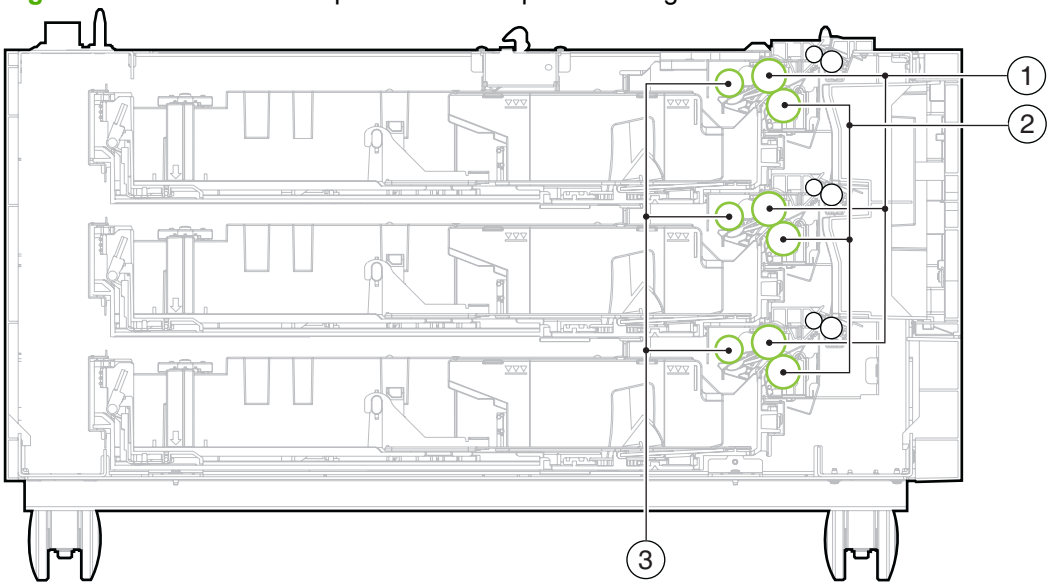


1	Pressure roller
2	Fuser roller
3	Static charge eliminator
4	Secondary transfer roller
5	MP tray pickup roller
6	MP tray separation roller
7	Front registration roller
8	Correction plate
9	Separation roller
10	Feed roller
11	Pickup roller
12	Media sensor roller
13	ITB

Clean the 3X500 sheet input tray

Component	Cleaning method
Guide for the paper path	Wipe with a lint-free cloth. If dirt cannot be removed, dampen the lint-free cloth with alcohol.
Cassette pickup roller, cassette separation roller, and cassette feed roller	Wipe with a lint-free cloth. If dirt cannot be removed, dampen the lint-free cloth with alcohol.

Figure 4-3 Location of components that require cleaning

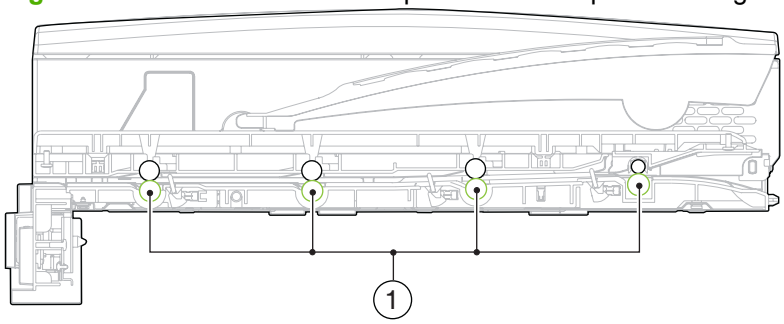


1	Cassette feed roller
2	Cassette separation roller
3	Cassette pickup roller

Clean the IPTU

Component	Cleaning method
Guide for the paper path	Wipe with a lint-free cloth. If dirt cannot be removed, dampen the lint-free cloth with alcohol.
IPTU feed roller	Wipe with a lint-free cloth. If dirt cannot be removed, dampen the lint-free cloth with alcohol.

Figure 4-4 Location of IPTU components that require cleaning



1	IPTU feed roller

Upgrade the firmware

The product has remote firmware update (RFU) capability. Use the information in this section to upgrade the product firmware.

Determine the current firmware version

1. Press Menu.
2. Press the down arrow ▼ to highlight **INFORMATION**, and then press the checkmark button ✓
3. Press the down arrow ▼ to highlight **PRINT CONFIGURATION**, and then press the checkmark button ✓ to print.

The firmware datecode is listed on the Configuration page in the section called **Printer Information**. The firmware datecode has this format: YYYYMMDD XX.XXX.X. The first string of numbers is the date, where YYYY represents the year, MM represents the month, and DD represents the date. For example, a firmware datecode of that begins with `20061125` represents November 25, 2006.

Download new firmware from the HP Web site

To find the most recent firmware upgrade for the product, go to www.hp.com/go/cljcp6015_software. This page provides instructions for downloading the new firmware version.

Transfer the new firmware to the product

NOTE: The product can receive an .RFU file update when it is in a "ready" state.

The elapsed time for an update depends on the I/O transfer time, as well as the time that it takes for the product to re-initialize. The I/O transfer time depends on a number of things, including the speed of the host computer that is sending the update. If the remote firmware update process is interrupted before the firmware is downloaded (while **Receiving Upgrade** appears on the control-panel display), the firmware file must be sent again. If power is lost during the update (while the **Performing Upgrade** message appears on the control-panel display), the update is interrupted and the message **Resend Upgrade** appears (in English only) on the control-panel display. In this case, you must send the upgrade by using the USB port. Finally, any jobs that are ahead of the RFU job in the queue are completed before the update is processed.

Use FTP to upload the firmware through a browser

NOTE: The firmware update involves a change in the format of nonvolatile random-access memory (NVRAM). Any menu settings that are changed from the default settings might return to default settings and must be changed again if you want settings that are different from the defaults.

1. Print a configuration page and note the TCP/IP address shown on the EIO Jetdirect page.
2. Open a browser window.
3. In the address line of the browser, type `ftp://<ADDRESS>`, where <ADDRESS> is the address of the product. For example, if the TCP/IP address is 192.168.0.90, type `ftp://192.168.0.90`.
4. Locate the downloaded .RFU file for the product.
5. Drag and drop the .RFU file onto the **PORT** icon in the browser window.

NOTE: The product turns off and then on automatically to activate the update. When the update process is complete, a **READY** message displays on the product control panel.

Use FTP to upgrade the firmware on a network connection using Microsoft Windows

NOTE: The firmware update involves a change in the format of nonvolatile random-access memory (NVRAM). Any menu settings that are changed from the default settings might return to default settings and must be changed again if you want settings that are different from the defaults.

1. Take note of the IP address on the HP Jetdirect page. The HP Jetdirect page is the second page that prints when you print the configuration page.

   NOTE: Before upgrading the firmware, make sure that the product is not in Sleep mode. Also make sure that any error messages are cleared from the control-panel display.

2. Open an MS-DOS command prompt on your computer.
3. Go to the folder where the firmware file is stored.
4. Type: `ftp TCP/IP ADDRESS>`. For example, if the TCP/IP address is 192.168.0.90, type `ftp 192.168.0.90`.
5. Press Enter on the keyboard.
6. When prompted for the user name, press Enter.
7. When prompted for the password, press Enter.
8. Type `bin` at the command prompt.
9. Press Enter. The message **200 Types set to I, Using binary mode to transfer files** appears in the command window.
10. Type `put` and then the file name (for example, if the file name is CP6015.rfu, type `CP6015.rfu`).
11. The download process begins and the firmware is updated on the product. This can take several minutes. Let the process finish without further interaction with the product or computer.

    NOTE: The product automatically turns off and then on again after processing the upgrade.

12. At the command prompt, type: `bye` to exit the ftp command.
13. At the command prompt, type: `exit` to return to the Windows interface.

Use HP Web Jetadmin to upgrade the firmware

This procedure requires that you install HP Web Jetadmin Version 7.0 or later on your computer. See Use HP Web Jetadmin software on page 81. Complete the following steps to update a single product through HP Web Jetadmin after downloading the .RFU file from the HP Web site.

1. Start HP Web Jetadmin.
2. Open the **Device Management** folder in the drop-down list in the **Navigation** panel. Navigate to the **Device Lists** folder.
3. Expand the **Device Lists** folder and select **All Devices**. Locate the product in the list of devices, and then click to select it.

If you need to upgrade the firmware for multiple HP Color LaserJet CP6015 series products, select all of them by pressing the Ctrl key as you click the name of each product.

4. Locate the drop-down box for **Device Tools** in the upper-right corner of the window. Select **Update Printer Firmware** from the action list.

5. If the name of the .RFU file is not listed in the **All Available Images** box, click **Browse** in the **Upload New Firmware Image** dialog box and navigate to the location of the .RFU file that you downloaded from the Web at the start of this procedure. If the filename is listed, select it.

6. Click **Upload** to move the .RFU file from your hard drive to the HP Web Jetadmin server. After the upload is complete, the browser window refreshes.

7. Select the .RFU file from the **Printer Firmware Update** drop-down menu.

8. Click **Update Firmware**. HP Web Jetadmin sends the selected .RFU file to the product. The control panel shows messages that indicate the progress of the upgrade. At the end of the upgrade process, the control panel shows the **READY** message.

Use MS-DOS commands to upgrade the firmware for USB connections

To update the firmware by using a network connection, follow these instructions.

1. From a command prompt or in an MS-DOS window, type the following `copy /B FILENAME> \ \COMPUTERNAME>\SHARENAME>`, where <FILENAME> is the name of the .RFU file (including the path), <COMPUTERNAME> is the name of the computer from which the product is being shared, and <SHARENAME> is the product share name. For example: `C:\>copy /b C:\6015FW.RFU \\YOUR_Computer\cljcp6015.`

NOTE: If the file name or path includes a space, you must enclose the file name or path in quotation marks. For example, type: `C:\>copy /b "C:\MY DOCUMENTS\6015FW.RFU" \ \YOUR_computer\cljcp6015`.

2. Press Enter on the keyboard. The control panel shows a message that indicates the progress of the firmware upgrade. At the end of the upgrade process, the control panel shows the **READY** message . The message **One File Copied** appears on the computer screen.

Upgrade the HP Jetdirect firmware

The HP Jetdirect network interface in the product has firmware that can be upgraded separately from the product firmware. This procedure requires that you install HP Web Jetadmin Version 7.0 or later on your computer. See Use HP Web Jetadmin software on page 81. Complete the following steps to update the HP Jetdirect firmware by using HP Web Jetadmin.

1. Open the HP Web Jetadmin program.

2. Open the **Device Management** folder in the drop-down list in the **Navigation** panel. Navigate to the **Device Lists** folder.

3. Select the product that you want to update.

4. In the **Device Tools** drop-down list, select **Jetdirect Firmware Update**.

5. Under **Jetdirect firmware version** the HP Jetdirect model number and current firmware version are listed. Make a note of these.

6. Go to www.hp.com/go/wja_firmware.

7. Scroll down to the list of HP Jetdirect model numbers and find the model number you wrote down.
8. Look at the current firmware version for the model, and see if it is later than the version you wrote down. If it is, right-click on the firmware link, and follow the instructions on the Web page to download the new firmware file. The file must be saved into the <drive>:\PROGRAM FILES \HP WEB JETADMIN\DOC\PLUGINS\HPWJA\FIRMWARE\JETDIRECT folder on the computer that is running the HP Web Jetadmin software.
9. In HP Web Jetadmin, return to the main product list and select the digital sender again.
10. In the **Device Tools** drop-down list, select **Jetdirect Firmware Update** again.
11. On the HP Jetdirect firmware page, the new firmware version is listed under **Jetdirect Firmware Available on HP Web Jetadmin**. Click the **Update Firmware Now** button to update the Jetdirect firmware.

Set the real-time clock

Use the real-time clock feature to set the date and time settings. The date and time information is attached to stored print, so you can identify the most recent versions.

Set the real-time clock

Set the date	1. Press Menu. 2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and then press the checkmark button ✓. 3. Press the down arrow ▼ to highlight **SYSTEM SETUP**, and then press the checkmark button ✓. 4. Press the checkmark button ✓ to select **DATE/TIME**. 5. Press the down arrow ▼ to highlight **DATE**, and then press the checkmark button ✓. 6. Select the correct month, date of the month, and the year, and then press the checkmark button ✓ to save.
Set the date format	1. Press Menu. 2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and then press the checkmark button ✓. 3. Press the down arrow ▼ to highlight **SYSTEM SETUP**, and then press the checkmark button ✓. 4. Press the checkmark button ✓ to select **DATE/TIME**. 5. Press the down arrow ▼ to highlight **DATE FORMAT**, and then press the checkmark button ✓. 6. Select the month, date of the month, and year, and then press the checkmark button ✓ to save.
Set the time	1. Press Menu. 2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and then press the checkmark button ✓. 3. Press the down arrow ▼ to highlight **SYSTEM SETUP**, and then press the checkmark button ✓. 4. Press the checkmark ✓ to select **DATE/TIME**. 5. Press the down arrow ▼ to highlight **TIME**, and then press the checkmark button ✓. 6. Select the correct hour, minute, and AM/PM setting, and then press the checkmark button ✓ to save.
Set the time format	1. Press Menu. 2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and then press the checkmark button ✓. 3. Press the down arrow ▼ to highlight **SYSTEM SETUP**, and then press the checkmark button ✓. 4. Press the checkmark button ✓ to select **DATE/TIME**.

5. Press the down arrow ▼ to highlight **TIME FORMAT**, and then press the checkmark button ✓.

6. Select the appropriate **TIME FORMAT**, and then press the checkmark button ✓ to save.

5 Theory of operation

- Basic operation
- Formatter system
- Engine-control system
- Laser/scanner system
- Image-formation system
- Pickup, feed, and delivery system
- Jam detection
- Optional input trays

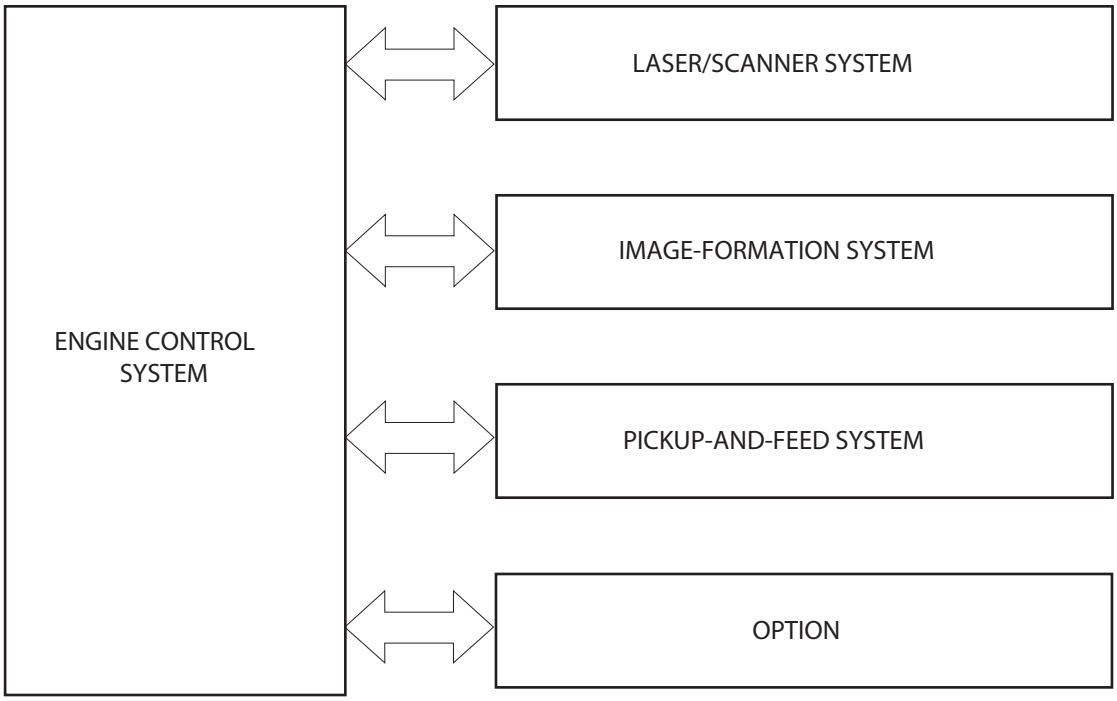
Basic operation

All high-level processes are routed through the formatter, which stores font information, processes the print image, and communicates with the host computer.

Basic product operation can be divided into the following systems:

- The engine-control system, which includes the power supply and the DC controller printed circuit assembly (PCA)
- The laser/scanner system, which forms the latent image on the photosensitive drum
- The image-formation system, which transfers a toner image onto the paper
- The paper pickup and feed system, which uses a system of rollers and belts to transport the paper through the product

Figure 5-1 Relationship between the main product systems



Sequence of operation

The DC controller PCA controls the operating sequence, as described in the following table. For detailed information about the timing of the processes, see General timing chart on page 545.

Table 5-1 Sequence of operation

Period	Duration	Description
Waiting	From the time the power is turned on or when the product exits Sleep mode until the product is ready for printing	• Pressurizes the fuser pressure roller • Detects the print cartridges and imaging drums

Table 5-1 Sequence of operation (continued)

Period	Duration	Description
		• Detects the home position for the intermediate-transfer belt (ITB) and the developing unit • Cleans waste toner from the ITB
Standby	From the end of the waiting sequence or the last rotation until the formatter receives a print command or until the product is turned off	• The product is in the **READY** state. • The product enters Sleep mode after the specified length of time. • The product calibrates if it is time for an automatic calibration.
Initial rotation	From the time the formatter receives a print command until the paper enters the paper path	• Activates the high-voltage power supply • Prepares each laser/scanner unit • Warms the fuser to the appropriate temperature
Printing	From the time the first sheet of paper enters the paper path until the last sheet has passed through the fuser	• Forms the image on the photosensitive drums • Transfers the toner to the paper • Fuses the toner image onto the paper • Performs calibration after a specified number of pages
Last rotation	From the time the last sheet of paper exits the fuser until the motors stop rotating	• Moves the last printed sheet into the output bin • Stops each laser/scanner unit • Discharges the bias from the high-voltage power supply

Formatter system

The formatter is responsible for the following procedures:

- Controlling Sleep mode
- Receiving and processing print data from the various product interfaces
- Monitoring control-panel functions and relaying product-status information (through the control panel and the network or the bidirectional interface)
- Developing and coordinating data placement and timing with the DC controller PCA
- Storing font information
- Communicating with the host computer through the network or the bidirectional interface

The formatter receives a print job from the network or the bidirectional interface and separates it into image information and instructions that control the printing process. The DC controller PCA synchronizes the image-formation system with the paper-input and -output systems, and then signals the formatter to send the print-image data.

The formatter also provides the electrical interface and mounting locations for two EIO cards and an additional DIMM.

Sleep mode

This feature conserves power after the product has been idle for an adjustable period of time. When the product is in Sleep mode, the control-panel backlight is turned off, but the product retains all settings, downloaded fonts, and macros. The default setting is for Sleep mode to be enabled, and the product enters the Sleep mode after a 60-minute idle time. The HP Color LaserJet CP6015de energy star bundle enters sleep mode after one minute. The Sleep mode can also be turned off from the **RESETS** menu on the control panel.

The product exits Sleep mode and enters the warm-up cycle when any of the following events occurs:

- A print job, valid data, or a PML or PJL command is received
- A control-panel button is pressed
- A cover is opened
- A paper tray is opened
- The engine-test switch is pressed

NOTE: Product error messages override the Sleep message. The product enters Sleep mode at the appropriate time, but the error message continues to appear.

Resolution

RESOLUTION	**Image REt 4800** (default) **1200X600 dpi**	Sets the resolution at which the product prints. The default value is **Image REt 4800**. Try the **1200X600** dpi setting to improve printing for detailed line work or small text.
EDGE CONTROL	**OFF** **LIGHT** **NORMAL** **MAXIMUM**	The Edge Control setting determines how edges are rendered. Edge control has two components: adaptive halftoning and trapping. Adaptive halftoning increases edge sharpness. Trapping reduces the effects of color-plane • **OFF** turns off both trapping and adaptive halftoning. • **LIGHT** sets trapping at a minimal level, and adaptive halftoning is on.

NOTE: The REt settings that are sent from software programs or printer drivers override the control-panel settings.

Input/output

The product receives print data primarily from the embedded HP Jetdirect print server. The product also has a USB 2.0 port for connecting directly to a computer.

CPU

The formatter incorporates a 835 MHz RISC processor.

Memory

The formatter system contains the product memory. All bundles support up to two RAM DIMMs up to 1 GB.

NOTE: If the product encounters a problem when managing available memory, a clearable warning message appears on the control panel.

Hard disk

The HP Color LaserJet CP6015xh model comes standard with a 40 GB hard disk. The hard disk can permanently store fonts and forms. It can also be used for making multiple original prints and for job-storage features.

Random-access memory

The random-access memory (RAM) contains the page, I/O buffers, and the font storage area. It stores printing and font information received from the host system, and can also serve to temporarily store a full page of print-image data before the data is sent to the print engine. Memory capacity can be increased by adding a DIMM to the formatter. Note that adding memory might also increase the print speed for complex graphics.

DIMM slot

The DIMM slot can be used to add memory or fonts. There are two memory DIMM slots. Slot 1 is closest to the outside of the formatter. Slot 2 is closest to the hard disk.

Firmware

The firmware is contained on NAND flash memory soldered on the formatter board. A remote firmware upgrade process is available, which overwrites the firmware in the NAND flash.

Nonvolatile memory

The product uses nonvolatile memory (NVRAM) to store I/O and print-environment-configuration information. The contents of NVRAM are retained when the product is turned off or disconnected.

PJL overview

The printer job language (PJL) is an integral part of configuration, in addition to the standard printer command language (PCL). With standard cabling, the product can use PJL to perform a variety of functions, such as these:

- Two-way communication with the host computer through a network connection or a USB connection. The product can inform the host about such things as the control-panel settings, and the control-panel settings can be changed from the host.
- Dynamic I/O switching. The product uses this switching to be configured with a host on each I/O. The product can receive data from more than one I/O simultaneously, until the I/O buffer is full. This can occur even when the product is offline.
- Context-sensitive switching. The product can automatically recognize the personality (PS or PCL) of each job and configure itself to serve that personality.
- Isolation of print environment settings from one print job to the next. For example, if a print job is sent to the product in landscape mode, the subsequent print jobs print in landscape only if they are formatted for landscape printing.

PML

The printer management language (PML) allows remote configuration and status readback through the I/O ports.

Control panel

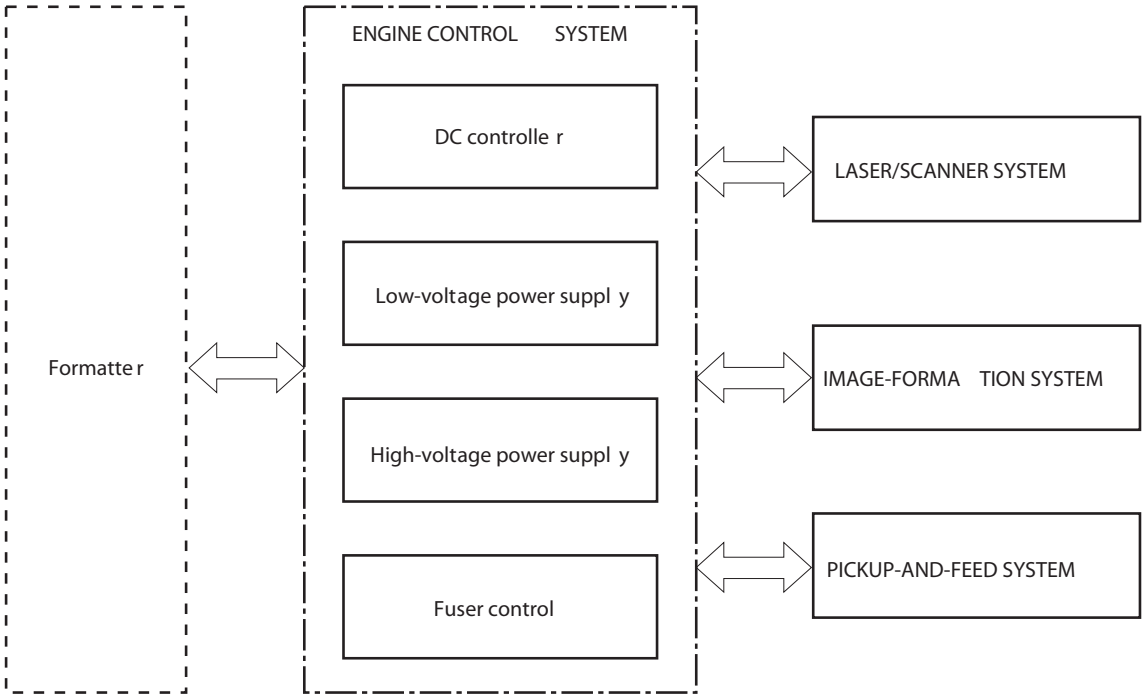
The formatter sends and receives product status and command data to and from a control-panel PCA.

Engine-control system

The engine-control system receives commands from the formatter and interacts with the other main systems to coordinate all product functions. It consists of the following components:

- DC controller
- Low-voltage power supply
- High-voltage power supply
- Fuser control

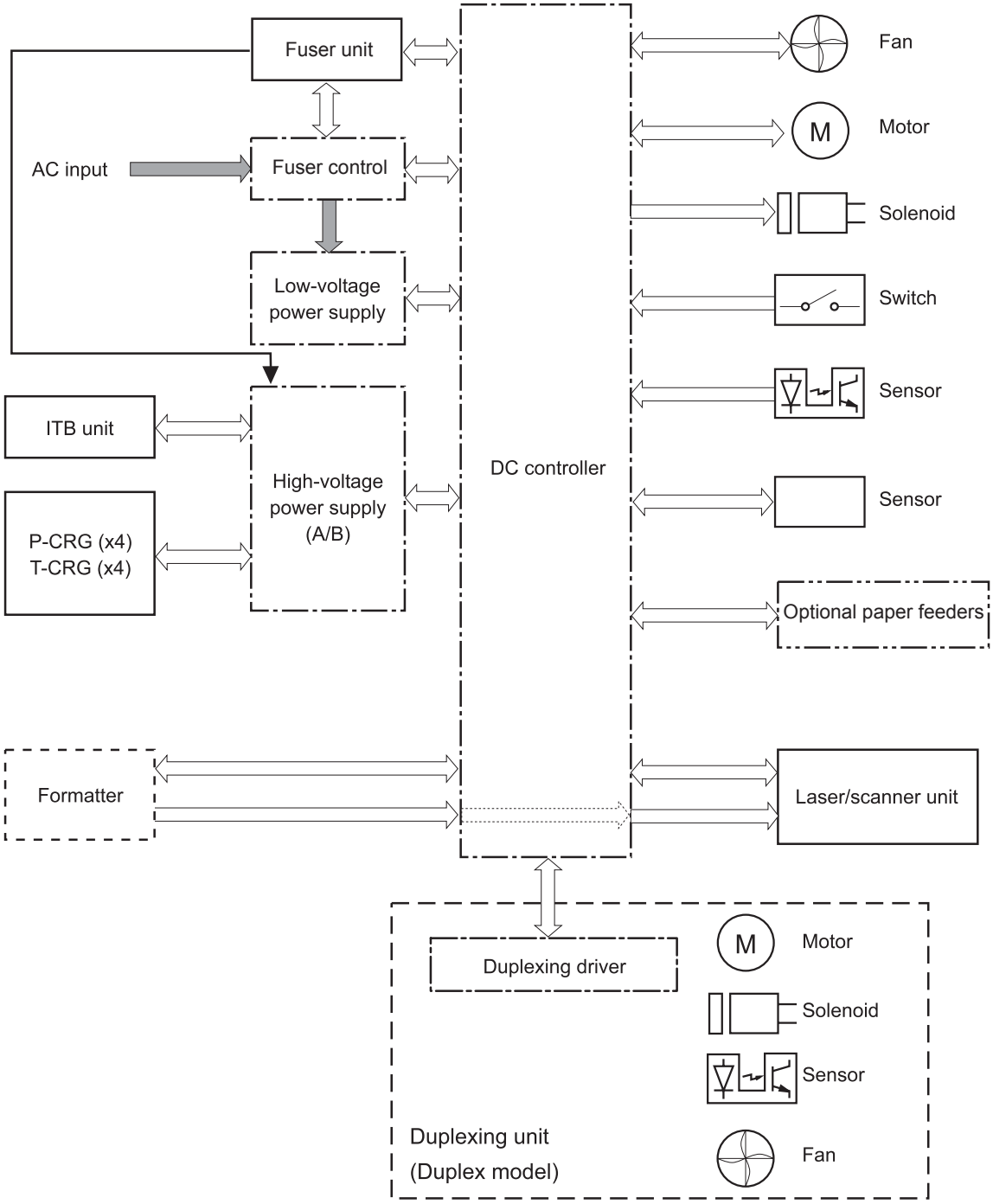
Figure 5-2 Engine-control system



DC controller

The DC controller provides operational commands to each of the product components, and it interacts with the other engine-control systems and product systems to control the product operational sequence.

Figure 5-3 DC controller block diagram



Solenoids

See Solenoids on page 531.

Table 5-2 Solenoids

Component abbreviation	Component name
SL1	Cassette pickup solenoid
SL2	Multipurpose-tray pickup solenoid
SL4	Toner-feed solenoid (yellow)
SL5	Toner-feed solenoid (magenta)
SL6	Toner-feed solenoid (cyan)
SL7	Toner-feed solenoid (black)
SL301	Duplexing-flapper solenoid (duplex models only)

Switches

See Switches on page 534.

Table 5-3 Switches

Component abbreviation	Component name
SW1	Door-open detection switch
SW4	Cassette end-plate-position detection switch
SW5	Cassette side-plate-position detection switch
SW11	Main switch
	Test print switch

Sensors

See Sensors on page 518.

Table 5-4 Sensors

Component abbreviation	Component name
CN1	Environment sensor
CS	Color sensor (duplex models only)
MS	Media sensor
	Color misregistration/image density sensor
	ITB sensor-mark detection sensor
SR0	Vertical synchronous-position sensor
SR1	Cassette media-presence sensor
SR2	Cassette media-stack surface sensor
SR4	Cassette media-level sensor
SR5	Cassette media-feed sensor
SR6	Multipurpose-tray (MP tray) media-presence sensor
SR7	MP tray media-feed sensor
SR8	MP tray last-media sensor
SR10	ITB home-position sensor
SR11	Right door-open-detection sensor
SR13	Loop sensor
SR15	Fuser-delivery media-feed sensor
SR16	Output-bin media-full sensor
SR17	Drum home-position sensor (yellow)
SR18	Drum home-position sensor (megenta)
SR19	Drum home-position sensor (cyan)
SR20	Drum home-position sensor (black)
SR21	Developing home-position sensor (yellow and magenta)
SR22	Developing home-position sensor (cyan and black)
SR23	Toner-feed-motor rotational-count sensor (yellow, magenta, and cyan)
SR24	Toner-feed-motor rotational-count sensor (black)
SR26	Fuser home-position sensor
SR31	ITB waste-toner-full sensor
SR32	Front door-open-detection sensor
SR33	Secondary-transfer-unit cover-open-detection sensor
SR34	Fuser cover-open-detection sensor

Table 5-4 Sensors (continued)

Component abbreviation	Component name
SR301	Color-sensor-disengagement sensor (duplex models only)
SR302	Duplexing media re-pickup sensor (duplex models only)
SR303	Duplexing media-feed sensor (duplex models only)
SR304	Duplexing media-reverse sensor (duplex models only)
SCN-TH1	Laser/scanner temperature sensor 1
SCN-TH2	Laser/scanner temperature sensor 2
	Print-cartridge presence sensor (yellow)
	Print-cartridge presence sensor (magenta)
	Print-cartridge presence sensor (cyan)
	Print-cartridge presence sensor (black)
	Imaging-drum waste-toner-full sensor (yellow)
	Imaging-drum waste-toner-full sensor (magenta)
	Imaging-drum waste-toner-full sensor (cyan)
	Imaging-drum waste-toner-full sensor (black)
	Imaging-drum toner-level sensor (yellow)
	Imaging-drum toner-level sensor (magenta)
	Imaging-drum toner-level sensor (cyan)
	Imaging-drum toner-level sensor (black)

Motors and fans

The product has 17 motors that drive the components in the paper-feed and image-formation systems. See Motors on page 526. It also has nine fans that cool the interior of the product. See Fans on page 525.

The DC controller can sense failure for all the fans and several of the motors. When this occurs, the DC controller notifies the formatter so it can halt the printing process and provide an alert on the control-panel display.

Table 5-5 Motors

Abbreviation	Name	Purpose	Type	Failure detection
M5	Pickup motor	Drives the cassette pickup roller, the cassette feed roller, and the MP tray pickup roller	Stepping motor	No
M6	Registration motor	Drives the registration roller	Stepping motor	No
M7	Cassette lifter motor	Drives the cassette-lifter mechanism	DC motor	No

Table 5-5 Motors (continued)

Abbreviation	Name	Purpose	Type	Failure detection
M9	Primary-transfer-roller disengagement motor	Engages or disengages the primary transfer roller	Stepping motor	No
M10	ITB motor	Drives the ITB and the secondary transfer roller	DC motor	Yes
M11	Fuser motor	Drives the fuser roller, the delivery roller, and the fuser pressure roller	DC motor	Yes
M12	Drum motor (Y)	Drives the photosensitive drum and the primary charging roller in the yellow imaging drum	DC motor	Yes
M13	Drum motor (M)	Drives the photosensitive drum and the primary charging roller in the magenta imaging drum	DC motor	Yes
M14	Drum motor (C)	Drives the photosensitive drum and the primary charging roller in the cyan imaging drum	DC motor	Yes
M15	Drum motor (K)	Drives the photosensitive drum and the primary charging roller in the black imaging drum	DC motor	Yes
M16	Toner-feed motor (K)	Drives the black toner feed screws and waste-toner feed screws	Stepping motor	No
M17	Toner-feed motor (C, M, Y)	Drives the yellow, magenta, and cyan toner feed screws and waste-toner feed screws	Stepping motor	No
M18	Developing disengagement motor (C, K)	Engages and disengages the developing rollers in the cyan- and black-imaging drums	Stepping motor	No
M19	Developing disengagement motor (Y, M)	Engages and disengages the developing rollers in the yellow- and magenta-imaging drums	Stepping motor	No
M301 Duplex models only	Duplexing feed motor	Drives the duplexing paper-feed roller	Stepping motor	No

Table 5-5 Motors (continued)

Abbreviation	Name	Purpose	Type	Failure detection
M302 Duplex models only	Duplexing reverse motor	Drives the duplexing paper-reverse roller	Stepping motor	No
M303 Duplex models only	Duplexing re-pickup motor	Drives the duplexing paper re-pickup roller and engages or disengages the color sensor	Stepping motor	No

Table 5-6 Fans

Abbreviation	Name	Cooling area	Type	Speed
FM1	Laser/scanner cooling fan	Laser/scanner area and formatter	Intake	Full/half
FM2	Fuser cooling fan	Fuser	Intake	Full/half
FM3	Cartridge-area cooling fan	Print-cartridge and imaging-drum area	Exhaust	Full
FM4	VOC fan	Fuser	Exhaust	Full/half
FM5	Low-voltage power-supply cooling fan	Low-voltage power-supply unit	Exhaust	Full/half
FM6	Cartridge front-area cooling fan	Print-cartridge and imaging-drum area	Intake	Full/half
FM7	Delivery unit cooling fan	Delivery unit	Intake	Full
FM301 Duplex models only	Duplexing unit cooling fan 1	Duplexing driver PCA	Intake	Full
FM302 Duplex models only	Duplexing unit cooling fan 2	Output bin area	Exhaust	Full/half

Fuser control

The fuser-control circuit controls the fuser temperature. The heaters provide the high temperatures that melt the toner to bond it to the paper. The thermistors and thermopiles monitor the temperature inside the fuser. The thermoswitches control the current to the heaters. If the thermistors and thermopiles

detect abnormally high temperatures, the thermoswitches interrupt the power to the heaters to prevent overheating.

Figure 5-4 Fuser components

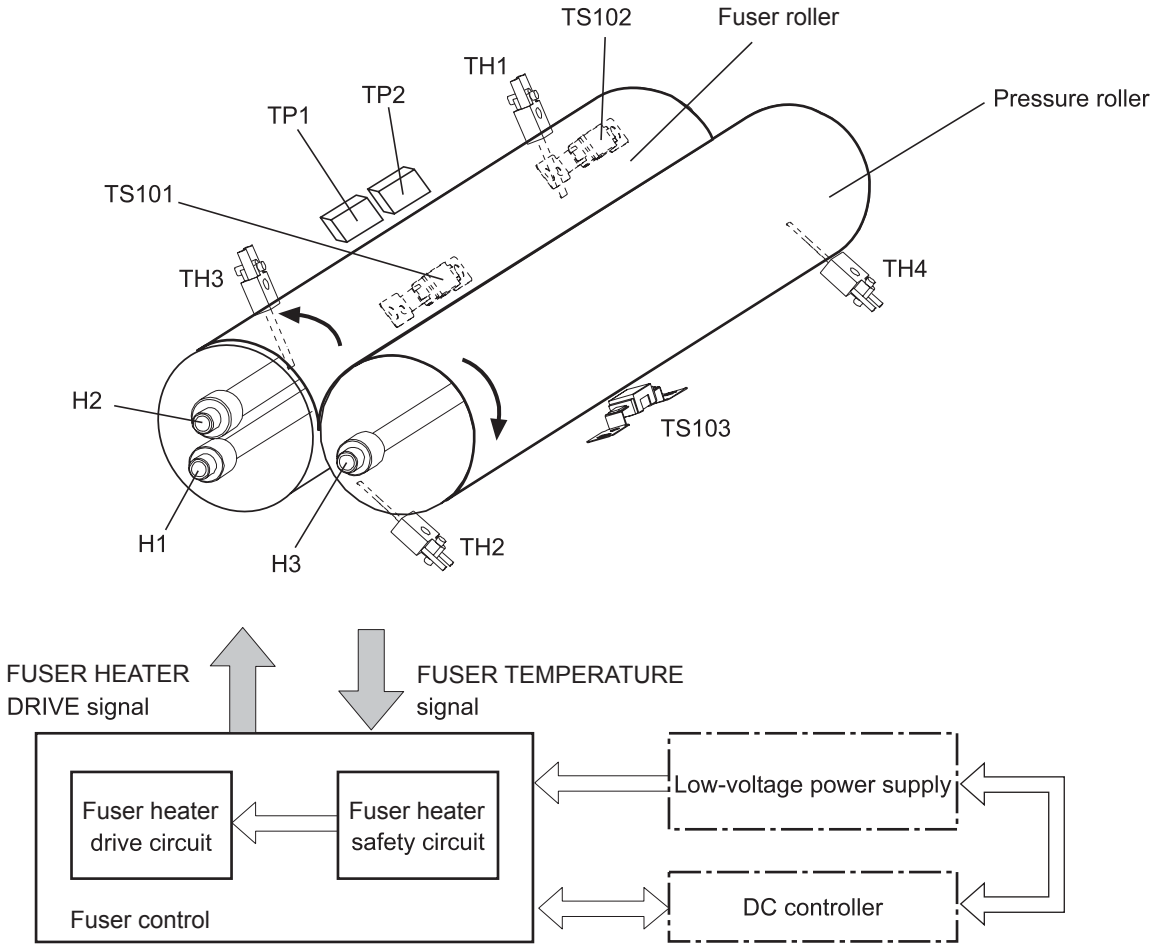


Table 5-7 Fuser components

Type of component	Abbreviation	Name	Function
Heaters	H1	Fuser-roller main heater	Heats the center area of the fuser roller
	H2	Fuser-roller sub heater	Heats both ends of the fuser roller
	H3	Pressure-roller heater	Heats the pressure roller
Thermistors (Contact type)	TH1	Fuser-roller end thermistor	Each thermistor detects the temperature on one end of the fuser roller.
	TH3		
	TH2	Pressure-roller end thermistor	Each thermistor detects the temperature on one end of the pressure roller.
	TH4		
Thermopiles (Non-contact type)	TP1	Main thermopile	Detects the temperature at the center of the fuser roller
	TP2	Sub thermopile	Detects the temperature at the center of the pressure roller

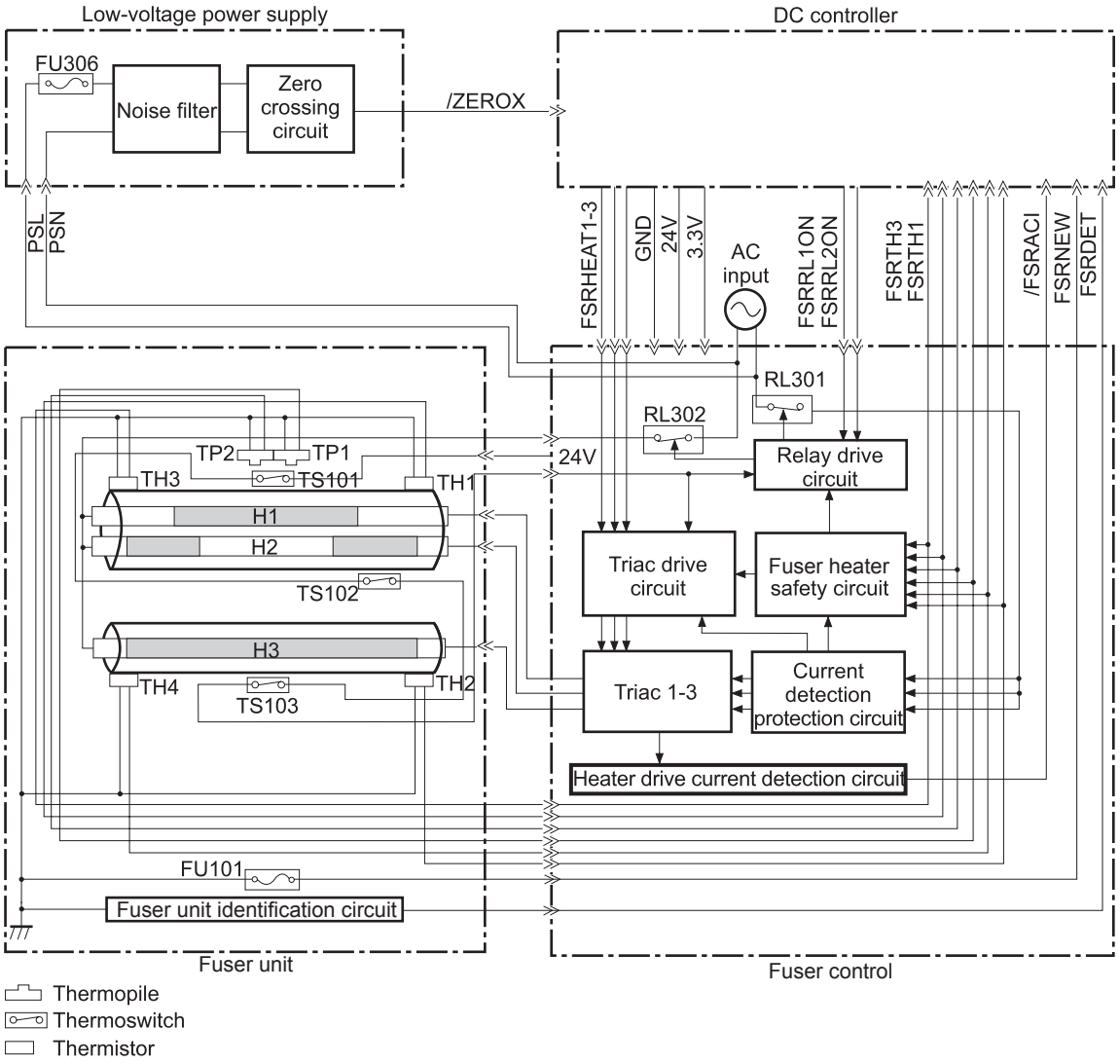
Table 5-7 Fuser components (continued)

Type of component	Abbreviation	Name	Function
Thermoswitches (Non-contact type)	TS101	Fuser-roller main thermoswitch	Controls the fuser-roller main heater
	TS102	Fuser-roller sub thermoswitch	Controls the fuser-roller sub heater
	TS103	Pressure-roller thermoswitch	Controls the pressure-roller heater

Fuser temperature-control circuit

The temperatures of the two rollers in the fuser fluctuate according to the stage of the printing process. The DC controller sends commands to the fuser-control circuit to adjust the temperatures accordingly.

Figure 5-5 Fuser temperature-control circuit



Fuser over-temperature protection

To protect the fuser from excessive temperatures, the product has four layers of protective functions. If one function fails, the subsequent functions should detect the problem.

- **DC controller**: When a thermistor or thermopile detects a temperature above a certain threshold, the DC controller interrupts power to the appropriate heater. Following are the thresholds for each component:
  - TH1: 223° C (433° F) or higher
  - TH2: 195° C (383° F) or higher
  - TH3: 223° C (433° F) or higher
  - TH4: 195° C (383° F) or higher
  - TP1: 240° C (464° F) or higher
  - TP2: 240° C (464° F) or higher
- **Fuser-heater safety circuit**: If the DC controller fails to interrupt the power to the heaters at the prescribed temperatures, the fuser-heater safety circuit deactivates the triac-drive circuit and releases the relay, which causes the heaters to stop at slightly higher temperature thresholds.
  - TH1: 230° C (446° F) or higher
  - TH2: 200° C (392° F) or higher
  - TH3: 230° C (446° F) or higher
  - TH4: 200° C (392° F) or higher
  - TP1: 250° C (482° F) or higher
  - TP2: 250° C (482° F) or higher
- **Current-detection protection circuit**: If current flowing in each triac exceeds a specific value, the current-detection protection circuit deactivates the triac-drive circuit and releases the relay, which interrupts the power supply to the heaters.
- **Thermoswitch**: If the temperature in the heaters is abnormally high, and the temperature the thermoswitches exceeds a pre-specified value, the contact to the thermoswitch is broken. Breaking this contact deactivates the triac-drive circuit and releases the relay, which interrupts the power supply to the heaters. Following are the thresholds for each thermoswitch:
  - TS101: 200° C (392° F) or higher
  - TS102: 200° C (392° F) or higher
  - TS103: 200° C (392° F) or higher

NOTE: When the thermoswitches reach this temperature, the actual temperature on the fuser rollers is approximately 370° C (698° F).

Fuser-failure detection

When the DC controller detects any of the following conditions, it determines that the fuser has failed. It then interrupts power to the fuser heaters and notifies the formatter.

- **Abnormally high temperatures**: Temperatures are too high for any of the following components, at any time:
  - TH1: 223° C (433° F) or higher
  - TH2: 195° C (383° F) or higher
  - TH3: 223° C (433° F) or higher
  - TH4: 195° C (383° F) or higher
  - TP1: 240° C (464° F) or higher
  - TP2: 240° C (464° F) or higher
- **Abnormally low temperatures**: Temperatures are too low at any of the following components after the product has initialized.
  - TH1 or TH3: 120° C (248° F) or lower
  - TP1 or TP2: 140° C (284° F) or lower

  Or, the temperature drops in either of the thermopiles (TP1 and TP2) by 30° C (86° F) or more within a specified length of time.
- **Abnormal temperature rise**: The temperature-detection sensors do not reach a predefined temperature within a specified length of time after the fuser heaters are turned on.
- **Temperature-detection-sensor failure 1**: The converted analog-to-digital value of each temperature detection sensor is abnormal.
- **Temperature-detection-sensor failure 2**: The difference in temperature between pairs of thermistors or thermopiles is greater than a predetermined amount. Following are the temperature differences for each pair:
  - Between TP1 and TP2: 20° C (68° F) or more
  - Between TH1 and TH3 (fuser-roller ends): 30° C (86° F) or more
  - Between TH2 and TH4 (pressure-roller ends): 25° C (70° F) or more
- **Drive-circuit failure**: The power-supply frequency is out of the specified range when the product is initializing or in standby mode. The specified range is between 40 and 70Hz.
- **Fuser discrepancy**: The fuser-ID voltage does not match the power-supply voltage when the product is turned on or when the right door is closed.

Fuser identification

Whenever the product is turned on or when the right door is closed, the DC controller detects whether the fuser is present and whether the fuser is for a 110-volt model or a 220-volt model.

Fuser-life detection

The fuser is rated to print a certain number of pages. When a new fuser is installed, the DC controller receives a signal and directs the formatter to set the fuser count to zero. As pages are printed, the formatter increments the fuser count. When the page count reaches a certain threshold, the formatter sends a message to the control panel to alert the customer to order a new fuser. When the maximum number of pages has printed, the formatter sends a message to the control panel to prompt the customer to replace the fuser.

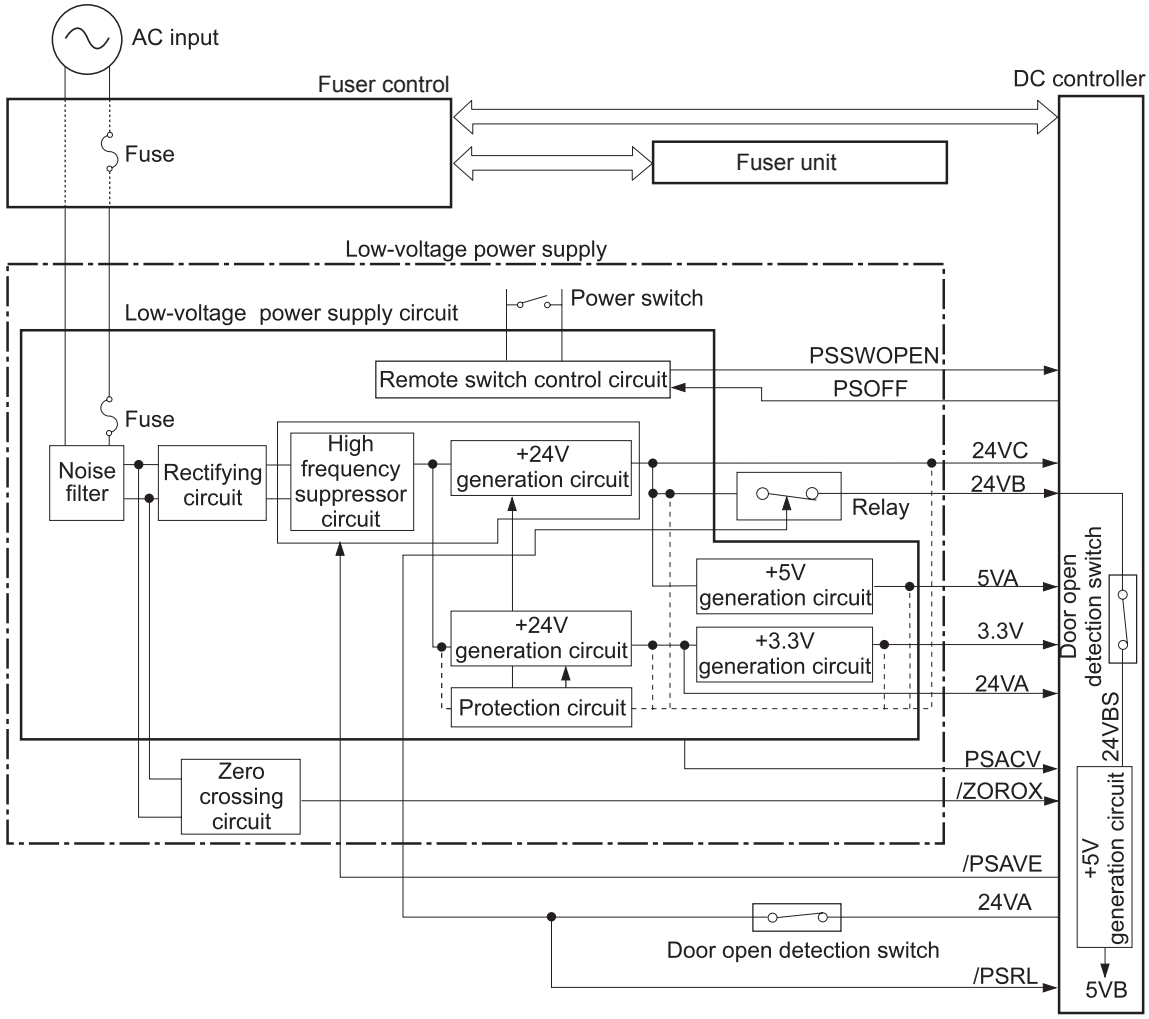
Relay-failure detection

If a fuser relay fails, the DC controller detects the failure and notifies the formatter. The DC controller checks for signals from the relays when the product is turned on or when it comes out of Sleep mode.

Low-voltage power supply

The low-voltage power-supply circuit converts the AC power from the wall receptacle into the DC voltage that the product components use. This is a universal power supply that accepts 110 Volt or 220 Volt input.

Figure 5-6 Low-voltage power-supply circuit



The low-voltage power supply converts the AC power into three DC voltages, which are then subdivided, as described in the following table.

Table 5-8 Converted DC voltages

Main DC voltage	Sub-voltage	Behavior
+24 V	+24VA	Constantly supplied
	+24VB	Interrupted when the front door or right door is opened Stopped during Sleep (powersave) mode
	+24VC	Stopped during Sleep (powersave) mode
+5 V	+5VA	Stopped during Sleep (powersave) mode
	+5VB	Interrupted when the front door or right door is opened Stopped during Sleep (powersave) mode
+3.3 V	none	Constantly supplied

Overcurrent/overvoltage protection

The low-voltage power supply stops supplying the DC voltage to the product components whenever it detects excessive current or abnormal voltage from the power source.

Safety

For personal safety, the low-voltage power supply interrupts power to the fuser, the high-voltage power supply, and the motors whenever the front door or right door is opened.

Voltage detection

The DC controller monitors the input voltage from the power source so it can control the voltage to the fuser. If the input voltage is out of range, the DC controller notifies the formatter that the low-voltage power supply has failed.

Sleep (powersave) mode

Sleep mode conserves energy by stopping the power to several components when the product is idle. If the DC controller detects voltage that is too high when the product is in Sleep mode, it determines that the low-voltage power supply has failed, and it notifies the formatter.

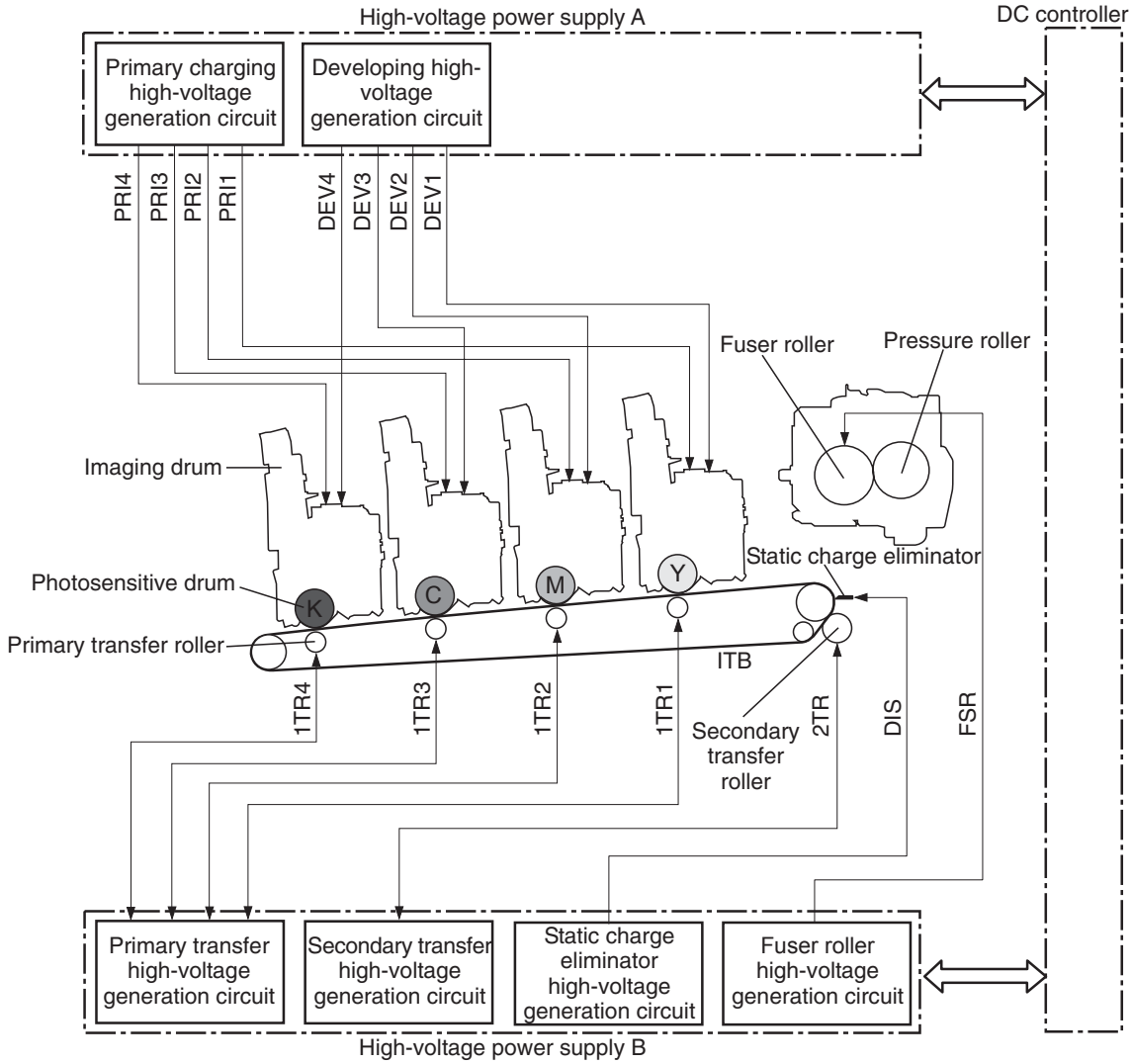
High-voltage power supply

The high-voltage power supply delivers the high-voltage biases to the following components that are used to transfer toner during the image-formation process:

- Primary-charging roller
- Developing roller

- Primary-transfer roller
- Secondary-transfer roller
- Fuser roller
- Static-charge eliminator

Figure 5-7 High-voltage power supply circuits



The high-voltage power supply contains several separate circuits.

Table 5-9 High-voltage power supply circuits

Circuit	Description
Primary-charging-bias generation	DC negative bias is applied to the surface of the photosensitive drum in each imaging drum to prepare it for image formation.
Developing-bias generation	DC negative bias is used to adhere the toner to each photosensitive drum during the image-formation process.
Primary-transfer-bias generation	DC positive bias is used to transfer the latent toner image from each photosensitive drum onto the ITB.

Table 5-9 High-voltage power supply circuits (continued)

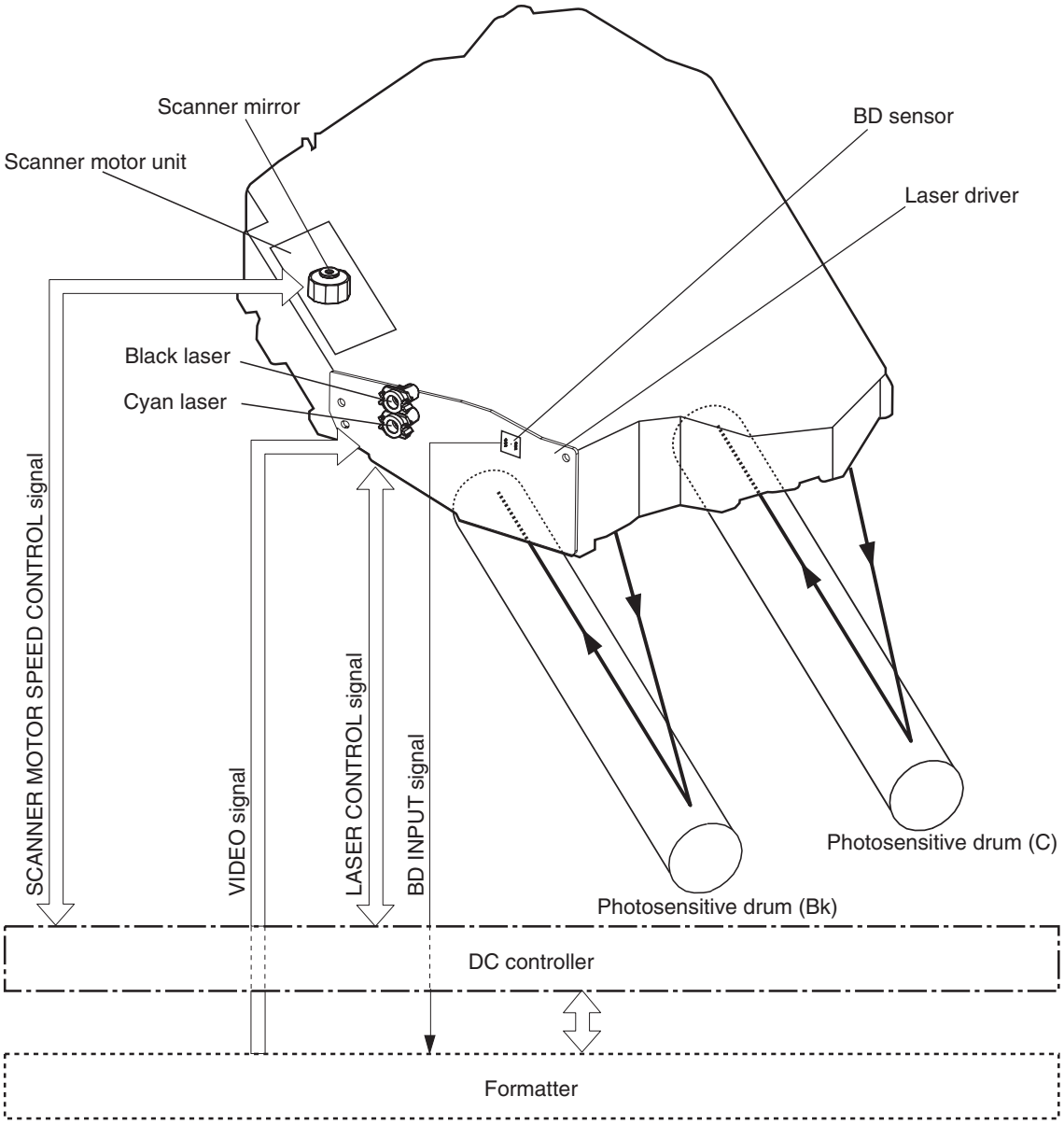
Circuit	Description
Secondary-transfer-bias generation	Two DC biases, one positive and one negative, are used to transfer the toner from the ITB onto the paper.
Static-charge-eliminator-bias generation	DC negative bias is used to reduce the electrical charge on the paper after the secondary-transfer process.
Fuser-roller-bias generation	DC negative bias is applied to the fuser roller to remove any toner that adheres to the roller after fusing.

Laser/scanner system

The laser/scanner system forms the latent electrostatic image on the photosensitive drums inside each of the imaging drums. The product has two laser/scanners: one for yellow and magenta and the other for cyan and black.

The DC controller receives instructions from the formatter regarding the image of the page to be printed. The DC controller signals the lasers to emit light, and the laser beams pass through lenses and onto the scanner mirror, which rotates at a constant speed. The mirror reflects the beam onto the photosensitive drum in the pattern required for the image, exposing the surface of the drum so it can receive toner.

Figure 5-8 Laser/scanner system



The DC controller determines that a laser/scanner has failed when any of the following conditions occurs:

- **Laser failure**: The detected laser intensity does not match a specified value when the product initializes.
- **Beam-detect (BD) failure**: The BD interval is outside of a specified range during printing.
- **Scanner-motor failure**: The scanner motor does not reach a specified rotation speed within a certain time after it begins rotating.

Image-formation system

The image-formation system creates the printed image on the paper. It consists of the laser/scanners, print cartridges, imaging drums, ITB, and fuser.

Figure 5-9 Image-formation system

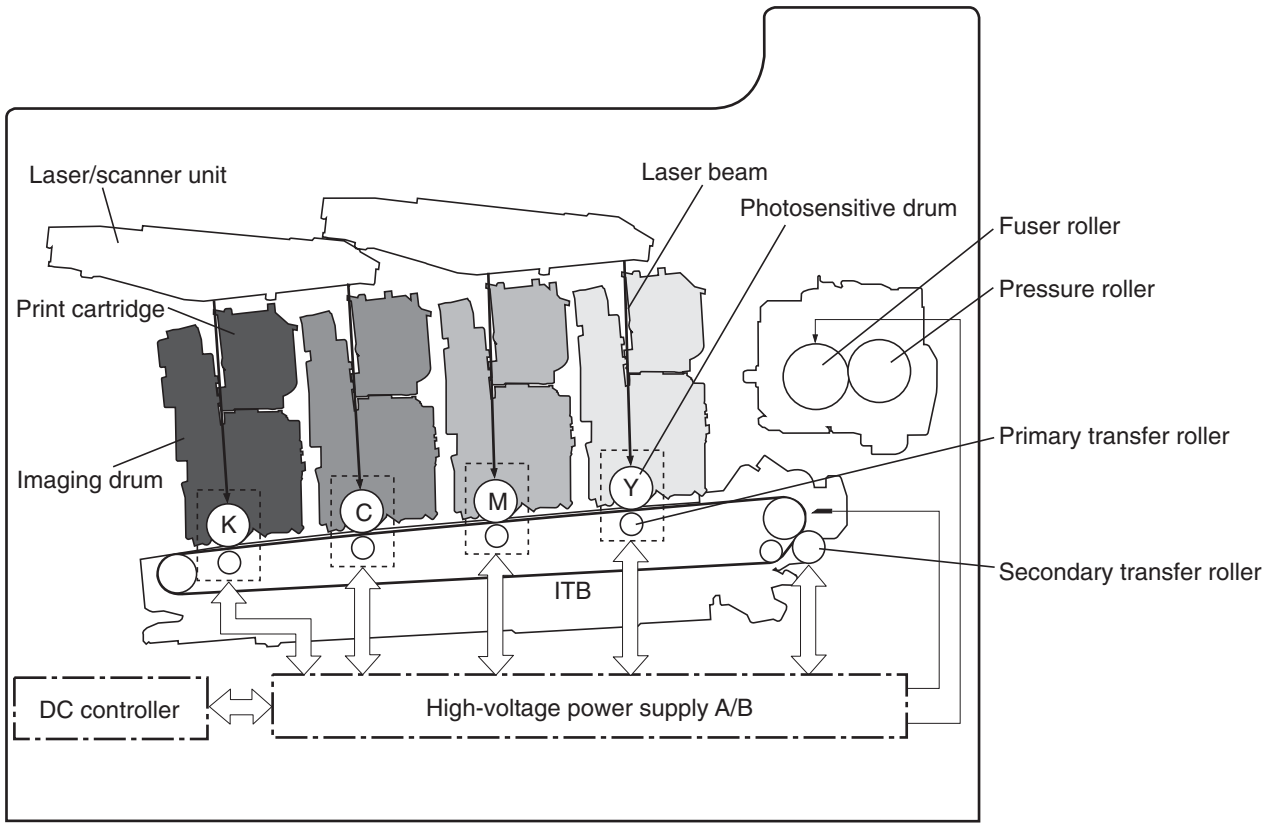
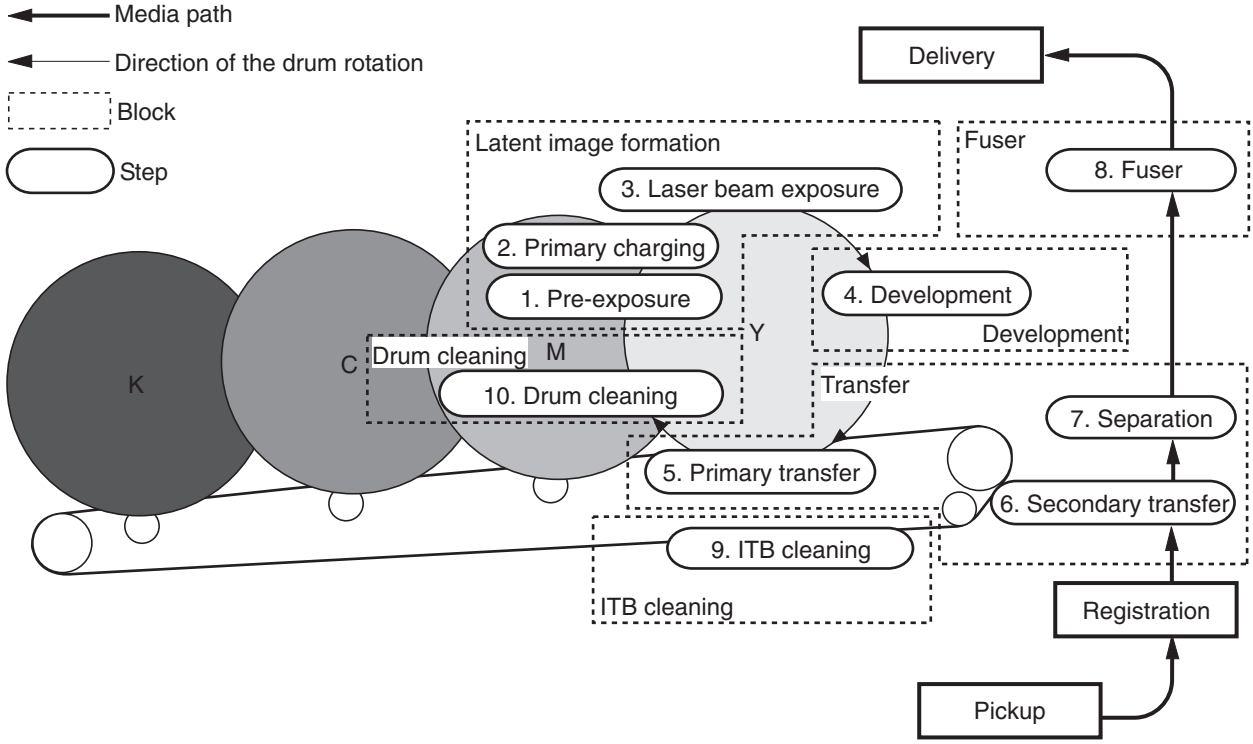


Image-formation process

The image-formation system consists of ten steps that are divided into six functional blocks.

Figure 5-10 Image-formation process

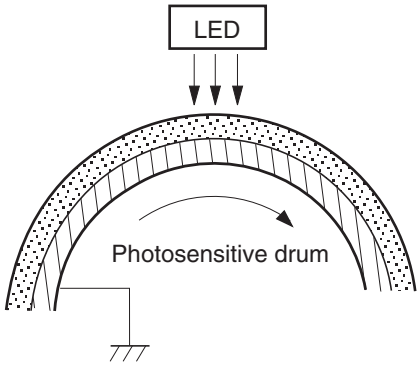


Functional block	Steps	Description
Latent image formation	1. Pre-exposure 2. Primary charging 3. Laser-beam exposure	An invisible latent image is formed on the surface of the photosensitive drums.
Development	4. Development	Toner adheres to the electrostatic latent image on the photosensitive drums.
Transfer	5. Primary transfer 6. Secondary transfer 7. Separation	The toner image is transferred to the ITB and subsequently to the paper.
Fusing	8. Fusing	The toner is fused to the paper to make a permanent image.
ITB cleaning	9. ITB cleaning	Residual toner is removed from the ITB.
Drum cleaning	10. Drum cleaning	Residual toner is removed from the photosensitive drums.

Step 1: Pre-exposure

Light from the pre-exposure LED strikes the surface of the photosensitive drum to remove any residual electrical charges from the drum surface.

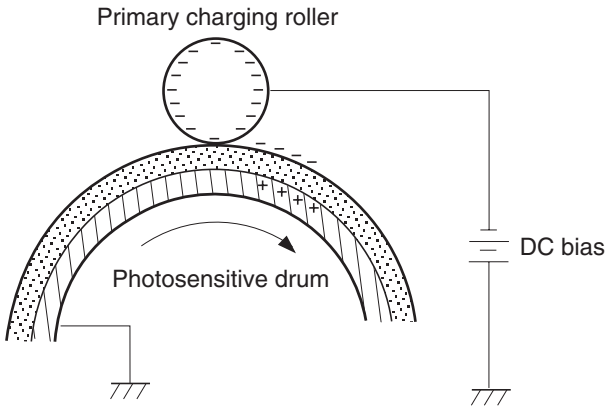
Figure 5-11 Pre-exposure



Step 2: Primary charging

The primary-charging roller contacts the photosensitive drum and charges the drum with negative potential.

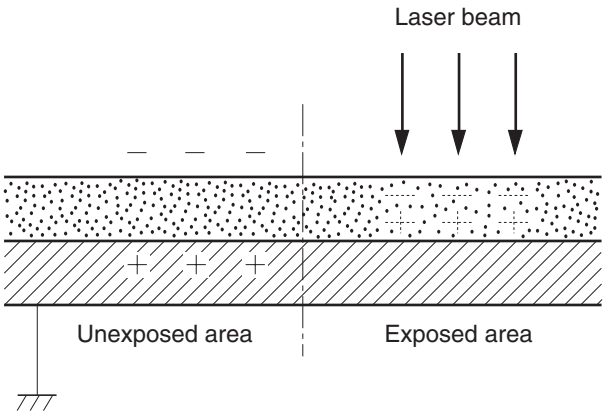
Figure 5-12 Primary charging



Step 3: Laser-beam exposure

The laser beam strikes the surface of the photosensitive drum in the areas where the image will be formed. The negative charge is neutralized in those areas, which are then ready to accept toner.

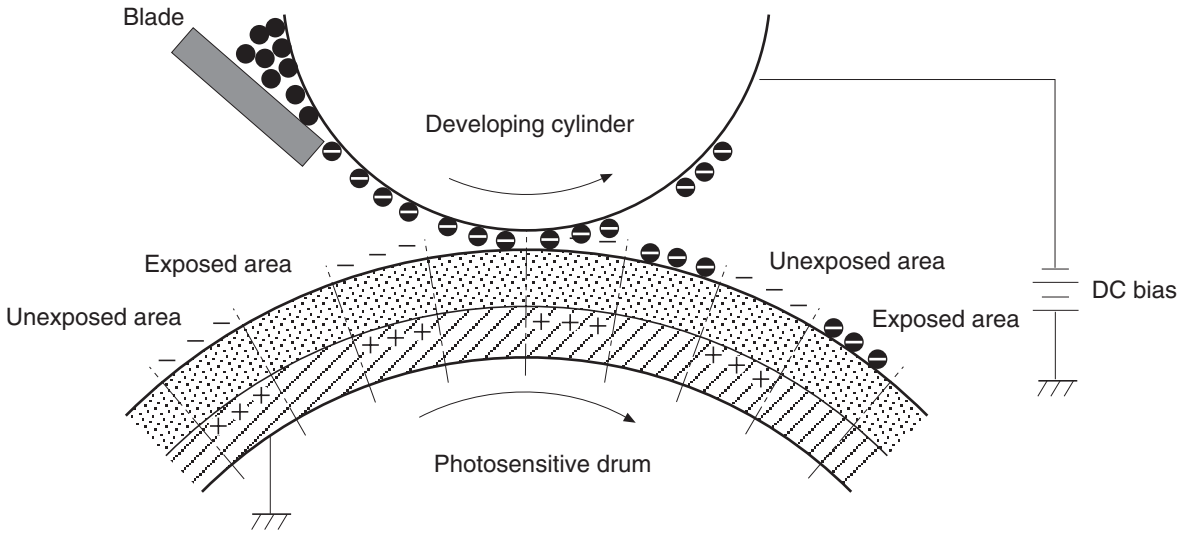
Figure 5-13 Laser-beam exposure



Step 4: Development

Toner inside the image drum acquires a negative charge as the developing cylinder contacts the developing blade. Because the negatively charged surface of the photosensitive drums have been neutralized where they have been struck by the laser beam, the toner adheres to those areas on the drums. The latent image becomes visible on the surface of each drum.

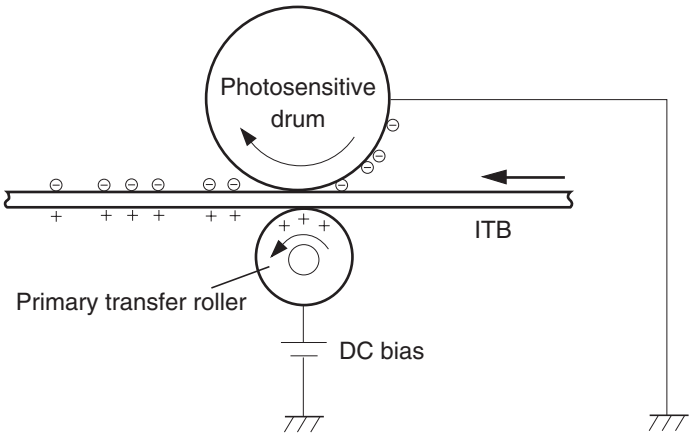
Figure 5-14 Development



Step 5: Primary transfer

The positively charged primary-transfer rollers contact the ITB, giving the ITB a positive charge. The ITB attracts the negatively charged toner from the surface of each photosensitive drum, and the complete toner image is transferred onto the ITB, beginning with yellow, then magenta, cyan, and black.

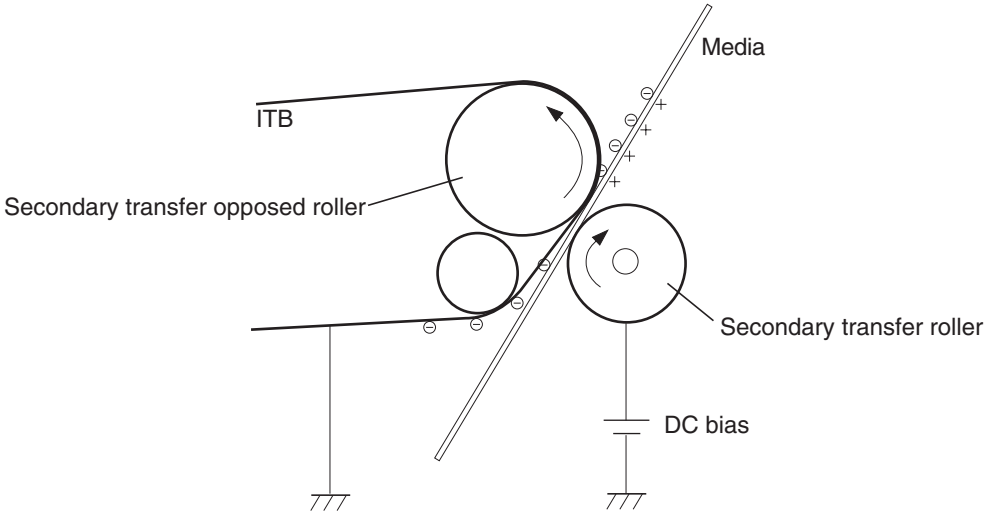
Figure 5-15 Primary transfer



Step 6: Secondary transfer

The paper acquires a positive charge from the secondary-transfer roller, and so it attracts the negatively charged toner from the surface of the ITB. The complete toner image is transferred onto the paper.

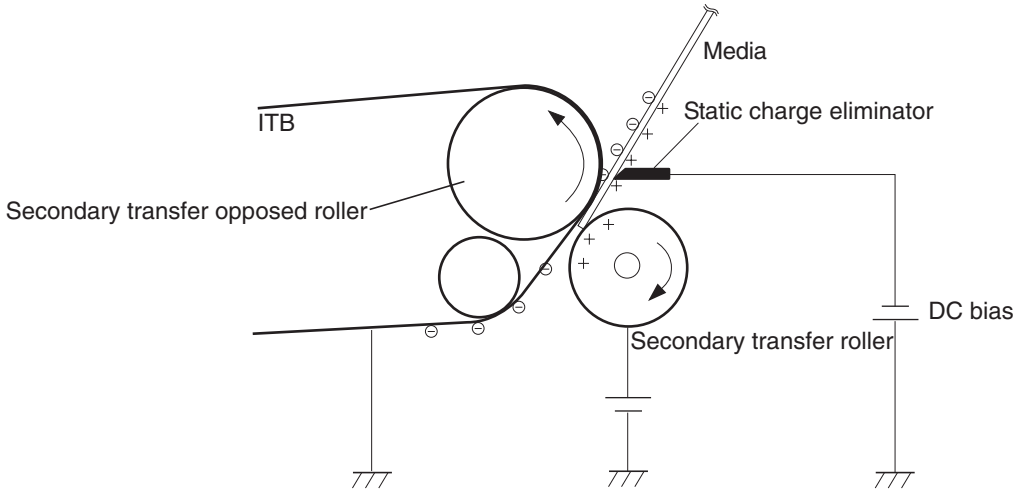
Figure 5-16 Secondary transfer



Step 7: Separation

The stiffness of the paper causes it to separate from the ITB as the ITB bends. The static-charge eliminator removes excess charge from the paper to ensure that the toner is fused correctly.

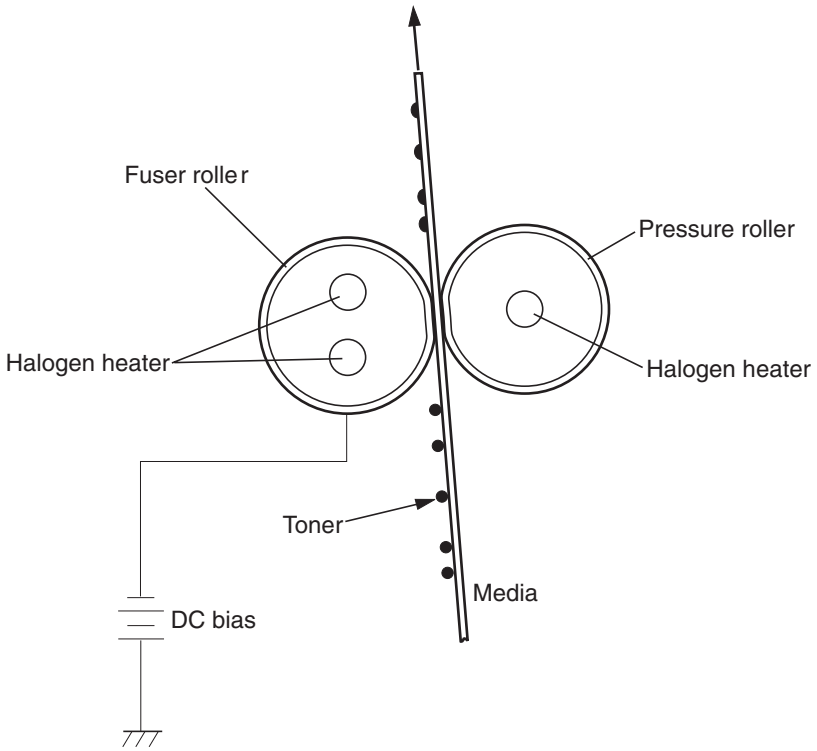
Figure 5-17 Separation



Step 8: Fusing

To create the permanent image, the paper passes through a set of heated, pressurized rollers to melt the toner onto the page. The fuser roller has a negative DC bias to prevent the negatively charged toner from being attracted to the roller, which would decrease print quality.

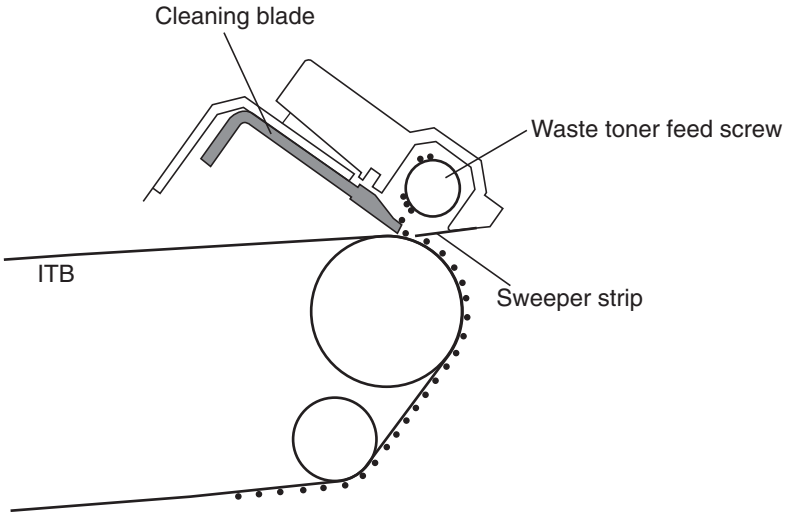
Figure 5-18 Fusing



Step 9: ITB cleaning

After the paper separates from the ITB, the cleaning blade scrapes the residual toner from the surface of the ITB, preparing it for the next image. The waste-toner feed screw picks up the residual toner and deposits it in the waste-toner container inside the imaging drum.

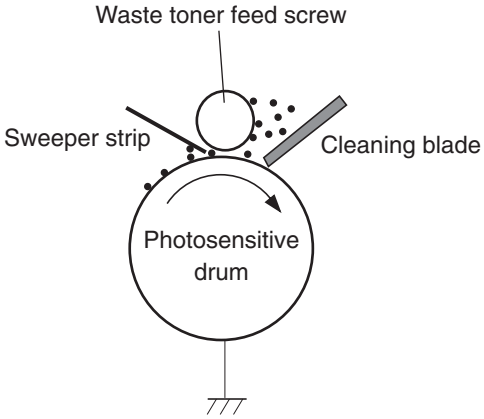
Figure 5-19 ITB cleaning



Step 10: Drum cleaning

Inside the imaging drum, the cleaning blade removes the residual toner from the surface of the photosensitive drum to prepare it for the next image. The waste-toner-feed screw picks up the residual toner and deposits it in the waste-toner container inside the imaging drum.

Figure 5-20 Drum cleaning

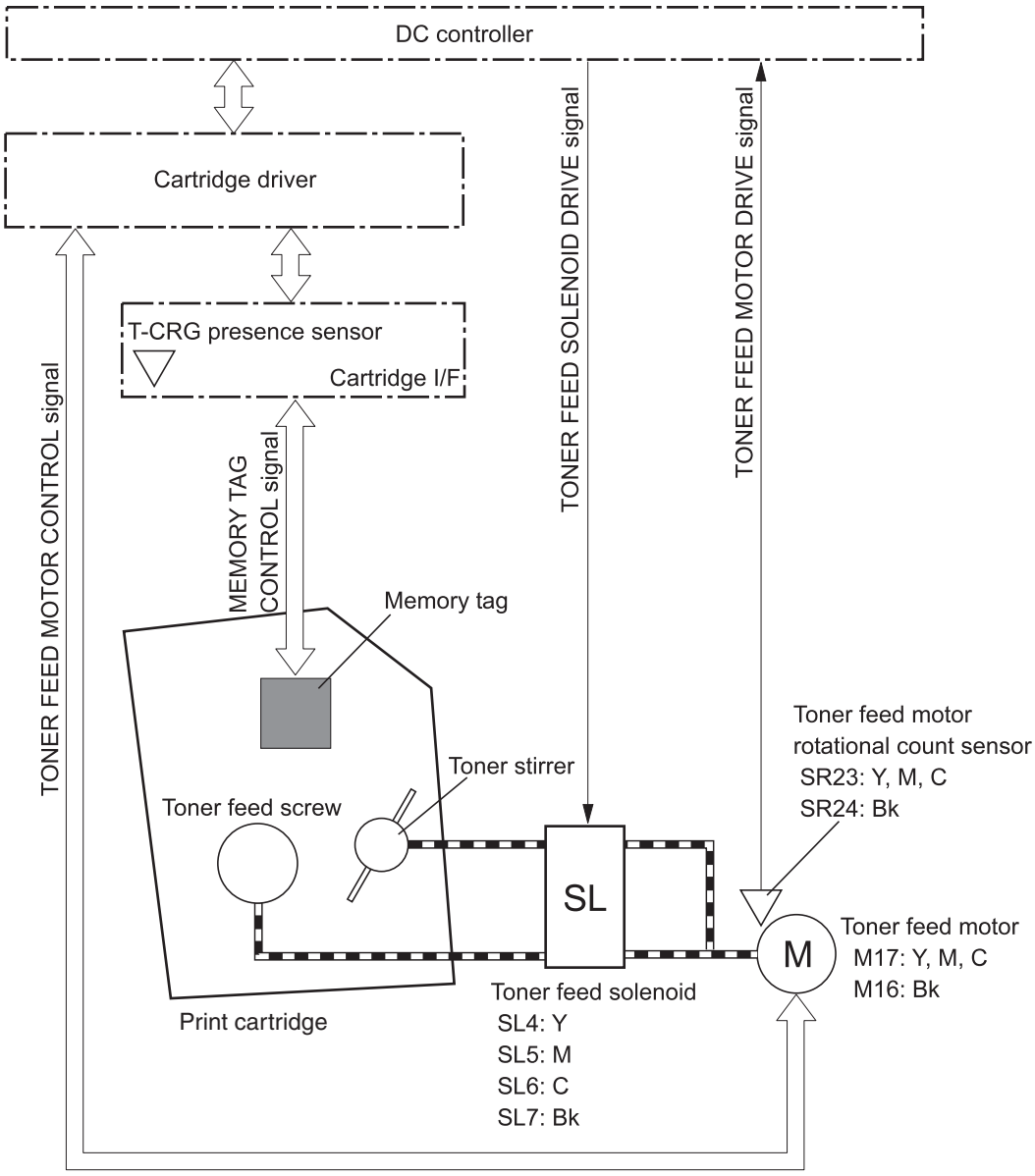


Print cartridge

The product has four print cartridges, one for each color. Each print cartridge contains a reservoir of toner and the following components:

- Toner-feed screw
- Toner stirrer
- Memory tag

Figure 5-21 Print-cartridge system



The toner-feed screw rotates, picks up the toner particles, and transports them into the imaging drum. The toner stirrer rotates at the same time as the toner-feed screw to keep the toner particles from sticking to each other.

The memory tag is a non-volatile memory chip that stores information about the usage for the print cartridge.

The DC controller notifies the formatter of an error if any of the following conditions exist:

- The memory tag fails to either read to or write from the DC controller
- A print-cartridge-presence sensors fails to detect the presence of the print cartridge
- The toner level in any of the print cartridges drops below a certain level
- The toner feed motor is rotating but the rotational-count sensor does not increment the rotation count after a specified length of time. This condition indicates a failure in the toner-feed motor.

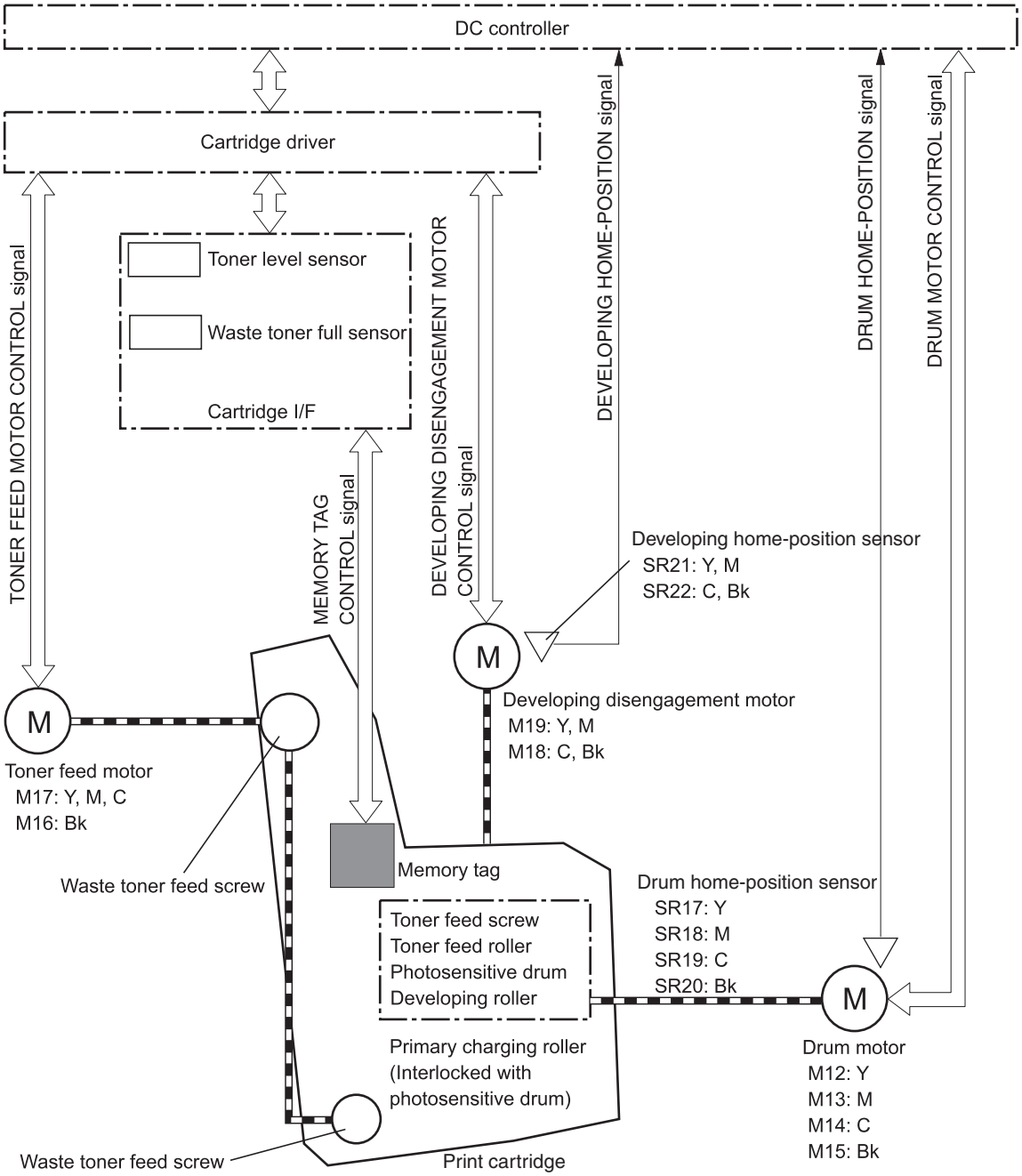
Imaging drum

The product has four imaging drums, one for each color. Each imaging drum contains the following components:

- Photosensitive drum
- Primary-charging roller
- Developing roller
- Toner-feed roller

- Toner-feed screw
- Waste-toner-feed screw

Figure 5-22 Imaging-drum system



The drum motor causes the photosensitive drum to rotate. That rotation causes the primary-charging roller to rotate. The drum motor also drives the toner feed screw, the toner-feed roller, and the developing roller to transfer toner from the print cartridge into the imaging drum.

The toner feed motor drives the waste-toner-feed screw, which removes the waste toner and transports it to the waste toner container.

The memory tag is a non-volatile memory chip that stores information about the usage for the imaging drum.

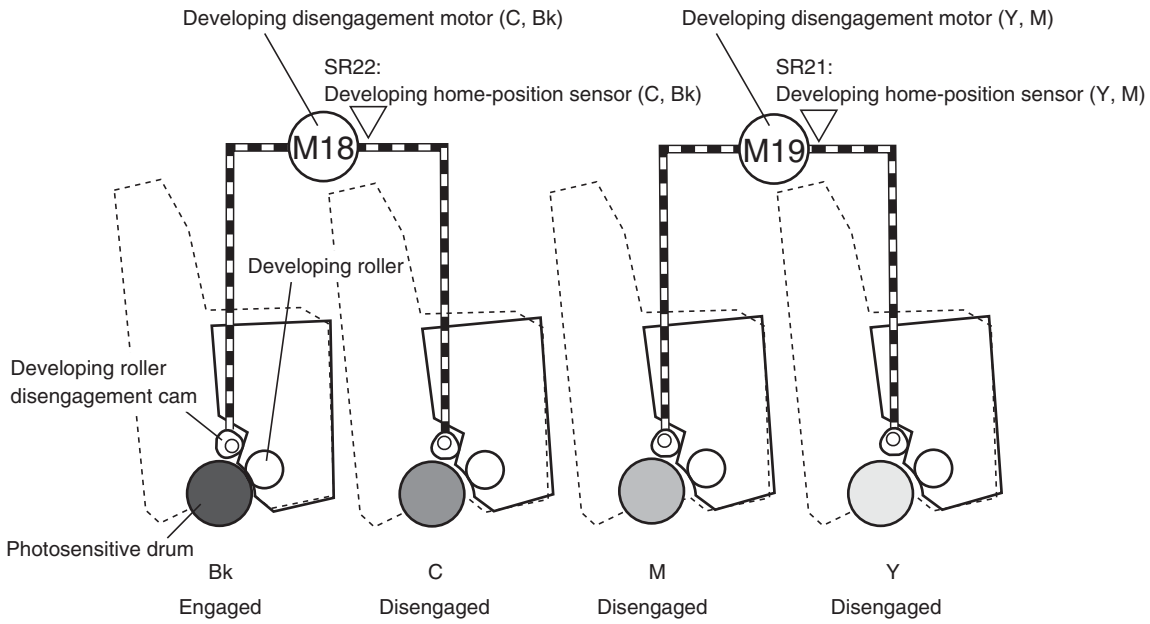
The DC controller notifies the formatter of an error if any of the following conditions exist:

- The memory tag fails to either read to or write from the DC controller
- The toner level in any of the waste toner containers reaches a certain level
- A drum-presence sensors fails to detect the presence of the imaging drum by monitoring the color misregistration/image density output.
- An imaging drum is installed incorrectly.
- The number of pages printed with the current imaging drum reaches a predetermined level
- The level of toner in the imaging drum is not at a predetermined level while the print cartridge is feeding toner to the imaging drum. This indicates a toner feed failure.
- The toner-level sensor detects a level of toner that is outside of a certain range during the print operation. This indicates a toner-level sensor failure.

Developing roller engagement and disengagement

The product can print in full-color mode or in black-only mode. To print in black only, the developing rollers in the cyan, magenta, and yellow imaging drums are disengaged. This maximizes the life of those three imaging drums.

Figure 5-23 Developing-roller engagement and disengagement control



The DC controller rotates the developing disengagement motor and changes the direction of the cam according to the instructions from the formatter for each print job.

When the product is turned on and at the end of each print job, all four of the developing rollers disengage from the photosensitive drums. If the next print job is full-color, each of the developing rollers engage. If the next print job is black-only, only the black developing roller engages.

If the DC controller does not detect any output from the developing home-position sensor, it determines that the developing-disengagement motor has failed.

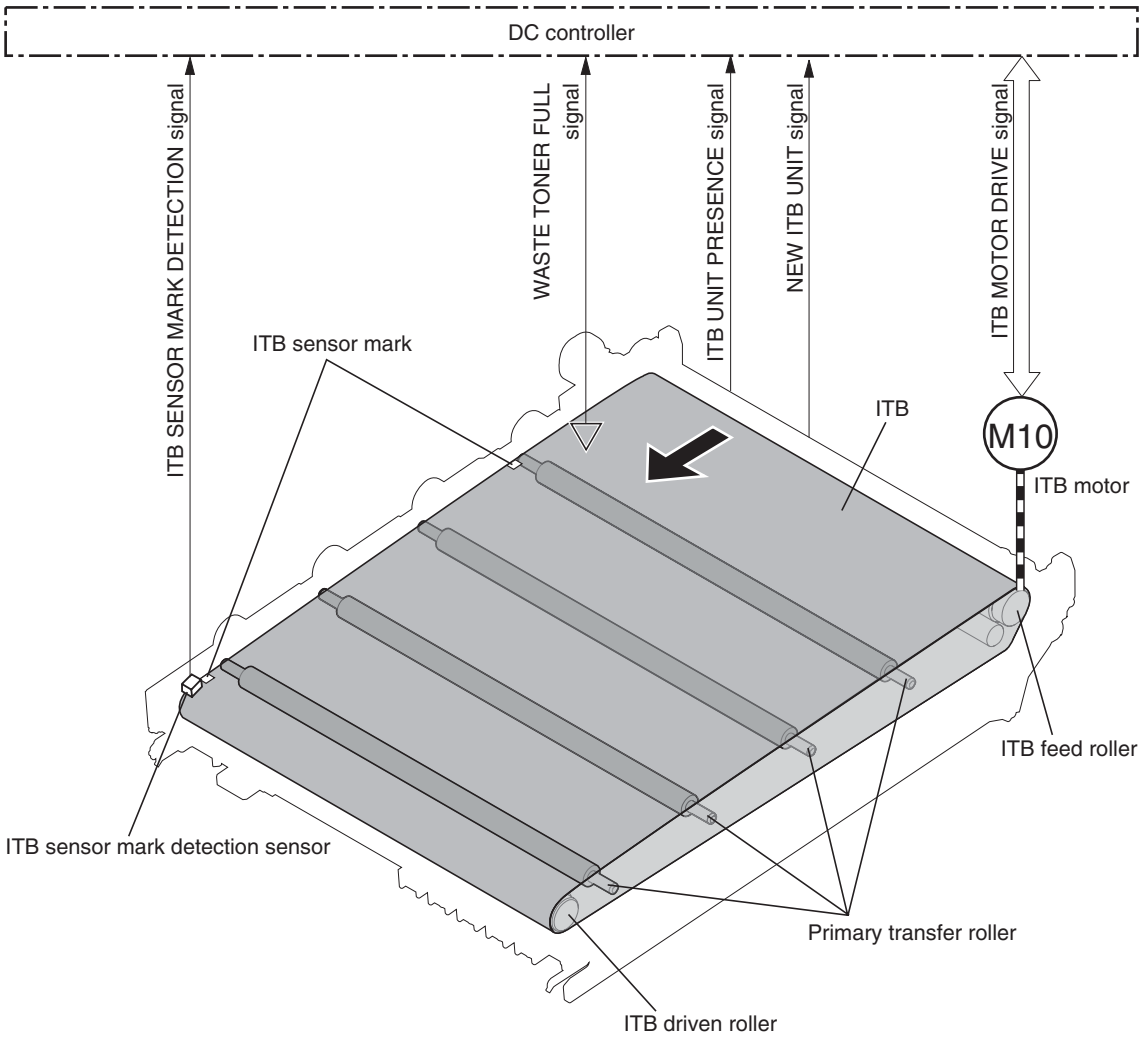
Intermediate transfer belt (ITB) unit

The ITB unit accepts the toner images from the photosensitive drums and transfers the completed image to the paper. The ITB unit has these main components:

- ITB
- ITB feed roller
- ITB-driven roller
- Primary-transfer rollers

The ITB motor drives the ITB feed roller, which rotates the ITB. The motion of the ITB causes the primary transfer rollers to rotate.

Figure 5-24 ITB unit



Primary-transfer-roller engagement and disengagement

Depending on the requirements of the print job, the primary-transfer rollers engage with the ITB so it can receive toner from the photosensitive drums. There are three states of roller engagement.

Table 5-10 Primary-transfer-roller engagement states

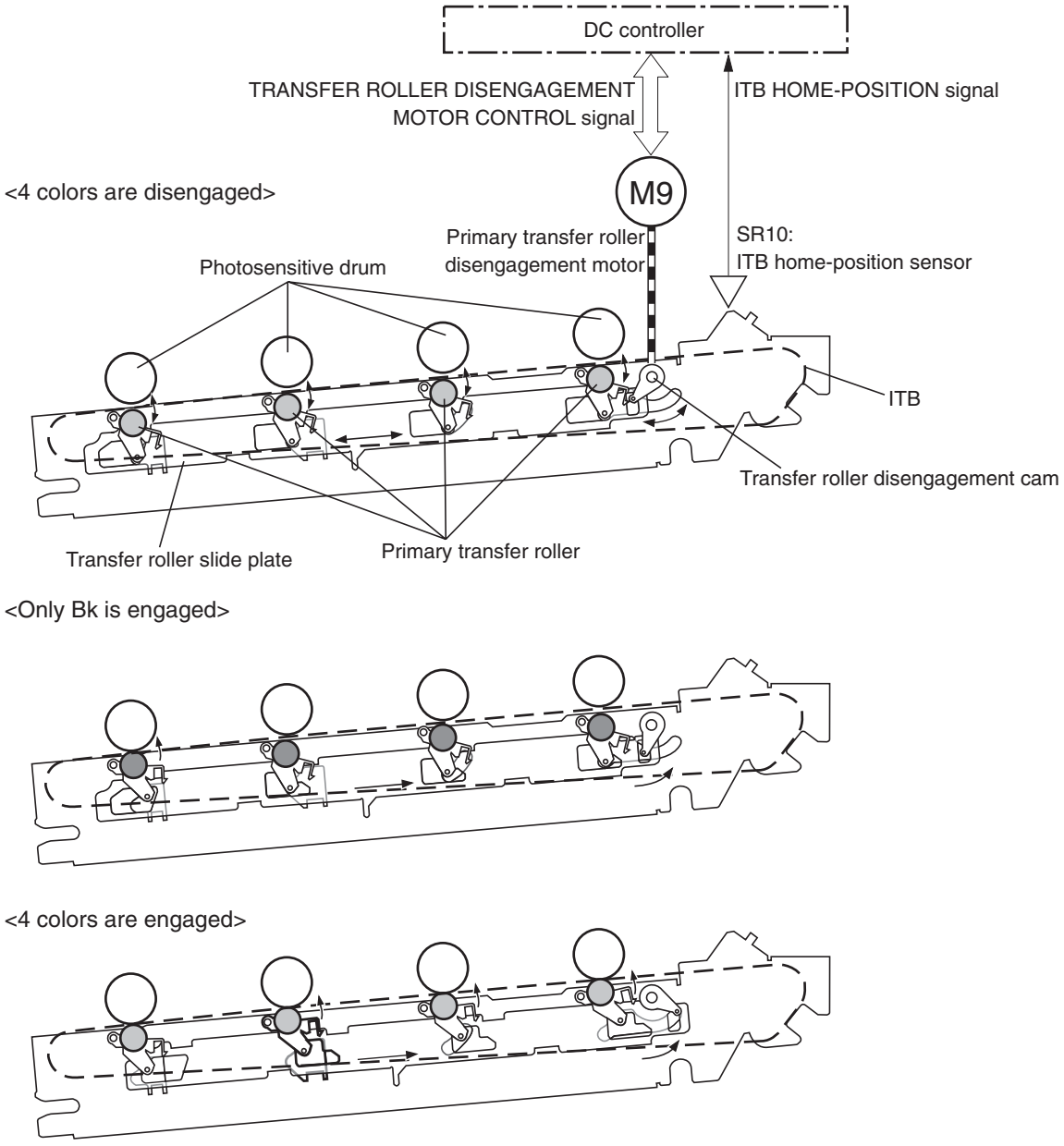
All rollers disengaged	This is the home position for the ITB unit.
Black roller engaged	This is the state for a black-only print job.
All rollers engaged	This is the state for a full-color print job.

The primary-transfer-roller-disengagement motor rotates or reverses to place the primary-transfer-roller-disengagement cam into one of three positions. The cam causes the transfer roller slide plate to move to the right or left, which causes the primary-transfer rollers to move up to engage the ITB with the photosensitive drum or down to disengage it.

If the DC controller does not receive the expected signal from the ITB home-position sensor during the primary-transfer-roller-engagement or disengagement operation, but the primary-transfer-roller-

disengagement motor is rotating, it determines that the primary-transfer-disengagement mechanism has failed, and it notifies the formatter.

Figure 5-25 Three states of primary-transfer-roller engagement and disengagement



ITB unit detection

The DC controller monitors several signals from the ITB unit to detect status.

Table 5-11 ITB unit detection

ITB unit life detection	When a specified number of pages have been printed since an ITB unit was installed, the DC controller alerts the formatter that the ITB unit is at the end of its life.
ITB unit waste toner full detection	When a waste-toner container collects a specified level of toner, the DC controller alerts the formatter that the imaging drum needs to be replaced.
ITB unit presence detection	

Table 5-11 ITB unit detection (continued)

ITB perimeter detection	To ensure that the toner image is placed correctly on each page, the DC controller uses the ITB sensor marks on the surface of the ITB. It adjusts the paper re-pickup timing based on this position.
ITB sensor-mark detection-sensor-failure detection	If the DC controller cannot detect the ITB sensor marks, it notifies the formatter that the ITB sensor-mark detection-sensor has failed.

Secondary-transfer-roller unit

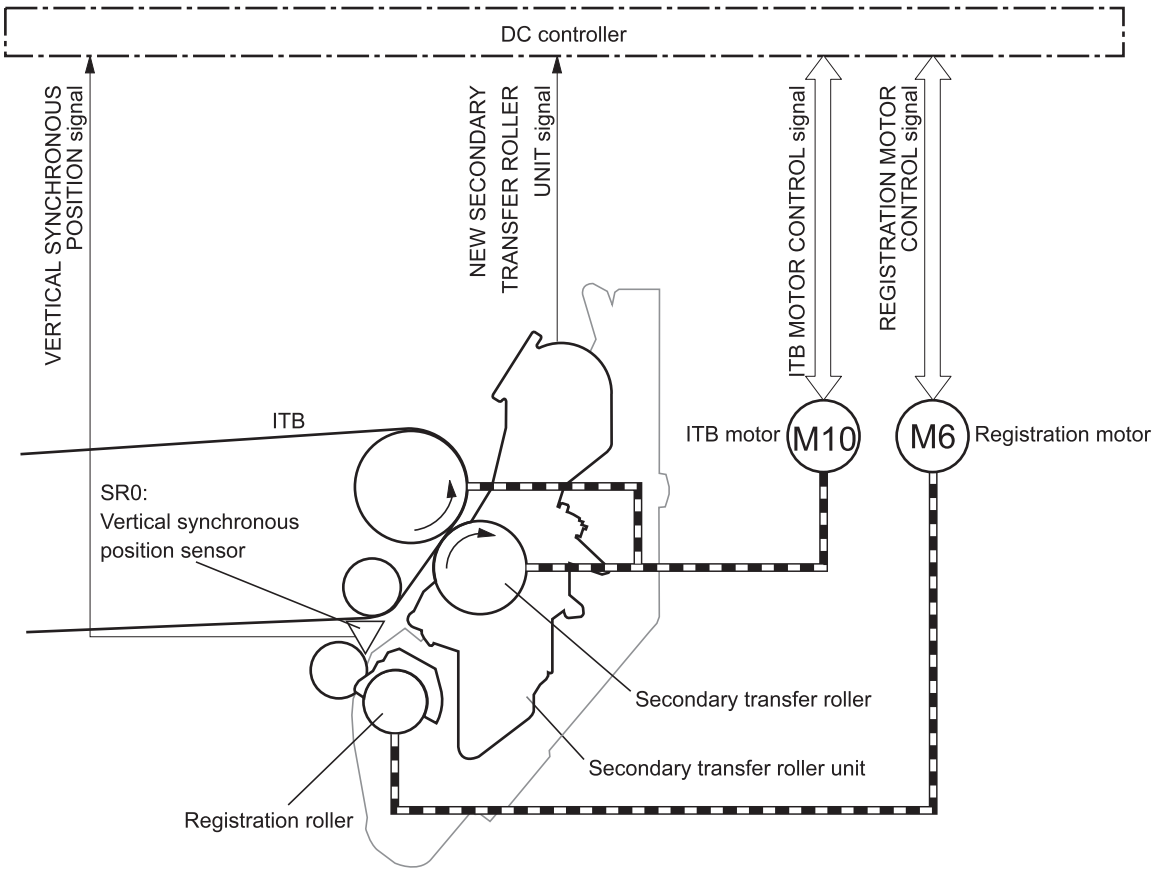
The secondary-transfer-roller unit transfers the toner image from the ITB surface onto the paper. The ITB motor drives the secondary transfer roller, and the registration motor drives the registration roller.

To ensure that the toner image is placed correctly on each page, the DC controller stops the registration motor when the leading edge of the paper passes the vertical synchronous position sensor. It holds the paper in this position until the ITB is in the correct position, according to the ITB perimeter detection, to align the toner image with the paper.

When the product is turned on, when it is coming out of Sleep mode, or after a door has been closed, DC bias is applied to the secondary transfer roller. If no current is detected, the DC controller notifies the formatter that the secondary-transfer-roller unit is not present.

The DC controller can detect when a new secondary-transfer-roller unit has been installed. After a specified number of pages have been printed since a new secondary-transfer-roller unit has been installed, the DC controller notifies the formatter that the secondary-transfer-roller unit is reaching the end of its life.

Figure 5-26 Secondary-transfer-roller unit

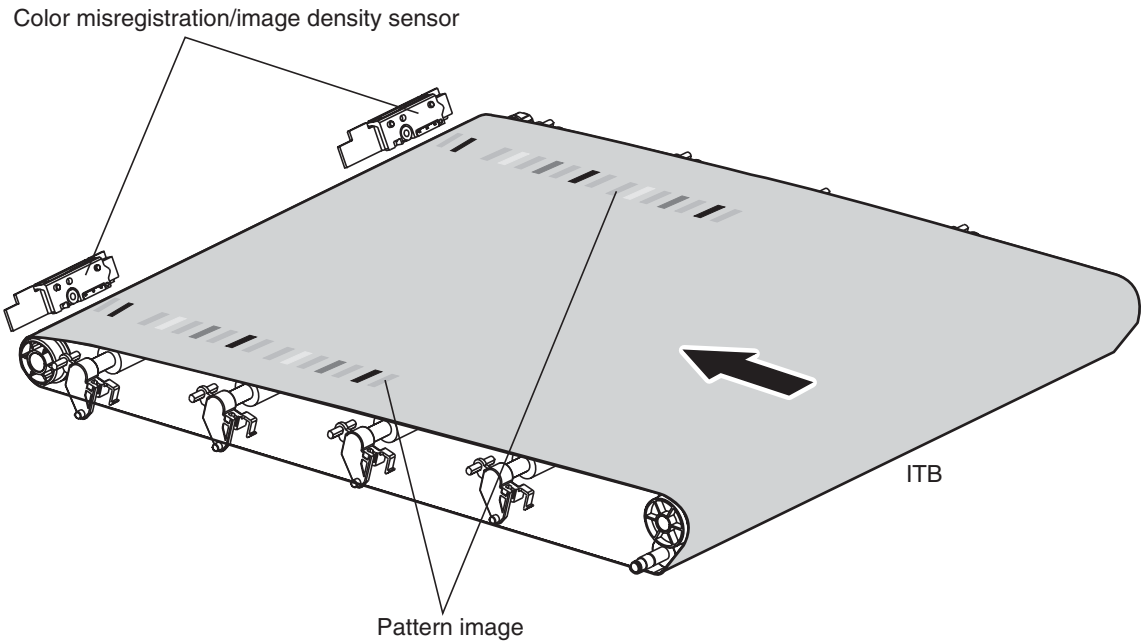


Calibration

The product calibrates itself to maintain excellent print quality. It corrects color-misregistration and color-density variation.

During calibration, the product places a specific pattern of toner on the surface of the ITB. Sensors at the end of the ITB read the toner pattern to determine if adjustments are necessary.

Figure 5-27 Toner patterns for calibration



Color-misregistration contol

Internal variations in the imaging drums or the laser/scanners can cause the toner images to become misaligned. The color-misregistration control corrects the following problems:

- Horizontal scanning start position
- Horizontal scanning magnification
- Vertical scanning start position

This calibration occurs at these times:

- The product is turned on or the front door is closed, after replacing an imaging drum.
- The product is turned on or the right door is closed, after replacing the ITB.
- A specified number of pages have been printed.
- The temperature in the laser/scanner unit area changes, which is a predictor of color misregistration.
- The user requests a calibration by using the control-panel menus.

If data from the color-misregistration and image-density sensors is outside a specified range when the product is turned on or when it is beginning the calibration sequence, the DC controller determines that these sensors have failed, and it notifies the formatter.

Image-stabilization control

Environmental changes or deterioration of the photosensitive drums and toner can cause variations in the image density. The image-stabilization control reduces these fluctuations. There are three kinds of image-stabilization controls.

Table 5-12 Image-stabilization controls

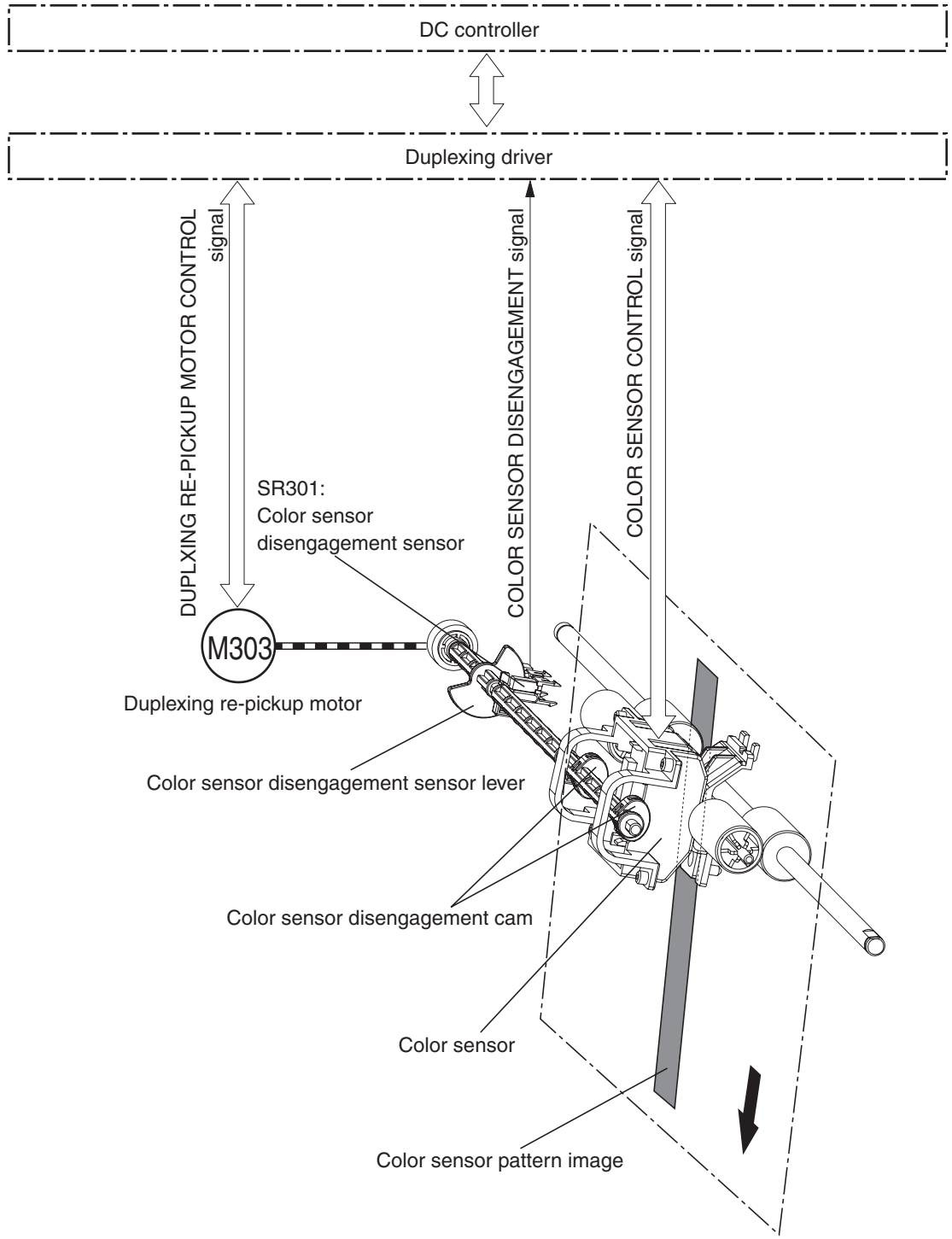
Environment change control	The DC controller monitors environmental information from internal temperature and humidity sensors. It adjusts the high-voltage bias to accommodate environmental changes. This control is performed under the following circumstances: • The product is turned on. • The imaging drum is replaced. • A change in environmental conditions occurs.
Image density control (DMAX)	This control corrects variations in image density that are related to deterioration of the photosensitive drum or the toner. The DC controller adjusts the high-voltage biases to correct the problem under the following conditions: • The themopile detects a temperature that is too low when the product is turned on. • The product is turned on, or the front door is closed after replacing an imaging drum. • The product is turned on, or the right door is closed after replacing the ITB. • A specified number of pages have been printed. • A prescribed environmental change occurs • The product is recovered from sleep mode • After a specific period of the completion of a print operation
Image halftone control (DHALF)	The formatter performs this control to calibrate the halftone, based on the halftone-density measurements, under the following conditions: • The thermopile detects a temperature that is too low when the product is turned on. • The product is turned on, or the front door is closed after replacing an imaging drum. • The product is turned on, or the right door is closed after replacing the ITB. • A specified number of pages have been printed. • A prescribed environmental change occurs • The product is recovered from sleep mode • After a specific period of the completion of a print operation

Color-sensor control (duplex models only)

The image halftone control measures the color halftones of the toner image on the ITB. However, this control cannot adjust halftone variations that occur because of differences in types of paper. To accommodate differences in paper, the product has a color-sensor-control mechanism, which is located

in the duplex paper path. The product adjusts the color halftones based on measurements from a test pattern that is printed on a page and passed through the duplexer after fusing.

Figure 5-28 Color-sensor control



The color sensor engages or disengages based on the position of the color-sensor disengagement cam, which is driven by reversing the duplexing re-pickup motor.

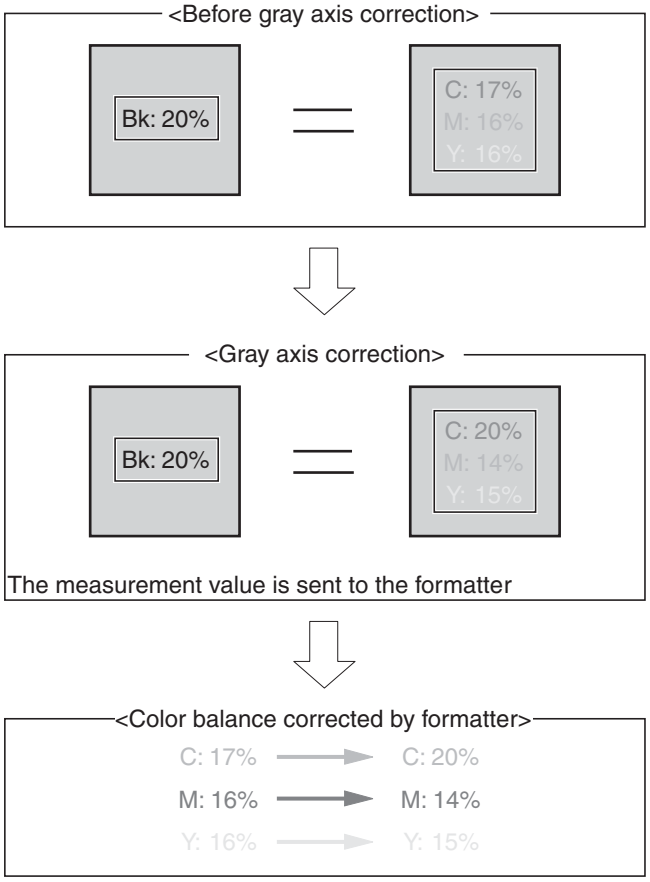
If the DC controller receives no signal from the color-sensor disengagement sensor during a color-sensor control operation, it determines that the duplexing paper feed mechanism has failed.

Gray-axis correction

The gray axis correction adjusts for differences in the process-gray color that is designated by the formatter. The formatter adjusts the color balance for cyan, magenta, and yellow based on measurements from this control.

Figure 5-29 Gray-axis correction

Flow of gray axis correction



Before the gray axis correction, the process color balance equivalent to Bk 20% is; Cyan 17%, Magenta 18% and Yellow 16%.
The formatter recognizes this color balance .

The gray axis correction determines that the process color balance equivalent to Bk 20% is; Cyan 20%, Magenta 14% and Yellow 15%.
This measurement value is sent to the formatter.

The formatter corrects the color balance referring to the measurement value.

Pickup, feed, and delivery system

The pickup, feed, and delivery system uses a series of rollers to move the paper through the product.

The duplexing flapper solenoid (SL301) controls the position of the duplexing flapper to feed the paper into the duplexing unit.

Figure 5-30 Switches and sensors for the pickup, feed, and delivery system

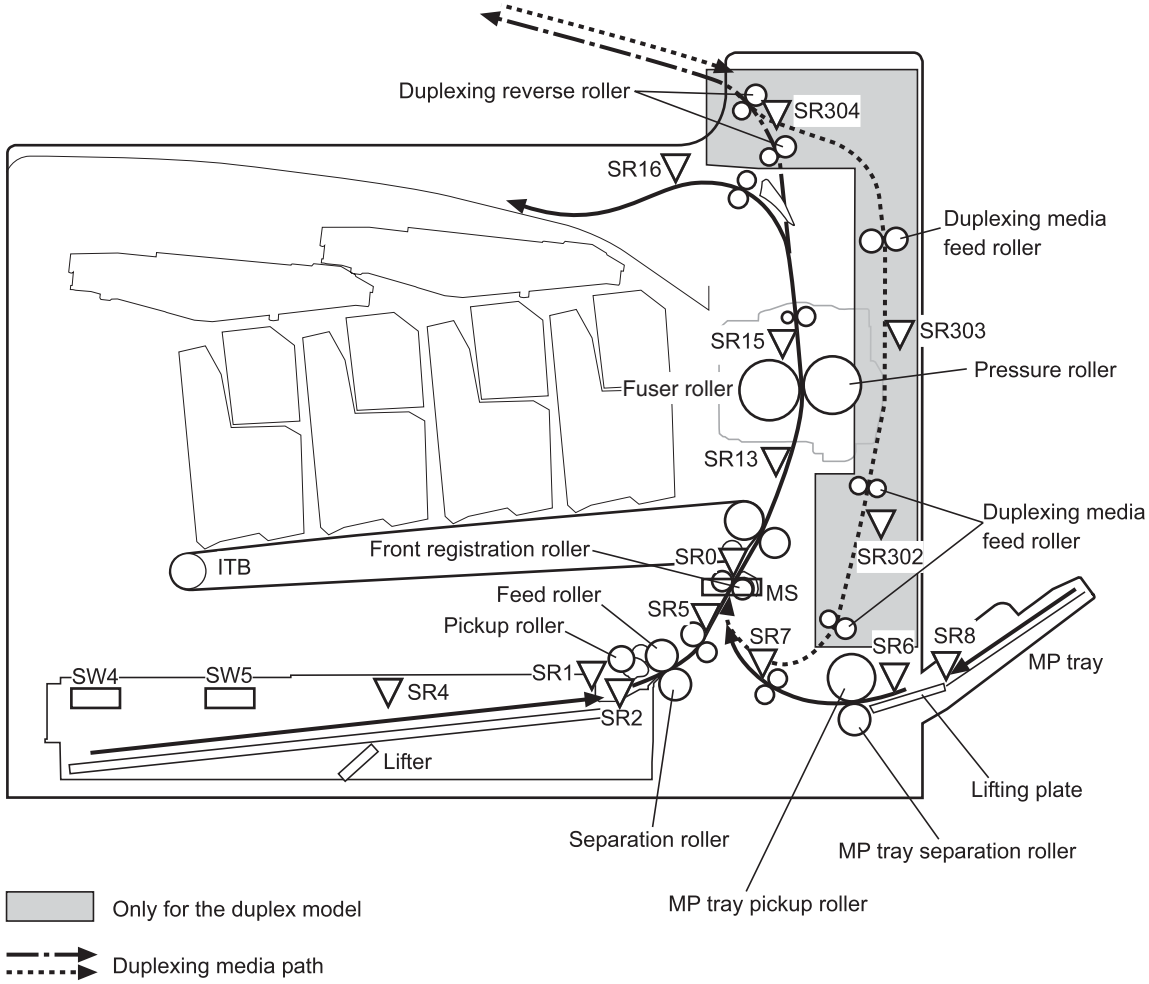


Table 5-13 Switches and sensors for the pickup, feed, and delivery system

Abbreviation	Component
SR0	Vertical synchronous position sensor
SR1	Cassette paper-presence sensor
SR2	Cassette paper-stack surface sensor
SR4	Cassette paper-level sensor
SR5	Cassette paper-feed sensor
SR6	Multipurpose tray paper-presence sensor
SR7	Multipurpose tray paper-feed sensor

Table 5-13 Switches and sensors for the pickup, feed, and delivery system (continued)

Abbreviation	Component
SR8	Multipurpose tray last paper sensor
SR13	Loop sensor
SR15	Fuser delivery paper-feed sensor
SR16	Output-bin full sensor
SR302	Duplexing paper re-pickup sensor
SR303	Duplexing paper-feed sensor
SR304	Duplexing paper-reverse sensor
SW4	Cassette end-plate position switch
SW5	Cassette side-plate position switch
MS	Paper sensor

Figure 5-31 Motors and solenoids for the pickup, feed, and delivery system

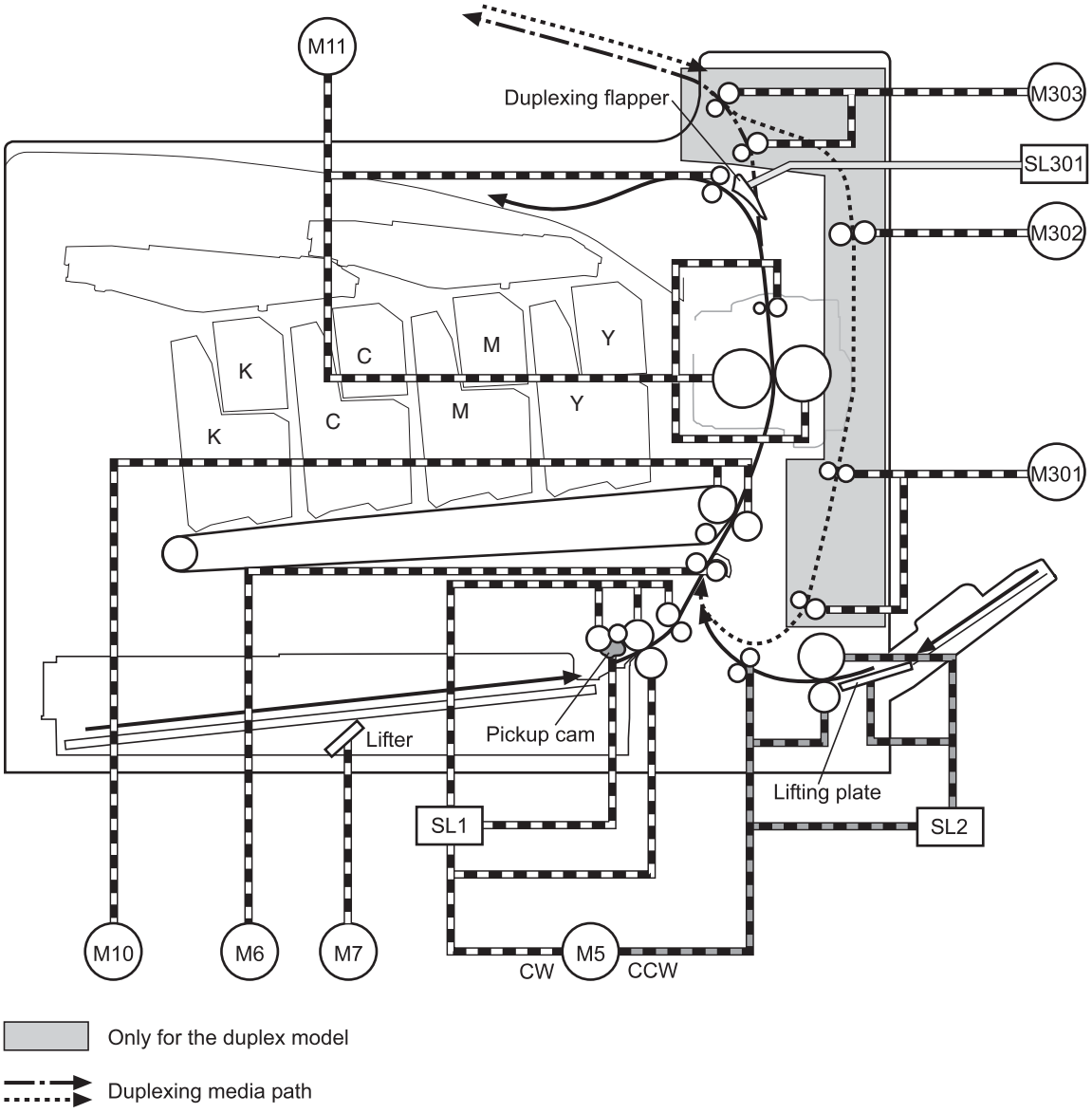


Table 5-14 **Motors and solenoids for the pickup, feed, and delivery system**

Abbreviation	Component
M5	Pickup motor
M6	Registration motor
M7	Cassette lifter motor
M10	ITB motor
M11	Fuser motor
M301	Duplexing re-pickup motor
M302	Duplexing feed motor
M303	Duplexing reverse motor

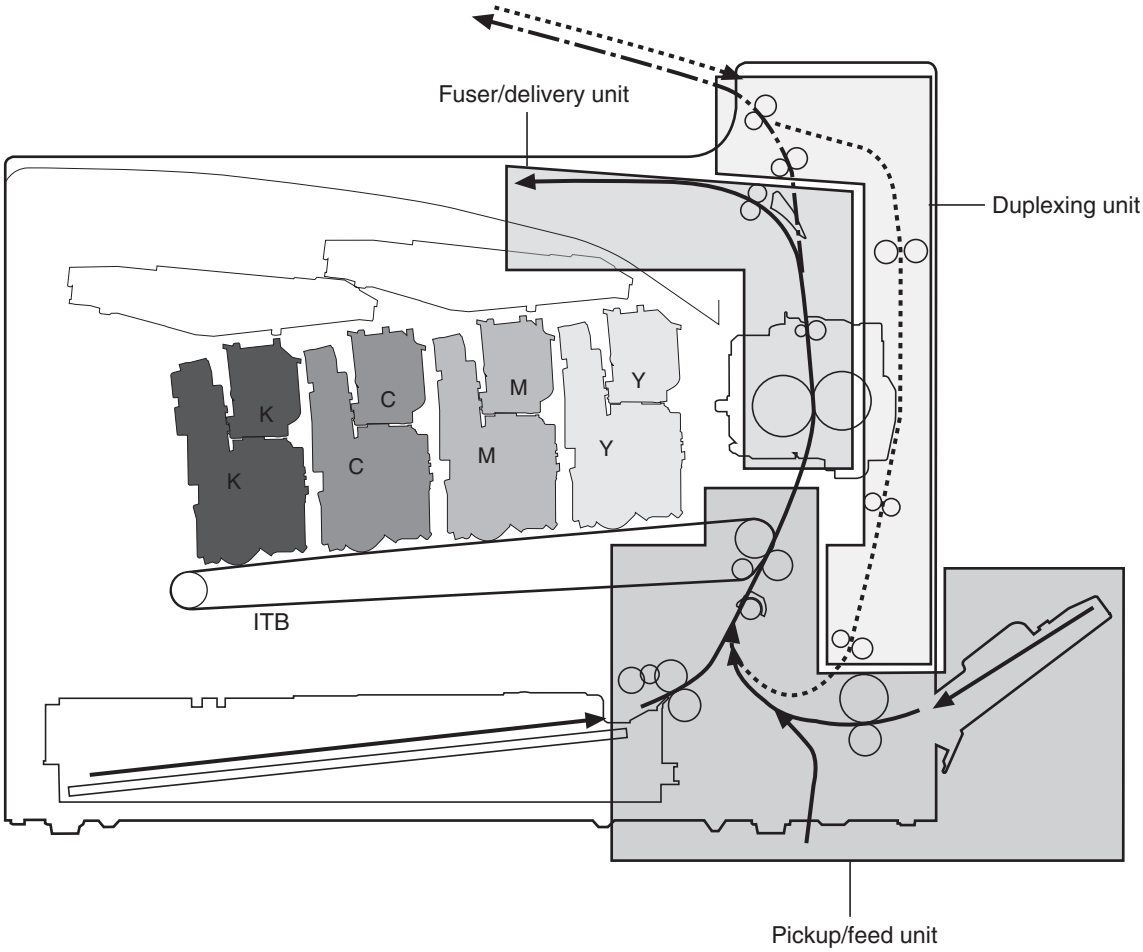
Table 5-14 Motors and solenoids for the pickup, feed, and delivery system (continued)

Abbreviation	Component
SL1	Cassette pickup solenoid
SL2	Multipurpose tray pickup solenoid
SL301	Duplexing flapper solenoid

The pickup, feed, and delivery system can be divided into three units:

- Pickup-and-feed unit
- Fuser and delivery unit
- Duplexing unit

Figure 5-32 Three main units of the pickup, feed, and delivery system



Pickup-and-feed unit

The pickup-and-feed unit picks an individual sheet of paper from the multipurpose tray or the cassettes, carries it through the secondary-transfer unit, and feeds it into the fuser.

Table 5-15 Main operations within the pickup-and-feed system

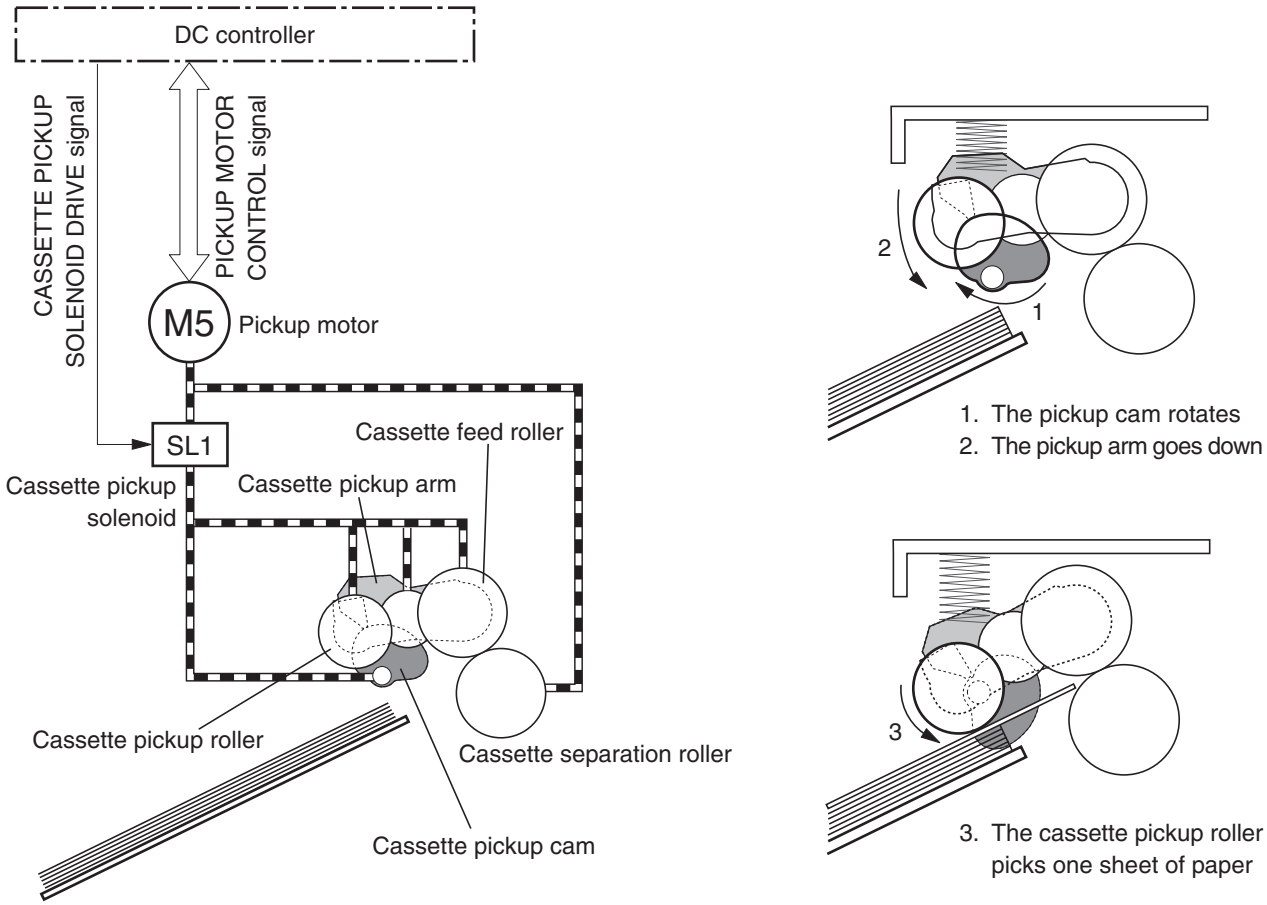
Operation	Steps
Cassette pickup	1. Paper-size and cassette-presence detection 2. Lift operation 3. Paper-level and paper-presence detection 4. Multiple-feed prevention
Multipurpose tray pickup	1. Paper-presence detection 2. Last paper detection
Paper feed	1. Skew-feed prevention 2. Paper detection 3. Feed-speed control

Cassette pickup

The sequence of steps for the cassette tray pickup operation is the following:

1. When the product is turned on or the tray is pushed closed, the lifting mechanism lifts the paper stack so it is ready.
2. After receiving a print command from the formatter, the DC controller rotates the pickup motor, which causes the cassette pickup roller, cassette feed roller, and cassette separation roller to rotate.
3. The DC controller drives the cassette pickup solenoid, which rotates the cassette pickup cam. As the pickup cam rotates, the pickup arm moves down, the cassette pickup roller touches the surface of the paper stack, and it picks up one sheet of paper.

Figure 5-33 Cassette-pickup mechanism



Cassette paper-size and cassette-presence detection

The cassette end-plate detection switch and the cassette side-plate detection switch detect the size of the paper that is loaded in the cassette. Each of these switches contains three sub-switches.

The DC controller compares the paper length that is detected by the vertical-synchronous-position sensor to the detected size and to the size that is specified for the print job. If they do not match, the DC controller notifies the formatter.

The cassette end-plate detection switch also detects whether the cassette is present. If all three of its switches are off, the DC controller determines that the cassette is absent.

Figure 5-34 Cassette paper-size detection switches

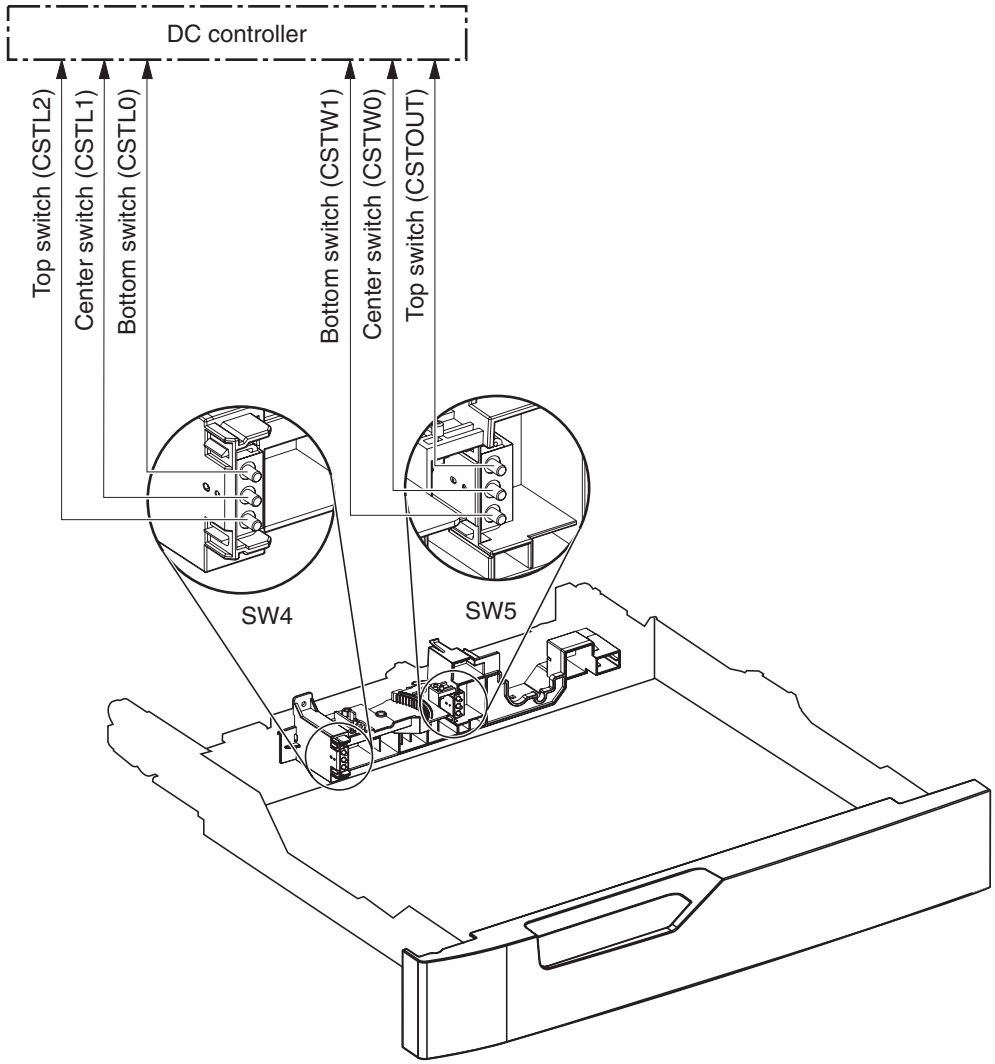


Table 5-16 **Switch states for paper-size detection**

Paper size	Cassette end-plate detection switch (SW4)			Cassette side-plate detection switch (SW5)		
	Top switch	Center switch	Bottom switch	Top switch[1]	Center switch	Bottom switch
A5	On	On	Off	On or off	Off	On
A4	On	On	Off	On or off	Off	Off
Letter	On	On	Off	On or off	On	Off
B5	Off	On	Off	On or off	Off	On
Executive	Off	On	Off	On or off	Off	On
Letter-R	Off	Off	On	On or off	Off	On
A4-R	On	Off	On	On or off	Off	On

Table 5-16 Switch states for paper-size detection (continued)

Legal	On	Off	Off	On or off	Off	On
B4	On	Off	Off	On or off	On	On
A3	On	Off	Off	On or off	Off	Off
Ledger	On	Off	Off	On or off	On	Off
Cassette absence	Off	Off	Off			

[1] The top side-plate detection switch controls the lifter mechanism. When the switch is on, the lifting plate moves up. When it is off, the lifting plate moves down. Its position has no effect on paper-size detection.

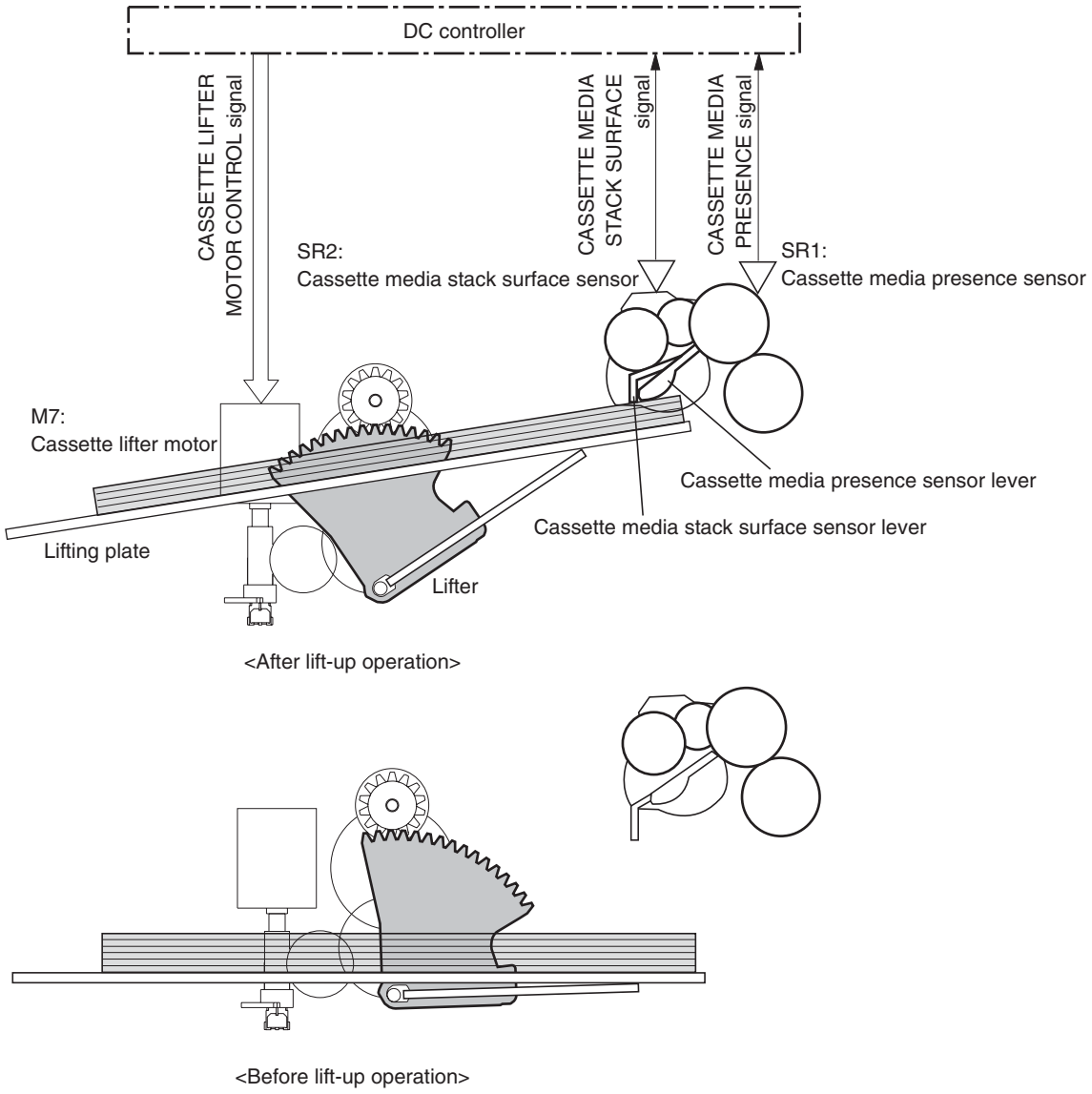
Cassette lift operation

When the product is turned on, when the cassette is inserted, or as the paper level in the cassette decreases, the cassette lift mechanism raises the plate to keep the surface of the stack high enough so the pickup roller can reach it.

1. The DC controller rotates the cassette-lifter motor to raise the lift plate.
2. When the paper-stack surface sensor detects the paper surface, the DC controller stops rotating the cassette-lifter motor. If the sensor no longer detects paper, the DC controller begins rotating the motor again.

If the paper-stack surface sensor does not detect the paper within a specified time after the lifter motor begins rotating, the DC controller notifies the formatter that the lifter motor has failed.

Figure 5-35 Cassette lift mechanism



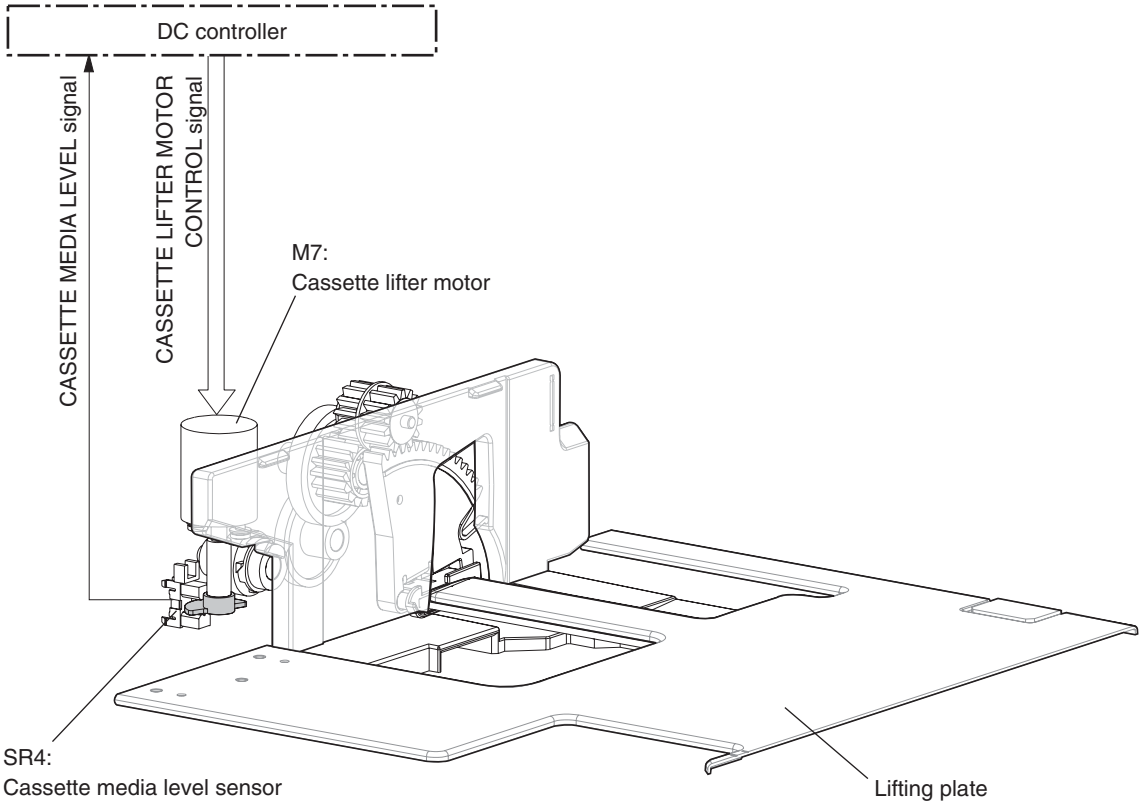
Cassette paper-level and paper-presence detection

The height of the paper-lift plate in the cassette indicates the paper level. The paper-level sensor, which is at the end of the lifter motor, monitors the rotations of the motor and calculates the paper level. It reports the paper level to the DC controller in the following increments:

- No paper
- Less than 10%
- Between 10% and 20%
- Between 20% and 40%
- More than 40%

The cassette media-presence sensor detects whether paper is in the cassette.

Figure 5-36 Paper-level-detection mechanism

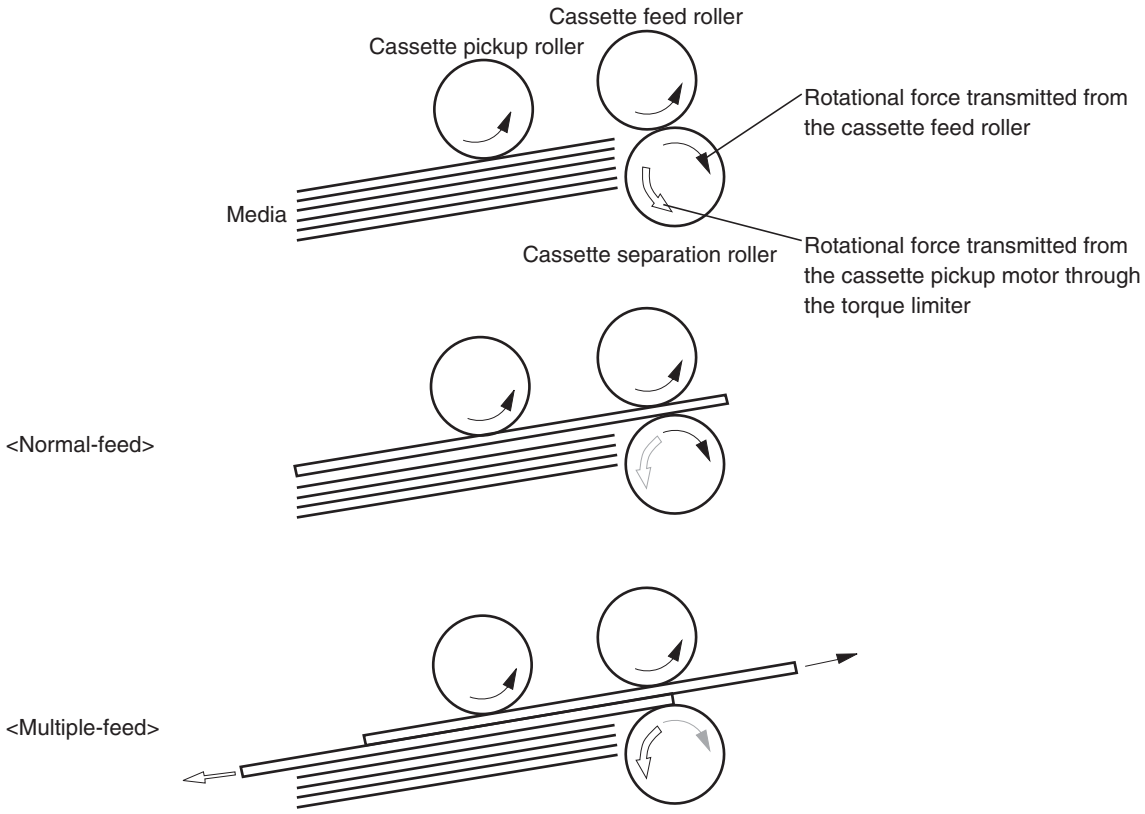


Multifeed prevention

In each of the cassettes and in the multipurpose tray, a separation roller prevents multiple sheets of paper from entering the paper path. The separation roller is driven by the rotation of the feed roller, but

it is equipped with a torque limiter that counteracts this rotation when more than one sheet of paper is between the two rollers.

Figure 5-37 Multifeed prevention



Multipurpose tray pickup

The multipurpose tray paper-presence sensor detects whether paper is in the tray. If no paper is present, the DC controller notifies the formatter. The print operation is not performed until paper is in the tray.

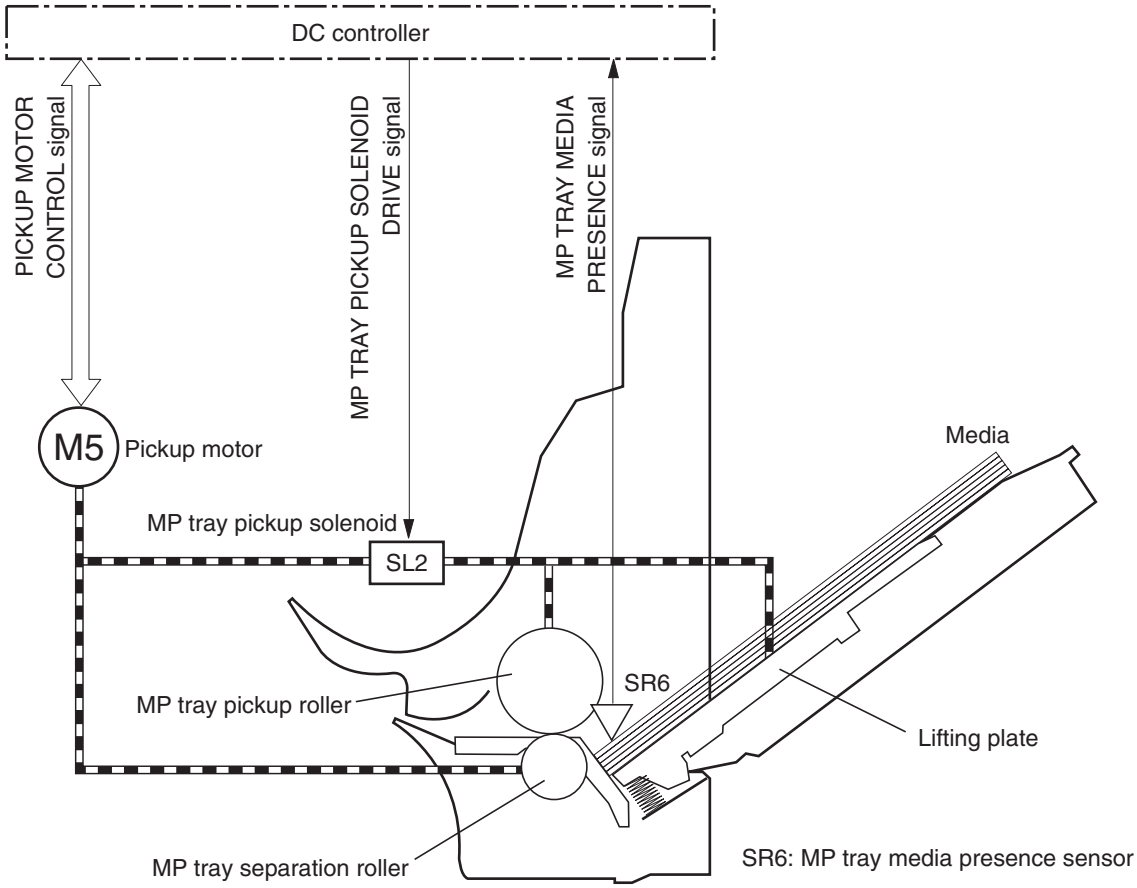
The sequence of steps for the multipurpose tray pickup operation as follows:

1. After receiving a print command from the formatter, the DC controller reverses the pickup motor, which causes the multipurpose tray separation roller to rotate.
2. The DC controller turns on the multipurpose tray pickup solenoid, causing the multipurpose tray pickup roller to rotate.

3. The lifting plate rises to meet the rotating pickup roller, and paper is picked from the stack.

4. The multipurpose tray separation roller isolates a single sheet of paper in case more than one sheet was picked. The single sheet of paper is fed into the product. This mechanism is the same as for the cassette pickup operation.

Figure 5-38 Multipurpose tray pickup mechanism



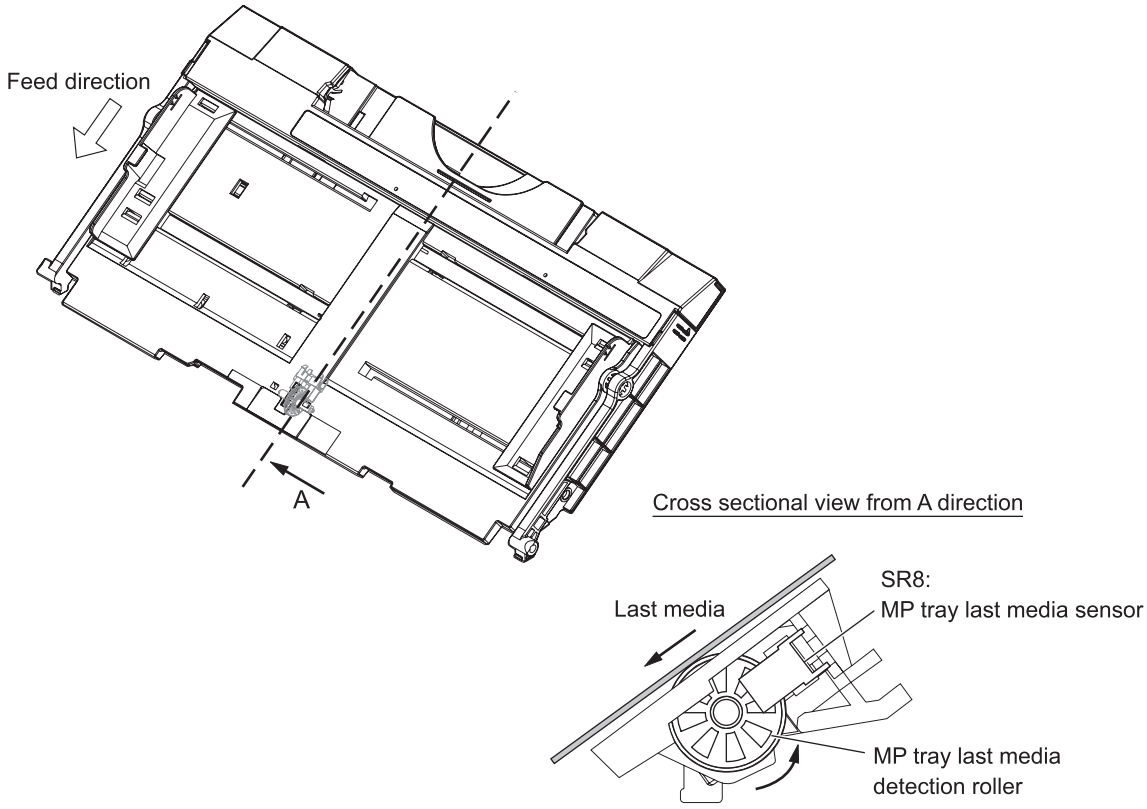
Multipurpose tray last-paper detection

Because the paper path between the multipurpose tray paper-presence sensor and the registration roller is short, the product attempts to form the next image before the DC controller detects that the tray is empty. To prevent the image from being formed on the photosensitive drum and wasting toner, the multipurpose tray last-paper sensor detects the empty tray before the image-formation process begins.

As the last sheet of paper is picked up, the multipurpose tray last-paper detection roller rotates. It does not rotate if two or more sheets are in the tray. The multipurpose tray last-paper sensor detects the

moving roller, and it sends a signal to the DC controller. The DC controller notifies the formatter so it can temporarily disable the image-formation process.

Figure 5-39 Multipurpose tray last-paper detection



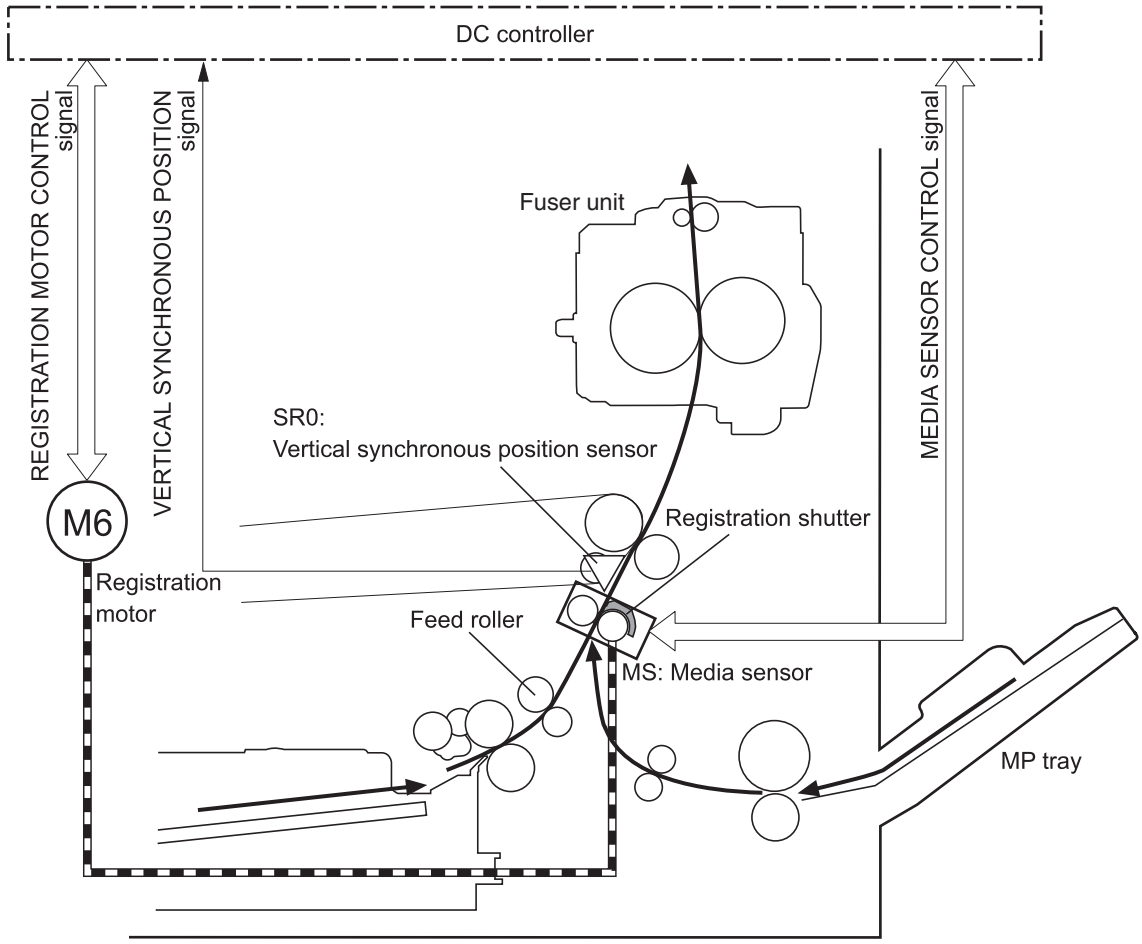
Paper feed

After the pickup operation, the paper is fed through the product and into the fuser.

1. The paper passes through the feed rollers. The registration shutter aligns the paper correctly to prevent skewed printing.
2. When the vertical synchronous position sensor detects the leading edge of the paper, the registration motor stops, and the paper movement pauses while the image on the ITB is timed to align with the leading edge of the paper.

3. While the paper is paused, the media sensor detects the type of paper.
4. When the timing is correct, the registration motor begins rotating again to feed the paper through the secondary transfer unit and into the fuser.

Figure 5-40 Paper-feed mechanism

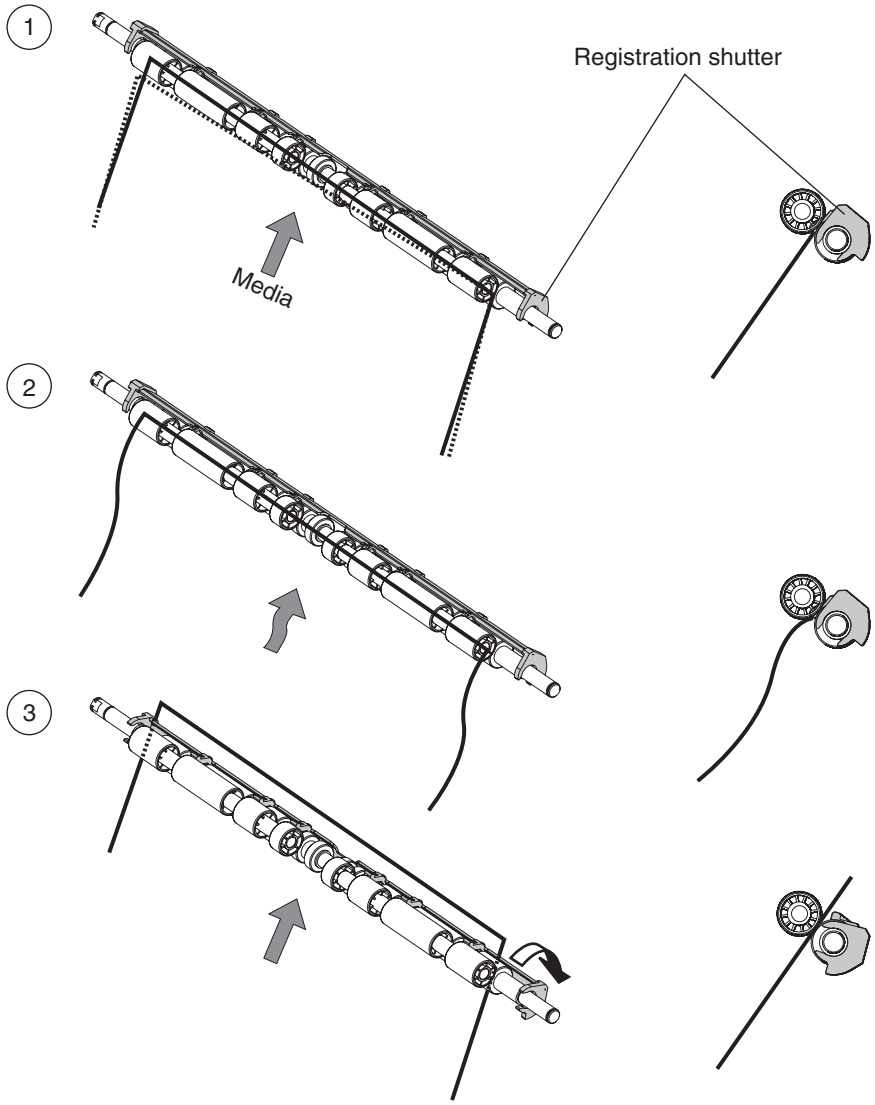


Skew-feed prevention

The product can straighten the paper without slowing the feed operation.

1. As the paper enters the paper path, the leading edge strikes the registration shutter, but the paper does not pass through the shutter, so it is straightened.
2. The feed rollers keep pushing the paper, creating a force on the leading edge against the registration shutter.
3. When the force is great enough, the registration shutter opens and the paper passes through.

Figure 5-41 Skew-feed prevention

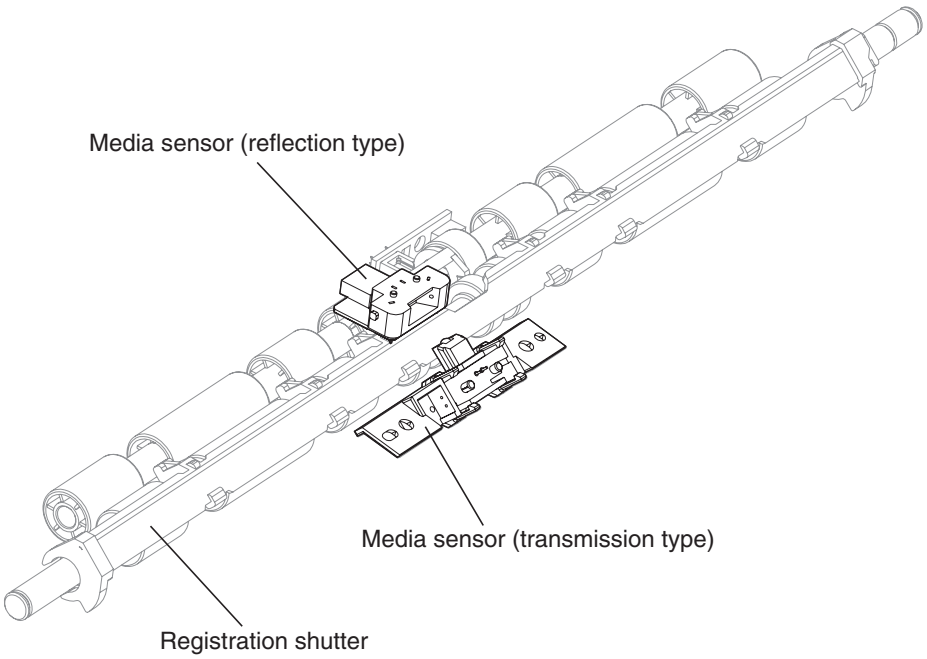


Paper-type detection

The product can detect the type of paper in the paper path, and it adjusts the print mode accordingly. The product uses two types of media sensors:

- **Reflection**: Detects the glossiness of the paper
- **Transmission**: Detects the thickness of the paper

Figure 5-42 Media sensor unit



The DC controller uses the information from the media sensors to determine the paper type, and it notifies the formatter. The DC controller notifies the formatter of a paper-type mismatch if any of the following conditions exist:

- **Simplex printing**:
  - The mode specified for the print job is Transparency, but the media sensor detects another type.
  - The mode specified for the print job is something other than Auto or Transparency, but the media sensor detects a transparency.
- **Duplex printing**: The mode specified for the print job is compatible with duplex printing, but the media sensor detects a transparency.

When the product is turned on or when it comes out of Sleep mode, it tests the media sensor by turning on the LED. If the intensity of the light does not match the specified value, the DC controller determines that the sensor has failed.

Feed-speed control

Depending on the type of paper, the product adjusts the feed speed to obtain the best print quality. For paper types that the media sensor cannot detect, the product adjusts the feed speed according to the print mode specified by the formatter for the print job.

Paper type (Control panel)	Print mode	Recommended paper weight range	Feed speed	Media-sensor detection
BOND	Normal	75–90 g/m^2	Full	Yes
COLORED				
HP MATTE 90g				
INTERMEDIATE 85-95g				
LETTERHEAD				
PLAIN				
PREPRINTED				
PREPUNCHED				
RECYCLED				
HEAVY 111–125g	Heavy 1	91–120 g/m^2	3/4	Yes
HP MATTE 105g				
HP MATTE 120g				
MID-WEIGHT 96-110g				
EXTRA HEAVY 126-175	Heavy 2	121–163 g/m^2	1/2	Yes
HP MATTE 160g				
CARDSTOCK 176-220g	Heavy 3	164–220 g/m^2	1/3	Yes
HP MATTE 200g				
HP MATTE 220g				
LIGHT 60-74g	Light 1	60–74 g/m^2	Full	No
HP GLOSSY 120g	Glossy 1	90–120 g/m^2	3/4	Yes
HP SOFT GLOSS 120g				
HVY GLOSSY 111g-125g				
MID-WTGLOSSY 96g-110g				
HP GLOSSY 160g	Glossy 2	121–150 g/m^2	1/2	Yes
XHVYGLOSSY 126-175g				
CARD GLOSSY 176-220	Glossy 3	151–220 g/m^2	1/3	Yes
HP GLOSSY 220g				
HP TOUGH PAPER	Glossy film	5 mil	1/10	Yes
OPAQUE FILM				
	Envelope	Envelope	Full	No
COLOR TRANSPARENCY	Transparency	5 mil	1/10	Yes
	Label	Label	1/2	No

Fusing and delivery unit

The fusing and delivery unit fuses the toner onto the paper and delivers the printed page into the output bin. It has the following controls to ensure optimum print quality:

- Loop control
- Pressure roller pressurization/depressurization control

A sensor detects when the output bin is full, and the DC controller notifies the formatter.

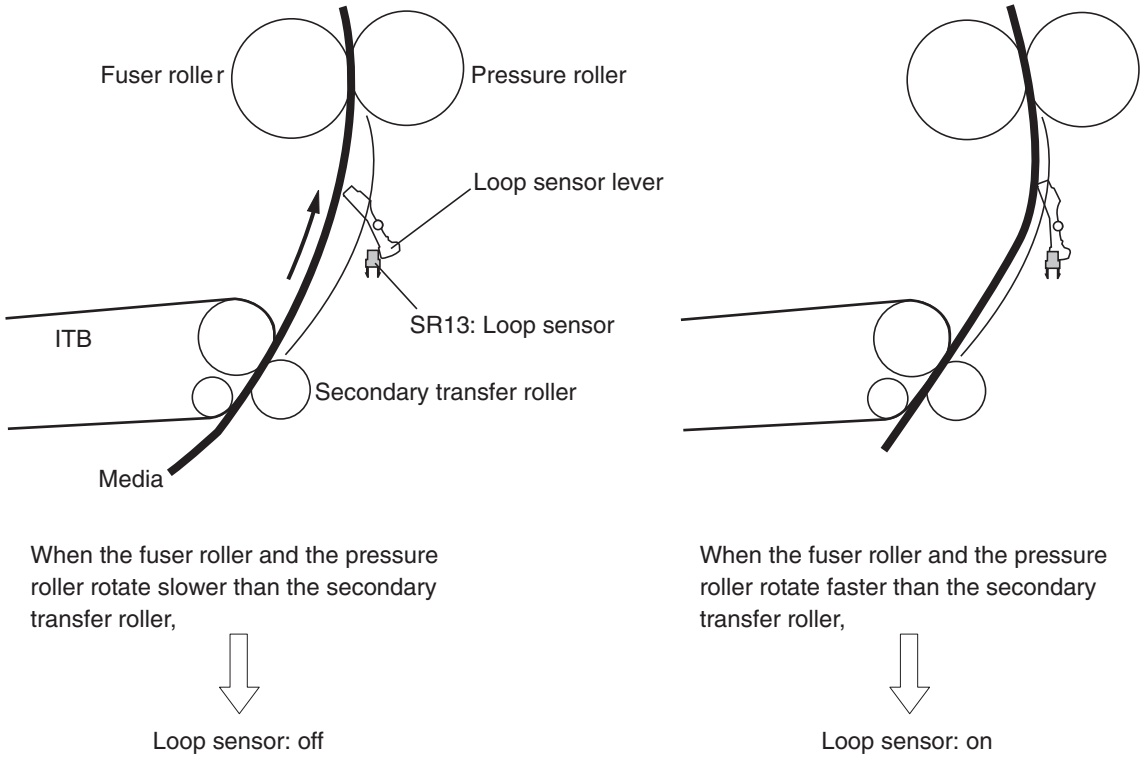
Loop control

The loop control maintains even tension on the paper while it is moving through the fuser to prevent print-quality defects and paper-handling defects.

- If the fuser rollers rotate more slowly than the secondary transfer rollers, the paper warp increases and an image defect or paper crease occurs.
- If the fuser rollers rotate faster than the secondary transfer rollers, the paper warp decreases and the toner image is not transferred to the paper correctly, causing color misregistration.

To prevent these problems, the loop sensor, located between the secondary transfer rollers and the fuser rollers, detects whether the paper is sagging or is too taut. The DC controller adjusts the speed of the fuser motor accordingly.

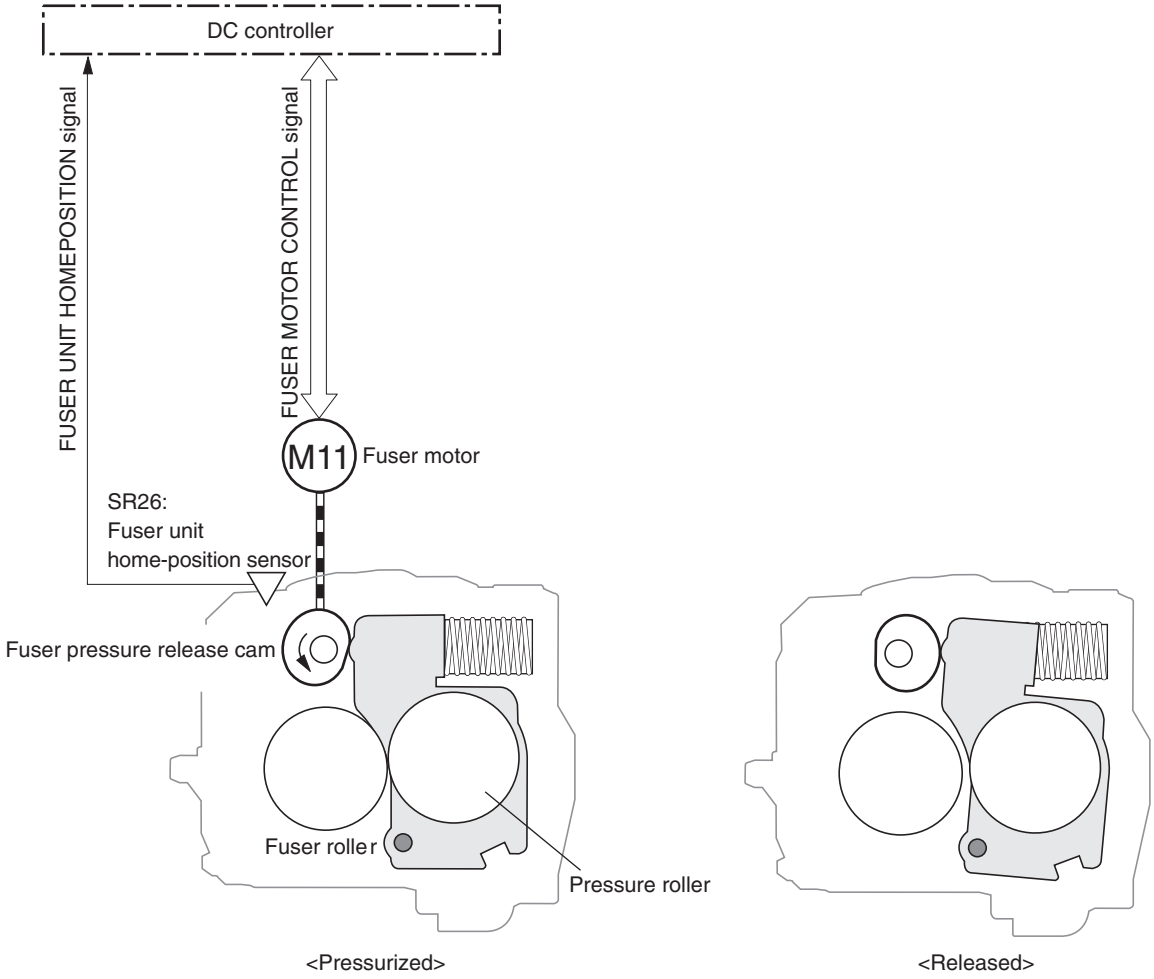
Figure 5-43 Loop-control mechanism



Pressure-roller pressurization control

To prevent excessive wear on the pressure roller and to facilitate jam-clearing procedures, the pressure roller is not pressurized except during printing. The DC controller reverses the fuser motor, which rotates the fuser pressure-release cam.

Figure 5-44 Pressure-roller pressurization control



The pressure roller is depressurized under the following conditions:

- The product is turned off with the on/off switch.
- After a specific time period from entering the standby period
- During powersave mode
- When a paper jam is detected.

NOTE: The fuser remains pressurized if the power is interrupted by removing the power cord or turning off a surge protector, or if the fuser is removed without turning off the product.

Duplexing unit

For supported models, the duplexing unit reverses the paper and feeds it through the paper path to print the second side. It consists of the following components:

- **Duplexing-reverse unit**: Installed on top of the product
- **Duplexing-feed unit**: Inside the product, along the right side

Figure 5-45 Duplexing unit

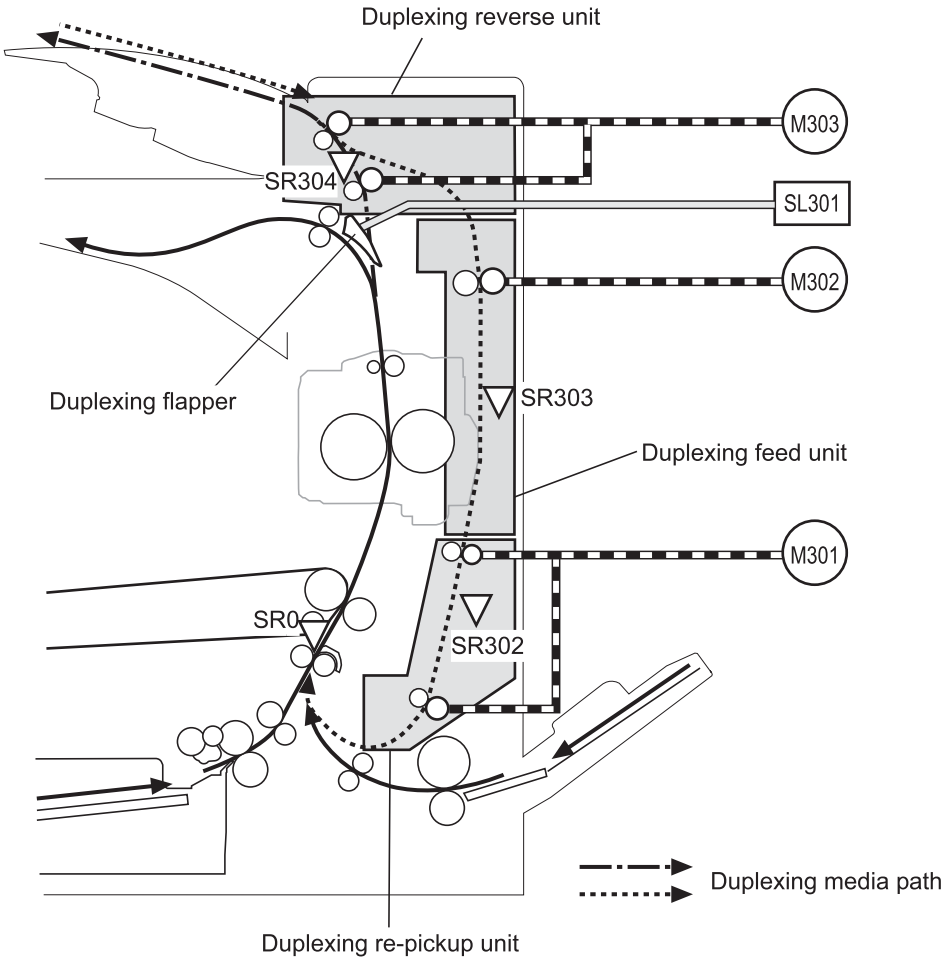


Table 5-17 Duplexing-unit components

Abbreviation	Component
M301	Duplexing re-pickup motor
M302	Duplexing feed motor
M303	Duplexing reverse motor
SL301	Duplexing flapper solenoid
SR302	Duplexing paper re-pickup sensor
SR303	Duplexing paper-feed sensor
SR304	Duplexing paper-reverse sensor

All these components are driven by the duplexing driver, according to signals from the DC controller. If the DC controller cannot communicate with the duplexing driver, it notifies the formatter that the duplexing unit has failed.

Duplexing reverse and feed control

The duplexing reverse procedure pulls the paper into the duplexing unit after it exits the fuser, and the duplexing feed procedure moves the paper through the duplexer so it can enter the product paper path to print the second side of the page.

1. After the first side has printed, the duplexing flapper solenoid is opened, which creates a paper path into the duplexing-reverse unit.
2. After the paper has fully entered the duplexing-reverse unit, the duplexing-reverse motor reverses and directs the paper into the duplexing-feed unit.
3. The duplexing re-pickup motor and duplexing feed motor move the paper into the duplexing re-pickup unit.
4. To align the paper with the toner image on the ITB, the duplexing re-pickup motor stops and the paper pauses until the specified time.
5. The paper re-enters the paper path, and the second side is printed.

Jam detection

The product uses the following sensors to detect the paper as it moves through the paper path and to report to the DC controller if the paper has jammed.

- Vertical synchronous position sensor
- Cassette paper-feed sensor
- Multipurpose tray paper-feed sensor
- Loop sensor
- Fuser delivery paper-feed sensor
- Output-bin full sensor
- Duplexing paper re-pickup sensor
- Duplexing paper-feed sensor
- Duplexing paper-reverse sensor
- Media sensor

The product determines that a jam has occurred if one of these sensors detects paper at an inappropriate time. The DC controller stops the print operation and notifies the formatter.

Table 5-18 Jams that the product detects

Jam	Description
Pickup delay jam 1	**Cassette pickup**: The cassette paper-feed sensor does not detect the leading edge of the paper within a specified period after the cassette pickup solenoid has turned on.
	Multipurpose tray pickup: The multipurpose tray paper-feed sensor does not detect the leading edge of the paper within a specified period after the multipurpose tray solenoid has turned on.
Pickup delay jam 2	The vertical synchronous position sensor does not detect the leading edge of the paper within a specified period after the paper-feed sensor (for either the cassette or the multipurpose tray) detects the leading edge.
Pickup stationary jam	The media sensor does not detect the trailing edge of the paper within a specified period after the registration motor begins rotating to re-feed the paper.
Fuser delivery delay jam	The fuser delivery paper-feed sensor does not detect the leading edge of the paper within a specified period after the registration motor begins rotating to re-feed the paper.
Fuser delivery stationary jam	The fuser delivery paper-feed sensor does not detect the trailing edge of the paper within a specified period after it detects the leading edge.
Wrapping jam	After it has detected the leading edge of the paper, the fuser delivery paper-feed sensor detects the absence of paper, and it has not yet detected the trailing edge.
Delivery delay jam 3	The output bin full sensor does not detect the leading edge of the paper within a specified period after the fuser delivery paper-feed sensor has detected the leading edge.

Table 5-18 Jams that the product detects (continued)

Jam	Description
Residual paper jam	One of the following sensors detects paper presence during the initialization sequence: • Fuser delivery paper-feed sensor • Loop sensor • Duplexing paper-reverse sensor
Door open jam	A door is open while paper is moving through the product.
Duplexing reverse jam 1	The duplexing paper-feed sensor does not detect the leading edge of the paper within a specified period after the paper-reverse operation starts.
Duplexing reverse jam 2	The duplexing paper-reverse sensor does not detect the trailing edge of the paper within a specified period after it detects the leading edge.
Duplexing re-pickup jam 1	The vertical synchronous position sensor does not detect the leading edge of the paper within a specified period after the paper is re-picked up from the duplexing pickup position.
Duplexing re-pickup jam 2	The duplexing paper re-pickup sensor does not detect the leading edge of the paper within a specified period after the paper-reverse operation starts.

After a jam, some sheets of paper might remain inside the product. If the DC controller detects residual paper after a door is closed or after the product is turned on, the product automatically clears itself of those residual sheets.

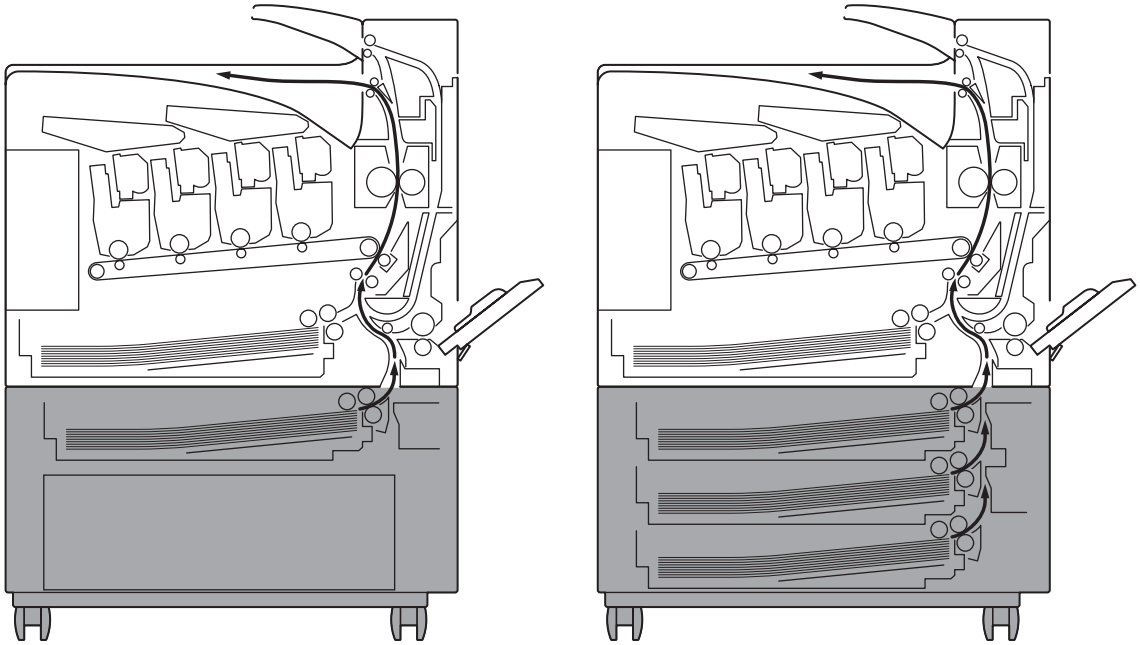
Optional input trays

The product is configured with either the additional 1x500-sheet input tray or 3x500-sheet input tray depending on which bundle was purchased.

- The 1x500-sheet input tray has one tray (Tray 3) and a storage compartment.
- The 3x500-sheet input tray has three trays (Trays 3, 4, and 5).

NOTE: These optional trays are *not* identical to the main cassette (Tray 2).

Figure 5-46 Optional input trays

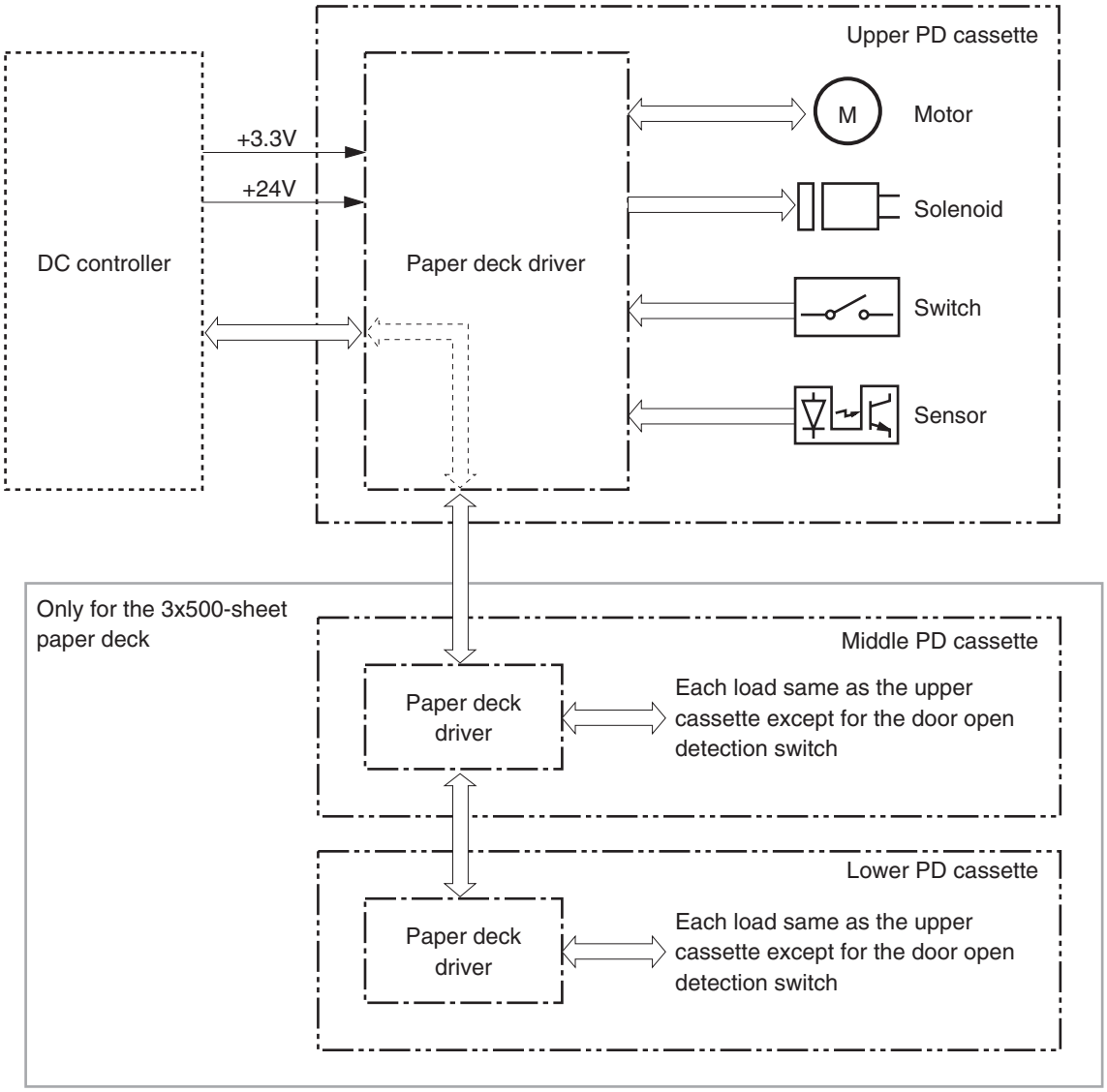


1x500-sheet input tray

3x500-sheet input tray

These additional trays are each controlled by paper-deck drivers, which contain a microcomputer. The paper-deck drivers receive commands from the DC controller. If the DC controller is unable to communicate with a paper-deck driver, it notifies the formatter that the optional input tray is not connected correctly.

Figure 5-47 Signals for the input trays



The input trays contain several motors, solenoids, sensors, and switches, as described in the following table.

Table 5-19 Electrical components for the optional input trays

Component type	Abbreviation	Component name
Motors	M101	Upper paper-feeder cassette pickup motor
	M102	Upper paper-feeder lifter cassette motor
	M111	Middle paper-feeder cassette pickup motor (3x500-sheet input tray only)
	M112	Middle paper-feeder cassette lifter motor (3x500-sheet input tray only)
	M121	Lower paper-feeder cassette pickup motor (3x500-sheet input tray only)
	M122	Lower paper-feeder cassette lifter motor (3x500-sheet input tray only)

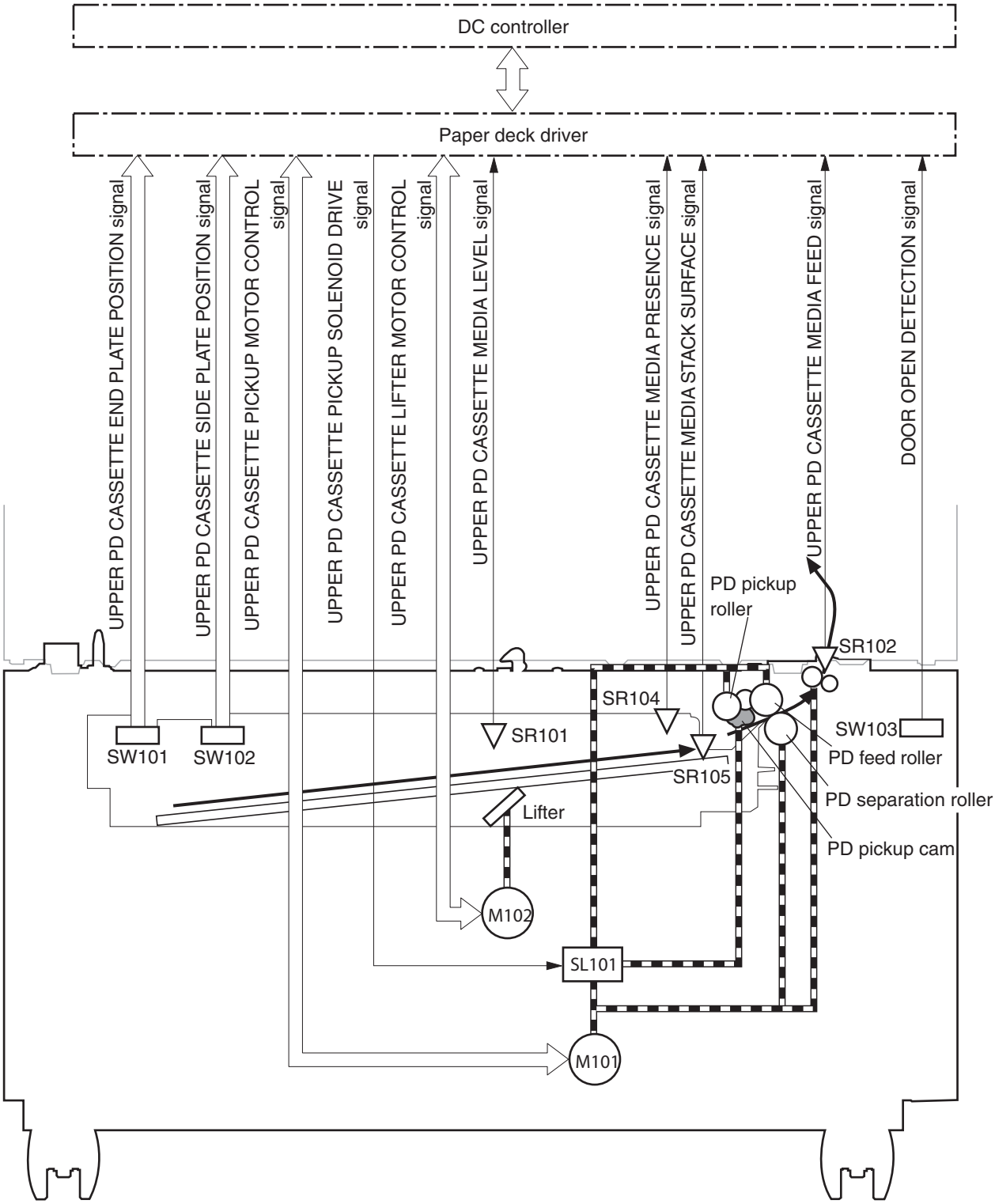
Table 5-19 Electrical components for the optional input trays (continued)

Component type	Abbreviation	Component name
Solenoids	SL101	Upper paper-feeder cassette pickup solenoid
	SL111	Middle paper-feeder cassette pickup solenoid (3x500-sheet input tray only)
	SL121	Lower paper-feeder cassette pickup solenoid (3x500-sheet input tray only)
Sensors	SR101	Upper paper-feeder cassette paper-level sensor
	SR102	Upper paper-feeder cassette paper-feed sensor
	SR104	Upper paper-feeder cassette paper-presence sensor
	SR105	Upper paper-feeder cassette paper-stack surface sensor
	SR111	Middle paper-feeder cassette paper-level sensor (3x500-sheet input tray only)
	SR112	Middle paper-feeder cassette paper-feed sensor (3x500-sheet input tray only)
	SR114	Middle paper-feeder cassette paper-presence sensor (3x500-sheet input tray only)
	SR115	Middle paper-feeder cassette paper-stack surface sensor (3x500-sheet input tray only)
	SR121	Lower paper-feeder cassette paper-level sensor (3x500-sheet input tray only)
	SR122	Lower paper-feeder cassette paper-feed sensor (3x500-sheet input tray only)
	SR124	Lower paper-feeder cassette paper-presence sensor (3x500-sheet input tray only)
	SR125	Lower paper-feeder cassette paper-stack surface sensor (3x500-sheet input tray only)
Switches	SW101	Upper paper-feeder cassette end-plate position switch
	SW102	Upper paper-feeder cassette side-plate position switch
	SW103	Door open detection switch
	SW111	Middle paper-feeder cassette end-plate position switch (3x500-sheet input tray only)
	SW112	Middle paper-feeder cassette side-plate position switch (3x500-sheet input tray only)
	SW121	Lower paper-feeder cassette end-plate position switch (3x500-sheet input tray only)
	SW122	Lower paper-feeder cassette side-plate position switch (3x500-sheet input tray only)

Paper-feeder pickup and feed operation

The pickup and feed operation is the same for each of the trays.

Figure 5-48 Paper-feeder pickup and feed operation



The methods for all the following operations are the same as for the main cassette (Tray 2):

- Paper-size detection and cassette-presence detection
- Lift operation
- Paper-level and paper-presence detection
- Multiple feed prevention
- Jam detection

6 Removal and replacement

- Removal and replacement strategy
- User-replaceable parts
- Removal sequence 1
- Removal sequence 2
- Removal sequence 3
- Removal sequence 4
- Removal sequence 4 Sub-1
- Removal sequence 5
- Removal sequence 6
- Removal sequence 7
- Optional input trays

Removal and replacement strategy

Introduction

This chapter describes the removal and replacement of field-replaceable units (FRUs) only.

Replacing FRUs is generally the reverse of removal. Notes are included to provide directions for difficult or critical replacement procedures.

HP does not support repairing individual subassemblies or troubleshooting to the component level.

Never operate or service the printer with the protective cover removed from the laser/scanner assembly. The reflected beam, although invisible, can damage your eyes.

The sheet-metal parts can have sharp edges. Be careful when handling sheet-metal parts.

△ **CAUTION:** 

Some parts are sensitive to electrostatic discharge (ESD). Look for the ESD reminder when removing printer parts. Always perform service work at an ESD-protected workstation or mat. If an ESD workstation or mat is not available, ground yourself by touching the sheet-metal chassis *before* touching an ESD-sensitive part.

Protect the ESD-sensitive parts by placing them in ESD pouches when they are out of the printer.

CAUTION: Do not bend or fold the flat flexible cables (FFCs) during removal or installation.

NOTE: To install a self-tapping screw, first turn it counterclockwise to align it with the existing thread pattern, and then carefully turn it clockwise to tighten. Do not overtighten. If a self-tapping screw-hole becomes stripped, repair the screw-hole or replace the affected assembly.

Required tools

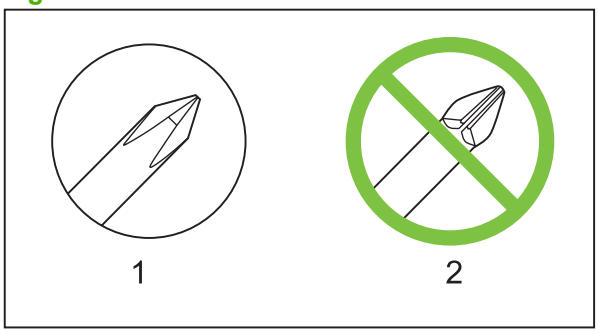
- #2 Phillips screwdriver with a magnetic tip and a 152-mm (6-inch) shaft length

NOTE: For the best fit, use a JIS #2 Phillips screwdriver for the stapler/stacker.

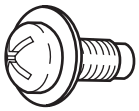
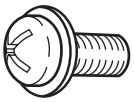
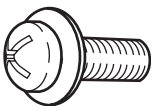
- Small, flat-blade screwdriver
- Needle-nose pliers
- ESD strap (if one is available)
- Penlight

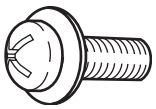
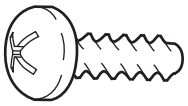
△ **CAUTION:** Always use a Phillips screwdriver (callout 1). Do not use a pozidrive screwdriver (callout 2) or any motorized screwdriver. These can damage screws or screw threads.

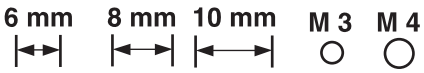
Figure 6-1 Screwdrivers



Types of screws

Illustration	Description	Size	Use
	Screw with washer	M3X8	Used to secure metal components to metal components (for example, a ground wire to the frame)
	Screw, RS	M3X6 M3X10	Used to secure metal to metal
	Screw, tapping	M3X6	
	Screw	M3X8	

	Screw	P3X8	
	Screw, tapping, truss head	M4X10	Used to secure anything to plastic



Service approach

The HP Color LaserJet CP6015 Series use a field repair strategy. Defective parts are diagnosed and replaced at the field-replaceable unit (FRU) assembly level. Printer repair normally begins by using the printer internal diagnostics and the following two-step process:

1. Isolate the problem to the major system (for example, the network or server, or the printer).
2. Troubleshoot the problem by using the procedures in the troubleshooting chapter.

After you locate a faulty part, the product can usually be repaired at the assembly level by replacing FRUs. Some mechanical assemblies might need to be repaired at the subassembly level. Hewlett-Packard Company does not support replacement of components on the printed circuit assembles.

Before performing service

⚠ **WARNING!** Turn the product off, wait 5 seconds, and then remove the power cord before attempting to service the printer. *If this warning is not followed, severe injury and damage to the device can result.*The power must be on for certain functional checks during troubleshooting. However, the power supply should be disconnected during parts removal.

1. Remove all media.
2. Place the product on an ESD mat (if available). If an ESD workstation or mat is not available, ground yourself by touching the sheet-metal chassis *before* touching an ESD-sensitive part.
3. Remove the print cartridge.
4. Remove the trays.

After performing service

1. Reinstall the print cartridge.
2. Reinstall the trays.
3. Return all media to the trays.
4. Plug in the power cable and turn on the printer.

Parts removal sequences

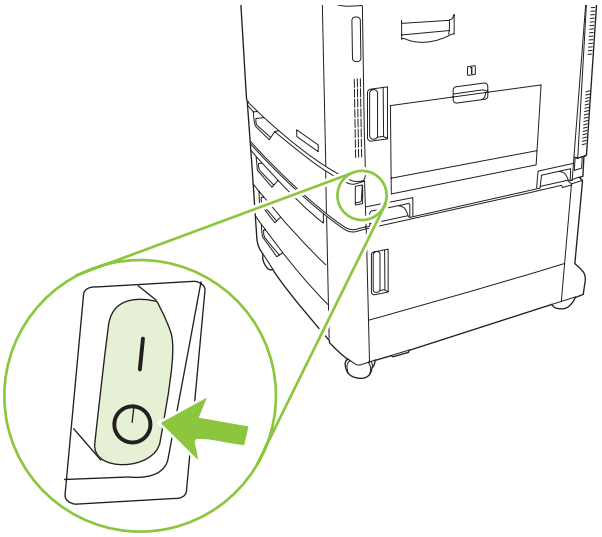
Removal and replacement procedures for FRUs of the product are grouped into seven sequences based on their logical removal order. Each sequence begins with a flowchart that shows the FRUs in the order they must be removed and reinstalled. When multiple FRUs can be removed at the same point in the sequence, the sequence is divided into subsequences. Some FRU removal procedures are repeated in multiple sequences.

User-replaceable parts

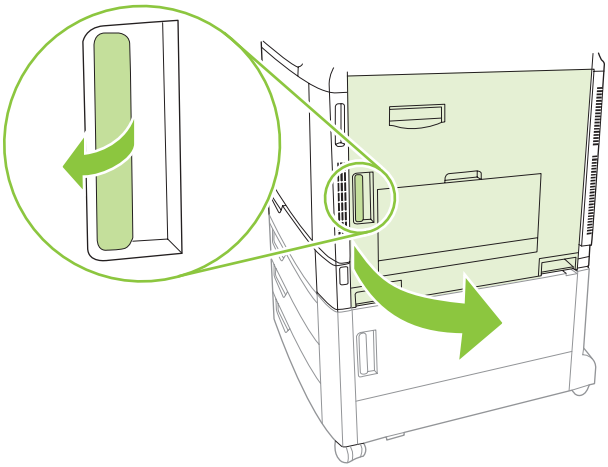
When you use genuine HP supplies, the product automatically notifies you when supplies are nearly depleted. The notification to order supplies allows ample time to order new supplies before they need to be replaced.

Fuser

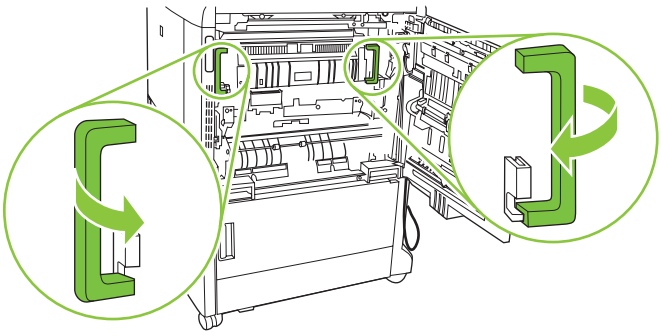
1. Turn the power off.



2. Open the right door.

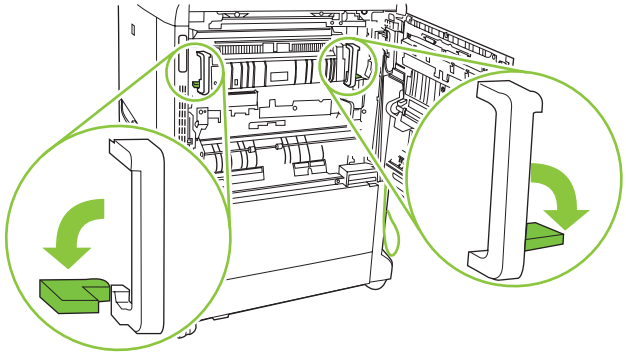


3. Pull the two blue fuser handles forward.

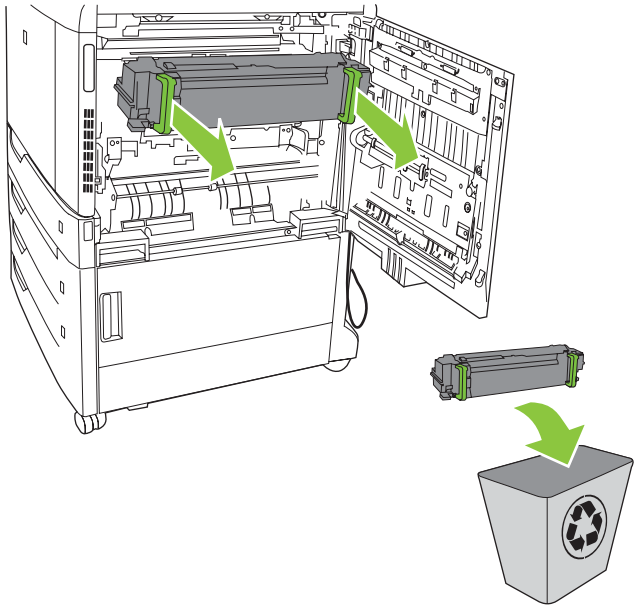


△ **CAUTION:** The fuser can be hot while the product is in use. Wait for the fuser to cool before handling it.

4. Rotate the fuser-release levers down to open them.

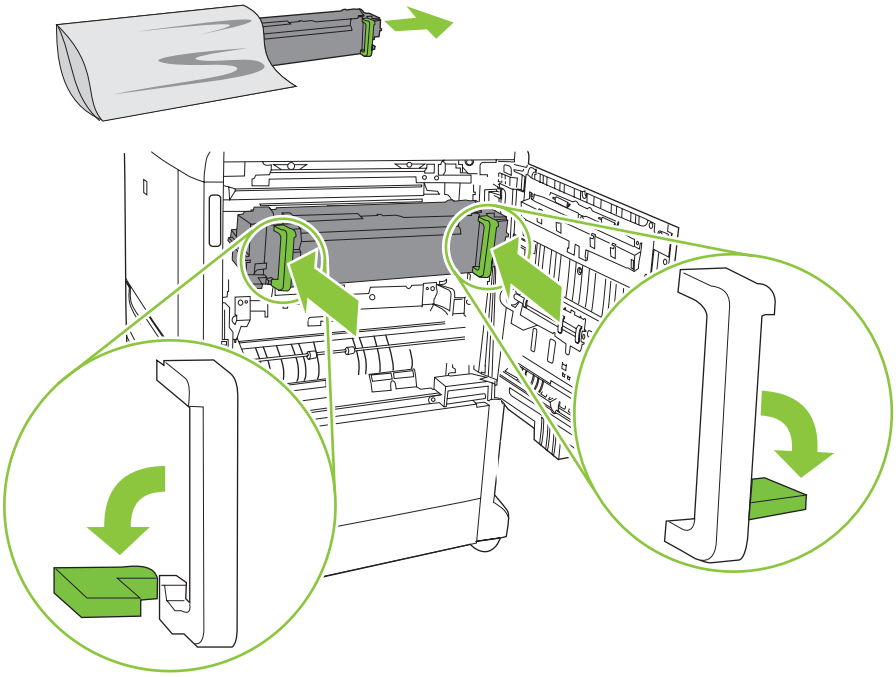


5. Grasp the fuser handles and pull straight out to remove the fuser. Recycle the used fuser following the instructions included with the new fuser.

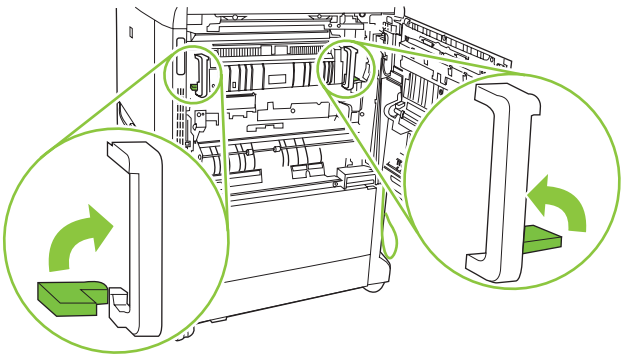


△ **CAUTION:** The fuser weighs 5 kg (11 lbs). Be careful not to drop it.

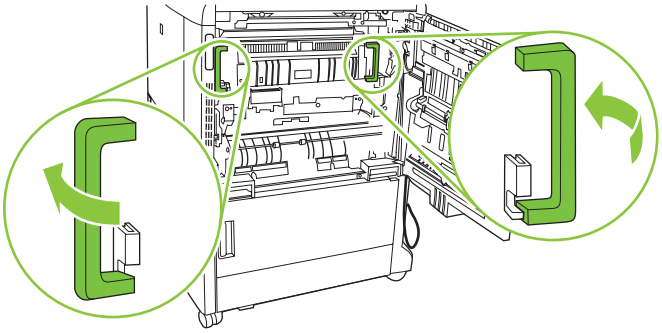
6. Remove the new fuser from its protective bag. Make sure the fuser-release levers are in the down and open position. Align the fuser with the arrows on the product. Push the fuser completely into the printer.



7. Rotate the fuser-release levers up to lock the fuser into place.



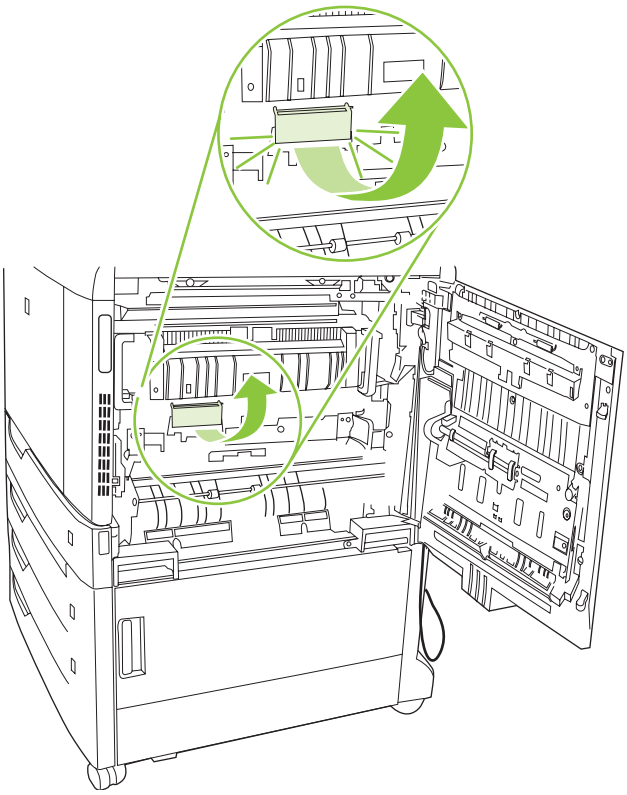
8. Push the fuser handles back to close them.



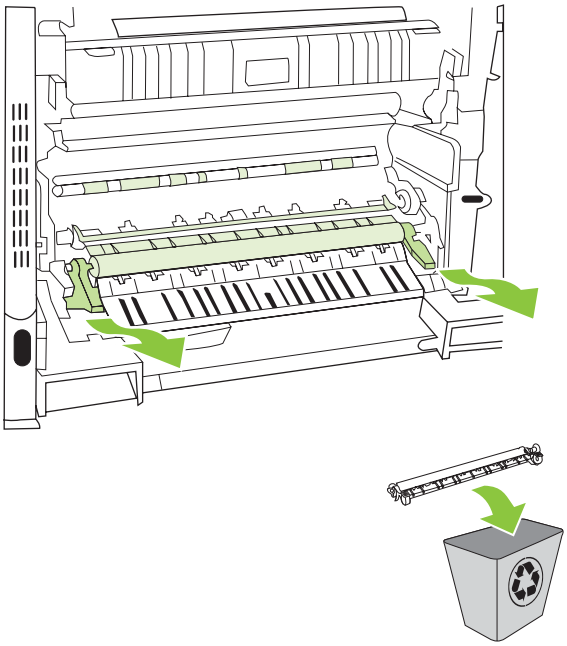
9. Close the right door and turn the power on.

Transfer roller

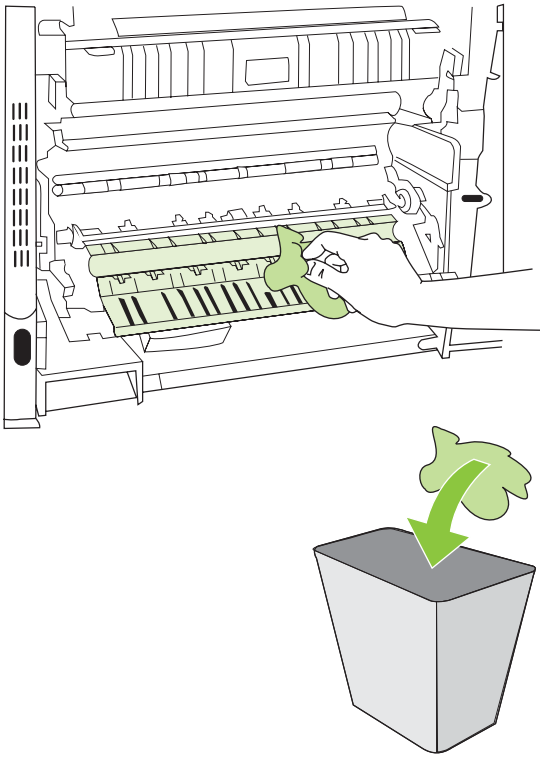
1. Turn the power off, and then open the right door.
2. Lift the green handle on the transfer assembly, and then open the panel.



3. Remove the transfer roller, and then recycle it.



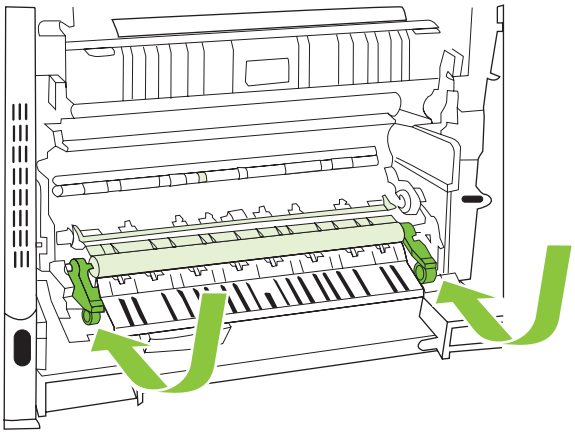
4. Wipe roller area.



5. Remove the new transfer roller from its protective bag.

△ **CAUTION:** Do not touch the sponge part of the new transfer roller or clean the roller. Contaminants or scratching may result in poor print quality.

6. Align the transfer roller with the slots in the product and push until it clicks into place.

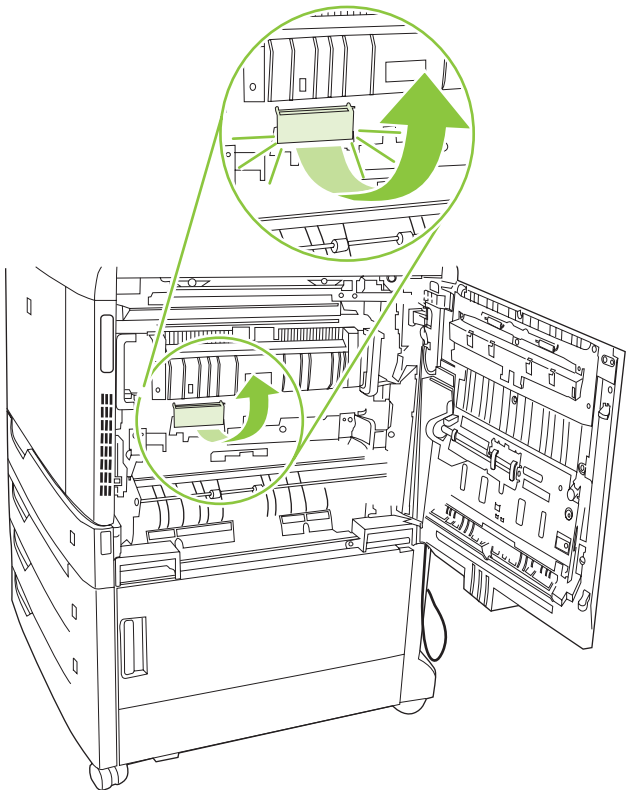


7. Close the transfer assembly.

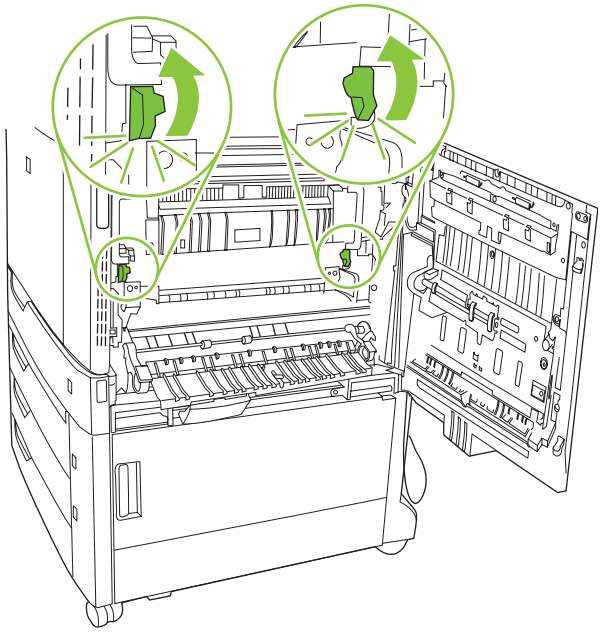
8. Close the right door, and then turn the power on.

Intermediate-transfer belt (ITB)

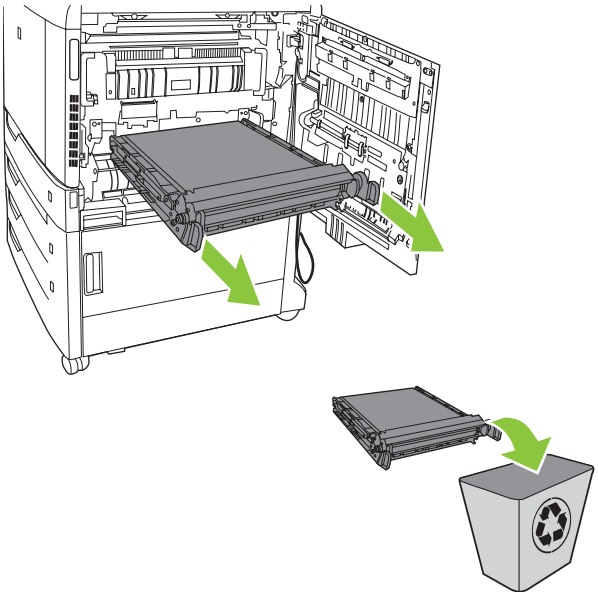
1. Turn the power off and open the right door.
2. Lift the green handle on the transfer assembly, and then open the panel.



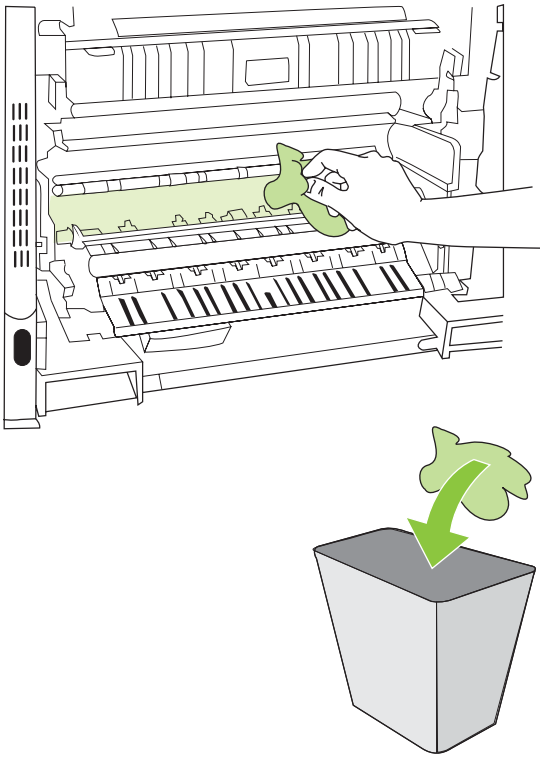
3. Raise the ITB levers.



4. Remove the ITB.



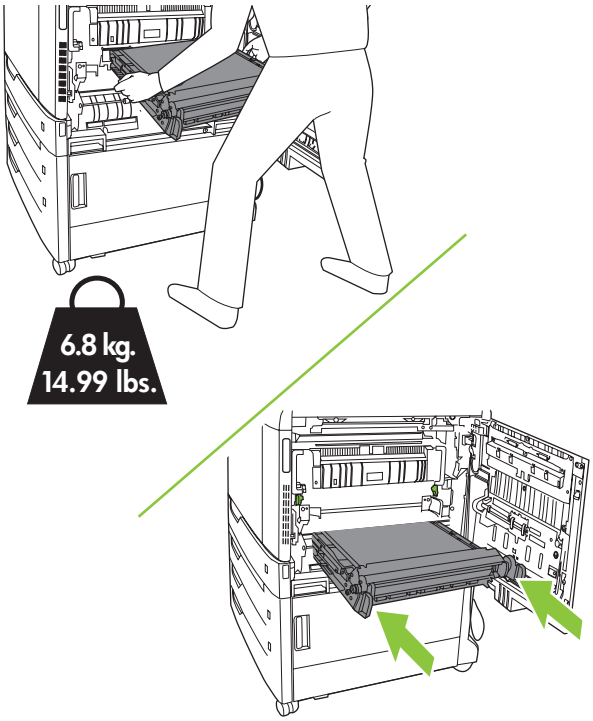
5. Wipe the ITB area.



6. Remove the new ITB from its protective bag.

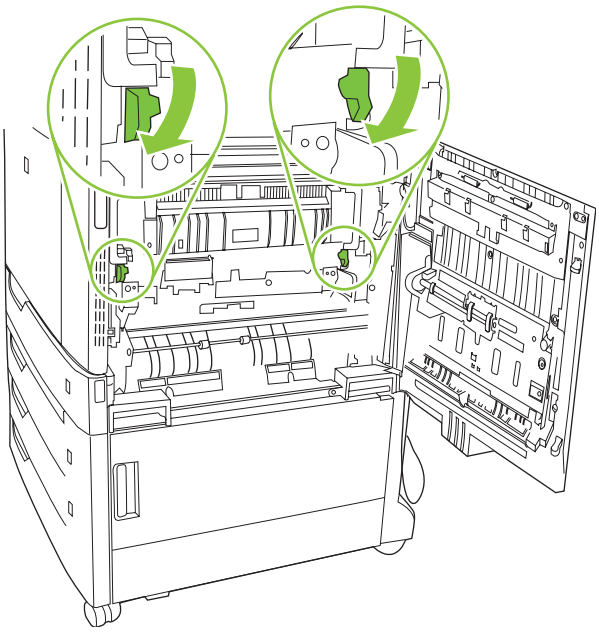
△ **CAUTION:** Contaminants or scratching may result in poor print quality.

7. Install the new ITB.



△ **CAUTION:** Only push on the side handles of the ITB as indicated. Do not push on the center because it could scratch the ITB or leave fingerprints.

8. Lower the ITB levers.

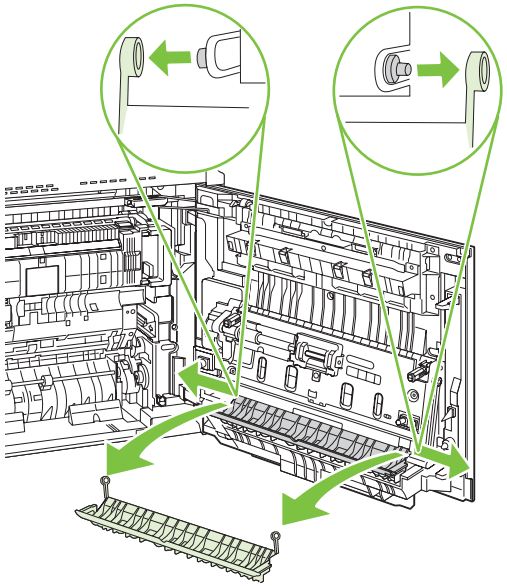


9. Close the transfer assembly.

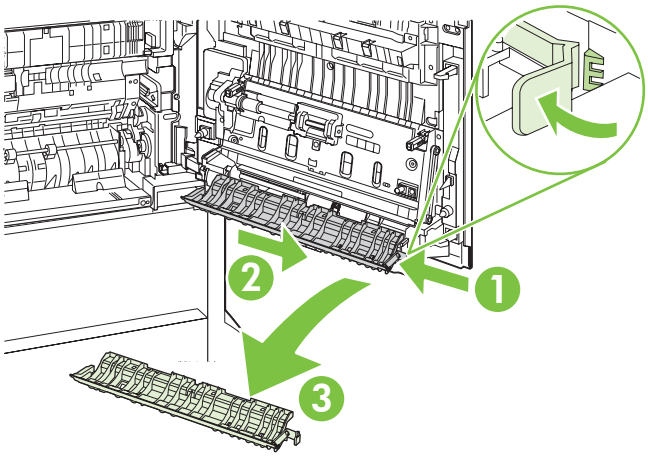
10. Close the right door, and then turn the power on.

Tray-1 pickup and separation rollers

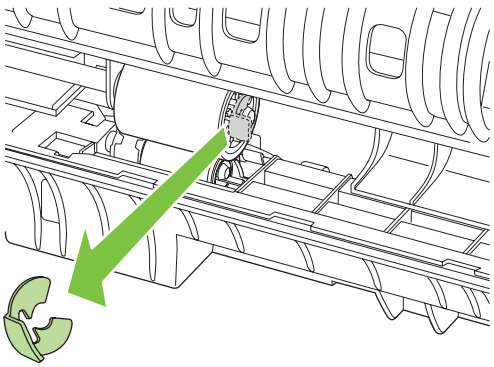
1. Turn the power off, and then open the right door.
2. Remove the paper-feed cover.



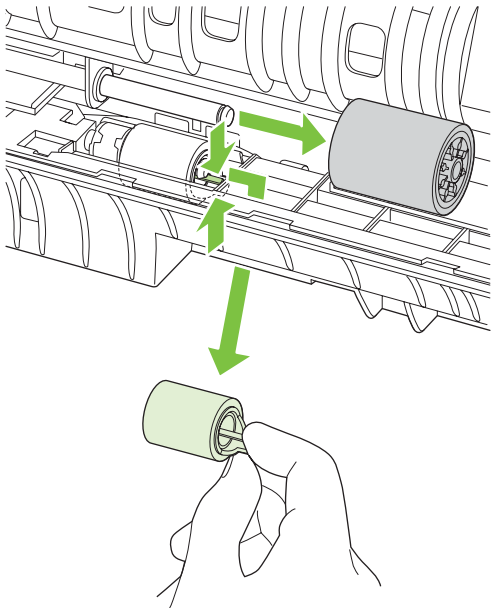
3. Remove the multipurpose upper-feed guide.



4. Remove one plastic clip.



5. Remove the upper roller by sliding it to the right. Rotate the lower roller and then grasp the blue plastic tab and pull the roller off the rod.



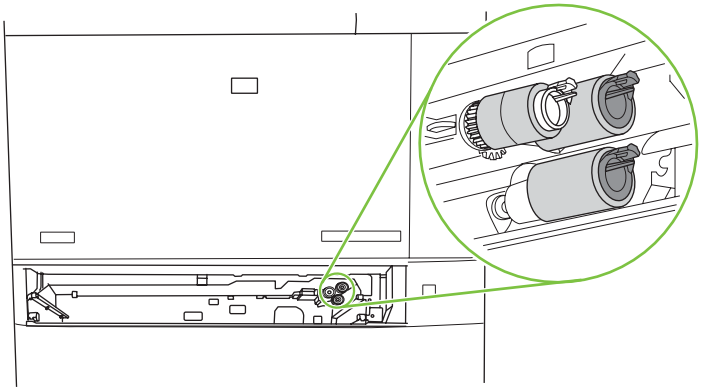
6. Recycle the used rollers, following the instructions included with the new roller.
7. Remove the new rollers from the protective bag and install.

△ **CAUTION:** Do not touch the rubber part of the new roller. Contaminants or scratching may result in poor print quality.

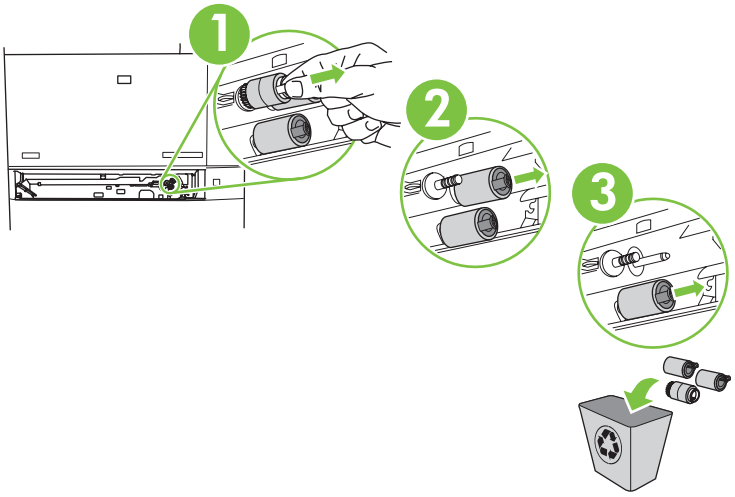
8. Attach paper-feed cover and multi-purpose upper feed guide, and then close the right door.
9. Turn the power on.

Tray-2, -3, -4, and -5 pickup rollers

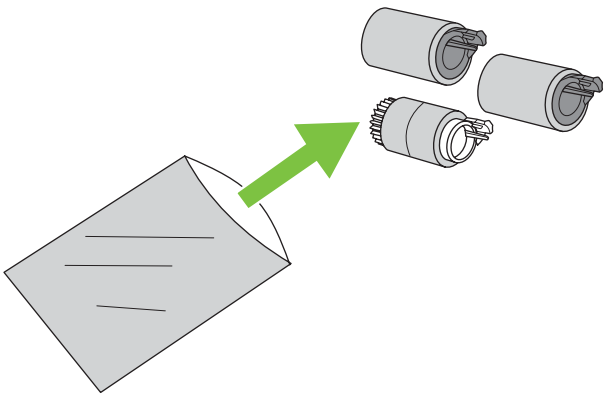
1. Turn the power off, and then remove the paper tray.
2. Locate the rollers.

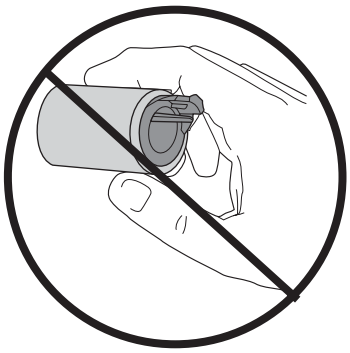


3. Turn the roller, and then grasp the plastic tab and pull the roller off the rod. Repeat the process for the other rollers. Recycle the used rollers.

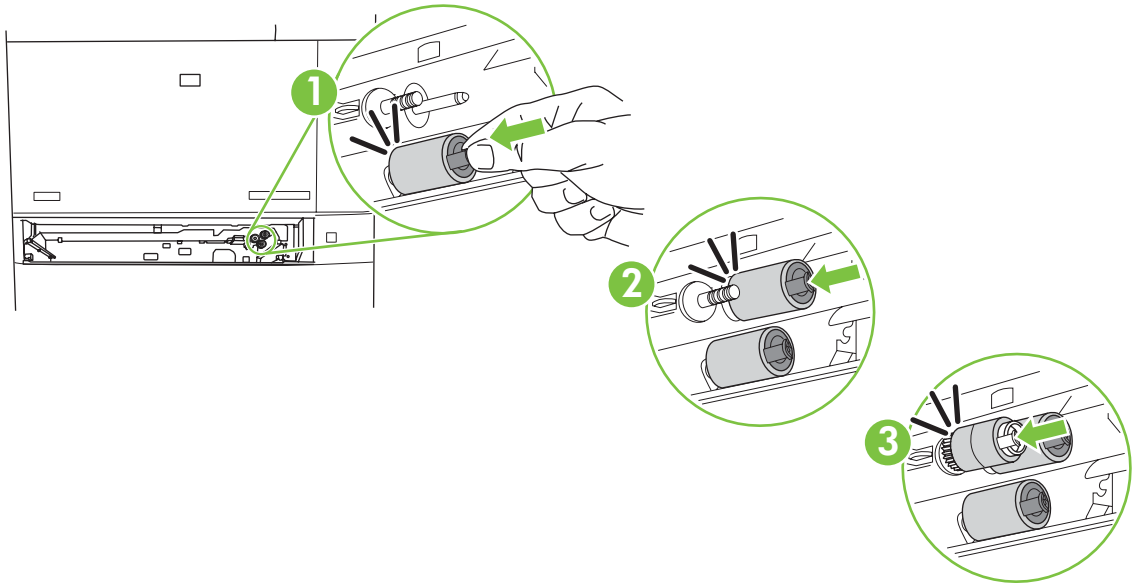


4. Remove each roller from its protective bag. Do not touch the rubber part of the new roller. Contaminants or scratching may result in poor print quality.





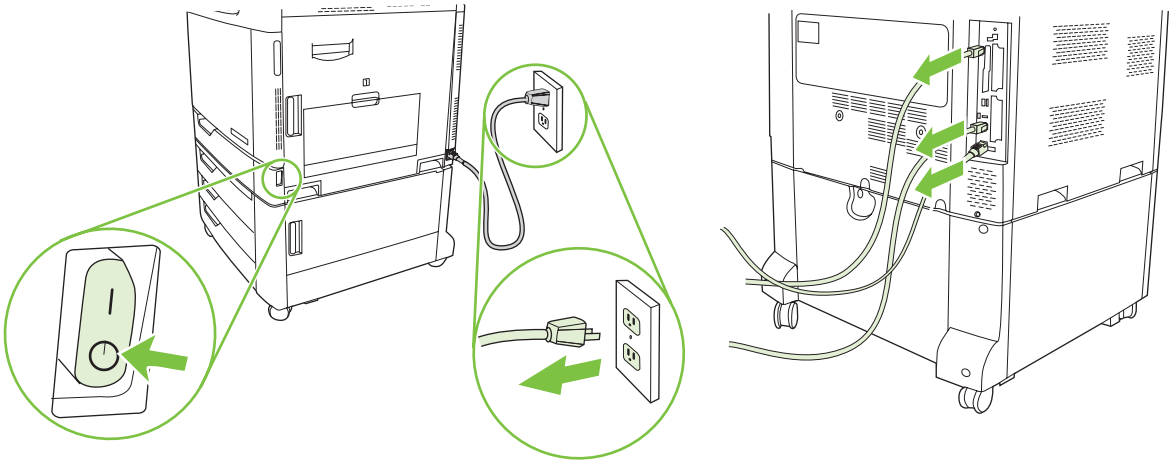
5. Attach the new roller, sliding the new roller onto the rod until it clicks in place. Repeat the process for the other rollers.



6. Reinstall the paper tray, and then turn the power on.

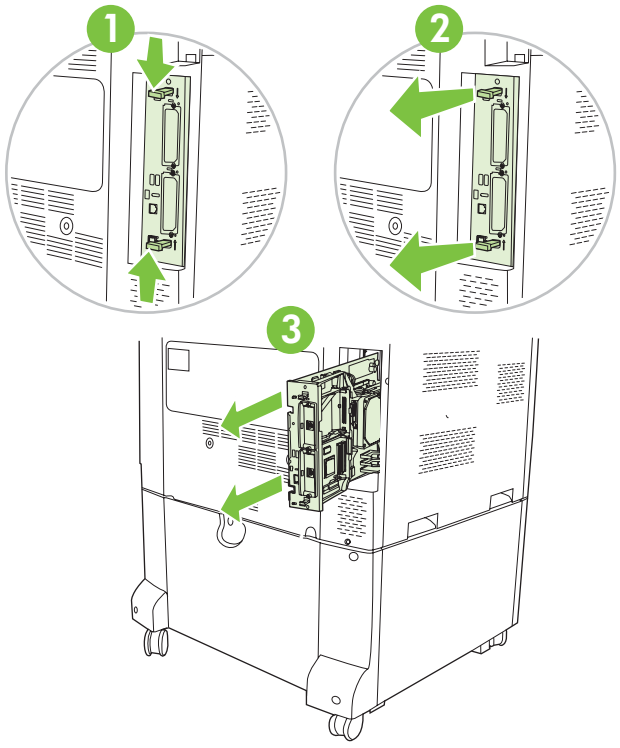
Formatter

1. Turn the product off, and then disconnect all power and interface cables.



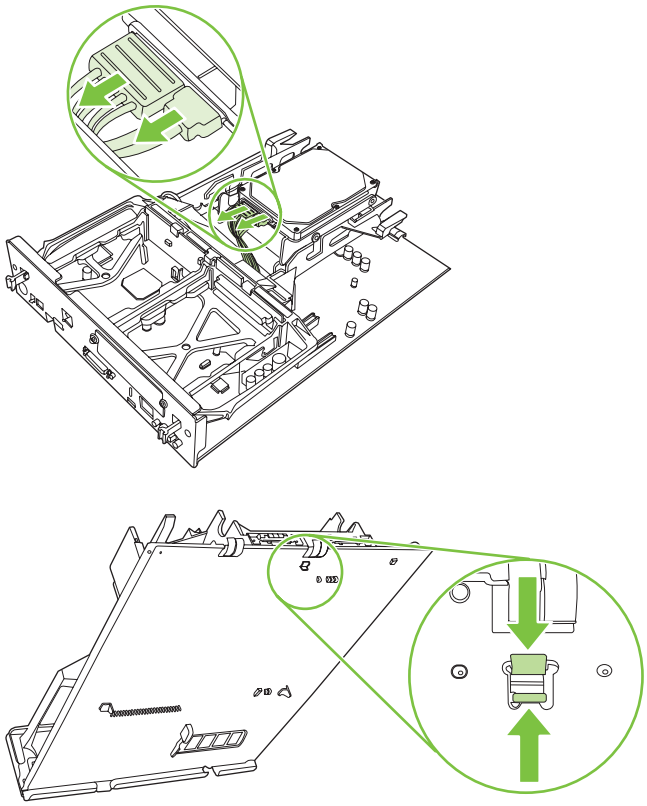
NOTE: Some parts are sensitive to electrostatic discharge (ESD). Look for the ESD reminder when removing printer parts. Always perform service work at an ESD-protected workstation or mat. If an ESD workstation or mat is not available, ground yourself by touching the sheet-metal chassis *before* touching an ESD-sensitive part.

2. Locate the black formatter-pressure-release tabs on the formatter board in the rear of the product, and then gently press the black tabs (callout 1) toward each other. Gently pull on the black tabs (callout 2) to pull the formatter board from the product (callout 3).

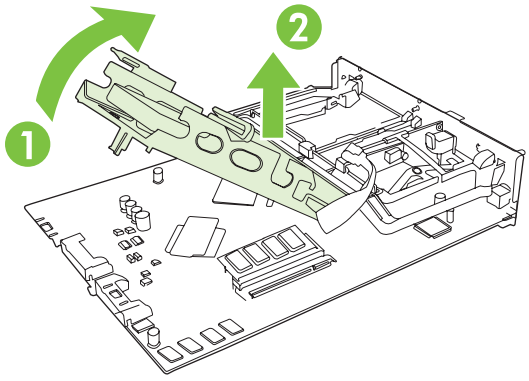


3. Place the formatter board on a clean, flat, grounded surface.
4. Remove the DDR memory DIMM. See Install DDR memory DIMMs on page 91.

5. Disconnect all connectors to the hard-drive, and then release the hard-drive cage.

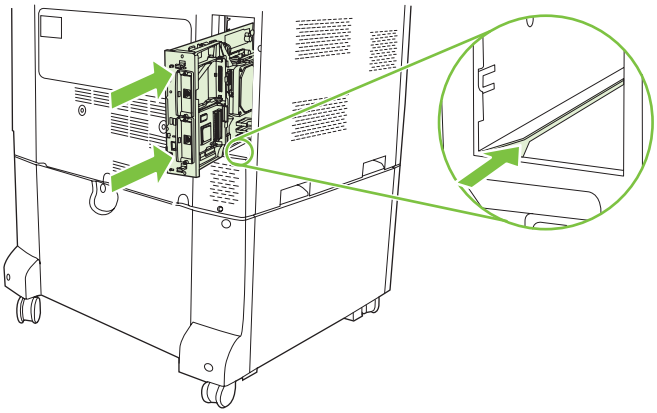


6. Remove the hard-drive cage.



7. Recycle the used formatter.
8. Remove the formatter from its protective bag, and then place it on a clean, flat, grounded surface.
9. Install the DDR memory DIMM and hard-drive cage to the new formatter.

10. Align the formatter board in the tracks at the bottom of the slot, and then slide the board back into the product. Attach all power and interface cables, and then turn the power on.



1 x 500-sheet input tray installation

1. Lock the wheels.
2. Turn the power off.
3. Set the product on the 1 x 500-sheet input tray.

   △ **CAUTION:** The product weights approximately 66.5 kg (143 lb) and requires at least 4 people to lift and carry. Do not attempt to lift by yourself .

4. Turn the lever to lock the product into position.
5. Turn the product on.

3 x 500-sheet input tray installation

1. Lock the wheels on the 3 x 500-sheet input tray.
2. Turn the power to the product off.
3. Set the product on the 3 x 500-sheet input tray.

   △ **CAUTION:** The product weights approximately 66.5 kg (143 lb) and requires at least 4 people to lift and carry. Do not attempt to lift it by yourself .

4. Turn the lever to lock the product into position.
5. Turn the product on.

Tray 2

1. Pull the old tray completely out of the product by pulling and lifting it up slightly. Recycle the used tray following the instructions included with the new tray.
2. Attach the front cover to the tray.
3. Reinsert the tray by aligning the side rollers and pushing it back into the product.

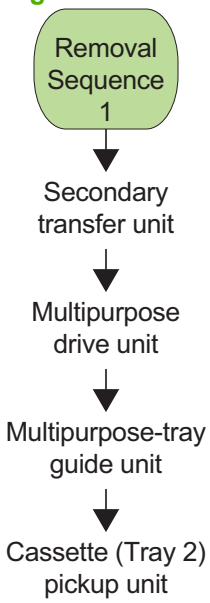
Trays 3, 4, and 5

1. Pull the tray completely out of the product by pulling and lifting it up slightly.
2. Recycle the used tray following the instructions included with the new tray.
3. Reinsert the tray by aligning the side rollers and pushing it back into the product.

Removal sequence 1

Use the flowchart below to determine the sequence of part removal and reinstallation. For information about using removal sequences, see Parts removal sequences on page 189.

Figure 6-2 Removal sequence 1 flowchart



Secondary transfer unit

NOTE: To begin, see Removal sequence 1 on page 209.

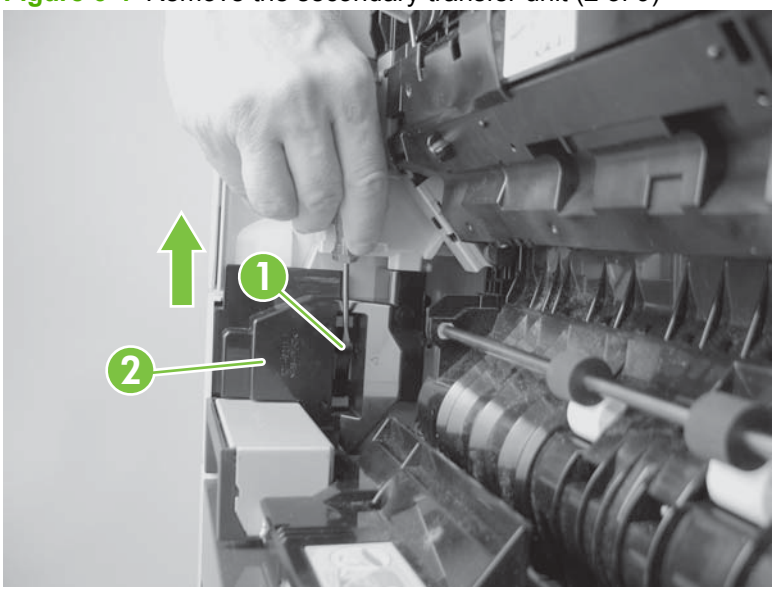
1. Remove the following user-replaceable parts.
   - Transfer roller. See Transfer roller on page 194.
   - Intermediate-transfer belt. See Intermediate-transfer belt (ITB) on page 196.
2. With a flatblade screwdriver, release two tabs along the bottom edge, and then remove the right ITB guide.

Figure 6-3 Remove the secondary transfer unit (1 of 9)



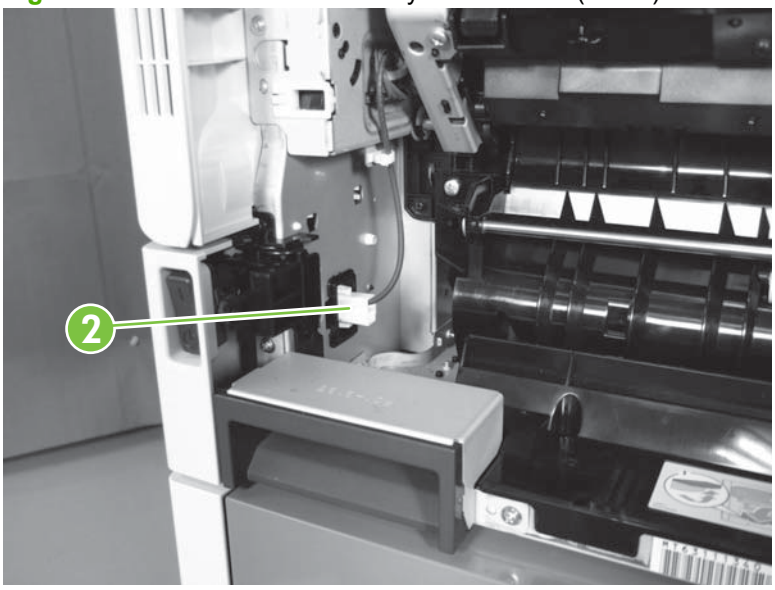
3. Close the secondary transfer unit. On the left side, release one tab (callout 1), and then lift the connector cover (callout 2) to remove it.

Figure 6-4 Remove the secondary transfer unit (2 of 9)



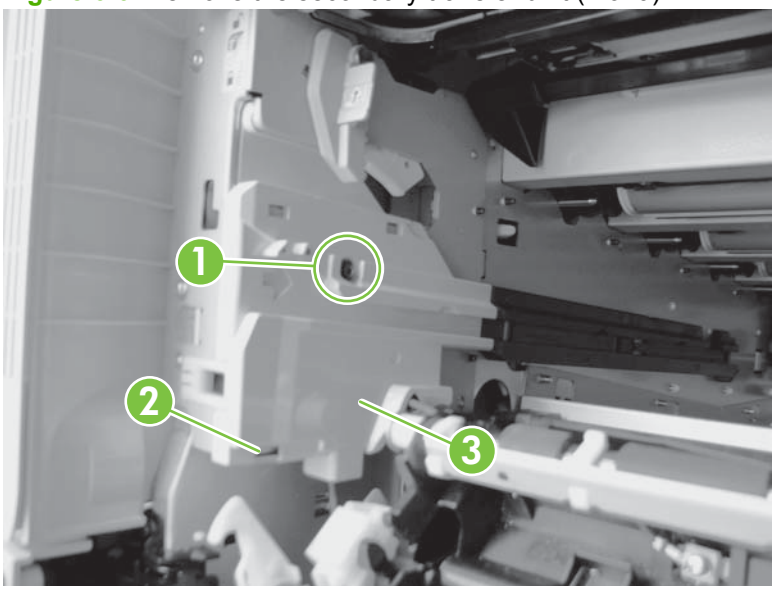
4. Disconnect one connector (callout 1). To disconnect, push the front of the connector toward the product, and then pull out.

Figure 6-5 Remove the secondary transfer unit (3 of 9)



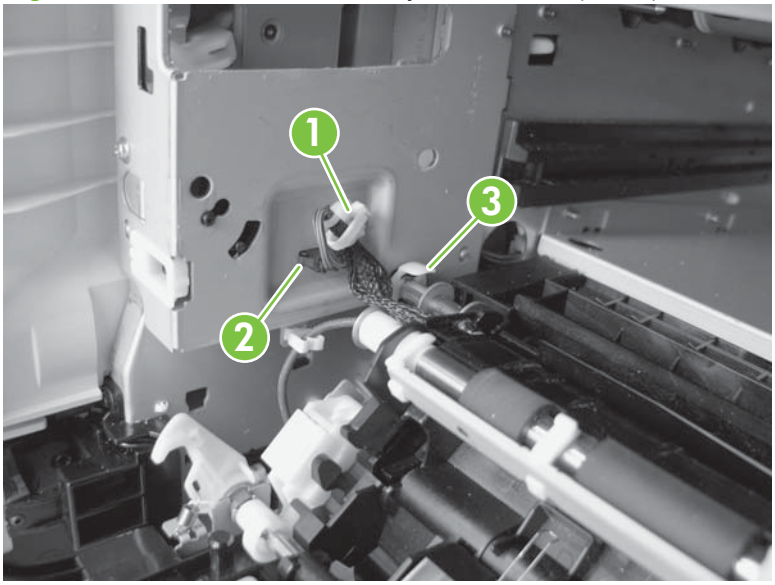
5. Remove one screw (callout 1), release one tab (callout 2), and then lift the left ITB guide (callout 3) to remove it.

Figure 6-6 Remove the secondary transfer unit (4 of 9)



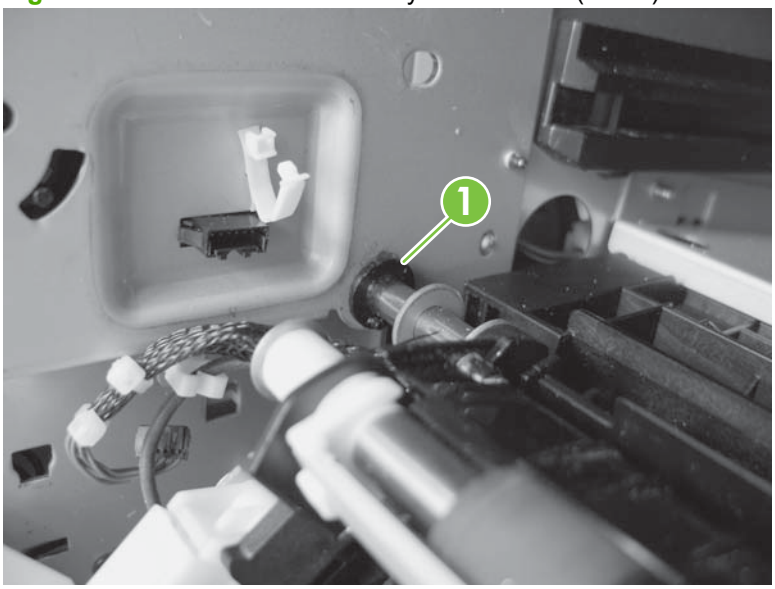
6. Release one wire retainer (callout 1), one connector (callout 2), and one c-clip (callout 3).

Figure 6-7 Remove the secondary transfer unit (5 of 9)



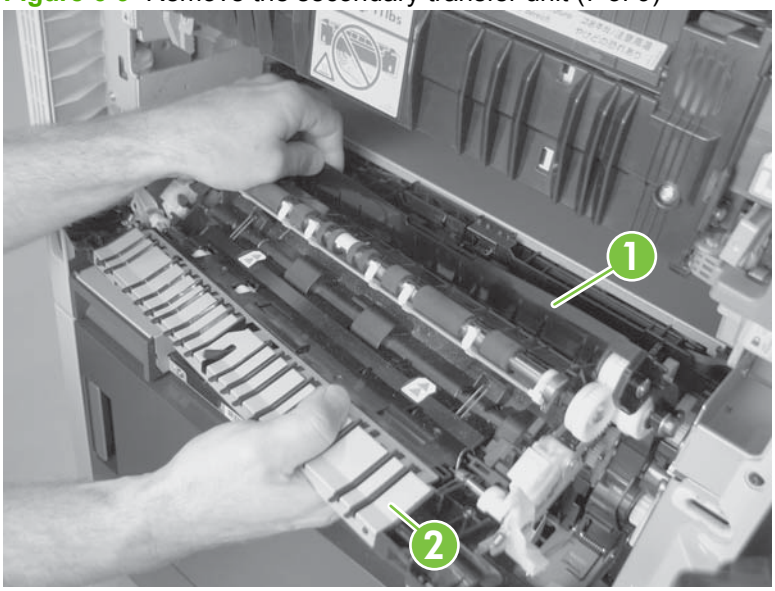
7. Slide the bushing (callout 1) out onto the rod.

Figure 6-8 Remove the secondary transfer unit (6 of 9)



8. While tilting the feed guide (callout 1) backward, grasp the secondary transfer unit (callout 2) and slide it to the left. Release the right guide bar, and then remove the secondary transfer unit.

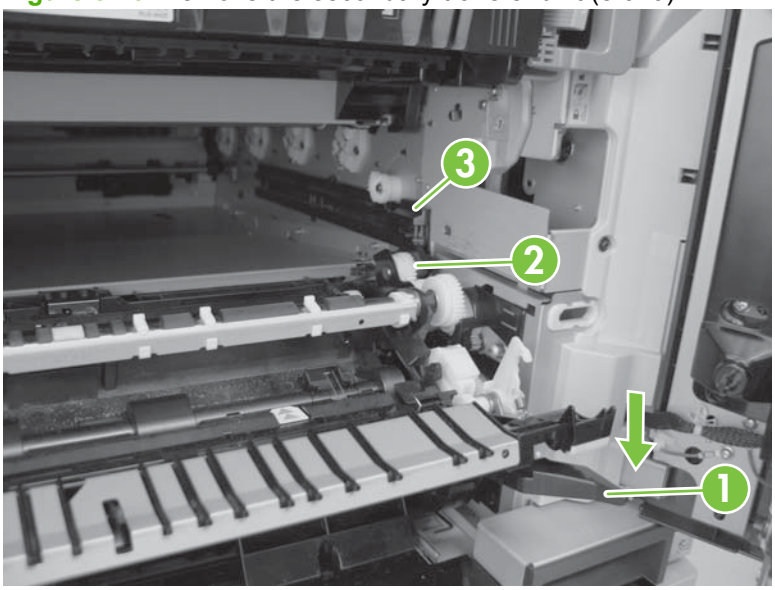
Figure 6-9 Remove the secondary transfer unit (7 of 9)



NOTE: When reassembling the secondary transfer unit, make sure to position it correctly.

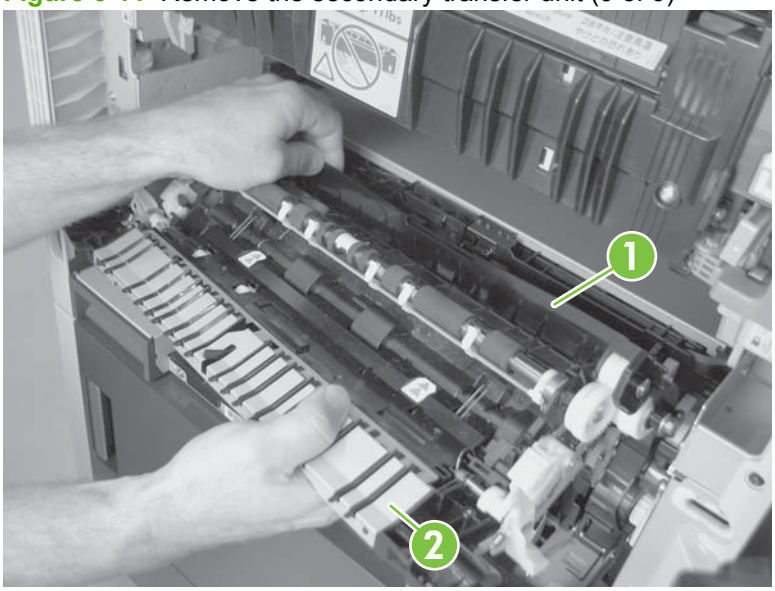
- Push down the secondary transfer unit stopper (callout 1). Place the gear unit (callout 2) under the ITB rail (callout 3).

Figure 6-10 Remove the secondary transfer unit (8 of 9)



- Lift and place the feed guide (callout 1) on the upper part of the secondary transfer unit (callout 2).

Figure 6-11 Remove the secondary transfer unit (9 of 9)



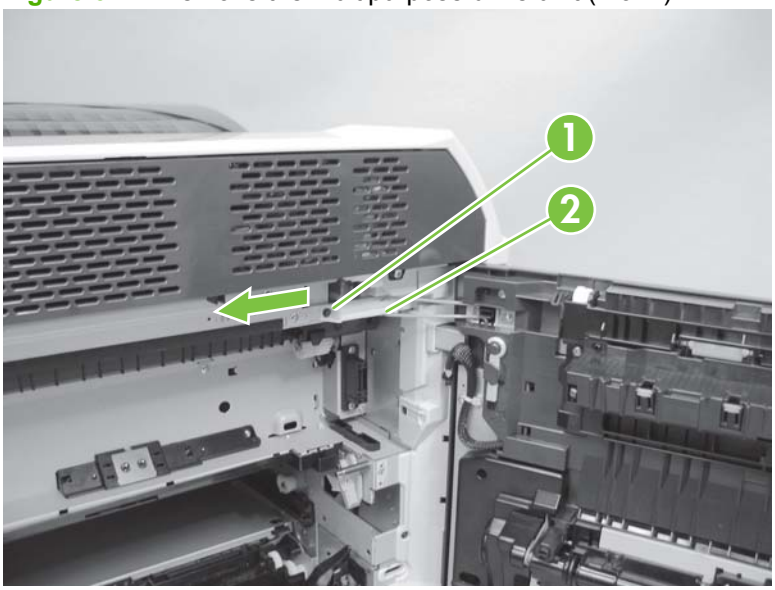
NOTE: Be sure to calibrate the media sensor from the **SERVICE** menu on the control panel after the secondary transfer unit has been replaced.

Multipurpose drive unit

NOTE: To begin, see Removal sequence 1 on page 209.

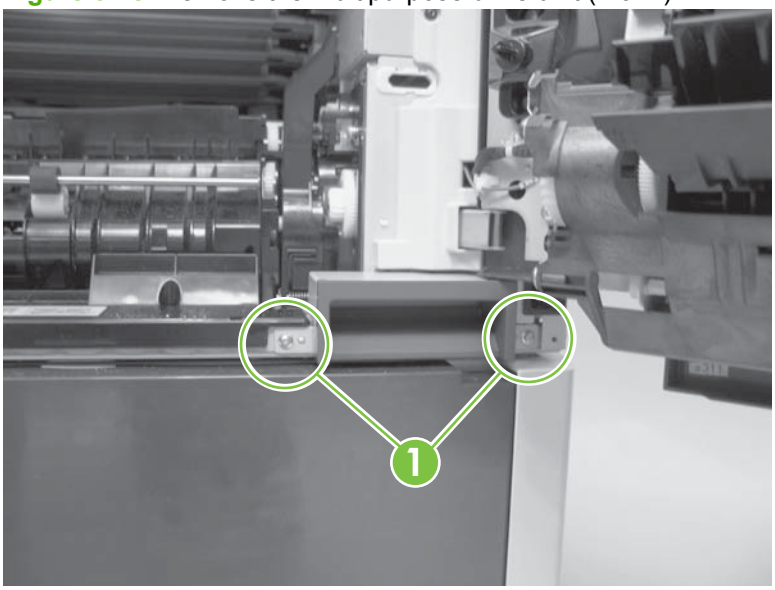
1. Remove the fuser. See Fuser on page 191.
2. Remove one screw (callout 1) and release the door hinge (callout 2).

Figure 6-12 Remove the multipurpose drive unit (1 of 7)



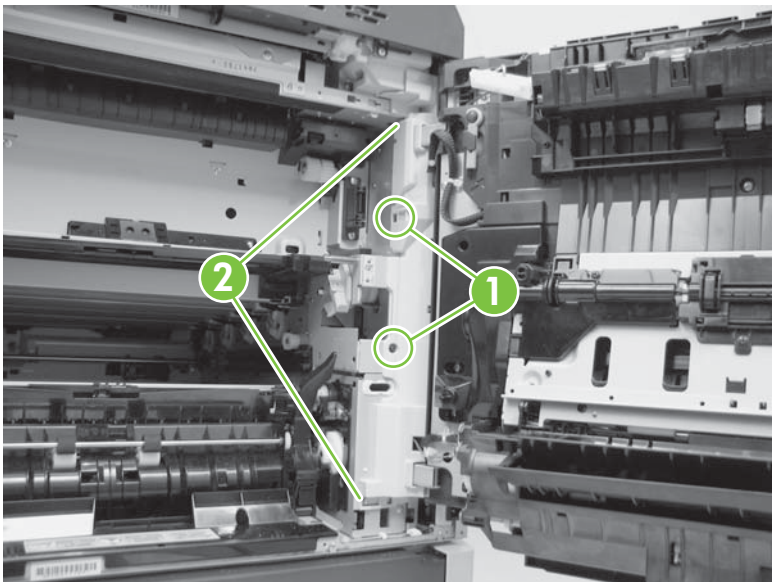
3. Remove two screws (callout 1) and the handle.

Figure 6-13 Remove the multipurpose drive unit (2 of 7)



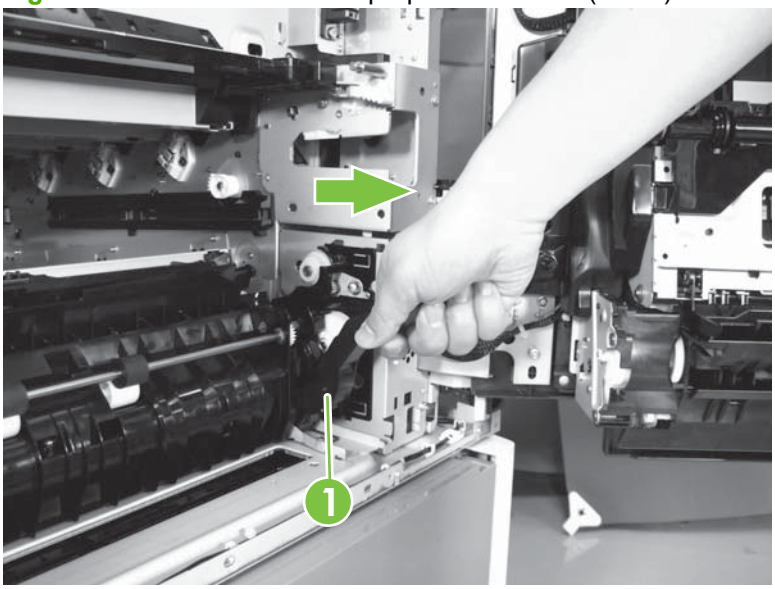
4. Remove two screws (callout 1), release two tabs (callout 2), and then remove the right inner cover.

Figure 6-14 Remove the multipurpose drive unit (3 of 7)



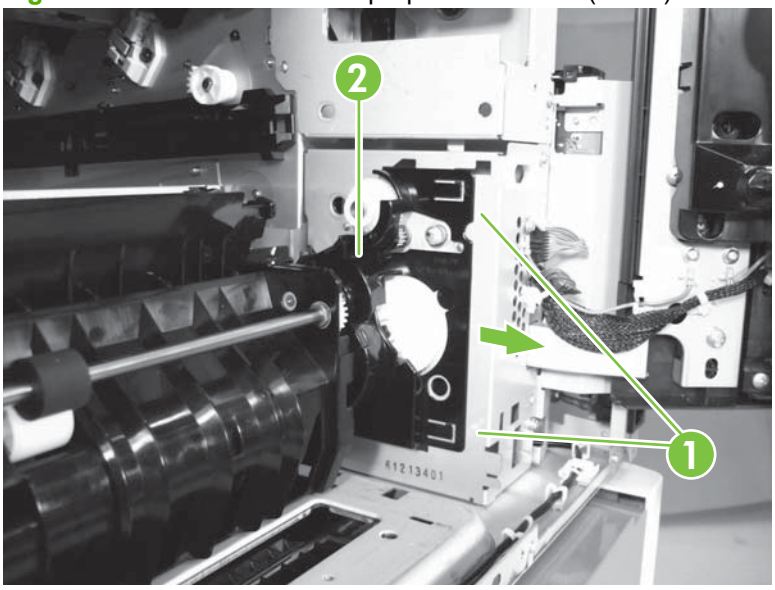
5. Lift the secondary transfer unit stopper (callout 1), and then pull it forward to remove it.

Figure 6-15 Remove the multipurpose drive unit (4 of 7)



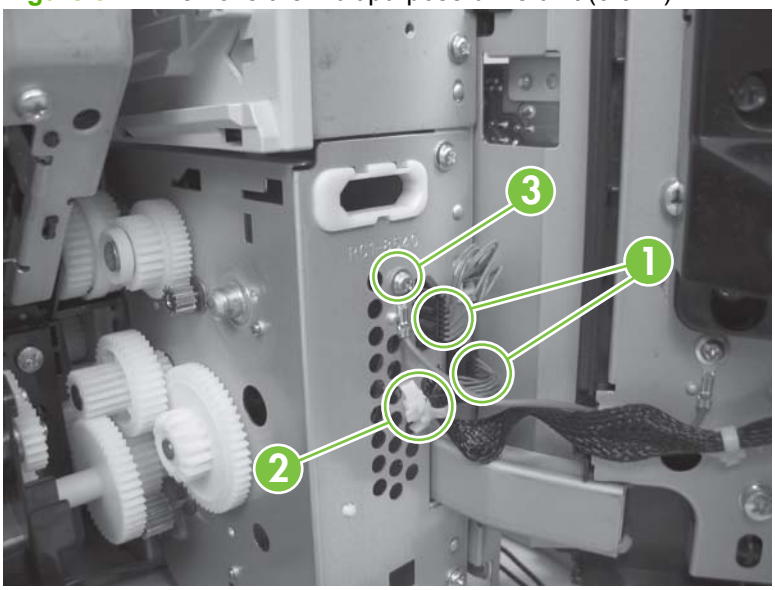
6. Release the two tabs (callout 1), and then slide the gear cover (callout 2) in the direction indicated to remove it.

Figure 6-16 Remove the multipurpose drive unit (5 of 7)



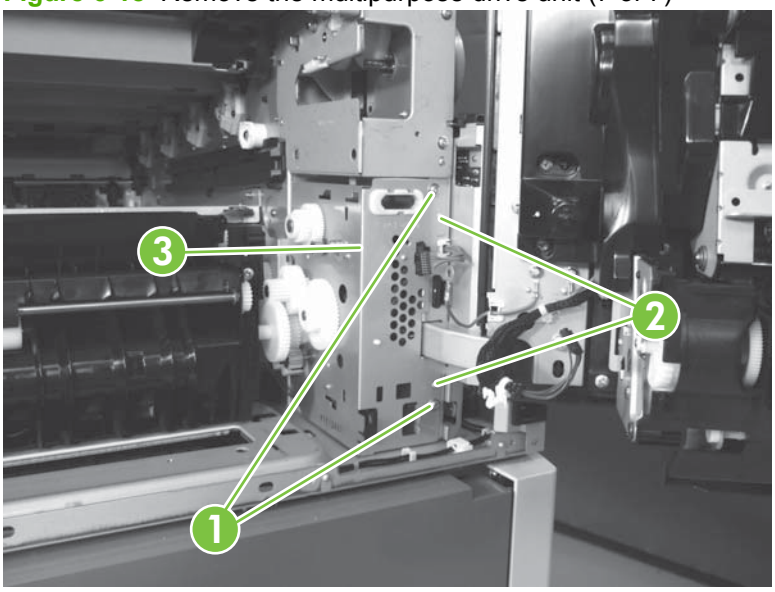
7. Remove two connectors (callout 1), one wire retainer (callout 2), and one ground screw (callout 3).

Figure 6-17 Remove the multipurpose drive unit (6 of 7)



8. Remove two screws (callout 1), two pins (callout 2), and then remove the multipurpose tray drive unit.

Figure 6-18 Remove the multipurpose drive unit (7 of 7)

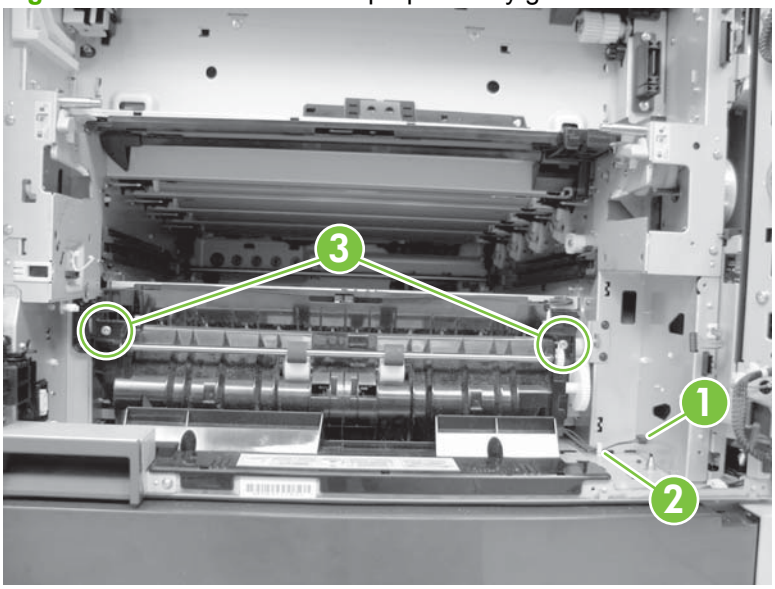


Multipurpose-tray guide (Tray 1) unit

NOTE: To begin, see Removal sequence 1 on page 209.

☐ Disconnect one connector (callout 1), release one wire retainer (callout 2), remove two screws (callout 3), and then remove the multipurpose-tray guide (Tray-1) unit.

Figure 6-19 Remove the multipurpose-tray guide unit

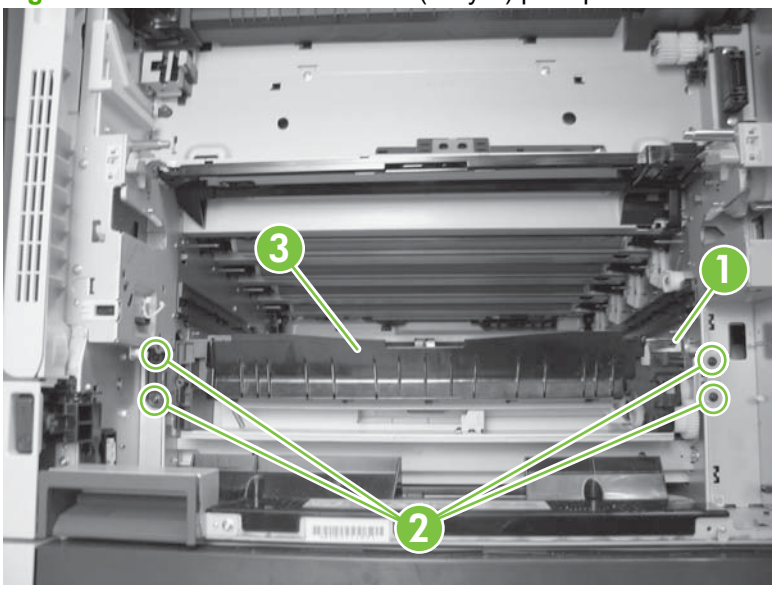


Cassette (Tray-2) pickup unit

NOTE: To begin, see Removal sequence 1 on page 209.

☐ Disconnect one connector (callout 1), remove four screws (callout 2), and then the Tray-2 pickup unit (callout 3).

Figure 6-20 Remove the cassette (Tray-2) pickup unit

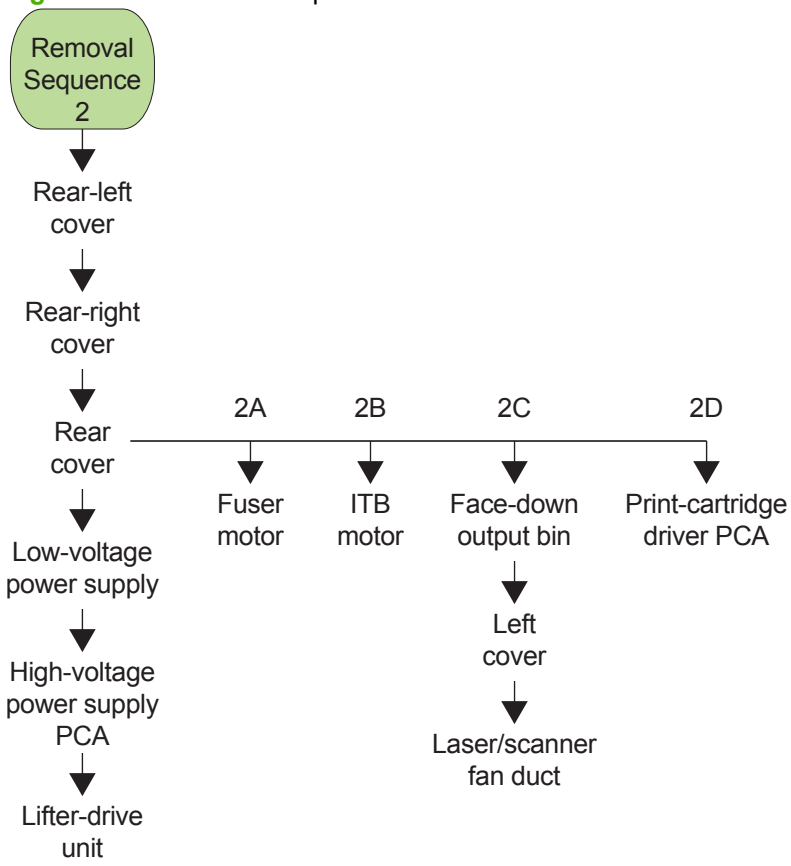


NOTE: Removal sequence 1 is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

Removal sequence 2

Use the flowchart below to determine the sequence of part removal and reinstallation. For information about using removal sequences, see Parts removal sequences on page 189.

Figure 6-21 Removal sequence 2 flowchart

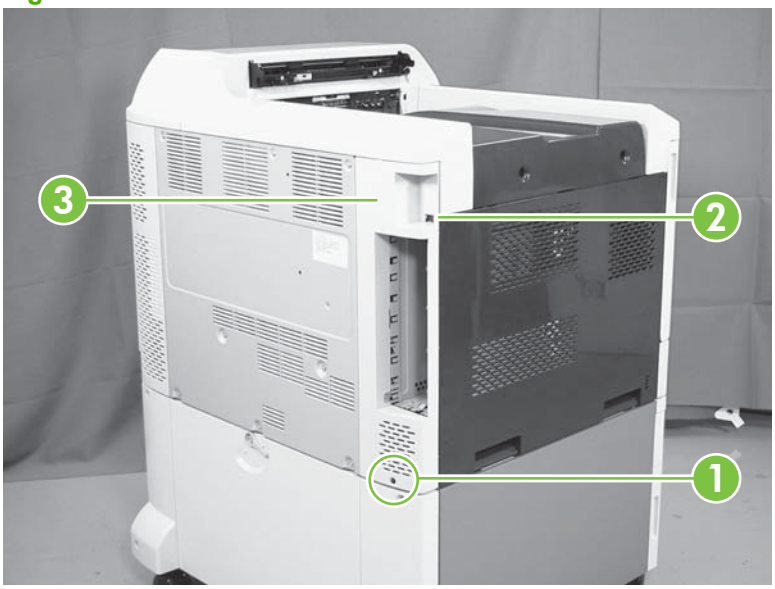


Rear-left cover

NOTE: To begin, see Removal sequence 2 on page 221.

☐ Remove one screw (callout 1), release one tab (callout 2), and then remove the rear-left cover (callout 3).

Figure 6-22 Remove rear-left cover

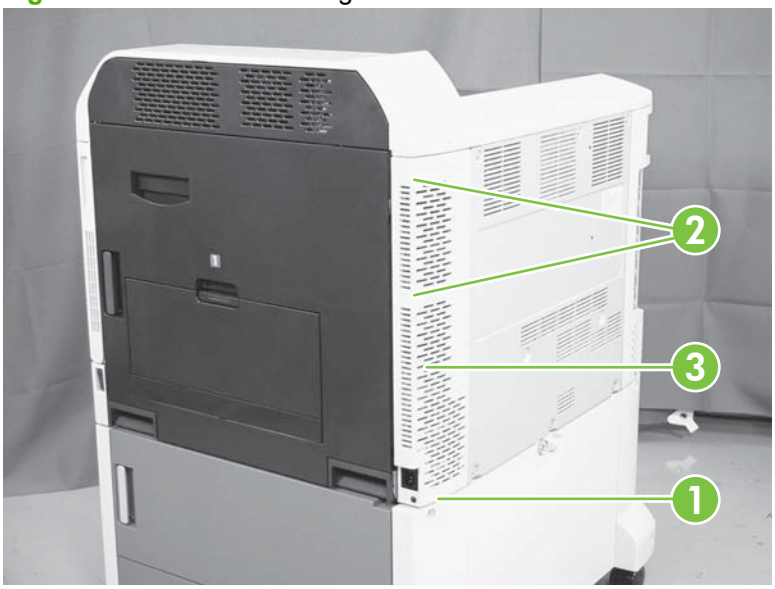


Rear-right cover

NOTE: To begin, see Figure 6-21 Removal sequence 2 flowchart on page 221.

☐ Remove one screw (callout 1), release two tabs (callout 2), and then remove the rear-right cover (callout 3).

Figure 6-23 Remove rear-right cover

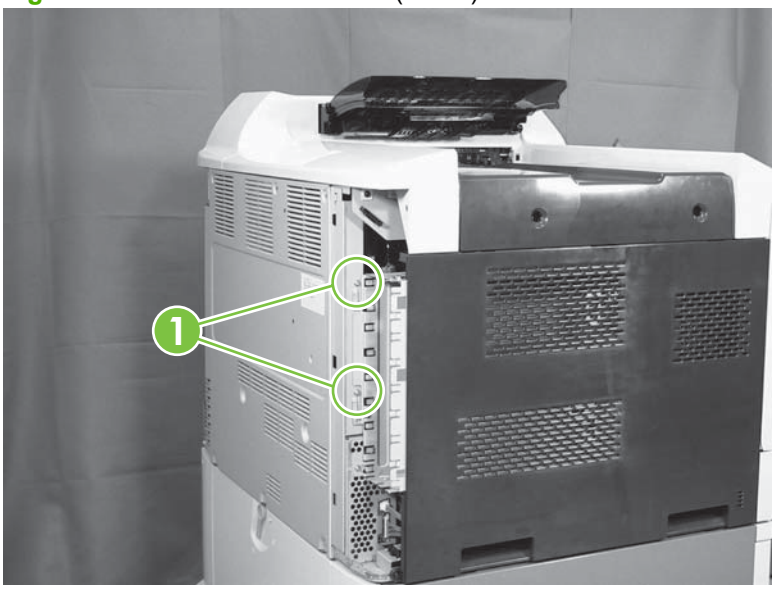


Rear cover

NOTE: To begin, see the Removal sequence 2 on page 221.

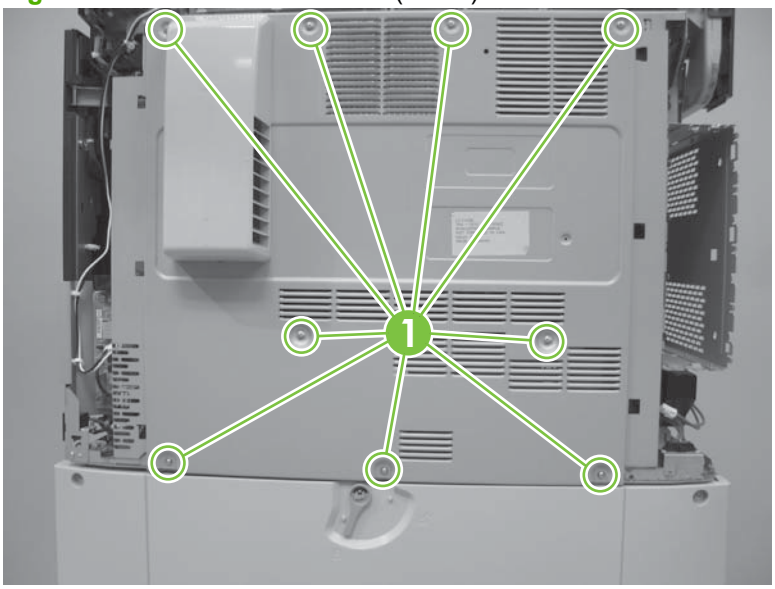
1. Remove two screws (callout 1).

Figure 6-24 Remove rear cover (1 of 2)



2. Remove nine screws (callout 1), and then remove the rear cover (callout 2).

Figure 6-25 Remove rear cover (2 of 2)



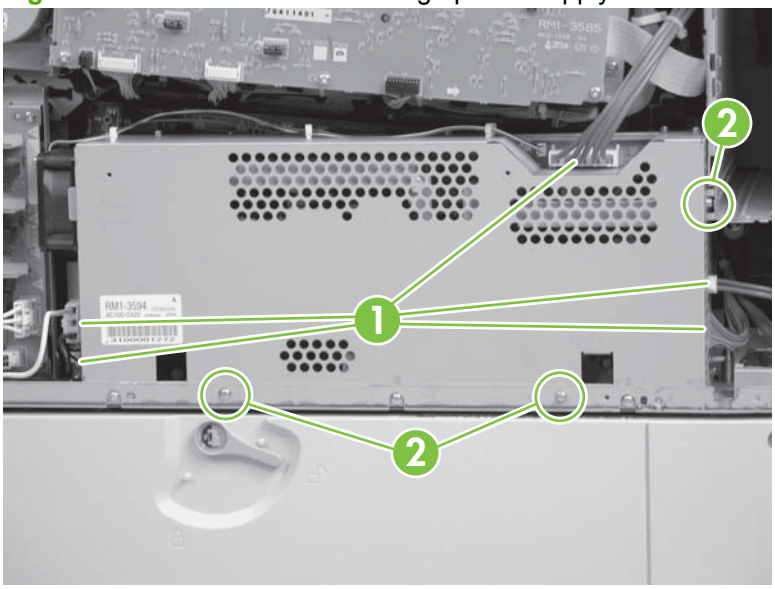
- For sequence 2A, see Removal sequence 2A on page 230.
- For sequence 2B, see Removal sequence 2B on page 231.
- For sequence 2C, see Removal sequence 2C on page 232.
- For sequence 2D, see Removal sequence 2D on page 236.

Low-voltage power supply unit

NOTE: To begin, see the Removal sequence 2 on page 221.

☐ Disconnect five connectors (callout 1), remove three screws (callout 2), and then remove the low-voltage power supply unit.

Figure 6-26 Remove the low-voltage power supply unit

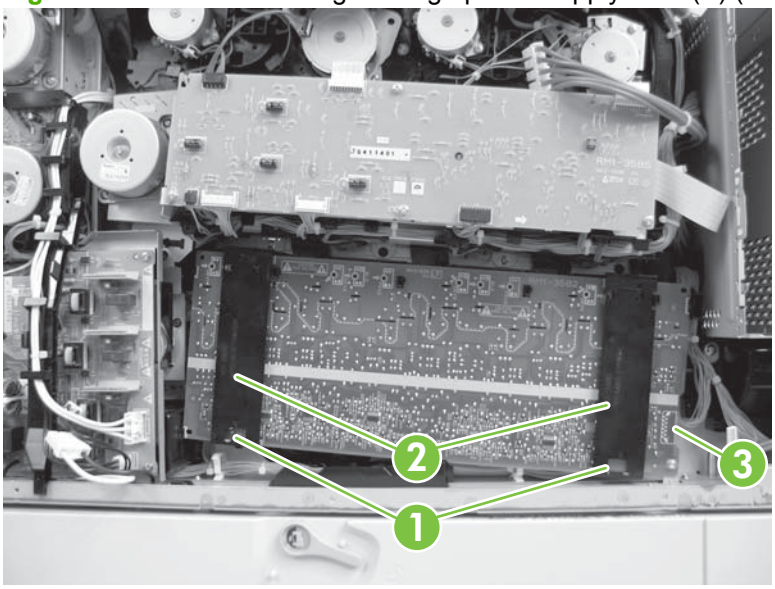


High-voltage power supply PCA (A)

NOTE: To begin, see Removal sequence 2 on page 221.

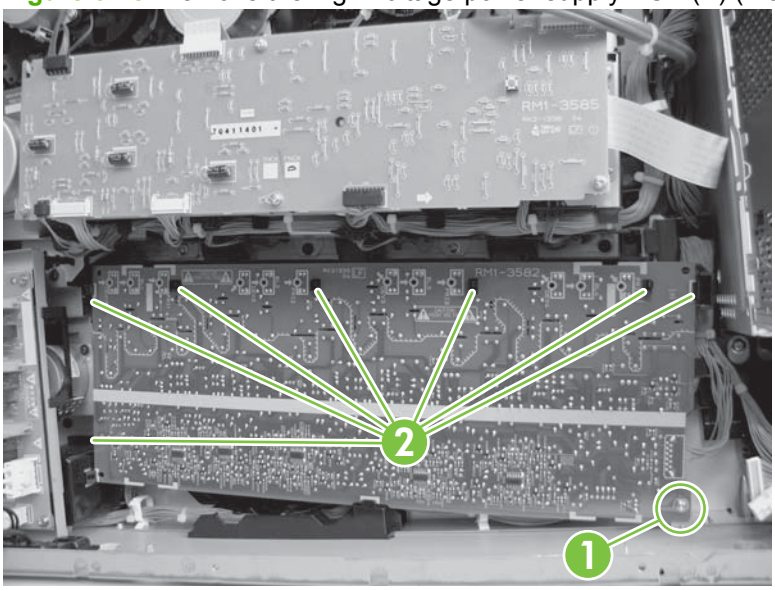
1. Release the two tabs (callout 1), remove the two PCA holders (callout 2), and then remove one connector (callout 3).

Figure 6-27 Remove the high-voltage power supply PCA (A) (1 of 3)



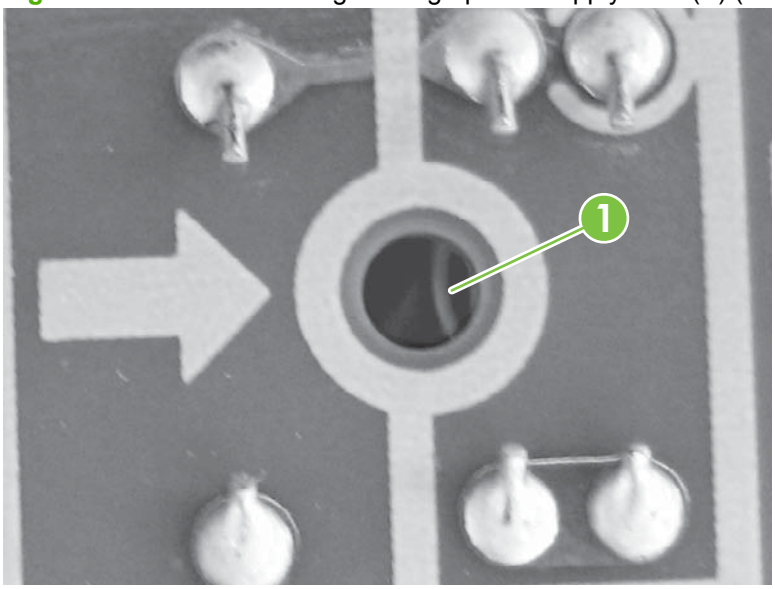
2. Remove one screw (callout 1), release seven tabs (callout 2), and then remove the high-voltage power supply PCA (A).

Figure 6-28 Remove the high-voltage power supply PCA (A) (2 of 3)



NOTE: When reassembling, set the bottom tab of the high-voltage power supply PCA (A) first. Ensure that the contact spring (callout 1) can be seen from the twelve confirmation windows.

Figure 6-29 Remove the high-voltage power supply PCA (A) (3 of 3)

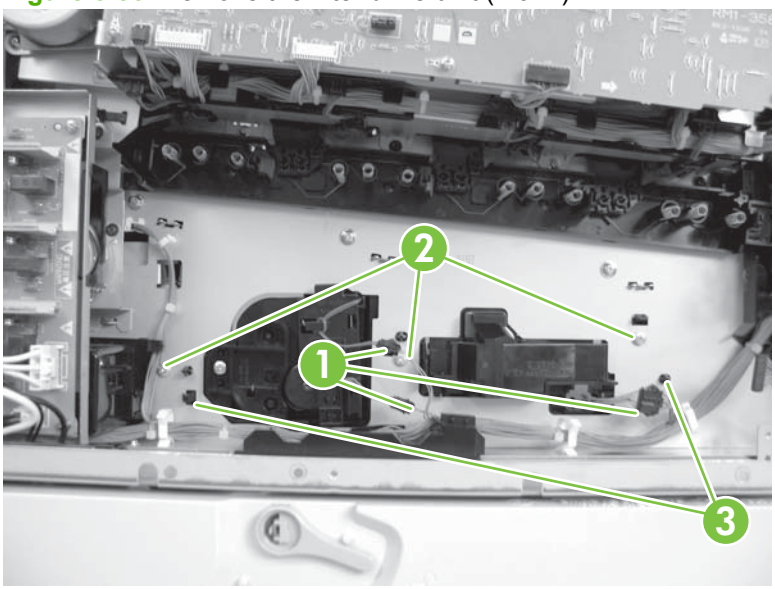


Lifter drive unit

NOTE: To begin, see Removal sequence 2 on page 221.

1. Remove Tray 2. See Tray 2 on page 208.
2. Disconnect three connectors (callout 1), remove three screws (callout 2), and then release two tabs (callout 3).

Figure 6-30 Remove the lifter drive unit (1 of 2)



3. Remove the lifter drive unit through the front of the product.

Figure 6-31 Remove the lifter drive unit (2 of 2)



NOTE: When reassembling, ensure that the lifter drive unit is unlocked (callout 1). If the lifter is locked (callout 2), the lifter will not function correctly.

Figure 6-32 Unlocked position of the lifter drive unit (correct)

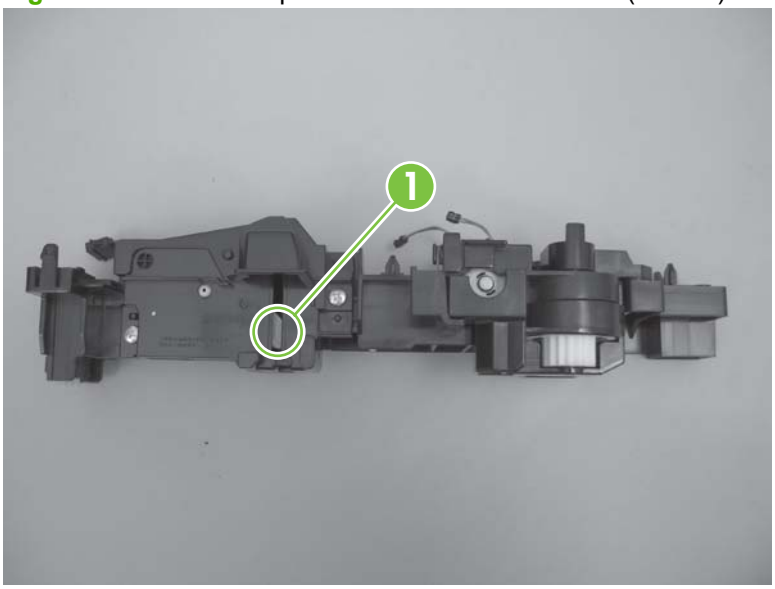
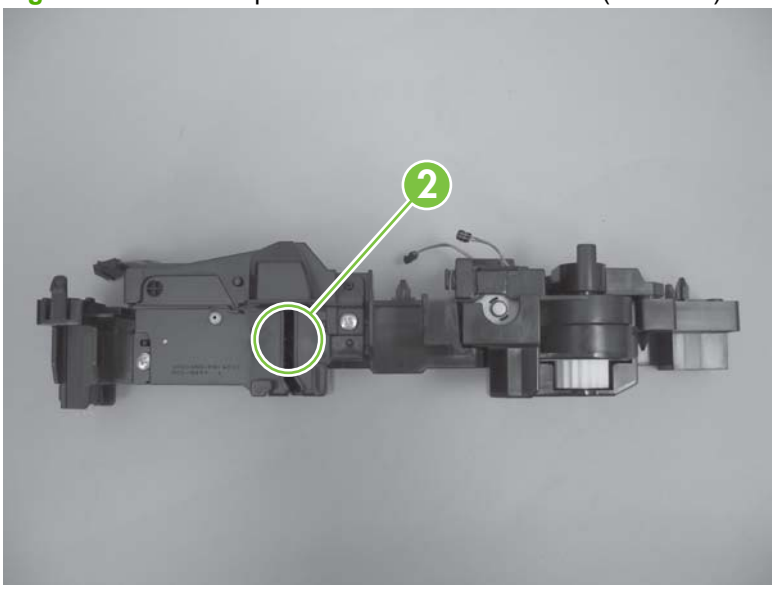


Figure 6-33 Locked position of the lifter drive unit (incorrect)



NOTE: Removal sequence 2 is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

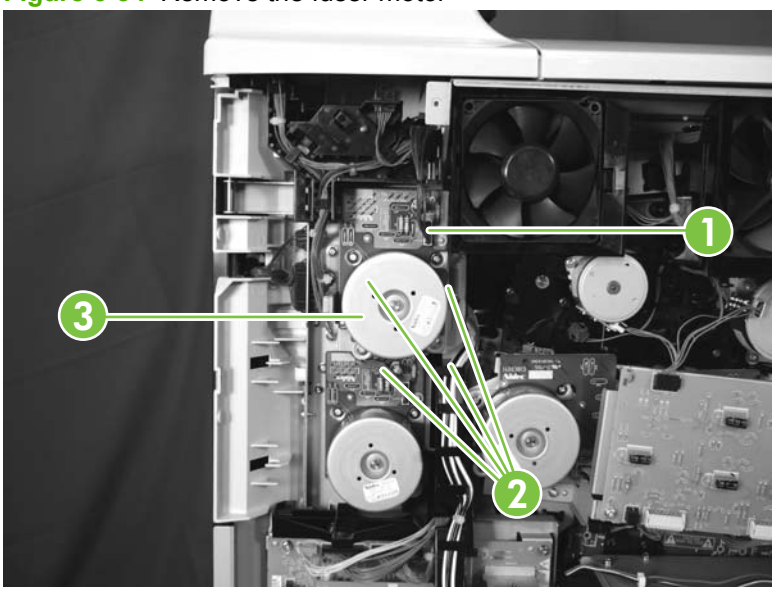
Removal sequence 2A

See Removal sequence 2 on page 221 for procedures to remove prerequisite parts.

Fuser motor

1. Disconnect one connector (callout 1).
2. Remove four screws (callout 2), and then remove the fuser motor (callout 3).

Figure 6-34 Remove the fuser motor



NOTE: Removal sequence 2A is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

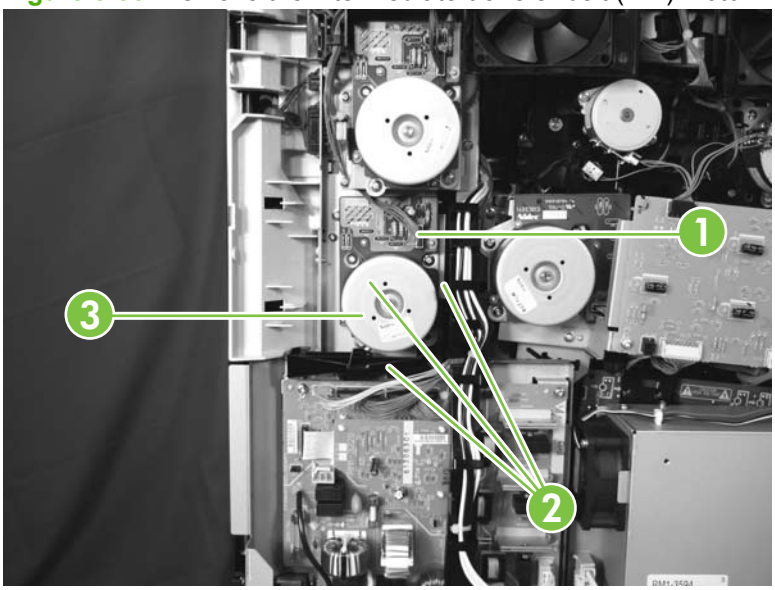
Removal sequence 2B

See Removal sequence 2 on page 221 for procedures to remove prerequisite parts.

Intermediate-transfer belt (ITB) motor

☐ Disconnect one connector (callout 1). Remove three screws (callout 2), and then remove the ITB motor (callout 3).

Figure 6-35 Remove the intermediate-transfer belt (ITB) motor



NOTE: Removal sequence 2B is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

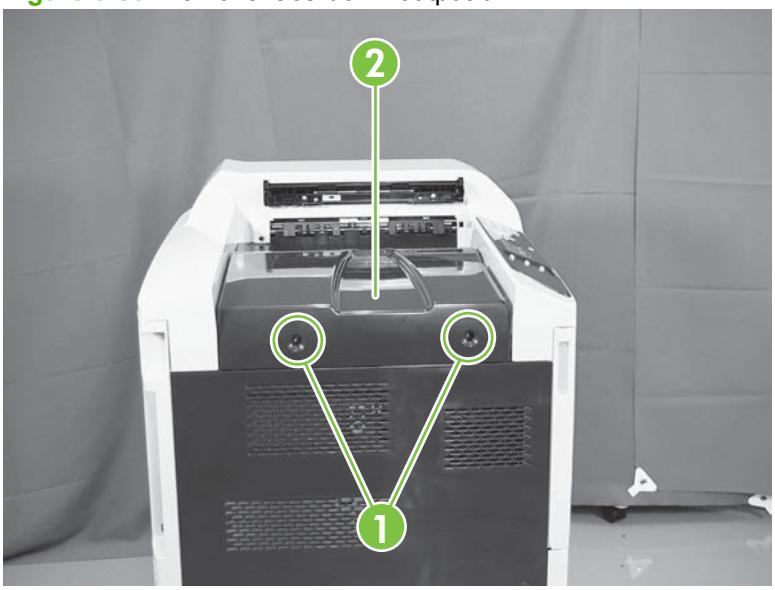
Removal sequence 2C

See Removal sequence 2 on page 221 for procedures to remove prerequisite parts.

Face-down output bin

☐ Remove two screws (callout 1), and then remove the face-down output bin (callout 2).

Figure 6-36 Remove face-down output bin

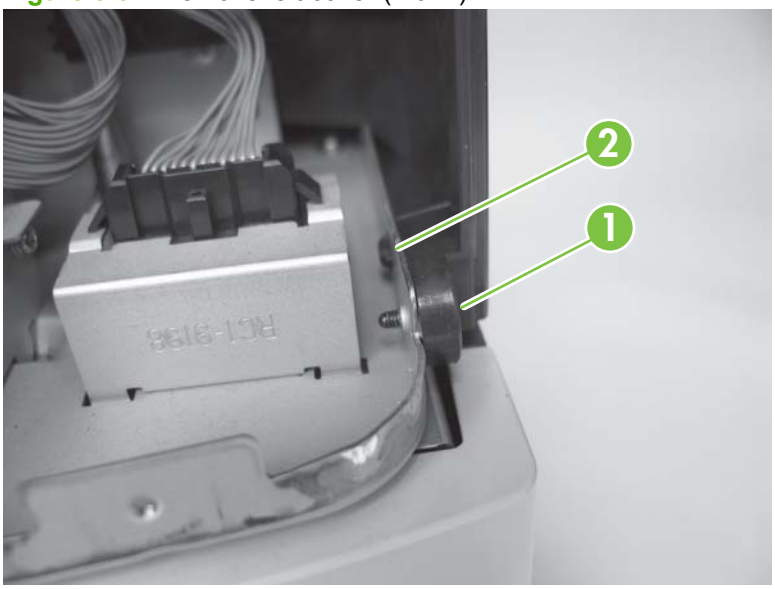


Left cover

NOTE: To begin, see Removal sequence 2 on page 221.

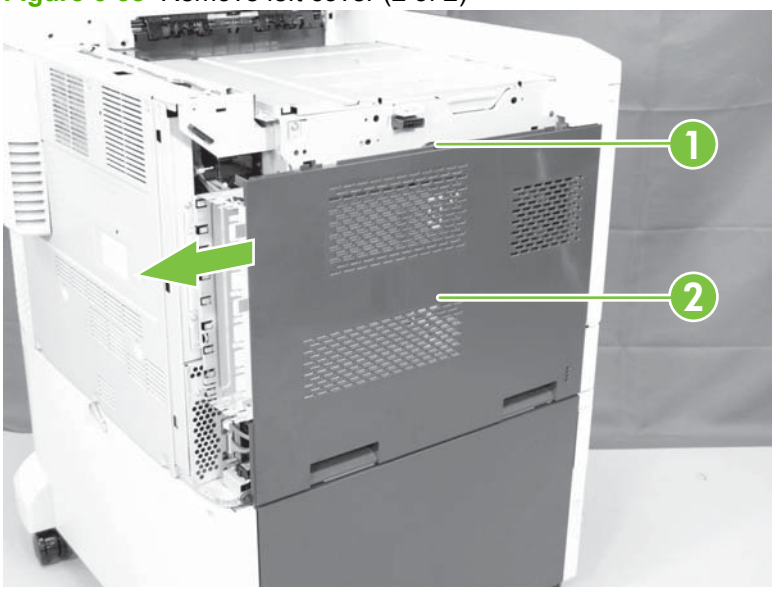
1. Remove one screw (callout 1), and then release one pin (callout 2).

Figure 6-37 Remove left cover (1 of 2)



2. Release one tab (callout 1) while pulling out on the bottom left corner (callout 2). Slide the left cover (callout 3) in the direction that the arrow indicates.

Figure 6-38 Remove left cover (2 of 2)

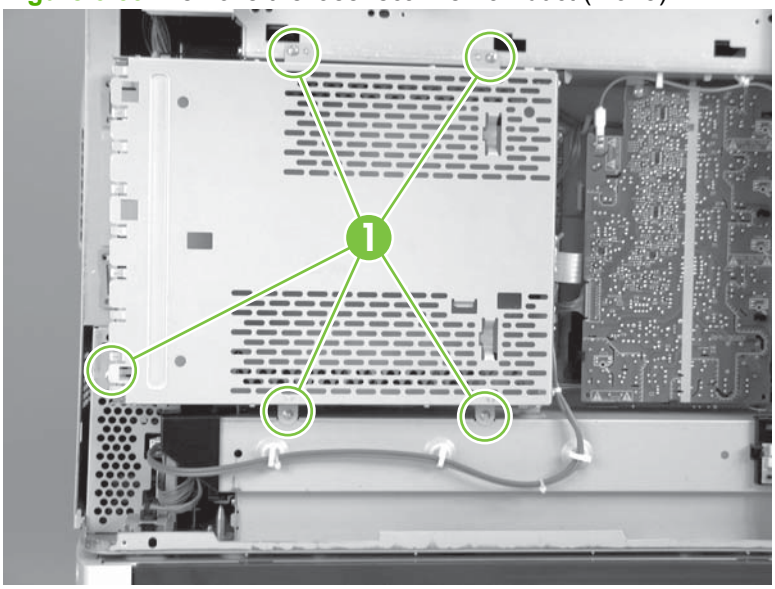


Laser/scanner-fan duct

NOTE: To begin, see Removal sequence 2 on page 221.

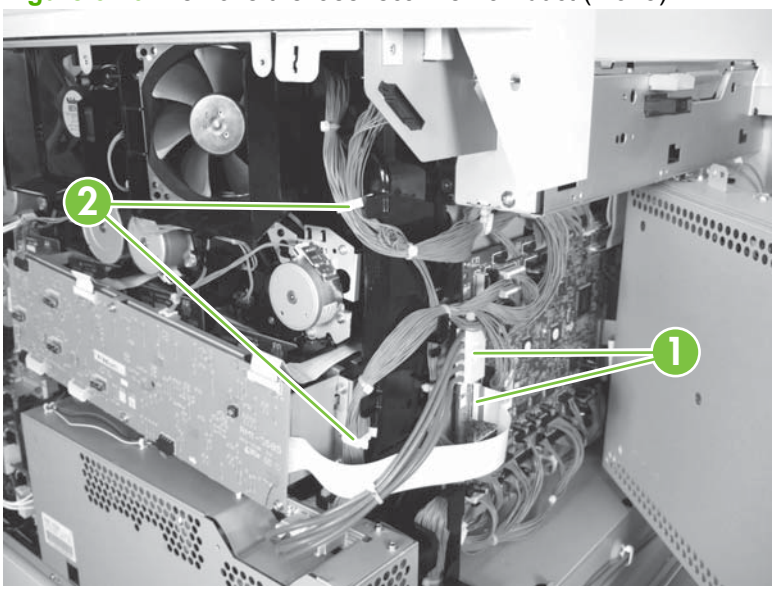
1. Remove five screws (callout 1), and then swing the formatter case to the right.

Figure 6-39 Remove the laser/scanner-fan duct (1 of 3)



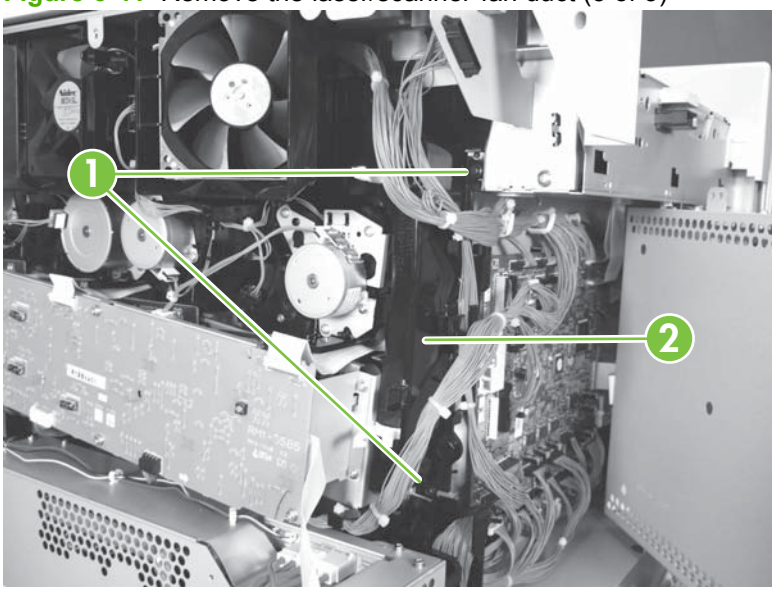
2. Disconnect the two connectors (callout 1), and then release two wire retainers (callout 2).

Figure 6-40 Remove the laser/scanner-fan duct (2 of 3)



3. Remove two screws (callout 1), and then remove the laser/scanner-fan duct (callout 2).

Figure 6-41 Remove the laser/scanner-fan duct (3 of 3)



NOTE: Removal sequence 2C is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

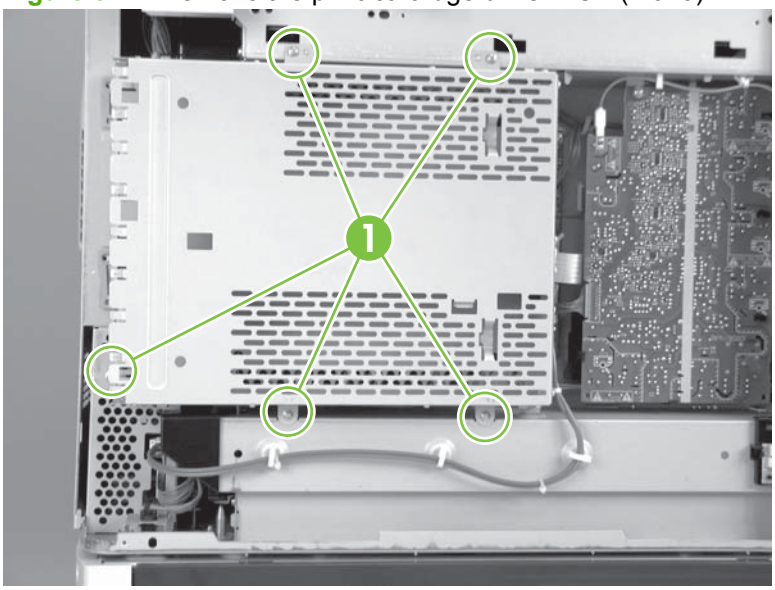
Removal sequence 2D

See Removal sequence 2 on page 221 for procedures to remove prerequisite parts.

Print-cartridge driver PCA

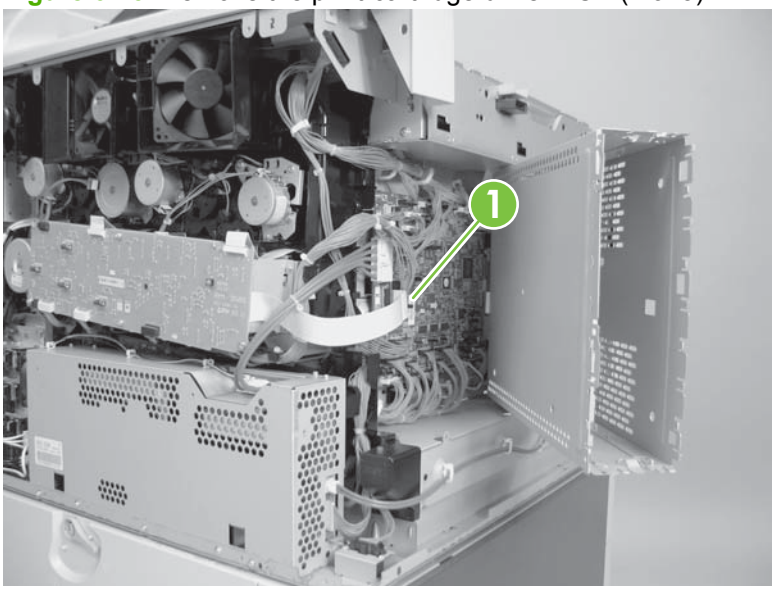
1. Remove four screws (callout 1), and then swing the formatter case to the right.

Figure 6-42 Remove the print-cartridge driver PCA (1 of 3)



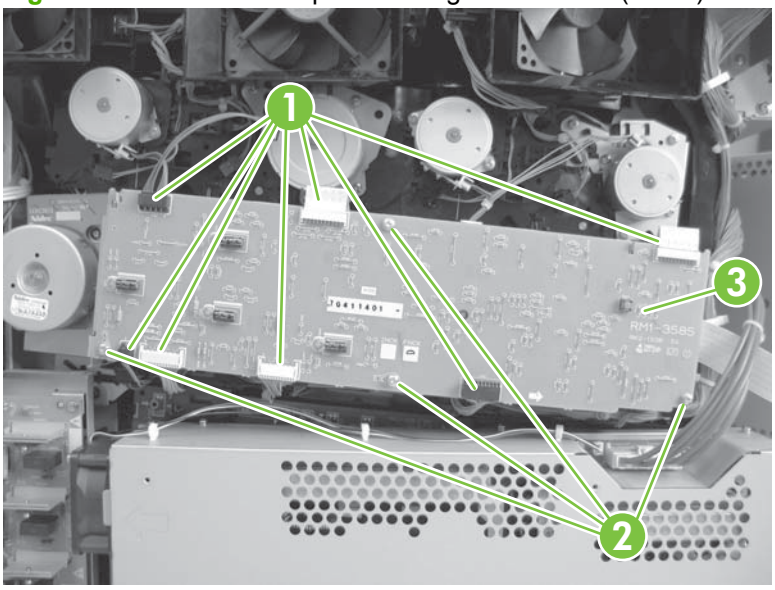
2. Disconnect one connector from the DC controller (callout 1).

Figure 6-43 Remove the print-cartridge driver PCA (2 of 3)



3. Disconnect seven connectors (callout 1), four screws (callout 2), and the print-cartridge driver PCA (callout 3).

Figure 6-44 Remove the print-cartridge driver PCA (3 of 3)

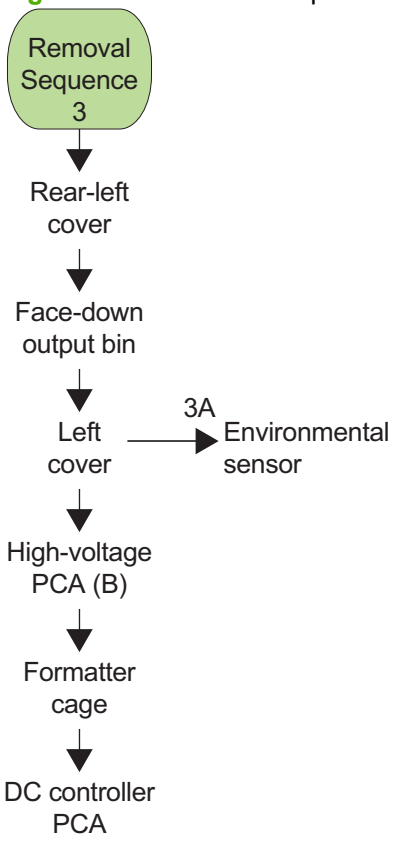


NOTE: Removal sequence 2D is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

Removal sequence 3

Use the flowchart below to determine the sequence of part removal and reinstallation. For information about using removal sequences, see Parts removal sequences on page 189.

Figure 6-45 Removal sequence 3 flowchart

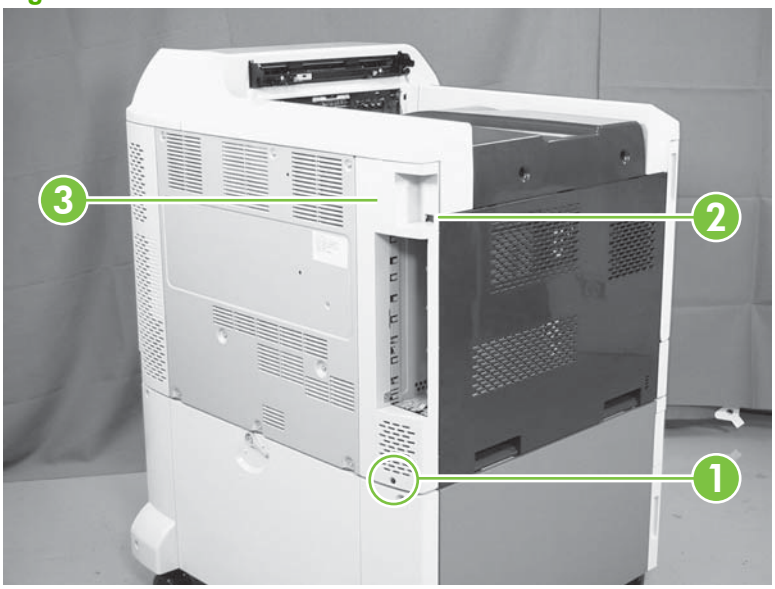


Rear-left cover

NOTE: To begin, see Removal sequence 3 on page 238.

☐ Remove one screw (callout 1), release one tab (callout 2), and then remove the rear-left cover (callout 3).

Figure 6-46 Remove rear-left cover

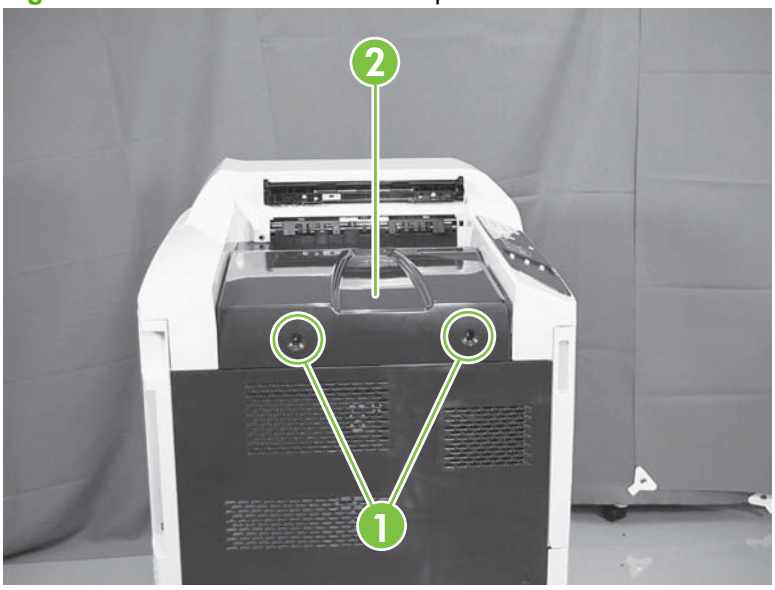


Face-down output bin

NOTE: To begin, see Removal sequence 3 on page 238.

☐ Remove two screws (callout 1), and then remove the face-down output bin (callout 2).

Figure 6-47 Remove face-down output bin

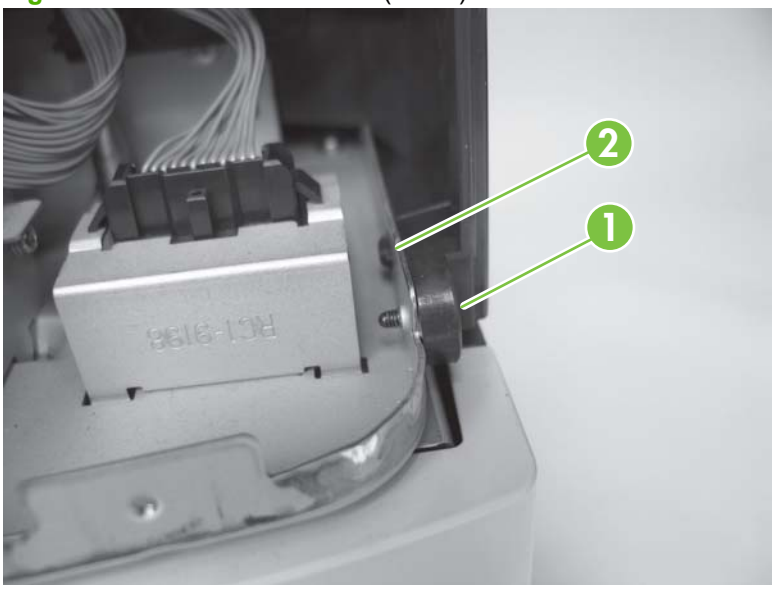


Left cover

NOTE: To begin, see Removal sequence 3 on page 238.

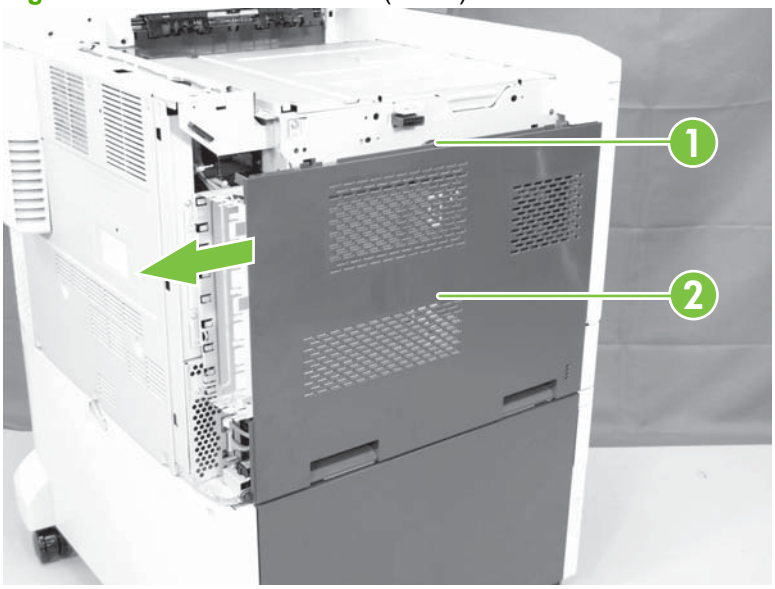
1. Remove one screw (callout 1), and then release one pin (callout 2).

Figure 6-48 Remove left cover (1 of 2)



2. Release one tab (callout 1), and then slide the left cover (callout 2) in the direction that the arrow indicates.

Figure 6-49 Remove left cover (2 of 2)



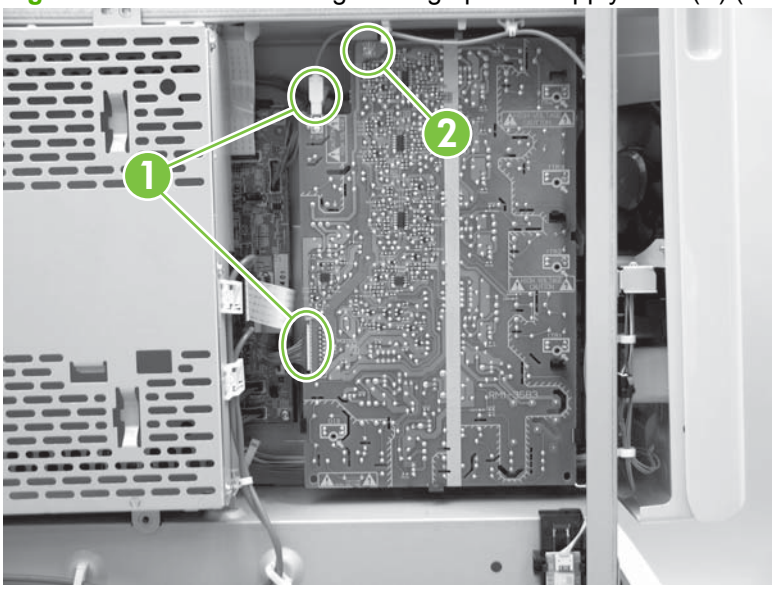
For Removal sequence 3A, see Removal sequence 3A on page 248.

High-voltage power supply PCA (B)

NOTE: To begin, see the Removal sequence 3 on page 238.

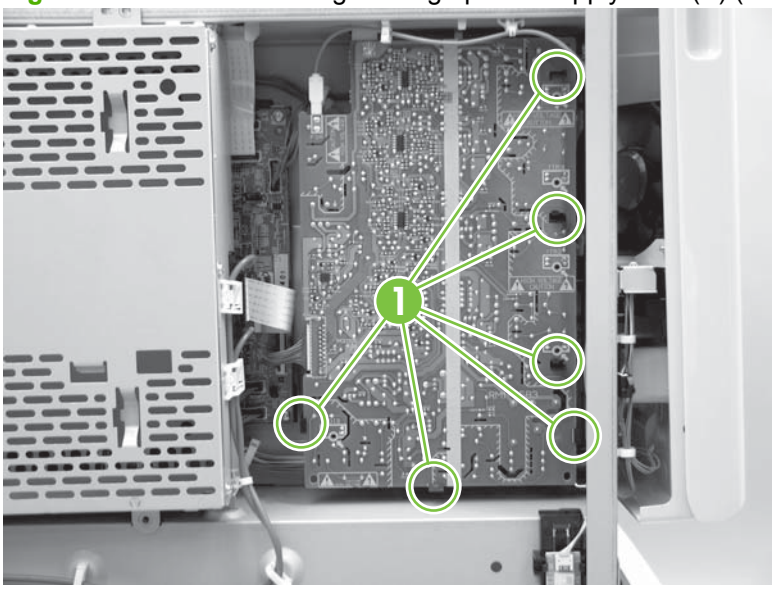
1. Disconnect two connectors (callout 1), and then remove one screw (callout 2).

Figure 6-50 Remove the high-voltage power supply PCA (B) (1 of 3)



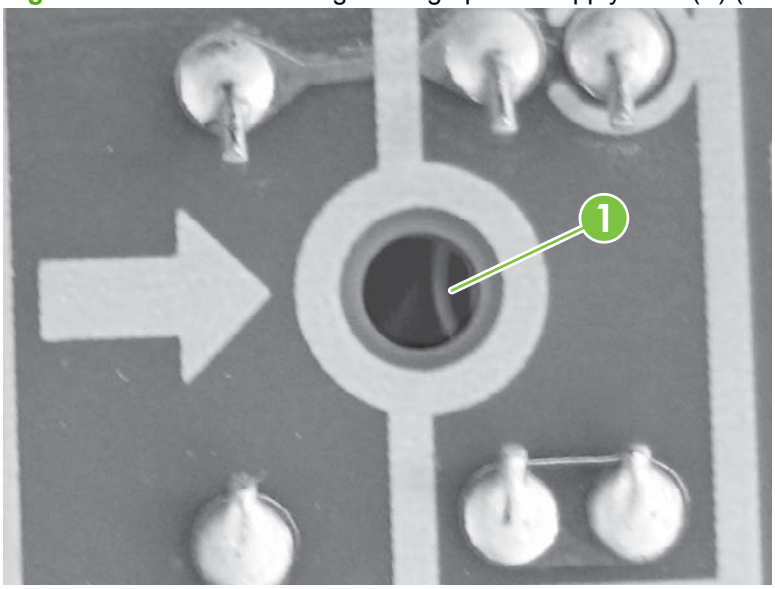
2. Release six tabs (callout 1), and then remove the high-voltage power supply PCA (B)

Figure 6-51 Remove the high-voltage power supply PCA (B) (2 of 3)



NOTE: When reassembling, ensure that the contact springs (callout 1) can be seen from the five confirmation windows. Failure to do so can cause print-quality issues.

Figure 6-52 Remove the high-voltage power supply PCA (B) (3 of 3)

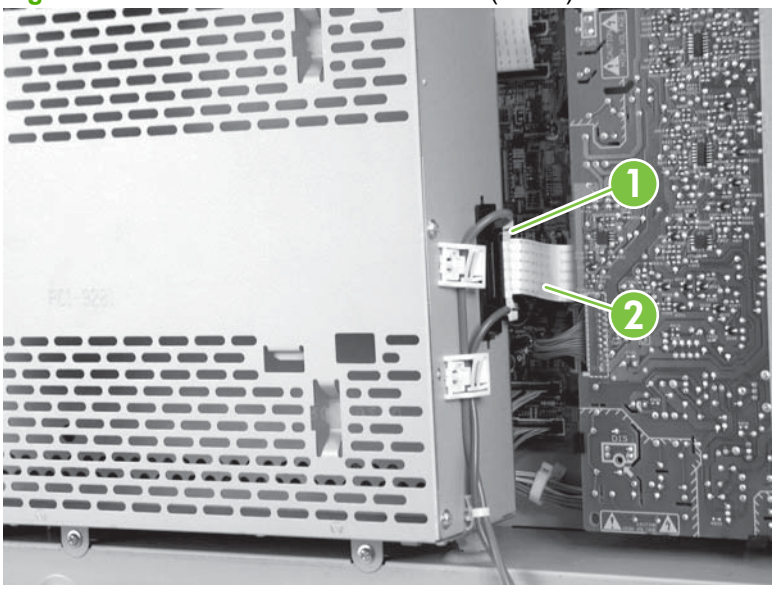


Formatter case

NOTE: To begin, see the Removal sequence 3 on page 238.

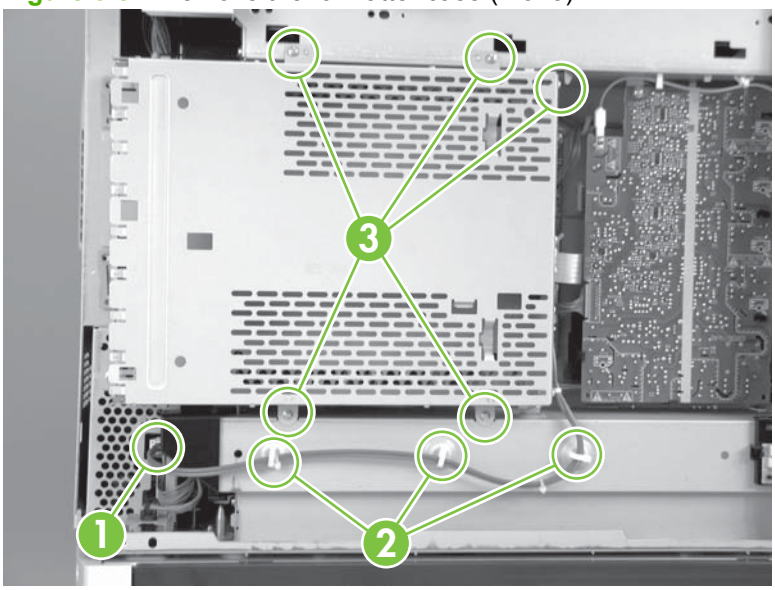
1. Remove the wire-harness holder (callout 1), and then disconnect the flat cable (callout 2) from the formatter case.

Figure 6-53 Remove the formatter case (1 of 3)



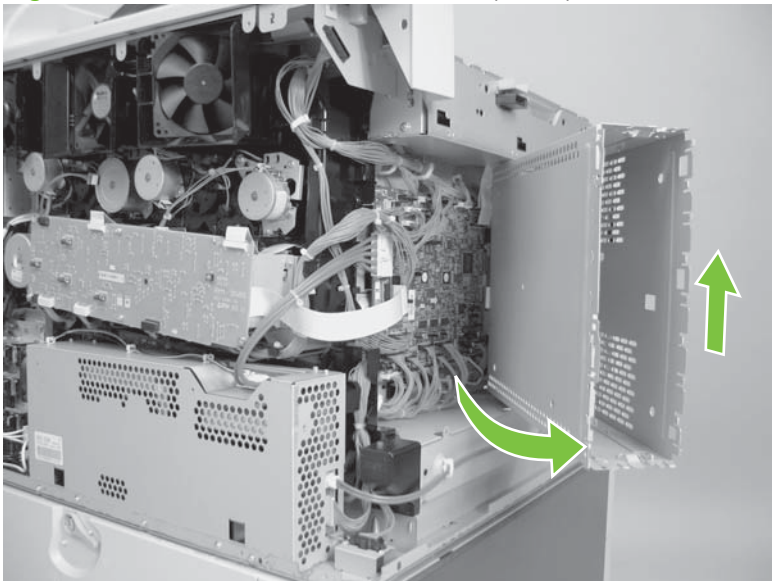
2. Disconnect one connector (callout 1), release three wire retainers (callout 2), and then remove five screws (callout 3).

Figure 6-54 Remove the formatter case (2 of 3)



3. Rotate and lift the formatter case to remove it.

Figure 6-55 Remove the formatter case (3 of 3)



NOTE: When reassembling, insert the C-shaped hinge on the top of the formatter case into the round hole.

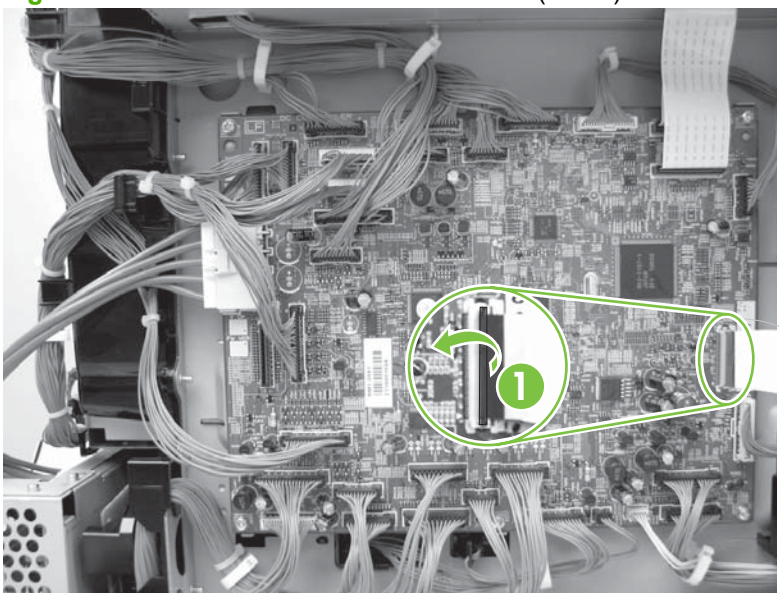
DC controller PCA

NOTE: To begin, see the Removal sequence 3 on page 238.

1. Disconnect all connectors on the DC controller PCA.

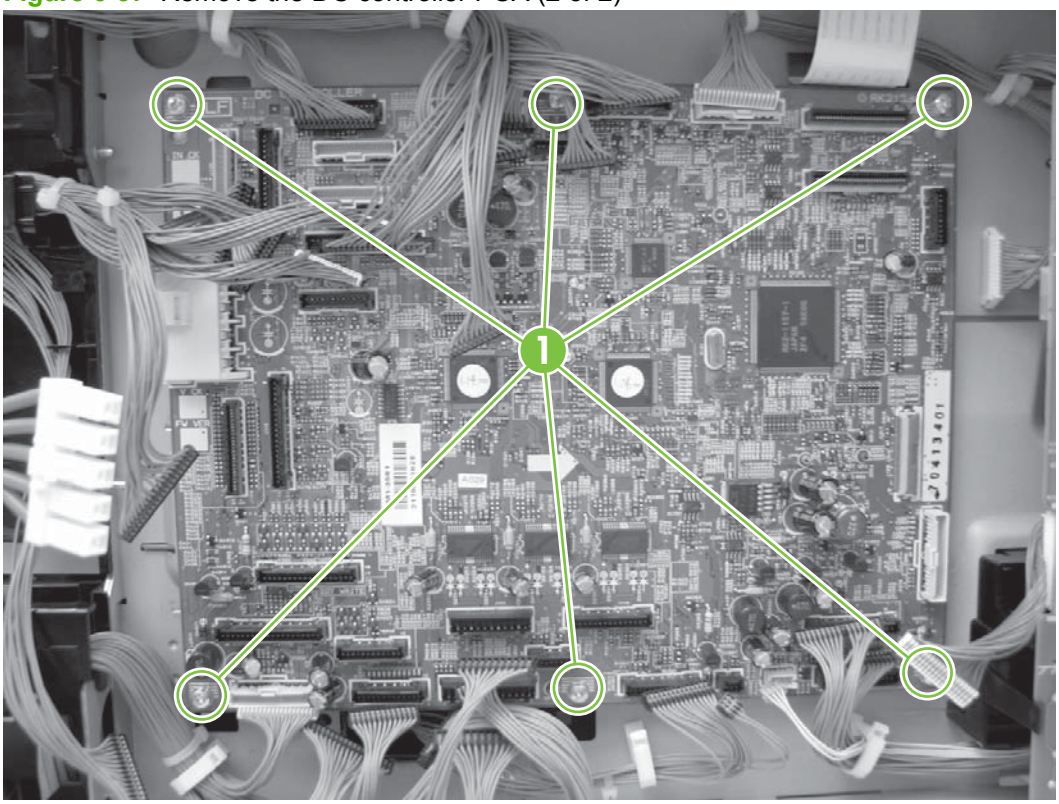
CAUTION: Use care when removing the flat cable that comes from the formatter case (callout 1). Gently lift the black latch to release the cable.

Figure 6-56 Remove the DC controller PCA (1 of 2)



2. Remove six screws (callout 1), and then remove the DC controller PCA.

Figure 6-57 Remove the DC controller PCA (2 of 2)



NOTE: Removal sequence 3 is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

Removal sequence 3A

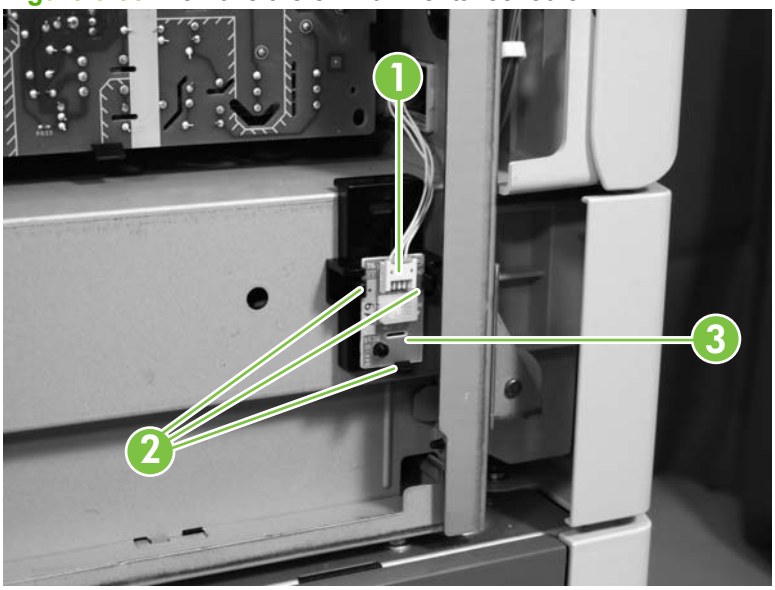
See Removal sequence 3 on page 238 for procedures to remove prerequisite parts.

Environmental sensor

NOTE: To begin, see Removal sequence 3A on page 248.

- ☐ Disconnect one connector (callout 1). Release three tabs (callout 2), and then remove the environmental sensor (callout 3).

Figure 6-58 Remove the environmental sensors

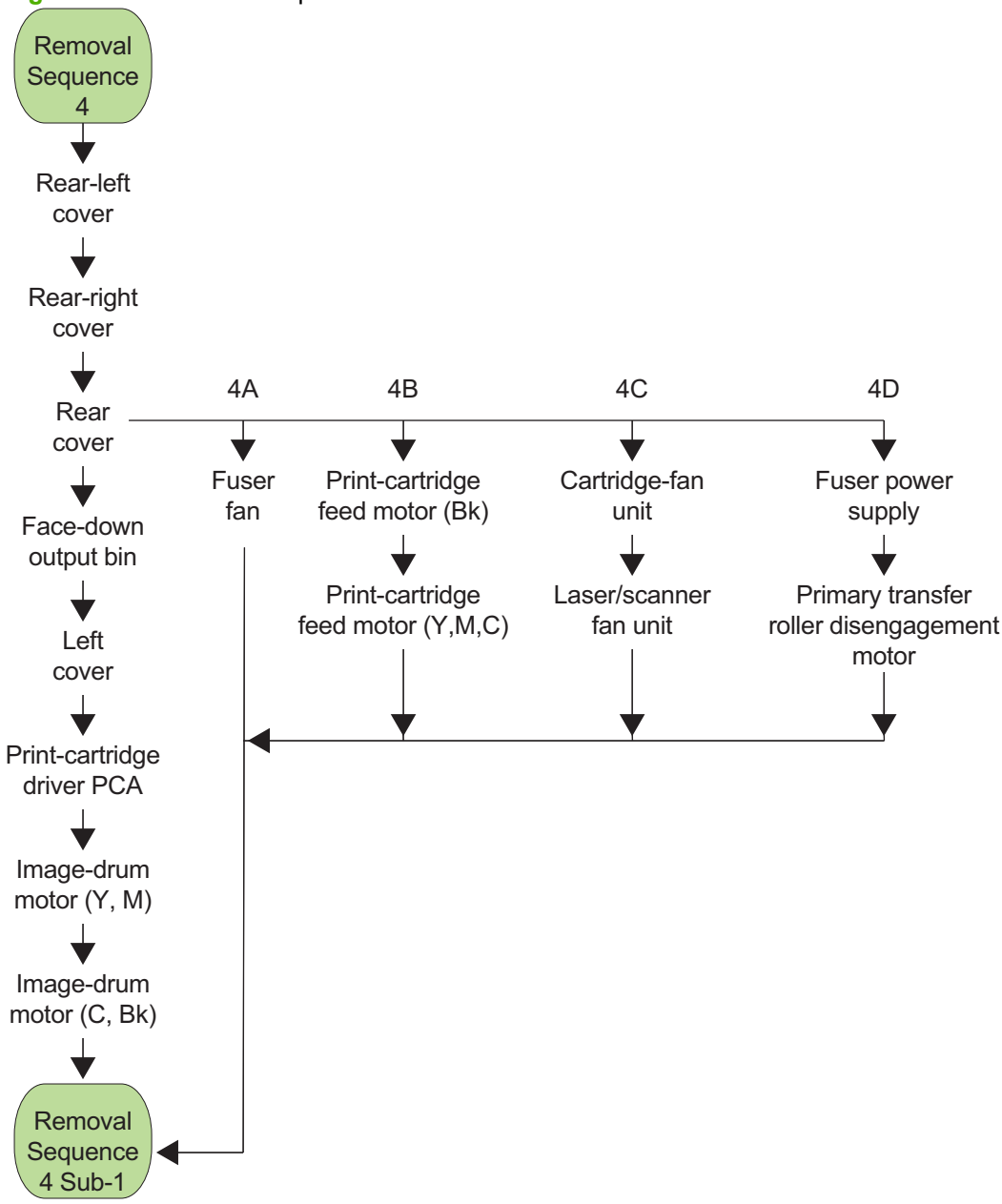


NOTE: Removal sequence 3A is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

Removal sequence 4

Use the flowchart below to determine the sequence of part removal and reinstallation. For information about using removal sequences, see Parts removal sequences on page 189.

Figure 6-59 Removal sequence 4 flowchart

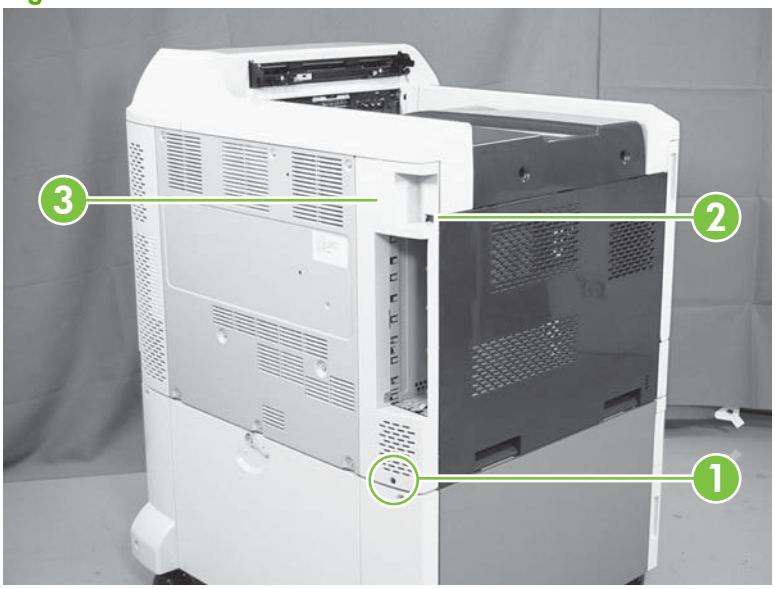


Rear-left cover

NOTE: To begin, see Removal sequence 4 on page 249.

- ☐ Remove one screw (callout 1), release one tab (callout 2), and then remove the rear-left cover (callout 3).

Figure 6-60 Remove rear-left cover

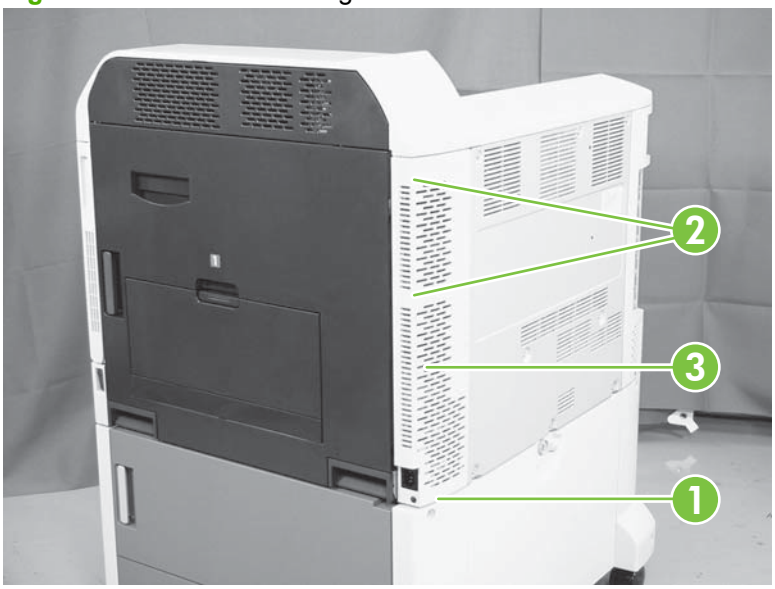


Rear-right cover

NOTE: To begin, see Removal sequence 4 on page 249.

☐ Remove one screw (callout 1), release two tabs (callout 2), and then remove the rear-right cover (callout 3).

Figure 6-61 Remove rear-right cover

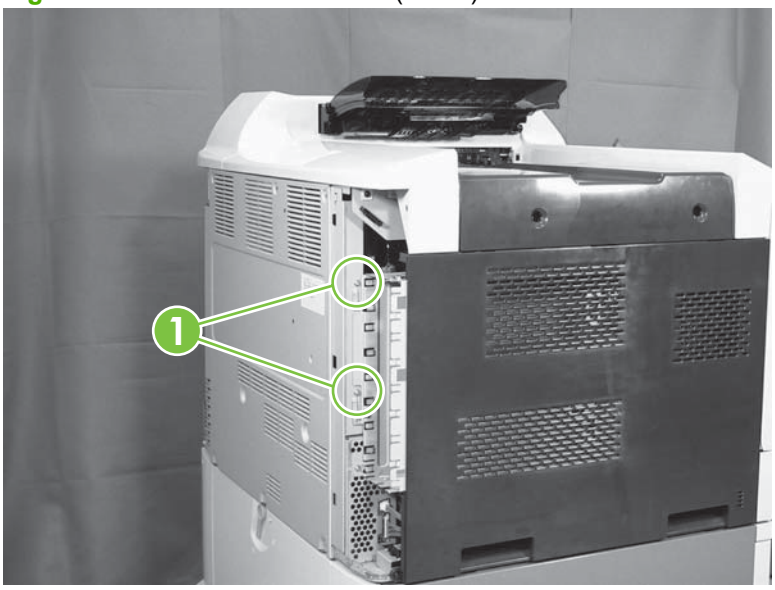


Rear cover

NOTE: To begin, see Removal sequence 4 on page 249.

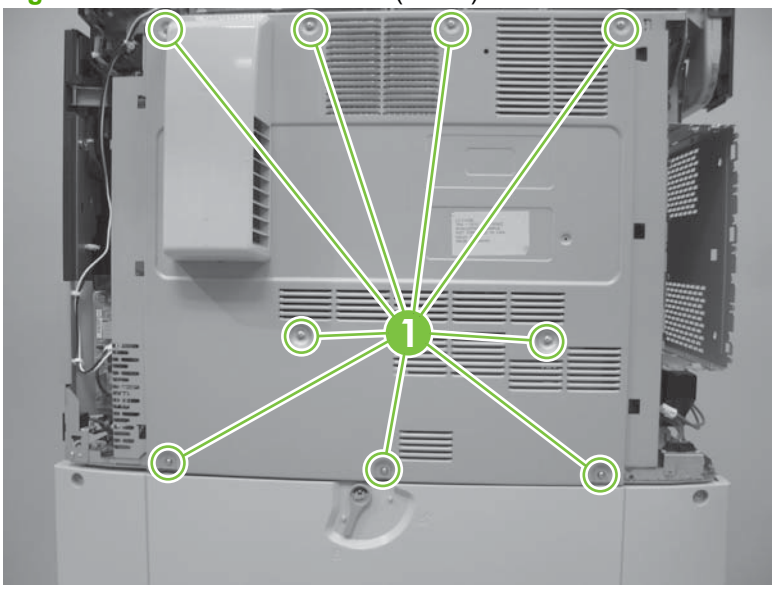
1. Remove two screws (callout 1).

Figure 6-62 Remove rear cover (1 of 2)



2. Remove nine screws (callout 1), and then remove the rear cover (callout 2).

Figure 6-63 Remove rear cover (2 of 2)



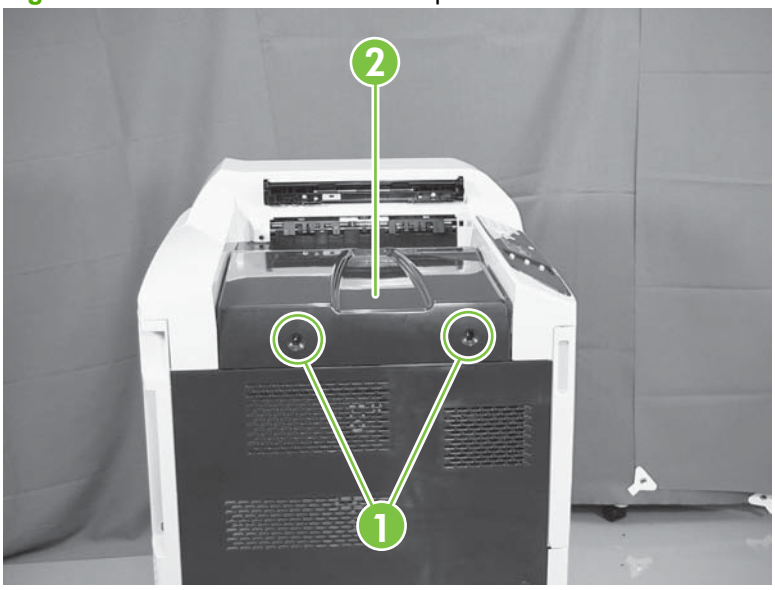
- For removal sequence 4A, see Removal sequence 4A on page 259.
- For removal sequence 4B, see Removal sequence 4B on page 260.
- For removal sequence 4C, see Removal sequence 4C on page 262.
- For removal sequence 4D, see Removal sequence 4D on page 264.

Face-down output bin

NOTE: To begin, see Removal sequence 4 on page 249.

☐ Remove two screws (callout 1), and then remove the face-down output bin (callout 2).

Figure 6-64 Remove face-down output bin

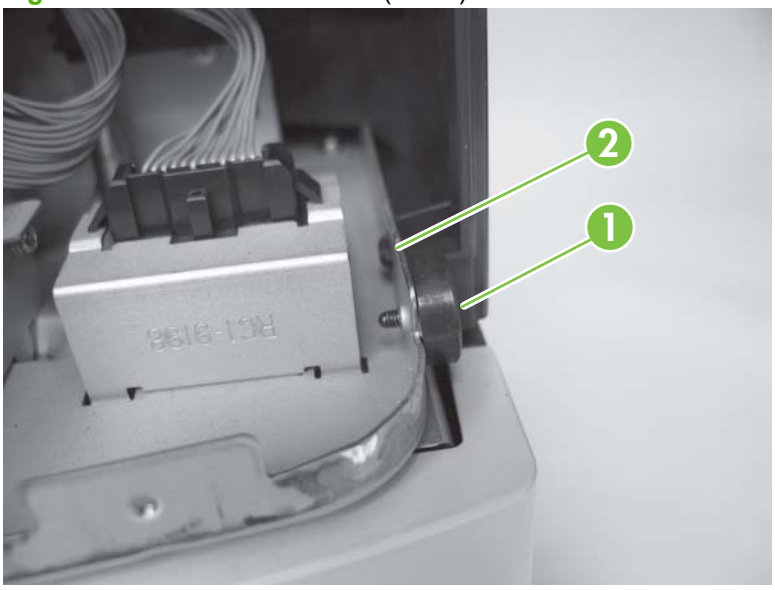


Left cover

NOTE: To begin, see Removal sequence 4 on page 249.

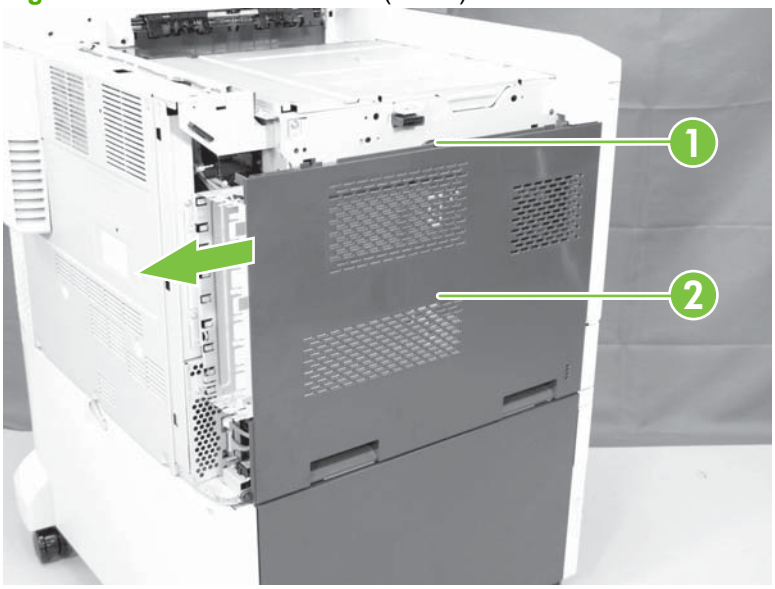
1. Remove one screw (callout 1), and then release one pin (callout 2).

Figure 6-65 Remove left cover (1 of 2)



2. Release one tab (callout 1), and then slide the left cover (callout 2) in the direction that the arrow indicates.

Figure 6-66 Remove left cover (2 of 2)

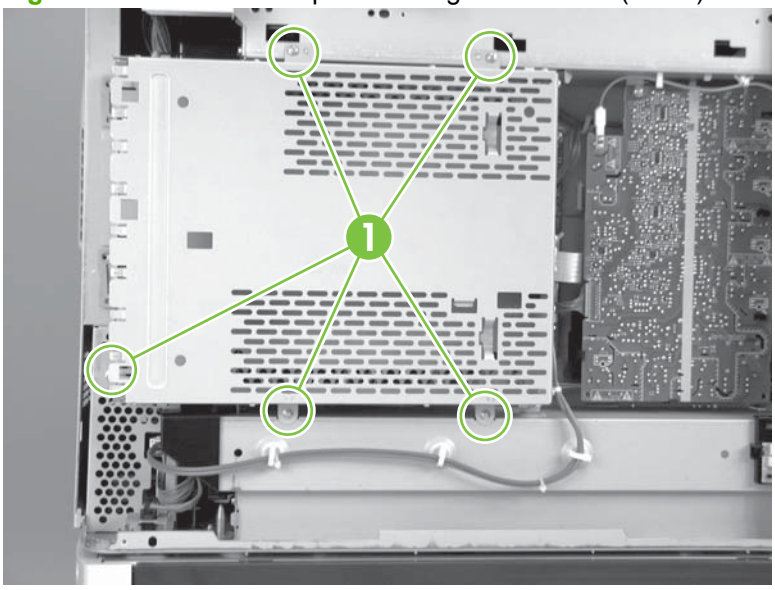


Print-cartridge driver PCA

NOTE: To begin, see Removal sequence 4 on page 249.

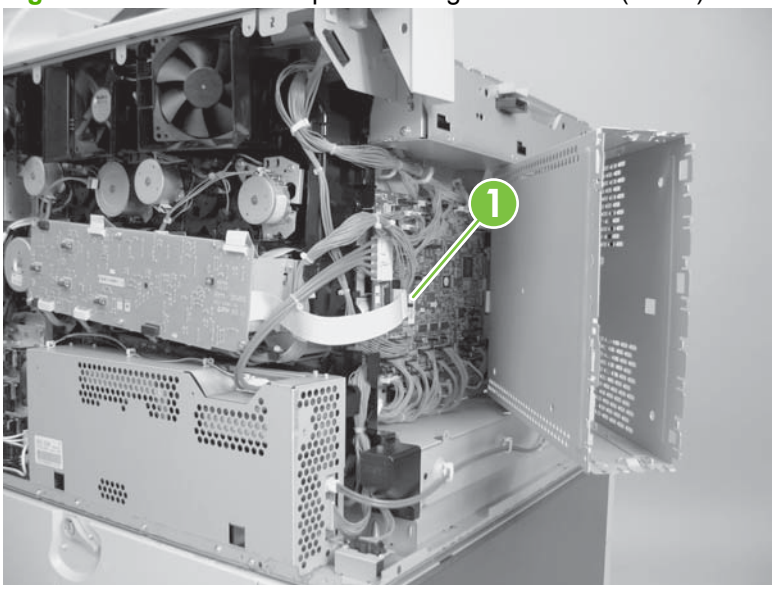
1. Remove five screws (callout 1) and swing the formatter case to the right.

Figure 6-67 Remove the print-cartridge driver PCA (1 of 3)



2. Disconnect one connector from the DC controller (callout 1).

Figure 6-68 Remove the print-cartridge driver PCA (2 of 3)



3. Disconnect seven connectors (callout 1), four screws (callout 2), and the print-cartridge driver PCA (callout 3).

Figure 6-69 Remove the print-cartridge driver PCA (3 of 3)

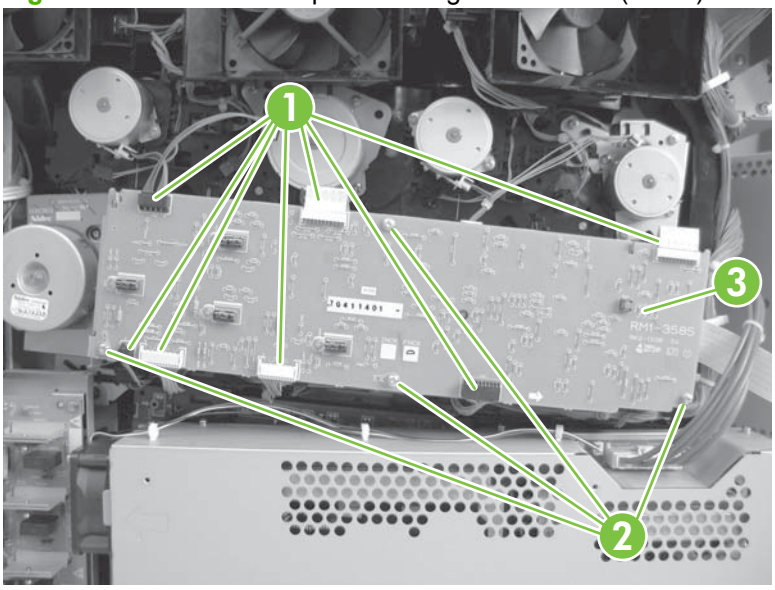
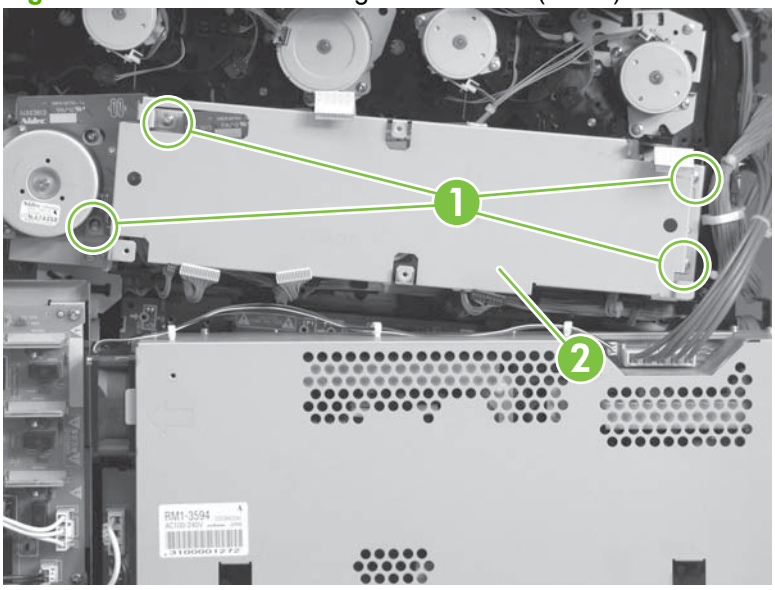


Image-drum motor

NOTE: To begin, see Removal sequence 4 on page 249.

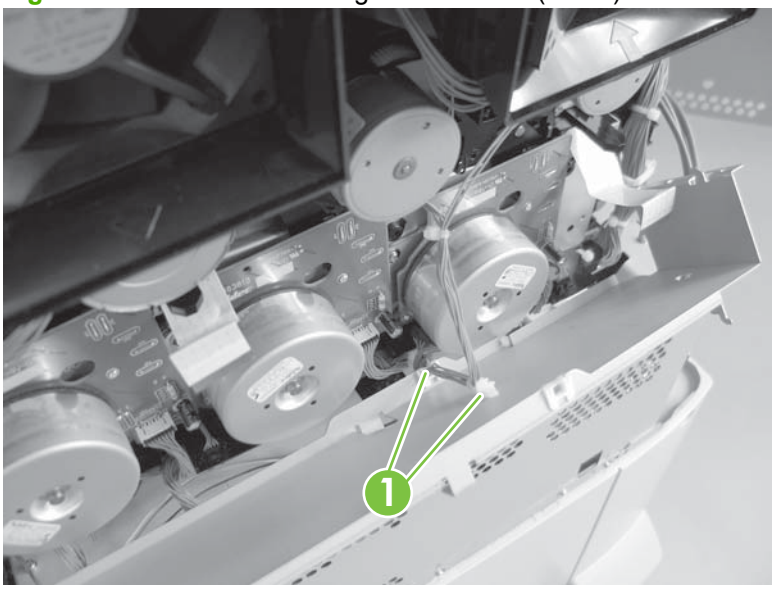
1. Remove four screws (callout 1), and then remove the cartridge driver PCA mount (callout 2).

Figure 6-70 Remove the image-drum motor (1 of 3)



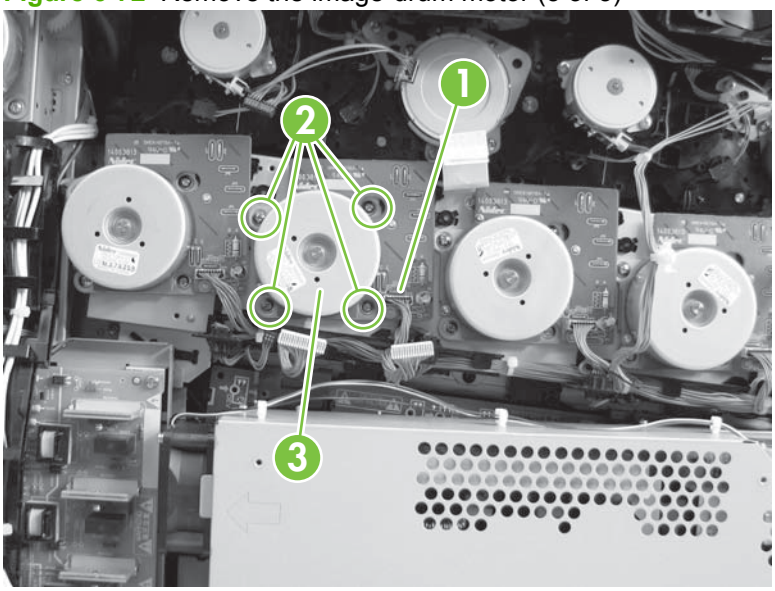
2. Disconnect two wire retainers (callout 1).

Figure 6-71 Remove the image-drum motor (2 of 3)



3. Remove one connector, four screws (callout 2), and the image-drum motor (callout 3).

Figure 6-72 Remove the image-drum motor (3 of 3)



NOTE: Repeat this procedure for all drum motors.

NOTE: Removal sequence 4 is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

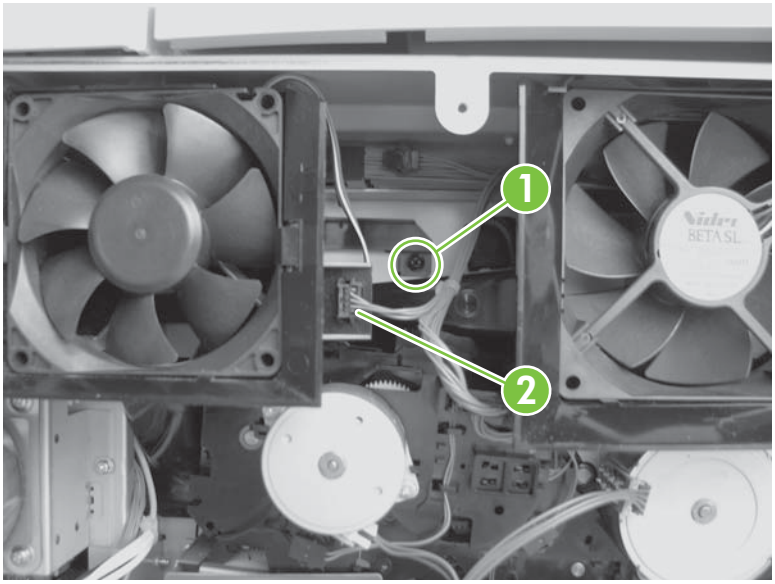
Removal sequence 4A

See Removal sequence 4 on page 249 for procedures to remove prerequisite parts.

Fuser fan

☐ Remove one screw (callout 1), disconnect one connector (callout 2), and then remove the fuser fan.

Figure 6-73 Remove the fuser fan



NOTE: Removal sequence 4A is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

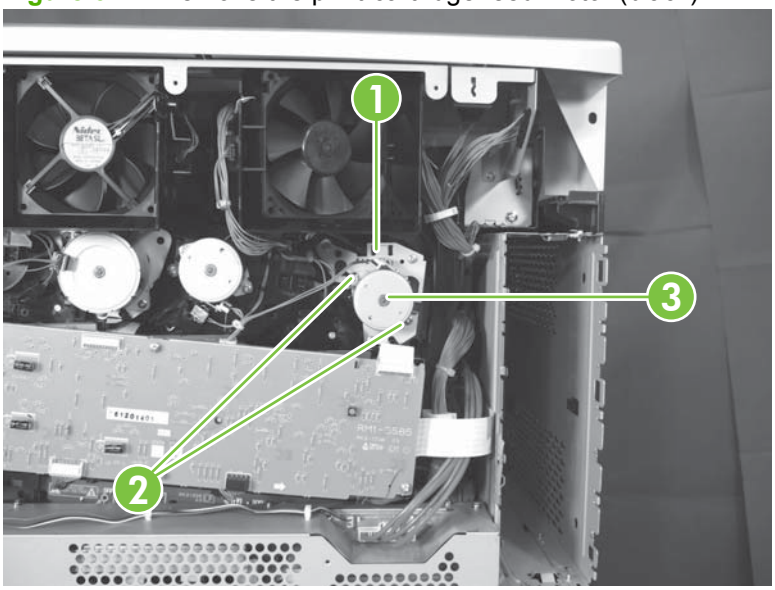
Removal sequence 4B

See Removal sequence 4 on page 249 for procedures to remove prerequisite parts.

Print-cartridge feed motor (black)

☐ Disconnect one connector (callout 1). Remove two screws (callout 2), and then remove the print-cartridge feed motor (black) (callout 3).

Figure 6-74 Remove the print-cartridge feed motor (black)

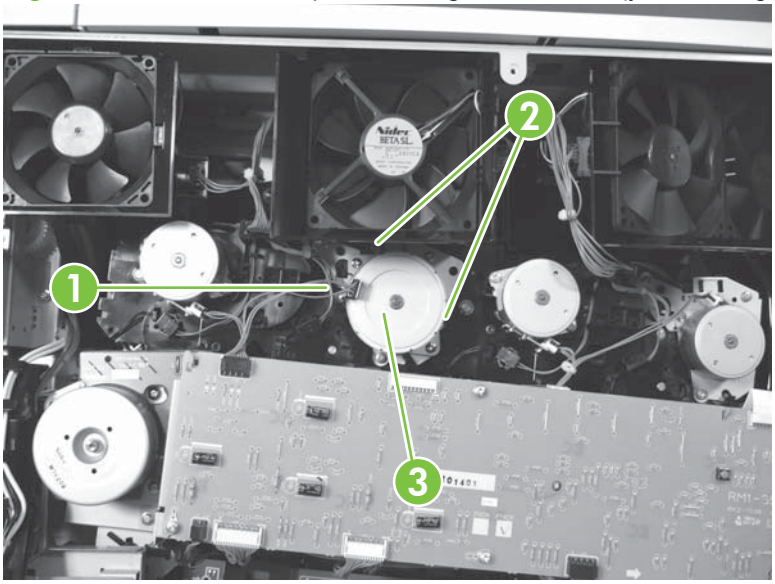


Print-cartridge feed motor (yellow, magenta, and cyan)

NOTE: To begin, see Removal sequence 4 on page 249.

☐ Disconnect one connector (callout 1). Remove two screws (callout 2), and then remove the print-cartridge feed motor (yellow, magenta, and cyan) (callout 3).

Figure 6-75 Remove the print-cartridge feed motor (yellow, magenta, and cyan)



NOTE: Removal sequence 4B is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

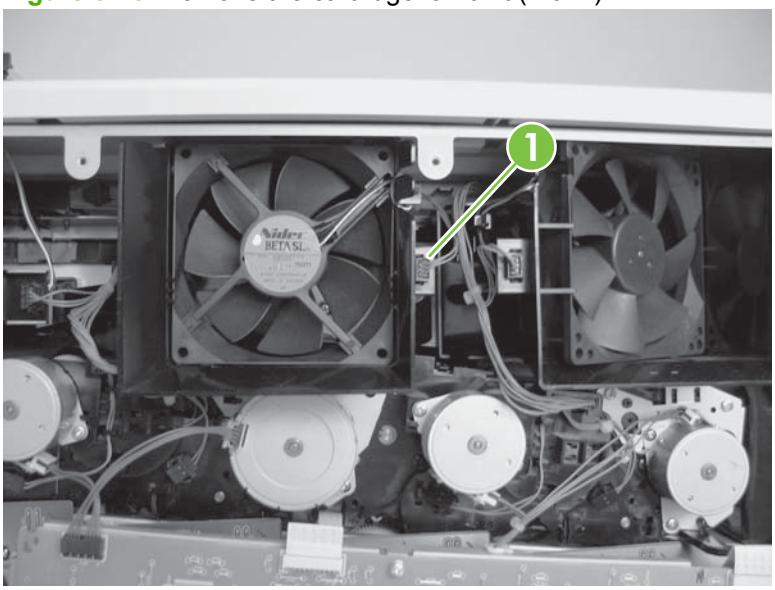
Removal sequence 4C

See Removal sequence 4 on page 249 for procedures to remove prerequisite parts.

Cartridge fan unit

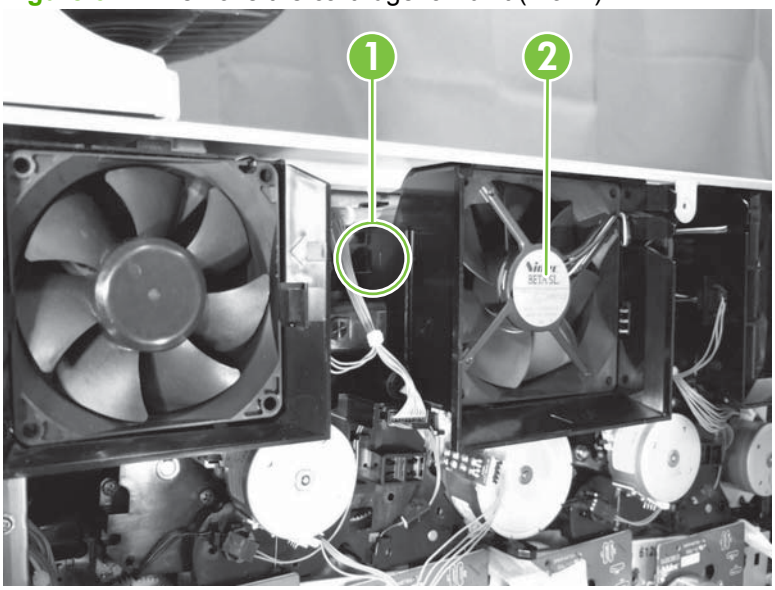
1. Disconnect one connector (callout 1).

Figure 6-76 Remove the cartridge fan unit (1 of 2)



2. Release one tab (callout 1), and then remove the cartridge fan unit (callout 2).

Figure 6-77 Remove the cartridge fan unit (2 of 2)

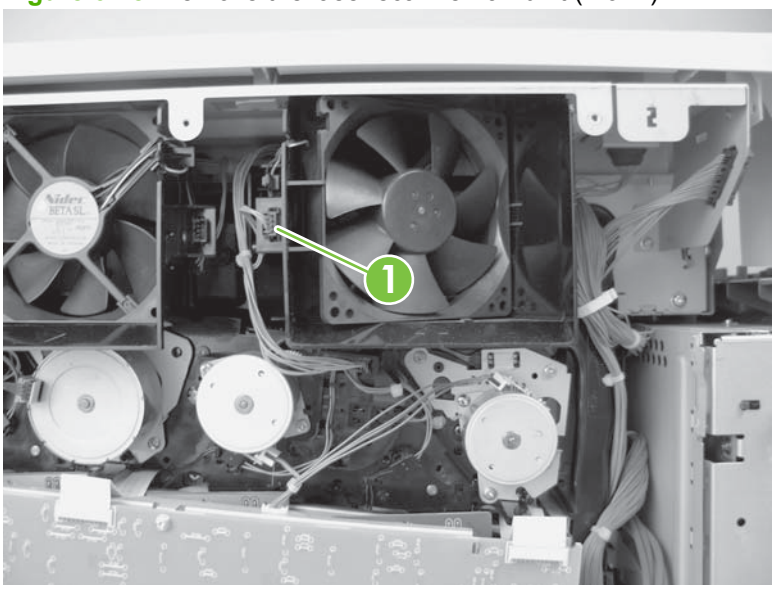


Laser/scanner fan unit

NOTE: To begin, see Removal sequence 4 on page 249.

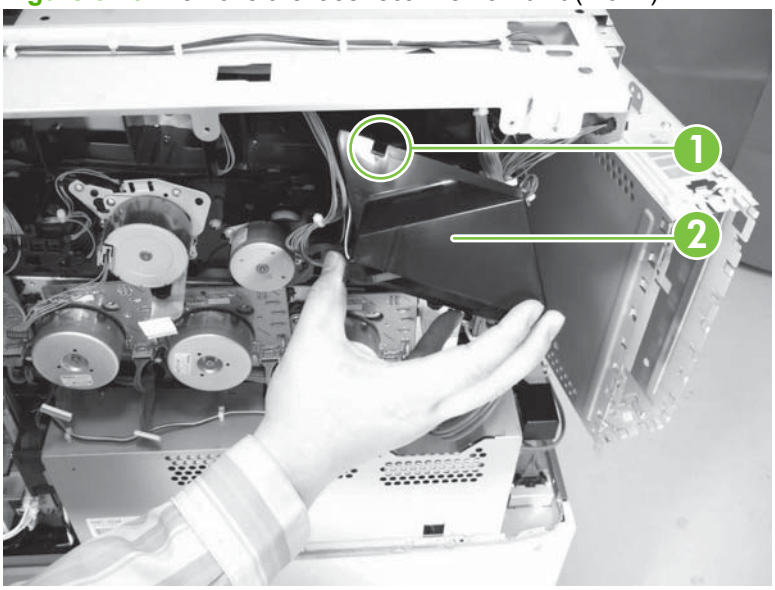
1. Disconnect one connector (callout 1).

Figure 6-78 Remove the laser/scanner fan unit (1 of 2)



2. Release one tab (callout 1), and then remove the laser/scanner fan unit (callout 2).

Figure 6-79 Remove the laser/scanner fan unit (2 of 2)



NOTE: Removal sequence 4C is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

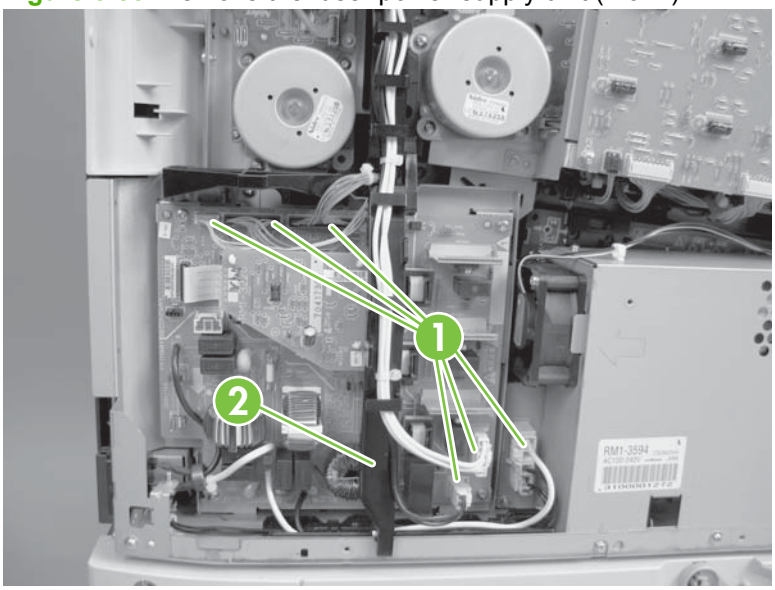
Removal sequence 4D

See Removal sequence 4 on page 249 for procedures to remove prerequisite parts.

Fuser power-supply unit

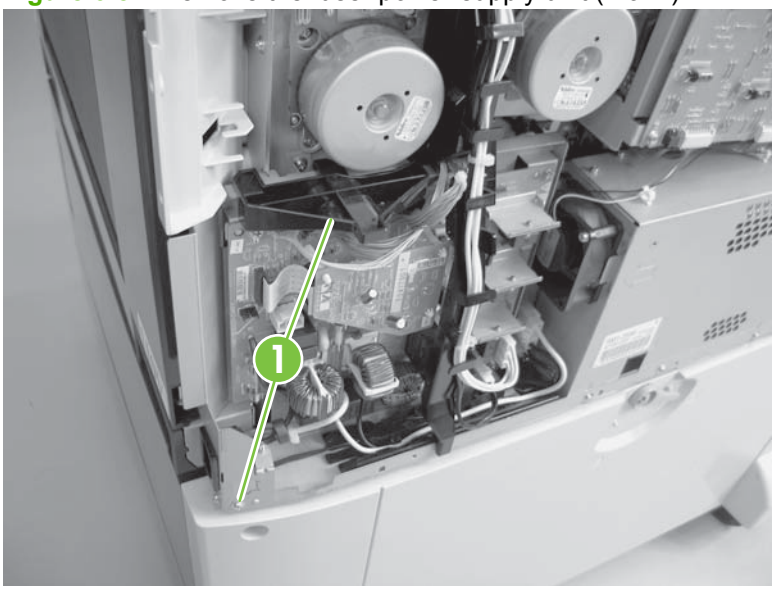
1. Disconnect six connectors (callout 1), and then remove one cable guide (callout 2).

Figure 6-80 Remove the fuser power-supply unit (1 of 2)



2. Remove two screws (callout 1), and then remove the fuser power-supply unit.

Figure 6-81 Remove the fuser power-supply unit (2 of 2)

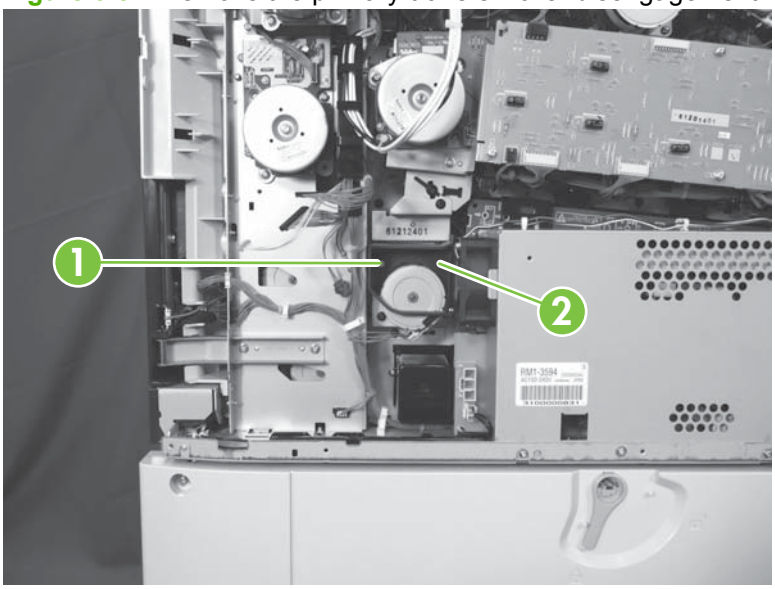


Primary-transfer-roller disengagement motor

NOTE: To begin, see Removal sequence 4 on page 249.

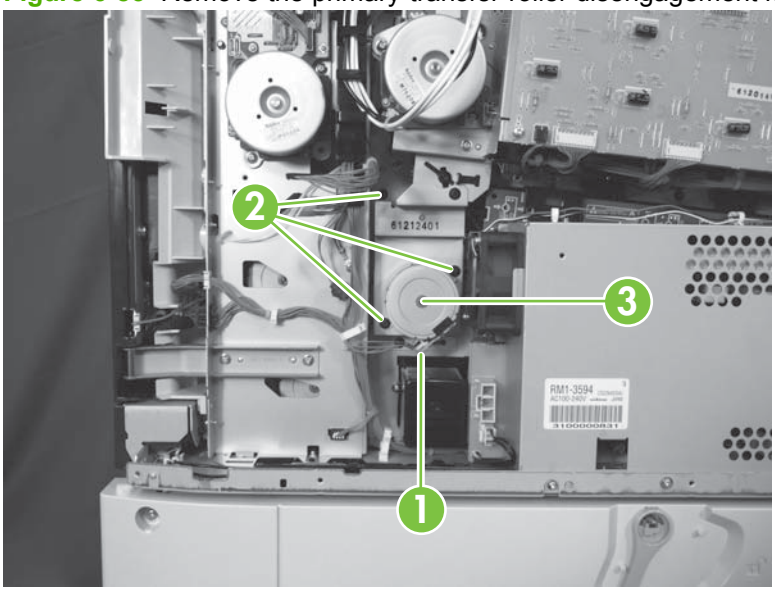
1. Remove one screw (callout 1), and then remove the motor cover (callout 2).

Figure 6-82 Remove the primary-transfer-roller disengagement motor (1 of 2)



2. Disconnect one connector (callout 1). Remove three screws (callout 2), and then remove the primary-transfer roller disengagement motor (callout 3).

Figure 6-83 Remove the primary-transfer-roller disengagement motor (2 of 2)



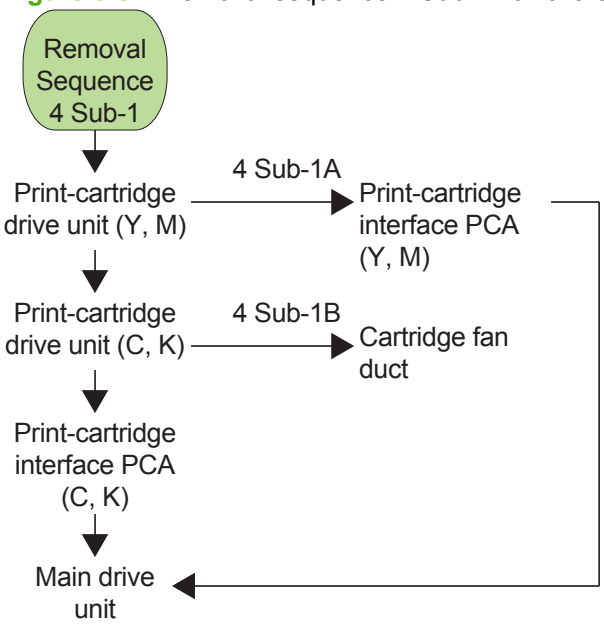
NOTE: Removal sequence 4D is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

Removal sequence 4 Sub-1

Before starting removal sequence 4 Sub-1, you must complete removal sequence 4. See Removal sequence 4 on page 249.

Use the flowchart below to determine the sequence of part removal and reinstallation. For information about using removal sequences, see Parts removal sequences on page 189.

Figure 6-84 Removal sequence 4 Sub-1 flowchart

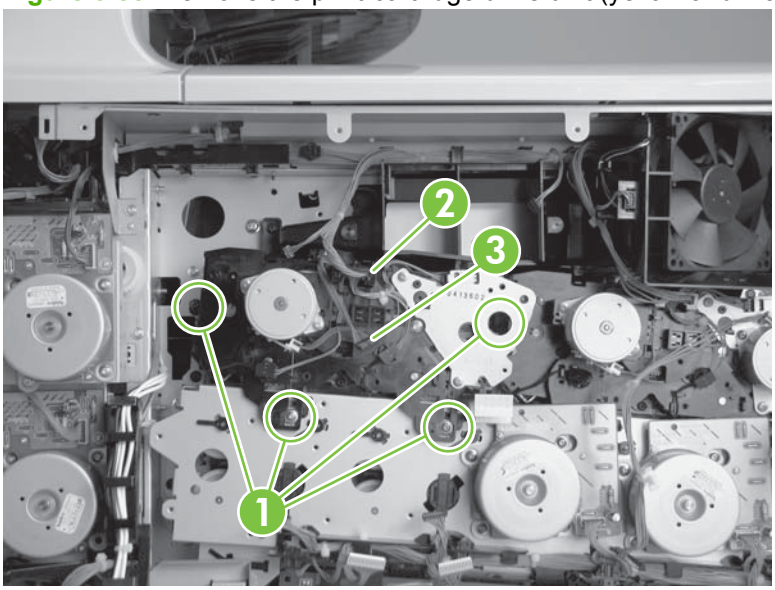


Print-cartridge drive unit (yellow and magenta)

NOTE: Do not remove the print-cartridge drive unit (yellow and magenta) without having the alignment pins required for reinstallation.

☐ Remove four screws (callout 1), disconnect one connector (callout 2), and then remove the print-cartridge drive unit (yellow and magenta) (callout 3).

Figure 6-85 Remove the print-cartridge drive unit (yellow and magenta)



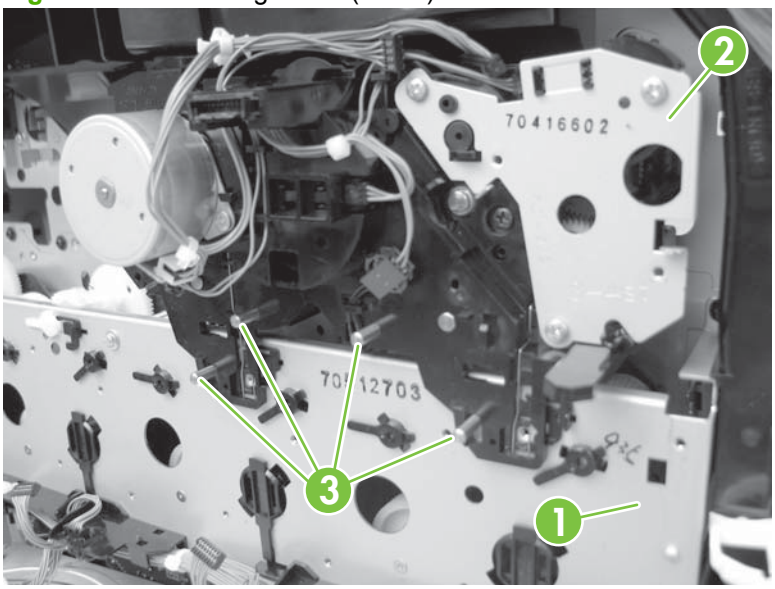
- For removal sequence 4 Sub-1A, see Removal sequence 4 Sub-1A on page 276.

NOTE: Follow the gear alignment procedures when reassembling the print-cartridge drive units and main drive unit.

Gear alignment

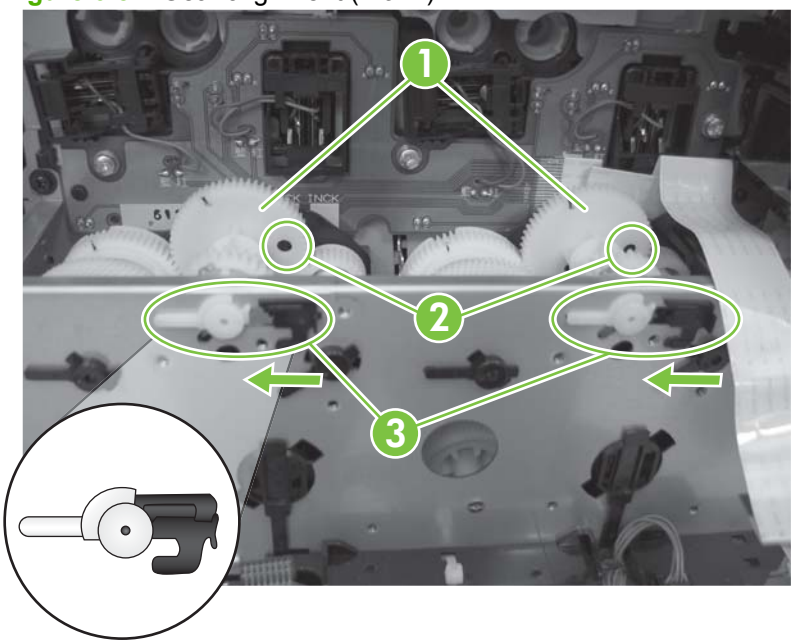
1. This procedure correctly aligns the gears of the main drive unit (callout 1) and the print-cartridge drive unit(s) (callout 2). Use the four pins (callout 3) supplied with the replacement units to align the gears.

Figure 6-86 Gear alignment (1 of 7)



2. Reinstall the main drive unit. Push the black locks (callout 3) to the left while rotating the top gears (callout 1) on the main drive unit until they lock into position. The large holes (callout 2) should point to the right (3 o'clock position).

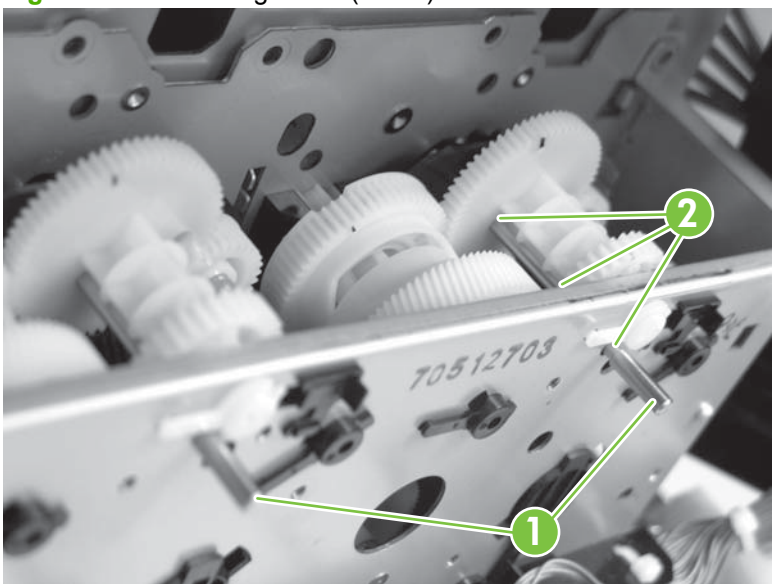
Figure 6-87 Gear alignment (2 of 7)



3. Insert the long alignment pins (callout 1) through the gears (callout 2) in the main drive unit.

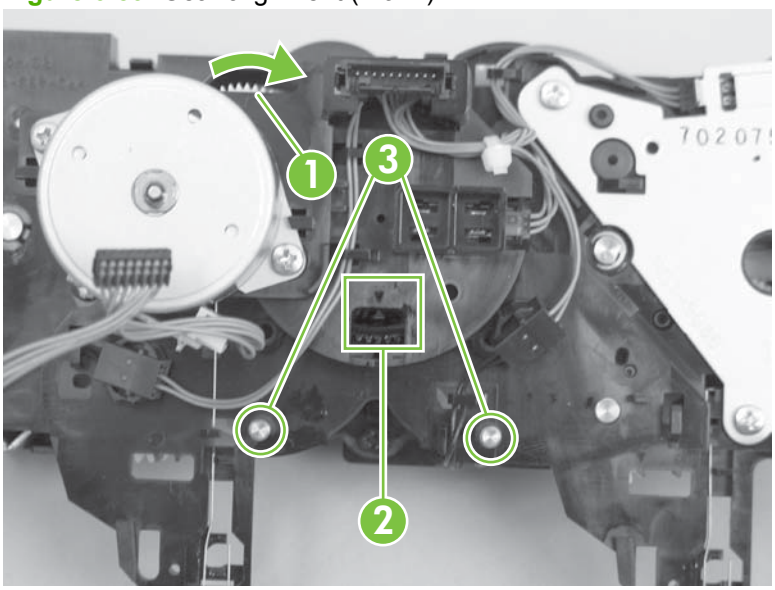
NOTE: This step is not required. Gears can be held in position with the locks.

Figure 6-88 Gear alignment (3 of 7)



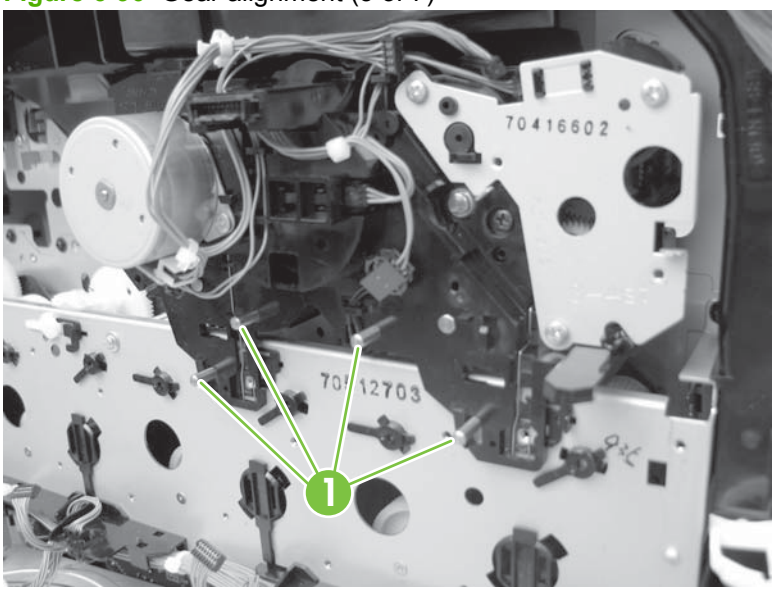
4. On the print-cartridge drive unit, rotate the top gear (callout 1) clockwise until the arrows align (callout 2). Insert the two short pins (callout 3).

Figure 6-89 Gear alignment (4 of 7)



5. Install the print-cartridge drive unit over the long pins in the main drive unit. Remove all pins (callout 1), disengage locks, and reinstalled screws.

Figure 6-90 Gear alignment (5 of 7)



△ **CAUTION:** Be sure to remove all pins (callout 1). Failure to do so can damage the product.

6. Ensure that the print-cartridge drive unit is installed correctly. The unit should be flush against the product (callout 1). Incorrect installation (callout 2) will cause the product to function incorrectly.

Figure 6-91 Correct position of print-cartridge drive unit (6 of 7)

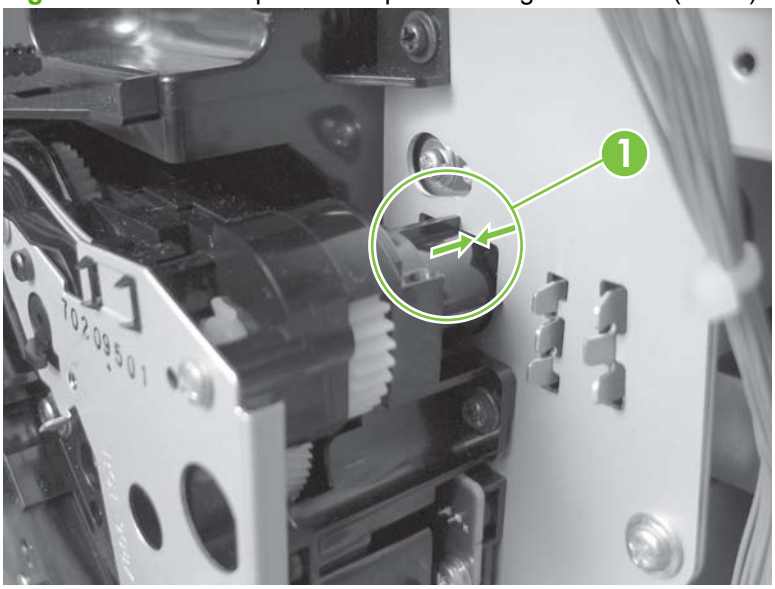
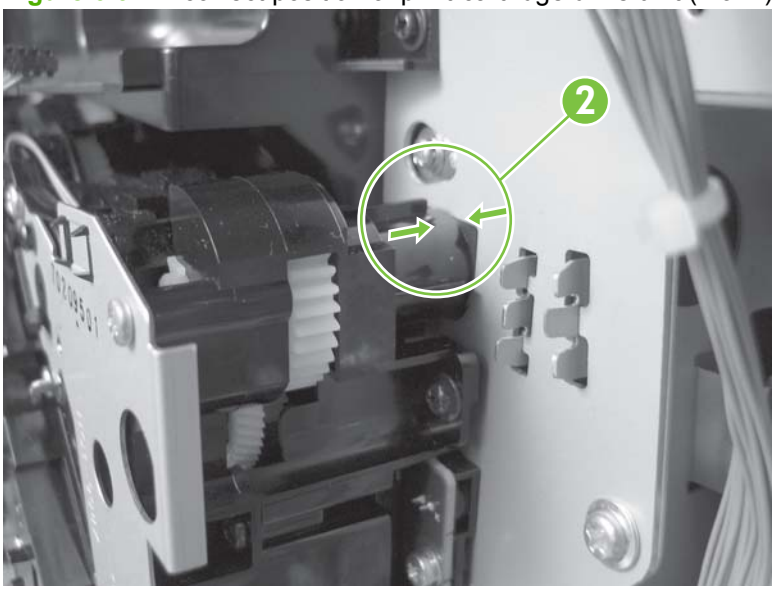


Figure 6-92 Incorrect position of print-cartridge drive unit (7 of 7)



Print-cartridge drive unit (cyan and black)

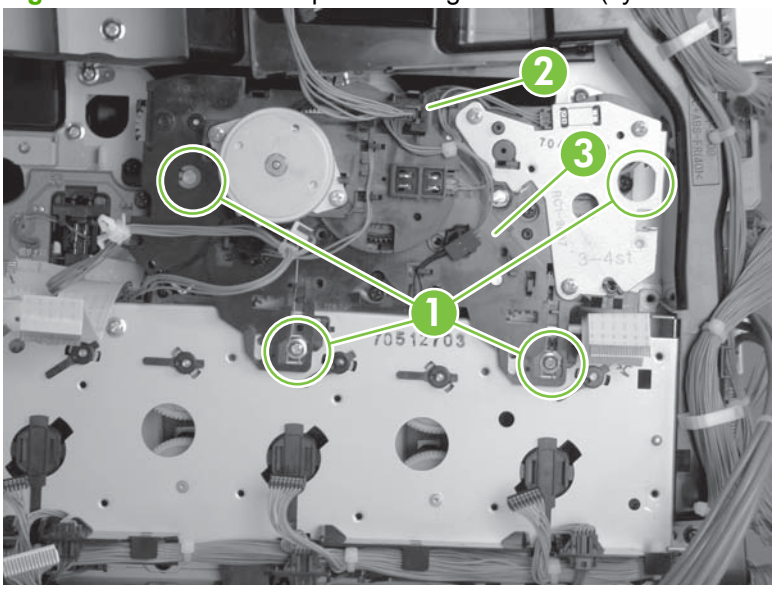
NOTE: To begin, see Removal sequence 4 Sub-1 on page 266.

NOTE: Do not remove the print-cartridge drive unit (cyan and black) without having the alignment pins required for reinstallation.

☐ Remove four screws (callout 1), disconnect one connector (callout 2), and then remove the print-cartridge drive unit (cyan and black) (callout 3).

NOTE: Follow the gear alignment procedures for the drive unit when reassembling. See Gear alignment on page 268.

Figure 6-93 Remove the print-cartridge drive unit (cyan and black)



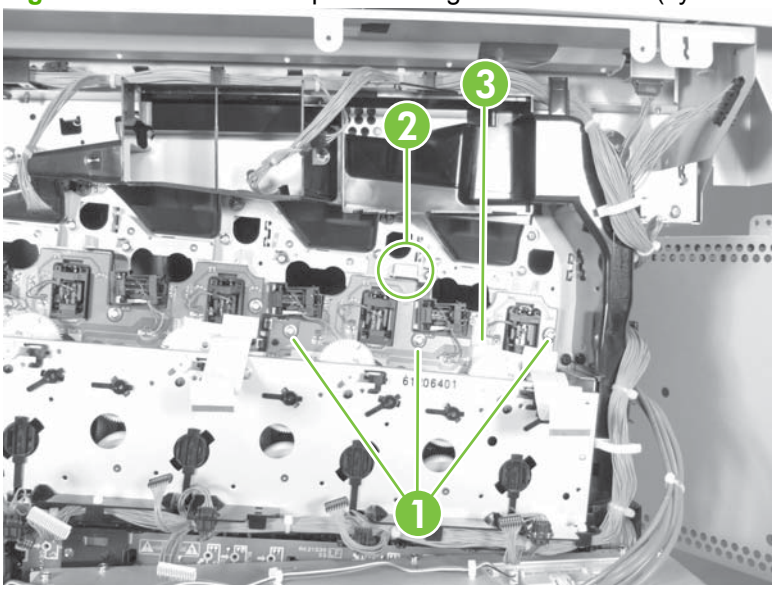
For sequence 4 Sub-1B, see Removal sequence 4 Sub-1B on page 277.

Print-cartridge interface PCA (cyan and black)

NOTE: To begin, see Removal sequence 4 Sub-1 on page 266.

☐ Remove three screws (callout 1) and release one tab (callout 2), and then remove the print-cartridge interface PCA (cyan and black) (callout 3).

Figure 6-94 Remove the print-cartridge interface PCA (cyan and black)



NOTE: When reassembling, some assemblies in this sequence require gear alignment. See Gear alignment on page 268.

Main drive unit

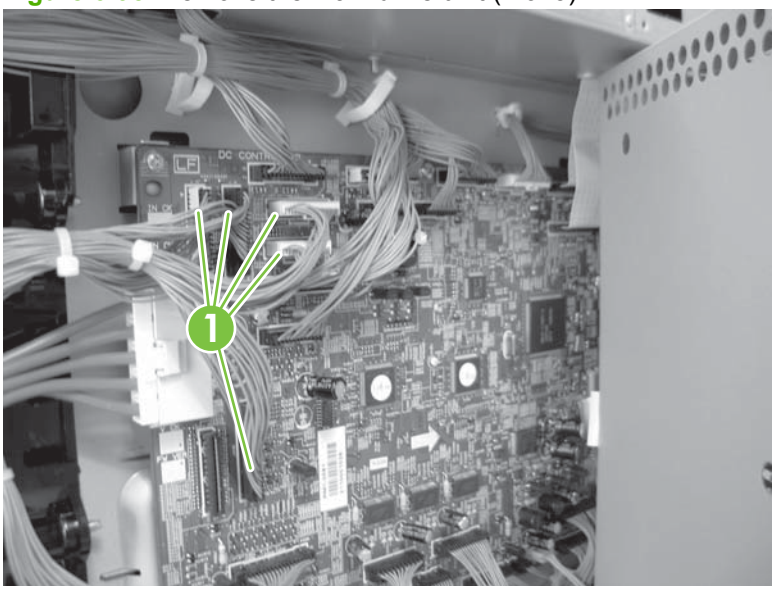
NOTE: To begin, see Removal sequence 4 Sub-1 on page 266.

NOTE: Do not remove the main drive unit without having the alignment pins required for reinstallation. See Gear alignment on page 268.

NOTE: Remove all image drums before removing the main drive unit. See. Change image drums on page 88

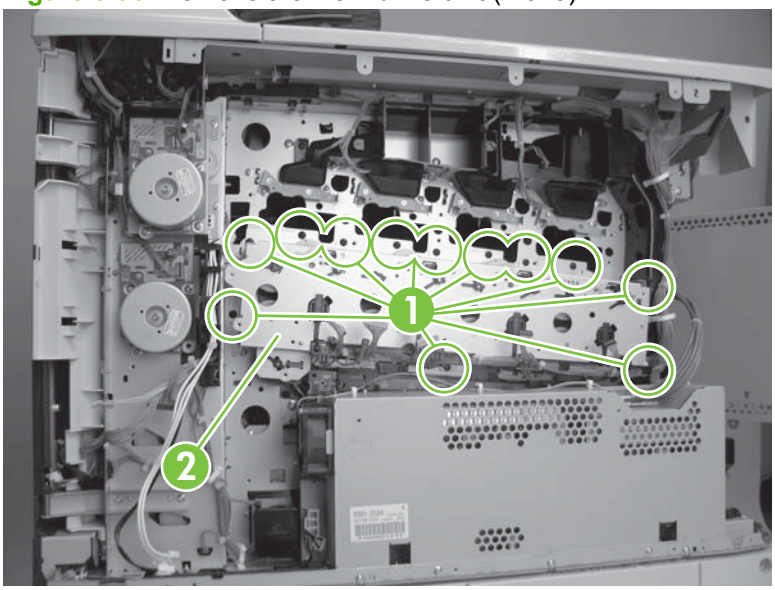
1. Disconnect five connectors (J113, J138, J139, J141, and J142) (callout 1) on the DC Controller PCA, behind the formatter case.

Figure 6-95 Remove the main drive unit (1 of 3)



2. Remove twelve screws (callout 1), and then the main drive unit (callout 2).

Figure 6-96 Remove the main drive unit (2 of 3)



CAUTION: Do not remove screws that hold the main drive unit together.

NOTE: Follow the gear adjustment procedures when reassembling the main drive unit. See Gear alignment on page 268.

NOTE: Removal sequence 4 Sub-1 is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

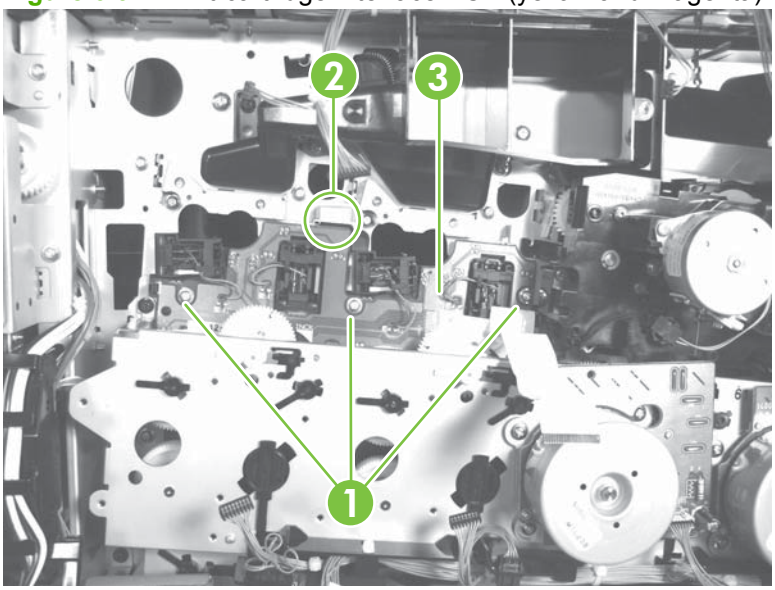
Removal sequence 4 Sub-1A

See Removal sequence 4 Sub-1 on page 266 for procedures to remove prerequisite parts.

Print-cartridge interface PCA (yellow and magenta)

☐ Remove three screws (callout 1) and release one tab (callout 2), and then remove the print-cartridge interface PCA (yellow and magenta) (callout 3).

Figure 6-97 Print-cartridge interface PCA (yellow and magenta)



NOTE: When reassembling, some assemblies in this sequence require gear alignment. See Gear alignment on page 268.

NOTE: Removal sequence 4 Sub-1A is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

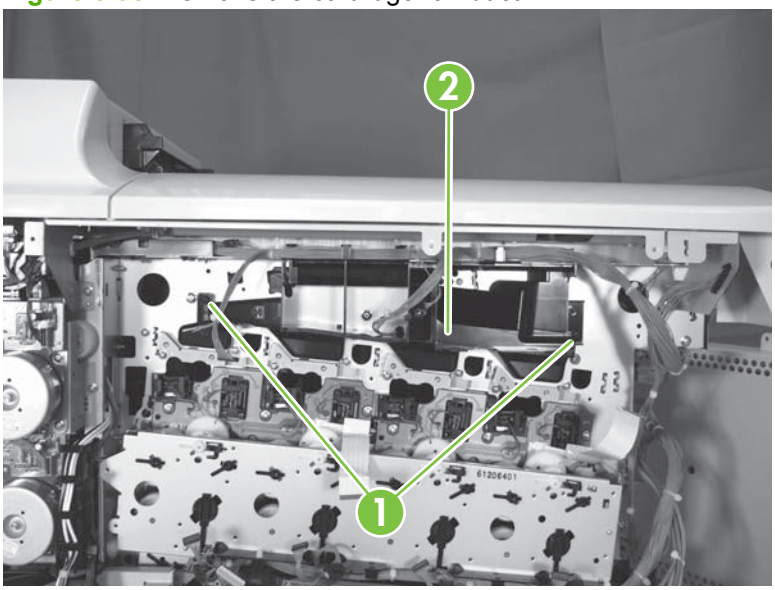
Removal sequence 4 Sub-1B

See Removal sequence 4 Sub-1 on page 266 for procedures to remove prerequisite parts.

Cartridge-fan duct

☐ Remove two screws (callout 1), and then remove the cartridge-fan duct (callout 2).

Figure 6-98 Remove the cartridge-fan duct

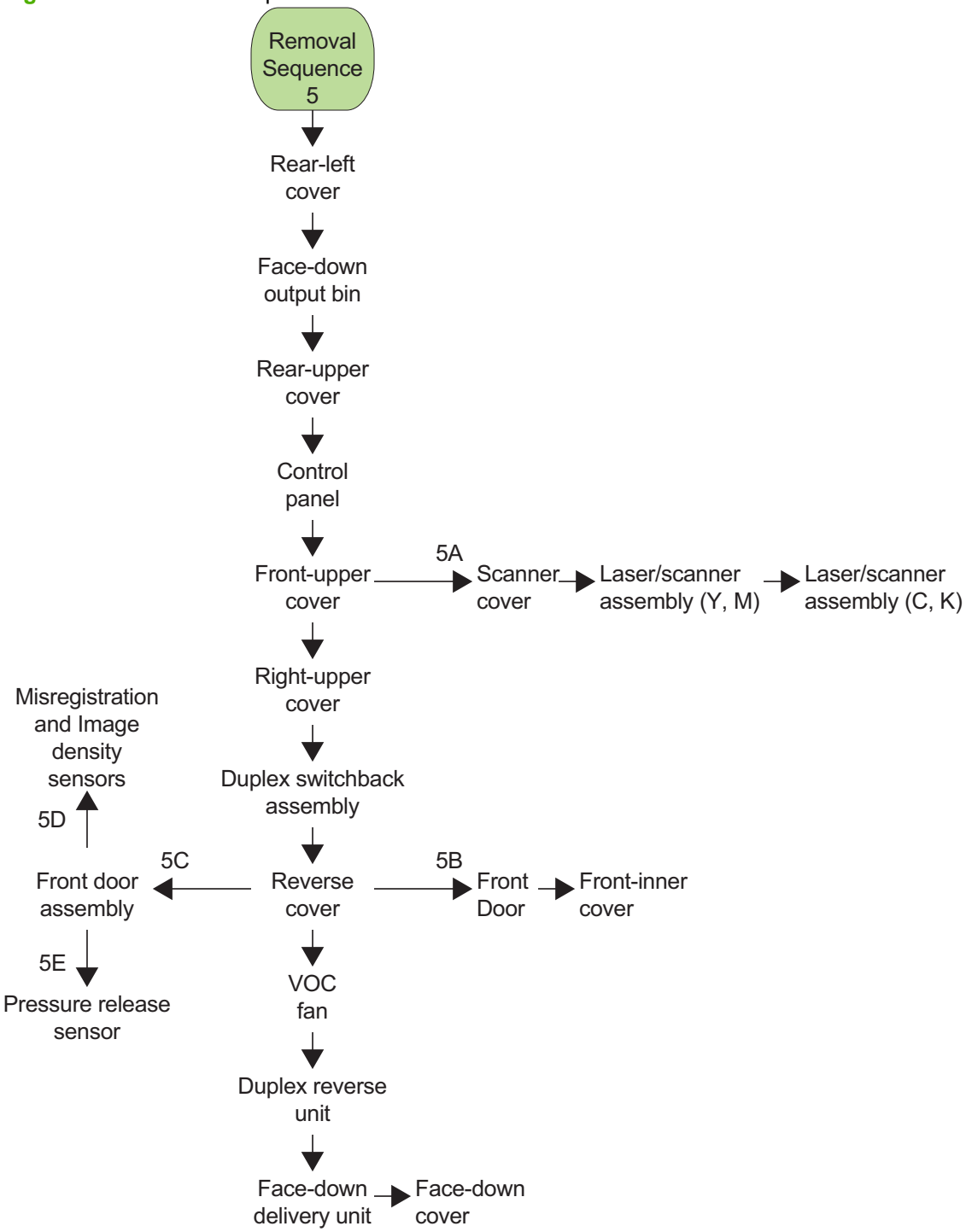


NOTE: Removal sequence 4 Sub-1B is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

Removal sequence 5

Use the flowchart below to determine the sequence of part removal and reinstallation. For information about using removal sequences, see Parts removal sequences on page 189.

Figure 6-99 Removal sequence 5 flowchart

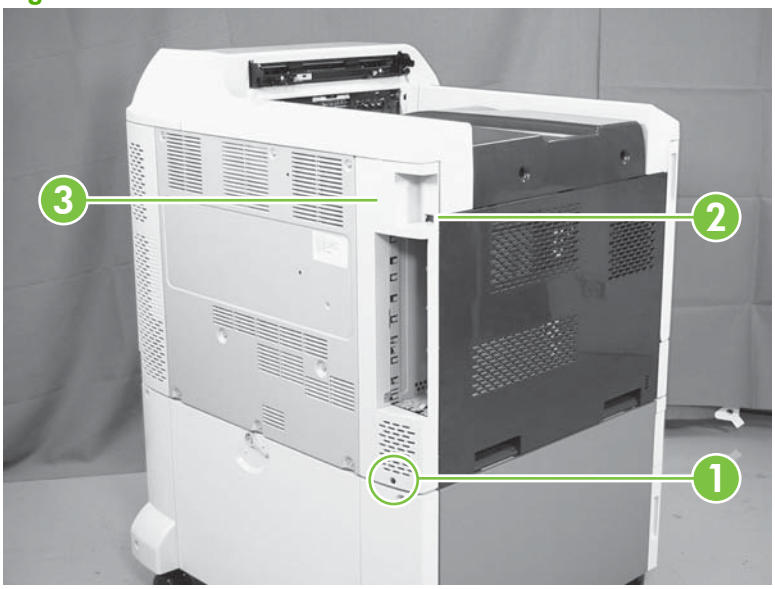


Rear-left cover

NOTE: To begin, see Removal sequence 5 on page 278.

☐ Remove one screw (callout 1), release one tab (callout 2) and then remove the rear-left cover (callout 3).

Figure 6-100 Remove rear-left cover

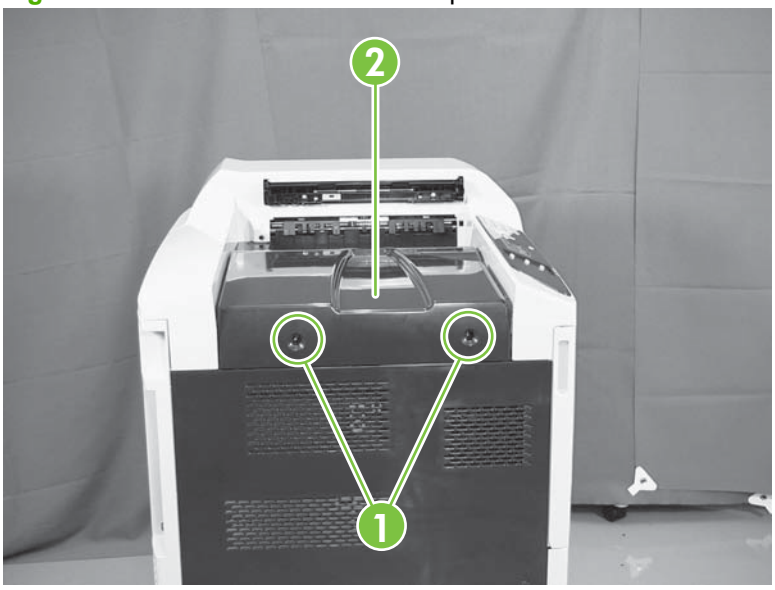


Face-down output bin

NOTE: To begin, see Removal sequence 5 on page 278.

☐ Remove two screws (callout 1), and then the face-down output bin (callout 2).

Figure 6-101 Remove face-down output bin

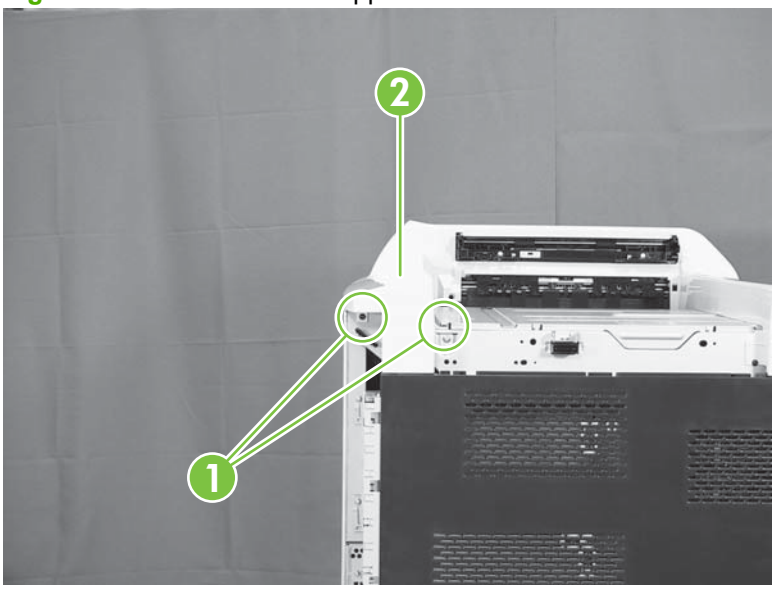


Rear-upper cover

NOTE: To begin, see Removal sequence 5 on page 278.

☐ Remove two screws (callout 1), and then remove the rear-upper cover (callout 2).

Figure 6-102 Remove rear-upper cover

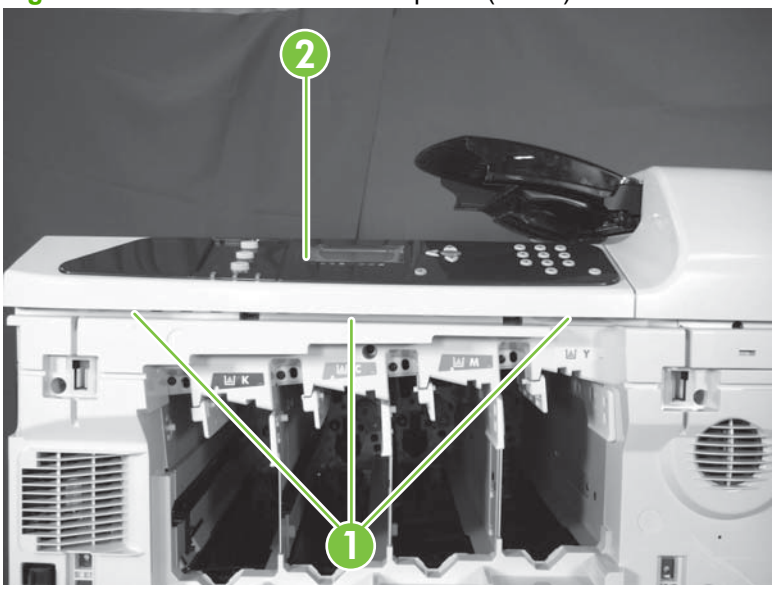


Control panel

NOTE: To begin, see Removal sequence 5 on page 278.

1. Open the front door.
2. Remove the control panel overlay and save it for reinstallation with the replacement control panel.
3. Release three tabs (callout 1), and then push the control panel (callout 2) up at a 45 degree angle to remove.

Figure 6-103 Remove the control panel (1 of 2)

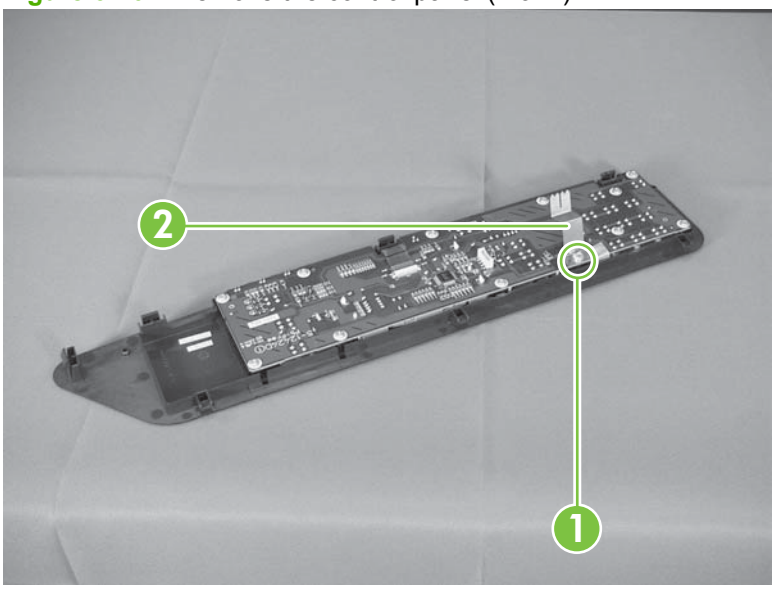


4. Disconnect one connector inside the control panel.

5. Remove one screw (callout 1), and then the grounding spring (callout 2).

NOTE: Be careful not to damage the grounding spring. The service parts for the control panel do not include the grounding spring and the screw. Install the grounding spring when replacing the control panel.

Figure 6-104 Remove the control panel (2 of 2)

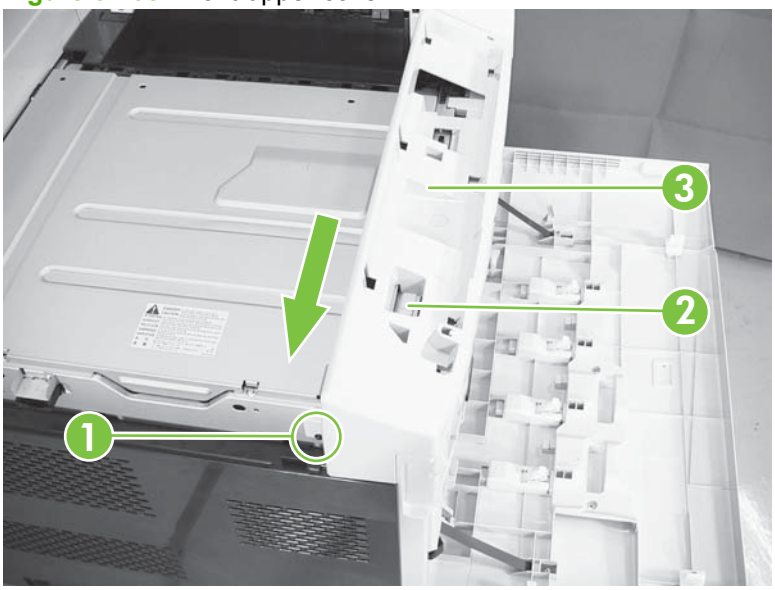


Front-upper cover

NOTE: To begin, see Removal sequence 5 on page 278.

1. Open the front door.
2. Remove one screw (callout 1) and lift one tab (callout 2). Slide the front-upper cover (callout 3) in the direction indicated.

Figure 6-105 Front-upper cover



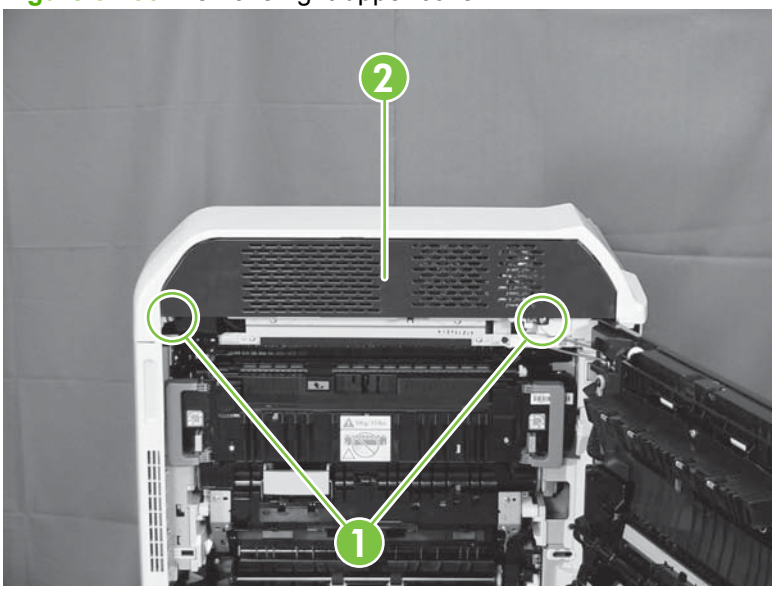
3. This procedure is complete. To continue, see the following:
   - For sequence 5A, see Removal sequence 5A on page 294.

Right-upper cover

NOTE: To begin, see Removal sequence 5 on page 278.

1. Open the right door.
2. Remove two screws (callout 1), and then remove the right-upper cover (callout 2).

Figure 6-106 Remove right-upper cover

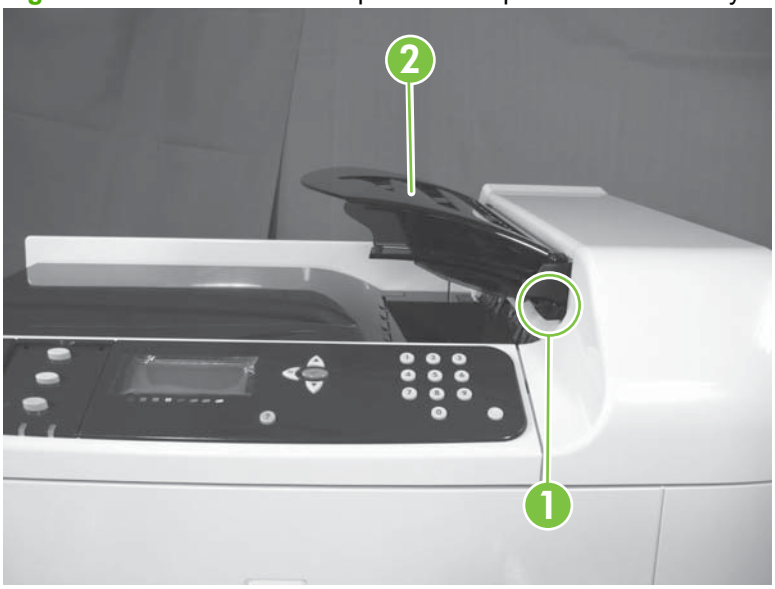


Duplex switchback tray

NOTE: To begin, see Removal sequence 5 on page 278.

1. Press the release button (callout 1).

Figure 6-107 Remove and replace the duplex switchback tray



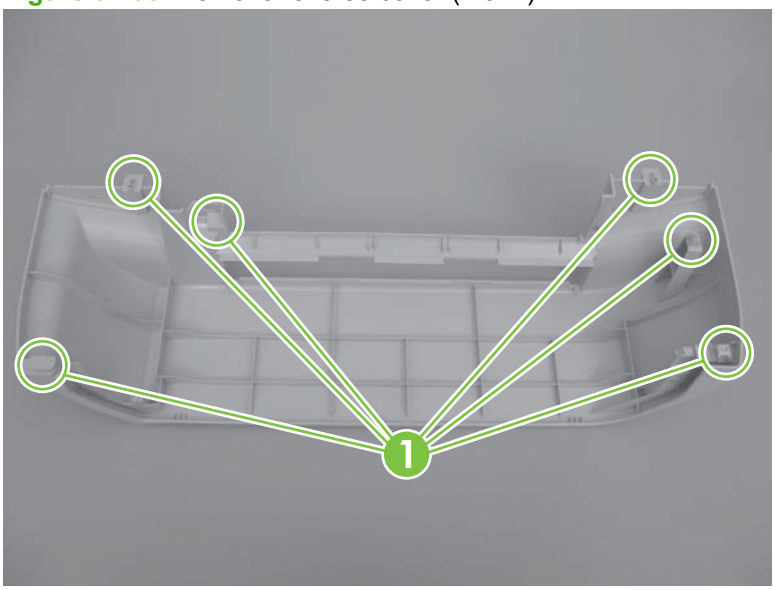
2. Remove the duplex switchback tray (callout 2).

Reverse cover

NOTE: To begin, see Removal sequence 5 on page 278.

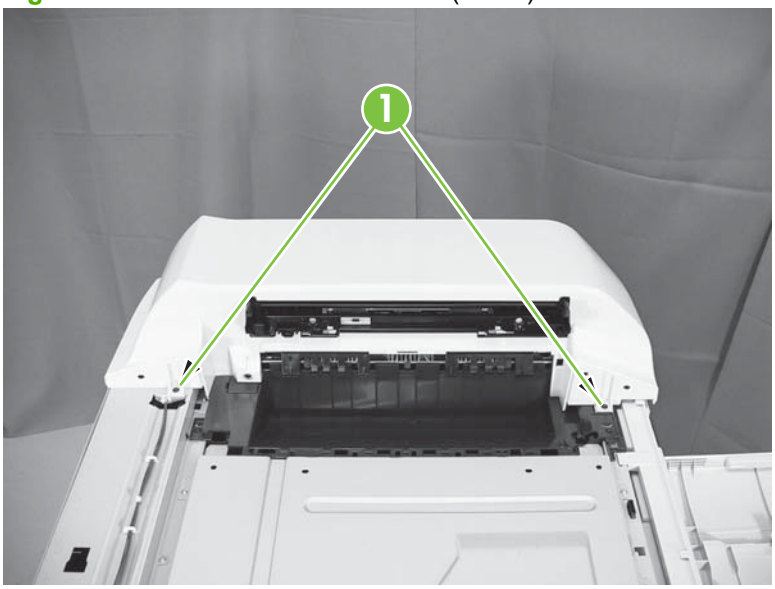
The reverse cover is difficult to remove and replace. The cover has six tabs (callout 1) that must clear the product when being removed. Not all the tabs are visible upon first inspection, so the first time removing the cover may be difficult.

Figure 6-108 Remove reverse cover (1 of 4)



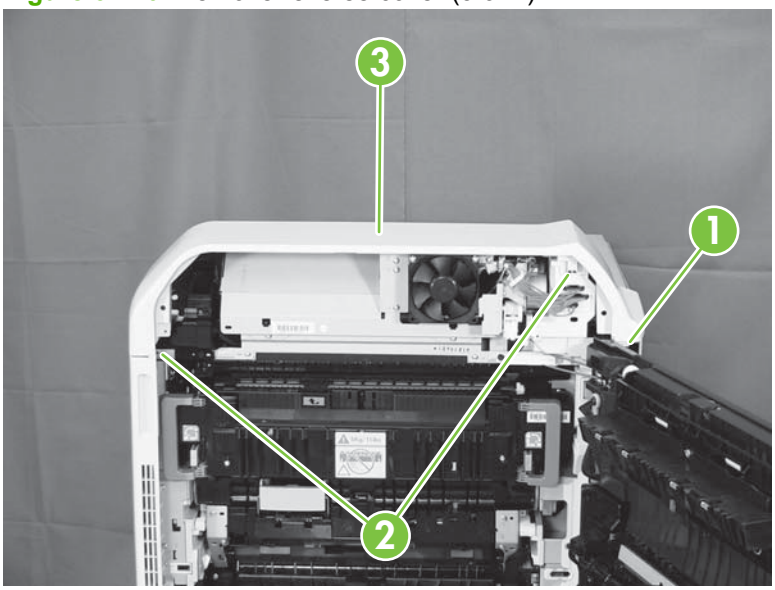
1. Remove two screws (callout 1) and then lift to clear tabs.

Figure 6-109 Remove reverse cover (2 of 4)



2. Push in on the lower-right corner (callout 1) and then pull out on the lower-right and upper-right tabs (callout 2). Move to the other side of the product, and then carefully move one side of the cover at a time to remove. If you feel resistance, make sure you are clearing the black plastic part on the lower-right side. Lift the cover up and over this part, and then continue to move each side of the cover to remove.

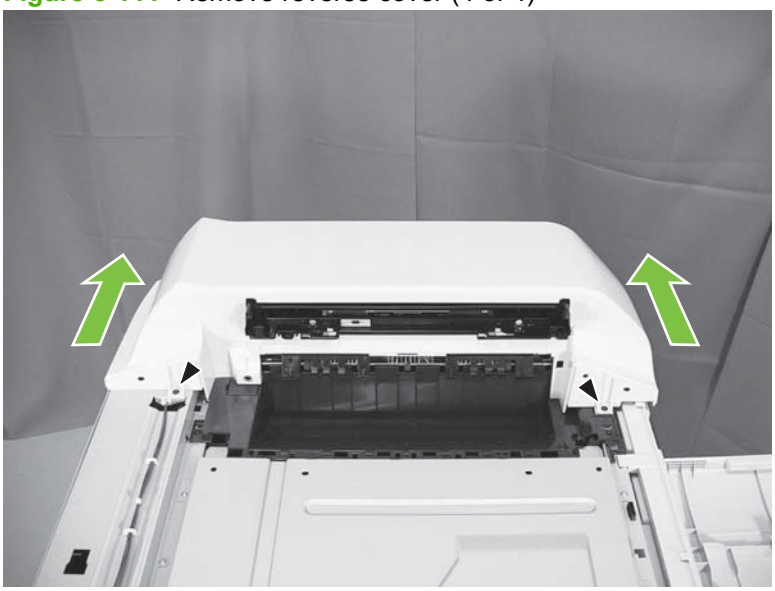
Figure 6-110 Remove reverse cover (3 of 4)



NOTE: When reassembling, slowly slide the reverse cover onto the product until the tabs are in place.

3. Slide the reverse cover slowly in the direction indicated ensuring that it clears all underlying parts.

Figure 6-111 Remove reverse cover (4 of 4)



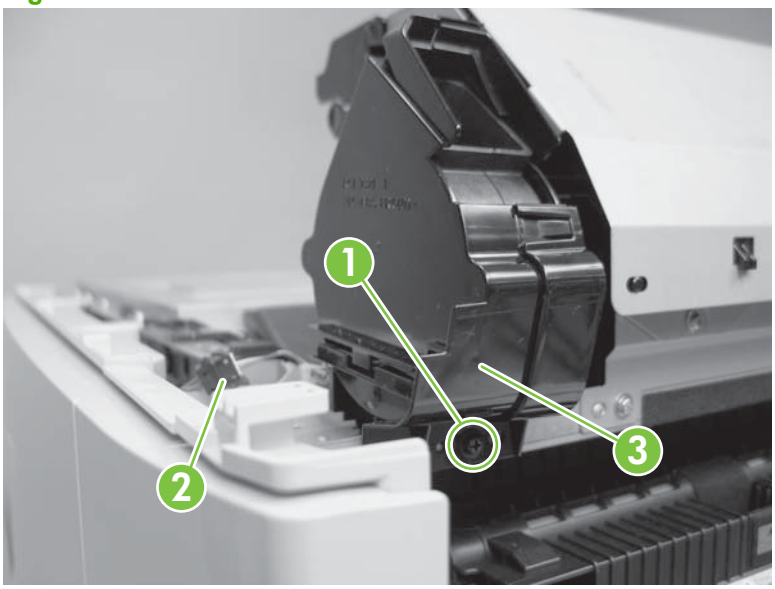
- For sequence 5B, see Removal sequence 5B on page 299.
- For sequence 5C, see Removal sequence 5C on page 301.

VOC fan

NOTE: To begin, see Removal sequence 5 on page 278.

☐ Remove one screw (callout 1), disconnect one connector (callout 2), and then remove the VOC fan (callout 3).

Figure 6-112 Remove the VOC fan

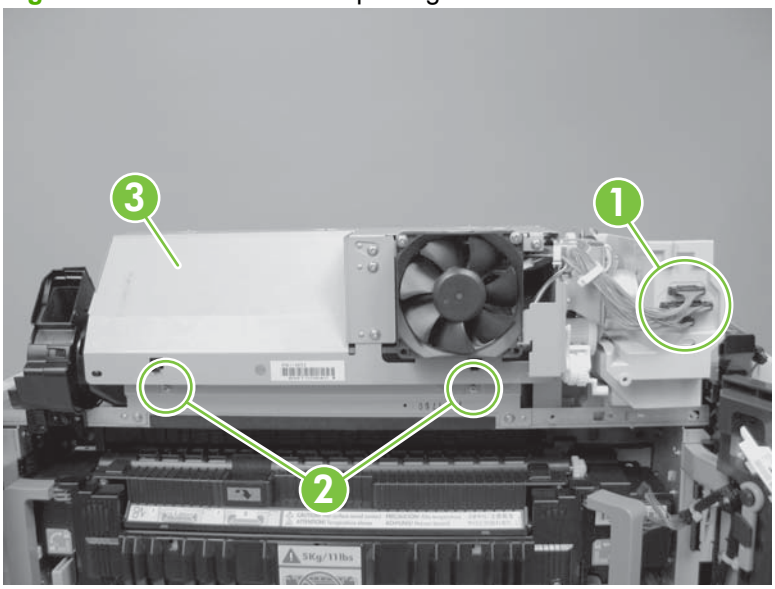


Duplexing reverse unit

NOTE: To begin, see Removal sequence 5 on page 278.

- ☐ Disconnect three connectors (callout 1), remove two screws (callout 2), and then the duplexing reverse unit (callout 3).

Figure 6-113 Remove the duplexing reverse unit

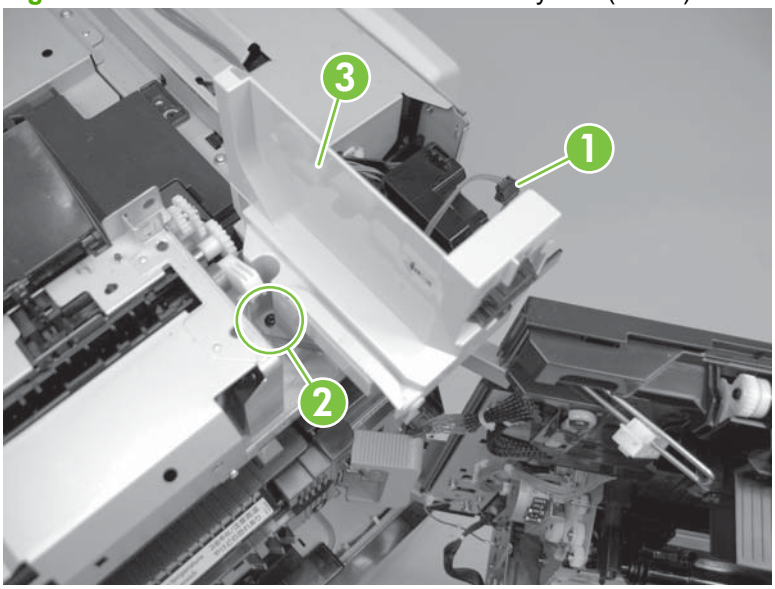


Face-down delivery unit

NOTE: To begin, see Removal sequence 5 on page 278.

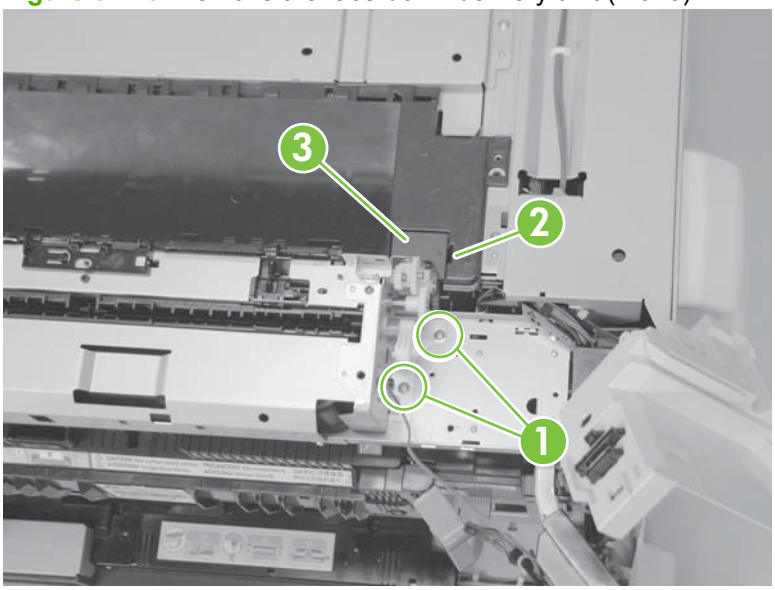
1. Disconnect one connector (callout 1), remove one screw (callout 2), and then move the inner cover (callout 3) to the side.

Figure 6-114 Remove the face-down delivery unit (1 of 3)



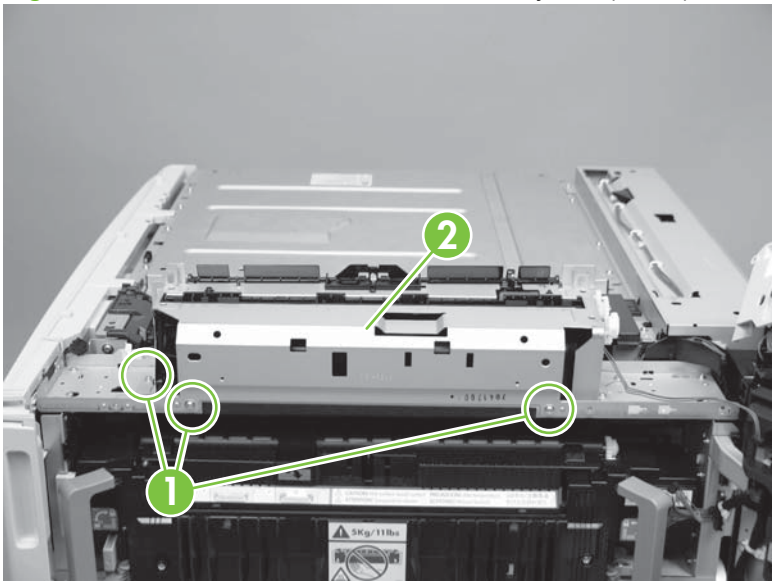
2. Remove two screws (callout 1), release one tab (callout 2), and then remove the gear cover (callout 3).

Figure 6-115 Remove the face-down delivery unit (2 of 3)



3. Remove three screws (callout 1), and then the face-down delivery unit (callout 2).

Figure 6-116 Remove the face-down delivery unit (3 of 3)

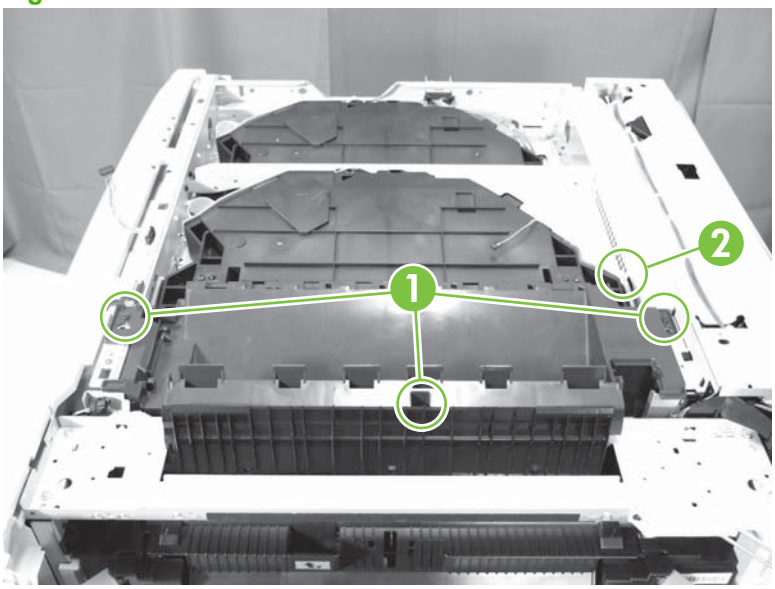


Face-down cover

NOTE: To begin, see Removal sequence 5 on page 278.

- ☐ Remove three screws (callout 1), disconnect one connector (callout 2), and then remove the face-down cover.

Figure 6-117 Remove face-down cover

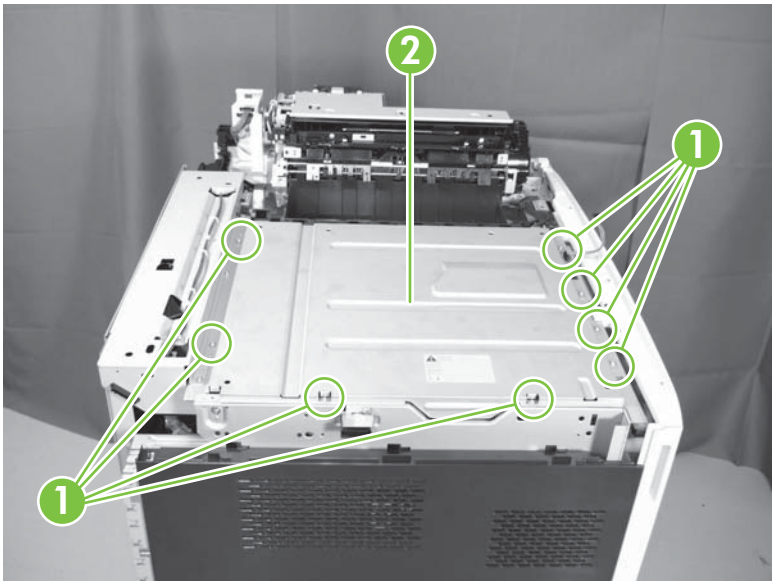


Removal sequence 5A

See Removal sequence 5 on page 278 for procedures to remove prerequisite parts.

Scanner cover

☐ Remove eight screws (callout 1) and then remove the scanner cover (callout 2).

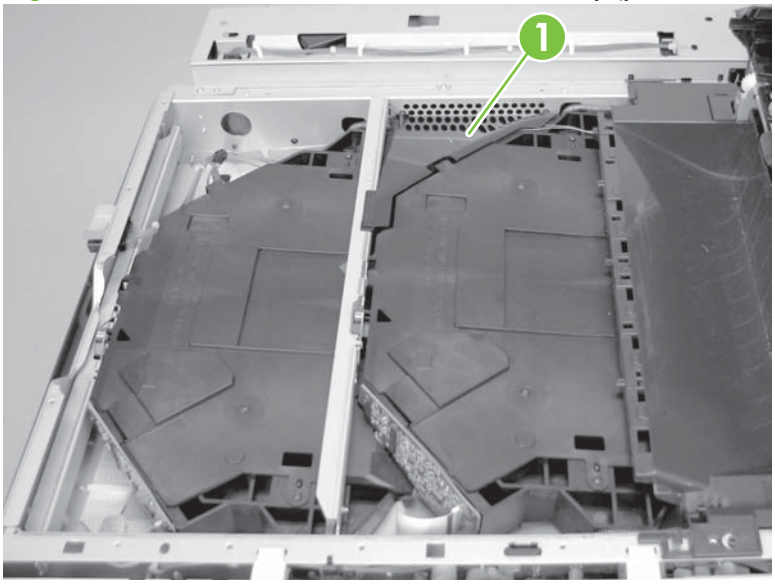


Laser/scanner assembly (yellow and magenta)

NOTE: To begin, see Removal sequence 5 on page 278.

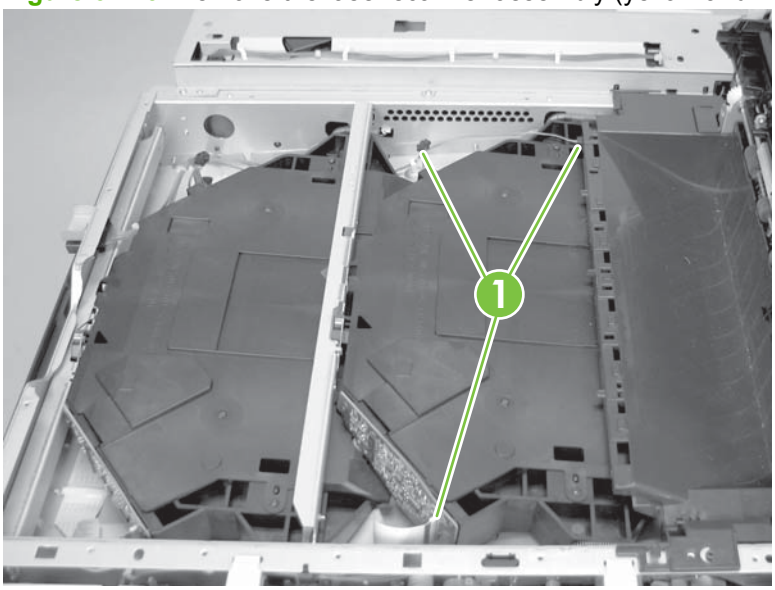
1. Remove the cover (callout 1).

Figure 6-118 Remove the laser/scanner assembly (yellow and magenta) (1 of 3)



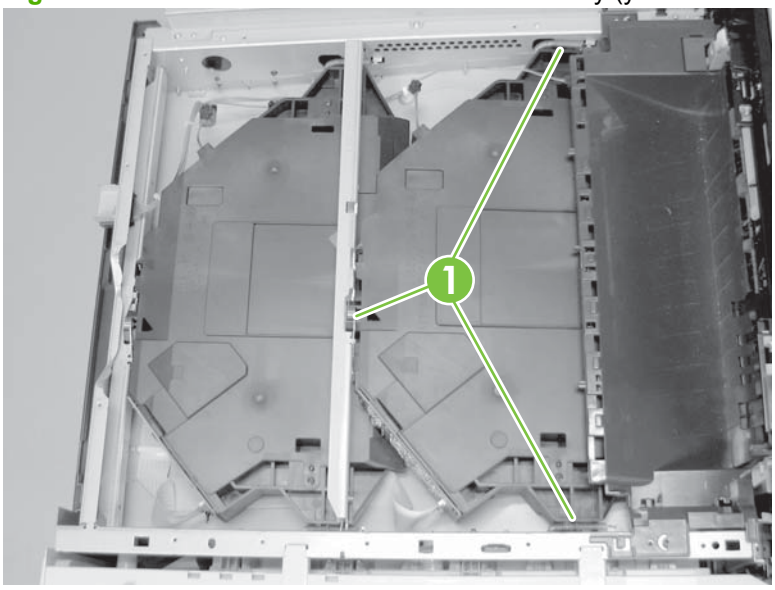
2. Disconnect three connectors (callout 1).

Figure 6-119 Remove the laser/scanner assembly (yellow and magenta) (2 of 3)

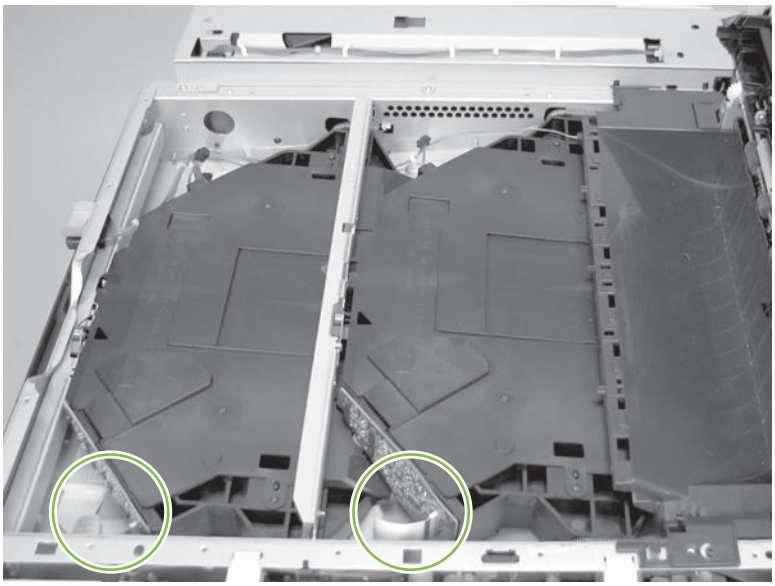


3. Unhook three springs (callout 1). Slide the laser/scanner assembly to the right, and then lift to remove it.

Figure 6-120 Remove the laser/scanner assembly (yellow and magenta) (3 of 3)



△ **CAUTION:** Use care when replacing the cables for the laser/scanner assemblies. The traces on the cable ends can be damaged when reinserted.

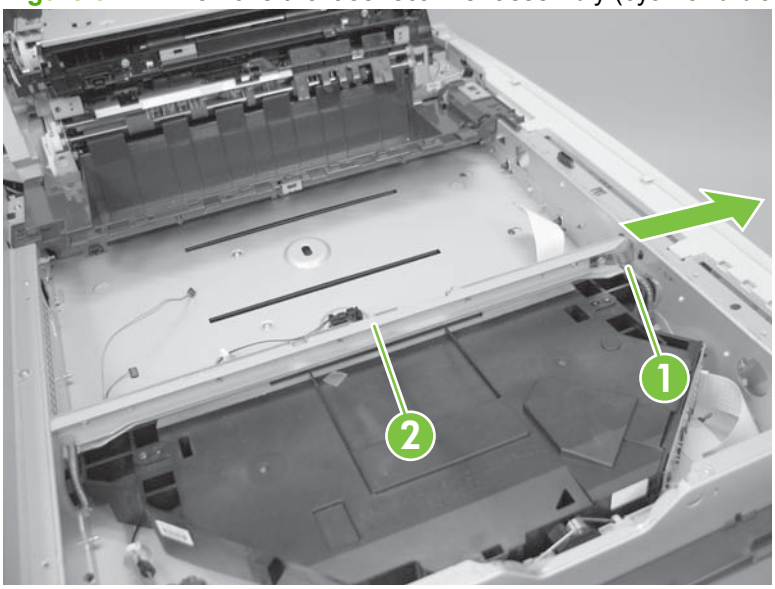


Laser/scanner assembly (cyan and black)

NOTE: To begin, see Removal sequence 5 on page 278.

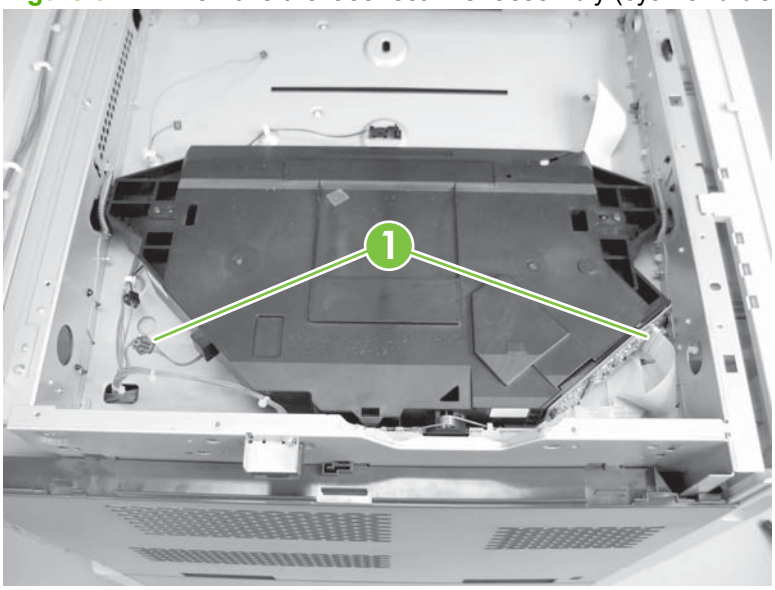
1. Push the tab (callout 1), and then slide the rod (callout 2) in the direction indicated to remove it.

Figure 6-121 Remove the laser/scanner assembly (cyan and black) (1 of 3)



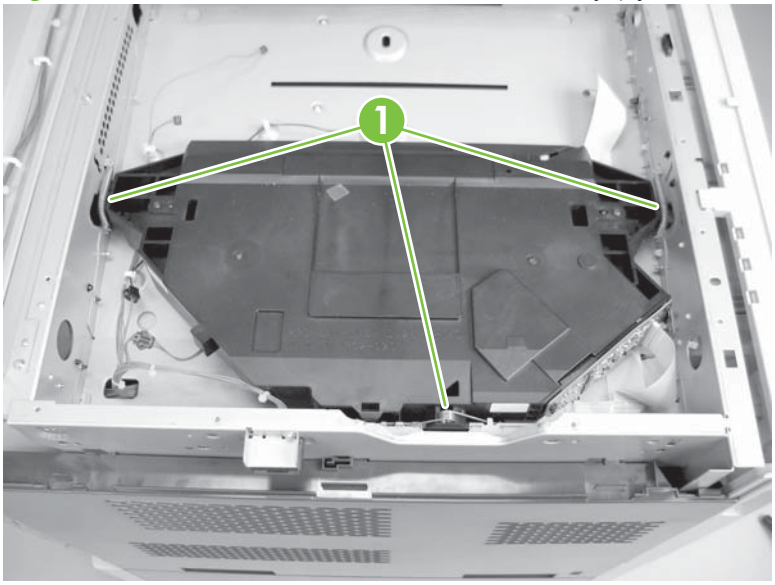
2. Disconnect two connectors (callout 1).

Figure 6-122 Remove the laser/scanner assembly (cyan and black) (2 of 3)

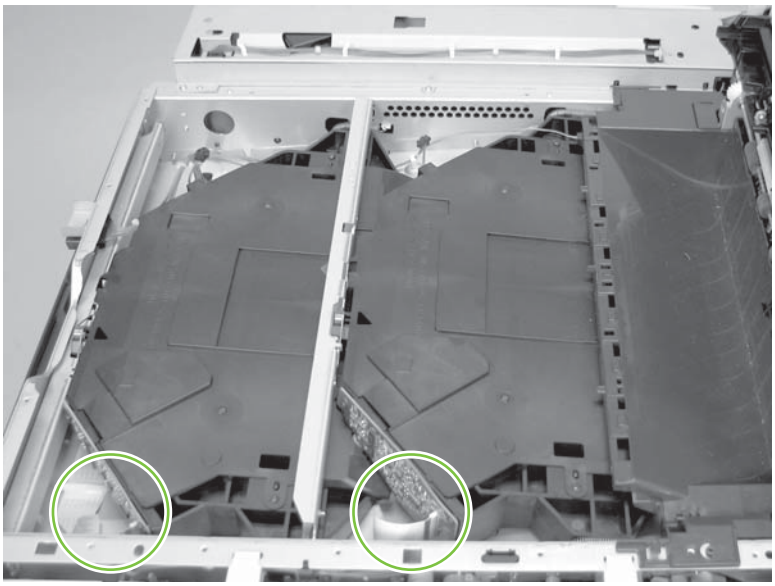


3. Unhook three springs (callout 1), and then remove the laser/scanner assembly.

Figure 6-123 Remove the laser/scanner assembly (cyan and black) (3 of 3)



△ **CAUTION:** Use care when replacing the cables for the laser/scanner assemblies. The traces on the cable ends can be damaged when reinserted.



NOTE: Removal sequence 5A is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

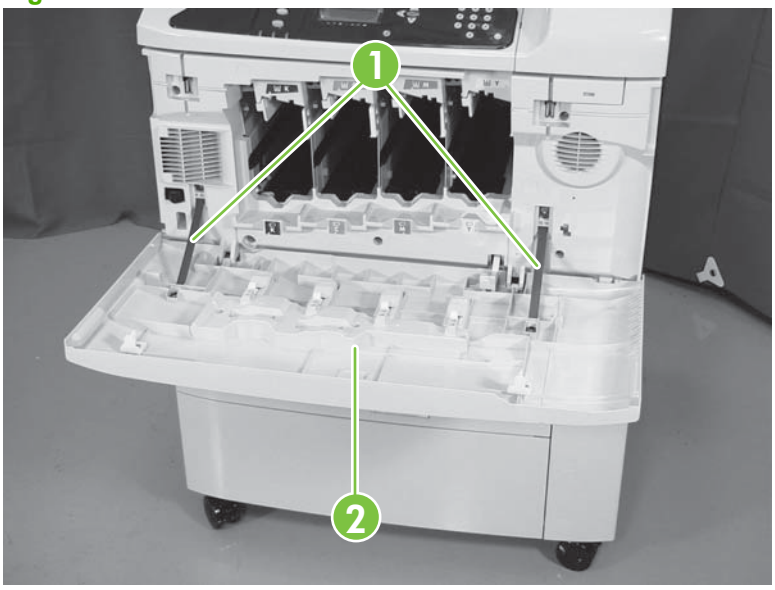
Removal sequence 5B

See Removal sequence 5 on page 278 for procedures to remove prerequisite parts.

Front door

1. Open the front door, and then remove the print cartridges and image drums.
2. Use a small flat-blade screwdriver to release the two arms (callout 1), and then remove the front door (callout 2).

Figure 6-124 Remove front door

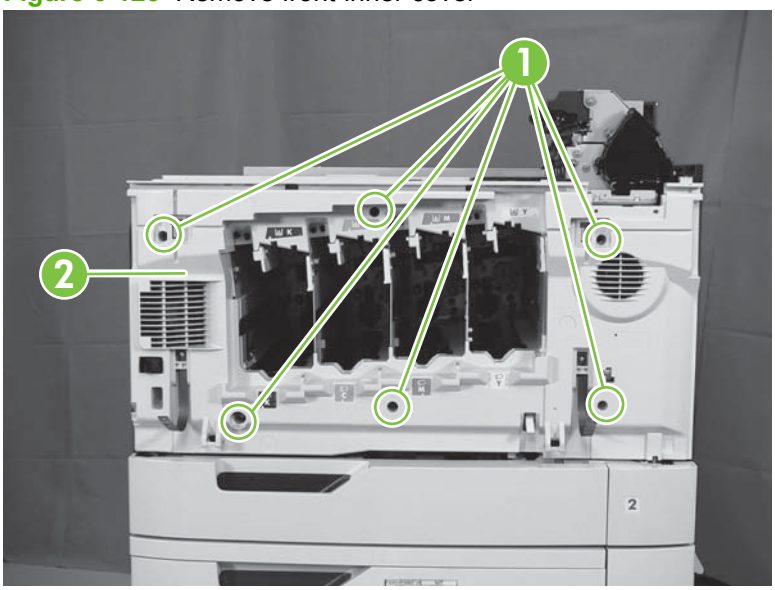


Front-inner cover

NOTE: To begin, see Removal sequence 5 on page 278.

☐ Remove six screws (callout 1), and then pull the bottom of the front-inner cover (callout 2) to remove.

Figure 6-125 Remove front-inner cover



NOTE: Removal sequence 5B is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

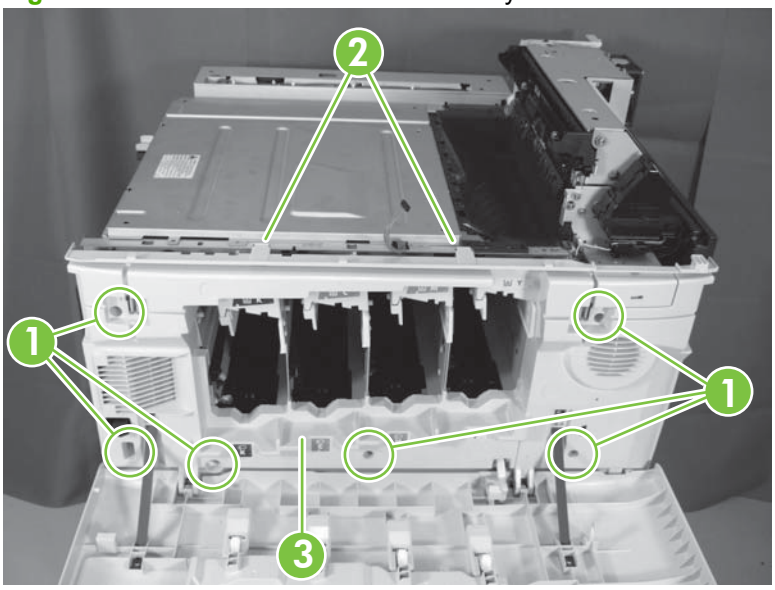
Removal sequence 5C

See Removal sequence 5 on page 278 for procedures to remove prerequisite parts.

Front-door assembly

1. Open the front door.
2. Remove six screws (callout 1), release the two tabs (callout 2), and then remove the front-door assembly (callout 3).

Figure 6-126 Remove front-door assembly



Removal sequence 5C is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

- For sequence 5D, see Removal sequence 5D on page 302.
- For sequence 5E, see Removal sequence 5E on page 304.

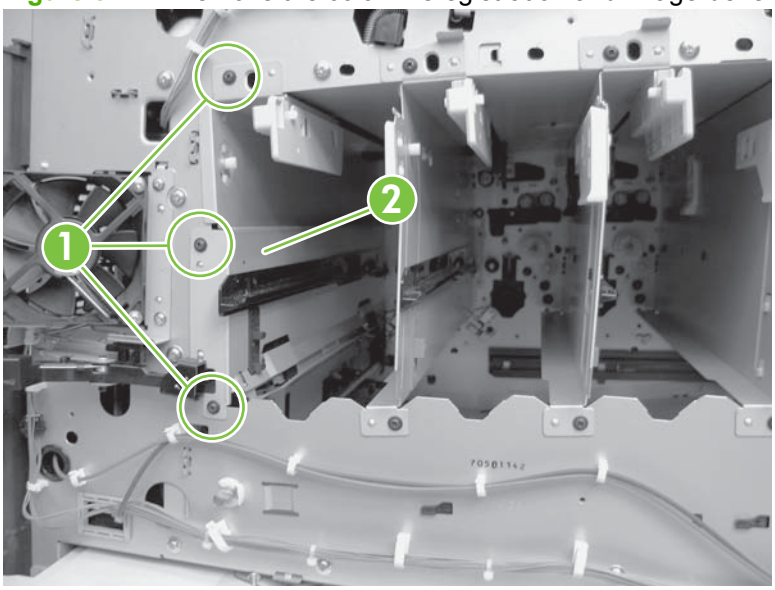
Removal sequence 5D

See Removal sequence 5 on page 278 for procedures to remove prerequisite parts.

Color-misregistration and image-density sensor unit

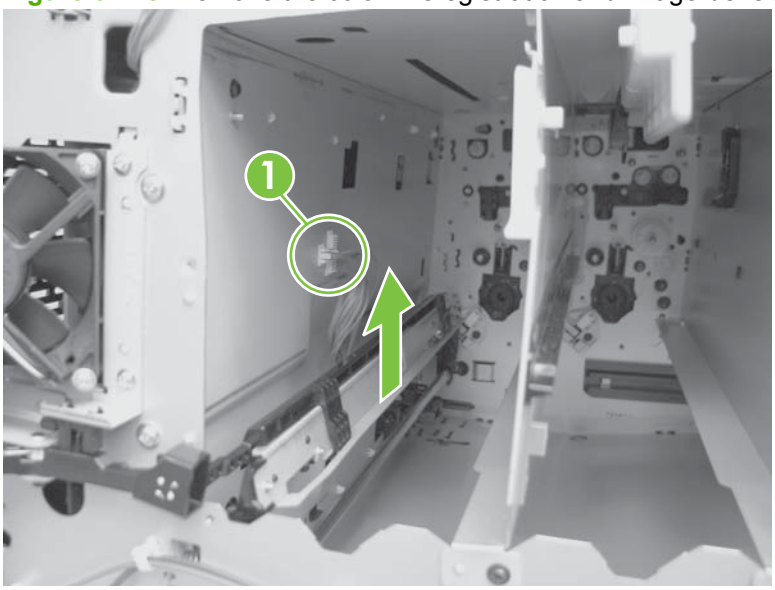
1. Remove three screws (callout 1) and the print-cartridge guide (callout 2).

Figure 6-127 Remove the color-misregistration and image-density sensor unit (1 of 3)



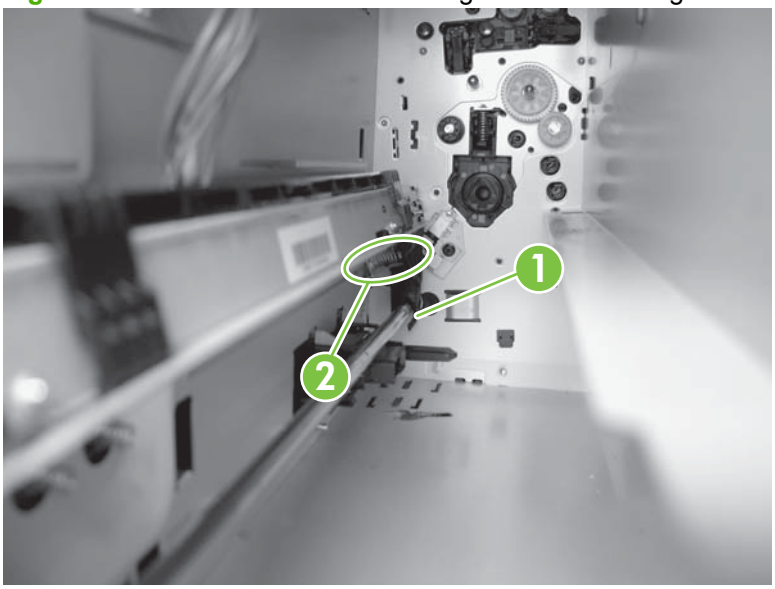
2. Disconnect the two connectors (callout 1) and lift the color-misregistration/image-density sensor unit to remove it.

Figure 6-128 Remove the color-misregistration and image-density sensor unit (2 of 3)



NOTE: When reassembling, snap the sensor on the rod (callout 1) and align the springs (callout 2).

Figure 6-129 Remove the color-misregistration and image-density sensor unit (3 of 3)



NOTE: Removal sequence 5D is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

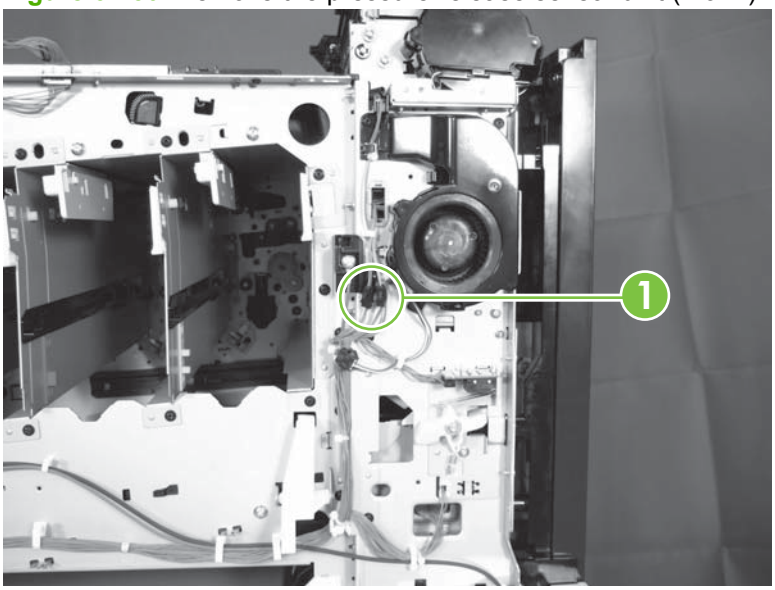
Removal sequence 5E

See Removal sequence 5 on page 278 for procedures to remove prerequisite parts.

Pressure-release sensor unit

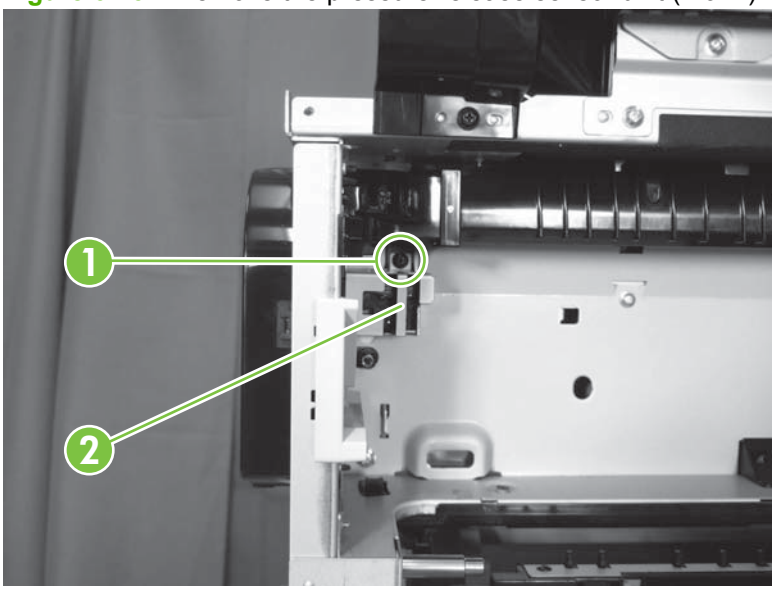
1. From the front of the product, disconnect the two connectors (callout 1).

Figure 6-130 Remove the pressure-release sensor unit (1 of 2)



2. From the right side of the product, remove one screw (callout 1), and then the pressure-release sensor unit (callout 2).

Figure 6-131 Remove the pressure-release sensor unit (2 of 2)

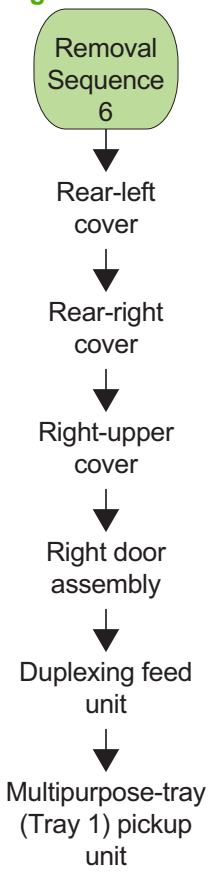


NOTE: Removal sequence 5E is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

Removal sequence 6

Use the flowchart below to determine the sequence of part removal and reinstallation. For information about using removal sequences, see Parts removal sequences on page 189.

Figure 6-132 Removal sequence 6 flowchart

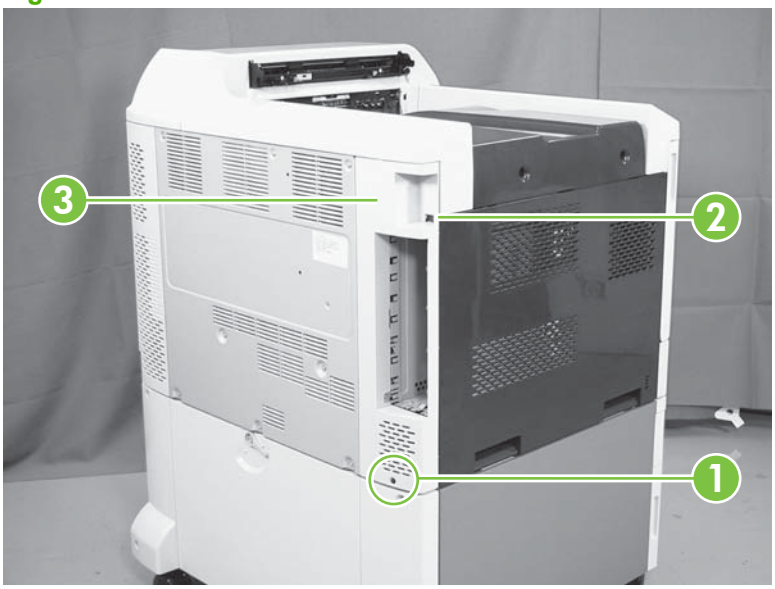


Rear-left cover

NOTE: To begin, see Removal sequence 6 on page 305.

☐ Remove one screw (callout 1), release one tab (callout 2) and remove the rear-left cover (callout 3).

Figure 6-133 Remove rear-left cover

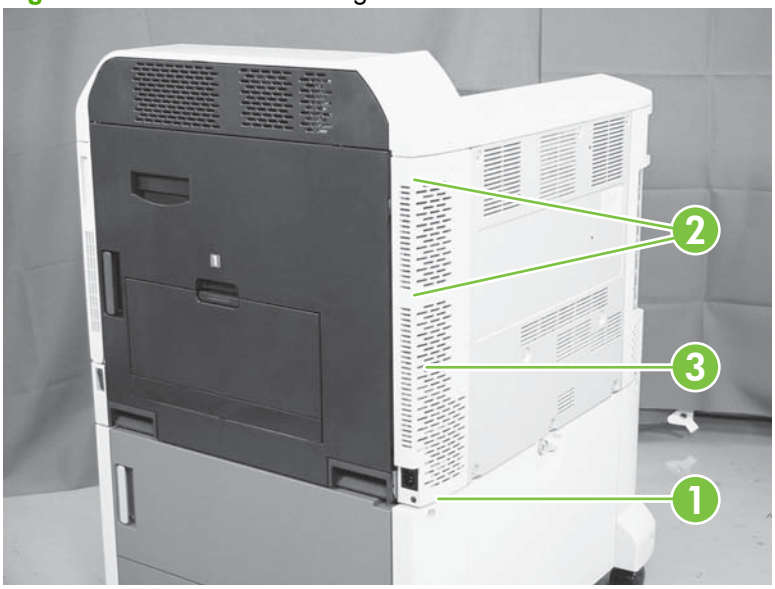


Rear-right cover

NOTE: To begin, see Removal sequence 6 on page 305.

☐ Remove one screw (callout 1), release two tabs (callout 2), and then remove the rear-right cover (callout 3).

Figure 6-134 Remove rear-right cover

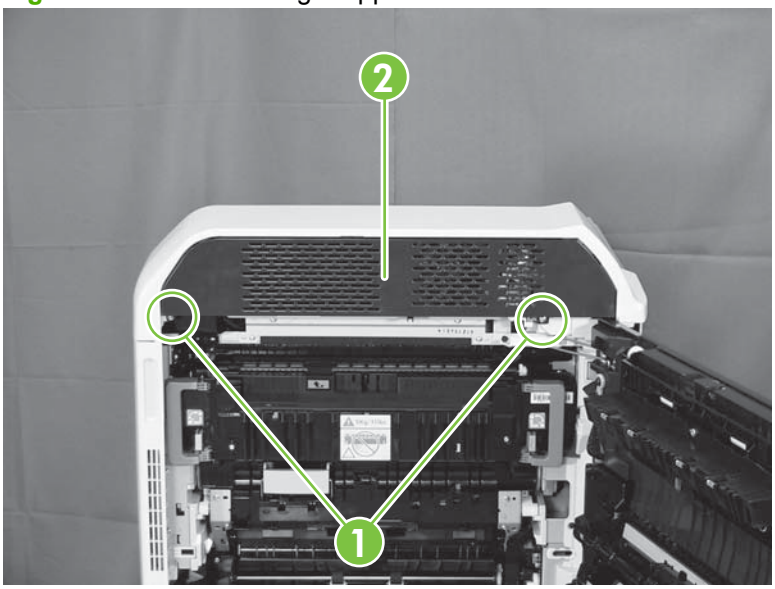


Right-upper cover

NOTE: To begin, see Removal sequence 6 on page 305.

1. Open the right door.
2. Remove two screws (callout 1), and then the right-upper cover (callout 2).

Figure 6-135 Remove right-upper cover

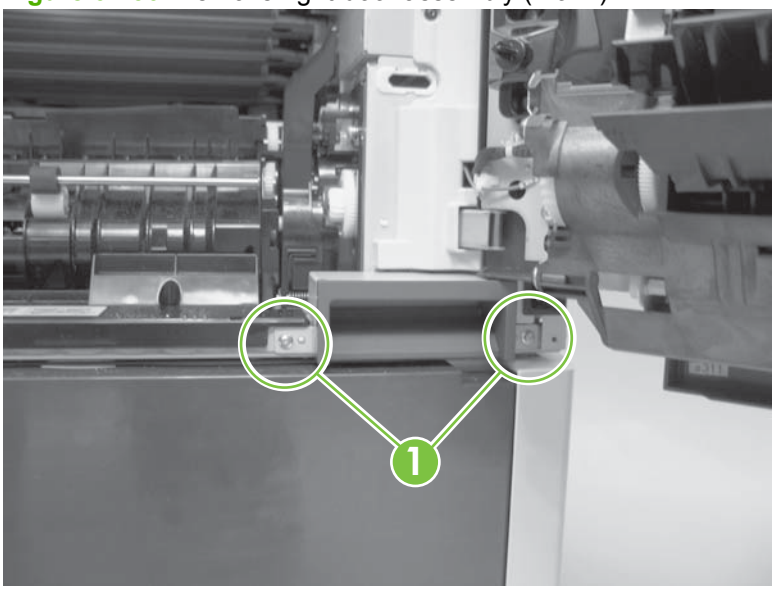


Right-door assembly

NOTE: To begin, see Removal sequence 6 on page 305.

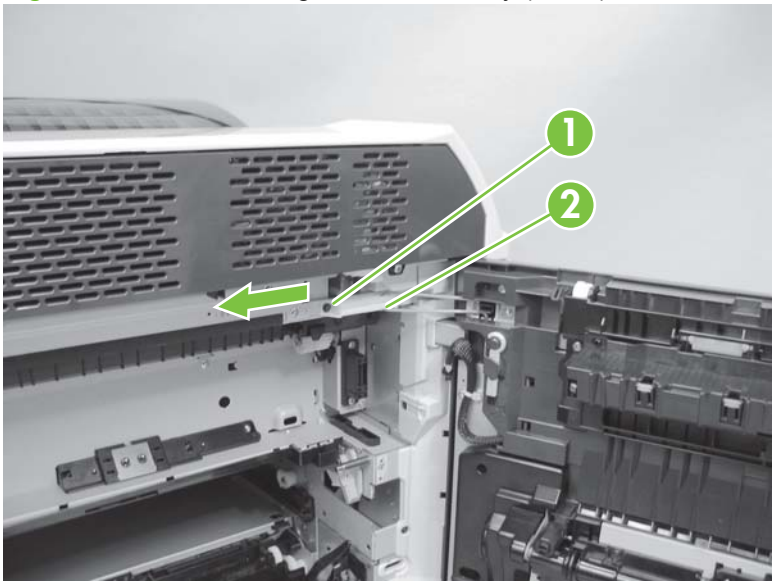
1. Open the right door.
2. Remove two screws (callout 1), and then lift the handle.

Figure 6-136 Remove right-door assembly (1 of 4)



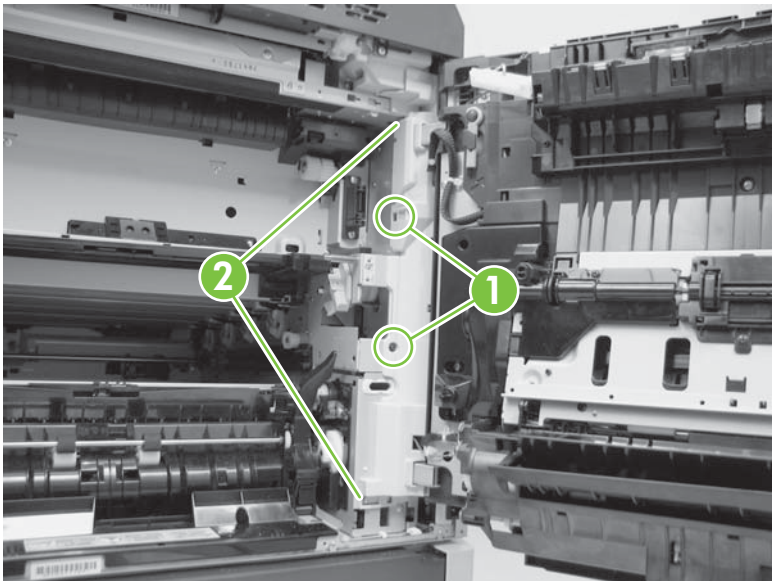
3. Remove one screw (callout 1). Slide the right door arm (callout 2) in the direction indicated to remove it.

Figure 6-137 Remove right-door assembly (2 of 4)



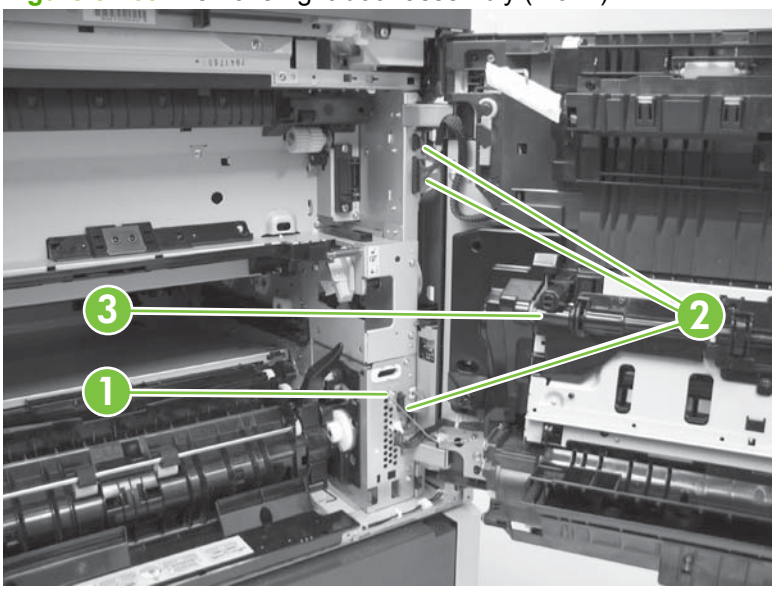
4. Remove two screws (callout 1), release the two tabs (callout 2), and then remove the right inner cover.

Figure 6-138 Remove right-door assembly (3 of 4)



5. Remove one grounding screw (callout 1), disconnect three connectors (callout 2), and then lift the right-door assembly (callout 3) to remove it.

Figure 6-139 Remove right-door assembly (4 of 4)

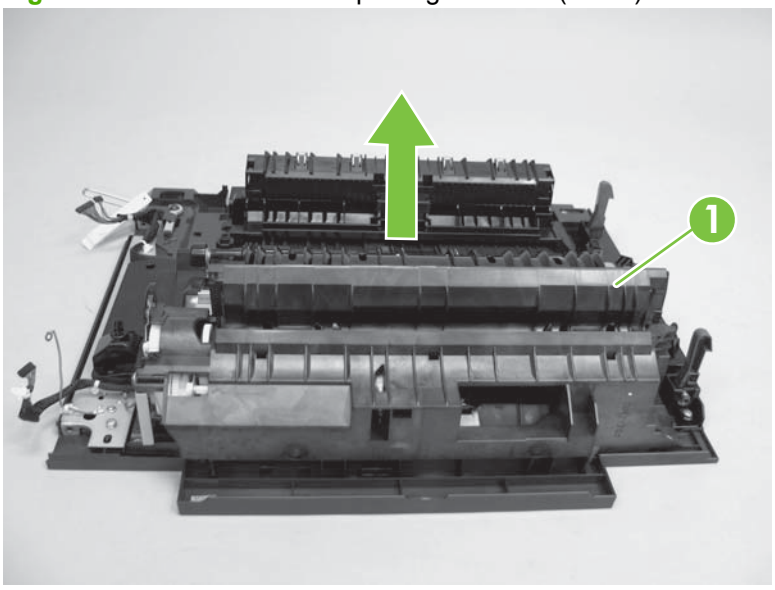


Duplexing feed unit

NOTE: To begin, see Removal sequence 6 on page 305.

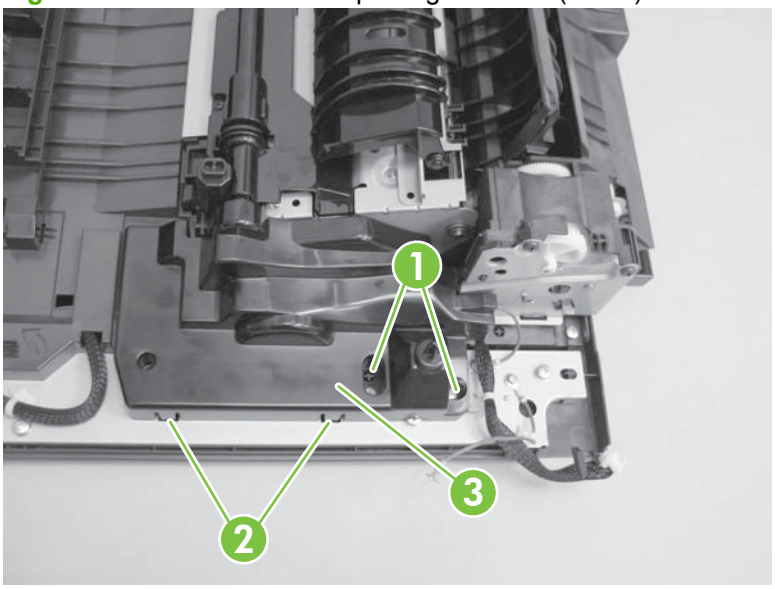
1. Lift the duplexing feed upper guide (callout 1) in the direction indicated to remove.

Figure 6-140 Remove the duplexing feed unit (1 of 3)



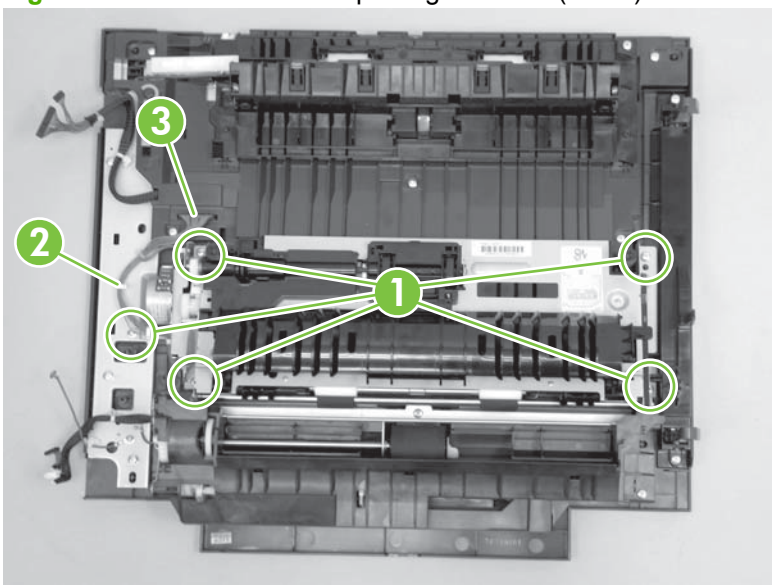
2. Remove two screws (callout 1), release two tabs (callout 2), and then remove the cover (callout 3).

Figure 6-141 Remove the duplexing feed unit (2 of 3)



3. Remove five screws (callout 1), one wire retainer (callout 2), one connector (callout 3), and then remove the duplexing feed unit.

Figure 6-142 Remove the duplexing feed unit (3 of 3)



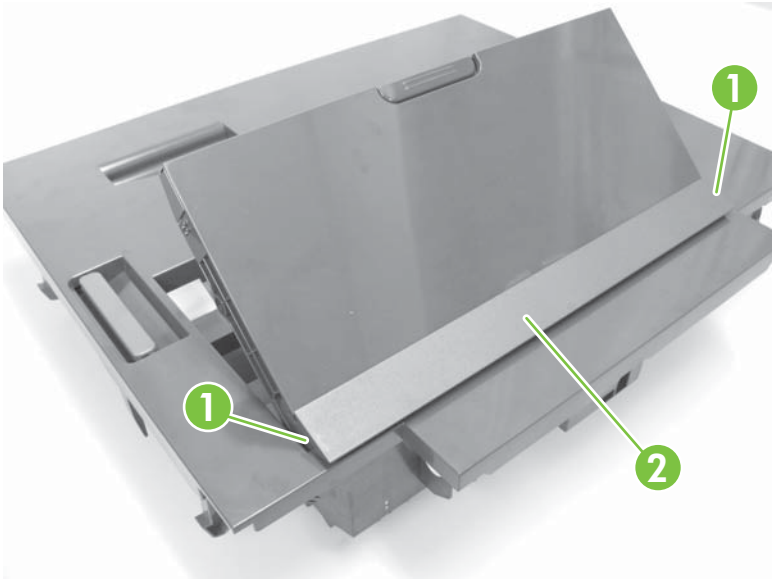
Multipurpose-tray (Tray-1) pickup unit

NOTE: To begin, see Removal sequence 6 on page 305.

1. Spread two tabs (callout 1) and remove the MP tray lower cover (callout 2). Close Tray 1.

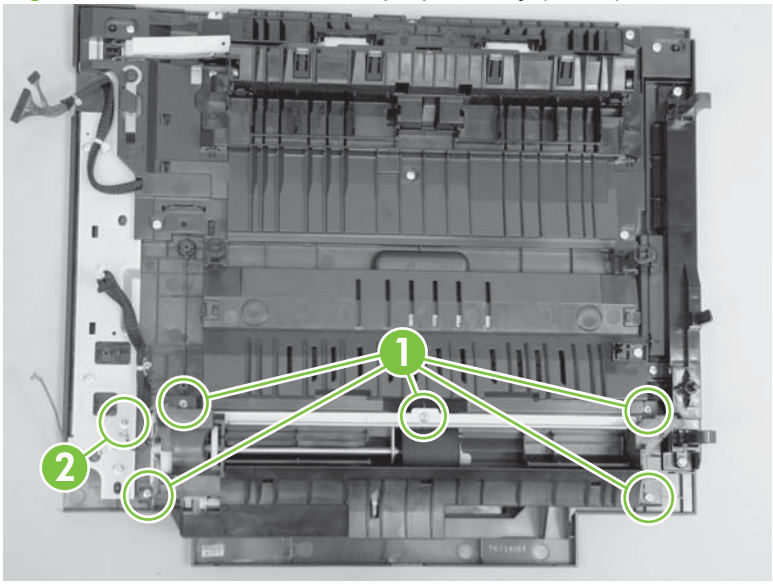
NOTE: Push down on the back of the Tray 1 so it is flat against itself. Close Tray 1 completely so that it is flush.

Figure 6-143 Remove the multipurpose tray (1 of 5)



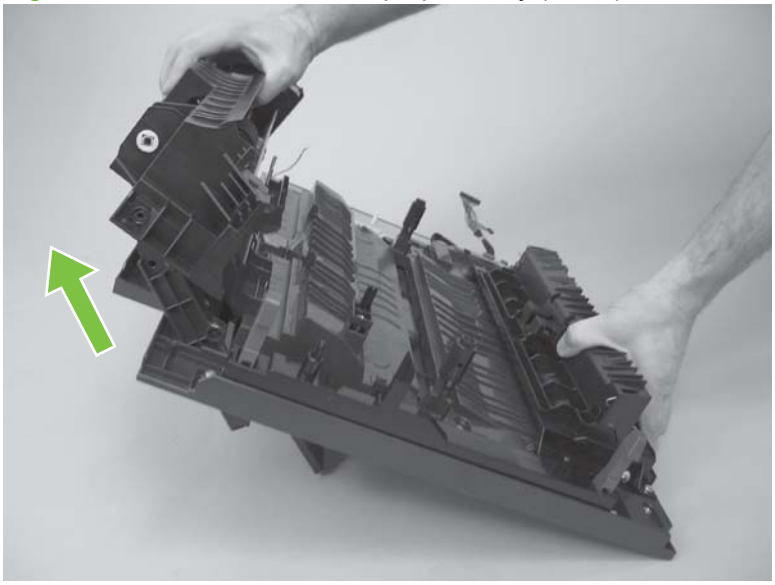
2. Remove five screws (callout 1), and then one grounding screw (callout 2).

Figure 6-144 Remove the multipurpose tray (2 of 5)



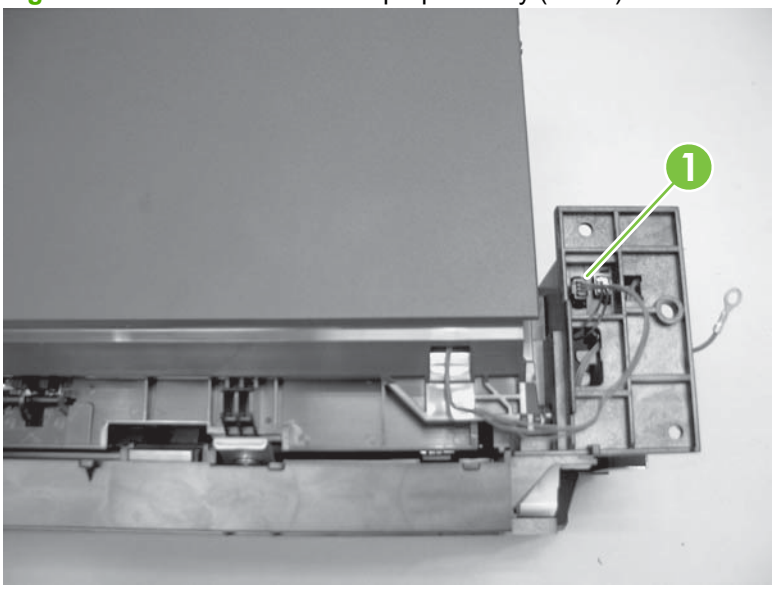
3. Remove the MP-tray pickup unit and the MP tray together.

Figure 6-145 Remove the multipurpose tray (3 of 5)



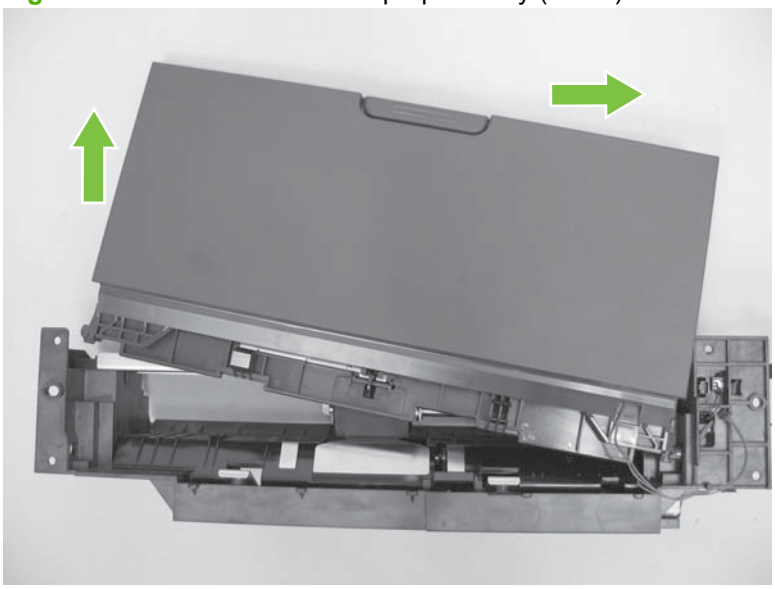
4. Disconnect one connector (callout 1).

Figure 6-146 Remove the multipurpose tray (4 of 5)



5. With the door closed, use a flat blade screw driver to pry the left side out. Pull the tray in the directions indicated to remove.

Figure 6-147 Remove the multipurpose tray (5 of 5)

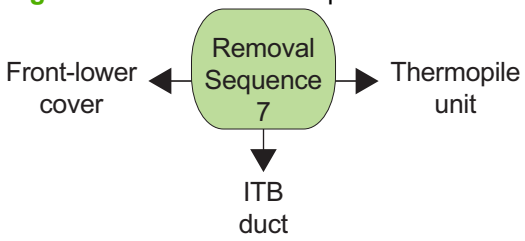


NOTE: Removal sequence 6 is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

Removal sequence 7

Use the flowchart below to determine the sequence of part removal and reinstallation. For information about using removal sequences, see Parts removal sequences on page 189.

Figure 6-148 Removal sequence 7 flowchart

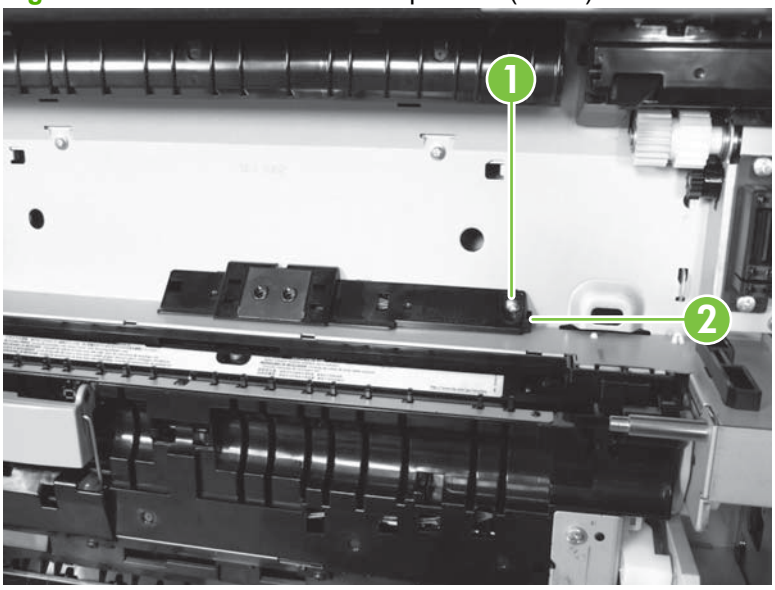


Thermopile unit

NOTE: To begin, see Removal sequence 7 on page 315.

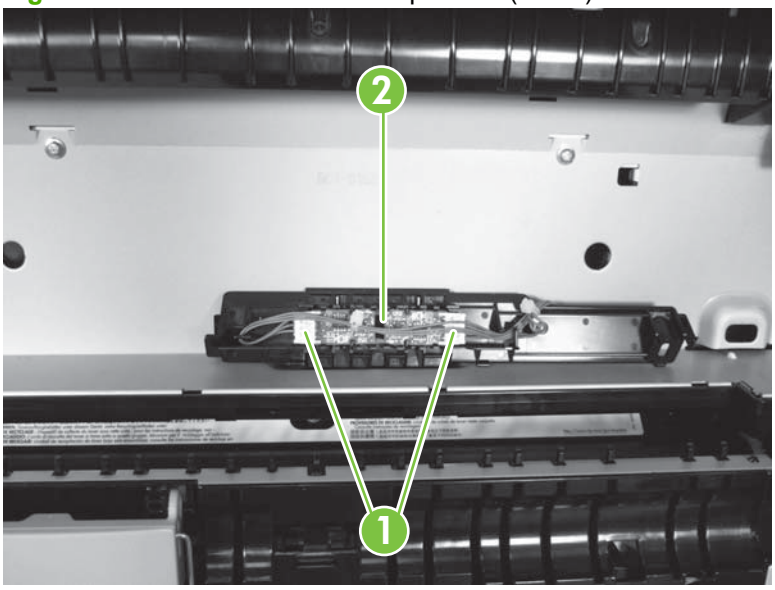
1. Remove the following user replaceable parts:
   - Fuser. See Fuser on page 191.
2. Remove one screw (callout 1), and then release one tab (callout 2).

Figure 6-149 Remove the thermopile unit (1 of 2)



3. Disconnect two connectors (callout 1), and then remove the thermopile unit (callout 2).

Figure 6-150 Remove the thermopile unit (2 of 2)



Front-lower cover

NOTE: To begin, see Removal sequence 7 on page 315.

1. Remove the following user replaceable parts:
   - Tray 2. See Tray 2 on page 208.
2. Remove one screw (callout 1), and then remove the front-lower cover (callout 2).

Figure 6-151 Remove front-lower cover

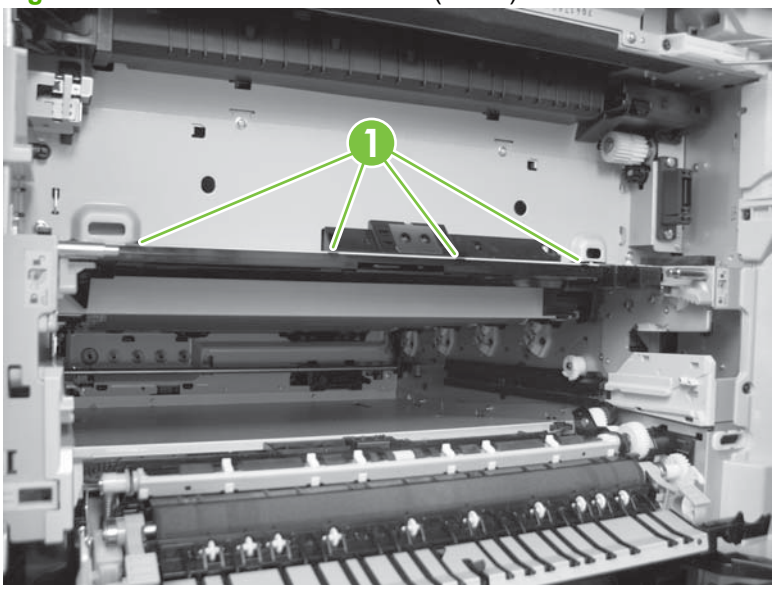


ITB duct

NOTE: To begin, see Removal sequence 7 on page 315.

1. Remove the following user replaceable parts:
   - Fuser unit. See Fuser on page 191.
2. Release four tabs (callout 1).

Figure 6-152 Remove the ITB duct (1 of 2)



3. Remove the ITB duct.

Figure 6-153 Remove the ITB duct (2 of 2)



NOTE: Removal sequence 7 is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

Optional input trays

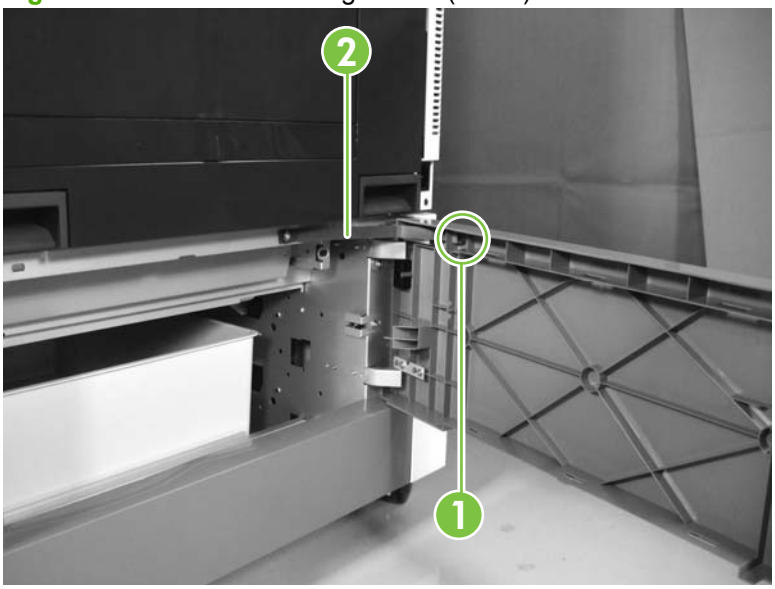
This section provides procedures for removal and replacement of field-replaceable units (FRUs) for optional input trays.

1 x 500-sheet input tray

Right door

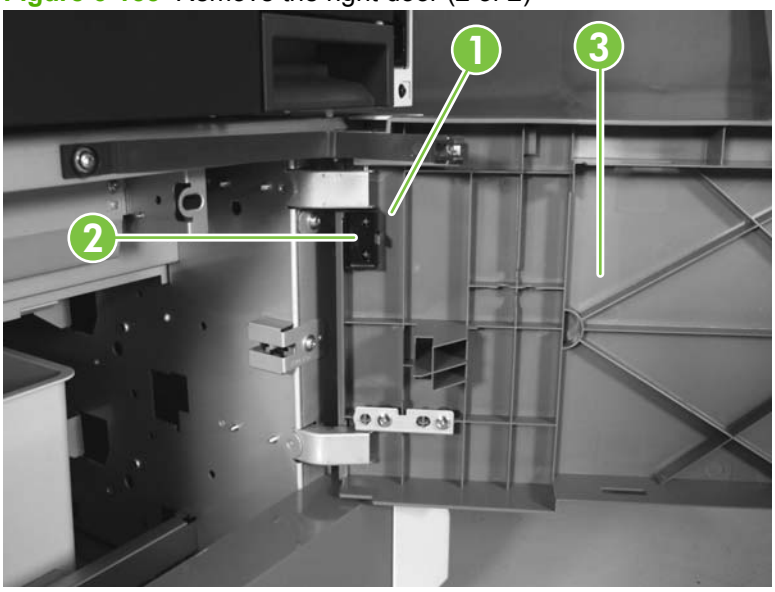
1. Open the right door.
2. Release one tab (callout 1), and then remove the arm (callout 2).

Figure 6-154 Remove the right door (1 of 2)



3. Release one tab (callout 1), and then remove the stopper (callout 2). Lift the right door (callout 3) to remove it.

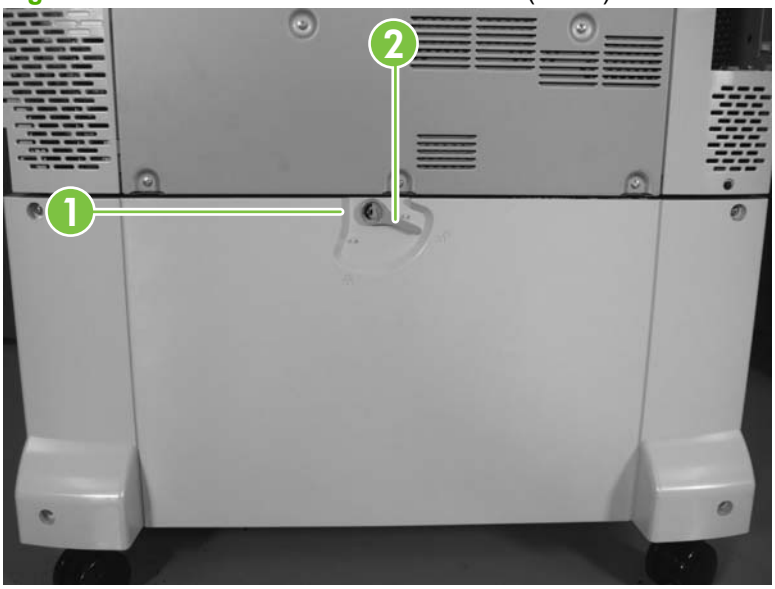
Figure 6-155 Remove the right door (2 of 2)



Lower-rear cover

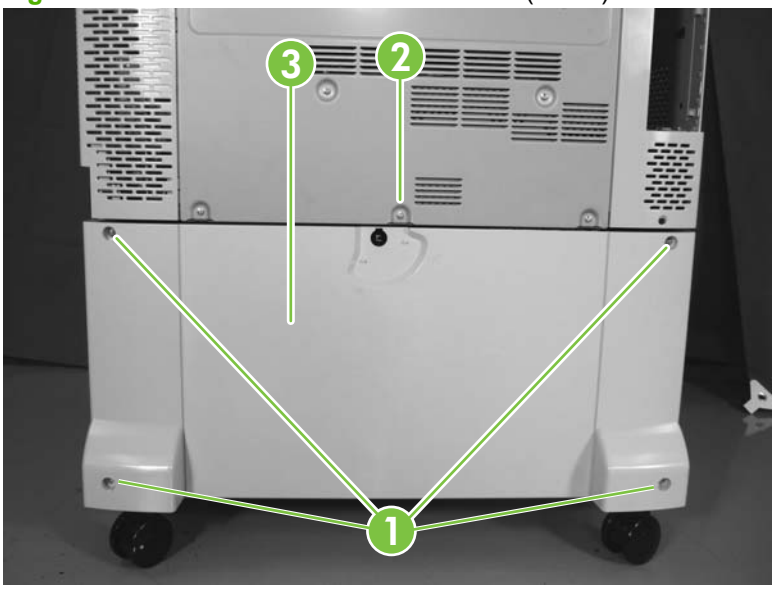
1. Release one tab (callout 1), and then remove the lever (callout 2).

Figure 6-156 Remove the lower-rear cover (1 of 2)



2. Remove four screws (callout 1). Release one tab (callout 2), and then remove the rear cover (callout 3).

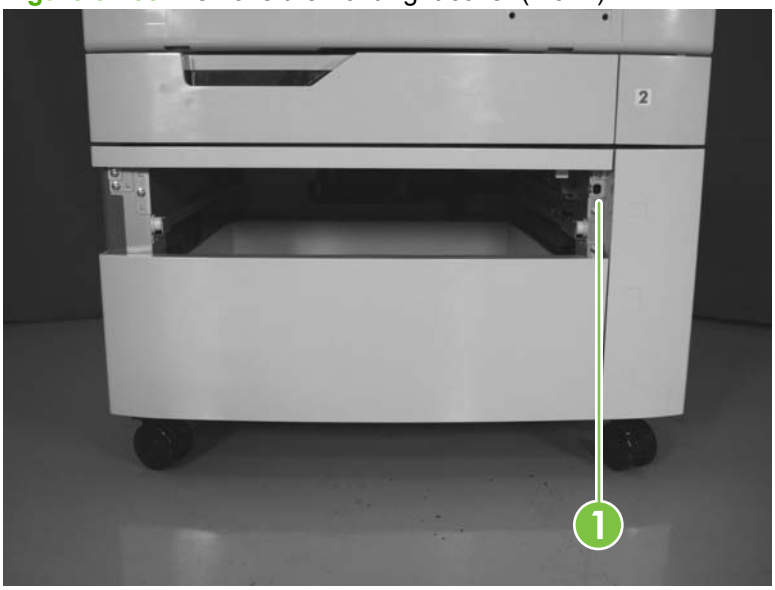
Figure 6-157 Remove the lower rear cover (2 of 2)



Front-right cover

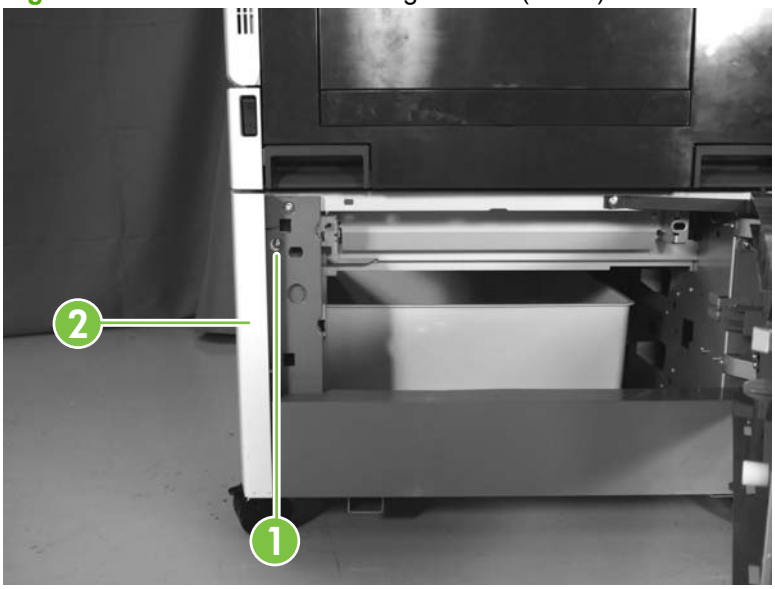
1. Remove the following:
   - Tray 2. See Tray 2 on page 208.
2. Remove one screw (callout 1).

Figure 6-158 Remove the front-right cover (1 of 2)



3. Open the right door. Remove one screw (callout 1). Lift the front-right cover (callout 2) to remove it.

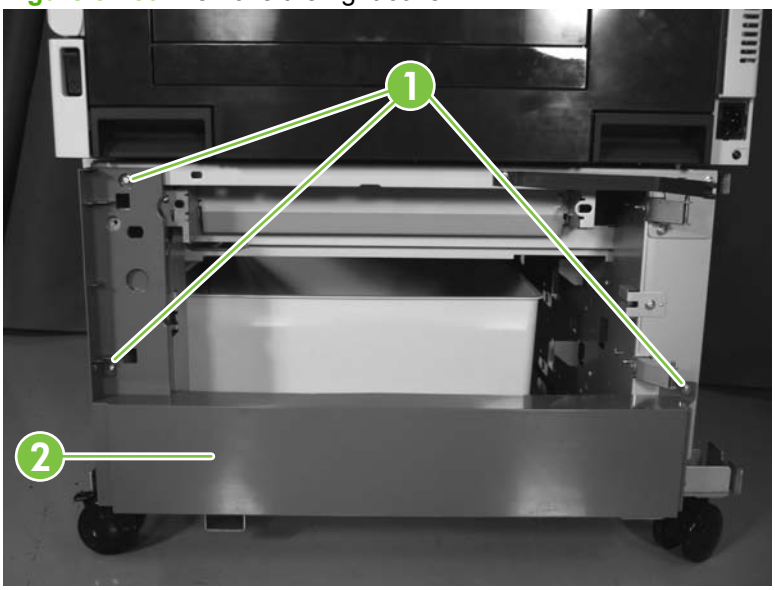
Figure 6-159 Remove the front-right cover (2 of 2)



Right cover

1. Remove the following:
   - Right door. See Right door on page 319.
   - Front-right cover. See Front-right cover on page 322.
   - Rear cover. See Lower-rear cover on page 321.
2. Remove three screws (callout 1) and then remove the right cover (callout 2).

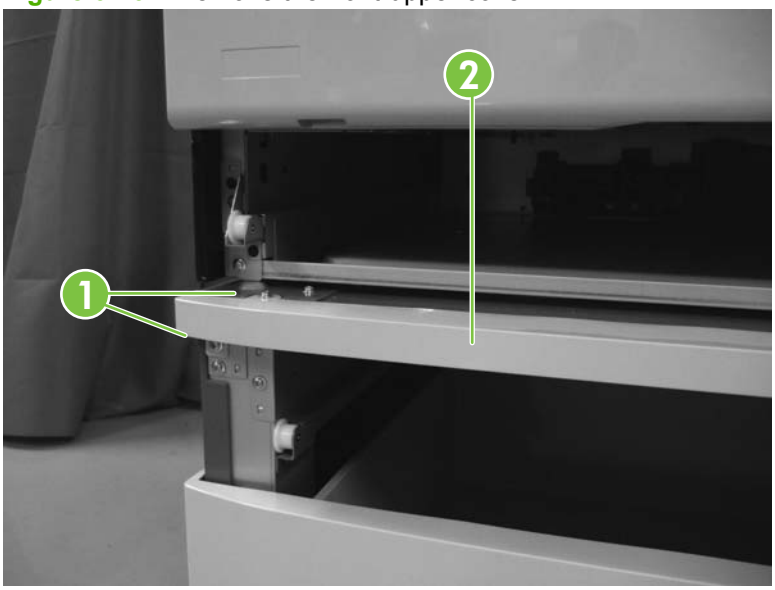
Figure 6-160 Remove the right cover



Front-upper cover

1. Remove the following:
   - Tray 2. See Tray 2 on page 208.
   - Tray 3. See Trays 3, 4, and 5 on page 208.
   - Front-right cover. See Front-right cover on page 322.
2. Remove two screws (callout 1), and then remove the front-upper cover (callout 2).

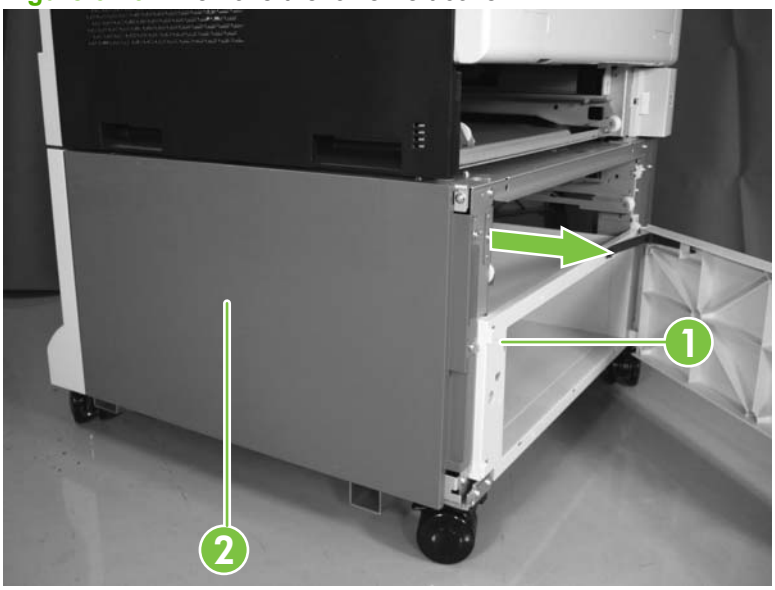
Figure 6-161 Remove the front-upper cover



Lower-left cover

1. Remove the following:
   - Front-upper cover. See Front-upper cover on page 324.
2. Remove one screw (callout 1). Slide the left cover (callout 2) in the direction indicated to remove it.

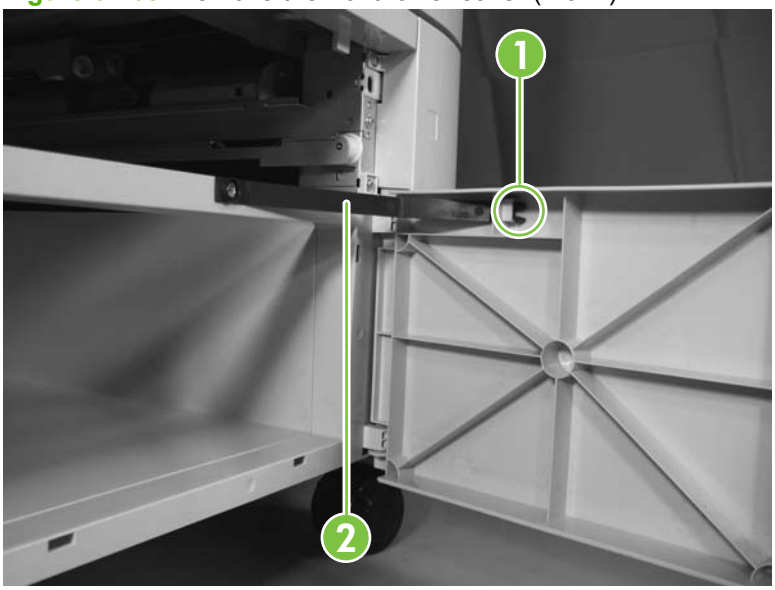
Figure 6-162 Remove the lower-left cover



Front-lower door

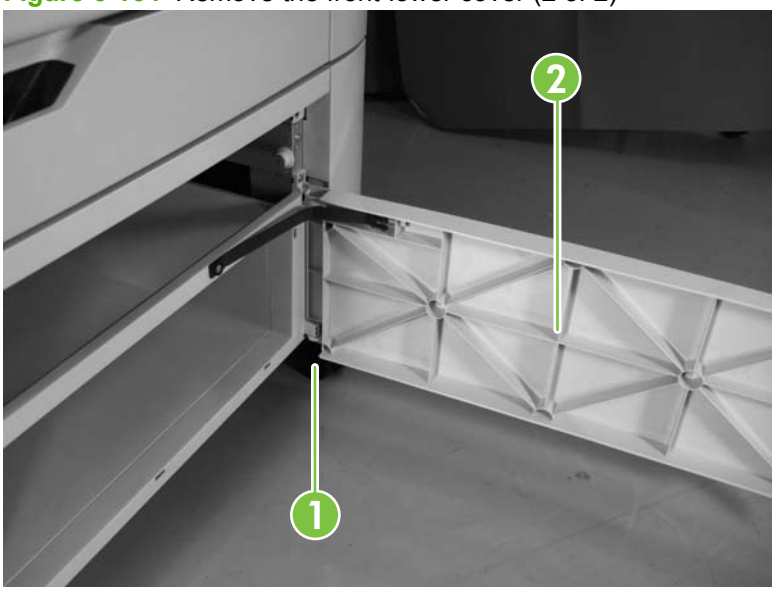
1. Remove the following:
   - Tray 3. See Trays 3, 4, and 5 on page 208.
2. Release one tab (callout 1), and then remove the arm (callout 2).

Figure 6-163 Remove the front-lower cover (1 of 2)



3. Clear the bottom pin (callout 1), and then lift the front-lower door (callout 2) to remove it.

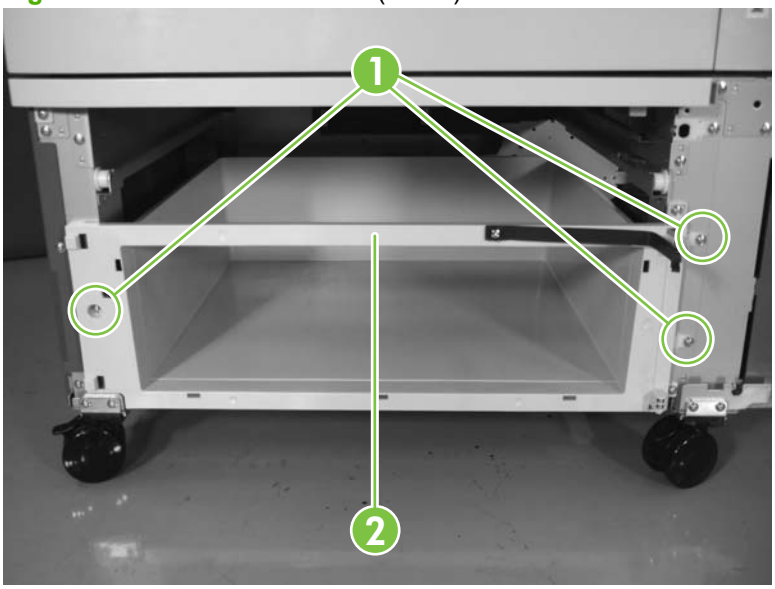
Figure 6-164 Remove the front-lower cover (2 of 2)



Box

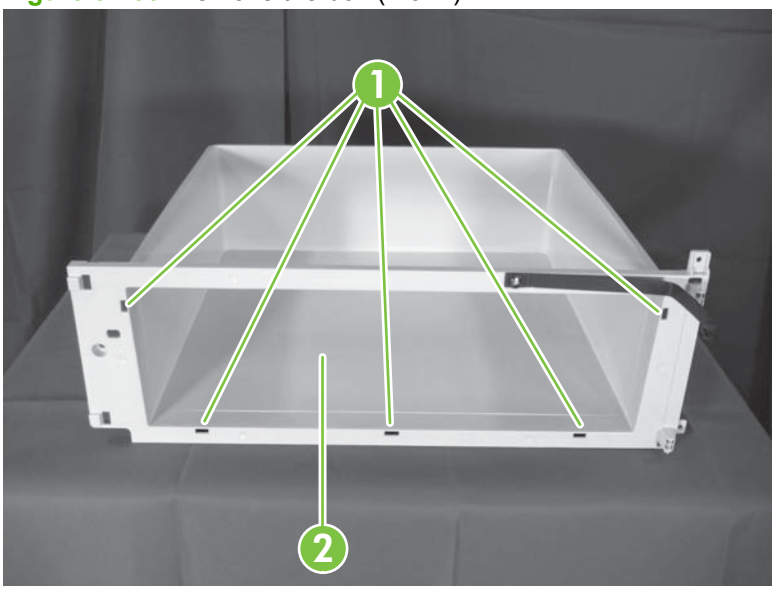
1. Remove the following:
   - Front-lower door. See Front-lower cover on page 317.
   - Front-right cover. See Front-right cover on page 322.
2. Remove three screws (callout 1), and then remove the box with the inner cover (callout 2).

Figure 6-165 Remove the box (1 of 2)



3. Release the five tabs (callout 1), and then remove the box (callout 2).

Figure 6-166 Remove the box (2 of 2)



Pickup unit

The procedure varies depending on whether the input tray is attached to the product.

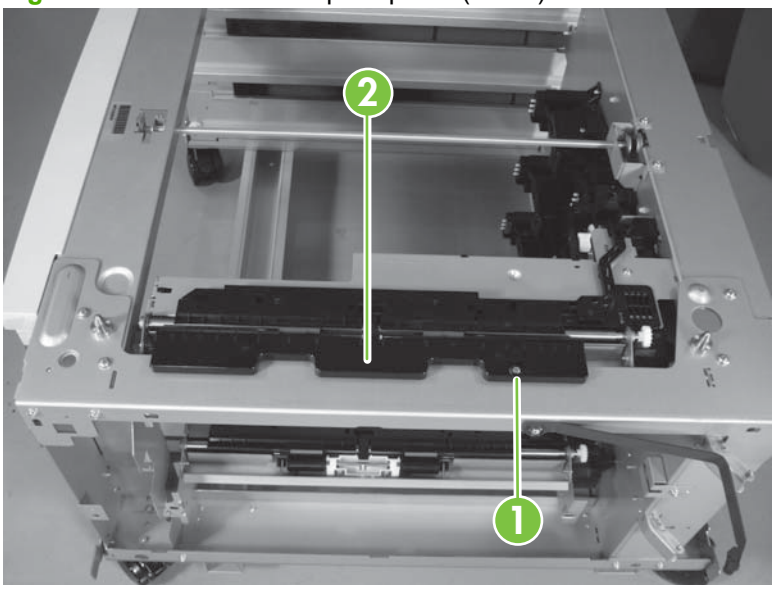
☐ Remove the following:

- Tray 3. See Trays 3, 4, and 5 on page 208.
- Lower-rear cover. See Lower-rear cover on page 321.
- Right cover. See Right cover on page 323.

Input tray is not attached

☐ Remove one screw (callout 1), and then remove the feed guide (callout 2).

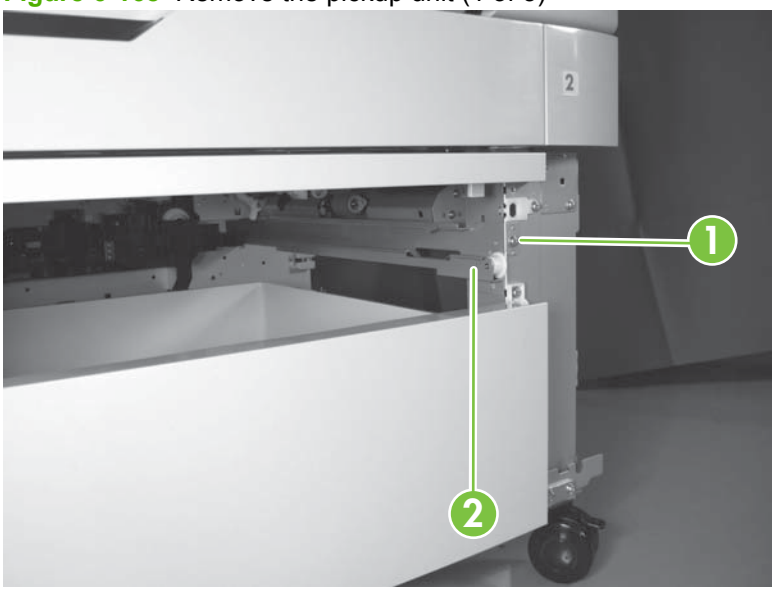
Figure 6-167 Remove the pickup unit (1 of 3)



Input tray is attached

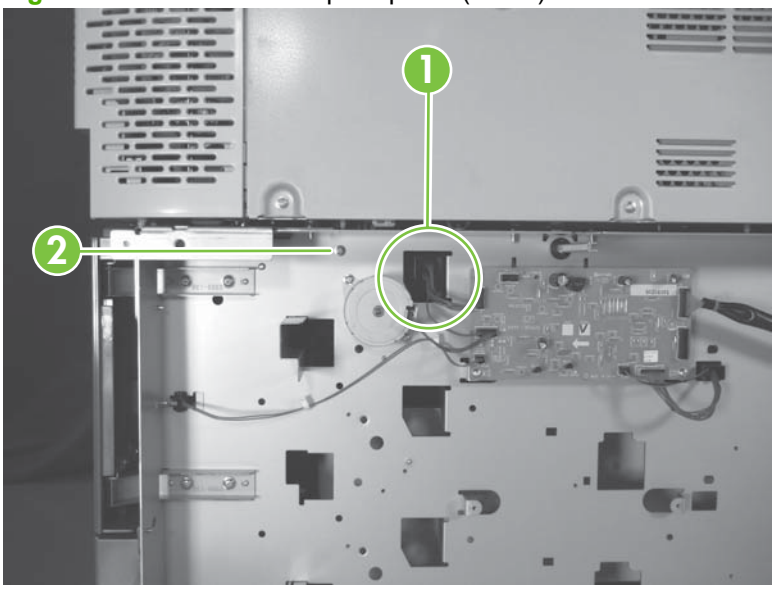
1. Remove one screw (callout 1), and then remove the cassette guide rail (callout 2).

Figure 6-168 Remove the pickup unit (1 of 3)



2. Disconnect three connectors (callout 1), and then remove one screw (callout 2).

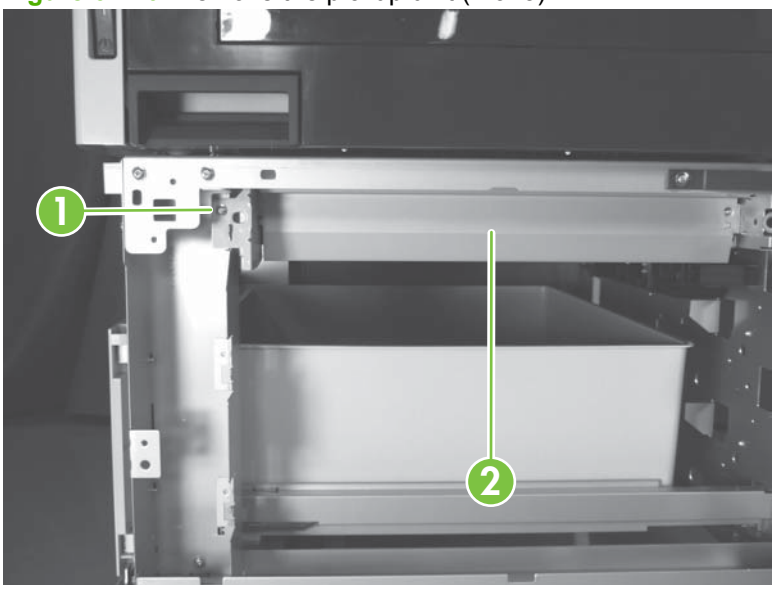
Figure 6-169 Remove the pickup unit (2 of 3)



3. Remove one screw (callout 1). Grasp the pickup unit (callout 2), pull the left end off the sheet metal tab, and shift it left to release the right shaft. Pull the pickup unit forward to remove it.

NOTE: If the pickup unit does not come out easily, gently slide a flat screwdriver over the top of the pickup unit to clear any interference with the feed guide.

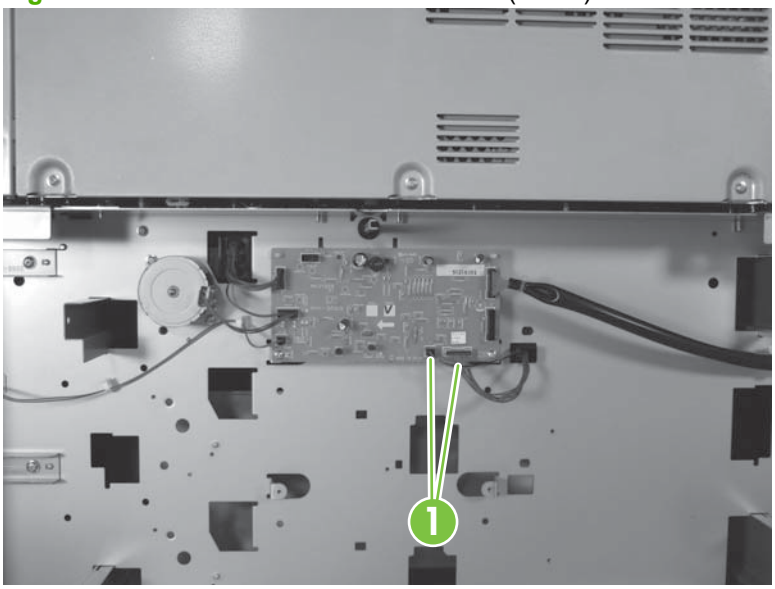
Figure 6-170 Remove the pickup unit (2 of 3)



Auto-close unit

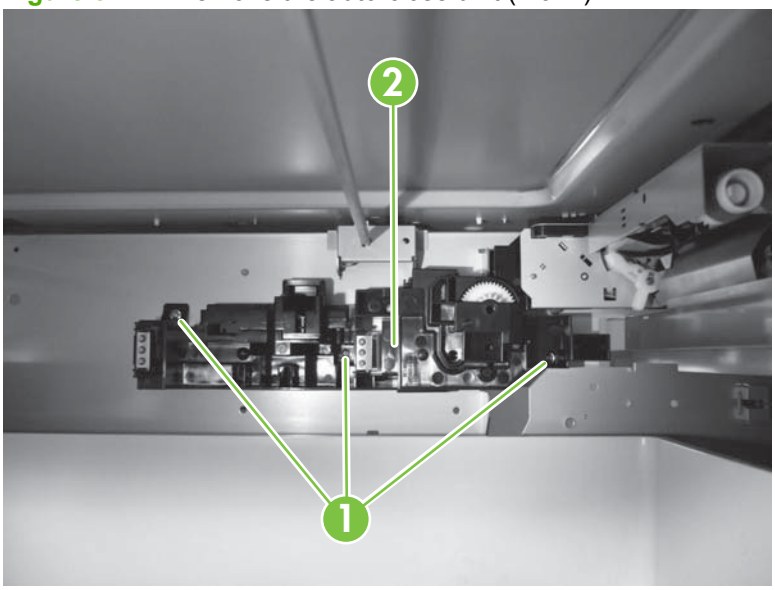
1. Remove the following:
   - Tray 3. See Trays 3, 4, and 5 on page 208.
   - Lower rear cover. See Lower-rear cover on page 321.
2. Disconnect the two connectors (callout 1).

Figure 6-171 Remove the auto-close unit (1 of 2)



3. Remove three screws (callout 1), and then remove the auto-close unit (callout 2).

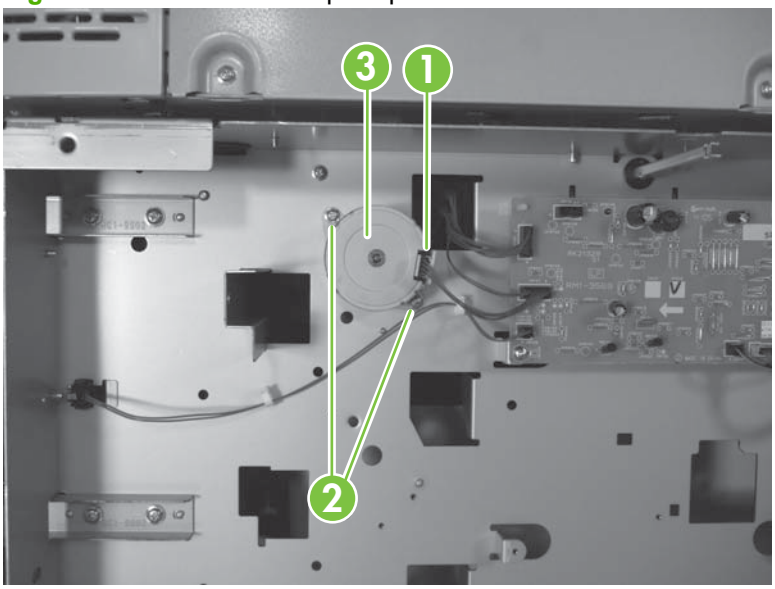
Figure 6-172 Remove the auto-close unit (2 of 2)



Pickup motor

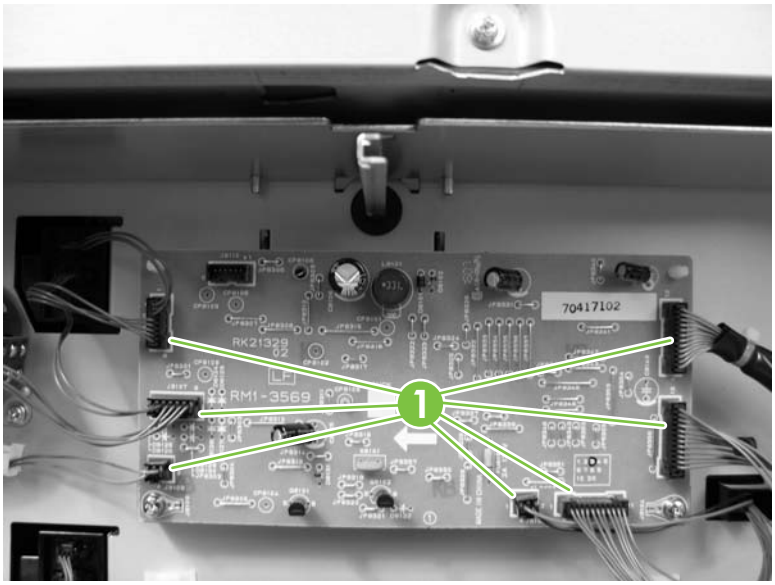
1. Remove the following:
   - Rear cover. See Lower-rear cover on page 321.
2. Disconnect one connector (callout 1).
3. Remove two screws (callout 2), and then remove the pickup motor (callout 3).

Figure 6-173 Remove the pickup motor



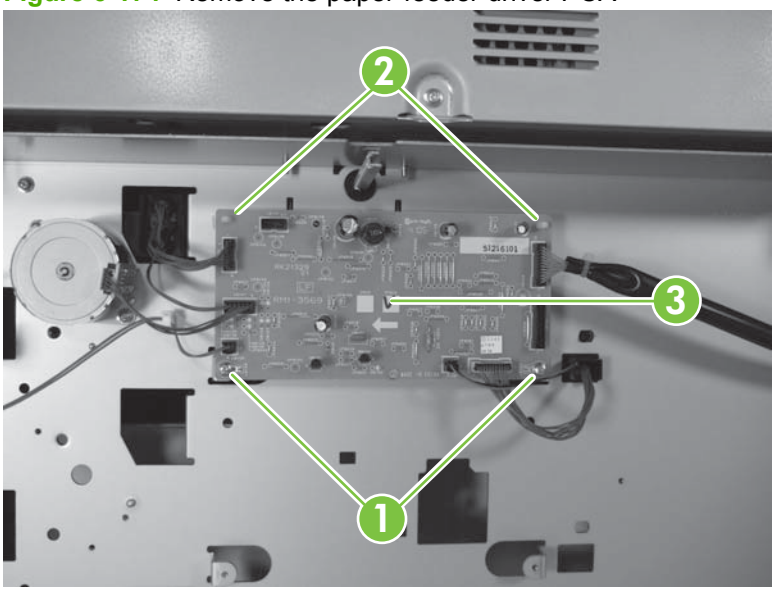
Paper-feeder driver PCA

1. Remove the following:
   - Rear cover. See Lower-rear cover on page 321.
2. Disconnect seven connectors on the paper-feeder driver PCA.



3. Remove two screws (callout 1), release two tabs (callout 2), and then remove the paper-feeder driver PCA (callout 3).

Figure 6-174 Remove the paper-feeder driver PCA



3 x 500-sheet input tray

Right door

To remove use the same procedure as with the 1 x 500 input tray. See Right door on page 319.

Lower-rear cover

To remove use the same procedure as with the 1 x 500-sheet input tray. See Lower-rear cover on page 321.

Front-right cover

To remove use the same procedure as with the 1 x 500-sheet input tray. See Front-right cover on page 322.

Right cover

To remove use the same procedure as with the 1 x 500-sheet input tray. See Right cover on page 323.

Front-upper cover

To remove use the same procedure as with the 1 x 500-sheet input tray. See Front-upper cover on page 284.

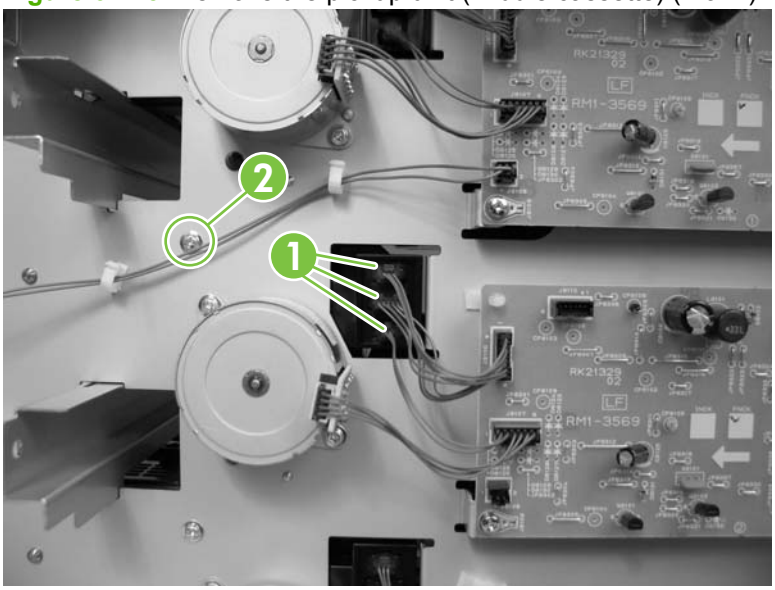
Left cover

To remove use the same procedure as that found with the 1 x 500-sheet input tray. See Lower-left cover on page 325.

Pickup unit (middle cassette)

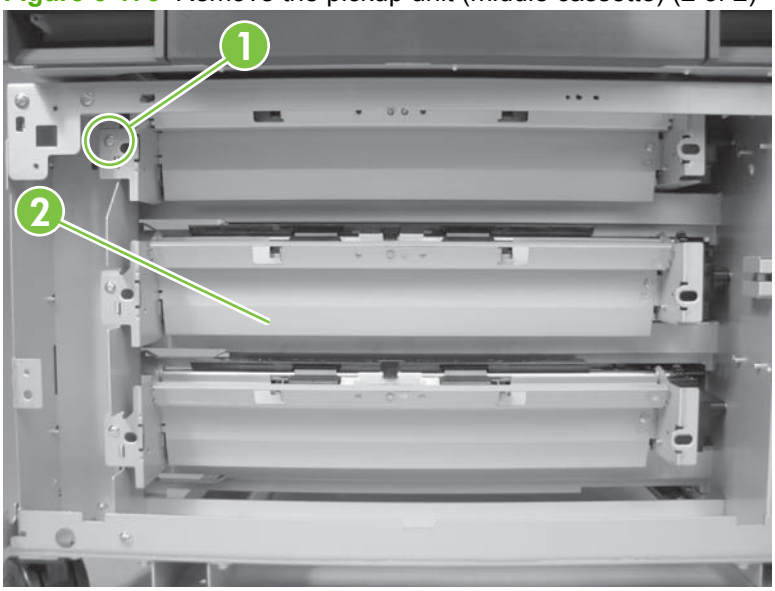
1. Remove the following:
   - Tray 4. See Trays 3, 4, and 5 on page 208.
   - Lower-rear cover. See Lower-rear cover on page 321.
   - Right cover. See Right cover on page 323.
2. Disconnect the three connectors (callout 1), and then remove one screw (callout 2).

Figure 6-175 Remove the pickup unit (middle cassette) (1 of 2)



3. Remove one screw (callout 1). Grasp the pickup unit (callout 2), and then shift to the left to release the right shaft. Pull the unit forward to remove it.

Figure 6-176 Remove the pickup unit (middle cassette) (2 of 2)



Pickup unit (lower cassette)

To remove use the same procedure as with the pickup unit (middle cassette). See Pickup unit (middle cassette) on page 335.

Pickup unit (upper cassette)

The procedure varies depending on whether the input tray is attached to the product.

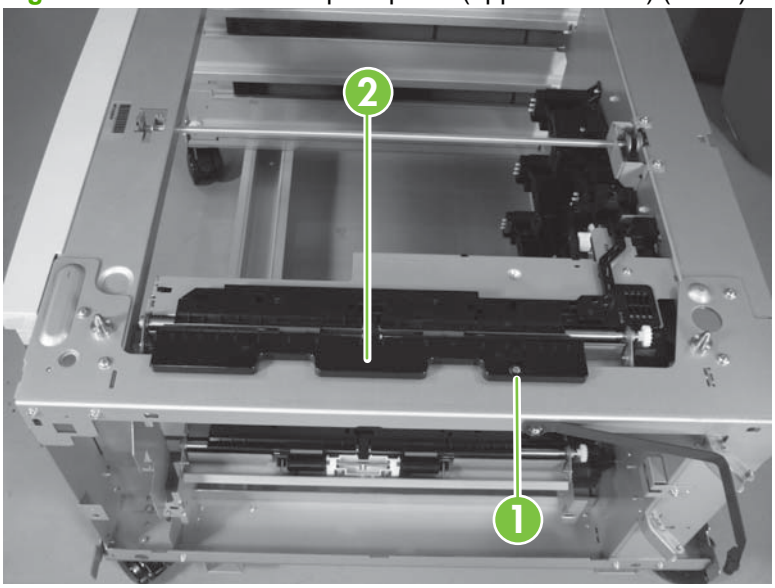
☐ Remove the following:

- Pickup unit (middle cassette). See Pickup unit (middle cassette) on page 335.

Input tray is not attached

☐ Remove one screw (callout 1), and then remove the feed guide (callout 2).

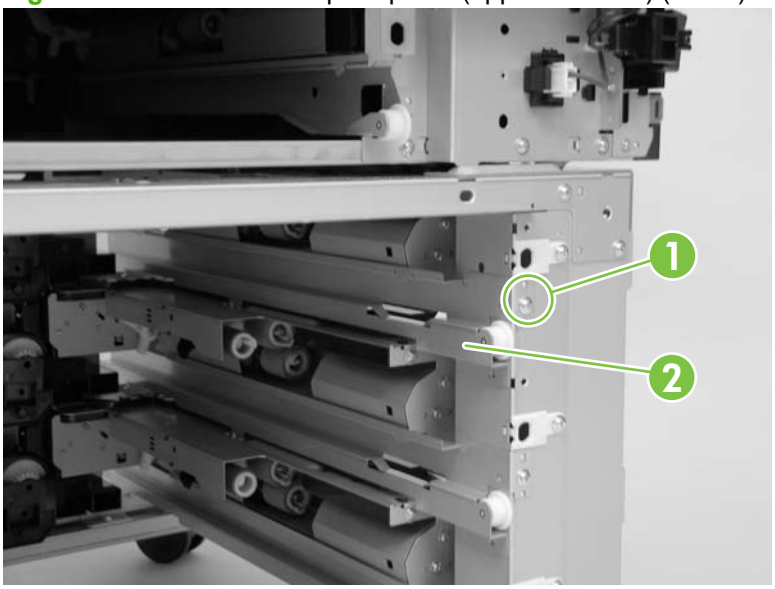
Figure 6-177 Remove the pickup unit (upper cassette) (1 of 3)



Input tray is attached

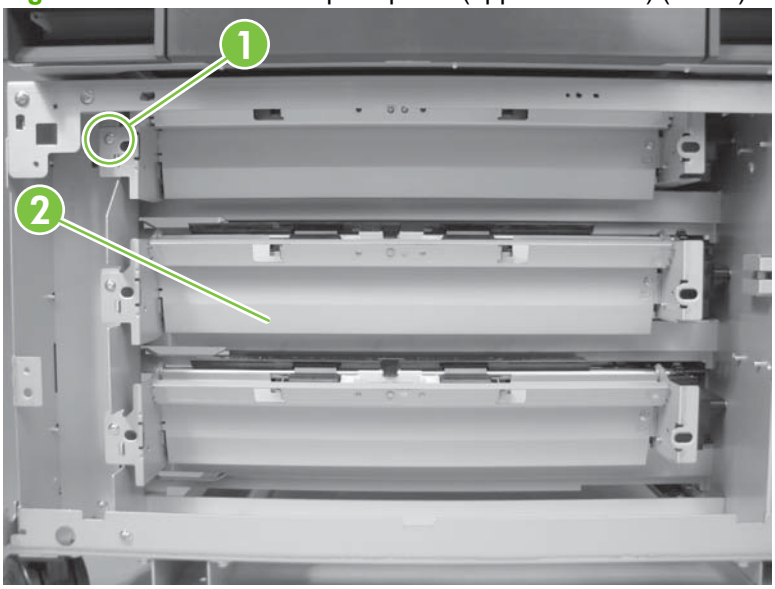
1. Remove one screw (callout 1), and then remove the cassette guide rail (callout 2).

Figure 6-178 Remove the pickup unit (upper cassette) (1 of 3)



2. Disconnect three connectors (callout 1), and then remove one screw (callout 2).

Figure 6-179 Remove the pickup unit (upper cassette) (2 of 3)

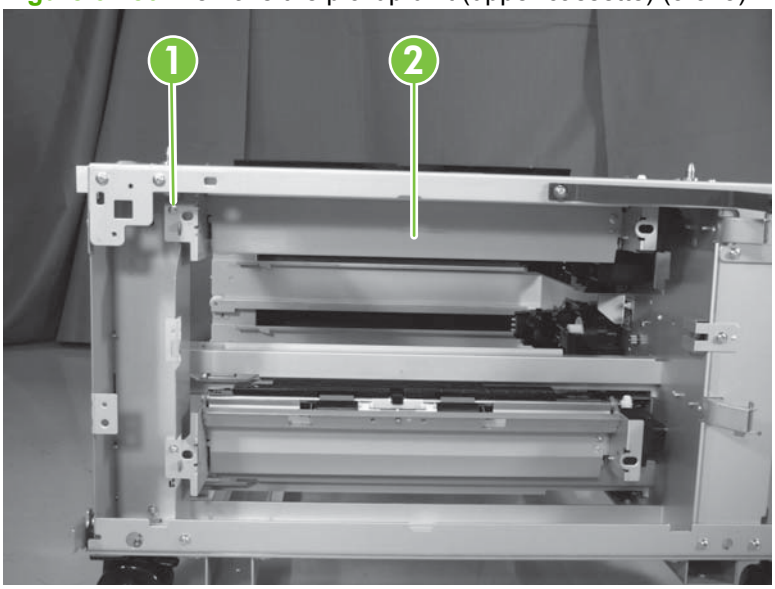


3. Remove one screw (callout 1).

4. Grasp the pickup unit (callout 2), pull the left end off the sheet metal tab, and shift to the left to release the right shaft. Pull the unit forward to remove it.

NOTE: If the pickup unit does not come out easily, gently slide a flat screwdriver over the top of the pickup unit to clear any interference with the feed guide.

Figure 6-180 Remove the pickup unit (upper cassette) (3 of 3)



Auto-close unit

To remove use the same procedure as with the 1 x 500-sheet input tray. See Auto-close unit on page 331.

Pickup motor

To remove use the same procedure as with the 1 x 500-sheet input tray. See Pickup motor on page 332.

Paper-feeder driver PCA

To remove use the same procedure as with the 1 x 500-sheet input tray. See Paper-feeder driver PCA on page 333.

7 Solve problems

- Troubleshooting process
- Tools for troubleshooting
- Solve performance problems
- Solve connectivity problems
- Control-panel message types
- Control-panel messages
- Event log messages
- Paper-handling problems
- Solve image-quality problems
- Interface troubleshooting
- Engine diagnostics
- Service mode functions
- Diagrams
- Signals

Troubleshooting process

Determine the problem source

When the product malfunctions or encounters an unexpected situation, the product control panel alerts you to the situation. This section contains a pre-troubleshooting checklist to filter out many possible causes of the problem. A troubleshooting flowchart helps you diagnose the root cause of the problem. The remainder of this chapter provides steps for correcting problems.

- Use the pre-troubleshooting checklist to evaluate the source of the problem and to reduce the number of steps that are required to fix the problem.
- Use the troubleshooting flowchart to pinpoint the root cause of hardware malfunctions. The flowchart guides you to the appropriate section of this chapter that provides steps for correcting the malfunction.

Before beginning any troubleshooting procedure, check the following conditions:

- Are supply items within their rated life?
- Does the configuration page reveal any configuration errors?

NOTE: The customer is responsible for checking supplies and for using supplies that are in good condition.

Pre-troubleshooting checklist

The list below describes basic questions to ask the customer to help quickly define the problem(s).

Table 7-1 Pre-troubleshooting checklist

Environment	• Is the product installed on a solid, level surface? • Is the product exposed to particle matter or dust? • Is the power-supply voltage within ± 10 volts of the specified power source? • Is the power supply plug inserted in the product and directly to the wall outlet (not a power strip)? • Is the operating environment within the specified parameters, as listed in chapter 1 of this manual? • Is the product exposed to ammonia gas, such as that produced by diazo copiers or office cleaning materials? • Is the product exposed to direct sunlight?
Media	• Does the customer use only supported media? • Is the media in good condition (contains no curls, folds, and so forth)? • Is the media stored correctly and within environmental limits?
Input trays	• Is the amount of media in the tray within specifications? • Is the media placed in the tray correctly?

Table 7-1 Pre-troubleshooting checklist (continued)

	• Are the paper guides aligned with the media? • Is the paper tray correctly installed in the product?
Print cartridges	• Is each print cartridge correctly installed? • Are original HP print cartridges installed? • Are the cartridges damaged?
ITB and fuser	• Are the ITB and fuser correctly installed? • Is the ITB or fuser damaged?
Covers	• Are the top cover and front cover closed?
Condensation	• Does condensation occur following a temperature change (particularly in winter following cold storage)? If so, wipe the affected area dry or leave the product on for 10 to 20 minutes. • Was a print cartridge installed soon after being moved from a cold to a warm room? If so, allow the product to sit at room temperature for one to two hours.
Miscellaneous	• Check for and remove any non-HP components (print cartridges, memory modules, and EIO cards) from the product. • If hardware or software configuration has not changed, or the problem is not associated with any specific software, contact the Customer Care Center (see chapter 1). • Remove the product from the network, and ensure that the failure is associated with the product before beginning troubleshooting. • For any print-quality issues, calibrate the product. See Calibrate the product on page 479.

Troubleshooting checklist

If the product is not responding correctly, complete the steps in the following checklist, in order. If the product does not pass a step, follow the corresponding troubleshooting suggestions. If a step resolves the problem, you can stop without performing the other steps on the checklist.

1. Make sure one of the following messages display on the control panel: **READY**, **PAUSED**, or **SLEEP MODE ON**. If no lights are on or the display does not say **READY**, **PAUSED**, or **SLEEP MODE ON**, see Power-on checks on page 345.
2. Check the cabling.
   a. Check the cable connection between the product and the computer or network port. Make sure that the connection is secure.
   b. Make sure that the cable itself is not faulty by using a different cable, if possible.
   c. Check the network connection. See Solve network printing problems on page 354.
3. Ensure that the print media that you are using meets specifications.

4. Print a configuration page (see Information pages on page 74.) If the product is connected to a network, an HP Jetdirect page also prints.

   a. If the pages do not print, check that at least one tray contains print media.

   b. If the page jams in the product, see Jams on page 428.

5. If the configuration page prints, check the following items.

   a. If the page prints correctly, then the product hardware is working. The problem is with the computer that you are using, with the printer driver, or with the program.

   b. If the page does not print correctly, the problem is with the product hardware.

6. Does the image quality meet the user's requirements? If yes, go to step 7. If no, check the following items:

   - Print the print-quality troubleshooting pages. See Example print quality problems on page 476 in this chapter.
   - Solve the print-quality problems, and then go to step 7.

7. At the computer, check to see if the print queue is stopped, paused, or set to print offline.

   Windows: Click **Start**, click **Settings**, and then click **Printers** or **Printers and Faxes**. Double-click **HP Color LaserJet CP6015**.

   -or-

   Mac OS X: Open **Printer Setup Utility**, and then double-click the line for the **HP Color LaserJet CP6015**.

8. Verify that you have installed the HP Color LaserJet CP6015 Series printer driver. Check the program to make sure that you are using the HP Color LaserJet CP6015 Series printer driver.

9. Print a short document from a different program that has worked in the past. If this solution works, then the problem is with the program that you are using. If this solution does not work (the document does not print) complete these steps:

   a. Try printing the job from another computer that has the product software installed.

   b. If you connected the product to the network, connect the product directly to a computer with a USB cable. Redirect the product to the correct port, or reinstall the software, selecting the new connection type that you are using.

Troubleshooting flowchart

This flowchart highlights the general processes that you can follow to quickly isolate and solve product hardware problems.

Each row depicts a major troubleshooting step. A “yes” answer to a question allows you to proceed to the next major step. A “no” answer indicates that additional testing is needed. Proceed to the appropriate section in this chapter, and follow the instructions there. After completing the instructions, proceed to the next major step in this troubleshooting flowchart.

Table 7-2 Troubleshooting flowchart

1 **Power on**	Is the product on and does a readable message display?		Follow the power-on troubleshooting checks. See Power-on checks on page 345. After the control panel display is functional, go to step 2.
	Yes ↓	No →	
2 **Control panel messages**	Does the message **READY** display on the control panel?		If an error message displays, see Control-panel messages on page 357. After the errors have been corrected, go to step 3.
	Yes ↓	No →	
3 **Event log**	Open the **DIAGNOSTICS** menu and print an event log to see the history of errors with this product. Does the event log print?		If the event log does not print, see Print an event log on page 422. If paper jams inside the product, see Jams on page 428. If error messages display on the control panel when you try to print an event log, see Control-panel messages on page 357. After successfully printing and evaluating the event log, go to step 4.
	Yes ↓	No →	
4 **Information pages**	Open the **INFORMATION** menu and print the configuration pages to verify that all of the accessories are installed. Are all of the accessories installed?		If accessories that are installed are not listed on the configuration page, remove the accessory and reinstall it. For more information about optional output devices, see Output accessories and intermediate paper-transfer unit (IPTU) on page 579. After evaluating the configuration pages, go to step 5.
	Yes ↓	No →	
5 **Image quality**	Does the print quality meet the customer's requirements?		Compare the images with the sample defects in the image defect tables. See Image-quality issues on page 487. After the print quality is acceptable, go to step 6.
	Yes ↓	No →	
6 **Interface**	Can the customer print successfully from the host computer?		Verify that all I/O cables are connected correctly and that a valid IP address is listed on the Jetdirect configuration page. See HP embedded Jetdirect page on page 350. If error messages display on the control panel, see Control-panel messages on page 357. When the customer can print from the host computer, this is the end of the troubleshooting process.
	Yes. This is the end of the troubleshooting process.	No →	

Power subsystem

Power-on checks

The basic product functions should start up as soon as the product is plugged into an electrical outlet and the power switch is pushed to the *on* position. If the product does not start, use the information in this section to isolate and solve the problem.

Power-on troubleshooting overview

Turn on the product power. If the control panel display remains blank, random patterns display, or asterisks remain on the control panel display, perform power-on checks to locate the cause of the problem.

During normal operation, the main cooling fan begins to spin briefly after the product power is turned on. Place your hand over the holes in the rear cover, above the formatter. If the fan is operating, you will feel air passing out of the product. You can also lean close to the product and hear the fan operating. When this fan is operational, the DC side of the power supply is functioning correctly.

After the fan is operating, the main motor turns on (unless the top cover is open, a jam condition is sensed, or the paper-path sensors are damaged). You should be able to visually and audibly determine if the main motor is turned on.

If the fan and main motor are operating correctly, the next troubleshooting step is to isolate print engine, formatter, and control panel problems. Perform an engine test (see Engine-test button on page 495). If the formatter is damaged, it might interfere with the engine test. If the engine-test page does not print, try removing the formatter and then performing the engine test again. If the engine test is then successful, the problem is almost certainly with the formatter, the control panel, or the cable that connects them.

If the control panel is blank when you turn on the product, check the following items.

1. Make sure that the product is plugged directly into an active electrical outlet (not a power strip) that delivers the correct voltage.
2. Make sure that the power switch is in the *on* position.
3. Make sure that the fan runs briefly, which indicates that the power supply is operational.
4. Make sure that the control panel display wire harness is connected. See Control panel on page 282.
5. Make sure that the formatter is seated and operating correctly.
6. Remove any HP Jetdirect or other EIO cards, and then try to turn the product on again.

NOTE: If the control panel display is blank, but the main cooling fan runs briefly after the product power is turned on, try printing an engine-test page to determine whether the problem is with the control-panel display, formatter, or other product components.

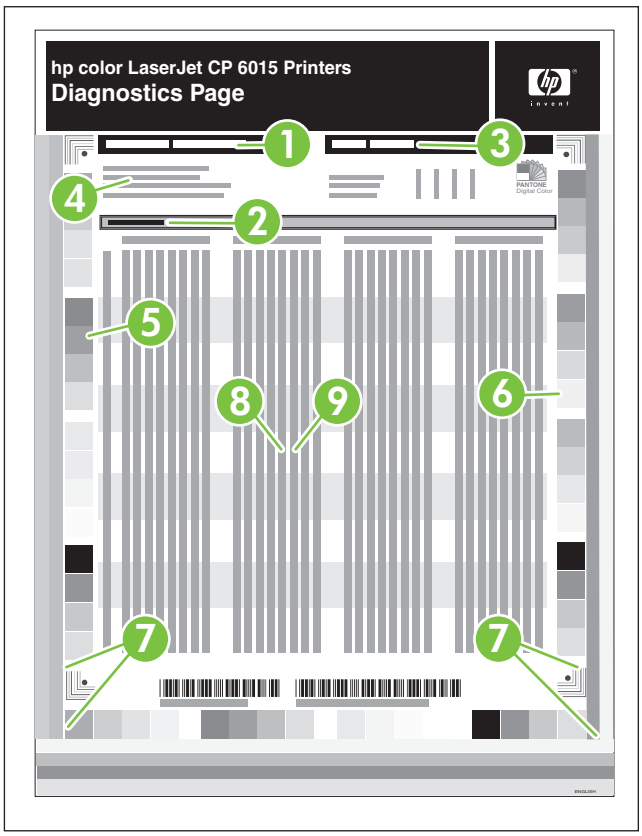
Tools for troubleshooting

Internal print-quality test pages

Diagnostics page

Use the diagnostics page to evaluate problems with color plane registration, EP parameters, and print quality.

1. Press Menu.
2. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight **PRINT DIAGNOSTICS PAGE**, and then press the checkmark button ✓ to print the page.



1	Calibration information
2	Parameters
3	Color density
4	Color plane registration
5	Primary colors
6	Secondary colors
7	Horizontal banding

8	Temperature values (22M)
9	Humidity values (22N)

Configuration pages

Depending on the model, up to three pages print when you select **PRINT CONFIGURATION**. In addition to the main configuration page, an embedded Jetdirect configuration page prints as well as a page for the stapler/stacker.

Configuration page

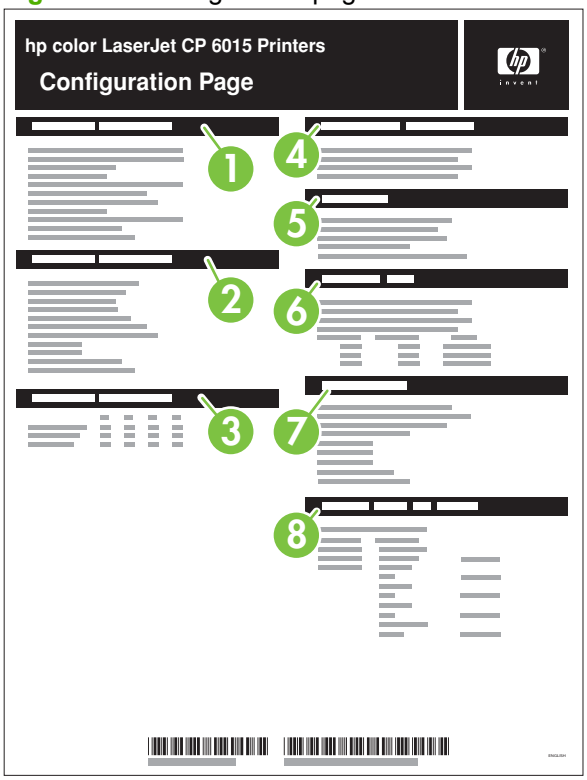
Use the configuration page to view current product settings, to help troubleshoot product problems, or to verify installation of optional accessories, such as memory (DIMMs), paper trays, and printer languages.

1. Press Menu.
2. Press the down arrow ▼ to highlight **INFORMATION**, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight **PRINT CONFIGURATION**, and then press the checkmark button ✓.

The message **PRINTING CONFIGURATION** displays on the control panel until the product finishes printing the configuration page. The product returns to the **READY** state after printing the configuration page.

NOTE: If the product is configured with EIO cards (for example, an HP Jetdirect Print Server) or an optional hard-disk drive, an additional configuration page will print that provides information about those devices.

Figure 7-1 Configuration page



1	Printer information
2	Installed personalities and options
3	Color density
4	Calibration information
5	Memory
6	Event log
7	Security
8	Paper trays and options

HP embedded Jetdirect page

The second configuration page is the HP embedded Jetdirect page, which contains the following information:

Figure 7-2 HP embedded Jetdirect page



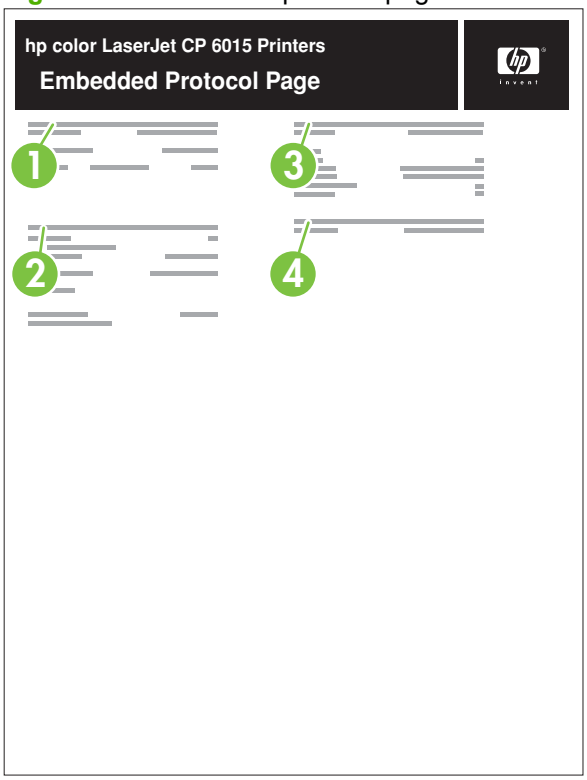
1	**HP Jetdirect Configuration** indicates the product status, model number, hardware firmware version, port select, port configuration, auto negotiation, manufacturing identification, and manufactured date.
2	**Security Settings** information
3	**Network Statistics** indicates the total packets received, unicast packets received, bad packets received, framing errors received, total packets transmitted, unsendable packets, transmit collisions, and transmit late collisions.
4	**TCP/IP** information, including the IP address
5	**IPX/SPX** information
6	**Novell/NetWare** information
7	**AppleTalk** information
8	**DLC/LLC** information

Always make sure the status line under the HP Jetdirect configuration lines indicates "I/O Card Ready".

Embedded protocol page

The embedded protocol page contains the following information:

Figure 7-3 Embedded protocol page



1	IPX/SPX
2	Novell/NetWare
3	AppleTalk
4	DLC/LLC

Finding important information on the configuration pages

Certain information, such as the firmware date codes, the IP address, and the e-mail gateways, is especially helpful while servicing the product. This information is on the various configuration pages. Table 7-3 Important information on the configuration pages on page 352 describes where to look for this information.

Table 7-3 Important information on the configuration pages

Type of information	Specific information	Configuration page
Firmware date codes When you use the remote firmware upgrade procedure, all of these firmware components are upgraded.	DC controller	Look on the main configuration page, under “Device Information.”
	Firmware datecode	Look on the main configuration page, under “Device Information.”
	Stapler/stacker firmware datecode	Look on the paper handling configuration page, under “Product Name.”
	Embedded Jetdirect firmware version	Look on the embedded Jetdirect page, under “HP Jetdirect Configuration.”
Accessories and internal storage All optional devices that are installed on the product should be listed on the main configuration page. In addition, separate pages print for the optional paper handling devices and the fax accessory. These pages list more-detailed information for those devices.	Internal disk (4700ph+ model only)	Look on the main configuration page, under “Installed Personalities and Options.” Shows model and capacity.
	Embedded HP Jetdirect	Look on the main configuration page, under “Installed Personalities and Options.” Shows model and ID.
	Total RAM	Look on the main configuration page, under “Memory.”
	Duplex unit	Look on the main configuration page, under “Paper Trays and Options.”
Additional 500-sheet feeders and optional output devices	Additional 500-sheet feeders and optional output devices	Look on the main configuration page, under “Paper Trays and Options.”
Engine cycles and event logs Total page counts and maintenance kit counts are important for ongoing product maintenance. The configuration page lists only the three most recent errors. To see a list of the 50 most recent errors, print an event log from the **DIAGNOSTICS** menu.	Engine cycles	Look on the main configuration page, under “Device Information.”
Pages since last maintenance (print engine maintenance count)	Pages since last maintenance (print engine maintenance count)	Look on the main configuration page, under “Device Information.”
Event-log information	Event-log information	Look on the main configuration page, under “Event log.”

Solve performance problems

Problem	Cause	Solution
Pages print but are totally blank.	The sealing tape might still be in the print cartridges.	Verify that the sealing tape has been completely removed from the print cartridges.
	The document might contain blank pages.	Check the document that you are printing to see if content appears on all of the pages.
	The product might be malfunctioning.	To check the product, print a configuration page.
Pages print very slowly.	Heavier media types can slow the print job.	Print on a different type of media.
	Complex pages can print slowly.	Proper fusing may require a slower print speed to ensure the best print quality.
	If printed in large batches, narrow paper can slow the print job.	Print on a different paper size or in smaller batches.
Pages did not print.	The product might not be pulling media correctly.	Make sure paper is loaded in the tray correctly. If the problem persists, you might need to replace the pickup rollers and the separation pad. See Tray-1 pickup and separation rollers on page 199.
	The media is jamming in the product.	Clear the jam. See Jams on page 428.
	The USB cable or network cable might be defective or incorrectly connected.	• Disconnect the cable at both ends and reconnect it. • Try printing a job that has printed in the past. • Try using a different cable.
	Other devices are running on your computer.	The product might not share a USB port. If you have an external hard drive or network switchbox that is connected to the same port as the product, the other device might be interfering. To connect and use the product, you must disconnect the other device or you must use two USB ports on the computer.

Solve connectivity problems

Solve direct-connect problems

If you have connected the product directly to a computer, check the USB cable.

- Verify that the cable is connected to the computer and to the product.
- Verify that the cable is not longer than 2 meters (6 feet). Replace the cable if necessary.
- Verify that the cable is working correctly by connecting it to another product. Replace the cable if necessary.

Solve network connectivity problems

If the product is having problems communicating with the network, use the information in this section to resolve the problem.

Solve network printing problems

NOTE: HP recommends that you use the product CD to install and set up the product on a network.

- Make sure that the network cable is securely seated into the product's RJ45 connector.
- Make sure that the Link LED on the formatter is lit. See Understand lights on the formatter on page 494.
- Make sure that the I/O card is ready. Print a configuration page (see Information pages on page 74). If an HP Jetdirect print server is installed, printing a configuration page also prints a second page that shows the network settings and status.

  NOTE: The HP Jetdirect print server supports various network protocols (TCP/IP, IPX/SPX, Novell NetWare, AppleTalk, and DCL/LLC). Make sure that the correct protocols and network parameters are set correctly.

  On the HP Jetdirect configuration page, verify the following items for your protocol:

  - Under HP Jetdirect Configuration, the status is "I/O Card Ready."
  - Protocol status is "Ready."
  - An IP address is listed.
  - The configuration method (Config by:) is listed correctly. See the network administrator if you are not sure which method is correct.
- Try printing the job from another computer.
- To verify that a product works with a computer, use a USB cable to connect it directly to a computer. You will have to reinstall the printing software. Print a document from a program that has printed correctly in the past. If this works, a problem with the network might exist.
- Contact your network administrator for assistance.

Verify communication over the network

If the HP Jetdirect configuration page shows an IP address for the product, use this procedure to verify that you can communicate with the product over the network.

1. **Windows**: Click **Start**, click **Run**, and then type `cmd`. An MS-DOS command prompt opens.

   -or-

   Mac: Click **Applications**, click **Utilities**, and then open the Terminal application. The terminal window opens.

2. Type `ping` followed by the IP address. For example, type `ping XXX.XXX.XXX.XXX` where "XXX.XXX.XXX.XXX" is the IPv4 address that is shown on the HP Jetdirect configuration page. If the product is communicating over the network, the response is a list of replies from the product.

3. Verify that the IP address is not a duplicate address on the network by using the address resolution protocol (arp -a) command. At the prompt, type `arp -a`. Find the IP address in the list and compare its physical address to the hardware address that is listed on the HP Jetdirect configuration page in the section called HP Jetdirect Configuration. If the addresses match, all network communications are valid.

4. If you cannot verify that the product is communicating over the network, contact the network administrator.

Control-panel message types

Four types of control-panel messages can indicate the status of or problems with the product.

Message type	Description
Status messages	Status messages reflect the current state of the product. They inform you of normal product operation and require no interaction to clear them. They change as the state of the product changes. Whenever the product is ready, not busy, and has no pending warning messages, the status message **READY** appears if the product is online.
Warning messages	Warning messages inform you of data and print errors. These messages typically alternate with the **READY** or status messages and remain until you press the checkmark button ✓. Some warning messages are clearable. If **CLEARABLE WARNINGS** is set to **JOB**, the next print job clears these messages.
Error messages	Error messages communicate that some action must be performed, such as adding paper or clearing a jam. Some error messages are auto-continuable. If **AUTO CONTINUE** is set on the menus, the product will continue normal operation after an auto-continuable error message appears for 10 seconds. **NOTE:** Pressing any button during the 10-second auto-continuable error message overrides the **AUTO CONTINUE** setting, and a button function takes precedence. For example, pressing the Stop button pauses printing with an option to cancel the print job.
Critical-error messages	Critical error messages inform you of a product failure. Some of these messages can be cleared by turning the product off and then on. These messages are not affected by the **AUTO CONTINUE** setting. If a critical error persists, service is required.

Control-panel messages

Table 7-4 Control-panel messages

Control panel message	Description	Recommended action
10.32.00 Unauthorized Supply **For help press ? (Help button)**	An unauthorized print cartridge has been installed.	1. Press the checkmark button ✓ to continue with this print cartridge.
10.90.XY REPLACE <COLOR> CARTRIDGE	A toner replenishment malfunction has occurred.	Replace the print cartridge. If replacing the print cartridge does not fix the problem, replace the corresponding image drum.
10.91.00 PRINT CARTRIDGE ERROR **For help press ? (Help button)** **REPLACE BLACK PRINT CARTRIDGE** **To continue turn off then on**	There is an error with the black-toner feed motor.	The black print cartridge is defective and needs to be replaced. Please record message and contact support. After replacing the defective cartridge turn the power off then on to continue. 1. Reconnect the connectors for the black-toner feed-motor rotational-count sensor (J2024), intermediate (J1930), and the DC controller PCA (J131). 2. Reconnect the connectors for the color/black I/F PCA (J2201B), cartridge driver PCA (J403, J404, and J405), and the DC controller PCA (J141). 3. Replace the black-toner feed motor.
10.91.09 PRINT CARTRIDGE ERROR **For help press ? (Help button)** **REPLACE BLACK PRINT CARTRIDGE** **To continue turn off then on**	There is an error with the color-toner feed motor.	One of the cyan, magenta, or yellow print cartridges is defective and needs to be replaced. Please record the message and contact support. After replacing the defective cartridge, turn the power off then on to continue. 1. Reconnect the connectors for the color-toner feed-motor rotational-count sensor (J2023), intermediate (J1929), and the DC controller PCA (J131). 2. Reconnect the connectors for the yellow/magenta cartridge I/F PCA (J2201A), the cyan/black cartridge I/F PCA (J2201B), the cartridge driver PCA (J402, J403, J406, and J408), and the DC controller PCA (J142). 3. Replace the color-toner feed motor.
10.XX.YY SUPPLY MEMORY ERROR **For help press ? (Help button)**	The product cannot read or write to at least one print cartridge e-label or an e-label is missing from a print cartridge.	Reinstall the print cartridge, or install a new print cartridge.
10.XX.YY SUPPLY MEMORY ERROR **For help press ? (Help button)**	The product cannot read or write to at least one image drum. 10.10.00-10.10.03 = Missing e-label on print cartridge	1. Open the front door. 2. Replace the specified image drum. 3. Close the front door.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
	10.10.05-10.10.08 = Missing e-label on image drum 10.00.00-10.00.03 = Defective e-label on print cartridge 10.00.05-10.00.08 = Defective e-label on image drum	
11.XX Internal clock error **To continue press ✓ (Checkmark button)**	The product real time clock has experienced an error.	Whenever the product is turned off and then turned on again, set the time and date at the control panel. See Use the control panel on page 14. If the error persists, replace the formatter.
13.12.11	Finisher stay jam at either PI33 or PI34 when engine powered on. When the engine is powered on, the finisher's upper-feed-path-entry sensor (PI33) or the upper-feed-path-exit sensor (PI34) is activated suggesting that there is paper in the upper paper path of the finisher at sensors PI33 or PI34.	Signal generated from PI33 (upper-feed-path-entry sensor) and PI34 (upper-feed-path-exit sensor) To locate these sensors, see Detect jams in the stacker unit on page 636. 1. Open the top door and remove any media in the paper path (media detected at PI33). 2. Raise the upper paper path (exit) delivery rollers and remove any media in the paper path (media detected at PI34). 3. Check these sensors for obstructions. Verify that the sensor flags are not damaged, move freely, and are correctly aligned with the sensor body and properly mounted. Also check wiring and connectors for damage or loose connections. 4. Carefully clean the sensor body by gently blowing clean air across the sensor to remove dust and debris. 5. Verify that the sensor connectors (J708 and J707) are fully seated on the stacker controller PCA. 6. Replace sensor PI33 and PI34. 7. Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.
13.12.12	Finisher delay jam at PI33. The engine signals the finisher that paper is about to enter the finisher from the IPTU. The finisher's upper-feed-path-entry sensor (PI33), which detects paper entering the finisher, does not detect the paper within the expected time period triggering the error.	To locate this sensor, see Detect jams in the stacker unit on page 636.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		Open the IPTU and the finisher top door and check the following items: • If media is found in the IPTU but has not reached the finisher, perform the following steps: ◦ Remove and then reinstall the IPTU. Make sure that the connector is fully seated and that the IPTU is securely fastened. ◦ If the error persists, replace the IPTU. See IPTU on page 646. • If media is jammed at the exit point of the IPTU (prior to entering the finisher), perform the following steps: ◦ Verify that the finisher is securely fastened to the engine. ◦ Make sure that the finisher and IPTU are correctly aligned. Adjust the finisher castors to obtain a uniform gap between the finisher and the engine. The engine-to-finisher gap must be the same at the bottom and the top so that the finisher is parallel to the engine. With the engine-to-finisher gap correct, make sure that the finisher paper path entry point is aligned with the IPTU exit point. ◦ Check the finisher entry point guides for damage. ◦ Verify that the finisher rollers are turning before the media leaves the IPTU. If the rollers are not turning, test motor M9 by using the finisher component test from the control-panel display. If the motor does not activate during the test, check the connectors for motor M9 (inlet motor). Make sure that connector J705 is fully seated on the stacker controller PCA. If the error persists, replace motor M9 or the saddle paper-feeder assembly. Only if the error persists and the previous steps fail to correct the problem, replace the stacker

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		controller PCA. See Stacker controller PCA on page 737. • If media is found in the finisher but has not reached sensor PI33, perform the following steps: ◦ Check the upper and lower guides and rollers in the paper path for damage. ◦ Make sure that the media diverter gate (saddle-stitch flapper) is not blocking the paper path. • If media is found in the finisher covering sensor PI33 (the sensor is not detecting the media), perform the following steps: ◦ Check the sensor for obstructions. Verify that the sensor flag is not damaged, moves freely, and is correctly aligned with the sensor body. Make sure that the lower end of the flag is not damaged and is correctly positioned to activate the sensor. ◦ Make sure that the sensor is securely fastened to the chassis. ◦ Carefully clean the sensor body by gently blowing clean air across the sensor to remove dust and debris. ◦ Verify that the wiring at the sensor is not damaged and that the intermediate connector J1007 and connector J708 on the stacker controller PCA are fully seated. Replace the sensor if necessary. ◦ Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.
13.12.13	Finisher stay jam at PI33. Finisher's upper-feed-path-entry sensor (PI33) is remaining activated longer than expected, suggesting that paper has jammed at the sensor.	Control panel diagnostics: none To locate this sensor, see Detect jams in the stacker unit on page 636. 1. Remove any media in the upper paper path that might be activating sensor PI33. 2. Verify that the sensor flag is not damaged, moves freely, and is correctly aligned with the sensor body.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		3. Carefully clean the sensor body by gently blowing clean air across the sensor to remove dust and debris. 4. Verify that the wiring at the sensor is not damaged and that the connector J708 on the stacker controller PCA is fully seated.
13.12.14	Finisher delay jam at PI34. Upper-paper-path-entry sensor (PI33) has signaled that paper has passed but upper-paper-path exit sensor PI34 does not actuate within the expected time, suggesting that the paper has jammed between PI33 and PI34 in the upper paper path.	Control panel diagnostics: none To locate these sensors, see Detect jams in the stacker unit on page 636. 1. Remove any media jammed in the upper paper path between sensor PI33 and sensor PI34. 2. Check the paper path between sensor PI33 and sensor PI34 for obstructions that may be preventing the media from reaching PI34. 3. Verify that the PI34 sensor flag is not damaged, moves freely, and is correctly aligned with the sensor body. 4. Make sure that sensor PI34 is securely fastened to the chassis and wiring is properly connected to sensor. **NOTE:** Sensor PI34 is located on the front frame of the finisher, directly over the primary stapler. 5. Verify that the wiring at the sensor is not damaged and that the connector J707 on the stacker controller PCA is fully seated. 6. Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.
13.12.15	Finisher stay jam at PI34 Finisher's upper-paper-path-exit sensor (PI34) remains activated longer than expected suggesting that paper has jammed at the sensor.	Control panel diagnostics: M31 (entrance motor), SL32 (buffer roller solenoid), and SL33 (output roller solenoid) To locate this sensor, see Detect jams in the stacker unit on page 636. PI34 is located on the front frame of the finisher, above the main stapler unit. 1. Remove any media in the upper paper path that might be activating sensor PI34. 2. Carefully clean the sensor body, by gently blowing clean air across the sensor to remove dust and debris.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		3. Verify that the sensor flag is not damaged, moves freely, and is correctly aligned with the sensor body. 4. Lift-swing-guide assembly at the paper-exit area to output bins and inspect for jammed paper, obstructions, or damage. 5. Run a diagnostic through the engine control panel and turn on M31 (entrance motor) to observe gear rotations on the upper-rear frame of the finisher. Ensure that the first-delivery rollers and buffer rollers that pass paper to and from PI34 are rotating. 6. Test SL32 (buffer-roller solenoid) and SL33 (output-roller solenoid) using the control panel diagnostics. 7. Check wiring from sensor PI34 to stacker-control board connector J707 for damage. 8. Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.
13.12.16	Finisher jam: door opened during staple/ stacking operation While the machine is printing, upper-door (open/close) sensor (PI31) or front-door (open/close) sensor (PI32) or the front-door (open/close) switch (MSW31) has signaled that one of the doors has been opened, suggesting that there may now be paper found in the upper paper path.	Control panel diagnostics: PI31 (top-door sensor), PI32 (front door sensor) Booklet maker only: check PI3 (Booklet Door 1 Sensor) (booklet-delivery door) 1. Make sure that the doors properly open and close and stay in the fully closed position. If the front door is not closing tightly at the top, it will not activate the door switch. If necessary, adjust the alignment of the front door by opening the door and carefully twisting it. 2. Verify that the sensor-activation arms on the doors are not damaged. 3. Make sure that the front-door sensor PI32 and switch MSW31 and top-door sensor PI31 are not obstructed. 4. Make sure that the arm on front-door switch MSSW31 is not bent or damaged. 5. Make sure that sensor PI32 and switch MSSW31 are securely fastened to the chassis. 6. Test sensor PI31 (upper-door sensor) and sensor PI32 (front-door sensor) by

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		using the finisher component tests from the control-panel display. **NOTE:** For finishers with a booklet maker, also test sensor PI3 (booklet-door-1 sensor).
13.12.17	Engine to finisher timing jam: unexpected arrival of paper to finisher Upper-paper-path entry sensor (PI33) has detected paper before a signal from the engine has been received, indicating that paper is being delivered from the IPTU to the finisher.	Control panel diagnostics: none To locate this sensor, see Detect jams in the stacker unit on page 636. 1. Verify that the latest firmware updates are installed for the engine and finisher. 2. Remove any media in the upper paper path that might be activating sensor PI33. If no media is found at PI33, proceed to step 3. If media is found at PI33, perform the following steps: ◦ Make sure that the power/communication cable from the IPTU to the finisher is properly connected. ◦ Make sure that the IPTU is properly connected to the engine and that the mounting screws are tight. ◦ Make sure that the finisher is properly grounded. ● Ensure that the finisher is latched and locked to the engine by tightening the thumbscrew inside the front door. ● Ensure that the grounding-frame assembly (the bar with the wheel located between the engine and the finisher) is in the “down” position with the wheel touching the floor and that the grounding plate is not damaged. **NOTE:** The grounding-frame assembly is in the “up” position when the finisher is shipped. It must be lowered when the finisher is installed. ◦ If the error persists, replace the IPTU. See IPTU on page 646. 3. Check for media at the finisher entrance point and at sensor PI33.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		If no media is found at PI33, perform the following steps: ◦ Make sure that the finisher is properly grounded. • Ensure that the finisher is latched and locked to the engine by tightening the thumbscrew inside the front door. • Ensure that the grounding-frame assembly (the bar with the wheel located between the engine and the finisher) is in the down position with the wheel touching the floor and that the grounding plate is not damaged. **NOTE:** The grounding-frame assembly is in the up position when the finisher is shipped. It must be lowered when the finisher is installed. ◦ Carefully clean the sensor body by gently blowing clean air across the sensor to remove dust and debris. ◦ Verify that the sensor flag is not damaged, moves freely, and is correctly aligned with the sensor body. ◦ Verify that the wiring at the sensor is not damaged and that the connector J708 on the stacker controller PCA is fully seated. 4. Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.
13.12.21	Finisher upper stapler (stapler 1) staple jam. When the staple motor (M41) is rotated forward, the staple home-position sensor (PI5) does not turn back on after the prescribed time has elapsed after it goes off, and the staple home-position sensor (PI50) turns on within the prescribed time after the staple motor (M41) is rotated backwards.	Control panel diagnostics: none 1. Check the stapler unit for jammed staples. 2. Check the stapler unit for loose staples and paper dust. 3. Inspect the stapler unit for damage. 4. Remove the stapler cartridge and make sure HP-approved staples are being used. 5. Verify that the wiring at the stapler unit and the connector are not damaged.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		6. Install new staple cartridge and retest. 7. If the error persists, replace the stapler unit. See Stapler on page 683.
13.12.41	Finisher: Paper detected in the booklet-making portion of the finisher at engine power on. Occurs when paper is detected by one of the sensors on the paper-sensor board (PI18, PI19, PI20), vertical-path-paper sensor (PI17), booklet-delivery sensor (PI11), paper-positioning-plate-paper sensor (PI8), or booklet-making paper-entry sensor (PI22) when engine is turned on.	Control panel diagnostics: none To locate these sensors, see Detect jams in the booklet maker unit on page 636. 1. Remove media from the booklet-maker paper path. 2. Verify that the sensor flags are not damaged, move freely, and are correctly aligned with the sensor bodies. 3. Carefully clean each sensor body by gently blowing clean air across each sensor to remove dust and debris. 4. Make sure that connectors J6, J9, J10, J13, and J21 are fully seated on the saddle-stitcher controller PCA. 5. Only if the error persists and the previous steps fail to correct the problem, replace the saddle-stitcher controller PCA. See Saddle-stitcher controller PCA (booklet maker only) on page 738.
13.12.42	Finisher delay jam at booklet-making paper-entry sensor (PI22) Occurs when booklet making function is selected and after the engine signals the finisher that it is delivering paper to the finisher. The booklet-making-paper entry sensor (PI22) is not activated within the expected time period after receiving the engine's delivery signal, suggesting that a paper jam has occurred somewhere between the output accessory bridge (IPTU) and sensor PI22.	Control panel diagnostics: M9 (inlet motor), SL5 (inlet-switch solenoid) Signal generated from: PI22 (booklet-making-paper entry sensor) To locate this sensor, see Detect jams in the booklet maker unit on page 636.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		Open the IPTU and the finisher top door and locate the media jam. Check the following items: • If media is found in the IPTU but has not reached the finisher entrance point, perform the following steps: ◦ Remove and then reinstall the IPTU. Make sure that the connector is fully seated and that the IPTU is securely fastened. ◦ If the error persists, replace the IPTU. • If media is jammed at the entrance point of the finisher, perform the following steps: ◦ Verify that the finisher is securely fastened to the engine. ◦ Make sure that the finisher and IPTU are correctly aligned. Adjust the finisher castors to obtain a uniform gap between the finisher and the engine. The engine-to-finisher gap must be the same at the bottom and the top so that the finisher is parallel to the engine. With the engine-to-finisher gap correct, make sure that the finisher paper path entry point is aligned with the IPTU exit point. ◦ Check the finisher entry point guides for damage. ◦ Verify that the finisher rollers are turning before the media leaves the IPTU. If the rollers are not turning, test motor M9 by using the finisher component test from the control-panel display. If the motor does not activate during the test, check the connectors for motor M9 (inlet motor). Make sure that connector J705 is fully seated on the stacker controller PCA. If the error persists, replace motor M9 or the saddle paper-feeder assembly for the type finisher you are working on. Only if the error persists and the previous steps fail to correct the

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		problem, replace the stacker controller PCA. See Stacker controller PCA on page 737. • If media is found in the finisher but has not reached sensor PI22, perform the following steps: ◦ Check the upper and lower guides and rollers in the paper path for damage. ◦ Make sure that the media diverter gate (saddle-stitch flapper) is functioning properly. ◦ Test solenoid SL5 (inlet-switch solenoid) by using the finisher component test from the control-panel display. SL5 should be opening and closing the media diverter gate (saddle stitch flapper). • If media is found in the finisher cover sensor PI22 (the sensor is not detecting the media), perform the following steps: ◦ Check the sensor for obstructions. Verify that the sensor flag is not damaged, moves freely, and is correctly aligned with the sensor body. Make sure that the lower end of the flag is not damaged and is correctly positioned to activate the sensor. ◦ Make sure that the sensor is securely fastened to the chassis. ◦ Carefully clean the sensor body by gently blowing clean air across the sensor to remove dust and debris. ◦ Verify that the wiring at the sensor is not damaged and that the intermediate connectors between the sensor and connector J21 on the saddle-stitcher controller PCA are fully seated. Replace the sensor if necessary. If PI22 is determined to be the failure point, replace the saddle paper-feeder assembly, which includes PI22. ◦ Only if the error persists and the previous steps fail to correct the problem, replace the saddle-stitcher controller PCA. See Saddle-stitcher controller PCA (booklet maker only) on page 738.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
13.12.43	Finisher stay jam at booklet-making paper entry sensor (PI22) Occurs when the booklet-making paper entry sensor (PI22) remains activated longer than expected, suggesting that there is a paper jam at the sensor.	Control panel diagnostics: none To locate this sensor, see Detect jams in the stacker unit on page 636. 1. Remove any media in the upper paper path that might be activating sensor PI22. 2. Verify that the sensor flag is not damaged, moves freely, and is correctly aligned with the sensor body. 3. Carefully clean the sensor body by gently blowing clean air across the sensor to remove dust and debris. 4. Verify that the wiring at the sensor is not damaged. Check the intermediate connectors between sensor PI22 and connector J21 on saddle-stitcher controller PCA for damage and proper connections. Replace the sensor if necessary.

13.12.44	Finisher delay jam at booklet making first paper sensor (PI18)
	
	Occurs when the first-paper sensor (PI18) is not activated within the expected time following the activation of the booklet-making-paper entry sensor (PI22), suggesting that there is a paper jam in the area between PI22 and PI18.
		Control panel diagnostics: M1 (Delivery Motor)
		
		To locate these sensors, see Detect jams in the booklet maker unit on page 636.
		
		Open the IPTU and the finisher top door and locate the media jam. Check the following items:
		
		• If media is found at sensor PI18, perform the following steps:
		  ◦ Check the sensor PI18 for damage. Replace the sensor if necessary.
		  ◦ Carefully clean the sensor body by gently blowing clean air across the sensor to remove dust and debris.
		  ◦ Verify that the wiring from sensor PI18 to connector J10 on the saddle-stitcher controller PCA is undamaged and the connectors are fully seated.
		• If media is found at the roller prior to sensor PI18 in the paper path, perform the following steps:
		  ◦ Test motor M1 (delivery motor) by using the finisher component test from the control-panel display.
		  ◦ Remove the finisher rear cover. Activate motor M1 and verify that the drive gears and belts are moving.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		◦ If motor M1 does not rotate, verify that connector J5 on the saddle-stitcher controller PCA is fully seated. If the error persists, replace motor M1. If motor M1 still does not rotate, replace the saddle-stitcher controller PCA. See Saddle-stitcher controller PCA (booklet maker only) on page 738. ◦ If motor M1 does rotate but the gears and belts connected to motor M1 do not move, check for damaged components. Replace damaged components as necessary.
13.12.45	Finisher stay jam at booklet making first paper sensor (PI18), flapper-1 paper sensor (PI19) or flapper-2 paper sensor (PI20) Occurs when PI18, PI19 or PI20 remain activated longer than expected, suggesting that there is a paper jam in the flapper 1 and 2 area of the booklet-maker section of the finisher.	Control-panel diagnostics: PI19 (flapper 1), PI20 (flapper 2), M1 (delivery motor), SL1 (flapper 1 solenoid), SL2 (flapper 2 solenoid) To locate these sensors, see Detect jams in the booklet maker unit on page 636. 1. Remove any media in the area around flapper 1 and flapper 2. 2. Check the flappers for damage. 3. Test sensor PI19 and sensor PI20 by using the finisher component test from the control-panel display. ◦ If the sensors are faulty, perform the following steps: • Verify that the sensor flags are not damaged, move freely, and are correctly aligned with the sensor bodies. • Verify that the wiring at the sensors is not damaged and that the connector J10 on the saddle-stitcher controller PCA is fully seated. • If the error persist, replace the paper sensor PCA (which contains PI118, PI119, and PI20). 4. Test flapper 1 and flapper 2 by using the finisher component test from the control-panel display. **NOTE:** To verify the proper movement of the flappers, activate SL1 and SL2 in the finisher component test.
13.12.46	Finisher jam: door was opened during booklet-making operation.	Control-panel diagnostics: PI31 (top-door sensor), PI32 (front-door sensor), PI3

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
	Occurs while the machine is booklet making and the booklet delivery door sensor (PI3) or the booklet paper path open/close sensor (PI3) detects that the door or paper path has been opened. Also occurs when the finisher's front-door sensor (PI32) has been opened with paper remaining in the processing tray of the main stapler while the finisher is not operating.	(booklet door 1 sensor) (booklet-delivery door) To locate sensor PI31 and sensor PI32, see Detect jams in the booklet maker unit on page 636. 1. Test sensor PI31, sensor PI32, and sensor PI3 by using the finisher component test from the control-panel display. 2. Make sure that the front door, top door, and booklet-delivery door properly open and close and stay in the fully closed position. If the front door is not closing tightly at the top, it will not activate the door switch. If necessary, adjust the alignment of the front door by opening the door and carefully twisting it into proper alignment. 3. Verify that the sensor-activation arms on the doors are not damaged. 4. Make sure that the sensors and front-door switch MSW31 are not obstructed. 5. Make sure that the arm on switch MSW31 is not bent or damaged. 6. Make sure that sensors PI31, PI32, PI9, and switch MSW31 are securely fastened to the chassis. 7. Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.
13.12.51	Finisher jam: rear booklet stapler (SW5) When the rear-staple motor (M6) is rotated forward, the staple-home-position sensor (SW5) does not turn back on after the prescribed time has elapsed after it goes off (0.4 seconds).	Control panel diagnostics: none 1. Check the rear booklet-stapler unit for jammed staples. 2. Check the rear booklet-stapler unit for loose staples. 3. Inspect the rear booklet-stitch-stapler unit for damage. 4. Verify that HP approved staples for this stapler are being used. 5. Verify that the wiring at the stapler unit and the connector are not damaged. 6. Replace the staple cartridge.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		NOTE: Replace both the front and rear staple cartridges at the same time so that the staple low sensors will properly detect the level of staples in the cartridges. 7. Only if the error persists and the previous steps fail to correct the problem, replace the saddle-stapler assembly. See Saddle-stapler assembly (booklet maker only) on page 699.
13.12.52	Finisher jam: front-booklet stapler (SW7) When the rear-staple motor (M7) is rotated forward, the staple home-position sensor (SW7) does not turn back on after the prescribed time has elapsed after it goes off (0.4 seconds).	Control panel diagnostics: none 1. Check the front booklet-stapler unit for jammed staples. 2. Check the front booklet-stapler unit for loose staples. 3. Inspect the front booklet-stapler unit for damage. 4. Verify that HP approved staples for this stapler are being used. 5. Verify that the wiring at the stapler unit and the connector are not damaged. 6. Replace the staple cartridge. See Stapler on page 683. **NOTE:** Replace both the front and rear cartridges at the same time so that the staple low sensors will properly detect the level of staples in the cartridges. 7. Only if the error persists and the previous steps fail to correct the problem, replace the saddle-stapler assembly. See Saddle-stapler assembly (booklet maker only) on page 699.
13.12.61	Finisher delay jam at the booklet-delivery sensor (PI11) Occurs when the folded booklet exits the folding rollers and does not reach the booklet-delivery sensor (PI11) within the expected time.	Control panel diagnostics: none 1. Check the folder roller area for a jam or media wrapped around the rollers. 2. Check sensor PI11 for damage. 3. Make sure that the sensor is not obstructed. 4. Make sure that sensor PI11 is securely fastened to the chassis.
13.12.62	Finisher stay jam at the booklet-delivery sensor (PI11) or the vertical-paper-path sensor (PI17)	Control panel diagnostics: M2 (Folding motor) 1. Check the folder roller area for a jam. 2. Test the folding motor (M2) by using the finisher component test from the control-

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
	Occurs when the booklet-delivery sensor (PI11) remains activated longer than expected after sensing the arrival of the new booklet from the folding rollers. Also occurs when the vertical-paper-path sensor (PI17) remains activated longer than expected after the paper has already passed through the folding rollers and is now detected by the booklet-delivery sensor (PI11).	panel display. ◦ Remove the finisher rear cover before starting the test and make sure that the folding rollers are rotating when motor M2 is on. 3. Check sensor PI11 and PI17 for damage. 4. Make sure that the sensors are not obstructed. 5. Make sure that sensor PI11 and sensor PI17 are securely fastened to the chassis.
13.12.XX JAM IN LEFT ACCESSORY	There is a paper jam in the output accessory. See Jam locations on page 429.	1. Follow the onscreen instructions to find and remove the jammed paper.
13.JJ.NT FUSER AREA JAM	A jam has occurred in the duplex and feed area. See Jam locations on page 429.	**CAUTION:** The fuser can be hot while the product is in use. Wait for the fuser to cool before handling it. 1. Open the right door. 2. Turn the blue levers on the fuser to unlock position. 3. Clear all paper. 4. Turn the blue levers to lock position. 5. Close the right door.
13.JJ.NT FUSER WRAP JAM	A jam has occurred in the fuser. See Jam locations on page 429.	**CAUTION:** The fuser can be hot while the product is in use. Wait for the fuser to cool before handling it. 1. Open the right door. 2. Turn the blue levers on the fuser to unlock position. 3. Clear all paper. 4. Turn the blue levers to lock position. 5. Close the right door. To prevent jam in future, set the print optimization mode **LIGHT MEDIA** to **ON**. See Print Quality menu on page 24.
13.JJ.NT JAM ABOVE TOP OUTPUT BIN	A jam has occurred in the duplex area. See Jam locations on page 429.	1. Clear all paper found in the duplex area above the output bin. 2. Press the checkmark button ✓.
13.JJ.NT JAM IN LOWER RIGHT DOOR	A jam has occurred in the lower-right door. See Jam locations on page 429.	1. Open the lower-right door. 2. Clear all paper. 3. Close the lower-right door.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
13.JJ.NT JAM IN RIGHT DOOR	A jam has occurred in the duplex and feed area inside the right door. See Jam locations on page 429.	1. Open the right door. 2. Clear all paper. 3. Close the right door.
13.JJ.NT JAM IN TOP COVER	A jam has occurred in the top cover. See Jam locations on page 429.	1. Open the top cover. 2. Clear all paper. 3. Close the top cover.
13.JJ.NT JAM IN TRAY 1	A jam has occurred in Tray 1. See Jam locations on page 429.	1. Clear all paper from Tray 1. 2. Press the checkmark button ✓.
13.JJ.NT JAM IN TRAY <X>	A jam has occurred in the indicated tray. See Jam locations on page 429.	1. Open the indicated tray. 2. Clear all paper. 3. Press the checkmark button ✓.
13.JJ.NT TRANSFER AND FUSER JAM	A jam has occurred inside the right door in the transfer or fuser area. See Jam locations on page 429.	**CAUTION:** The fuser can be hot while the product is in use. Wait for the fuser to cool before handling it. 1. Open the right door. 2. Open the transfer-access panel and clear all paper found. 3. Remove the fuser and clear all paper found. 4. Reinstall the fuser and close the transfer-access panel. 5. Close the right door.
13.JJ.NT TRANSFER AREA JAM	A jam has occurred inside the right door in the image transfer area. See Jam locations on page 429.	1. Open the right door. 2. Open the transfer-access panel. 3. Clear all paper found. 4. Close the transfer-access panel. 5. Close the right door.
20 INSUFFICIENT MEMORY **To continue press ✓ (Checkmark button)**	The product received more data than can fit in the available memory. You might have tried to transfer too many macros, soft fonts, or complex graphics.	Press the checkmark button ✓ to print the transferred data (some data might be lost), and then simplify the print job or install additional memory.
22 EIO X BUFFER OVERFLOW **To continue press ✓ (Checkmark button)**	Too much data was sent to the EIO card in the specified slot (x). An incorrect communications protocol might be in use.	Press the checkmark button ✓ to print the transferred data. (Some data might be lost.)
22 EMBEDDED I/O BUFFER OVERFLOW **To continue press ✓ (Checkmark button)**	Too much data was sent to the embedded HP Jetdirect print server.	Press the checkmark button ✓ to print the transferred data. (Some data might be lost.)
22 USB I/O BUFFER OVERFLOW	The product's USB buffer has overflowed.	Press the checkmark button ✓ to print the transferred data. (Some data might be lost.)

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
To continue press ✓ (Checkmark button)		Check the host configuration.
40 BAD EIO X TRANSMISSION	The connection between the product and the EIO card in the specified slot has been broken.	Press the checkmark button ✓ to clear the error message and continue printing. Try to reinstall the EIO card.
40 BAD SERIAL TRANSMISSION **To continue press ✓ (Checkmark button)**	A serial data error (parity, framing, or line overrun) occurred as data was being sent by the computer.	Press the checkmark button ✓ to clear the error message. (Data will be lost.)
40 EMBEDDED I/O BAD TRANSMISSION **To continue press ✓ (Checkmark button)**	A temporary printing error has occurred.	Press the checkmark button ✓ to clear the error message. (Data will be lost.)
41.3 UNEXPECTED SIZE IN TRAY <XX> **For help press ? (Help button)** **LOAD TRAY <XX> [TYPE] [SIZE]** **To use another tray press ✓ (Checkmark button)**	The product detected a different paper size than expected.	Following the instructions on the screen, load the tray with the size and type of paper indicated, or use another tray. To use another tray press the checkmark button ✓.
41.3 UNEXPECTED SIZE IN TRAY <XX> **For help press ? (Help button)** **LOAD TRAY <XX> [TYPE} [SIZE]** **To use another tray press ✓ (Checkmark button)**	The product detected a different paper size than expected.	Load the tray with the size and type of paper indicated, or use another tray.
41.5 UNEXPECTED TYPE IN TRAY <XX> **For help press ? (Help button)** **LOAD TRAY <XX> [TYPE] [SIZE]** **To use another tray press ✓ (Checkmark button)**	The product detected a different paper type than expected.	Load the tray with the size and type of paper indicated, or use another tray if available. If the error persists: 1. Reinstall the ITB unit. 2. Reconnect the connectors for the media sensor (J901), intermediate-transfer belt (J1962, J2701, and J2702), and the DC controller PCA (J116). 3. Replace the ITB unit. See Intermediate transfer belt (ITB) unit on page 147.
41.7 ERROR **To continue touch OK. ✓.**	Paper was late arriving at the registration area and almost caused a paper jam. If this error reappears, use different media.	Press the Help button **?** to see details. To clear, press the checkmark button ✓. If the error persists, turn the product off then on. See Paper-handling problems on page 428.
41.<X> ERROR **For help press ? (Help button)** **To continue press ✓ (Checkmark button)**	A temporary printing error has occurred.	Press the Help button **?** to see details.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
48.01 TRANSFER UNIT ERROR **For help press ? (Help button)**	The transfer belt has dislocated during printing.	Turn product off then on.
49.XXXX **PRINTER ERROR ✓.** **To continue turn off then on**	A critical firmware error has occurred that caused the processor on the formatter to abort operation. This type of error can be caused by invalid print commands. corrupt data, or invalid operations. In some cases, electrical noise in the cable can corrupt data during transmission to the printer. Other causes include poor-quality USB cables, poor connections, or home-grown programs. On rare occasions, the formatter is at fault, which is usually indicated by a **79 Service Error**.	1. Turn the product off then on. 2. Press Stop to clear the print job from the printer memory. 3. Turn the product off then on. 4. Try printing a job from a different software program. If the job prints, go back to the first program and try printing a different file. If the message displays only with a certain software program or print job, contact the software vendor for assistance. 5. If the message persists with different software programs and print jobs, disconnect all of the cables to the printer that connect it to the network or computer. 6. Turn the product off. 7. Remove all memory DIMMs or third-party DIMMs from the product. 8. Remove all EIO devices from the product. 9. Turn the product on. 10. If the error no longer exists, install each DIMM and EIO device one at a time, making sure to turn the printer off and on again as you install each device. 11. Replace a DIMM or EIO device if you determine that it causes the error.
50.1 FUSER ERROR	The fuser has experienced a low-temperature error.	1. Remove any paper jams from the fuser area. 2. Reinstall the fuser. Check the connector (J1901) between the fuser and the product. Replace the cable or fuser if the connector is damaged. 3. Reconnect the connectors of the thermopile (J1990), fuser control PCA (J302, J305, J306, J309) and the DC controller PCA (J107). 4. Replace the fuser. See Fuser on page 191. 5. Replace the fuser power-supply unit. See Fuser power-supply unit on page 264.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
50.10 FUSER ERROR	The fuser has experienced a low-temperature error.	1. Remove any paper jams from the fuser area. 2. Reinstall the fuser. Check the connector (J1901) between the fuser and the product. Replace the cable or fuser if the connector is damaged. 3. Reconnect the connectors of the fixing control PCA (J302, J303, J305) and the DC controller PCA (J107). 4. Replace the fuser. See Fuser on page 191. 5. Replace the fuser power-supply unit. See Fuser power-supply unit on page 264.
50.11 FUSER ERROR	The fuser has experienced a high-temperature error.	1. Reinstall the fuser. Check the connector (J1901) between the fuser and the product. Replace the cable or fuser if the connector is damaged. 2. Reconnect the connectors of the fixing control PCA (J302, J303, J305) and the DC controller PCA (J107). 3. Replace the fuser. See Fuser on page 191. 4. Replace the fuser power-supply unit. See Fuser power-supply unit on page 264.
50.2 FUSER ERROR	The fuser has experienced a warm-up error.	1. Reinstall the fuser. Check the connector (J1901) between the fuser and the product. Replace the cable or fuser if the connector is damaged. 2. Reconnect the connectors of the thermopile (J1990), fuser control PCA (J302, J305, J306, J309) and the DC controller PCA (J107). 3. Replace the fuser. See Fuser on page 191. 4. Replace the fuser power-supply unit. See Fuser power-supply unit on page 264.
50.3 FUSER ERROR	The fuser has experienced a high-temperature error.	1. Reinstall the fuser. Check the connector (J1901) between the fuser and the product. Replace the cable or fuser if the connector is damaged. 2. Reconnect the connectors of the thermopile (J1990), fuser control PCA (J302, J305, J306, J309) and the DC controller PCA (J107).

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		3. Replace the fuser. See Fuser on page 191. 4. Replace the fuser power-supply unit. See Fuser power-supply unit on page 264.
50.4 FUSER ERROR	The fuser driver circuit has experienced an error.	1. Reconnect the connectors of the fuser control PCA (J305) and the DC controller PCA (J107). 2. Check the power source. If a power generator is used, improve the situation. **NOTE:** If the product does not meet the power requirement of 40 to 70Hz frequency, the fuser temperature control will not work properly, which will cause a malfunction. 3. Replace the fuser power-supply unit. See Fuser power-supply unit on page 264.
50.5 FUSER ERROR	The fuser has experienced a type-mismatch error.	1. Reinstall the fuser. Check the connector (J1901) between the fuser and the product. Replace the cable or fuser if the connector is damaged. 2. Reconnect the connectors of the fuser control PCA (J303, J305), low-voltage power-supply unit (J6), and the DC controller PCA (J102, J207). 3. Replace the fuser. See Fuser on page 191.
50.7 FUSER ERROR	The fuser has experienced a pressure release mechanism error.	1. Reconnect the connectors of the fuser motor (J1720), fuser unit home-position sensor (J1965), intermediate (J1964), and the DC controller PCA (J105, J121). 2. Test the fuser pressure-release sensor by performing the paper-path test or the manual sensor test in the **DIAGNOSTICS** menu. 3. Check the sensor flag of the fuser pressure-release sensor. If the sensor flag is damaged, Replace the fuser. See Fuser on page 191. 4. Perform the fuser motor and fuser pressure-release-motor component tests in the **DIAGNOSTICS** menu. 5. Replace the fuser motor. 6. Replace the fuser. See Fuser on page 191.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
50.8 FUSER ERROR	The fuser has experienced a low-temperature error.	1. Remove any paper jams from the fuser area. 2. Reinstall the fuser. Check the connector (J1901) between the fuser and the product. Replace the cable or fuser if the connector is damaged. 3. Reconnect the connectors of the fixing control PCA (J302, J303, J305) and the DC controller PCA (J107). 4. Replace the fuser. See Fuser on page 191. 5. Replace the fuser power-supply unit. See Fuser power-supply unit on page 264.
50.9 FUSER ERROR	The fuser has experienced a high-temperature error.	1. Reinstall the fuser. Check the connector (J1901) between the fuser and the product. Replace the cable or fuser if the connector is damaged. 2. Reconnect the connectors of the fixing control PCA (J302, J303, J305) and the DC controller PCA (J107). 3. Replace the fuser. See Fuser on page 191. 4. Replace the fuser power-supply unit. See Fuser power-supply unit on page 264.
50.X FUSER ERROR	A fuser error has occurred.	Make sure you have the correct fuser. Reseat the fuser. Turn the product off, and then turn the product on. If this message persists, contact an HP-authorized service or support provider. (See the HP Support flyer, or go to www.hp.com/support/cljcp6015.)
51.20 ERROR To continue turn off then on **51.21 ERROR To continue turn off then on**	The black laser (51.20) or cyan laser (51.21) has experienced an error.	1. Reconnect the connectors of the laser driver PCA (J501B) and the DC controller PCA (J127). 2. Replace the cyan/black laser-scanner unit. See Laser/scanner assembly (cyan and black) on page 297.
51.22 ERROR To continue turn off then on **51.23 ERROR To continue turn off then on**	The magenta laser (51.22) or yellow laser (51.23) has experienced an error.	1. Reconnect the connectors of the laser driver PCA (J501A) and the DC controller PCA (J126). 2. Replace the yellow/magenta laser-scanner unit. See Laser/scanner assembly (yellow and magenta) on page 295.
51.<XY> ERROR **For help press ? (Help button)**	A printer error has occurred.	Turn power off then on.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
51.<XY> ERROR **To continue turn off then on**		
52.00 ERROR To continue turn off then on	The scanner has experienced a startup error.	1. Perform the laser scanner component tests in the **DIAGNOSTICS** menu. 2. Depending on the test results, perform one of the following steps: ◦ If the cyan or black component tests showed a startup failure, reconnect the connectors of the cyan/black scanner motor (J1702) and the DC controller PCA (J129). ◦ If the yellow or magenta component tests showed a startup failure, reconnect the connectors of the yellow/magenta scanner motor (J1701) and the DC controller PCA (J129). 3. Replace the cyan/black laser-scanner unit or the yellow/magenta laser-scanner unit. See Laser/scanner assembly (cyan and black) on page 297 or Laser/scanner assembly (yellow and magenta) on page 295.
52.20 ERROR To continue turn off then on	The scanner has experienced a rotational error.	1. Perform the laser scanner component tests in the **DIAGNOSTICS** menu. 2. Depending on the test results, perform one of the following steps: ◦ If the cyan or black component tests showed a rotational failure, reconnect the connectors of the cyan/black scanner motor (J1702) and the DC controller PCA (J129). ◦ If the yellow or magenta component tests showed a rotational failure, reconnect the connectors of the yellow/magenta scanner motor (J1701) and the DC controller PCA (J129). 3. Replace the cyan/black laser-scanner unit or the yellow/magenta laser-scanner unit. See Laser/scanner assembly (cyan and black) on page 297 or Laser/scanner assembly (yellow and magenta) on page 295.
52.<XY> ERROR **To continue turn off then on**	A printer error has occurred.	Turn power off then on.
53.XY.ZZ CHECK RAM DIMM SLOT <X>	A RAM DIMM error has occurred. X=1 slot toward the outside of the formatter board. X=2 is the slot closest to the hard disc.	Reseat the RAM DIMM in slot <X>. Replace the RAM DIMM if the error persists.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
54.01 ERROR **To continue turn off then on**	The environment sensor has experienced an error.	1. Reconnect the connector of the DC controller PCA (J115). 2. Replace the environment sensor. See Environmental sensor on page 248.
54.15 ERROR **To continue turn off then on**	The yellow-toner-level sensor has experienced an error.	1. Reconnect the connectors of the yellow/magenta-cartridge I/F PCA (J2201A), the cartridge driver PCA (J402), and the DC controller PCA (J109). 2. Replace the yellow/magenta-cartridge I/F PCA.
54.16 ERROR **To continue turn off then on**	The magenta-toner-level sensor has experienced an error.	1. Reconnect the connectors of the yellow/magenta-cartridge I/F PCA (J2201A), the cartridge driver PCA (J402), and the DC controller PCA (J109). 2. Replace the yellow/magenta-cartridge I/F PCA.
54.17 ERROR **To continue turn off then on**	The cyan-toner-level sensor has experienced an error.	1. Reconnect the connectors of the cyan/black-cartridge I/F PCA (J2201B), the cartridge driver PCA (J403), and the DC controller PCA (J109). 2. Replace the cyan/black-cartridge I/F PCA.
54.18 ERROR **To continue turn off then on**	The black-toner-level sensor has experienced an error.	1. Reconnect the connectors of the cyan/black-cartridge I/F PCA (J2201B), the cartridge driver PCA (J403), and the DC controller PCA (J109). 2. Replace the cyan/black-cartridge I/F PCA.
54.<XX> ERROR **To continue turn off then on**	Error requires that the product be turned off then on.	Turn the product off, and then turn the product on.
55.00.00 DC CONTROLLER ERROR **To continue turn off then on**	The DC controller has experienced a communication error.	1. Turn the product off, and then turn the product on. 2. If this message persists, replace the DC controller PCA. See DC controller PCA on page 246.
55.01.YY DC CONTROLLER ERROR **To continue turn off then on**	The DC controller has experienced a memory error.	1. Turn the product off, and then turn the product on. 2. If this message persists, replace the DC controller PCA. See DC controller PCA on page 246.
55.XX.YY DC CONTROLLER ERROR To continue turn off then on	The print engine is not communicating with the formatter.	Turn the product off, and then turn the product on. If this message persists, contact an HP-authorized service or support provider. (See the HP Support flyer, or go to www.hp.com/support/cljcp6015.)

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
56.02 ERROR **To continue turn off then on**	The product has experienced an output error.	1. Follow the solutions for **BAD DUPLEXER CONNECTION** or **BAD OPTIONAL TRAY CONNECTION**.
56.X ERROR To continue turn off then on	A temporary printing error has occurred.	Turn the product off, and then turn the product on. If this message persists, contact an HP-authorized service or support provider. (See the HP Support flyer, or go to www.hp.com/support/cljcp6015.)
57.01 ERROR To continue turn off then on	The laser/scanner-unit cooling fan (FM1) has experienced an error.	1. Reconnect the connectors of the laser/scanner-unit cooling fan (J1916) and the DC controller PCA (J132). 2. Measure the voltage between the connector J132-4 and J132-6 on the DC controller PCA right after the product is turned on. If the voltage changes from 0V to approximately 24V, replace the laser/scanner-unit cooling fan.
57.01 ERROR To continue turn off then on	The VOC fan (FM4) has experienced an error.	1. Reconnect the connectors of the VOC fan (J1921) and the DC controller PCA (J103). 2. Measure the voltage between the connector J103-4 and J103-6 on the DC controller PCA right after the product is turned on. If the voltage changes from 0V to approximately 24V, replace the VOC fan.
57.03 ERROR To continue turn off then on	The fuser cooling fan (FM2) has experienced an error.	1. Reconnect the connectors of the fuser cooling fan (J1917) and the DC controller PCA (J132). 2. Measure the voltage between the connector J132-7 and J132-9 on the DC controller PCA right after the product is turned on. If the voltage changes from 0V to approximately 24V, replace the cartridge area cooling fan.
57.04 ERROR To continue turn off then on	The cartridge area cooling fan (FM3) has experienced an error.	1. Reconnect the connectors of the cartridge area cooling fan (J1915) and the DC controller PCA (J132). 2. Measure the voltage between the connector J132-1 and J132-3 on the DC controller PCA right after the product is turned on. If the voltage changes from 0V to approximately 24V, replace the cartridge area cooling fan.
57.05 ERROR To continue turn off then on	The low-voltage power supply cooling fan (FM5) has experienced an error.	1. Reconnect the connectors of the low-voltage power supply cooling fan (J2), low-voltage power supply (J6) and the DC controller PCA (J102). 2. Measure the voltage between the connector J2-1 and J2-3 on the low-voltage power supply cooling fan right

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		after the product is turned on. If the voltage changes from 0V to approximately 24V, replace the low-voltage power supply cooling fan.
57.06 ERROR To continue turn off then on	The cartridge front area cooling fan (FM6) has experienced an error.	1. Reconnect the connectors of the cartridge front area cooling fan (J1934) and the DC controller PCA (J103). 2. Measure the voltage between the connector J103-1 and J103-3 on the DC controller PCA right after the product is turned on. If the voltage changes from 0V to approximately 24V, replace the cartridge front area cooling fan. See Cartridge fan unit on page 262.
57.07 ERROR To continue turn off then on	The laser/scanner-unit cooling fan (FM1) has experienced an error.	1. Reconnect the connectors of the laser/scanner-unit cooling fan (J1916) and the DC controller PCA (J132). 2. Measure the voltage between the connector J132-4 and J132-6 on the DC controller PCA right after the product is turned on. If the voltage changes from 0V to approximately 24V, replace the laser/scanner-unit cooling fan. See Laser/scanner fan unit on page 263.
57.08 ERROR To continue turn off then on	The delivery-unit cooling fan (FM7) has experienced an error.	1. Reconnect the connectors of the delivery-unit cooling fan (J1910) and the DC controller PCA (J103). 2. Measure the voltage between the connector J103-7 and J103-9 on the DC controller PCA right after the product is turned on. If the voltage changes from 0V to approximately 24V, replace the delivery-unit cooling fan.
57.09 ERROR To continue turn off then on	The IPTU feed-unit cooling fan (FM8) has experienced an error.	1. Reconnect the connectors of the IPTU media-feed-unit cooling fan (J7008), IPTU driver PCA (J7001), and the DC controller PCA (J130). 2. Reinstall the IPTU. 3. Measure the voltage between the connector J7008-1 and J7008-3 on the IPTU driver PCA right after the product is turned on. If the voltage changes from 0V to approximately 24V, replace the IPTU media-feed-unit cooling fan.
57.0A ERROR To continue turn off then on	The duplexing-unit cooling fan (FM1) has experienced an error.	1. Reconnect the connector (J4106) on the duplexing driver PCA. 2. Measure the voltage between the connector J4106-1 and J4106-3 on the duplexing driver PCA right after the product is turned on. If the voltage changes from 0V to approximately 24V, replace the duplexing-unit cooling fan 1.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
57.XX ERROR To continue turn off then on	A temporary printing error has occurred.	Turn the product off, and then turn the product on. If this message persists, contact an HP-authorized service or support provider. (See the HP Support flyer, or go to www.hp.com/support/cljcp6015.)
58.04 ERROR To continue turn off then on	The low-voltage power supply has experienced an error.	1. Reinstall the fuser. Check the connector (J1901) between the fuser and product. Replace the cable or fixing unit if the connector is damaged. 2. Reconnect the connectors of the fuser control PCA (J303, J305) and the DC controller PCA (J107). 3. Replace the fuser. See Fuser on page 191.
58.XX ERROR To continue turn off then on	A temporary printing error has occurred.	Turn the product off, and then turn the product on. If this message persists, contact an HP-authorized service or support provider. (See the HP Support flyer, or go to www.hp.com/support/cljcp6015.)
59.10 ERROR To continue turn off then on	The ITB motor has experienced a startup error.	1. Perform the transfer motors and belt-only component tests in the **DIAGNOSTICS** menu. 2. Reconnect the connectors for the ITB motor (J1710) and the DC controller PCA (J105). 3. Replace the ITB unit.
59.20 ERROR To continue turn off then on	The ITB motor has experienced a rotational error.	1. Perform the transfer motors and belt-only component tests in the **DIAGNOSTICS** menu. 2. Reconnect the connectors of the ITB motor (J1710) and the DC controller PCA (J105). 3. Replace the ITB unit.
59.30 ERROR To continue turn off then on	The fuser motor has experienced a startup error.	1. Perform the fuser motor component test in the **DIAGNOSTICS** menu. 2. Reconnect the connectors of the fixing motor (J1711), intermediate (J1720) and the DC controller PCA (J105). 3. Replace the fuser motor. See Fuser motor on page 230.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
59.40 ERROR To continue turn off then on	The fuser motor has experienced a rotational error.	1. Perform the fuser motor component test in the **DIAGNOSTICS** menu. 2. Reconnect the connectors of the fixing motor (J1711), intermediate (J1720) and the DC controller PCA (J105). 3. Replace the fuser motor. See Fuser motor on page 230.
59.50 ERROR To continue turn off then on	The black-image-drum motor has experienced a startup error.	1. Perform the image-drum-motors component test in the **DIAGNOSTICS** menu. 2. Reconnect the connectors of the black-image-drum motor (J1715) and the DC controller PCA (J139). 3. Replace the black-image-drum motor. See Image-drum motor on page 257.
59.51 ERROR To continue turn off then on	The cyan-image-drum motor has experienced a startup error.	1. Perform the image-drum-motors component test in the **DIAGNOSTICS** menu. 2. Reconnect the connectors of the cyan-image-drum motor (J1714) and the DC controller PCA (J139). 3. Replace the cyan-image-drum motor. See Image-drum motor on page 257.
59.52 ERROR To continue turn off then on	The magenta-image-drum motor has experienced a startup error.	1. Perform the image-drum-motors component test in the **DIAGNOSTICS** menu. 2. Reconnect the connectors of the magenta-image-drum motor (J1713) and the DC controller PCA (J138). 3. Replace the magenta-image-drum motor. See Image-drum motor on page 257.
59.53 ERROR To continue turn off then on	The yellow-image-drum motor has experienced a startup error.	1. Perform the image-drum-motors component test in the **DIAGNOSTICS** menu. 2. Reconnect the connectors of the yellow-image-drum motor (J1712) and the DC controller PCA (J138). 3. Replace the yellow-image-drum motor. See Image-drum motor on page 257.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
59.60 ERROR To continue turn off then on	The black-image-drum motor has experienced a rotational error.	1. Perform the image-drum-motors component test in the **DIAGNOSTICS** menu. 2. Reconnect the connectors of the black-image-drum motor (J1715) and the DC controller PCA (J139). 3. Replace the black-image-drum motor. See Image-drum motor on page 257.
59.61 ERROR To continue turn off then on	The cyan-image-drum motor has experienced a rotational error.	1. Perform the image-drum-motors component test in the **DIAGNOSTICS** menu. 2. Reconnect the connectors of the cyan-image-drum motor (J1714) and the DC controller PCA (J139). 3. Replace the cyan-image-drum motor. See Image-drum motor on page 257.
59.62 ERROR To continue turn off then on	The magenta-image-drum motor has experienced a rotational error.	1. Perform the image-drum-motors component test in the **DIAGNOSTICS** menu. 2. Reconnect the connectors of the magenta-image-drum motor (J1713) and the DC controller PCA (J138). 3. Replace the magenta-image-drum motor. See Image-drum motor on page 257.
59.63 ERROR To continue turn off then on	The yellow-image-drum motor has experienced a rotational error.	1. Perform the image-drum-motors component test in the **DIAGNOSTICS** menu. 2. Reconnect the connectors of the yellow-image-drum motor (J1712) and the DC controller PCA (J138). 3. Replace the yellow-image-drum motor. See Image-drum motor on page 257.
59.C0 ERROR To continue turn off then on	The developer-alienation motor has experienced a rotational error.	1. Perform the alienation-motor component tests in the **DIAGNOSTICS** menu. 2. Reconnect the connectors of the yellow/magenta-developing disengagement motor (J1719), cyan/black-developing disengagement motor (J1718), print cartridge PCA (J404, J405, J406, J408), and the DC controller PCA (J141, J142). 3. Check the print-cartridge drive unit if the adjustment pin sticks in. 4. Check the main drive unit if the lever locks. 5. Replace the developer-alienation motor.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
59.F0 ERROR To continue turn off then on	The transfer-roller alienation motor has experienced an error.	1. Check the ITB-alienation sensor (m) by performing either the manual sensor test or the paper-path sensors test in the **DIAGNOSTICS** menu. 2. Reconnect the connectors of the ITB home-position sensor (J2010), the cartridge driver PCA (J406, J407), and the DC controller PCA (J142). 3. Perform the ITB-contact/alienation component test in the **DIAGNOSTICS** menu. 4. Reconnect the connectors of the primary-transfer-roller disengagement motor (J1709) and the DC controller PCÀ (J110). 5. Replace the primary-transfer-roller-alienation motor. See Primary-transfer-roller disengagement motor on page 265.
59.XY ERROR To continue turn off then on	A temporary printing error has occurred.	Turn the product off, and then turn the product on. If this message persists, contact an HP-authorized service or support provider. (See the HP Support flyer, or go to www.hp.com/support/cljcp6015.)
60.03 ERROR **To continue turn off then on**	The Tray-2 lifter motor has experienced an error.	1. Check the Tray-2 paper-surface sensor (u) in the **MANUAL SENSOR TEST 2** submenu in the **DIAGNOSTICS** menu. 2. Reconnect the connectors of the lifter motor (J1920) and the DC controller PCA (J112). 3. Replace the lifter drive unit. See Lifter drive unit on page 228.
60.04 ERROR **To continue turn off then on**	The Tray-3 lifter motor has experienced an error.	1. Check the Tray-3 paper-surface sensor (y) in the **MANUAL SENSOR TEST 2** submenu in the **DIAGNOSTICS** menu. 2. Reconnect the connector of the upper-PD driver PCA (J8105A). 3. Replace the upper-PD-cassette-lifter drive unit.
60.05 ERROR **To continue turn off then on**	The Tray-4 lifter motor has experienced an error.	1. Check the Tray-4 paper-surface sensor (c) in the **MANUAL SENSOR TEST 2** submenu in the **DIAGNOSTICS** menu. 2. Reconnect the connector of the middle-PD driver PCA (J8105B). 3. Replace the middle-PD-cassette-lifter drive unit.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
60.06 ERROR **To continue turn off then on**	The Tray-5 lifter motor has experienced an error.	1. Check the Tray-5 paper-surface sensor (g) in the **MANUAL SENSOR TEST 2** submenu in the **DIAGNOSTICS** menu. 2. Reconnect the connector of the lower-PD driver PCA (J8105C). 3. Replace the lower-PD-cassette-lifter drive unit.
60.X ERROR To continue turn off then on	The tray specified by **X** is not lifting correctly.	Follow the instructions on the product control panel.
66.12.01	Finisher-to-engine communication error The communication between the print engine and the finisher has been interrupted or lost.	Control panel diagnostics: none 1. Verify that the latest firmware updates are installed for the engine and finisher. 2. Make sure that the finisher is properly grounded. ◦ Ensure that the finisher is latched and locked to the engine by tightening the thumbscrew inside the front door. ◦ Ensure that the grounding-frame assembly (the bar with the wheel located between the engine and the finisher) is in the down position with the wheel touching the floor and that the grounding plate is not damaged. **NOTE:** The grounding-frame assembly is in the up position when the finisher is shipped. It must be lowered when the finisher is installed. 3. Make sure that the communication cable from the engine to the finisher is correctly installed. 4. Verify that connectors J701 and J726 on the stacker controller PCA are fully seated and not damaged. 5. Remove and inspect the electrical connections for damage and then reinstall the IPTU. Make sure that the connector is fully seated and that the IPTU is securely fastened. 6. If the error persists, replace the IPTU. 7. Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
66.12.02	Finisher board communication error Occurs when the finisher's stacker controller board has had a internal communication problem between the two processors on the board.	Control panel diagnostics: none 1. Make sure that the finisher is properly grounded. ◦ Ensure that the finisher is latched and locked to the engine by tightening the thumbscrew inside the front door. ◦ Ensure that the grounding-frame assembly (the bar with the wheel located between the engine and the finisher) is in the down position with the wheel touching the floor and that the grounding plate is not damaged. **NOTE:** The grounding-frame assembly is in the up position when the finisher is shipped. It must be lowered when the finisher is installed. 2. Verify that the latest firmware updates are installed for the engine and finisher. 3. If the error persists, replace the stacker controller PCA. See Stacker controller PCA on page 737.
66.12.03	Finisher-control-board RAM error The checksum for the finisher stacker controller PCA has an error when the power is turned on.	Control panel diagnostics: none 1. Make sure that the finisher is properly grounded. ◦ Ensure that the finisher is latched and locked to the engine by tightening the thumbscrew inside the front door ◦ Ensure that the grounding-frame assembly (the bar with the wheel located between the engine and the finisher) is in the down position with the wheel touching the floor and that the grounding plate is not damaged. **NOTE:** The grounding-frame assembly is in the up position when the finisher is shipped. It must be lowered when the finisher is installed. 2. Turn the engine power off and then on to try clearing this error. 3. If the error persists, replace the stacker controller PCA. See Stacker controller PCA on page 737.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
66.12.11	Finisher error: swing motor (M36) and the swing-guide home-position sensor (PI35) Occurs when the swing guide does not leave its home position (swing-guide home-position sensor: PI35) after the swing motor (M36) is activated for 3 seconds. Also occurs when the swing guide does not return to its home position (swing-guide home-position sensor: PI35) after the swing motor (M36) is activated for 3 seconds.	Control panel diagnostics: M36 (Swing Motor) and PI35 (Swing Guide Home Position Sensor) 1. Test the swing motor M36 by using the finisher component test from the control-panel display. **NOTE:** When activated during the component test, the motor should rotate for about five seconds. While the motor is rotating, make sure that the swing guide is moving up or down at the exit area for stapling and stacking. ◦ If the swing guide freely moves up and down, proceed to the next step (testing the swing-guide sensor PI35). ◦ If the swing guide does not freely move up and down, remove the finisher rear cover and use your hand to turn the gear located to the right of motor M36 clockwise. • If the swing guide moves upward, the gears are properly working. Replace motor M36. If after replacing the motor the motor still does not turn on, replace the stacker controller PCA. See Stacker controller PCA on page 737. • If the swing guide does not move, inspect the gears and replace damaged components as necessary. 2. Test the swing-guide sensor PI35 by using the finisher component test from the control-panel display.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		NOTE: Manually lift the swing guide to the highest position, and then look at the control-panel display and verify a change in state for the sensor. ◦ If the sensor state does not change, perform the following steps: • Verify that the connector J707 on the stacker controller PCA is fully seated and not damaged. • Manually activate the sensor PI35 at the sensor body. If the control panel does not indicate a change of state, replace the sensor. • If raising the swing guide does not activate the sensor but it can be manually activated at the sensor body, replace the swing-guide assembly. ◦ If the PI35 sensor state does change, check the drive gears for damage or obstructions. Replace components as necessary.
66.12.12	Finisher error - shutter movement malfunction Normal operation: When the shutter clutch (CL31) and stack ejection lower roller clutch (CL32) are on, the shutter moves up (closed) when the stack ejection motor (M32) turns forward and moves down (open, delivery enabled) when the motor turns backwards. Error occurs when the shutter home position sensor (PI45) indicates no change when the stack ejection motor (M32) is activated for 3 seconds, indicating that the shutter is not moving.	Control panel diagnostics: none 1. Inspect the shutter for damage. If the shutter cannot freely move, replace the shutter assembly. 2. Remove the lower guide (grate-shaped) and check sensor PI45 for damage. Make sure that the sensor is securely fastened to the chassis. 3. Check for proper alignment of the shutter mounted on the back of the grate-shaped lower guide and the lift mechanism on the finisher chassis. 4. Verify that connector J721 on the stacker controller PCA is fully seated and not damaged. 5. Check CL31 during operation, and verify that it is correctly functioning by activating prior to the error. Replace CL31 if necessary. 6. Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
66.12.13	Finisher error - stack trailing-edge motor (M39) In order to improve stacking performance when ejecting copies, a trailing edge assist guide is used in addition to the stack ejection roller to support the rear end of the stack during stack ejection. Error occurs when the stacker trailing-edge guide does not leave its home position (PI39) after the stack trailing-edge motor (M39) has been turned on for 3 seconds.	Control panel diagnostics: M39 process motor (stack trailing-edge assist motor) Test the swing motor M39 by using the finisher component test from the control-panel display. ● If the trailing-edge assist guide does not move, perform the following steps: ◦ Verify that connector J722 on the stacker controller PCA is fully seated and not damaged. Also check the wiring at motor M39 and sensor PI39. ◦ Replace the operation-tray assembly (processing tray). See Positioning plate unit (inner side-plate assembly) (booklet maker only) on page 700. ◦ Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737. ● If the trailing-edge assist guide does move, perform the following steps: ◦ Carefully clean the sensor body by gently blowing clean air across the sensor to remove dust and debris. ◦ Verify that the sensor flag is not damaged, moves freely, and is correctly aligned with the sensor body. ◦ Verify that connector J722 on the stacker controller PCA is fully seated and not damaged. Also check the wiring at sensor PI39. ◦ Replace the operation-tray assembly (processing tray). See Positioning plate unit (inner side-plate assembly) (booklet maker only) on page 700. ◦ Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
66.12.14	Finisher stapling and offsetting front-aligning-plate motor failure In order to neatly align the paper stack for either stapling or offsetting to take place, the front and rear-aligning plates move to align each sheet when it enters the processing tray. The error occurs when the aligning plate either does not leave or when it does not return to the aligning-plate front-home-position sensor (PI36) when the front-aligning-plate motor (M33) has been driven for 4 seconds.	Control panel diagnostics: none 1. Verify that **Offsetting** is turned **On** in the **Device Behavior** menu. 2. Verify that connector J722 on the stacker controller PCA is fully seated and not damaged. Also check the wiring at sensor PI39 and motor M33. 3. Replace the operation-tray assembly (processing tray). See Positioning plate unit (inner side-plate assembly) (booklet maker only) on page 700. 4. Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.
66.12.15	Finisher stapling or offsetting rear aligning plate motor failure (M34) In order to neatly align the paper stack for either stapling or offsetting to take place, the front and rear aligning plates move to align each sheet when it enters the processing tray. The error occurs when the aligning plate either does not leave or when it does not return to the aligning-plate-rear-home-position sensor (PI37) when the alignment plate rear motor (M34) has been driven for 4 seconds.	Control panel diagnostics: none 1. Verify that **Offsetting** is turned **On** in the **Device Behavior** menu. 2. Verify that connector J722 on the stacker controller PCA is fully seated and not damaged. Also check the wiring at sensor PI37 and motor M34. 3. Replace the operation-tray assembly (processing tray). See Positioning plate unit (inner side-plate assembly) (booklet maker only) on page 700. 4. Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.
66.12.16	Finisher error - speed change motor (M40) The speed change motor M40 and sensor PI49 associated with this error have been removed from the output device prior to introduction to the field. This error message should never be seen in the field.	If error message appears, contact HP Support and report the error. HP Support: Report error to Technical Marketing.
66.12.21	Finisher upper-stapler-motor failure (M41) Error occurs either when the stapler does not leave stapler home position (PI50) after staple motor (M41) is driven for 0.4 seconds or when it does not return to stapler home position after the staple motor has detected a motor lock condition and the motor is driven backwards for 0.4 seconds, attempting to reach home position.	Control panel diagnostics: none 1. Check the stapler unit for jammed staples. 2. Check the stapler unit for loose staples and paper dust. 3. Make sure that the stapler unit is fully seated. 4. Verify that connector J717 on the stacker controller PCA is fully seated

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
	NOTE: PI50 and M41 are located on the stapler assembly and can only be replaced by replacing entire stapler assembly. M41 (staple motor) drives the insertion and crimping of the staple only (not location of the staple on paper). PI50 senses the home position of the stapler as it is inserting and crimping a staple only (not location of the staple on the paper). The stapler-safety switch (MS34) that assures that stapler motor (M41) is disabled when it senses a finger may be in the stapler.	and not damaged. Check the wiring at the stapler unit and the stapler PCA. 5. Replace the stapler. See Stapler on page 683.
66.12.22	Finisher upper stapler shift motor failure (M35) Error occurs when the stapler does not leave the stapler-shift home-position sensor (PI40) after the stapler-shift motor (M35) has driven for 5 seconds. Also occurs when the stapler fails to return to the stapler-shift home-position sensor (PI40) after the stapler-shift motor (M35) has been driven for 20 seconds.	Control panel diagnostics: M35 staple motor (stapler-shift motor) and PI140 stapler home sensor (stapler home-position sensor) 1. Test the upper-stapler-shift motor M35 by using the finisher component test from the control-panel display. ◦ If the stapler unit moves properly, proceed to the next step in this section. ◦ If the stapler unit does not move properly or moves erratically, perform the following steps: • Check the flat-flexible cable (FFC) for damage (dents, folds, and/or tears). Replace the FFC if necessary. • Check the FFC connectors and cable mounting areas. • If the error persists, replace the stapler assembly. See Stapler assembly on page 685. 2. Test the stapler-shift home position sensor PI40 by using the finisher component test from the control-panel display. ◦ If the sensor does not change state when the stapler unit is moved from the home position, perform the following steps: • Make sure that the sensor is securely fastened to the chassis. • Carefully clean the sensor body by gently blowing clean air across the sensor to remove dust and debris. • Verify that connector J1040 on the stacker controller PCA

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		is fully seated and not damaged. Check the wiring at the sensor. • If the error persists, replace the stapler assembly. See Stapler assembly on page 685. **NOTE:** The stapler assembly includes the stapler-shift home position sensor PI40, stapler unit, shift-position-plate assembly, and the flat-flexible cable (FFC).
66.12.23	Finisher upper-stapler failure Occurs when stapler alignment interference sensor (PI46) is activated, signaling that the stapler unit is not in its proper position for stapling to occur. This is to prevent damage to stapler from occurring when stapler is positioned over one of the three stoppers when the signal to staple has been sent.	Control-panel diagnostics: none 1. If the stapler unit does not move properly or moves erratically, check the flat-flexible cable (FFC) for damage (dents, folds, and/or tears). Replace the FFC if necessary. 2. If the stacker controller PCA was recently replaced, use the steps in this manual to adjust the staple alignment and staple position. See Adjust the staple position on page 768. 3. If the stapler is not positioned over a stopper when this error occurs, perform the following steps. ◦ Make sure that the stapler unit is correctly mounted and securely fastened to the base. ◦ Make sure that the sensor is not obstructed or damaged. Verify that the sensor flag is not damaged, moves freely, and is correctly aligned with the sensor body. ◦ If the error persists, replace the stapler subassembly. See Stapler on page 683. **NOTE:** The stapler subassembly includes the stapler unit and base.
66.12.31	Finisher error - 1st tray lift/lower motor (M37) Occurs when the output bin 1 does not activate the home-position sensor (PI41) when the output-bin-1 shift motor (M37) is driven for 20 seconds. Also occurs when output bin 1 does not move when output-bin-1 shift motor (M37) is driven for 4 seconds.	Control panel diagnostics: M37 tray 1 (output bin 1 motor) **NOTE:** M37 moves both output bin 1 and the upper-output bin that is attached to output bin 1 on the stapler/stacker finisher, but only output bin 1 on the booklet-maker finisher. 1. Manually release output bin 1, and position it at the mid point of its travel area. Test the output-bin-1 shift motor

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
	Also occurs when output-bin-1 switch (MSW33) is activated while output bin 1 is operating. **NOTE:** Output-bin-1 home position is detected using the top sheet of paper on the bin when paper is present and the edge of the bin itself when there is no paper on the bin.	M37 by using the finisher component test from the control-panel display. ◦ If output bin 1 moves during the test, perform the following steps. • If the paper-surface sensor flag was recently removed or replaced, make sure that it is installed correctly. **NOTE:** The four tabs under the clips must be inserted into the slots behind the roller shaft of the lower-stack ejection roller. See Figure 8-188 Remove the operation-tray assembly (2 of 6) on page 704. • Verify that the paper-surface sensor flag is not damaged, moves freely, and is correctly aligned with the PI41 sensor body. Also verify that when the top edge of the output bin engages the sensor arm that the sensor flag moves into sensor PI41. • Make sure that the sensor is securely fastened to the chassis. • Carefully clean the sensor body by gently blowing clean air across the sensor to remove dust and debris. • Verify that intermediate connector J1040 and J721 on the stacker controller PCA are fully seated and not damaged. Check the wiring at the sensor. • If the error persist, replace sensor PI41. • If the error persist, replace the output-bin-1 assembly. See Output-bin 1 on page 708.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		NOTE: The output-bin-1 assembly includes the output-bin-1 shift motor (M37), output-bin-1 switch (MSW33), output-bin-1 area sensors, and the output-bin-1 driver PCA. 2. If output bin 1 does not move during the test, perform the following steps. ◦ Check the output-bin tracks for damage. ◦ Replace the output-bin-1 assembly. See Output-bin 1 on page 708. **NOTE:** The output-bin-1 assembly includes the output-bin-1 shift motor (M37), output-bin-1 switch (MSW33), output-bin-1 area sensors, and the output-bin-1 driver PCA. ◦ Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.
66.12.32	Finisher error: second-tray-lift/lower motor (M38) Occurs when the output bin 2 does not activate the home-position sensor (PI48) when the output-bin-1 shift motor (M38) is driven for 20 seconds. Also occurs when output bin 2 does not move when output-bin-1 shift motor (M38) is driven for 4 seconds. Also occurs when bin-2 upper limit is detected by PS983, PS982, PS981 on the Tray-2 shift PCA when no paper has been sensed by the output-bin-2 paper sensor (PI43). **NOTE:** Output-bin-2 home position is detected using the top sheet of paper on the bin when paper is present and the edge of the bin itself when there is no paper on the bin.	Control-panel diagnostics: M38 (output-bin-2 motor) and PI48 output-bin-2-paper-surface sensor 1. Manually release output bin 2, and position it at the mid point of its travel area. Test the output-bin-2 shift motor M38 by using the finisher component test from the control-panel display. ◦ If output bin 2 moves during the test, perform the following steps. • Verify that the paper-surface sensor flag is not damaged, moves freely, and is correctly aligned with the PI48 sensor body. Also verify that when the top edge of the output bin engages the sensor arm that the sensor flag moves into sensor PI41. • Make sure that the sensor is securely fastened to the chassis. • Carefully clean by gently blowing clean air across the sensor to remove dust and debris.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		• Verify that intermediate connector J1040 and J721 on the stacker controller PCA are fully seated and not damaged. Check the wiring at the sensor. • If the error persist, replace sensor PI48. • If the error persist, replace the output-bin-2 assembly. See Output-bin 2 on page 710. **NOTE:** The output-bin-2 assembly includes the output-bin-2 shift motor (M38), output-bin-2 area sensors, and the output-bin-2 driver PCA. **2.** If output bin 2 does not move during the test, perform the following steps. ◦ Check the output-bin tracks for damage. ◦ Replace the output-bin-2 assembly. See Output-bin 2 on page 710. **NOTE:** The output-bin-2 assembly includes the output-bin-2 shift motor (M38), output-bin-2 area sensors, and the output-bin-2 driver PCA. ◦ Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.
66.12.41	Finisher: folding-paper-positioning-plate motor (M4) The paper-positioning-plate motor (M4), located in the booklet-making area of the finisher, controls the up and down positioning of the stacked paper for stitch stapling and for folding. An error occurs when the paper-positioning-plate home-position sensor (PI7) does not turn on when the paper-positioning-plate motor (M4) has been driven for 1500 pulses. Also occurs when the paper-positioning-plate home-position sensor (PI7) does not turn off when the paper-positioning-plate motor (M4) has been driven for 300 pulses.	Control-panel diagnostics: M4-guide-plate motor (paper-positioning-plate motor) **1.** Test the paper-position-plate motor M4 by using the finisher component test from the control-panel display. During the test, observe the movement of the booklet-maker-guide plate, and make sure it is not obstructed or damaged. **2.** Remove the booklet-maker output bin to gain access to the paper-position-plate home-position sensor PI7 and delivery door. Remove the plate that holds PI7, and carefully clean the sensor body by gently blowing clean air across the sensor to remove dust and debris.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		3. Make sure that the sensor is securely fastened to the plate. 4. Check the wiring at the sensor. 5. If the error persists, replace sensor PI7 and the positioning-plate assembly together. 6. Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.
66.12.42	Finisher error: folding-guide motor (M3) The guide motor (M3), located in the booklet-making area of the finisher, controls the position of the guide plate. The guide plate is positioned in front of the folding rollers as the paper stack is being stapled, allowing the bottom edge of the paper to smoothly pass by the folding rollers. When the stacked paper is lowered to the folding position, the guide motor (M3) lowers the guide plate out of the way to allow the paper stack to be pushed into the folding rollers. Error occurs when The guide-home-position sensor (PI13) does not turn on when the guide motor (M3) has been driven for 700 pulses. Also occurs when the guide-home-position sensor (PI13) does not turn off when the guide motor (M3) has been driven for 50 pulses.	Control panel diagnostics: M3 guide motor 1. Carefully clean the sensor body by gently blowing clean air across the sensor to remove dust and debris. 2. Make sure that the sensor is securely fastened to the plate. 3. Check the wiring at the sensor. 4. Check sensor PI13 for damage. 5. Check the guide, gears, and gear tracks on the front and rear frame for damage. Replace components as necessary. 6. If the error persists, replace the guide motor M3 and the guide home position sensor PI13 together.
66.12.43	Finisher error: paper-fold motor (M2) M2: paper-fold motor, located in the booklet making area of the finisher, drives the rotation of the folding rollers to create the desired fold in the paper. The error occurs when the number of pulses by the paper-fold-motor clock sensor (PI4) is less than expected standard value. Also occurs when the status of the paper-fold home-position sensor (PI21) does not change when the paper-fold motor (M2) has been driven for 3 seconds.	Control panel diagnostics: M2 folding motor (paper-fold motor) 1. Check the area around the folding rollers for a jam. 2. Test the paper-fold motor M2 by using the finisher component test from the control-panel display. ◦ If the folding rollers rotate properly, perform the following steps: • Check sensor PI4 and sensor PI21 for damage. • Verify that the sensor flags are not damaged, move freely, and are correctly aligned with the PI48 and PI21 sensor bodies. • Make sure that the sensors are securely fastened to the chassis.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		• Carefully clean each sensor body with a clean, lint-free cloth, or gently blow clean air across each sensor to remove dust and debris. • Verify that connector J3 on the saddle-stitcher controller PCA is fully seated and not damaged. Check the wiring at the PI4 sensor. • Verify that connector J18 on the saddle-stitcher controller PCA is fully seated and not damaged. Check the wiring at the PI21 sensor. • If the error persists, replace sensor PI4 or PI21. • Only if the error persists and the previous steps fail to correct the problem, replace the saddle-stitcher controller PCA. See Saddle-stitcher controller PCA (booklet maker only) on page 738. ◦ If the folding rollers do not rotate properly, perform the following steps: • Check the folding-roller gears and connecting gears between the paper-fold motor M2 and the folding rollers for damage. Replace components as necessary. • Check the folding rollers for wear and damage. Replace components as necessary. • Replace the motor-mount assembly. **NOTE:** The motor-mount assembly includes the paper-fold motor M2 and the paper-fold motor-clock sensor PI4. • Only if the error persists and the previous steps fail to correct the problem, replace the saddle-stitcher controller PCA. See Saddle-stitcher controller PCA (booklet maker only) on page 738.
66.12.44	Finisher - folding-paper-alignment motor (M5)	Control panel diagnostics: none

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
	M5: The alignment motor, located in the booklet making area of the finisher, drives the two alignment plates that adjust the side edges of the stacked paper so that the paper in the stack is perfectly aligned with one another. Error occurs when the aligning-plate home-position sensor (PI5) does not turn on when the aligning plate motor (M5) has been driven for 500 pulses. Also occurs when the aligning-plate home-position sensor (PI5) does not turn off when the aligning-plate motor (M5) has been driven for 50 pulses.	Observe the alignment plates during a booklet-maker stacking operation. • If the alignment plates move during the operation, perform the following steps: ◦ Check sensor PI5 for damage. ◦ Verify that the sensor flag is not damaged, moves freely, and is correctly aligned with the sensor body. ◦ Make sure that the sensor is securely fastened to the chassis. ◦ Carefully clean the sensor body by gently blowing clean air across the sensors to remove dust and debris. ◦ If the alignment plates or the alignment-plates drive gear has been removed or replaced, make sure that the plates are correctly aligned with each other on the drive gear. • If the alignment plates do not move during the operation, perform the following steps: ◦ Remove motor M5 and check the gears between the motor and alignment plates for damage. Replace components as necessary. ◦ Verify that connector J7 on the saddle-stitcher controller PCA is fully seated and not damaged. Check the wiring at the M5 motor. ◦ Replace the alignment motor M5. ◦ Only if the error persists and the previous steps fail to correct the problem, replace the saddle-stitcher controller PCA. See Saddle-stitcher controller PCA (booklet maker only) on page 738.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
66.12.45	Finisher: paper-pushing-plate motor (M8) Error occurs when the paper-pushing-plate home-position sensor (PI14) does not turn on when the paper-pushing-plate motor (M8) has been driven for 0.3 seconds. Also occurs when the paper-pushing-plate home-position sensor (PI14) does not turn off when the paper-pushing-plate motor (M8) has been driven for 80 ms. Also occurs when the paper pushing-plate leading-edge-position sensor (PI15) does not turn off when the paper-pushing-plate motor (M8) has been driven for 80 ms. Also occurs when the number of pulses detected by the paper-pushing-plate motor clock sensor (PI1) is less than expected standard value. Also occurs when the paper pushing-plate-leading-edge-position sensor (PI15) does not turn on when the paper-pushing-plate motor (M8) has been driven for 0.3 seconds.	Control panel diagnostics: none 1. Open the front-finishing door, and activate the front-door switch (MSW31) and front-door sensor (PI32) so that the finisher will operate with the front door open. Turn the engine and finisher power off to clear the error, and then turn the power on. **WARNING!** Operating the finisher with the front door open exposes moving parts that can cause serious injury. Be very careful operating the finisher with the front door open. 2. Use the control-panel menus to begin a booklet making operation. Observe the paper-pushing plate motor M8 (located in the lower-right front corner of the finisher), associated gears, and the paper-pushing plate for proper motion. ◦ If motor M8 does not rotate, replace the motor-mount assembly. **NOTE:** The motor-mount assembly includes the paper-pushing plate motor M8. ◦ If motor M8 does rotate but the paper-pushing plate does not move or moves erratically, check the drive gears and paper-pushing plate for wear or damage. Replace components as necessary. ◦ If motor M8 does rotate and the paper-pushing plate moves

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		properly, the plate movement sensors might have failed. • Inspect the paper-pushing plate home position sensor PI14, pushing-plate leading-edge position sensor PI15, and paper-pushing motor-clock sensor PI1. Make sure that the sensors are securely fastened to the chassis. Check sensor PI4, sensor PI15, and sensor PI1 for damage. • Verify that connectors J6, J9, and J23 on the saddle-stitcher controller PCA are fully seated and not damaged. Check the wiring at the sensors. • Only if the error persists and the previous steps fail to correct the problem, replace the saddle-stitcher controller PCA. See Saddle-stitcher controller PCA (booklet maker only) on page 738.
66.12.46	Finisher: communication lost with stitcher controller PCA Error occurs when communication between the stacker-controller board and the saddle-stitcher-controller board has been lost or interrupted.	Control-panel diagnostics: none 1. Make sure that the finisher is properly grounded. ◦ Ensure that the finisher is latched and locked to the engine by tightening the thumbscrew inside the front door. ◦ Ensure that the grounding-frame assembly (the bar with the wheel located between the engine and the finisher) is in the down position with the wheel touching the floor and that the grounding plate is not damaged. **NOTE:** The grounding-frame assembly is in the up position when the finisher is shipped. It must be lowered when the finisher is installed. 2. Verify that connector J730 on the stacker controller PCA and the wiring between connector J22 on the saddle-stitcher controller PCA are fully seated and not damaged.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		3. Replace the saddle-stitcher controller PCA. See Saddle-stitcher controller PCA (booklet maker only) on page 738. 4. Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.
66.12.47	Finisher error: micro switches and doors There are three switches in the booklet-maker finisher: SW1 (saddle-guide switch also known as the inlet-door switch), SW3 the booklet-ejection door switch, and MS31 the front-door switch. The stapler/stacker finisher only has one switch, MS31 for the front door of the finisher. All three switches detect if the associated door or guide plate is open or closed. Each of the switches also have a sensor (SW1/PI9, SW3/PI3, and MS31/PI32) that acts as a backup and detects the same information as the switches. The error occurs when all the doors and guides are closed and there is a mismatch in readings between the sensors and the switches. For example, the front-finisher door is closed, PI32 senses the door is closed and MS31 senses the door is still open. Associated finisher door and guide switches and sensors are as follows: • Saddle-guide switch SW1 and saddle-guide sensor PI9 • Booklet-ejection-door switch SW3 and booklet-ejection-door sensor PI3 • Front-door switch MS31 and front-door sensor PI32	Control-panel diagnostics: PI32 (front-door-1 sensor), PI3 (booklet-door-1 sensor, also known as booklet-delivery door sensor), PI9 (front-door-2 sensor, also known as the saddle-guide-door sensor or inlet-door sensor), SW3 (booklet door 2) 1. Using the control-panel diagnostics, try to isolate which door or guide switch and sensor is causing the error. 2. Make sure that the sensors are securely fastened to the chassis. 3. Check the switches and sensors for damage and clean the sensors by gently blowing clean air into the sensor to remove dust and debris. 4. Check the wiring at the switches and sensors. 5. Check the tabs that activate the switches and sensors on the doors and guides for damage. Make sure that the tabs are aligned with the switches and sensors. Replace the doors and guides as necessary. 6. Verify that the following connectors are fully seated and not damaged: ◦ Stacker controller PCA • J719 (MS31) • J707 (PI32) ◦ Saddle-stitcher controller PCA • J4 (SW1) • J10 (PI9) • J4 (SW3) • J11 (PI3) 7. Only if the error persists and the previous steps fail to correct the problem, replace the PCA that is associated with the failed switch/sensor (stacker controller PCA or saddle-

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		stitcher controller PCA). See Stacker controller PCA on page 737 or Saddle-stitcher controller PCA (booklet maker only) on page 738.
66.12.51	Finisher error- rear-booklet-stapler motor (M6) The booklet-maker stitch staplers do not move to different locations in relation to the paper like the main stapler. The only movement is through the movement of the rotary cam located on the stapler unit itself, during the actual stapling of the booklet. The stitch-home-position switch (SW5) is part of the rear stitch stapler unit and senses the stapler opening and closing during stapling by the motion of the rotary drive cam. Like SW5, the stitch motor (M6) is also part of the overall stitch-stapler unit and replacement requires the replacement of saddle-stapler assembly. Error occurs when the front booklet-maker-stapler stitching-home-position sensor (SW5) does not turn on when the stitch motor (rear) (M6) has been driven forward for 0.5 seconds. Also occurs when the front booklet-maker-stapler stitching-home-position sensor (SW5) does not turn off when the stitch motor (rear) (M6) has been driven forward for 0.5 seconds.	Control panel diagnostics: none 1. Check the rear-stitch stapler for jammed staples, and then perform the following steps: ◦ Clear jammed staples, and then check the staple unit for damage. Retest the stapler. • If the error continues, check the following items: Make sure that HP-approved staples are used. Replace the staple cartridge with one containing HP-approved staples. If the error continues, replace the saddle-stapler assembly. See Saddle-stapler assembly (booklet maker only) on page 699. • If the error persists, but no damage is found, proceed to the next step. 2. If the error persists and no jammed staples are found, perform the following steps: ◦ Verify that connector J8 on the saddle-stitcher controller PCA is fully seated and not damaged. Check the wiring at the rear-saddle-stitch stapler and the saddle-stapler assembly for damage and proper seating. Also inspect the connector that the saddle-stitch stapler assembly engages inside finisher, for damage and foreign material in the connector as well as for proper seating with the saddle-stitch stapler assembly. ◦ Only if the error persists and the previous steps fail to correct the problem, replace the saddle-stitcher controller PCA. See Saddle-stitcher controller PCA (booklet maker only) on page 738.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
66.12.52	Finisher error - front booklet-stapler motor (M7) The booklet-maker stitch staplers do not move to different locations in relation to the paper like the main stapler. The only movement is through the movement of the rotary cam located on the stapler unit itself, during the actual stapling of the booklet. The stitch-home-position switch (SW7) is part of the front stitch stapler unit and senses the stapler opening and closing during stapling by the motion of the rotary drive cam. Like SW7, the stitch motor (M7) is also part of the overall stitch stapler unit and replacement requires the replacement of saddle-stapler assembly. Error occurs when the front booklet-maker stapler stitching home position sensor (SW7) does not turn on when the stitch motor (front) (M7) has been driven forward for 0.5 seconds. Also occurs when the front booklet-maker stapler-stitching home-position sensor (SW7) does not turn off when the stitch motor (front) (M7) has been driven forward for 0.5 seconds.	Control panel diagnostics: none 1. Check the front-stitch stapler for jammed staples, and then perform the following steps: ◦ Clear jammed staples, and then check the staple unit for damage. Retest the stapler. ● If the error continues, check the following items: Make sure that HP-approved staples are used. Replace the staple cartridge with one containing HP-approved staples. If the error continues, replace the saddle-stapler assembly. See Saddle-stapler assembly (booklet maker only) on page 699. ● If the error persists, but no damage is found, proceed to the next step. 2. If the error persists and no jammed staples are found, perform the following steps: ◦ Verify that connector J8 on the saddle-stitcher controller PCA is fully seated and not damaged. Check the wiring at the rear-saddle-stitch stapler and the saddle-stapler assembly for damage and proper seating. Also inspect the connector that the saddle-stitch stapler assembly engages inside finisher, for damage and foreign material in the connector as well as for proper seating with the saddle-stitch stapler assembly. ◦ Only if the error persists and the previous steps fail to correct the problem, replace the saddle-stitcher controller PCA. See Saddle-stitcher controller PCA (booklet maker only) on page 738.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
66.XY.ZZ OUTPUT DEVICE FAILURE	An error occurred in an external paper-handling accessory.	• Turn the product power off. • Check that the accessory is properly seated on and connected to the product, without any gaps between the product and the accessory. If the accessory uses cables, disconnect and reconnect them. • Verify that there is no packaging material in or around the output device. • Turn the product power on. • If this message persists, contact an HP-authorized service or support provider. (See the HP Support flyer, or go to www.hp.com/support/cljcp6015.)
66.XY.ZZ SERVICE ERROR **For help press ? (Help button)** **66.XY.ZZ INPUT DEVICE ERROR** **For help press ? (Help button)**	The external paper-handling controller has detected a failure.	1. Turn power off. 2. Disconnect cables to external paper handling devices, then reconnect them. 3. Turn power on. 4. Make sure there are no obstructions near the paper handling device that could prevent the output bins from raising or lowering. If the message persists, contact HP Support at www.hp.com/support/cljcp6015.
68.X PERMANENT STORAGE FULL **To continue press ✓ (Checkmark button).**	The product NVRAM is full. Some settings saved in the NVRAM might have been reset to the factory defaults. Printing can continue, but some unexpected functions might occur if an error occurred in permanent storage.	Press the checkmark button ✓ to clear the message. If the message is not cleared, turn the product off, and then turn the product on. If this message persists, contact an HP-authorized service or support provider. (See the HP support flyer, or go to www.hp.com/support/cljcp6015.)
68.X PERMANENT STORAGE WRITE FAIL **To continue press ✓ (Checkmark button).**	The product NVRAM is failing to write. Printing can continue, but some unexpected functions might occur if an error occurred in permanent storage.	Press the checkmark button ✓ to clear the message. If the message is not cleared, turn the product off, and then turn the product on. If this message persists, contact an HP-authorized service or support provider. (See the HP Support flyer, or go to www.hp.com/support/cljcp6015.)
68.X STORAGE ERROR SETTINGS CHANGED	One or more product settings are invalid and have been reset to the factory-default settings. Printing can continue, but some unexpected functions might occur if an error occurred in permanent storage.	Press the checkmark button ✓ to clear the message. If the message is not cleared, turn the product off, and then turn the product on. If this message persists, contact an HP-authorized service or support provider. (See the HP Support flyer, or go to www.hp.com/support/cljcp6015.)
69.X ERROR To continue turn off then on	A temporary printing error occurred.	Turn the product off, and then turn the product on.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		If this message persists, contact an HP-authorized service or support provider. (See the HP Support flyer, or go to www.hp.com/support/cljcp6015.)
<Bin name> FULL **Remove all paper from bin**	The specified output bin is full.	Empty bin and continue printing. Output bins include the standard top bin, and, if you have an optional paper handling device, the upper-left bin, middle-left bin, lower-left bin, or lower-booklet bin
ACTION NOT CURRENTLY AVAILABLE FOR TRAY X TRAY SIZE CANNOT BE ANY SIZE/ANY CUSTOM **Canceling…**	The user attempted to set the registration for a tray that is set to **ANY SIZE** or **ANY CUSTOM**. Duplex registration is not available when the size is set to **ANY SIZE** or **ANY CUSTOM**.	Configure the tray to a specific size, and then set the registration for that tray.
BAD DUPLEXER CONNECTION	The duplexer is not functioning correctly.	1. Reconnect the connectors for the duplexing driver PCA (J4101), intermediate (J1902), and the DC controller PCA (J133). 2. Replace the duplexing reverse unit. See Duplexing reverse unit on page 290.
BAD OPTIONAL TRAY CONNECTION	The optional tray is not connected.	1. Turn the product off. 2. Remove and then reinstall optional tray or trays. 3. Reinstall the IPTU. 4. Reconnect the connectors for the IPTU driver PCA (J7001) and the DC controller PCA (J130). 5. Replace the IPTU driver PCA. IPTU driver PCA on page 663.
Calibrating...	Displays during calibration.	No action is necessary.
CALIBRATION RESET PENDING **For help press ? (Help button)** **PROCESSING…**	A calibration reset will occur when all jobs are processed.	To initiate the reset sooner, cancel all jobs by pressing the STOP button.
CARD SLOT <X> NOT FUNCTIONAL **For help press ? (Help button)**	The compact flash card in slot <X> is not working correctly.	Remove the card from the slot indicated, and replace with a new card.
CARD SLOT DEVICE FAILURE **To clear press ✓ (Checkmark button)**	The specified device has failed.	Press the checkmark button ✓ to clear.
CARD SLOT FILE OPERATION FAILED **To clear press ✓ (Checkmark button)**	A PJL file system command attempted to perform an illogical operation.	Press the checkmark button ✓ to clear.
CARD SLOT FILE SYSTEM IS FULL **To clear press ✓ (Checkmark button)**	A PJL file system command could not store something on the file system because the file system was full.	Press the checkmark button ✓ to clear.
CARD SLOT IS WRITE PROTECTED	The file system device is protected and no new files can be written to it.	Press the checkmark button ✓ to clear.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
To clear press ✓ (Checkmark button)		
CHECKING OUTPUT DEVICE	An error has occurred with the output device.	Remove and reinstall the output device.
Checking paper path	The product is checking for possible paper jams.	No action is necessary.
Checking printer	The product is conducting an internal test.	No action is necessary.
CHOSEN PERSONALITY NOT AVAILABLE. **To continue press ✓ (Checkmark button)**	A print job requested a product language (personality) that is not available for this product. The job will not print and will be cleared from memory.	Print the job by using a printer driver for a different printer language, or add the requested language to the product (if possible). To see a list of available personalities, print a configuration page. (See Information pages on page 74.)
CLEANING DISK <X>% COMPLETE **Do not power off** **For help press ? (Help button)**	The product is cleaning the hard disk or a compact flash disk.	Do not turn off. The product will automatically restart when cleaning is complete. Product functions are unavailable.
Cleaning...	A cleaning page is being processed.	No action is necessary.
Clearing event log	This message is displayed while the event log is cleared. The product will exit the menus once the event log has been cleared.	No action is necessary.
Clearing paper path	The product is attempting to eject jammed paper.	Check progress at the bottom of the display.
CLOSE LOWER RIGHT DOOR	The lower-right door is open.	1. Close the lower-right door. 2. If the message persists, check the right-door-open-detection sensor by the sensor monitor mode. 3. If the message persists, check the right-door sensor flag. Replace the right-door unit if the sensor flag is damaged. See Right-door assembly on page 308
CLOSE RIGHT DOOR **For help press ? (Help button)**	A door on the right side of the product is open.	1. Close the door. 2. If the message persists, check the right-door-open-detection sensor by the sensor monitor mode. 3. If the message persists, check the right-door sensor flag. Replace the right-door unit if the sensor flag is damaged. See Right-door assembly on page 308.
CLOSE TOP COVER	The top cover is open.	Close the top cover.
CODE CRC ERROR SEND FULL RFU ON <X> PORT	And error has occurred during a firmware upgrade.	If the message persists, contact HP Support at www.hp.com/support/cljcp6015.
COLOR RFU FAILED SEND FULL RFU ON <X> PORT	And error has occurred during a firmware upgrade.	If the message persists, contact HP Support at www.hp.com/support/cljcp6015.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
CONNECT OUTPUT DEVICE	No external output device is installed.	1. Turn power off. 2. Connect output device product cable. 3. Turn power on. To continue without output device, turn power off, remove the output-accessory bridge (IPTU), and then turn power on. If error persists, contact an HP-authorized service or support provider. See the HP support flyer, or go to www.hp.com/support/cljcp6015
Cooling Device...	The product is adding additional pauses to the print cycle in order to cool down.	The product has recently experienced a period of heavy usage, so it has entered a cooling cycle in order to maintain a supported operating temperature. No action is necessary.
CORRUPT FIRMWARE IN EXTERNAL ACCESSORY **For help press ? (Help button)**	The product detected corrupt firmware in the input or output accessory.	An external accessory of the product requires a firmware upgrade. Printing can continue if other inputs or outputs are available, but jams may occur if the job uses the corrupt external accessory. To view the upgrade procedure and download the most recent firmware, go to www.hp.com/support/cljcp6015.
DATA RECEIVED **To print last page press ✓ (Checkmark button)**	The product is waiting for the command to print the last page.	Press the checkmark button ✓ to print the last page.
DATE/TIME= YYYY/MMMM/DD HH:MM **To change press ✓ (Checkmark button)** **To skip press STOP**	The current date and time set for the product.	Press the checkmark button ✓ to set the date and time or press the stop button to skip setup.
Deleting private jobs	The product is deleting a private stored job.	No action is necessary.
Deleting...	The product is currently deleting the stored job.	No action is necessary.
Device shutting down...	Device is shutting down.	No action is necessary.
EIO <X> disk initializing	The specified EIO disk device is initializing.	No action is necessary.
EIO <X> disk is spinning up	EIO disk device in slot <X> is spinning up its platter. Jobs that require disk access must wait.	No action is necessary.
EIO <X> DISK NOT FUNCTIONAL **For help press ? (Help button)**	The EIO disk in slot <X> is not working correctly.	1. Turn product off. 2. Remove disk from the slot indicated. 3. Replace with new disk. 4. Turn product on.
EIO DEVICE FAILURE **To clear press ✓ (Checkmark button)**	The specified device has failed.	Press the checkmark button ✓ to clear.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
EIO FILE OPERATION FAILED **To clear press ✓ (Checkmark button)**	A PJL file system command attempted to perform an illogical operation.	Press the checkmark button ✓ to clear.
EIO FILE SYSTEM IS FULL **To clear press ✓ (Checkmark button)**	A PJL file system command could not store something on the file system because the file system was full.	Press the checkmark button ✓ to clear.
EIO IS WRITE PROTECTED **To clear press ✓ (Checkmark button)**	The file system device is protected and no new files can be written to it.	Press the checkmark button ✓ to clear.
EXTERNAL DEVICE INITIALIZING	The external paper handling device is initializing.	No action is necessary.
FINISHING PROCESS NOT FUNCTIONAL **For help press ? (Help button)**	A finishing process has failed.	Press the help button **?** for help.
INCOMPATIBLE FUSER	The incorrect fuser was installed.	**CAUTION:** The fuser can be hot while the product is in use. Wait for the fuser to cool before handling it. 1. Open right door. 2. Turn blue levers to unlock position. 3. Remove incompatible fuser. 4. Install correct fuser. 5. Turn blue levers to lock position. 6. Close the right door.
INCOMPATIBLE ROLLER KIT	Installed roller kit is incompatible.	1. Open right door. 2. Remove incompatible roller kit. 3. Install correct roller kit. 4. Close the right door.
Initializing permanent storage	Displayed when the product is turned on to show that permanent storage is being initialized.	No action is necessary.
INPUT PAPER PATH OPEN **For help press ? (Help button)**	The paper path between the product and the external paper handling input device is open and must be closed before printing can continue.	Close the paper path.
INSTALL <COLOR> CARTRIDGE **For help press ? (Help button)**	The print cartridge has been removed or has been installed incorrectly.	Replace or reinstall the print cartridge correctly to continue printing. Turn the product off then on to clear the message.
INSTALL <COLOR> DRUM **For help press ? (Help button)**	One or more of the <color> drums have been removed or installed incorrectly.	Replace or reinstall the image drum correctly to continue printing. Turn the product off then on to clear the message.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
INSTALL FUSER **For help press ? (Help button)**	The fuser has been removed or installed incorrectly.	**CAUTION:** The fuser can be hot while the product is in use. Wait for the fuser to cool before handling it. 1. Open right door. 2. Turn blue levers to unlock position. 3. Install or adjust fuser. 4. Turn blue levers to lock position. 5. Close the right door. 6. If the message persists, replace the fuser with a unit that meets the product power supply specifications (110V or 220V). See Fuser on page 191.
INSTALL ROLLER UNIT **For help press ? (Help button)**	The roller unit has been removed or installed incorrectly.	1. Open the right door. 2. Open the transfer-access panel. 3. Install or adjust the roller unit. 4. Close the transfer-access panel. 5. Close the right door.
INSTALL SUPPLIES **For status press ✓ (Checkmark button)**	Press the checkmark button ✓ to identify which supplies need replaced.	Insert the supply item or make sure the installed supply item is fully seated.
INSTALL TRANSFER ROLLER	The secondary transfer roller has experienced an error.	1. Reinstall the secondary-transfer roller. 2. Reconnect the connectors of the high-voltage power-supply PCA B (J251) and the DC controller PCA (J122).
INSTALL TRANSFER UNIT	The transfer unit has been removed or installed incorrectly.	1. Open the right door. 2. Open the transfer-access panel. Push locks upward. 3. Install or transfer the unit. 4. Close the transfer-access panel. 5. Close the right door.
INSUFFICIENT MEMORY TO LOAD FONTS/DATA **For help press ? (Help button)** **USB STORAGE <X>** **To continue press ✓ (Checkmark button).**	The product does not have enough memory to load the data (for example, fonts or macros) from the location specified.	To continue without this information press the checkmark button ✓. If the message persists, add more memory.
INTERNAL DISK DEVICE FAILURE **To clear press ✓ (Checkmark button)**	The specified device has failed.	Press the checkmark button ✓ to clear.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
INTERNAL DISK FILE OPERATION FAILED **To clear press ✓ (Checkmark button)**	A PJL file system command attempted to perform an illogical operation.	Press the checkmark button ✓ to clear.
INTERNAL DISK FILE SYSTEM IS FULL **To clear press ✓ (Checkmark button)**	A PJL file system command could not store something on the file system because the file system was full.	Press the checkmark button ✓ to clear.
INTERNAL DISK IS WRITE PROTECTED **To clear press ✓ (Checkmark button)**	The file system device is protected and no new files can be written to it.	Press the checkmark button ✓ to clear.
INTERNAL DISK NOT FUNCTIONAL	The internal disk is not working correctly.	Turn product off and then on.
INTERNAL DISK SPINNING UP	The internal disk is spinning up its platter. Jobs that require disk access must wait.	No action is necessary.
INTERNAL DOOR X OPEN	One of the internal doors is open.	If X=1, close the fuser door. If X=2, close the transfer door.
JOB NOT STAPLED DUE TO MIXED SIZES	A job sent to the optional paper handling device was not stapled because it had mixed sizes of paper.	Resend the job using only one size of paper.
LOAD TRAY 1 [Type] [Size] **For help press ? (Help button)**	This message appears when Tray 1 is selected but is not loaded, and no other paper trays are available for use.	Load Tray 1 with requested paper and then press the checkmark button ✓ to continue.
LOAD TRAY 1 [Type] [Size] **To continue press ✓ (Checkmark button)** **For help press ? (Help button)**	Tray 1 is loaded and configured for a type and size other than the one specified in the job.	1. If the correct paper is loaded, press the checkmark button ✓. 2. Otherwise, remove the incorrect paper and load Tray 1 with the specified paper. 3. If prompted, confirm the size and type of paper loaded. 4. Confirm that the paper guides are in the correct position. 5. To use another tray, remove paper from Tray 1 and then press the checkmark button ✓.
LOAD TRAY 1 [Type] [Size] **To use another tray press ✓ (Checkmark button)** **For help press ? (Help button)**	This message appears when Tray 1 is selected but is not loaded, and other paper trays are available for use.	1. Load the correct paper in the tray. 2. If prompted, confirm the size and type of paper loaded. 3. Otherwise, press the ✓ checkmark button to select another tray.
Loading program <XX> Do not power off	Programs and fonts can be stored on the product's file system and are loaded into RAM when the product is turned on. The number XX specifies a sequence number indicating the current program being loaded.	No action necessary. Do not turn the product off.
MANUALLY FEED <TYPE> <SIZE> **For help press ? (Help button)**	This message appears when Tray 1 is selected but is not loaded, and other paper trays are available for use.	Load tray with requested paper. If paper is already in tray, press the help button **?** to exit message and then press the checkmark button ✓ to print. To use another tray, clear paper from Tray 1, press the help button **?** to

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		exit message and then press the checkmark button ✓.
MANUALLY FEED <TYPE> <SIZE> **To continue press ✓** **For help press ? (Help button)**	This message appears when Tray 1 is selected but is not loaded, and other paper trays are available for use.	Load tray with requested paper. To override the message, press the checkmark button ✓ to use a type and size of paper that is available in another tray.
MANUALLY FEED <TYPE> <SIZE> **To use another tray press ✓ (Checkmark button)** **For help press ? (Help button)**	The specified job requires a manual feed.	Load tray with requested paper. If paper is already in tray, press the help button **?** to exit message and then press the checkmark button ✓ to print. To use another tray, clear paper from Tray 1, press the help button **?** to exit message and then press the checkmark button ✓.
MANUALLY FEED OUTPUT STACK **Then press ✓ (Checkmark button) to print second sides**	The product has printed the first side of a manual duplex job and is waiting for the user to insert the output stack to print the second side.	1. Maintaining the same orientation, remove document from the output bin. 2. Flip document printed side up. 3. Load document in Tray 1. 4. Press the ✓ (Checkmark button) to print.
Moving solenoid **To exit press STOP**	The solenoid is moving as part of a component test.	No action is necessary.
Moving solenoid and motor **To exit press STOP**	The solenoid and a motor are moving as part of a component test.	No action is necessary.
No stored jobs	Displayed when the user enters the RETRIEVE JOB menu and there are no jobs to retrieve.	No action is necessary.
NON HP SUPPLY IN USE **For help press ? (Help button)**	A non-HP supply is in use.	A user authorized the use of non-HP supplies when the HP supply was replaced. Any product repair required as a result of using non-HP supplies is not covered under warranty. Certain features may not be accurate or available.
Non-HP supply installed	A refilled color or a cloned color/mono cartridge has been installed, and the product previously used all genuine HP supplies. It can also appear when an unauthorized cartridge has been installed, and the product previously used all genuine supplies.	Install a genuine HP cartridge, or press the checkmark button ✓ to override the condition.
OPEN AND CLOSE TRAY 2 **For help press ? (Help button)**	The transfer unit has not been detensioned after shipping.	Open and close Tray 2.
ORDER <COLOR> CARTRIDGE	The identified print cartridge is nearing the end of its useful life. Printing will continue until a supply needs to be replaced.	Order a replacement print cartridge.
ORDER <COLOR> CARTRIDGE LESS THAN XXXX PAGES	The identified cartridge is nearing the end of its useful life. The product is ready and will	Order a replacement cartridge. Printing can continue until the cartridge must be replaced

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
	continue for the estimated number of pages indicated. Estimated pages remaining is based upon the historical page coverage of this product.	
ORDER <COLOR> DRUM	The identified drum is nearing the end of its useful life. Printing will continue until a supply needs to be replaced.	Order a replacement drum.
ORDER <COLOR> DRUM LESS THAN XXXX PAGES	The identified drum is nearing the end of its useful life. The product is ready and will continue for the estimated number of pages indicated. Estimated pages remaining is based upon the historical page coverage of this product.	Order a replacement drum. Printing can continue until the drum must be replaced.
ORDER FUSER KIT LESS THAN XXX PAGES **For help press ?**	The fuser is near end of life. The product is ready and will continue for the estimated number of pages indicated. Printing will continue until a supply needs to be replaced.	Order a replacement fuser kit.
ORDER ROLLER KIT LESS THAN XXX PAGES	The identified roller kit is nearing the end of its useful life. The product is ready and will continue for the estimated number of pages indicated. Estimated pages remaining is based upon the historical page coverage of this product.	Order a replacement roller kit.
ORDER STAPLE CARTRIDGE **To continue press ✓ (Checkmark button)**	The staple cartridge has reached the low threshold. Printing and stapling will continue until the staples need to be replaced.	Order a staple cartridge. Press the checkmark button ✓ to continue printing.
ORDER SUPPLIES	More than one supply needs to be replaced or is nearing the end of its useful life.	Order the necessary supplies.
ORDER TRANSFER KIT	The transfer kit is near end of life. Printing can continue.	Order a replacement transfer kit.
ORDER TRANSFER KIT LESS THAN XXX PAGES **For help press ? (Help button)**	The transfer unit is near end of life. The product is ready and will continue printing for the estimated number of pages.	Pages remaining for this supply have reached the low threshold. Printing will continue until a supply needs to be replaced.
OUTPUT ACCESSORY BRIDGE ATTACHED **To continue turn power off then on**	The output-accessory bridge was attached while the product was on. Printing cannot continue.	1. Turn the product off. 2. Attach the output device. 3. Turn the product on.
OUTPUT ACCESSORY BRIDGE DISCONNECTED **For help press ? (Help button)**	The output-accessory bridge was removed while the product was on. Printing cannot continue.	1. Turn power off. 2. Verify that the output-accessory bridge and output device are connected correctly. 3. Turn power on. To continue without the output-accessory bridge, turn power off, attach a standard output tray, and then turn power on.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
OUTPUT ACCESSORY BRIDGE FAILURE **For help press ? (Help button)**	The output-accessory bridge has failed.	1. Turn power off. 2. Verify that the output-accessory bridge is connected correctly. 3. Turn power on.
Password or name is incorrect. Please enter correct login.	The user name or password was typed incorrectly.	Retype the user name and password.
Paused To return to ready press STOP	The product is paused, and there are no error messages pending at the display. The I/O continues receiving data until memory is full.	Press the Stop key.
Performing COLOR BAND TEST	The color-band test is being performed.	No action is necessary.
Performing... PAPER PATH TEST	The product is performing a paper-path test.	No action is necessary.
Please wait	The product is in the process of clearing data.	No action is necessary.
PRINTING <REPORT>	The product is generating the specified report. The product will return to the online Ready state when the page is completed.	No action is necessary.
PRINTING STOPPED **To continue press ✓ (Checkmark button)**	Time has expired on the Print/Stop test.	Press the checkmark button ✓ to continue.
PROCESSING DUPLEX JOB **Do not grab paper until job completes**	Paper temporarily comes into the output bin while printing a duplex job. Do not attempt to remove the pages until the job is complete.	Do not grab paper as it temporarily comes into the output bin. The message will disappear when the job is finished.
Processing...	The product is currently processing a job but is not yet picking pages. When paper motion begins, this message will be replaced by a message that indicates which tray the job is being printed from.	No action is necessary.
Processing... from tray <X>	The product is actively processing a job from the designated tray.	No action is necessary.
Processing...copy <X> of <Y>	The product is currently processing or printing collated copies. The message indicates that copy X of Y total copies is currently being processed.	No action is necessary.
RAM DISK DEVICE FAILURE **To clear press ✓ (Checkmark button)**	The specified device has failed.	Press the checkmark button ✓ to clear.
RAM DISK FILE OPERATION FAILED **To clear press ✓ (Checkmark button)**	A PJL file system command attempted to perform an illogical operation.	Press the checkmark button **?** to clear.
RAM DISK FILE SYSTEM IS FULL **To clear press ✓ (Checkmark button)**	A PJL file system command could not store something on the file system because the file system was full.	Press the checkmark button ✓ to clear.
RAM DISK IS WRITE PROTECTED **To clear press ✓ (Checkmark button)**	The file system device is protected and no new files can be written to it.	Press the checkmark button ✓ to clear.
READY	The product is online and ready for data. No status or device attendance messages are pending at the display.	No action is necessary.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
Ready <IP ADDRESS>	The product is online and ready.	No action is necessary.
Ready Diagnostics mode **To exit press STOP**	The product is in Diagnostics mode.	To stop Diagnostic mode, press the Stop button.
Receiving upgrade	A firmware upgrade is in progress.	Do not turn the product off until the product returns to READY.
REMOVE ALL CARTRIDGES AND DRUMS	Remove image drums during the component test.	1. Open the front door. 2. Remove image drums and cartridges. 3. Close the front door.
REMOVE ALL IMAGE DRUMS **TO EXIT PRESS STOP**	Remove image drums during the component test.	1. Open the front door. 2. Remove image drums. 3. Close the front door.
Remove or install cartridge/drum pairs	This message is displayed during the Disable Cartridge Check when the print cartridge and image drum of the same color are not removed. To exit press the Stop button.	Remove or install cartridge and drum of the same color together.
REPLACE <COLOR> CARTRIDGE	The identified print cartridge has reached the end of life. Printing can continue.	Replace the specified color cartridge.
REPLACE <COLOR> DRUM **For help press ? (Help button)**	The specified color drum has reached the end of life.	Replace image drum. 1. Open the front door. 2. Replace the specified image drum. 3. Close the front door.
REPLACE <COLOR> DRUM **To continue press ✓ (Checkmark button).**	The REPLACE SUPPLIES menu is set to STOP AT LOW. The specified image drum has passed the low threshold.	Replace image drum or press the checkmark button ✓ to continue until the image drum is at the end of life. 1. Open the front door. 2. Replace the specified image drum. 3. Close the front door.
REPLACE FUSER KIT	The fuser is nearing the end of its useful life. Printing can continue.	**CAUTION:** The fuser can be hot while the product is in use. Wait for the fuser to cool before handling it. 1. Open the right door. 2. Turn blue levers to unlock position. 3. Install new fuser. 4. Remove the old fuser unit from the product.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		5. Turn blue levers to lock position. 6. Close the right door.
REPLACE FUSER KIT **For help press ? (Help button)** **To continue press ✓ (Checkmark button).**	The REPLACE SUPPLIES menu is set to STOP AT LOW. The fuser kit has reached the low threshold.	**CAUTION:** The fuser can be hot while the product is in use. Wait for the fuser to cool before handling it. Press the checkmark button ✓ to continue printing until the fuser reached the end of life or replaced fuser. Replaced fuser 1. Open the right door. 2. Turn blue levers to unlock position. 3. Install new fuser. 4. Turn blue levers to lock position. 5. Close the right door.
REPLACE ROLLER KIT **For help press ? (Help button)**	**Pages remaining for roller kit has reached the low threshold.**	To continue printing without replacing the roller kit, press the checkmark button ✓. Replace roller kit. 1. Open the right door. 2. Open the transfer-access panel. 3. Replace the roller kit. 4. Close the transfer-access panel. 5. Close the right door.
REPLACE ROLLER KIT **For help press ? (Help button)** **To continue press ✓ (Checkmark button)**	The REPLACE SUPPLIES menu is set to STOP AT LOW. The roller kit is at end of life.	To continue printing without replacing the roller kit, press the checkmark button ✓. Replace roller kit. 1. Open the right door. 2. Open the transfer-access panel. 3. Replace roller kit. 4. Close the transfer-access panel. 5. Close the right door.
REPLACE SUPPLIES **For status press ✓ (Checkmark button).**	Two or more supplies are out and need to be replaced.	Press the checkmark button ✓ to see which supplies need to be replaced.
REPLACE SUPPLIES **To continue press ✓ (Checkmark button).**	Pages remaining for at least two supplies have reached the low threshold. The product was set to stop printing when a supply needs to be ordered.	Press the checkmark button ✓ to continue until the supply reaches the end of life.
REPLACE SUPPLIES - OVERRIDE IN USE	The product is set to continue printing even though a supply has reached end of life.	Press the down arrow ▼ to see step by step information.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
	CAUTION: Using the Override mode can result in unsatisfactory print quality. HP recommends replacing the supply when the REPLACE SUPPLIES - OVERRIDE IN USE message appears. The HP Supplies Premium Protection Warranty coverage ends when a supply is used in Override mode.	
REPLACE SUPPLIES - Using black only	A color supply (or supplies) has reached the out condition and the **COLOR SUPPLY OUT** menu item is set to **AUTOCONTINUE BLACK** .	No user input is required for printing to continue. Printing continues in black. For color printing, replace the needed color print cartridge or drum.
REPLACE TRANSFER KIT **For help press ? (Help button)**	The transfer kit has reached the end of life	Replace transfer kit. 1. Open the right door. 2. Open the transfer-access panel. 3. Push locks upward. 4. Install the transfer unit. 5. Push locks downward. 6. Close the transfer-access panel. 7. Close the right door.
REPLACE TRANSFER KIT **For help press ? (Help button)** **To continue press ✓ (Checkmark button)**	The REPLACE SUPPLIES menu is set to STOP AT LOW. The transfer kit has passed the low threshold.	Press the ✓ to continue printing until the transfer unit reaches the end of life or replace transfer kit. Replace transfer kit. 1. Open the right door. 2. Open the transfer-access panel. 3. Push locks upward. 4. Install the transfer unit. 5. Push locks downward. 6. Close the transfer-access panel. 7. Close the right door.
Request accepted please wait	The product has accepted a request to print an internal page, but the current job must finish printing before the internal page will print.	No action is necessary.
RESEND EXTERNAL ACCESSORY FIRMWARE	The product detected corrupt firmware in an input or output accessory.	Printing can continue from another source or to another destination, if available. If product attempts to use a corrupt accessory, there is a high probability it will jam.
Resend upgrade	The firmware upgrade was not completed successfully.	Attempt upgrade again.
Restoring	The product is restoring settings. This message is displayed during the execution of	No action is necessary.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
	a restore action, such as RESTORE COLOR VALUES.	
Restoring factory settings	The product is restoring factory settings.	No action is necessary.
Restoring... [ACCESSORY #]	The product is restoring external accessory settings in response to a user request.	No action is necessary.
RFU LOAD ERROR SEND FULL RFU ON <X> PORT	An error has occurred during a firmware upgrade.	If the message persists, contact HP Support at www.hp.com/support/cljcp6015.
ROM DISK DEVICE FAILURE **To clear press ✓ (Checkmark button)**	The specified device has failed.	Press the checkmark button ✓ to clear.
ROM DISK FILE OPERATION FAILED **To clear press ✓ (Checkmark button)**	A PJL file system command attempted to perform an illogical operation.	Press the checkmark button ✓ to clear.
ROM DISK FILE SYSTEM IS FULL **To clear press ✓ (Checkmark button)**	A PJL file system command could not store something on the file system because the file system was full.	Press the checkmark button ✓ to clear.
ROM DISK IS WRITE PROTECTED **To clear press ✓ (Checkmark button)**	The file system device is protected and no new files can be written to it.	Press the checkmark button ✓ to clear.
Rotating <color> Motor **To exit press STOP**	A component test is in progress; the component selected is the <color> cartridge motor.	Press **STOP** when ready to stop this test.
Rotating Motor - To exit press STOP	The product is executing a component test and the component selected is a motor.	Press **STOP** when ready to stop this test.
SANITIZING DISK <X>% COMPLETE Do not power off **CLEANING DISK <X>% COMPLETE** **For help press ? (Help button)**	The hard disk is being cleaned.	Contact the network administrator.
Size mismatch in tray XX	The paper in the listed tray does not match the size specified for that tray.	1. Load the correct paper. 2. Verify the paper is positioned correctly.
Sleep mode on	The product is in sleep mode. A button press, receipt of printable data, or an error condition will clear this message.	No action is necessary.
TRAY <XX> [TYPE] [SIZE] **To change size or type press ✓ (Checkmark button) To accept settings press ⮌ (Back arrow)**	This message states the current type and size configuration of the tray.	To change size or type press the checkmark button ✓ To accept settings press the back arrow ⮌.
TRAY <XX> EMPTY [TYPE][SIZE]	The specified tray is empty and the current job does not need this tray to print.	Refill the tray at a convenient time.
TRAY <XX> OPEN **For help press ? (Help button)**	The specified tray is open or not closed completely.	Close the tray.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
Type Mismatch In Tray <XX>	The specified tray contains a paper type that does not match the configured type.	The specified tray will not be used until this condition is addressed. Printing can continue from other trays. 1. Load the correct paper in the specified tray. 2. Verify the type configuration.
Unable to store job	A job cannot be stored because of a memory or configuration problem.	Install additional memory in the product.
Unauthorized supply in use	The product is using a non-HP supply.	If you believe you purchased a genuine HP supply, go to www.hp.com/go/anticounterfeit. Any product repair required as a result of using non-HP or unauthorized supplies is not covered under warranty. HP cannot ensure the accuracy or the availability of certain features.
USB ACCESSORY ERROR **For help press ? (Help button)**	This message appears when a connected USB accessory draws too much power. When this happens, the ACC port is disabled and printing stops.	Printing can continue. The USB device should be removed.
USB STORAGE <X> NOT FUNCTIONAL **For help press ? (Help button)**	A parameter in the USB storage is not working correctly.	1. Turn product off. 2. Disconnect the USB storage accessory, and replace with a new USB storage accessory.
USB STORAGE <X> REMOVED **For help press ? (Help button)**	A USB storage accessory has been disconnected.	1. Turn product off. 2. Reconnect the USB storage accessory. 3. Turn product on.
USB STORAGE DEVICE FAILURE **To clear press ✓ (Checkmark button)**	The specified device has failed.	Press the checkmark button ✓ to clear.
USB STORAGE FILE SYSTEM IS FULL **To clear press ✓ (Checkmark button)**	A PJL file system command could not store something on the file system because the file system was full.	Press the help button **?** to clear.
USB STORAGE IS WRITE PROTECTED **To clear press ✓ (Checkmark button)**	The file system device is protected and no new files can be written to it.	Press the checkmark button ✓ to clear.
USB STORAGE] FILE OPERATION FAILED **To clear press ✓ (Checkmark button)**	A PJL file system command attempted to perform an illogical operation.	Press the checkmark button ✓ to clear.
Wait for printer to reinitialize	This message can appear for a variety of reasons: The RAM DISK settings changed before the product has rebooted. The product is auto power cycling after changing external device modes. The user has exited Diagnostics. A new formatter has been installed with an old engine or a new engine has been installed with an old formatter.	No action is necessary.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
WAITING FOR TRAY <XX> TO LIFT	The specified tray is lifting paper for feeding.	No action is necessary.
WARMING UP	Product is coming out of powersave mode.	No action is necessary.

Event log messages

Print an event log

Use the event log to help diagnose and solve product problems.

1. Press Menu.
2. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight **PRINT EVENT LOG**, and then press the checkmark button ✓ to print the pages.

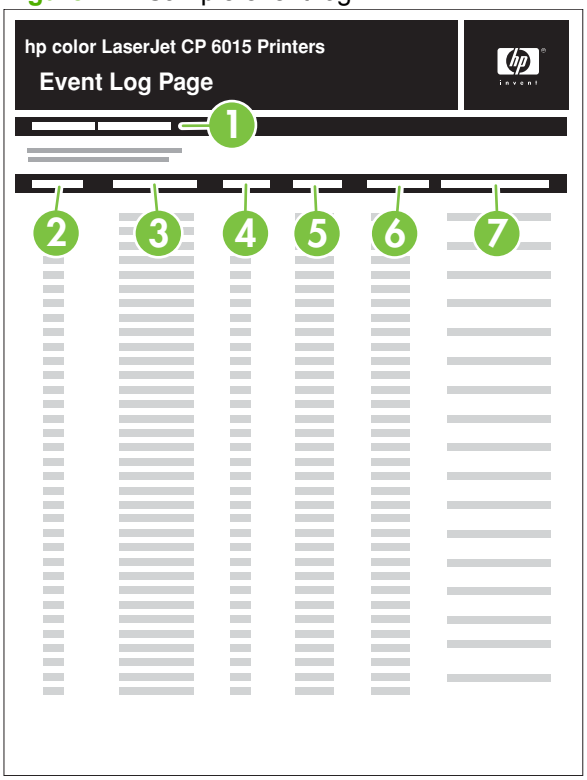
Show an event log

Use the control panel to view the event log.

1. Press Menu.
2. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight **SHOW EVENT LOG**, and then press the checkmark button ✓ to print the pages.

Sample event log

Figure 7-4 Sample event log



1	Product information
2	Event number
3	Date and time
4	Engine cycles
5	Event log code
6	Firmware version number
7	Description of personality

Clear the event log

Use the **SERVICE** menu to clear the event log.

1. Press Menu.
2. Press the down arrow ▼ to highlight **SERVICE**, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight **CLEAR EVENT LOG**, and then press the checkmark button ✓ to print the pages.

Event log message

Event log message	Description	Recommended action
13.01.00 JAM IN TRAY N	A jam has occurred in the indicated tray.	1. Open the tray. 2. Clear all paper. 3. Press the checkmark button ✓. 4. See Jam locations on page 429. See areas 5, 6, and 7 for more troubleshooting information.
13.02.00 TRANSFER AREA JAM, TRANSFER AND FUSER JAM	A jam has occurred in the right door of the product in the transfer or fuser areas.	See Jam locations on page 429. See areas 2 and 3 for more troubleshooting information.
13.05.00 FUSER OUTPUT, PAPER LATE JAM	Paper is late arriving at SR15 fuser-delivery media-feed sensor in the fuser.	See Jam locations on page 429. See area 2 for more troubleshooting information.
13.06.00 FUSER OUTPUT, PAPER STOPPED JAM	Paper has stopped at SR15 fuser-delivery media-feed sensor in the fuser.	See Jam locations on page 429. See area 2 for more troubleshooting information.
13.10.00 DUPLEX TURN AROUND, PAPER LATE JAM	Paper is late arriving at SR304 duplexing media-reverse sensor.	See Jam locations on page 429. See area 4 for more troubleshooting information.
13.11.00 DUPLEX TURN AROUND, PAPER STOPPED JAM	Paper has stopped at SR304 duplexing media-reverse sensor.	See Jam locations on page 429. See area 4 for more troubleshooting information.
13.12.00 DUPLEX PATH, PAPER LATE JAM	Paper is late arriving at SR303 duplexing media-feed sensor.	See Jam locations on page 429. See area 4 for more troubleshooting information.
13.13.00 DUPLEX PATH, PAPER STOPPED JAM	Paper has stopped at SR303 duplexing media-feed sensor.	See Jam locations on page 429. See area 4 for more troubleshooting information.
13.1C.00 FUSER ACCORDION JAM	Paper has stopped at SR15 fuser-delivery media-feed sensor.	See Jam locations on page 429. See area 2 for more troubleshooting information.
13.20.00 PRINTER COULD NOT AUTOMATICALLY EJECT PAPER	Paper is still in the product and must be cleared.	See Jam locations on page 429.
13.21.00 DOOR OPEN JAM	A door on the product is open.	See Jam locations on page 429. Check the doors in areas 1-7.
13.2C.00 JAM IN TOP COVER, DELIVERY DELAY JAM 1	Paper has stopped in the output-bin area.	See Jam locations on page 429. See area 1 for more troubleshooting information.
13.2D.00 JAM IN TOP COVER, DELIVERY DELAY JAM 2	Paper has stopped in the output-bin area.	See Jam locations on page 429. See area 1 for more troubleshooting information..
13.2E.00 JAM IN RIGHT DOOR (FUSER/TRANSFER JAM)	Paper has stopped in the fuser area or transfer area.	See Jam locations on page 429. See areas 2 and 3 for more troubleshooting information.
13.30.00 JAM IN LOWER RIGHT DOOR or JAM IN RIGHT DOOR (FUSER/ TRANSFER JAM)	Paper has stopped in the lower-right door or the upper-right door of the product.	See Jam locations on page 429. See areas 2, 3 and 7 for more troubleshooting information.

Event log message	Description	Recommended action
54.06	The DMAX density sensor is out of range.	1. Press Menu. 2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and then press the checkmark button ✓ 3. Press the down arrow ▼ to highlight **PRINT QUALITY**, and then press the checkmark button ✓. 4. Press the down arrow ▼ to highlight **QUICK CALIBRATE NOW**, and then press the checkmark button ✓.
54.0C.06	The engine reported a neutral calibration error.	1. Press Menu. 2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and then press the checkmark button ✓ 3. Press the down arrow ▼ to highlight **PRINT QUALITY**, and then press the checkmark button ✓. 4. Press the down arrow ▼ to highlight **CALIBRATE NEUTRALS**, and then press the checkmark button ✓.
54.0D.XX	• XX=00: Black density-measurement abnormality • XX=01: Cyan density-measurement abnormality • XX=02: Magenta density-measurement abnormality • XX=03: Yellow density-measurement abnormality	1. Press Menu. 2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and then press the checkmark button ✓. 3. Press the down arrow ▼ to highlight **PRINT QUALITY**, and then press the checkmark button ✓. 4. Press the down arrow ▼ to highlight **QUICK CALIBRATE NOW**, and then press the checkmark button ✓.
54.01	The humidity-environment sensor is abnormal.	Ensure the product is in a supported environment. If the error persists, replace the CN1 environment sensor.
54.0E.01 Media sensor replace registration-second-transfer assembly	The registration unit is abnormal.	Ensure the product is in a supported environment. If the error persists, replace the registration-second-transfer assembly. See Secondary transfer unit on page 210
54.0E.02 Replace transfer kit	The ITB unit is abnormal.	Ensure the product is in a supported environment. If the error persists, replace the ITB.
54.0E.03 Media sensor clean registration second-transfer assembly	The media-sensor window is contaminated.	Clean the media-sensor window. See Clean the registration second transfer assembly on page 482.

Event log message	Description	Recommended action
54.0F.XX	• XX=00: Black misregistration is out of range. • XX=01: Cyan misregistration is out of range. • XX=02: Magenta misregistration is out of range. • XX=03: Yellow misregistration is out of range.	1. Press Menu. 2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and then press the checkmark button ✓. 3. Press the down arrow ▼ to highlight **PRINT QUALITY**, and then press the checkmark button ✓. 4. Press the down arrow ▼ to highlight **FULL CALIBRATE NOW**, and then press the checkmark button ✓.
54.14	The misregistration sensor is abnormal and has failed a self test.	1. Press Menu. 2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and then press the checkmark button ✓. 3. Press the down arrow ▼ to highlight **PRINT QUALITY**, and then press the checkmark button ✓. 4. Press the down arrow ▼ to highlight **FULL CALIBRATE NOW**, and then press the checkmark button ✓. 5. If the error persists, replace the C.P.R sensor assembly. 6. Replace the ITB. See Intermediate-transfer belt (ITB) on page 196.
54.19	The ITB sensor-mark detection sensor is abnormal.	1. Press Menu. 2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and then press the checkmark button ✓. 3. Press the down arrow ▼ to highlight **PRINT QUALITY**, and then press the checkmark button ✓. 4. Press the down arrow ▼ to highlight **FULL CALIBRATE NOW**, and then press the checkmark button ✓. 5. If the error persists, replace the C.P.R sensor assembly. 6. Replace the ITB. See Intermediate-transfer belt (ITB) on page 196.
54.22.00	The color sensor (CS) is out of range.	1. Press Menu. 2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and then press the checkmark button ✓.

Event log message	Description	Recommended action
		3. Press the down arrow ▼ to highlight **PRINT QUALITY**, and then press the checkmark button ✓. 4. Press the down arrow ▼ to highlight **CALIBRATE NEUTRALS**, and then press the checkmark button ✓.
55.06.01	the DC controller NVRM has an abnormal read/write.	1. Turn the product off then on. 2. If the error persists, replace the DC Controller. See DC controller PCA on page 246.
55.06.02	The DC controller NVRM is not accessible.	1. Turn the product off then on. 2. If the error persists, replace the DC Controller. See DC controller PCA on page 246.

Paper-handling problems

Jams

Common causes of jams

The product is jammed.

Cause	Solution
The paper does not meet specifications.	Use only paper that meets HP specifications. See Supported paper and print media sizes on page 52.
A component is installed incorrectly.	Verify that the transfer belt and transfer roller are correctly installed.
You are using paper that has already passed through a product or copier.	Do not use paper that has been previously printed on or copied.
An input tray is loaded incorrectly.	Remove any excess paper from the input tray. Make sure that the stack is below the maximum stack height mark in the tray. See Load paper and print media on page 59.
The paper is skewed.	The input-tray guides are not adjusted correctly. Adjust them so they hold the stack firmly in place without bending it.
The paper is binding or sticking together.	Remove the paper, flex it, rotate it 180°, or flip it over. Reload the paper into the input tray.
When printing on lightweight paper or on jobs with heavy toner coverage, paper is wrapping on the fuser causing Fuser Delay Jam or Fuser Wrap Jam messages.	Set the **LIGHT MEDIA** optimize mode on the Print Quality menu to **ON**.
The paper is removed before it settles into the output bin.	Reset the product. Wait until the page completely settles in the output bin before removing it.
During two-sided printing, you removed the paper before the second side of the document was printed.	Reset the product and print the document again. Wait until the page completely settles in the output bin before removing it.
The paper is in poor condition.	Replace the paper.
The internal tray rollers are not picking up the paper.	If the paper is heavier than 220 g/m^2 (58 lb), it might not be picked from the tray. The rollers are worn. Replace the rollers.
The paper has rough or jagged edges.	Replace the paper.
The paper is perforated or embossed.	Perforated or embossed paper does not separate easily. Feed single sheets from Tray 1.
Device supply items have reached the end of their useful life.	Check the product control panel for messages prompting you to replace supplies, or print a supplies status page to verify the remaining life of the supplies. See Information pages on page 74.
Paper was not stored correctly.	Replace the paper in the trays. Paper should be stored in the original packaging in a controlled environment.
Not all product packing material was removed.	Verify that the packing tape, cardboard, and plastic shipping locks have been removed from the product.

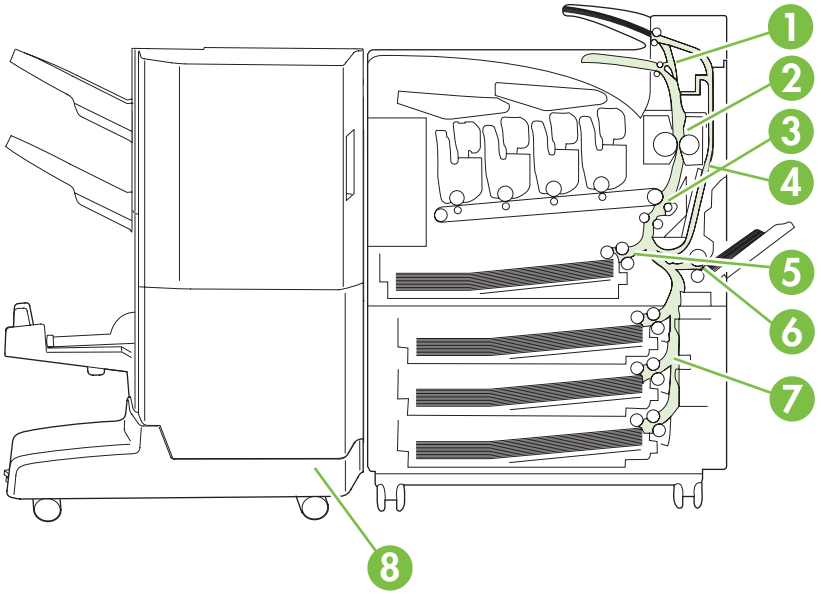
If the product still continues to jam, contact HP Customer Support or your authorized HP service provider.

Jam locations

Use this illustration to identify locations of jams. In addition, instructions appear on the control panel to direct you to the location of jammed paper and how to clear it.

NOTE: Internal areas of the product that might need to be opened to clear jams have green handles or green labels.

Figure 7-5 Jam locations



1	AREA 1: Output-bin area
2	AREA 2: Fuser area
3	AREA 3: Transfer area
4	AREA 4: Duplexing area (for the HP Color LaserJet CP6015dn, x, and xh models only)
5	AREA 5: Tray–2 pickup area
6	AREA 6: Tray 1 area
7	AREA 7: Optional Trays 3, 4, and 5
8	AREA 8: Optional finishing device

Clear jams

When a jam occurs, a message appears on the control-panel display that describes the location of the jam. The following table lists the messages that can appear and provides links to the procedures for clearing the jam.

WARNING! To avoid electrical shock, remove any necklaces, bracelets, or other metal items before reaching into the inside of the product.

Type of jam	Procedure
AREA 1: **13.XX.YY JAM ABOVE TOP OUTPUT BIN** **13.XX.YY JAM IN TOP COVER**	See AREA 1: Jams in the output bin on page 431.
AREA 2 and 3: **13.XX.YY FUSER AREA JAM** **13.XX.YY FUSER WRAP JAM** **13.XX.YY TRANSFER AND FUSER JAM**	See AREA 2 and 3: Jams in the fuser and transfer area on page 433.
AREA 4: **13.XX.YY JAM IN RIGHT DOOR**	See AREA 4: Jams in the duplex area on page 440 (for the HP Color LaserJet CP6015dn, x, and xh models only)
AREA 5: **13.XX.YY JAM IN TRAY 2** **13.XX.YY TRANSFER AREA JAM**	See AREA 5: Jams in Tray 2 and the internal paper path on page 445.
AREA 6: **13.XX.YY JAM IN TRAY 1**	See AREA 6: Clear jams in Tray 1 on page 449.
AREA 7: **13.XX.YY JAM IN TRAY 3** **13.XX.YY JAM IN TRAY 4** **13.XX.YY JAM IN TRAY 5** **13.XX.YY JAM IN LOWER RIGHT DOOR** **13.XX.YY JAM IN INPUT ACCESSORY**	See AREA 7: Jams in optional Trays 3, 4, and 5 on page 455
AREA 8: **13.XX.YY JAM IN LEFT ACCESSORY** **13.XX.YY JAM INSIDE TOP DOOR**	See AREA 8: Jams in the optional finishing devices on page 460.

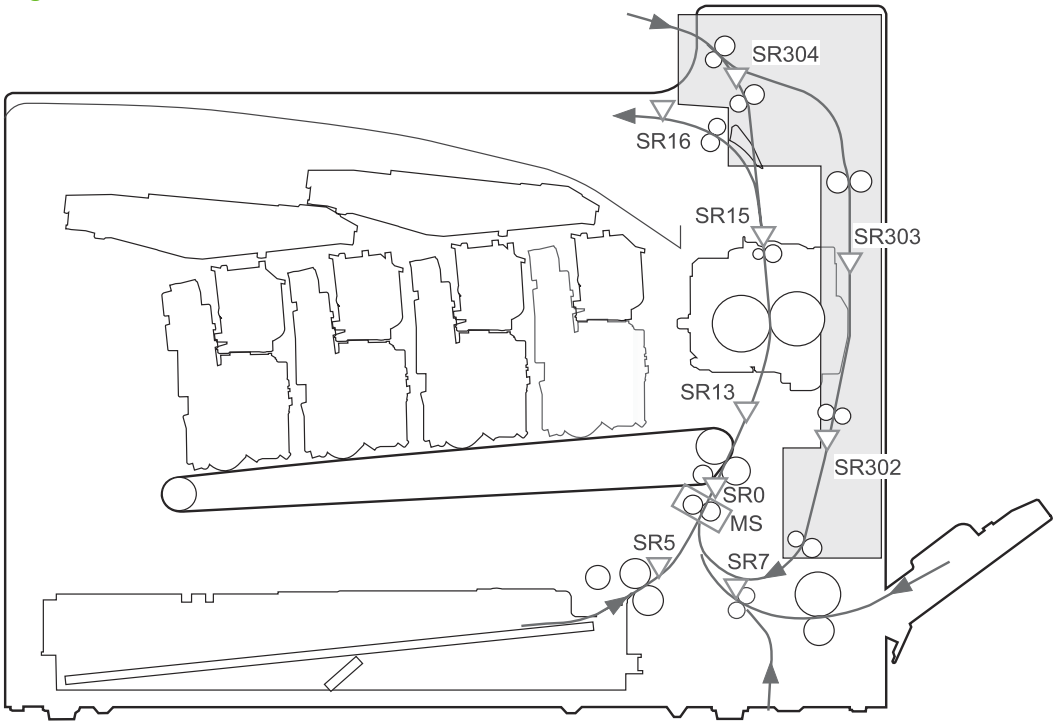
Jam sensors

Jams in areas 1-6 are detected by the paper sensors on the paper path. The product has the following sensors:

- Vertical-synchronous-position sensor (SR0)
- Cassette media-feed sensor (SR5)
- MP-tray media-feed sensor (SR7)
- Loop sensor (SR13)
- Fixing-delivery media-feed sensor (SR15)
- Face-down tray media-full sensor (SR16)

- Duplexing media-repickup sensor (SR302)
- Duplexing media-feed sensor (SR303)
- Duplexing media-reverse sensor (SR304)

Figure 7-6 Locations of Jam sensors



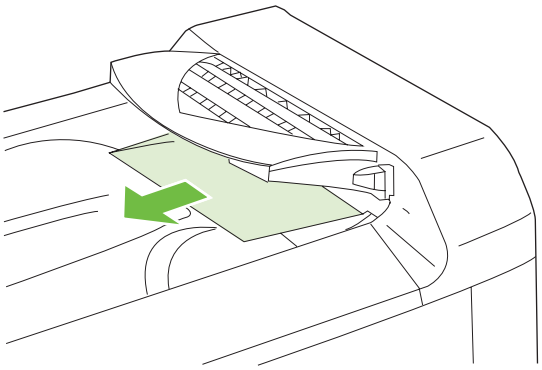
AREA 1: Jams in the output bin

Table 7-5 Causes and solutions for delivery delay jam

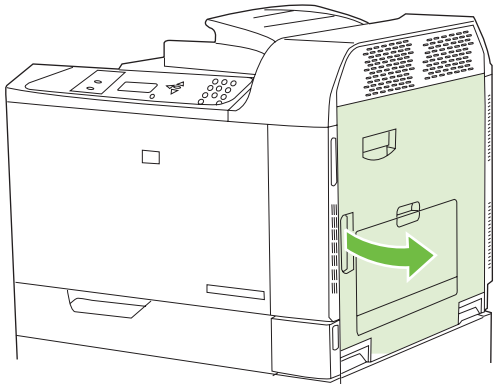
Cause	Solution
The face-down output-bin media-full sensor lever is damaged	Replace the face-down delivery unit.
Poor contact of the face-down output-bin media-full sensor connector	Reconnect the connectors of the face-down output-bin media-full sensor (J2016), intermediate (J1905) and the DC controller PCB (J108).
The face-down output-bin media-full sensor is defective	Check the face-down output-bin media-full sensor via the sensor monitor mode. If the sensor is defective, replace the face-down delivery unit.
Poor contact of the fuser-motor connector	Reconnect the connectors of the fuser motor (J1711), intermediate (J1720) and the DC controller PCA (J105).
The fuser motor is defective	Execute the fuser-motor driving test in the actuator drive mode. If the motor is defective, replace the fuser motor.

Area 1: Clear jams in the output bin

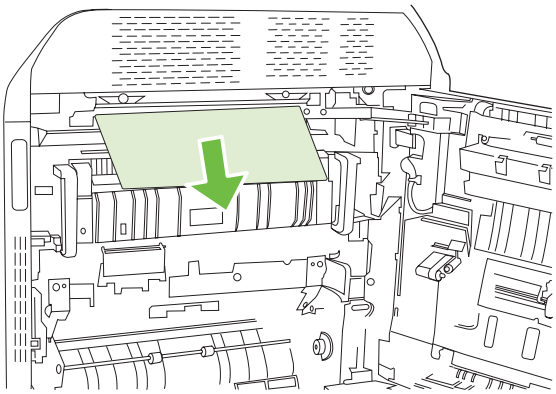
1. If jammed paper is visible in the output bin, gently pull the paper to remove it.



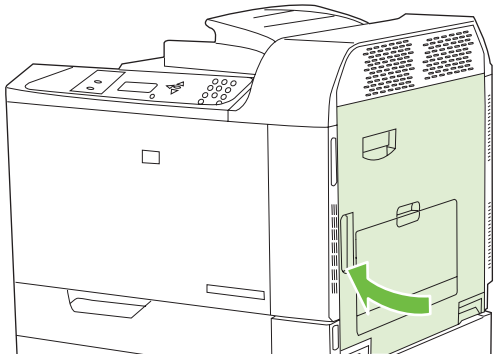
2. Open the right door.



3. If paper has jammed as it enters the output bin, gently pull the paper to remove it.



4. Close the right door.



AREA 2 and 3: Jams in the fuser and transfer area

Table 7-6 Causes and solutions for fuser delivery delay jams

Cause	Solution
The loop-sensor lever is not set correctly	Check the loop-sensor lever and place it in the correct position.
The spring of the fuser-delivery media-feed-sensor lever is unhooked	Check the spring of the fuser and right-door sensor levers and place it in the correct position.
The fuser-delivery media-feed-sensor lever is damaged	Replace the fuser or right door.
Poor contact of the fuser-delivery media-feed-sensor connector	Reconnect the connectors of the fuser-delivery media-feed sensor (J1945), intermediate (J1950, J1919) and the DC controller PCA (J108).
The fuser-delivery media-feed sensor is defective	Check the fuser-delivery media-feed sensor by the sensor monitor mode. If the sensor is defective, replace the right door.
Poor contact of the fuser-motor connector	Reconnect the connectors of the fuser motor (J1711), intermediate (J1720) and the DC controller PCA (J105).
The fuser motor is defective	Execute the fuser-motor driving test in the actuator drive mode. If the motor is defective, replace the fuser motor.

Table 7-7 Causes and solutions for wrapping jams

Cause	Solution
The fuser roller or pressure roller is dirty	Execute a fuser roller cleaning.
The guide of the fuser delivery unit is dirty	Clean the guide.
The fuser roller of the pressure roller is worn or deformed	Replace the fuser.

Table 7-8 Causes and solutions for fuser delivery stationary jams

Cause	Solution
The fuser roller or pressure roller is worn or deformed	Replace the fuser.
The fuser delivery roller is deformed	Replace the fuser.

Table 7-8 Causes and solutions for fuser delivery stationary jams (continued)

Cause	Solution
The gear of the fuser delivery roller is damaged	Replace the fuser.
The pressure roller is not within nip-width specifications	Check the nip-width specifications. If the pressure roller is not within the specifications, replace the fuser.

Table 7-9 Causes and solutions for residual media jams

Cause	Solution
The spring of the loop-sensor lever is unhooked	Check the spring and place it in the correct position.
The loop-sensor lever is damaged	Replace the right door.
Poor contact of the loop-sensor connector	Reconnect the connectors of the loop sensor (J2013), intermediate (J1954, J1955) and the DC controller PCA (J121).
The loop sensor is defective	Check the loop sensor via the sensor monitor mode. If the sensor is defective, replace the right-door unit.
The spring of the fuser-delivery media-feed-sensor lever is unhooked	Check the spring of the fuser and right door and place it in the correct position.
The fuser-delivery media-feed-sensor lever is damaged	Replace the fuser or right door.
Poor contact of the fuser-delivery media-feed-sensor connector	Reconnect the connectors of the fuser-delivery media-feed sensor (J1945), intermediate (J1950, J1919) and the DC controller PCA (J108).
The fuser-delivery media-feed sensor is defective	Check the fuser-delivery media-feed sensor via the sensor monitor mode. If the sensor is defective, replace the right door.
The spring of the duplexing media-reverse sensor lever is unhooked	Check the spring and place it in the correct position.
The duplexing media-reverse sensor lever is damaged	Replace the duplexing reverse unit.
Poor contact of the duplexing media-reverse sensor connector	Reconnect the connectors of the duplexing media-reverse sensor (J2305) and the duplexing driver PCA (J4103).
The duplexing media-reverse sensor is defective	Check the duplexing media-reverse sensor via the sensor monitor mode. If the sensor is defective, replace the duplexing reverse unit.

Table 7-10 Causes and solutions for pickup delay jams 2

Cause	Solution
The registration roller is worn or deformed	Replace the secondary-transfer unit.
The spring of the registration shutter is unhooked	Check the spring and place it in correct position.
Poor contact of the vertical-synchronous-position sensor	Reinstall the ITB unit.
The vertical-synchronous-position sensor is defective	Check the vertical-synchronous-position sensor by the sensor monitor mode. If the sensor is defective, replace the ITB unit.

Table 7-10 Causes and solutions for pickup delay jams 2 (continued)

Cause	Solution
Poor contact of the registration-motor drive connector	Reconnect the connectors of the registration motor (J1706), intermediate (J1924) and the DC controller PCA (J111).
The registration motor is defective	Execute the registration-motor driving test in the actuator drive mode. If the motor is defective, replace the multipurpose drive unit.

Table 7-11 Causes and solutions for pickup stationary jam

Cause	Solution
Multiple feed of media	Replace any worn or deformed parts (tray separation roller, tray feed roller, MP-tray pickup roller or MP-tray separation roller). Check the separation roller and MP-tray separation roller to see if they are firmly seated and coupled with the torque limiter. Replace the separation roller and feed roller. Replace the MP-tray pickup roller and MP-tray separation roller.
The secondary transfer roller is not set correctly	Place the secondary-transfer-roller unit in the correct position.
The secondary transfer roller is worn or deformed	Replace the secondary-transfer-roller unit.
Poor contact of the ITB-motor drive connector	Reconnect the connectors of the ITB motor (J1710) and the DC controller PCA (J105).
The ITB motor is defective	Execute the ITB-motor driving test in the actuator drive mode. If the motor is defective, replace the ITB motor.
The ITB does not rotate smoothly	Replace the ITB unit.

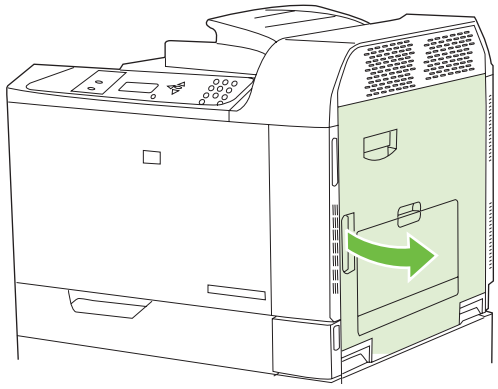
Table 7-12 Causes and solutions for fuser delivery stationary jam

Cause	Solution
The fuser roller or pressure roller is worn or deformed	Replace the fuser.
The fuser delivery roller is deformed	Replace the fuser.
The gear of the fuser delivery roller is damaged	Replace the fuser.
The pressure roller is not within nip-width specifications	If the pressure roller is not within the specifications, replace the fuser.

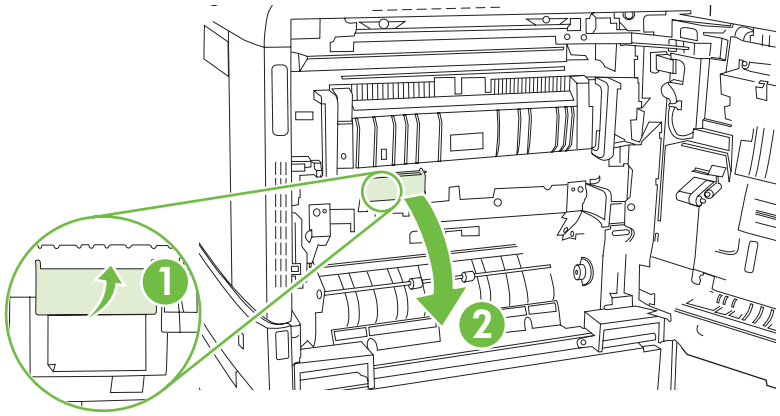
△ **CAUTION:** The fuser can be hot while the product is in use. Wait for the fuser to cool before handling it.

AREA 2 and 3: Clear jams in the fuser and transfer area

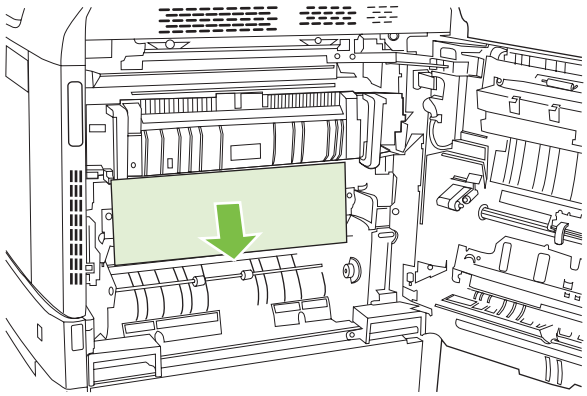
1. Open the right door.



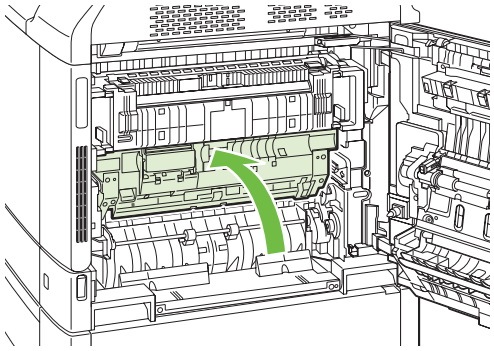
2. Lift the green handle on the transfer-access panel and open the panel.



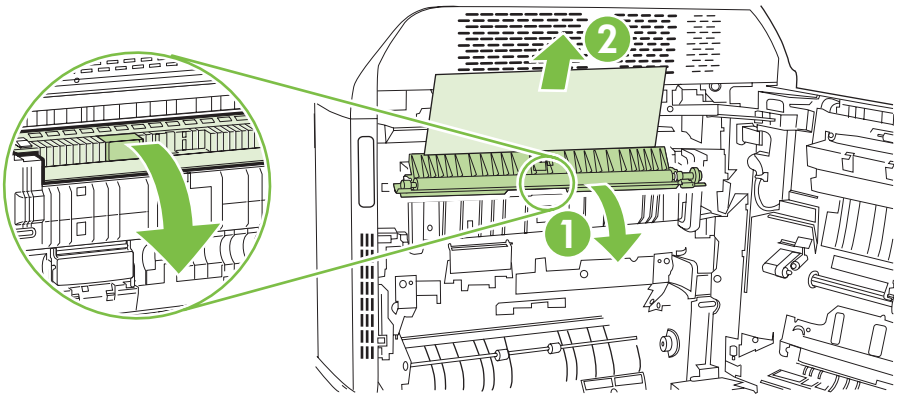
3. If paper is visible entering the bottom of the fuser, gently pull downward to remove it.



4. Close the transfer-access panel.



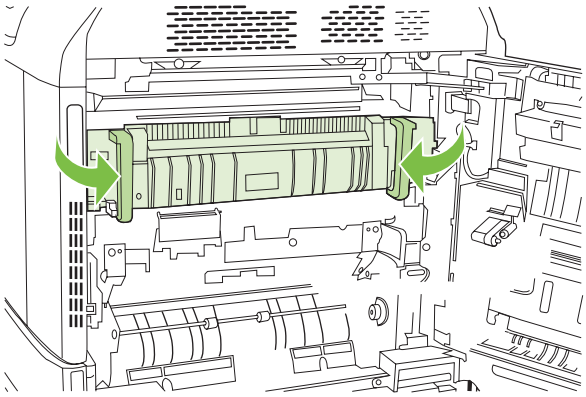
5. Open the fuser jam access door above the fuser and remove any paper that is visible. Then close the fuser jam access door.



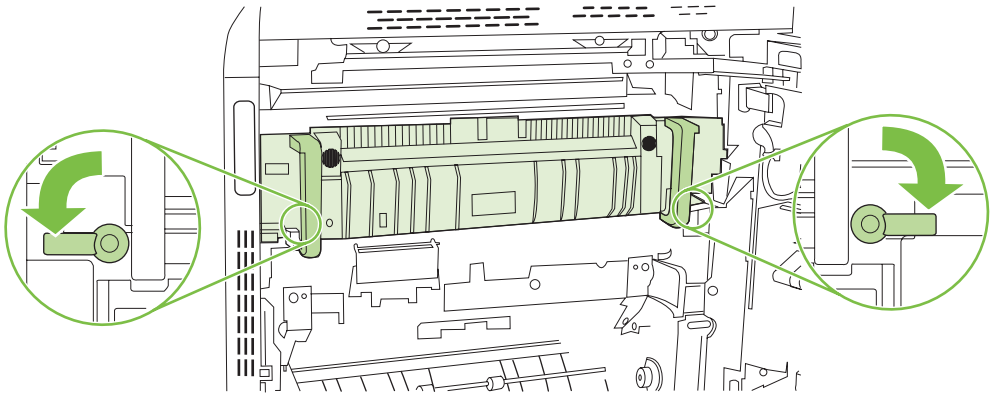
6. Paper could also be jammed inside the fuser where it would not be visible. Remove the fuser to check for jammed paper inside.

△ **CAUTION:** The fuser can be hot while the product is in use. Wait for the fuser to cool before handling it.

a. Pull the two blue fuser handles forward.

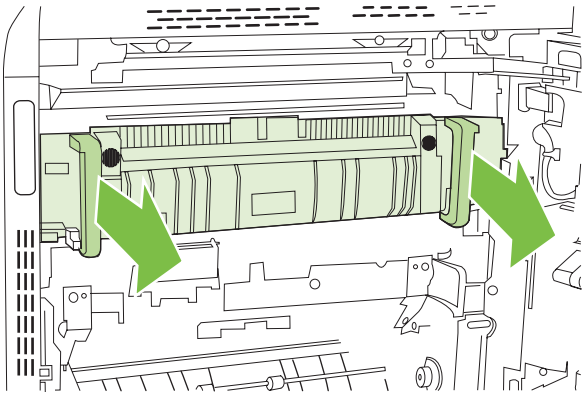


b. Rotate the fuser-release levers down to open them.



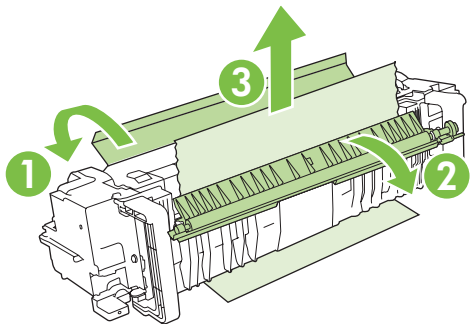
c. Grasp the fuser handles and pull straight out to remove the fuser.

△ **CAUTION:** The fuser weighs 5 kg (11 lbs). Be careful not to drop it.

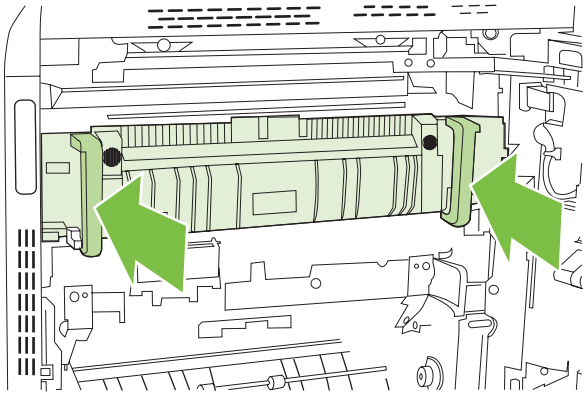


d. Open the two fuser jam access doors by pushing and rotating the rear door backward, and pulling and rotating the front door forward. If paper is jammed inside the fuser, gently pull it straight up to remove it. If the paper tears, remove all paper fragments.

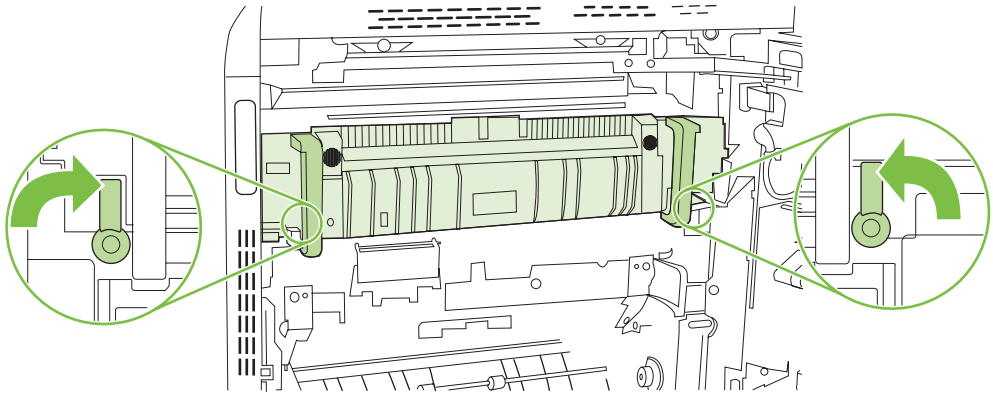
△ **CAUTION:** Even if the body of the fuser has cooled, the rollers that are inside could still be hot. Do not touch the fuser rollers until they have cooled.



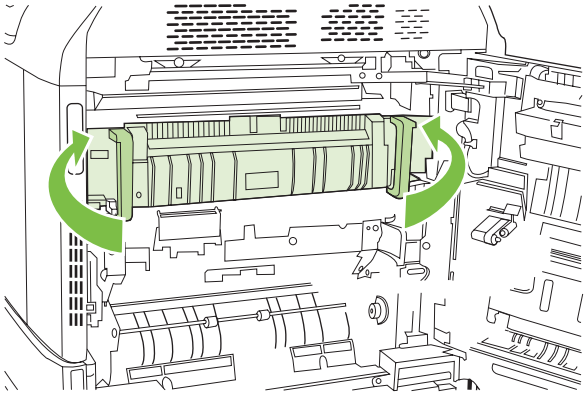
e. Close both fuser jam-access doors and align the fuser with the arrows on the product. Push the fuser completely into the printer.



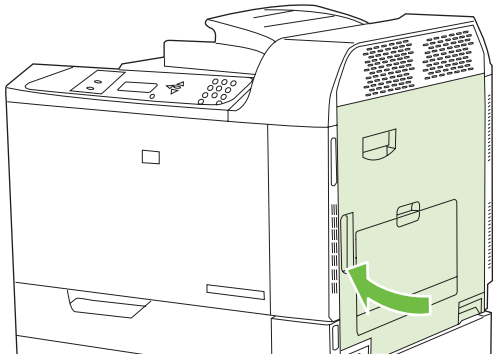
f. Rotate the fuser-release levers up to lock the fuser into place.



g. Push the fuser handles back to close them.



7. Close the right door.



AREA 4: Jams in the duplex area

Table 7-13 Causes and solutions for duplexing reverse jams 1

Cause	Solution
The spring of the duplexing media-feed sensor is unhooked	Check the spring and place it in the correct position.
The duplexing media-feed-sensor lever is damaged	Replace the right-door unit.
Poor contact of the duplexing media-feed-sensor connector	Reconnect the connectors of the duplexing media-feed sensor (J1945), intermediate (J1909, J1950) and the DC controller PCA (J4105).
The duplexing media-feed sensor is defective	Check the duplexing media-feed sensor via the sensor monitor mode. If the sensor is defective, replace the right door.
Poor contact of the duplexing feed-motor connector	Reconnect the connectors of the duplexing feed motor (J1772) and the duplexing driver PCA (J4108).
The duplexing feed motor is defective	Replace the duplexing reverse unit.

Table 7-14 Causes and solutions for duplexing reverse jams 2

Cause	Solution
Poor contact of the duplexing reverse-motor connector	Reconnect the connectors of the duplexing reverse motor (J1773) and the duplexing driver PCA (J4108).
The duplexing reverse motor is defective	Replace the duplexing reverse unit.

Table 7-15 Causes and solutions for duplexing repickup jams 1

Cause	Solution
The MP-tray upper guide or duplexing media-feed upper guide is not installed properly	Reinstall the MP-tray upper guide and duplexing media-feed upper guide.
The MP-tray upper guide or duplexing media-feed upper guide is scarred or deformed	Replace the MP-tray upper guide or duplexing media-feed upper guide.

Table 7-16 Causes and solutions for residual media jams

Cause	Solution
The spring of the loop-sensor lever is unhooked	Check the spring and place it in the correct position.
The loop-sensor lever is damaged	Replace the right door.
Poor contact of the loop-sensor connector	Reconnect the connectors of the loop sensor (J2013), intermediate (J1954, J1955) and the DC controller PCA (J121).
The loop sensor is defective	Check the loop sensor via the sensor monitor mode. If the sensor is defective, replace the right-door unit.
The spring of the fuser-delivery media-feed-sensor lever is unhooked	Check the spring of the fuser and right door and place it in the correct position.
The fuser-delivery media-feed-sensor lever is damaged	Replace the fuser or right door.
Poor contact of the fuser-delivery media-feed-sensor connector	Reconnect the connectors of the fuser-delivery media-feed sensor (J1945), intermediate (J1950, J1919) and the DC controller PCA (J108).
The fuser-delivery media-feed sensor is defective	Check the fuser-delivery media-feed sensor via the sensor monitor mode. If the sensor is defective, replace the right door.
The spring of the duplexing media-reverse-sensor lever is unhooked	Check the spring and place it in the correct position.
The duplexing media-reverse-sensor lever is damaged	Replace the duplexing reverse unit.
Poor contact of the duplexing media-reverse-sensor connector	Reconnect the connectors of the duplexing media-reverse sensor (J2305) and the duplexing driver PCA (J4103).
The duplexing media-reverse sensor is defective	Check the duplexing media-reverse sensor via the sensor monitor mode. If the sensor is defective, replace the duplexing reverse unit.

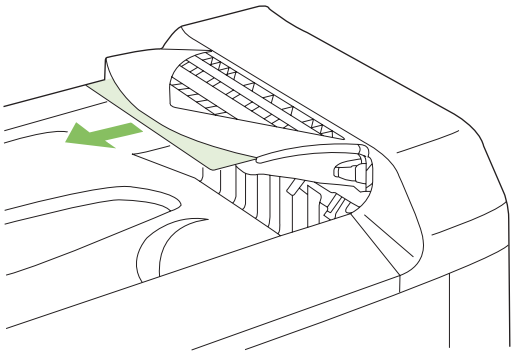
Table 7-17 Causes and solutions for duplexing repickup jams 2

Cause	Solution
The spring of the duplexing media-repickup-sensor lever is unhooked	Check the spring and place it in the correct position.
The duplexing media-repickup-sensor lever is damaged	Replace the duplexing feed unit.
Poor contact of the duplexing media-repickup-sensor connector	Reconnect the connectors of the duplexing media-repickup sensor (J1945), intermediate (J1909, J1950) and the DC controller PCA (J4105).
The duplexing media-repickup sensor is defective	Check the duplexing media-repickup sensor by the sensor monitor mode. If the sensor is defective, replace the duplexing feed unit.
Poor contact of the duplexing repickup-motor connector	Reconnect the connectors of the duplexing repickup motor (J1771), intermediate (J1908, J1939, J1941) and the duplexing driver PCA (J4104).
The duplexing repickup motor is defective	Replace the duplexing feed unit.

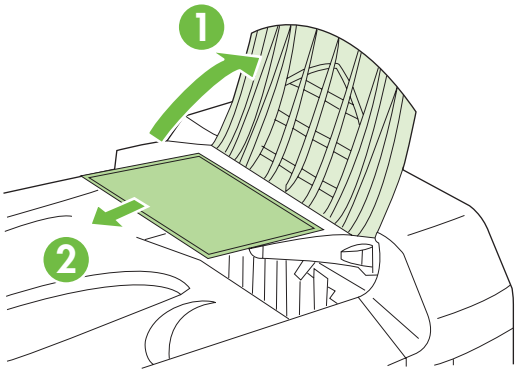
NOTE: This procedure is for the HP Color LaserJet CP6015, dn, de, x, and xh models only.

AREA 4: Clear jams in the duplex area

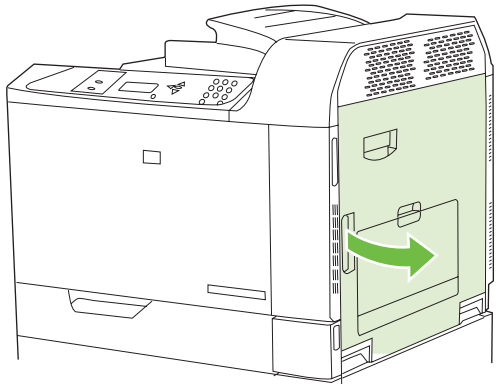
1. If jammed paper is visible in the duplex output area, gently pull it to remove it.



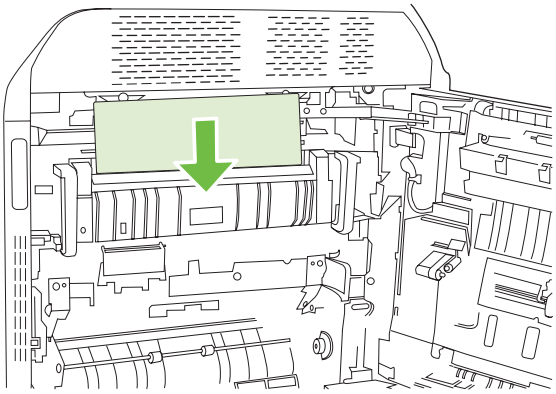
2. If no jammed paper is visible in the duplex output area, open the duplex switchback tray. Gently pull the jammed paper to remove it.

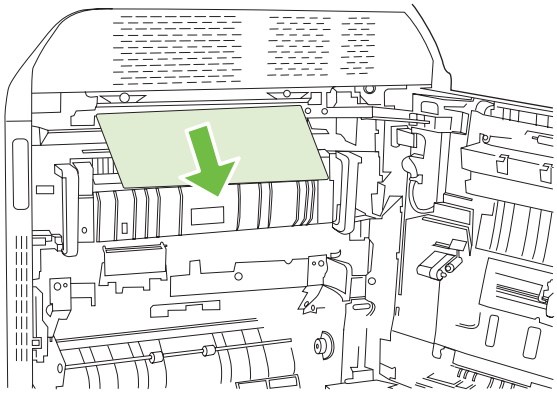


3. Check for jammed paper inside the product. Open the right door.

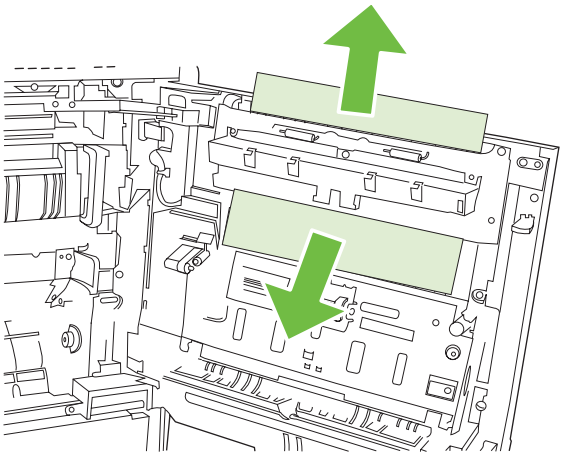


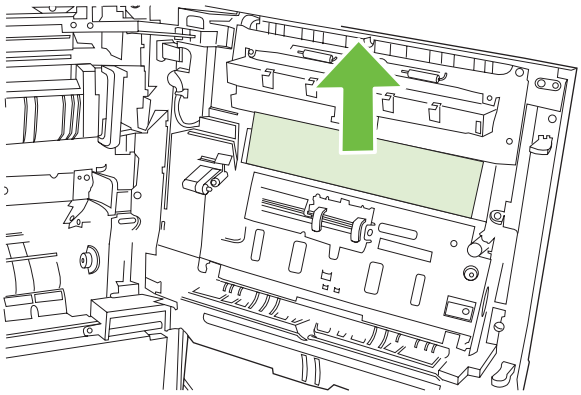
4. If paper is jammed below the duplexing unit, gently pull the paper downward to remove it.



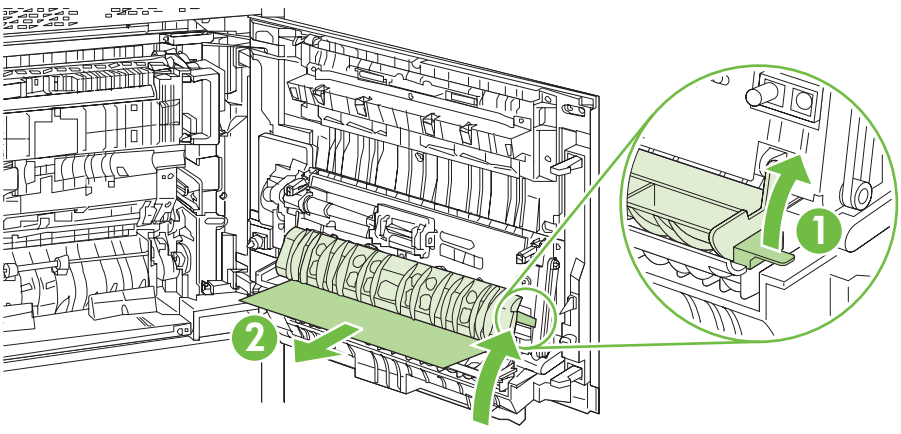


5. If paper is jammed inside the right door, gently pull the paper to remove it.

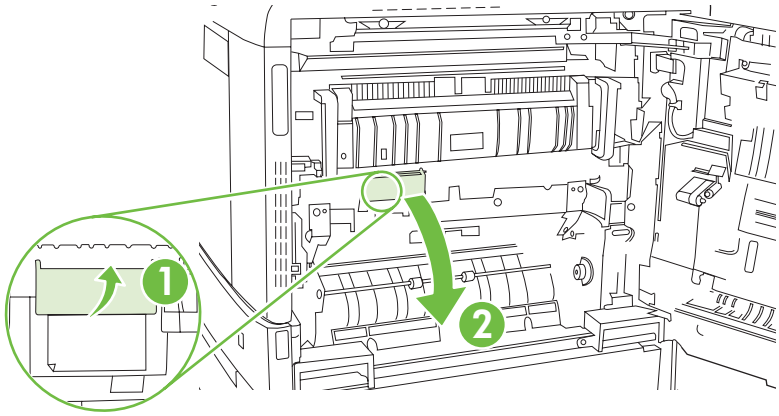




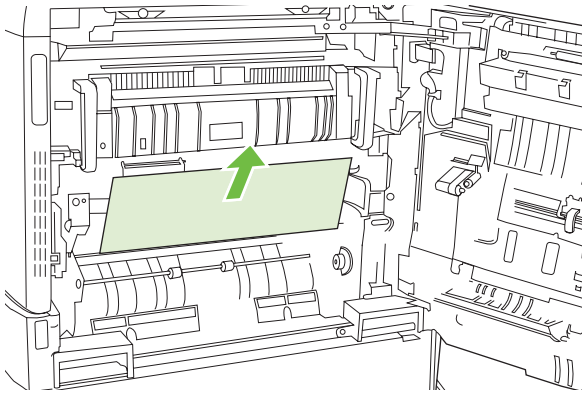
6. Lift the paper-feed cover on the inside of the right door. If jammed paper is present, gently pull the paper straight out to remove it.



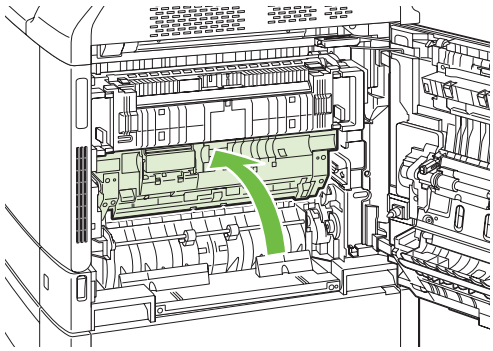
7. Lift the green handle on the transfer assembly and open the panel.



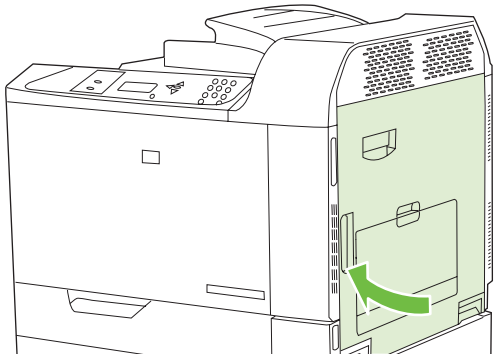
8. Gently pull the paper out of the paper path.



9. Close the transfer-access panel.



10. Close the right door.



AREA 5: Jams in Tray 2 and the internal paper path

Table 7-18 Causes and solutions for pickup delay jam 1: tray pickup

Cause	Solution
The tray separation roller or tray feed roller is worn or deformed	Replace the tray separation roller and tray feed roller.
Poor contact of the tray media-feed-sensor connector	Reconnect the connectors of the tray media-feed sensor (J2005), intermediate (J1922) and the DC controller PCA (J110).
The tray media-feed sensor is defective	Check the tray media-feed sensor by the sensor monitor mode. If the sensor is defective, replace the tray-pickup unit.
The arm spring of the tray pickup solenoid is unhooked	Check the spring and place it in the correct position.
Poor contact of the tray-pickup-solenoid drive connector	Reconnect the connectors of the tray pickup solenoid (J1923), intermediate (J1922) and the DC controller PCA (J110).
The tray pickup solenoid is defective	Execute the tray-pickup-solenoid driving test in the actuator drive mode. If the solenoid is defective, replace the tray-pickup unit.
Poor contact of the pickup-motor drive connector	Reconnect the connectors of the pickup motor (J1705), intermediate (J1924) and the DC controller PCA (J111).
The pickup motor is defective	Execute the pickup-motor driving test in the actuator drive mode. If the motor is defective, replace the multipurpose drive unit.

Table 7-19 Causes and solutions for pickup stationary jams

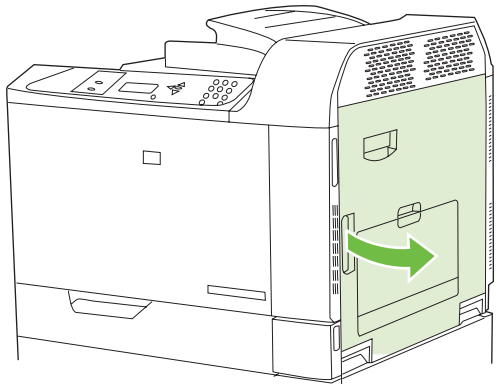
Cause	Solution
Multiple feed of media	Replace any worn or deformed parts (tray separation roller, tray feed roller, MP-tray pickup roller or MP-tray separation roller). Check the separation roller and MP-tray separation roller to see if they are firmly seated and coupled with the torque limiter. Replace the separation roller and feed roller. Replace the MP-tray pickup roller and MP-tray separation roller.
The secondary transfer roller is not set correctly	Place the secondary-transfer-roller unit in the correct position.

Table 7-19 Causes and solutions for pickup stationary jams (continued)

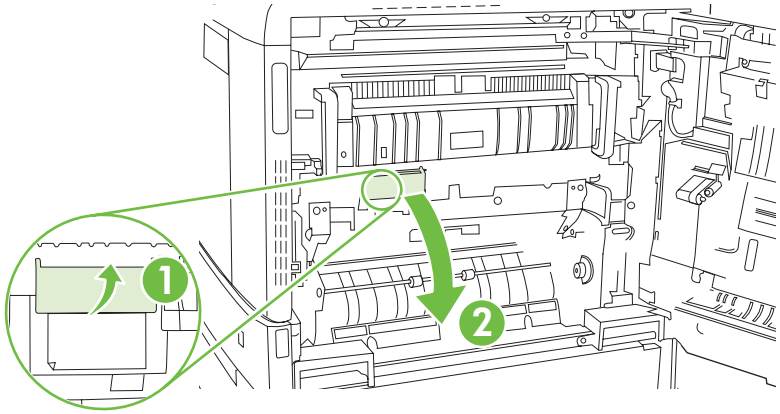
Cause	Solution
The secondary-transfer roller is worn or deformed	Replace the secondary-transfer-roller unit.
Poor contact of the ITB-motor drive connector	Reconnect the connectors of the ITB motor (J1710) and the DC controller PCA (J105).
The ITB motor is defective	Execute the ITB-motor driving test in the actuator drive mode. If the motor is defective, replace the ITB motor.
The ITB does not rotate smoothly	Replace the ITB unit.

AREA 5: Clear jams in Tray 2 and the internal paper path

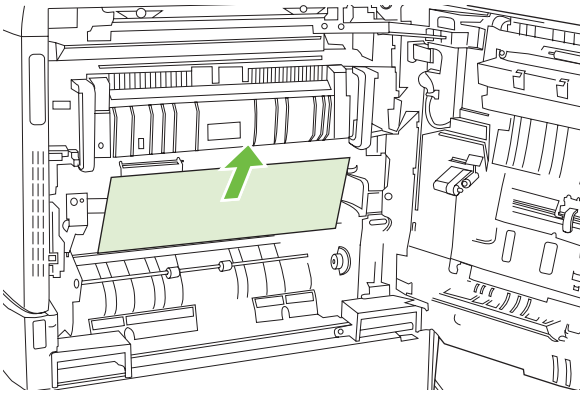
1. Open the right door.



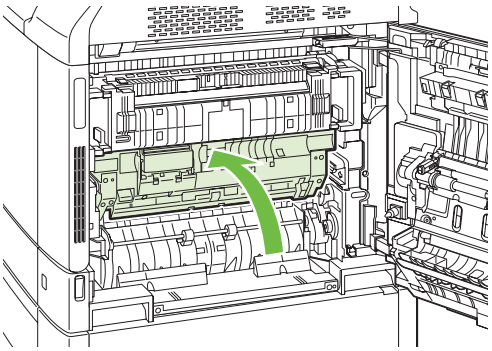
2. Lift the green handle on the transfer-access panel and open the panel.



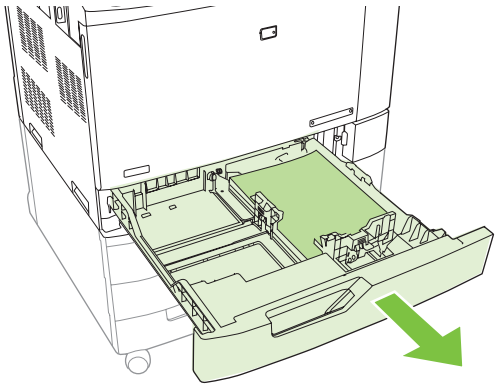
3. Gently pull the paper out of the paper path.



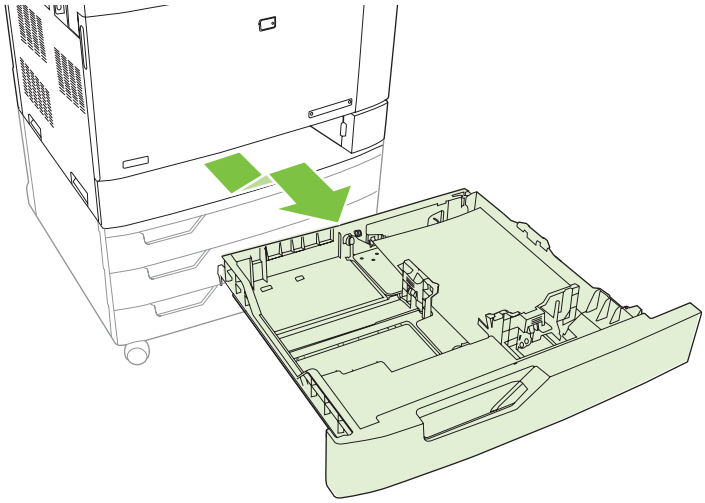
4. Close the transfer-access panel.



5. Open Tray 2 and make sure that the paper is stacked correctly.

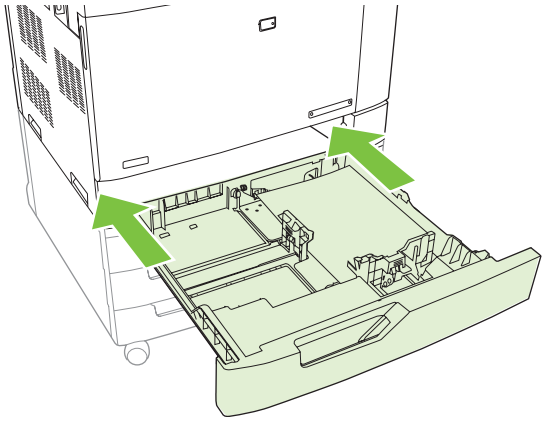


6. Pull the tray completely out of the product by pulling and lifting it up slightly.

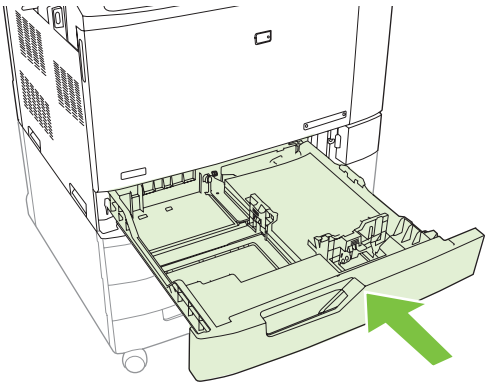


7. Remove any paper from the feeder rollers inside the product.

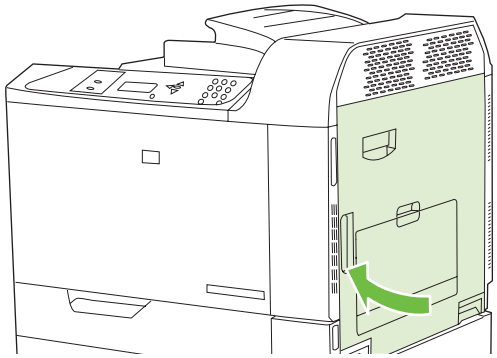
8. Reinsert Tray 2 by aligning the side rollers and pushing it back into the product.



9. Close the tray.



10. Close the right door.



AREA 6: Clear jams in Tray 1

Table 7-20 Causes and solutions for pickup delay jam 1; MP-tray pickup

Cause	Solution
The MP-tray pickup roller or MP-tray separation roller is worn or deformed	Replace the MP-tray pickup roller and MP-tray separation roller.
Poor contact of the MP-tray media-feed-sensor connector	Reconnect the connectors of the MP-tray media-feed sensor (J2007), intermediate (J1935) and the DC controller PCA (J111).
The MP-tray media-feed sensor is defective	Check the MP-tray media-feed sensor via the sensor monitor mode. If the sensor is defective, replace the MP-tray guide unit.
The arm spring of the MP-tray pickup solenoid is unhooked	Check the spring and place it in the correct position.
Poor contact of the MP-tray-pickup-solenoid drive connector	Reconnect the connectors of the MP-tray pickup solenoid (J1925), intermediate (J1926) and the DC controller PCA (J144).
The MP-tray pickup solenoid is defective	Execute the MP-tray-pickup-solenoid driving test in the actuator drive mode. If the solenoid is defective, replace the MP-tray-pickup unit.
Poor contact of the pickup-motor drive connector	Reconnect the connectors of the pickup motor (J1705), intermediate (J1924) and the DC controller PCA (J111).
The pickup motor is defective	Execute the pickup-motor driving test in the actuator drive mode. If the motor is defective, replace the multipurpose drive unit.

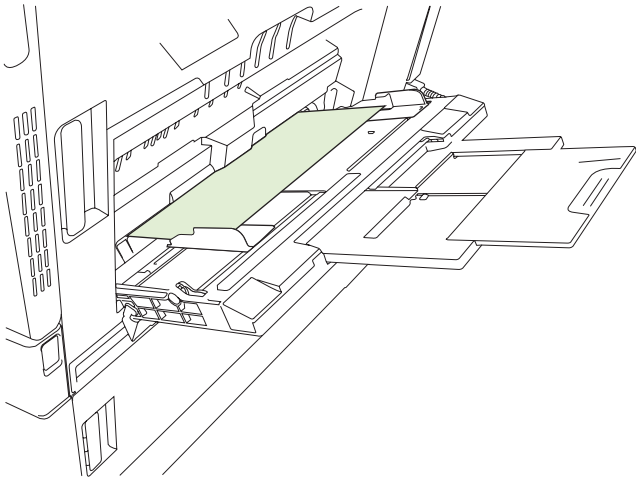
Table 7-21 Causes and solutions for pickup stationary jams

Cause	Solution
Multiple feed of media	Replace any worn or deformed parts (tray separation roller, tray feed roller, MP-tray pickup roller or MP-tray separation roller). Check the separation roller and MP-tray separation roller to see if they are firmly seated and coupled with the torque limiter. Replace the separation roller and feed roller. Replace the MP-tray pickup roller and MP-tray separation roller.
The secondary transfer roller is not set correctly	Place the secondary-transfer-roller unit in the correct position.

Table 7-21 Causes and solutions for pickup stationary jams (continued)

Cause	Solution
The secondary transfer roller is worn or deformed	Replace the secondary-transfer-roller unit.
Poor contact of the ITB-motor drive connector	Reconnect the connectors of the ITB motor (J1710) and the DC controller PCA (J105).
The ITB motor is defective	Execute the ITB-motor driving test in the actuator drive mode. If the motor is defective, replace the ITB motor.
The ITB does not rotate smoothly	Replace the ITB unit.

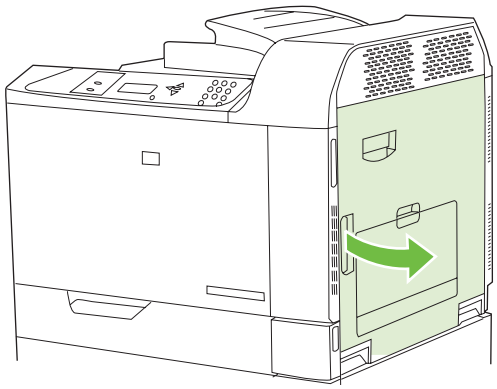
NOTE: Even if jammed paper is visible in Tray 1, clear the jam from the inside of the product by opening the right door.



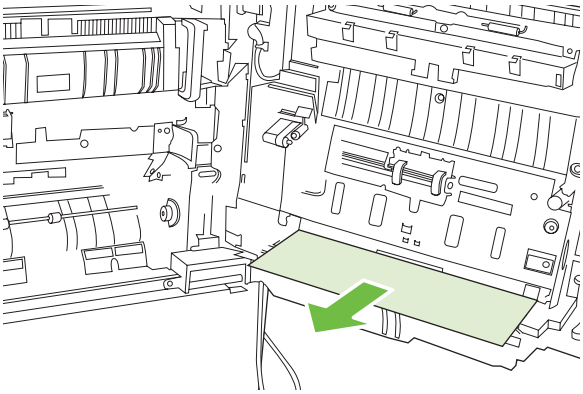
AREA 6: Clear jams in Tray 1

1. Open the right door.

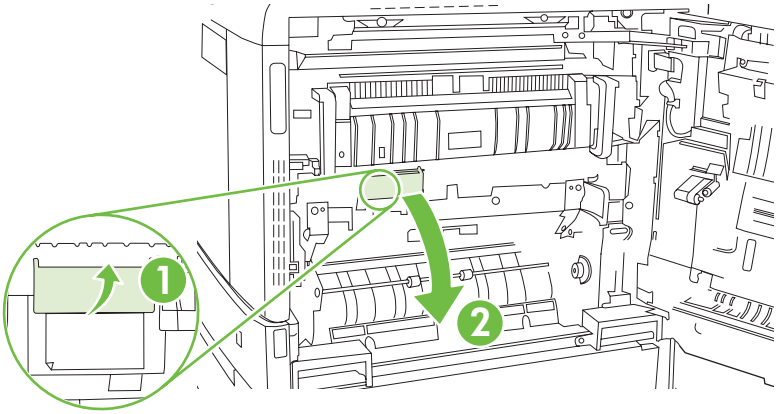
NOTE: When clearing jams of long paper (11 x 17, 12 x 18, A3, and banners), it may be necessary to cut or tear the jammed paper before opening the right door.



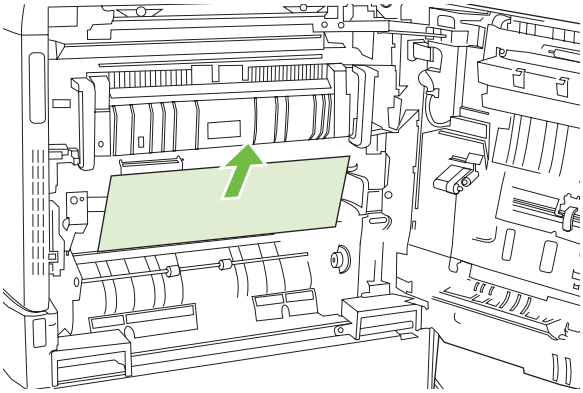
2. If paper is visible inside the right door, gently pull the paper downward to remove it.



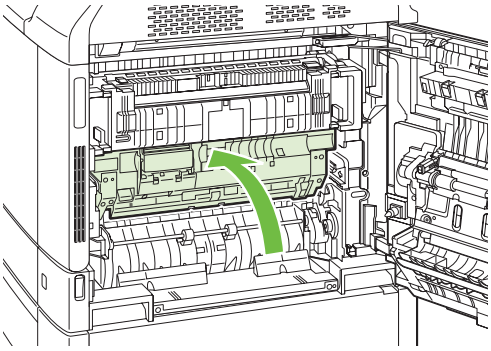
3. If paper has entered the internal paper path, lift the green handle on the transfer-access panel and open the panel.



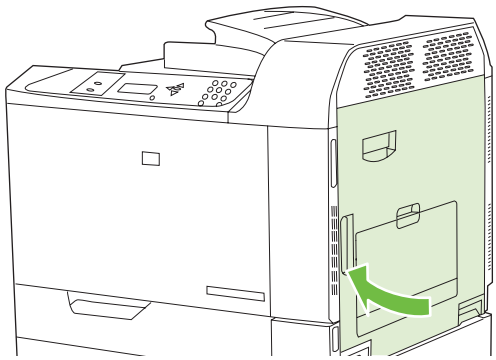
4. Gently pull the paper out of the paper path.



5. Close the transfer-access panel.



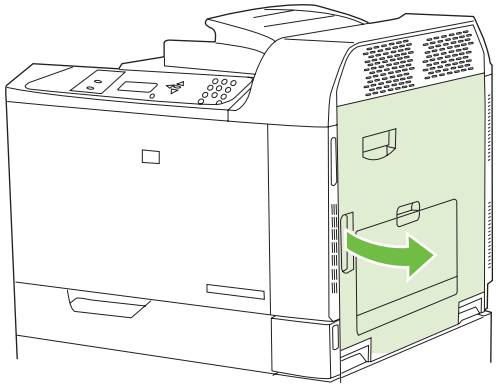
6. Close the right door.



Clear jams when printing banners

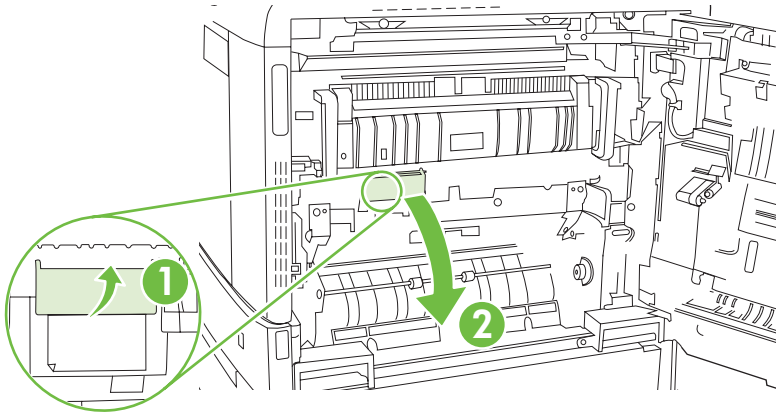
If a paper jam occurs while printing with banner paper, gently pull the paper forward through the output bin or back through Tray 1 to remove the paper from the paper path. After removing the paper, open and close the right door to clear the jam message from the control panel. If you cannot remove the paper, carry out the following steps:

1. Open the right door.

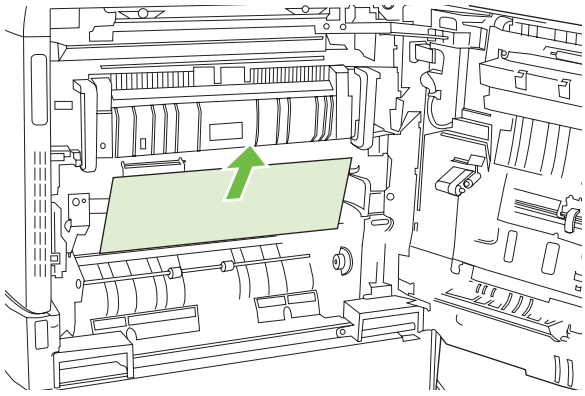


NOTE: If you are printing to very heavy banner paper, and the paper is still feeding in through Tray 1, you may need to cut the paper at the base of Tray 1 in order to open the right door and pull the paper free of the Tray 1 rollers.

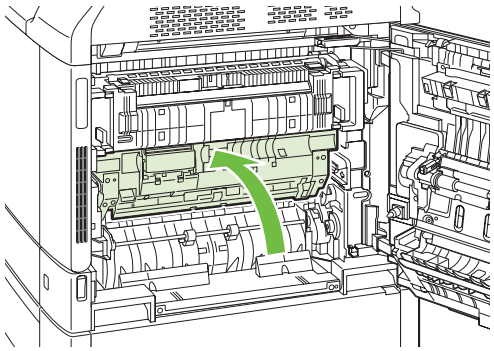
2. Lift the green handle on the transfer-access panel and open the panel.



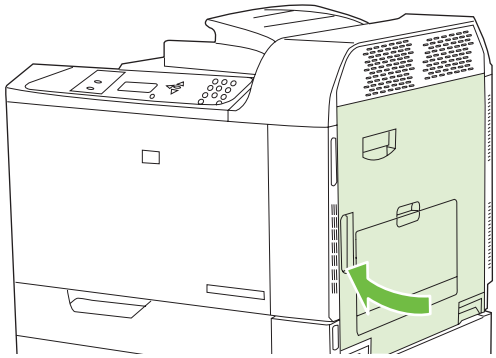
3. Gently pull the paper out of the paper path



4. Close the transfer-access panel.



5. Close the right door.



AREA 7: Jams in optional Trays 3, 4, and 5

Jams in AREA 7 are detected by paper sensors on the paper path:

- Upper-PD-cassette media-feed sensor (SR102)
- Middle-PD-cassette media-feed sensor (SR112)
- Lower-PD-cassette media-feed sensor (SR122)

Figure 7-7 Paper-deck sensors

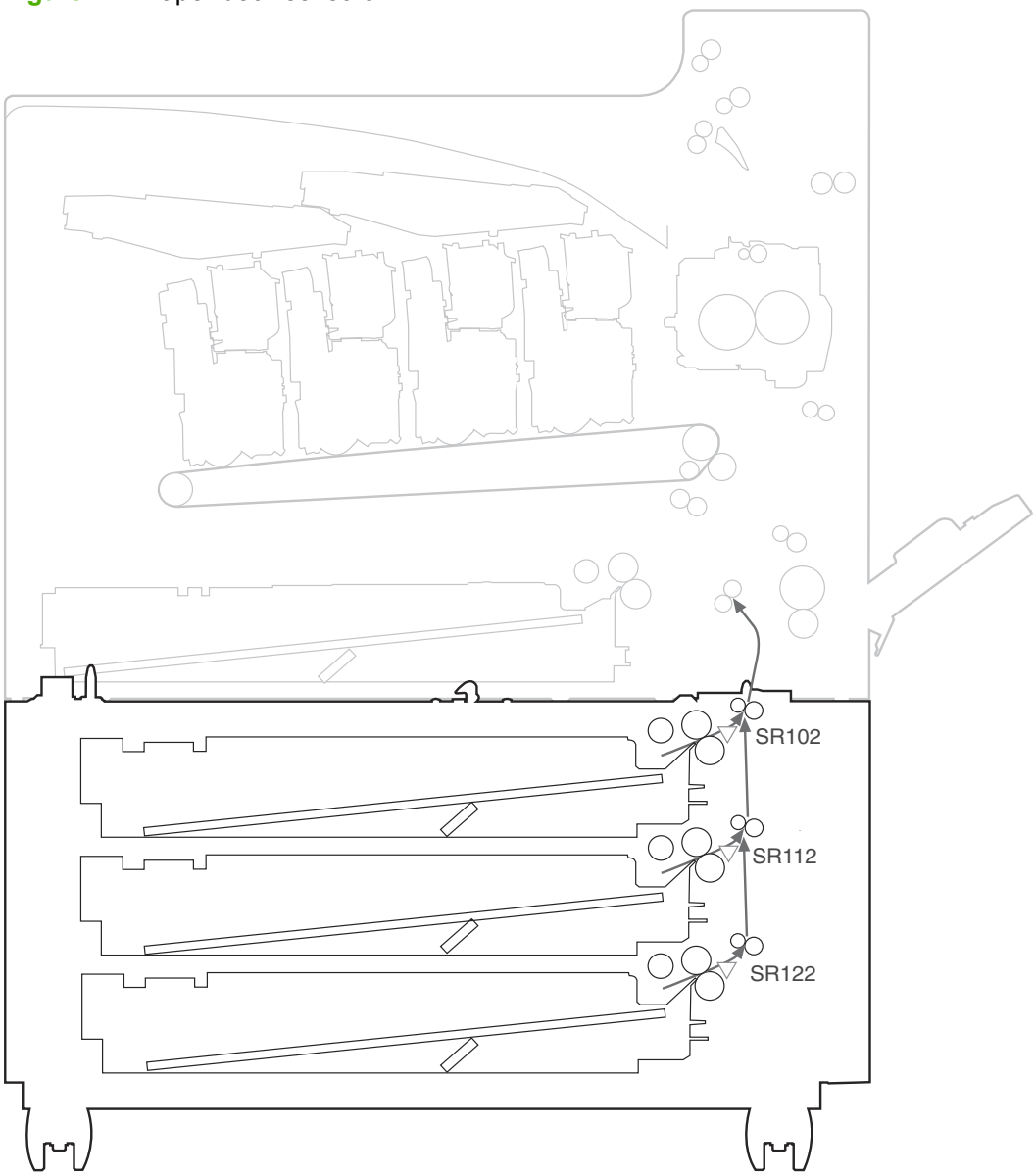


Table 7-22 Causes and solutions for pickup delay jam

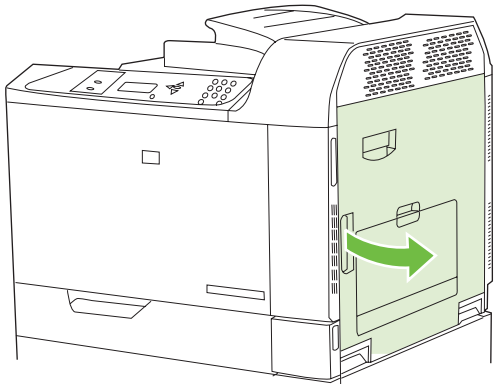
Cause	Solution
The separation roller or feed roller for optional Trays 3, 4, and 5 is worn or deformed	Replace the separation roller and feed roller for optional Trays 3, 4, and 5.

Table 7-22 Causes and solutions for pickup delay jam (continued)

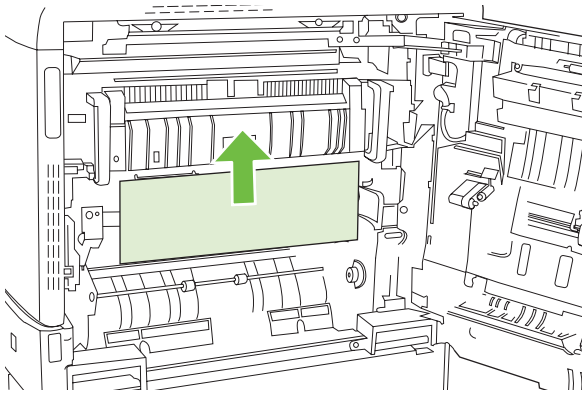
Cause	Solution
Poor contact of the Tray-3 media-feed-sensor connector	Reconnect the connectors of the Tray-3 media-feed sensor (J2102), intermediate (J1982) and the Tray-3 paper-deck driver PCA (J8106A).
The Tray-3 media-feed sensor for is defective	Check the Tray-3 media-feed sensor via the sensor monitor mode. If the sensor is defective, replace the pickup-plate unit.
The spring of the Tray-3-pickup-solenoid arm is unhooked	Check the spring and place it in the correct position.
Poor contact of the Tray-3-pickup-solenoid drive connector	Reconnect the connectors of the Tray-3 pickup solenoid (J1983) and the Tray-3 paper-deck driver PCA (J8107A).
The Tray-3 pickup solenoid is defective	Execute the Tray-3-pickup-solenoid driving test in the actuator drive mode. If the solenoid is defective, replace the pickup solenoid.
Poor contact of the Tray-3 pickup-motor drive connector	Reconnect the connectors of the Tray-3 pickup motor (J1751) and the Tray-3 paper-deck driver PCA (J8107A).
The Tray-3 pickup motor is defective	Execute the Tray-3-pickup-motor driving test in the actuator drive mode. If the motor is defective, replace the pickup motor.
Poor contact of the Tray-4 media-feed-sensor connector	Reconnect the connectors of the Tray-4 media-feed sensor (J2112), intermediate (J1985) and the Tray-4 paper-deck driver PCA (J8106B).
The Tray-4 media-feed sensor is defective	Check the Tray-4 media-feed sensor via the sensor monitor mode. If the sensor is defective, replace the pickup-plate unit.
The spring of the Tray-4-pickup-solenoid arm is unhooked	Check the spring and place it in the correct position.
Poor contact of the Tray-4-pickup-solenoid drive connector	Reconnect the connectors of the Tray-4 pickup solenoid (J1986) and the Tray-4 paper-deck driver PCA (J8107B).
The Tray-4 pickup solenoid is defective	Execute the Tray-4-pickup-solenoid driving test in the actuator drive mode. If the solenoid is defective, replace the pickup solenoid.
Poor contact of the Tray-4 pickup-motor drive connector	Reconnect the connectors of the Tray-4 pickup motor (J1752) and the Tray-4 paper- deck driver PCA (J8107B).
The Tray-4 pickup motor is defective	Execute the Tray-4-pickup-motor driving test in the actuator drive mode. If the motor is defective, replace the pickup motor.
Poor contact of the Tray-5 media-feed-sensor connector	Reconnect the connectors of the Tray-5 media-feed sensor (J2122), intermediate (J1988) and the Tray-5 paper-deck driver PCA (J8106C).
The Tray-5 media-feed sensor is defective	Check the Tray-5 media-feed sensor via the sensor monitor mode. If the sensor is defective, replace the pickup-plate unit.
The spring of the Tray-5-pickup-solenoid arm is unhooked	Check the spring and place it in the correct position.
Poor contact of the Tray- 5-pickup-solenoid drive connector	Reconnect the connectors of the Tray-5 pickup solenoid (J1989) and the Tray-5 paper-deck driver PCA (J8107C).
The Tray-5 pickup solenoid is defective	Execute the Tray-5-pickup-solenoid driving test in the actuator drive mode. If the solenoid is defective, replace the pickup solenoid.
Poor contact of the Tray-5 pickup-motor drive connector	Reconnect the connectors of the Tray-5 pickup motor (J1753) and the Tray-5 paper-deck driver PCA (J8107C).
The Tray-5 pickup motor is defective	Execute the Tray-5-pickup-motor driving test in the actuator drive mode. If the motor is defective, replace the pickup motor.

AREA 7: Clear jams in optional Trays 3, 4, and 5

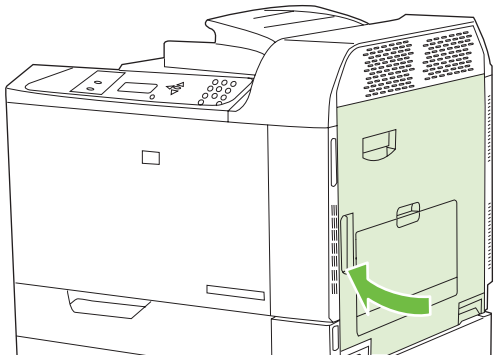
1. Open the right door.



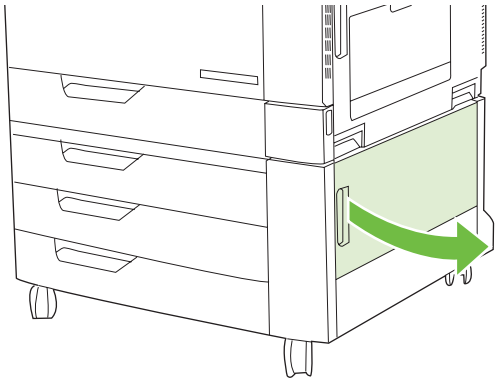
2. If paper is visible in the paper-input area, gently pull the jammed paper up to remove it.



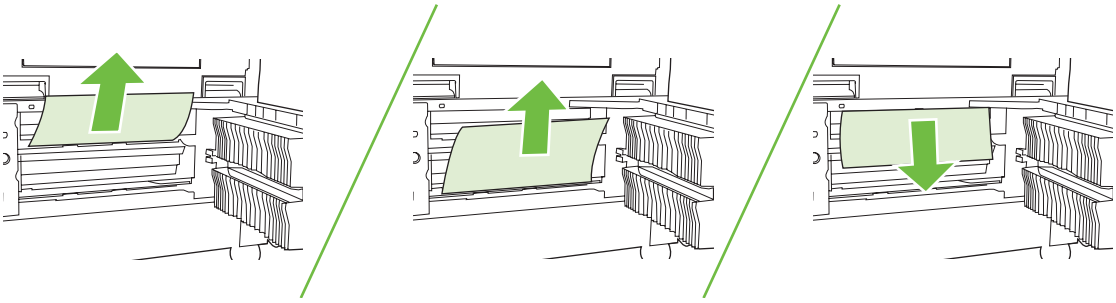
3. Close the right door.



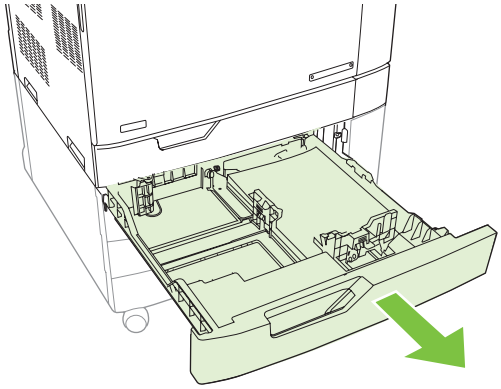
4. Open the lower-right door.



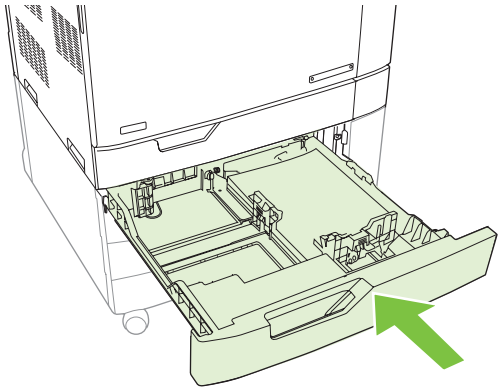
5. Gently pull the jammed paper to remove it.



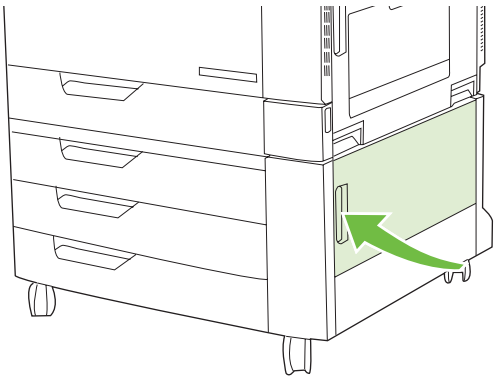
6. Open the tray that is indicated in the control-panel message, and make sure that the paper is stacked correctly.



7. Close the tray.



8. Close the lower-right door.

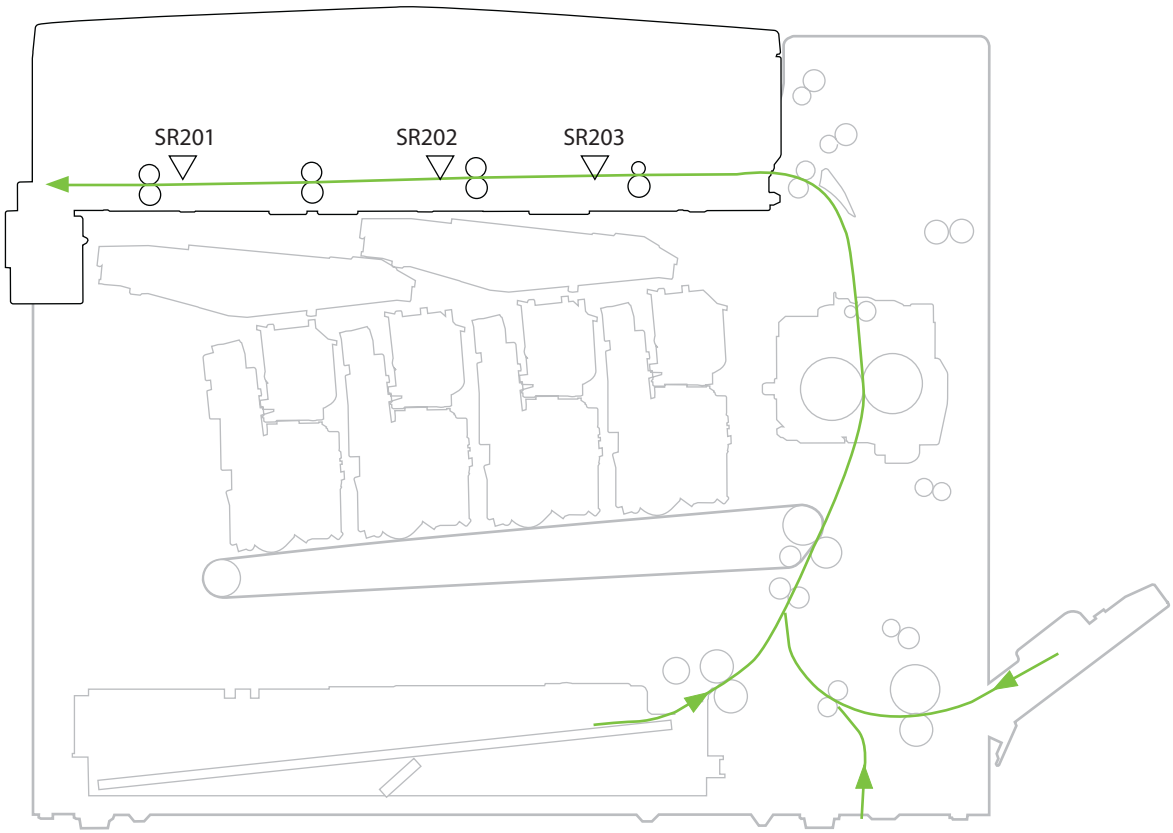


AREA 8: Jams in the optional finishing devices

Clear jams in the output-accessory bridge

Figure 7-8 IPTU paper sensors

Media path



Sensor	Description
SR201	IPTU paper-feed sensor 1
SR202	IPTU paper-feed sensor 2
SR203	IPTU paper-feed sensor 3

Table 7-23 Causes and solutions for delivery delay jams 1

Cause	Solution
The spring of the IPTU media-feed sensor-1 lever is unhooked	Check the spring and place it in the correct position.
The IPTU media-feed sensor-1 lever is damaged	Replace the lower-guide unit.
Poor contact of the IPTU media-feed sensor-1 connector	Reconnect the connectors of the IPTU media-feed sensor 1 (J12203) and the IPTU driver PCA (J7006).
The IPTU media-feed sensor 1 is defective	Check the IPTU media-feed sensor 1 by the sensor monitor mode. If the sensor is defective, replace the lower-guide unit.

Table 7-23 Causes and solutions for delivery delay jams 1 (continued)

Cause	Solution
Poor contact of the IPTU media-feed-motor-1 connector	Reconnect the connectors of the IPTU media-feed motor 1 (J7011) and the IPTU driver PCA (J7003).
The IPTU media-feed motor 1 is defective	Execute the IPTU-media-feed-motor driving test in the actuator drive mode. If the motor is defective, replace the IPTU media-feed motor 1.

Table 7-24 Causes and solutions for delivery delay jams 2

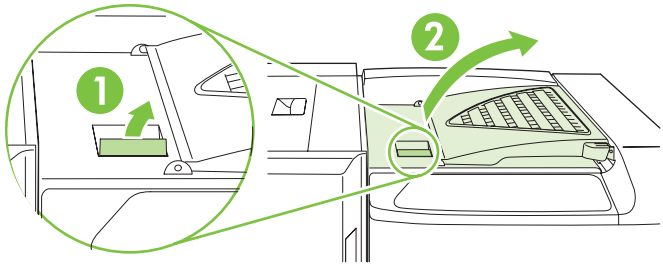
Cause	Solution
The spring of the IPTU media-feed sensor-2 lever is unhooked	Check the spring and place it in correct position.
The IPTU media-feed sensor-2 lever is damaged	Replace the lower-guide unit.
Poor contact of the IPTU media-feed sensor-2 connector	Reconnect the connectors of the IPTU media-feed sensor 2 (J12202) and the IPTU driver PCA (J7006).
The IPTU media-feed sensor 2 is defective	Check the IPTU media-feed sensor 2 via the sensor monitor mode. If the sensor is defective, replace the lower-guide unit.
The spring of the IPTU media-feed sensor-3 lever is unhooked	Check the spring and place it in the correct position.
The IPTU media-feed sensor-3 lever is damaged	Replace the lower-guide unit.
Poor contact of the IPTU media-feed sensor-3 connector	Reconnect the connectors of the IPTU media-feed sensor 3 (J12201) and the IPTU driver PCA (J7006).
The IPTU media-feed sensor 3 is defective	Check the IPTU media-feed sensor 3 via the sensor monitor mode. If the sensor is defective, replace the lower-guide unit.
Poor contact of the IPTU media-feed-motor-2 connector	Reconnect the connectors of the IPTU media-feed motor 2 (J7012) and the IPTU driver PCA (J7007).
The IPTU media-feed motor 2 is defective	Execute the IPTU-media-feed-motor driving test in the actuator drive mode. If the motor is defective, replace the IPTU media-feed motor 2.

Table 7-25 Causes and solutions for delivery stationary jams

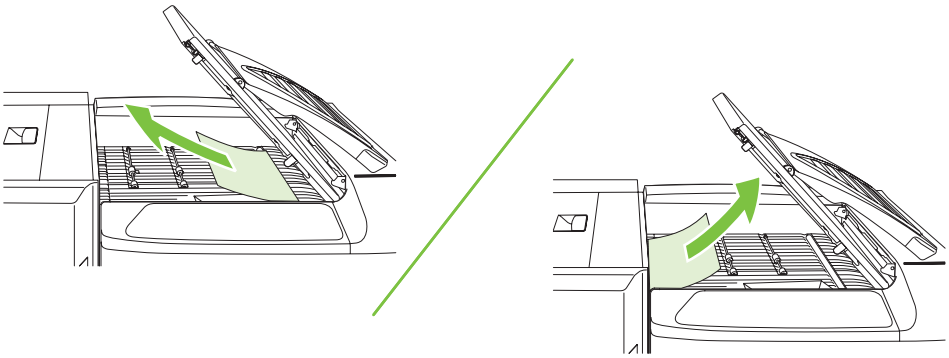
Cause	Solution
The IPTU feed roller is worn or deformed	Replace the upper-guide unit or lower-guide unit.
The spring of the IPTU feed subroller is unhooked	Check the spring and place it in the correct position.

Clear jams in the optional finishing devices

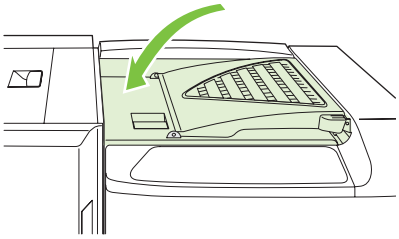
1. Lift the latch on the top cover of the output-accessory bridge and open the top cover.



2. Gently pull the jammed paper to remove it.



3. Close the top cover of the output-accessory bridge.

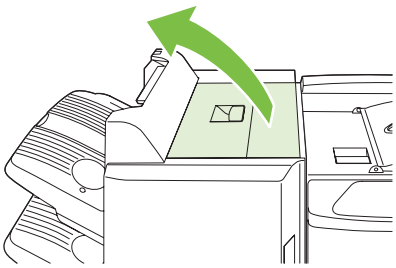


Clear jams in the sorter area

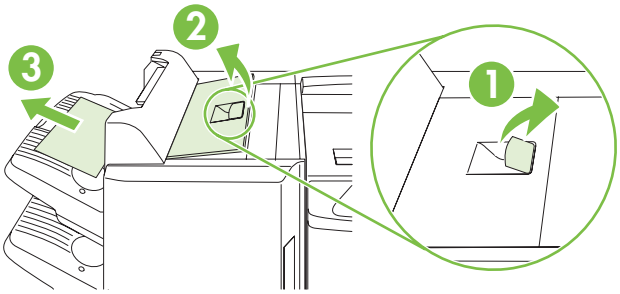
Clear jams in the sorter area

1. Lift the latch on the top cover of the finishing device, and open the top cover.

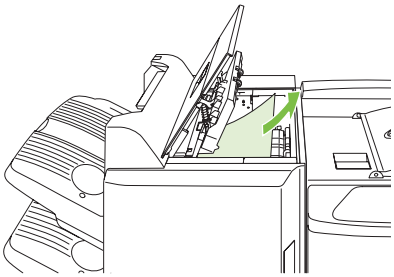
NOTE: Opening the top cover releases pressure on the output-bin rollers.



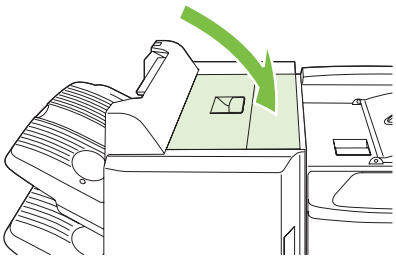
2. Remove jammed paper from the output bin or from the inside of the finishing device.



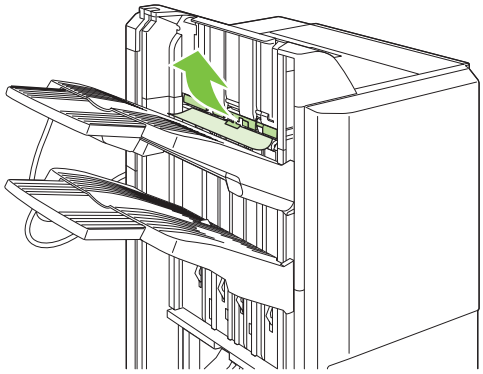


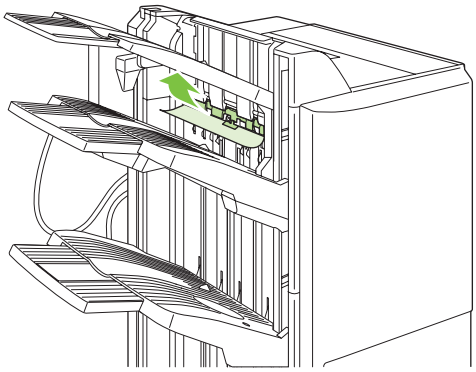


3. Close the top cover of the finishing device.



4. Lift the swing guide panel in the output bin. If you can see any jammed paper, gently pull it out.

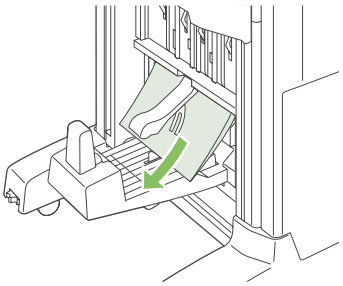




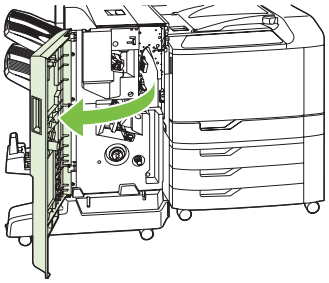
Clear jams in the booklet maker

Clear jams in the booklet maker

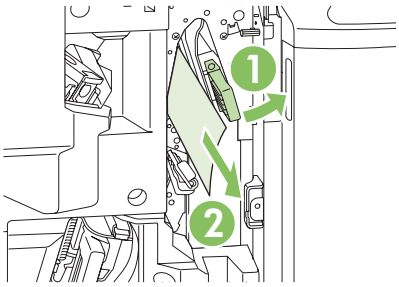
1. If the paper is visible in the booklet output bin, gently pull the paper to remove it.



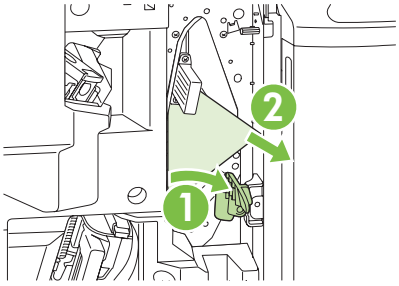
2. Open the front door of the booklet maker.



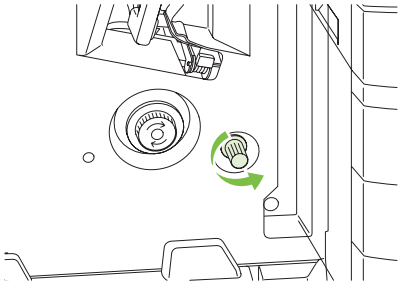
3. Push the upper delivery guide to the right, and remove any jammed paper.



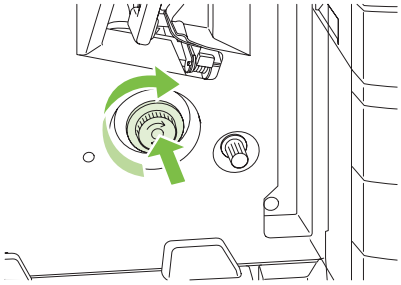
4. Push the lower delivery guide to the right, and remove any jammed paper.



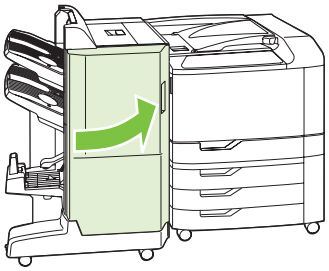
5. The positioning knob is the smaller, green dial on the right. Turn the positioning knob counterclockwise.



6. The jam-release knob is the larger, green dial on the left. Push in the jam-release knob, and then turn it clockwise to move any jammed paper into the output bin.



7. Close the front door of the booklet maker.

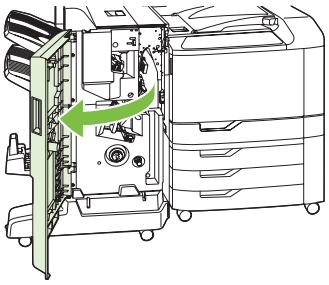


Clear staple jams

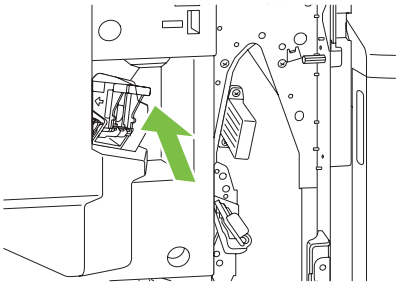
Clear staple jams in the main stapler

The HP 3-bin Stapler/Stacker and the HP Booklet maker/Finisher Accessory each have a main stapler, which is located near the top of the finishing device.

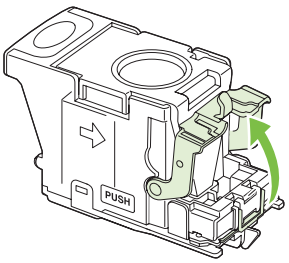
1. Open the front door of the finishing device.



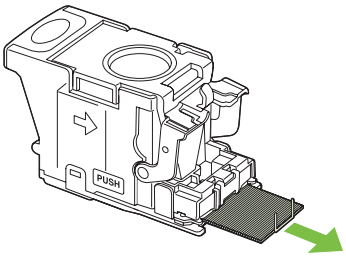
2. To remove the staple cartridge, pull up on the green handle and pull out the staple cartridge.



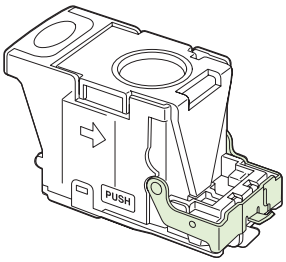
3. Lift up on the small lever at the back of the staple cartridge.



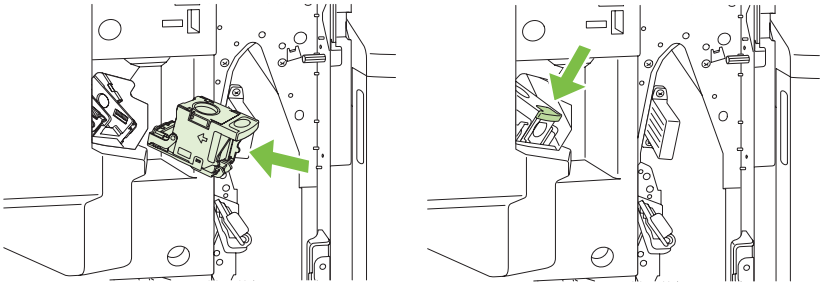
4. Remove the damaged staples that protrude from the staple cartridge. Remove the entire sheet of staples that the damaged staples were attached to.



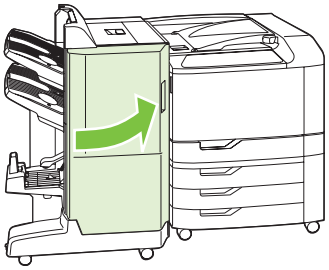
5. Close the lever at the back of the staple cartridge. Be sure that it snaps into place.



6. Reinsert the staple cartridge into the finishing device, and push down on the green handle until it snaps into place.



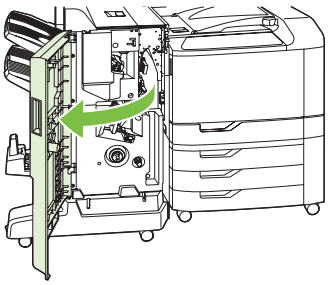
7. Close the front cover of the finishing device.



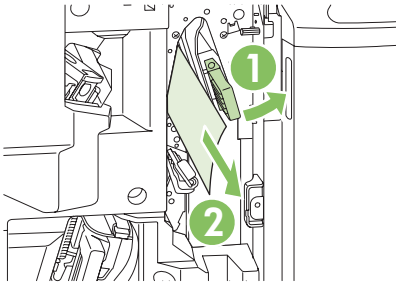
Clear staple jams in the booklet maker

The booklet maker has an additional saddle stitch stapler that is below the main stapler. The saddle stitch stapler has two staple cartridges.

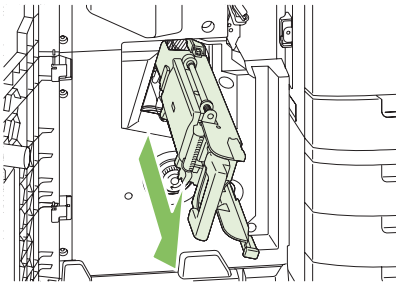
1. Open the front door of the booklet maker.



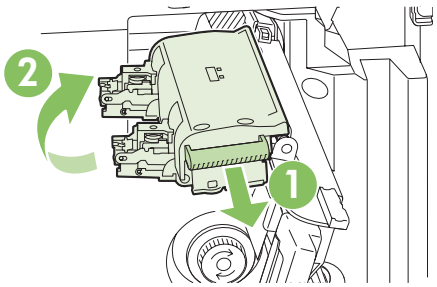
2. Push the upper delivery guide to the right, and remove any jammed paper.



3. Grasp the blue handle for the stapler carriage and pull it straight out.



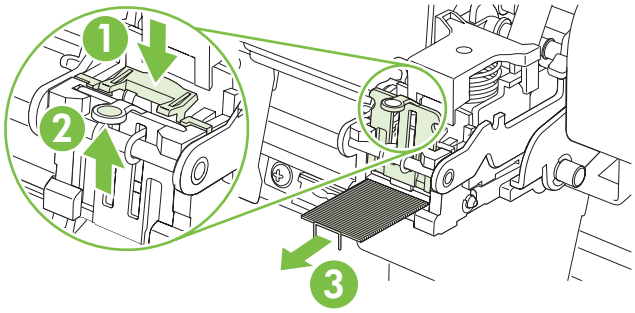
4. Grasp the handle of the blue staple cartridge unit and pull it toward you, then swing the staple cartridge unit into an upright position.



5. Check each staple cartridge for jammed staples.

   a. On each staple cartridge, press down on the green plastic tabs while lifting the jam clearance plate.

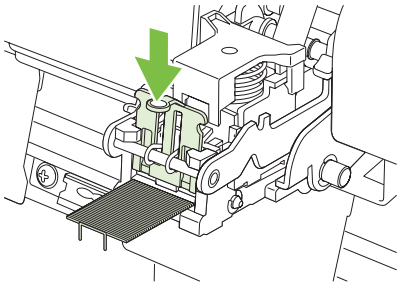
   △ **CAUTION:** Do not place your fingers or hands underneath the staple cartridge during this procedure.



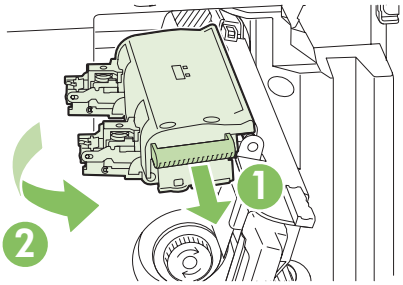
   b. Remove any jammed staples. Remove any damaged staples and the entire sheet of staples that the damaged staples were attached to.

   c. Press down on the jam clearance plate to close it.

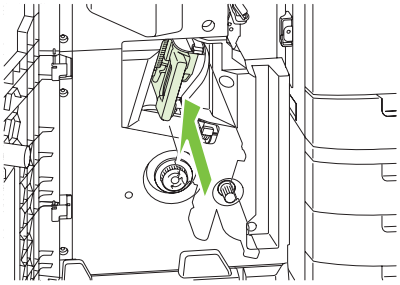
   △ **CAUTION:** Do not place your fingers or hands underneath the staple cartridge during this procedure.



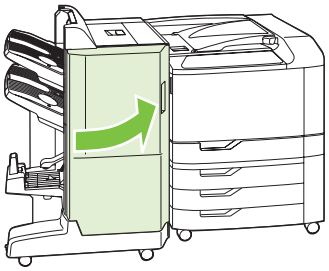
6. Pull the staple cartridge unit forward, and swing it downward to the original position. Push in on the handle to lock it into position.



7. Push the staple carriage back into the booklet maker.



8. Close the front door of the booklet maker.



Jam recovery

This product provides a jam recovery feature that reprints jammed pages. The following options are available:

- **AUTO** — The product attempts to reprint jammed pages when sufficient memory is available.
- **OFF** — The product does not attempt to reprint jammed pages. Because no memory is used to store the most recent pages, performance is optimal.

> **NOTE:** When using this option, if the product runs out of paper and the job is being printed on both sides, some pages can be lost.

- **ON** — The product always reprints jammed pages. Additional memory is allocated to store the last few pages printed. This might cause overall performance to suffer.

Set the jam recovery feature

1. Press Menu.
2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and press the checkmark button ✓.
3. Press the down arrow ▼ to highlight **SYSTEM SETUP**, and press the checkmark button ✓.
4. Press the down arrow ▼ to highlight **JAM RECOVERY**, and press the checkmark button ✓.
5. Press the down arrow or up arrow ▼/▲ to highlight the appropriate setting, and press the checkmark button ✓.
6. Press Menu to return to the **READY** state.

Product feeds multiple sheets

Product feeds multiple sheets

Cause	Solution
The input tray is overfilled. Open the tray and verify that the paper stack is below the maximum stack height mark.	Remove excess paper from the input tray.
Print paper is sticking together.	Remove paper, flex it, rotate it 180 degrees or flip it over, and then reload it into the tray. **NOTE:** Do not fan paper. Fanning can cause static electricity, which can cause paper to stick together.
Paper does not meet the specifications for this product.	Use only paper that meets HP paper specifications for this product.
Trays are not properly adjusted.	Make sure that the paper guides match the size of paper being used.

Product pulls from incorrect tray

Product pulls from incorrect tray

Cause	Solution
You are using a driver for a different product.	Use a driver for this product.
The specified tray is empty.	Load paper in the specified tray.
The paper size is not configured correctly for the input tray.	Print a configuration page or use the control panel to determine the paper size for which the tray is configured.
The guides in the tray are not against the paper.	Verify that the guides are touching the paper.

Product feeds incorrect page size

Product feeds incorrect page size

Cause	Solution
The correct size paper is not loaded in the input tray.	Load the correct size paper in the input tray.
The correct size paper is not selected in the software program or printer driver.	Confirm that the settings in the software program and printer driver are correct, because the software program settings override the printer driver and control panel settings, and the printer driver settings override the control panel settings. For more information, see user guide.
The correct size paper for the tray is not selected in the product control panel.	From the control panel, select the correct size paper for the tray.
The paper size is not configured correctly for the input tray.	Print a configuration page or use the control panel to determine the paper size for which the tray is configured.
The guides in the tray are not against the paper.	Verify that the paper guides are touching the paper.

Paper does not feed automatically

Paper does not feed automatically

Cause	Solution
Manual feed is selected in the software program.	Load Tray 1 with paper, or, if the paper is loaded, press the checkmark button ✓.
The correct size paper is not loaded.	Load the correct size paper.
The input tray is empty.	Load paper into the input tray.
Paper from a previous jam has not been completely removed.	Open the product and remove any paper in the paper path.
The paper size is not configured correctly for the input tray.	Print a configuration page or use the control panel to determine the paper size for which the tray is configured.
The guides in the tray are not against the paper.	Verify that the rear and width paper guides are touching the paper.
The manual-feed prompt is set to **ALWAYS**. The product always prompts for manual feed, even if the tray is loaded.	Open the tray, reload the media, and then close the tray. Or, change the manual-feed prompt setting to **UNLESS LOADED**, so that the product prompts for manual feed only when the tray is empty.
The **USE REQUESTED TRAY** setting on the product is set to **EXCLUSIVELY**, and the requested tray is empty. The product will not use another tray.	Load the requested tray. Or, change the setting from **EXCLUSIVELY** to **FIRST** on the **CONFIGURE DEVICE** menu. The product can use other trays if no media is loaded in the specified tray.

Paper does not feed from Tray 2, 3, 4, or 5

Paper does not feed from Tray 2, 3, 4, or 5

Cause	Solution
The correct size paper is not loaded.	Load the correct size paper.
The input tray is empty.	Load paper in the input tray.
The correct paper type for the input tray is not selected in the product control panel.	From the product control panel, select the correct paper type for the input tray.
Paper from a previous jam has not been completely removed.	Open the product and remove any paper in the paper path. Closely inspect the fuser area for jams.
None of the optional trays appear as input tray options.	The optional trays only display as available if they are installed. Verify that any optional trays are correctly installed. Verify that the printer driver has been configured to recognize the optional trays.
An optional tray is incorrectly installed.	Print a configuration page to confirm that the optional tray is installed. If not, verify that the tray is correctly attached to the product.
The paper size is not configured correctly for the input tray.	Print a configuration page or use the control panel to determine the paper size for which the tray is configured.
The guides in the tray are not against the paper.	Verify that the guides are touching the paper.

Transparencies or glossy paper will not feed

Transparencies or glossy paper will not feed

Cause	Solution
The correct paper type is not specified in the software or printer driver.	Verify that the correct paper type is selected in the software or printer driver.
The input tray is overfilled.	Remove excess paper from the input tray. Do not load more than 200 sheets of glossy paper or glossy film, or more than 100 transparencies in Tray 2, 3, 4, or 5. Do not exceed the maximum stack height marks for Tray 1.
Paper in another input tray is the same size as the transparencies, and the product is defaulting to the other tray.	Make sure that the input tray containing the transparencies or glossy paper is selected in the software program or printer driver. Use the product control panel to configure the tray to the paper type loaded.
The tray containing the transparencies or glossy paper is not configured correctly for type.	Make sure that the input tray containing the transparencies or glossy paper is selected in the software program or printer driver. Use the product control panel to configure the tray to the paper type loaded.
Transparencies or glossy paper might not meet supported paper specifications.	Use only paper that meets the HP paper specifications for this product.
High-humidity environments may cause glossy paper not to feed, or to feed too many sheets.	Print glossy paper from Tray 2, 3, 4, or 5 for best results. Avoid printing glossy paper in high humidity conditions. When printing glossy paper, removing the paper from the wrapper and letting it rest for a few hours can improve feeding into the product. However, letting paper rest in humid environments may also cause blisters.

△ **CAUTION:** HP Color Laser Presentation Paper, Glossy (Q2546A) is not supported with this product. Using this type of paper can cause a fuser jam that might require the replacement of the fuser. Two recommended alternatives are HP Color LaserJet Presentation Paper, Soft Gloss (Q6541A) and HP Color LaserJet Brochure Paper, Glossy (Q6611A, Q6610A). For a list of supported paper types, see Supported paper types on page 56.

Envelopes jam or will not feed in the product

Envelopes jam or will not feed in the product

Cause	Solution
Envelopes are loaded in an unsupported tray. Only Tray 1 can feed envelopes.	Load envelopes into Tray 1.
Envelopes are curled or damaged.	Try using different envelopes. Store envelopes in a controlled environment.
Envelopes are sealing because the moisture content is too high.	Try using different envelopes. Store envelopes in a controlled environment.
Envelope orientation is incorrect.	Verify that the envelope is loaded correctly.
This product does not support the envelopes being used.	Refer to the *HP LaserJet Printer Family Print Media Guide*.
Tray 1 is configured for a size other than envelopes.	Configure Tray 1 size for envelopes.

Output is curled or wrinkled

Output is curled or wrinkled

Cause	Solution
Paper does not meet the specifications for this product.	Use only paper that meets the HP paper specifications for this product.
Paper is damaged or in poor condition.	Remove paper from the input tray and load paper that is in good condition.
Product speed needs to be reduced.	Set the **PAPER CURL** option in the Print Quality menu to **REDUCED** to decrease full speed to 10 ppm (instead of 40 ppm) and 3/4 speed to 7.5 ppm (instead of 30 ppm).
Product is operating in an excessively humid environment.	Verify that the printing environment is within humidity specifications.
You are printing large, solid-filled areas.	Large, solid-filled areas can cause excessive curl. Try using a different pattern.
Paper used was not stored correctly and might have absorbed moisture.	Remove paper and replace it with paper from a fresh, unopened package.
Paper has poorly cut edges.	Remove paper, flex it, rotate it 180 degrees or turn it over, and then reload it into the input tray. Do not fan paper. If the problem persists, replace the paper.
The specific paper type was not configured for the tray or selected in the software.	Configure the software for the paper (see the software documentation). Configure the tray for the paper, see Load paper and print media on page 59.
The paper has previously been used for a print job.	Do not re-use paper.

Product will not duplex or duplexes incorrectly

Product will not duplex (print 2-sided jobs) or duplexes incorrectly

Cause	Solution
You are trying to duplex on unsupported paper.	Verify that the paper is supported for duplex printing.
The printer driver is not set up for duplex printing.	Set up the printer driver to enable duplex printing.
The first page is printing on the back of preprinted forms or letterhead.	Load preprinted forms and letterhead in Tray 1 with the letterhead or printed side down, with the top of the page toward the back of the product. For Tray 2, 3, 4 and 5, load the paper printed side up with the top of the page toward the back of the product.
The product model does not support automatic 2-sided printing.	The HP Color LaserJet CP6015n does not support automatic 2-sided printing.
The product configuration is not set for duplexing.	In Windows, run the automatic configuration feature: 1. Click the **Start** button, point to **Settings**, and then click **Printers** (for Windows 2000) or **Printers and Faxes** (for Windows XP). 2. Right-click the HP product icon, and then click **Properties** or **Printing Preferences**.

Product will not duplex (print 2-sided jobs) or duplexes incorrectly

Cause	Solution
	3. Click the **Device Settings** tab. 4. Under **Installable Options**, click **Update Now** in the **Automatic Configuration** list.

Solve image-quality problems

This section helps you define print-quality problems and what to do to correct them. Often print-quality problems can be handled easily by making sure that the product is properly maintained, using paper that meets HP specifications, or running a cleaning page.

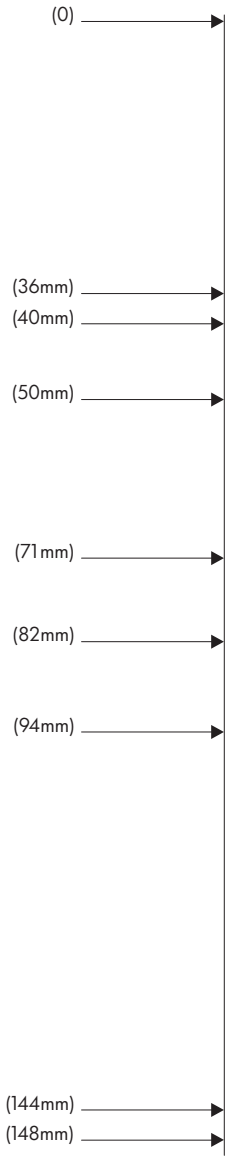
Example print quality problems

Some print quality problems arise from use of inappropriate paper.

- Use paper that meets HP paper specifications.
- The surface of the paper is too rough. Use paper that meets HP paper specifications.
- The printer driver setting or paper tray setting might be incorrect. Be sure that you have configured the paper tray at the product control panel and have also selected the correct driver setting for the paper that you are using.
- The print mode might be set incorrectly, or the paper might not meet recommended specifications.
- The transparencies you are using are not designed for proper toner adhesion. Use only transparencies designed for HP Color LaserJet products.
- The moisture content of the paper is uneven, too high, or too low. Use paper from a different source or from an unopened ream of paper.
- Some areas of the paper reject toner. Use paper from a different source or from an unopened ream of paper.
- The letterhead you are using is printed on rough paper. Use a smoother, xerographic paper. If this solves your problem, consult with the printer of your letterhead to verify that the paper used meets the specifications for this product.
- Several optimize print modes can be used to address print quality issues. See Print Quality menu on page 24.

Repetitive defects ruler

If defects repeat at regular intervals on the page, use this ruler to identify the cause of the defect. Place the top of the ruler at the first defect. The marking that is beside the next occurrence of the defect indicates which component needs to be replaced.



36 mm	Developer roller in an image drum. The print quality defect will be in one of the four image drums (image drum).
40 mm	Charge roller in an image drum. The print quality defect will be spots or dots sometimes caused when feeding labels and will be in one of the four image drums (image drum).
50 mm	Transfer 1 roller in the transfer unit (transfer kit).
71 mm	Transfer 2 roller in the roller kit (transfer kit).
82 mm	Tension in the transfer unit (transfer kit).
94 mm	Image drum. The print quality defect will be in one of the four image drums (image drum).

144 mm	Pressure roller in the fuser (fuser kit).
148 mm	Fusing roller in the fuser (fuser kit).

To identify if the image drum is the problem, insert an image drum from another HP Color LaserJet CP6015 series, if one is available, before ordering a new image drum.

If the defect repeats at 94.0 mm (3.75 inch) intervals, try replacing the image drum before replacing the fuser.

Overhead transparency defects

Overhead transparencies might display any of the image quality problems that any other type of paper could display, as well as defects specific to transparencies. In addition, because transparencies are pliable while in the print path, they are subject to being marked by the paper-handling components.

NOTE: Allow transparencies to cool at least 30 seconds before handling them.

- On the printer driver's **Paper** tab, select **Transparency** as the paper type. Also, make sure that the tray is correctly configured for transparencies.
- Check that the transparencies meet the specifications for this product.
- If transparencies are sticking together in the output bin, set **MEDIA TEMP** to **REDUCED** from the print quality menu. See Use manual print modes on page 484.
- Handle transparencies by the edges. Skin oil on the surface of transparencies can cause spots and smudges.
- Small, random dark areas on the trailing edge of solid fill pages might be caused by transparencies sticking together in the output bin. Try printing the job in smaller batches.
- If the selected colors are undesirable when printed, select different colors in the software program or printer driver.
- If you are using a reflective overhead projector, use a standard overhead projector instead.

Print quality problems associated with the environment

If the product is operating in excessively humid or dry conditions, verify that the printing environment is within specifications. See Environmental specifications on page 991. Several optimization modes can also help with environmental conditions. See Use manual print modes on page 484.

Print quality problems associated with jams

- Make sure that all paper is cleared from the paper path.
- If the product recently jammed, print two to three pages to clean the product.
- The paper does not pass through the fuser, causing image defects to appear on subsequent documents. Print two to three pages to clean the product.

Optimize and improve image quality

The following procedures can be used to solve most image-quality problems.

If following the procedures do not improve print quality, go to www.hp.com/support/cljcp6015.

Use supported paper

Using unsupported paper or other media in the product can cause a wide variety of image-quality problems. For a list of supported paper types, see Supported paper types on page 56.

Calibrate the product

Calibration is a product function that optimizes print quality. If you experience any image-quality problems, calibrate the product.

1. Press Menu.
2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight **PRINT QUALITY**, and then press the checkmark button ✓.
4. Press the down arrow ▼ to highlight **FULL CALIBRATE NOW**, and then press the checkmark button ✓.

If this calibration procedure does not fix the image-quality problems, perform the following additional calibration procedure.

1. Press Menu.
2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight **PRINT QUALITY**, and then press the checkmark button ✓.
4. Press the down arrow ▼ to highlight **CALIBRATE NEUTRALS**, and then press the checkmark button ✓.

Specify the correct paper type

NOTE: The steps can vary; this procedure is most common.

When you load a different paper type into the product, specify the type of paper you are using.

1. After loading the paper tray, specify the paper type at the control panel by using the control panel buttons. For more information, see Load Trays 2, 3, 4, or 5 on page 60. Use the table below to aid in selecting the best paper type. The same type is then selected in the printer driver at the time of printing.
2. When you send a print job from your computer, on the **File** menu in the software program, click **Print**.
3. Select the product, and then click **Properties** or **Preferences**.
4. Select the **Paper/Quality** tab.
5. In the **Paper Type** drop-down box, select **More...** and then select the paper type that best matches the paper that is loaded in the product.

   If you are using the HP Color LaserJet CP6015 PCL 6 printer driver, select the **General Everyday Printing** shortcut and select **Paper Type**. If you are using the HP Universal Printing PS driver, select the **Paper/Quality** tab and then select **Paper Type**.

6. Select the paper type that best matches the paper that is loaded in the product.

   Use the table below to help select the best type in the driver. The table maps the default settings for specific paper types to the types that are listed in the driver and on the product control panel. For example, if you are using glossy paper that is 125 g/m^2, the type that would be selected in the printer driver is XHVY Glossy 131-175 g/m^2.

Printer modes	Paper types that can be selected from the printer driver and control panel
• Normal • Heavy 1 • Heavy 2 • Heavy 3 • Glossy 1 • Glossy 2 • Glossy 3 • Gloss Film • OHT	Unspecified
Light 1 60-74 g/m^2	Light 60-74 g/m^2
Normal 75-90 g/m^2	Intermediate 85-95 g/m^2
Heavy 1 91-120 g/m^2	Heavy 111-130 g/m^2
Heavy 2 121-163 g/m^2	Extra Heavy 131-175 g/m^2
Heavy 3 164-220 g/m^2	Cardstock 176-220 g/m^2
Gloss 1 91-120 g/m^2	HVY Glossy 111-130 g/m^2
Gloss 2 121-160 g/m^2	XHVY Glossy 131-175 g/m^2
Gloss 3 161-220 g/m2	Card Glossy 176-220 g/m^2
Gloss Film	HP Tough Paper
OHT	Color Laser Transparency
Label	Labels
Envelope	Envelope
Envelope 2	Heavy Envelope
Rough 1 60-90 g/m^2	Rough
Rough 2 >91 g/m^2	Heavy Rough

Clean the fuser

Use the cleaning page to keep the fuser free of toner and paper particles that can sometimes accumulate. Accumulation of toner and particles can cause specks to appear on the front or back side of print jobs.

HP recommends that you use the cleaning page when there is a print-quality issue.

A **CLEANING** message appears on the product control panel display while the cleaning is taking place.

In order for the cleaning page to work correctly, print the page on copier-grade paper (not bond, heavy, or rough paper). A blank page will be printed when the task is complete. Discard the page.

1. Press Menu.
2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight **PRINT QUALITY**, and then press the checkmark button ✓.
4. Press the down arrow ▼ to highlight **PROCESS CLEANING PAGE**, and then press the checkmark button ✓.
5. Discard the printed page. The task is complete.

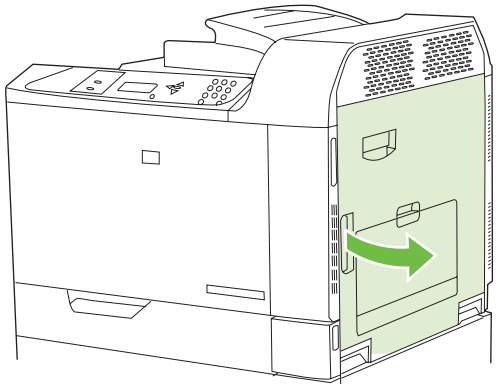
Respond to control panel error messages

If you see a **54.ERROR <XX>** message in the event log, you might need to perform some maintenance on the product to avoid more errors and to solve print-quality problems.

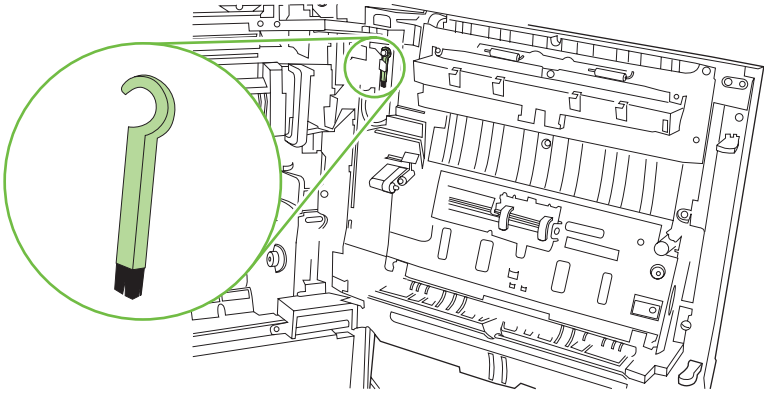
1. Open and then close the right door of the product to log a **54.ERROR <XX>** as the latest event in the event log.
2. Press Menu.
3. Press the down arrow ▼ to highlight **INFORMATION**, and then press the checkmark button ✓.
4. Press down arrow ▼ to highlight **DIAGNOSTICS**, and then press the checkmark button ✓.
5. Press the down arrow ▼ to highlight **PRINT EVENT LOG**, and then press the checkmark button ✓.
6. Find the most recent event in the log.
   - If the event is a **54.OE.01 MEDIA SENSOR** event, a service technician needs to replace the registration-second-transfer assembly. Contact HP Support at www.hp.com/support/cljcp6015 and provide them with this error code.
   - If the event is a **54.OE.02 MEDIA SENSOR** event, you need to replace the product transfer kit. Contact HP Support at www.hp.com/support/cljcp6015 and provide them with this error code.
   - If the event is a **54.OE.03 MEDIA SENSOR** event, clean the registration-second-transfer assembly media sensor using the following procedure.

Clean the registration second transfer assembly

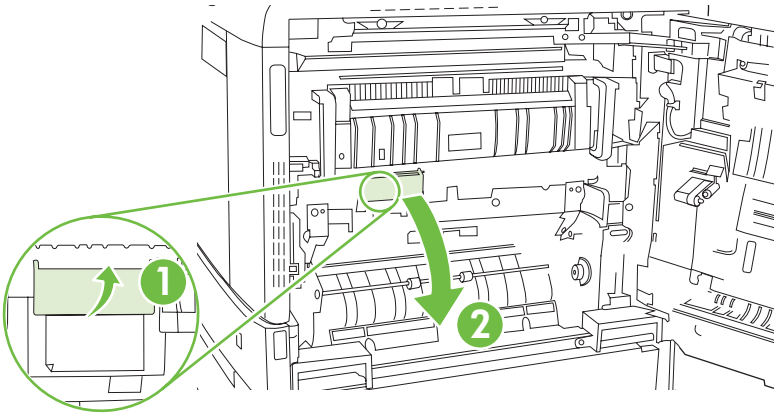
1. Open the right door.



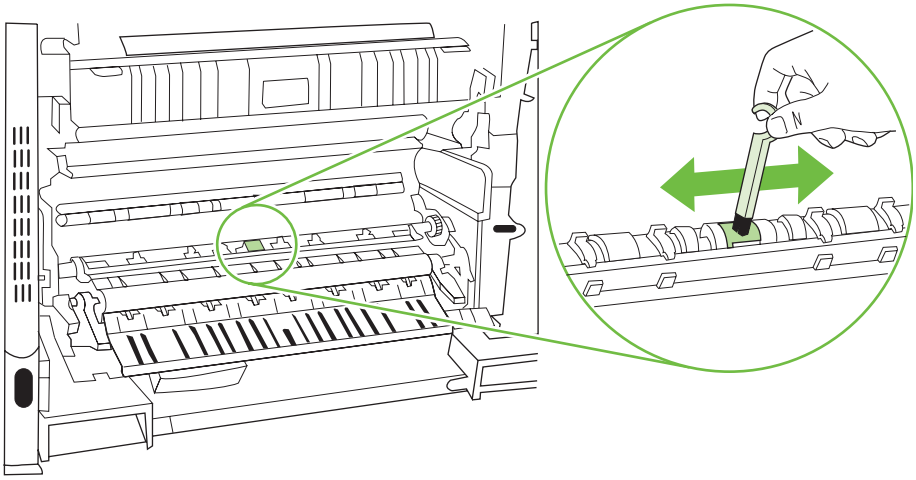
2. Locate and remove the cleaning brush.



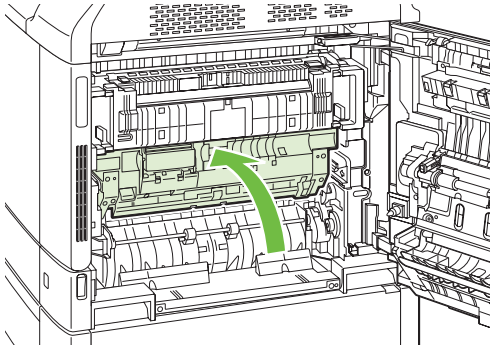
3. Lift the green handle on the transfer-access panel and open the panel.



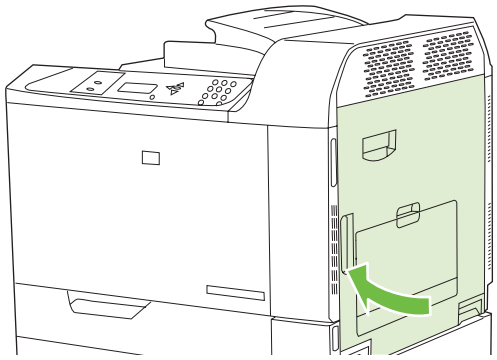
4. Clean the media sensor with the cleaning brush.



5. Close the transfer access panel, and replace the cleaning brush in its holder.



6. Close the right door.



Use manual print modes

Try the following manual print modes to see if they solve the image-quality problems. These options can be found in the Optimize submenu under the control-panel Print Quality menu. See Print Quality menu on page 24.

- **PAPER CURL**: The **REDUCED** setting decreases full speed to 10 PPM (instead of 40 PPM) and 3/4 speed to 7.5 PPM (instead of 30 PPM) in order to reduce paper curl problems.
- **PRE-ROTATION**: Set this feature to **ON** if horizontal streaks appear on pages. Using this feature increases the warmup time for the product.
- **FUSER TEMP**: If you are seeing a faint image of the page repeated at the bottom of the page or on the following page, you should first make sure the Paper Type and Print Mode settings are correct for the type of paper you are using. If you continue to see ghost images on your print jobs, set the Fuser Temp feature to one of the Alternate settings . Try the **ALTERNATE 1** setting first and see if it solves the problem. If you continue to see the problem, try **ALTERNATE 2** and then **ALTERNATE 3**. With the **ALTERNATE 2** and **ALTERNATE 3** settings you may see an extra delay between jobs.
- **TRAY 1**: Set the mode to **ALTERNATE** if you are seeing marks on the back side of the paper when printing from Tray 1. This increases the frequency of the cleaning cycle.
- **GLOSS MODE**: Set this feature to **HIGH** for glossy print jobs, such as photos, if you notice the gloss finish decreasing after the first page is printed.
- **LIGHT MEDIA**: Set this feature to **ON** if you are frequently seeing Fuser Delay Jam or Fuser Wrap Jam messages, especially when printing on lightweight paper or on jobs with heavy toner coverage.
- **MEDIA TEMP**: Set this feature to **REDUCED** if you are having problems with paper sticking together in the output bin.
- **ENVIRONMENT**: Optimizes performance in extreme low temperature environments. Set this feature to **ON** if the product is operating in a low-temperature environment and you are having problems with print quality such as blisters in the printed image.
- **LINE VOLTAGE**: Optimizes performance in low-voltage conditions. Set this feature to **ON** if the product is operating in a low-voltage environment and you are having problems with print quality such as blisters in the printed image.
- **CLEANING FREQUENCY**: If you are seeing defects in the printed output that repeat at 38 mm (1.5 inch) intervals, set this feature to **ALTERNATE**. This feature increases the frequency at which the C roller is cleaned. Setting this feature to **ALTERNATE** might also reduce printing speed and increase the frequency of consumable replacement.
- **D-BLADE BIAS**: If you are seeing short white vertical lines in the printed output, set this feature to **ALTERNATE**. The **ALTERNATE** setting might also cause dark spots in the printed output, so be sure to test this setting on a few print jobs.
- **WASTE BIN**: Set this feature to **ALTERNATE** if you are seeing lengthwise toner streaks in your printed output, especially in jobs with low toner coverage.
- **BACKGROUND**: Turn this feature on if pages are printing with a shaded background. Using this feature can reduce gloss levels.
- **HEAVY MODE**: Sets speed to **30 PPM** or **24 PPM** in order to better feed heavy paper.
- **TRACKING CONTROL**: Improves color stability by adjusting the bias voltage. Make sure this mode is set to **ON**.

Print-quality-troubleshooting pages

Use the built-in print-quality-troubleshooting pages to help diagnose and solve print-quality problems.

1. Press Menu.
2. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight **PQ TROUBLESHOOTING**, and then press the checkmark button ✓ to print the pages.

The product returns to the **READY** state after printing the print-quality-troubleshooting pages. Follow the instructions on the pages that print out.

Figure 7-9 Print-quality troubleshooting procedure

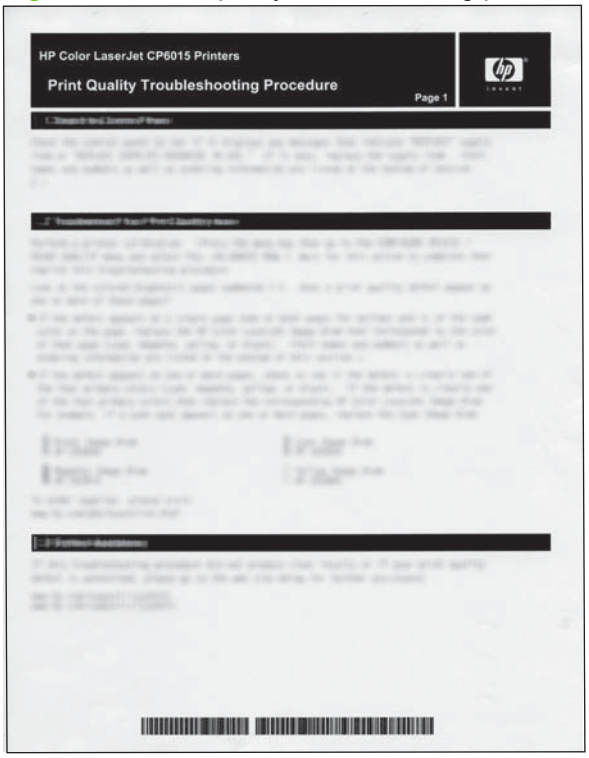


Figure 7-10 Yellow print-quality troubleshooting page

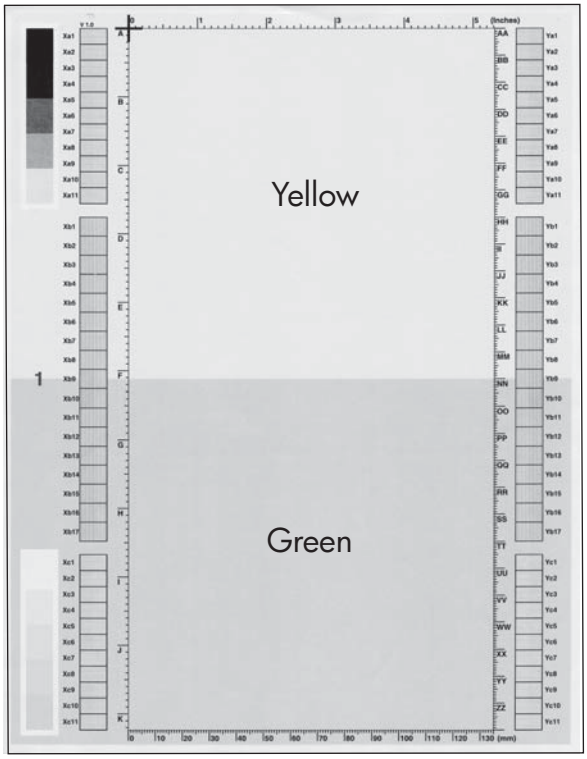
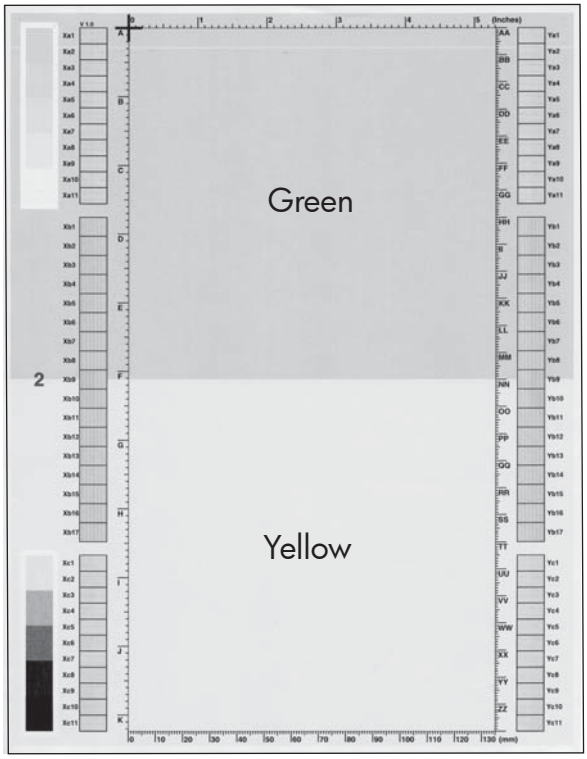
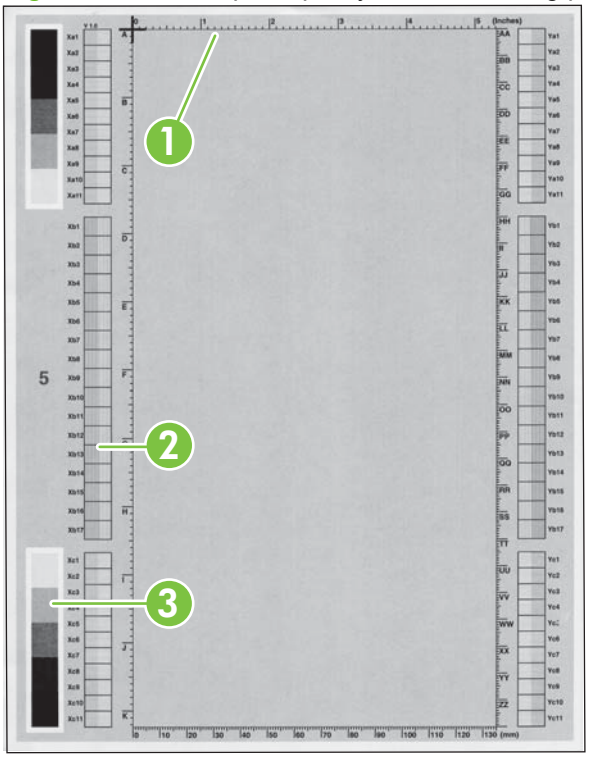


Figure 7-11 Yellow comparison page



Yellow cannot be easily seen unless combined with cyan, so half of each page is yellow and the other half is an amplified version of yellow problems (green half). Compare the yellow on page one with the corresponding green on page two for defects. You can also check the cyan page for defects.

Figure 7-12 Black print-quality troubleshooting page

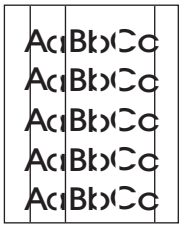
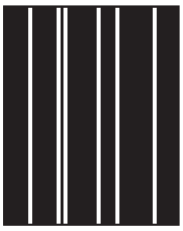
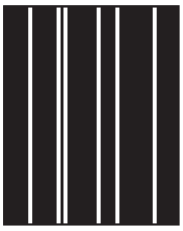


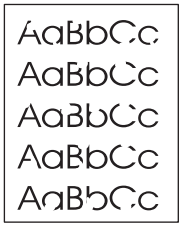
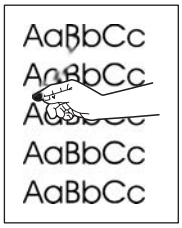
1. Grids	The grids are in inches and millimeters. They are label with letters and numbers so that defects can be described by position and by distance between repeats.
2. Color plane registration (CPR) bars	After printing, the box with no extra color in each area on each page shows how far off the CPR of that color is. Each page has two process direction areas and three scan direction areas that are labeled x and y and 1–11. The page should be fed by the long edge. Each square from the center equals 42 microns.
3. Color ramp patches	Used to detect offset for the OPC or developer in the image drum of offset in the fuser.

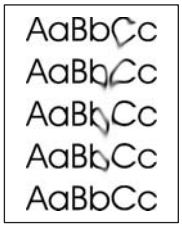
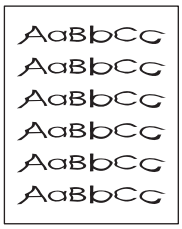
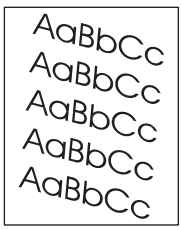
Image-quality issues

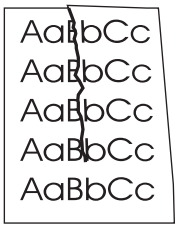
The following examples depict letter-size paper that has passed through the product short-edge first. These examples illustrate problems that would affect all of the pages that you print, whether you print in color or in black only. The topics that follow list the typical cause and solution for each of these examples.

Problem	Cause	Solution
Print is light or faded on entire page. 	Poor contacts exist on the ITB unit and the product grounding unit.	Clean the grounding contacts. If the problem remains after cleaning, check the contacts for damage. Replace any deformed or damaged parts.
	Poor secondary transfer contacts with exist on the secondary transfer roller and the ITB unit.	Clean the contacts. If the problem remains after cleaning, check the contacts for damage. Replace any deformed or damaged parts.
Print is light or faded in a particular color. 	Poor primary transfer bias contacts on the ITB unit and product.	Clean the contacts of the color that produces the light print. If the problem remains after cleaning, check the contacts for damage. Replace any deformed or damaged parts.
	Poor primary charging bias contacts with the print cartridge and product.	
	Poor developing bias contacts with the print cartridge and product.	
Image is too dark. 	The image-density sensor is defective.	Replace the color misregistration/image-density sensor unit.
Page is blank.	The high-voltage power-supply PCA is defective (no developing bias output).	Replace the high-voltage power-supply PCA A. See High-voltage power supply PCA (A) on page 226.
The page is all black or a solid color.	Poor primary charging contacts or developing bias contacts from the high-voltage power-supply PCA A to print cartridge.	Clean each contact of the color that produces the all black or solid color. If the problem remains after cleaning, check the contacts for damage. Replace any deformed or damaged parts.
White spots appear in an image	The static charge eliminator is dirty.	Clean the static charge eliminator.
	The primary transfer roller is deformed or has deteriorated.	Replace the ITB. See Intermediate-transfer belt (ITB) on page 196.
	The secondary transfer roller is deformed or has deteriorated.	Replace the secondary-transfer-roller unit. See Transfer roller on page 194.

Problem	Cause	Solution
The back of the page is dirty.	The feed roller that makes contact with the back of the media is dirty.	Use the repetitive image defect ruler to identify the dirty roller. See Repetitive defects ruler on page 476. Clean the dirty roller. If the dirt does not come off, replace the roller.
	The fuser inlet guide or separation guide is dirty.	Clean the dirty parts. If the dirt does not come off, replace the guide.
	The pressure roller is dirty.	Execute the cleaning page. If the dirt does not come off, replace the fuser. See Fuser on page 191.
Vertical streaks or bands appear on the page. 	Scratches are present on the circumference of the photosensitive drum.	Replace the print cartridge of the color that matches the defect.
	Scratches are present on the circumference of the fuser roller.	Replace the fuser. See Fuser on page 191.
	Scratches are present on the circumference of the ITB.	Replace the ITB unit. See Intermediate-transfer belt (ITB) on page 196.
	The ITB drive roller is deformed or has deteriorated.	
	The ITB cleaning mechanism is malfunctioning.	
Vertical white lines appear in a particular color. 	The laser beam window is dirty.	Clean the window and remove any foreign substances.
	Scratches are present on the circumference of the developing cylinder or photosensitive drum.	Replace the image drum of the color that matches the defect. See Change image drums on page 88.
	The laser/scanner-unit mirror is dirty.	Replace the laser/scanner unit.
Vertical white lines appear in all colors. 	Vertical scratches are present on the fuser roller.	Replace the fuser. See Fuser on page 191.
	Scratches are present on the circumference of the ITB.	Replace the ITB. See Intermediate-transfer belt (ITB) on page 196.
Horizontal lines appear on the page.	Horizontal scratches are present on the photosensitive drum.	Replace the image drum of the color that matches the defect. See Change image drums on page 88.
	Horizontal scratches are present on the fuser roller.	Replace the fuser. See Fuser on page 191.

Problem	Cause	Solution
A horizontal white line appears on the page.	Horizontal scratches are present on the photosensitive drum.	Replace the image drum of the color that matches the defect. See Change image drums on page 88.
	Scratches are present on the circumference of the ITB.	Replace the ITB. See Intermediate-transfer belt (ITB) on page 196.
Image in a particular color does not print in the correct color.	Poor primary charging contacts or developing bias contacts between the high-voltage power-supply PCA A and the image drum.	Clean each contact of the color that produces the missing color. If the problem remains after cleaning, check the contacts for damage. Replace any deformed or damaged parts.
	The image drum (primary charging roller, developing cylinder or photosensitive drum) is defective.	Replace the image drum of the color that matches the defect. See Change image drums on page 88.
	The high-voltage power-supply PCA A is defective (no primary charging bias or developing bias output).	Replace the high-voltage power-supply PCA A. See High-voltage power supply PCA (A) on page 226.
	The laser/scanner unit is defective.	Replace the laser/scanner unit. See Laser/scanner assembly (cyan and black) on page 297.
Dropouts appear. 	The secondary transfer roller is deformed or has deteriorated.	Replace the secondary-transfer-roller unit. See Transfer roller on page 194.
	The primary charging roller, developing cylinder, or photosensitive drum is deformed or has deteriorated.	Replace the image drum of the color that matches the defect. See Change image drums on page 88.
	The fuser roller is deformed or has deteriorated.	Replace the fuser. See Fuser on page 191.
	The high-voltage power-supply PCA B is defective (no transfer bias output).	Replace the high-voltage power-supply PCA A. See See High-voltage power supply PCA (A) on page 226.
The toner is not fully fused to the paper. 	The fuser roller or pressure roller is scarred or deformed.	Replace the fuser. See Fuser on page 191.
	The fuser control PCA is defective.	Replace the fuser control PCA.
	The thermistor or fuser heater has deteriorated.	Replace the fuser. See Fuser on page 191.
	The thermopile is defective.	Replace the thermopile-case unit.

Problem	Cause	Solution
Some color is misregistered.	The product is incorrectly calibrated.	Calibrate the product. See Calibrate the product on page 479.
	The ITB unit is defective.	If the ITB does not rotate smoothly or a cleaning malfunction occurs (ITB is dirty), replace the ITB unit. See Intermediate-transfer belt (ITB) on page 196.
	The drive gear of the ITB motor is worn or chipped.	Check each drive gear between the ITB drive roller and the ITB motor. If the gear is worn or chipped, replace the drive unit. See Intermediate-transfer belt (ITB) motor on page 231.
	The color misregistration sensor is defective.	Replace the color misregistration/image-density sensor unit.
	The laser/scanner unit is defective.	Replace the laser/scanner unit. See Laser/scanner assembly (cyan and black) on page 297.
Toner smears appear on the media. 	The product has residual media.	Remove the residual media.
	Poor grounding contacts exist between each image drum and the product.	Clean the grounding contacts on each drum and the product. If the problem remains after cleaning, check the contacts for damage. Replace any deformed or damaged parts.
	The fuser inlet guide is dirty.	Clean the fuser inlet guide.
The printed page contains misformed characters. 	The product is experiencing page skew.	See the “Text or graphics are skewed on the printed page” row in this table.
	The laser/scanner unit is defective.	Replace the laser/scanner unit. See Laser/scanner assembly (cyan and black) on page 297.
Text or graphics are skewed on the printed page. 	The registration shutter spring is unhooked.	Check the spring and place it in the correct position.
	The registration shutter spring is deformed.	Replace the secondary-transfer unit. See Secondary transfer unit on page 210.

Problem	Cause	Solution
The printed page contains wrinkles or creases.  	The roller or media feed guide is dirty.	Clean any dirty components.
	A roller is deformed or has deteriorated.	Replace any deformed or deteriorated rollers.
	The paper feed guide is damaged.	Replace the paper-feed-guide unit.
The front of the page is dirty.	The feed roller that contacts with front of media is dirty.	Use the repetitive image defect ruler to identify the dirty roller. Clean the dirty roller. If the dirt does not come off, replace the roller. See Repetitive defects ruler on page 476.
	The fuser roller or pressure roller is dirty.	Clean the fuser. If the dirt does not come off, replace the fuser. See Fuser on page 191.

Interface troubleshooting

Communication checks

NOTE: Communication problems are normally the customer's responsibility. Time spent attempting to resolve these problems might not be covered by the Hewlett-Packard warranty.

Refer the customer to the network administrator for assistance in troubleshooting network problems.

If the printer is *not* connected to an MS-DOS-based host, use the following table to check the connection.

Table 7-26 Communication check

Check	Action
Does the computer configuration match the parameters described in the configuration instructions?	Verify that the configuration of the computer's communications port matches these parameters. View the Jetdirect configuration page for print server status, and to verify configuration parameters for operation on your network. **NOTE:** If these parameters are not set correctly, an error message might appear on the control panel.

EIO troubleshooting

If the printer contains an optional HP Jetdirect print server and you cannot communicate with the printer over the network, verify the operation of the print server. Print a configuration page. If the Jetdirect card does not appear under "Installed personalities and options" on the configuration page, see the troubleshooting section of the *HP Jetdirect Print Server Administrators Guide* supplied with the print server.

If the host system and printer still do not communicate, replace the formatter PCA, or if installed the EIO card and reconfigure the printer. If the problem persists, use a protocol analyzer to find the source of the problem.

△ **CAUTION:** HP LaserJet printers are not designed to work with mechanical switch-box products that do not have surge protection. These devices generate high transient voltages that cause permanent damage to the formatter PCB. This circumstance is not covered under the Hewlett-Packard warranty.

Engine diagnostics

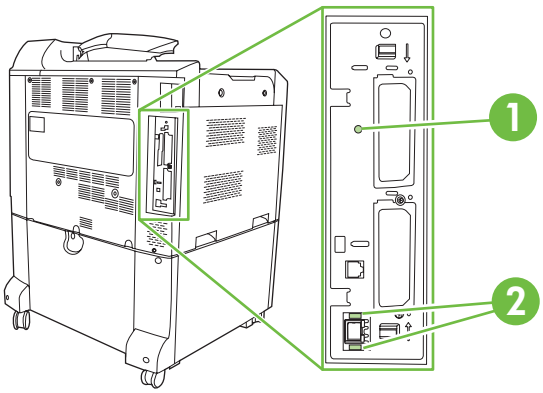
This section provides an overview of the engine diagnostics that are available in the HP Color LaserJet CP6015 Series product. The product contains extensive internal diagnostics that help in troubleshooting print quality, paper path, noise, component, and timing issues.

LED diagnostics

LED, engine, and individual diagnostics can identify and troubleshoot product problems.

Understand lights on the formatter

Three LEDs on the formatter indicate that the product is functioning correctly.



1	Heartbeat LED
2	HP Jetdirect LEDs

HP Jetdirect LEDs

The embedded HP Jetdirect print server has two LEDs. The yellow LED indicates network activity, and the green LED indicates the link status. A blinking yellow LED indicates network traffic. If the green LED is off, a link has failed.

For link failures, check all of the network cable connections. In addition, you can try to manually configure the link settings on the embedded print server by using the product control-panel menus.

1. Press Menu.
2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight **I/O**, and then press checkmark button ✓.
4. Press the down arrow ▼ to highlight **EMBEDDED JETDIRECT MENU**, and then press the checkmark button ✓.
5. Press the down arrow ▼ to highlight **LINK SPEED**, and then press the checkmark button ✓.
6. Select the appropriate link speed, and then press the checkmark button ✓.

Heartbeat LED

The heartbeat LED indicates that the formatter is functioning correctly. While the product is initializing after you turn it on, the LED blinks rapidly, and then turns off. When the product has finished the initialization sequence, the heartbeat LED pulses on and off.

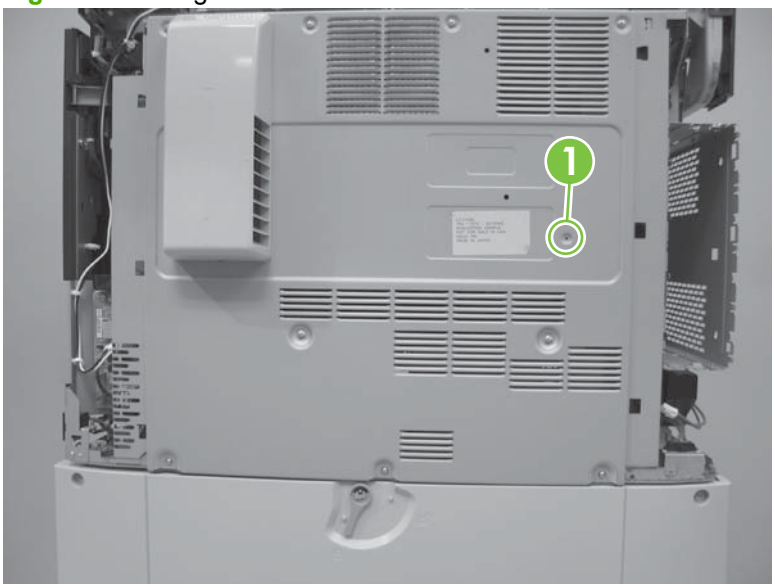
The heartbeat LED will perform the following sequences:

1. The LED blinks with four fast bursts at power on.
2. The LED blinks at a fast, steady rate during memory testing (one blink per 8 MB).
3. The LED stays off for about eight seconds, while the boot code is decompressing, before the display turns on.
4. The LED blinks at a steady rate of two blinks per second for the remainder of the product operation.
5. If these sequences are not performed, check the following:
    - Reseat the memory.
    - Replace the memory.
    - Replace the formatter.
6. If the control panel display does not illuminate, perform an engine test to check the engine. You must have paper loaded in Tray 2 for the engine test.

Engine-test button

To verify that the product engine is functioning, print an engine test page. Use a small pointed object to depress the test-page switch located on the rear of the product. The test page should have a series of horizontal lines. The test page can use only Tray 2 as the paper source, so make sure that paper is loaded in Tray 2.

Figure 7-13 Engine-test button



Diagnostics menu

The diagnostics menu allows you to run tests that can help you identify and solve problems with the printer.

Menu item	Description
PRINT EVENT LOG	This item will print an event log that will display the last 50 entries in the printer's event log, starting with the most recent. See Print an event log on page 422.
SHOW EVENT LOG	This item displays the last 50 events on the control panel display, starting with the most recent. See Show an event log on page 422.
PQ TROUBLESHOOTING	This item prints a series of 8 pages that include instructions, pages for each color, demo page, and configuration page. These pages can help isolate print-quality problems. See Print-quality-troubleshooting pages on page 485.
PRINT DIAGNOSTICS PAGE	This item allows you to print a page that can assist in diagnosing printer problems. See Internal print-quality test pages on page 347.
DISABLE CARTRIDGE CHECK	This item allows you to remove a print cartridge to help determine which cartridge is the source of a problem. See Disable cartridge check on page 498.
PAPER PATH SENSORS	This item performs a test on each of the printer's sensors to determine if they are working correctly and displays the status of each sensor. See Paper-path sensors test on page 499.
PAPER PATH TEST	This item is useful for testing the paper handling features of the printer, such as the configuration of the trays. See Paper-path test on page 501.
MANUAL SENSOR TEST	This item performs tests to determine whether the paper-path sensors are operating correctly. See Manual sensor test (special-mode test) on page 501.
MANUAL SENSOR TEST 2	This item performs tests to determine whether the paper-path sensors are operating correctly. See Manual sensor test 2 (special-mode test) on page 502.
COMPONENT TEST	This item will activate individual parts independently to isolate noise, leaking, and other hardware issues. See Component tests on page 503.
PRINT/STOP TEST	This item isolates print-quality faults more accurately by stopping the printer in mid-print cycle. Stopping the printer in mid-print cycle allows you to see where the image begins to degrade. Stopping the printer in mid-print cycle will cause a jam that may need to be manually removed. A service representative should perform this test. See Print/stop test on page 507.
COLOR BAND TEST	Use this page to print a color-band test page that is used to identify arcing in the high-voltage power supply. See Color-band test on page 507.

Diagnostics mode

Some of the diagnostic tests automatically put the printer into a special diagnostics mode. During the special diagnostics mode the printer can perform actions that would normally cause the printer to enter an error state. Always follow the control panel directions in the **DIAGNOSTICS** menu to exit the special diagnostics mode correctly and return the printer to a normal state.

Diagnostics that put the engine into the special diagnostics mode

Four diagnostic tests put the engine into a special state:

- Disable-cartridge check
- paper-path sensors
- Manual sensor test
- Manual sensor test 2
- Component test

While the printer is in the special diagnostics mode, the following message should appear:

READY DIAGNOSTICS MODE

TO EXIT PRESS STOP

When the printer is in the special diagnostics mode, these five tests display in the menu and are available to be run. To gain access into other diagnostic tests or to leave the special state, press Stop, and then select **EXIT**. The printer will reset itself, and then return to the normal state.

NOTE: You need to have a good understanding of how the printer operates in order to use the engine diagnostics successfully. Before proceeding with these diagnostic tests, make sure that you understand the information in chapter 5 of this manual.

Diagnostic tests

Different tests can be used to isolate different types of issues. For component or noise isolation, you can run the diagnostic test after removing the covers. Removing the covers provides a better view of the areas that are being tested. To operate the printer with the covers removed, the door switch levers must be depressed (this is the door-closed position).

WARNING! Be careful when performing printer diagnostics to avoid risk of injury. Only trained service personnel should open and run the diagnostics with the covers removed. Never touch any of the power supplies when the printer is turned on.

Figure 7-14 Front and right door switch on the right side

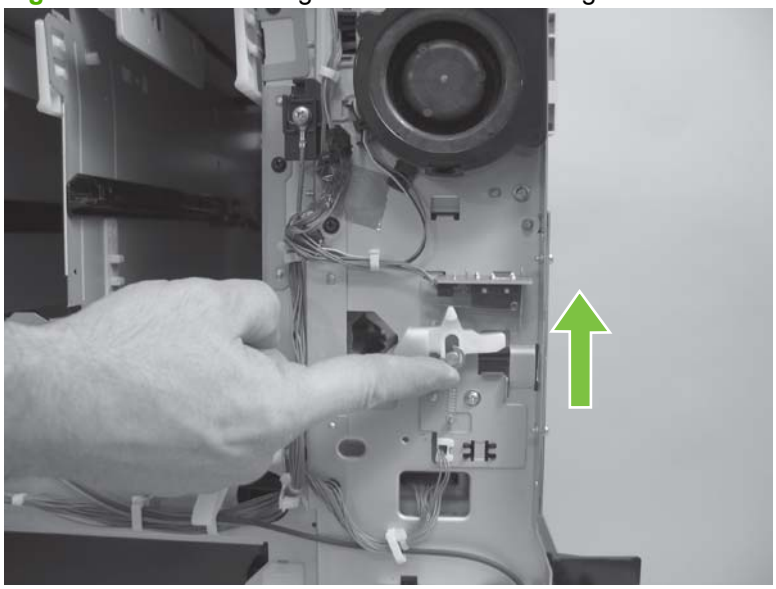
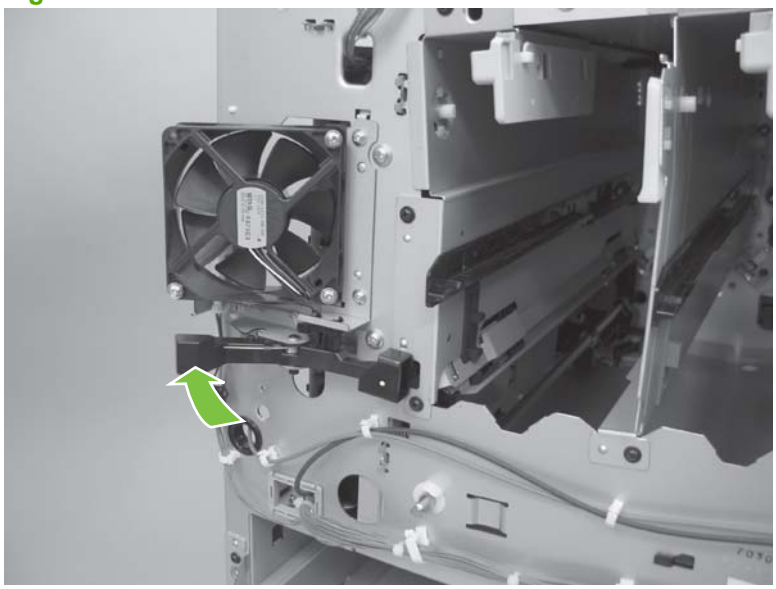


Figure 7-15 Front-door switch on the left side



NOTE: Any time a cartridge is installed or removed while the covers are removed, the door interlock must be cycled to simulate opening and closing the top cover in order for the engine to recognize the change. When the covers are installed, the door switch and fuser interlock are automatically operated. When the covers are removed, you must perform these steps manually.

Disable cartridge check

Use this diagnostic test to print internal pages or send an external job to the product when one or more print cartridges or image drum pairs are removed or exchanged. The print cartridges and image drums are keyed. They must be removed in pairs and can only be used in the correct color slot. Consumable supply errors are ignored while the product is in this mode. When the product is in this mode, you can navigate the menus and print internal pages or send an external print job to the product. This test can be used isolate problems, such as noise, and to isolate print-quality problems that are related to individual print cartridges or image drum pairs.

NOTE: Do not remove or exchange print cartridges and image drums before you start the disable cartridge check diagnostic. After starting the test, you can remove or exchange print cartridges and image drum pairs.

1. Press Menu.
2. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight **DISABLE CARTRIDGE CHECK**, and then press the checkmark button ✓.

To exit this diagnostic test, press Stop and then select **EXIT DIAGNOSTICS**.

Paper-path sensors test

This test displays the status of each paper-path sensor and allows viewing of sensor status while printing internal pages.

1. Press Menu.
2. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight **PAPER PATH SENSORS**, and then press the checkmark button ✓.
4. Select the paper-path test options for the test you want to run.

Table 7-27 Paper-path sensors diagnostic tests

Sensor name	Sensor number	Paper-path sensors test name
Vertical-synchronous-position sensor	SR0	A Registration
Loop sensor	SR13	B Loop
Fixing-delivery media-feed sensor	SR15	C Fuser Output
Duplexing media-reverse sensor	SR304	D Duplexer Switchback
Duplexing media-feed sensor	SR303	E Duplexer Delivery
Duplexing media-repickup sensor	SR302	F Duplexer Refeed
Face-down tray media-full sensor	SR16	G Output bin full
IPTU media-feed sensor 1	SR203	H IPTU 1
IPTU media-feed sensor 2	SR202	I IPTU 2
IPTU media-feed sensor 3	SR201	J IPTU 3
Developing home-position sensor	SR21, YM, SR22 CK	K Developer alienation
Fixing home-position sensor	SR26	L Fuser pressure release[1]
ITB home-position sensor	SR10	M ITB alienation
Media sensor	MS	N Media sensor

[1] Open and close the right door to toggle the fuser pressure-release sensor.

To test the media sensor in the paper-path sensors diagnostic mode, feed paper by printing from a computer to the product or by activating the paper-path test diagnostic test. The following table provides the values for the N-media-sensor test.

Table 7-28 N-media-sensor test values

Code	Media type	Tray 1	Cassette
0	Unknown	✔	✔
1	Normal media 85-95 gm^2	✔	✔
3	LBP OHT	✔	✔
4	Glossy media 111-130 gm^2	✔	✔
5	Gloss film (HP Tough Paper)	✔	✔
6	Non-assured OHT		
7	Heavy media 111-130 gm^2	✔	✔
8	Light media		
9	Rough media		
A	Extra Heavy Glossy media (Glossy media3) 176-220 gm^2	✔	✔
B	Heavy Glossy media (Glossy media2) 131-175 gm^2	✔	✔
C	Heavy media3 176-220 gm^2	✔	✔
D	Heavy media2 131-175 gm^2	✔	✔

To determine if the media sensor is defective or requires cleaning, check the event log for errors as described below. For instructions on how to clean the media sensor, see Clean the registration second transfer assembly on page 482.

If **54.ERROR<XX>** appears in the event log, you might need to perform maintenance on the product to avoid more errors and to solve print-quality problems.

1. Open and then close the right door of the product to log **54.ERROR<XX>** as the most recent event in the event log.
2. Press Menu.
3. Press the down arrow ▼ to highlight **INFORMATION**, and then press the checkmark button ✓.
4. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press the checkmark button ✓.

5. Press the down arrow ▼ to highlight **PRINT EVENT LOG**, and then press the checkmark button ✓.

6. Find the most recent event in the event log.

   - If the event is a **54.OE.01 MEDIA SENSOR** event, a service technician must replace the registration-second-transfer assembly. See Secondary transfer unit on page 210.
   - If the event is a **54.OE.02 MEDIA SENSOR** event, replace the product transfer kit.
   - If the event is a **54.OE.03 MEDIA SENSOR** event, clean the registration second-transfer-assembly media sensor. See Secondary transfer unit on page 210.

Paper-path test

This diagnostic test generates one or more test pages that you can use to isolate the cause of jams.

To isolate a problem, you can specify which input tray to use, specify whether to use the duplex path, and specify the number of copies to print. Multiple copies can be printed to help isolate intermittent problems. The following options become available after you start the diagnostic feature:

- **PRINT TEST PAGE**. Run the paper-path test from the default settings: Tray 2, no duplex, and one copy. To specify other settings, scroll down the menu and select the setting, and then scroll back up and select **PRINT TEST PAGE** to start the test.
- **SOURCE**. Select Tray 1, Tray 2, or the optional trays.
- **DUPLEX**. Enable or disable 2-sided printing.
- **COPIES**. Set the numbers of copies to be printed; the choices are 1,10, 50, 100, or 500.

1. Press Menu.
2. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight **PAPER PATH TEST**, and then press the checkmark button ✓.
4. Select the paper-path test options for the test you want to run.

Manual sensor test (special-mode test)

Use this diagnostic test to manually test the product sensors and switches. Each sensor is represented by a letter and number on the control panel display. See Table 7-29 Manual sensor diagnostic tests on page 502 for a definition of the sensor letter codes.

NOTE: The media sensor (N) cannot be tested manually. For this sensor, see Paper-path sensors test on page 499.

1. Press Menu.
2. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight **MANUAL SENSOR TEST**, and then press the checkmark button ✓ .

To exit this diagnostic, press the Stop key, and then select **EXIT DIAGNOSTICS**.

Menus cannot be opened during this test, so the checkmark button ✓ serves the same function as the Stop button.

Table 7-29 Manual sensor diagnostic tests

Sensor or switch name	Sensor or switch number	Manual sensor test
Vertical-synchronous-position sensor	SR0	A Registration
Loop sensor	SR13	B Loop
Fuser-delivery media-feed sensor	SR15	C Fuser Output
Duplexing media-reverse sensor	SR304	D Duplexer Switchback
Duplexing media-feed sensor	SR303	E Duplexer Delivery
Duplexing media-repickup sensor	SR302	F Duplexer Refeed
Face-down tray media-full sensor	SR16	G Output bin full
IPTU media-feed sensor 1	SR203	H IPTU 1
IPTU media-feed sensor 2	SR202	I IPTU 2
IPTU media-feed sensor 3	SR201	J IPTU 3
Developing home-position sensor	SR21 YM, SR22 CK	K Developer alienation
Fuser home-position sensor	SR26	L Fuser pressure release
ITB home-position sensor	SR10	M ITB alienation
Media sensor	MS	N Media sensor
Front-door-open-detection sensor	SR32	O Door opening/closing
Right-door-open-detection switch	SW1	P Right door sensor
Fixing-unit-cover-open-detection sensor	SR34	Q Fuser door sensor
Secondary-transfer-unit-cover-open-detection sensor	SR33	R T2 door sensor

Manual sensor test 2 (special-mode test)

Use this test to test paper-path sensors and the paper-size switches manually. The following illustrations and table show the locations of these sensors.

1. Press Menu.
2. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight **MANUAL SENSOR TEST 2**, and then press the checkmark button ✓.

Table 7-30 Manual sensor test 2 diagnostic tests

Sensor or switch name	Sensor or switch number	Manual sensor test 2
Tray-1 media-presence sensor	SR6	S Tray 1 paper sensor[1]
Tray-1 media-feed sensor	SR7	T Tray 1 feed sensor[2]
Tray-2 media-presence sensor	SR1	U Tray 2 paper sensor

Table 7-30 Manual sensor test 2 diagnostic tests (continued)

Sensor or switch name	Sensor or switch number	Manual sensor test 2
Tray-2 media-feed sensor	SR5	V Tray 2 feed sensor
Tray-2 media-stack surface sensor	SR2	W Tray 2 paper surface sensor[3]
Tray-2 end-plate-position-detection switch or Tray-2 side-plate-position-detection switch	SW4, SW5	X Tray 2 paper size sensor[4]
Tray -3 media-presence sensor	SR104	Y Tray 3 paper sensor
Tray-3 media-feed sensor	SR102	Z Tray 3 feed sensor
Tray-3 media-stack surface sensor	SR105	a Tray 3 paper surface sensor
Tray-3 end-plate-position-detection switch or Tray-3 side-plate-position-detection switch	SW101, SW102	b Tray 3 paper size sensor
Tray-4 media-presence sensor	SR114	c Tray 4 paper sensor
Tray-4 media-feed sensor surface sensor	SR112	d Tray 4 feed sensor
Tray-4 media stack	SR115	e Tray 4 paper surface sensor
Tray-4 end-plate-position-detection switch or Tray-4 side-plate-position-detection switch	SW111, SW112	f Tray 4 paper size sensor
Tray-5 media-presence sensor	SR124	g Tray 5 paper sensor
Tray-5 media-feed sensor	SR122	h Tray 5 feed sensor
Tray-5 media-stack surface sensor	SR125	i Tray 5 paper surface sensor
Tray-5 end-plate-position-detection switch or Tray-5 side-plate-position-detection switch	SW121, SW122	j Tray 5 paper size sensor

1 The paper sensor detects paper in the tray.

2 The paper-feed sensor detects jams.

3 The paper-surface sensor detects whether or not the tray is raised.

4 The paper-size sensor detects paper size.

To perform an end-plate (left-side set of switches) or side-plate (right-side set of switches) switch test, do the following:

- Remove the appropriate tray (for example, if you want to test SW4 or SW5, remove Tray 2).
- Watch for the corresponding bit to toggle from 1 to 0. Note that it can take a few seconds for bits to toggle.
- Test each switch individually to see if the corresponding bit toggles from 0 to 1.

Component tests

Component test (special-mode test)

This test activates individual parts independently to isolate problems.

Each component test can be performed once or repeatedly. If you select **CONTINUOUS** from the drop-down menu as the repeat option, the test cycles the component on and off. This process continues for two minutes, and then the test terminates.

NOTE: The door-interlock switch must be defeated to run any of the component tests. If covers are removed, the door switch must be manually cycled during some tests in order for the engine to recognize a change. The ITB assembly can be open, closed, or removed while some of these tests are executing. Print cartridges can be installed or removed during certain tests. The control-panel display prompts you to remove some or all cartridges during certain tests to rotate and isolate certain components, and to protect the cartridges and ITB.

1. Press Menu.
2. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight **COMPONENT TEST**, and then press the checkmark button ✓.
4. Select the component test options for the test you want to run.

Table 7-31 Component test details

Component test	Motor or solenoid number	Component test control-panel display message	Comments
ITB-motor / drum-motor driving test	M10, M12 Y, M13 M, M14 C, M15 Bk	Transfer motors	This test simultaneously activates the ITB motor and four drum motors for 10 seconds.
ITB-motor driving test	M10	Belt only	This test activates the ITB motor for 10 seconds.
Drum-motor driving test	M12 Y, M13 M, M14 C, M15 Bk	Image drum motors	This test individually activates the Y/M/C/Bk drum motors for 10 seconds.
Scanner-motor driving test	No number, part of scanner	Black laser scanner	This test activates the cyan/ black scanner motor for 10 seconds.
Scanner-motor driving test	No number, part of scanner	Cyan laser scanner	This test activates the cyan/ black scanner motor for 10 seconds.
Scanner-motor driving test	No number, part of scanner	Magenta laser scanner	This test activates the Y/M scanner motor for 10 seconds.
Scanner-motor driving test	No number, part of scanner	Yellow laser scanner	This test activates the Y/M scanner motor for 10 seconds.
Fuser-motor driving test	M11	Fuser motor	This test activates the fuser motor for 10 seconds.
Fuser pressure-release-motor driving test	M11	Fuser pressure-release motor	This test activates or reverses the fuser motor and pressurizes or depressurizes the pressure roller.
Developing-disengagement driving test	M18	Black alienation motor	This test activates the cyan/ black-developing disengagement motor and

Table 7-31 Component test details (continued)

			engages or disengages the developing rollers.
Developing-disengagement driving test	M18	Cyan alienation motor	This test activates the cyan/black-developing disengagement motor and engages or disengages the developing rollers.
Developing-disengagement driving test	M19	Magenta alienation motor	This test activates the yellow/magenta-developing disengagement motor and engages or disengages the developing rollers.
Developing-disengagement driving test	M19	Yellow alienation motor	This test activates the yellow/magenta-developing disengagement motor and engages or disengages the developing rollers.
ITB disengagement-motor driving test	M9	ITB contact/alienation	This test activates the primary transfer roller disengagement motor. The test either separates the ITB from the photosensitive drum, engages the ITB with only the Bk photosensitive drum, or engages with four photosensitive drums.
IPTU media-feed-motor driving test	M201, M202	Paper transport motor	This test is available only if the IPTU is installed. The test activates the IPTU motor for 10 seconds.
Tray-1-pickup-solenoid driving test	SL2	Tray-1 pickup solenoid	This test activates the Tray-1 pickup solenoid for 10 seconds.
Tray-2-cassette-pickup-motor driving test	M5, for Tray-1 and Tray-2 cassette	Tray-2 pickup motor	This test activates the Tray-2-cassette pickup motor for 10 seconds.
Tray-2-cassette-pickup-solenoid driving test	SL1	Tray-2 pickup solenoid	This test activates the Tray-2-cassette pickup solenoid for 10 seconds.
Tray-3-pickup-motor driving test	M101	Tray-3 pickup motor	This test activates the Tray-3 pickup motor for 10 seconds.
Tray-3-pickup-solenoid driving test	SL101	Tray-3 pickup solenoid	This test activates the Tray-3 pickup solenoid for 10 seconds.
Tray-4-pickup-motor driving test	M111	Tray-4 pickup motor	This test activates the Tray-4 pickup motor for 10 seconds.
Tray-4-pickup-solenoid driving test	SL111	Tray-4 pickup solenoid	This test activates the Tray-4 pickup solenoid for 10 seconds.
Tray-5-pickup-motor driving test	M121	Tray-5 pickup motor	This test activates the Tray-5 pickup motor for 10 seconds.

Table 7-31 Component test details (continued)

Tray-5-pickup-solenoid driving test	SL121	Tray-5 pickup solenoid	This test activates the Tray-5 pickup solenoid for 10 seconds.
Duplexing reverse-motor test	M303	Duplexer reverse motor	This test activates the duplexing reverse motor for 10 seconds.
Duplexing feed-motor test	M302	Duplexer feed motor	This test activates the duplexing feed motor for 10 seconds.
Duplexing repickup-motor test	M301	Duplexer refeed motor	This test activates the duplexing repickup motor for 10 seconds.

Print/stop test

Use this diagnostic test to isolate the cause of problems such as image-formation defects and jams within the engine. During this test you can stop the paper anywhere along the product paper path. The test can be programmed to stop printing internal pages or an external print job when the paper reaches a certain position. The test can also be programmed to stop from 0 to 60,000 mS. If the timer is set to a value that is greater than the job-print time, you can recover the product in one of two ways.

- After the print job is completed press Stop to return to the **DIAGNOSTICS** menu before the timer times out.
- After the timer times out, press Stop. Activate the door switch to restart the engine and return it to a normal state.

When the timer trips, the control panel display shows the message **PRINTING STOPPED To continue, press** ✓. Pressing Menu will print the previously selected job. If you do not want the previous job to print, press Stop first, and then press Menu.

NOTE: Do not attempt to perform a print/stop test while the product is calibrating, because you be required to power-cycle the product. If a jam message displays on the control panel during testing, activate the door switch.

Color-band test

The color-band test page shows bands of colors that can indicate whether or not the product is producing colors correctly.

1. Press Menu.
2. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight **COLOR BAND TEST**, and then press the checkmark button ✓.
4. Press the down arrow ▼ to highlight **PRINT TEST PAGE**, and then press the checkmark button ✓.

Service mode functions

Service menu

The **SERVICE** menu is PIN-protected for added security. Only authorized service people have access to the **SERVICE** menu. When you select **SERVICE** from the list of menus, the product prompts you to enter an eight-digit PIN number. The PIN for the HP Color LaserJet CP6015 Series is 03601508.

1. Press Menu.
2. Press the down arrow ▼ to highlight **SERVICE**, and then press the checkmark button ✓.
3. Enter the eight-digit PIN using the alphanumeric keypad.
4. Press the checkmark button ✓ to enter the PIN and open the **SERVICE** menu.

The following menu items appear in the **SERVICE** menu:

CLEAR EVENT LOG	Use this item to clear the product event log.
CLEAR BOOTLOADER PASSWORD	This menu item allows you to clear the bootloader password if it has been lost.
MONO CYCLE COUNT	After replacing the formatter, use this item to reset the mono page count so that the figure continues to represent the page count for the product engine. The page count that is stored in NVRAM and printed on the configuration page represents the number of pages that the formatter has formatted (not including engine-test prints). If you install a new formatter when repairing a product, use this menu item to reset the page count to the previous value. In this way, the page count reflects the number of pages that the engine has printed rather than restarting the count for the new formatter. The page count is in two categories: total mono pages and total color pages.
COLOR CYCLE COUNT	After replacing the formatter, use this item to reset the color page count so that the figure continues to represent the page count for the product engine. The page count that is stored in NVRAM and printed on the configuration page represents the number of pages that the formatter has formatted (not including engine-test prints). If you install a new formatter when repairing a product, use this menu item to reset the page count to the previous value. In this way, the page count reflects the number of pages that the engine has printed rather than restarting the count for the new formatter. The page count is in two categories: total mono pages and total color pages.
REFURBISH CYCLE COUNT	Use this item to record the page count when the product was refurbished.
SERIAL NUMBER:	After replacing the formatter, use this item to reset the product serial number.
REFURBISH CYCLE COUNT	Use this item to record the page count when the product was refurbished.
SERVICE ID	Use this item to show the date that the product was first used on the control panel. This eliminates the need for users to keep paper receipts for proof of warranty. **Restore the service ID**

	If you replace the formatter, the date is lost. Use this menu item to reset the date to the original date that the product was first used. The date format is YYDDD. Use the following formula to calculate the dates: 1. To calculate YY, subtract 1990 from the calendar year. For instance, if the product was first used in 2002, calculate YY as follows: 2002 - 1990 = 12. YY = 12. 2. Subtract 1 from 10 (October is the tenth month of the year): 10 - 1 = 9. ◦ Multiply 9 by 30: 9 x 30 = 270 or add 17 to 270: 270 + 17 = 287. Thus, DDD = 287. **Convert the service ID to an actual date** You can use the product Service ID number to determine whether the product is still under warranty. Use the following formula to convert the Service ID into the installation date as follows: 1. Add 1990 to YY to get the actual year that the product was installed. 2. Divide DDD by 30. If there is a remainder, add 1 to the result. This is the month. 3. The remainder from the calculation in step 2 is the date. Using the Service ID 12287 as an example, the date conversion is as follows: 1. 12 + 1990 = 2002, so the year is 2002. 2. 287 divided by 30 = 9 with a remainder of 17. Since there is a remainder, add 1 to 9 to get 10, which represents October. 3. The remainder in step 2 is 17, so that is the date. 4. The complete date is 17-October-2002. **NOTE:** A six-day grace period is built into the date system.
COLD RESET PAPER	When you perform a cold reset, the paper size that is stored in NVRAM is reset to the default factory setting. If you replace a formatter board in a country/region that uses A4 as the standard paper size, use this menu to reset the default paper size to A4. LETTER and A4 are the only available values.
CALIBRATE MEDIA SENSOR	When a 54.0E.03 error appears in the event log, the registration second-transfer assembly needs to be replaced. After it is replaced, the media sensor must be calibrated. Select **CALIBRATE MEDIA SENSOR** in the **SERVICE** menu, and then send 10 jobs through the product. Make sure that there is a pause between each job that allows the product to completely spin down. After this process, the sensor is calibrated.

Product resets

Restore factory-set defaults

Hard disk initialization

A hard disk initialization will erase and reformat the product's hard disk. Perform hard disk initialization only if an error code displays on the control panel indicating a disk error. Always try initializing the hard disk before replacing it.

1. Turn the product on.
2. As the product performs its power-on sequence, press and hold the Menu button until all three lights on the control panel are lit.
3. Press the back arrow ⮌. The message **INITIALIZE DISC** displays on the control panel.
4. Press the down arrow ▼. The product initializes the hard disk and continues its power-on sequence.

NVRAM initialization

△ **CAUTION:** Initializing NVRAM resets the serial number, the event log, the page counts, the calibration settings, and the EIO card. Use the **SERVICE** menu to restore the serial number and page counts. You also need to reconfigure any computers that print to this product to recognize the product. Initialize NVRAM only when absolutely necessary. In most situations, use a cold reset to reset product variables but still retain the needed values in the **SERVICE** menu.

Before initializing NVRAM, print a configuration page and a supplies status page to gather the following information:

- Total page count and color page count
- Serial number

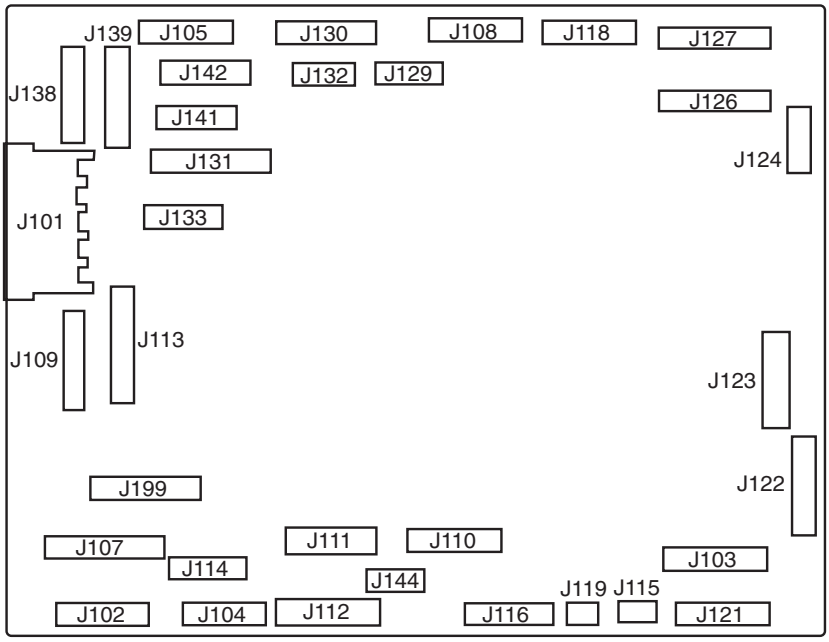
1. Turn the product on and watch the control panel display.
2. When the display shows the memory count, press and hold the down arrow ▼ until all three lights on the control panel are lit.
3. Press the up arrow ▲.
4. Press Menu. The message **SKIP DISK LOAD** displays on the control panel.
5. Press the up arrow ▲ until **NVRAM INIT** is highlighted, and then press the checkmark button ✓. The product initializes NVRAM and then continues its power-on sequence.

Diagrams

Connectors

DC controller PCA

Figure 7-16 DC controller PCA



PCAs

Figure 7-17 Cartridge driver PCA

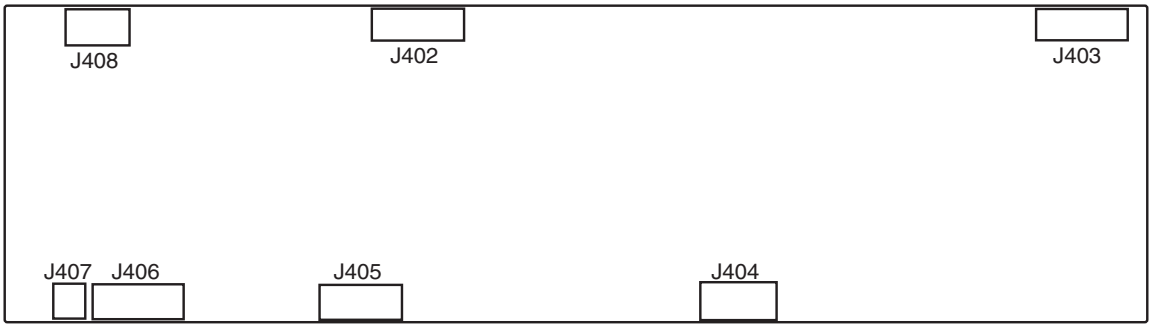


Figure 7-18 Fuser control PCA

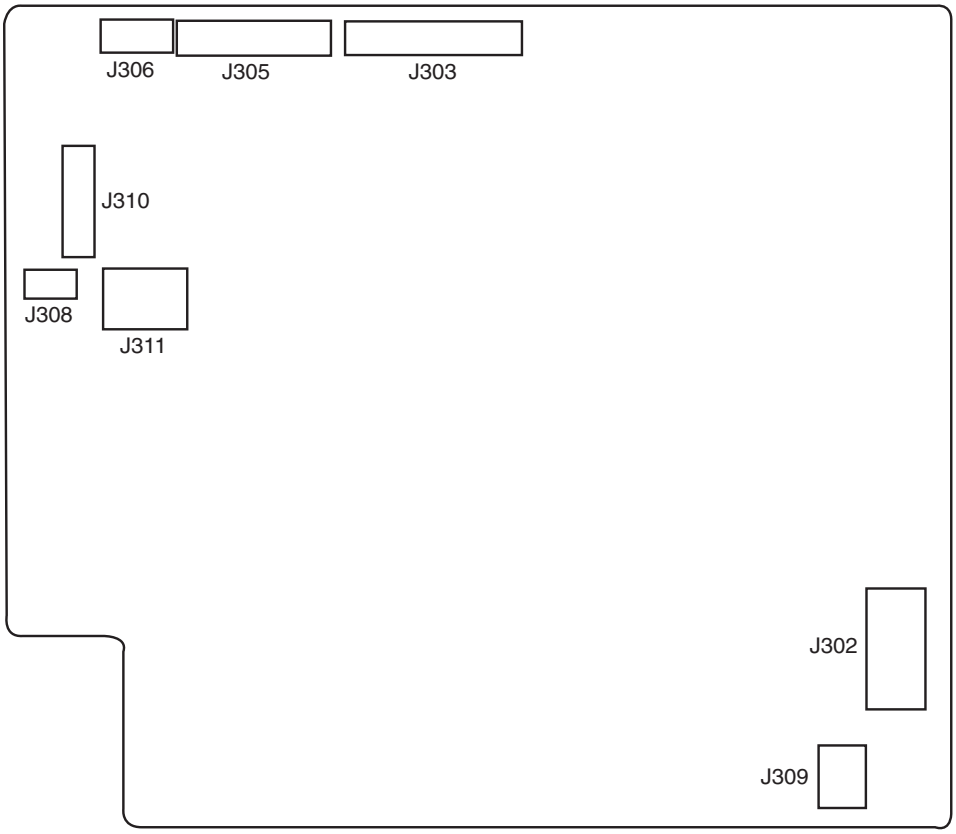


Figure 7-19 Duplexing driver PCA

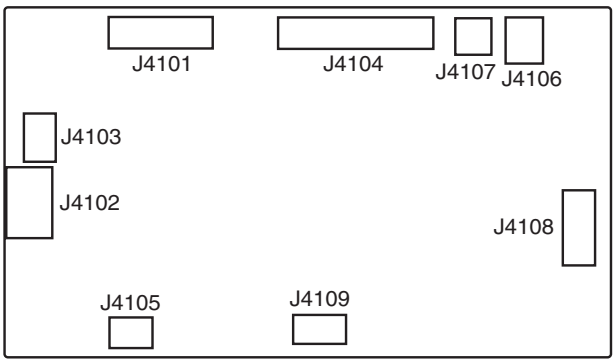


Figure 7-20 Input-tray driver PCA

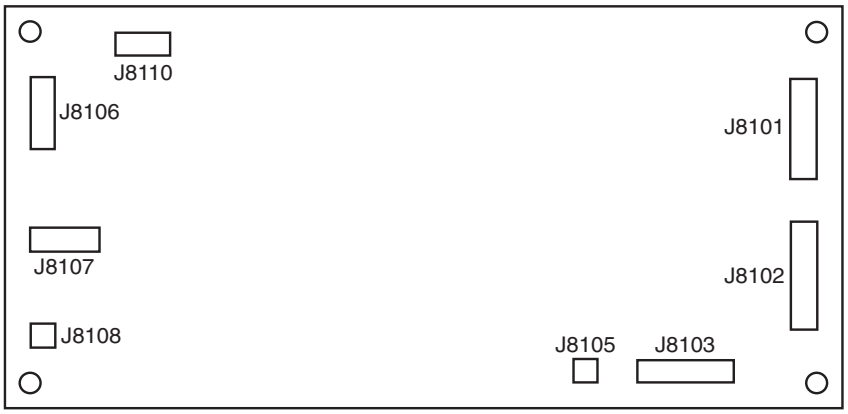
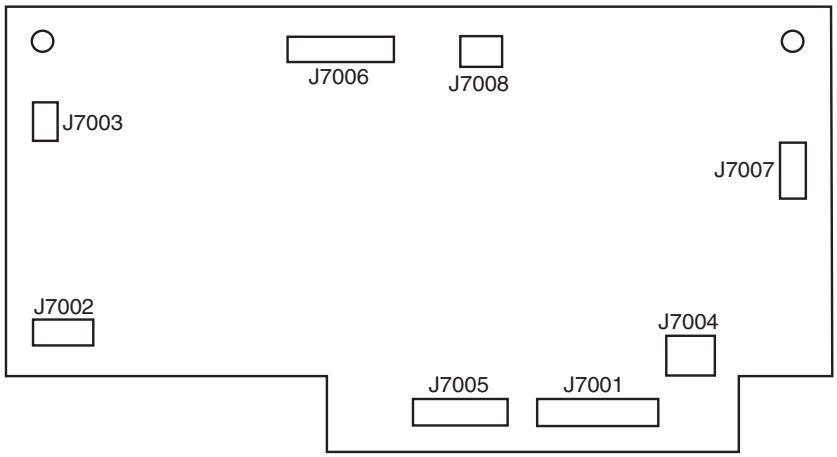


Figure 7-21 IPTU driver PCA



Product base

Figure 7-22 Product connector locations (1 of 6)

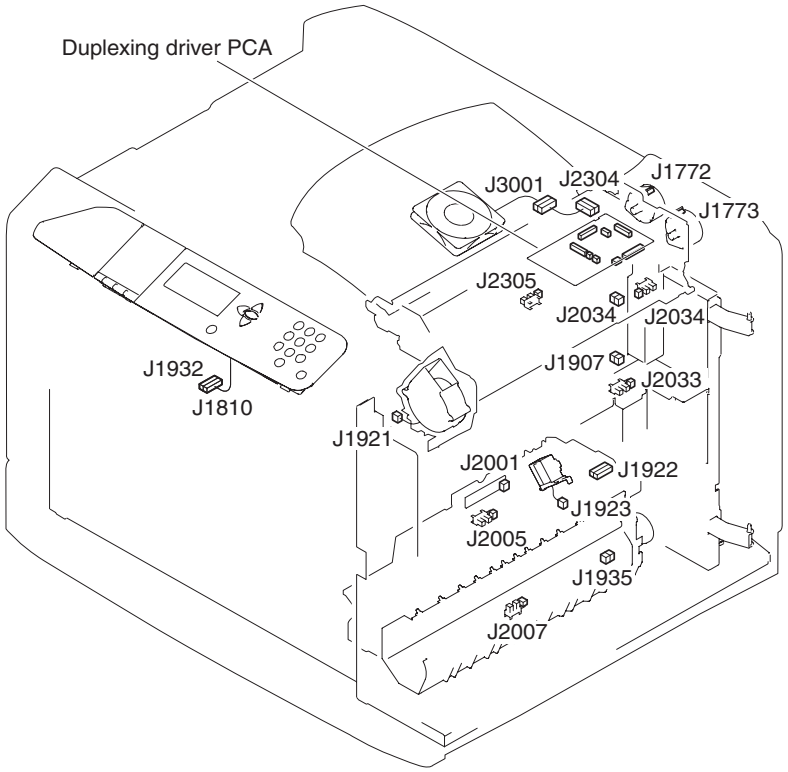


Figure 7-23 Product connector locations (2 of 6)

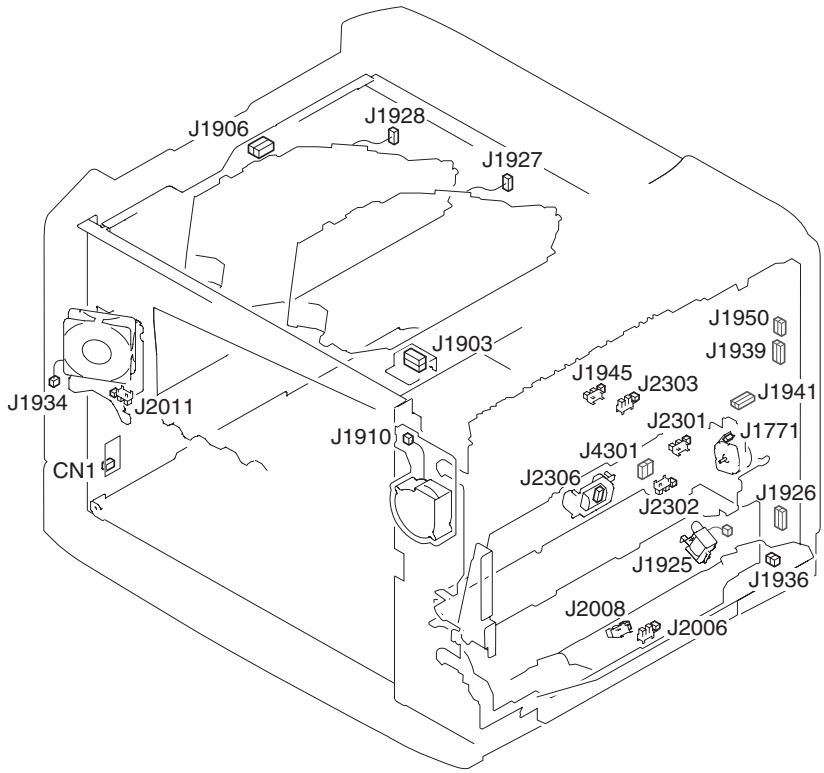


Figure 7-24 Product connector locations (3 of 6)

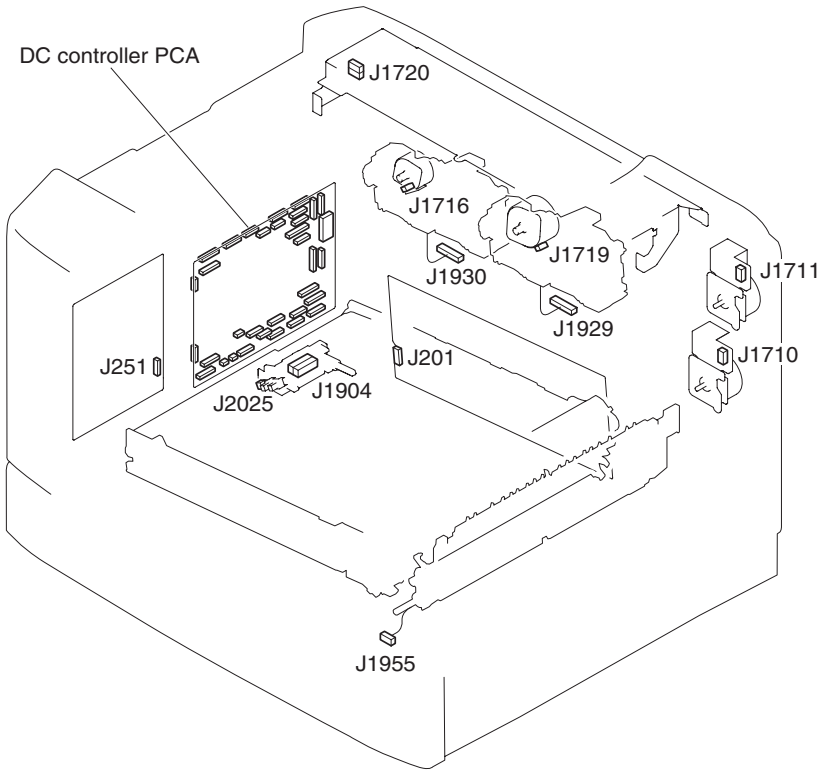


Figure 7-25 Product connector locations (4 of 6)

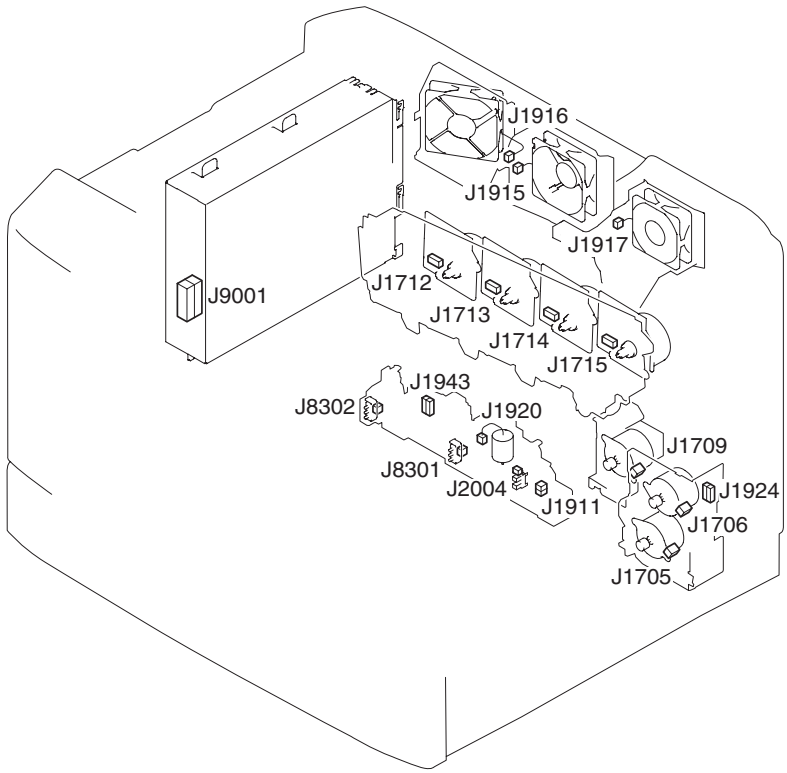


Figure 7-26 Product connector locations (5 of 6)

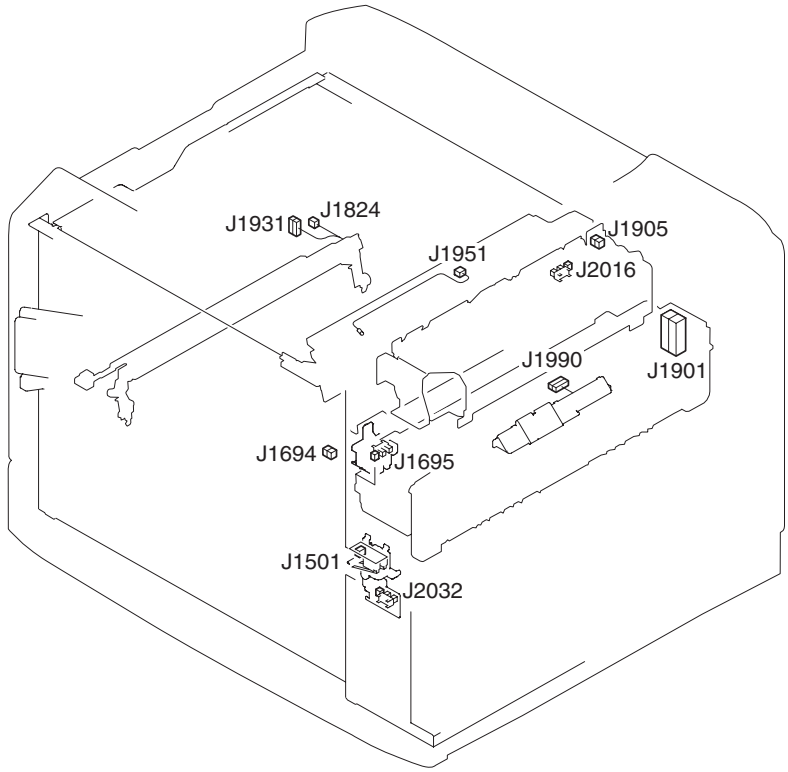
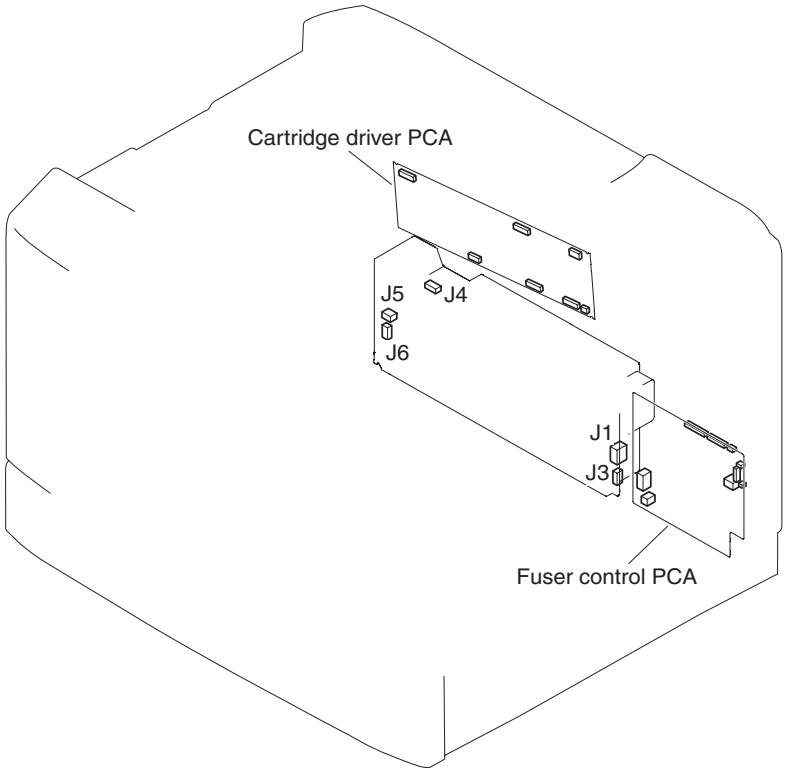
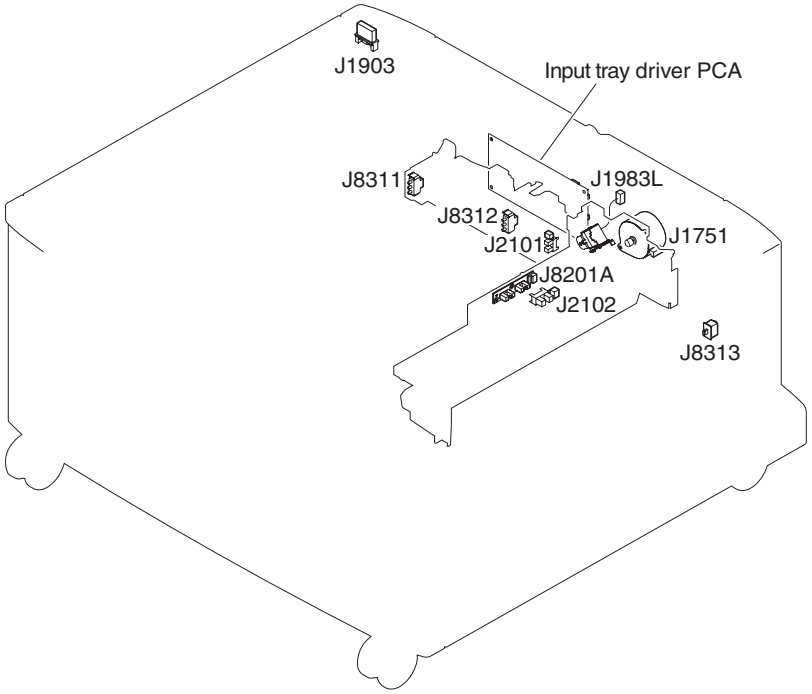


Figure 7-27 Product connector locations (6 of 6)



1 x 500-sheet input tray

Figure 7-28 1 x 500-sheet input tray



3 x 500-sheet input tray

Figure 7-29 3 x 500-sheet input tray (1 of 2)

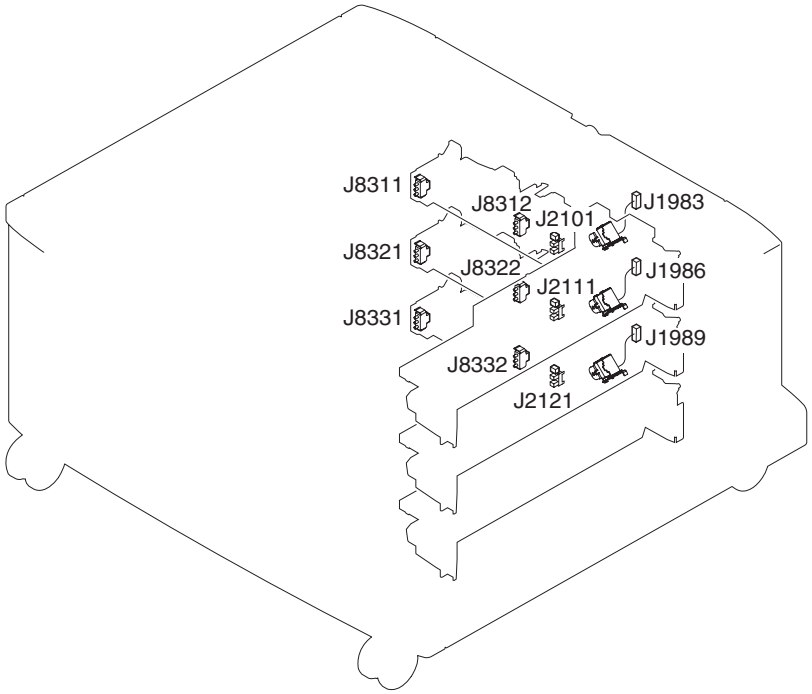
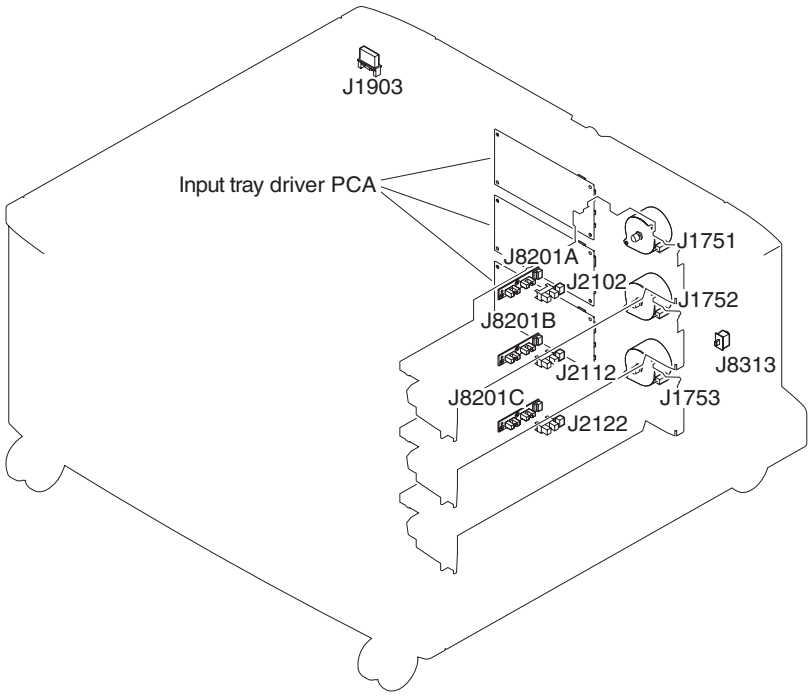
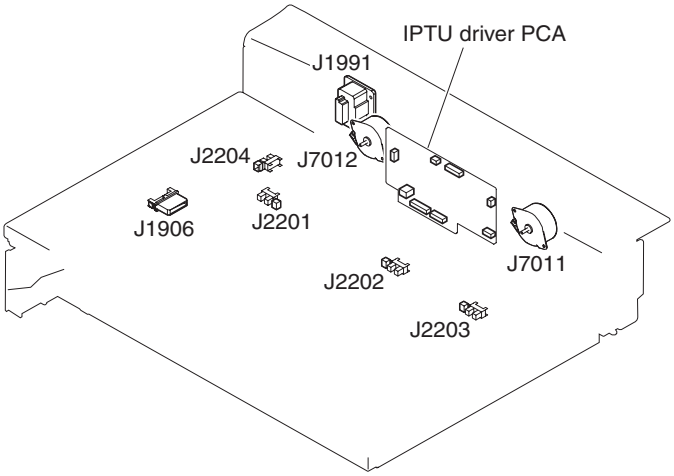


Figure 7-30 3 x 500-sheet input tray (2 of 2)



IPTU

Figure 7-31 IPTU



Sensors

Sensors

Table 7-32 Sensors

Component abbreviation	Component name
CN1	Environment sensor
CS	Color sensor (duplex models only)

Table 7-32 Sensors (continued)

Component abbreviation	Component name
MS	Media sensor
	Color misregistration/image density sensor
	ITB sensor-mark detection sensor
SR0	Vertical synchronous-position sensor
SR1	Cassette media-presence sensor
SR2	Cassette media-stack surface sensor
SR4	Cassette media-level sensor
SR5	Cassette media-feed sensor
SR6	Multipurpose-tray (MP tray) media-presence sensor
SR7	MP tray media-feed sensor
SR8	MP tray last-media sensor
SR10	ITB home-position sensor
SR11	Right door-open-detection sensor
SR13	Loop sensor
SR15	Fuser-delivery media-feed sensor
SR16	Output-bin media-full sensor
SR17	Drum home-position sensor (yellow)
SR18	Drum home-position sensor (megenta)
SR19	Drum home-position sensor (cyan)
SR20	Drum home-position sensor (black)
SR21	Developing home-position sensor (yellow and magenta)
SR22	Developing home-position sensor (cyan and black)
SR23	Toner-feed-motor rotational-count sensor (yellow, magenta, and cyan)
SR24	Toner-feed-motor rotational-count sensor (black)
SR26	Fuser home-position sensor
SR31	ITB waste-toner-full sensor
SR32	Front door-open-detection sensor
SR33	Secondary-transfer-unit cover-open-detection sensor
SR34	Fuser cover-open-detection sensor
SR301	Color-sensor-disengagement sensor (duplex models only)
SR302	Duplexing media re-pickup sensor (duplex models only)
SR303	Duplexing media-feed sensor (duplex models only)
SR304	Duplexing media-reverse sensor (duplex models only)
SCN-TH1	Laser/scanner temperature sensor 1

Table 7-32 Sensors (continued)

Component abbreviation	Component name
SCN-TH2	Laser/scanner temperature sensor 2
	Print-cartridge presence sensor (yellow)
	Print-cartridge presence sensor (magenta)
	Print-cartridge presence sensor (cyan)
	Print-cartridge presence sensor (black)
	Imaging-drum waste-toner-full sensor (yellow)
	Imaging-drum waste-toner-full sensor (magenta)
	Imaging-drum waste-toner-full sensor (cyan)
	Imaging-drum waste-toner-full sensor (black)
	Imaging-drum toner-level sensor (yellow)
	Imaging-drum toner-level sensor (magenta)
	Imaging-drum toner-level sensor (cyan)
	Imaging-drum toner-level sensor (black)

Product base

Figure 7-32 Product sensor locations (1 of 3)

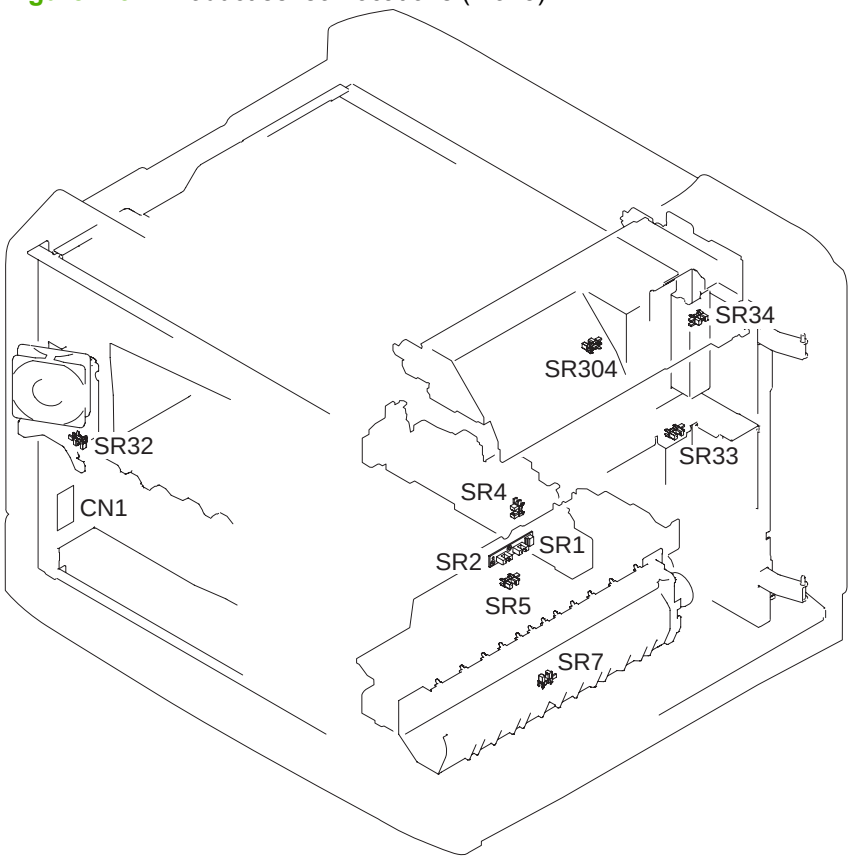


Figure 7-33 Product sensor locations (2 of 3)

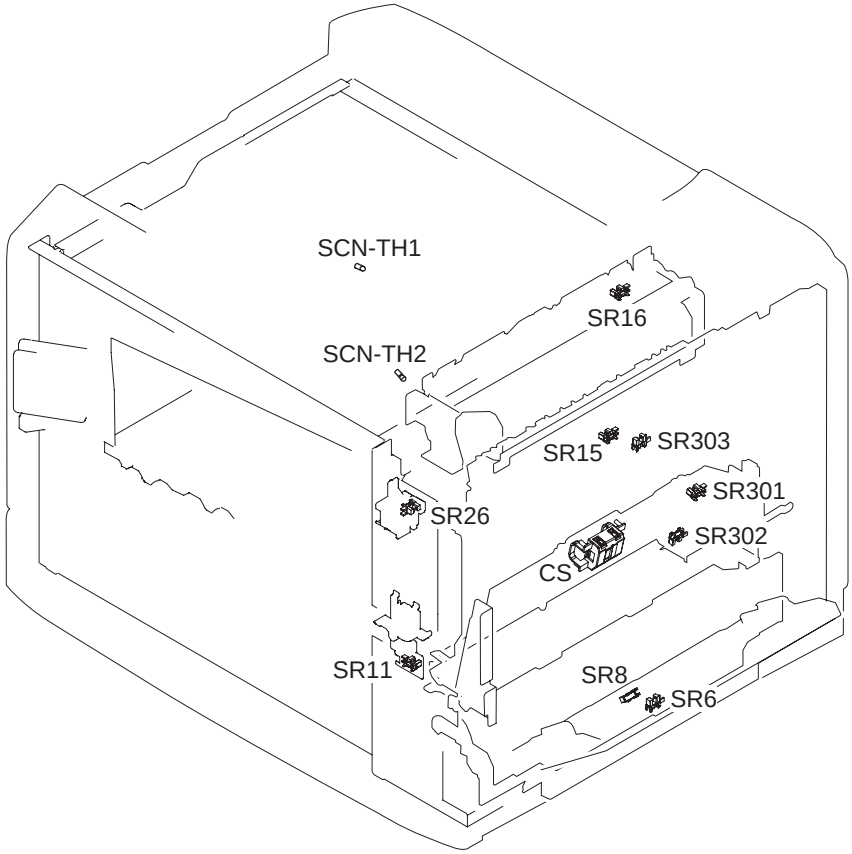
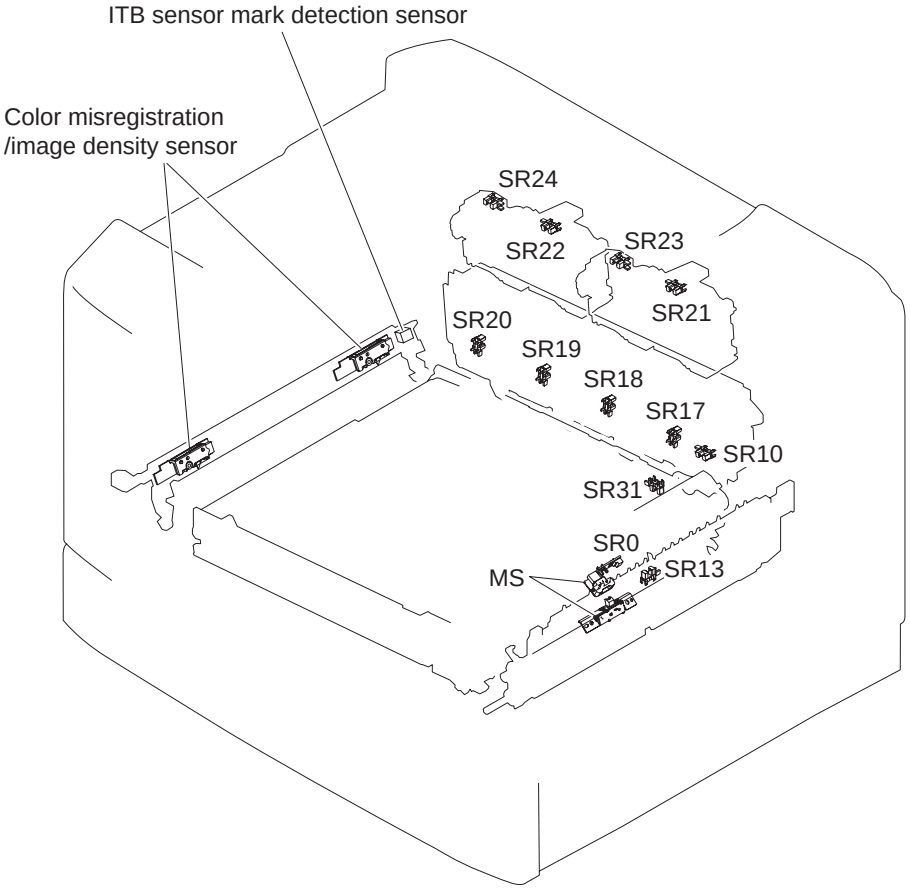
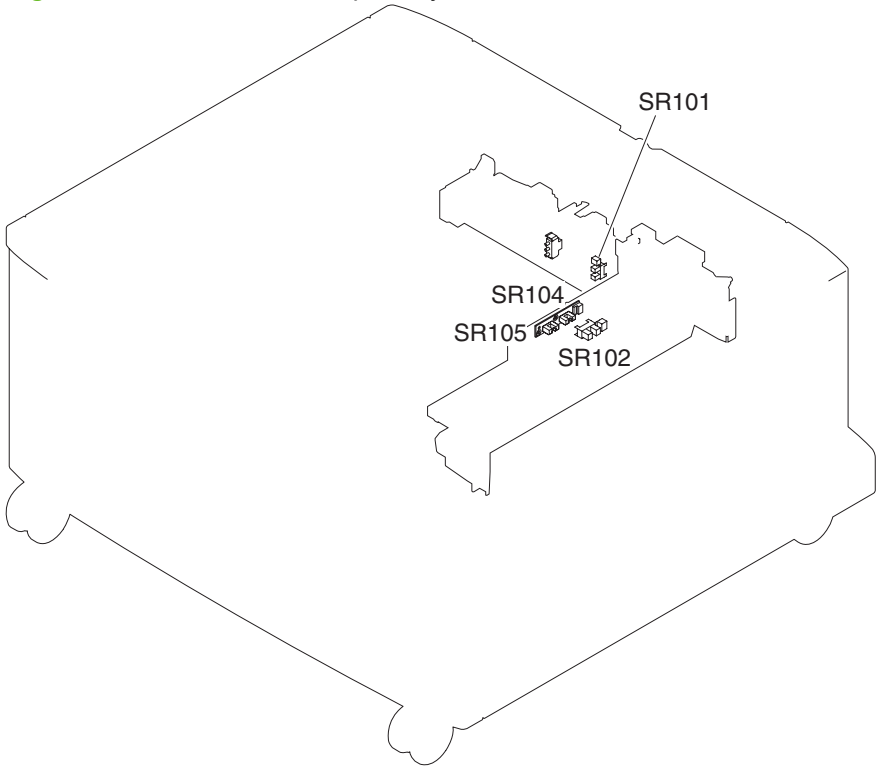


Figure 7-34 Product sensor locations (3 of 3)



1 x 500-sheet input tray

Figure 7-35 1 x 500-sheet input-tray sensor locations



3 x 500-sheet input tray

Figure 7-36 3 x 500-sheet input-tray sensor locations (1 of 2)

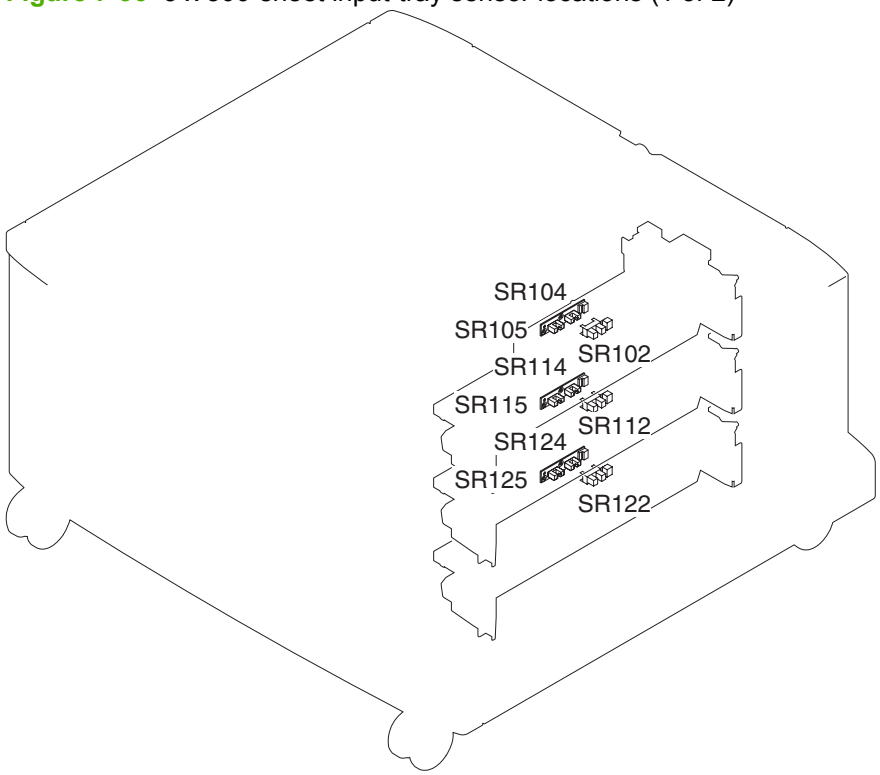
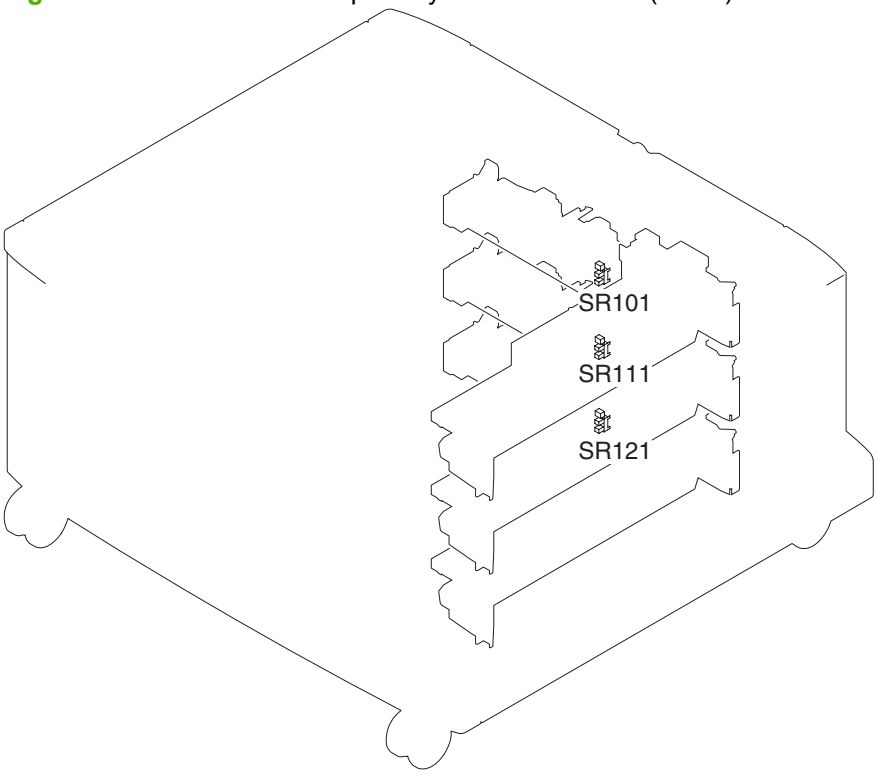
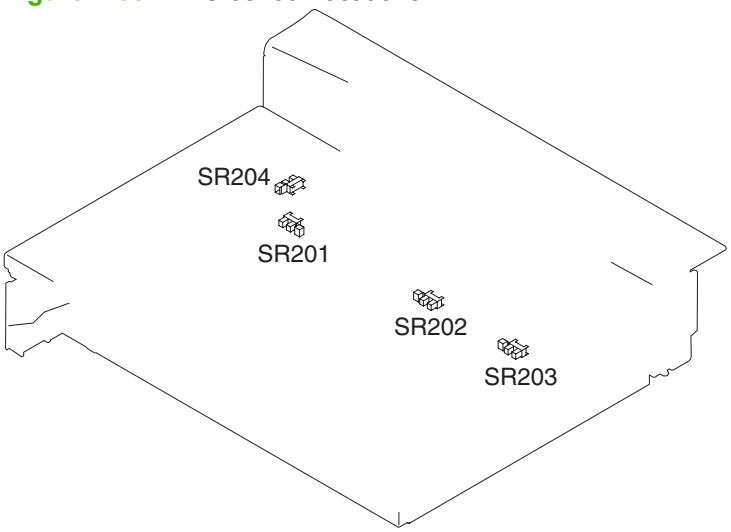


Figure 7-37 3 x 500-sheet input-tray sensor locations (2 of 2)



IPTU

Figure 7-38 IPTU sensor locations



Fans

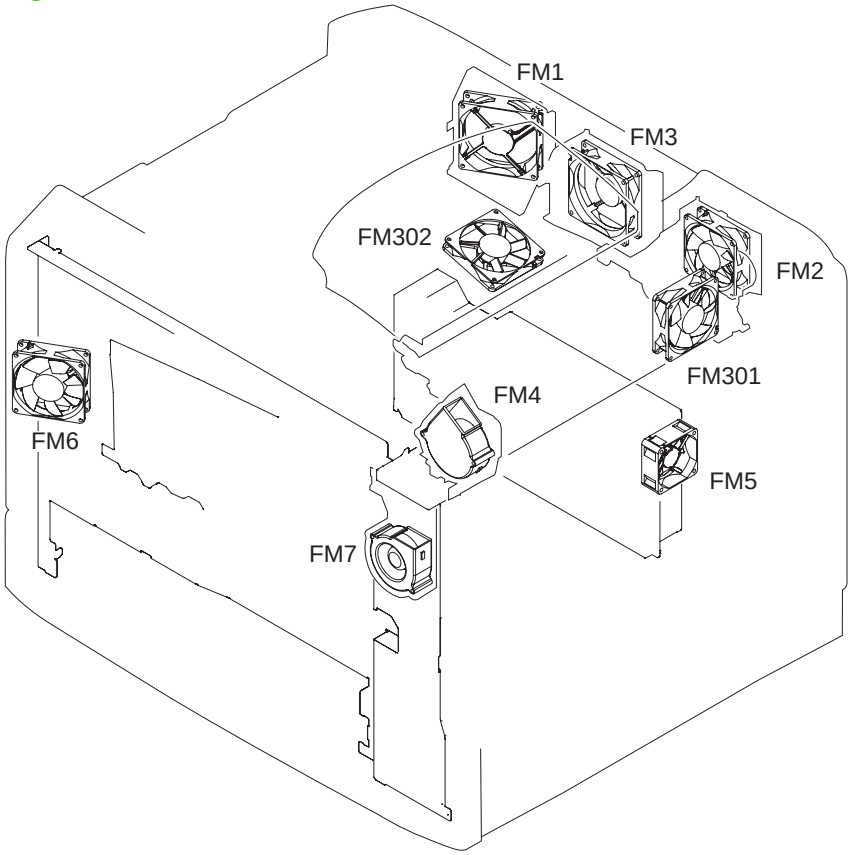
Fans

Table 7-33 Fans

Abbreviation	Name	Cooling area	Type	Speed
FM1	Laser/scanner cooling fan	Laser/scanner area and formatter	Intake	Full/half
FM2	Fuser cooling fan	Fuser	Intake	Full/half
FM3	Cartridge-area cooling fan	Print-cartridge and imaging-drum area	Exhaust	Full
FM4	VOC fan	Fuser	Exhaust	Full/half
FM5	Low-voltage power-supply cooling fan	Low-voltage power-supply unit	Exhaust	Full/half
FM6	Cartridge front-area cooling fan	Print-cartridge and imaging-drum area	Intake	Full/half
FM7	Delivery unit cooling fan	Delivery unit	Intake	Full
FM301 Duplex models only	Duplexing unit cooling fan 1	Duplexing driver PCA	Intake	Full
FM302 Duplex models only	Duplexing unit cooling fan 2	Output bin area	Exhaust	Full/half

Product base

Figure 7-39 Product fan locations



Motors

Motors

Table 7-34 Motors

Abbreviation	Name	Purpose	Type	Failure detection
M5	Pickup motor	Drives the cassette pickup roller, the cassette feed roller, and the MP tray pickup roller	Stepping motor	No
M6	Registration motor	Drives the registration roller	Stepping motor	No
M7	Cassette lifter motor	Drives the cassette-lifter mechanism	DC motor	No
M9	Primary-transfer-roller disengagement motor	Engages or disengages the primary transfer roller	Stepping motor	No
M10	ITB motor	Drives the ITB and the secondary transfer roller	DC motor	Yes

Table 7-34 Motors (continued)

Abbreviation	Name	Purpose	Type	Failure detection
M11	Fuser motor	Drives the fuser roller, the delivery roller, and the fuser pressure roller	DC motor	Yes
M12	Drum motor (Y)	Drives the photosensitive drum and the primary charging roller in the yellow imaging drum	DC motor	Yes
M13	Drum motor (M)	Drives the photosensitive drum and the primary charging roller in the magenta imaging drum	DC motor	Yes
M14	Drum motor (C)	Drives the photosensitive drum and the primary charging roller in the cyan imaging drum	DC motor	Yes
M15	Drum motor (K)	Drives the photosensitive drum and the primary charging roller in the black imaging drum	DC motor	Yes
M16	Toner-feed motor (K)	Drives the black toner feed screws and waste-toner feed screws	Stepping motor	No
M17	Toner-feed motor (C, M, Y)	Drives the yellow, magenta, and cyan toner feed screws and waste-toner feed screws	Stepping motor	No
M18	Developing disengagement motor (C, K)	Engages and disengages the developing rollers in the cyan- and black-imaging drums	Stepping motor	No
M19	Developing disengagement motor (Y, M)	Engages and disengages the developing rollers in the yellow- and magenta-imaging drums	Stepping motor	No
M301 Duplex models only	Duplexing feed motor	Drives the duplexing paper-feed roller	Stepping motor	No
M302 Duplex models only	Duplexing reverse motor	Drives the duplexing paper-reverse roller	Stepping motor	No
M303 Duplex models only	Duplexing re-pickup motor	Drives the duplexing paper re-pickup roller and engages or	Stepping motor	No

Table 7-34 Motors (continued)

Abbreviation	Name	Purpose	Type	Failure detection
		disengages the color sensor		

Product base

Figure 7-40 Product motor locations (1 of 2)

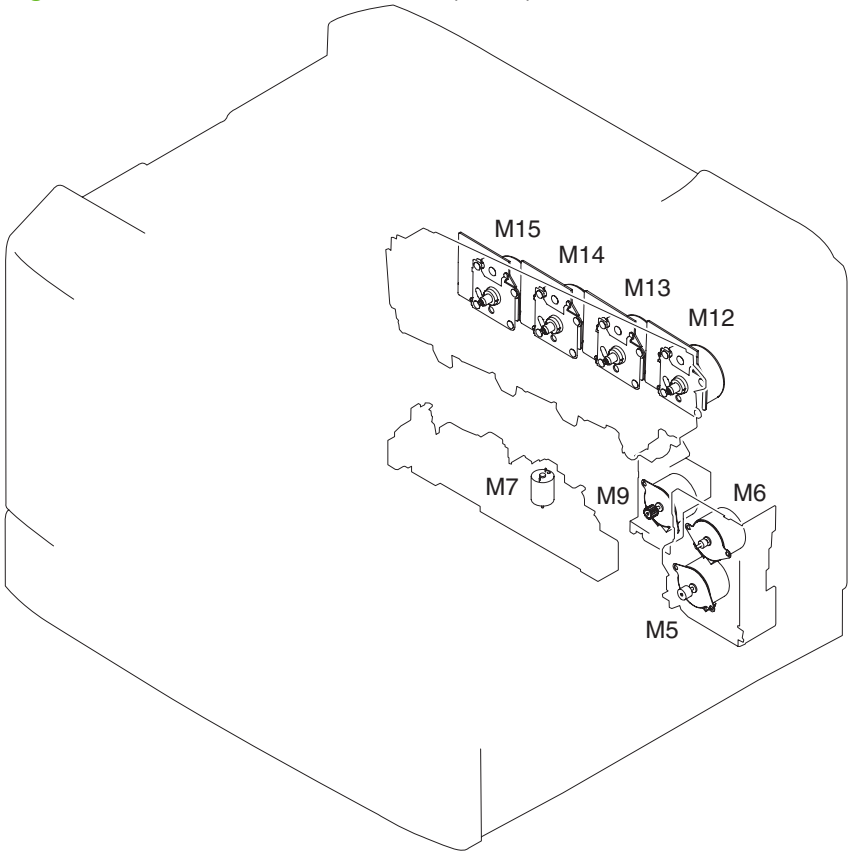
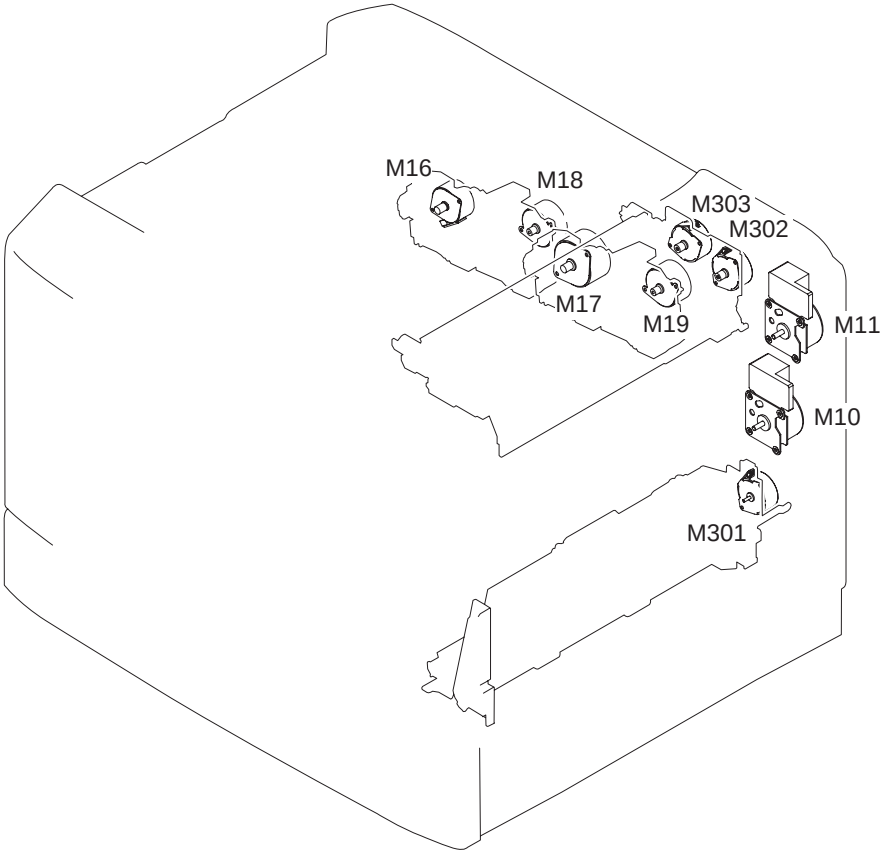
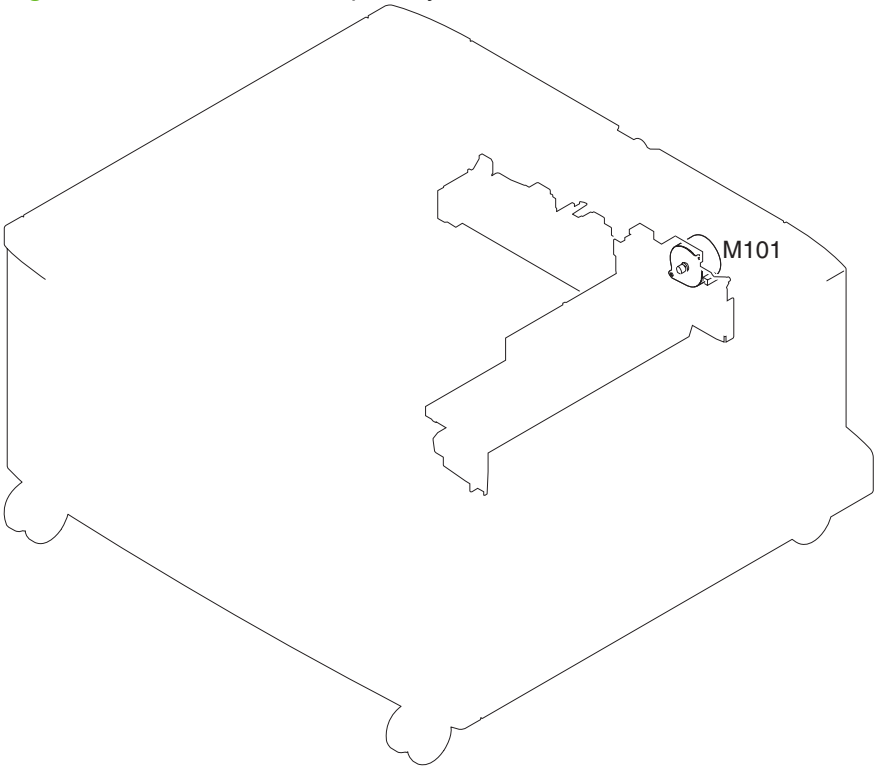


Figure 7-41 Product motor locations (2 of 2)



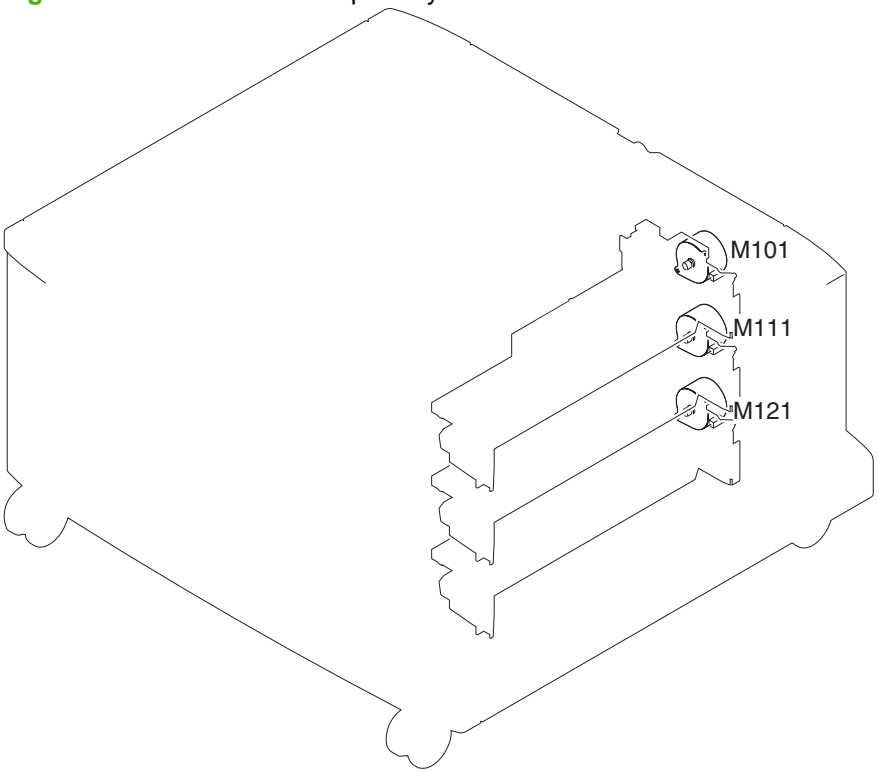
1 x 500-sheet input tray

Figure 7-42 1 x 500-sheet input tray motor locations



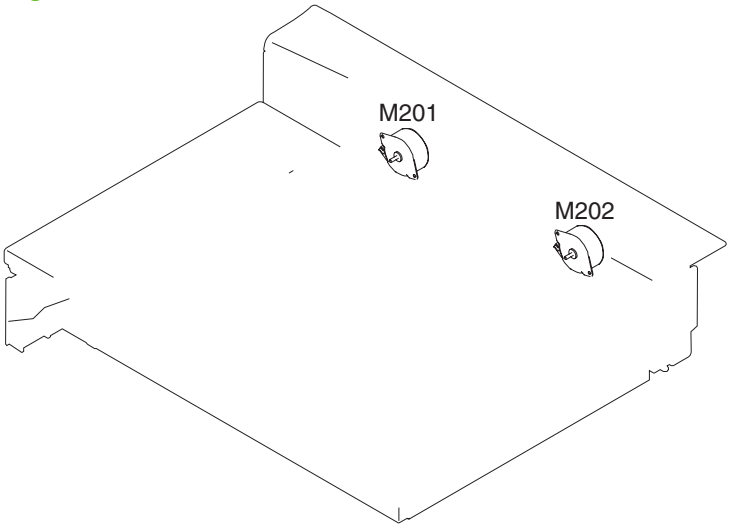
3 x 500-sheet input tray

Figure 7-43 3 x 500-sheet input tray motor locations



IPTU

Figure 7-44 IPTU motor locations



Solenoids

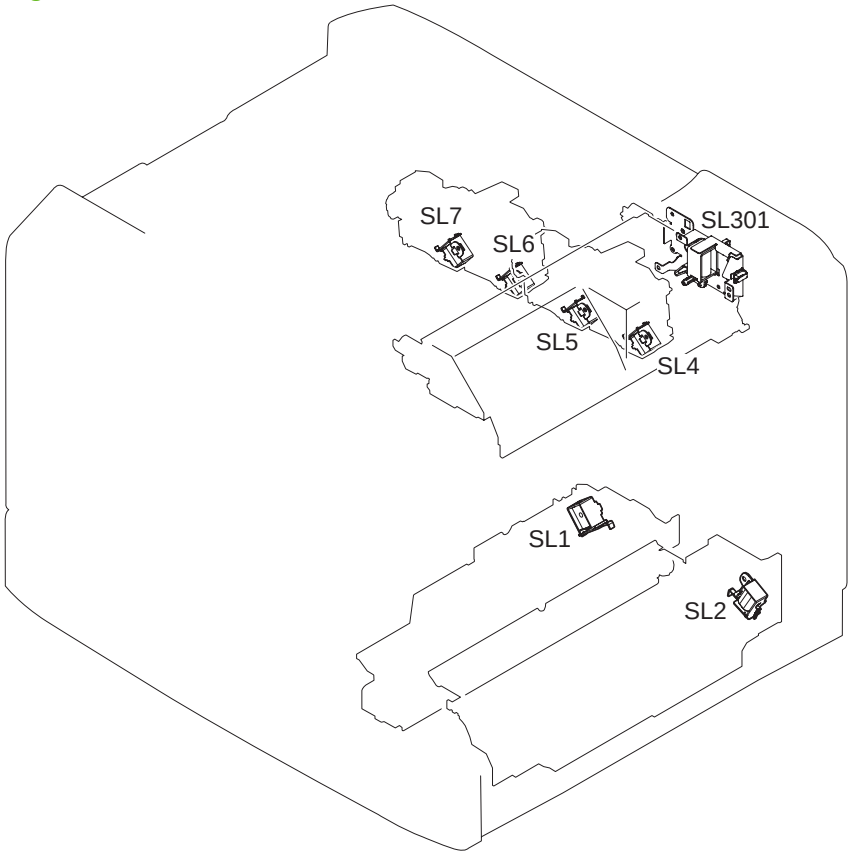
Solenoids

Table 7-35 Solenoids

Component abbreviation	Component name
SL1	Cassette pickup solenoid
SL2	Multipurpose-tray pickup solenoid
SL4	Toner-feed solenoid (yellow)
SL5	Toner-feed solenoid (magenta)
SL6	Toner-feed solenoid (cyan)
SL7	Toner-feed solenoid (black)
SL301	Duplexing-flapper solenoid (duplex models only)

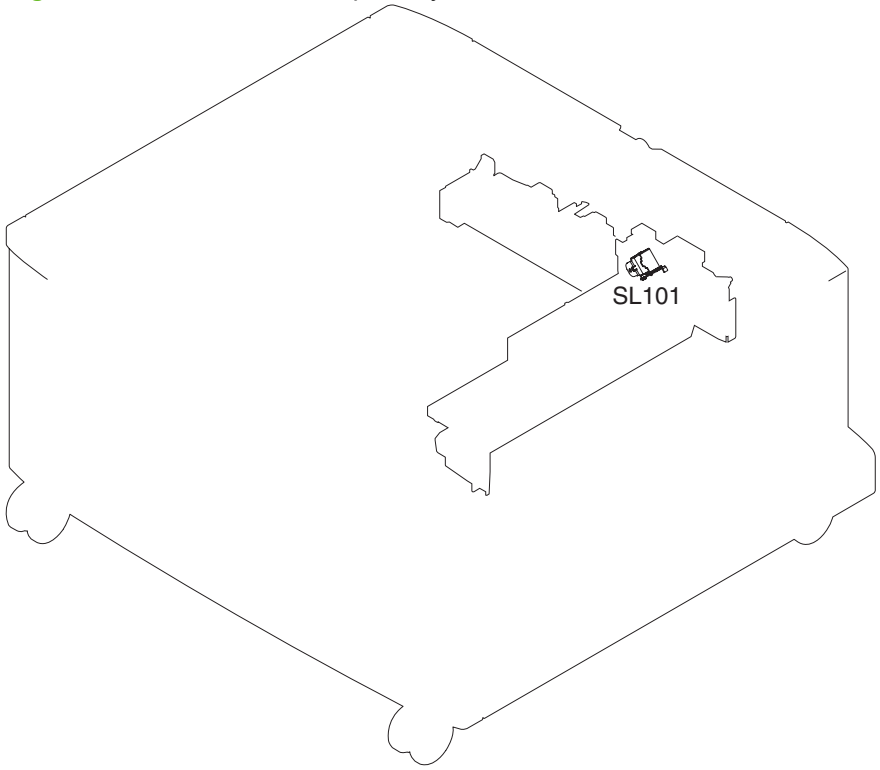
Product base

Figure 7-45 Product solenoid locations



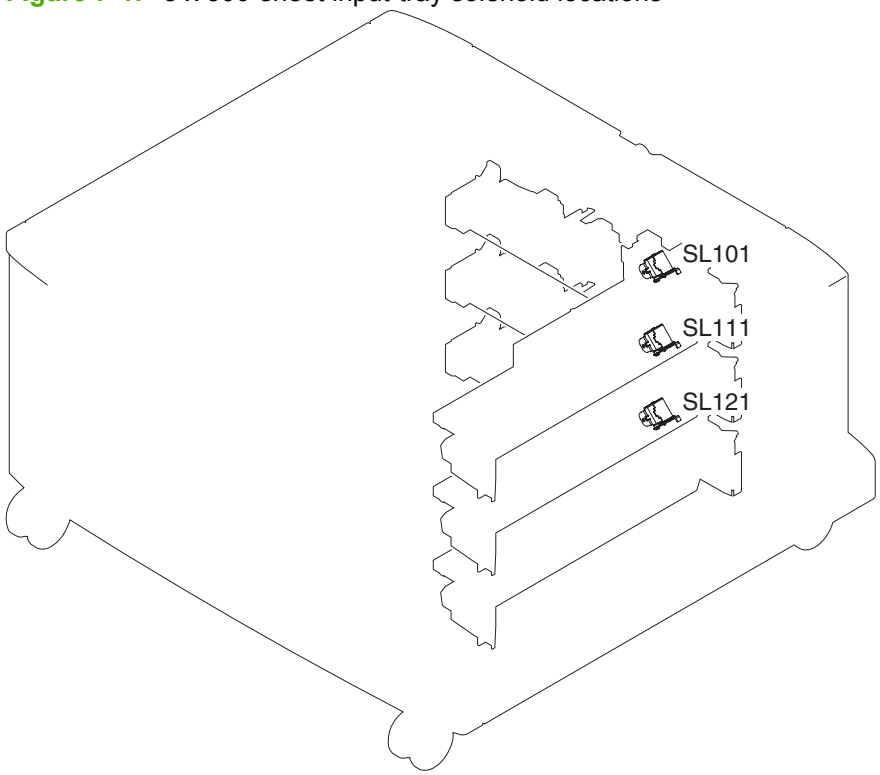
1 x 500-sheet input tray

Figure 7-46 1 x 500-sheet input-tray solenoid locations



3 x 500-sheet input tray

Figure 7-47 3 x 500-sheet input-tray solenoid locations



Switches

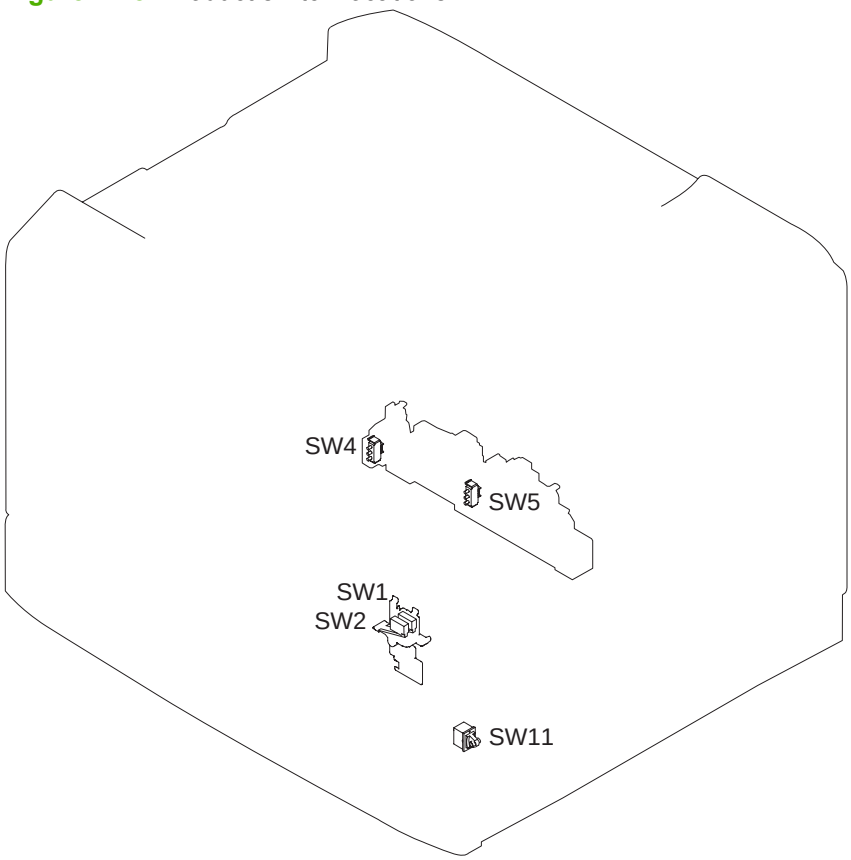
Switches

Table 7-36 Switches

Component abbreviation	Component name
SW1	Door-open detection switch
SW4	Cassette end-plate-position detection switch
SW5	Cassette side-plate-position detection switch
SW11	Main switch
	Test-print switch

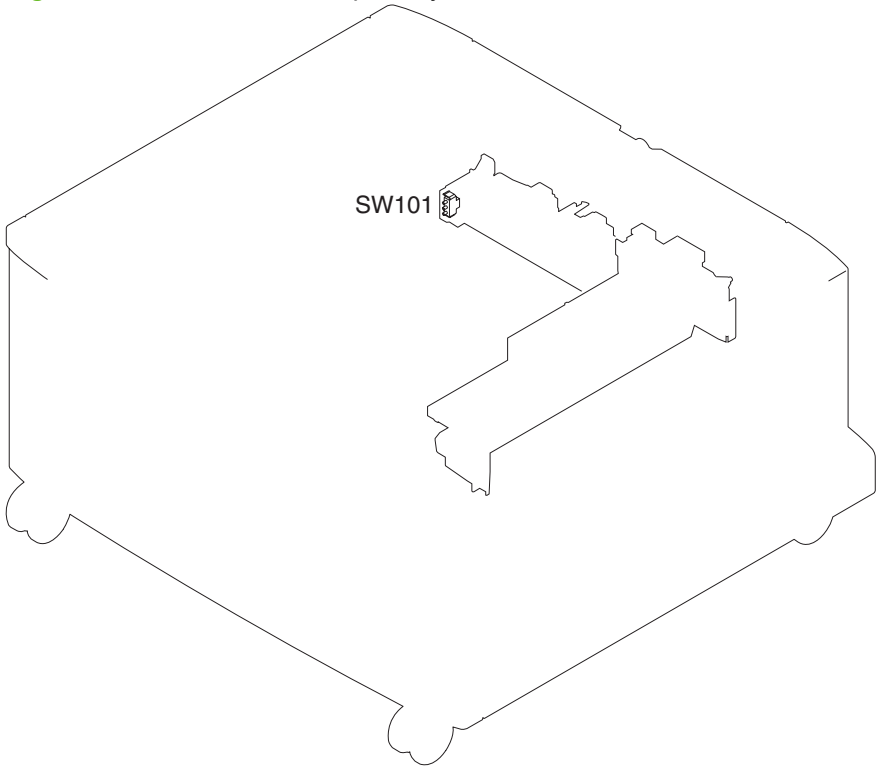
Product base

Figure 7-48 Product switch locations



1 x 500-sheet input tray

Figure 7-49 1 x 500-sheet input-tray switch locations



3 x 500-sheet input tray

Figure 7-50 3 x 500-sheet input-tray switch locations (1 of 2)

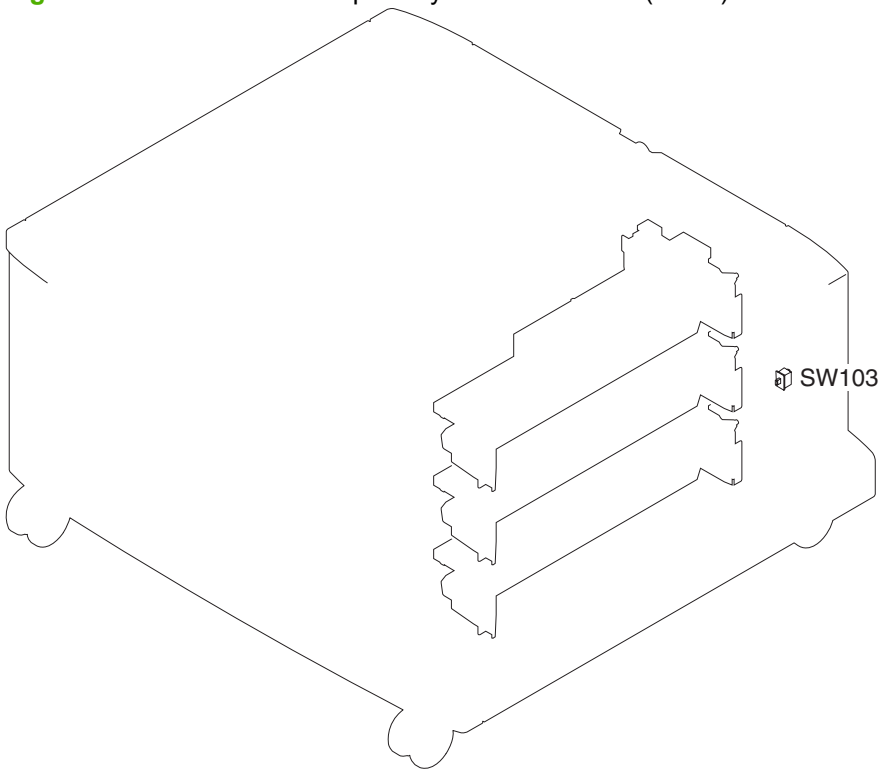
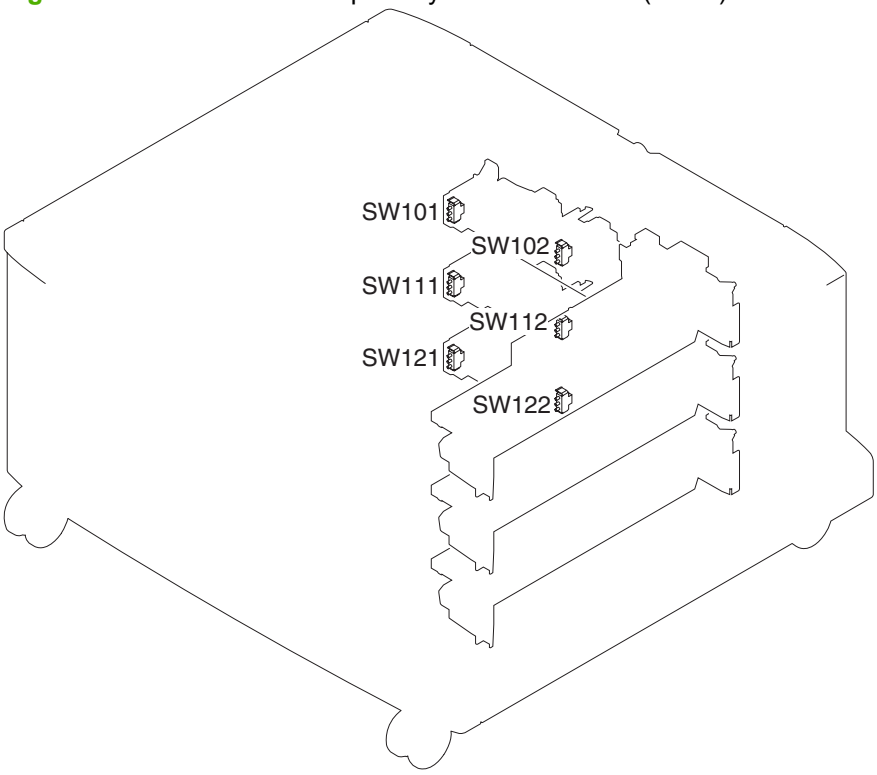


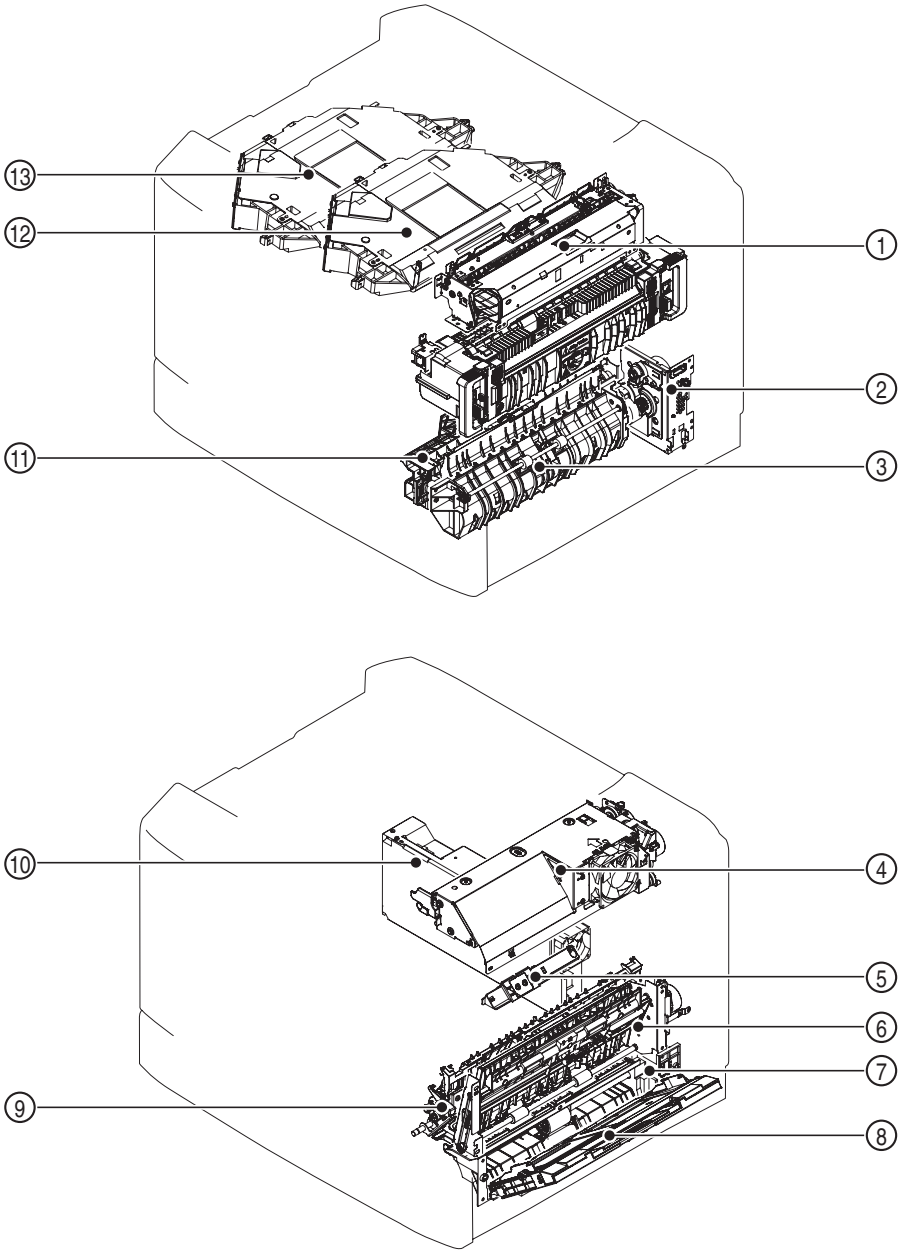
Figure 7-51 3 x 500-sheet input-tray switch locations (2 of 2)



Block diagrams

Main assemblies

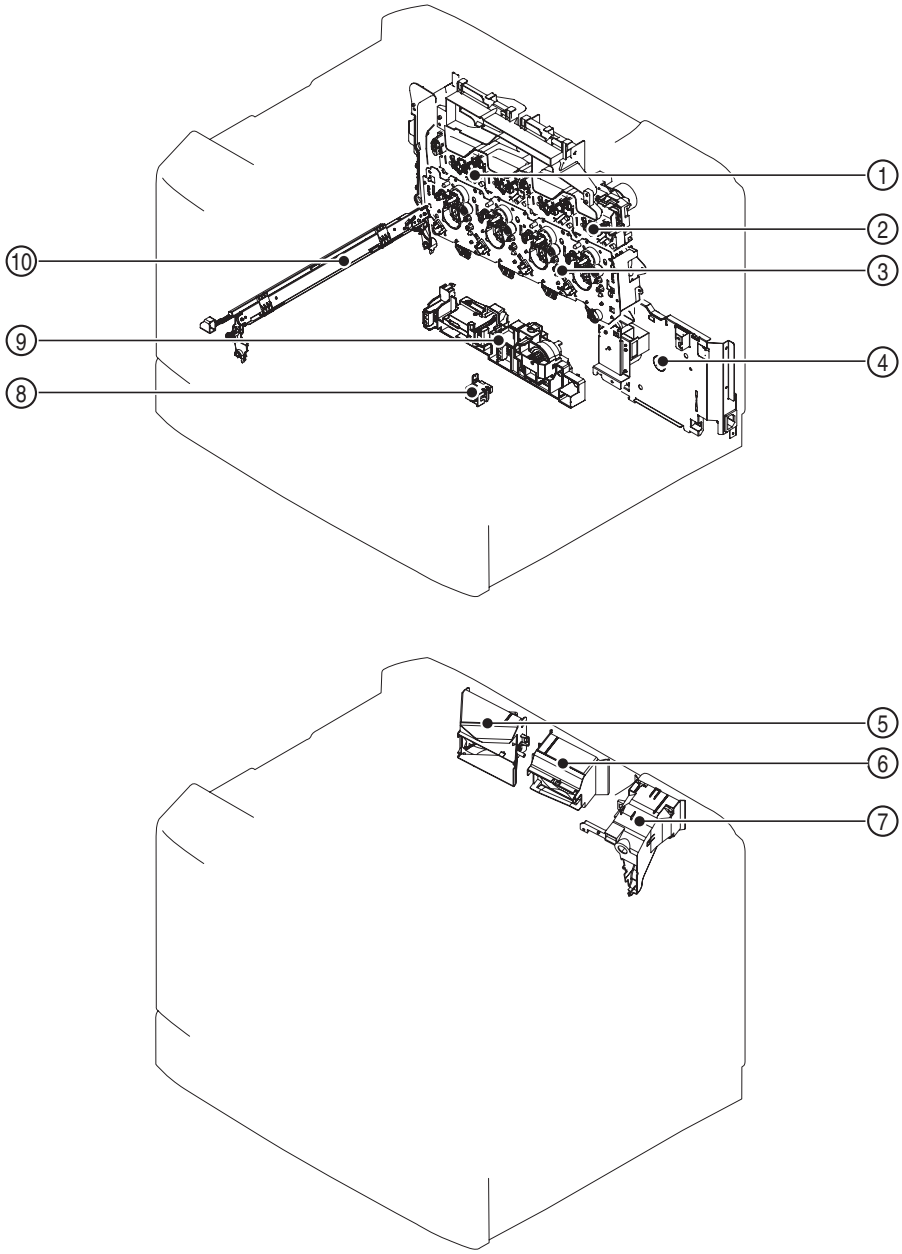
Figure 7-52 Main assemblies (1 of 2)



1	Face-down delivery unit
2	Multipurpose drive unit
3	Multipurpose-tray guide unit
4	Duplexing reverse unit
5	Thermopile unit
6	Duplexing feed unit

7	Multipurpose-tray pickup unit
8	Multipurpose tray
9	Secondary-transfer unit
10	Low-voltage power-supply unit
11	Cassette pickup unit
12	Yellow/magenta laser/scanner unit
13	Cyan/black laser/scanner unit

Figure 7-53 Main assemblies (2 of 2)

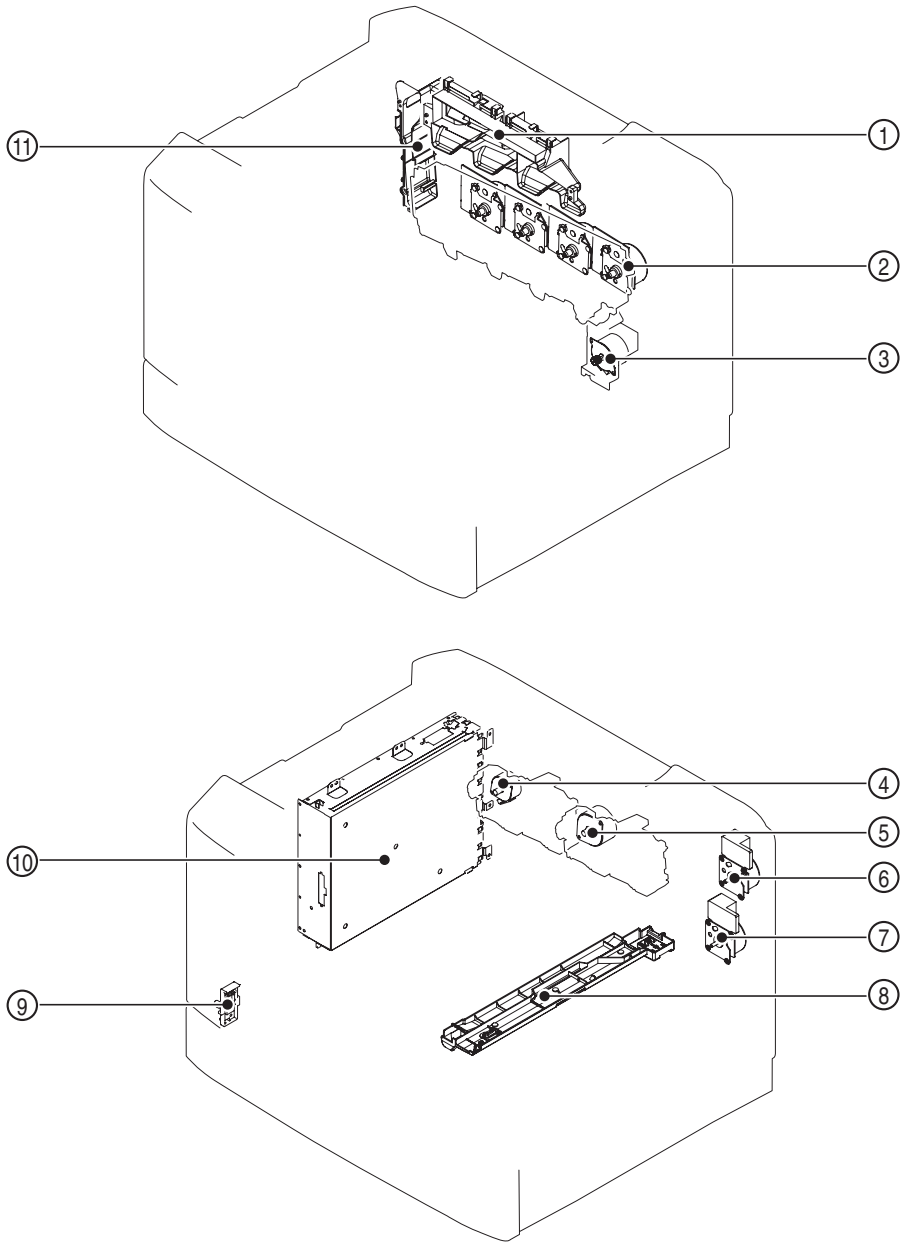


1	Print-cartridge drive unit (cyan/black)
2	Print-cartridge drive unit (yellow/magenta)
3	Main drive unit
4	Fuser power-supply unit
5	Scanner fan unit
6	Cartridge fan unit
7	Fuser fan unit
8	Pressure-release sensor unit

9	Lifter drive unit
10	Color-misregistration/image-density sensor unit

Main parts

Figure 7-54 Main parts

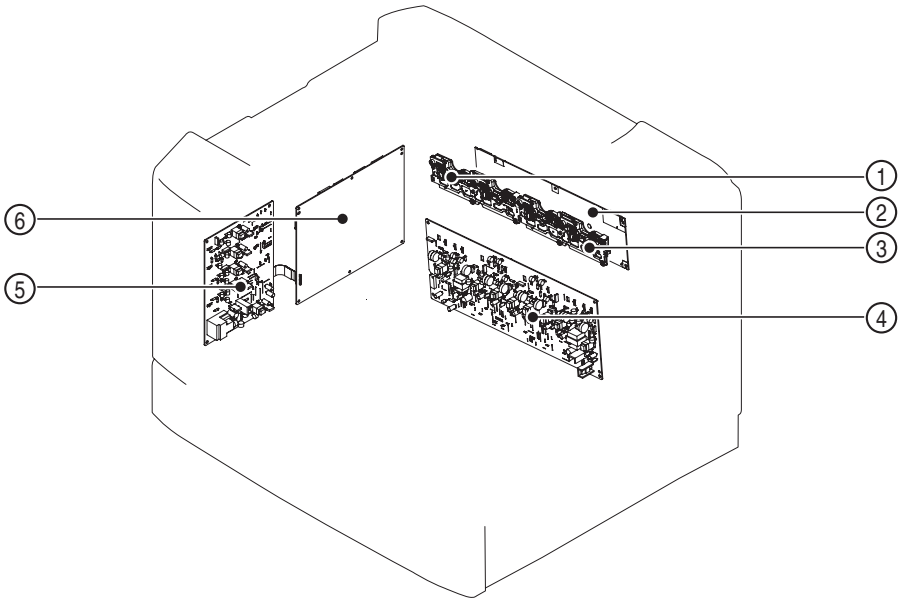


1	Cartridge fan duct
2	Drum motor
3	Primary-transfer-roller disengagement motor
4	Black-toner feed motor

5	Yellow-/magenta-/cyan-toner feed motor
6	Fuser motor
7	ITB motor
8	ITB duct
9	Environment sensor
10	Formatter case
11	Scanner fan duct

PCAs

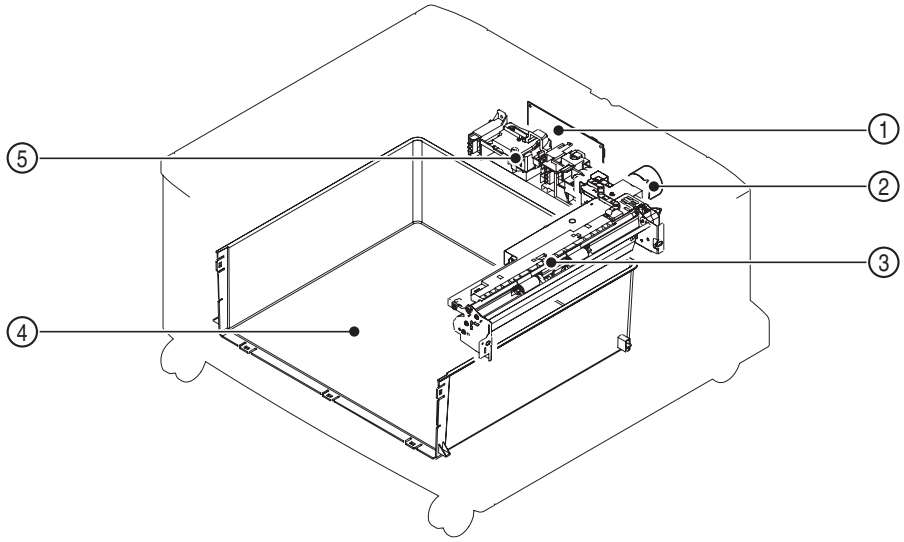
Figure 7-55 PCAs



1	Cartridge I/F PCA (cyan/black)
2	Cartridge driver PCA
3	Cartridge I/F PCA (yellow/magenta)
4	High-voltage power-supply PCA A
5	High-voltage power-supply PCA B
6	DC controller PCA

1 x 500-sheet input tray

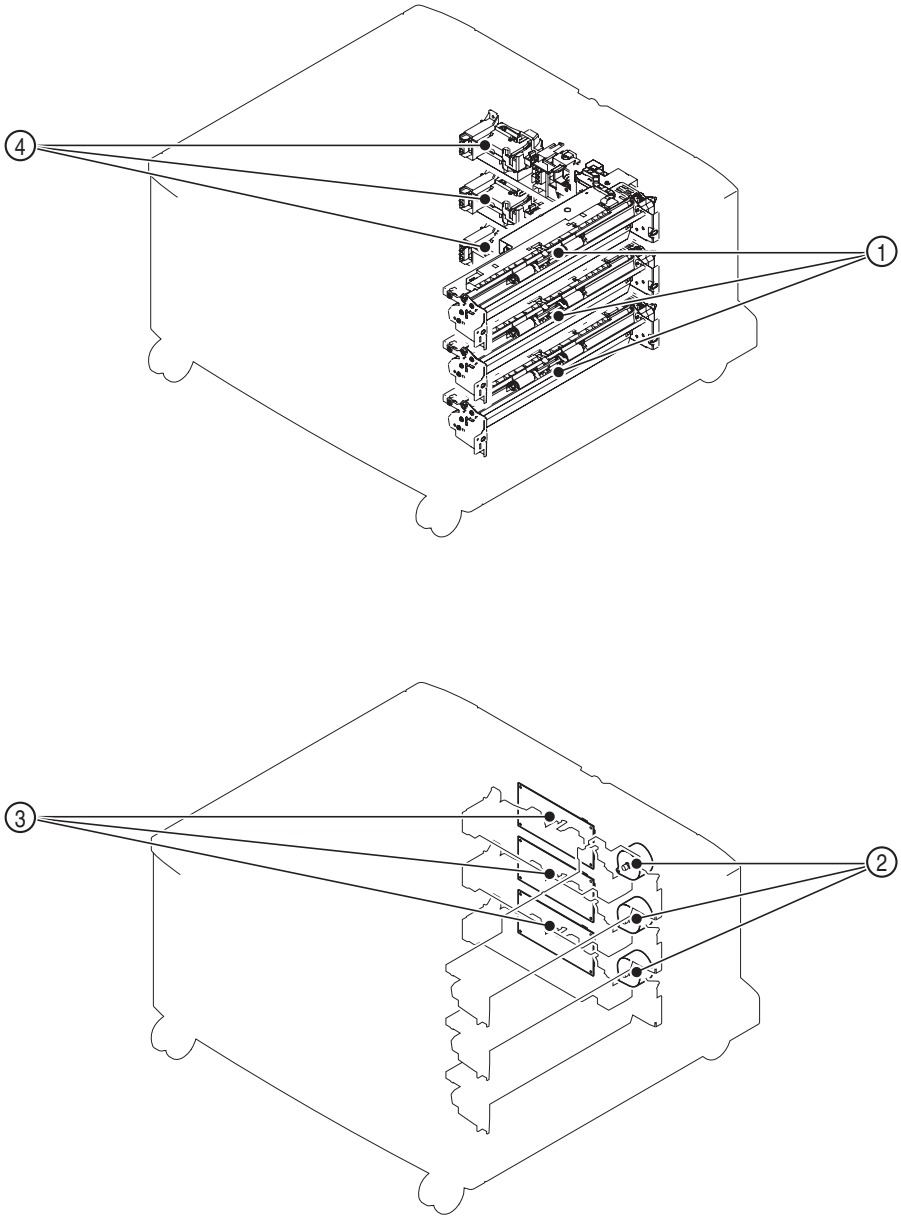
Figure 7-56 1 x 500-sheet input tray



1	Input-tray driver PCA
2	Pickup motor
3	Pickup unit
4	Box
5	Auto-close unit

3 x 500-sheet input tray

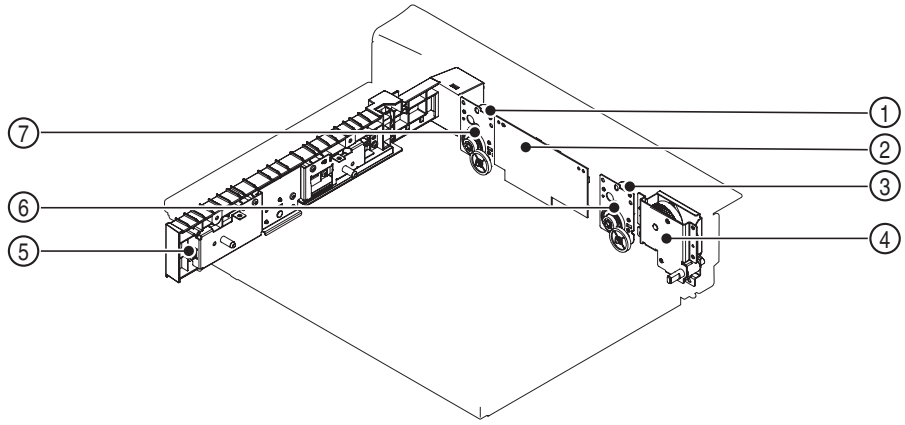
Figure 7-57 3 x 500-sheet input tray



1	Pickup unit (upper/middle/lower cassette)
2	Pickup motor (upper/middle/lower cassette)
3	Input-tray driver PCA (upper/middle/lower cassette)
4	Auto-close unit (upper/middle/lower cassette)

Intermediate paper-transfer unit (IPTU)

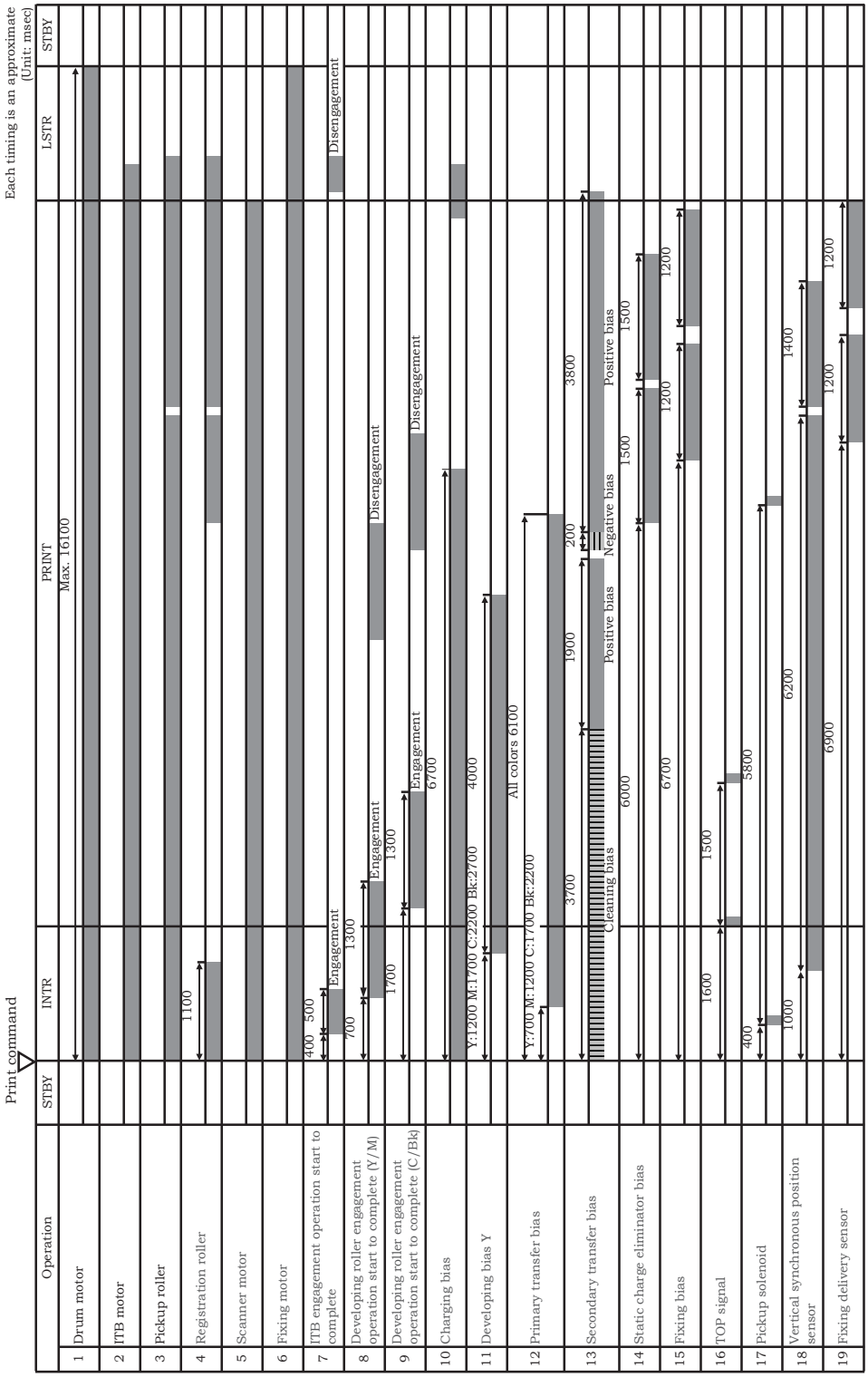
Figure 7-58 IPTU



1	IPTU media-feed motor 2
2	IPTU driver PCA
3	IPTU media-feed motor 1
4	Damper unit
5	Finisher fuser unit
6	Right-belt drive unit
7	Left-belt drive unit

General timing chart

Figure 7-59 General timing chart



General circuit diagrams

Figure 7-60 General circuit diagram (1 of 4)

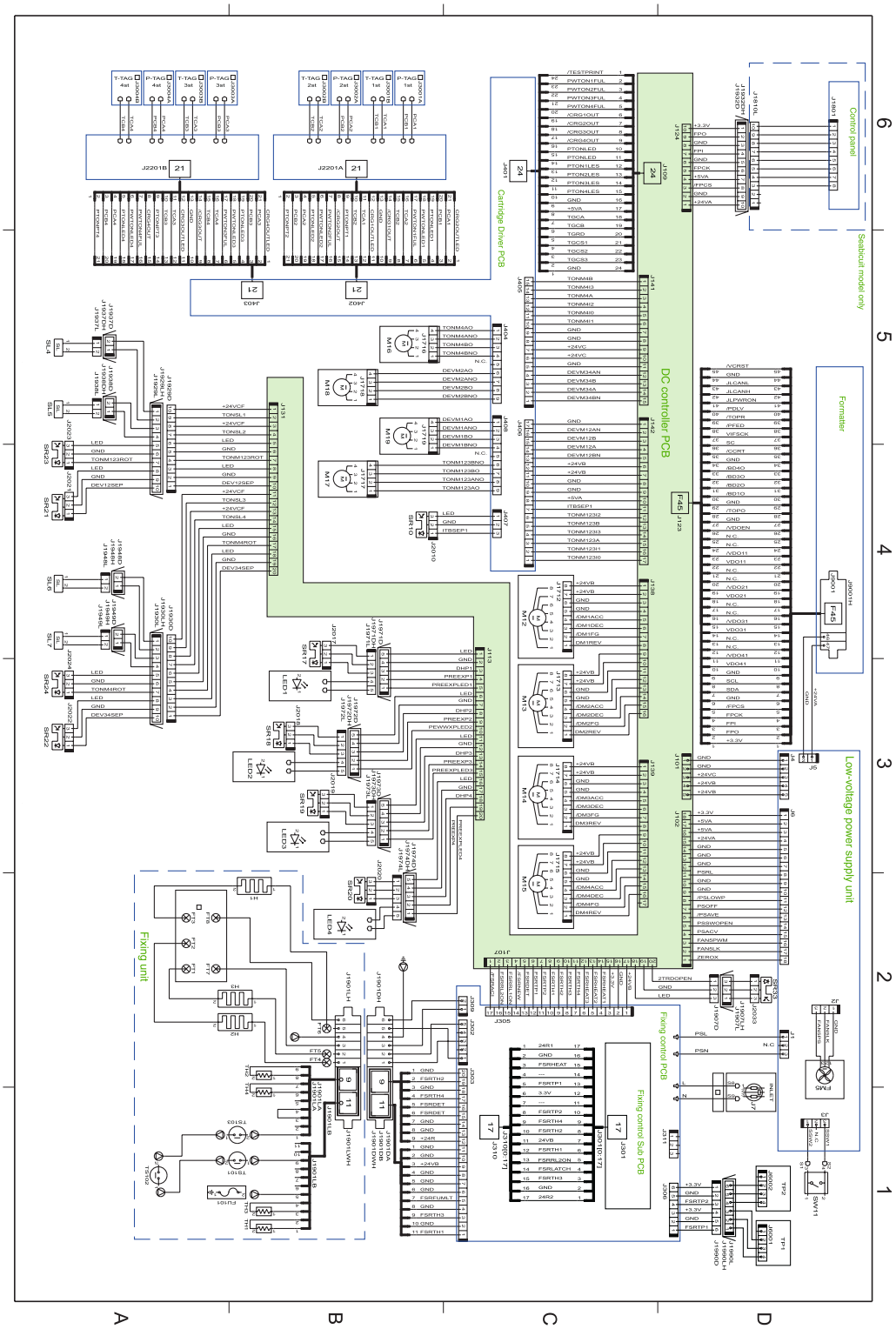


Figure 7-61 General circuit diagram (2 of 4)

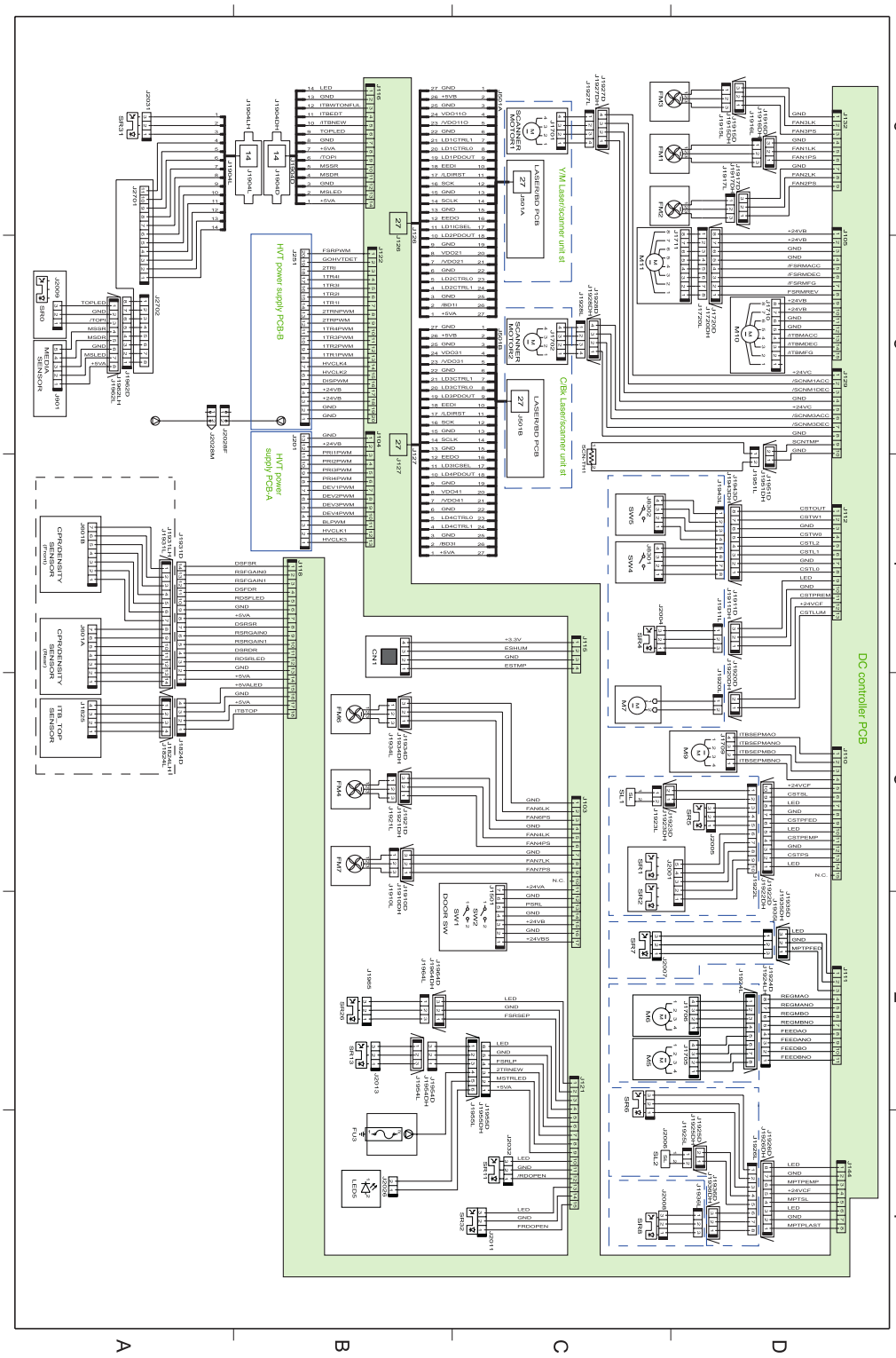


Figure 7-62 General circuit diagram (3 of 4)

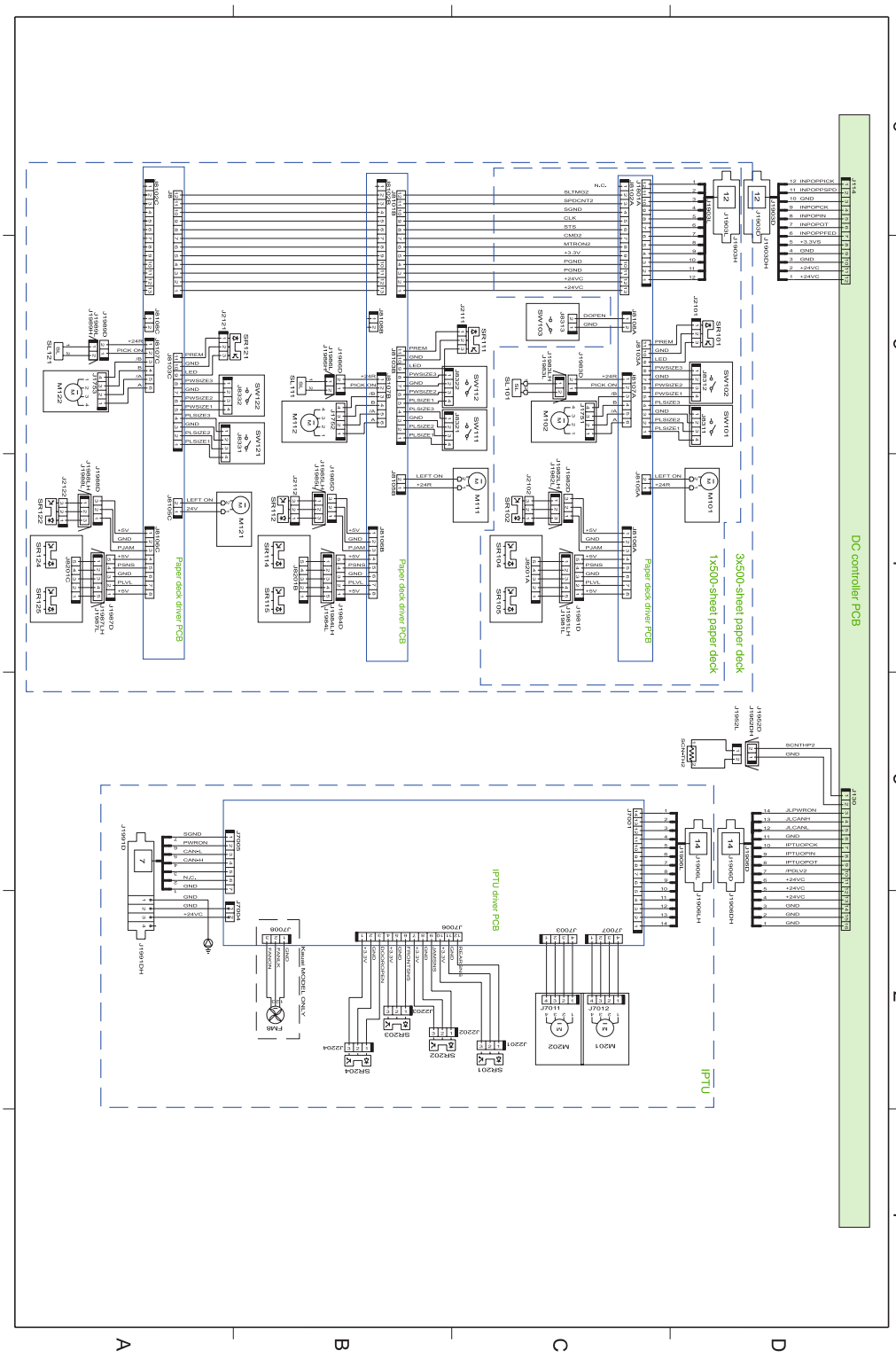
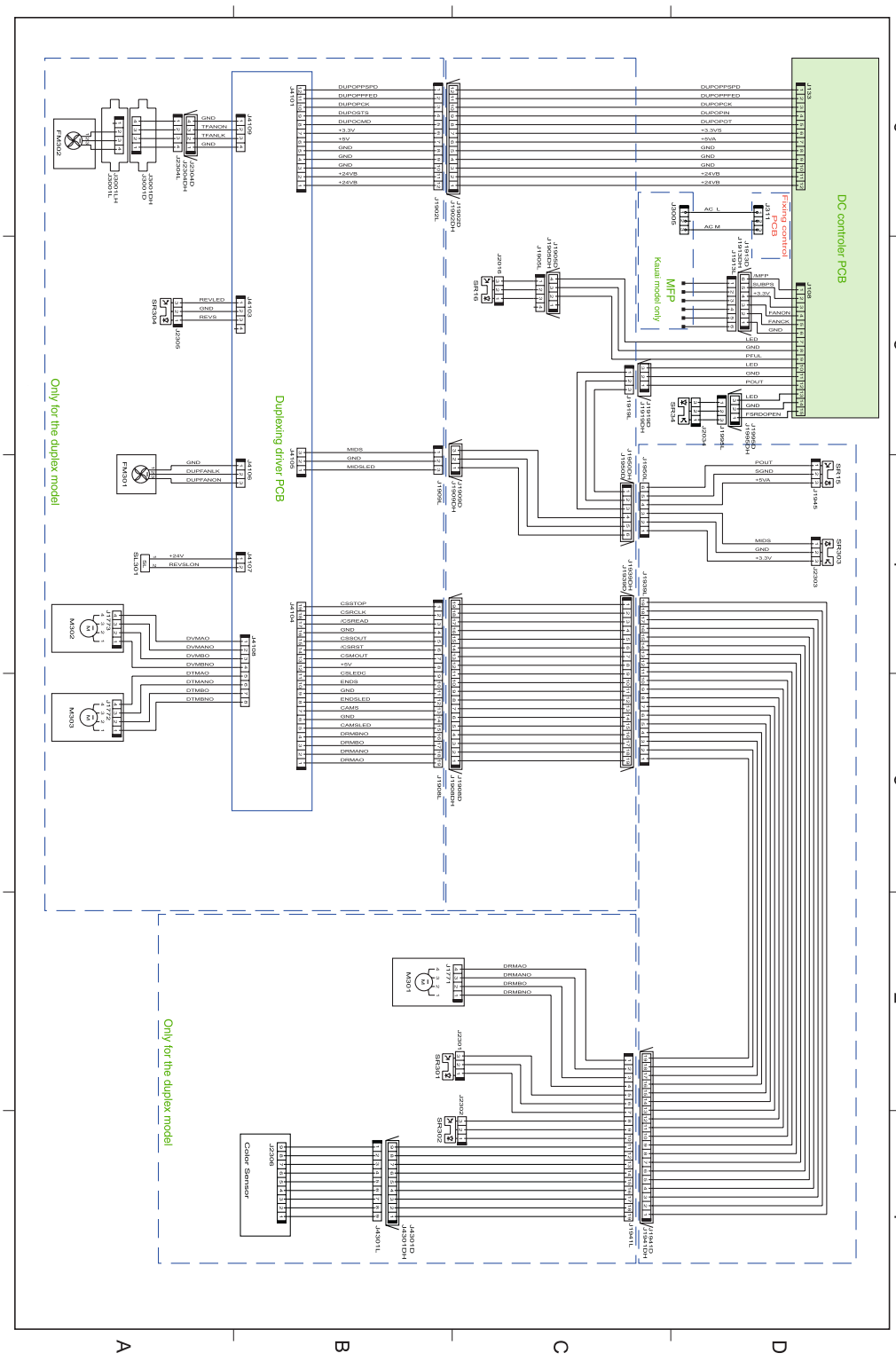


Figure 7-63 General circuit diagram (4 of 4)



Signals

Table 7-37 Input/output signals to and from DC Controller PCA

Connector	Pin	Abbreviation	I/O	Logic	Signal name
J101	1	GND			
	2	GND			
	3	+24VC			
	4	+24VB			
	5	+24VB			
J102	1	ZEROX	I	Pulse	ZERO CROSS signal
	2	FAN5LK	I	H	LVPS UNIT COOLING FAN LOCK signal
	3	FAN5PWM	O	H	LVPS UNIT COOLING FAN DRIVE signal
	4	PSACV	I	Analog	INPUT VOLTAGE DETECTION signal
	5	PSSWOPEN	I	H	POWER SWITCH MONITOR signal
	6	/PSAVE	O	Pulse	POWER SAVE MODE signal
	7	PSOFF	O	H	POWER OFF CONTROL signal
	8	/PSLOWP	O	L	POWER SAVE MODE SWITCH signal
	9	GND			
	10	GND			
	11	PSRL	O	H	DOOR OPEN DETECTION signal
	12	GND			
	13	GND			
	14	GND			
	15	+24VA			
	16	+5VA			
	17	+5VA			
	18	+3.3V			

Table 7-37 Input/output signals to and from DC Controller PCA (continued)

J103	1	GND			
	2	FAN6LK	I	H	CRG FRONT AREA COOLING FAN LOCK signal
	3	FAN6PS	O	H	CRG FRONT AREA COOLING FAN DRIVE signal
	4	GND			
	5	FAN4LK	I	H	VOC FAN LOCK signal
	6	FAN4PS	O	H	VOC FAN DRIVE signal
	7	GND			
	8	FAN7LK	I	H	DELIVERY UNIT COOLING FAN LOCK signal
	9	FAN7PS	O	H	DELIVERY UNIT COOLING FAN DRIVE signal
	10	N.C.			
	11	+24VA			
	12	GND			
	13	PSRL			DOOR OPEN DETECTION signal
	14	GND			
	15	+24VB			
	16	GND			
	17	24VBS			

Table 7-37 Input/output signals to and from DC Controller PCA (continued)

J104	1	GND			
	2	+24VB			
	3	PRI1PWM	O	Pulse	CHARGING BIAS CONTROL signal (Y)
	4	PRI2PWM	O	Pulse	CHARGING BIAS CONTROL signal (M)
	5	PRI3PWM	O	Pulse	CHARGING BIAS CONTROL signal (C)
	6	PRI4PWM	O	Pulse	CHARGING BIAS CONTROL signal (Bk)
	7	DEV1PWM	O	Pulse	DEVELOPING BIAS CONTROL signal (Y)
	8	DEV2PWM	O	Pulse	DEVELOPING BIAS CONTROL signal (M)
	9	DEV3PWM	O	Pulse	DEVELOPING BIAS CONTROL signal (C)
	10	DEV4PWM	O	Pulse	DEVELOPING BIAS CONTROL signal (Bk)
	11	BLPWM	O	Pulse	BLADE BIAS CONTROL signal
	12	HVCLK1	O	Pulse	HIGH-VOLTAGE TRANSFORMER CONTROL signal
	13	HVCLK3	O	Pulse	HIGH-VOLTAGE TRANSFORMER CONTROL signal

Table 7-37 Input/output signals to and from DC Controller PCA (continued)

J105	1	+24VB			
	2	+24VB			
	3	GND			
	4	GND			
	5	/FSRMACC	O	L	FIXING MOTOR ACCELERATION signal
	6	/FSRMDEC	O	L	FIXING MOTOR DECELERATION signal
	7	/FSRMFG	I	L	FIXING MOTOR SPEED DETECTION signal
	8	FSRMREV	O	H	FIXING MOTOR REVERSE signal
	9	+24VB			
	10	+24VB			
	11	GND			
	12	GND			
	13	/ITBMACC	O	L	ITB MOTOR ACCELERATION signal
	14	/ITBMDEC	O	L	ITB MOTOR DECELERATION signal
	15	/ITBMFG	I	L	ITB MOTOR SPEED DETECTION signal

Table 7-37 Input/output signals to and from DC Controller PCA (continued)

J107	1	/FSRACI	I	L	FIXING DRIVE CURRENT DETECTION signal
	2	FSRRL2ON	O	H	FIXING RELAY 2 DRIVE signal
	3	FSRRL1ON	O	H	FIXING RELAY 1 DRIVE signal
	4	/FSRNEW	I	L	NEW FIXING UNIT signal
	5	FSRDET	I	Analog	FIXING UNIT IDENTIFICATION signal
	6	FSRTP1	I	Analog	FIXING MAIN THERMOPILE TEMPERATURE signal
	7	FSRTP2	I	Analog	FIXING SUB THERMOPILE TEMPERATURE signal
	8	FSRTH1	I	Analog	FIXING ROLLER END THERMISTOR TEMPERATURE signal
	9	FSRTH2	I	Analog	PRESSURE ROLLER END THERMISTOR TEMPERATURE signal
	10	FSRTH3	I	Analog	FIXING ROLLER END THERMISTOR TEMPERATURE signal
	11	FSRTH4	I	Analog	PRESSURE ROLLER END THERMISTOR TEMPERATURE signal
	12	FSRHEAT3	O	H	PRESSURE ROLLER HEATER DRIVE signal
	13	FSRHEAT2	O	H	FIXING ROLLER SUB HEATER DRIVE signal
	14	FSRHEAT1	O	H	FIXING ROLLER MAIN HEATER DRIVE signal
	15	+3.3V			
	16	GND			
	17	+24VB			
	18	LED (+5VA)			
	19	GND			
	20	2TRDOPEN	I	H	SECONDARY TRANSFER UNIT COVER OPEN DETECTION signal

Table 7-37 Input/output signals to and from DC Controller PCA (continued)

J108	1	/MFP	I	L	MFP CONTROL sign
	2	SUBPS	O	H	MFP CONTROL signal
	3	+3.3V			
	4	FANON	O	L	IPTU FAN DRIVE signal
	5	FANLK	I	H	IPTU FAN LOCK signal
	6	GND			
	7	LED (+5VA)			
	8	GND			
	9	PFUL	I	H	FACE-DOWN TRAY MEDIA FULL signal
	10	LED (+5VA)			
	11	GND			
	12	POUT	I	H	FIXING DELIVERY media-feed signal
	13	LED (+5VA)			
	14	GND			
	15	FSRDOPEN	I	H	FIXING UNIT COVER OPEN DETECTION signal

Table 7-37 Input/output signals to and from DC Controller PCA (continued)

J109	1	/TESTPRINT	I	L	TEST PRINT signal
	2	PWTON1FUL	I	H	P-CRG WASTE TONER FULL signal (Y)
	3	PWTON2FUL	I	H	P-CRG WASTE TONER FULL signal (M)
	4	PWTON3FUL	I	H	P-CRG WASTE TONER FULL signal (C)
	5	PWTON4FUL	I	H	P-CRG WASTE TONER FULL signal (Bk)
	6	/CRG1OUT	I	L	T-CRG PRESENCE signal (Y)
	7	/CRG2OUT	I	L	T-CRG PRESENCE signal (M)
	8	/CRG3OUT	I	L	T-CRG PRESENCE signal (C)
	9	/CRG4OUT	I	L	T-CRG PRESENCE signal (Bk)
	10	PTONLED	O	H	P-CRG TONER LEVEL DETECTION LED DRIVE signal
	11	PTONLED	O	H	P-CRG TONER LEVEL DETECTION LED DRIVE signal
	12	PTON1LE	I	H	P-CRG TONER LEVEL signal (Y)
	13	PTON2LES	I	H	P-CRG TONER LEVEL signal (M)
	14	PTON3LES	I	H	P-CRG TONER LEVEL signal (C)
	15	PTON4LES	I	H	P-CRG TONER LEVEL signal (Bk)
	16	GND			
	17	+5VA			
	18	TGCA	O	CLOCK	MEMORY TAG COMMUNICATION CLOCK signal
	19	TGCB	O	CLOCK	MEMORY TAG COMMUNICATION CLOCK signal
	20	TGRD	I	H	MEMORY TAG DATA signal
	21	TGCS1	O	H	MEMORY TAG COMMUNICATION SELECT signal
	22	TGCS2	O	H	
	23	TGCS3	O	H	
	24	GND			

Table 7-37 Input/output signals to and from DC Controller PCA (continued)

J110	1	ITBSEPMAO	O	H	PRIMARY TRANSFER ROLLER DISENGAGEMENT MOTOR CONTROL signal
	2	ITBSEPMANO	O	H	PRIMARY TRANSFER ROLLER DISENGAGEMENT MOTOR CONTROL signal
	3	ITBSEPMBO	O	H	PRIMARY TRANSFER ROLLER DISENGAGEMENT MOTOR CONTROL signal
	4	ITBSEPMBNO	O	H	PRIMARY TRANSFER ROLLER DISENGAGEMENT MOTOR CONTROL signal
	5	+24VCF			
	6	CSTSL	O	H	CST PICKUP SOLENOID CONTROL signal
	7	LED (+5VA)			
	8	GND			
	9	CSTPFED	I	H	CST media-feed signal
	10	LED (+5VA)			
	11	CSTPEMP	I	H	CST MEDIA PRESENCE signal
	12	GND			
	13	CSTPS	I	H	CST MEDIA STACK SURFACE signal
	14	LED (+5VA)			
	15	N.C.			

Table 7-37 Input/output signals to and from DC Controller PCA (continued)

J111	1	LRD(+5VA)			
	2	GND			
	3	MPTPFED	I	H	MPT media-feed signal
	4	REGMAO	O	H	REGISTRATION MOTOR CONTROL signal
	5	REGMANO	O	H	REGISTRATION MOTOR CONTROL signal
	6	REGMBO	O	H	REGISTRATION MOTOR CONTROL signal
	7	REGMBNO	O	H	REGISTRATION MOTOR CONTROL signal
	8	FEEDAO	O	H	PICKUP MOTOR CONTROL signal
	9	FEEDANO	O	H	PICKUP MOTOR CONTROL signal
	10	FEEDBO	O	H	PICKUP MOTOR CONTROL signal
	11	FEEDBNO	O	H	PICKUP MOTOR CONTROL signal
J112	1	CSTOUT	I	H	CST SIDE PLATE POSITION signal 2
	2	CSTW1	I	H	CST SIDE PLATE POSITION signal 1
	3	GND			
	4	CSTW0	I	H	CST SIDE PLATE POSITION signal 0
	5	CSTL2	I	H	CST END PLATE POSITION signal 2
	6	CSTL1	I	H	CST END PLATE POSITION signal 1
	7	GND			
	8	CSTL0	I	H	CST END PLATE POSITION signal 0
	9	LED (+5VA)			
	10	GND			
	11	CSTPREM	I	H	CST MEDIA LEVEL signal
	12	+24VCF			
	13	CSTLUM	O	H	CST LIFT UP MOTOR DRIVE signal

Table 7-37 Input/output signals to and from DC Controller PCA (continued)

J113	1	LED (+5VA)			
	2	GND			
	3	DHP1	I	H	DRUM HOMEPOSITION signal (Y)
	4	PREEXP1	O	H	PRE-EXPOSURE LED DRIVE signal (Y)
	5	PREEXPLED1 (+5VA)			
	6	LED (+5VA)			
	7	GND			
	8	DHP2	I	H	DRUM HOMEPOSITION signal (M)
	9	PREEXP2	O	H	PRE-EXPOSURE LED DRIVE signal (M)
	10	PREEXPLED2 (+5VA)			
	11	LED (+5VA)			
	12	GND			
	13	DHP3	I	H	DRUM HOMEPOSITION signal (C)
	14	PREEXP3	O	H	PRE-EXPOSURE LED DRIVE signal (C)
	15	PREEXPLED3 (+5VA)			
	16	LED (+5VA)			
	17	GND			
	18	DHP4	I	H	DRUM HOMEPOSITION signal (Bk)
	19	PREEXP4	O	H	PRE-EXPOSURE LED DRIVE signal (Bk)
	20	PREEXPLED4 (+5VA)			

Table 7-37 Input/output signals to and from DC Controller PCA (continued)

J114	1	INPOPPICK	O	H	OPTIONAL PICKUP UNIT PICKUP signal
	2	INPOPPSPD	O	H	OPTIONAL PICKUP UNIT PICKUP SPEED signal
	3	GND			
	4	INPOPCK	O	Clock	OPTIONAL PICKUP UNIT COMMUNICATION signal
	5	INPOPIN	I	H	OPTIONAL PICKUP UNIT COMMUNICATION signal
	6	INPOPOT	O	H	OPTIONAL PICKUP UNIT COMMUNICATION signal
	7	INPOPPFED	O	H	OPTIONAL PICKUP UNIT RE-PICKUP signal
	8	+3.3VS			
	9	GND			
	10	GND			
	11	+24VC			
	12	+24VC			
J115	1	+3.3V			
	2	ESHUM	I	Pulse	ENVIRONMENT signal (Humidity)
	3	GND			
	4	ESTMP	I	Analog	ENVIRONMENT signal (Temperature)

Table 7-37 Input/output signals to and from DC Controller PCA (continued)

J116	1	LED (+5VA)			
	2	GND			
	3	ITBWTONFUL	I	H	ITB WASTE TONER FULL signal
	4	ITBDET	I	Analog	ITB UNIT PRESENCE signal
	5	/ITBNEW	I	L	NEW ITB UNIT signal
	6	TOPLED (+5VA)			
	7	GND			
	8	+5VA			
	9	/TOPI	I	L	VERTICAL SYNCHRONOUS POSITION signal
	10	MSSR	I	Analog	MEDIA SENSOR REFLECTION signal
	11	MSDR	I	Analog	MEDIA SENSOR REFLECTION signal
	12	GND			
	13	MSLED	O	H	MEDIA SENSOR LED DRIVE signal (Reflection type)
	14	+5VA			

Table 7-37 Input/output signals to and from DC Controller PCA (continued)

J118	1	DSFSR	I	Analog	COLOR MISREGISTRATION/ IMAGE DENSITY signal
	2	RSFGAIN0	O	H	COLOR MISREGISTRATION/ IMAGE DENSITY LIGHT RECEIVE SENSITIVITY SWITCH signal
	3	RSFGAIN1	O	H	COLOR MISREGISTRATION/ IMAGE DENSITY LIGHT RECEIVE SENSITIVITY SWITCH signal
	4	DSFDR	I	Analog	COLOR MISREGISTRATION/ IMAGE DENSITY signal
	5	RDSFLED	O	H	COLOR MISREGISTRATION/ IMAGE DENSITY LED DRIVE sig
	6	GND			
	7	+5VA			
	8	DSRSR	I	Analog	COLOR MISREGISTRATION/ IMAGE DENSITY signal
	9	RSRGAIN0	O	H	COLOR MISREGISTRATION/ IMAGE DENSITY LIGHT RECEIVE SENSITIVITY SWITCH signal
	10	RSRGAIN1	O	H	COLOR MISREGISTRATION/ IMAGE DENSITY LIGHT RECEIVE SENSITIVITY SWITCH signal
	11	DSRDR	I	Analog	COLOR MISREGISTRATION/ IMAGE DENSITY signal
	12	RDSRLED	O	H	COLOR MISREGISTRATION/ IMAGE DENSITY LED DRIVE signal
	13	GND			
	14	+5VA			
	15	+5VALED	O	H	ITB SENSOR MARK LED DRIVE signal
	16	GND			
	17	+5VA			
	18	ITBTOP	I	H	ITB SENSOR MARK signal

Table 7-37 Input/output signals to and from DC Controller PCA (continued)

J121	1	LED (+5VA)			
	2	GND			
	3	FSRSEP	I	H	FIXING UNIT HOMEPOSITION signal
	4	LED (+5VA)			
	5	GND			
	6	FSRLP	I	H	LOOP DETECTION signal
	7	/2TRNEW	I	L	NEW SECONDARY TRANSFER UNIT signal
	8	MSTRLED	O	H	MEDIA SENSOR LED DRIVE signal
	9	+5VA			
	10	LED (+3.3V)			
	11	GND			
	12	/RDOPEN	I	L	RIGHT DOOR OPEN DETECTION signal
	13	LED (+3.3V)			
	14	GND			
	15	FRDOPEN	I	H	FRONT DOOR OPEN DETECTION signal

Table 7-37 Input/output signals to and from DC Controller PCA (continued)

J122	1	FSRPWM	O	Pulse	FIXING BIAS CONTROL signal
	2	GOHVTDET	I	H	HIGH-VOLTAGE PCB IDENTIFICATION signal (Not in use)
	3	2TRI	I	Analog	SECONDARY TRANSFER CURRENT signal
	4	1TR4I	I	Analog	PRIMARY TRANSFER CURRENT signal (Bk)
	5	1TR3I	I	Analog	PRIMARY TRANSFER CURRENT signal (C)
	6	1TR2I	I	Analog	PRIMARY TRANSFER CURRENT signal (M)
	7	1TR1I	I	Analog	PRIMARY TRANSFER CURRENT signal (Y)
	8	2TRNPWM	O	Pulse	SECONDARY TRANSFER REVERSE VOLTAGE CONTROL signal
	9	2TRPWM		Pulse	SECONDARY TRANSFER VOLTAGE CONTROL signal
	10	1TR4PWM	O	Pulse	PRIMARY TRANSFER VOLTAGE CONTROL signal (Bk)
	11	1TR3PWM	O	Pulse	PRIMARY TRANSFER VOLTAGE CONTROL signal (C)
	12	1TR2PWM	O	Pulse	PRIMARY TRANSFER VOLTAGE CONTROL signal (M)
	13	1TR1PWM	O	Pulse	PRIMARY TRANSFER VOLTAGE CONTROL signal (Y)
	14	HVCLK4	O	Pulse	HIGH-VOLTAGE TRANSFORMER CONTROL signal
	15	HVCLK2	O	Pulse	HIGH-VOLTAGE TRANSFORMER CONTROL signal
	16	DISPWM	O	Pulse	STATIC CHARGE ELIMINATOR BIAS DRIVE signal
	17	+24VB			
	18	+24VB			
	19	GND			
	20	GND			

Table 7-37 Input/output signals to and from DC Controller PCA (continued)

J123	1	+3.3V			
	2	FPO	O	H	OPERATION PANEL SERIAL DATA OUTPUT signal
	3	FPI	I	H	OPERATION PANEL SERIAL DATA INPUT signal
	4	FPCK	I	Pulse	OPERATION PANEL SERIAL CLOCK signal
	5	/FPCS	I	L	OPERATION PANEL CONTROLLER CHIP SELECT signal
	6	GND			
	7	SDA	I/O	Pulse	FORMATTER EEPROM COMMUNICATION DATA signal
	8	SCL	I/O	Pulse	FORMATTER EEPROM COMMUNICATION CLOCK signal
	9	GND			
	10	VDO41			
	11	/VDO41			
	12	N.C.			
	13	N.C.			
	14	VDO31	I	Pulse	VIDEO signal (C)
	15	/VDO31	I	Pulse	VIDEO signal (C)
	16	N.C.			
	17	N.C.			
	18	VDO21	I	Pulse	VIDEO signal (M)
	19	/VDO21	I	Pulse	VIDEO signal (M)
	20	N.C.			
	21	N.C.			
	22	VDO11	I	Pulse	VIDEO signal (Bk)
	23	/VDO11	I	Pulse	VIDEO signal (Bk)
	24	N.C.			
	25	N.C.			
	26	/VDOEN	O	L	VIDEO ENABLE signal
	27	GND			
	28	/TOPO	O	L	TOP OF PAGE signal
	29	GND			
	30	/BD1O	O	Pulse	BD signal (Y)
	31	/BD2O	O	Pulse	BD signal (M)

Table 7-37 Input/output signals to and from DC Controller PCA (continued)

J123 (continued)	32	/BD3O	O	Pulse	BD signal (C)
	33	/BD4O	O	Pulse	BD signal (Bk)
	34	GND			
	35	/CCRT	O	L	STATUS CHANGE NOTICE signal
	36	SC	I/O	H	STATUS COMMAND signal
	37	VIFSCK	I/O	L	SERIAL CLOCK signal
	38	/PFED	I	L	media-feed signal
	39	/TOPR	O	L	MEDIA RE-PICKUP signal
	40	/PDLV	O	L	MEDIA DELIVERY signal
	41	JLPWRON	O	H	OPTIONAL DELIVERY UNIT COMMUNICATION signal
	42	JLCANH	O	H	OPTIONAL DELIVERY UNIT COMMUNICATION signal
	43	JLCANL	I/O	L	OPTIONAL DELIVERY UNIT COMMUNICATION signal
	44	GND	O		
	45	/VCRST	I/O	L	FORMATTER RESET signal
J124	1	+24VA			
	2	GND			
	3	/FPCS	I	L	OPERATION PANEL CONTROLLER CHIP SELECT signal
	4	+5VA			
	5	FPCK	I	Pulse	OPERATION PANEL SERIAL CLOCK signal
	6	GND			
	7	FPI	I	H	OPERATION PANEL SERIAL DATA INPUT signal
	8	GND			
	9	FPO	O	H	OPERATION PANEL SERIAL DATA OUTPUT signal
	10	+3.3V			

Table 7-37 Input/output signals to and from DC Controller PCA (continued)

J126	1	+5VA			
	2	BD1I	I	Pulse	BD signal (Y)
	3	GND			
	4	LD2CTRL1	O	H	LASER CONTROL signal (M)
	5	LD2CTRL0	O	H	LASER CONTROL signal (M)
	6	GND			
	7	/VDO21	O	L	VIDEO signal (M)
	8	VDO21	O	H	VIDEO signal (M)
	9	GND			
	10	LD2PDOUT	I	Analog	LASER CURRENT OUTPUT signal (M)
	11	LD1ICSEL	O	H	LASER CONTROL SWITCH signal
	12	EEDO	O	H	EEPROM WRITING DATA signal
	13	GND			
	14	SCLK	O	H	LASER IC CLOCK signal
	15	GND			
	16	SCK	O	H	EEPROM COMMUNICATION CLOCK signal
	17	/LDIRST	O	L	LASER IC RESET signal
	18	EEDI	I	H	EEPROM READING DATA signal
	19	LD1PDOUT	I	Analog	LASER CURRENT OUTPUT signal (Y)
	20	LD1CTRL0	O	H	LASER CONTROL signal (Y)
	21	LD1CTRL1	O	H	LASER CONTROL signal (Y)
	22	GND			
	23	/VDO11O	O	L	VIDEO signal (Y)
	24	VDO11O	O	H	VIDEO signal (Y)
	25	GND			
	26	+5VB			
	27	GND			

Table 7-37 Input/output signals to and from DC Controller PCA (continued)

J127	1	+5VA			
	2	/BD3I	I	Pulse	BD signal (C)
	3	GND			
	4	LD4CTRL1	O	H	LASER CONTROL signal (Bk)
	5	LD4CTRL0	O	H	LASER CONTROL signal (Bk)
	6	GND			
	7	/VDO41	O	L	VIDEO signal (Bk)
	8	VDO41	O	H	VIDEO signal (Bk)
	9	GND			
	10	LD4PDOUT	I	Analog	LASER CURRENT OUTPUT signal (Bk)
	11	LD3ICSEL	O	H	LASER CONTROL SWITCH signal
	12	EEDO	O	H	EEPROM WRITING DATA signal
	13	GND			
	14	SCLK	O	L	LASER IC CLOCK signal
	15	GND			
	16	SCK	O	L	EEPROM COMMUNICATION CLOCK signal
	17	/LDIRST	O	L	LASER IC RESET signal
	18	EEDI	I	H	EEPROM READING DATA signal
	19	LD3PDOUT	I	Analog	LASER CURRENT OUTPUT signal (C)
	20	LD3CTRL0	O	H	LASER CONTROL signal (C)
	21	LD3CTRL1	O	H	LASER CONTROL signal (C)
	22	GND			
	23	/VDO31	O	L	VIDEO signal (C)
	24	VDO31	O	H	VIDEO signal (C)
	25	GND			
	26	+5VB			
	27	GND			

Table 7-37 Input/output signals to and from DC Controller PCA (continued)

J129	1	+24VC			
	2	/SCNM1ACC	O	L	SCANNER MOTOR ACCELERATION signal
	3	/SCNM1DEC	O	L	SCANNER MOTOR DECELERATION signal
	4	GND			
	5	+24VC			
	6	/SCNM3ACC	O	L	SCANNER MOTOR ACCELERATION signal
	7	/SCNM3DEC	O	L	SCANNER MOTOR DECELERATION signal
	8	GND			
	9	SCNTMP1	I	Analog	LASER/SCANNER AREA TEMPERATURE signal 1
	10	GND			

Table 7-37 Input/output signals to and from DC Controller PCA (continued)

J130	1	SCNTHP2	I	Analog	LASER/SCANNER AREA TEMPERATURE signal 2
	2	GND			
	3	JLPWRON	O	H	OPTIONAL DELIVERY UNIT POWER ON signal
	4	JLCANH	I/O	H	OPTIONAL DELIVERY UNIT COMMUNICATION signal
	5	JLCANL	I/O	L	OPTIONAL DELIVERY UNIT COMMUNICATION signal
	6	GND			
	7	IPTUOPCK	O	H	OPTIONAL IPTU CLOCK signal
	8	IPTUOPIN	I	L	OPTIONAL IPTU STATUS signal
	9	IPTUOPOT	O	H	OPTIONAL IPTU COMMAND signal
	10		O	H	OPTIONAL IPTU media-feed signal
	11				
	12				
	13				
	14				
	15				
	16				

Table 7-37 Input/output signals to and from DC Controller PCA (continued)

J131	1	+24VCF			
	2	TONSL1	O	H	TONER FEED SOLENOID CONTROL signal (Y)
	3	+24VCF			
	4	TONSL2	O	H	TONER FEED SOLENOID CONTROL signal (M)
	5	LED (+5VA)			
	6	GND			
	7	TONM123ROT	I	Pulse	TONER FEED SCREW ROTATION NUMBER signal (Y, M, C)
	8	LED (+5VA)			
	9	GND			
	10	DEV12SEP	I	H	DEVELOPING HOMEPOSITION signal (Y, M)
	11	+24VCF			
	12	TONSL3	O	H	TONER FEED SOLENOID CONTROL signal (C)
	13	+24VCF			
	14	TONSL4	O	H	TONER FEED SOLENOID CONTROL signal (Bk)
	15	LED (+5VA)			
	16	GND			
	17	TONM4ROT	I	Pulse	TONER FEED SCREW ROTATION NUMBER signal (Bk)
	18	LED (+5VA)			
	19	GND			
	20	DEV34SEP	I	H	DEVELOPING HOMEPOSITION signal (C, Bk)

Table 7-37 Input/output signals to and from DC Controller PCA (continued)

J132	1	GND			
	2	FAN3LK	I	H	CRG AREA COOLING FAN LOCK signal
	3	FAN3PS	O	H	CRG AREA COOLING FAN DRIVE signal
	4	GND			
	5	FAN1LK	I	H	LASER/SCANNER UNIT COOLING FAN LOCK signal
	6	FAN1PS	O	H	LASER/SCANNER UNIT COOLING FAN DRIVE signal
	7	GND			
	8	FAN2LK	I	H	FIXING UNIT COOLING FAN LOCK signal
	9	FAN2PS	O	H	FIXING UNIT COOLING FAN DRIVE signal
J133	1	DUPOPPSPD	O	H	DUPLEXING UNIT PICKUP SPEED signal
	2	DUPOPPFED	O	H	DUPLEXING UNIT RE-PICKUP signal
	3	DUPOPCK	O	H	DUPLEXING UNIT CLOCK signal
	4	DUPOPIN	I	H	DUPLEXING UNIT STATUS signal
	5	DUPOPOT	O	H	DUPLEXING UNIT COMMAND signal
	6	+3.3VS			
	7	+5VA			
	8	GND			
	9	GND			
	10	GND			
	11	+24VB			
	12	+24VB			

Table 7-37 Input/output signals to and from DC Controller PCA (continued)

J138	1	+24VB			
	2	+24VB			
	3	GND			
	4	GND			
	5	/DM1ACC	O	H	DRUM MOTOR ACCELERATION signal (Y)
	6	/DM1DEC	O	H	DRUM MOTOR DECELERATION signal (Y)
	7	/DM1FG	I	Pulse	DRUM MOTOR SPEED DETECTION signal (Y)
	8	DM1REV	O	H	DRUM MOTOR REVERSE signal (Y)
	9	+24VB			
	10	+24VB			
	11	GND			
	12	GND			
	13	/DM2ACC	O	H	DRUM MOTOR ACCELERATION signal (M)
	14	/DM2DEC	O	H	DRUM MOTOR DECELERATION signal (M)
	15	/DM2FG	I	Pulse	DRUM MOTOR SPEED DETECTION signal (M)
	16	DM2REV	O	H	DRUM MOTOR REVERSE signal (M)

Table 7-37 Input/output signals to and from DC Controller PCA (continued)

J139	1	+24VB			
	2	+24VB			
	3	GND			
	4	GND			
	5	/DM3ACC	O	H	DRUM MOTOR ACCELERATION signal (C)
	6	/DM3DEC	O	H	DRUM MOTOR DECELERATION signal (C)
	7	/DM3FG	I	Pulse	DRUM MOTOR SPEED DETECTION signal (C)
	8	DM3REV	O	H	DRUM MOTOR REVERSE signal (C)
	9	+24VB			
	10	+24VB			
	11	GND			
	12	GND			
	13	/DM4ACC	O	H	DRUM MOTOR ACCELERATION signal (Bk)
	14	/DM4DEC	O	H	DRUM MOTOR DECELERATION signal (Bk)
	15	/DM4FG	I	Pulse	DRUM MOTOR SPEED DETECTION signal (Bk)
	16	DM4REV	O	H	DRUM MOTOR REVERSE signal (Bk)
	17	N.C.			

Table 7-37 Input/output signals to and from DC Controller PCA (continued)

J141	1	TONM4B	O	H	TONER FEED MOTOR CONTROL signal (Bk)
	2	TONM4I3	O	H	TONER FEED MOTOR CURRENT SWITCH signal (Bk)
	3	TONM4A	O	H	TONER FEED MOTOR CONTROL signal (Bk)
	4	TONM4I2	O	H	TONER FEED MOTOR CURRENT SWITCH signal (Bk)
	5	TONM4I0	O	H	TONER FEED MOTOR CURRENT SWITCH signal (Bk)
	6	TONM4I1	O	H	TONER FEED MOTOR CURRENT SWITCH signal (Bk)
	7	GND			
	8	GND			
	9	+24VC			
	10	+24VC			
	11	GND			
	12	DEVM34AN	O	H	DEVELOPING DISENGAGEMENT MOTOR CONTROL signal (C, Bk)
	13	DEVM34B	O	H	DEVELOPING DISENGAGEMENT MOTOR CONTROL signal (C, Bk)
	14	DEVM34A	O	H	DEVELOPING DISENGAGEMENT MOTOR CONTROL signal (C, Bk)
	15	DEVM34BN	O	H	DEVELOPING DISENGAGEMENT MOTOR CONTROL signal (C, Bk)

Table 7-37 Input/output signals to and from DC Controller PCA (continued)

J142	1	GND			
	2	DEVM12AN	O	H	DEVELOPING DISENGAGEMENT MOTOR CONTROL signal (Y, M)
	3	DEVM12B	O	H	DEVELOPING DISENGAGEMENT MOTOR CONTROL signal (Y, M)
	4	DEVM12A	O	H	DEVELOPING DISENGAGEMENT MOTOR CONTROL signal (Y, M)
	5	DEVM12BN	O	H	DEVELOPING DISENGAGEMENT MOTOR CONTROL signal (Y, M)
	6	+24VB			
	7	+24VB			
	8	GND			
	9	GND			
	10	+5VA			
	11	ITBSEP1	I	H	ITB HOMEPOSITION signal
	12	TONM123I2	O	H	TONER FEED MOTOR CURRENT SWITCH signal (Y, M, C)
	13	TONM123B	O	H	TONER FEED MOTOR CONTROL signal (Y, M, C)
	14	TONM123I3	O	H	TONER FEED MOTOR CURRENT SWITCH signal (Y, M, C)
	15	TONM123A	O	H	TONER FEED MOTOR CONTROL signal (Y, M, C)
	16	TONM123I1	O	H	TONER FEED MOTOR CURRENT SWITCH signal (Y, M, C)
	17	TONM123I0	O	H	TONER FEED MOTOR CURRENT SWITCH signal (Y, M, C)

Table 7-37 Input/output signals to and from DC Controller PCA (continued)

J144	1	LED (+5VA)			
	2	GND			
	3	MPTPEMP	I	H	MPT MEDIA PRESENCE signal
	4	+24VCF			
	5	MPTSL	O	H	MPT PICKUP SOLENOID CONTROL signal
	6	LED (+5VA)			
	7	GND			
	8	MPTPLAST	I	H	MPT LAST MEDIA signal

8 Output accessories and intermediate paper-transfer unit (IPTU)

- Theory of operation
- Specifications
- Removal and replacement
- Solve problems

Theory of operation

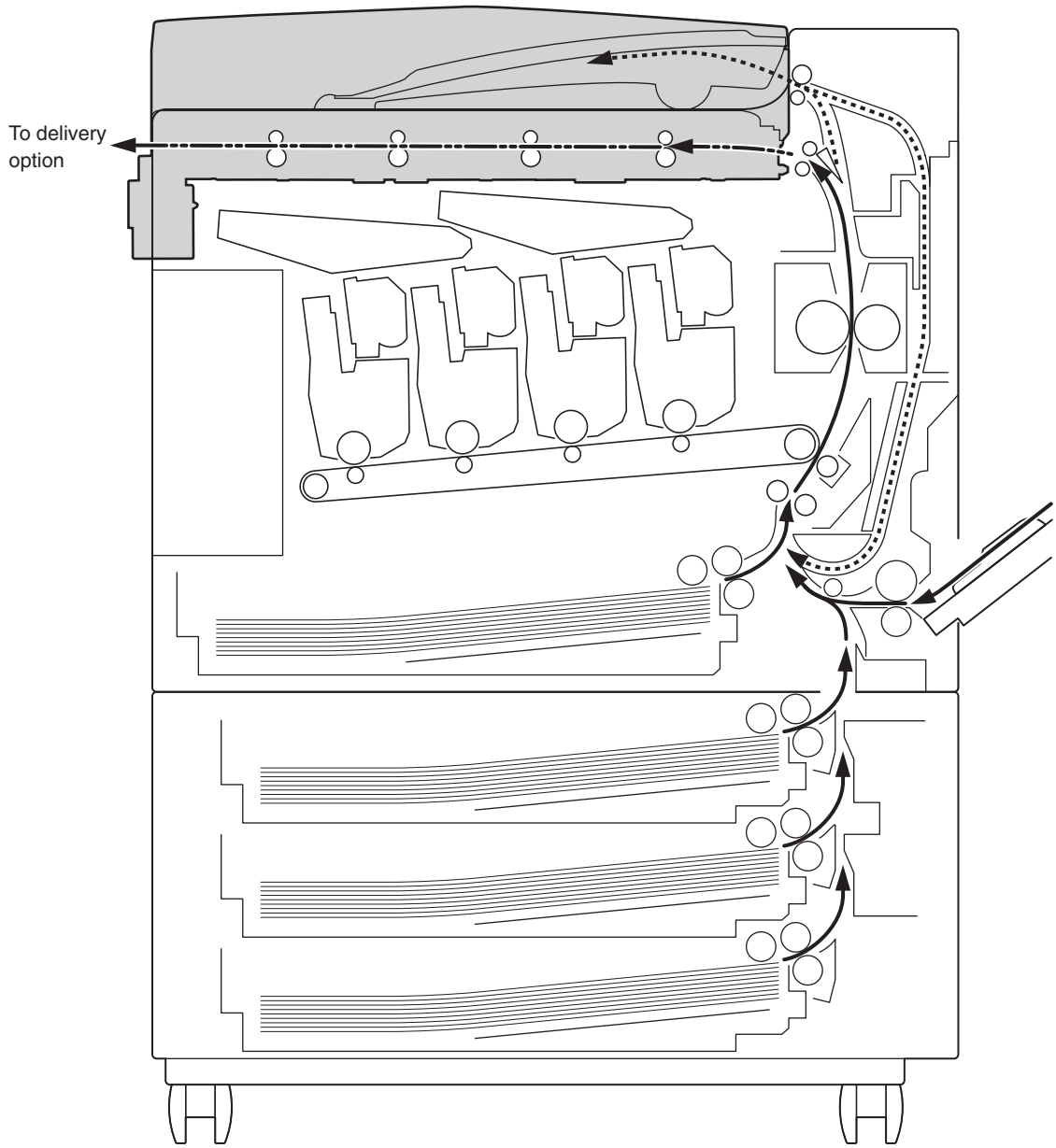
Intermediate paper-transfer unit (IPTU)

NOTE: This item is called the “output-accessory bridge” in the user documentation for this product.

Basic operation

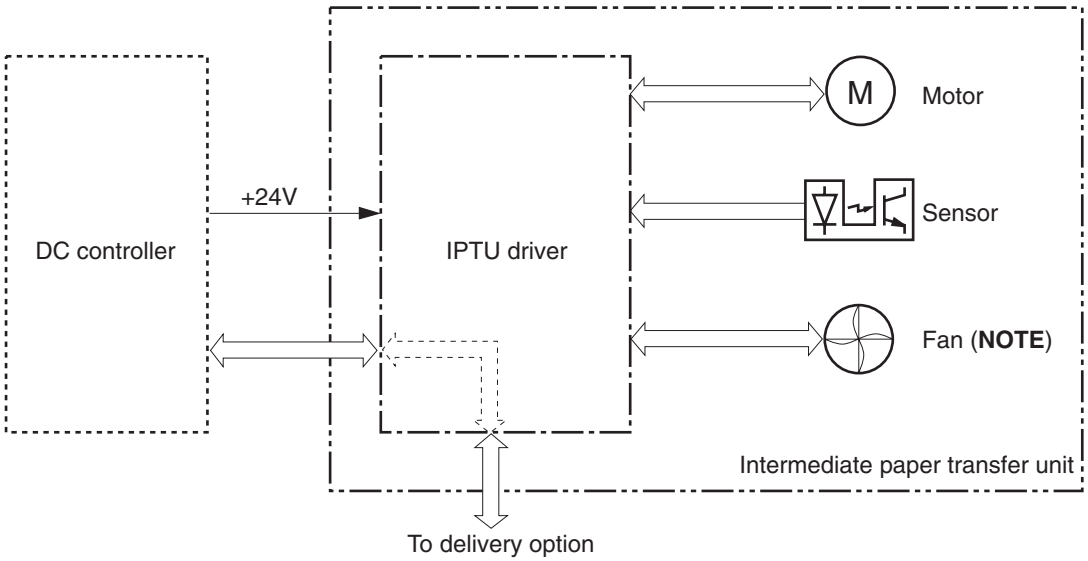
The intermediate paper-transfer unit (IPTU) is optionally installed to the face-down delivery unit of the product. It feeds paper to the staple/stacker or booklet maker. The face-down tray is removed when you install the IPTU.

Figure 8-1 Paper path of the IPTU



The IPTU driver controls the operational sequence of the IPTU and the serial communication with the DC controller of the product. The DC controller sends several commands to the IPTU driver at specific times. The IPTU driver drives the motors according to the commands. The IPTU driver sends the status information of the IPTU to the DC controller. The DC controller determines if there is an IPTU illegal connection. The DC controller notifies the formatter if it does not control the serial communication with the IPTU driver when the product is turned on, when it is recovering from Sleep mode, or during the prerotation period when the door closes. The printer supplies DC24V to the IPTU. The IPTU driver generates DC3.3V for sensors and ICs based on the DC24V.

Figure 8-2 Signal flow in the IPTU



NOTE: Only for the Kauai

Table 8-1 Components of the IPTU

Symbol for component		Name	Remark
Motor	M201	IPTU media-feed motor 2	
	M202	IPTU media-feed motor 1	
Sensor	SR201	IPTU media-feed sensor 3	
	SR202	IPTU media-feed sensor 2	
	SR203	IPTU media-feed sensor 1	
	SR204	IPTU door-open-detection sensor	
Fan	FM8	IPTU feed-unit cooling fan	

Feed operation

The paper is delivered to the staple/stacker or booklet maker through the IPTU.

Figure 8-3 Motors and sensors of the IPTU

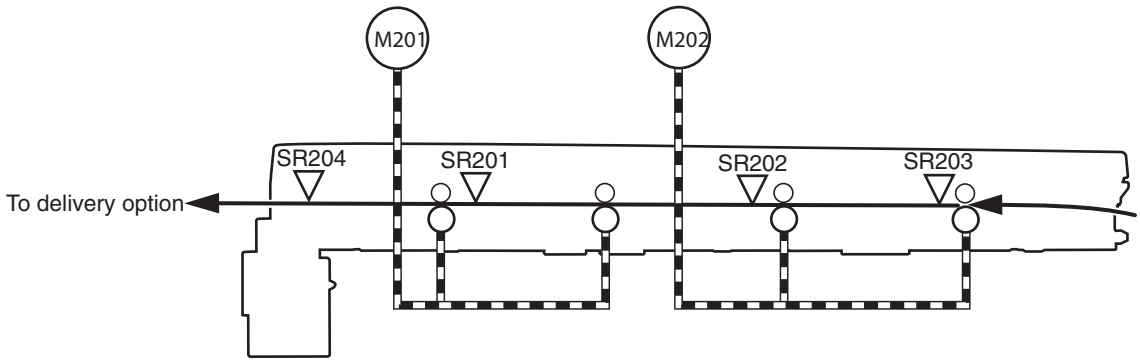


Table 8-2 IPTU components

Component		Signal	Driver
IPTU feed motor 2	M201	IPTU feed-motor-2 control signal	IPTU driver
IPTU feed motor 1	M202	IPTU feed-motor-1 control signal	IPTU driver
IPTU media-feed sensor 3	SR201	IPTU media-feed 3 signal	IPTU driver
IPTU media-feed sensor 2	SR202	IPTU media-feed 2 signal	IPTU driver
IPTU media-feed sensor 1	SR203	IPTU media-feed 1 signal	IPTU driver
IPTU door-open-detection sensor	SR204	IPTU door-open-detection signal	IPTU driver

IPTU sequence

1. The paper is fed into the IPTU after fusing.
2. The DC controller sends a drive command to the IPTU driver after the fusing delivery media-feed sensor detects the leading edge of paper.
3. When it receives a command, the IPTU driver drives the IPTU feed motors to rotate the PD media-feed rollers.
4. The IPTU feed rollers feed the paper to the accessory.

Jam detection

The IPTU uses three media-feed sensors on the media path to detect the presence of paper and to check whether paper is being fed correctly or has jammed. The IPTU identifies a jam if the sensor detects paper at a specified time stored in the IPTU driver. The IPTU driver stops a print operation and notifies the formatter through the DC controller when it determines that a jam has occurred.

The IPTU detects the following jams:

- Delivery-delay jam 1

  This jam occurs if the IPTU media-feed sensor 1 does not detect the leading edge of a sheet of paper within a specified period from when the paper is delivered from the printer into the IPTU.

- Delivery-delay jam 2

  This jam occurs if the IPTU media-feed sensor 2 does not detect the leading edge of a sheet of paper within a specified period from when the IPTU media-feed sensor 1 detects the leading edge. This jam also occurs if the IPTU media-feed sensor 3 does not detect the leading edge of the sheet within a specified period from when the IPTU media-feed sensor 2 detects the leading edge.

- Delivery-stationary jam 1

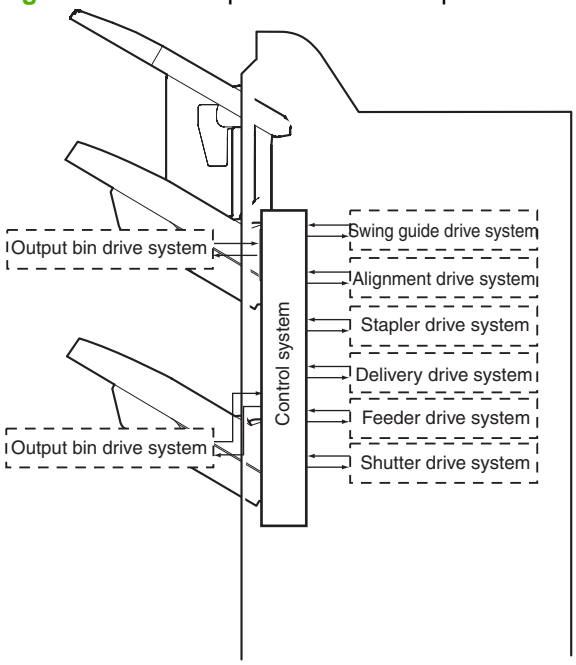
  This jam occurs if the IPTU media-feed sensor 1 does not detect the trailing edge of sheet of paper within a specified period from when it detects the leading edge. This jam also occurs if the IPTU media-feed sensor 2 does not detect the trailing edge of a sheet of paper within a specified period from when it detects the leading edge. This also occurs if the IPTU media-feed sensor 3 does not detect the trailing edge of a sheet of paper within a specified period from when it detects the leading edge.

3-bin stapler/stacker

Basic operation

The stapler/stacker delivers jobs from the product several ways. The modes of delivery include simple stacking, job offset, and stapling. The stacker controller PCA controls all operations involved in these modes, according to the commands from the product.

Figure 8-4 Basic operation of the stapler/stacker



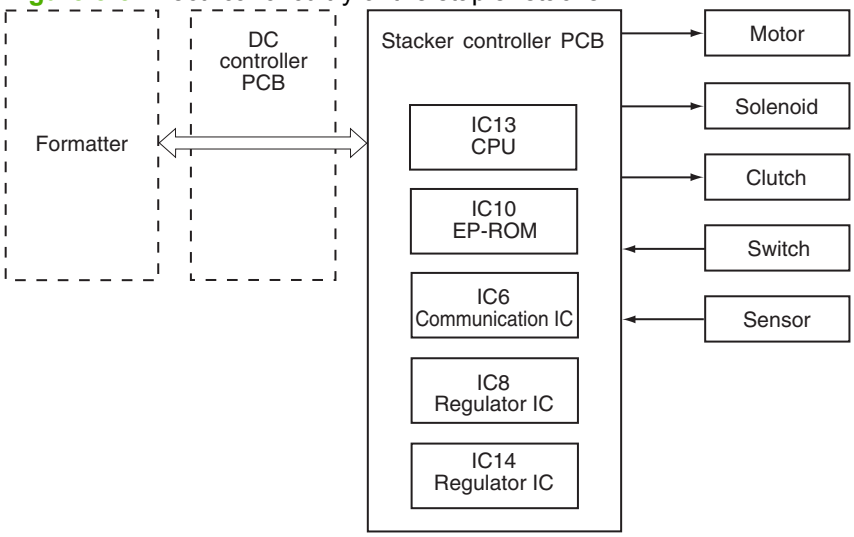
NOTE: With job offset, each sheet of a job is shifted to one side in the output bin in order to keep each sheet separate from the others.

Electrical circuitry

The stacker controller PCA controls the stacker operation sequence. A 16-bit microprocessor (CPU) is installed on the stacker controller PCA to control the stacker operation sequence and CAN communication with the video controller PCA. The stacker controller PCA drives solenoids, motors, and so forth in response to the commands received from the video controller through the CAN communication line. In addition, the stacker controller PCA reports information about various sensors and switches to the video controller through the CAN communication line. Major functions of the IC chips installed on the stacker controller PCA are as follows:

- IC13 (CPU): Controls the operation sequence
- IC10 (EEP-ROM): Backs up adjustment values
- IC6 (Communication IC): Communicates with the host machine
- IC8 (Regulator IC): Generates 5 V
- IC14 (Regulator IC): Generates 3.3 V

Figure 8-5 Electrical circuitry of the stapler/stacker



Feed drive system

Based on commands from the product, the stapler/stacker delivers jobs to the output bins in the appropriate mode: simple stacking, job offset, and stapling.

Figure 8-6 Electrical circuitry of the stapler/stacker

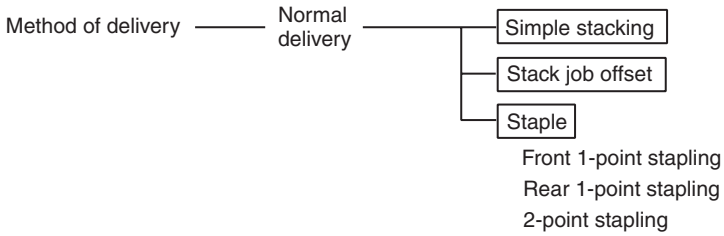
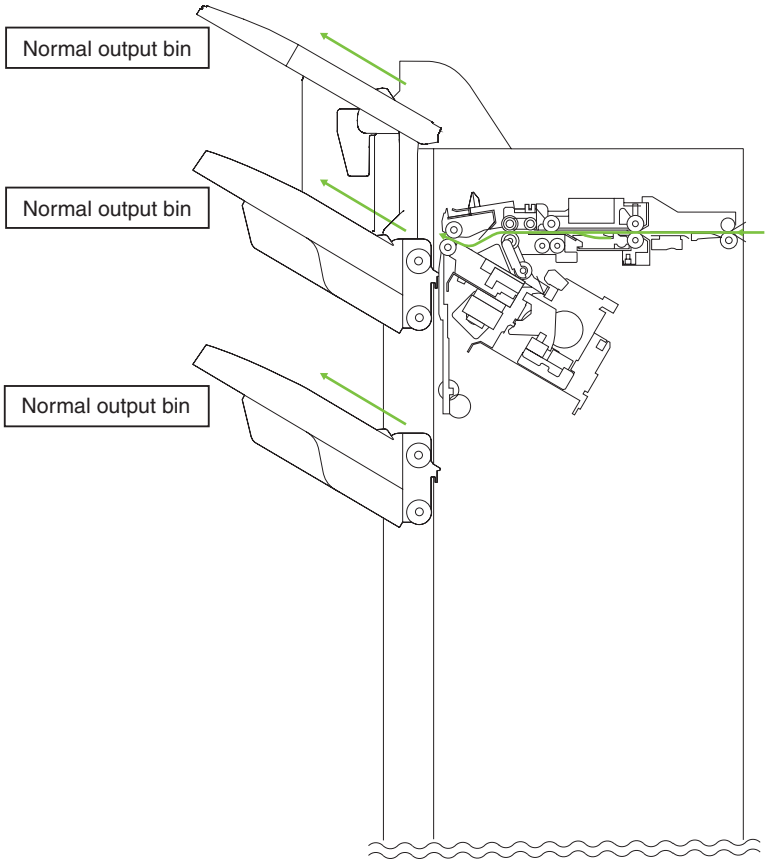


Figure 8-7 Output bins of the stapler/stacker



Construction of the control system

Jobs sent from the product are delivered to the output bin or the processing output bin according to the ejection type. For jobs delivered to the staple bin, job offset or stapling is performed according to the instructions from the product. When ejecting from the processing output bin, a stack trailing-edge assist guide is used in addition to the stack-ejection roller to eject the stack. The inlet motor (M31), stack-ejection motor (M32), and stack trailing-edge assist motor (M39) are step motors. These motors are rotated forward or backward by the microcomputer (CPU) in the stacker controller PCA. The following two sensors are provided in the paper delivery path to detect the arrival or passing of copies:

- Stacking paper-path-entry sensor (PI33)
- Stacking paper-path-delivery sensor (PI34)

Each output bin also has sensors to detect the presence of a sheet on the bin:

- First output-bin paper sensor (PI42)
- Second output-bin paper sensor (PI43)

If a sheet does not reach or pass each sensor within the prescribed time, the stacker controller PCA stops the operation and notifies the product that a jam has occurred. After a jam is cleared and all of the doors are closed, the stapler/stacker checks whether the sheet is detected by the stacking paper-

path-entry sensor or stacking paper-path-delivery sensor. If the sensors detect a sheet, the stapler/stacker determines that the jam is not fixed and sends a jam processing signal to the product again.

Figure 8-8 Stacker controller PCA (1 of 2)

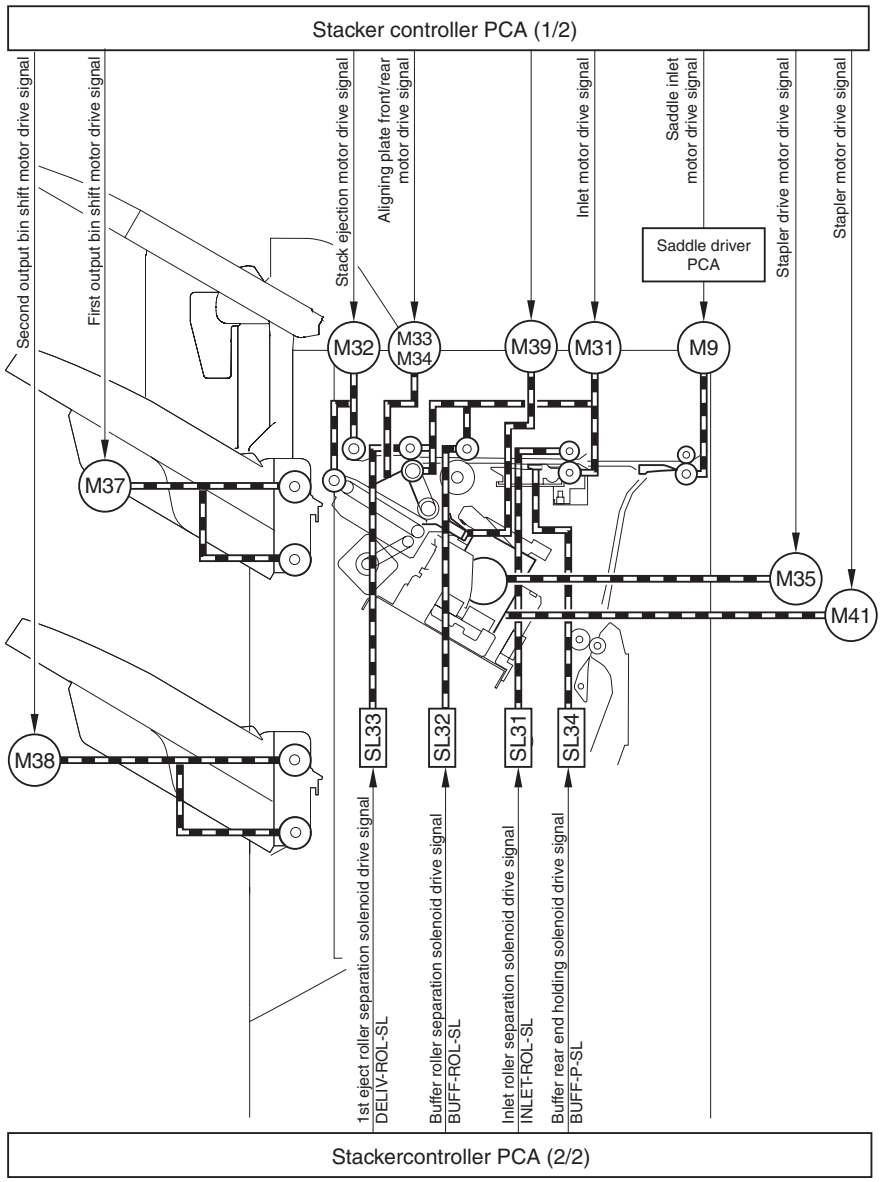
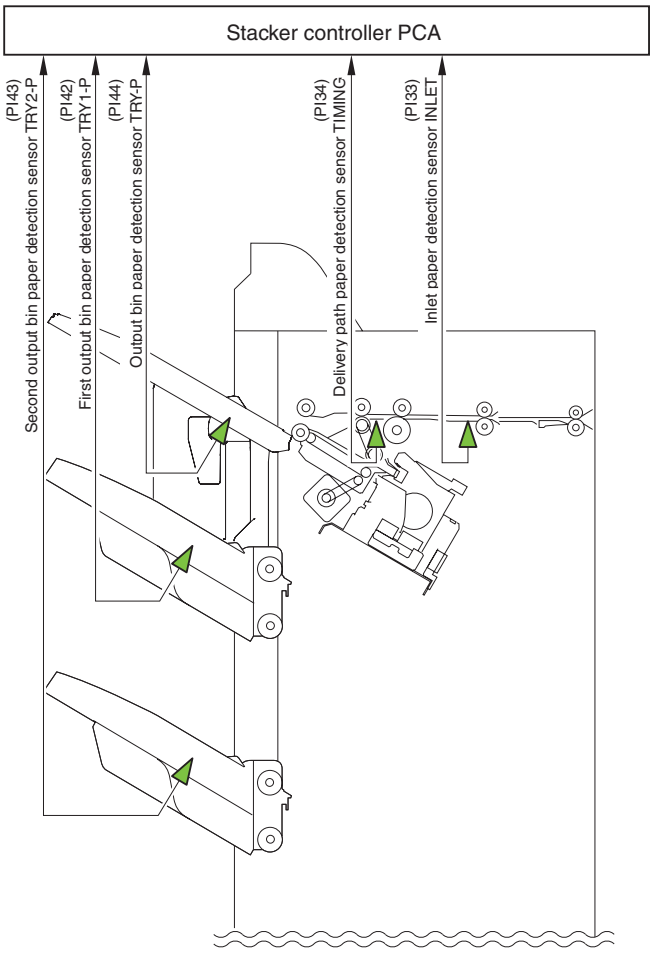


Figure 8-9 Stacker controller PCA (2 of 2)

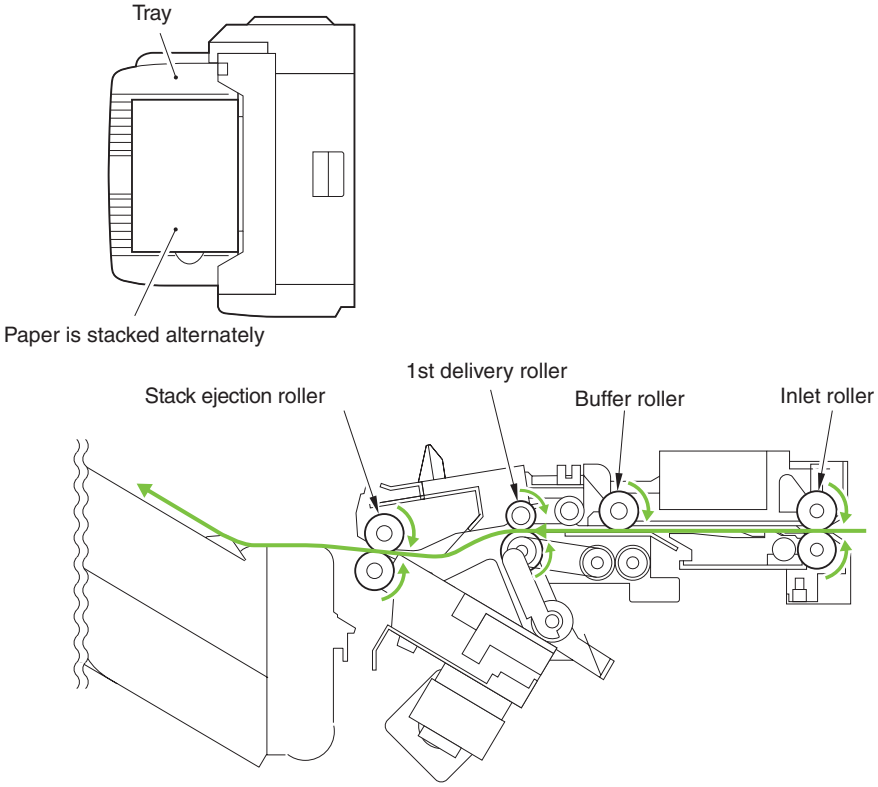


Paper delivery path (stapler/stacker and booklet maker)

There are three paper paths to output bins 1, 2, and the additional output bin depending on the ejection process.

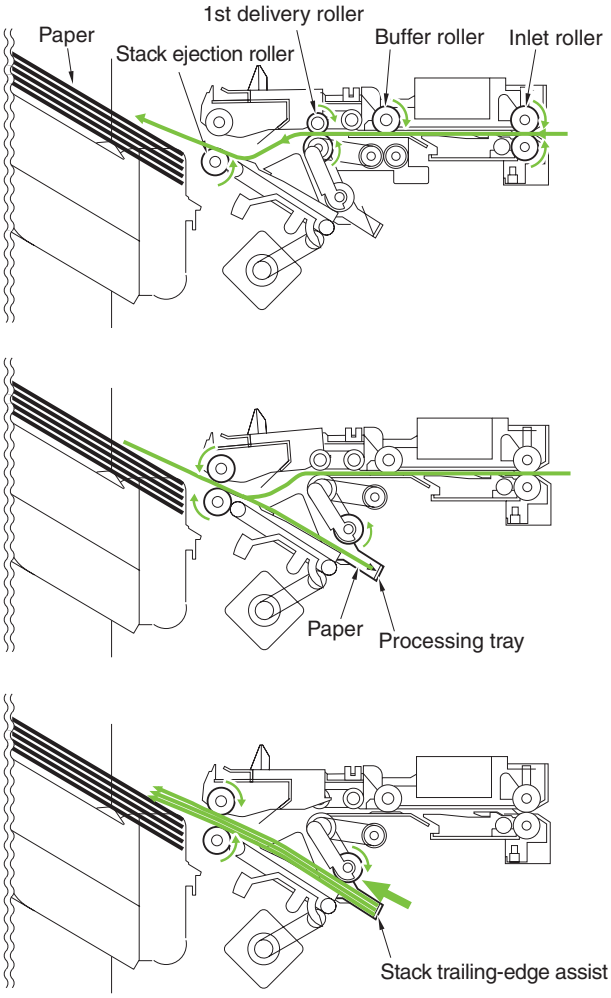
All sheets are ejected through the following path when the accessory is set to non-sort.

Figure 8-10 Paper path when set to non-sort



When the product sorts paper size other than A4, B5, or LTR or when set to staple and sort, copies are delivered to the processing output bin for aligning and stapling and then ejected using the stack trailing-edge assist.

Figure 8-11 Paper path for sizes other than A4, B5, or LTR

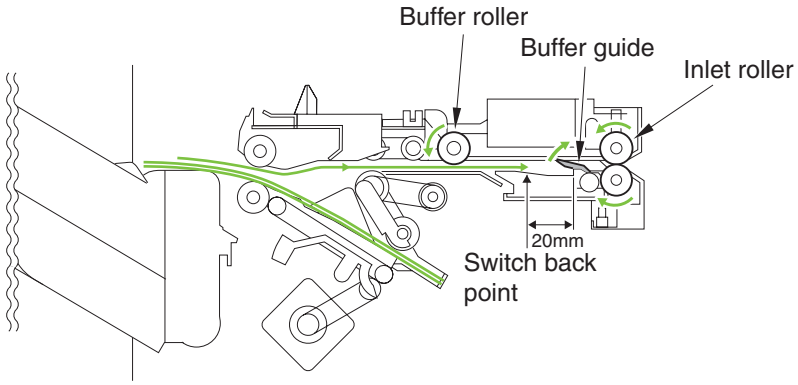


With A4, B5, or LTR paper sizes, two sheets of paper feed into the buffer (two or three sheets if 2-point stapling). The sheets are then aligned and stapled in the processing output bin and ejected. While stapling or offset is performed, copies are simultaneously ejected, delivered to the buffer, and stacked in the processing output bin. Copies are received continuously from the product. The stack delivered from the buffer is ejected to the processing output bin, and the stack processed in the processing output

bin is ejected to the output bin. Simultaneous stack ejection is described below for two A4 copies between stacks when the equipment is set to sort.

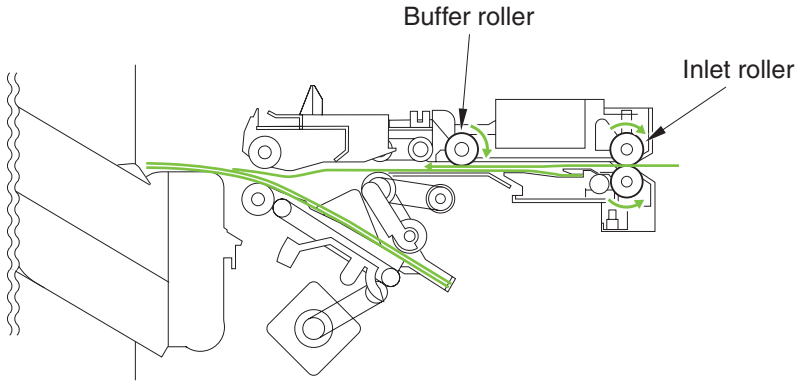
1. When the first paper reaches the switchback point, it is sent to the buffer unit, and the buffer guide holds the trailing edge of the paper.

Figure 8-12 Paper path (1 of 5)



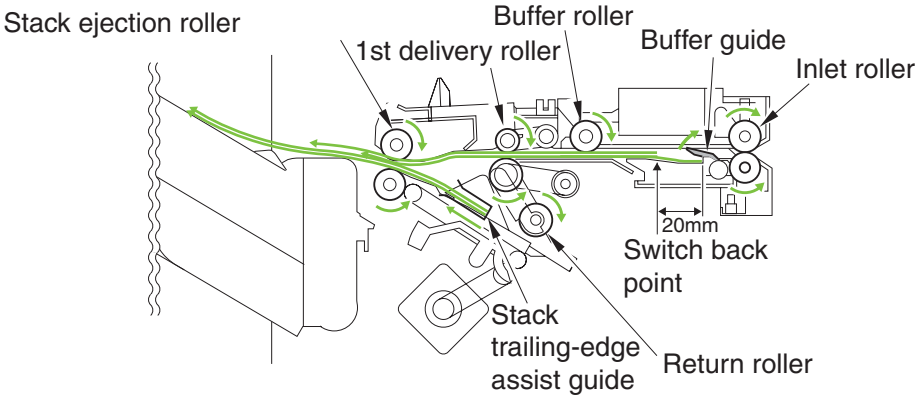
2. When the first sheet arrives at the buffer, the second sheet is sent from the product.

Figure 8-13 Paper path (2 of 5)



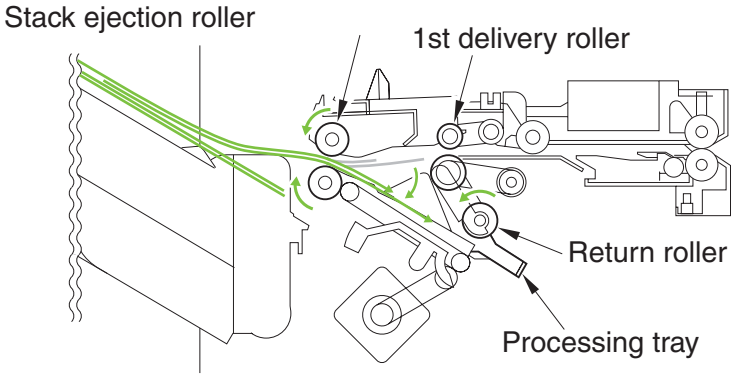
3. The first delivery roller descends and works with the stack-delivery roller to deliver the first and second sheet to the processing output bin. At the same time, the return roller and stack trailing-edge assist send the stack in the processing output bin to the output bin.

Figure 8-14 Paper path (3 of 5)



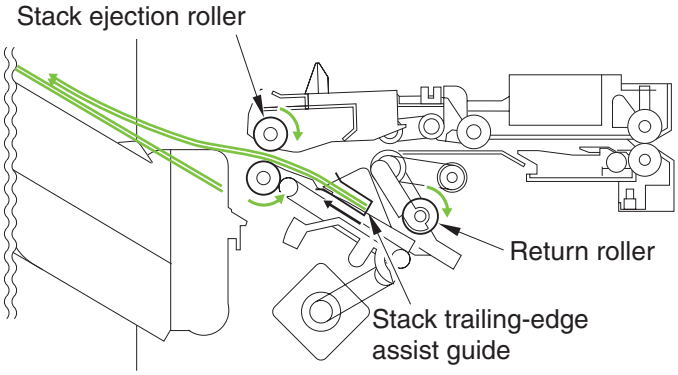
4. When the stack in the processing output bin is sent to the delivery output bin and the trailing edge of the first and second paper exits the first delivery roller, the stack-delivery roller and return roller deliver the first and second sheet to the processing output bin.

Figure 8-15 Paper path (4 of 5)



5. The first and second paper delivered to the processing output bin are aligned and then delivered to the output bin.

Figure 8-16 Paper path (5 of 5)



Intermediate-process output-bin assembly (stapler/stacker and booklet maker)

Stack job offset

The job-offset operation offsets the paper stack to the front or rear when ejecting to sort the paper stack. The forward/backward movement of the sheet delivered to the processing output bin is controlled by the front-aligning plate and rear-aligning plate. The aligned copies are stapled or ejected according to the signal from the product. When the power is turned on, the stacker controller PCA drives the aligning-plate front motor (M33) and aligning-plate rear motor (M34) to return the two aligning plates to home

position. The name and function of motors and sensors used by the stack job-offset function are shown below.

Figure 8-17 Motors and sensors for stack job offset

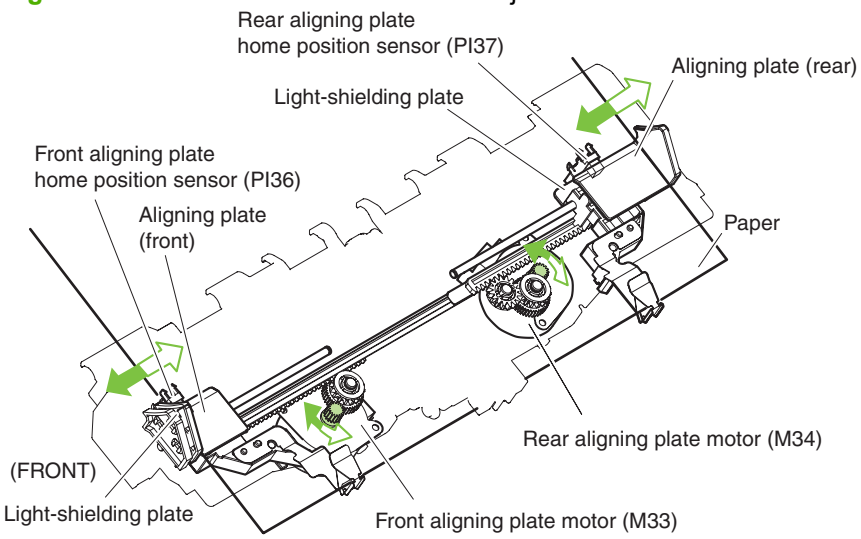


Figure 8-18 Stack job offset example

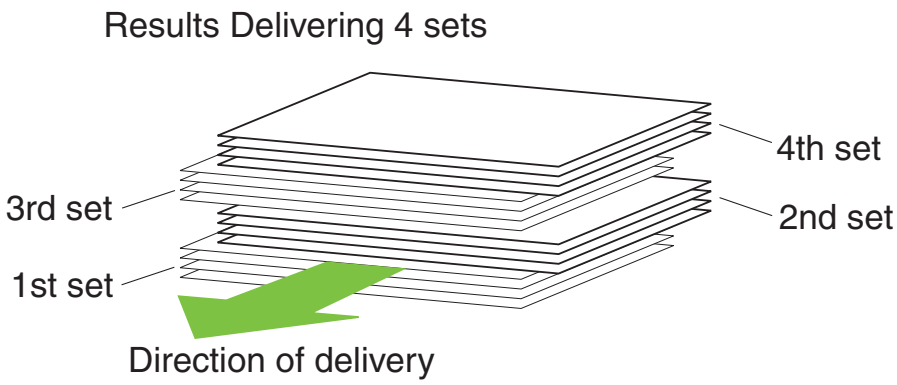


Table 8-3 Motors for the stack job offset

Motor	Function
Front-aligning-plate motor (M33)	Aligns paper in the processing output bin to the front
Rear-aligning-plate motor (M34)	Aligns paper in the processing output bin to the rear
Swing motor (M36)	Moves the swing guide up/down
Stack trailing-edge assist motor (M39)	Carry the stack end during stack ejection

Table 8-4 Sensors for the stack job offset

Sensor	Function
Swing-guide home-position (HP) sensor (PI35)	Detects the swing guide home position
Front-aligning-plate HP sensor (PI36)	Detects the aligning plate front-home position

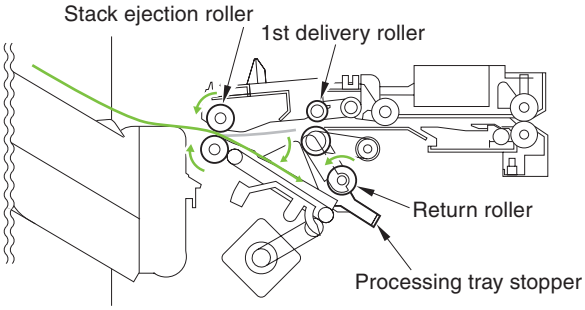
Table 8-4 Sensors for the stack job offset (continued)

Sensor	Function
Rear-aligning-plate HP sensor (PI37)	Detects the aligning plate rear-home position
Stack trailing-edge assist HP sensor (PI39)	Detects the stack trailing-edge assist home-position

Process output bin paper-stacking operation

When the trailing edge of the paper exits the first delivery roller, the sheet is delivered to the processing output bin by the stack-delivery roller and return roller and then pushed against the processing output-bin stopper.

Figure 8-19 Process output bin



Offset operation

Each sheet is pulled forward or backward using the front-aligning plate and the rear-aligning plate. The offset operation is performed each time a sheet is pulled onto the processing output bin.

Figure 8-20 Job offset operation (1 of 2)

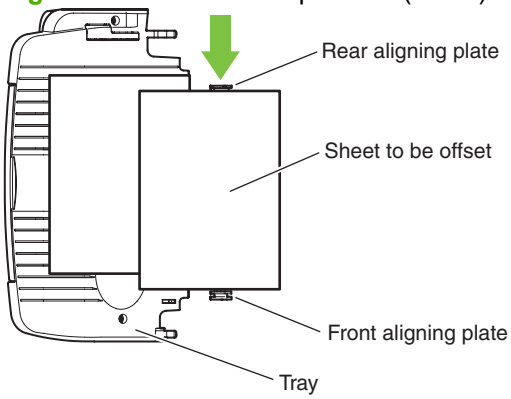
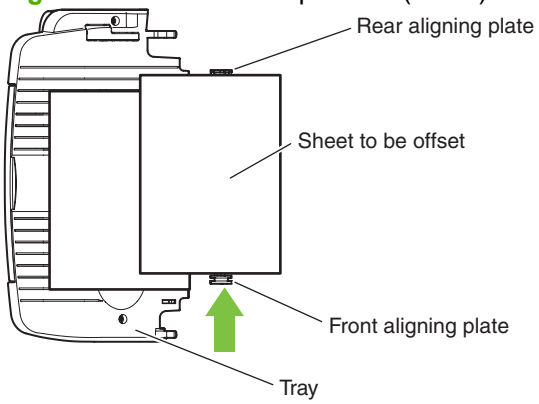


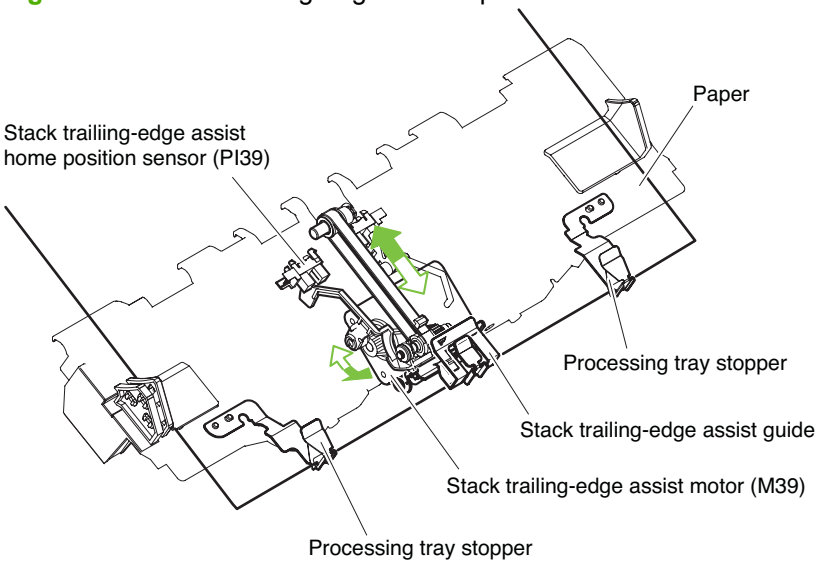
Figure 8-21 Job offset operation (2 of 2)



Stack trailing-edge assist operation

To improve stacking performance when ejecting jobs delivered to the processing output bin, a stack trailing-edge assist guide supports the back of the stack during stack ejection.

Figure 8-22 Stack trailing-edge assist operation

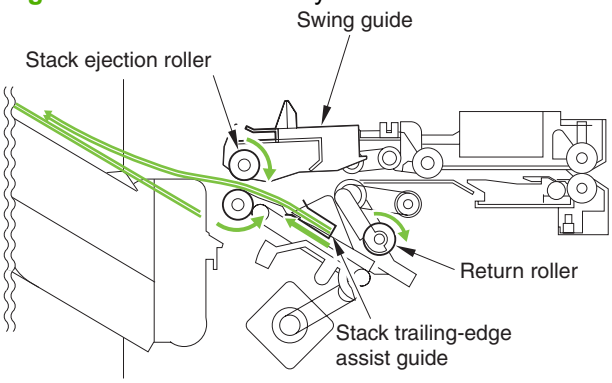


Stack delivery operation

The stack is ejected each time 2–4 large sheets or 2–6 small sheets are offset on the processing output bin. The swing motor turns and the swing guide descends causing the upper and lower stack-delivery rollers to hold the stack. The stack-delivery motor turns the stack-delivery roller and return roller. At the same time, the stack trailing-edge assist motor starts the stack trailing-edge assist guide, and the stack held by the stack-delivery rollers is moved forward. When the stack trailing-edge assist motor reverses,

the stack trailing-edge assist guide returns to home position. The stack-delivery motor then ejects the stack with the upper and lower stack-delivery rollers.

Figure 8-23 Stack delivery



Staple operation (stapler/stacker and booklet maker)

The stapling operation staples the prescribed number of copies with the stapler unit. The staple position depends on the staple mode and paper size. The stapler-shift home-position sensor (PI40) detects whether the stapler unit is at the home position. The stapler unit is equipped with a stapler-alignment interference sensor (PI46). The staple motor (M41) operation is prohibited when the stapler-alignment interference sensor (PI46) is on. This prevents stapling at the stopper and damaging the stopper when the stapler-shift motor (M35) is incorrectly adjusted. When the power is turned on, the stacker controller PCA drives the stapler-shift motor (M35) to return the stapler unit to home position. If the stapler unit is already at home position, it waits in that state.

Figure 8-24 Stapler unit

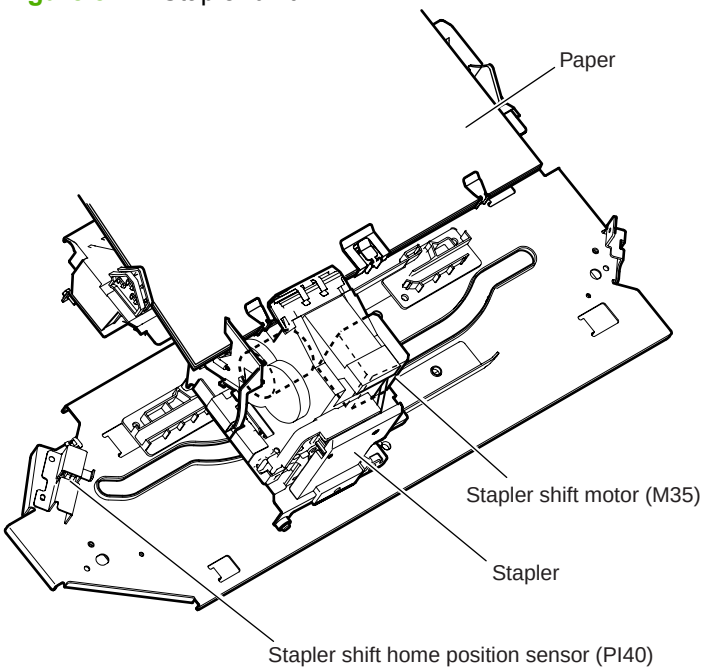


Figure 8-25 Staple location

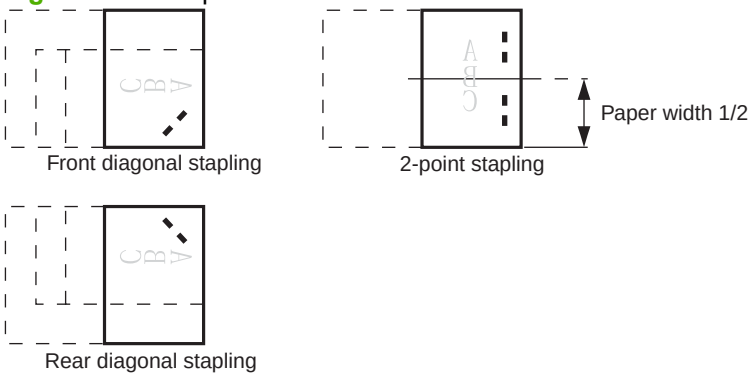


Table 8-5 **Sensors used in stapling**

Sensor	Symbol	Connector	Function	Remarks
Stapler-shift home-position sensor	PI40	J721B-6	Detects the home position for the stapler moving back and forth	
Stapler-alignment interference sensor	PI46	J717-3	Staple prohibited area detection	
Stapler home-position sensor	PI50	J717-5	Detects the home position for the stapling operation	In the stapler
Staple edging sensor	PI51	J717-6	Detects the staple top position	In the stapler
Staple sensor	PI52	J717-7	Detects presence or absence of staples in the cartridge	In the stapler

Table 8-6 **Motors used in stapling**

Function	Motor	Symbol	Remarks
Moves the stapler	Stapler-shift motor	M35	
Performs the stapling operation	Staple motor	M41	

The stacker controller PCA moves the stapler according to the specified stapling position. When the rear of the first sheet passes the first delivery roller, the stacker controller PCA stops the stack-delivery motor (M32) and then rotates it in reverse. The stack-delivery motor rotates the stack-delivery roller and return roller and delivers the paper to the processing output bin. The paper in the processing output bin is detected by the processing-output-bin paper sensor (PI38). When the paper is delivered to the processing output bin, the swing motor (M36) starts and raises the swing guide. When the swing-guide home-position sensor (PI35) detects the rising of the swing guide, the swing-guide motor stops and holds the swing guide at the raised position. After the processing-output-bin paper sensor detects the paper, the aligning motor (M33/M34) starts and aligns the paper.

Figure 8-26 Paper path for stapling

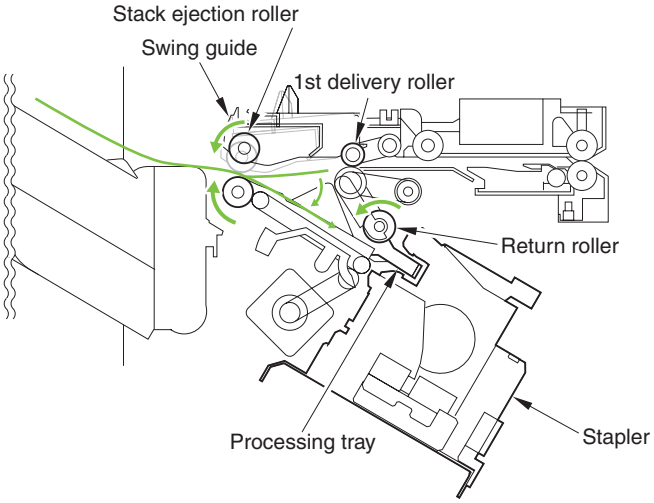
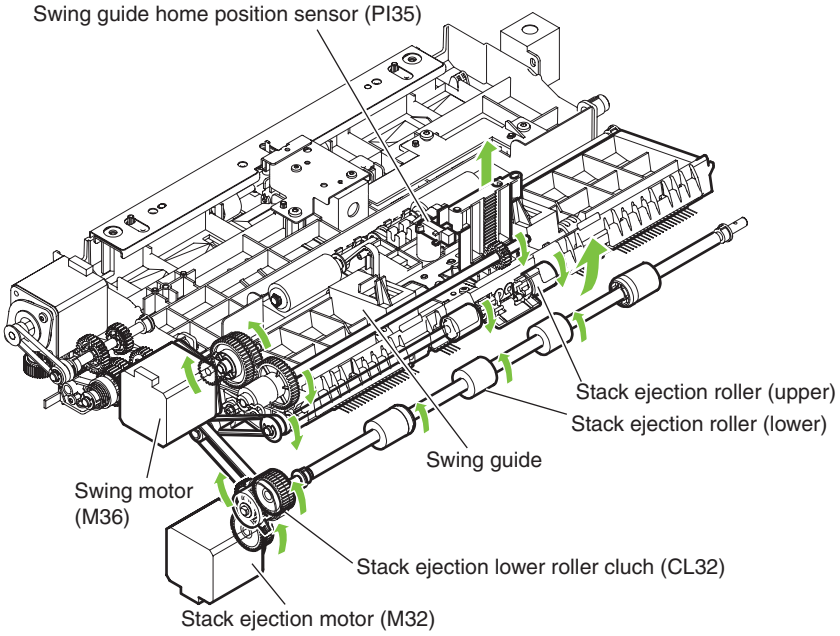
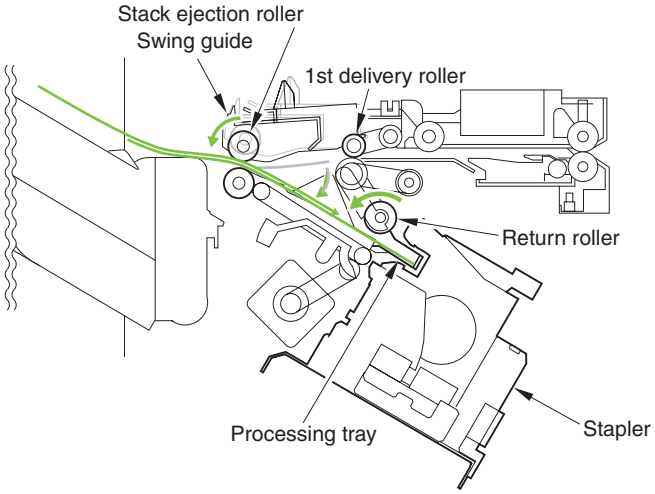


Figure 8-27 Rollers and sensors for stapling



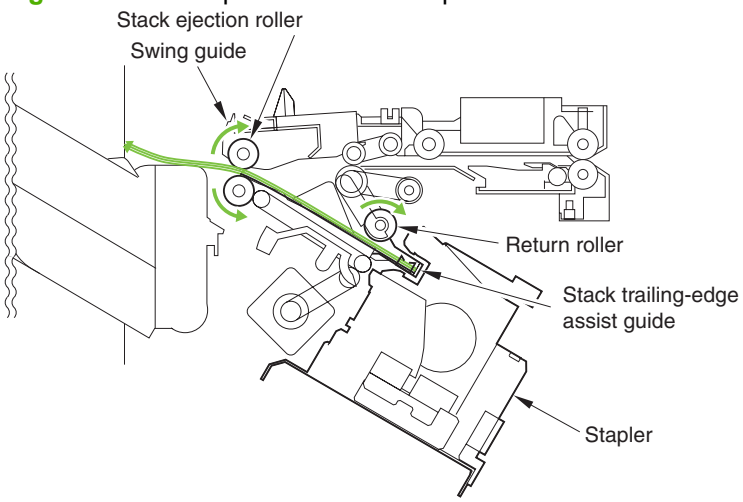
The stacker controller PCA starts the swing motor (M36) and lowers the swing guide when the rear of the second paper passes the first delivery roller. The stack-delivery motor is reversed. The stack-delivery motor rotates the stack-delivery roller (upper) and return roller and sends the paper to the processing output bin. At this point, the stack-delivery roller (lower) does not rotate because the stack-ejection lower-roller clutch (CL32) is disengaged. The output-bin paper sensor (PI38) detects the processing-output-bin paper sensor (P138). When the paper is delivered to the processing output bin, the swing motor (M36) starts and raises the swing guide. When the swing-guide home-position sensor (PI35) detects the rising of the swing guide, the swing-guide motor stops and holds the swing guide at the raised position. After the processing-output-bin paper sensor detects the paper, the aligning motor (M33/M34) starts and aligns the paper.

Figure 8-28 Paper path



When the last sheet is aligned, the stacker controller PCA moves the aligning plate to the alignment position with the aligning motor (M33/M34) (the paper is held by the aligning plate). Then the stacker controller PCA staples at the specified staple position. After stapling, the stacker controller PCA starts the swing motor (M36) and lowers the swing guide. Then the stack is ejected by the stack-delivery roller, return roller, and stack trailing-edge assist guide.

Figure 8-29 Shift process for the staple unit



Staple unit

The stapler motor (M41) rotates the cam one turn for stapling. The stapler home-position sensor (PI50) detects the home position of the cam. The macro computer (IC13) on the stacker controller PCA controls the forward and reverse rotation of the staple motor. When the stapler home-position sensor is off, the stacker controller PCA rotates the stapler motor in the forward direction until the sensor turns on, allowing the staple cam to return to the original position. The staple sensor (PI52) is used to detect the presence or absence of a staple cartridge in the machine and the presence or absence of staples in the cartridge. The staple edging sensor (PI51) determines whether staples are pushed up to the top of the

staple cartridge. For safety, the stacker controller circuit does not drive the staple motor (M41) unless the staple safety switch (MS34) is on.

Figure 8-30 Stapling operation (1 of 2)

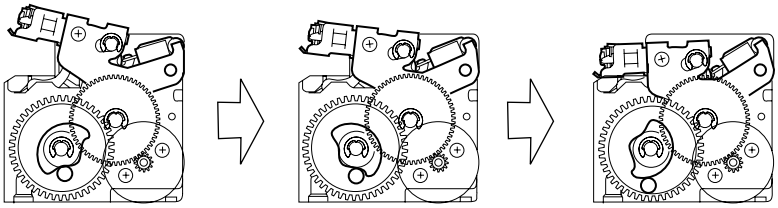
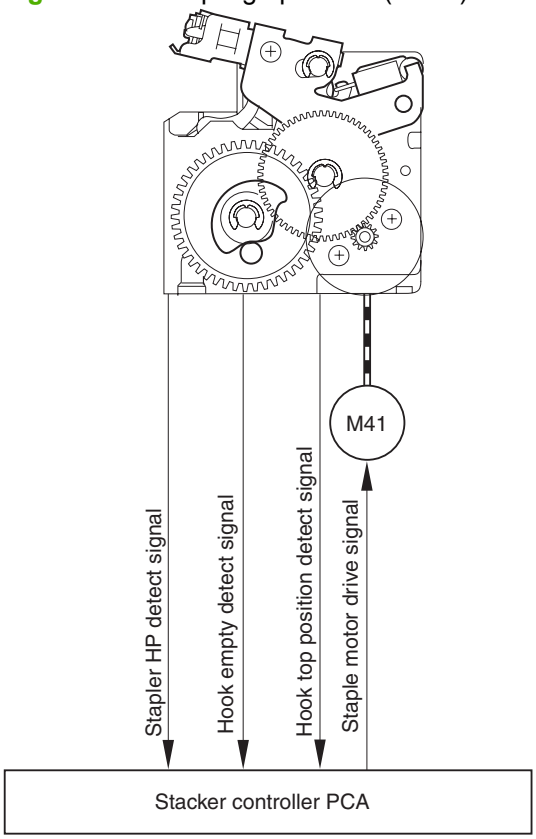


Figure 8-31 Stapling operation (2 of 2)



Shift the staple unit

The stapler-shift motor (M35) shifts the stapler unit. The stapler-shift home-position sensor (PI40) detects the home position. When there is a staple command from the product, the stapler shifts to the

staple ready position, which depends on the stapling position and paper size. The stapler unit waits at the following points when staple mode is selected:

Figure 8-32 Front 1-point stapling

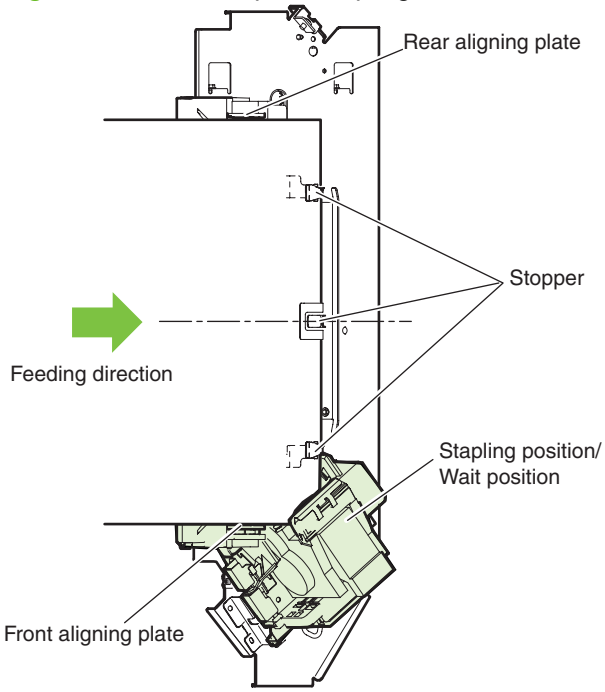


Figure 8-33 Rear 1-point stapling

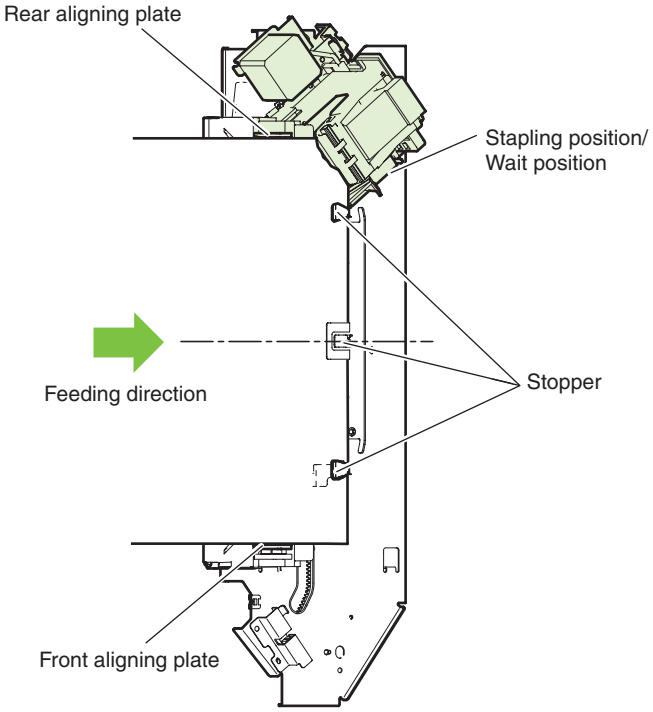
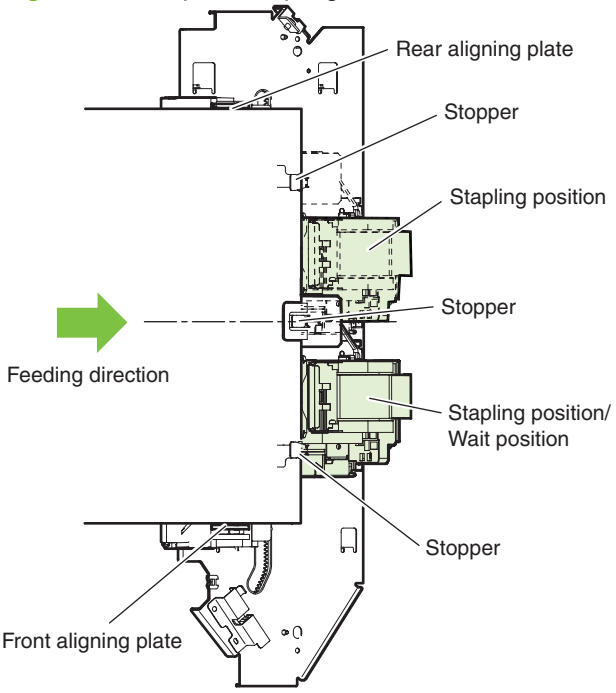


Figure 8-34 2-point stapling



Stack operation (stapler/stacker and booklet maker)

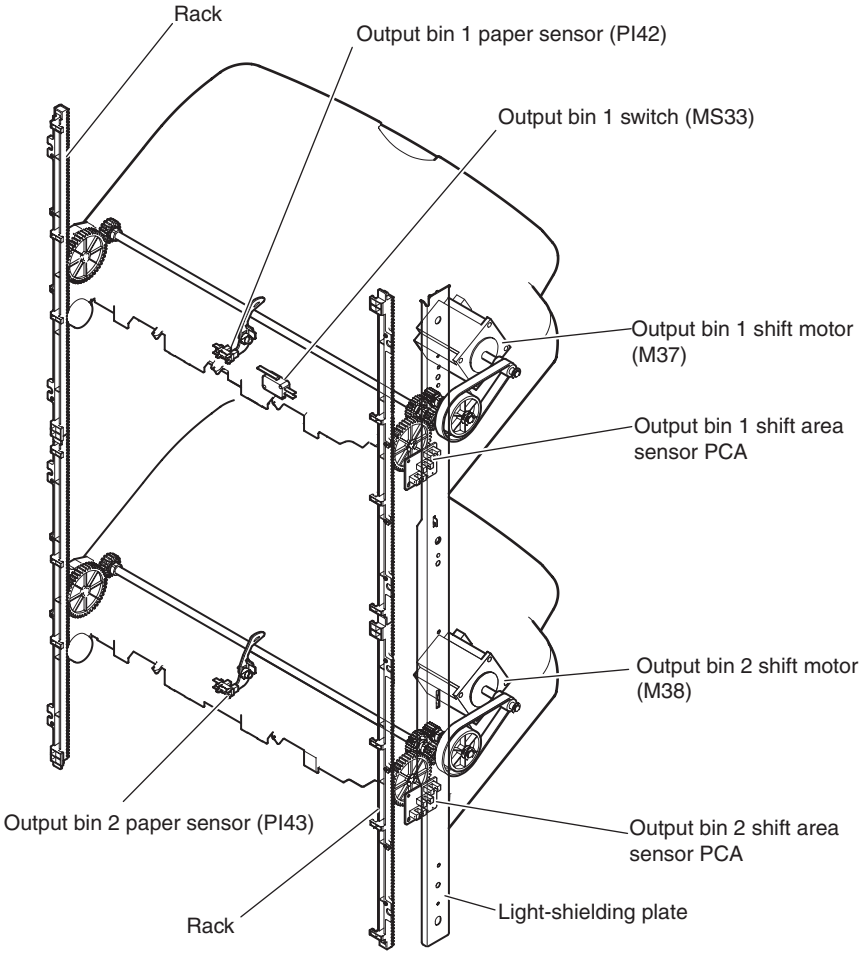
Output bin operation

This accessory has an upper output bin (output-bin 1) and a lower output bin (output-bin 2).

- The output-bin-1-shift motor (M37) and output-bin-2-shift motor (M38) move output-bin 1 and output-bin 2 up and down independently.
- The output-bin-1 paper sensor (PI42) and output-bin-2 paper sensor (PI43) detect paper stacked on the output bin.
- The output-bin-1 paper-surface sensor (PI41) and output-bin-2 paper-surface sensor (PI48) detect the home positions of output-bin 1 and output-bin 2.
- The home position is the top surface of the paper when paper is stacked on the output bin, or the position where the edge of the output bin is detected when no paper is stacked.
- When the power is turned on, the stacker controller PCA drives the output-bin-1-shift motor (M37) and output-bin-2-shift motor (M38) to return the output bin to home position. If already at home position, the output bin is moved from the home position and then returned. If both output bins are at home position, this is performed for output-bin 1 and then for output-bin 2.
- If the product specifies output-bin 2, the stacker controller PCA shifts the output bin so that output-bin 2 is at the delivery port. When paper is stacked on the output bin, a prescribed number of pulses drive the output-bin-1-shift motor (M37) or output-bin-2-shift motor (M38) to lower the output bin. Then the output bin returns to home position to prepare for the next stack.
- The upper and lower limits of the output bin are detected by three area sensors (PS981, PS982, and PS983) on the output-bin-1- and output-bin-2-shift area sensor PCA.

- The stacker controller PCA stops driving the output-bin-1-shift motor (M37) and output-bin-2-shift motor (M38) when it detects the upper or lower limit of the output bin. Also, the on/off combinations of the area sensors (PS981, PS982, PS983) are used to detect over-stacking according to the stack height for large-size and mixed stacking.
- The stacker controller PCA stops supplying +24 V to the output-bin-1-shift motor (M37) and stops the stacker operation when the output-bin-1 switch (MS33) turns on.

Figure 8-35 Items detected by the area sensors (PS981, PS982, PS983)



NOTE: PI42 is located on output-bin 1.

NOTE: PI43 is located on output-bin 2.

Figure 8-36 Output-bin components

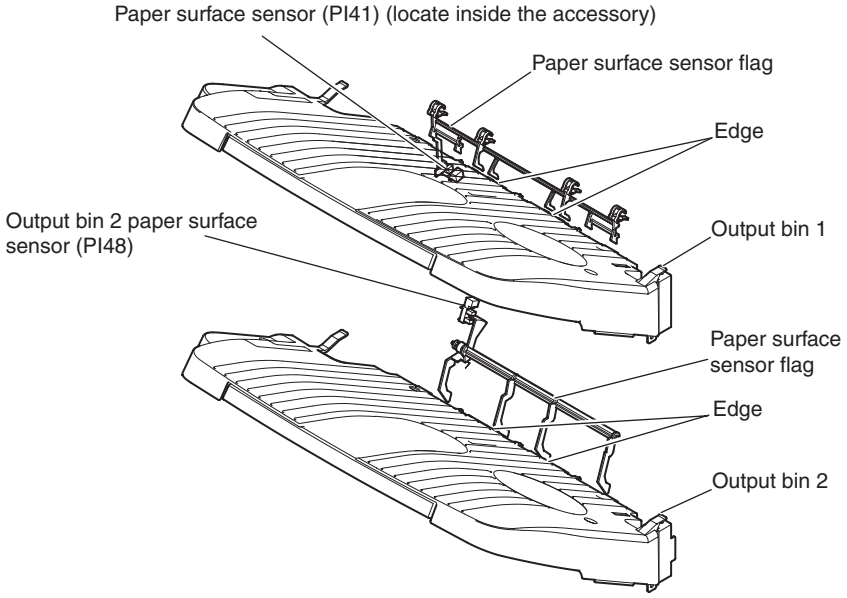


Table 8-7 Output-bin-1-shift area sensor PCA

Detected items	Area sensors 1 (PS983)	Area sensors 2 (PS982)	Area sensors 3 (PS981)
Output-bin-1 upper limit	off	off	off
Stack-count 500-sheet limit exceeded	on	on	off
Stack-count 1000-sheet limit exceeded	on	off	off
Output-bin-1 lower limit	on	off	on

Table 8-8 Output-bin-2-shift area sensor PCA

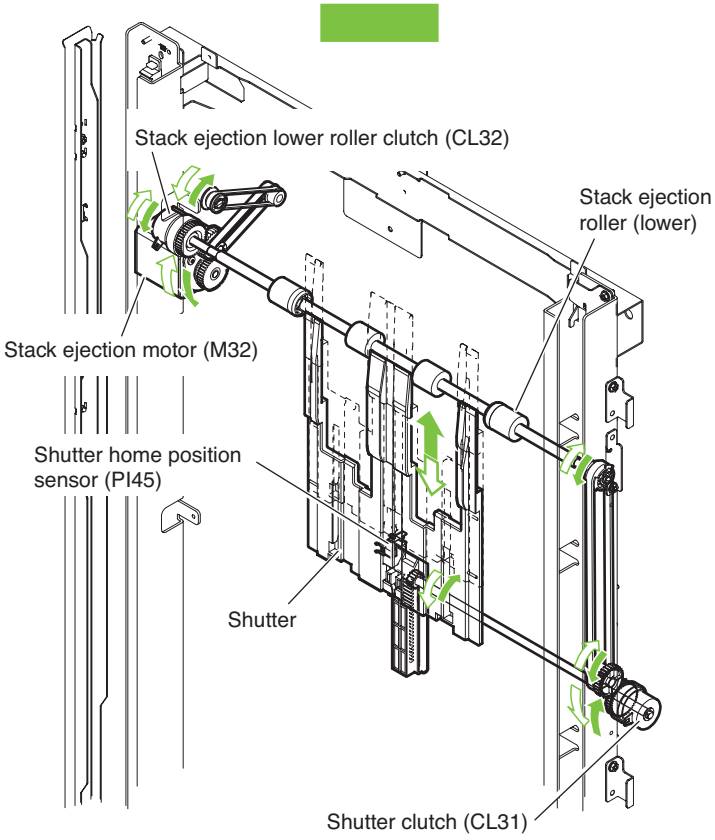
Detected items	Area sensors 1 (PS983)	Area sensors 2 (PS982)	Area sensors 3 (PS981)
Output-bin-2 upper limit	off	on	off
Stack-count 500-sheet limit exceeded	on	on	off
Stack-count 1000-sheet limit exceeded	on	off	off
Output-bin-2 lower limit (Stapler/stacker)	off	off	off
Output-bin-2 lower limit (Booklet maker)	off	off	on

Shutter operation

To prevent the delivery section from catching stacked paper in output-bin 1 when it passes, a shutter is provided at the delivery section. The shutter closes when output-bin 1 passes, even when no paper is stacked. When the shutter clutch (CL31) and stack-ejection lower-roller clutch (CL32) are on, the shutter

moves up (closes) when the stack-ejection motor (M32) turns forward and moves down (open, delivery enabled), which occurs when the motor turns backward. The shutter home-position sensor (PI45) detects the opening and closing of the shutter.

Figure 8-37 Shutter location



Jam detection

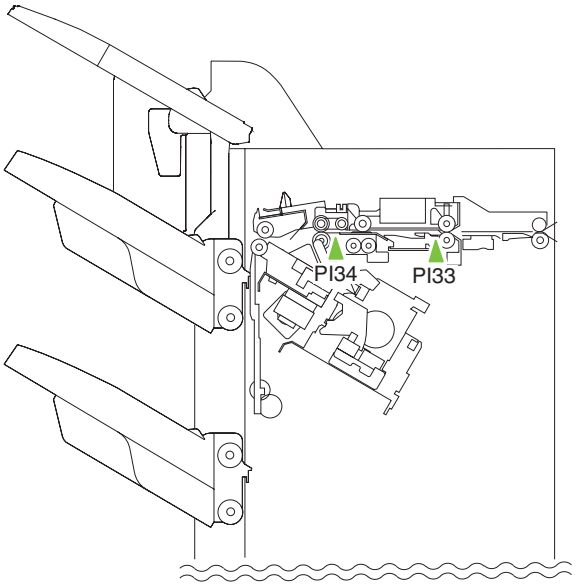
The following sensors detect paper and determine whether paper is delivered properly.

- Stacking paper-path-entry sensor (PI33)
- Stacking paper-path-delivery sensor (PI34)

A jam is identified by checking whether paper is present at each sensor at the timing programmed in the memory of the microcomputer (CPU) on the stacker controller PCA. When the CPU identifies a jam, it suspends the stacker's delivery operation and informs the product of the jam. When all doors are closed after the paper jam is removed, the stacker use the two sensors (stacking paper-path-entry sensor and stacking paper-path-delivery sensor) to check for further jams. If the sensors detect paper,

the stacker determines that the paper jam has not been removed and sends another jam removal signal to the product.

Figure 8-38 Jam detection sensors

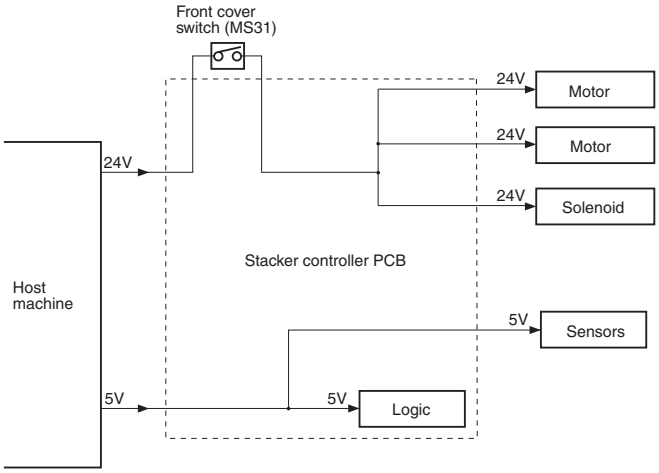


Power supply

Power-supply route

When the product power is turned on, 5 Vdc and 24 Vdc are supplied from the product to the stacker controller PCA. The 24 Vdc power drives the motors, solenoids, etc. The 5 Vdc power drives sensors, IC chips on the stacker controller PCA, etc. When the front-cover switch (MS31) is open, the 24 Vdc power for the motor drive is shut down.

Figure 8-39 Power-supply route



Protection function

The 24Vdc for the motor and solenoid drive has a fuse or motor driver for over-current protection.

HP Booklet Maker/Finisher accessory

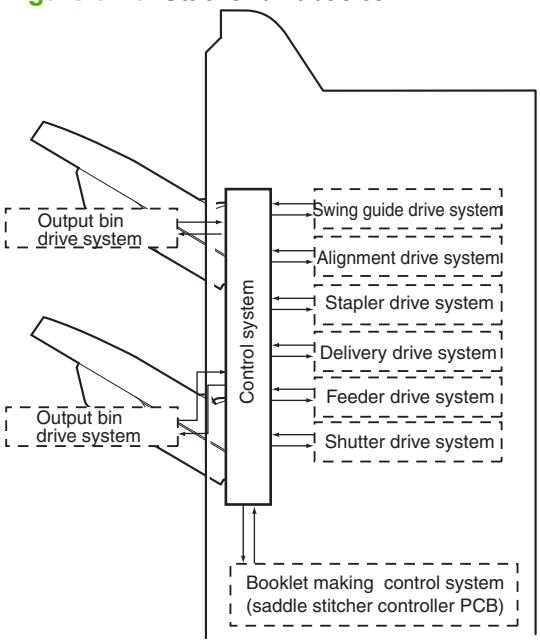
Basic operation

The following section describes the basic operation of the HP Booklet Maker/ Finisher accessory.

Basic operation of the stacker unit

The stacker unit processes jobs from the product in several ways. These include simple stacking, job offset, and stapling. The stacker controller PCA controls all operations involved in these modes, according to the commands from the product. Jobs from the product can also be routed for booklet making.

Figure 8-40 Stacker unit basics



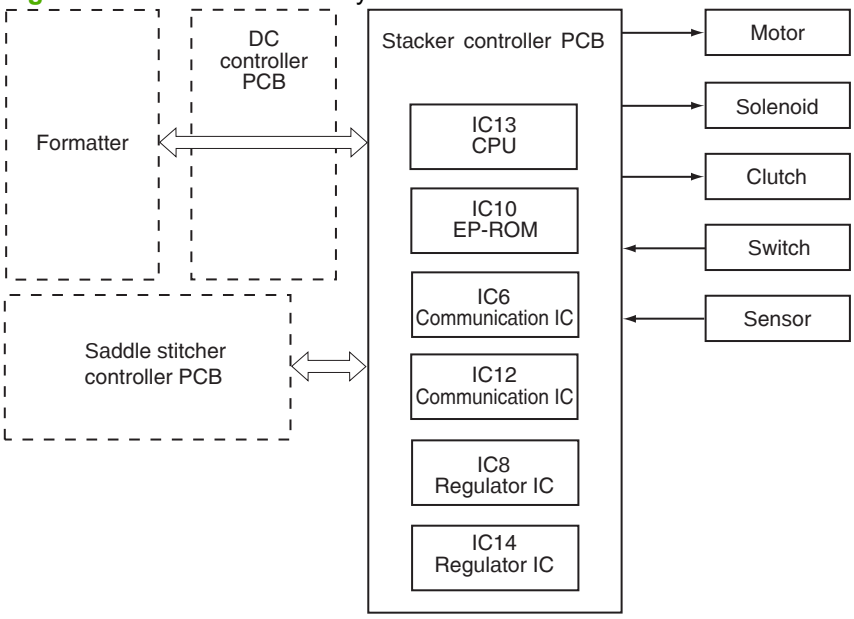
Electrical circuitry of the stacker unit

A 16-bit microprocessor (CPU) is installed on the stacker controller PCA to control the stacker operation sequence and CAN communication with the video controller PCA. The stacker controller PCA drives solenoids, motors, and so forth in response to the commands received from the video controller through the CAN communication line. In addition, the stacker controller PCA reports information about various sensors and switches to the video controller through the CAN communication line. Major functions of the IC chips installed on the stacker controller PCA are as follows:

- IC13 (CPU): Controls the operation sequence
- IC10 (EEP-ROM): Backs up adjustment values
- IC6 (Communication IC): Communicates with the host machine
- IC12 (communication IC): Communicates with the saddle stitcher unit

- IC8 (Regulator IC): Generates 5 V
- IC14 (Regulator IC) : Generates 3.3 V

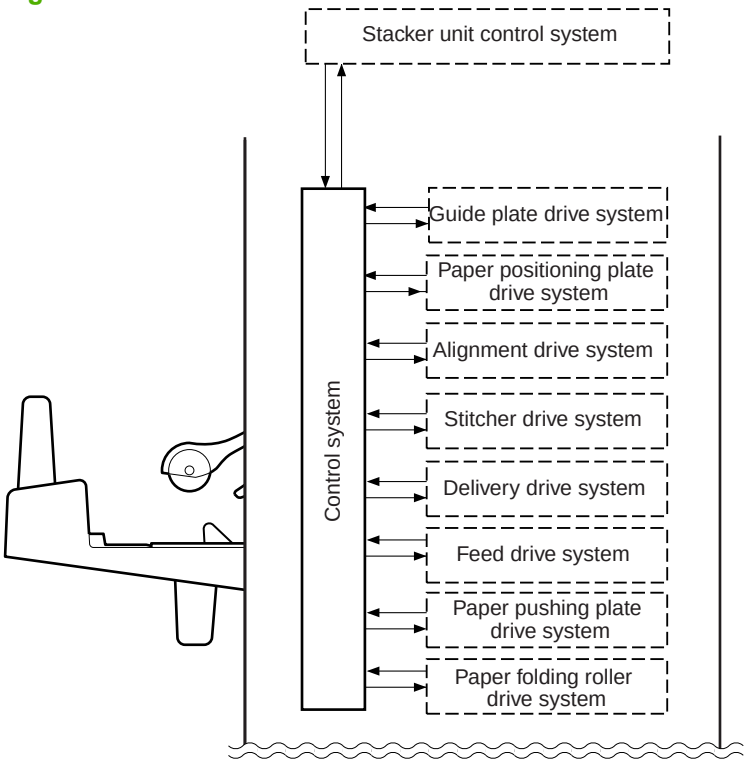
Figure 8-41 Electrical circuitry of the stacker unit



Basic operation of the booklet maker unit

The booklet maker unit staples and folds (in half) stacks of paper delivered from the stacker unit. The product sends commands via the stacker to the saddle stitcher controller PCA, which controls these operations.

Figure 8-42 Booklet maker unit basics

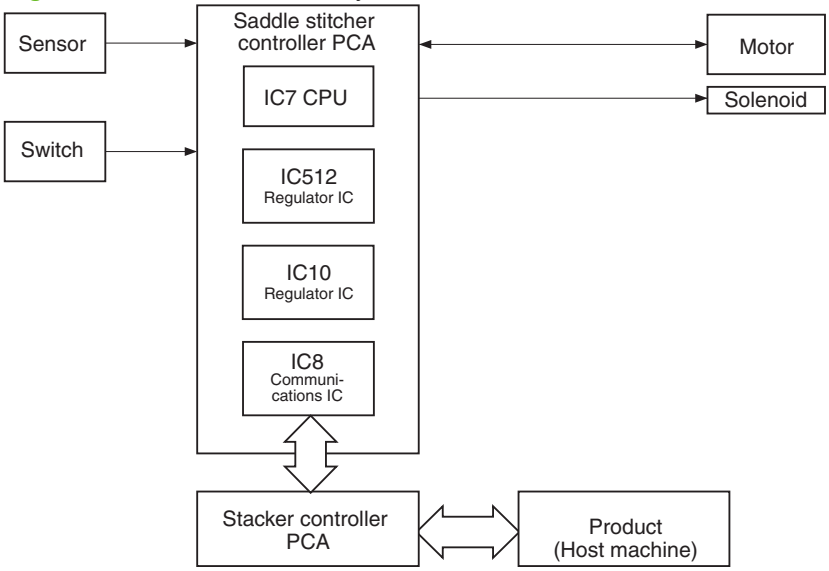


Electrical circuitry for the booklet maker unit

The saddle-stitcher controller PCA has a microprocessor that controls the sequence of operations and that handles serial communications with the stacker controller PCA. This includes driving solenoids and motors in response to the commands from the stacker controller PCA. The saddle-stitcher controller PCA is also used to communicate the state of various sensors and switches to the stacker controller PCA in serial. The functions of the major ICs mounted on the saddle stitcher controller PCA are as follows:

- IC7 (CPU): Controls the sequence of operations. Contains the sequence program
- IC8 (communications IC): Communicates with the finisher unit
- IC512 (regulator IC): Generates 5 V
- IC10 (regulator IC): Communicates with the product

Figure 8-43 Electrical circuitry for the booklet maker unit



Feed drive system

The stacker unit stacks paper delivered from the product, offsets stack jobs, or staples and delivers paper to the outputs according to commands from the product. The booklet maker unit carries, aligns, and stitches paper delivered from the product, and then feeds the resulting stack. After these operations, the booklet maker unit folds the stacks of paper and delivers them to the booklet-maker-unit output bin. The delivery methods are shown in the following figure.

Figure 8-44 Feed drive for the stacker unit

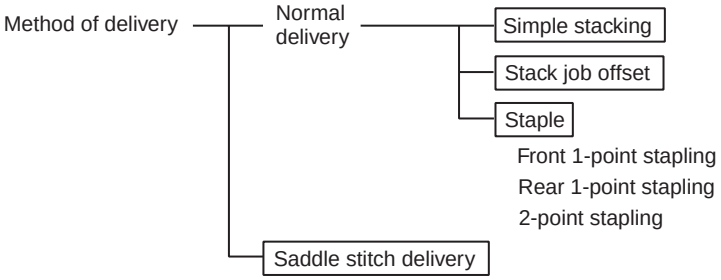
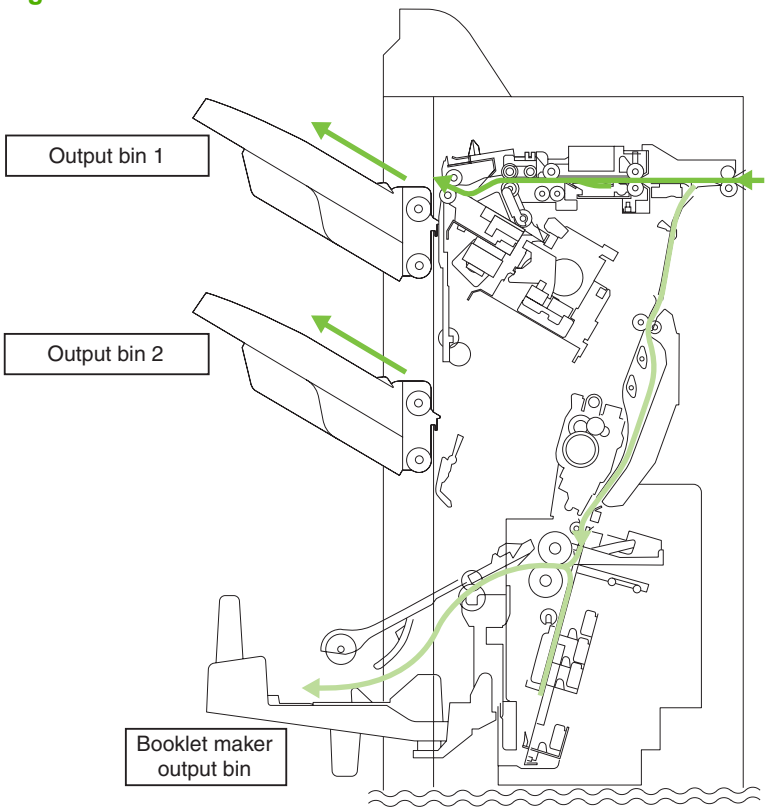


Figure 8-45 Feed drive for the booklet maker unit



Construction of the stacker-unit control system

The paper sent from the product is delivered to the output bin or the processing tray according to the type. Job offset or stapling is performed on paper delivered to the output bin, according to the instructions from the product. When paper ejects from the processing tray, a stack trailing-edge assist guide is used in addition to the stack-ejection roller to eject the stack. The inlet motor (M31), stack-ejection motor (M32), and stack trailing-edge assist motor (M39) are step motors. The microcomputer (CPU) in the stacker controller PCA rotates these motors forward or backward. The following two sensors in the paper delivery path detect the arrival or passing of papers:

- Stacking paper-path-entry sensor (PI33)
- Stacking paper-path-delivery sensor (PI34)

Each output bin also has sensors to detect the presence of a paper on the bin:

- First output-bin paper sensor (PI42)
- Second output-bin paper sensor (PI43)

If the sheet does not reach or pass each sensor within the prescribed time, the stacker controller PCA determines that the jam has occurred and stops the operation. It then notifies the product that a jam has occurred. After the jam is cleared and the doors are closed, the stacker unit checks whether the sheet is detected by the stacking paper path entry sensor or stacking paper path delivery sensor. If the sensors

detect a sheet of paper, the stacker unit determines that the jam is not cleared and re-sends the jam processing signal to the product.

Figure 8-46 Components of the stacker unit control system (1 of 2)

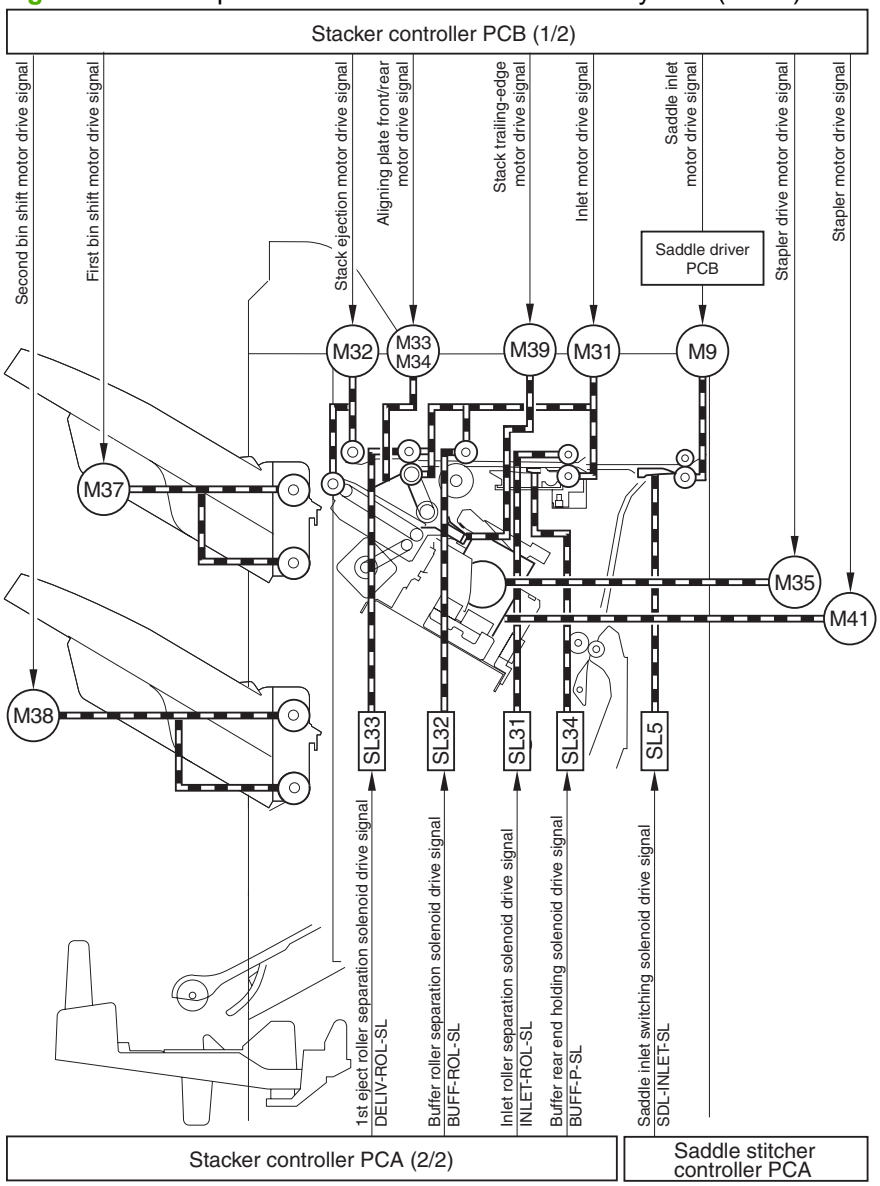
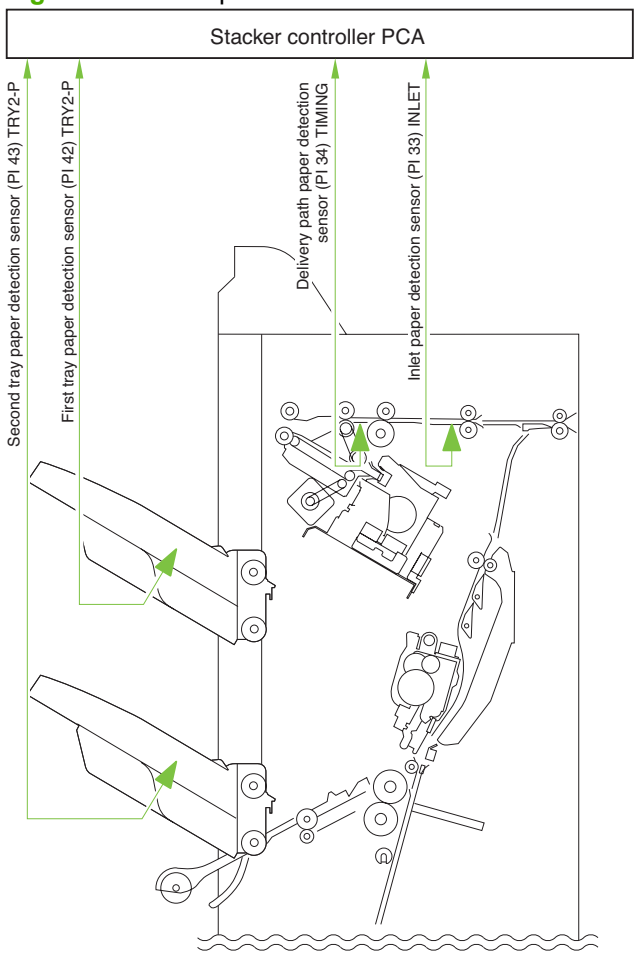


Figure 8-47 Components of the stacker unit control system (2 of 2)



Paper-delivery path for the stacker unit

See Paper delivery path (stapler/stacker and booklet maker) on page 587.

Construction of the booklet-maker-unit control system

- The paper-output mechanism keeps paper from the stacker unit in place for stapling and folding.
- The No. 1 flapper and the No. 2 flapper of the paper inlet configure the paper path to fit the paper size.
- The paper-positioning plate is kept at a predetermined location to fit the paper size.
- The paper-positioning-plate motor (M4) drives the paper-positioning plate, and the position of the plate is identified by the number of motor pulses coming from the paper-positioning-plate home-position sensor (PI7).
- The feed rollers and the crescent roller handle paper moved by the inlet roller and held in a predetermined position.
- The feed plate moves paper by coming into contact with or moving away from paper as needed.
- The alignment plates order the stack when paper is output. The alignment motor (M5) drives the alignment plates. The position of the alignment motor (M5) is identified by the number of motor pulses sent from the alignment-plate home-position sensor (PI5).

- The guide plate covers the folding rollers to prevent interference between paper and the paper-folding rollers when paper is output. The guide plate moves down before paper is folded to expose the paper-folding rollers.
- The inlet has three paper sensors (PI18, PI19, PI20) that are each suited to specific paper sizes.
- The paper-positioning plate has a paper-positioning-plate paper sensor (PI8).

Figure 8-48 Components of the booklet-maker-unit control system

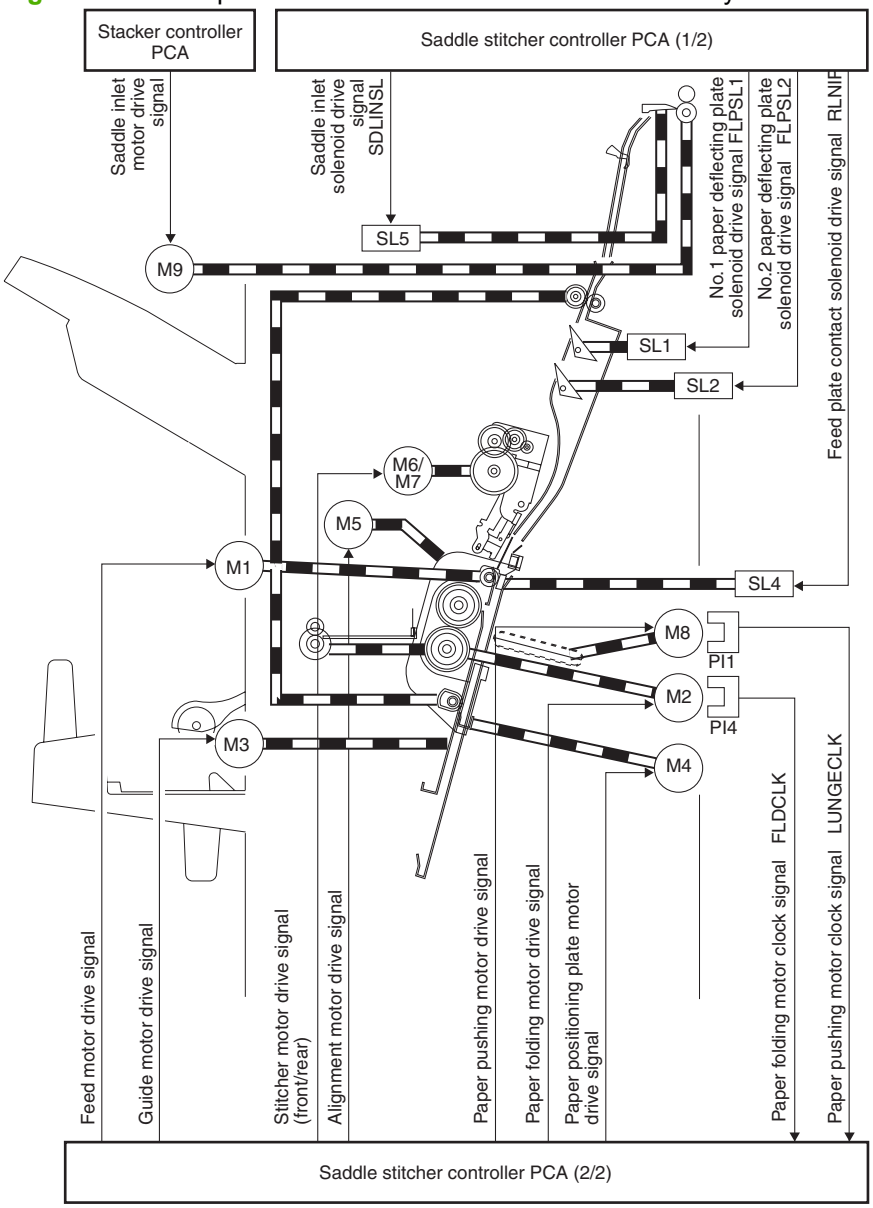
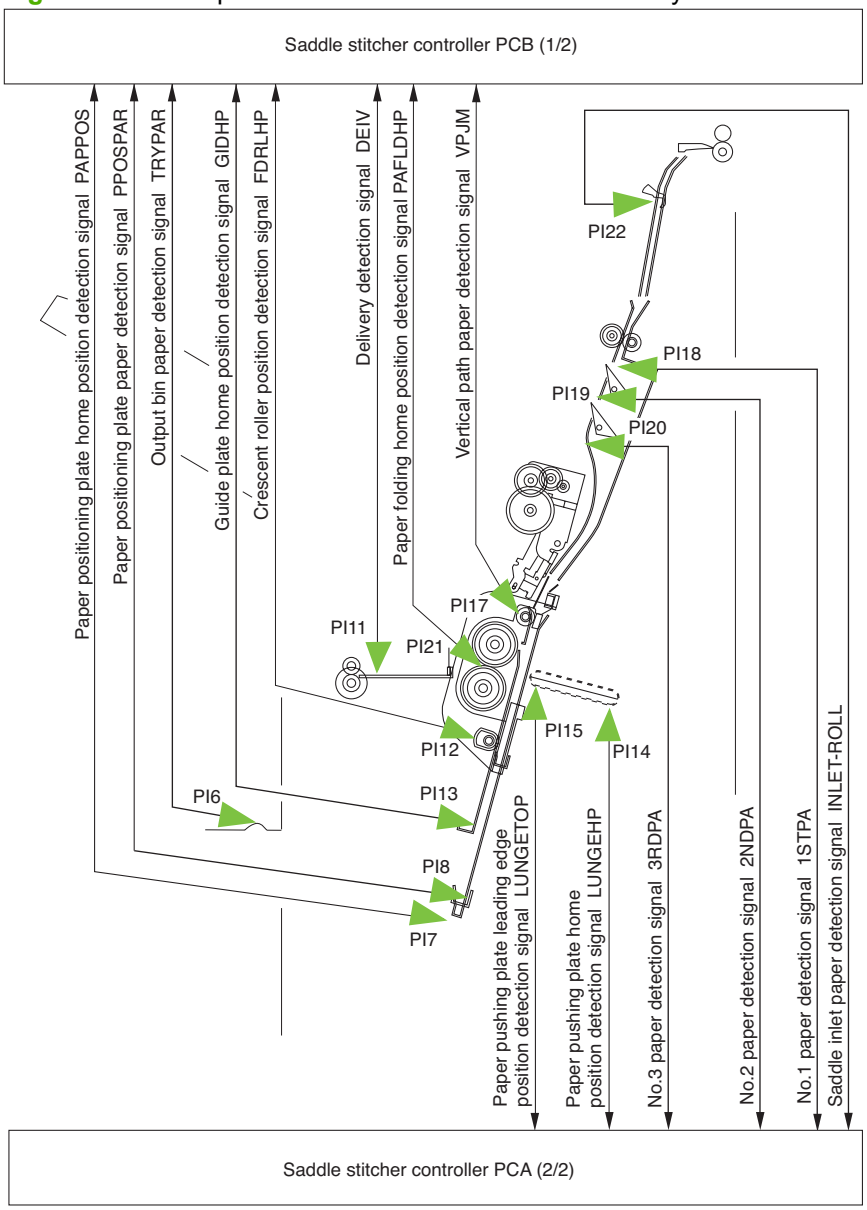


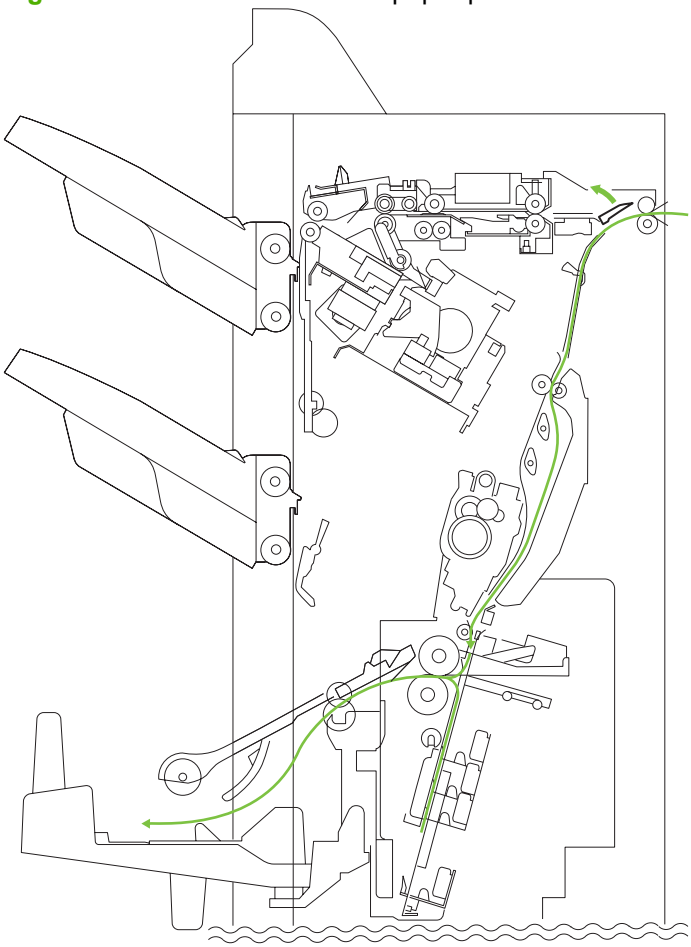
Figure 8-49 Components of the booklet-maker control system



Paper-delivery path (booklet maker only)

The saddle-stitcher flapper routes paper from the product to the booklet maker unit. The booklet maker unit staples, folds and then delivers the paper to the booklet-maker-unit output bin.

Figure 8-50 Booklet-maker-unit paper path

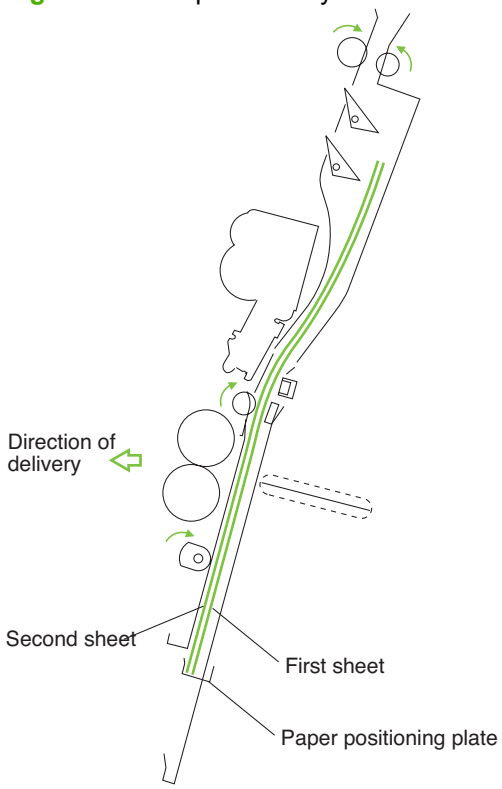


Basic operation for the booklet maker

- When receiving paper from the stacker unit, the booklet maker unit outputs paper in a vertical orientation to a vertical path.
- Two paper-deflecting plates configure the path.

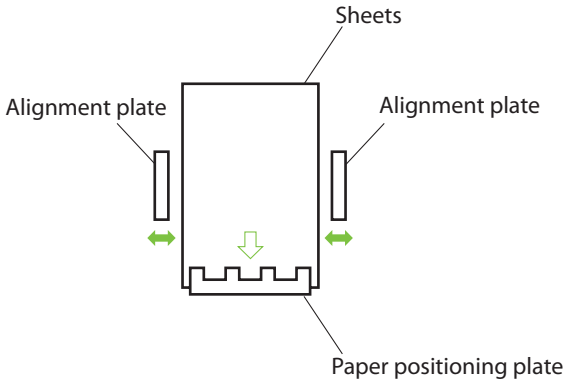
- The paper-positioning plate sets the position of the paper so that the center of the stack matches the stapling/folding position.
- Subsequent paper is output closer to the delivery slot. The volume of paper that can be output is as follows: 15 sheets (maximum of 14 sheets of 80 g/m^2 + 1 sheet of 250 g/m^2).

Figure 8-51 Paper delivery for booklet maker



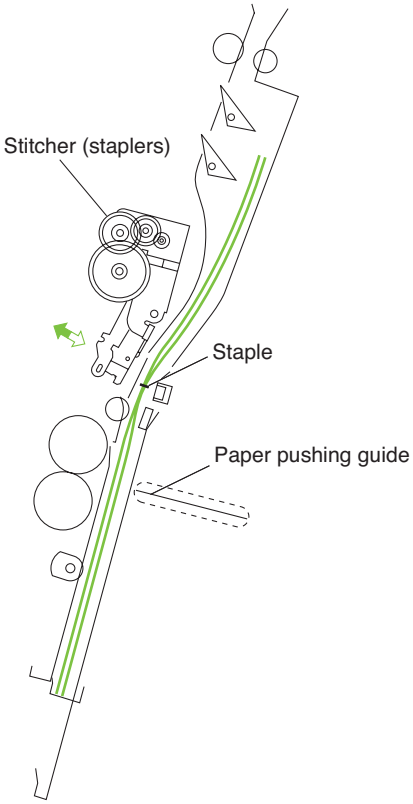
The alignment plates put paper in order when it is output to the vertical-path assembly. Mounted at the edge of the-vertical path assembly, alignment plates also prepare the stack for delivery after stapling.

Figure 8-52 Alignment plates



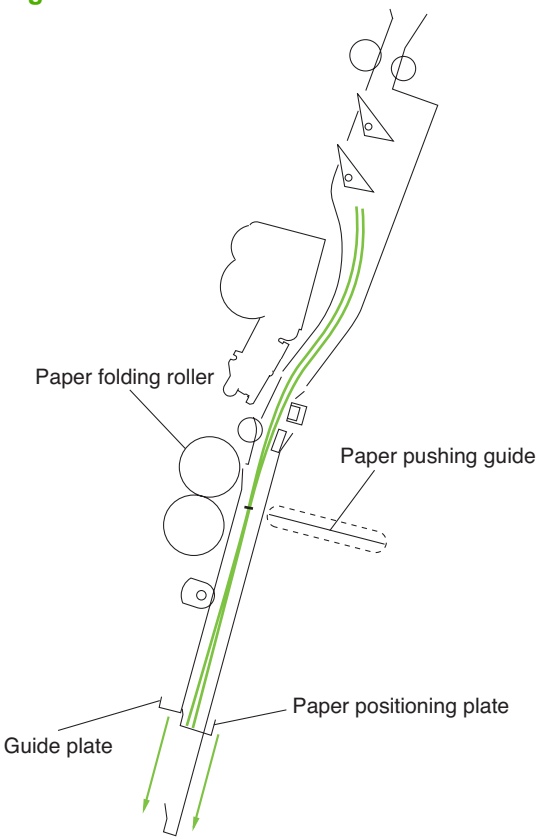
When all paper has been output, the two stitchers staple the stack. The stitchers face the center of a stack and alternate to prevent the paper from wrinkling and to limit the load on the power supply. If only one sheet arrives, stitching does not take place and the next operation (stack feeding) occurs.

Figure 8-53 Stitching the stack



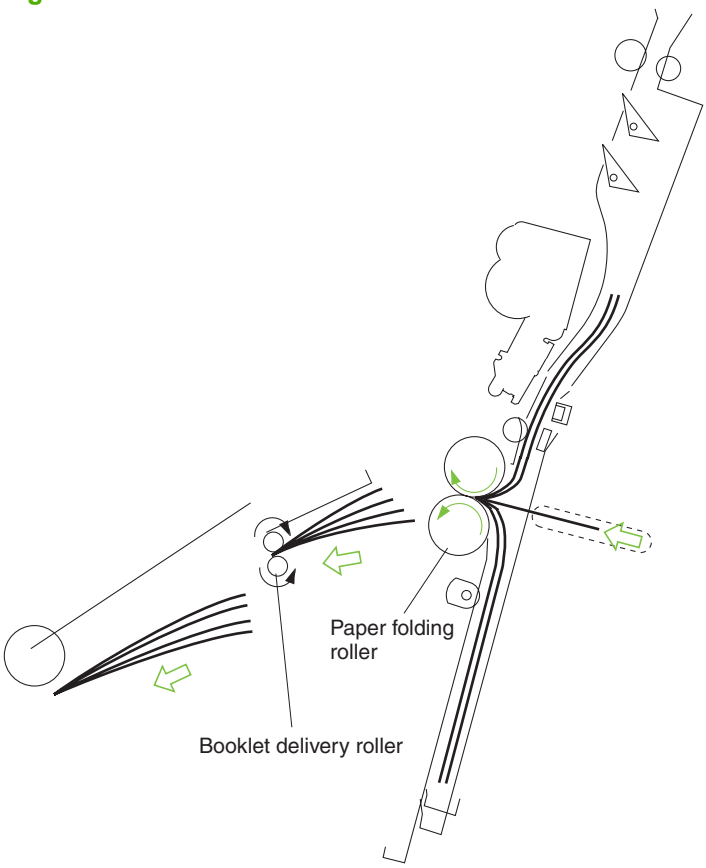
The booklet maker unit folds the stitched stack, and then feeds it to where the stapling position matches the height of the paper-pushing plate and the paper-folding roller nip. The paper-positioning plate moves the stack forward and the guide plate descends so that the paper-folding rollers directly face the stack.

Figure 8-54 Position the stack



The paper-pushing plate moves the stack to the paper-folding rollers that hold the stack at its center and fold it. The paper-folding rollers and delivery roller then output the stack to the output bin.

Figure 8-55 Fold and deliver the stack



Control of the inlet flappers

The two flappers mounted at the paper inlet configure the feed path according to paper size. The flappers detect the trailing edge of the paper and prevent the trailing paper from butting against the top of the existing stack. The following table shows the relationship between sensors and paper sizes.

Table 8-9 Sensors and paper sizes

Sensor	A3/279 mm x 432 mm (11 x 17)	B4/LGL	A4R/LTRR
No.1 paper sensor (PI18)	Used	Used	Used
No.2 paper sensor (PI19)	Not used	Used	Used
No.3 paper sensor (PI20)	Not used	Not used	Used

Each flapper is driven by its own solenoid. The following table shows the relationship between solenoids and paper sizes.

Table 8-10 Solenoids and paper sizes

Sensor	A3/279 mm x 432 mm (11 x 17)	B4/LGL	A4R/LTRR
No.1 paper-deflecting solenoid (SL1)	off	on	on
No.2 paper-deflecting solenoid (SL2)	off	off	on

Figure 8-56 A3/279 mm x 432 mm (11 x 17) paper path (3 sheets)

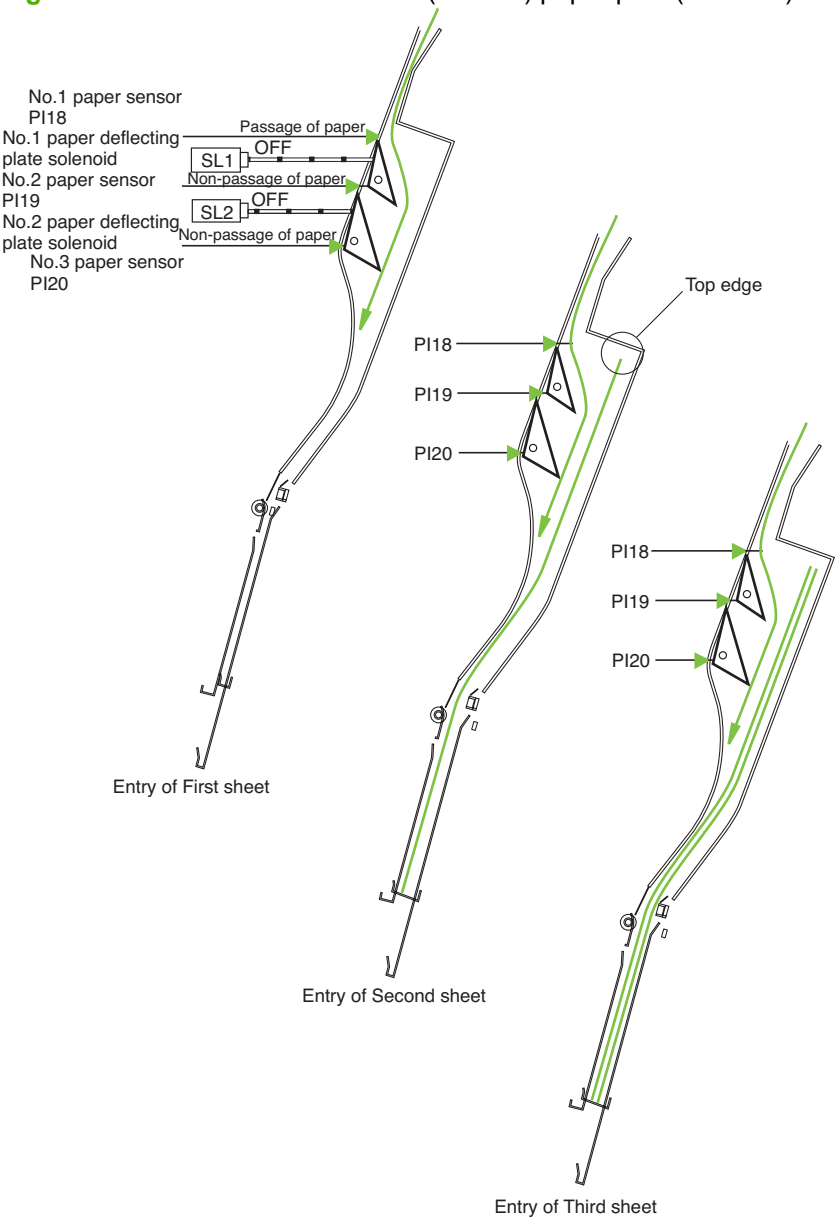


Figure 8-57 B4/LGL paper path (3 sheets)

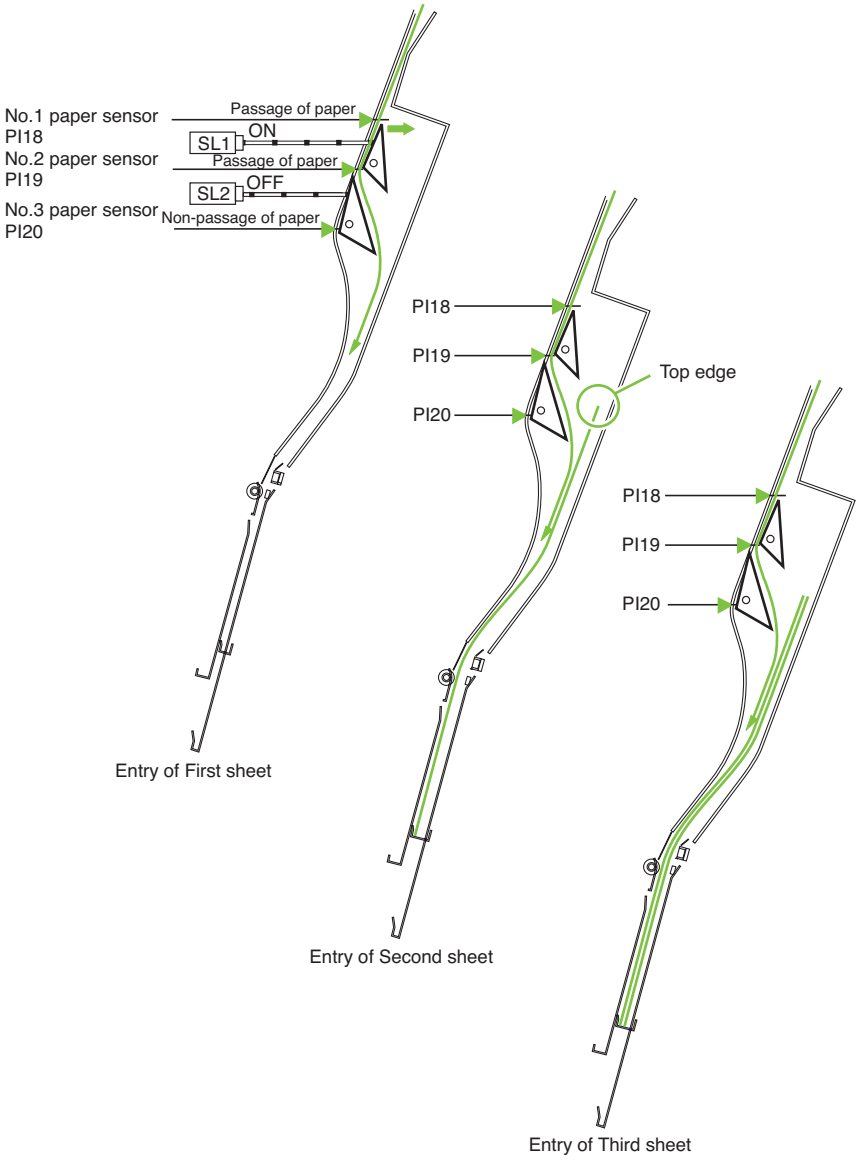
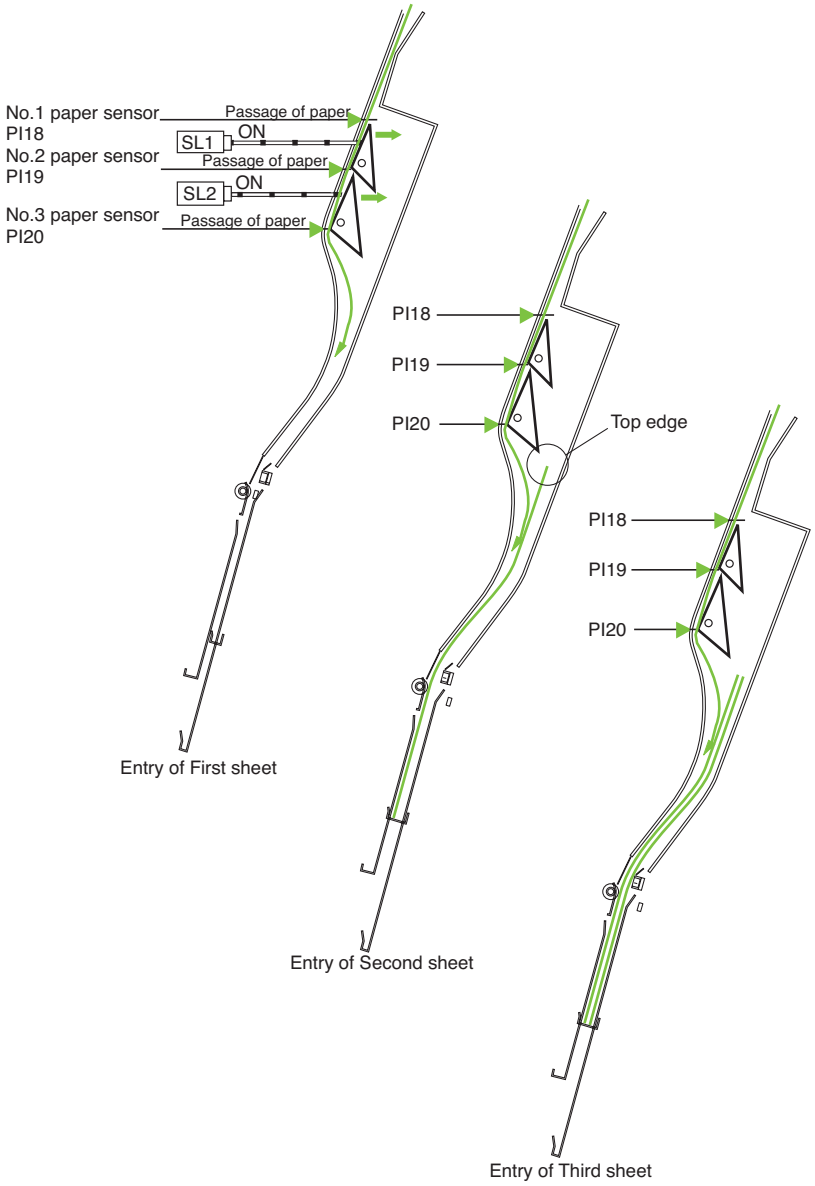


Figure 8-58 A4R/LTRR Paper Path (3 sheets)



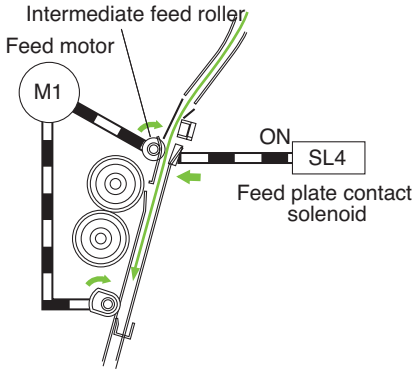
Control of paper movement

- When the leading edge of the paper has passed the inlet flapper, the intermediate-feed roller and the crescent roller start to move the paper forward.
- When the leading edge of the paper reaches the intermediate-feed roller, the feed-plate-contact solenoid (SL4) causes the roller to contact the path bed and move the paper forward. When the leading edge of the paper reaches the paper-positioning plate, contact is broken.
- When the leading edge of the first sheet reaches the paper-positioning plate, the paper-positioning-plate paper sensor (PI8) turns on. Subsequent sheets will not be checked because the first sheet will still be over the sensor.

- The crescent roller rotates while sheets are output, butting the leading edge of each sheet against the paper-positioning plate and keeping the leading edge of the stack in order.
- The alignment motor (M5) drives the alignment plates for each sheet to keep both the left and right edges of the sheet in order.

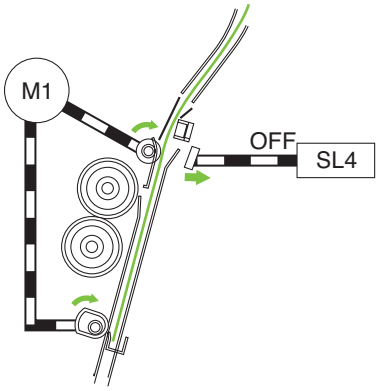
1. The solenoid turns on while paper is being moved so that the feed plate comes into contact.

Figure 8-59 Paper movement (1 of 3)



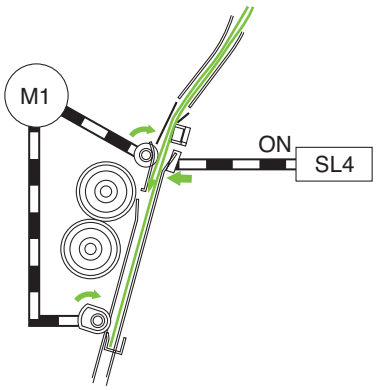
2. The solenoid turns off when the paper touches the paper-positioning plate. The feed motor continues to rotate.

Figure 8-60 Paper movement (2 of 3)



3. The solenoid turns on when the next sheet arrives, and the feed plate comes into contact.

Figure 8-61 Paper movement (3 of 3)

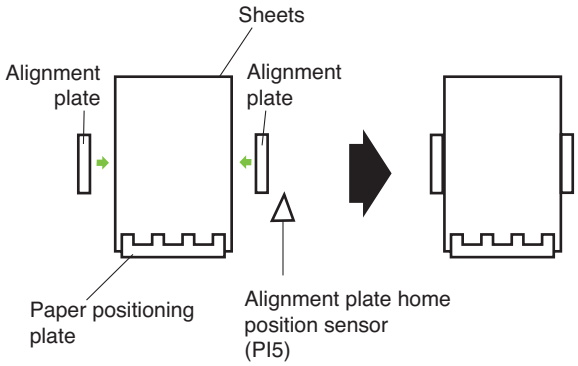


Alignment of paper

The alignment motor (M5) drives the alignment plates each time paper is output, putting both left and right edges of the sheet in order. The alignment-plate motor is a four-phase stepping motor. The position of the alignment plate is identified by the number of motor pulses from the alignment-plate home-position sensor (PI5). The following briefly describes how the saddle-stitching mechanism operates on two sheets.

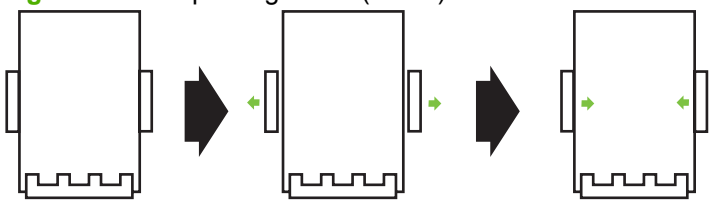
1. When the first sheet is output, the alignment plates touch the left and right edges of the stack (first alignment). The alignment plates leave the home position in advance and wait at points 10 mm from the edges of the stack.

Figure 8-62 Paper alignment (1 of 8)



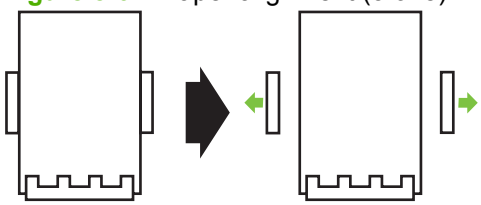
2. The alignment plates move away from the stack and then return (Second alignment).

Figure 8-63 Paper alignment (2 of 8)



3. The alignment plates move 10 mm from the edge of the stack.

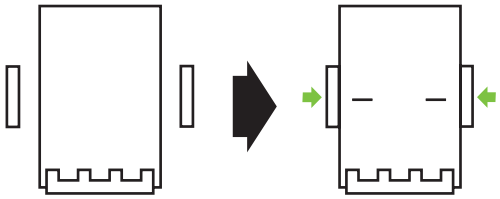
Figure 8-64 Paper alignment (3 of 8)



4. When the stack arrives, steps 1 through 3 repeat.

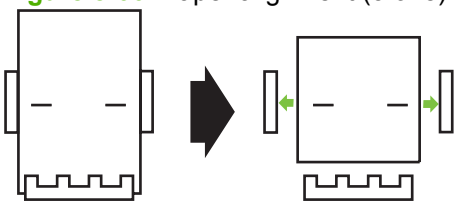
5. The alignment plates return to the stack and stitching takes place.

Figure 8-65 Paper alignment (4 of 8)



6. The alignment plates move 10 mm from the edges of the stack and folding and delivery takes place.

Figure 8-66 Paper alignment (5 of 8)



7. When the first sheet of the following stack reaches the No. 1 paper sensor, the guide moves to 10 mm from the edge of the stack for the next alignment.

Figure 8-67 Paper alignment (6 of 8)

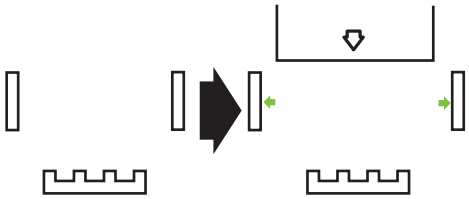


Figure 8-68 Paper alignment (7 of 8)

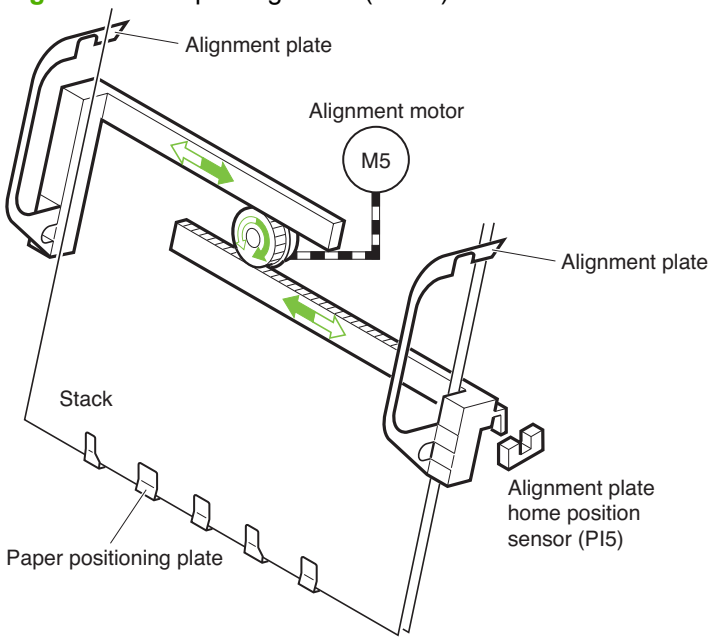
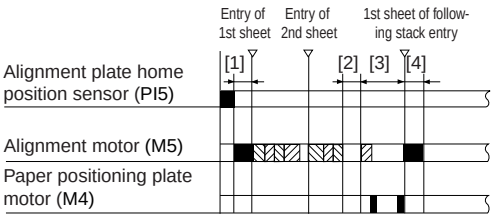


Figure 8-69 Paper alignment (8 of 8)

In case of 2 sheets:



: Alignment : Escape

[1]: Move to wait position
[2]: Stapling period
[3]: Paper folding/delivery period
[4]: Move to following stack size wait position

Control the phase of the crescent roller

During alignment, the crescent roller can create friction against the roller causing the stack to move incorrectly. To prevent this problem, the crescent-roller phase sensor (PI12) identifies the phase of the crescent roller to determine the timing of alignment. The flag for the crescent-roller phase sensor is

mounted to the crescent-roller shaft. The roller shaft rotates, turning the sensor on and off. Operation of the alignment plates corresponds with the change in the state of the sensor.

Figure 8-70 Crescent-roller process (1 of 4)

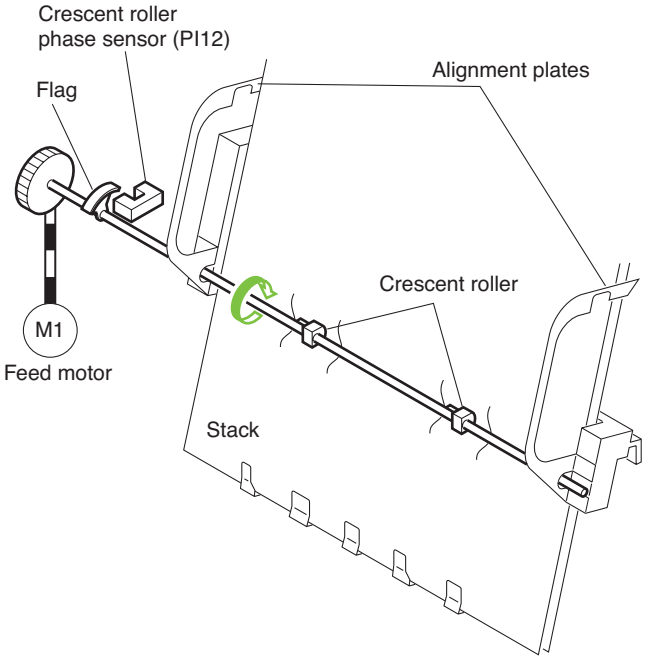


Figure 8-71 Crescent-roller process (2 of 4)

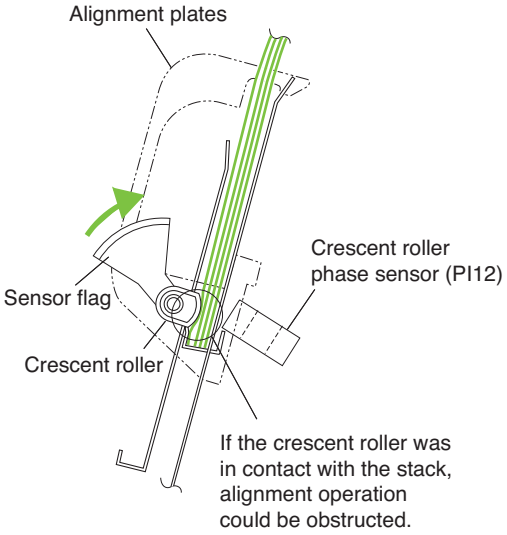


Figure 8-72 Crescent-roller process (3 of 4)

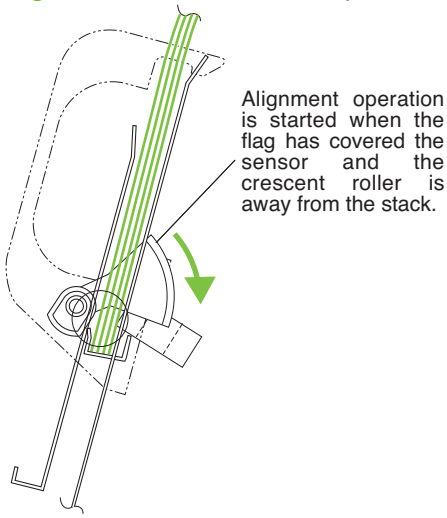
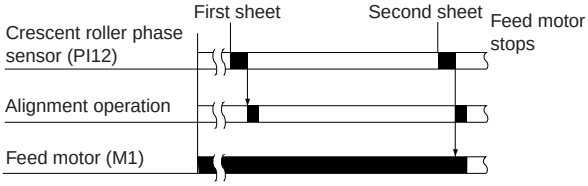


Figure 8-73 Crescent-roller process (4 of 4)



Overview of folding

The paper-folding mechanism includes a guide plate, paper-folding rollers, paper-pushing plate, and paper-positioning plate. The guide plate covers the folding rollers to prevent sheets from contacting the folding rollers during output. Before folding, the guide plate descends, allowing the folding rollers to operate. The following tables show the names and the functions of the motors and sensors used by the paper folding mechanism.

Motor	Function
Paper-folding motor (M2)	Drives the folding roller
Paper-pushing-plate motor (M8)	Drives the paper-pushing plate

Sensor	Function
Paper-pushing-plate-motor clock sensor (PI1)	Detects the paper-pushing-plate-motor clock
Paper-folding-motor clock sensor (PI4)	Detects the paper-folding-motor clock
Output-bin paper sensor (PI6)	Detects the presence/absence of a stack of sheets in the saddle output bin
Delivery sensor (PI11)	Detects the paper delivery
Paper-pushing-plate home-position sensor (PI14)	Detects the paper pushing plate leading edge position
Vertical-path paper sensor (PI17)	Detects the presence/absence of paper after removal of a jam
Paper-folding home-position sensor (PI21)	Detects the paper-folding home position

Control of stack movement

After stitching, the paper-positioning plate lowers allowing the stack to come into contact with the paper-folding rollers. The location of the paper-positioning plate is determined by the number of motor pulses from the paper-positioning home-position sensor (PI7). As the paper-positioning plate operates, the guide plate lowers for folding.

Figure 8-74 Movement of the stack

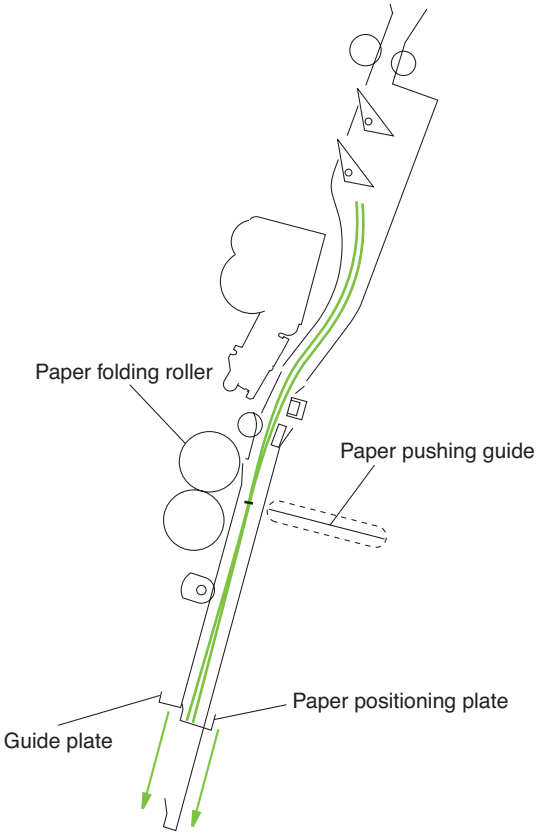
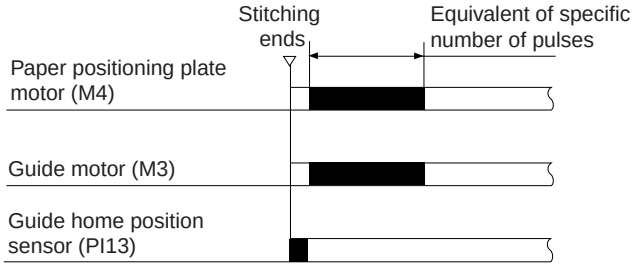


Figure 8-75 Stack sequence



Fold the stack

The paper-pushing plate pushes the center of the stack to the roller-contact section and waits at the leading-edge position until the stack is taken by the paper-folding roller. When the paper-folding roller has gripped the stack, the paper-pushing-plate motor rotates, returning the paper-pushing plate to its home position. The paper-folding roller draws the stack until the delivery roller moves it to the output bin. The thickness of the paper-folding rollers is reduced at the upper half of the periphery but maintained in the center area and at the lower half of the periphery. At the lower half of the periphery where the thickness is not reduced, the paper-folding roller (upper) and the paper-folding roller (lower) contact

each other tightly, and paper starts to be folded at this position. The upper and lower rollers feed paper while folding it and stop at the folding position. At the upper half of the periphery where the thickness is reduced, the upper and lower paper-folding rollers do not contact each other except at the center, so they only feed the paper to prevent paper from being wrinkled. The paper-folding start and stop positions are controlled by the number of motor pulses delivered from the paper-folding home-position sensor (P121).

Figure 8-76 Folding position (1 of 5)

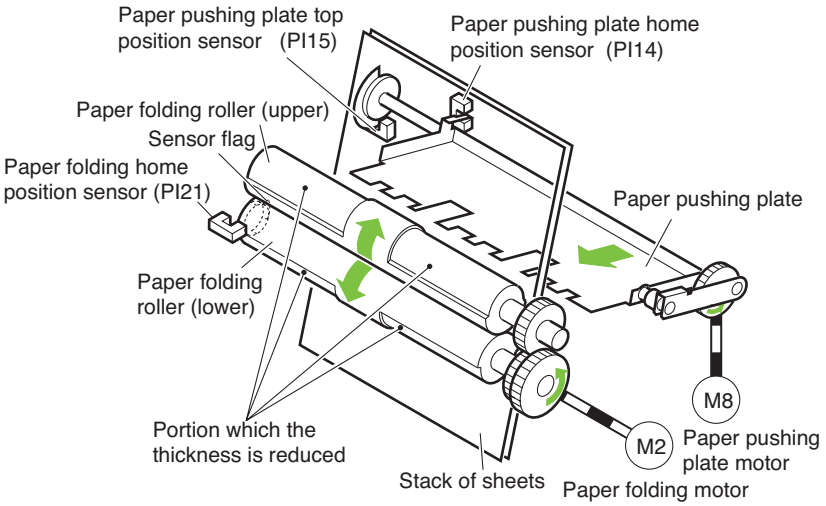


Figure 8-77 Folding process (2 of 5)

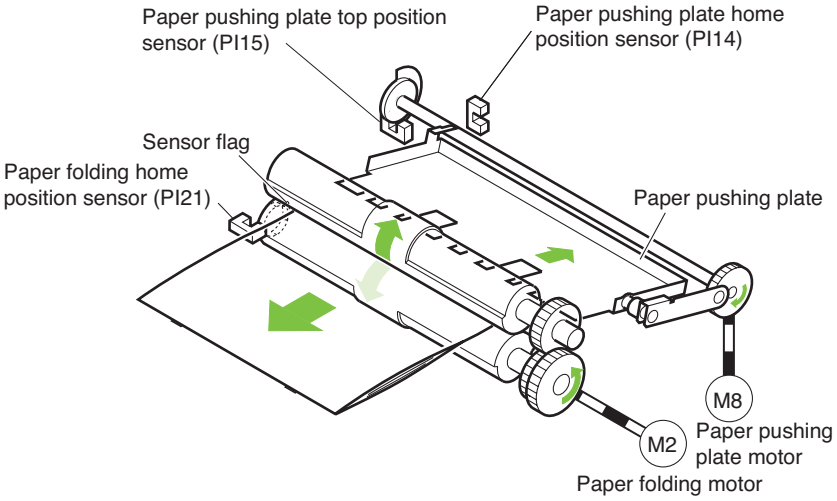


Figure 8-78 Folding start position (3 of 5)

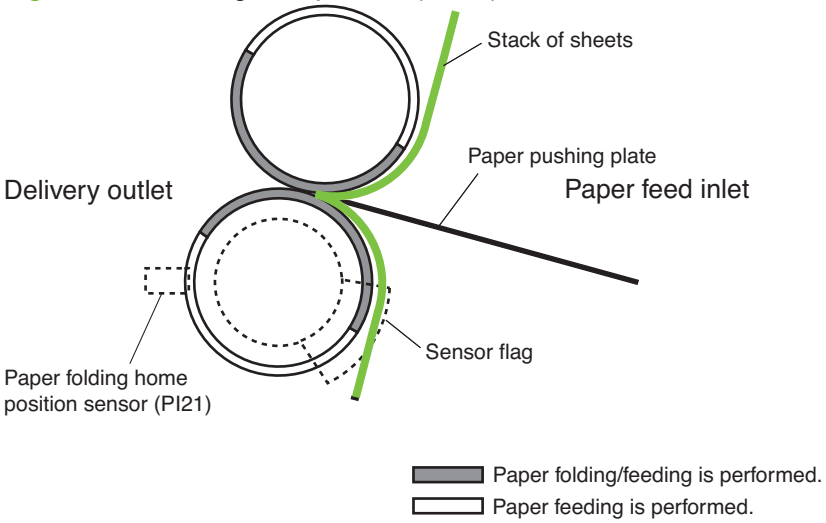


Figure 8-79 Folding start position (4 of 5)

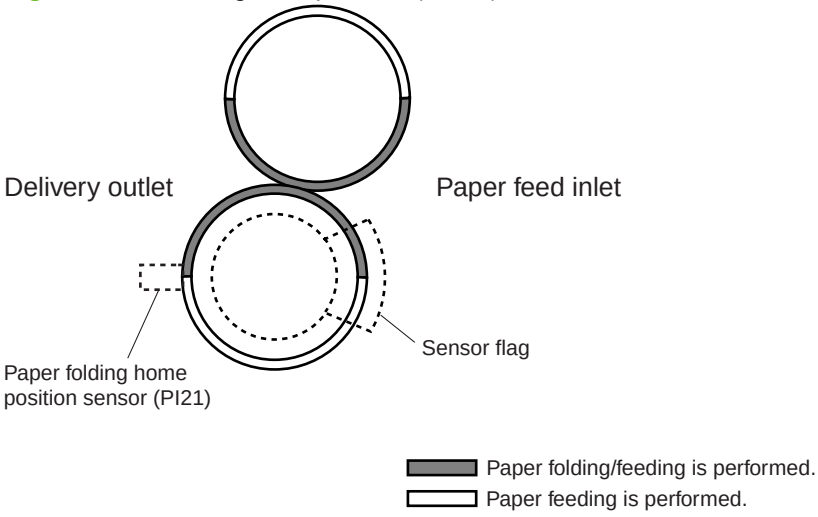
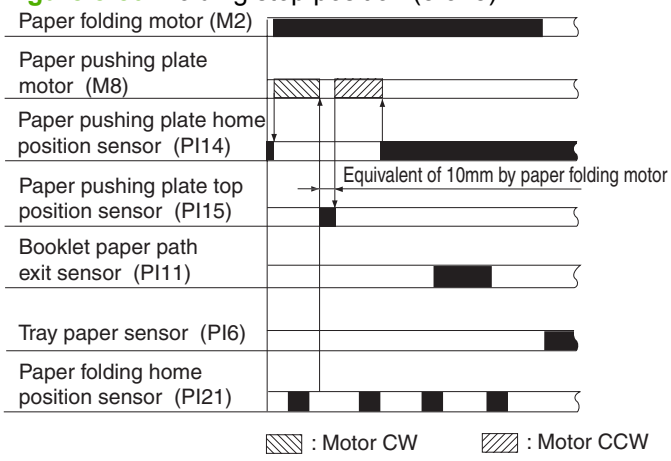


Figure 8-80 Folding stop position (5 of 5)

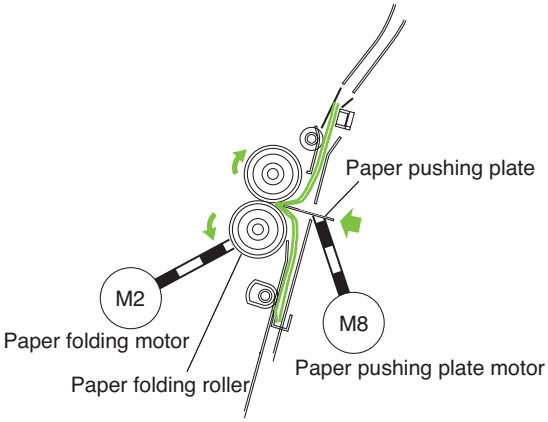


Double folding a stack

A stack of 10 or more A4R or LTRR sheets is folded twice.

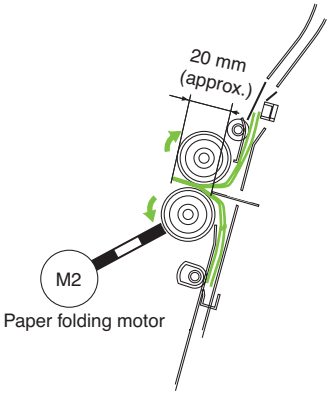
1. The paper-pushing plate pushes the stack to the paper-folding rollers.

Figure 8-81 Double-folding process (1 of 5)



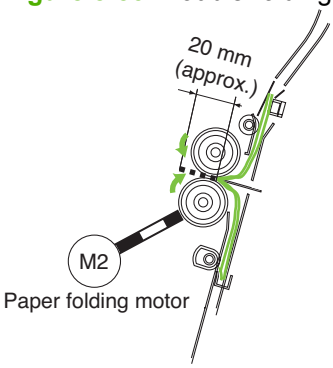
2. The paper-folding rollers grip the stack.

Figure 8-82 Double-folding process (2 of 5)



3. The paper-folding rollers rotate in reverse, pushing the stack backward 20 mm (reverse feeding).

Figure 8-83 Double-folding process (3 of 5)



4. The paper-folding rollers rotate forward to push the stack forward. The paper-pushing plate returns to its home position.

Figure 8-84 Double-folding process (4 of 5)

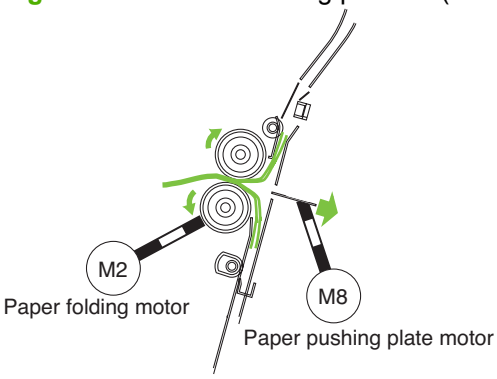
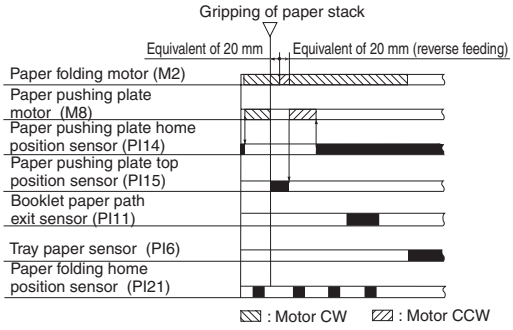


Figure 8-85 Double-folding process (5 of 5)



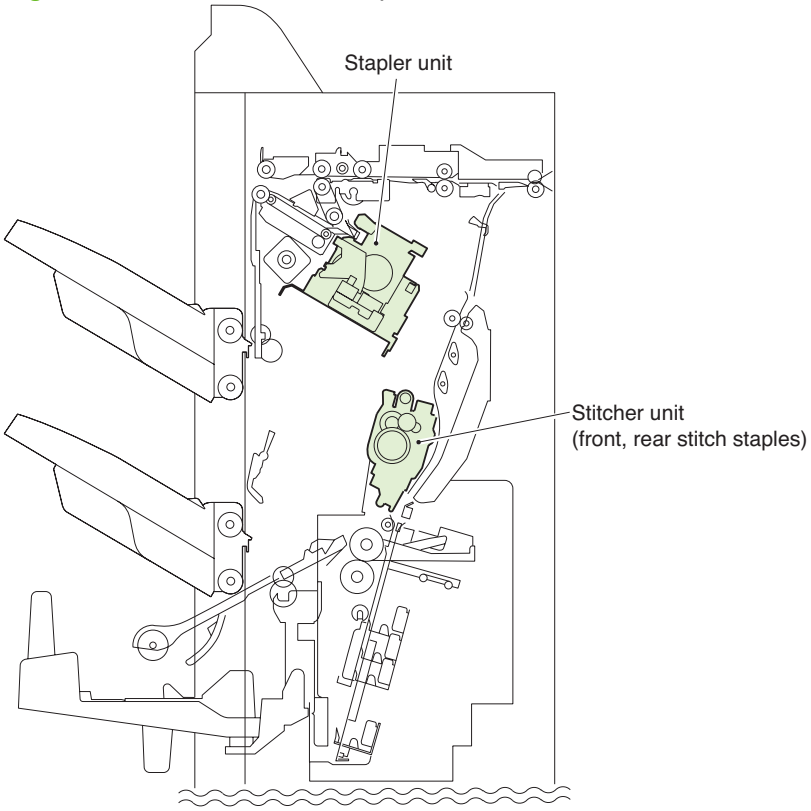
Intermediate-process-tray assembly

See Intermediate-process output-bin assembly (stapler/stacker and booklet maker) on page 591.

Staple operation

The stacker unit provides 1-point front stapling, 1-point rear stapling, and 2-point stapling. The booklet stapler provides 2-point center stapling.

Figure 8-86 Location of the staplers



Stapler unit

- The staple motor (M41) rotates the cam one turn for stapling. The macro computer (IC101) on the stacker controller PCA controls the motor.
- The staple home-position sensor (PI50) detects the home position of the cam. When the staple home-position sensor is off, the stacker controller PCA rotates the staple motor forward until the sensor turns on, moving the staple cam to its original position.
- The staple sensor (PI52) detects presence of a staple cartridge and of staples in the cartridge.
- The staple-edging sensor (PI51) determines whether staples are pushed to the top of the staple cartridge.
- For safety, the stacker-controller circuit does not drive the staple motor (M41) unless the staple safety switch (MS34) is turned on.

Figure 8-87 Stapling operation (1 of 2)

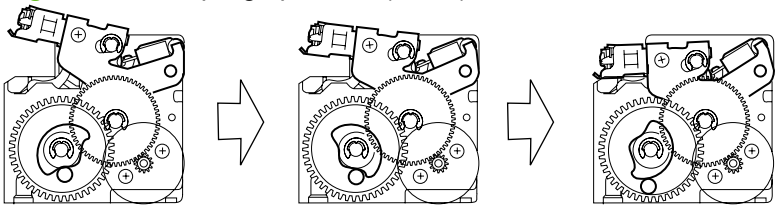
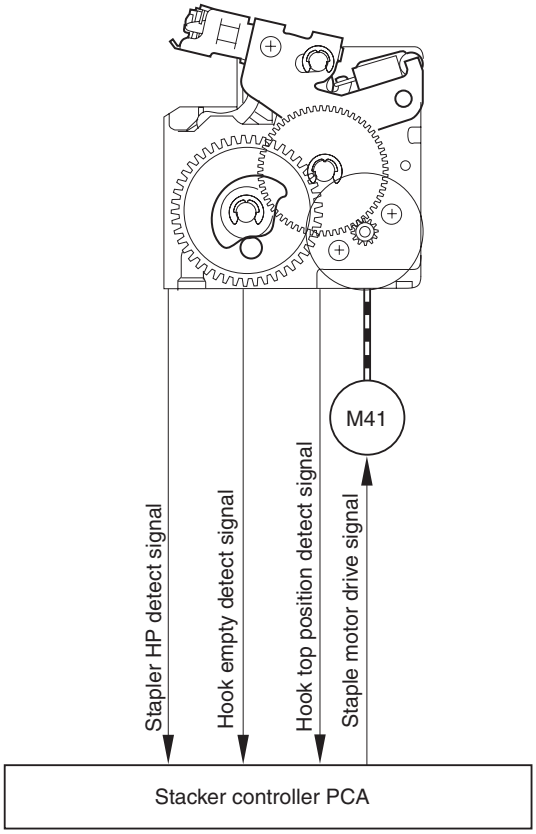


Figure 8-88 Stapling operation (2 of 2)



Stapling operation

See Staple operation (stapler/stacker and booklet maker) on page 595.

Stitcher (stapler) unit

The stitcher base unit includes two stitchers and stitcher bases. The stitchers are fixed in position and do not slide or swing. Stitching begins when the stitcher motor (M7, M6) drives the rotary cam. The front and rear stitcher units operate with a time delay to prevent wrinkling of paper and to limit the load applied to the power supply. The stitcher home-position sensor (SW7, SW5) monitors the movement of the rotary cam and allows identification of individual stitcher operations. The staple sensor (SW6, SW4)

detects the presence or absence of staples inside the staple cartridge. The alignment plates keep both edges of the stack in place while stitching takes place.

Figure 8-89 Stitcher unit

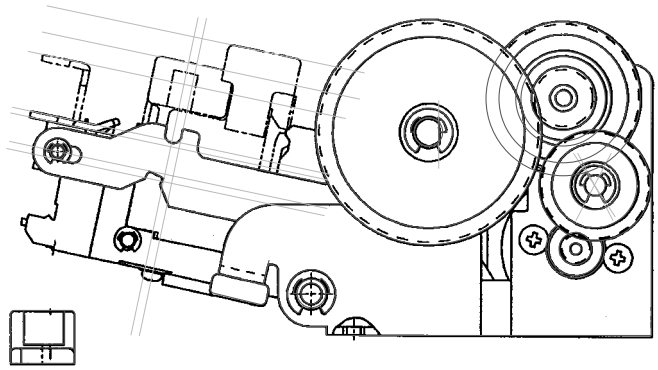


Figure 8-90 Sequence of stitching

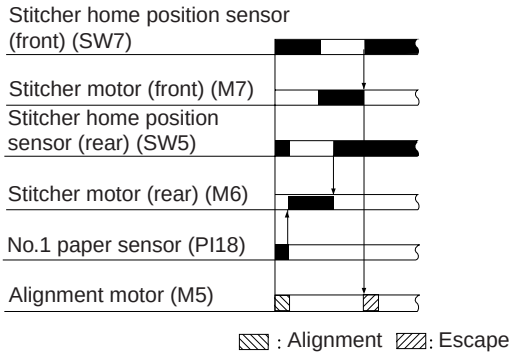
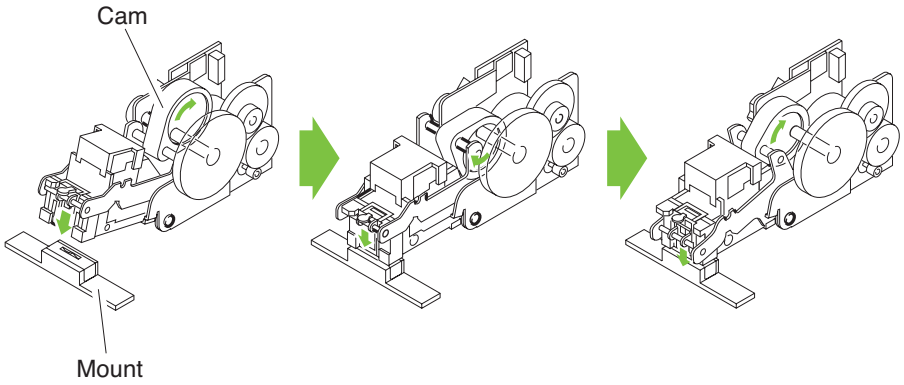


Figure 8-91 Rotation of the cam



Stack operation

See Stack operation (stapler/stacker and booklet maker) on page 601.

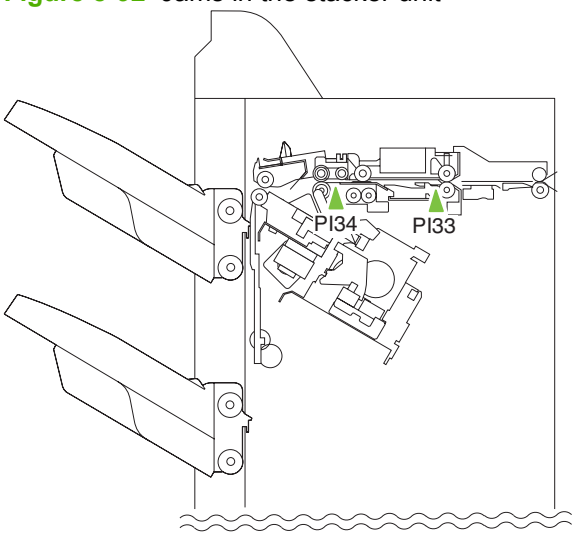
Jam detection

The stacker unit and booklet maker unit detect jams and provide messages to the product.

Detect jams in the stacker unit

The inlet sensor (PI33) and delivery sensor (PI34) detect the presence of paper to determine if paper is delivered properly. A jam is identified by checking whether paper is present at each sensor at the timing programmed in the memory of the microcomputer (CPU) on the stacker controller PCA. When the CPU identifies a jam, it suspends the stacker's delivery operation and informs the product. When all doors are closed after the paper jam is removed, the stacker checks whether paper is detected by the sensors (inlet sensor and delivery sensor). If the sensors detect paper, the stacker determines that paper jam is not removed and resends the message to the product.

Figure 8-92 Jams in the stacker unit

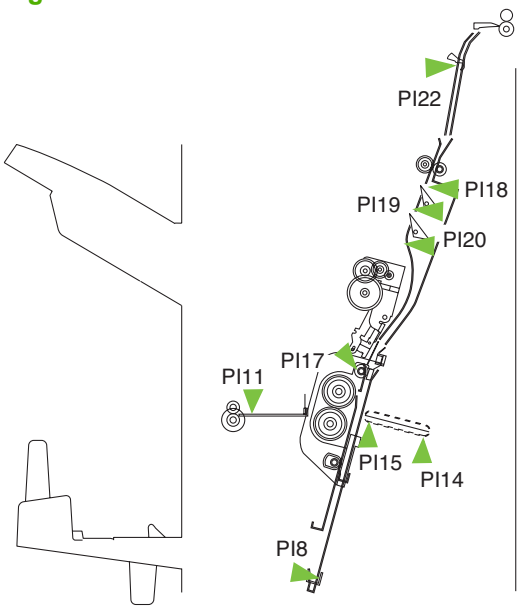


Detect jams in the booklet maker unit

The saddle stitcher unit identifies any of the following conditions as a jam, and sends the jam signal to the product. When all doors are closed after the jam is removed, the saddle stitcher unit checks whether the vertical-path paper sensor (PI17) has detected the presence of paper. If the sensor has detected

paper, the unit identifies the condition as being a faulty jam removal and sends the jam signal to the product once again.

Figure 8-93 Jams in the booklet maker unit



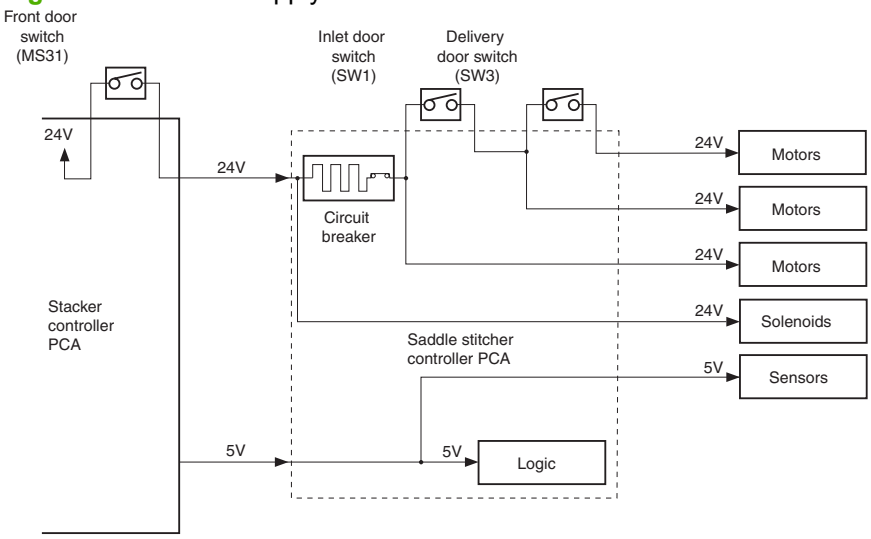
Power supply

The stacker unit and booklet maker unit use both 5 Vdc and 24 Vdc power.

Power-supply route for the stacker unit

When power is turned on, 5 Vdc and 24 Vdc are supplied from the product to the stacker controller PCA. The 24 Vdc power drives the motor, solenoid, and so on. The 5 Vdc power drives sensors, IC chips on the stacker controller PCA, and so on. Both 5 Vdc and 24 Vdc are also supplied from the stacker controller PCA to the saddle-stitcher controller PCA. The 24 Vdc power for the motor drive is shut down when the front door switch (MS31) is open. A block diagram of the power supply is shown as follows.

Figure 8-94 Power-supply route for the stacker unit



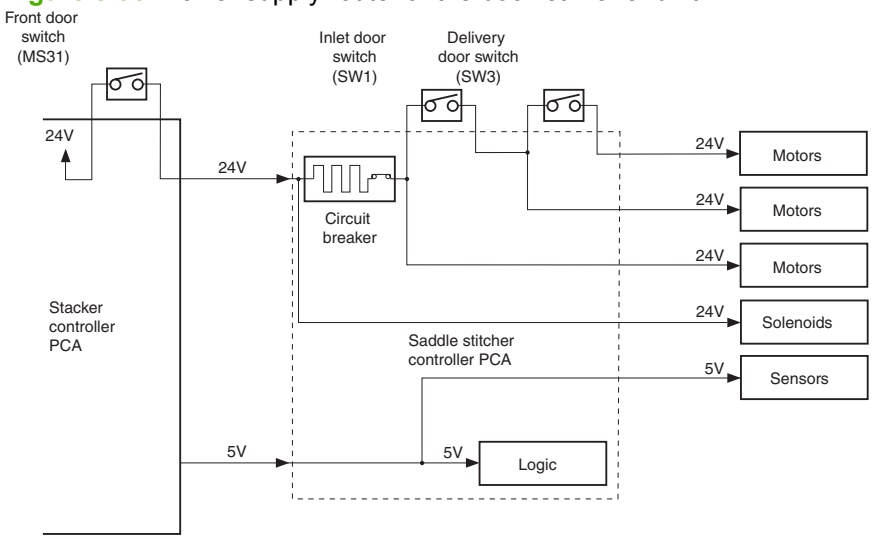
Protective function for the stacker unit

The 24 Vdc has a fuse or motor driver with over-current protection.

Power-supply route for the booklet maker unit

When the power to the product is turned on and the door is closed, 24 Vdc and 5 Vdc are supplied from the stacker-controller PCA as saddle stitcher power. The 24 V power supply to solenoids is supplied from the stacker controller PCA without passing through protection mechanisms such as microswitches. The 5 Vdc power drives sensors, IC chips on the stacker controller PCA, and so on. The 24 V power supply to motors is not supplied if either of the door switches of the booklet maker unit is open.

Figure 8-95 Power supply route for the booklet maker unit



Protective function for the booklet maker unit

The 24 Vdc power supply for motors and solenoids comes with a circuit breaker (CB1). The 24 V power supply for the guide motor (M3), alignment motor (M5), and the paper-positioning plate motor (M4) comes with a fuse designed to blow when there is too much current.

Specifications

Use the following guidelines to obtain satisfactory results. For information about supported paper sizes, see, Table 3-3 Supported paper and print media sizes for the optional HP 3-bin Stapler/Stacker and HP Booklet Maker/Finisher accessories on page 53.

Accessory specifications

Table 8-11 Stapling and stacking specifications (stapler/stacker and booklet maker)

Item	Specifications		Remarks
Stacking method	Stack sub tray (for stapler/stacker only), output bin 1 and output bin 2: by lifting tray		Stack sub tray is interlocked with output bin 1
Stacking orientation	Face down		
Paper capacity	Paper form	Cut-sheet	
	Special paper	Envelope, OHT film, colored paper, label paper, thick paper	
	Paper weight	60 g/m^2 to 220 g/m^2	
	Paper size	Feed direction: 139.7 mm to 482.6 mm	Large size paper length > 216 mm Small size maximum paper length:216 mm
		Cross feed direction: 98.425 mm to 330.2 mm	
Mode	Non sort, job offset, staple sort		
Paper size	Non sort	A3, B4, A4, A4-R, B5-R, A5-R, LDR, LGL, LTR, LTR-R, EXE-R, Youkei No.4, Kakukei No.2, COM10, Monarch, DL, C5, B5 envelope, New-DRY type postcard, 12 x 18, 312 x 440 mm, custom size	Large size: A3, B4, A4-R, LDR, LGL, LTR-R Small size: A4, B5-R, A5-R, LTR, EXE-R
	Job offset	A3, B4, A4, A4-R, LDR, LGL, LTR, LTR-R	
	Staple sort	A3, B4, A4, A4-R, LDR, LGL, LTR, LTR-R	

Table 8-11 Stapling and stacking specifications (stapler/stacker and booklet maker) (continued)

Item	Specifications			Remarks
Stacking capacity	Non sort, Job offset	Stack sub tray (for stapler/stacker only)	Large size maximum stack height: 17 mm Small maximum stack height: 24 mm	Stack tray overstacking detection is provided.
		Output bin 1	Large size maximum stack height: 73.5 mm Small size maximum stack height: 73.5 mm	
		Output bin 2	Large size maximum stack height: 73.5 mm Small size maximum stack height: 147 mm	
	Staple sort	Large size maximum stack height: 73.5 mm Small size maximum stack height: 73.5 mm 30 copies or less		
	Special paper	Not specified but up to 10 envelopes can be stacked		
Mixed stacking	Non sort	Plain paper, recycled paper 60 to 80 g/m^2	Maximum stack height: 73.5 mm	Stacking capacity is not guaranteed. The value is just for reference.
		Plain paper, thick paper 61 to 220 g/m^2	Maximum stack height: 73.5 mm	
		Special paper	Not acceptable	
	Job offset	Not specified		
	Staple sort	Maximum stack height: 73.5 mm, 30 copies or less		
Stapling position	Front 1-point stapling, Rear 1-point stapling, 2-point stapling			Rear parallel stapling
Stapling	By rotating cam			
Staple supply	Special staple cartridge (5000 staples)			
Staple near end detection	Provided: Low staple warning is signaled after the staple near end is detected.			Remaining about 40 staples
Staple detection	Provided			
Manual stapling	Not provided			

Table 8-11 Stapling and stacking specifications (stapler/stacker and booklet maker) (continued)

Item	Specifications		Remarks
Staple capacity	Large size: 2 to 30 sheets 2 sheets of 199 g/m^2 paper and 28 sheets of 80 g/m^2 paper maximum: 30 sheets in total A3, B4, A4-R, LDR, LGL, LTR-R	Plain paper: 60 g/m^2 to 81 g/m^2: 30 sheets	• Stapling thickness: 5.5 mm or less • Including 2 cover pages except extra thick paper when cover mode is applied
		Plain paper: 82 g/m^2 to 90 g/m^2: 22 sheets	
		Thick paper: 91 g/m^2 to 105 g/m^2: 14 sheets	
		Thick paper: 106 g/m^2 to 120 g/m^2: 11 sheets	
		Thick paper: 121 g/m^2 to 163 g/m^2: 9 sheets	
		Extra thick paper: 164 g/m^2 to 199 g/m^2: 6 sheets	
		Extra thick paper: 200 g/m^2 to 220 g/m^2: 5 sheets	
	Small size: 2 to 50 sheets 2 sheets of 199 g/m^2 paper and 48 sheets of 80 g/m^2 maximum: total 50 sheets A4, LTR	Plain paper: 60 g/m^2 to 81 g/m^2: 50 sheets	
		Plain paper: 82 g/m^{2}to 90 g/m^2 44 sheets	
		Thick paper: 91 g/m^2 to 105 g/m^2: 28 sheets	
		Thick paper: 106 g/m^2 to 148 g/m^2: 18 sheets	
		Thick paper:149 g/m^2 to 163 g/m^2): 13 sheets	
		Extra thick paper: 164 g/m^2 to 199 g/m^2 12 sheets	
		Extra thick paper: 200 g/m^2 to 220 g/m^2: 5 sheets	
	Glossy paper	Glossy paper: 91 g/m^2 to 130 g/m^2 8 sheets	
		Glossy paper: 131 g/m^2 to 220 g/m^2: 5 sheets	
Self-diagnosis function	Provided with staple unit failure, tray failure and jam detection etc.		Identified by LED
Dimensions	W: 662 mm x D: 657 mm x H: 1063 mm		
Weight	Approximately 54 kg		

Table 8-11 Stapling and stacking specifications (stapler/stacker and booklet maker) (continued)

Item	Specifications	Remarks
Power supply	From printer (24VDC)	
Maximum power consumption	20 W or less during standby, 20 W or less operating	

Figure 8-96 Stapling position

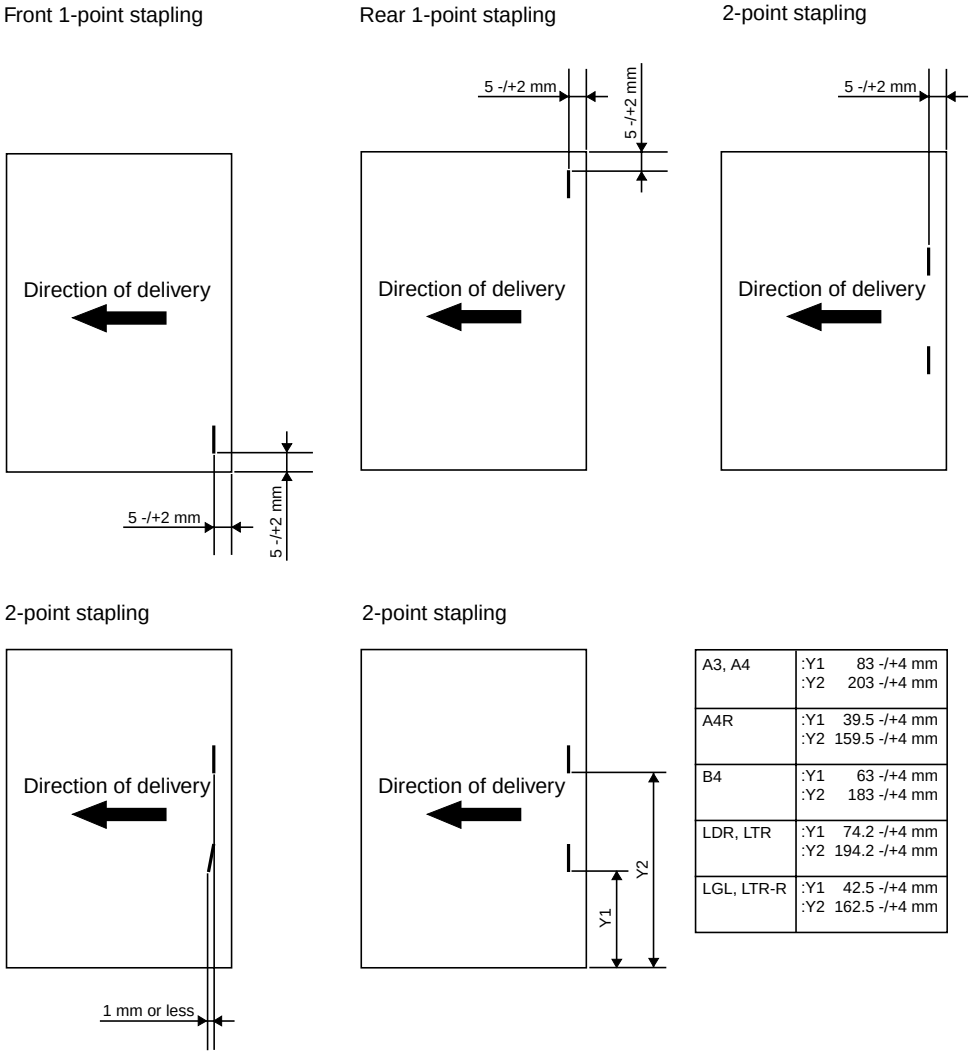


Table 8-12 Specifications for booklet making (Booklet maker only)

Item	Specifications
Stapling method	Center binding (double folding)
Paper size	A3, B4, A4-R, LDR, LGL, LTR-R

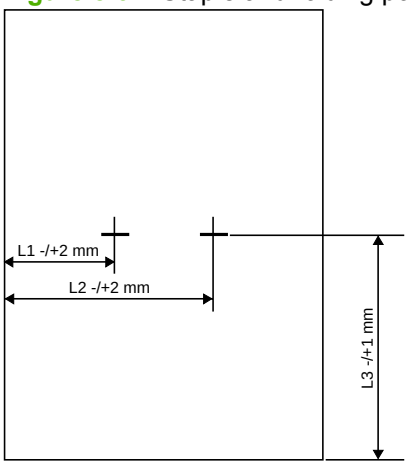
Table 8-12 Specifications for booklet making (Booklet maker only) (continued)

Item	Specifications				
Capacity	Plain paper: 60 g/m^2 to 81 g/m^2: 15 sheets				
	Plain paper: 82 g/m^2 to 90 g/m^2: 10 sheets				
	Plain paper: 91 g/m^2 to 105 g/m^2: 6 sheets				
	Plain paper: 106 g/m^2 to 148 g/m^2: 5 sheets				
	Plain paper: 149 g/m^2 to 199 g/m^2: 3 sheets				
	Plain paper: 200 g/m^2 to 220 g/m^2: 2 sheets				
	Glossy paper: 91 g/m^2 to 148 g/m^2: 5 sheets				
	Glossy paper: 149 g/m^2 to 220 g/m^2: 2 sheets				
Paper weight	60 g/m^2 to 220 g/m^2				
Stacking capacity	Paper weight	Paper size	1 to 5 sheets	6 to 10 sheets	11 to 15 sheets
	Plain paper: 60 g/m^2 to 81 g/m^2	A4R, LTR-R	20 copies	10 copies	10 copies
		LGL	10 copies	10 copies	5 copies
		A3, B4, LDR	25 copies	15 copies	10 copies
	Plain paper: 82 g/m^2 to 90 g/m^2	A4R, LTR-R	20 copies	10 copies	
		LGL	10 copies	10 copies	
		A3, B4, LDR	25 copies	15 copies	
	Plain paper: 91 g/m^2 to 105 g/m^2	Large size	10 copies	10 copies	
	Plain paper: 106 g/m^2 to 220 g/m^2	Large size	10 copies		
	Glossy paper: 91 g/m^2 to 220 g/m^2	Large size	10 copies		
Folding capacity	Without binding: 1 sheet				
	With binding: 2 to 15 sheets				
Stapling position	2 points (center distribution; fixed interval)				
Staple accommodation	2000 staples				
Staple supply	Special cartridge				
Staples	Special staple				
Staple detection	Provided				
Manual stapling	Not provided				
Folding method	Roller contact				
Folding mode	Double folding				
Folding position	Paper center				

Table 8-12 Specifications for booklet making (Booklet maker only) (continued)

Item	Specifications
Position adjustment	Provided
Power supply	From stacker unit (24VDC)

Figure 8-97 Staple and folding position



Paper Size	L1	L2	L3
A3	88.5mm	208.5mm	210.0mm
B4	68.5mm	188.5mm	182.0mm
A4R	45.0mm	165.0mm	148.5mm
LDR	79.7mm	199.7mm	216.0mm
LGL	48.0mm	168.0mm	177.8mm
LTR-R	48.0mm	168.0mm	139.7mm

Stapler/stacker output-bin capacities

The actual capacities of the stapler/stacker output bins vary from 100 sheets, to 500 sheets, to 1,000 sheets of plain paper, depending on the bin. However, the stapler/stacker has been designed to accept only 30 staple jobs at one time, regardless of the number of pages in each job. Therefore, customers may see an **OUTPUT BIN FULL** message on the control panel long before the individual output bin is at full capacity.

Table 8-13 Stapler/stacker output-bin capacities

Output bin	Actual capacity of output bin	Number of staple jobs accepted	Bin capacity for staple jobs
Top output bin	100 sheets of plain paper[1]	30 staple jobs, regardless of size	30 staple jobs, or 100 sheets (whichever comes first)
Output-bin 1	500 sheets of plain paper[1]		30 staple jobs or 500 sheets (whichever comes first)
Output-bin 2 (stacker bin)	1,000 sheets of plain paper[1]		30 staple jobs or 1,000 sheets (whichever comes first)

[1] Based on 75 g/m^2 (20 lb) paper

Example scenario:

A customer sends 40 staple jobs to the accessory with each job consisting of just two sheets (40 jobs x 2 sheets = 80 total sheets). Because the capacity of the stacker output bin is 1,000 sheets, the customer expects the 80-sheet job to output without issue.

However, the stacker bin sends an **OUTPUT BIN FULL** message to the control panel at the end of 30 jobs (30 jobs x 2 sheets = 60 total sheets). The actual full capacity of the output bin is 1,000 sheets, but

the stapler/stacker assumes the bin is full after stacking only 60 sheets due to reaching the 30-staple job limit.

The customer calls HP to complain that the stapler/stacker is not working correctly.

Booklet-maker output-bin capacities

The actual capacities of the booklet-maker output bins are 1,000 sheets of plain paper. However, the booklet maker has been designed to accept only 30 staple jobs at one time, regardless of the number of pages in each job. Therefore, customers may see an **OUTPUT BIN FULL** message on the control panel long before the individual output bin is at full capacity.

Table 8-14 Booklet-maker output-bin capacities

Output bin	Actual capacity of output bin	Number of staple jobs accepted	Bin capacity for staple jobs
Output-bin 1	1,000 sheets of plain paper[1]	30 staple jobs, regardless of size	30 staple jobs or 1000 sheets (whichever comes first)
Output-bin 2	1,000 sheets of plain paper[1]		30 staple jobs or 1,000 sheets (whichever comes first)

[1] Based on 75 g/m^2 (20 lb) paper

Removal and replacement

Intermediate paper-transfer unit (IPTU)

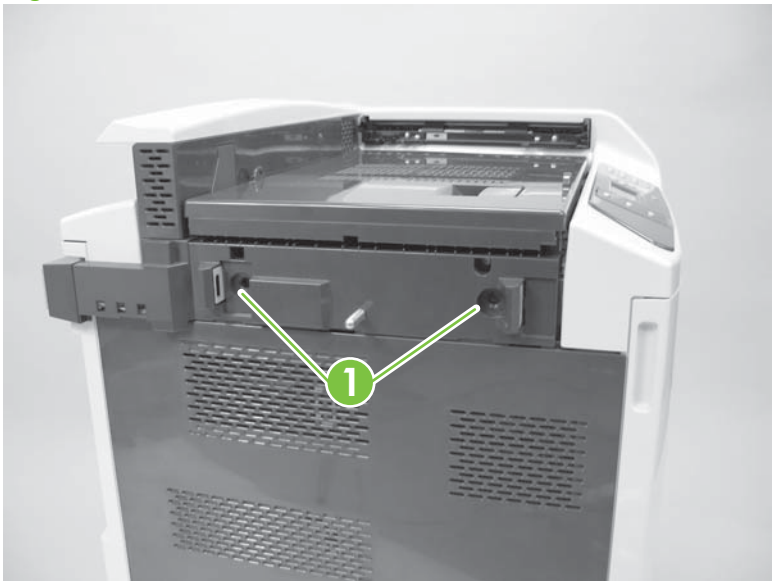
NOTE: This item is called the “output-accessory bridge” in the user documentation for this printer.

NOTE: Before removing and replace FRUs from the IPTU, remove the IPTU from the printer.

IPTU

1. Remove two screws (callout 1).

Figure 8-98 Remove IPTU



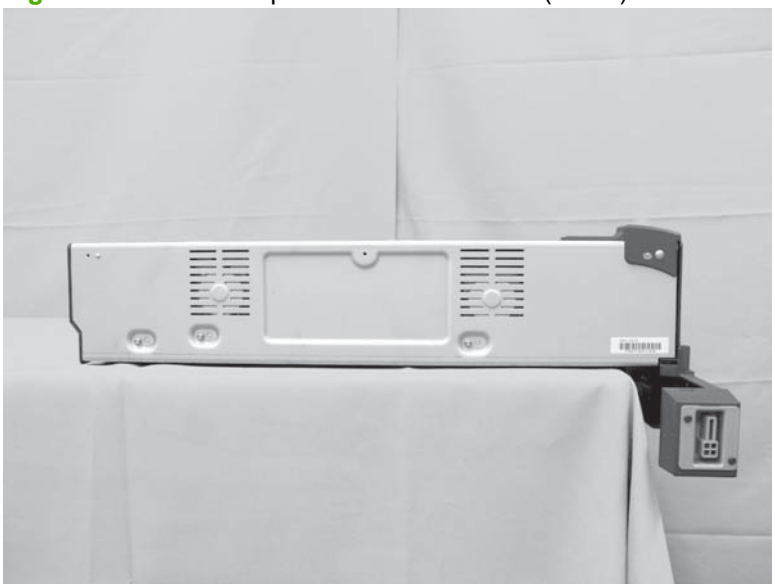
2. Slide the IPTU away from the printer to remove.

Figure 8-99 Remove IPTU



△ **CAUTION:** When disassembling or reassembling the IPTU, use the edge of a work table as shown below.

Figure 8-100 Correct placement of the IPTU (1 of 2)



The connector can be damaged when the IPTU is placed on a table as shown below.

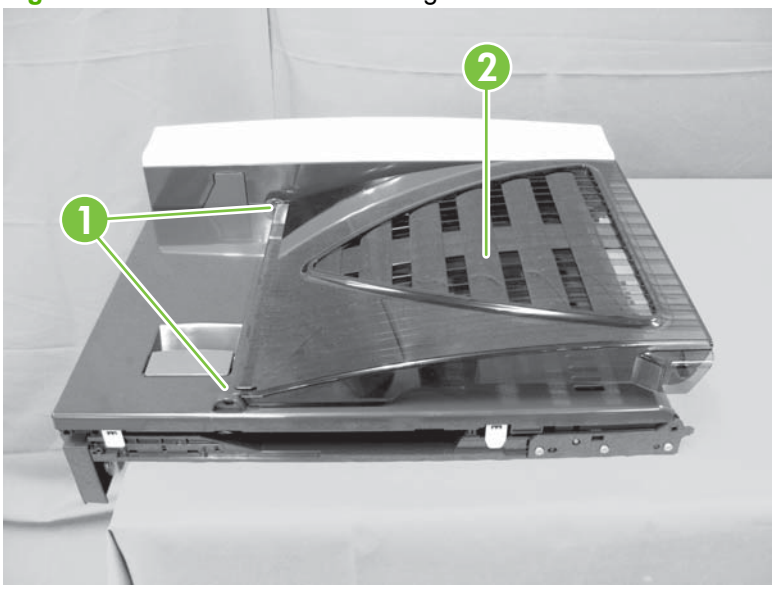
Figure 8-101 Incorrect placement of the IPTU (2 of 2)



Reverse guide

☐ Remove two pins (callout 1), and then remove the reverse guide (callout 2).

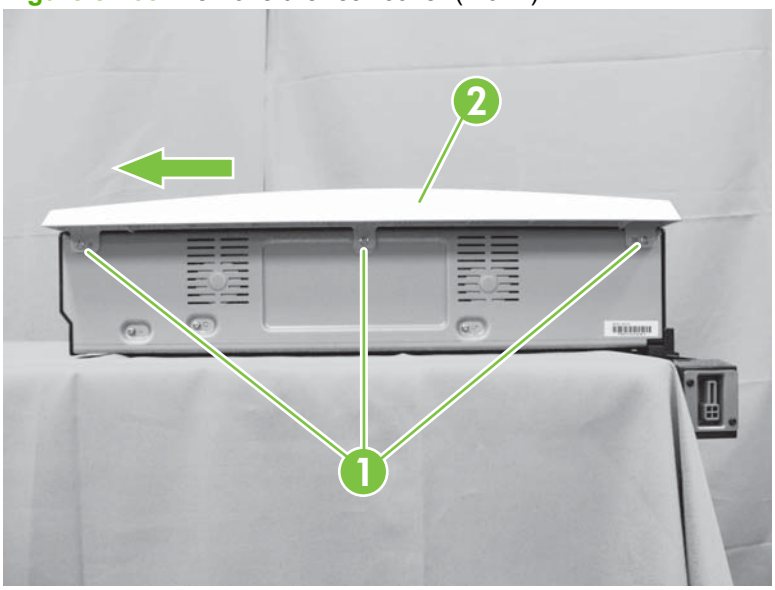
Figure 8-102 Remove the reverse guide



Rear cover

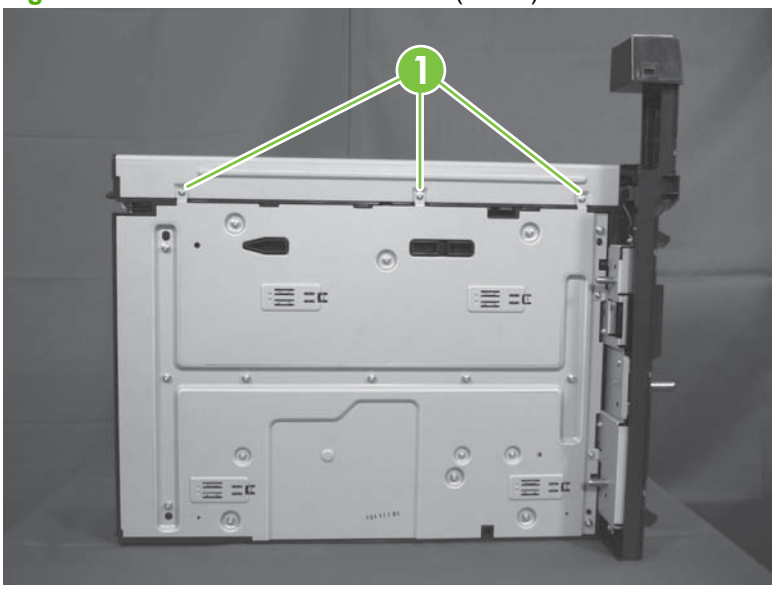
1. Remove three screws (callout 1) and then slide the upper cover (callout 2) in the direction that the arrow indicates to remove it.

Figure 8-103 Remove the rear cover (1 of 4)



2. Remove three screws (callout 1).

Figure 8-104 Remove the rear cover (2 of 4)



3. Remove three screws with washers (callout 1), and then release three tabs (callout 2). Release the bottom of the rear cover (callout 3) first and then lift to remove.

Figure 8-105 Remove the rear cover (3 of 4)

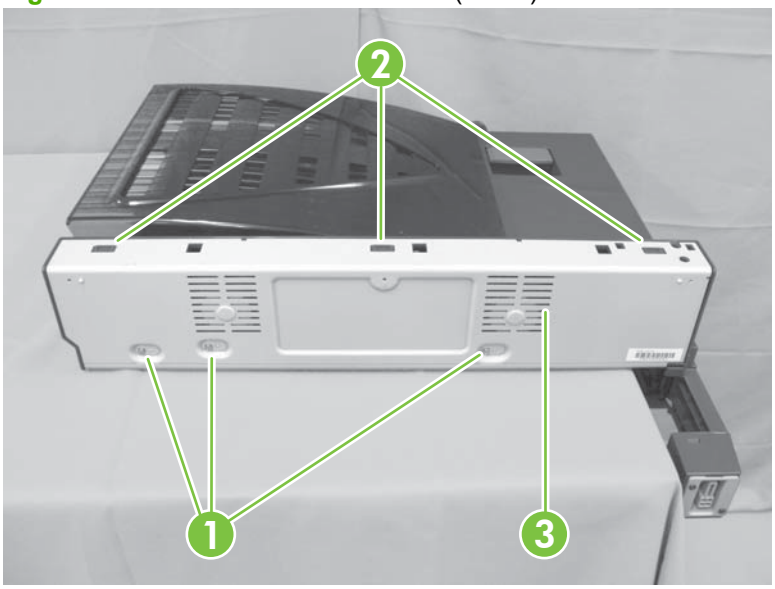
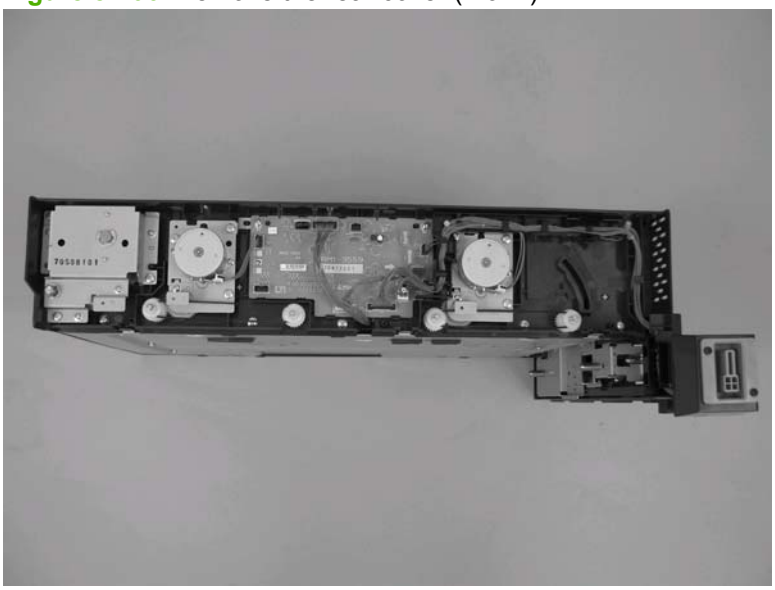
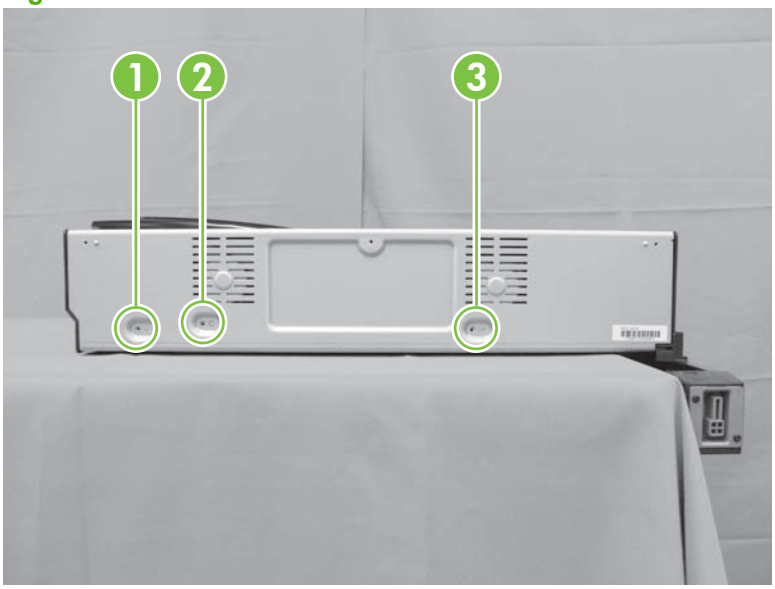


Figure 8-106 Remove the rear cover (4 of 4)



NOTE: When reassembling, tighten the screws from left to right.

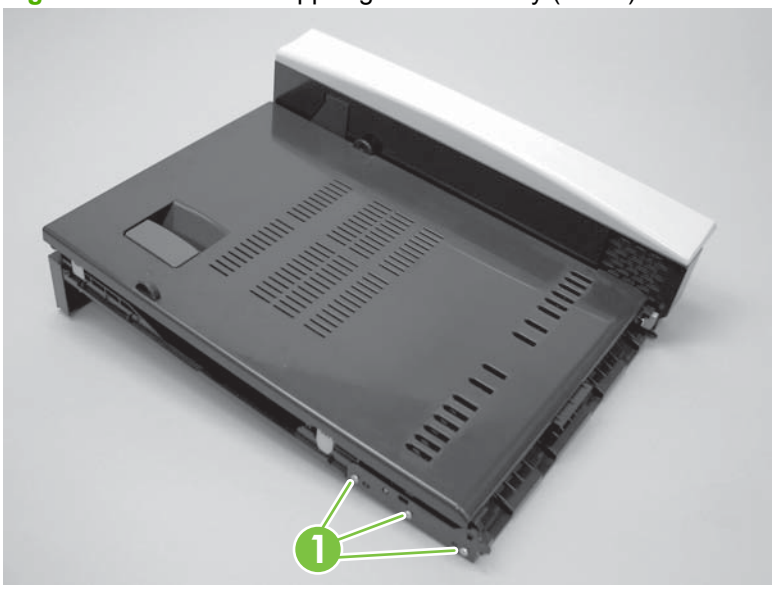
Figure 8-107 Reassemble the rear cover



Upper-guide assembly

1. Remove three screws (callout 1).

Figure 8-108 Remove upper-guide assembly (1 of 2)



2. Remove the upper-guide assembly (callout 1).

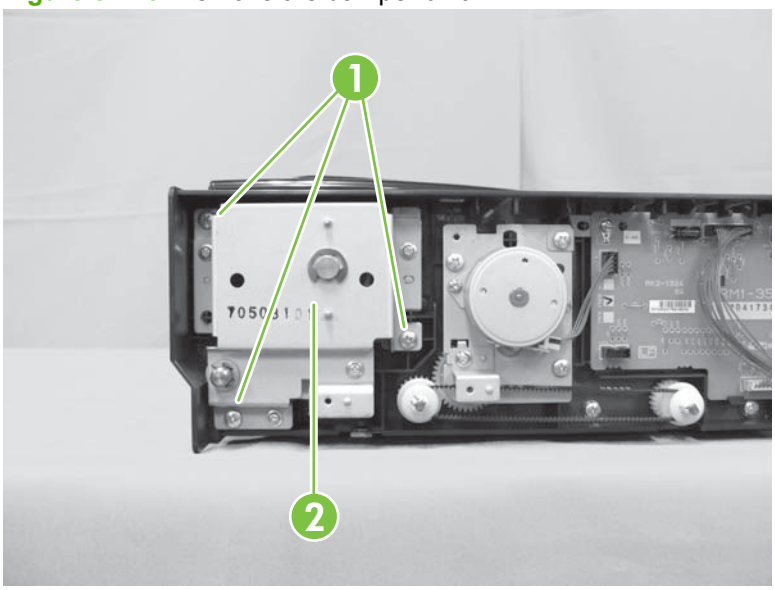
Figure 8-109 Remove upper-guide assembly (2 of 2)



Damper unit

1. Remove the following:
   - Rear cover. See Rear cover on page 649.
2. Remove three screws (callout 1), and then remove the damper unit (callout 2).

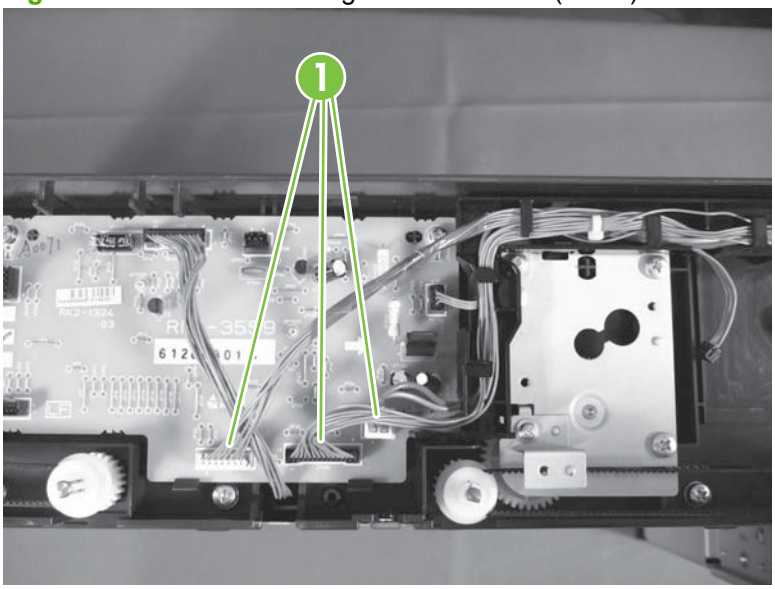
Figure 8-110 Remove the damper unit



Right-belt drive unit

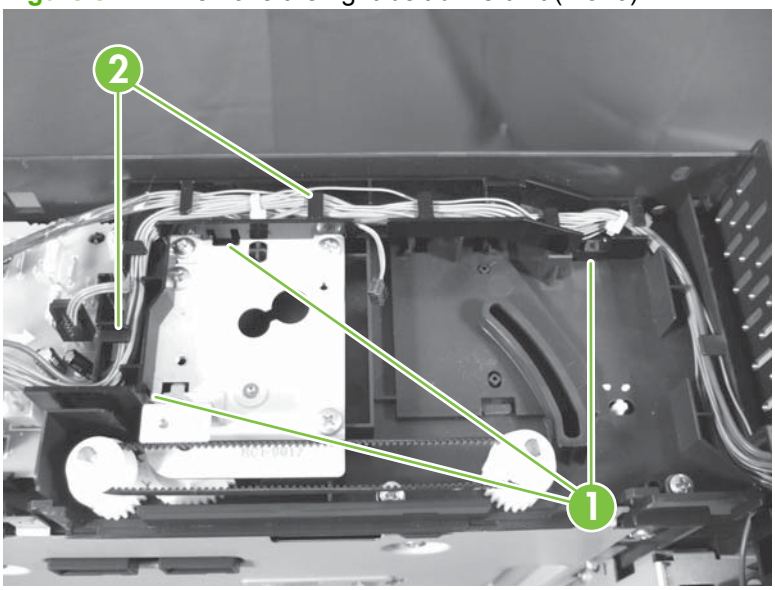
1. Remove the following:
   - Rear cover. See Rear cover on page 649.
   - IPTU paper-feed motor 2. IPTU paper-feed motor 2 on page 662
2. Disconnect three connectors (callout 1).

Figure 8-111 Remove the right-belt drive unit (1 of 6)



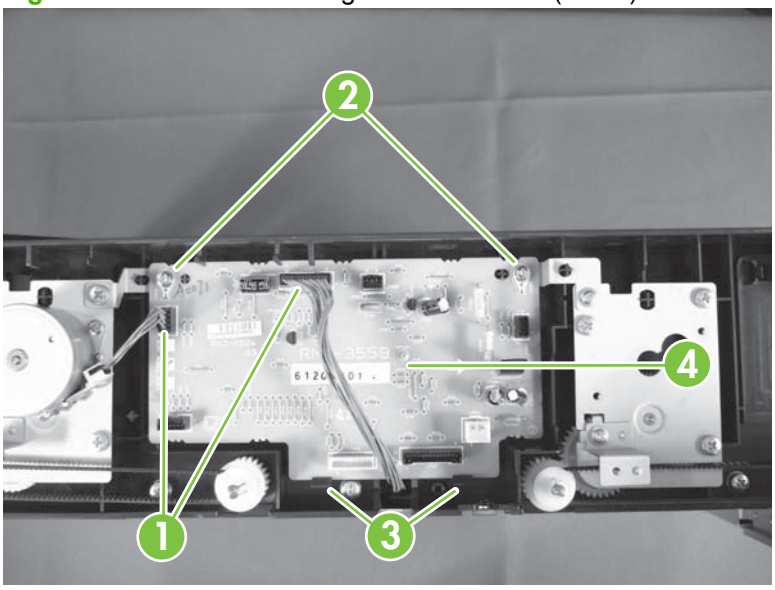
3. Release three tabs (callout 1) and then remove two wire-harness guides (callout 2).

Figure 8-112 Remove the right-belt drive unit (2 of 6)



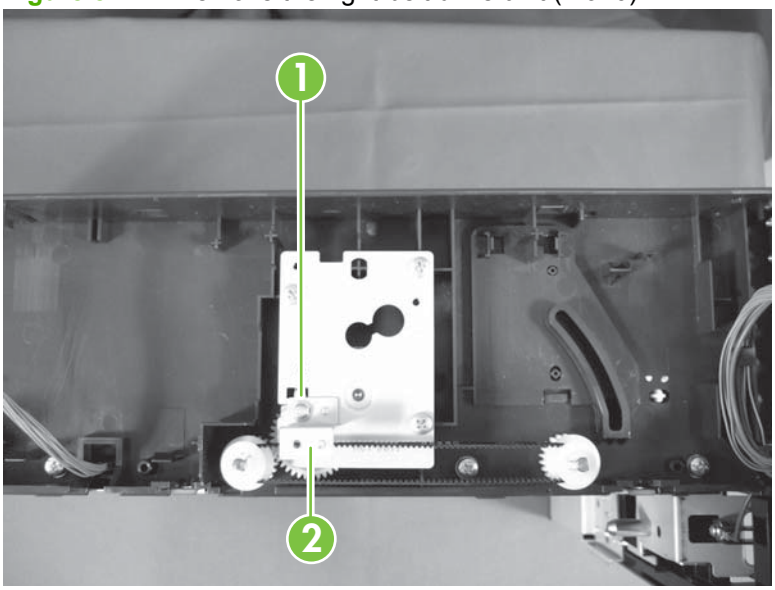
4. Disconnect two connectors (callout 1), and then remove two screws (callout 2). Release two tabs (callout 3), and then remove the IPTU driver PCA (callout 4).

Figure 8-113 Remove the right-belt drive unit (3 of 6)



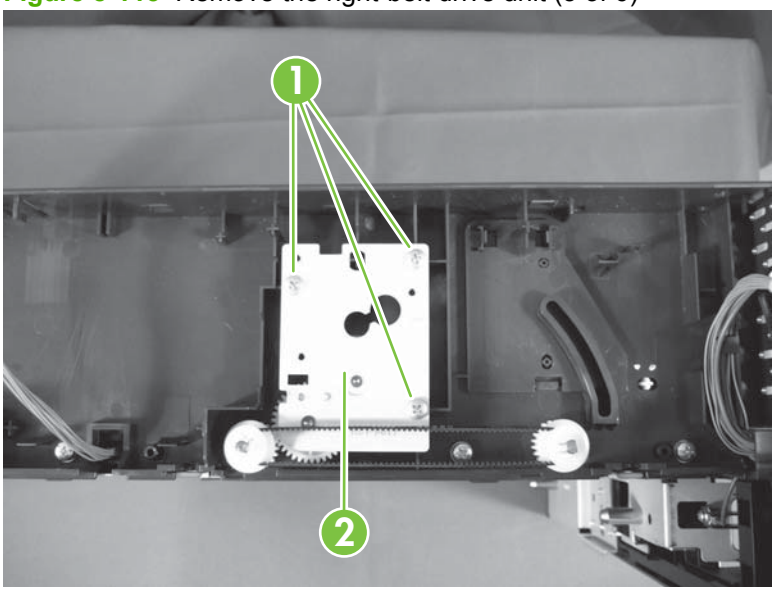
5. Remove one screw (callout 1), and then remove the belt cover plate (callout 2).

Figure 8-114 Remove the right-belt drive unit (4 of 6)



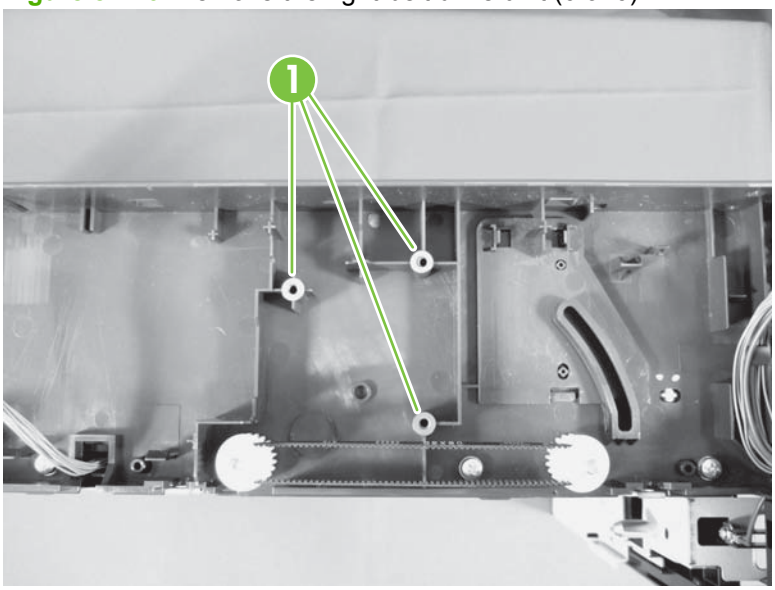
6. Remove three screws (callout 1) , and then remove the right-belt drive unit (callout 2).

Figure 8-115 Remove the right-belt drive unit (5 of 6)



NOTE: When reassembling, be sure to attach the IPTU drive using two washers with each screw.

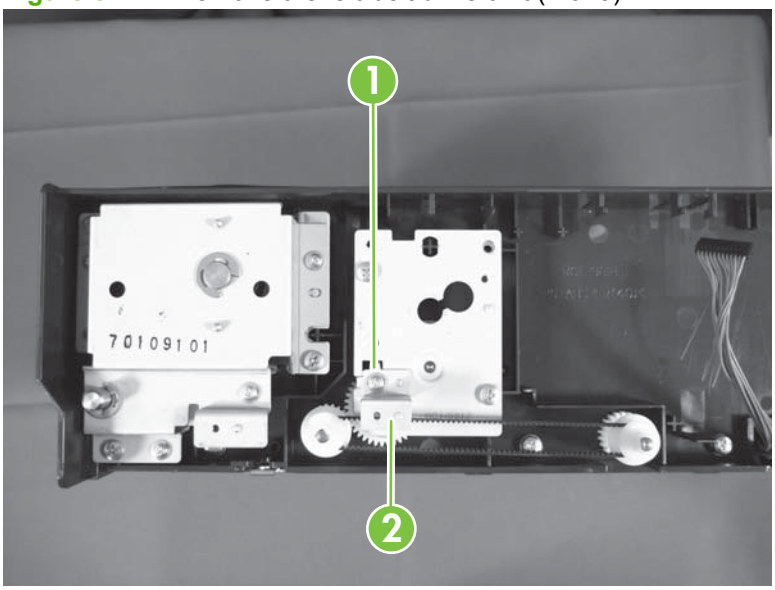
Figure 8-116 Remove the right-belt drive unit (6 of 6)



Left-belt drive unit

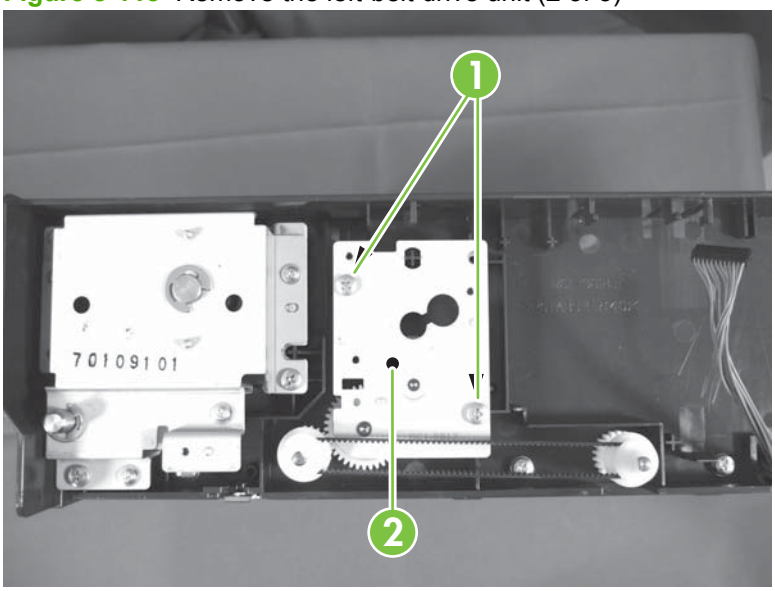
1. Remove the following:
   - Rear cover. See Rear cover on page 649.
   - Right-belt drive unit. See Right-belt drive unit on page 654.
   - IPTU paper-feed motor 1. See IPTU paper-feed motor 1 on page 661.
2. Remove one screw (callout 1) , and then remove the belt cover plate (callout 2).

Figure 8-117 Remove the left-belt drive unit (1 of 3)



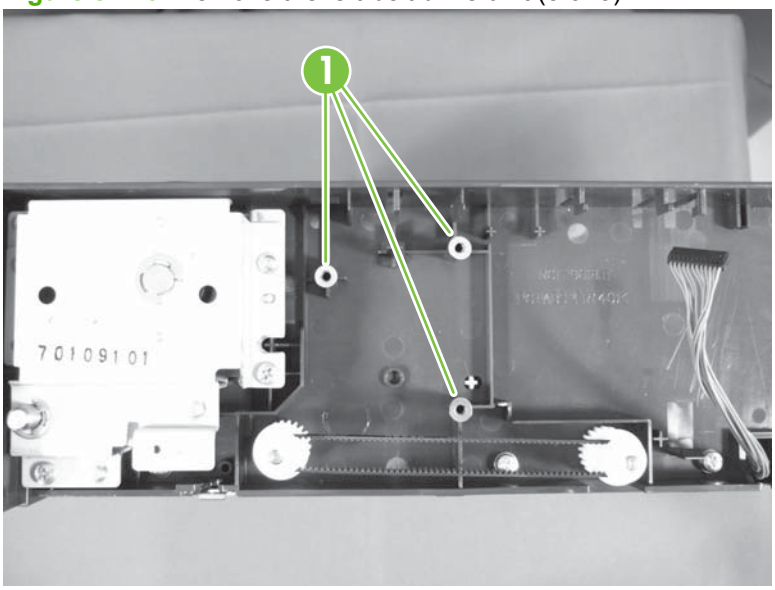
3. Remove two screws (callout 1), and then remove the left-belt drive unit (callout 2).

Figure 8-118 Remove the left-belt drive unit (2 of 3)



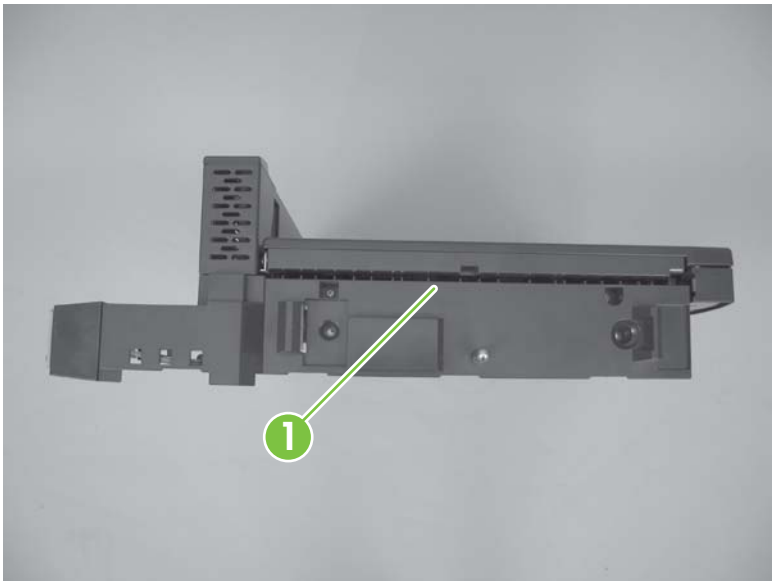
NOTE: When reassembling, be sure to attach the IPTU drive using two washers with each screw.

Figure 8-119 Remove the left-belt drive unit (3 of 3)



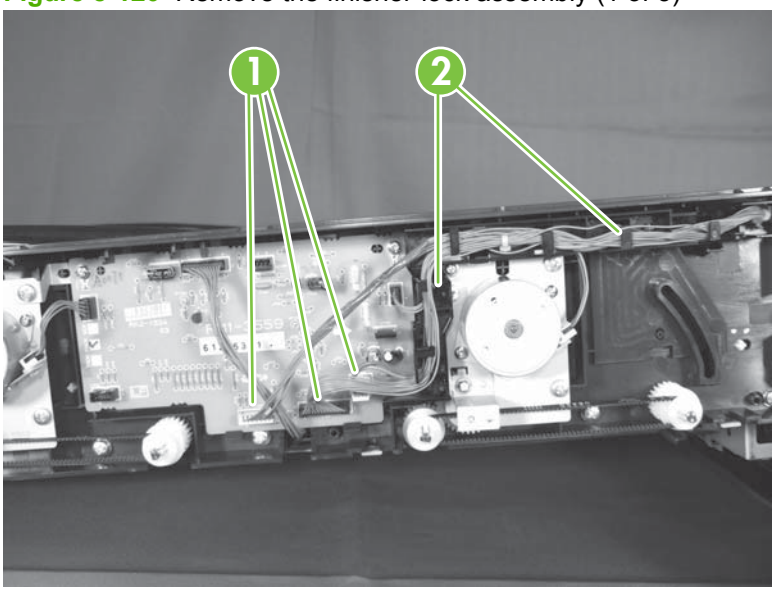
Finisher-lock assembly

1. Remove the following:
   - Rear cover. See Rear cover on page 649.
2. Locate the finisher lock assembly (callout 1).



3. Disconnect three connectors (callout 1), and then release the wire harnesses from the guide (callout 2).

Figure 8-120 Remove the finisher-lock assembly (1 of 3)



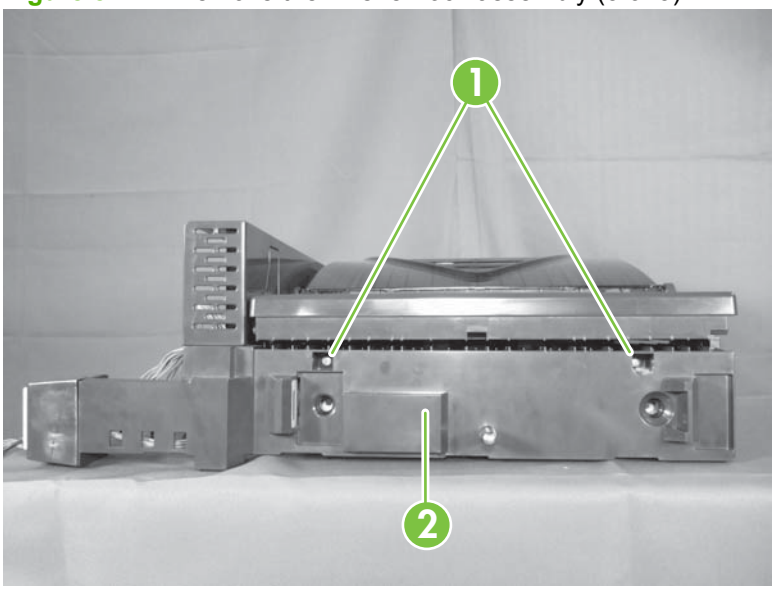
4. Remove two screws (callout 1).

Figure 8-121 Remove the finisher-lock assembly (2 of 3)



NOTE: Remove two screws (callout 1), and then remove the finisher-lock assembly (callout 2).

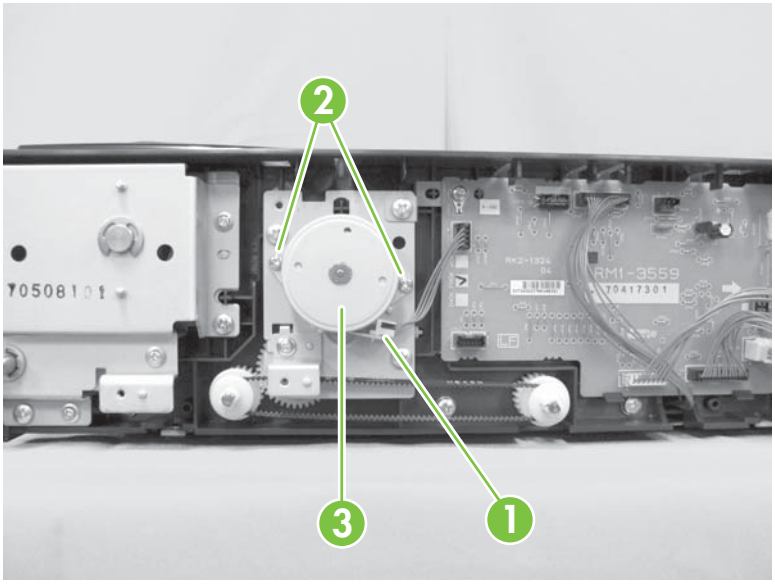
Figure 8-122 Remove the finisher-lock assembly (3 of 3)



IPTU paper-feed motor 1

1. Remove the following:
   - Rear cover. See Rear cover on page 649.
2. Disconnect one connector (callout 1). Remove two screws (callout 2), and remove then the IPTU paper-feed motor 1 (callout 3).

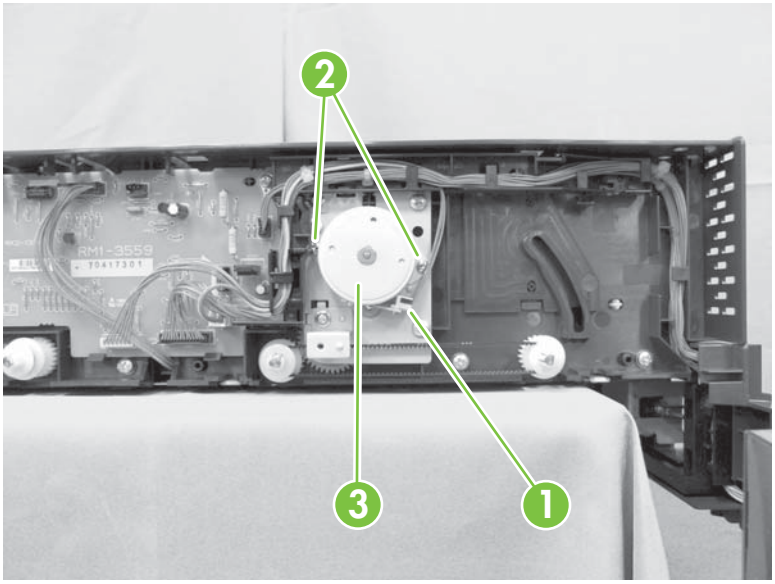
Figure 8-123 Remove the IPTU paper-feed motor 1



IPTU paper-feed motor 2

1. Remove the following:
   - Rear cover. See Rear cover on page 649.
2. Disconnect one connector (callout 1). Remove two screws (callout 2), and then remove the IPTU paper-feed motor 2 (callout 3).

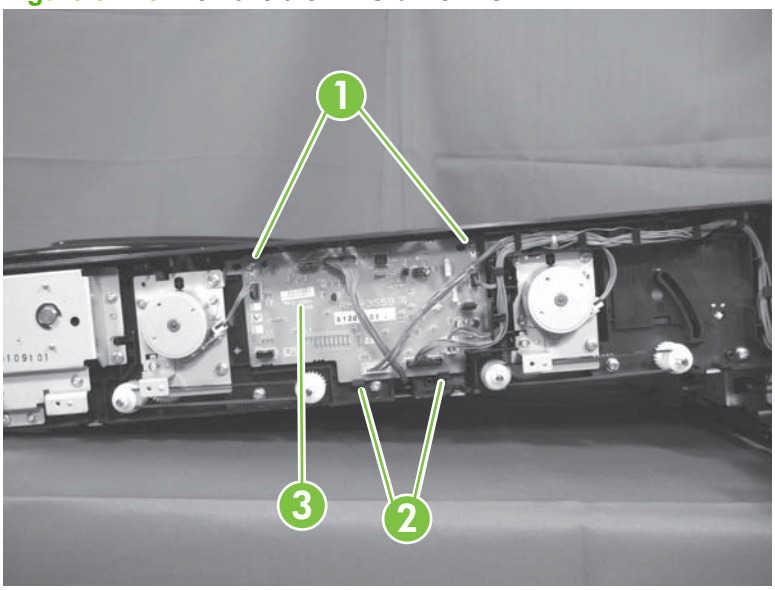
Figure 8-124 Remove the IPTU paper-feed motor 2



IPTU driver PCA

1. Remove the following:
   - Rear cover. See Rear cover on page 649.
2. Disconnect all the connectors on the IPTU driver PCA. Remove two screws (callout 1), release two tabs (callout 2), and then remove the IPTU driver PCA (callout 3).

Figure 8-125 Remove the IPTU driver PCA

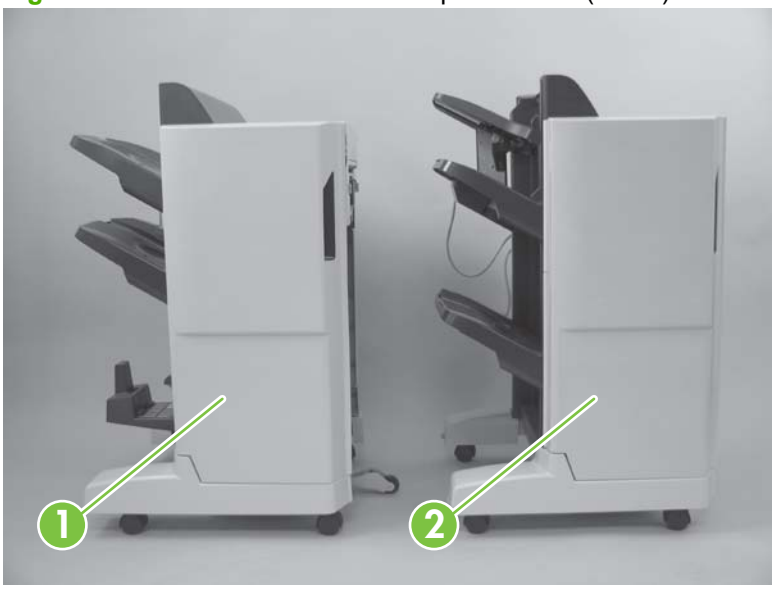


Booklet maker and stapler/stacker

Identify the booklet maker and stapler/stacker

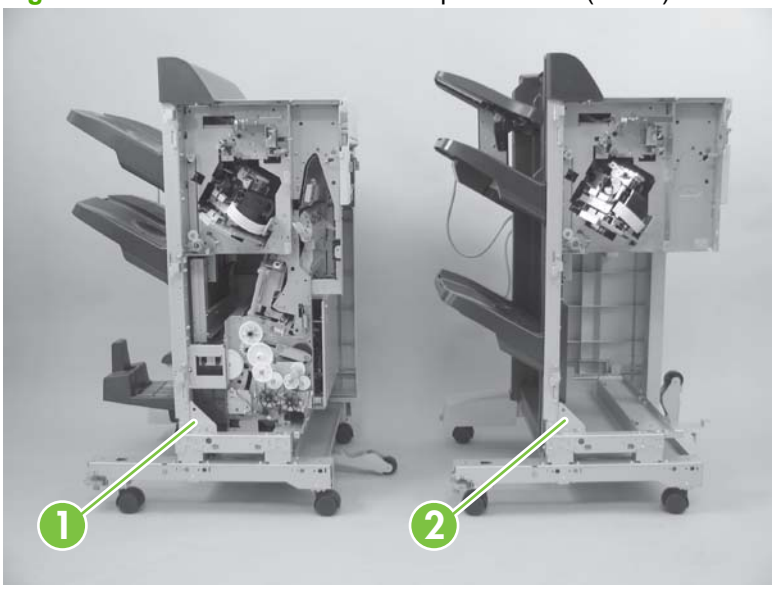
- Remove and replace procedures for the booklet maker (callout 1) and stapler/stacker (callout 2) are provided in this section.

Figure 8-126 Booklet maker and stapler/stacker (1 of 2)



Most FRUs and removal procedures apply to both the booklet maker (callout 1) and stapler/stacker (callout 2). Exceptions are noted where they exist.

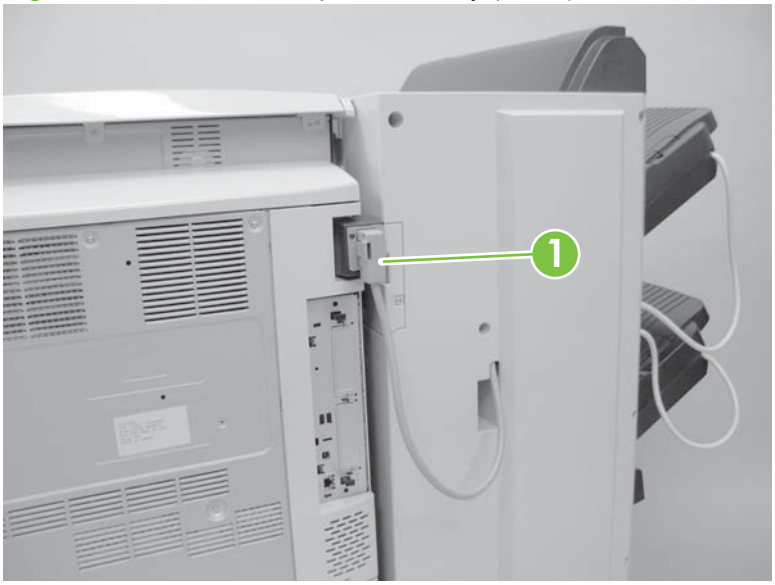
Figure 8-127 Booklet maker and stapler/stacker (2 of 2)



Remove the booklet maker and stapler/stacker from the printer

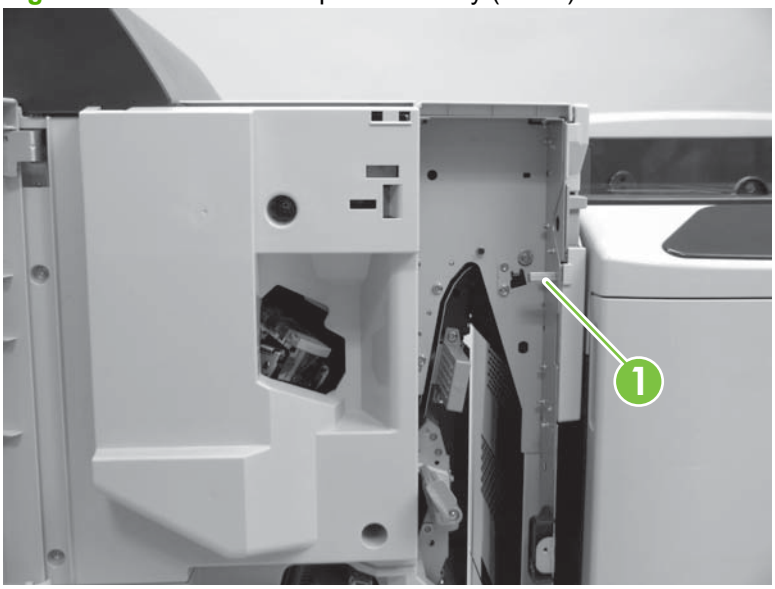
1. Turn the power off.
2. Disconnect the power cord (callout 1).

Figure 8-128 Remove output accessory (1 of 5)



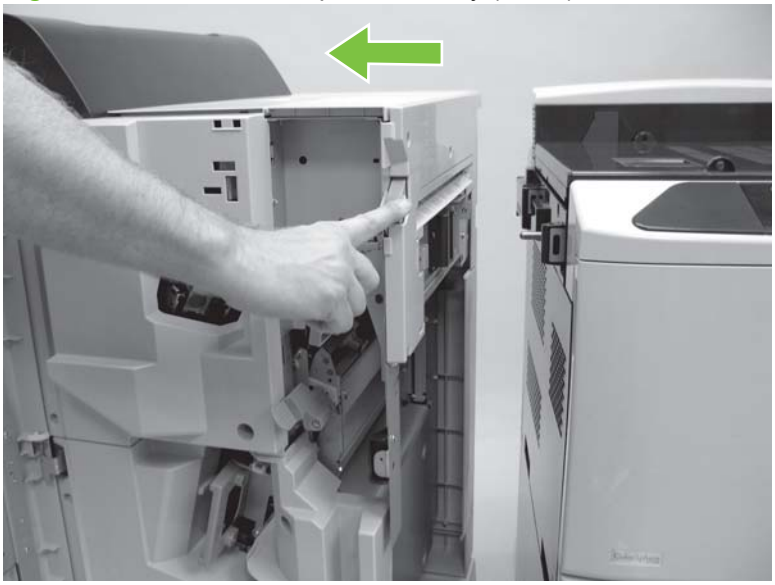
3. Open the front door to the output accessory and loosen the thumb screw (callout 1).

Figure 8-129 Remove output accessory (2 of 5)



4. Press down the release button while moving the output accessory away from the printer.

Figure 8-130 Remove output accessory (3 of 5)



NOTE: When reassembling, adjust the wheels on the output accessory to ensure correct attachment to the printer.

Figure 8-131 Remove output accessory (4 of 5)

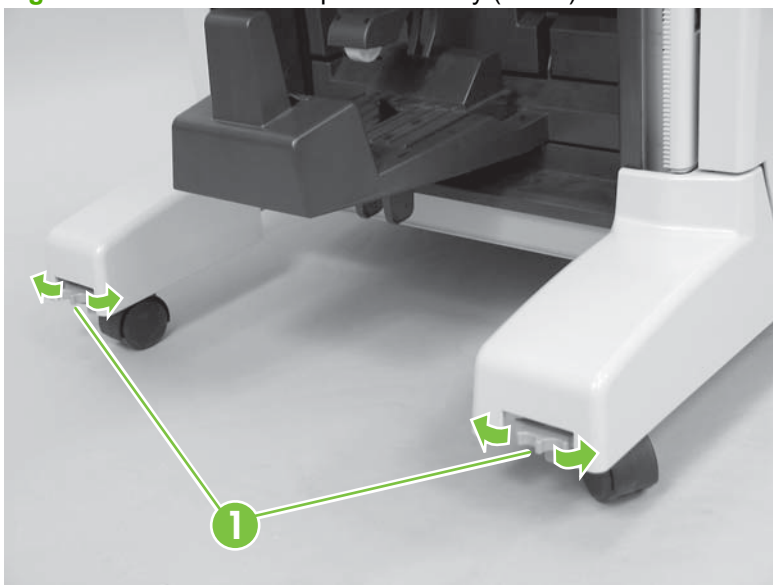
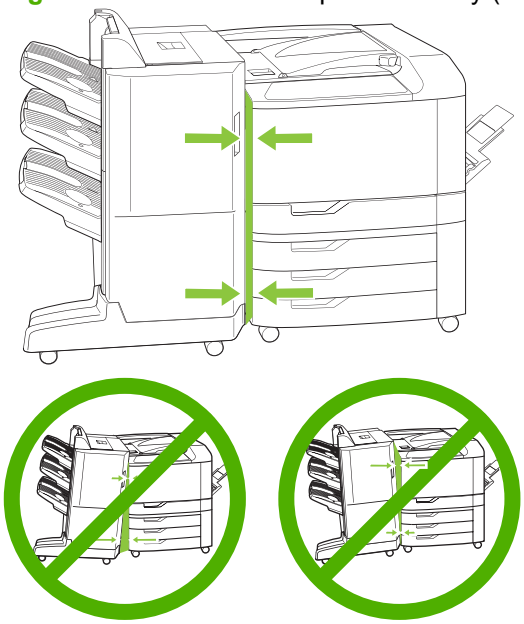


Figure 8-132 Remove output accessory (5 of 5)

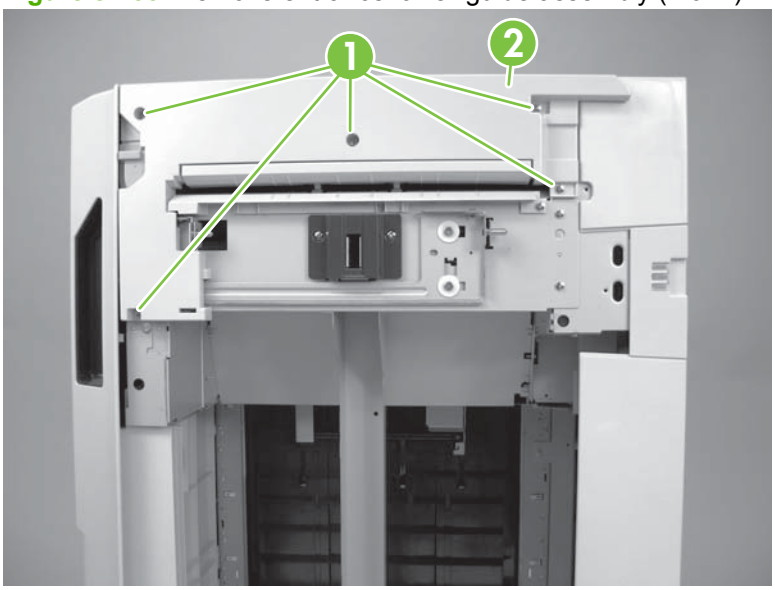


External covers

Entrance lower-guide assembly

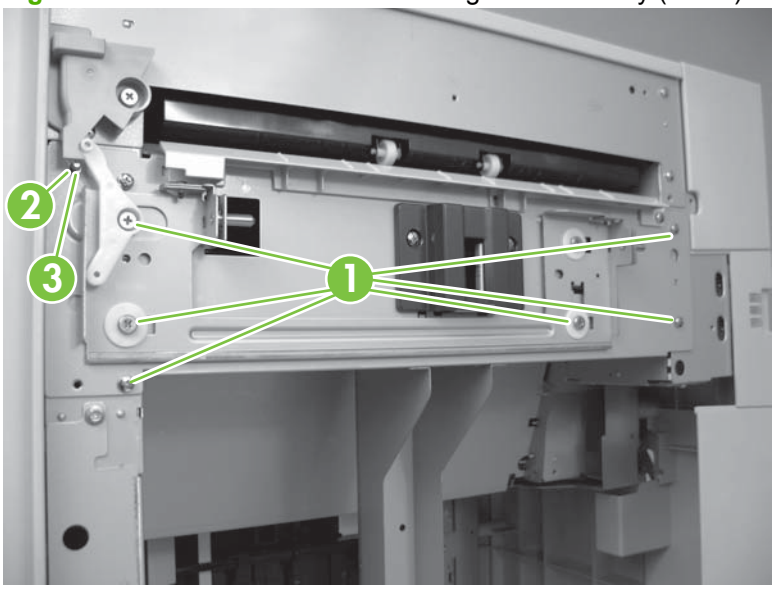
1. Remove five screws (callout 1) and the cover (callout 2).

Figure 8-133 Remove entrance lower-guide assembly (1 of 2)



2. Remove six screws (callout 1), one e-ring (callout 2), one thumbscrew (callout 3), and then remove the entrance lower-guide assembly.

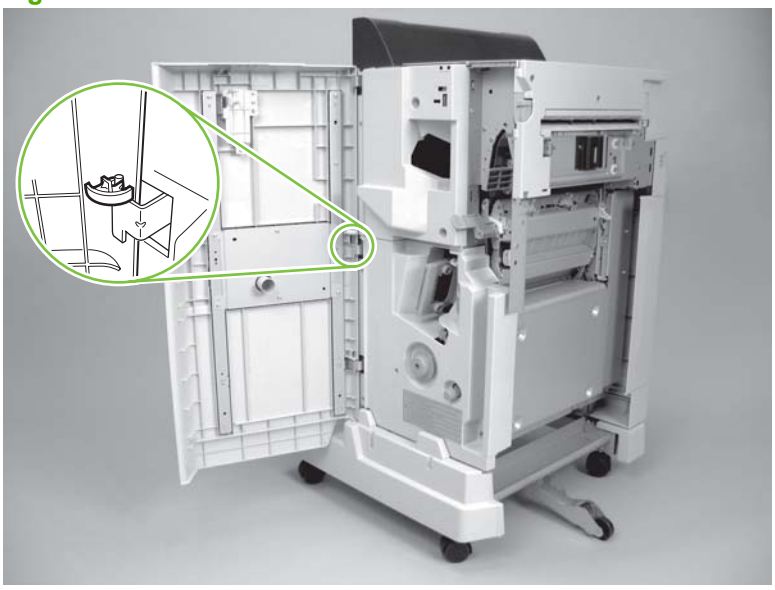
Figure 8-134 Remove entrance lower-guide assembly (2 of 2)



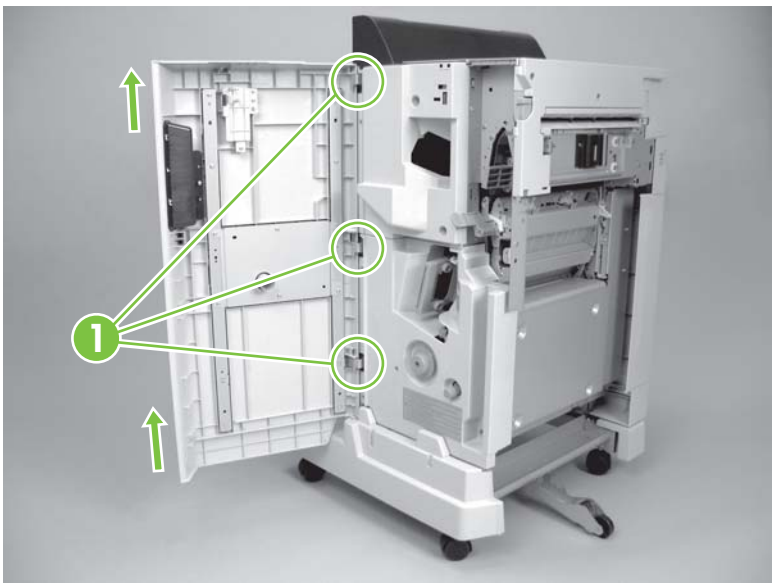
Front door

1. Open the front door (callout 1) and remove the clip (callout 2).

Figure 8-135 Remove the front door



2. Lift the front door off the three hinges (callout 1) to remove.



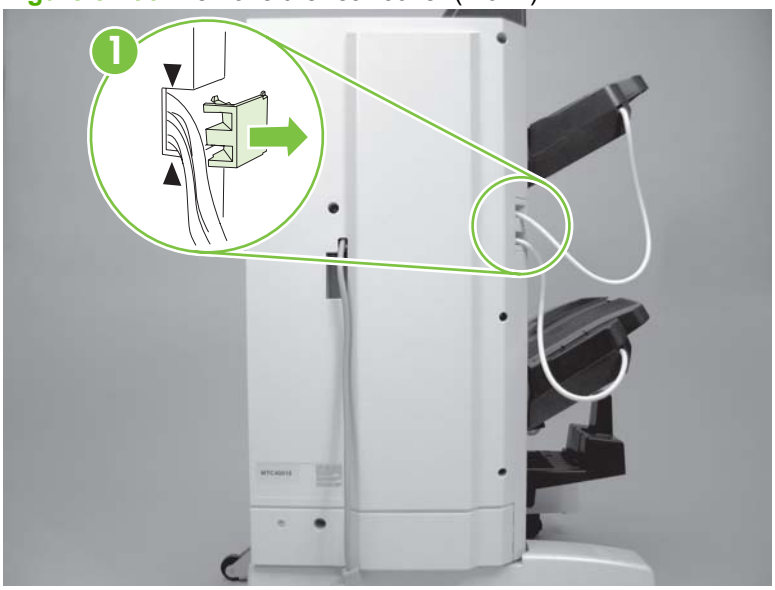
Rear cover

1. Remove the cable cover by using the two pry points marked on the rear cover to release the cover.

NOTE: Reposition output bins if necessary to remove the cable cover.

△ **CAUTION:** When moving output bins, be careful not to damage the stack-delivery gate. See Move output bins 1 and 2 on page 679.

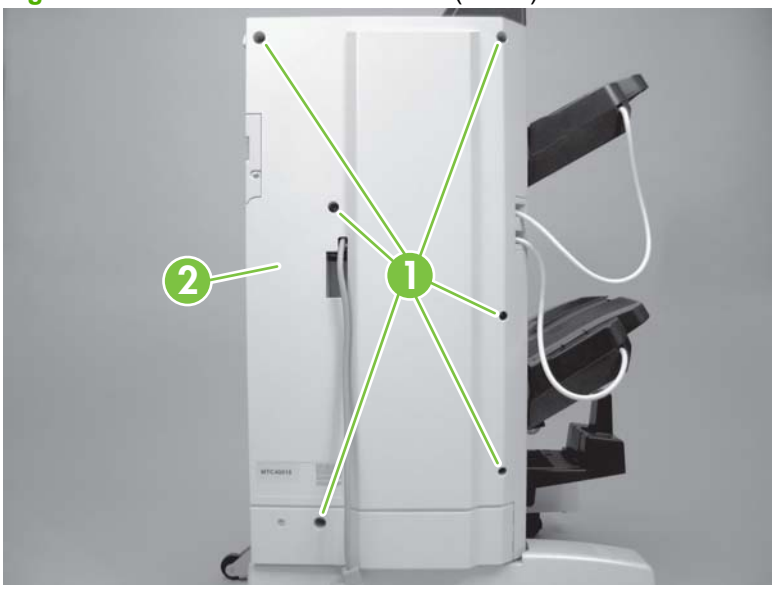
Figure 8-136 Remove the rear cover (1 of 2)



△ **CAUTION:** When reinstalling the cable cover, the cover must be flush with the rear cover so that it does not interfere with movement of the output bins, or damage can result.

2. Remove six screws (callout 1), and then lift the rear cover (callout 2) up and off.

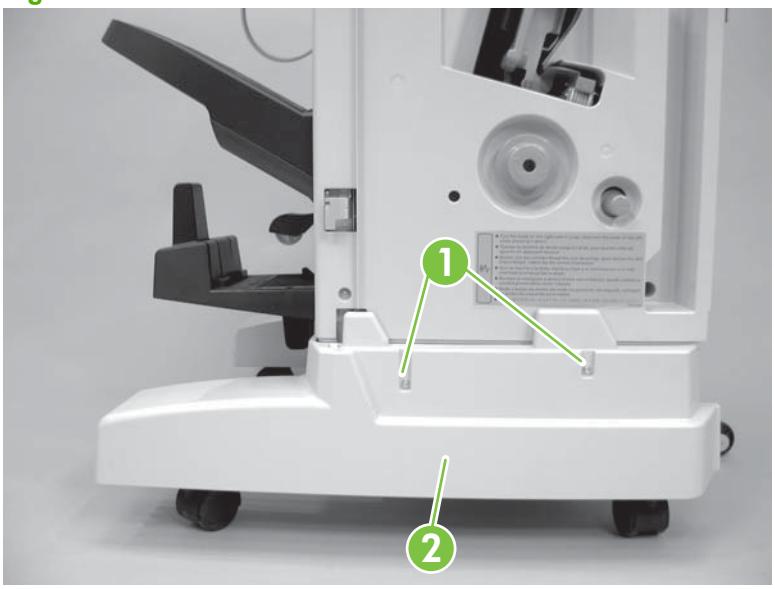
Figure 8-137 Remove the rear cover (2 of 2)



Front-foot cover

1. Remove the following:
   - Front door. See Front door on page 669
2. Remove two screws (callout 1), and then remove the front-foot cover (callout 2) by moving the cover to the left and up.

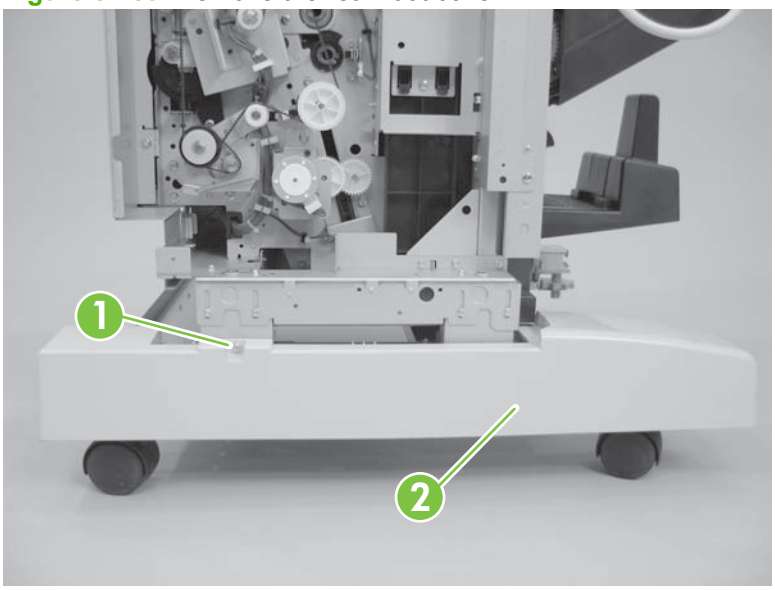
Figure 8-138 Remove the front-foot cover



Rear-foot cover

1. Remove the following:
   - Rear cover. See Rear cover on page 670.
2. Remove one screw (callout 1), and then slide the rear-foot cover (callout 2) to the right to remove.

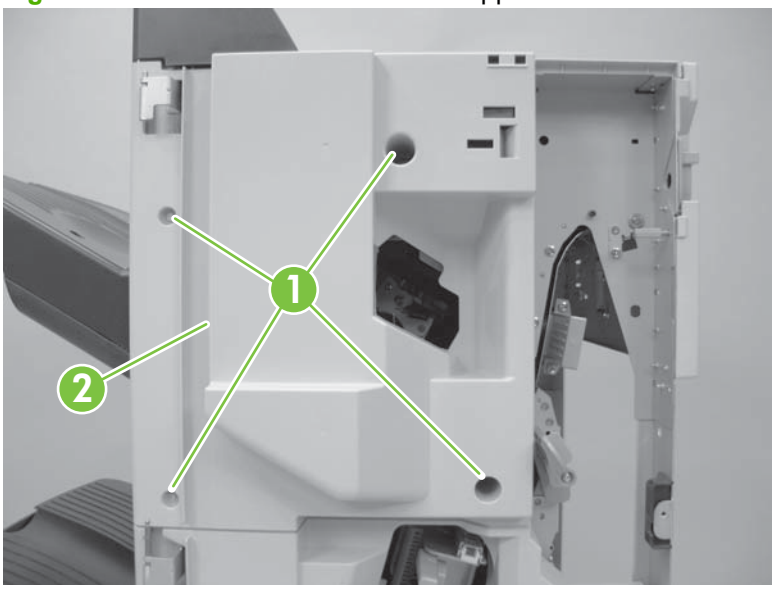
Figure 8-139 Remove the rear-foot cover



Front inside-upper cover

1. Remove the following:
   - Front door. See Front door on page 669.
2. Remove four screws (callout 1), and then remove the front inside-upper cover (callout 2).

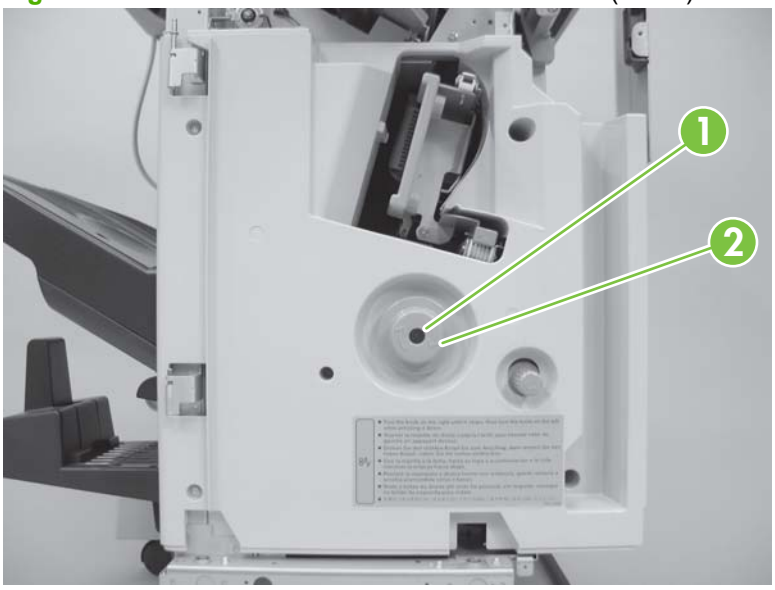
Figure 8-140 Remove the front inside-upper cover



Front inside-lower cover (booklet maker only)

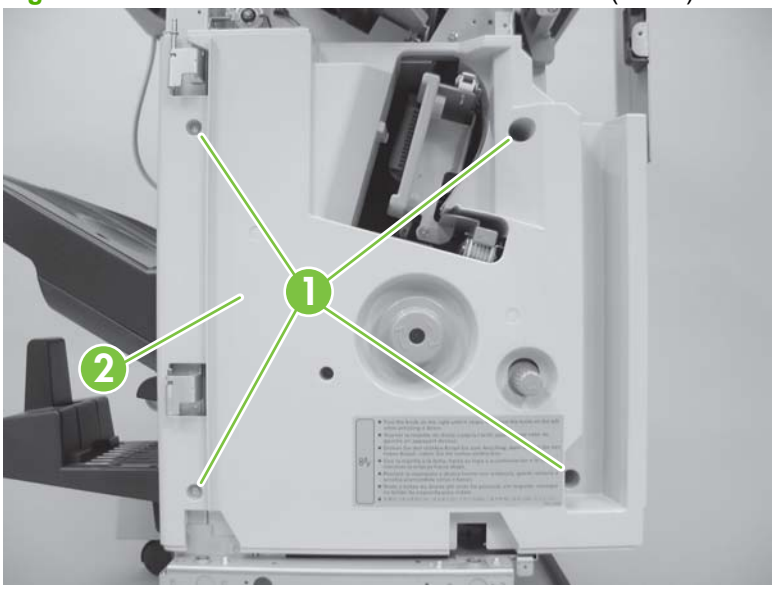
1. Remove the following:
   - Front door. See Front door on page 669.
   - Front inside-upper cover. See Front inside-upper cover on page 672
   - Front-foot cover. See Front-foot cover on page 671
2. Remove one screw (callout 1), and then remove the roller knob (callout 2).

Figure 8-141 Remove the front inside-lower cover (1 of 2)



3. Remove four screws (callout 1) and remove the front inside-lower cover (callout 2).

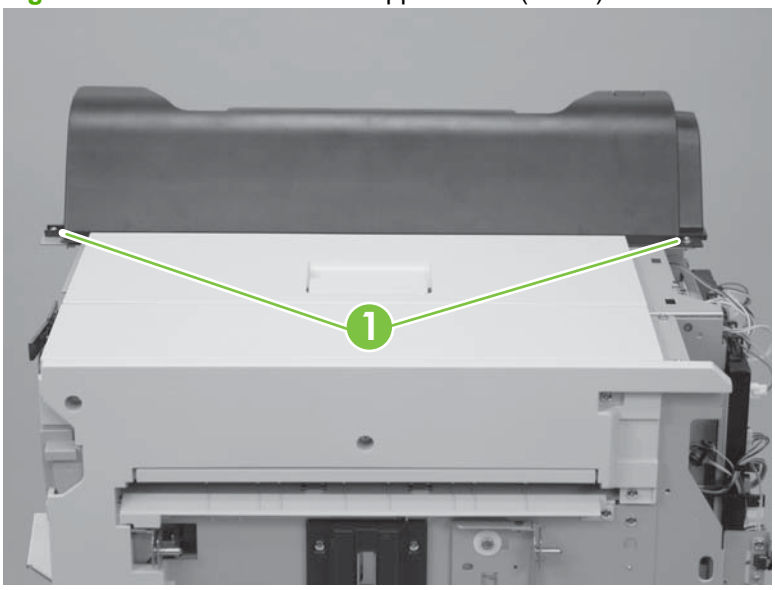
Figure 8-142 Remove the front inside-lower cover (2 of 2)



Left-upper cover

1. Remove the following:
   - Front door. See Front door on page 669.
   - Front inside-upper cover. See Front inside-upper cover on page 672.
   - Rear cover. See Rear cover on page 670.
2. Remove two screws (callout 1).

Figure 8-143 Remove the left-upper cover (1 of 3)



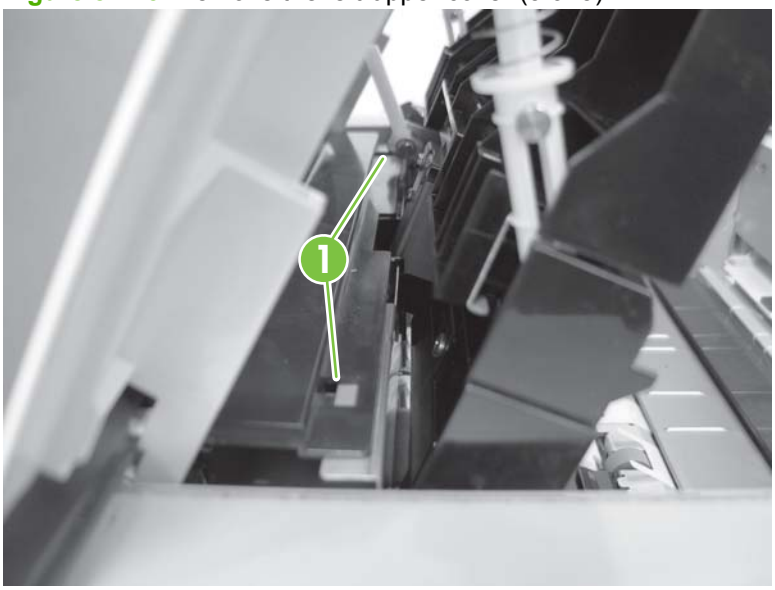
3. With the top door open, tilt the left-upper cover to the right, and then slide it to the left to remove.

Figure 8-144 Remove the left-upper cover (2 of 3)



NOTE: When replacing, hook the two tabs of the left-upper cover (callout 1) under the steel plate located under the top door.

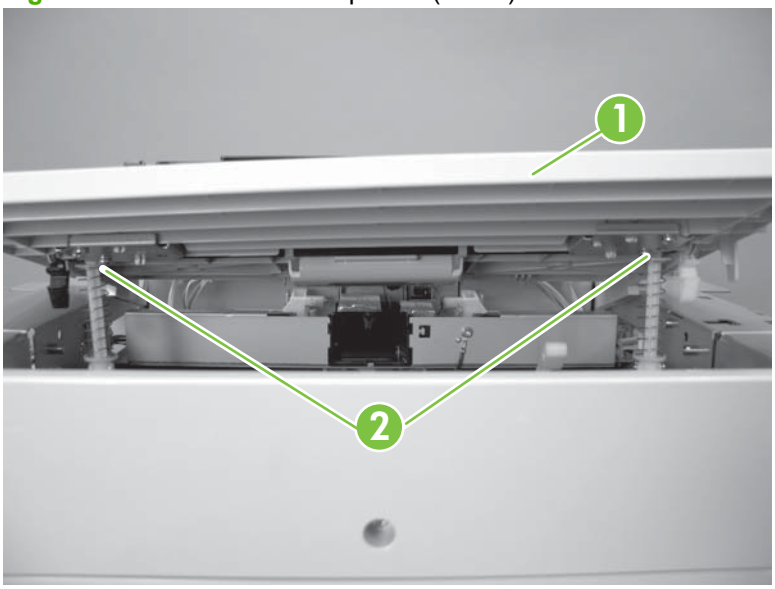
Figure 8-145 Remove the left-upper cover (3 of 3)



Top door

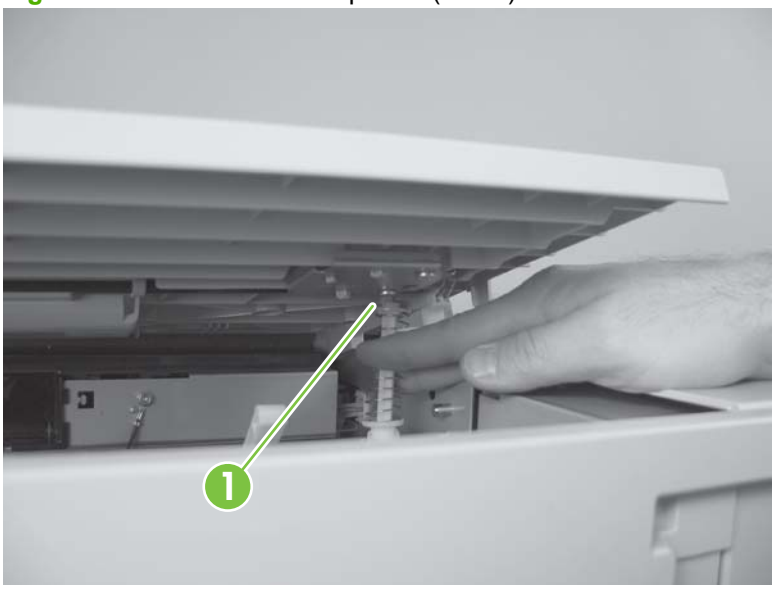
1. Remove the following:
   - Front door. See Front door on page 669.
   - Front inside-upper cover. See Front inside-upper cover on page 672.
   - Rear cover. See Rear cover on page 670.
2. Open the top door (callout 1) and locate the two hooks (callout 2) at the top of the two spring-loaded arms.

Figure 8-146 Remove the top door (1 of 3)



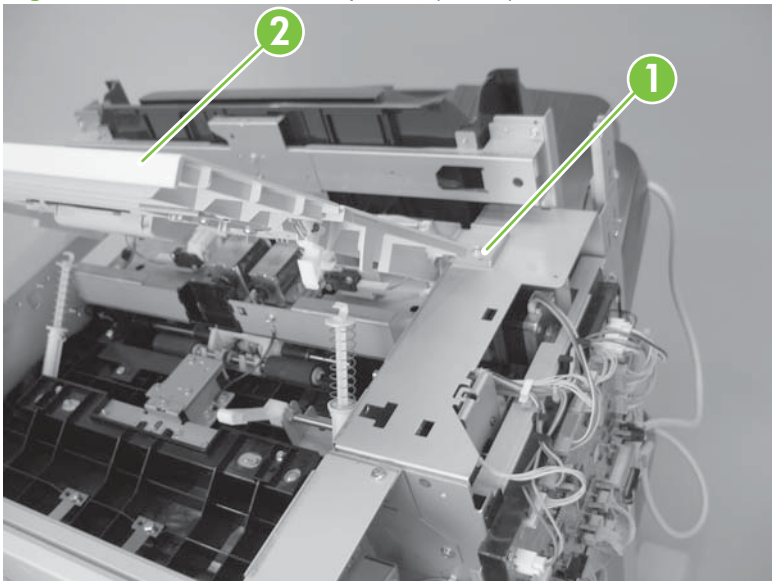
3. Press the hooks at the top (callout 1) to release them from the top door.

Figure 8-147 Remove the top door (2 of 3)



4. Remove one screw (callout 1), and then remove the top door (callout 2).

Figure 8-148 Remove the top door (3 of 3)



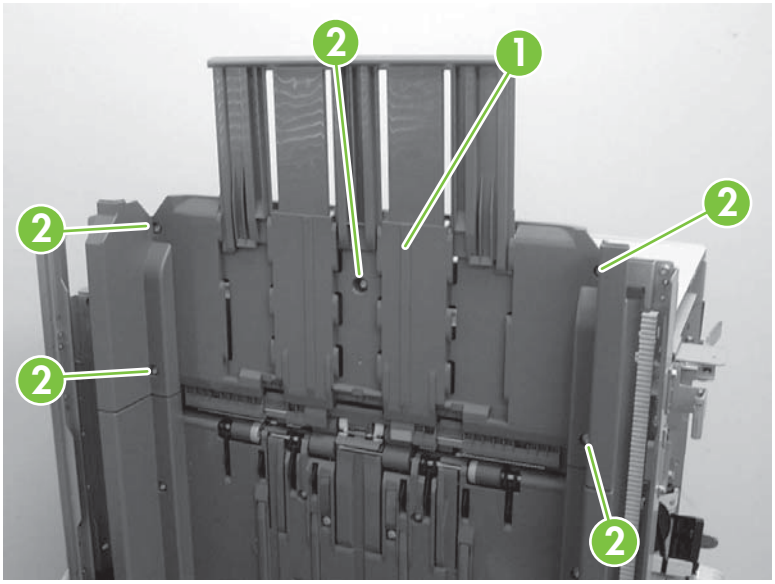
Grate-shaped upper guide

1. Remove the following:
   - Front door. See Front door on page 669.
   - Front inside-upper cover. See Front inside-upper cover on page 672.
   - Rear cover. See Rear cover on page 670.
   - Left-upper cover. See Left-upper cover on page 674.

   NOTE: Position output bins below the grate-shaped upper guide.

2. Remove five screws (callout 2), and then remove the grate-shaped upper guide (callout 1).

Figure 8-149 Remove the grate-shaped upper guide



Move output bins 1 and 2

△ **CAUTION:** Lowering the output bins without lifting the shutter can cause the stack-delivery gate to come off the accessory.

1. Raise and hold the shutter to cover the stack-delivery gate.

Figure 8-150 Move output bins (1 of 3)



2. While covering the shutter, pull the output-bin lift-motor-gear clutch on the bottom of the output bin. Lower the output bin past the stack-delivery gate.

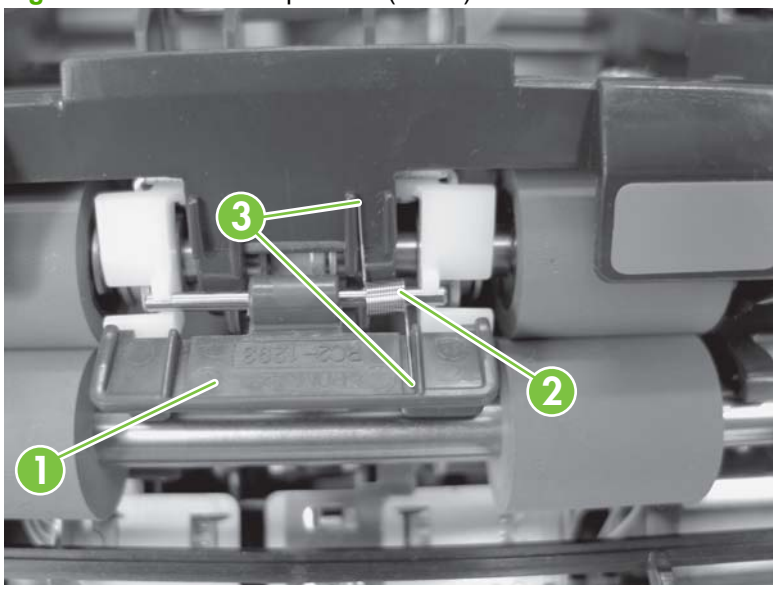
⚠ **WARNING!** Hold the output bin with your hand when releasing the clutch. When the output-bin lift-motor-gear clutch is released, the output bin drops by its own weight.

Figure 8-151 Move output bins (2 of 3)



NOTE: If the stack-delivery gate (callout 1) comes off, retain the spring (callout 2) and reinstall. The spring ends (callout 3) fit in the slots provided.

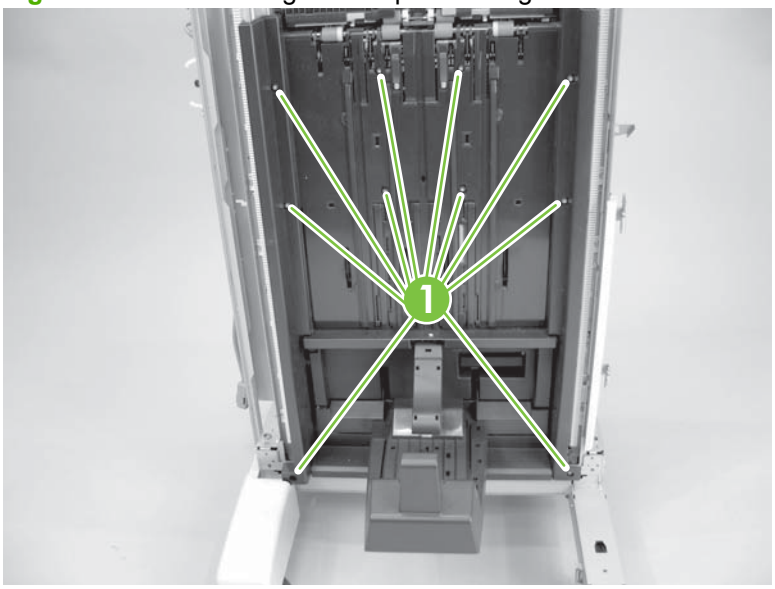
Figure 8-152 Move output bins (3 of 3)



Grate-shaped lower guide

1. Remove the following:
   - Front door. See Front door on page 669.
   - Front inside-upper cover. See Front inside-upper cover on page 672.
   - Front-foot cover. See Front-foot cover on page 671.
   - Rear cover. See Rear cover on page 670.
   - Rear-foot cover. See Rear-foot cover on page 671.
   - Grate-shaped upper guide. See Grate-shaped upper guide on page 678.
   - Upper output bin. See Upper output bin (stapler-stacker only) on page 712.
   - Output-bin 1. See Output-bin 1 on page 708.
   - Output-bin 2. See Output-bin 2 on page 710.
2. Remove ten screws (callout 1), and then remove the grate-shaped lower guide.

Figure 8-153 Remove grate-shaped lower guide

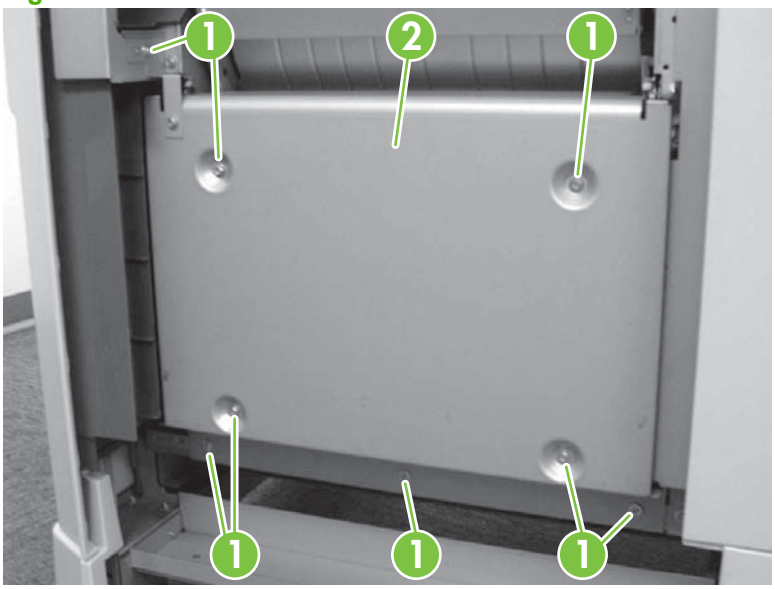


NOTE: When reinstalling, be careful not to hook the grate-shaped lower guide to the sensor flag arm.

PCA cover

- ☐ Remove eight screws (callout 1), and then remove the PCA cover (callout 2) (booklet maker only).

Figure 8-154 Remove the PCA cover



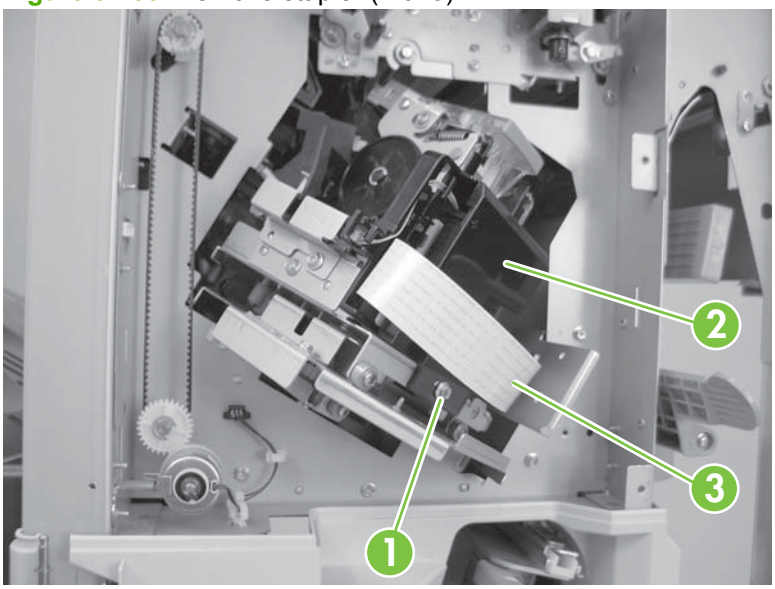
Drive system

Stapler

1. Remove the following:
   - Front door. See Front door on page 669.
   - Front inside-upper cover. See Front inside-upper cover on page 672.
2. Pull out the stapler, remove one screw (callout 1), and then remove the PCA cover (callout 2).

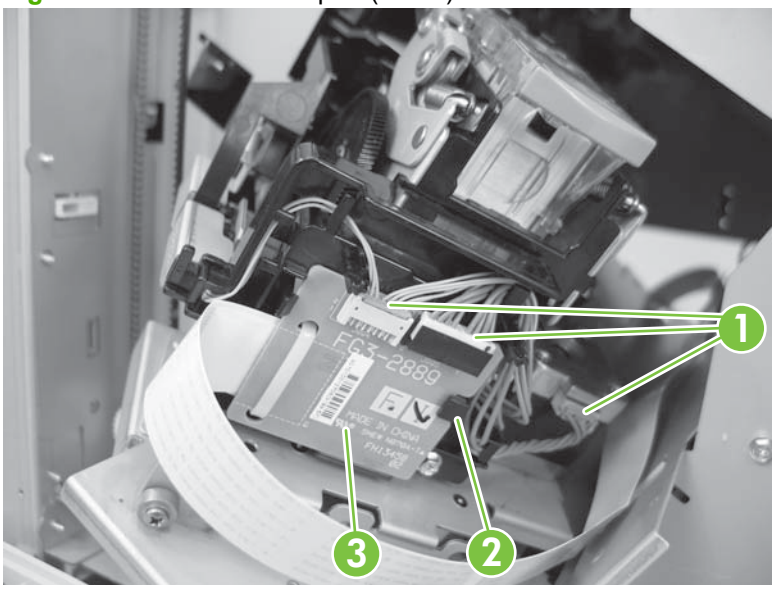
△ **CAUTION:** Handle the FCC cable (callout 3) with care. It can be easily damaged if folded, dented, or mishandled.

Figure 8-155 Remove stapler (1 of 3)



3. Disconnect three connectors (callout 1), release one tab (callout 2), and then remove the PCA (callout 3).

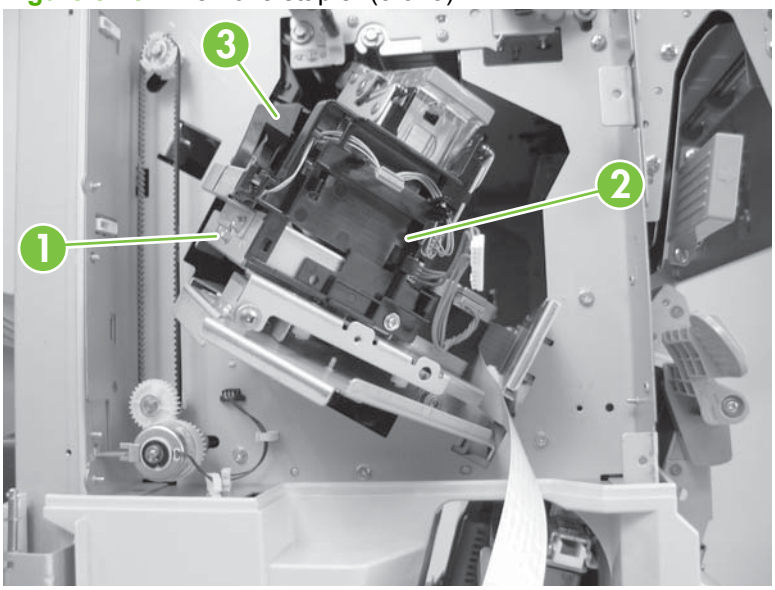
Figure 8-156 Remove stapler (2 of 3)



4. Remove one screw (callout 1), and then remove the stapler with the stapler base (callout 2).

△ **CAUTION:** When removing and reinstalling the stapler, be careful not to damage the flag (callout 3).

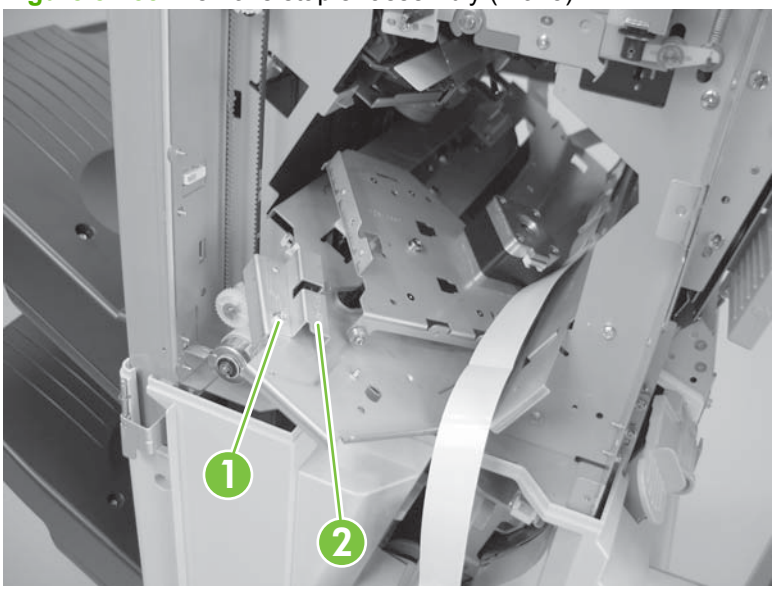
Figure 8-157 Remove stapler (3 of 3)



Stapler assembly

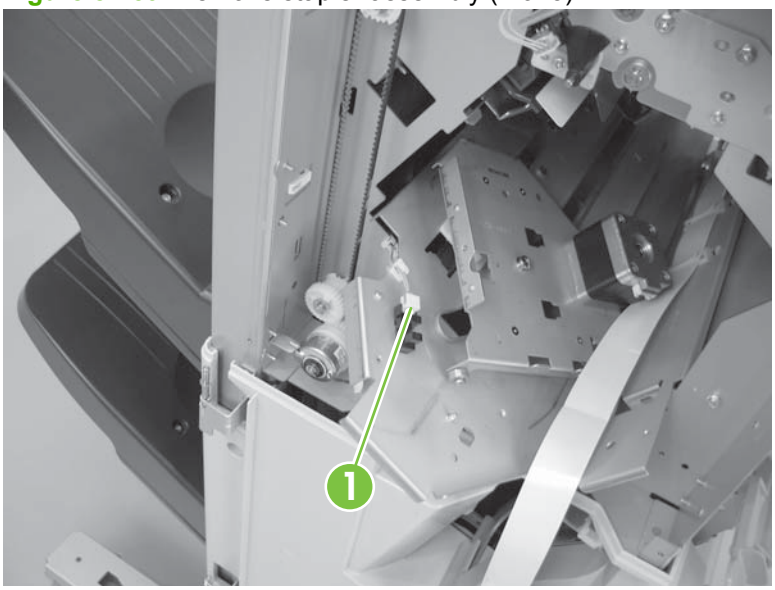
1. Remove the following:
   - Front door. See Front door on page 669.
   - Front inside-upper cover. See Front inside-upper cover on page 672.
   - Rear cover. See Rear cover on page 670.
   - Stapler. See Stapler on page 683.
2. Remove one screw (callout 1), and then remove one cover (callout 2).

Figure 8-158 Remove stapler assembly (1 of 5)



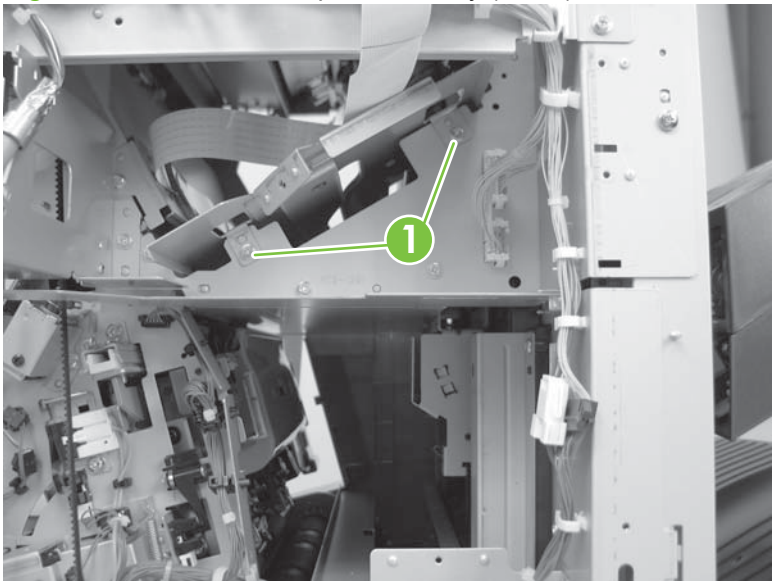
3. Disconnect one connector (callout 1).

Figure 8-159 Remove stapler assembly (2 of 5)



4. From the rear of the accessory, remove two screws (callout 1).

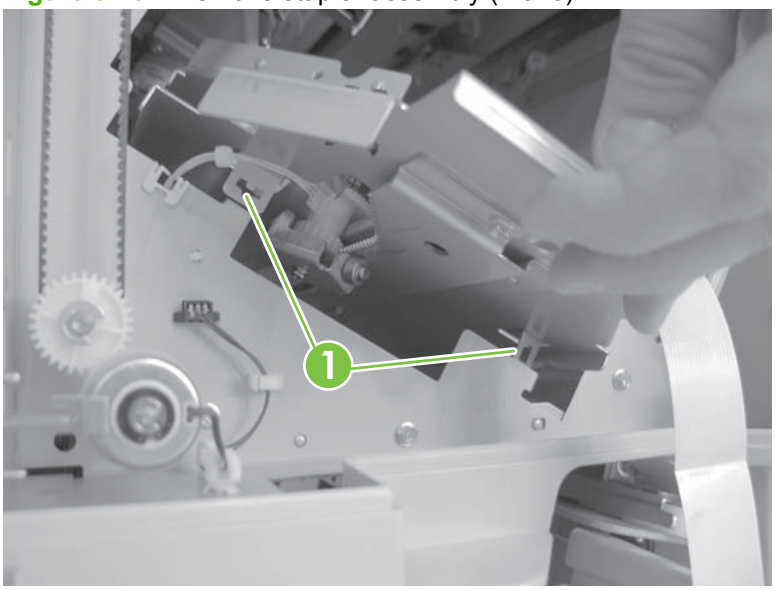
Figure 8-160 Remove stapler assembly (3 of 5)



5. From the front of the accessory, push the stapler assembly back to clear the tabs (callout 1), and then lift up. Remove the stapler assembly through the front of the accessory.

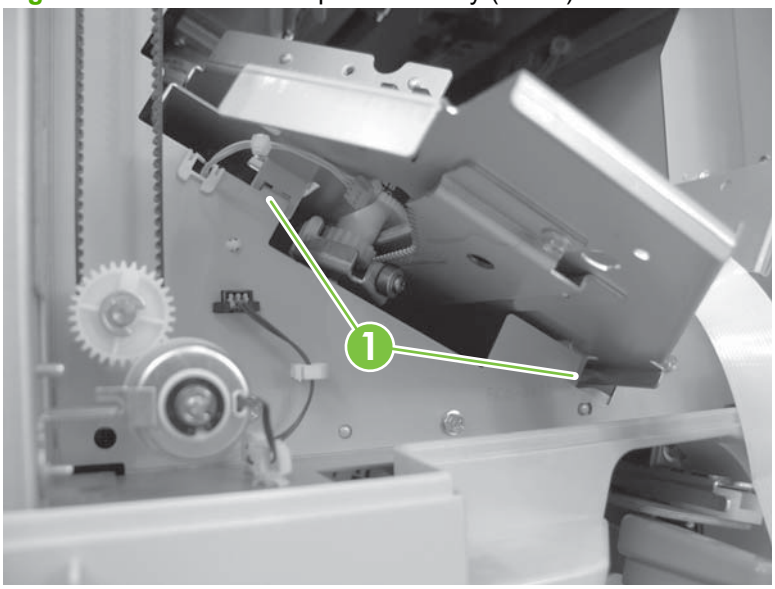
△ **CAUTION:** Handle the FCC cable (callout 3) with care. It can be easily damaged if folded, dented, or mishandled.

Figure 8-161 Remove stapler assembly (4 of 5)



NOTE: When reinstalling, make sure the tabs are positioned correctly (callout 1).

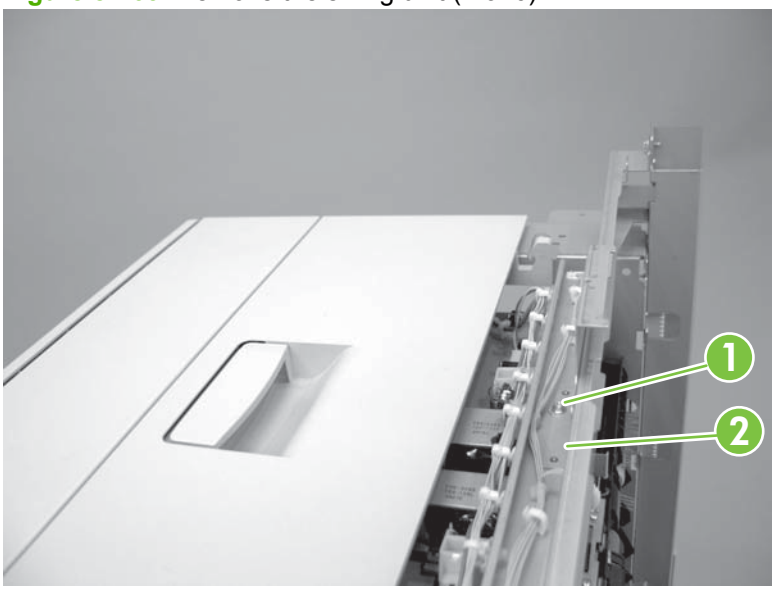
Figure 8-162 Remove stapler assembly (5 of 5)



Swing unit

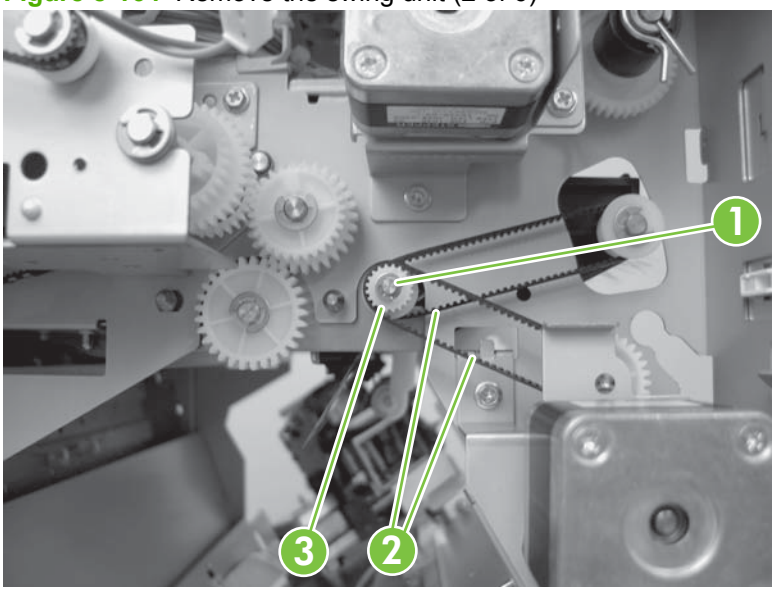
1. Remove the following:
   - Front door. See Front door on page 669.
   - Front inside-upper cover. See Front inside-upper cover on page 672.
   - Front-foot cover. See Front-foot cover on page 671.
   - Rear cover. See Rear cover on page 670.
   - Rear-foot cover. See Rear-foot cover on page 671.
   - Left-upper cover. See Left-upper cover on page 674.
   - Grate-shaped upper guide. See Grate-shaped upper guide on page 678.
   - Upper output bin. See Upper output bin (stapler-stacker only) on page 712.
   - Output-bin 1. See Output-bin 1 on page 708.
   - Output-bin 2. See Output-bin 2 on page 710.
   - Grate-shaped lower guide. See Grate-shaped lower guide on page 681.
   - Processing tray. See Operation-tray assembly on page 703.
2. Remove one screw (callout 1), and then lift the swing-pressure guide (callout 2) to remove.

Figure 8-163 Remove the swing unit (1 of 6)



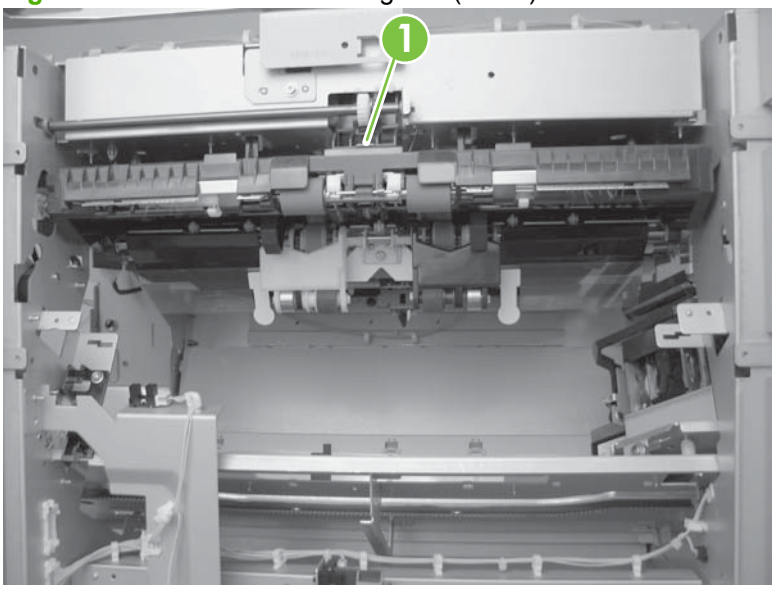
3. Remove one e-ring (callout 1), two belts (callout 2), and one gear (callout 3).

Figure 8-164 Remove the swing unit (2 of 6)



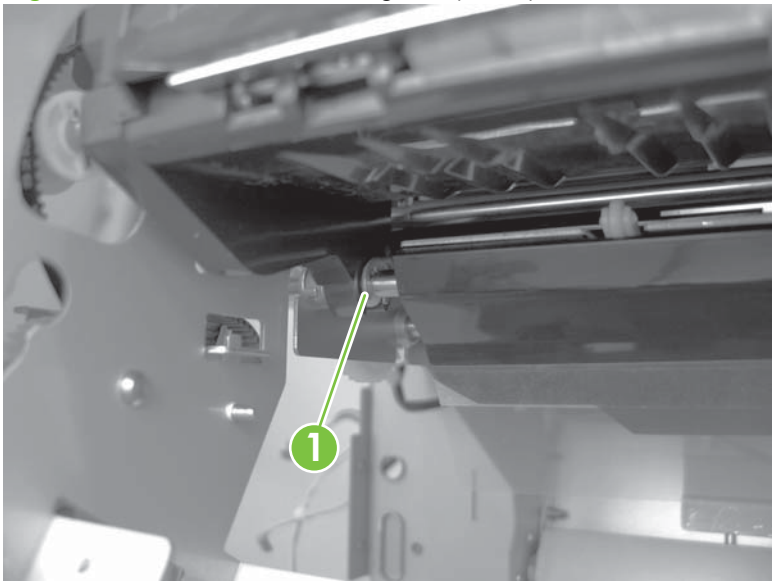
4. Unhook the swing pressure rack (callout 1) from the swing unit center hook.

Figure 8-165 Remove the swing unit (3 of 6)



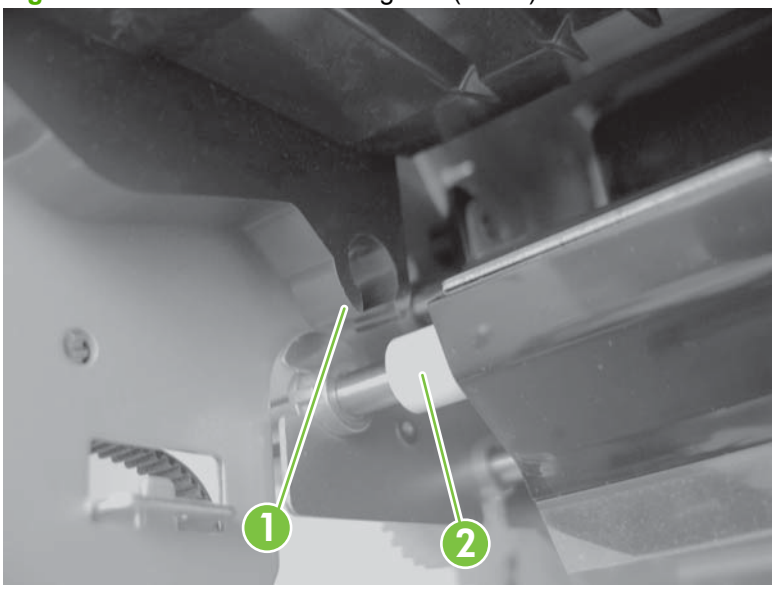
5. Remove one e-ring (callout 1) on each side of the swing unit.

Figure 8-166 Remove the swing unit (4 of 6)



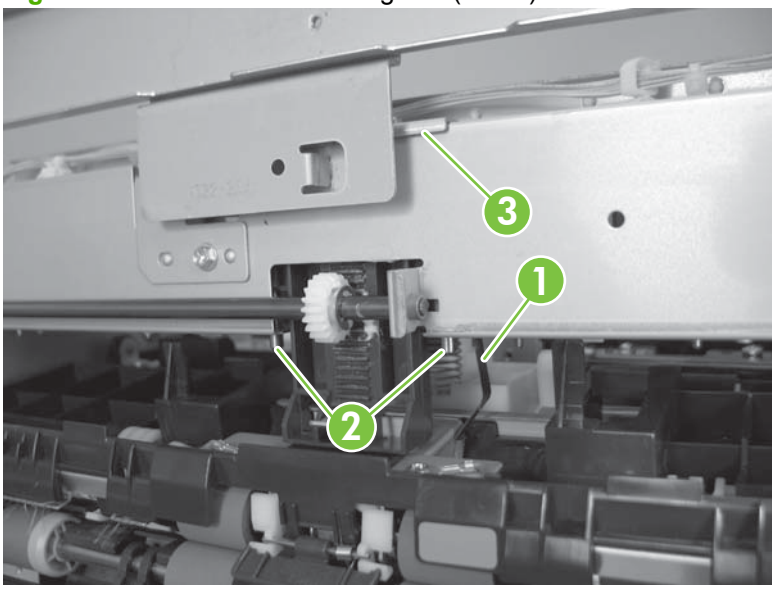
6. Slide the bushing (callout 2) to the inside and lift the swing unit (callout 1) to remove.

Figure 8-167 Remove the swing unit (5 of 6)



△ **CAUTION:** When reinstalling the swing unit, make sure the grounding plate (callout 1) is positioned so that the bottom of the grounding plate rubs against the metal plate when the swing arm moves up and down. Also make sure the pins (callout 2) are inserted correctly and the swing-pressure guide is flush (callout 3).

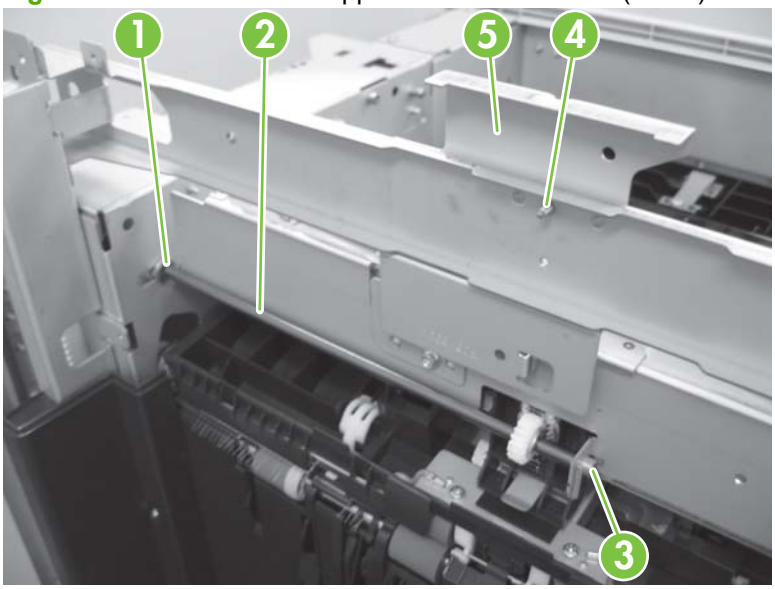
Figure 8-168 Remove the swing unit (6 of 6)



Upper crossmember unit

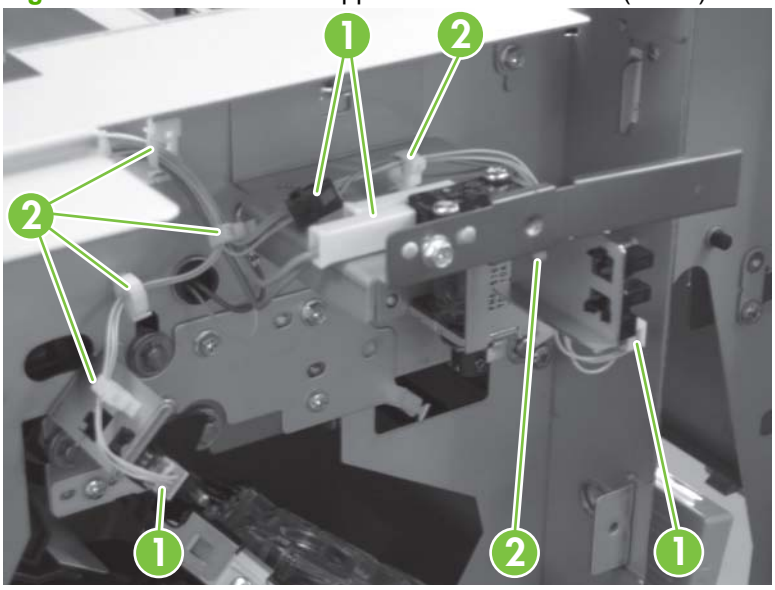
1. Remove the following:
   - Front door. See Front door on page 669.
   - Front inside-upper cover. See Front inside-upper cover on page 672.
   - Rear cover. See Rear cover on page 670.
   - Left-upper cover. See Left-upper cover on page 674.
   - Grate-shaped upper guide. See Grate-shaped upper guide on page 678.
2. Remove the e-ring (callout 1). Slide the shaft (callout 2) to the rear side, and then remove the bushing (callout 3). Remove one screw (callout 4), and then remove the stopper (callout 5).

Figure 8-169 Remove the upper crossmember unit (1 of 5)



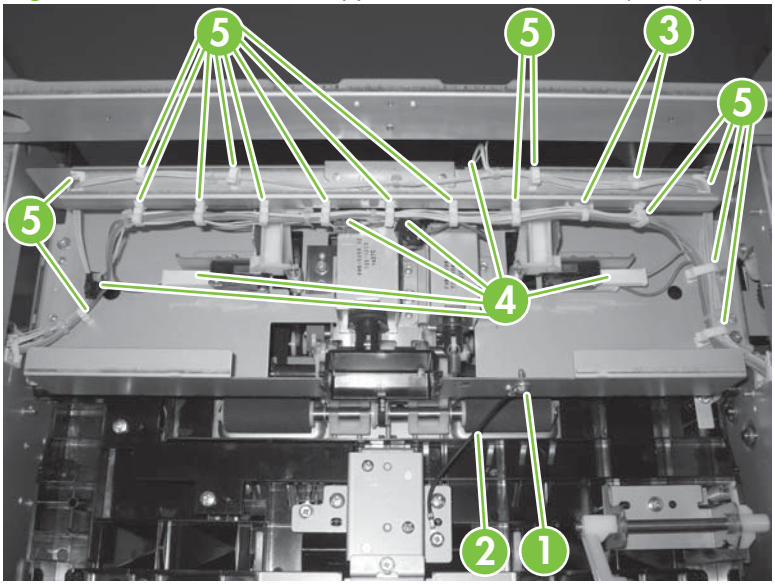
3. Disconnect four connectors (callout 1), and then remove the wire from the six wire retainers (callout 2).

Figure 8-170 Remove the upper crossmember unit (2 of 5)



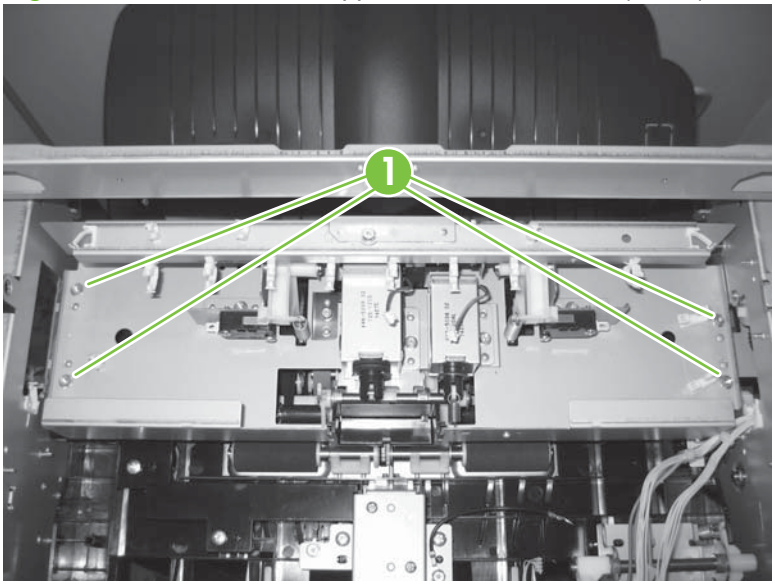
4. Remove one screw (callout 1) and a grounding wire (callout 2). Remove the two cable bands (callout 3). Disconnect six connectors (callout 4), and then release 16 wire retainers (callout 5).

Figure 8-171 Remove the upper crossmember unit (3 of 5)



5. Remove the four screws (callout 1).

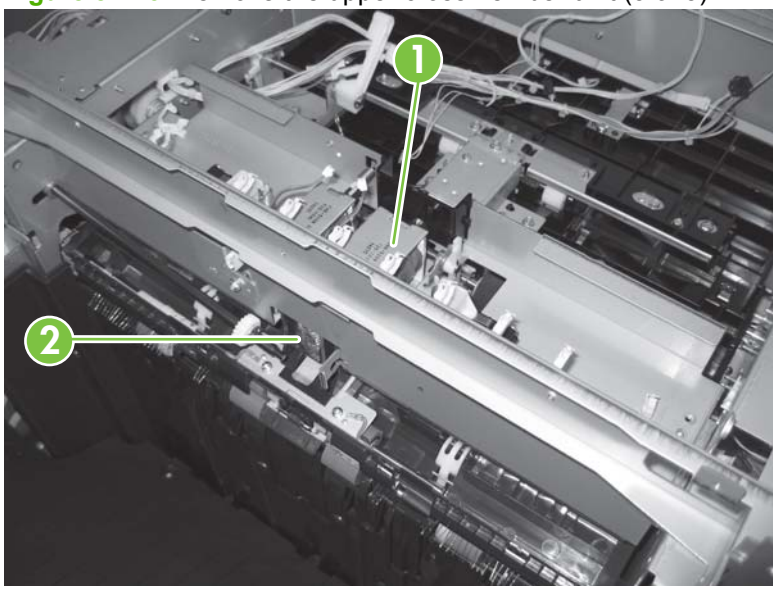
Figure 8-172 Remove the upper crossmember unit (4 of 5)



6. Lift the upper crossmember unit (callout 1), release the catch of the swing pressure rack (callout 2), and then remove the upper crossmember unit.

NOTE: Do not lose the spring that is attached to the back of the upper crossmember unit.

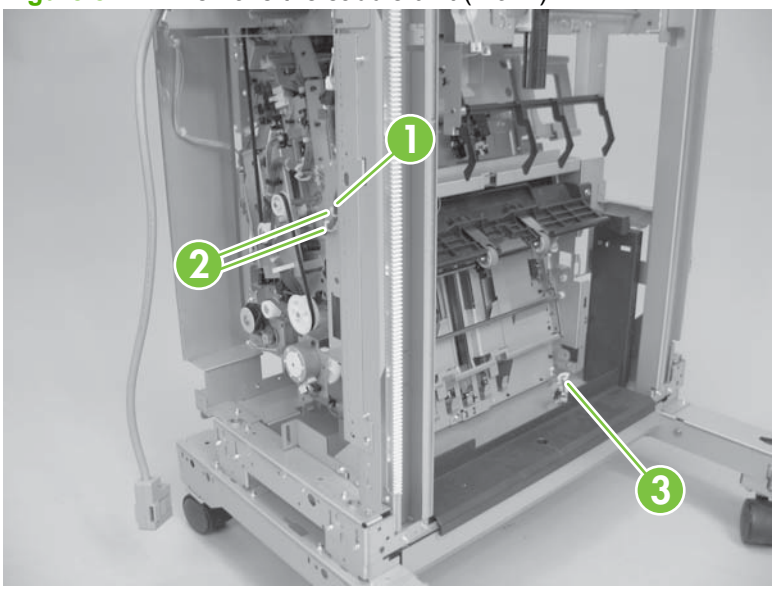
Figure 8-173 Remove the upper crossmember unit (5 of 5)



Saddle unit (booklet maker only)

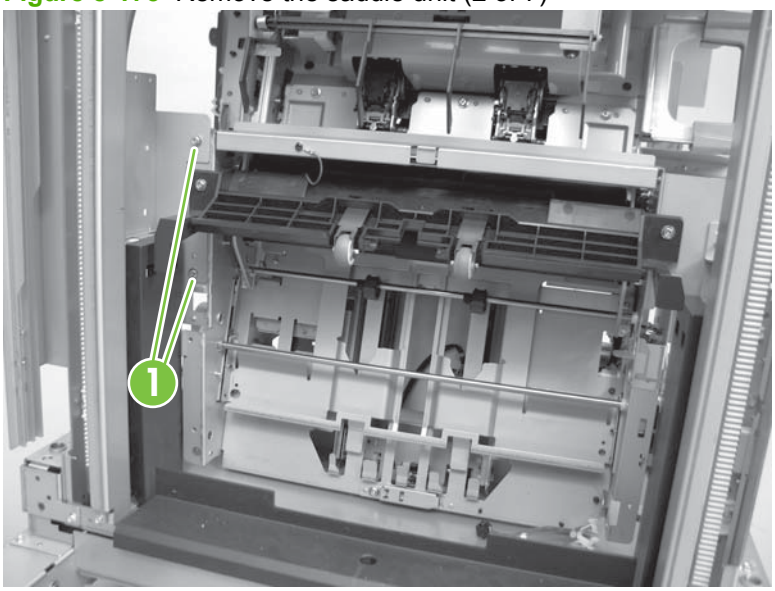
1. Remove the following:
   - Front door. See Front door on page 669.
   - Front inside-upper cover. See Front inside-upper cover on page 672.
   - Front-foot cover. See Front-foot cover on page 671.
   - Front inside-lower cover. See Front inside-lower cover (booklet maker only) on page 673.
   - Rear cover. See Rear cover on page 670.
   - Rear-foot cover. See Rear-foot cover on page 671.
   - Left-upper cover. See Left-upper cover on page 674.
   - Grate-shaped upper guide. See Grate-shaped upper guide on page 678.
   - Upper output bin. See Upper output bin (stapler-stacker only) on page 712.
   - Output-bin 1. See Output-bin 1 on page 708.
   - Output-bin 2. See Output-bin 2 on page 710.
   - Grate-shaped lower guide. See Grate-shaped lower guide on page 681.
   - Booklet-delivery output bin unit. See Booklet-delivery output bin unit (booklet maker only) on page 715.
   - PCA cover. See PCA cover on page 682.
   - Inlet feed unit. See Inlet feed unit (booklet maker only) on page 729 or Inlet feed unit (stapler-stacker only) on page 726.
2. Disconnect two connectors (callout 1), and then release the wire from the two retainers (callout 2). From the delivery side, release the wire from the two retainers (callout 3).

Figure 8-174 Remove the saddle unit (1 of 7)



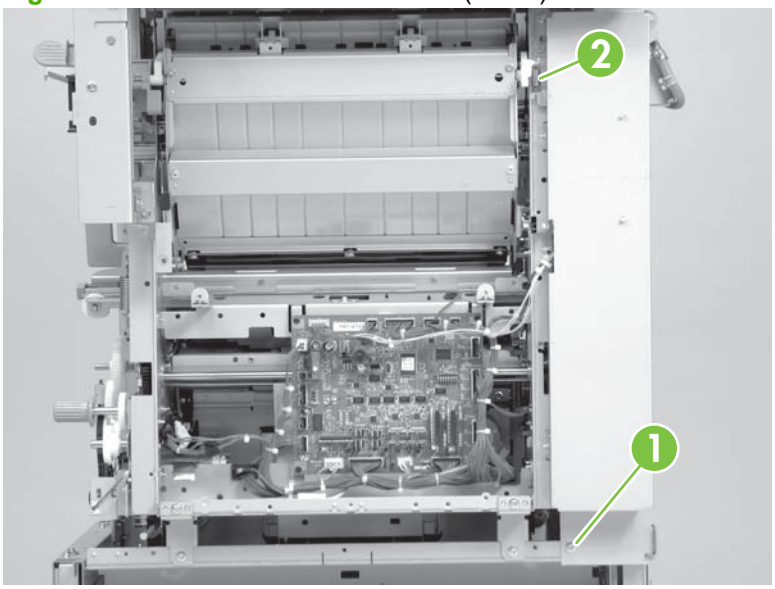
3. Remove two screws (callout 1).

Figure 8-175 Remove the saddle unit (2 of 7)



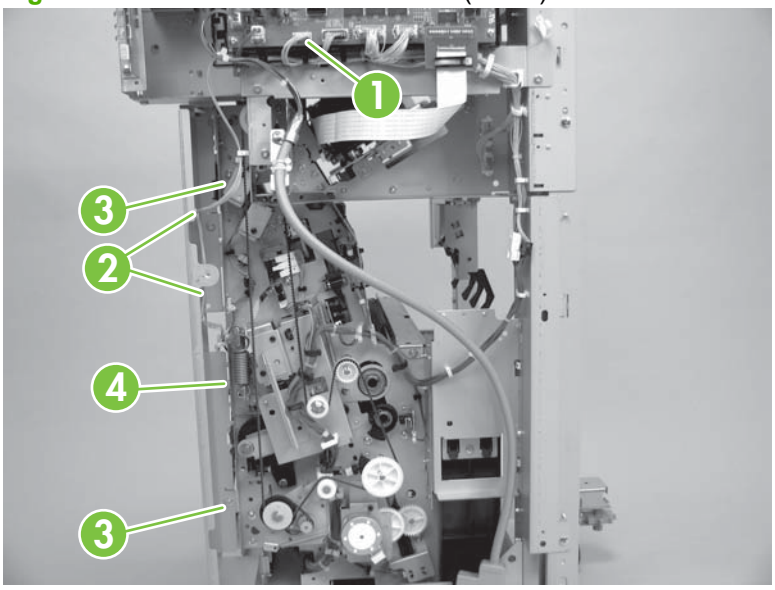
4. Remove one screw (callout 1), and then remove one spring (callout 2).

Figure 8-176 Remove the saddle unit (3 of 7)



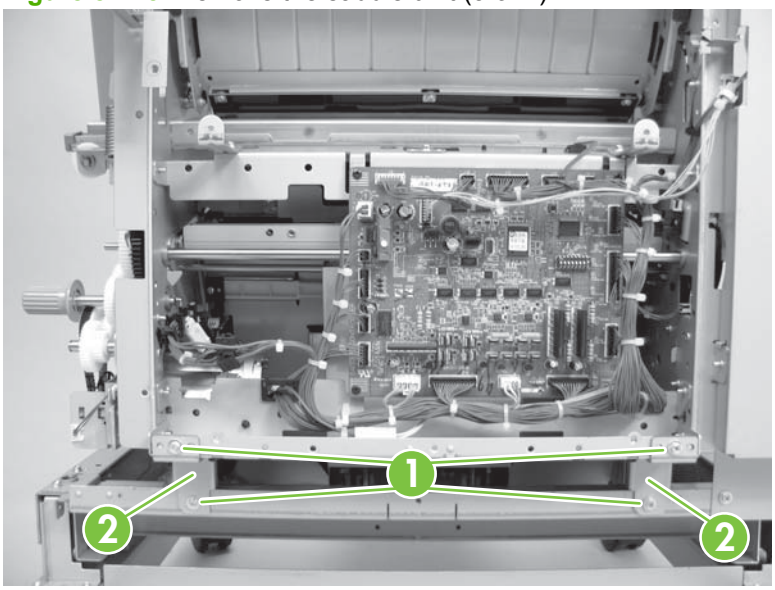
5. Disconnect one connector (callout 1). Release two wire retainers (callout 2), and then remove two screws (callout 3). Remove the guide plate (callout 4).

Figure 8-177 Remove the saddle unit (4 of 7)



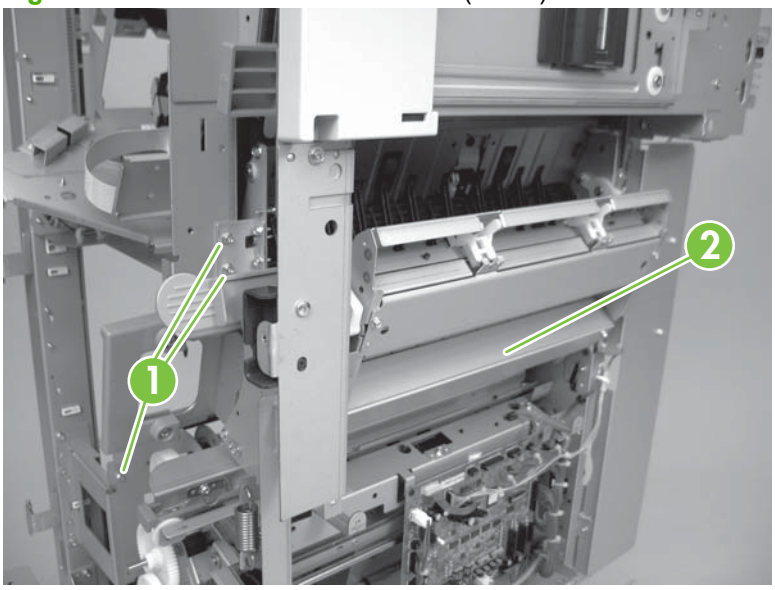
6. Remove four screws (callout 1), and then remove two brackets (callout 2).

Figure 8-178 Remove the saddle unit (5 of 7)



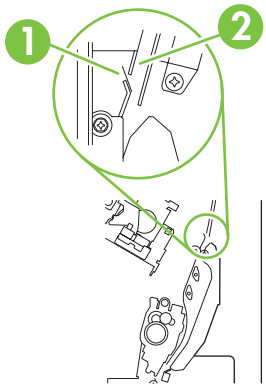
7. Remove three screws (callout 1), and then remove the saddle unit (callout 2) from the paper-feed side.

Figure 8-179 Remove the saddle unit (6 of 7)



NOTE: Install the saddle unit so that the Mylar (callout 1) at the front-upper side of the saddle is on the outside of the delivery-guide plate (callout 2). A delivery fault will occur if it is on the inside.

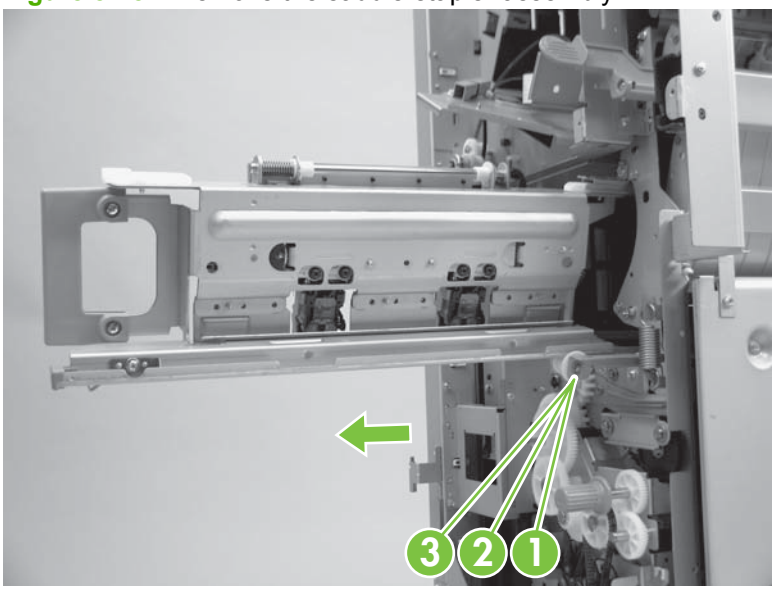
Figure 8-180 Remove the saddle unit (7 of 7)



Saddle-stapler assembly (booklet maker only)

1. Remove the following:
   - Front door. See Front door on page 669.
   - Front-foot cover. See Front-foot cover on page 671.
   - Front inside-upper cover. See Front inside-upper cover on page 672.
   - Front inside-lower cover. See Front inside-lower cover (booklet maker only) on page 673.
2. Remove one e-ring (callout 1), one shaft (callout 2), and one roller (callout 3). With one hand on the handle and the other supporting the bottom, slide the stitcher stapler out of the accessory.

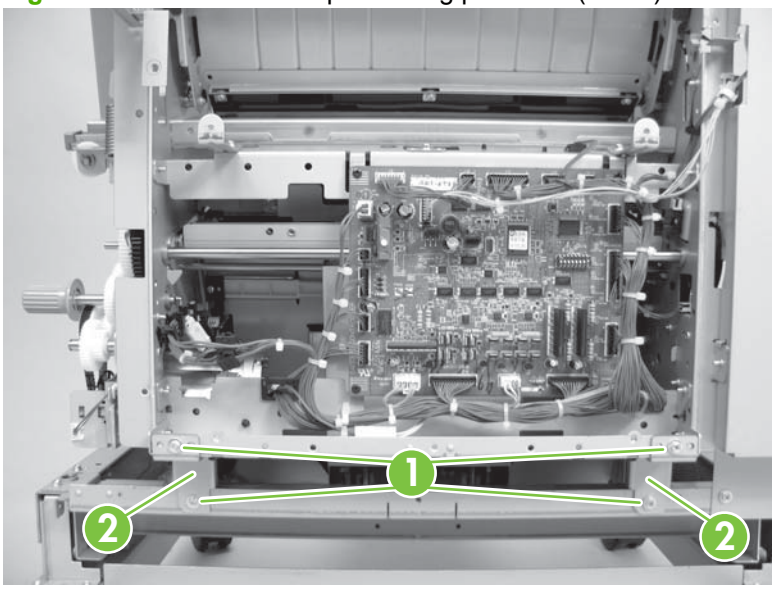
Figure 8-181 Remove the saddle-stapler assembly



Positioning plate unit (inner side-plate assembly) (booklet maker only)

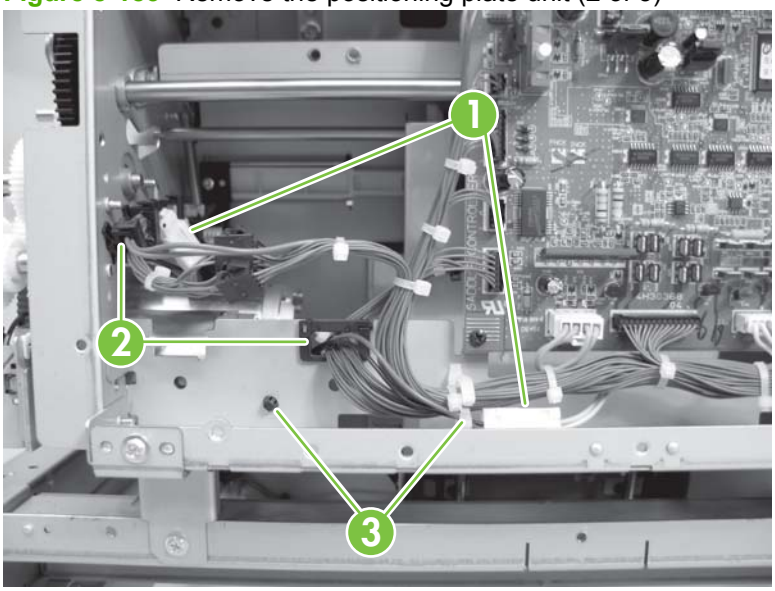
1. Remove the following:
   - Front door. See Front door on page 669.
   - Rear cover. See Rear cover on page 670.
   - Front-foot cover. See Front-foot cover on page 671.
   - Front inside-upper cover. See Front inside-upper cover on page 672.
   - Front inside-lower cover. See Front inside-upper cover on page 672.
   - PCA cover. See PCA cover on page 682.
   - Saddle-stitcher controller PCA. See Saddle-stitcher controller PCA (booklet maker only) on page 738.
2. Remove four screws (callout 1) and two brackets (callout 2).

Figure 8-182 Remove the positioning plate unit (1 of 5)



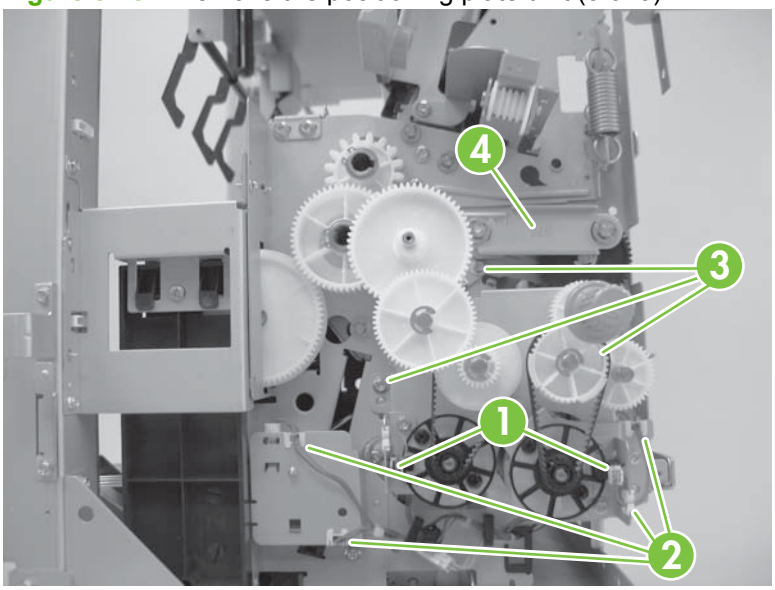
3. Disconnect two connectors (callout 1), two wire retainers (callout 2), and two clamps (callout 3).

Figure 8-183 Remove the positioning plate unit (2 of 5)



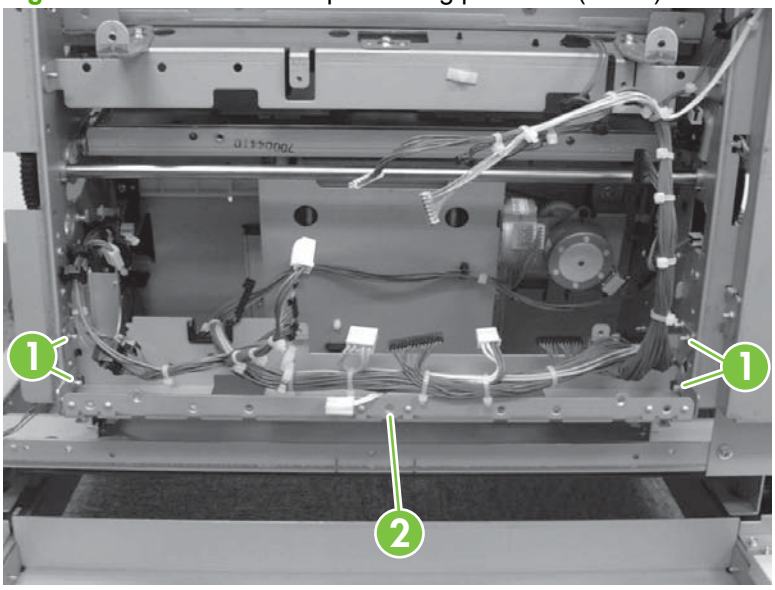
4. Disconnect two connectors (callout 1) and release four wire retainers (callout 2). Remove three screws (callout 3), and then remove the paper-folding/paper-pushing motor base (callout 4).

Figure 8-184 Remove the positioning plate unit (3 of 5)



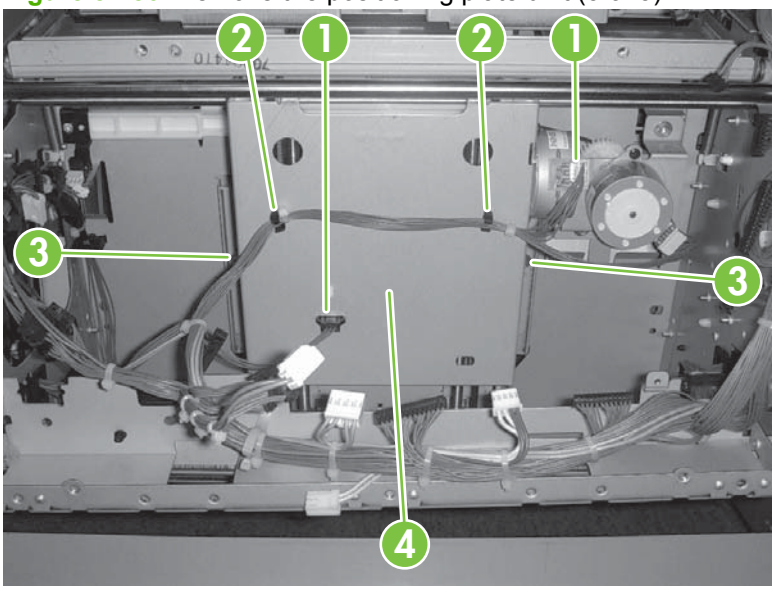
5. Remove four screws (callout 1), and then remove the stay (callout 2). Do not remove the wire retainer on the stay.

Figure 8-185 Remove the positioning plate unit (4 of 5)



6. Disconnect two connectors (callout 1) and release two wire retainers (callout 2). Remove two screws (callout 3), shift the positioning plate unit (callout 4) forward, and then remove it from the paper-feeding side.

Figure 8-186 Remove the positioning plate unit (5 of 5)



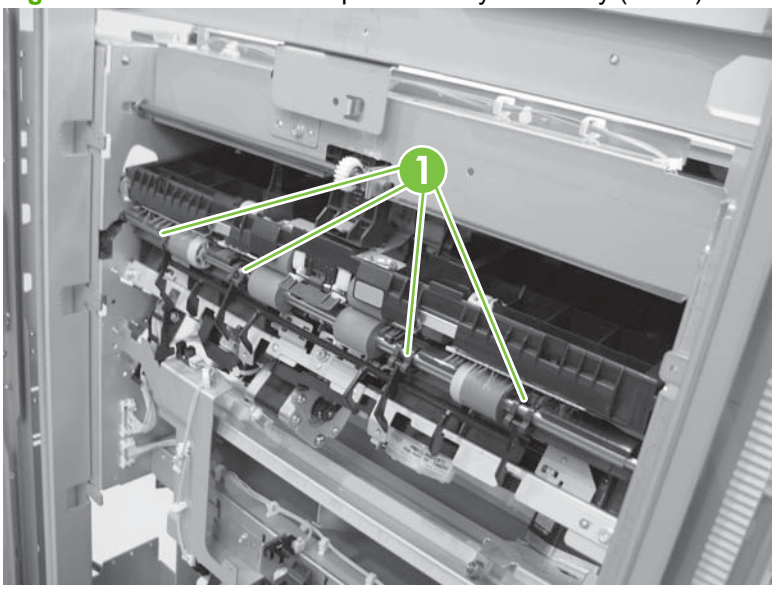
Document feed system

Operation-tray assembly

1. Remove the following:
    - Front door. See Front door on page 669.
    - Rear cover. See Rear cover on page 670.
    - Front-foot cover. See Front-foot cover on page 671.
    - Rear-foot cover. See Rear-foot cover on page 671.
    - Front inside-upper cover. See Front inside-upper cover on page 672.
    - Left-upper cover. See Left-upper cover on page 674.
    - Grate-shaped upper guide. See Grate-shaped upper guide on page 678.
    - Grate-shaped lower guide. See Grate-shaped lower guide on page 681
    - Output-bin 1. See Output-bin 1 on page 708.
    - Output-bin 2. See Output-bin 2 on page 710.
    - Upper output bin. See Upper output bin (stapler-stacker only) on page 712.

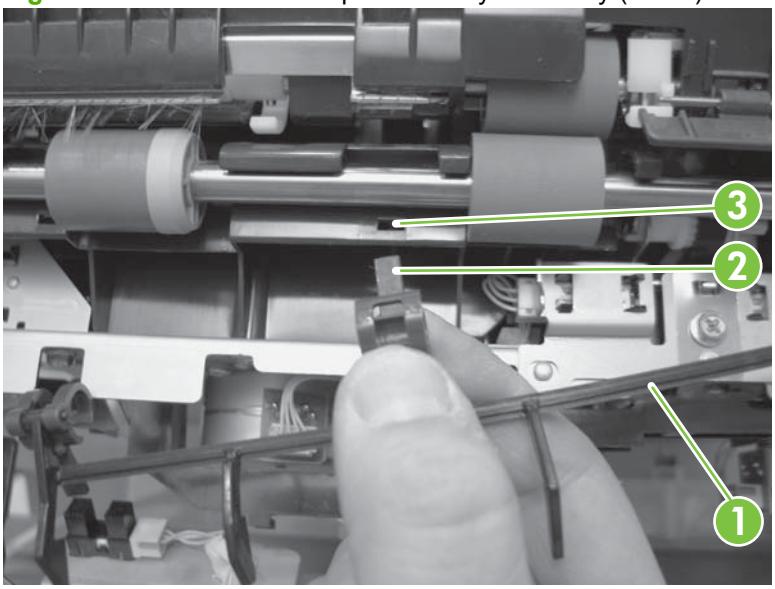
2. The sensor flag arm is very fragile. Grip the sensor flag by the snap fasteners and not by the arm. To remove the sensor flag, start at one end, grip each snap fastener at the base gently pull to remove one at a time.

Figure 8-187 Remove the operation-tray assembly (1 of 6)



NOTE: When reinstalling, the small tab (callout 2) on each snap fastener must be inserted into a hole (callout 3). The sensor flag (callout 1) will not work properly if the tabs are not installed correctly.

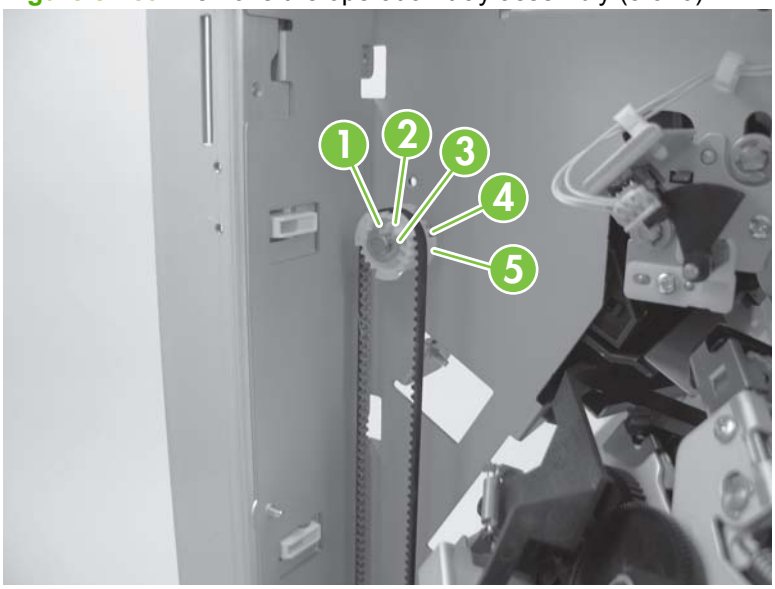
Figure 8-188 Remove the operation-tray assembly (2 of 6)



3. Remove one e-ring (callout 1), one parallel pin (callout 2), one gear (callout 3), one e-ring (callout 4), and one bushing (callout 5).

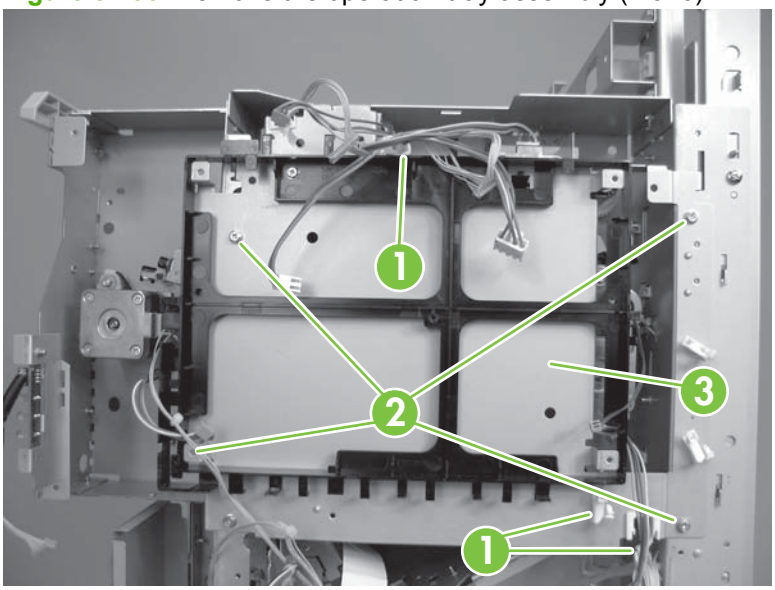
NOTE: The parallel pin (callout 3) drops when the gear (callout 2) is removed. Be sure to locate and save the pin for reinstallation.

Figure 8-189 Remove the operation-tray assembly (3 of 6)



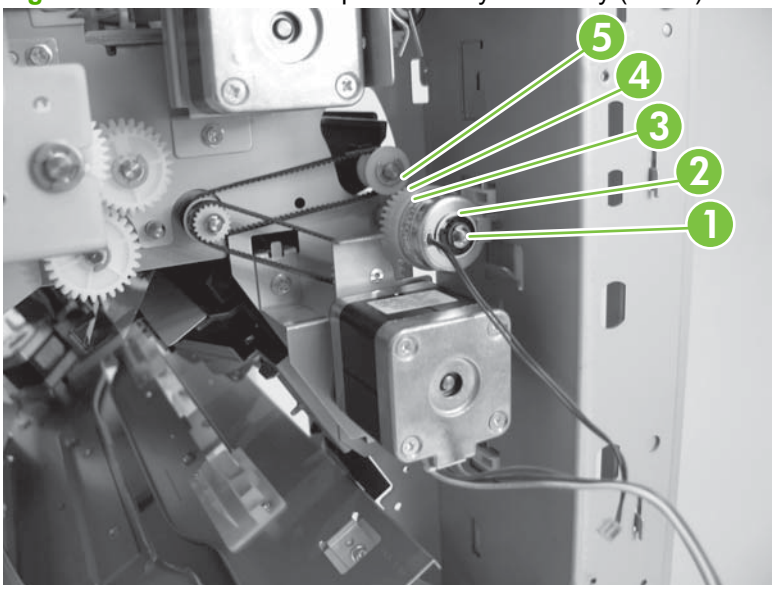
4. Release three wire retainers (callout 1). Remove four screws (callout 2), and then remove the PCA mount (callout 3).

Figure 8-190 Remove the operation-tray assembly (4 of 6)



5. Remove one e-ring (callout 1) and the stack-delivery-roller rear-side clutch (callout 2). Behind the clutch, remove one e-ring (callout 3), one bushing (callout 4), and one bearing (callout 5), and then remove the stack-delivery roller.

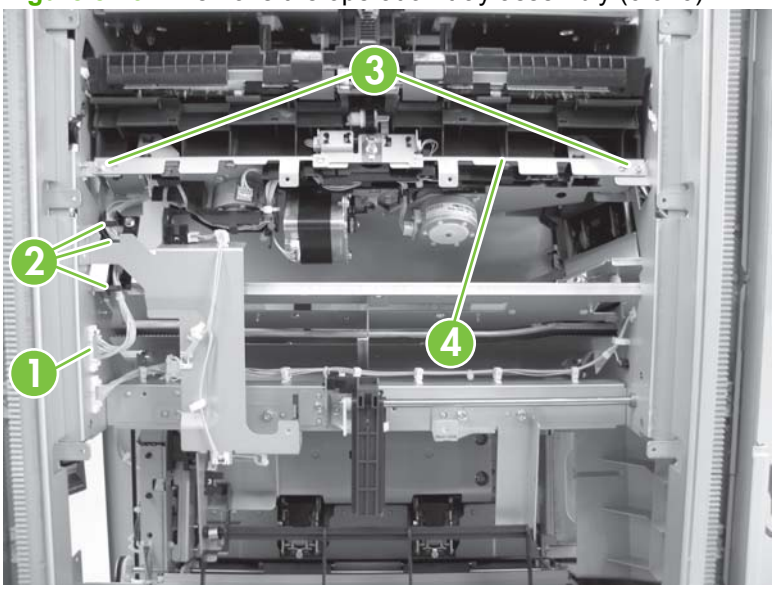
Figure 8-191 Remove the operation-tray assembly (5 of 6)



6. Disconnect one connector (callout 1), and then release one clamp and one edge saddle (callout 2). Remove two screws (callout 3), and then pull out the operation-tray assembly (callout 4) in the paper-delivery direction.

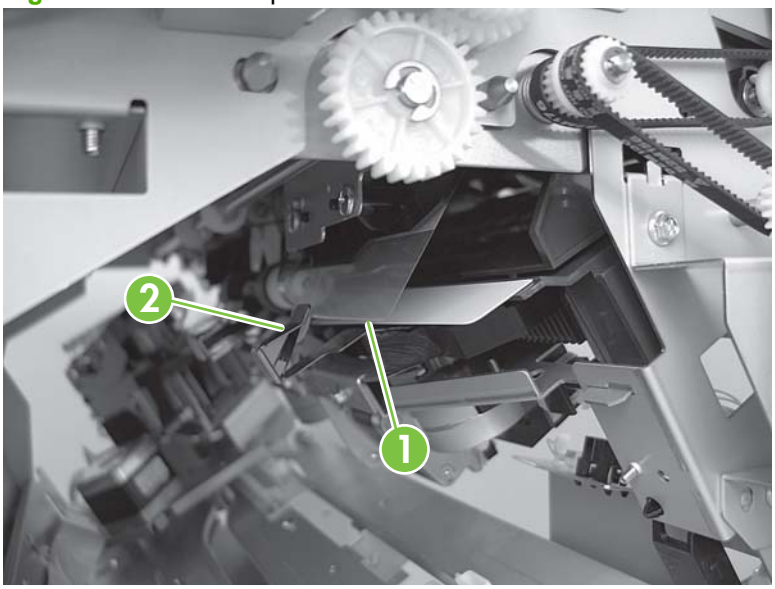
NOTE: When removing parts inside the operation tray, be careful not to exert force on the aligning plates (front/rear) or the rear-end stopper plate.

Figure 8-192 Remove the operation-tray assembly (6 of 6)



NOTE: When attaching the operation-tray assembly, do not mount the Mylar sheet (callout 1) on top of the stack trailing-edge assist guide (callout 2).

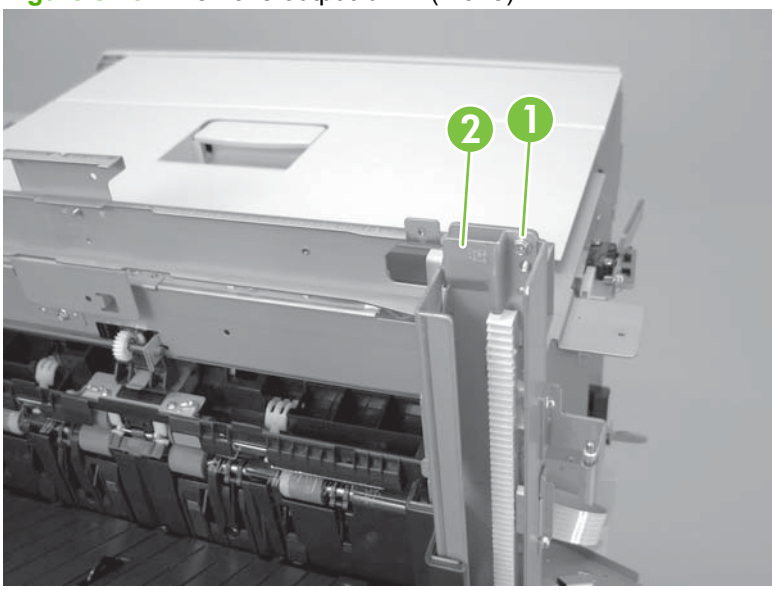
Figure 8-193 Correct position of sheet



Output-bin 1

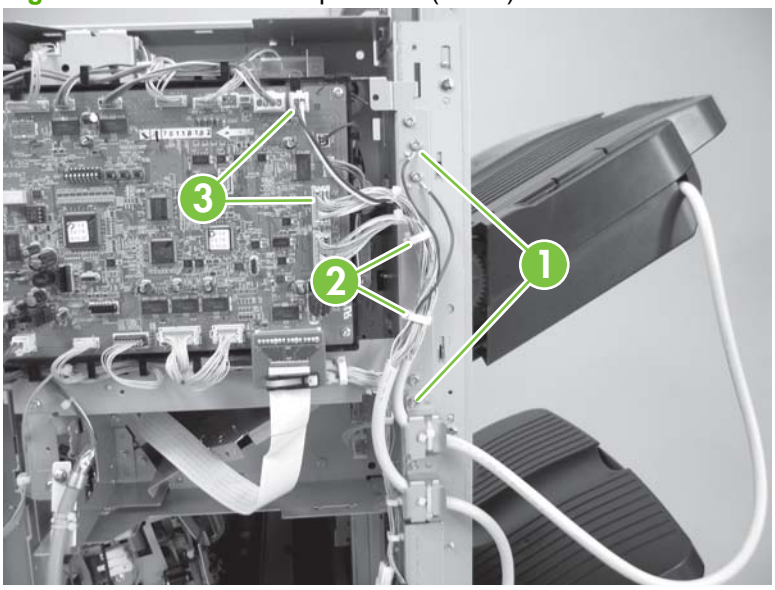
1. Remove the following:
   - Front door. See Front door on page 669.
   - Front inside-upper cover. See Front inside-upper cover on page 672.
   - Front-foot cover. See Front-foot cover on page 671.
   - Rear cover. See Rear cover on page 670.
   - Rear-foot cover. See Rear-foot cover on page 671.
   - Left-upper cover. See Left-upper cover on page 674.
   - Grate-shaped upper guide. See Grate-shaped upper guide on page 678.
   - Upper output bin. See Upper output bin (stapler-stacker only) on page 712
2. Remove one screw (callout 1), and then remove the stopper (callout 2).

Figure 8-194 Remove output-bin 1 (1 of 3)



3. Remove two screws (callout 1), release two wire retainers (callout 2) and then disconnect two connectors (callout 3).

Figure 8-195 Remove output-bin 1 (2 of 3)



4. Hold output-bin 1 to prevent the bin from falling. Insert your finger in the hole at the rear side of the bin and release the lift-motor gear. Lift the shutter to prevent damage to the stack-delivery gate. Lift output-bin 1 to remove.

Figure 8-196 Remove output-bin 1 (3 of 3)



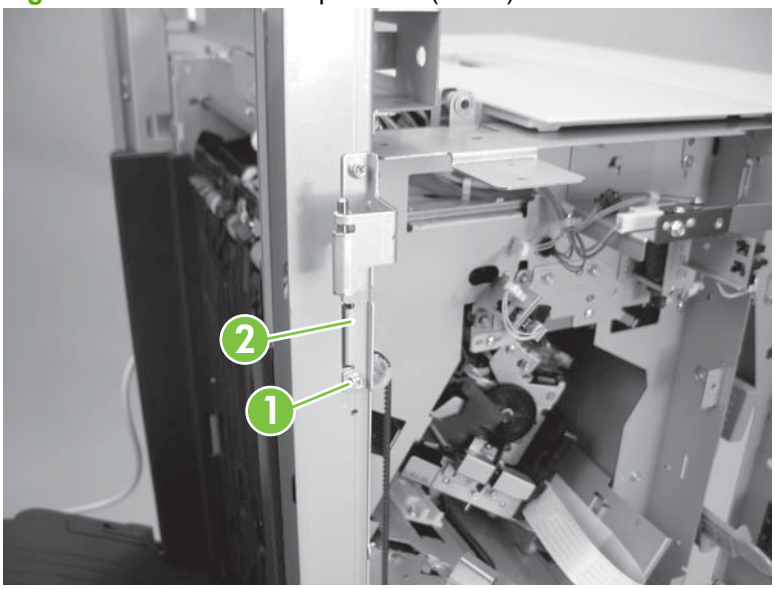
NOTE: When reinstalling, be careful not to twist the tray cable. Lift the shutter to prevent damage to the stack-delivery gate. See Move output bins 1 and 2 on page 679

NOTE: Output bin 1 and output bin 2 are different. Do not reverse the locations of the output bins when reinstalling

Output-bin 2

1. Remove the following:
   - Front door. See Front door on page 669.
   - Front inside-upper cover. See Front inside-upper cover on page 672.
   - Front-foot cover. See Front-foot cover on page 671.
   - Rear cover. See Rear cover on page 670.
   - Rear-foot cover. See Rear-foot cover on page 671.
   - Left-upper cover. See Left-upper cover on page 674.
   - Grate-shaped upper guide. See Grate-shaped upper guide on page 678.
   - Upper output bin. See Upper output bin (stapler-stacker only) on page 712
   - Output-bin 1. See Output-bin 1 on page 708.
2. Remove screw (callout 1), and then remove the stopper (callout 2).

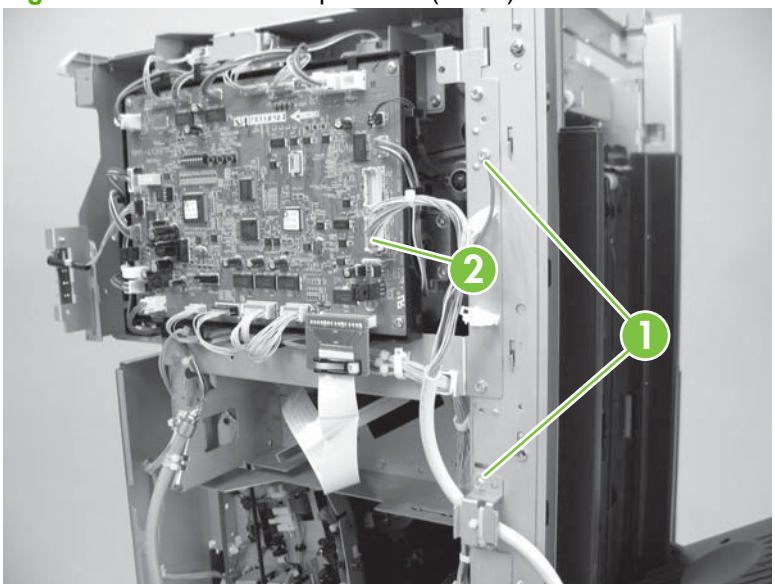
Figure 8-197 Remove output-bin 2 (1 of 3)



3. Remove two screws (callout 1) and one connector (callout 2).

NOTE: Output-bin 2 has one connector. Output-bin 1 has two connectors.

Figure 8-198 Remove output-bin 2 (2 of 3)



4. Hold output-bin 2 to prevent the bin from falling. Insert your finger in the hole at the rear side of the bin and release the lift-motor gear. Lift the shutter to prevent damage to the stack-delivery gate. Lift output-bin 2 to remove.

Figure 8-199 Remove output-bin 2 (3 of 3)



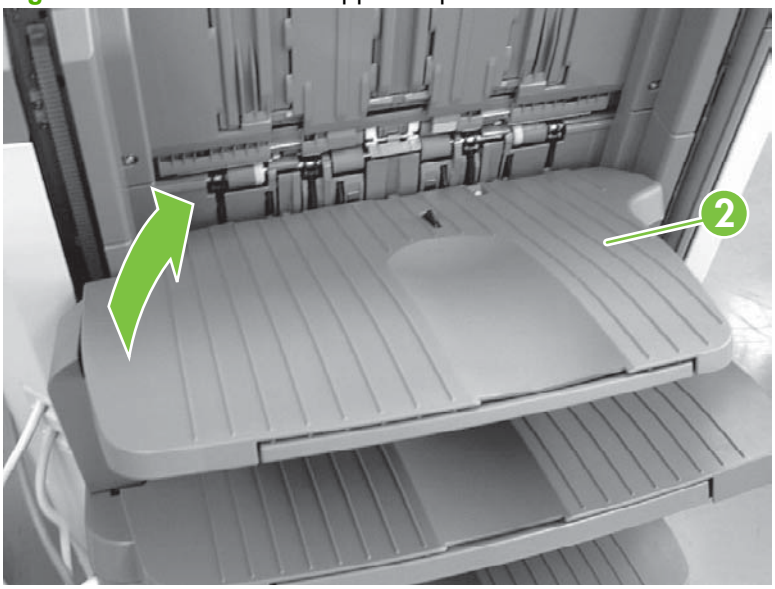
NOTE: When reinstalling, be careful not to twist the tray cable. Lift the shutter to prevent damage to the stack-delivery gate. See Move output bins 1 and 2 on page 679

NOTE: Output bin 1 and output bin 2 are different. Do not reverse the locations of the output bins when reinstalling

Upper output bin (stapler-stacker only)

- ☐ Lift the back of the upper output bin (callout 1) to remove.

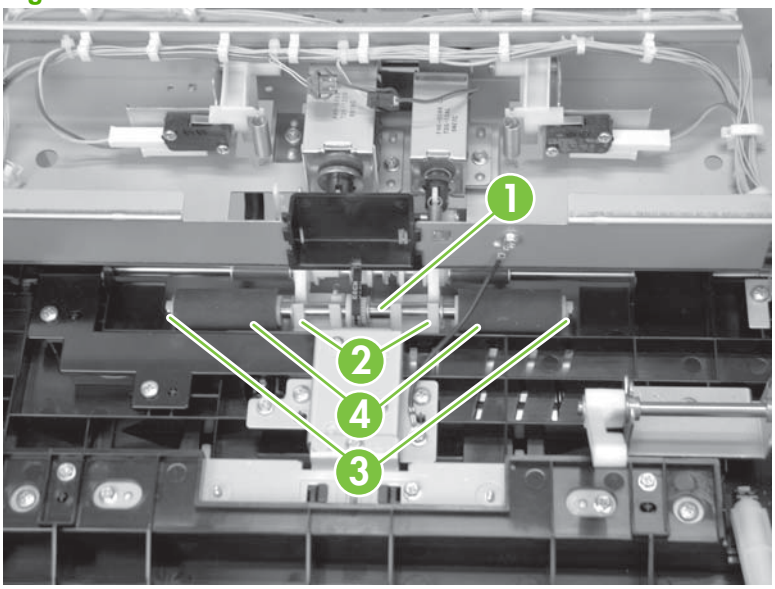
Figure 8-200 Remove the upper output bin



Buffer rollers

1. Remove the following:
   - Front door. See Front door on page 669.
   - Rear cover. See Rear cover on page 670.
   - Rear-foot cover. See Rear-foot cover on page 671.
   - Front inside-upper cover. See Front inside-upper cover on page 672.
   - Left-upper cover. See Left-upper cover on page 674.
2. Remove the buffer roller axis (callout 1) from the two arms (callout 2). Remove two clips (callout 3), and then remove the two buffer rollers (callout 4).

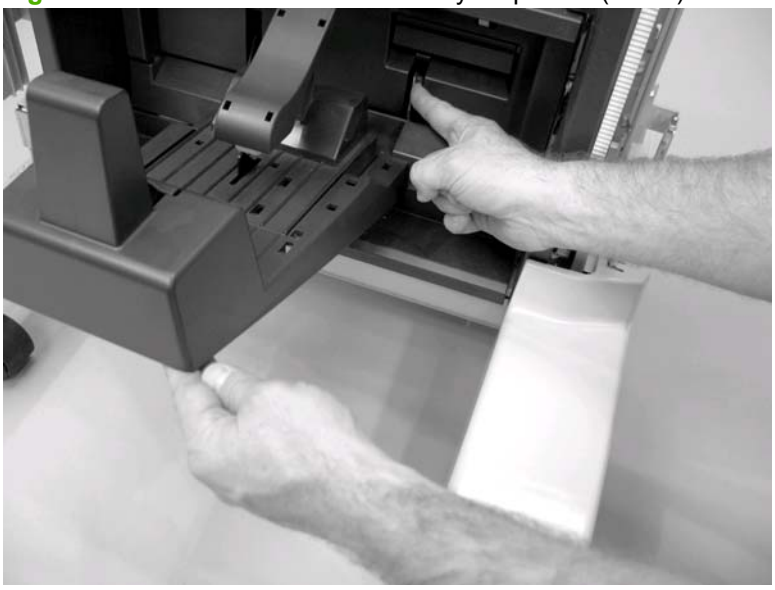
Figure 8-201 Remove buffer rollers



Booklet-delivery output bin (booklet maker only)

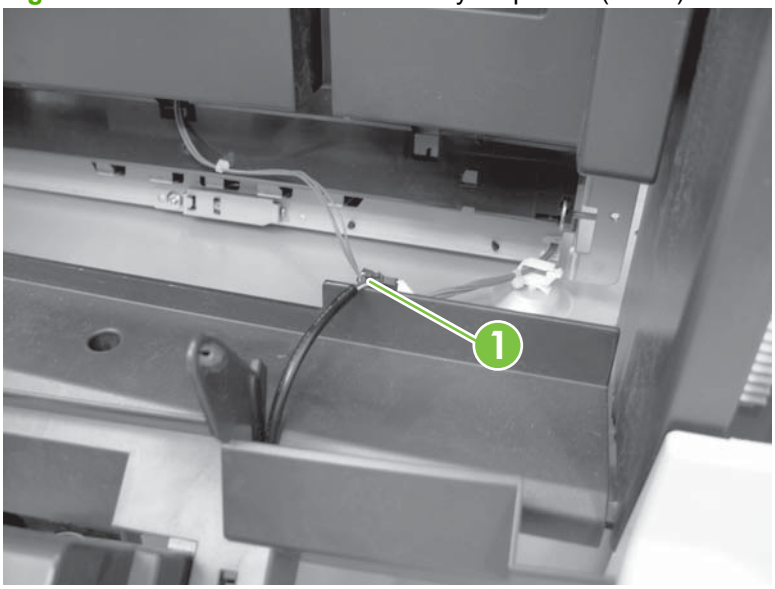
1. Press the hinge of the booklet-delivery output bin to release it from the booklet maker accessory.

Figure 8-202 Remove booklet-delivery output bin (1 of 2)



2. Disconnect one connector (callout 1), and then remove the booklet-delivery output bin.

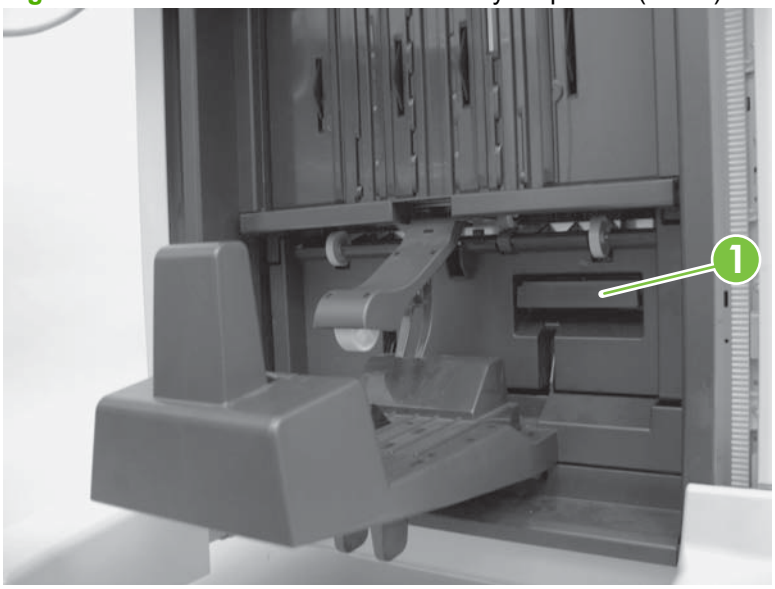
Figure 8-203 Remove booklet-delivery output bin (2 of 2)



Booklet-delivery output bin unit (booklet maker only)

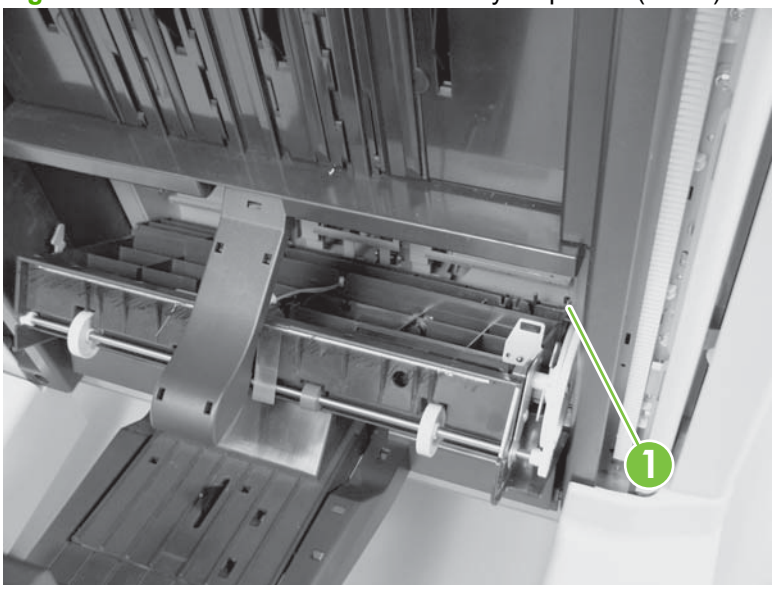
1. Lift the lever (callout 1) to open booklet-delivery output bin unit.

Figure 8-204 Remove the saddle-delivery output bin (1 of 3)



2. Remove the door pin (callout 1) to release the booklet-delivery output bin unit.

Figure 8-205 Remove the saddle delivery output bin (2 of 3)



3. Release one wire retainer (callout 1) and disconnect two connectors (callout 2). Remove the booklet-delivery output bin unit.

Figure 8-206 Remove the saddle delivery output bin (3 of 3)

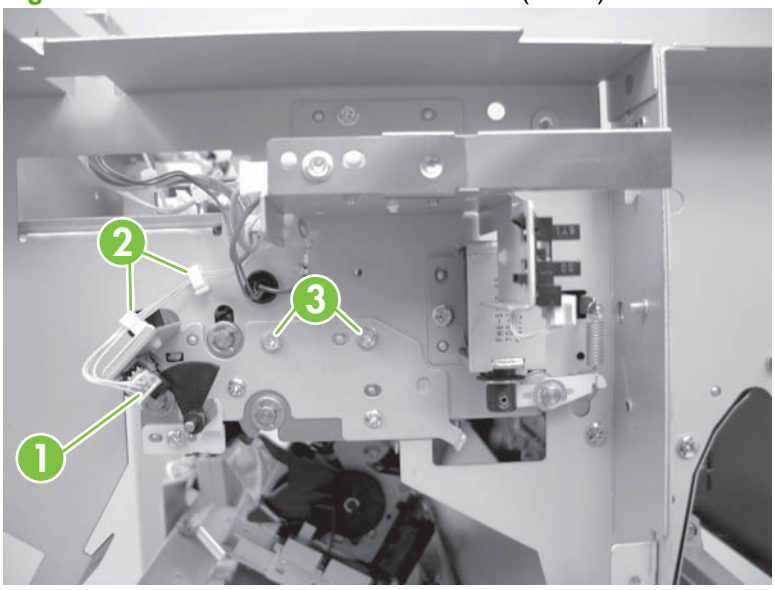


Return roller unit

1. Remove the following:
   - Front door. See Front door on page 669
   - Rear cover. See Rear cover on page 670.
   - Front-foot cover. See Front-foot cover on page 671.
   - Rear-foot cover. See Rear-foot cover on page 671.
   - Front inside-upper cover. See Front inside-upper cover on page 672.
   - Left-upper cover. See Left-upper cover on page 674.
   - Grate-shaped upper guide. See Grate-shaped upper guide on page 678.
   - Grate-shaped lower guide. See Grate-shaped lower guide on page 681
   - Swing unit. See Swing unit on page 688
   - Output-bin 1. See Output-bin 1 on page 708.
   - Output-bin 2. See Output-bin 2 on page 710.
   - Upper output bin (stapler-stacker only). See Upper output bin (stapler-stacker only) on page 712.

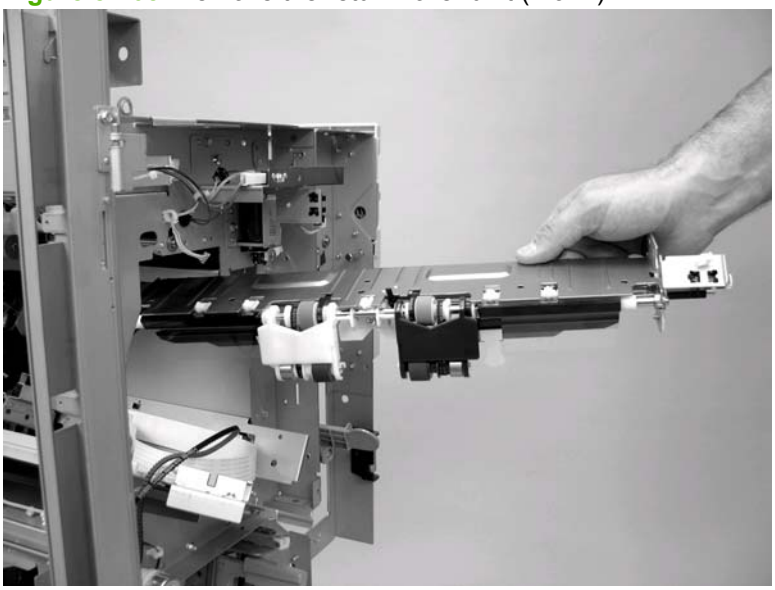
2. Disconnect one connector (callout 1), release two wire retainers (callout 2), and remove two screws (callout 3).

Figure 8-207 Remove the return roller unit (1 of 2)



3. Remove return roller unit from the front side.

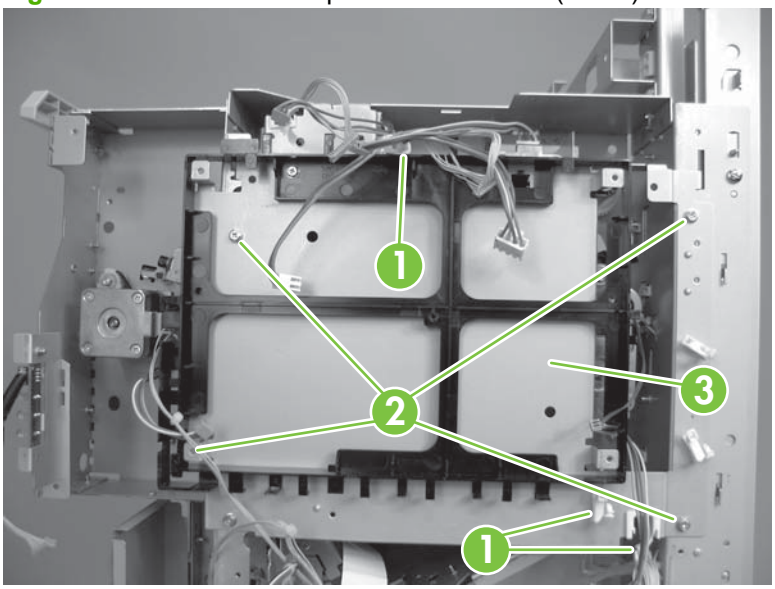
Figure 8-208 Remove the return roller unit (2 of 2)



Pressure roller unit

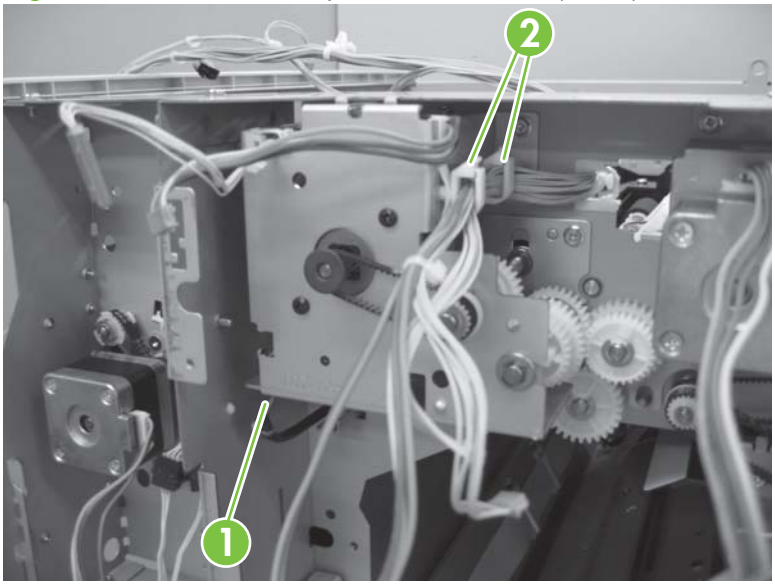
1. Remove the following:
   - See Front door on page 669.
   - Rear cover. See Rear cover on page 670.
   - Front inside-upper cover. See Front inside-upper cover on page 672
   - Left-upper cover. See Left-upper cover on page 674.
   - Top door. See Top door on page 676.
   - Upper crossmember unit. See Upper crossmember unit on page 692.
   - Stacker controller PCA. See Stacker controller PCA on page 737.
2. Release three wire retainers (callout 1), remove four screws (callout 2), and then remove the PCA mount (callout 3).

Figure 8-209 Remove the pressure roller unit (1 of 8)



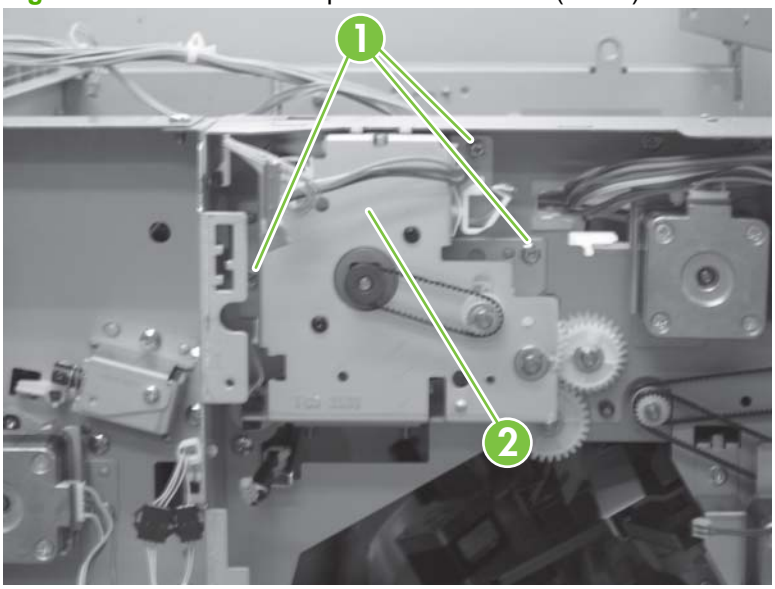
3. Disconnect one connector (callout 1) and release two wire retainers (callout 2).

Figure 8-210 Remove the pressure roller unit (2 of 8)



4. Remove three screws (callout 1), and then remove the drive unit (callout 2).

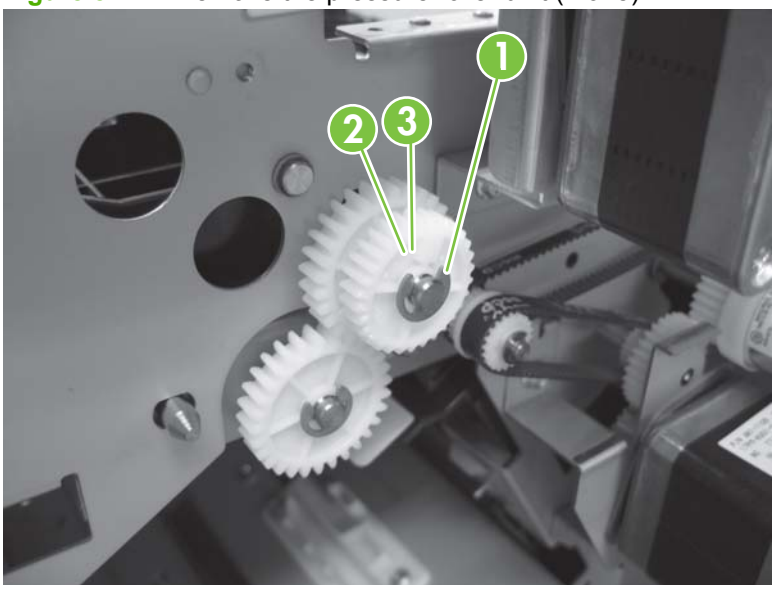
Figure 8-211 Remove the pressure roller unit (3 of 8)



5. Remove one e-ring (callout 1), one gear (callout 2), and one parallel pin (callout 3).

NOTE: The parallel pin (callout 3) drops when the gear (callout 2) is removed. Be careful not to lose it.

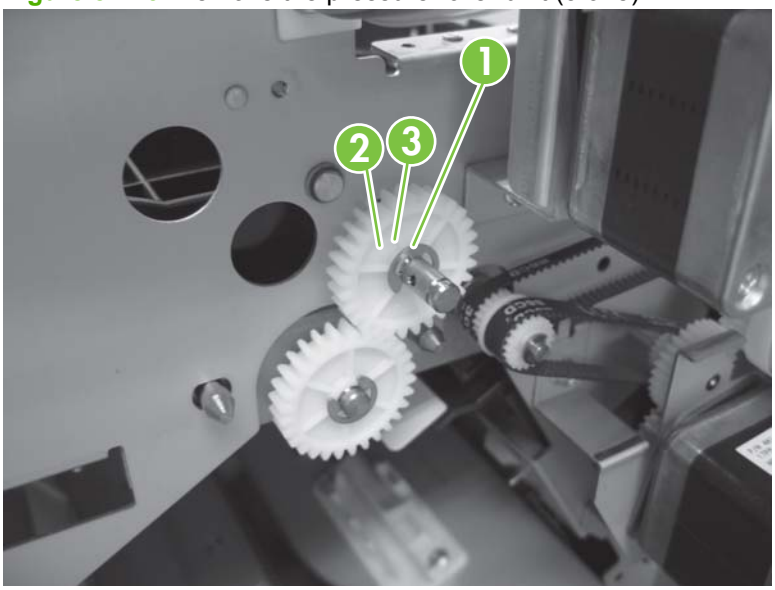
Figure 8-212 Remove the pressure roller unit (4 of 8)



6. Remove one e-ring (callout 1), one gear (callout 2), and one parallel pin (callout 3).

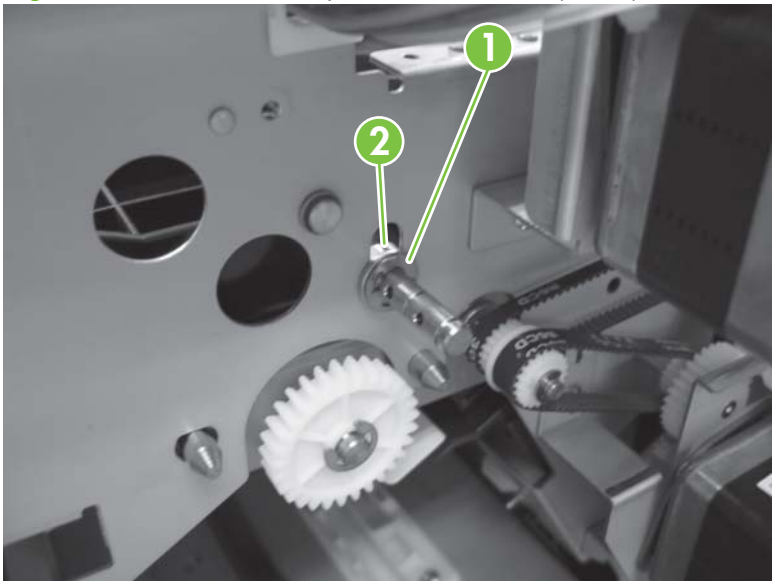
NOTE: The parallel pin (callout 3) drops when the gear (callout 2) is removed. Be careful not to lose it.

Figure 8-213 Remove the pressure roller unit (5 of 8)



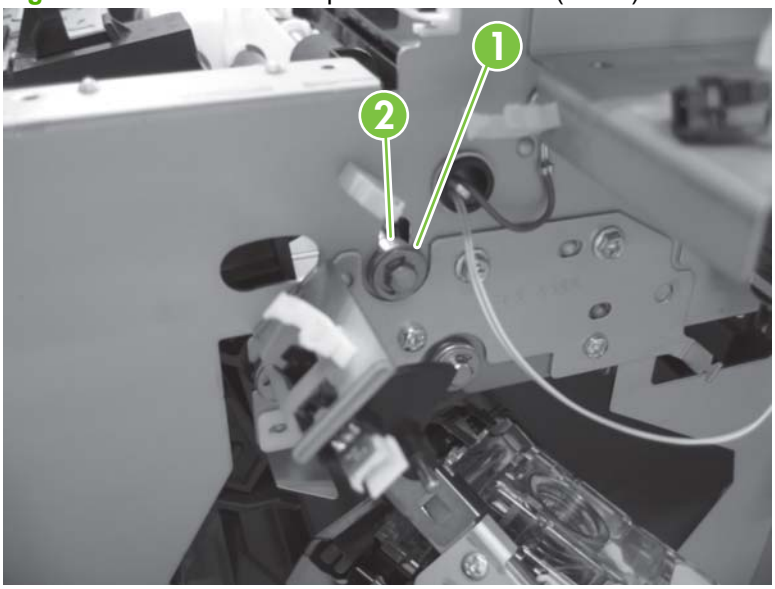
7. Remove the e-ring (callout 1) and one bushing (callout 2).

Figure 8-214 Remove the pressure roller unit (6 of 8)



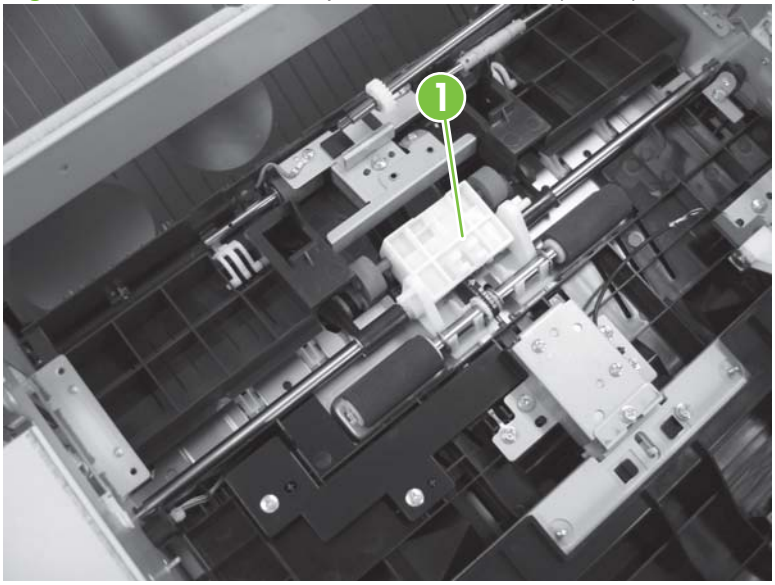
8. Remove one e-ring (callout 1) and one bushing (callout 2).

Figure 8-215 Remove the pressure roller unit (7 of 8)



9. Slide the pressure roller unit (callout 1) to the rear side, and then remove from the front side.

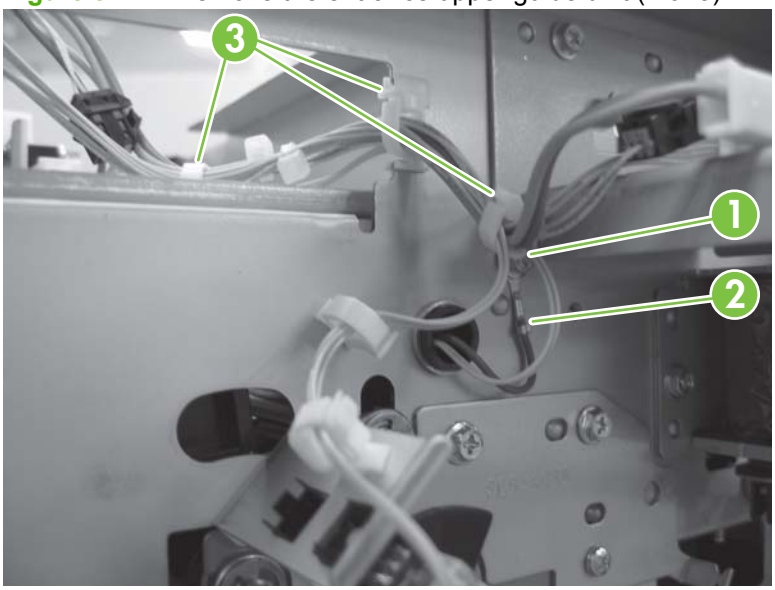
Figure 8-216 Remove the pressure roller unit (8 of 8)



Entrance upper guide unit

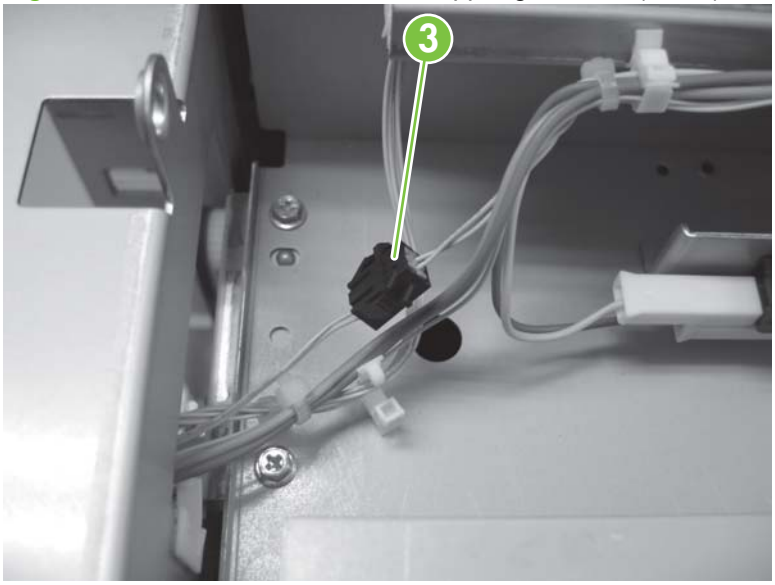
1. Remove the following:
   - Front door. See Front door on page 669.
   - Rear cover. See Rear cover on page 670.
   - Front inside-upper cover. See Front inside-upper cover on page 672
   - Left-upper cover. See Left-upper cover on page 674.
   - Top door. See Top door on page 676.
2. Remove one screw (callout 1), and then remove the grounding wire (callout 2).
3. Release three wire retainers (callout 3).

Figure 8-217 Remove the entrance upper guide unit (1 of 3)



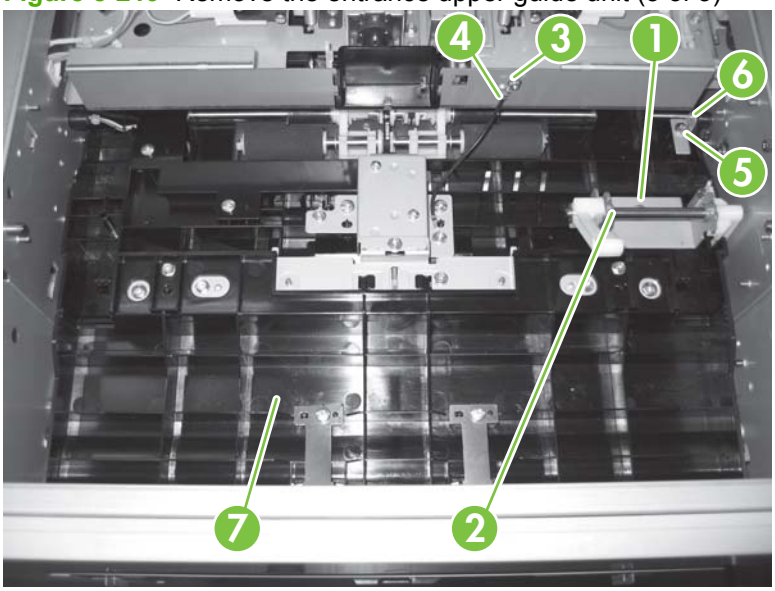
4. Disconnect one connector (callout 3).

Figure 8-218 Remove the entrance upper guide unit (2 of 3)



5. Remove one screw (callout 1), and then remove the door lock unit (callout 2).
6. Remove one screw (callout 3), and then remove the grounding wire (callout 4).
7. Remove one screw (callout 5), and then remove the one pin (callout 6).
8. Remove the entrance upper guide unit (callout 7).

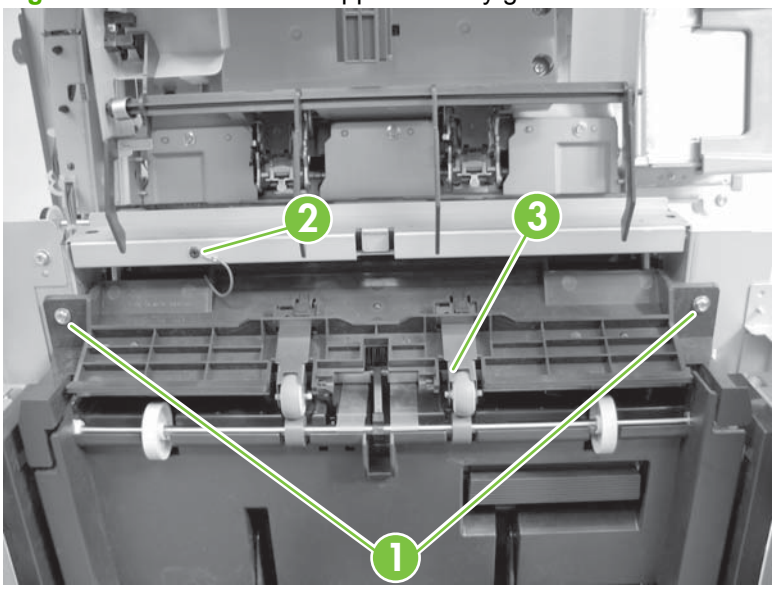
Figure 8-219 Remove the entrance upper guide unit (3 of 3)



Upper-delivery guide (booklet maker only)

1. Remove the following:
   - Front door. See Front door on page 669.
   - Rear cover. See Rear cover on page 670.
   - Front-foot cover. See Front-foot cover on page 671.
   - Rear-foot cover. See Rear-foot cover on page 671.
   - Front inside-upper cover. See Front inside-upper cover on page 672.
   - Left-upper cover. See Left-upper cover on page 674.
   - Grate-shaped upper guide. See Grate-shaped upper guide on page 678.
   - Grate-shaped lower guide. See Grate-shaped lower guide on page 681.
   - Output-bin 1. See Output-bin 1 on page 708.
   - Output-bin 2. See Output-bin 2 on page 710.
   - Upper output bin. See Upper output bin (stapler-stacker only) on page 712.
2. Remove two screws (callout 1), one ground screw (callout 2), and then remove the upper-delivery guide (callout 3).

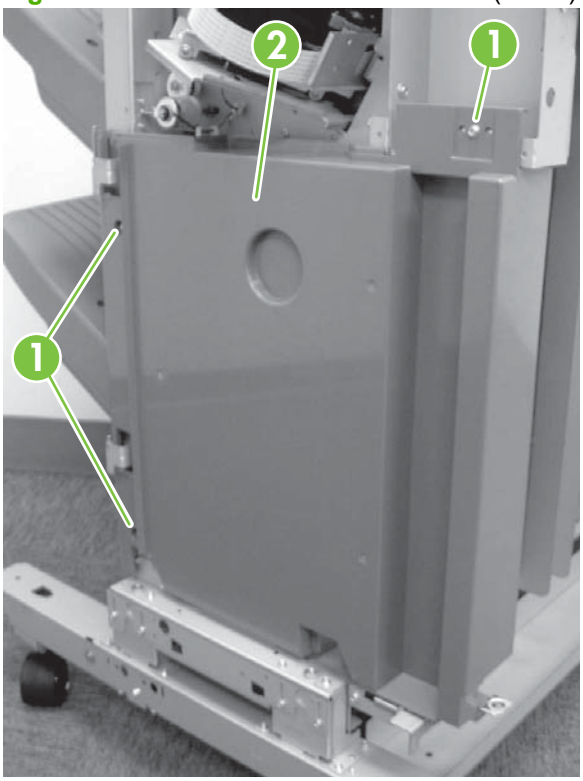
Figure 8-220 Remove the upper-delivery guide



Inlet feed unit (stapler-stacker only)

1. Remove the following:
   - Front door. See Front door on page 669.
   - Front inside-upper cover. See Front inside-upper cover on page 672.
   - Front-foot cover. See Front-foot cover on page 671.
2. Remove three screws (callout 1), and then remove the front inside-lower cover (callout 2).

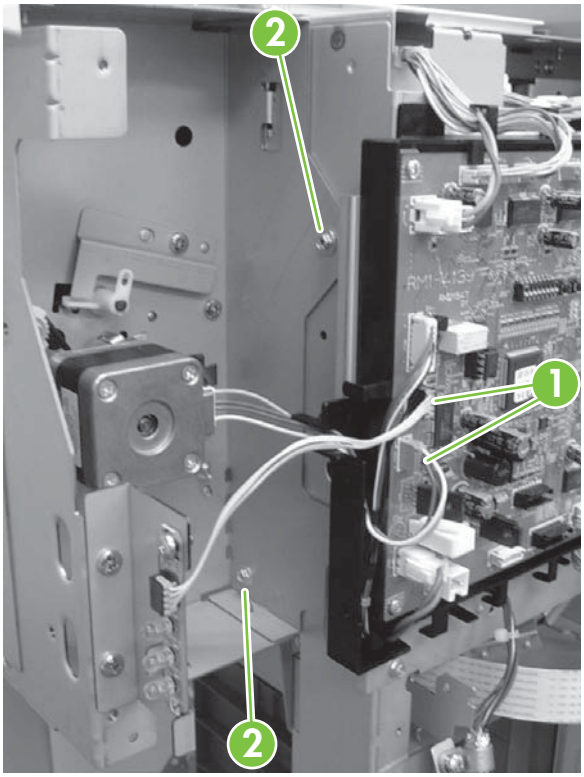
Figure 8-221 Remove the inlet feed unit (1 of 4)



3. Remove the rear cover.

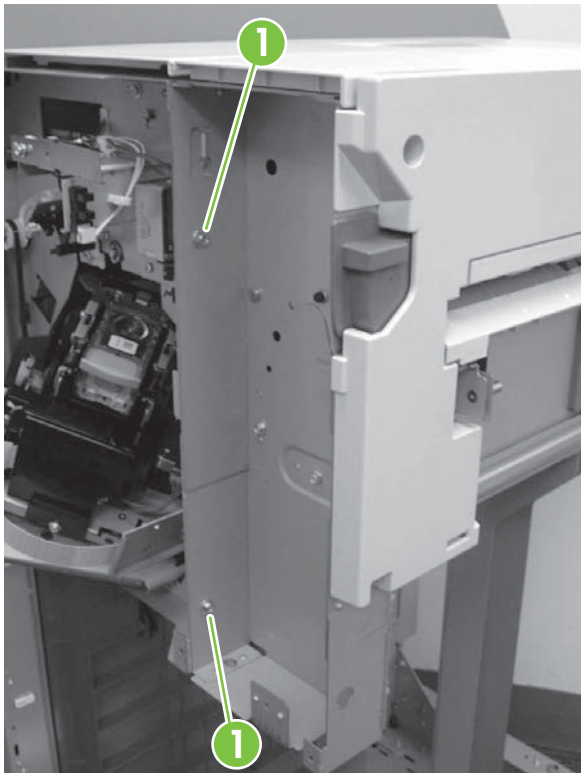
4. Remove two connectors (callout 1), and then remove two screws (callout 2).

Figure 8-222 Remove the inlet feed unit (2 of 4)



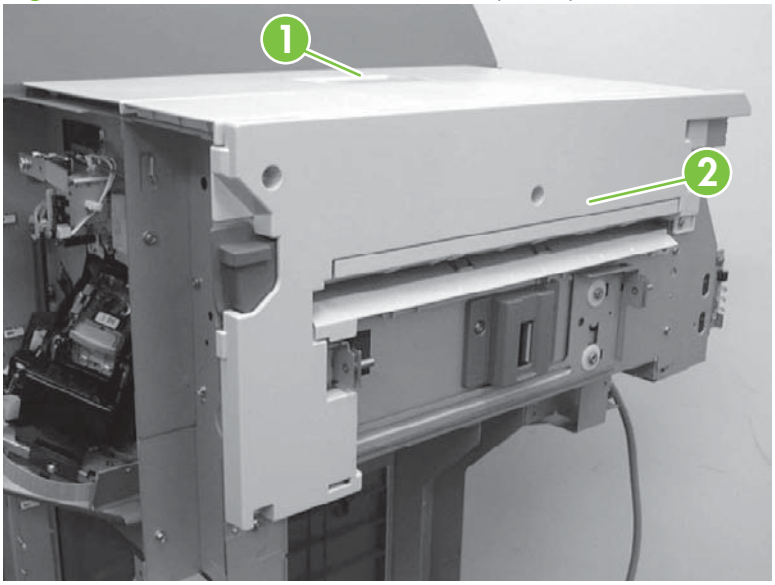
5. Remove the two screws from the front side of the inlet feed unit (callout 1).

Figure 8-223 Remove the inlet feed unit (3 of 4)



6. Open the top door (callout 1) and remove the inlet feed unit (callout 2) by lifting up and off.

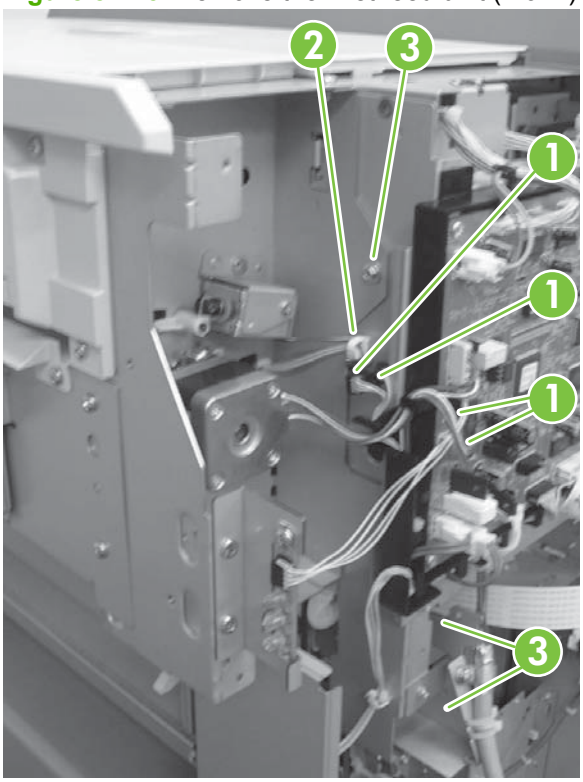
Figure 8-224 Remove the inlet feed unit (4 of 4)



Inlet feed unit (booklet maker only)

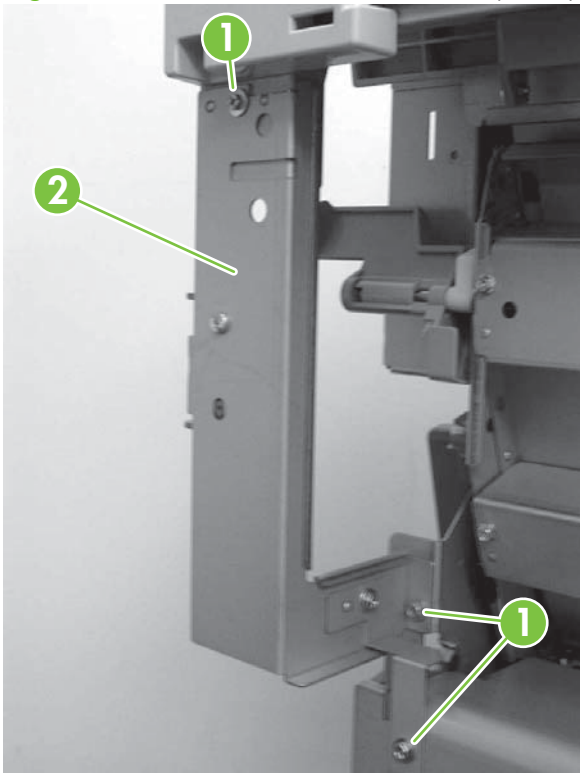
1. Remove the following:
   - Front door. See Front door on page 669
   - Front inside-upper cover. See Front inside-upper cover on page 672.
   - Front-foot cover. See Front-foot cover on page 671.
   - Front inside-lower cover. See Front inside-lower cover (booklet maker only) on page 673.
   - Rear cover. See Rear cover on page 670.
2. Disconnect the four connectors (callout 1), and then remove the harness from the clamp (callout 2).
3. Remove the three screws (callout 3).

Figure 8-225 Remove the inlet feed unit (1 of 4)



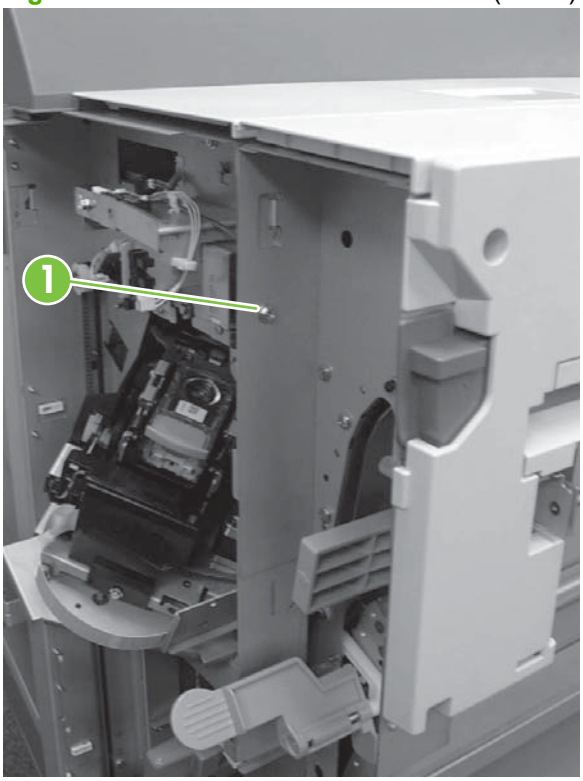
4. Remove three screws (callout 1), and then remove the support plate (callout 2).

Figure 8-226 Remove the inlet feed unit (2 of 4)



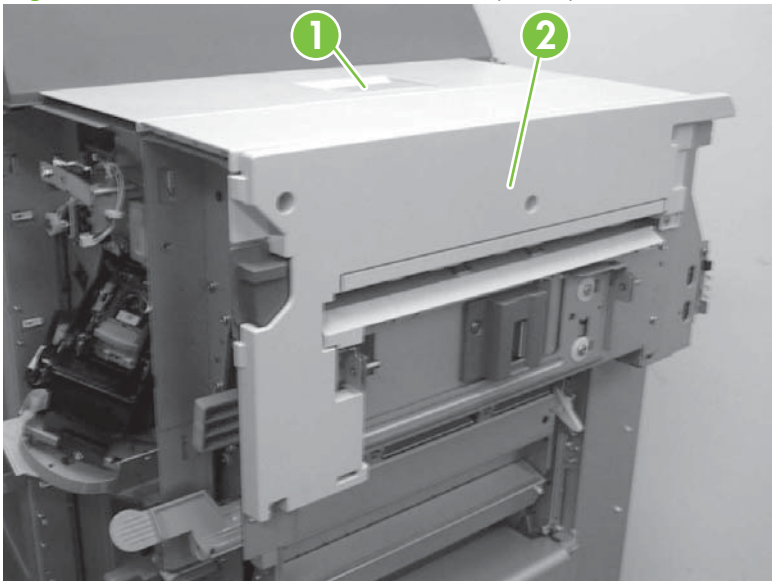
5. Remove one screw (callout 1).

Figure 8-227 Remove the inlet feed unit (3 of 4)



6. Open the top door (callout 1), and then remove the inlet feed unit (callout 2).

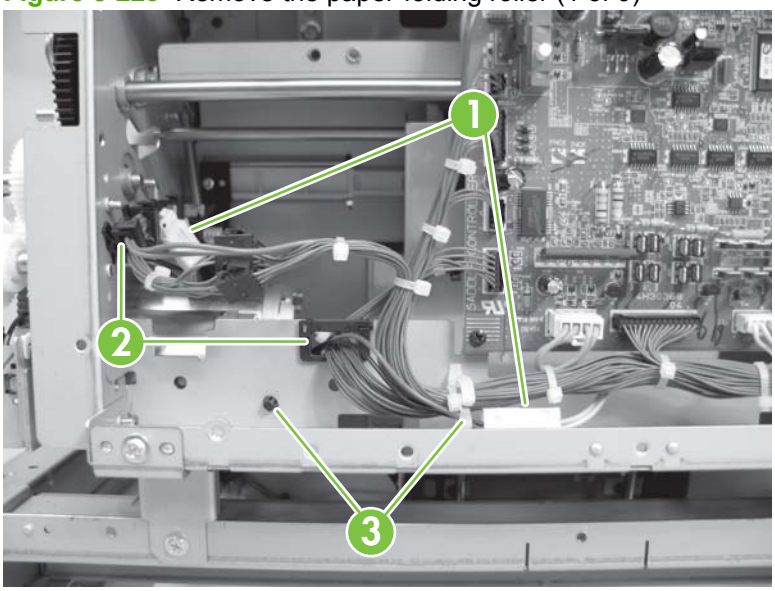
Figure 8-228 Remove the inlet feed unit (4 of 4)



Paper-folding roller (booklet maker only)

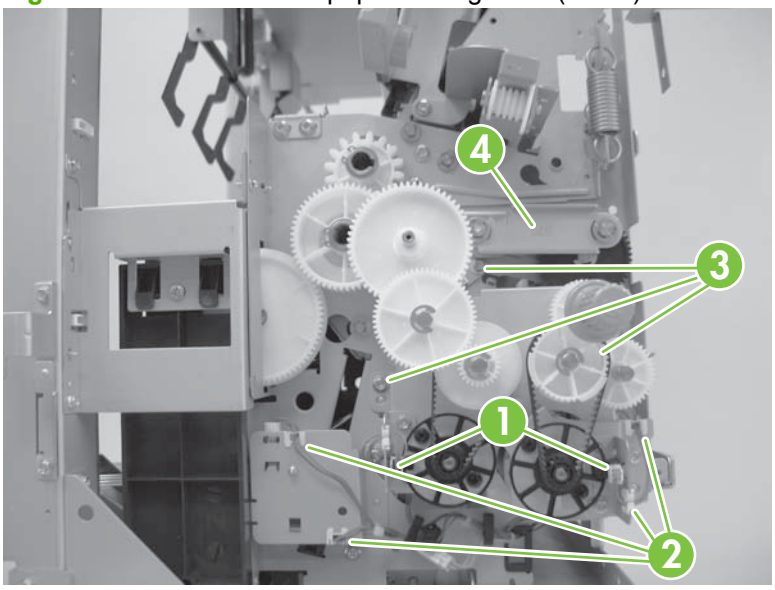
1. Remove the following:
   - Front door. See Front door on page 669
   - Front inside-upper cover. See Front inside-upper cover on page 672.
   - Front-foot cover. See Front-foot cover on page 671.
   - Front inside-lower cover. See Front inside-lower cover (booklet maker only) on page 673.
   - Rear cover. See Rear cover on page 670.
   - Rear-foot cover. See Rear-foot cover on page 671.
   - Left-upper cover. See Left-upper cover on page 674.
   - Grate-shaped upper guide. See Grate-shaped upper guide on page 678.
   - Upper output bin. See Upper output bin (stapler-stacker only) on page 712
   - Output-bin 1. See Output-bin 1 on page 708.
   - Output-bin 2. See Output-bin 2 on page 710.
   - Grate-shaped lower guide. See Grate-shaped lower guide on page 681
   - Upper-delivery guide. See Upper-delivery guide (booklet maker only) on page 725
   - PCA cover. See PCA cover on page 682
2. Disconnect two connectors (callout 1), and then release two edge saddles (callout 2) and two clamps (callout 3).

Figure 8-229 Remove the paper-folding roller (1 of 9)



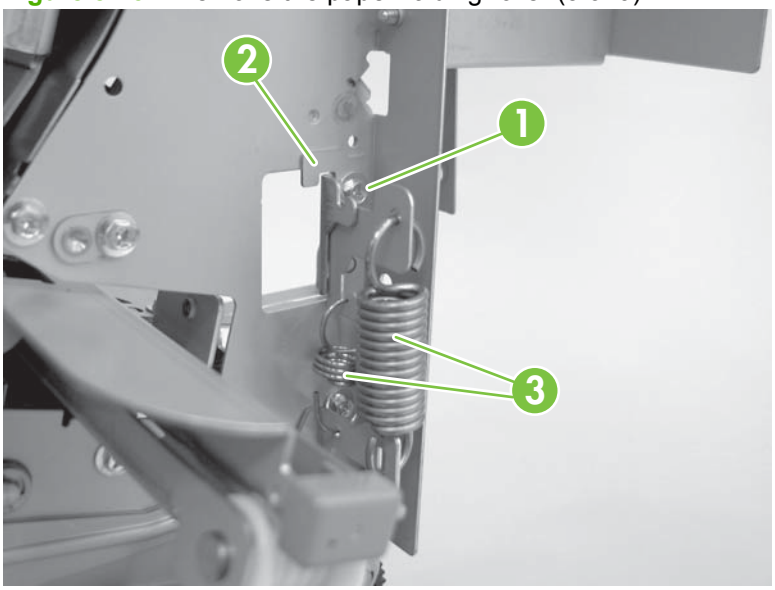
3. Disconnect two connectors (callout 1) and release four edge saddles (callout 2). Remove three screws (callout 3), and then remove the paper-folding/paper-pushing motor base (callout 4).

Figure 8-230 Remove the paper-folding roller (2 of 9)



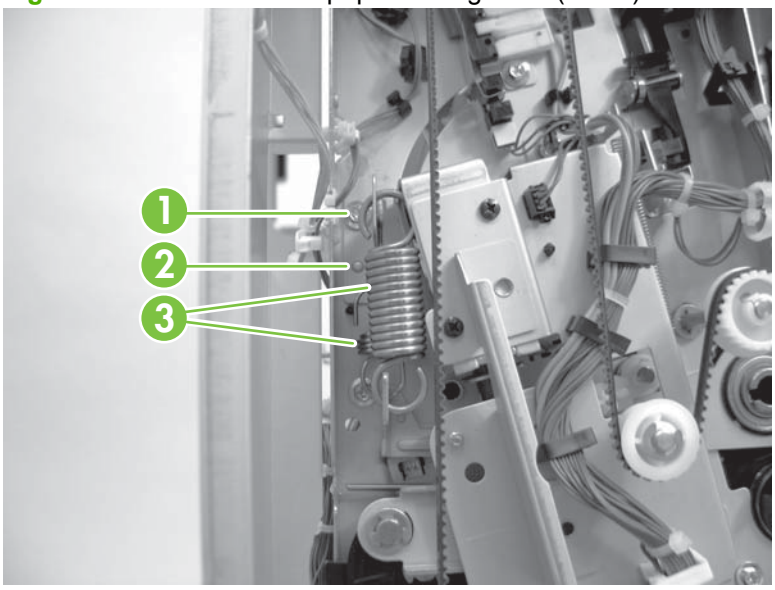
4. Remove one screw (callout 1), one spring retaining plate (callout 2), and two tension springs (callout 3).

Figure 8-231 Remove the paper-folding roller (3 of 9)



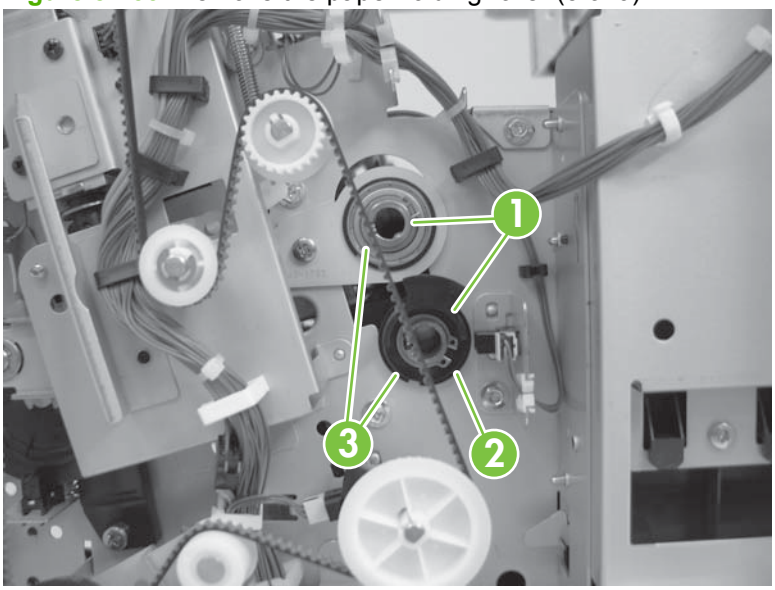
5. Remove one screw (callout 1), one spring-retaining plate (callout 2), and two tension springs (callout 3).

Figure 8-232 Remove the paper-folding roller (4 of 9)



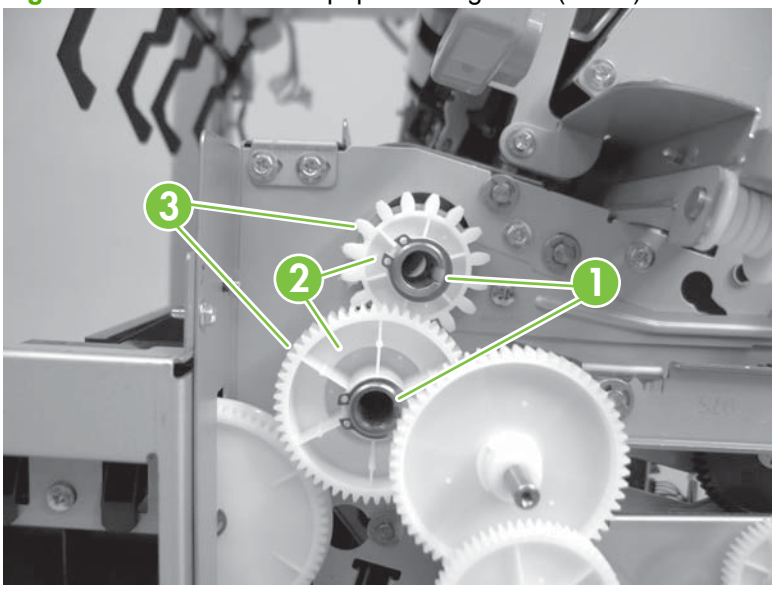
6. From the rear side, remove two c-rings (callout 1), remove one sensor flag (callout 2), and then remove two bearings (callout 3).

Figure 8-233 Remove the paper-folding roller (5 of 9)



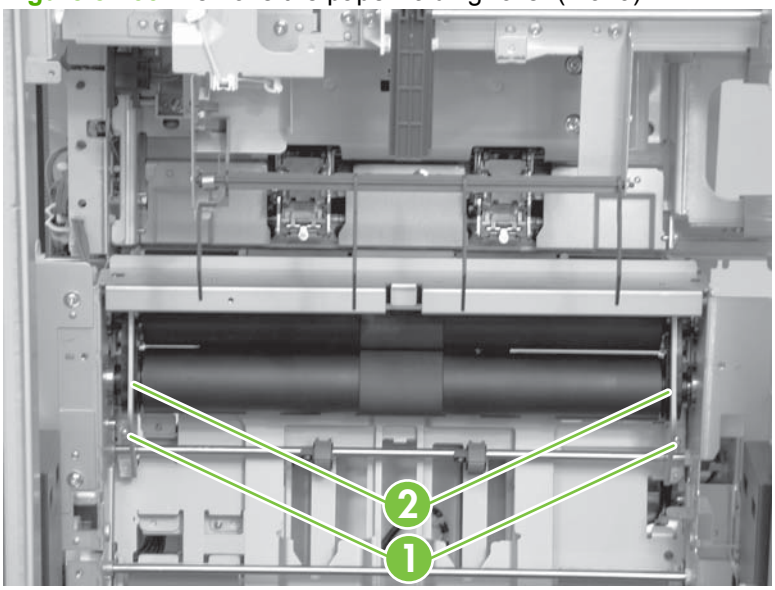
7. From the front, remove two c-rings (callout 1), remove two gears (callout 2), and then remove two bearings (callout 3).

Figure 8-234 Remove the paper-folding roller (6 of 9)



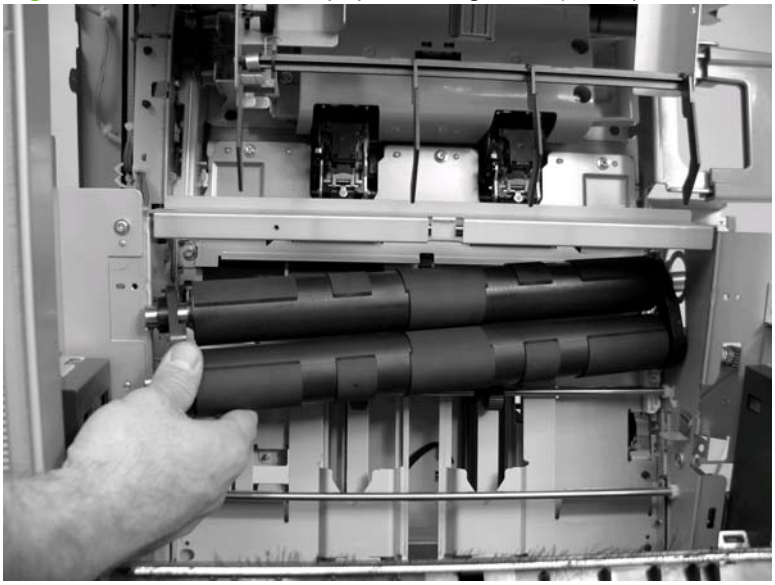
8. Open the saddle delivery output bin. Remove two screws (callout 1) and two brackets (callout 2).

Figure 8-235 Remove the paper-folding roller (7 of 9)



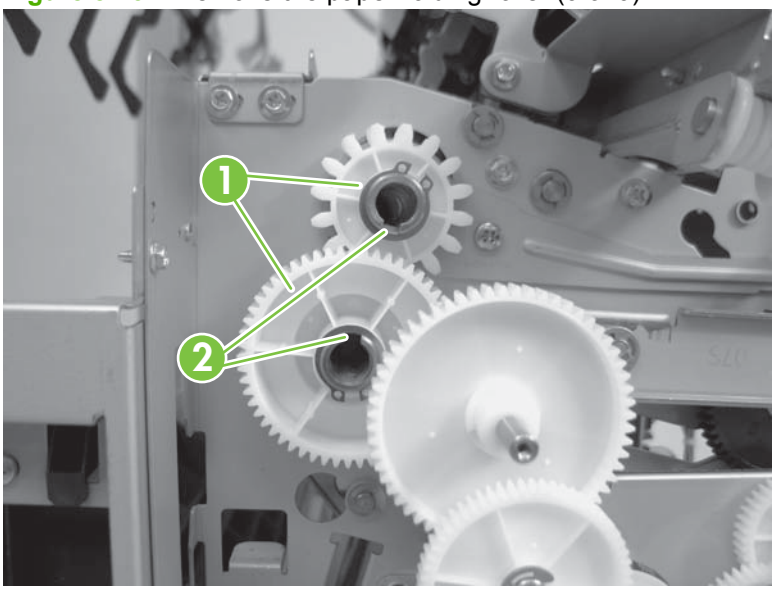
9. Slide the two paper-folding rollers to the front, and then pull them out in the delivery direction.

Figure 8-236 Remove the paper-folding roller (8 of 9)



△ **CAUTION:** When reinstalling, attach the gears (callout 1) so that the slots (callout 2) of the paper-folding rollers face each other to ensure gear alignment.

Figure 8-237 Remove the paper-folding roller (9 of 9)

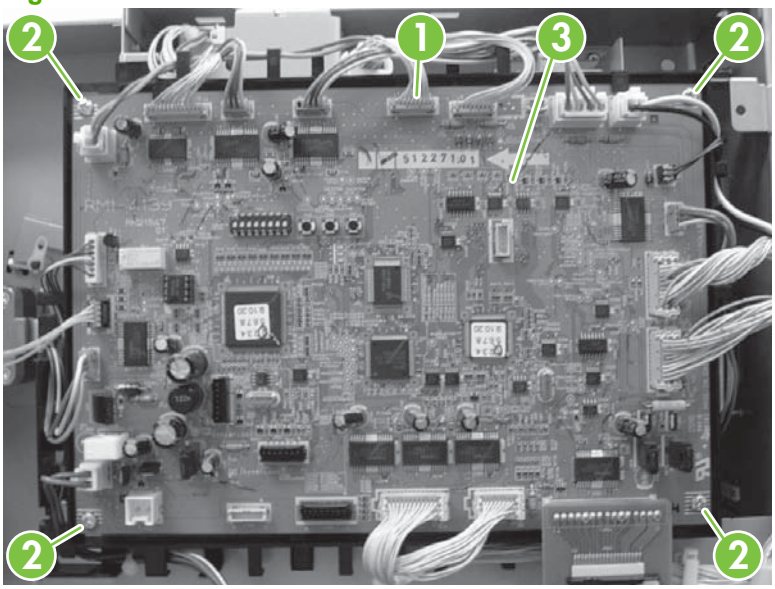


Electrical system

Stacker controller PCA

1. Remove the following:
   - Rear cover. See Rear cover on page 670.
2. Disconnect all connectors (callout 1) on the stacker controller PCA.
3. Remove four screws (callout 2), and then remove the stacker controller PCA (callout 3).

Figure 8-238 Remove the stacker controller PCA

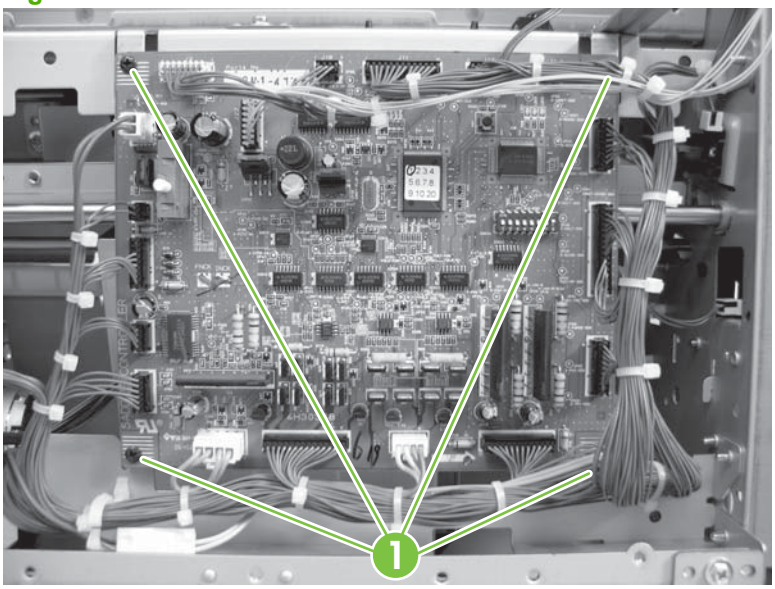


4. Adjust the stack alignment position. See Adjust the alignment position on page 768.

Saddle-stitcher controller PCA (booklet maker only)

1. Remove the following:
   - Rear cover. See Rear cover on page 670.
2. Disconnect all connectors on the saddle-stitcher controller PCA. Remove four screws (callout 1) and them remove the saddle-stitcher controller PCA.

   Figure 8-239 Remove the saddle-stitcher controller PCA

3. Adjust the folding position. See Adjust the folding position to the stitch position (Booklet maker only) on page 770.

Solve problems

Intermediate paper-transfer unit (IPTU)

NOTE: This item is called the “output-accessory bridge” in the user documentation for this product.

Stapler/stacker and booklet maker

Individual component diagnostics

Manual sensor test

The manual sensor test indicates the status of the sensors in the product. It can verify the current status or the last change in status of the listed sensors.

From the **DIAGNOSTICS** menu, scroll to and touch **Read all once** to check the current status of the sensors. Each sensor is assigned a letter. The sensor test indicates the status of each sensor with a corresponding “0” for non-activated or “1” for activated. The status message appears on the control-panel display for 10 seconds. After 10 seconds, the message is cleared and **Ready** appears on the control-panel display.

From the **DIAGNOSTICS** menu, scroll to and touch **Continuous reading** to check the last change in status of the sensors. The output device reads the status of the sensors and stores the data. Next, the output device continuously reads the sensors until it detects a change. The change-in-status message appears on the control-panel display indicating which sensor changed from the original reading. Note that the status messages appear on a first-in, first-out basis. If two or more sensors change in a short period of time, only the first change detected is indicated as a status message on the control-panel display.

Use the following table to determine which component each letter designates..

Table 8-15 Manual sensor test letter designations

Letter	Component
A	Front door 1, PI32 (Front-door sensor)
B	Front door 2, PI9 (Saddle-guide sensor)
C	Top door, PI31 (Top-door sensor)
D	Booklet door 1, PI3 (Booklet-delivery-door sensor)
E	Booklet door 2, SW3
F	Stapler home sensor, P140 (Staple-shift home-position sensor)
G	Swing unit, PI35 (Swing-guide home-position sensor)
H	Folding plate, PI13 (Guide home-position sensor)
I	Process tray assy, PI38 (Processing-tray sensor)
J	Bin-1 empty, PI42 (Output-bin-1 paper sensor)

Table 8-15 Manual sensor test letter designations (continued)

Letter	Component
K	Bin-2 empty, PI43 (Output-bin-2 paper sensor)
L	Bin-3 empty, PI44
M	Flapper 1, PI19 (#1 flapper paper sensor)
N	Flapper 2, PI20 (#2 flapper paper sensor)

Component test

The component test exercises the individual motors and solenoids one at a time so that you can determine the cause of noise inside the product. The component test exercises each motor for approximately 5 seconds and each solenoid for 3 seconds. Note that the product requires that some motors be moved back to the home position. The solenoids are deactivated after the exercise period.

A list of the motors and solenoids appears on the control-panel display, but no messages appear unless the component test detects a hardware malfunction. The following table lists the motors and solenoids that are exercised during the component test.

Table 8-16 Component test motors and solenoids

Component number	Component name
M1	Delivery motor (Feed motor)
M2	Folding motor (Paper-folding motor)
M3	Guide motor
M4	Guide-plate motor (Paper-positioning-plate motor)
M9	Inlet motor (Saddle-inlet motor)
M31	Entrance motor
M35	Staple motor (Staple-shift motor)
M36	Swing motor
M37	Tray-1 motor (Output-bin-1-shift motor)
M38	Tray-2 motor (Output-bin-2-shift motor)
M39	Process motor (Stack trailing-edge-assist motor)
SL1	Flapper-1 solenoid (#1 paper-deflecting solenoid)
SL2	Flapper-2 solenoid (#2 paper-deflector solenoid)
SL4	Booklet solenoid (Feed-plate-contact solenoid)
SL5	Switch solenoid (Saddle-inlet solenoid)
SL31	Roller 1A solenoid (Inlet-roller-alienate solenoid)
SL32	Buffer solenoid (Buffer-roller-alienate solenoid)
SL33	Output solenoid (#1 delivery-roller-alienate solenoid)
SL34	Guide solenoid (Buffer rear-end holding solenoid)

LED diagnostics

The LEDs (callout 1) on the rear cover of the accessories indicate malfunctions and errors by blinking a specified number of times.

Figure 8-240 LEDs on the output accessories

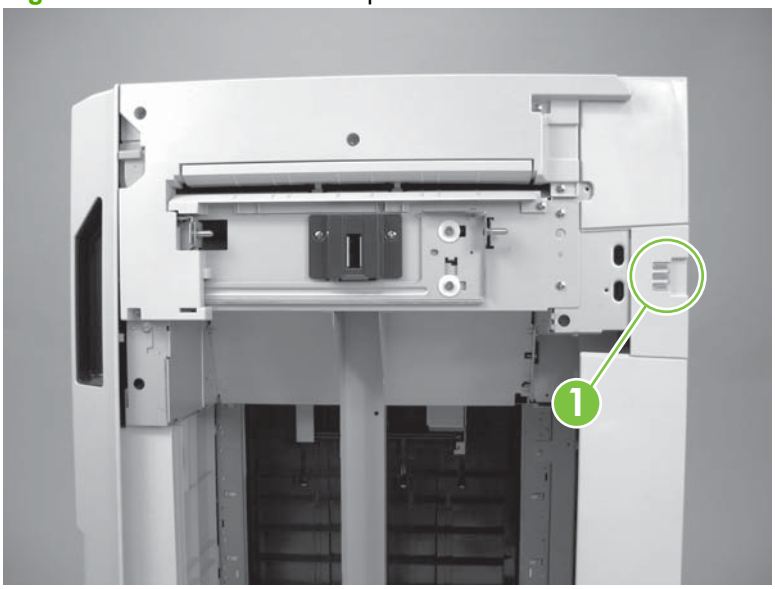


Table 8-17 LED

Classification	Number of blinks			Error
	Red LED	Yellow LED	Green LED	
Malfunction (Stacker unit)	1		1	Swing motor (M36)
	1		2	Shutter mechanism
	1		3	Stack trailing-edge-assist motor (M39)
	1		4	Front-aligning-plate motor (M33)
	1		5	Rear-aligning-plate motor (M34)
Malfunction (Stapler unit)	2		1	Staple motor (M41)
	2		2	Stapler-shift motor (M35)
Malfunction (Output bin)	3		1	Output-bin-1-shift motor (M37)
	3		2	Output-bin-2-shift motor (M38)

Table 8-17 LED (continued)

Malfunction (Booklet maker unit)	4		1	Paper-positioning-plate motor (M4)
	4		2	Guide motor (M3)
	4		3	Paper-folding motor (M2)
	4		4	Alignment motor (M5)
	4		5	Paper-pushing-plate motor (M8)
	4		7	Microswitch error
	5		1	Stitcher motor (rear) (M6)
	5		2	Stitcher motor (front) (M7)
Malfunction	Blinking			Communication error
Jam (Feed path unit)		1	1	Power-on jam
		1	2	Inlet sensor (PI33) delay jam
		1	3	Inlet sensor (PI33) stationary jam
		1	4	Upper paper-path-exit sensor (PI34) delay jam
		1	5	Upper paper-path-exit sensor (PI34) stationary jam
Jam (Stapler unit)		2	1	Stapler staple jam
Jam (Booklet-maker feed path unit)		4	1	Saddle power-on jam
		4	2	Booklet-making paper-entry sensor (PI22) delay jam
		4	3	Booklet-making paper-entry sensor (PI22) stationary jam
		4	4	Paper sensor (PI18, PI19, PI20) delay jam
		4	5	Paper sensor (PI18, PI19, PI20) stationary jam
Jam (Booklet maker unit)		5	1	Stitcher staple jam (rear)
		5	2	Stitcher staple jam (front)

Table 8-17 LED (continued)

Jam (Booklet-maker tray unit)		6	1	Booklet paper-path-exit sensor (PI11) delay jam
		6	2	Booklet paper-path-exit sensor (PI11) stationary jam
Jam		1	6	Door-open jam
		4	7	Timing jam
		4	6	Saddle-door-open jam

Diagrams

Cross sections

Figure 8-241 Stapler/stacker cross-sectional view

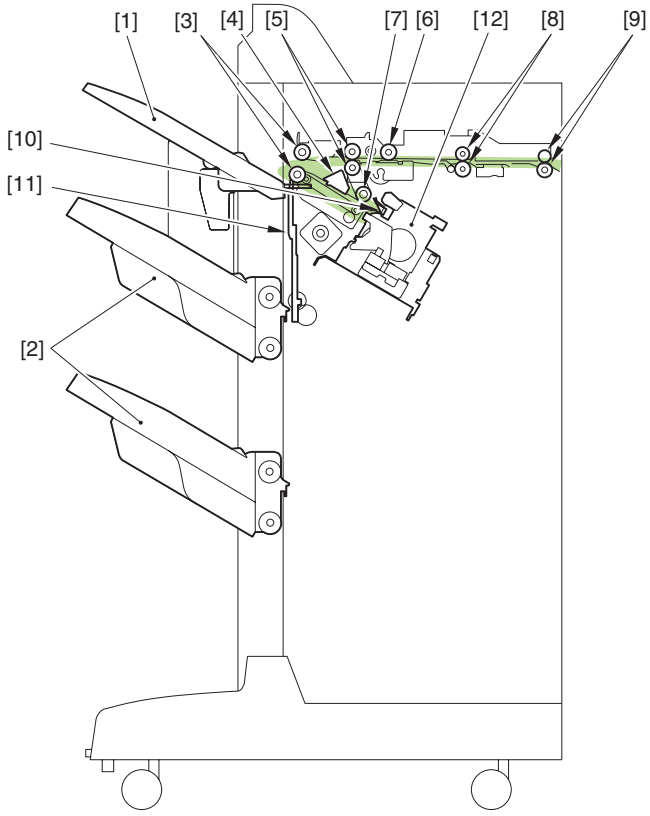


Table 8-18 Stapler/stacker cross-sectional view

1	Stack sub tray
2	Output bins
3	Stack-delivery roller
4	Aligning plate

Table 8-18 Stapler/stacker cross-sectional view (continued)

5	First delivery roller
6	Buffer roller
7	Return roller
8	Inlet roller
9	Inlet roller 1
10	Trailing-edge-assist guide
11	Shutter
12	Stapler

Figure 8-242 Booklet maker cross-sectional view highlighting the stapling/stacking paper path

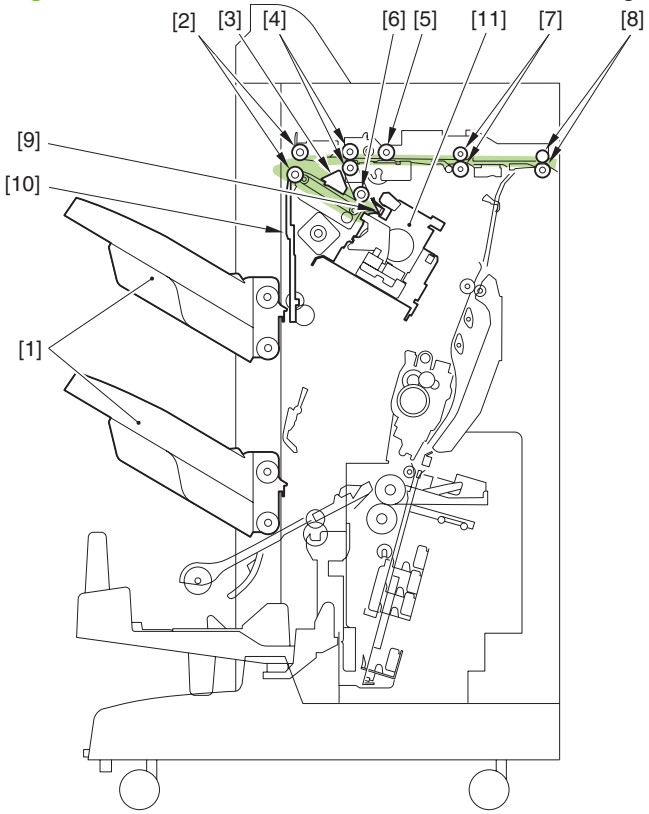


Table 8-19 Booklet maker cross-sectional view highlighting the stapling/stacking paper path

1	Output bins
2	Stack-delivery roller
3	Aligning plate
4	First delivery roller
5	Buffer roller
6	Return roller
7	Inlet roller

Table 8-19 Booklet maker cross-sectional view highlighting the stapling/stacking paper path (continued)

8	Inlet roller 1
9	Stack trailing-edge-assist guide
10	Shutter
11	Stapler

Figure 8-243 Booklet maker cross-sectional view highlighting the booklet-making paper path

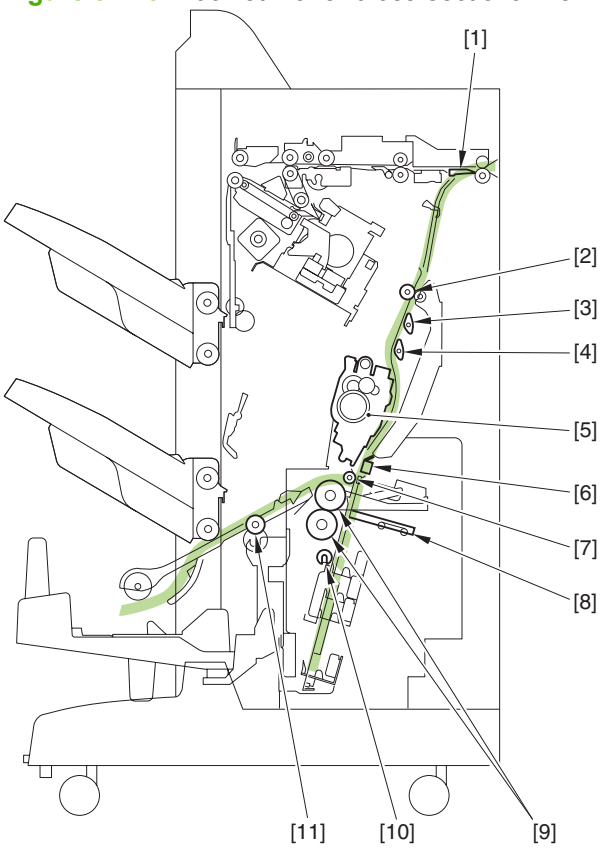


Table 8-20 Booklet maker cross-sectional view highlighting the booklet-making paper path

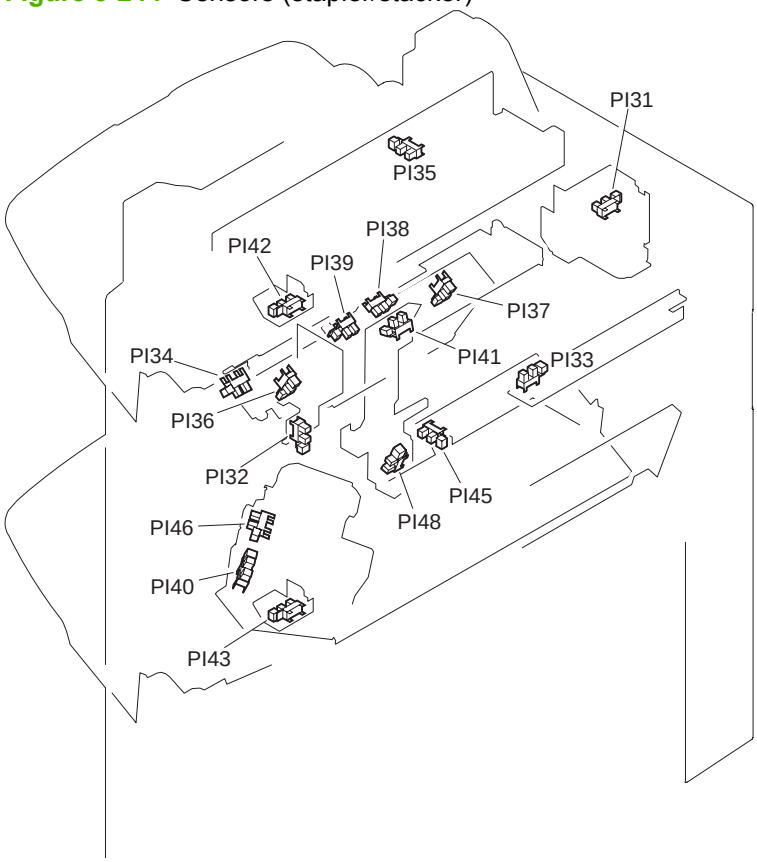
1	Booklet-maker entry flapper
2	Inlet roller 2
3	#1 Flapper paper sensor
4	#2 Flapper paper sensor
5	Stitcher (front, rear) staplers
6	Stitcher mount
7	Holding roller
8	Paper-pushing plate
9	Paper-folding roller

Table 8-20 Booklet maker cross-sectional view highlighting the booklet-making paper path (continued)

10	Crescent roller
11	Booklet-delivery roller

Sensors

Figure 8-244 Sensors (stapler/stacker)



Reference	Name	Description	Stapler PCA2	Stapler PCA1	Stapler controller PCA
PI31	Top-door sensor	Detects upper door open/close			J708
PI32	Front-door sensor	Detects front door open/close			J707
PI33	Upper paper-path-entry sensor	Detects paper entering stacker			J708
PI34	Upper paper-path-exit sensor	Detects paper-feed path			J707
PI35	Swing-guide home-position sensor	Detects swing-guide home position			J707

Reference	Name	Description	Stapler PCA2	Stapler PCA1	Stapler controller PCA
PI36	Front-aligning-plate home-position sensor	Detects aligning-plate front-home position			J722
PI37	Rear-aligning-plate home-position sensor	Detects aligning-plate rear-home position			J722
PI38	Processing-tray sensor	Detects paper in processing tray			J722
PI39	Stack trailing-edge-assist position sensor	Detects stack trailing-edge-assist home position			J722
PI40	Stapler shift home position sensor	Detects stapler home position			J721
PI41	Output-bin-1 paper-surface sensor	Detects paper surface			J721
PI42	Output-bin-1 paper sensor	Detects paper on output-bin 1			J711
PI43	Output-bin-2 paper sensor	Detects paper on output-bin 2			J716
PI45	Shutter home-position sensor	Detects shutter home position			J721
PI46	Stapler alignment-interference sensor	Detects stapler alignment interference	J994 / J993	J992 / J991	J717
PI48	Output-bin-2 paper-surface sensor	Detects paper surface on output-bin 2			J721

Figure 8-245 Sensors (booklet maker)

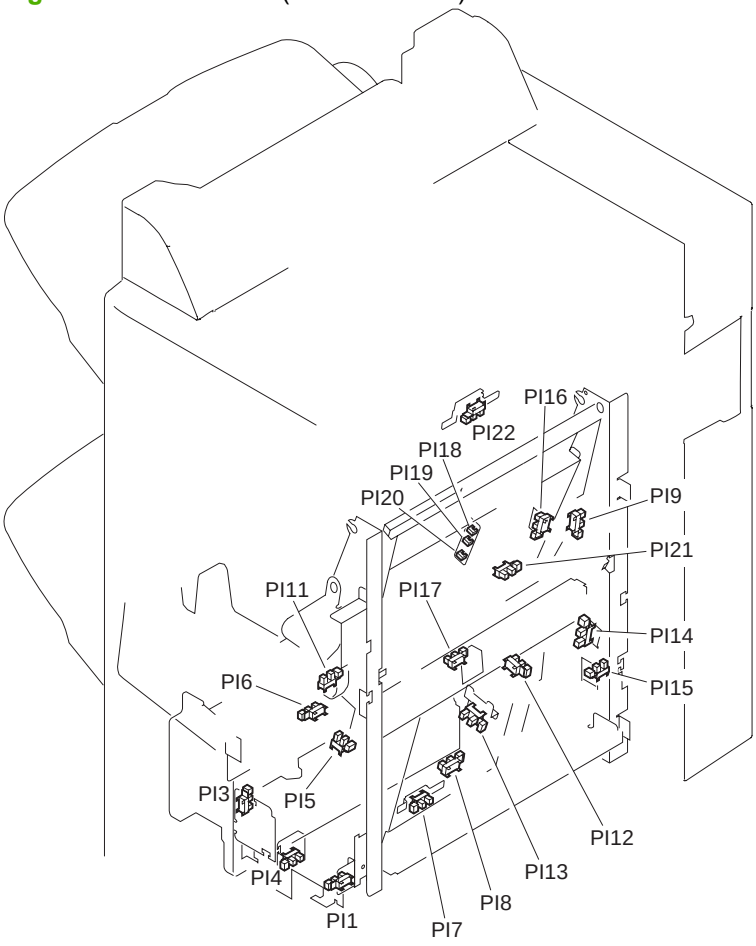


Table 8-21 **Sensors (booklet maker)**

Reference	Name	Description	Saddle-stitcher controller PCA
PI1	Paper-pushing-plate-motor clock sensor	Detects paper-pushing-plate-motor clock	J3
PI3	Booklet-delivery-door sensor	Detects eject cover open	J3
PI4	Paper-folding-motor clock sensor	Detects paper-folding-motor clock	J3
PI5	Alignment-plate home-position sensor	Detects alignment-plate home position	J3
PI6	Output-bin sensor	Detects paper on output bin	J6
PI7	Paper-positioning-plate home-position sensor	Detects paper-positioning-plate home position	J6
PI8	Paper-positioning-plate paper sensor	Detects paper on paper-positioning plate	J6
PI9	Saddle-guide assembly (Inlet door)	Detects inlet cover open	J9

Table 8-21 Sensors (booklet maker) (continued)

Reference	Name	Description	Saddle-stitcher controller PCA
PI11	Saddle-guide door (Inlet cover)	Detects paper ejection	J9
PI12	Crescent-roller phase sensor	Detects crescent-roller phase	J9
PI13	Guide home-position sensor	Detects guide home position	J9
PI14	Paper-pushing-plate home-position sensor	Detects paper-pushing-plate home position	J9
PI15	Paper-pushing-plate top-position sensor	Detects paper-pushing-plate leading-edge position	J13
PI16	Stitcher-unit IN sensor	Detects stitcher-unit storage	J13
PI17	Vertical-path paper sensor	Detects paper in vertical path	J10
PI18	No.1 paper sensor (#1 Flapper paper sensor)	Detects paper (No. 1; on paper sensor PCA)	J10
PI19	No.2 paper sensor (#2 Flapper paper sensor)	Detects paper (No. 2; on paper sensor PCA)	J10
PI20	No.3 paper sensor	Detects paper (No. 3; on paper sensor PCA)	J10
PI21	Paper-folding home-position sensor	Detects paper-fold home position	J18
PI22	Booklet-making paper-entry sensor	Detects saddle-inlet paper	J21

Microswitches

Figure 8-246 Microswitches (stapler/stacker)

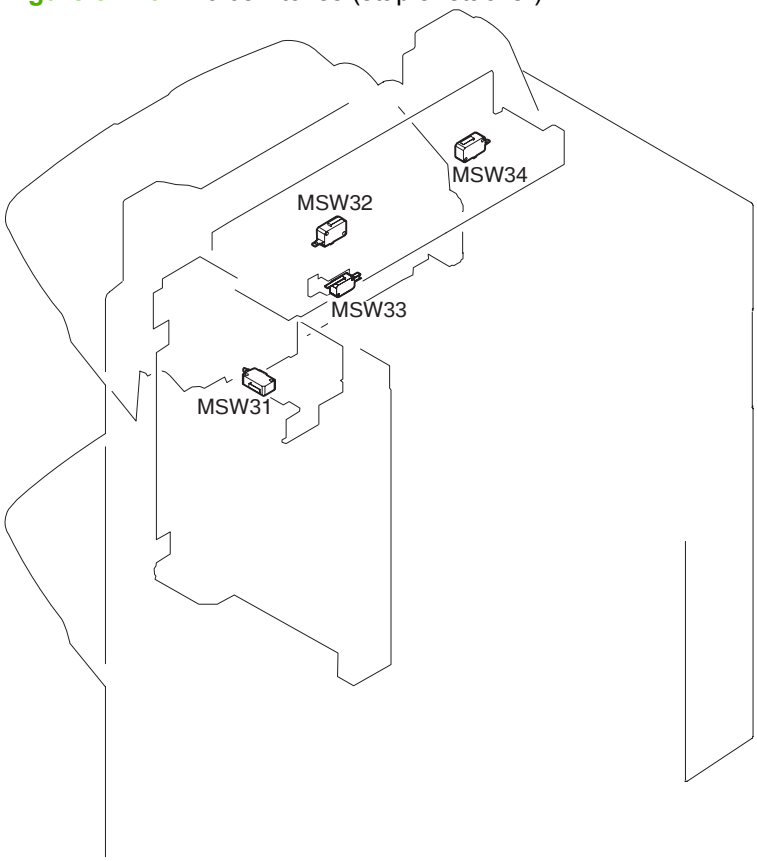


Table 8-22 Microswitches (stapler/stacker)

Part number	Name	Description	Stacker controller PCA
MSW31	Front-door switch	Detects front cover close	J719
MSW32	Swing-guide switch	Detects swing guide open	J715
MSW33	Tray-1 switch	Detects Tray 1	J714
MSW34	Staple safety switch	Detects swing guide open	J715

Figure 8-247 Microswitches (booklet maker)

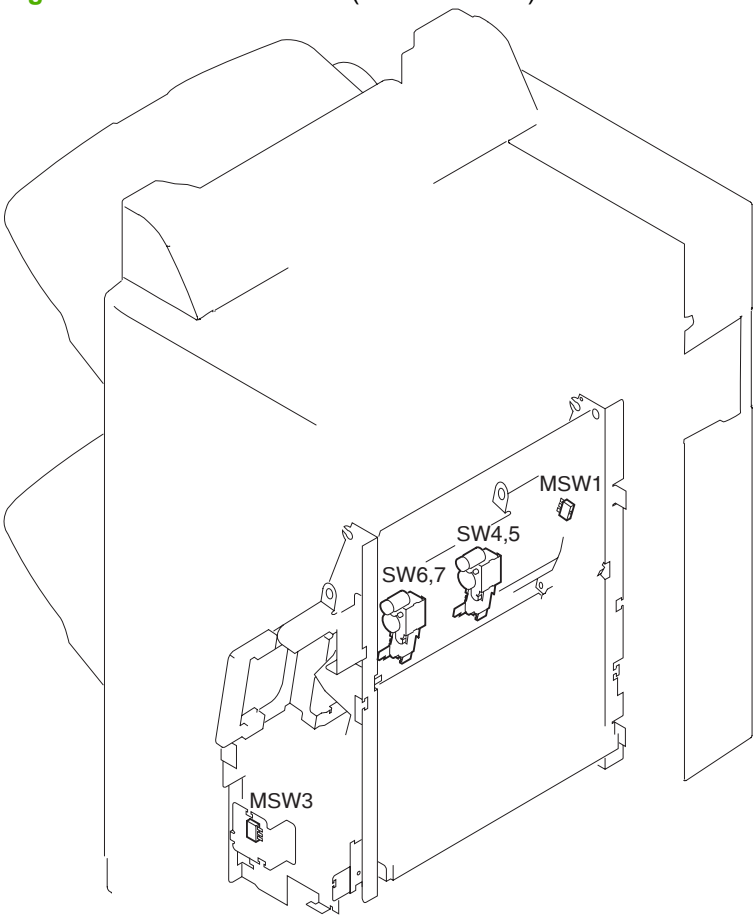


Table 8-23 Microswitches (booklet maker)

Part number	Name	Description	Stacker controller PCA
MSW1	Saddle-guide-assembly switch (Inlet switch)	Detects saddle-guide assembly (inlet door) open	J4
MSW3	Delivery-door switch	Detects ejection door open	J4
SW4	Staple sensor (rear)	Detects presence of staples (rear)	J8
SW5	Stitcher home-position sensor (rear)	Detects stitching home position (rear)	J8
SW6	Staple sensor (front)	Detects presence of staples (front)	J8
SW7	Stitcher home-position sensor (front)	Detects stitching home position (front)	J8

Solenoids

Figure 8-248 Solenoids (stapler/stacker)

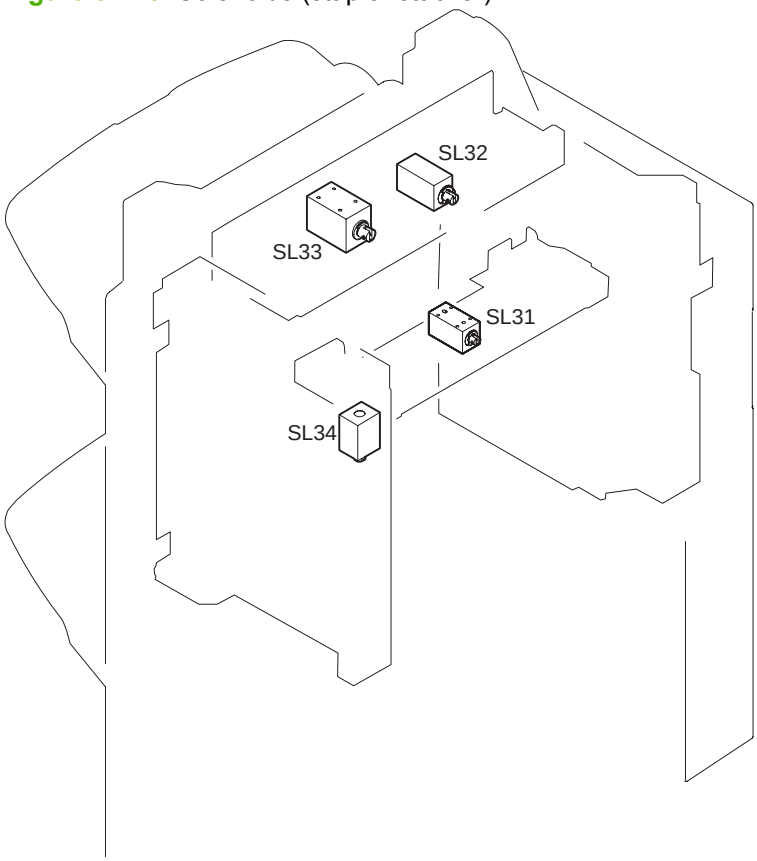


Table 8-24 Solenoids (stapler/stacker)

Part number	Name	Stack controller PCA
SL31	Inlet-roller-separation solenoid	J710
SL32	Buffer-roller-separation solenoid	J710
SL33	1st-delivery-roller-separation solenoid	J710
SL34	Buffer rear-end holding solenoid	J710

Figure 8-249 Solenoids (booklet maker)

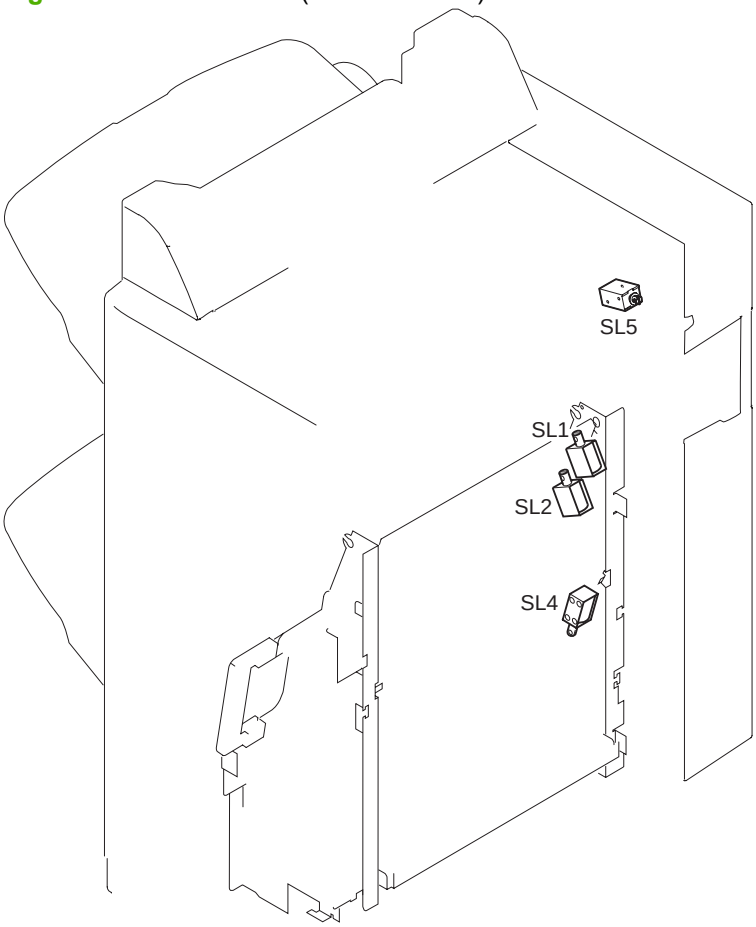


Table 8-25 Solenoids (booklet maker)

Part number	Name	Stack controller PCA
SL1	No.1 paper-deflecting solenoid	J15
SL2	No.2 paper-deflecting solenoid	J15
SL4	Feed-plate-contact solenoid	J15
SL5	Saddle-inlet solenoid	J19

Motors

Figure 8-250 Motors (stapler/stacker)

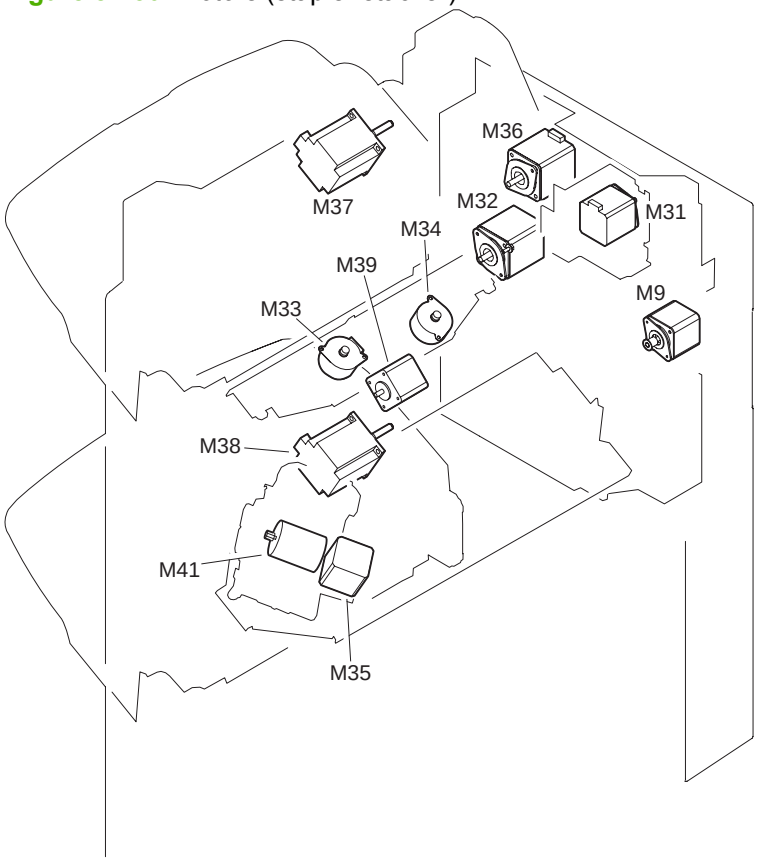


Table 8-26 **Motors (stapler/stacker)**

Part number	Name	Tray-1 driver PCA	Stapler PCA2	Stapler PCA1	Tray-2 driver PCA	Stacker controller PCA
M9	Saddle-inlet motor					J705
M31	Inlet motor					J718
M32	Stack-ejection motor					J713
M33	Front-aligning-plate motor					J722
M34	Rear-aligning-plate motor					J722
M35	Stapler-shift motor		J995 / J993	J992 / J991		J717
M36	Swing motor					J709
M37	Output-bin-1-shift motor	J952 / J951				J711
M38	Output-bin-2-shift motor				J1953 / J1951	J716

Table 8-26 Motors (stapler/stacker) (continued)

Part number	Name	Tray-1 driver PCA	Stapler PCA2	Stapler PCA1	Tray-2 driver PCA	Stacker controller PCA
M39	Stack trailing-edge-assist motor					J722
M41	Staple motor		J995 / J993	J992 / J991		J717

Figure 8-251 Motors (booklet maker)

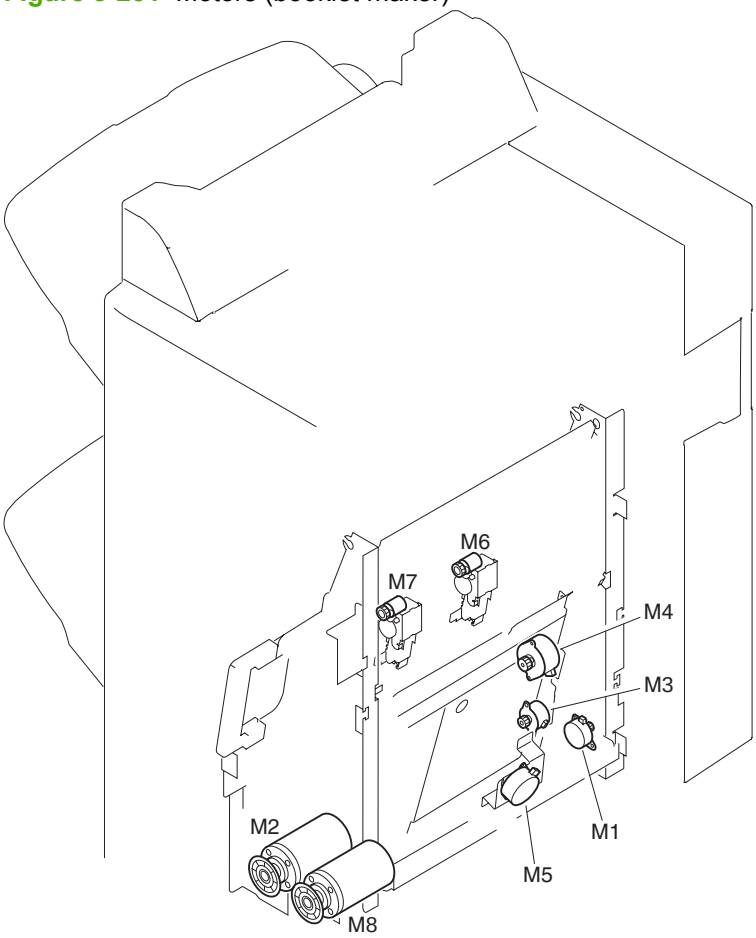


Table 8-27 Motors (booklet maker)

Part Number	Name	Saddle-stitcher controller PCA
M1	Feed motor	J5
M2	Paper-folding motor	J23
M3	Guide motor	J12
M4	Paper-positioning-plate motor	J7
M5	Alignment motor	J7
M6	Stitcher motor (rear)	J8

Table 8-27 Motors (booklet maker) (continued)

Part Number	Name	Saddle-stitcher controller PCA
M7	Stitcher motor (front)	J8
M8	Paper-pushing-plate motor	J23

Clutches

Figure 8-252 Clutches (stapler/stacker)

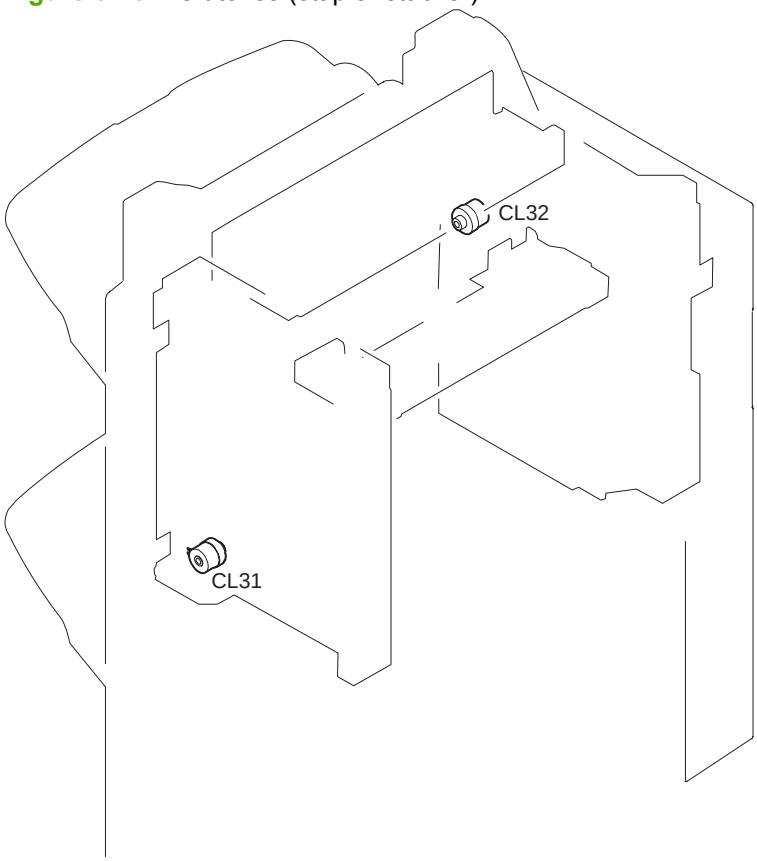


Table 8-28 Clutches (stapler/stacker)

Part number	Description	Stacker controller PCA
CL31	Shutter clutch	J721
CL32	Stack-ejection lower-roller clutch	J712

PCA

Figure 8-253 PCA (stapler/stacker)

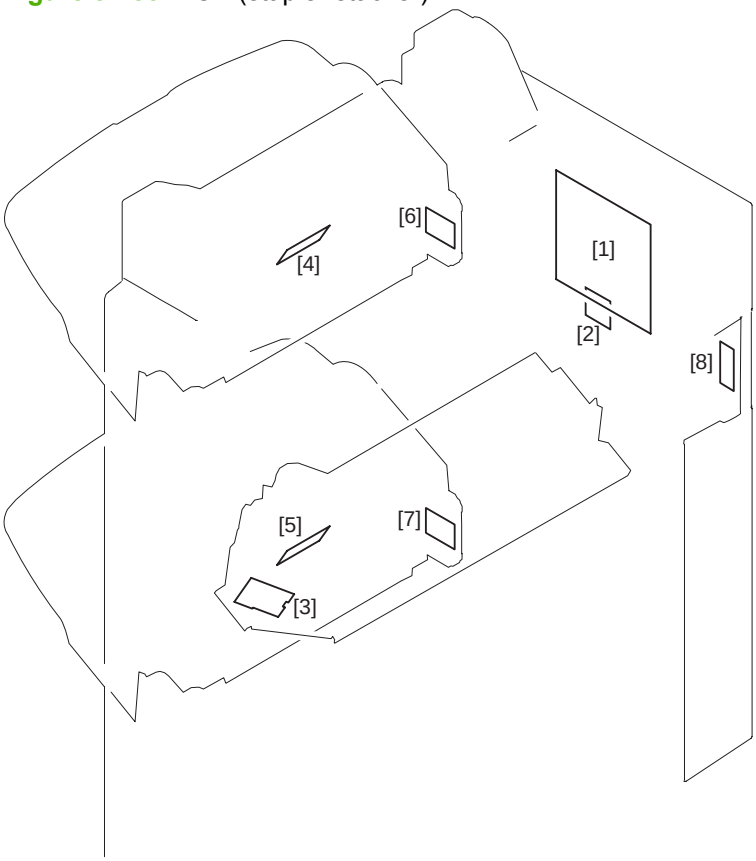


Table 8-29 PCA (stapler/stacker)

Part number	Name
1	Stacker controller PCA
2	Stapler PCA1
3	Stapler PCA2
4	Tray-1 driver PCA
5	Tray-2 driver PCA
6	Tray-1 shift-area sensor PCA
7	Tray 2 shift-area sensor PCA
8	Service LED PCA

Figure 8-254 Stacker controller PCA

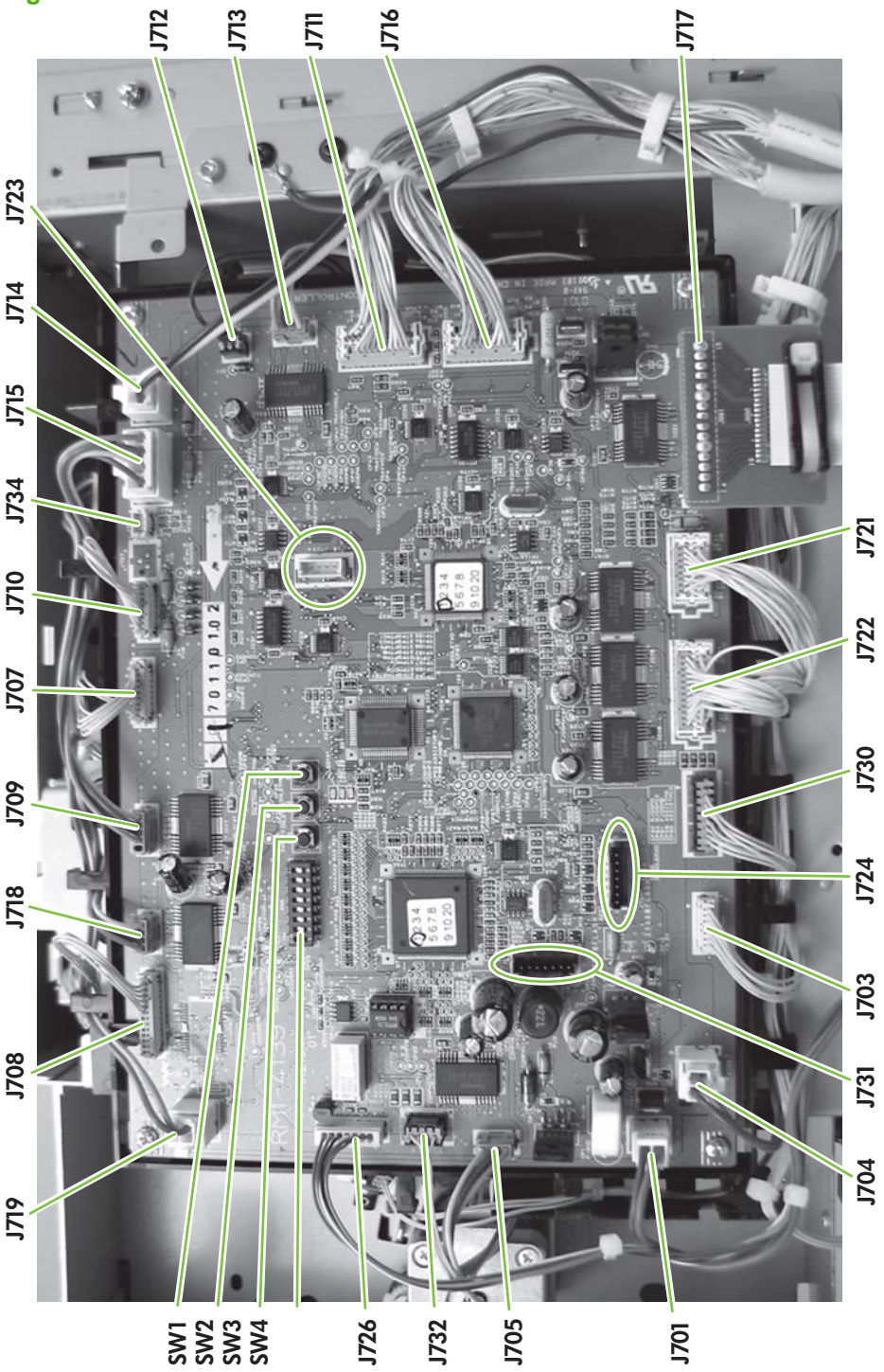


Figure 8-255 PCA (booklet maker)

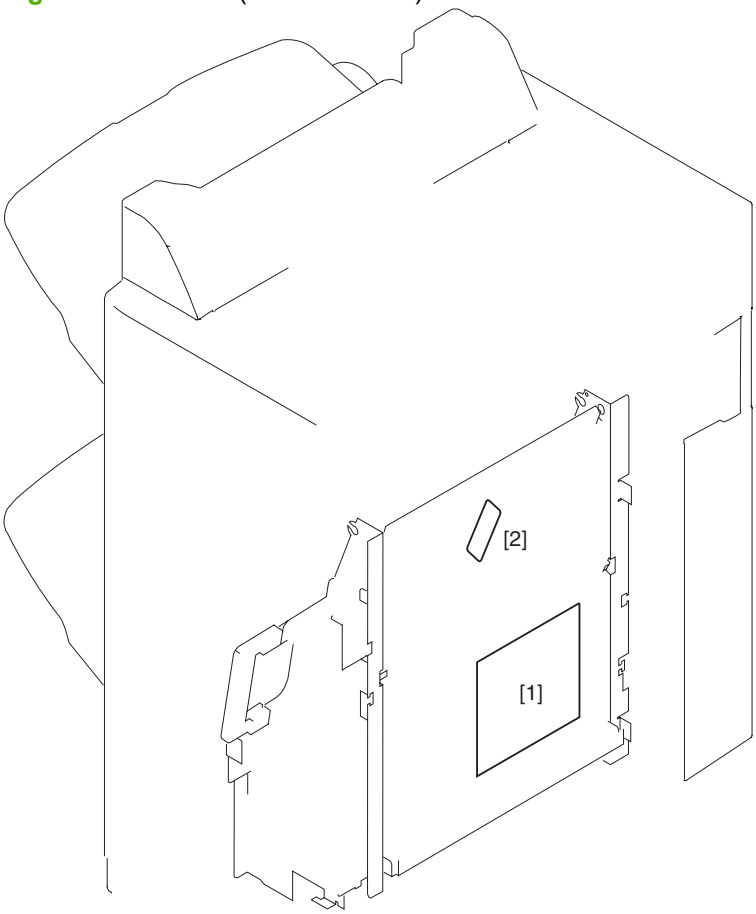
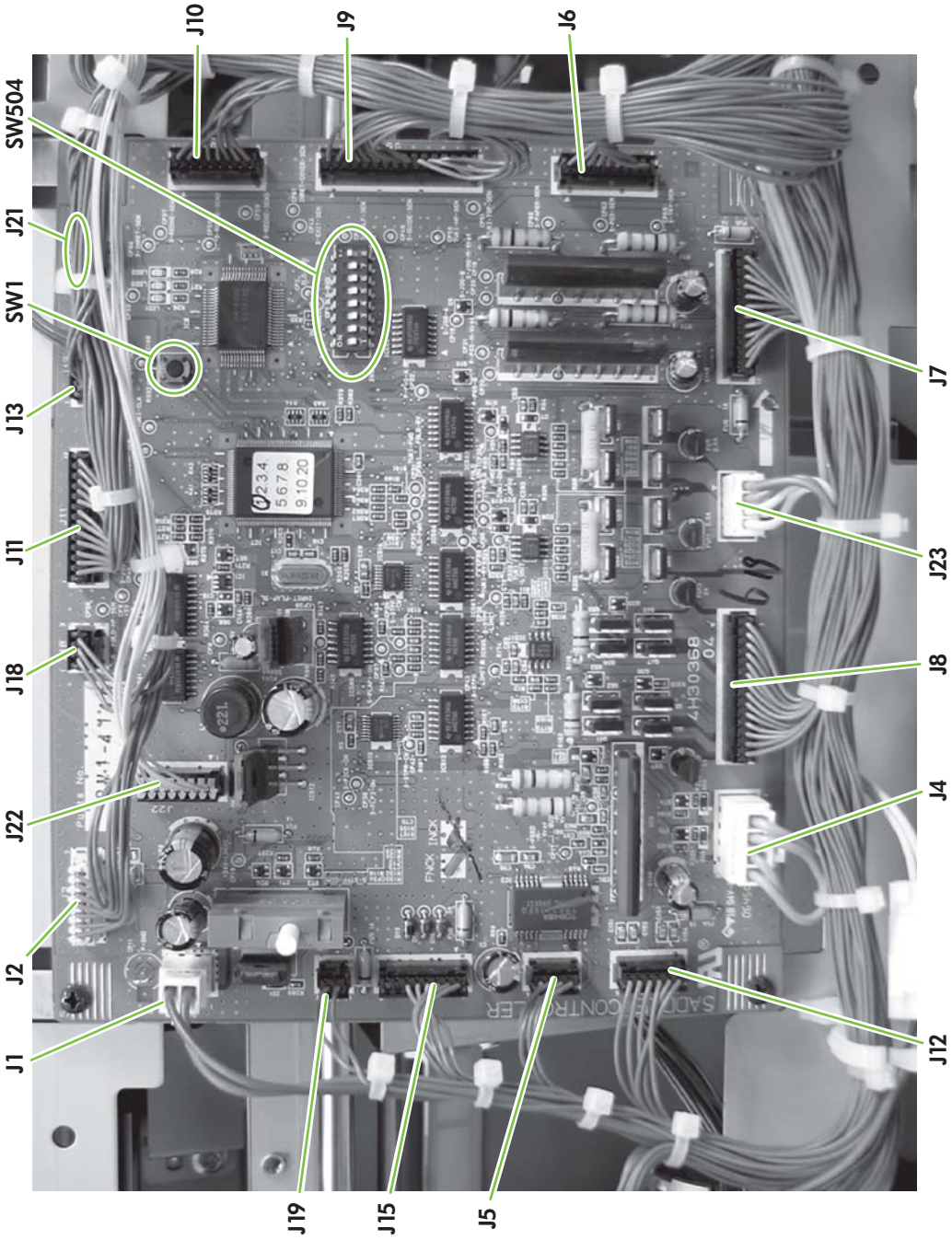


Table 8-30 PCA (booklet maker)

Part number	Name
1	Saddle-stitcher controller PCA
2	Paper sensor PCA

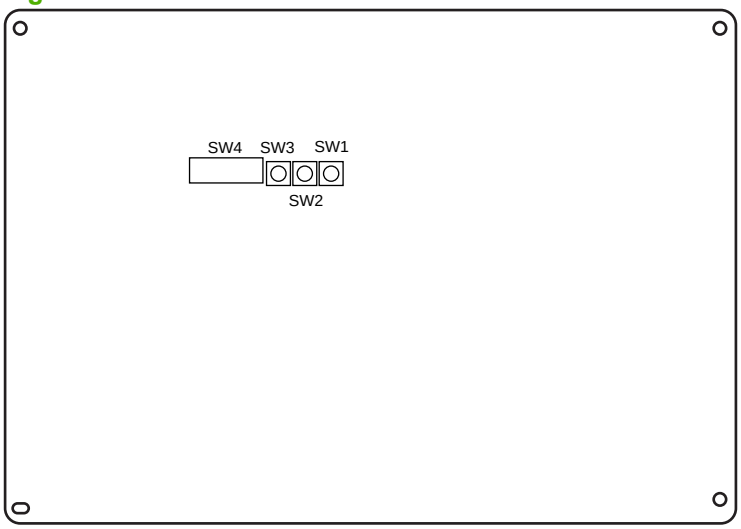
Figure 8-256 Saddle-stitcher controller PCA



Variable resistors, LED, and check pins

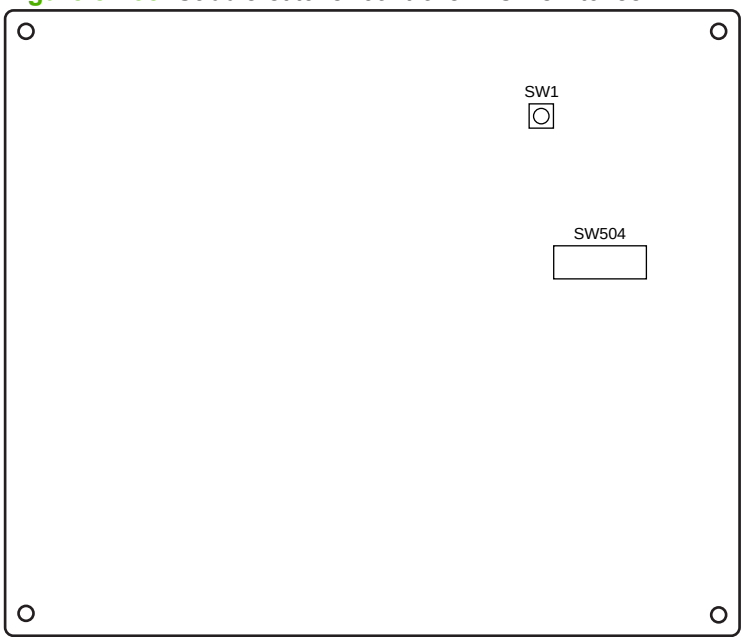
△ **CAUTION:** Do not touch check pins that are absent from the following list. They are for factory use only and special tools must be used to service them.

Figure 8-257 Stacker controller PCA switches



Switch	Function
SW1	Used for making adjustments to the alignment position/stapling position
SW2	Used for making adjustments to the alignment position/stapling position
SW3	Used to start operation for alignment position adjustment/ stapling position adjustment
SW4	Used to start operation for alignment position adjustment/ stapling position adjustment

Figure 8-258 Saddle-stitcher controller PCA switches



Switch	Function
SW504,Bit 1 to 2	Starts correction of discrepancy between stitching position and folding position
SW504,Bit 6 to 8	Stores corrected settings for stitching position and folding position
SW1	Starts correction of discrepancy between stitching position and folding position

Circuit diagrams

Figure 8-259 Stapler/stacker stacker controller PCA circuit diagram (1 of 2)

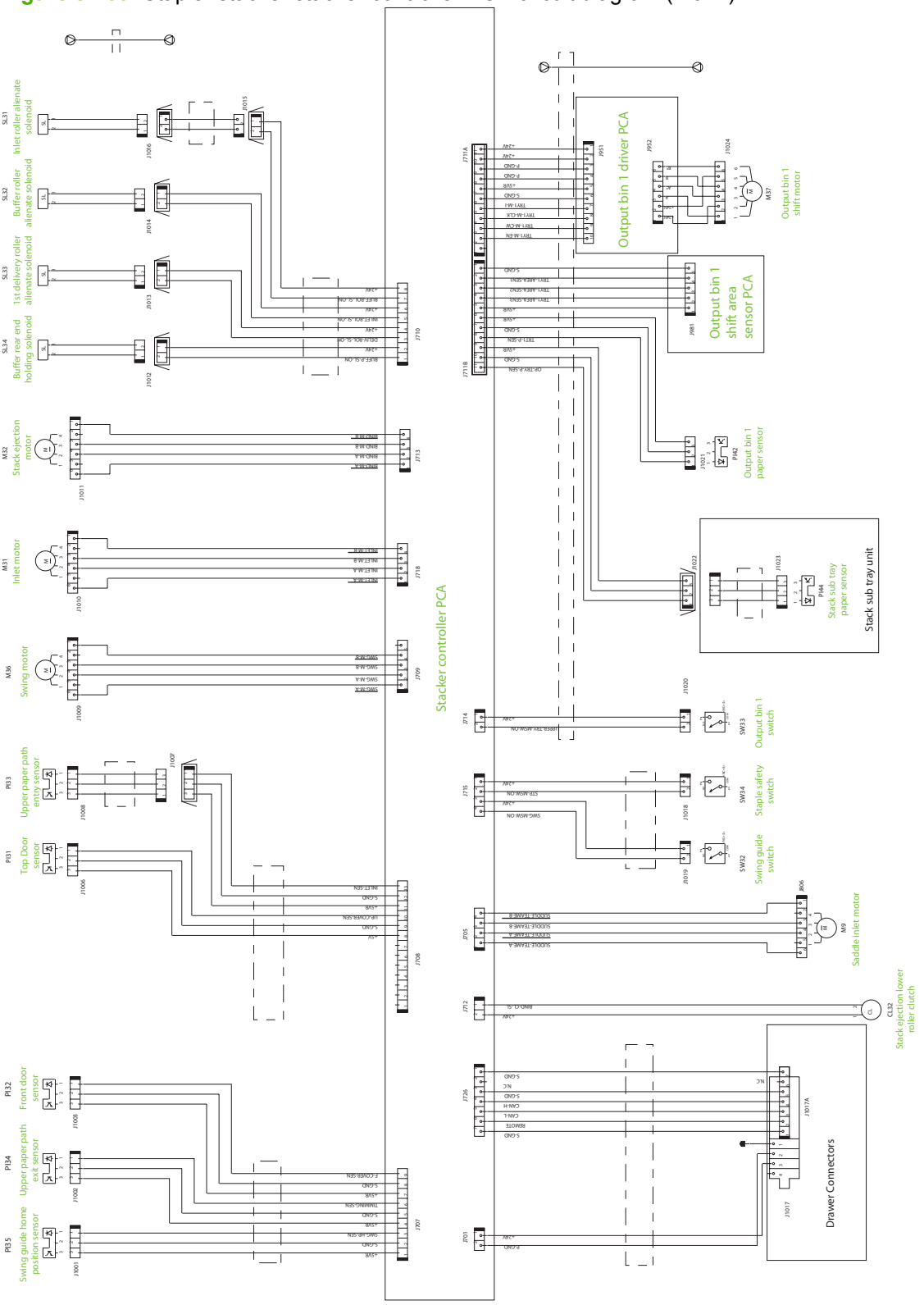
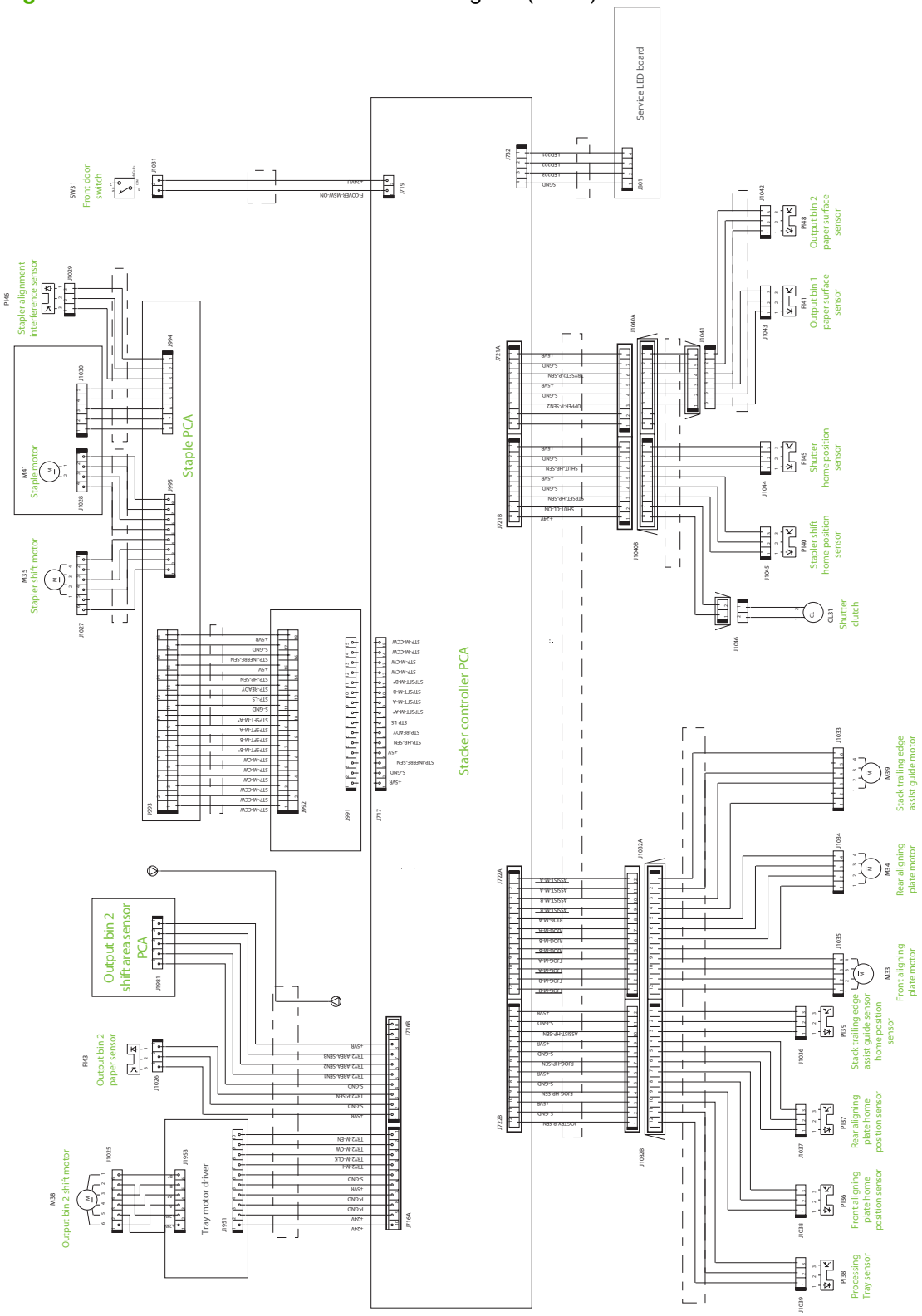


Figure 8-260 Stacker controller PCA circuit diagram (2 of 2)



NOTE: The stack sub tray unit is located only on the stapler/stacker.

Figure 8-261 Saddle-stitcher controller PCA circuit diagram (1 of 2)

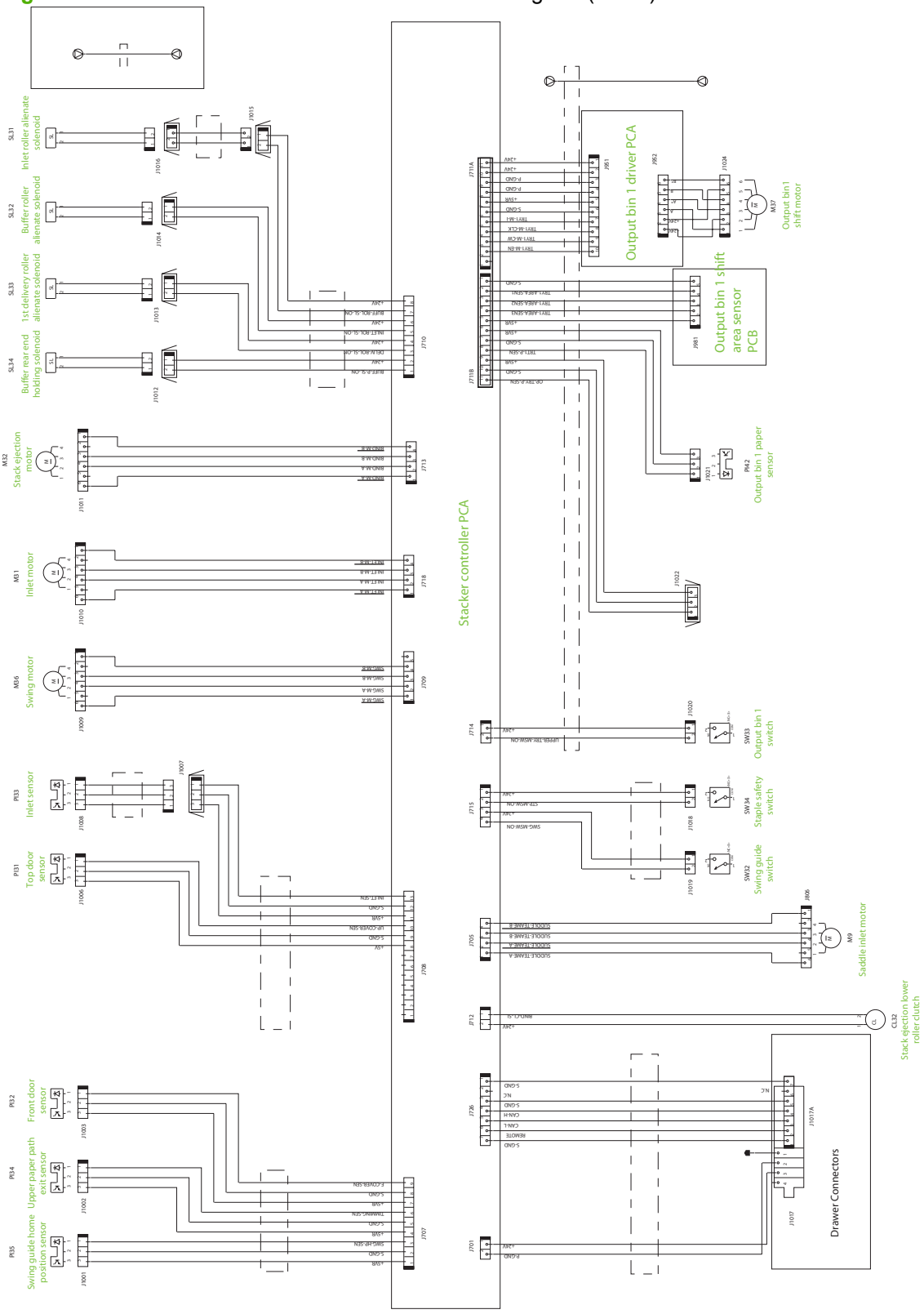


Figure 8-262 Saddle-stitcher controller PCA circuit diagram (2 of 2)

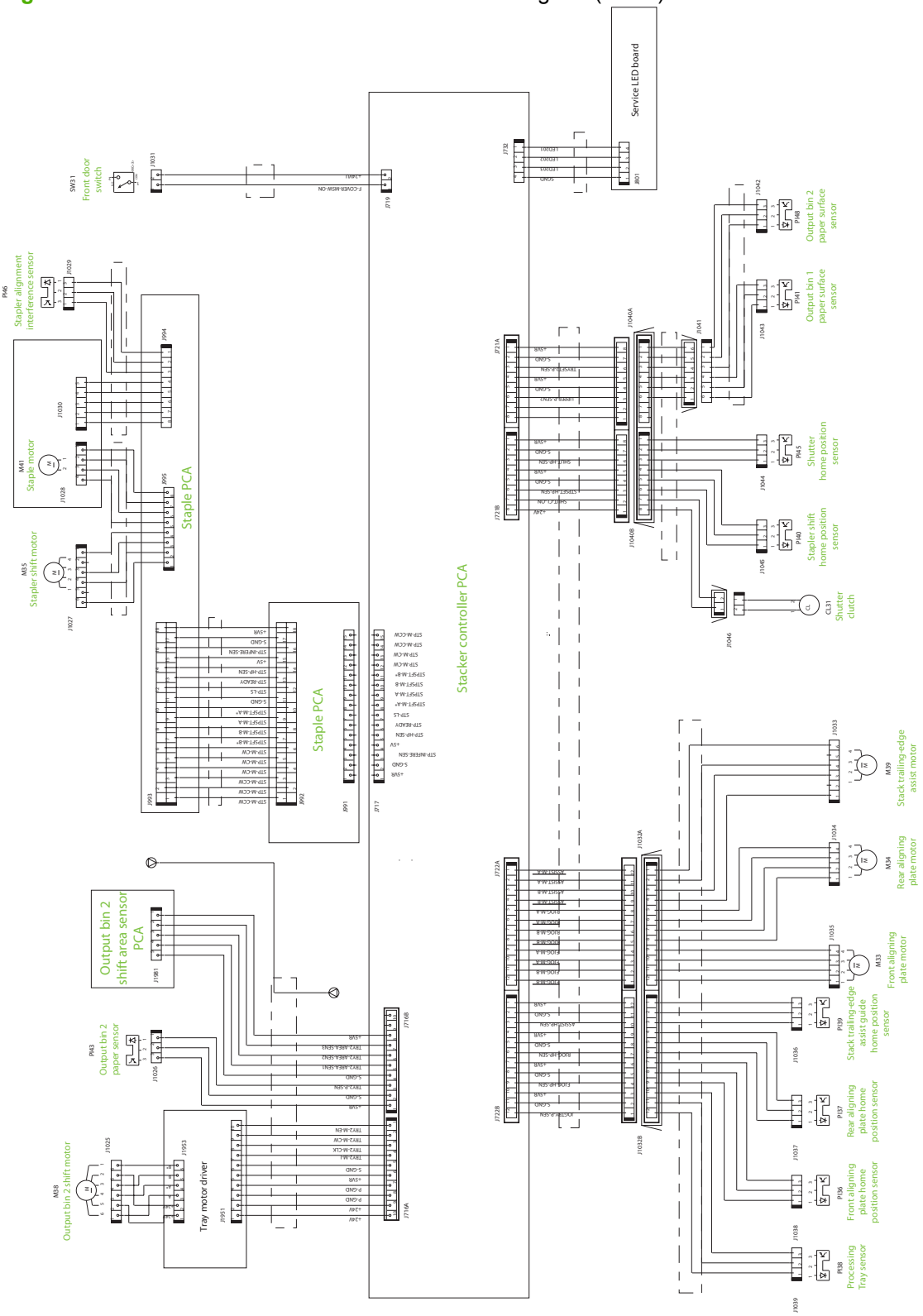
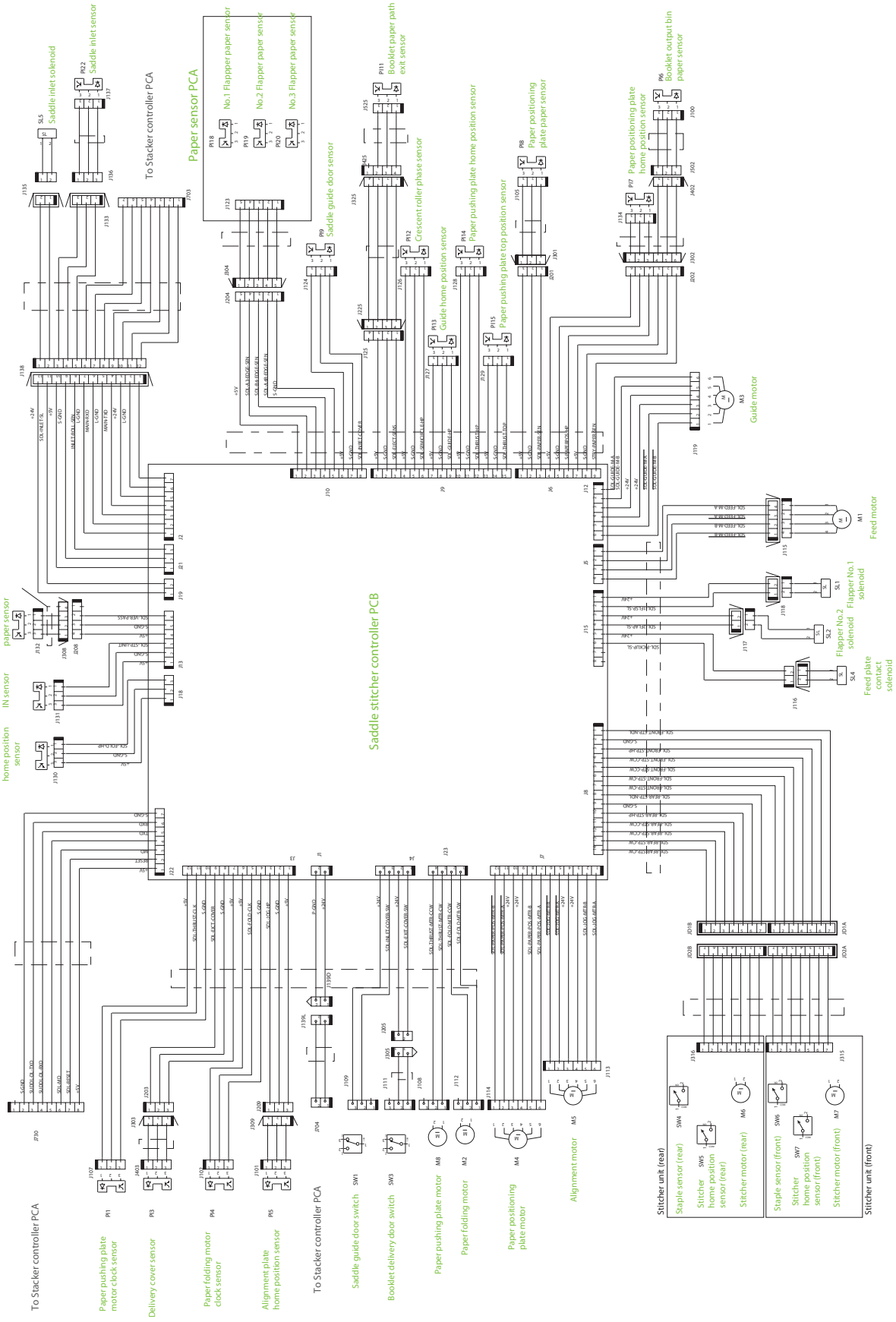


Figure 8-263 Saddle-stitcher controller PCA circuit diagram



Adjustments

Adjust the alignment position

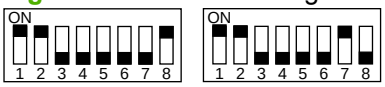
These adjustments are for the primary stapler unit for the both the stapler/stacker and booklet maker finishers.

Perform this adjustment after replacing the stacker controller PCA or when the alignment position must be changed.

NOTE: When the stacker controller PCA is replaced, EP-ROM (IC10) must be transferred from the old board to the new board so that old adjustment values stay with finisher. Otherwise, this adjustment must be made in order to program IC10.

1. Turn the printer off.
2. Disconnect the communication/power cable from the accessory to the printer.
3. Remove the rear cover of the accessory.
4. Set SW4 on the stacker controller PCA according to the paper used for adjustment.

   Figure 8-264 SW4 settings

5. Reconnect the communication/power cable from the finisher to the printer.
6. Turn the printer power on at the printer.
7. Press SW3 on the stacker controller PCA. When SW3 is pressed, the swing guide opens and the alignment plate moves to prescribed position.
8. Place ten sheets of A4/LTR paper between the alignment plates and push them squarely against the stopper.

   NOTE: The objective of this adjustment is to adjust the plates so that they will be lightly and evenly touching the sides of the stacked paper.

9. Press SW1 or SW2 on the stacker controller PCA and adjust the alignment plate against the paper. When SW1 is pressed, the alignment plate moves 0.42 mm forward. When SW2 is pressed, the alignment plate moves 0.42 mm backward. The adjustment range is -/+ 4.2 mm.
10. When adjustment is complete, remove the paper and press SW3 on the stacker controller PCA once to store the adjustment in memory.
11. Turn off all bits of stacker controller PCA SW4.
12. Turn the power off and install the rear cover of the stacker unit.

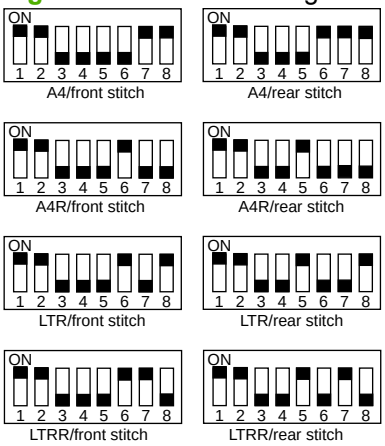
Adjust the staple position

Adjust the stapler position after replacing the stacker controller PCA or when the staple position must be changed for some reason. This adjustment sets the front and rear stitches with A4/A4R when the paper used for adjustment is AB type and with LTR/LTRR when the paper is INCH type.

NOTE: When the stacker controller PCA is replaced, EP-ROM (IC10) must be transferred from the old board to the new board so that old adjustment values stay with finisher. Otherwise, this adjustment must be made in order to program IC10.

1. Remove the rear cover.
2. Turn the printer power off and set SW4 on the stacker controller PCA according to paper/stitch position used for adjustment.

Figure 8-265 SW4 settings



3. Turn the printer power on.
4. Press SW3 on the stacker controller PCA. When SW3 is pressed, the swing guide opens and the alignment plate moves to prescribed position.
5. Place two sheets of paper between the alignment plates, push them against the stopper, and then push the rear edge of the paper against the rear alignment plate. If the gap between the front alignment plate and front edge of the paper is 1 mm or greater, adjust the plate alignment before continuing.
6. Press SW3 on the stacker controller PCA once to staple and then remove the stapled paper manually to verify the staple position.
7. Press SW3 on the stacker controller PCA once.
8. If the staple position is correct, insert a sheet of paper between the aligning plates and push it against the stopper, push the far end edge of the paper to the rear aligning plate, press SW3 once (stapling action/store adjustment value), and then proceed to step 11.
9. To adjust the staple position, press SW1 or SW2 on the stacker controller PCA and adjust the staple position. When SW1 is pressed, the staple position moves 0.49 mm forward. When SW2 is pressed, the staple position moves 0.49 mm backward.
10. Repeat steps 5 and 6 and check that the staple position is adjusted correctly.
11. Turn off all bits of SW4 on the stacker controller PCA.
12. Turn off the printer off and install the rear cover.

Adjust the folding position to the stitch position (Booklet maker only)

Adjust the position of the booklet fold by changing the settings of bits six through eight of DIPSW1 on the saddle-stitcher controller board to match the booklet stapling (stitching) position. If the saddle-stitcher controller PCA has been replaced, be sure to set the new DIPSW1 so that the settings will be the same as those on the old DIPSW1. Perform this adjustment if you must change the folding position. DIPSW1 on the saddle-stitcher controller PCA to match the stitching position (adjusting the distance over which the paper positioning plate is moved to the folding position from the stitching position).

1. Turn the printer power off and disconnect the communication/power cord from the booklet maker to the printer.
2. Remove the PCA cover from the lower portion of the booklet maker. To establish a baseline for measurements, set bits 1 through 8 of SW504 on the saddle-stitcher controller PCA as follows:

NOTE: Do not change bit 5.

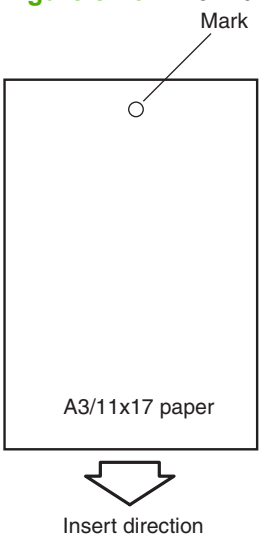
Figure 8-266 SW504 settings



Do not change bit 5.

3. Remove the rear cover. Open the front door and the paper-jam-access guide plate (saddle-guide assembly) (green handle above the booklet stapler unit) of the saddle stitcher unit. Moving to the rear of the machine, tape the actuator of the inlet-cover sensor (saddle-guide assembly) (PI9) and inlet-door switch (saddle-guide assembly) (SW1) so that both sensor and switch remain activated signaling that the saddle guide is in the closed position throughout the entire adjustment procedure.
4. You will be using two sheets of A3 or 11 x 17 paper. Mark the top of the paper as shown. This is a reference mark only to show a specific end of the paper. The mark's position just needs to be somewhere at one end of the paper as shown.

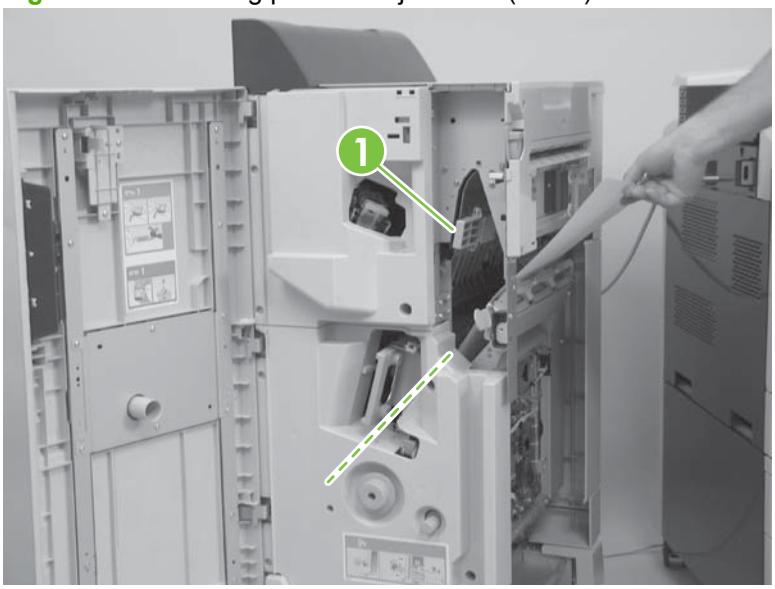
Figure 8-267 Mark the paper



5. Close the saddle-guide assembly and the front door of the accessory. Reconnect the power cord from the booklet maker to the printer. Turn the printer power on and wait until the printer is in a ready state.
6. Press SW1 on the saddle-stitcher controller PCA so that the feed motor (M1) starts to rotate. You will need to press SW1 three seconds or more if the 11 x 17 paper is used.

7. Open the front door of the booklet maker and then open saddle-guide assembly (callout 1). Insert the two sheets of marked paper down the paper path leading to the folding unit and past the booklet stapler unit. Push them in by hand until the front edge of the sheets push against the paper positioning plate.

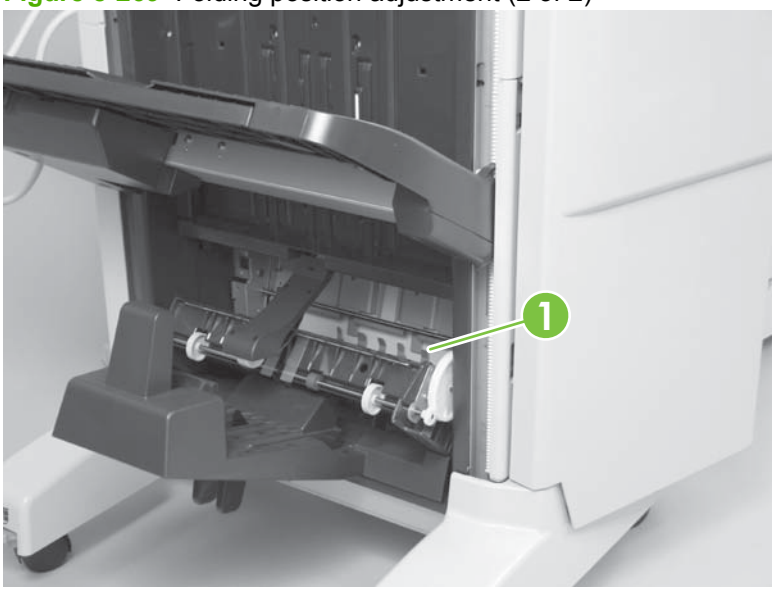
Figure 8-268 Folding position adjustment (1 of 2)



8. Verify that the paper is properly located against the paper positioning plate by opening the booklet delivery door and looking at the paper positioning plate (callout 1).

NOTE: It is important for the bottom of the sheets of paper to be squarely resting on the paper positioning plate for the adjustment to be accurate.

Figure 8-269 Folding position adjustment (2 of 2)

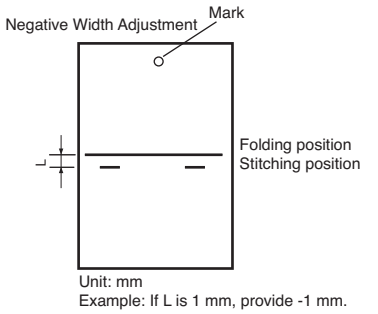


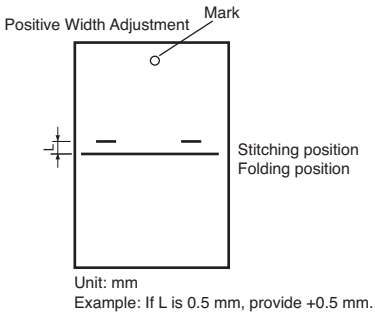
9. Close the saddle-guide assembly.

10. Press SW1 on the saddle-stitcher controller PCA. The saddle stitcher unit will "stitch" the sheets, and fold and deliver the stack automatically to the booklet output bin.

11. Measure the distance (L) between the stitching position and the folding position. Then perform "positive width adjustment" or "negative width adjustment" to suit the relationship between the stitching position and the folding position. If the stitching position is below the folding position, perform "negative width adjustment." If the stitching position is above the folding position, perform "positive width adjustment."

Figure 8-270 Positive and negative width adjustment





NOTE: If the L adjustment is significantly larger than what the adjustment allows, the most common cause is that the paper was not fully inserted and resting squarely on the paper position plate.

12. Change the settings of bits 6 through 8 on SW504 referring to the following table.

Table 8-31 SW504 settings

SW504 bit settings			Setting (in units of 0.5 mm)
Bit 6	Bit 7	Bit 8	
OFF	ON	ON	+3
OFF	ON	OFF	+2
OFF	OFF	ON	+1
OFF	OFF	OFF	0
ON	OFF	ON	-1
ON	ON	OFF	-2
ON	ON	ON	-3

Table 8-32 Do not use the following setting.

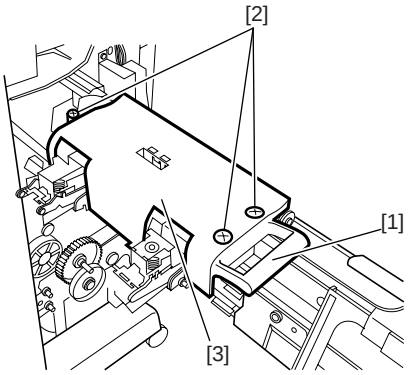
Bit 6	Bit 7	Bit 8
ON	OFF	OFF

13. When adjustment has been completed and the stitch staples are within the fold line, set SW504 bits 1 to 4 (only) to OFF.
14. Remove the tape from the actuator arm of switch SW1 and PI9 on the rear frame of the booklet-making assembly.

Adjust the stitcher unit

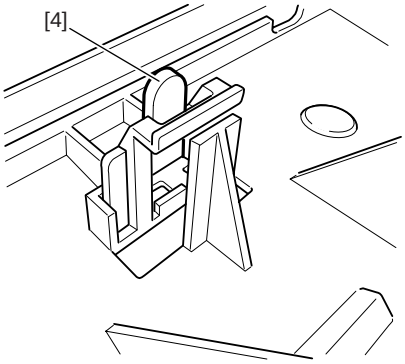
1. Open the front cover.
2. Pull out the stitcher mount unit to the front. Pull the stitcher towards you and then pull up.
3. Remove three screws (callout 2) and then remove the stitcher cover (callout 3).

Figure 8-271 Adjust the stitcher (1 of 6)



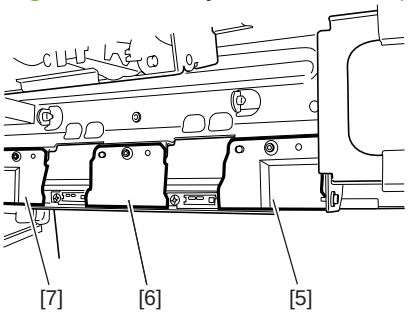
4. Remove the stitcher positioning tool (callout 4) from the back of the cover.

Figure 8-272 Adjust the stitcher (1 of 6)



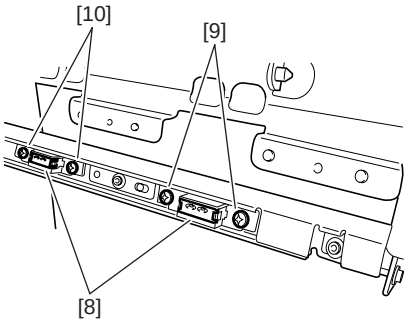
5. To adjust the front stitcher, remove the front guide plate (callout 4) and center guide plate (callout 6). To adjust the rear stitcher, remove the center guide plate (callout 6) and the rear guide plate (callout 7) (one screw each).

Figure 8-273 Adjust the stitcher (2 of 6)



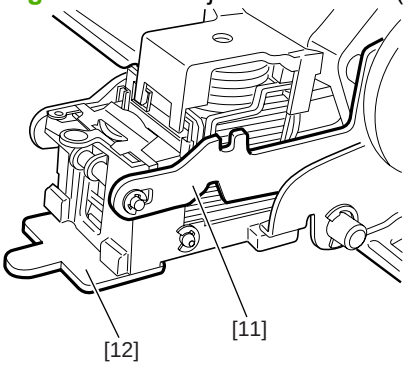
6. To adjust the front stitcher, loosen the two screws (callout 9) on the stitcher mount (callout 8). To adjust the rear stitcher, loosen the two screws (callout 10) on the stitcher mount.

Figure 8-274 Adjust the stitcher (3 of 6)



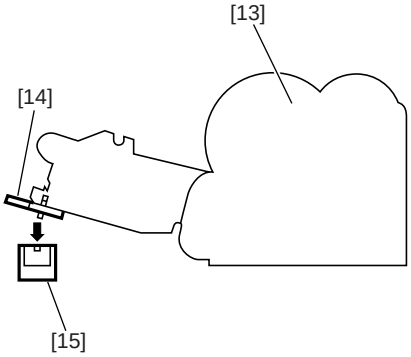
7. Insert the tool (callout 12) into the staple slot of the stitcher (callout 11).

Figure 8-275 Adjust the stitcher (5 of 6)



8. Tilt the stitcher, and turn the stitcher gear (callout 13) to match the recess of the tool (callout 14) and the mount (callout 15) and then tighten the screws on the mount to secure.

Figure 8-276 Adjust the stitcher (6 of 6)



9 Parts and diagrams

- Order parts, accessories, and supplies
- Customer self-repair parts
- Printer
- Input accessories
- Output accessories
- Alphabetical parts list
- Numerical parts list

Order parts, accessories, and supplies

Several methods are available for ordering parts, supplies, and accessories.

Order directly from HP

You can obtain the following items directly from HP:

- **Replacement parts:**Outside the United States, order parts by contacting your local authorized HP service center. To order replacement parts in the U.S., go to the following Web sites:
  - HP Parts Store: www.hp.com/buy/parts
  - Partsurfer: www.partsurfer.hp.com
  - HP Parts Portal: www.hp.com/go/HPparts
- **Supplies and accessories:** To order supplies in the U.S., go to www.hp.com/go/ljsupplies. To order supplies worldwide, go to www.hp.com/ghp/buyonline.html. To order accessories, go to www.hp.com/support/cljcp6015.

Order directly through the software

HP Easy Printer Care and HP ToolboxFX are product management tools designed to make product configuration, monitoring, supplies ordering, troubleshooting, and updating as simple and efficient as possible.

Customer self-repair parts

Customer self-repair parts

Description	Part number	Self-repair level
Control-panel overlay assembly, EN/FR, ES/PT	Q3931-60103	Level 1 (A)
Control-panel overlay assembly, EN/FR, DE/IT	Q3931-60104	Level 1 (A)
Control-panel overlay assembly, SK/SL, EN/CS, HU/PL, HR/RO	Q3931-60105	Level 1 (A)
Control-panel overlay assembly, EN/FR, DA/FI, NO/SV	Q3931-60106	Level 1 (A)
Control-panel overlay assembly, RU/TR, EN/EL	Q3931-60107	Level 1 (A)
Control-panel overlay assembly, EN/FR, DE/IT, NL/CA, ES/PT	Q3931-60108	Level 1 (A)
Overlay, control-panel – EN/AR	Q3931-40051	Level 1 (A)
Overlay, control-panel – EN/HE	Q3931-40053	Level 1 (A)
Overlay, control-panel – ID/TH	Q3931-40054	Level 1 (A)
Overlay, control-panel – EN/JA	Q3931-40055	Level 1 (A)
Overlay, control-panel – EN/KO	Q3931-40056	Level 1 (A)
Overlay, control-panel – EN/ZHCN	Q3931-40057	Level 1 (A)
Overlay, control-panel – EN/ZHTW	Q3931-40058	Level 1 (A)
Black print cartridge	CB380-67901	Level 1 (A)
Black image drum	CB384-67901	Level 1 (A)
Magenta print cartridge	CB383-67901	Level 1 (A)
Magenta image drum	CB387-67901	Level 1 (A)
Yellow print cartridge	CB382-67901	Level 1 (A)
Yellow image drum	CB386-67901	Level 1 (A)
Cyan print cartridge	CB381-67901	Level 1 (A)
Cyan image drum	CB385-67901	Level 1 (A)
Formatter (exchange)	Q7539-69001	Level 1 (A)
Formatter (new)	Q7539-67901	Level 1 (A)
Hard-drive kit with service document	Q3931-67901	Level 1 (A)
Memory kit, 128 MB, with service document	Q3931-67902	Level 1 (A)
Memory kit, 256 MB, with service document	Q3931-67903	Level 1 (A)

Memory kit, 512 MB, with service document	Q3931-67904	Level 1 (A)
Face down cover	Q3931-67905	Level 1 (A)
VOC filter	RC1-9313-000CN	Level 1 (A)
Intermediate transfer belt assy (Image transfer kit)	RMI-3307-000CN	Level 1 (A)
Second transfer roller assy (Roller kit)	RMI-3319-000CN	Level 1 (A)
110 Volt fusing assy kit	Q3931-67914	Level 1 (A)
220 Volt fusing assy kit	Q3931-67915	Level 1 (A)
Tray 2	Q3931-67918	Level 1 (A)
Tray 3, 4, or 5	Q3931-67923	Level 1 (A)
Tray 3, 4, or 5 pickup (1) feed roller (2) kit	Q3931-67919	Level 1 (A)
Tray 1 pickup (1), retard roller (1) kit	Q3931-67920	Level 2 (B)
Duplex switchback tray	Q3931-67921	Level 1 (A)
Security-lock adapter kit	Q3931-67925	Level 1 (A)

NOTE: Only highlighted parts are orderable.

Service documentation

Description	Part number	Self-repair level
Manual-service, EN CLJ CP6015	Q3931-90938	
Service/support CD	Q3931-60110	

Part numbers

Ordering information and availability might change during the life of the product.

Accessories

Item	Description	Part number
HP Color LaserJet 1 x 500 Paper Feeder	500-sheet paper feeder and cabinet	CB473A
HP Color LaserJet 3 x 500 Paper Feeder	3-drawer (500 sheets each) paper feeder and cabinet	CB474A
HP 3-bin Stapler/Stacker Accessory	3-bin stapler/stacker with output accessory bridge unit	Q6998A
HP 3-bin Stapler/Stacker or HP Booklet Maker/Finisher staple cartridge (upper cartridge on HP Booklet Maker/Finisher)	5000-staple replacement cartridge	C8091A C8091-67901 (Order this part number.)

Item	Description	Part number
HP Booklet Maker/Finisher Accessory	Booklet maker finisher with output accessory bridge unit	Q6999A
HP Booklet Maker/Finisher saddle-stitch staple cartridge (lower cartridge)	2000-staple replacement cartridge	CC383A CC383-67901 (Order this part number.)

Print cartridges

Item	Description	Part number
HP Color LaserJet black print cartridge	21,000-page black cartridge	CB380A
HP Color LaserJet cyan print cartridge	16,500-page cyan cartridge	CB381A
HP Color LaserJet yellow print cartridge	16,500-page yellow cartridge	CB382A
HP Color LaserJet magenta print cartridge	16,500-page magenta cartridge	CB383A

Image drums

Item	Description	Part number
HP Color LaserJet black image drum		CB384A
HP Color LaserJet cyan image drum		CB385A
HP Color LaserJet yellow image drum		CB386A
HP Color LaserJet magenta image drum		CB387A

Maintenance kits

Item	Description	Part number
Image fuser kit	110 volt	CB457A
Image fuser kit	220 volt	CB458A
Roller kit		CB459A
Image transfer kit		CB463A

Memory

Item	Description	Part number
200-pin DDR memory DIMM (dual inline memory module) Boosts the ability of the product to handle large or complex print jobs.	128 MB	Q7557A
	256 MB	Q7558A
	512 MB	Q7559A

Cables and interfaces

Item	Description	Part number
Enhanced I/O (EIO) card	HP Jetdirect 635n IPv6/IPsec Print Server	J7961G
USB cable	2-meter standard USB-compatible device connector	C6518A

Printer

Printer unit

Figure 9-1 Printer-unit major assemblies (1 of 2)

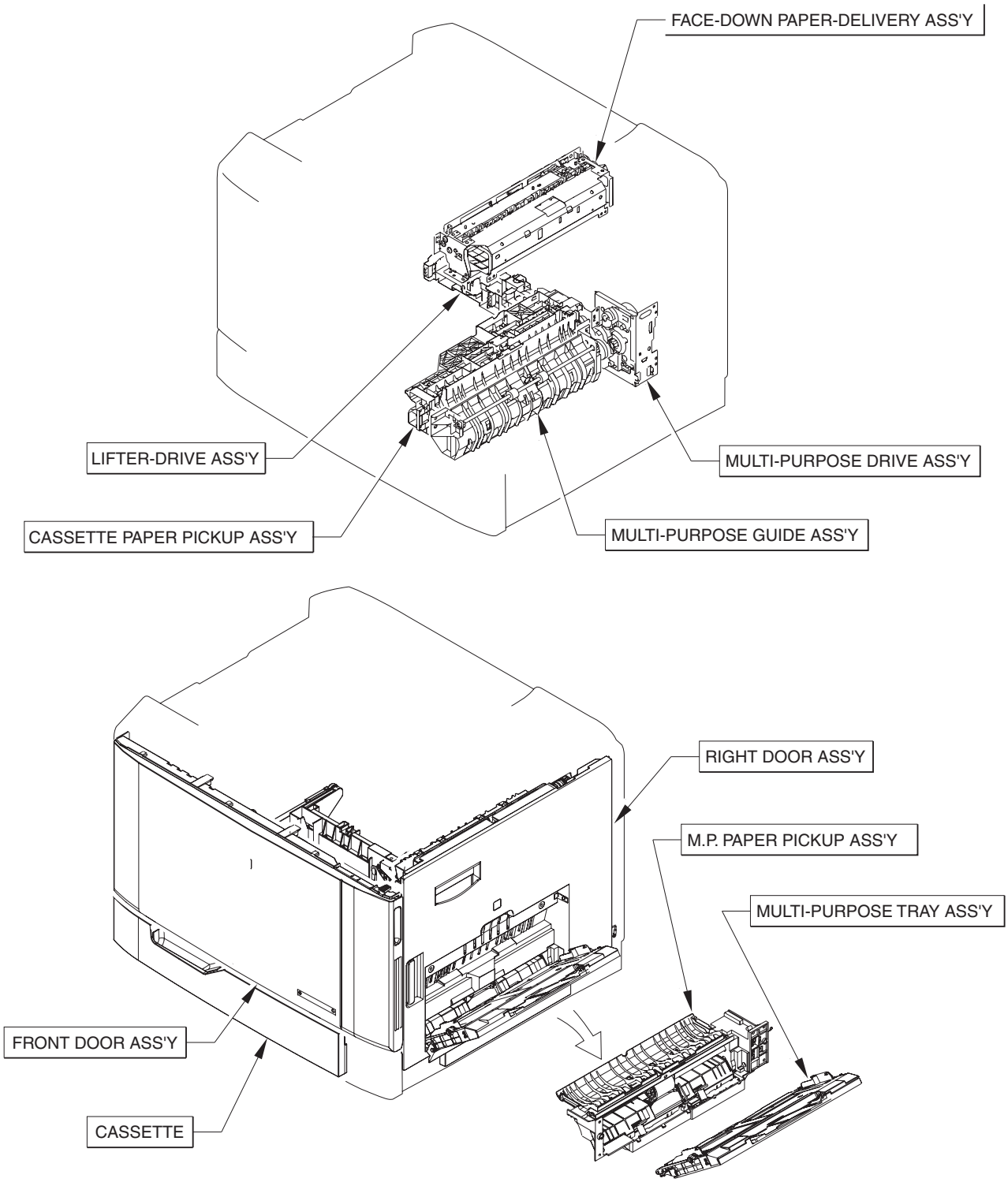
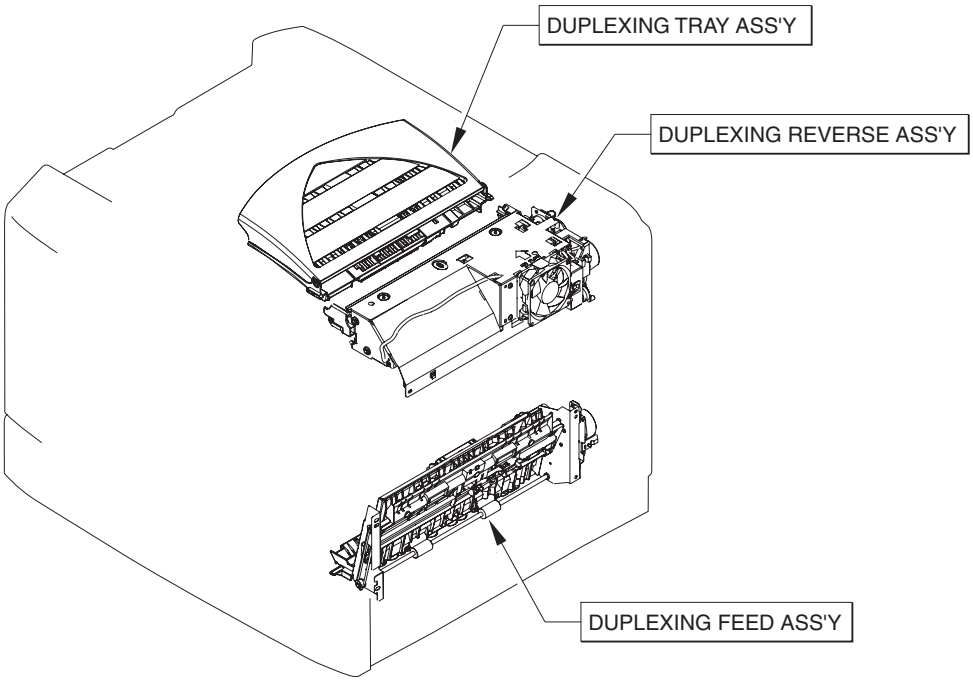


Figure 9-2 Printer-unit major assemblies (2 of 2)

DUPLEX MODEL



Printer parts

Figure 9-3 Printer external covers and panels

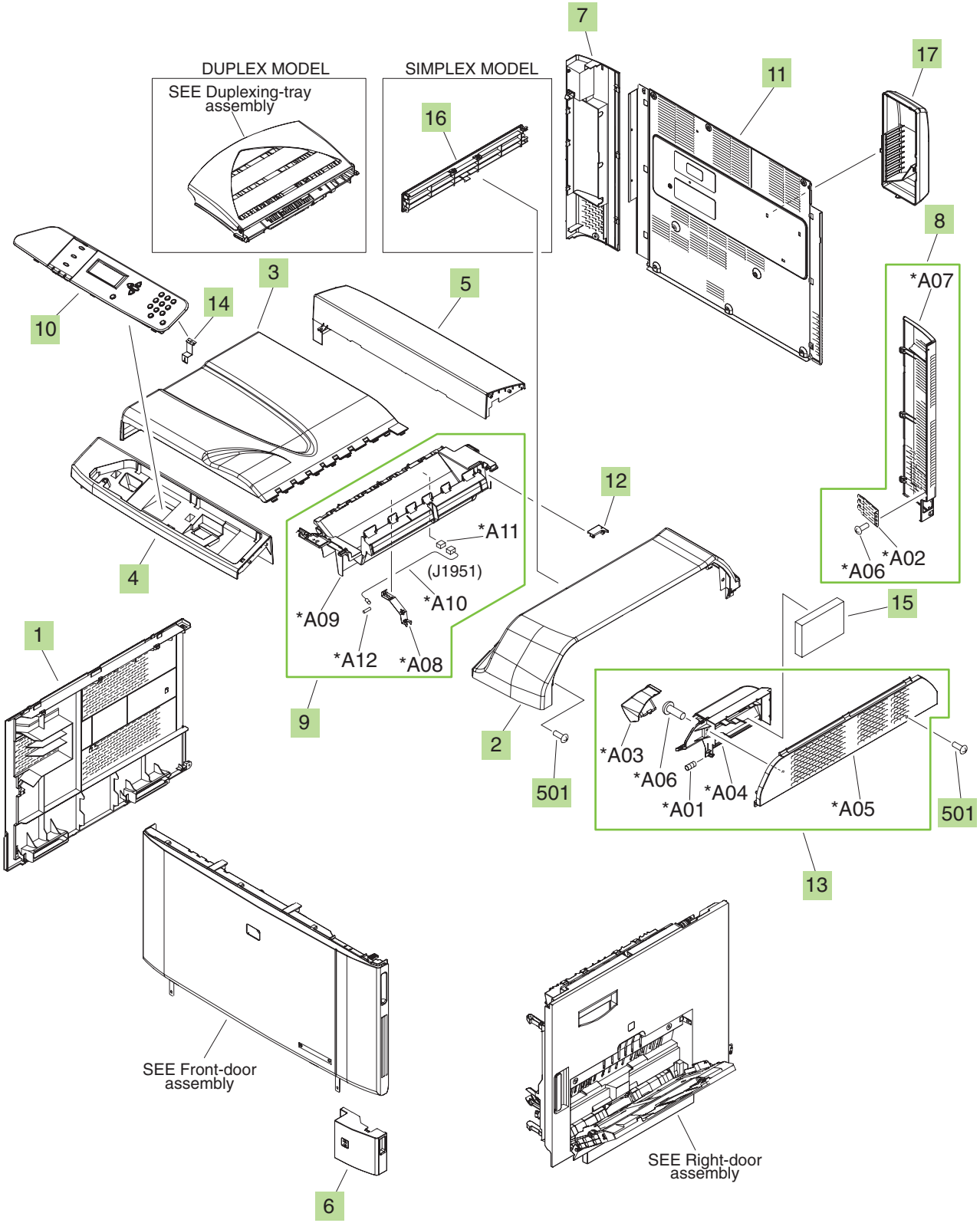


Table 9-1 Printer external covers and panels

Ref	Description	Part number	Qty
1	Cover, left	RC1-9336-000CN	1
2	Cover, right-upper	RC1-9339-000CN	1
3	Cover, face-down	Q3931-67905	1
4	Cover, panel	RC1-9341-000CN	1
5	Cover, rear-upper	RC1-9342-000CN	1
6	Right-lower cover assembly	RL1-1280-000CN	1
7	Cover, rear-left	RC1-9344-000CN	1
8	Rear-right cover assembly	RM1-4415-000CN	1
9	Face-down end-tray assembly	RM1-3340-000CN	1
10	Control-panel unit	RM1-4516-000CN	1
11	Cover, rear	RL1-1210-000CN	1
12	Cover, face-down drive	RC1-9360-000CN	1
13	Switchback-cover assembly	RM1-3360-000CN	1
14	Plate, control-panel grounding	RC1-9238-000CN	1
15	Filter unit, air	RC1-9313-000CN	1
16	Cover, blanking (simplex)	RC1-9362-000CN	1
17	Fixing-fan cover assembly	RM1-5950-000CN	1
501	Screw, tapping, truss-head, M4X10	XB4-7401-005CN	8 (simplex)
501	Screw, tapping, truss-head, M4X10	XB4-7401-005CN	12 (duplex)

NOTE: Only highlighted parts are orderable.

Figure 9-4 Printer front-door assembly

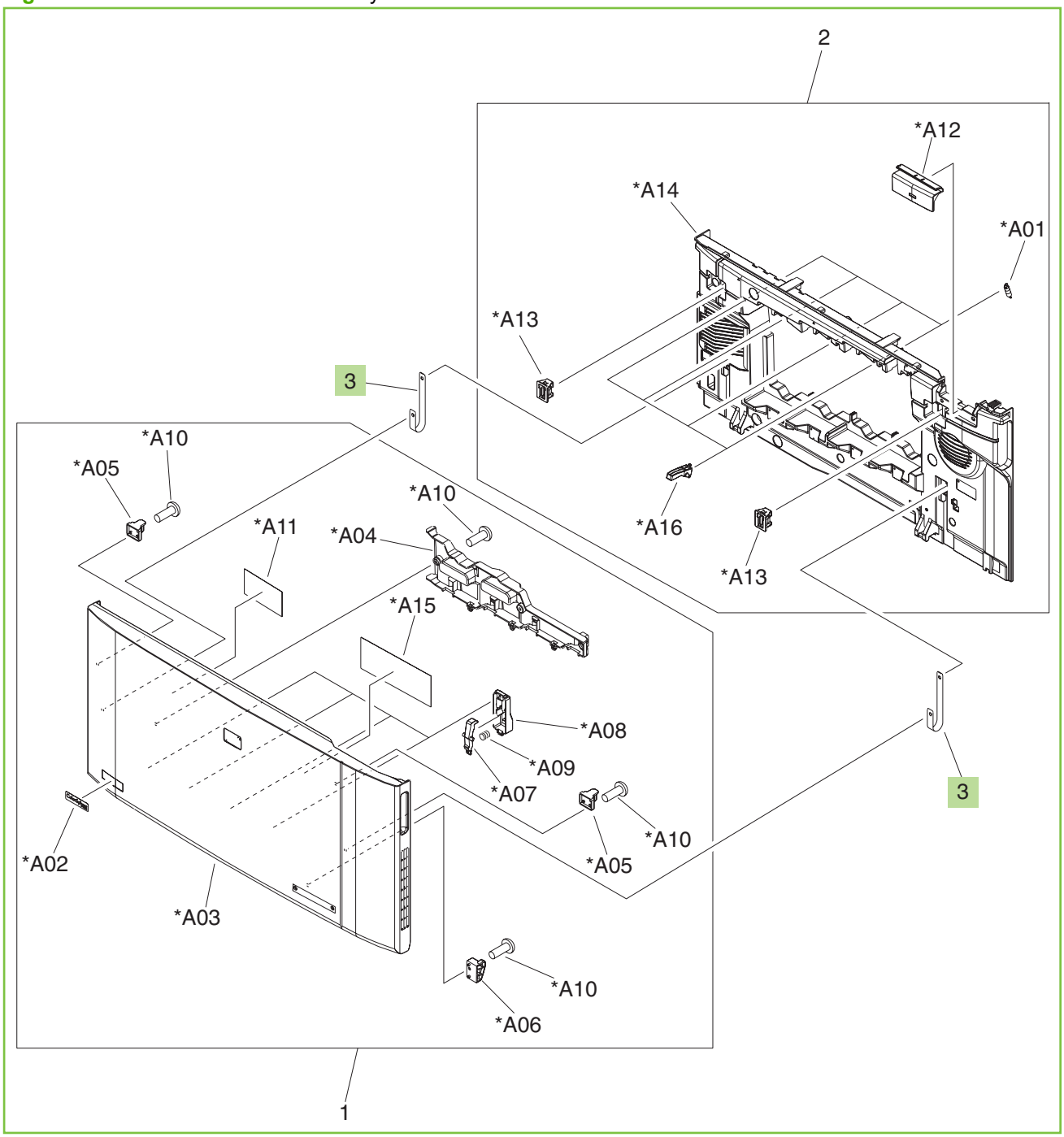


Table 9-2 Printer front-door assembly

Ref	Description	Part number	Qty
All	Front-door assembly	RM1-3356-000CN	1
3	Band, door	RC1-9043-000CN	2

NOTE: Only highlighted parts are orderable.

Figure 9-5 Printer right-door assembly

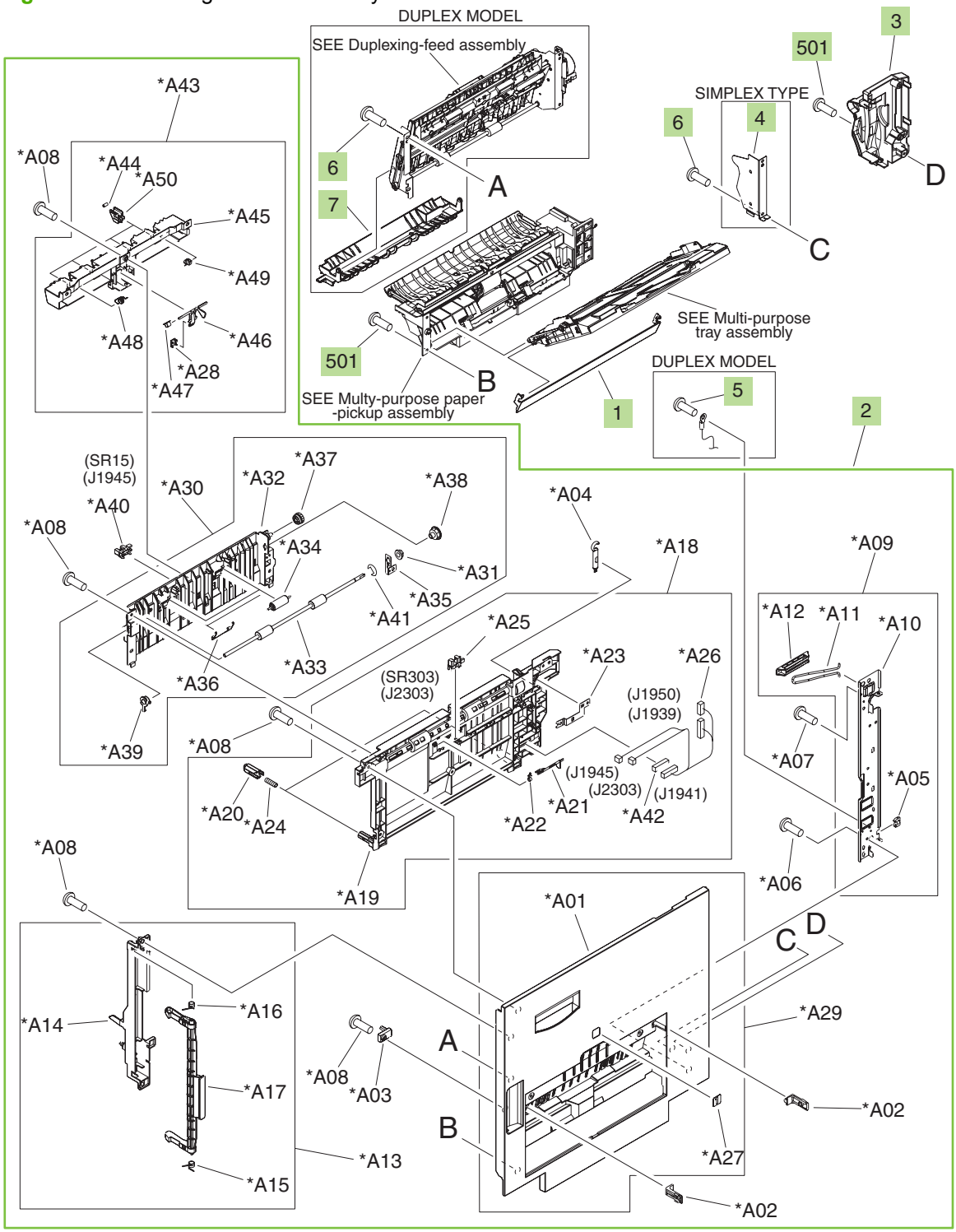


Table 9-3 Printer right-door assembly

Ref	Description	Part number	Qty
1	Cover, multi-purpose blanking	RC1-8527-000CN	1
2	Right-door sub-assembly	RM1-3333-000CN	1
3	Cover, motor	RC1-9511-000CN	1
4	Support, door-cover (simplex)	RC1-9014-000CN	1
5	Screw, RS, M3X6 (duplex)	XA9-1495-000CN	1
6	Screw, with washer, M4X12	XA9-1422-000CN	2 (simplex)
6	Screw, with washer, M4X12	XA9-1422-000CN	4 (duplex)
7	Guide, duplexing-feed, upper (duplex)	RL1-1335-000CN	1
501	Screw, tapping, truss-head, M4X10	XB4-7401-005CN	7

NOTE: Only highlighted parts are orderable.

Figure 9-6 Printer internal components (1 of 7)

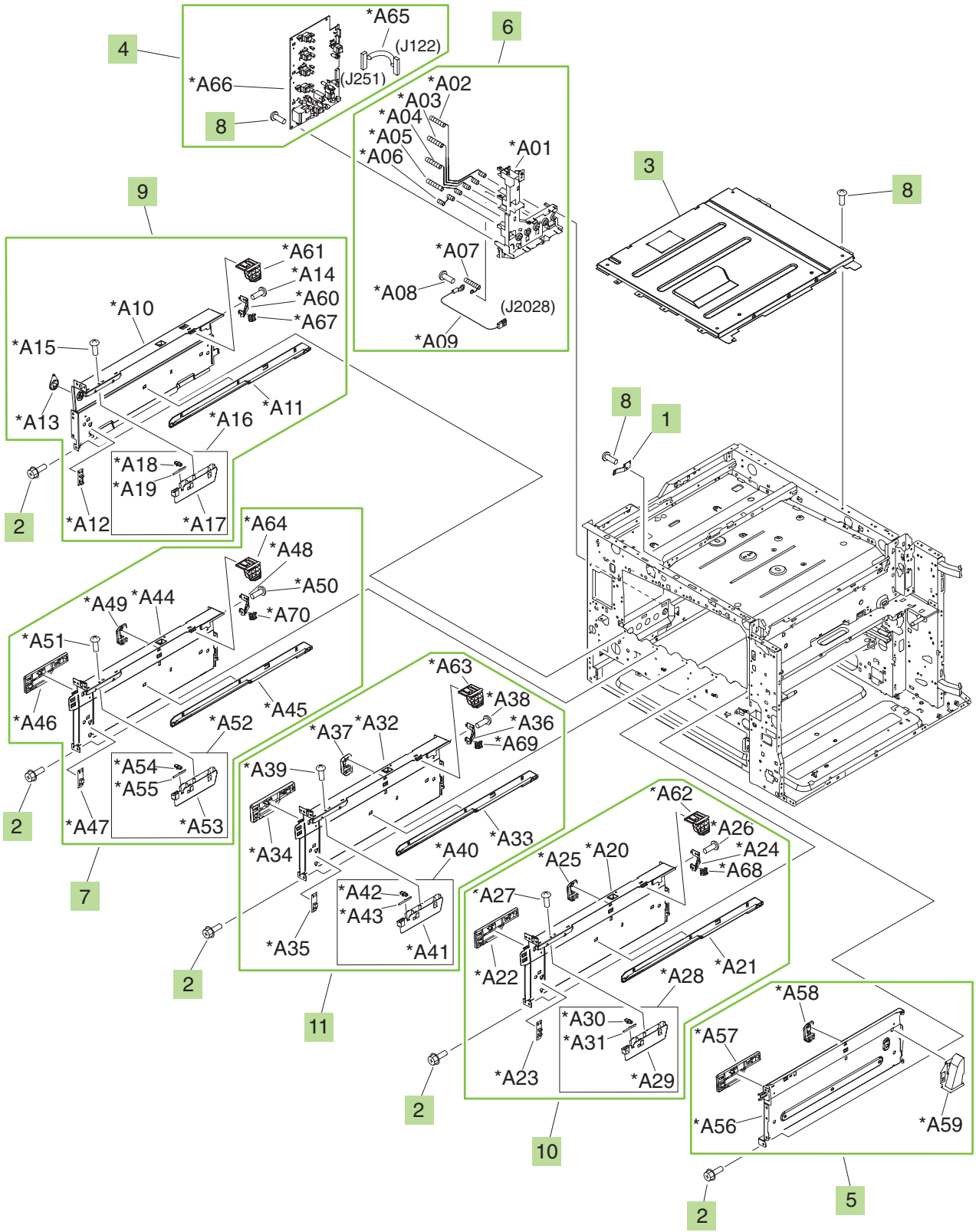


Table 9-4 Printer internal components (1 of 7)

Ref	Description	Part number	Qty
1	Spring, leaf	RC1-9233-000CN	1
2	Screw, RS, M3x8	XA9-1504-000CN	5
3	Top-cover assembly	RL1-1284-000CN	1
4	High-voltage transfer B PCA assembly	RM1-5475-000CN	1
5	Right-side wall assembly	RM1-3239-000CN	1
6	Transfer contact-holder assembly	RM1-3230-000CN	1
7	Partition-plate assembly, cyan	RM1-3238-000CN	1
8	Screw, RS, M3x6	XA9-1495-000CN	10
9	Left-side wall assembly	RM1-3233-000CN	1
10	Partition-plate assembly, yellow	RM1-3235-000CN	1
11	Partition-plate assembly, magenta	RM1-3237-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-7 Printer internal components (2 of 7)

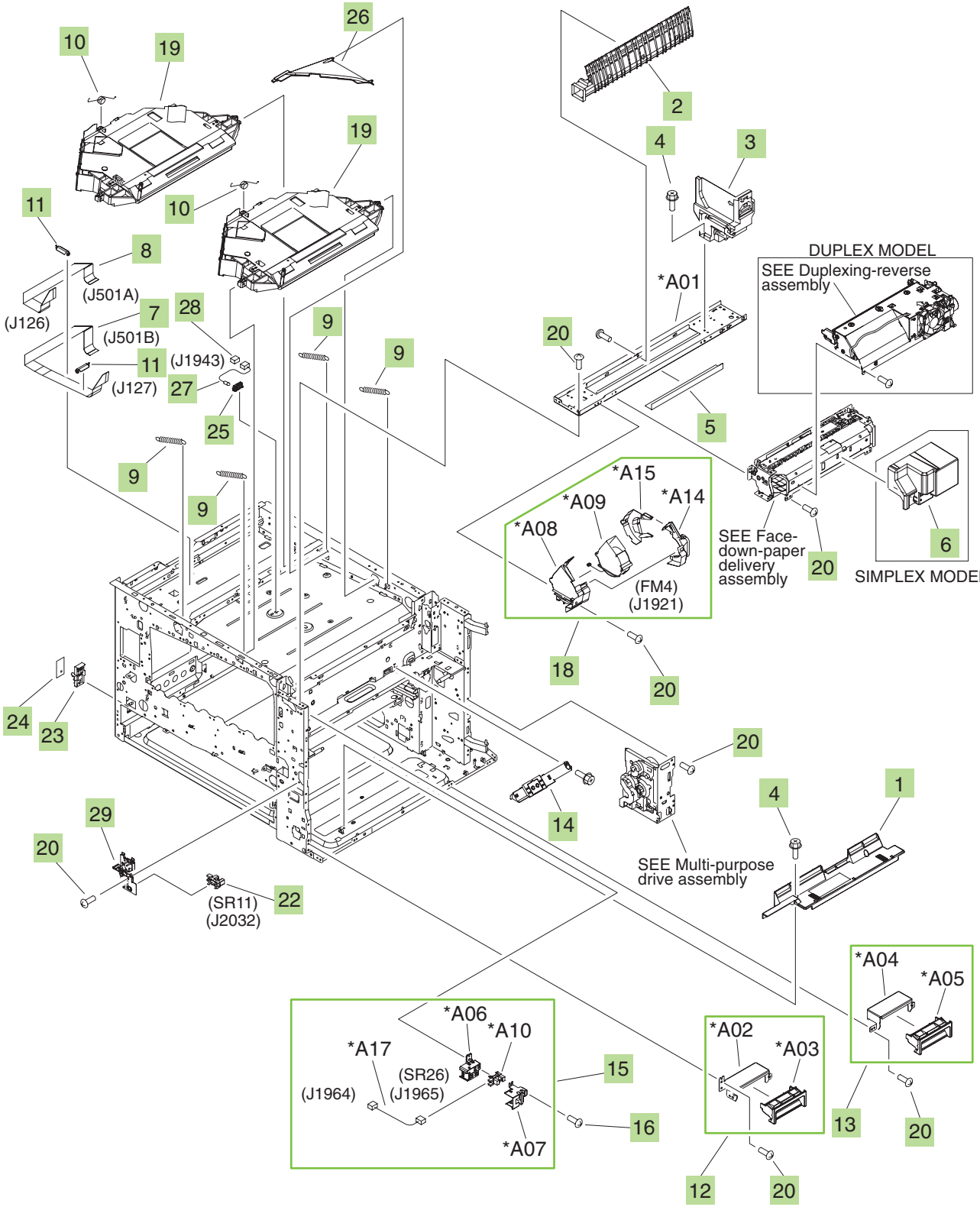


Table 9-5 Printer internal components (2 of 7)

Ref	Description	Part number	Qty
1	Guide, multi-purpose, right	RL1-1283-000CN	1
2	Guide, face-down inner	RC1-8959-000CN	1
3	Rail, reverse, rear	RC1-9206-000CN	1
4	Screw, RS, M3x8	XA9-1504-000CN	10
5	Sheet, fixing-crossmember	RC1-9232-000CN	1
6	Block, reinforcement (simplex)	RC1-9354-000CN	1
7	Cable, laser flexible flat	RK2-1354-000CN	1
8	Cable, laser flexible flat	RK2-1355-000CN	1
9	Spring, tension	RU5-2822-000CN	4
10	Spring, torsion	RU5-2825-000CN	2
11	Clamp, FFC	WT2-5912-000CN	2
12	Grip-support front assembly	RM1-3225-000CN	1
13	Grip-support rear assembly	RM1-3226-000CN	1
14	Thermopile case assembly	RM1-3232-000CN	1
15	Photosensor assembly	RM1-3250-000CN	1
16	Screw, RS, M3x8	XA9-1449-000CN	2
18	Fan assembly	RM1-3364-000CN	1
19	Scanner assembly kit (1 scanner assembly per kit) with service document	Q3931-67907	2
20	Screw, RS, M3x6	XA9-1495-000CN	20
22	Photo interrupter, TLP1243	WG8-5696-000CN	1
23	Holder, environment-sensor	RC1-9324-000CN	1
24	Sensor unit, humidity	RK2-2376-000CN	1
25	Holder, scanner-thermistor	RC1-9260-000CN	1
26	Duct, scanner	RC1-9334-000CN	1
27	Thermistor unit	RK2-1363-000CN	1
28	Connector, snap-tight	VS1-7177-002CN	1
29	Interlock-switch assembly	RM1-3589-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-8 Printer internal components (3 of 7)

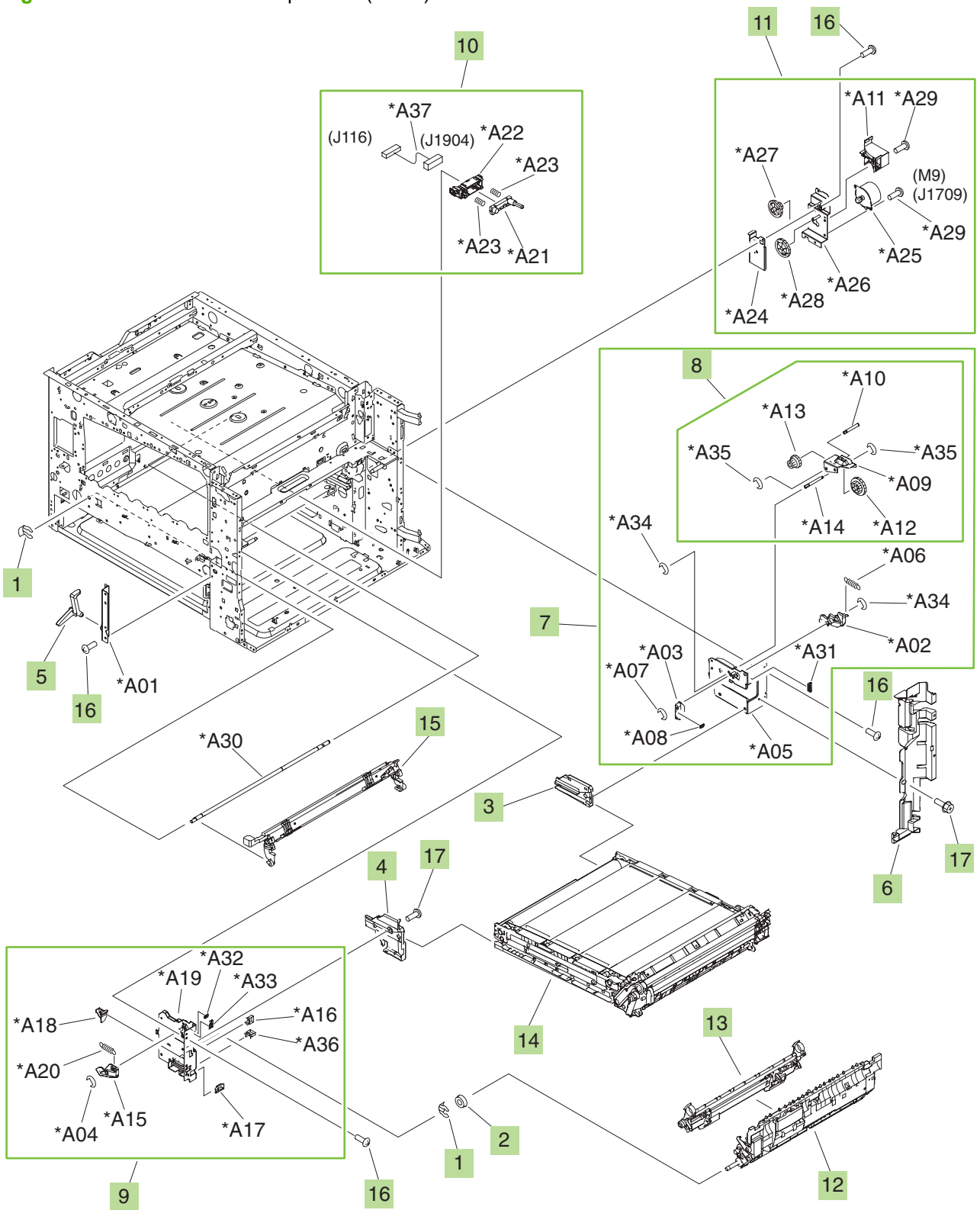


Table 9-6 Printer internal components (3 of 7)

Ref	Description	Part number	Qty
1	Retainer	RC1-8511-000CN	2
2	Bushing	RC1-8734-000CN	1
3	Guide, intermediate transfer belt (ITB)-entrance, rear	RC1-9186-000CN	1
4	Guide, intermediate transfer belt (ITB)-entrance, front	RC1-9185-000CN	1
5	Arm, 1st-estrangement	RC1-9189-000CN	1
6	Cover, internal, right	RC1-9348-000CN	1
7	Intermediate transfer belt (ITB) lock-support rear assembly	RM1-3215-000CN	1
9	Intermediate transfer belt (ITB) lock-support front assembly	RM1-3228-000CN	1
10	Intermediate transfer belt (ITB)-drawer assembly	RM1-3240-000CN	1
11	Intermediate transfer belt (ITB) estrangement-drive assembly	RM1-3280-000CN	1
12	Registration 2nd-transfer assembly kit with service document	Q3931-67909	1
13	2nd-transfer-roller assembly	RM1-3319-000CN	1
14	Intermediate transfer belt (ITB) assembly	RM1-3307-000CN	1
15	Color-plane-registration sensor assembly	RM1-3258-000CN	1
16	Screw, RS, M3x6	XA9-1495-000CN	10
17	Screw, RS, M3x8	XA9-1504-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-9 Printer internal components (4 of 7)

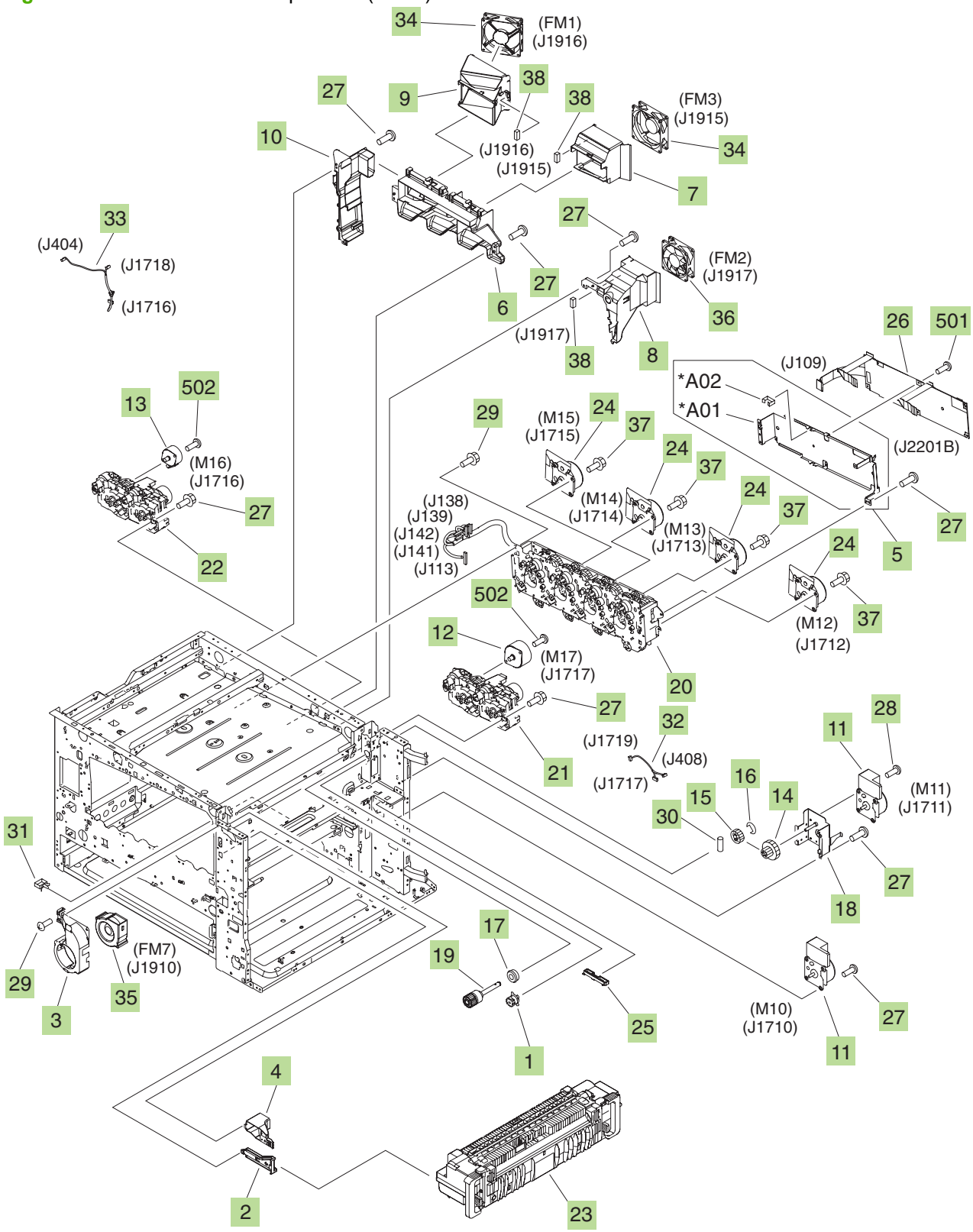


Table 9-7 Printer internal components (4 of 7)

Ref	Description	Part number	Qty
1	Damper, gear	RC1-8925-000CN	1
2	Rail, fixing, front	RC1-8931-000CN	1
3	Duct, air	RC1-8961-000CN	1
4	Duct, face-down joint	RC1-8964-000CN	1
5	Tag PCA-holder assembly	RM1-4402-000CN	1
6	Duct, cartridge	RC1-9276-000CN	1
7	Holder, cartridge-fan	RC1-9277-000CN	1
8	Holder, fixing-fan	RC1-9278-000CN	1
9	Holder, scanner-fan	RC1-9279-000CN	1
10	Duct, scanner-fan	RC1-9309-000CN	1
11	DC motor assembly	RM1-4519-000CN	2
12	Motor, stepping, DC	RK2-1366-000CN	1
13	Motor, stepping, DC	RK2-1370-000CN	1
14	Gear, 83T/25T	RU5-0790-000CN	1
15	Gear, 34T	RU5-0791-000CN	1
16	Ring, E	XD9-0234-000CN	1
17	Bearing, ball	XG9-0586-000CN	1
18	Plate, fixing-motor	RL1-1216-000CN	1
19	Fixing one-way gear assembly	RM1-3247-000CN	1
20	Main drive-unit kit with service document	Q3931-67911	1
21	Toner cartridge drive assembly kit with service document	Q3931-67912	1
22	Toner cartridge drive assembly kit with service document	Q3931-67913	1
23	Fixing assembly kit, 110-127V	Q3931-67914	1
24	Fixing assembly kit, 220-240V	Q3931-67915	1
24	Drum-motor assembly	RM1-3286-000CN	4
25	Rail, fixing, rear	RC1-8939-000CN	1
26	Memory-tag PCA assembly	RM1-3585-000CN	1
27, 28	Screw, RS, M3x6	XA9-1495-000CN	14
29	Screw, RS, M3x8	XA9-1504-000CN	10
30	Pin, dowel	XD9-0240-000CN	1
31	Saddle, wire	WT2-5694-000CN	17
32	Toner-motor cable	RM1-3383-000CN	1
33	Toner-motor cable	RM1-3385-000CN	1
34	Fan	RK2-1377-000CN	2

Table 9-7 Printer internal components (4 of 7) (continued)

Ref	Description	Part number	Qty
35	Fan	RK2-1382-000CN	1
36	Fan	RK2-1378-000CN	1
37	Screw, TP, M3x6	XA9-1159-000CN	16
38	Connector, snap-tight	VS1-7177-003CN	3
501	Screw, with washer, M3x6	XB2-8300-607CN	5
502	Screw, machined, truss-head, M3x4	XB1-2300-407CN	4

NOTE: Only highlighted parts are orderable.

Figure 9-10 Printer internal components (5 of 7)

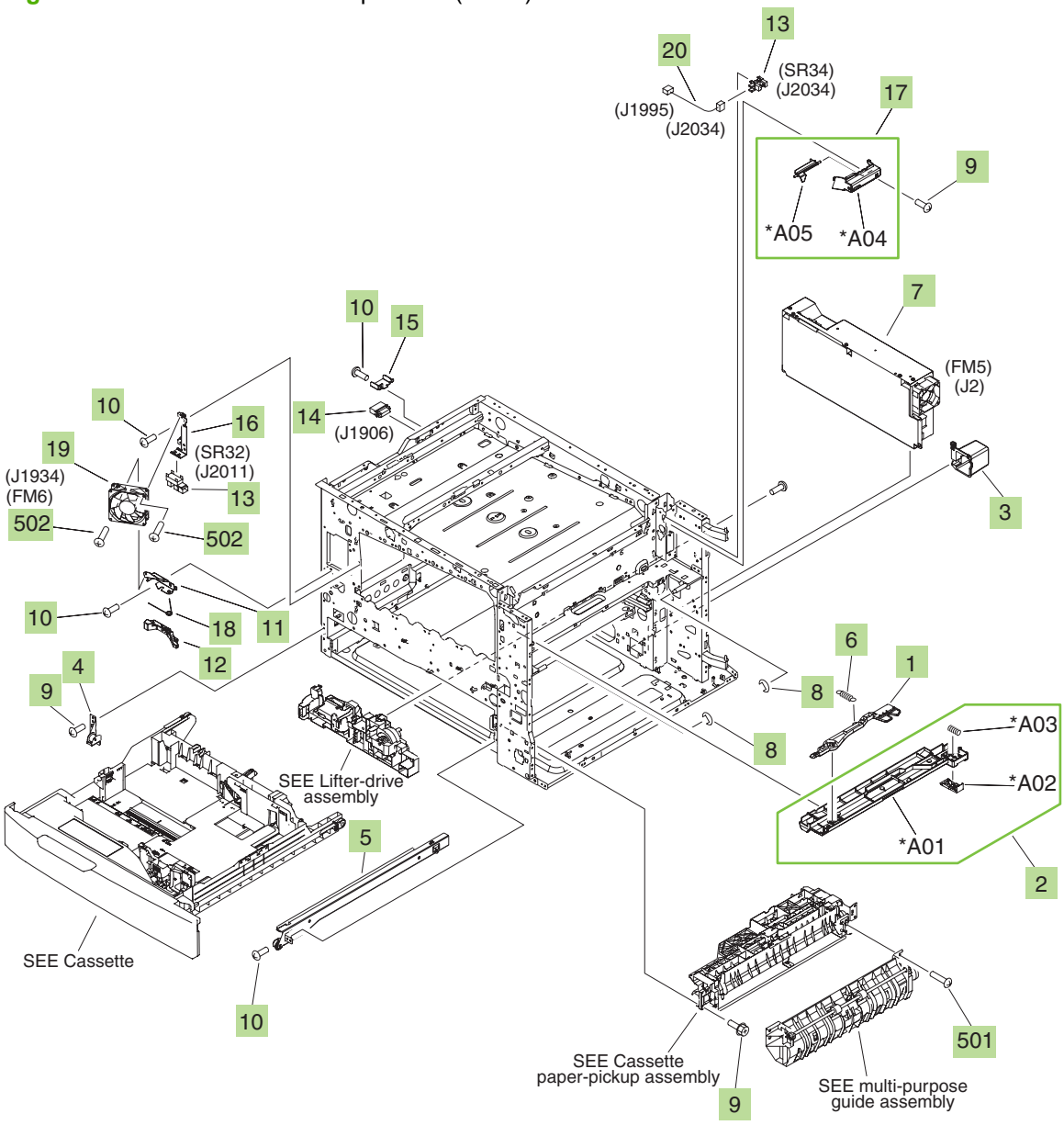


Table 9-8 Printer internal components (5 of 7)

Ref	Description	Part number	Qty
1	Lever, paper-sensing	RC1-8928-000CN	1
2	Intermediate transfer belt (ITB) duct assembly	RM1-4401-000CN	1
3	Cover, cassette back-end	RC1-9201-000CN	1
4	Rail, left, top	RL1-1213-000CN	1
5	Rail, cassette, right	RL1-1215-000CN	1
6	Spring, tension	RU5-2796-000CN	1
7	Low-voltage power-supply assembly	RM1-3594-000CN	1
8	Ring, E	XD9-0234-000CN	2
9	Screw, RS, M3x8	XA9-1504-000CN	10
10	Screw, RS, M3x6	XA9-1495-000CN	10
11	Plate, fan-fixing, front	RC1-9190-000CN	1
12	Lever, door-interlock shutter	RC1-9220-000CN	1
13	Photo interrupter, TLP1243	WG8-5696-000CN	2
14	Connector, drawer	VS1-7258-000CN	1
15	Plate, drawer-guard	RC1-9235-000CN	1
16	Plate, sensor, front	RC1-9246-000CN	1
17	Guide-sensor assembly	RM1-4400-000CN	1
18	Spring, torsion	RC1-9244-000CN	1
19	Fan	RK2-1378-000CN	1
20	Cable, fixing open-sensor	RM1-5029-000CN	1
501	Screw, tapping, truss-head, M4x10	XB4-7401-005CN	4
502	Screw, TP, M3x30	XB6-7303-005CN	2

NOTE: Only highlighted parts are orderable.

Figure 9-11 Printer internal components (6 of 7)

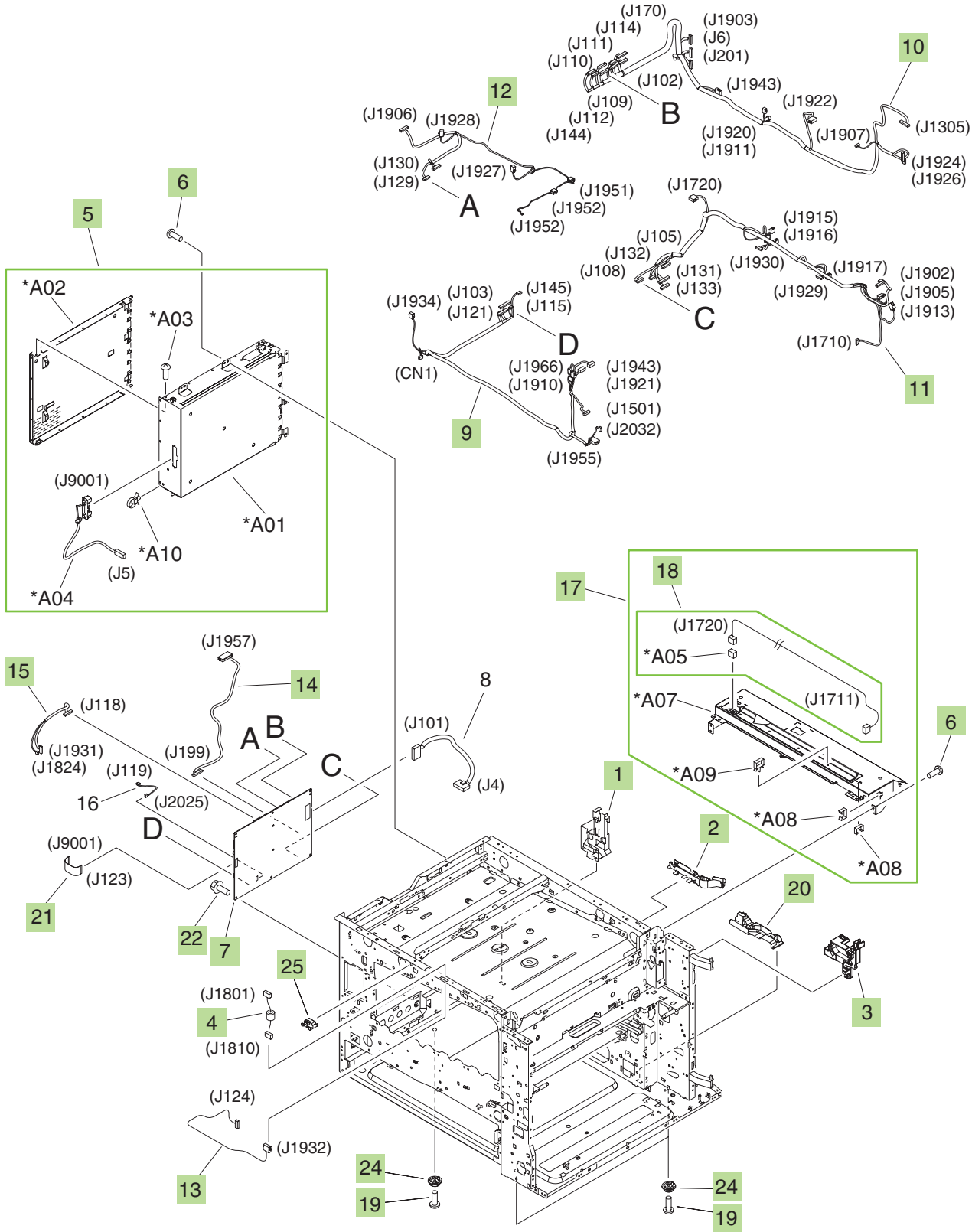


Table 9-9 Printer internal components (6 of 7)

Ref	Description	Part number	Qty
1	Guide, cable, C	RC1-9308-000CN	1
2	Guide, cable, D	RC1-9312-000CN	1
3	Guide, cable, E	RC1-9318-000CN	1
4	Panel cable	RM1-3389-000CN	1
5	Formatter-case assembly	RM1-3253-000CN	1
6	Screw, RS, M3x6	XA9-1495-000CN	20
7	DC-controller kit with service document	Q3931-67916	1
8	DC-controller power cable	RM1-3610-000CN	1
9	Front cable	RM1-3617-000CN	1
10	Rear-lower cable	RM1-3618-000CN	1
11	Rear-upper cable	RM1-3619-000CN	1
12	Scanner-joint cable	RM1-3620-000CN	1
13	Panel-joint cable	RM1-3622-000CN	1
14	Interface-joint cable	RM1-3623-000CN	1
15	Color-plane-registration joint cable	RM1-3624-000CN	1
17	Rear-cover-mount plate assembly	RM1-3354-000CN	1
18	Fixing-motor cable	RM1-3217-000CN	1
19	Screw, TP, M4x8	XA9-1300-000CN	3
20	Guide, cable, B	RC1-9307-000CN	1
21	Cable, flexible flat	RK2-1356-000CN	1
22	Screw, RS, M3x8	XA9-1449-000CN	8
24	Foot, rubber	RC1-9208-000CN	3
25	Guide, cable	RC1-9329-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-12 Printer internal components (7 of 7)

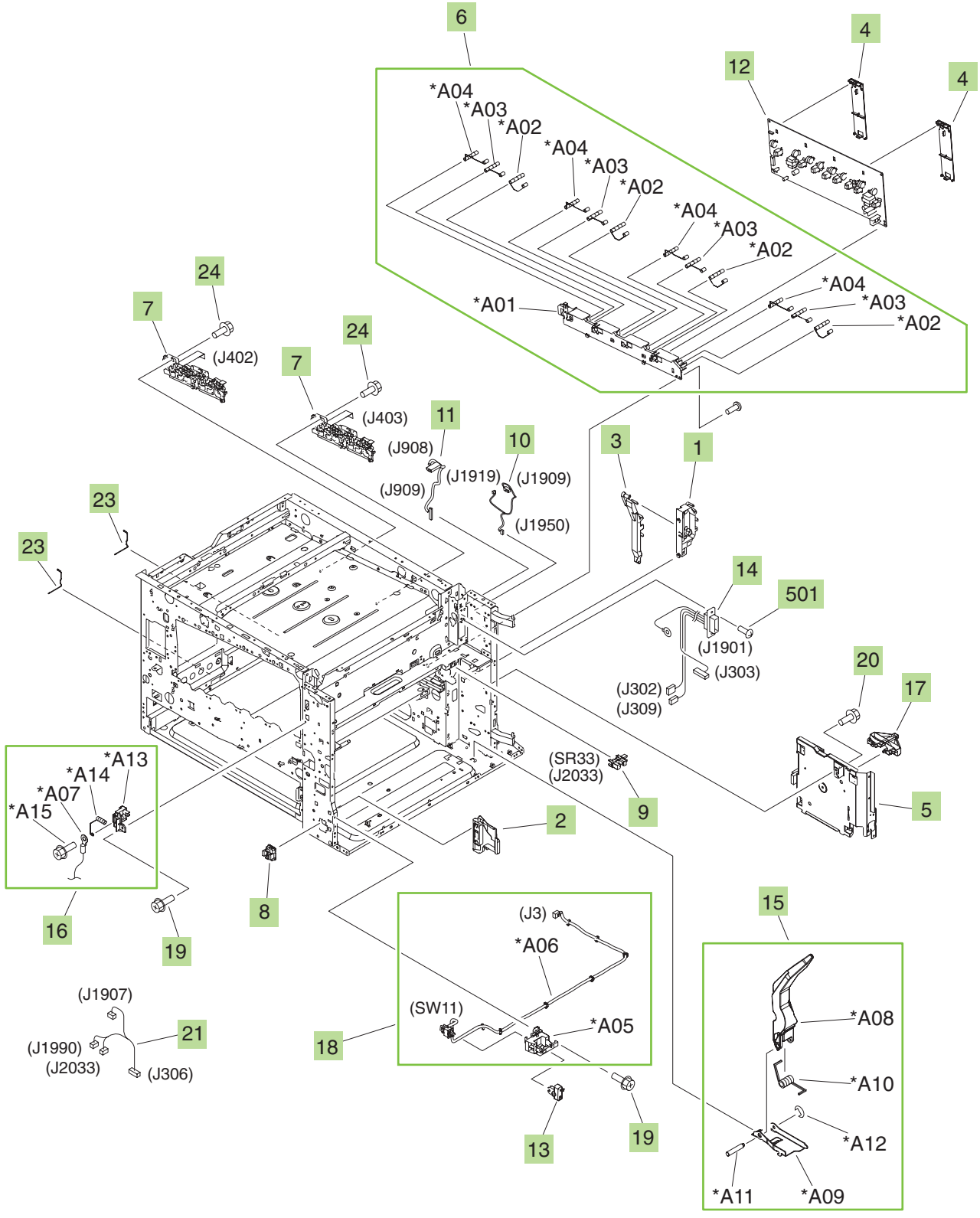


Table 9-10 Printer internal components (7 of 7)

Ref	Description	Part number	Qty
1	Guide, cable, A	RC1-9306-000CN	1
2	Cover, main-switch	RC1-9211-000CN	1
3	Guide, cable, F	RC1-9323-000CN	1
4	Plate, HVT-A (high-voltage transmission) guard	RC1-9326-000CN	2
5	Fixing power-supply assembly	RM1-3218-000CN	1
6	Cartridge contact-holder assembly	RM1-3254-000CN	1
7	Cartridge-interface assembly kit with service document	Q3931-67917	1
8	Holder, high-voltage-connector	RC1-9328-000CN	1
9	Photo interrupter, TLP1243	WG8-5696-000CN	1
10	Face-down unit-1 cable	RM1-3390-000CN	1
11	Face-down unit-2 cable	RM1-3391-000CN	1
12	High-voltage-transfer A PCA assembly	RM1-3582-000CN	1
13	Button, main-switch	RC1-9300-000CN	1
14	Fixing-joint cable	RM1-3612-000CN	1
15	T2 guide-arm assembly	RM1-4411-000CN	1
16	Fixing-bias cable assembly	RM1-4409-000CN	1
17	Guide, fixing-cable	RC1-9332-000CN	1
18	Main switch-holder assembly	RM1-3252-000CN	1
19	Screw, RS, M3x8	XA9-1504-000CN	47
20	Screw, RS, M3x6	XA9-1495-000CN	54
21	Cable TP/T2 open-sensor	RM1-5030-000CN	1
23	Clamp, formatter cable	RC1-9261-000CN	2
24	Screw, RS, M13x12	XA9-1801-000CN	6
501	Screw, machined, truss-head, M4x8	XB1-2400-805CN	2

NOTE: Only highlighted parts are orderable.

Figure 9-13 Printer multi-purpose-drive assembly

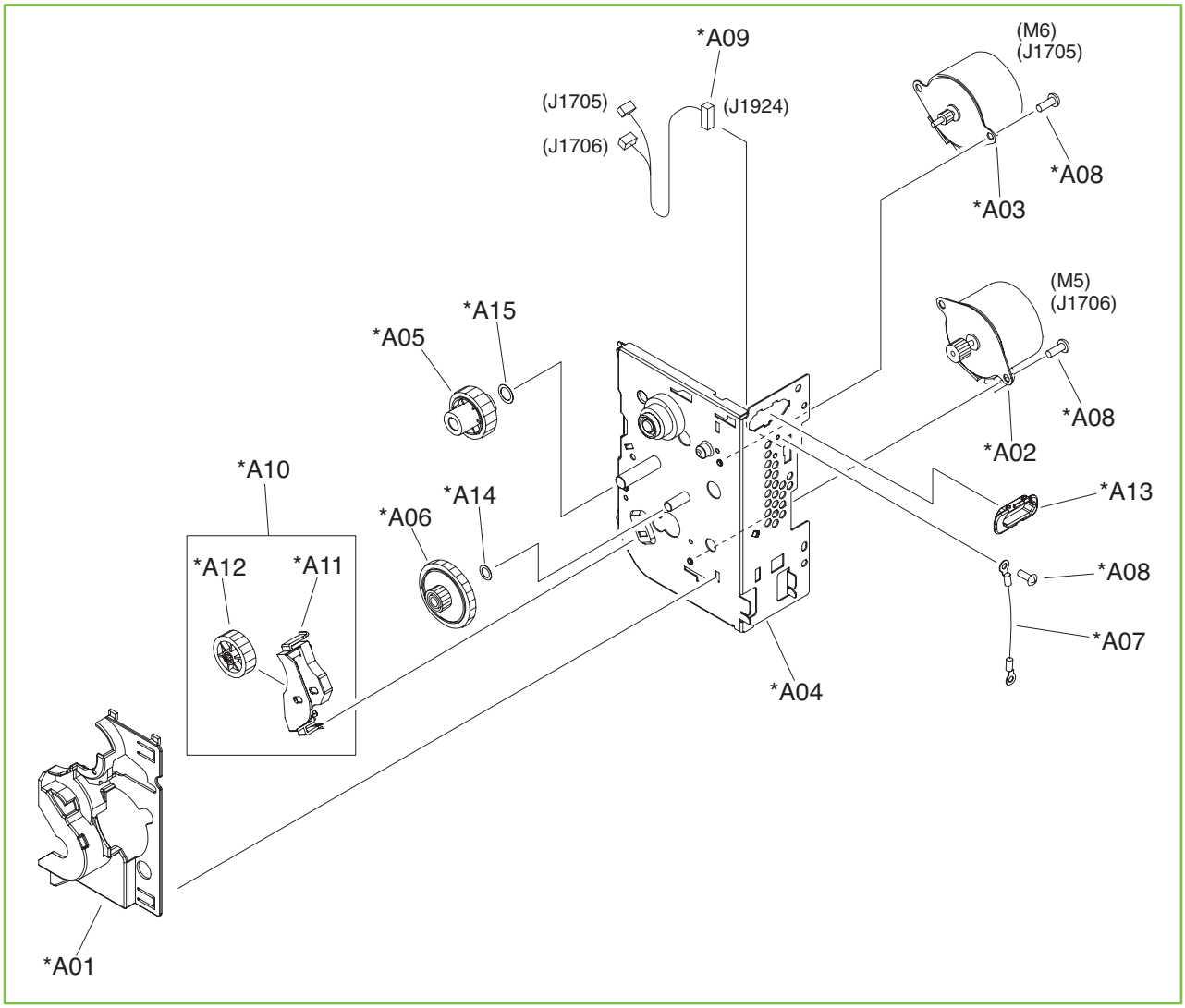


Table 9-11 Printer multi-purpose-drive assembly

Ref	Description	Part number	Qty
All	Multi-purpose-drive assembly	RM1-3366-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-14 Printer lifter-drive assembly

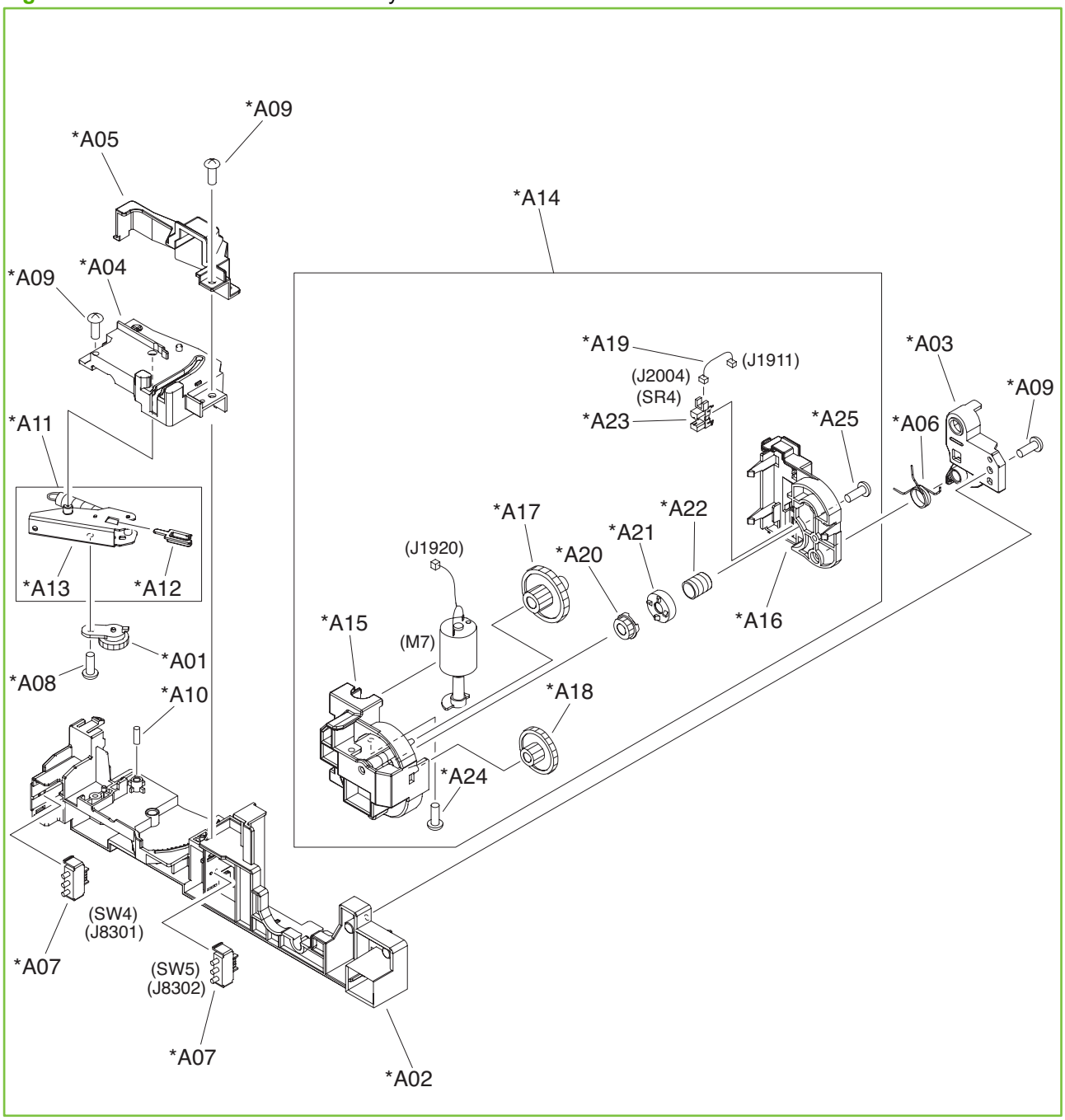


Table 9-12 Printer lifter-drive assembly

Ref	Description	Part number	Qty
All	Lifter-drive-assembly kit	RM1-3222-020CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-15 Printer cassette

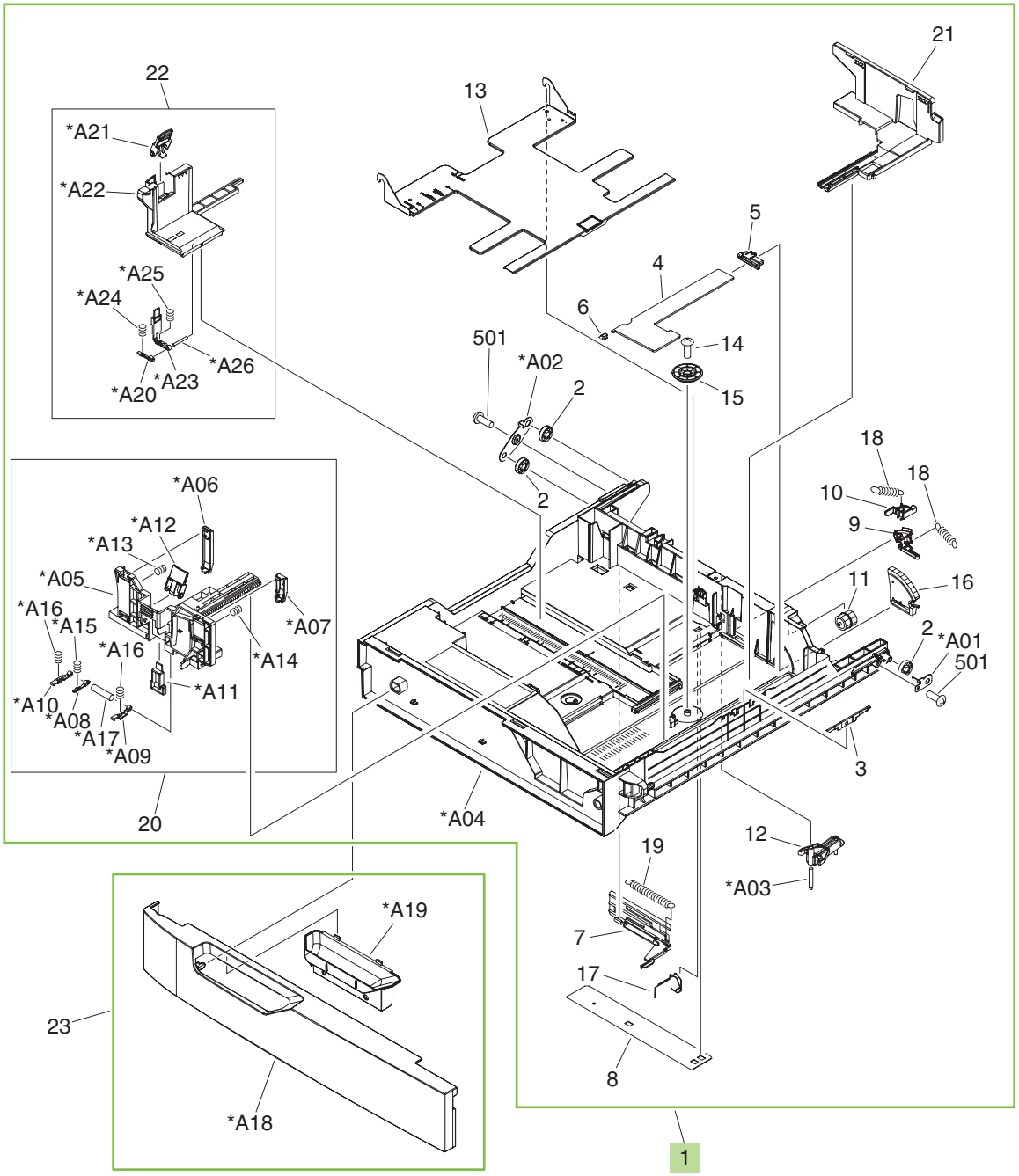


Table 9-13 Printer cassette

Ref	Description	Part number	Qty
1, 23	Cassette-assembly kit	Q3931-67918	1

NOTE: Only highlighted parts are orderable.

Figure 9-16 Printer cassette paper-pickup assembly

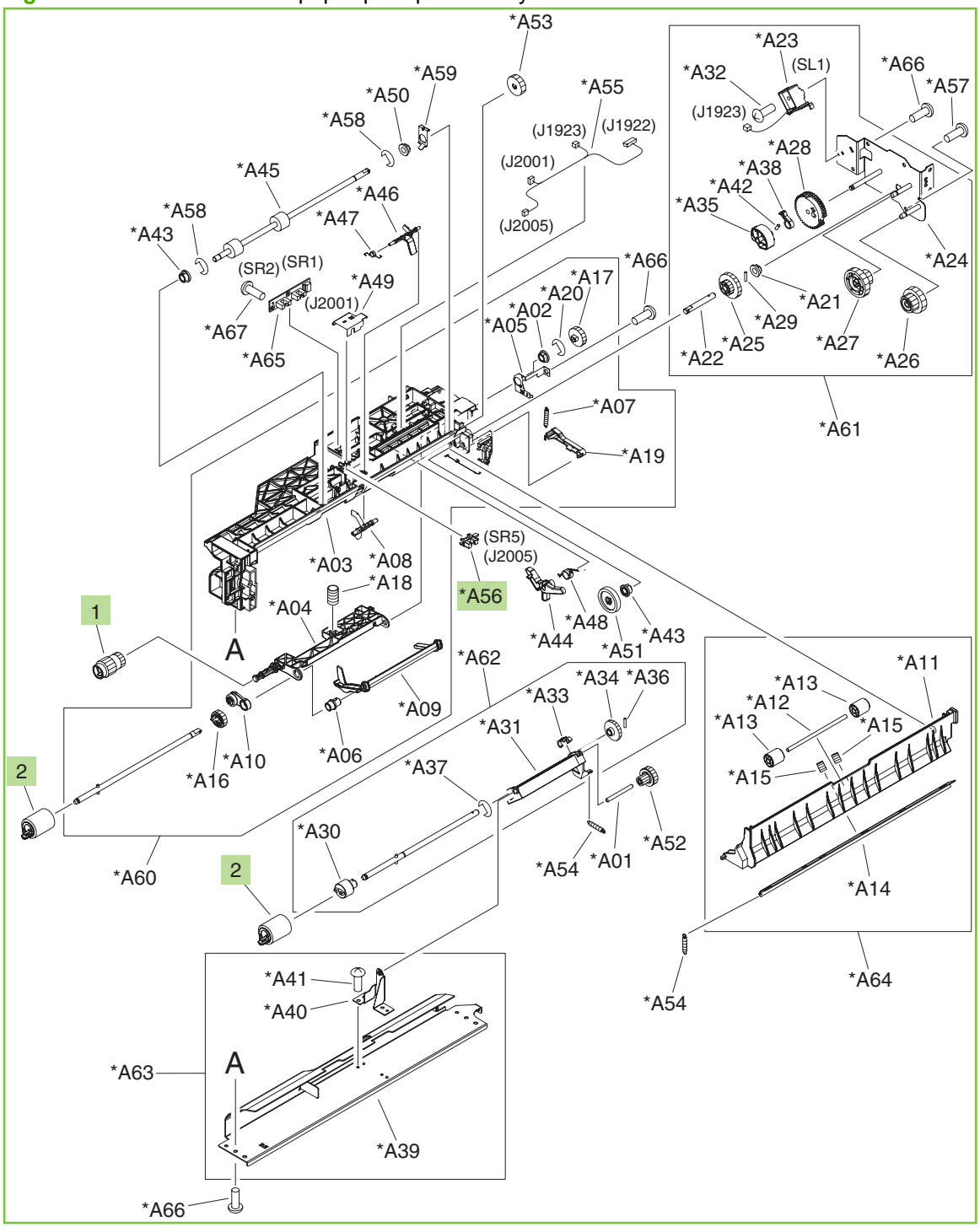


Table 9-14 Printer cassette paper-pickup assembly

Ref	Description	Part number	Qty
All	Cassette paper-pickup assembly (includes 1 pick and 2 feed rollers)	RM1-3206-000CN	1
1, 2	Tray 2 pickup, feed-roller kit	Q3931-67919	1

NOTE: Only highlighted parts are orderable.

Figure 9-17 Printer multi-purpose paper-pickup assembly

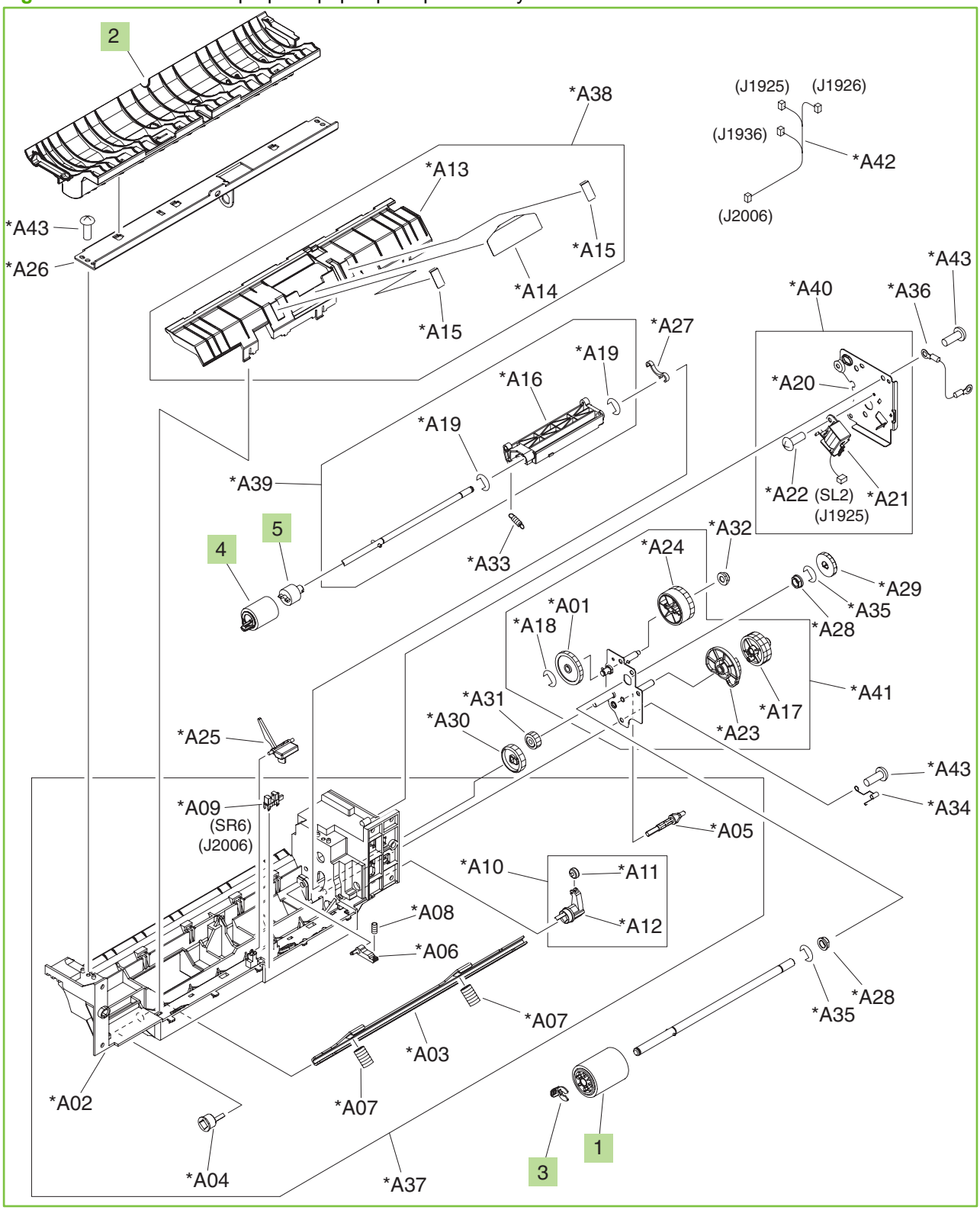


Table 9-15 Printer multi-purpose paper-pickup assembly

Ref	Description	Part number	Qty
All	Multi-purpose paper-pickup assembly	RM1-3345-000CN	1
1, 4	Tray 1 pickup, retard-roller kit	Q3931-67920	1
2	Guide, multi-purpose, upper	RC1-8526-000CN	1
3	Retainer	RC1-8511-000CN	1
5	Limiter, torque	RC1-8519-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-18 Printer multi-purpose-tray assembly

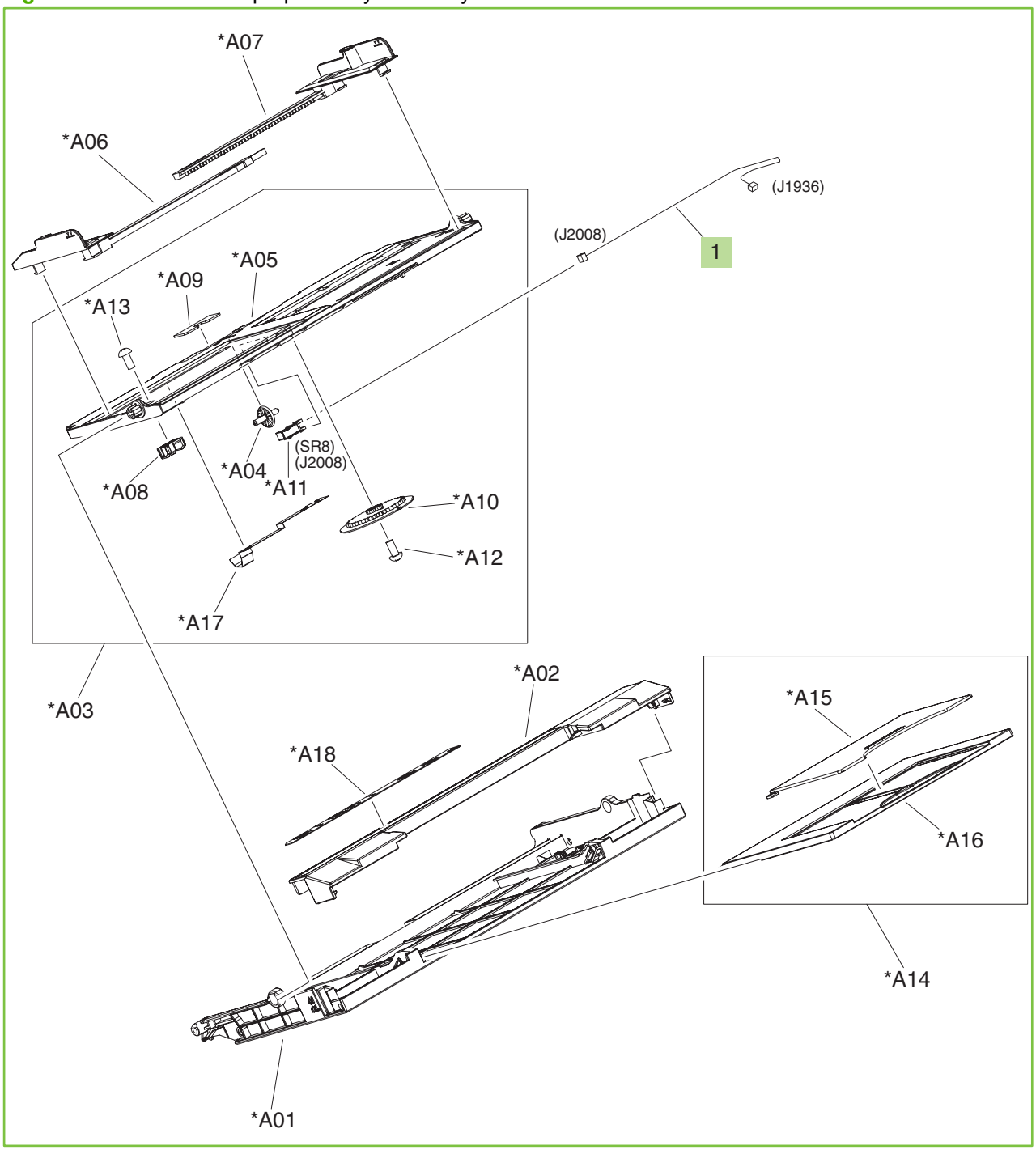


Table 9-16 Printer multi-purpose-tray assembly

Ref	Description	Part number	Qty
All	Multi-purpose-tray assembly	RM1-3341-000CN	1
1	Multi-tray cable	RM1-3630-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-19 Printer multi-purpose-guide assembly

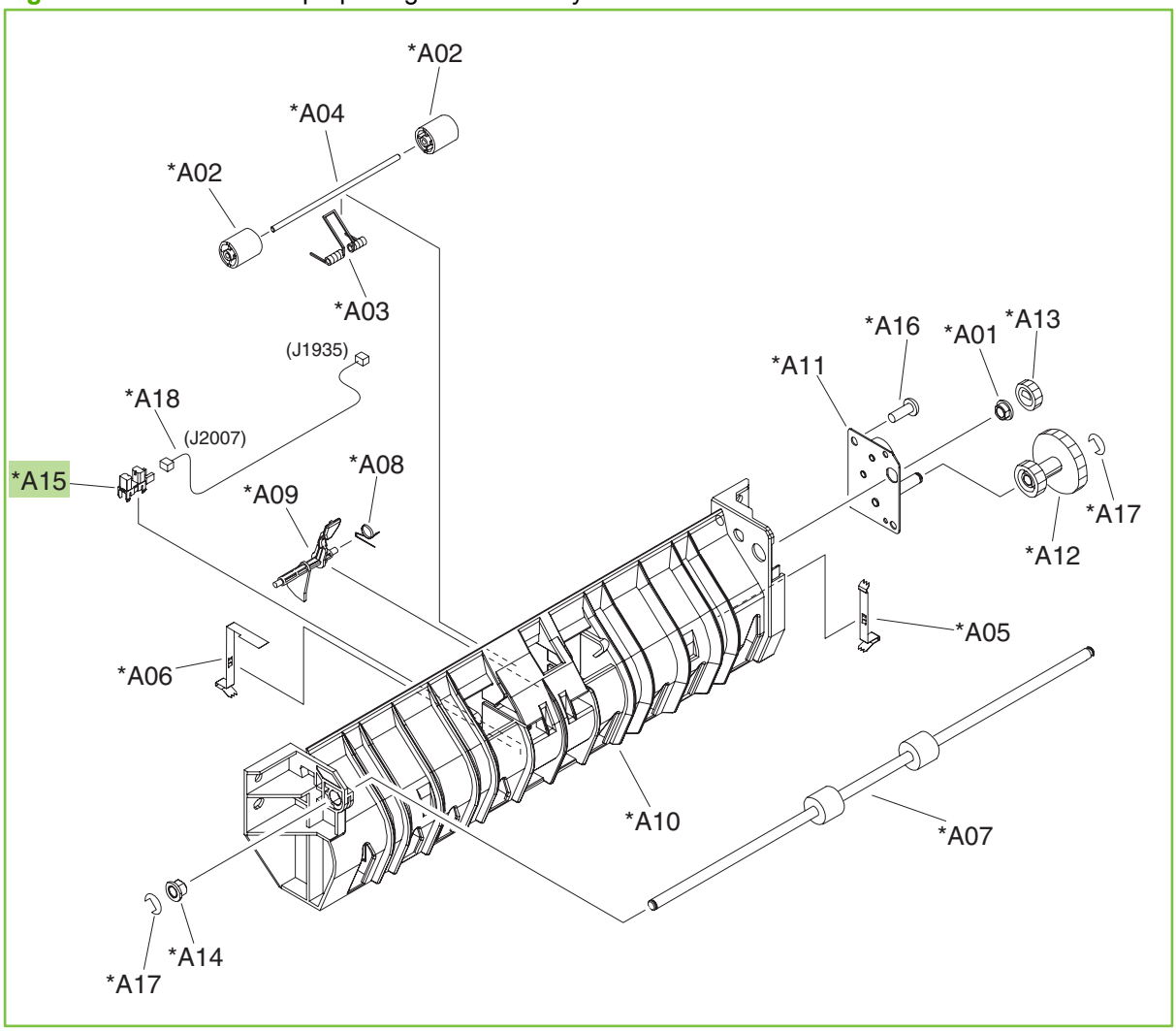


Table 9-17 Printer multi-purpose-guide assembly

Ref	Description	Part number	Qty
All	Multi-purpose-guide assembly	RM1-3291-000CN	1
A15	Photo interrupter, TLP1243	WG8-5696-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-20 Printer face-down paper-delivery assembly

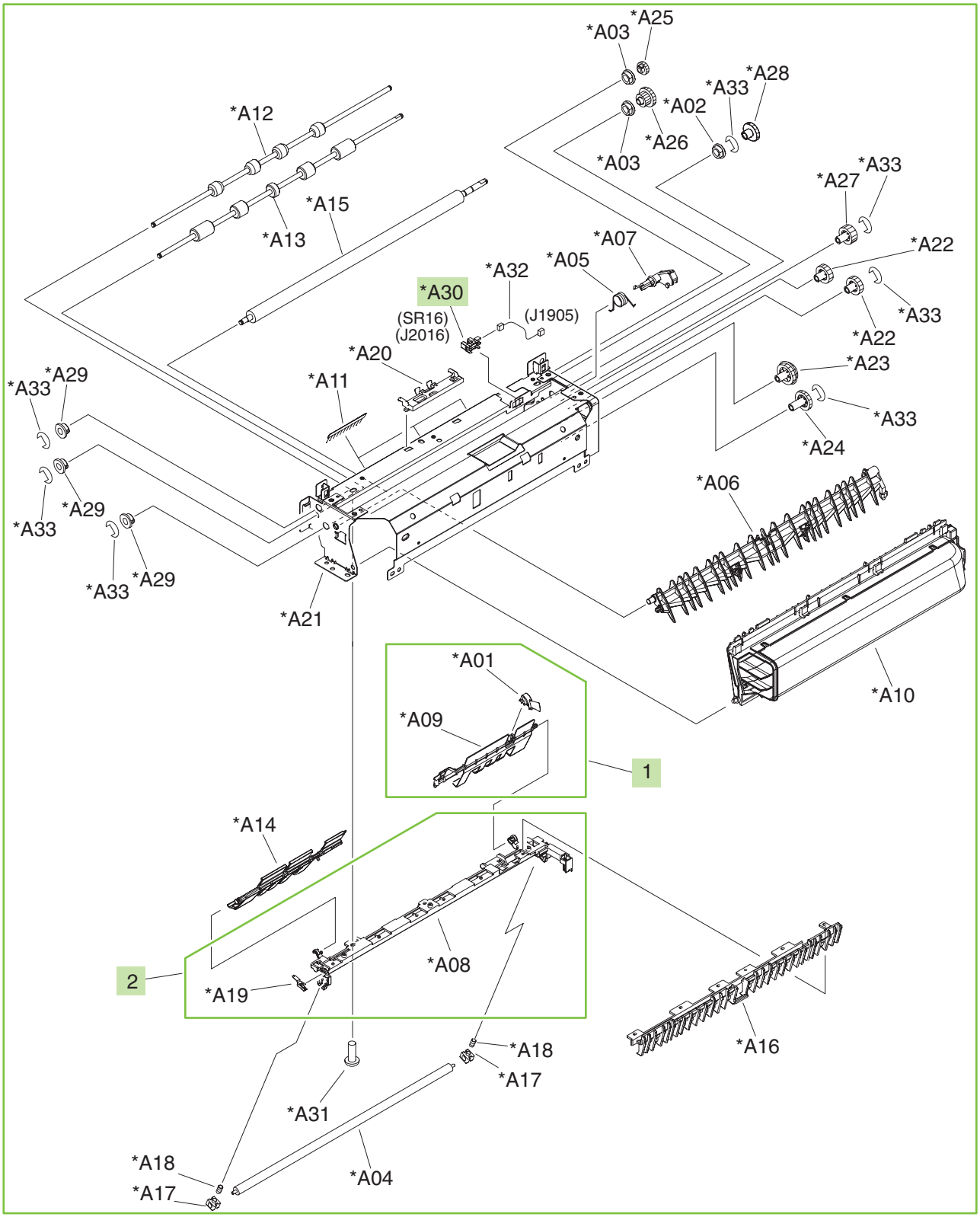


Table 9-18 Printer face-down paper-delivery assembly

Ref	Description	Part number	Qty
All	Face-down paper-delivery assembly	RM1-3293-000CN	1
1	Face-down full-flag assembly	RM1-4391-000CN	1
2	Paper-delivery-guide assembly	RM1-4407-000CN	1
A30	Photo interrupter, TLP1243	WG8-5696-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-21 Printer duplexing-reverse assembly (duplex model)

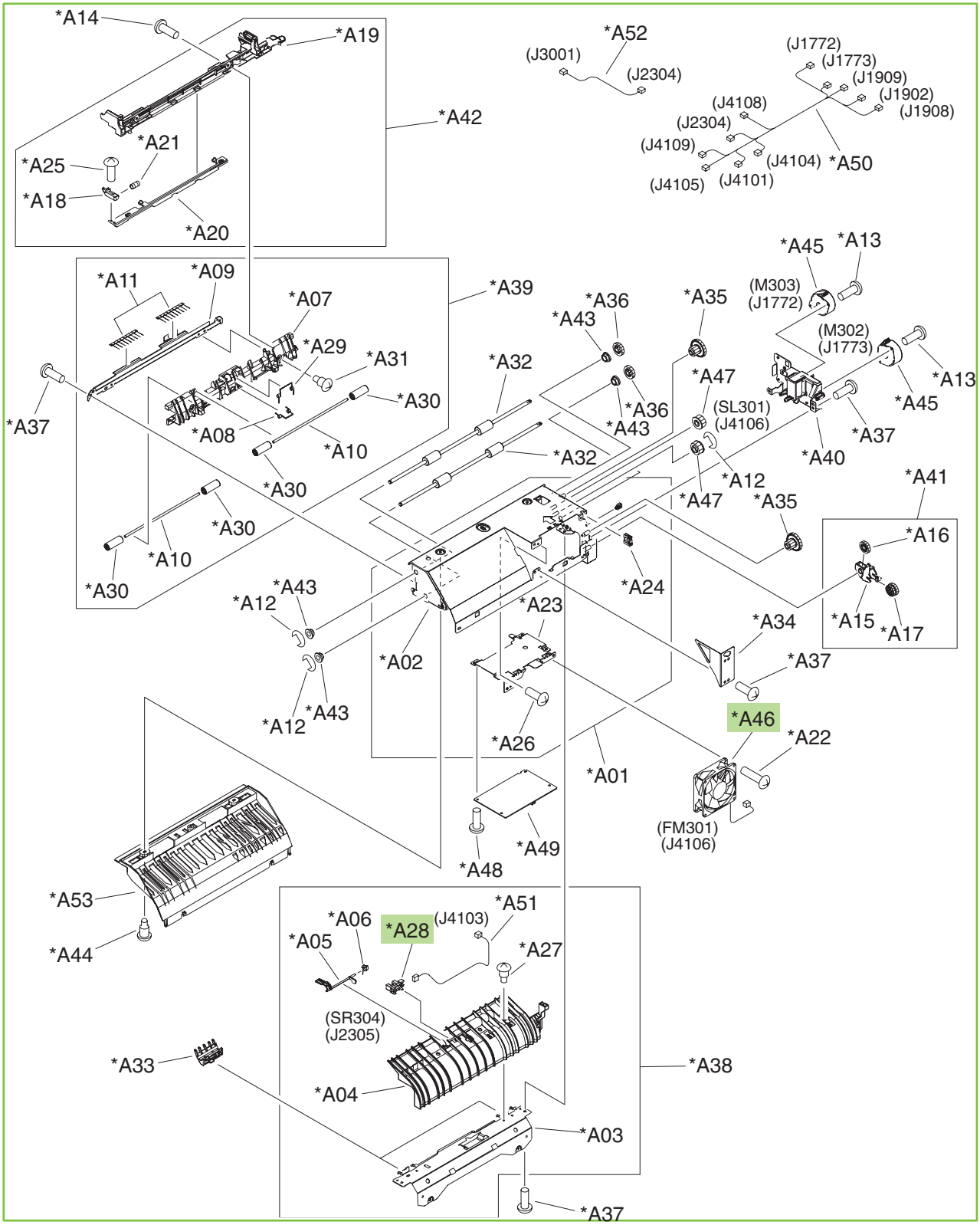


Table 9-19 Printer duplexing-reverse assembly

Ref	Description	Part number	Qty
All	Duplexing-reverse assembly	RM1-3652-000CN	1
A28	Photo interrupter, TLP1243	WG8-5696-000CN	1
A46	Fan	RK2-1378-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-22 Printer duplexing-tray assembly (duplex model)

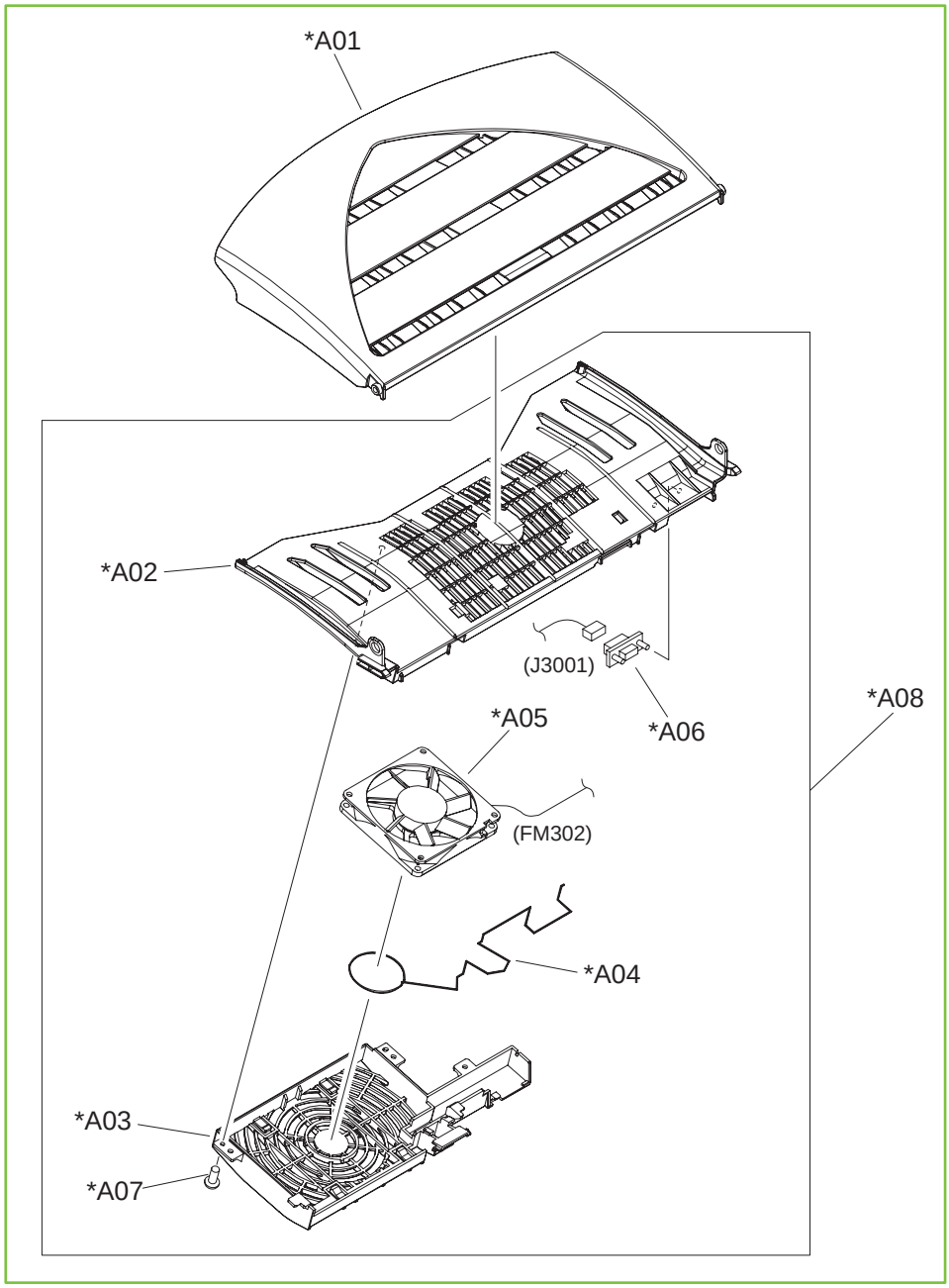


Table 9-20 Printer duplexing-tray assembly

Ref	Description	Part number	Qty
All	Duplex-switchback tray assembly kit	Q3931-67921	1

NOTE: Only highlighted parts are orderable.

Figure 9-23 Printer duplexing-feed assembly (duplex model)

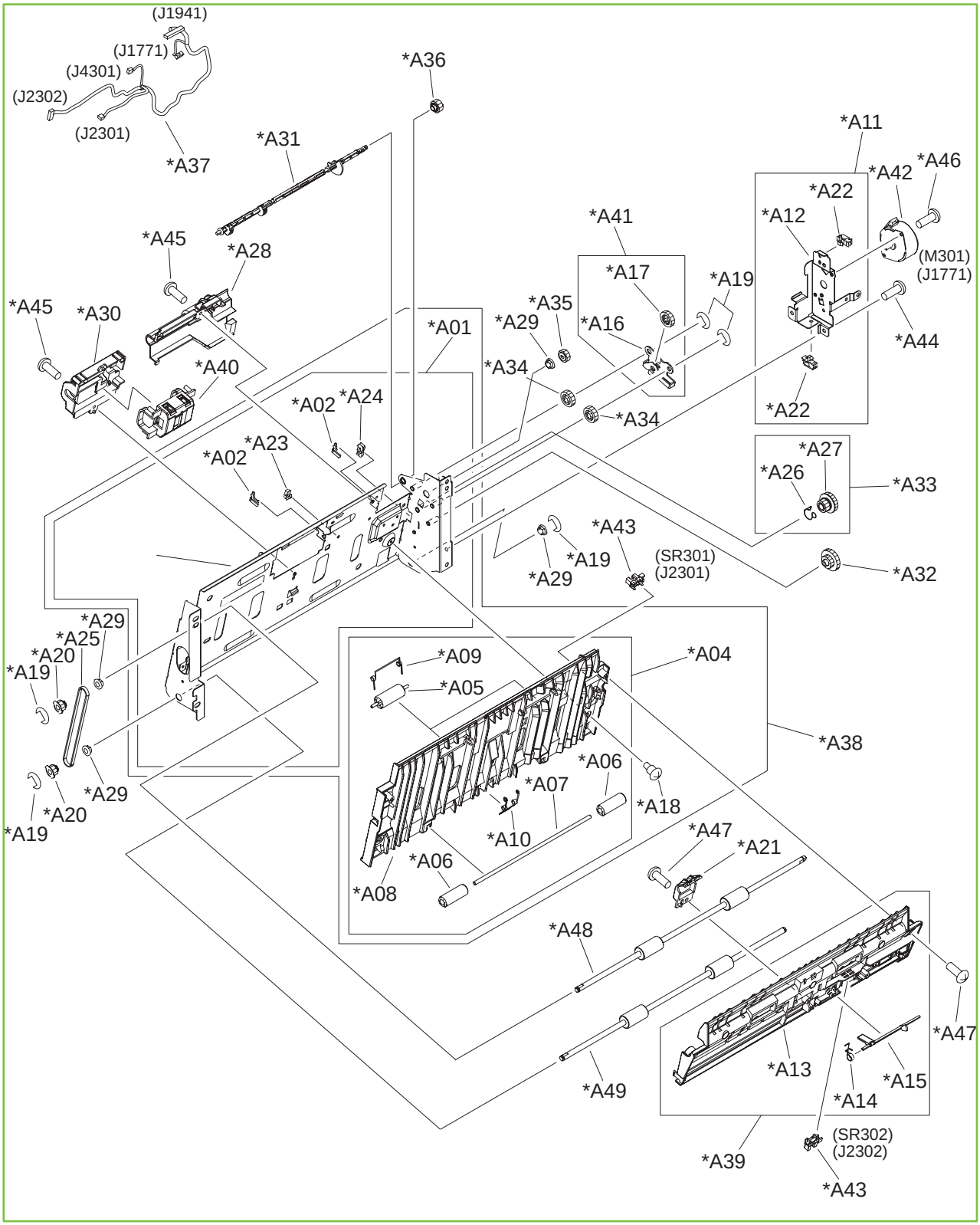


Table 9-21 Printer duplexing-feed assembly

Ref	Description	Part number	Qty
All	Duplexing-feed assembly	RM1-3665-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-24 Printer PCA assembly location

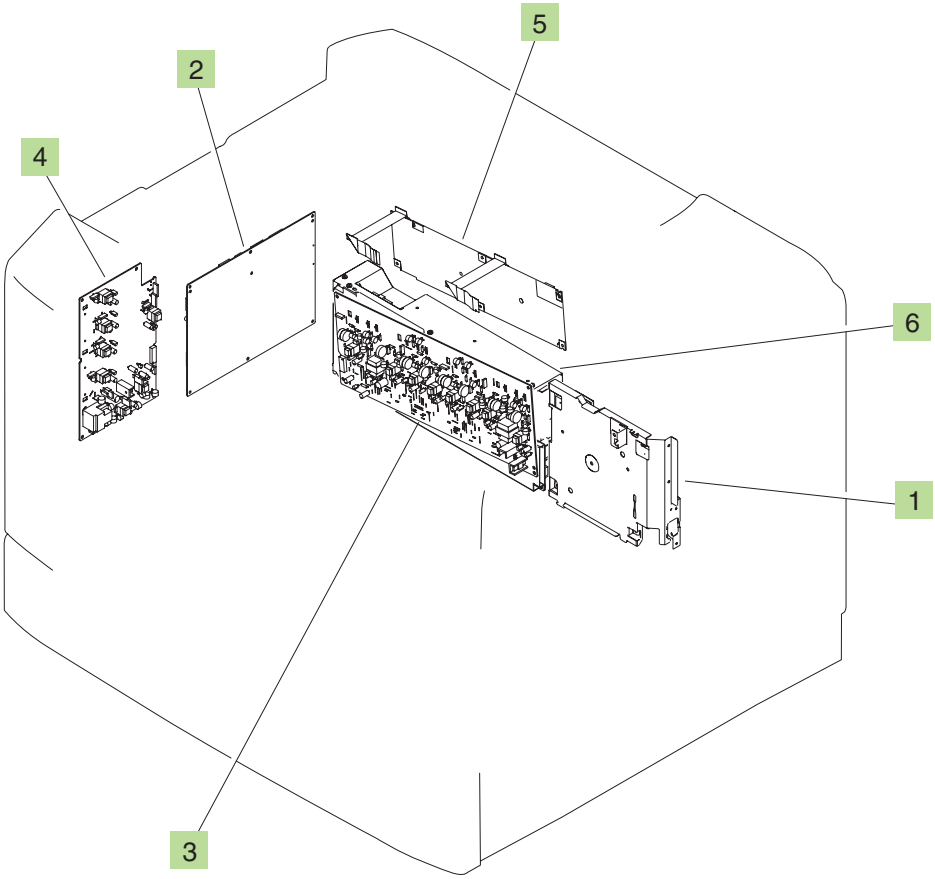


Table 9-22 Printer PCA assembly location

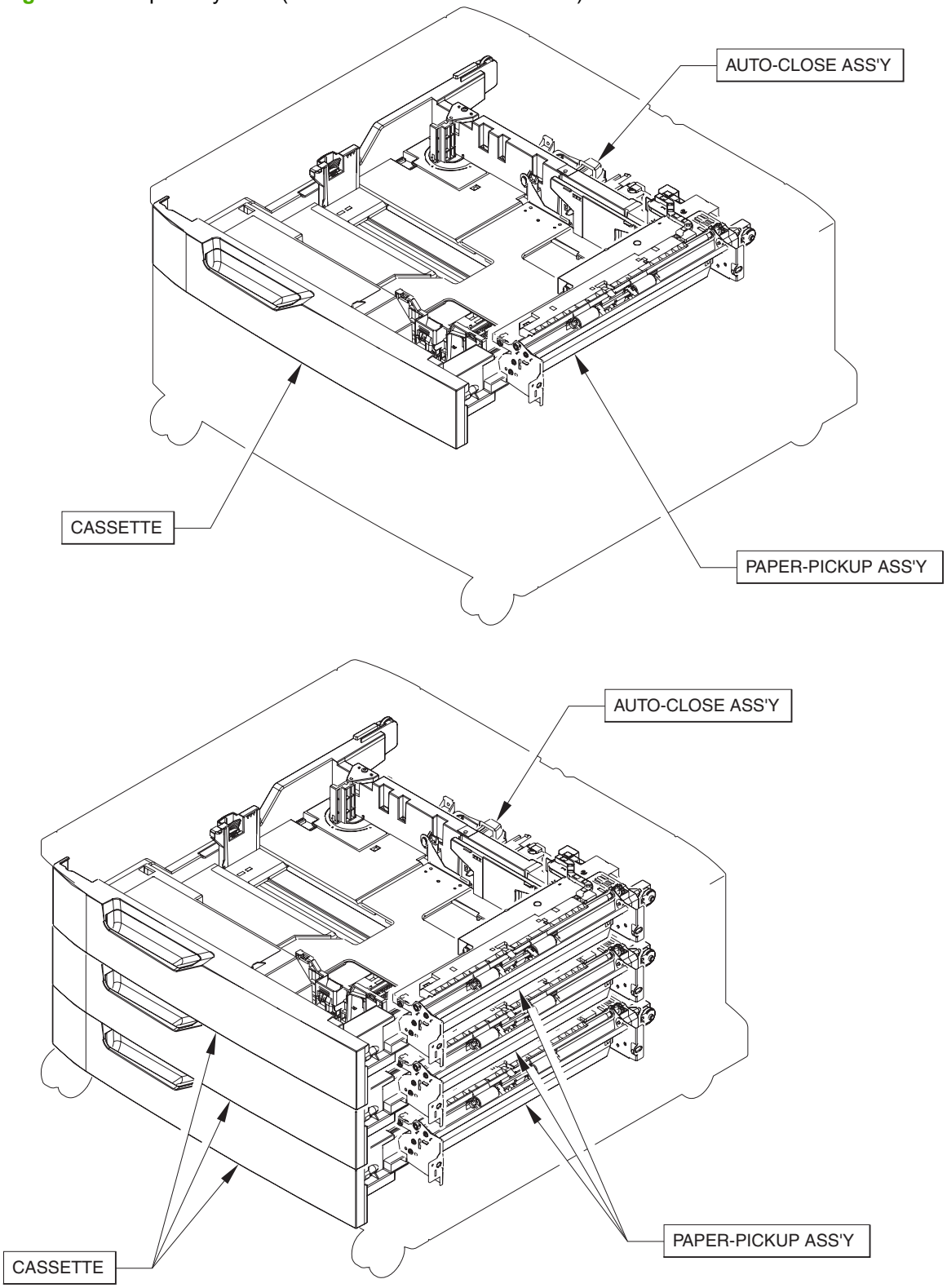
Ref	Description	Part number	Qty
1	Fixing power-supply assembly	RM1-3218-000CN	1
2	DC controller kit with service document	Q3931-67922	1
3	High-voltage-transfer A PCA assembly	RM1-3582-000CN	1
4	High-voltage-transfer B PCA assembly	RM1-5475-000CN	1
5	Memory-tag PCA assembly	RM1-3585-000CN	1
6	Low-voltage power-supply assembly	RM1-3594-000CN	1

NOTE: Only highlighted parts are orderable.

Input accessories

Input trays

Figure 9-25 Input-tray units (1x500-sheet and 3x500-sheet)



NOTE: Only highlighted parts are orderable.

Figure 9-26 Input-tray main body (1x500-sheet)

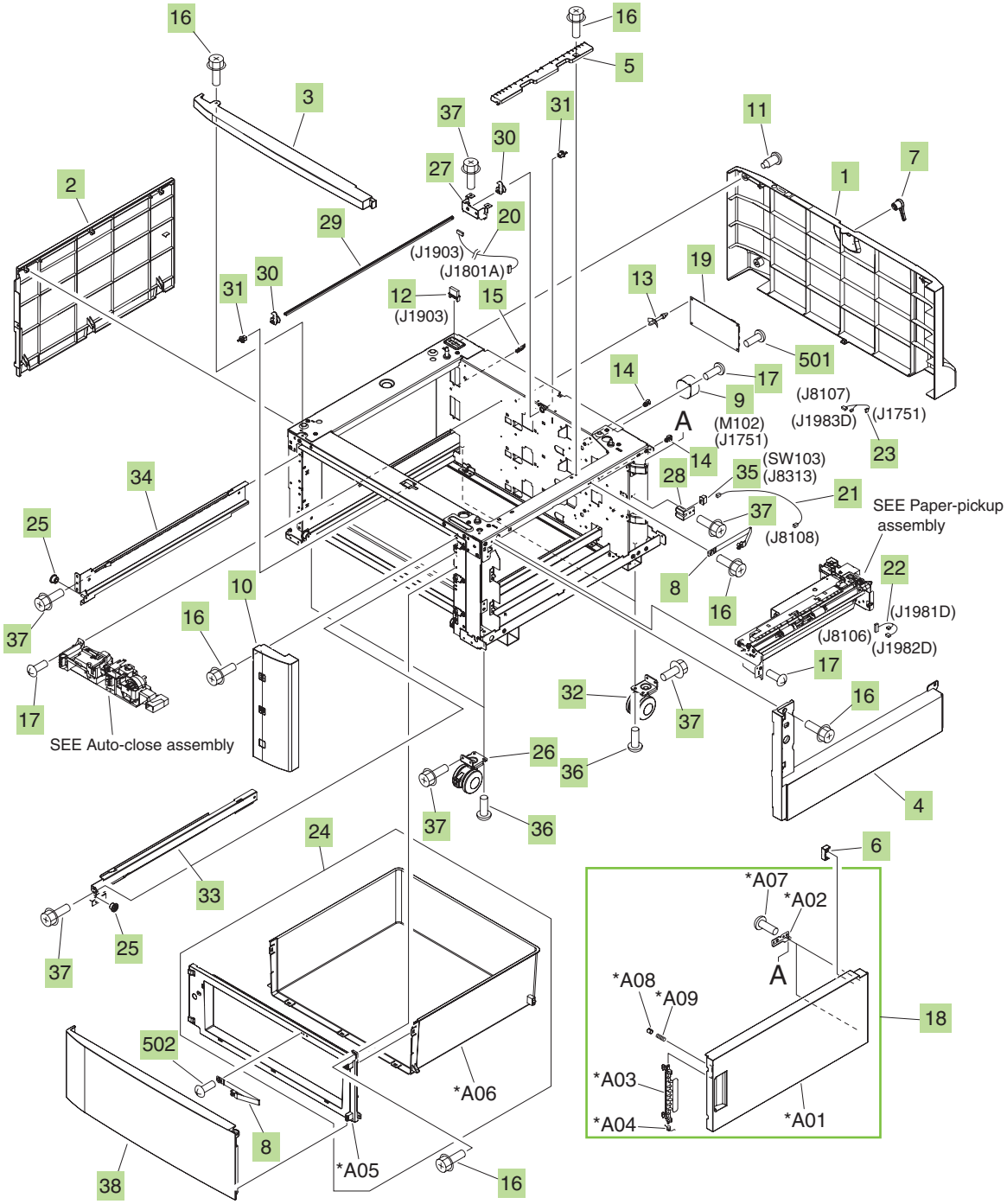


Table 9-23 Input-tray main body (1x500-sheet)

Ref	Description	Part number	Qty
1	Cover, rear	RC1-9871-000CN	1
2	Cover, left	RC1-9872-000CN	1
3	Cover, front-upper	RC1-9873-000CN	1
4	Cover, right-lower	RC1-9874-000CN	1
5	Guide, paper-feed roller	RC1-9881-000CN	1
6	Stopper, right-door	RC1-9882-000CN	1
7	Lever, lock	RC1-9883-000CN	1
8	Tape, door	RC1-9884-000CN	2
9	Motor, stepping, DC	RK2-1331-000CN	1
10	Cover, right-front	RL1-1322-000CN	1
11	Screw, stepped	RS5-9099-000CN	4
12	Connector, drawer	VS1-7257-012CN	1
13	Support, PCA	VT2-0001-008CN	2
14	Saddle, wire	WT2-5694-000CN	2
15	Clamp, cable	WT2-5738-000CN	1
16	Screw, RS, M4x8	XA9-1448-000CN	13
14	Screw, TP, M3x6	XA9-1469-000CN	7
15	Right-door assembly	RM1-3538-000CN	1
19	Paper-feed PCA assembly	RM1-3569-000CN	1
20	Cable, pickup-option drawer	RM1-3571-000CN	1
21	Cable, pickup-option door switch	RM1-3572-000CN	1
22	Cable, option-sensor PCA connect	RM1-3574-000CN	1
23	Cable, paper-pickup option	RM1-3575-000CN	1
24	Stock-box assembly	RM1-3539-000CN	1
25	Roller, rail	RC1-9231-000CN	4
26	Caster, double-lock, front	RC1-9896-000CN	2
27	Support, lock-shaft	RC1-9900-000CN	1
28	Plate, switch-cover	RC1-9901-000CN	1
29	Shaft, lock	RC1-9912-000CN	1
30	Arm, lock	RC1-9913-000CN	2
31	Bushing	RC1-9915-000CN	2
32	Caster, rear	RC1-9917-000CN	2
33	Rail, cassette, right	RL1-1310-000CN	2
34	Rail, cassette, left	RL1-1311-000CN	2

Table 9-23 Input-tray main body (1x500-sheet) (continued)

Ref	Description	Part number	Qty
35	Switch, button	WC2-5512-000CN	1
36	Screw, with washer, M5x12	XA9-0912-000CN	8
37	Screw, RS, M4x8	XA9-1448-000CN	75
38	Door, stock	RC1-9921-000CN	1
501	Screw, with washer, M3x6	XB2-8300-607CN	2
502	Screw, tapping, pan-head, M4x10	XB4-7401-006CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-27 Input-tray main body (3x500-sheet)

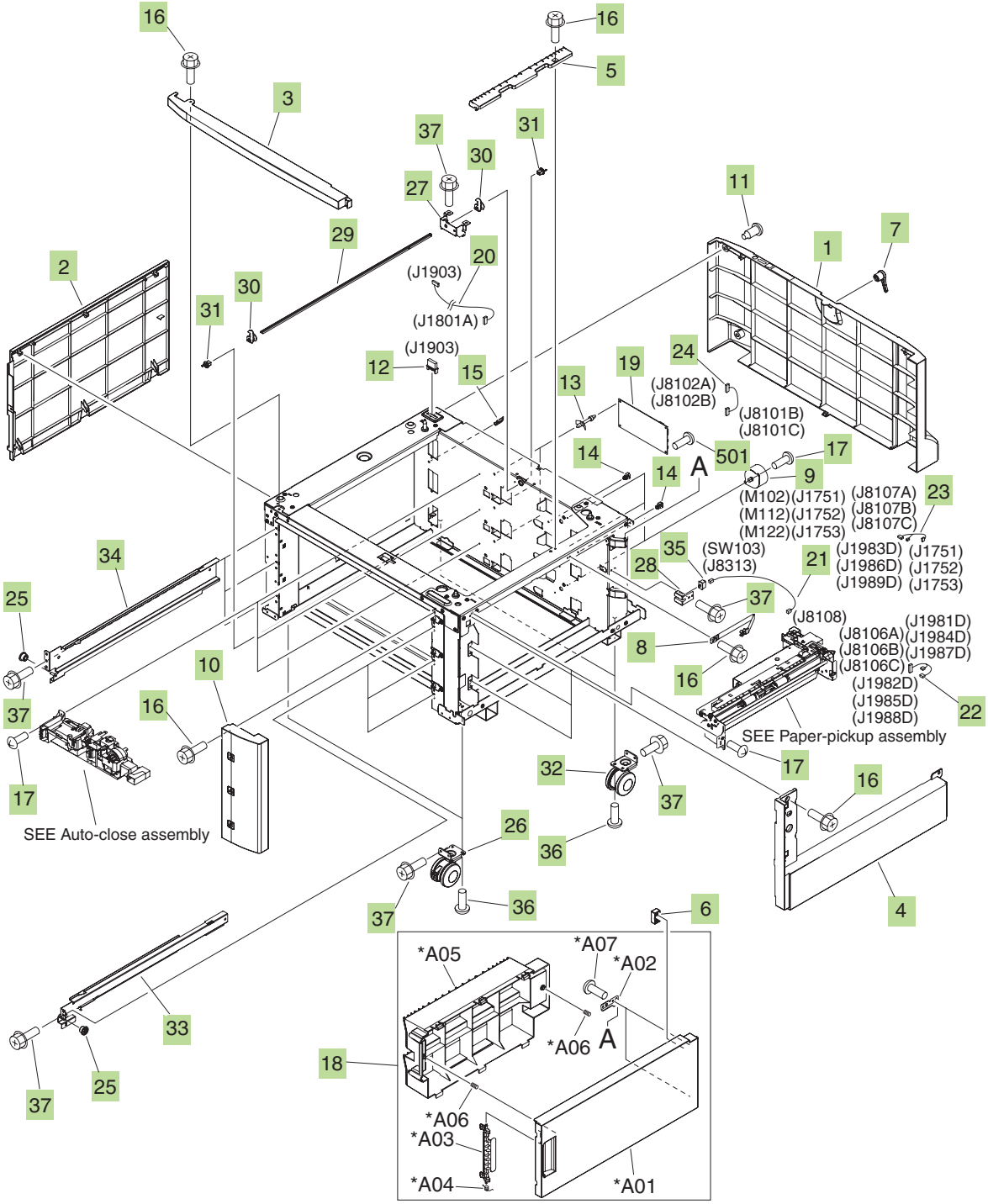


Table 9-24 Input-tray main body (3x500-sheet)

Ref	Description	Part number	Qty
1	Cover, rear	RC1-9871-000CN	1
2	Cover, left	RC1-9872-000CN	1
3	Cover, front-upper	RC1-9873-000CN	1
4	Cover, right-lower	RC1-9874-000CN	1
5	Guide, paper-feed roller	RC1-9881-000CN	1
6	Stopper, right-door	RC1-9882-000CN	1
7	Lever, lock	RC1-9883-000CN	1
8	Tape, door	RC1-9884-000CN	1
9	Motor, stepping, DC	RK2-1331-000CN	3
10	Cover, right-front	RL1-1321-000CN	1
11	Screw, stepped	RS5-9099-000CN	4
12	Connector, drawer	VS1-7257-012CN	1
13	Support, PCA	VT2-0001-008CN	6
14	Saddle, wire	WT2-5694-000CN	2
15	Clamp, cable	WT2-5738-000CN	1
16	Screw, RS, M4x8	XA9-1448-000CN	10
17	Screw, TP, M3x6	XA9-1469-000CN	21
18	Right-door assembly	RM1-3537-000CN	1
19	Paper-feed PCA assembly	RM1-3569-000CN	3
20	Cable, paper-pickup-option drawer	RM1-3571-000CN	1
21	Cable, pickup-option door switch	RM1-3572-000CN	1
22	Cable, option-sensor PCA connect	RM1-3574-000CN	3
23	Cable, paper-pickup option	RM1-3575-000CN	3
24	Cable, pickup-option PCA connect	RM1-3573-000CN	2
25	Roller, rail	RC1-9231-000CN	6
26	Caster, double-lock, front	RC1-9896-000CN	2
27	Support, lock-shaft	RC1-9900-000CN	1
28	Plate, switch-cover	RC1-9901-000CN	1
29	Shaft, lock	RC1-9912-000CN	1
30	Arm, lock	RC1-9913-000CN	2
31	Bushing	RC1-9915-000CN	2
32	Caster, rear	RC1-9917-000CN	2
33	Rail, cassette, right	RL1-1310-000CN	3
34	Rail, cassette, left	RL1-1311-000CN	3

Table 9-24 Input-tray main body (3x500-sheet) (continued)

Ref	Description	Part number	Qty
35	Switch, button	WC2-5512-000CN	1
36	Screw, with washer, M5x12	XA9-0912-000CN	8
37	Screw, RS, M4x8	XA9-1448-000CN	77
501	Screw, with washer, M3x6	XB2-8300-607CN	6

NOTE: Only highlighted parts are orderable.

Figure 9-28 Input-tray auto-close assembly

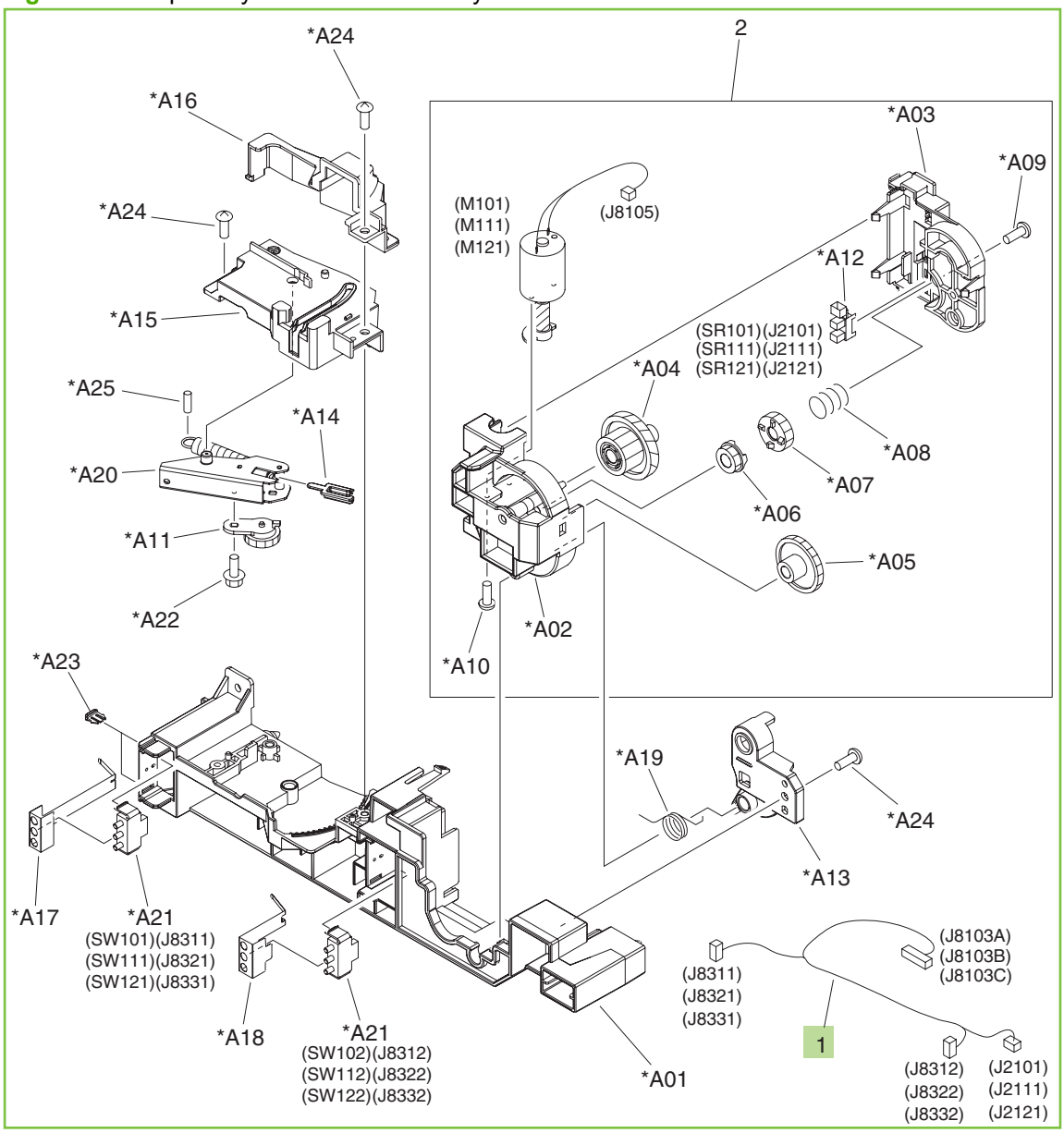


Table 9-25 Input-tray auto-close assembly

Ref	Description	Part number	Qty
All	Auto-close assembly, 1x500-sheet	RM1-3531-040CN	1
All	Auto-close assembly, 3x500-sheet	RM1-3531-040CN	3
1	Cable, pickup-option lifter unit	RM1-3576-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-29 Input-tray cassette

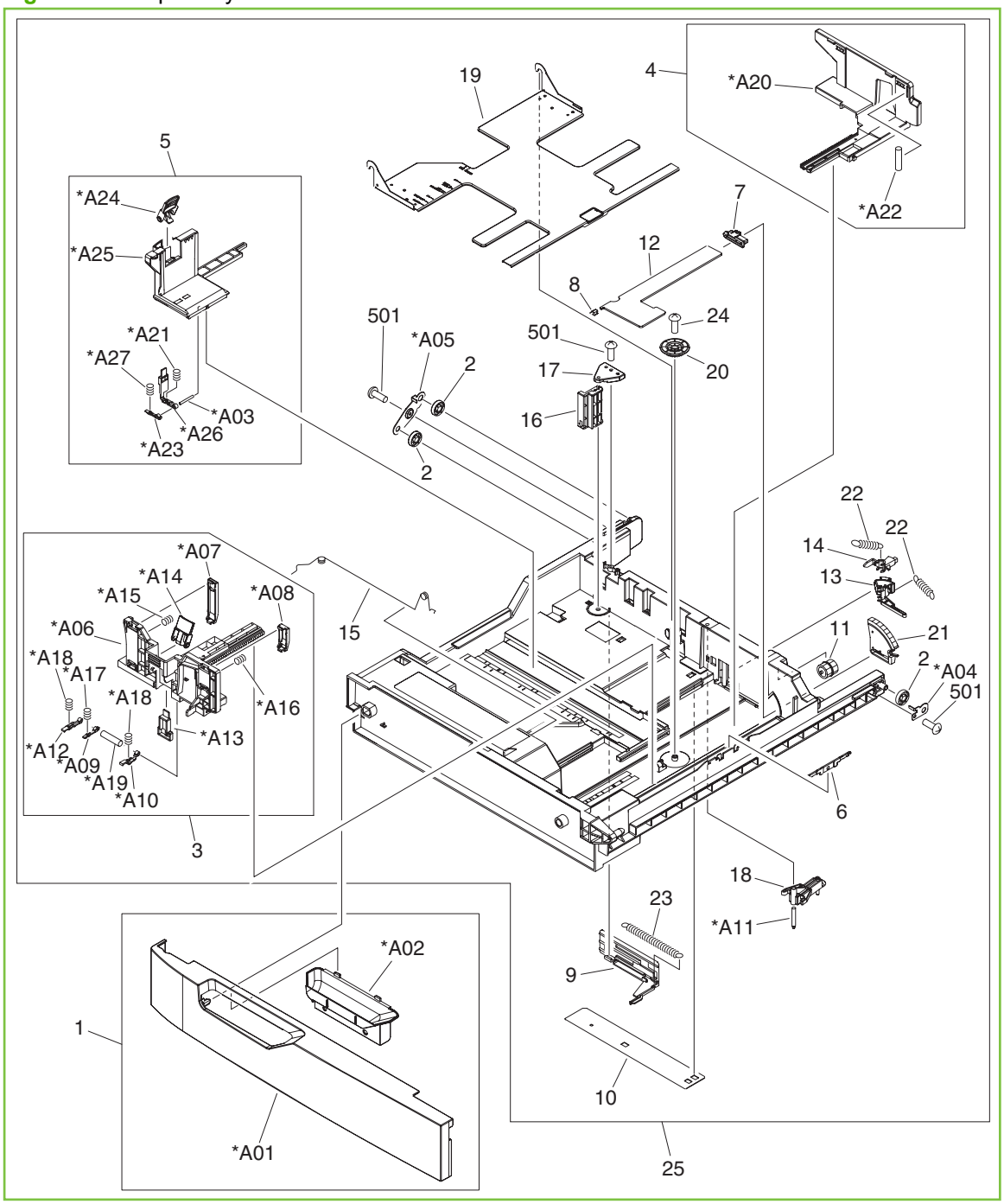


Table 9-26 Input-tray cassette

Ref	Description	Part number	Qty
All	Cassette (1x500-sheet)	RM1-3529-000CN	1
All	Cassette (3x500-sheet)	RM1-3529-000CN	3

NOTE: Only highlighted parts are orderable.

Figure 9-30 Input-tray paper-pickup assembly

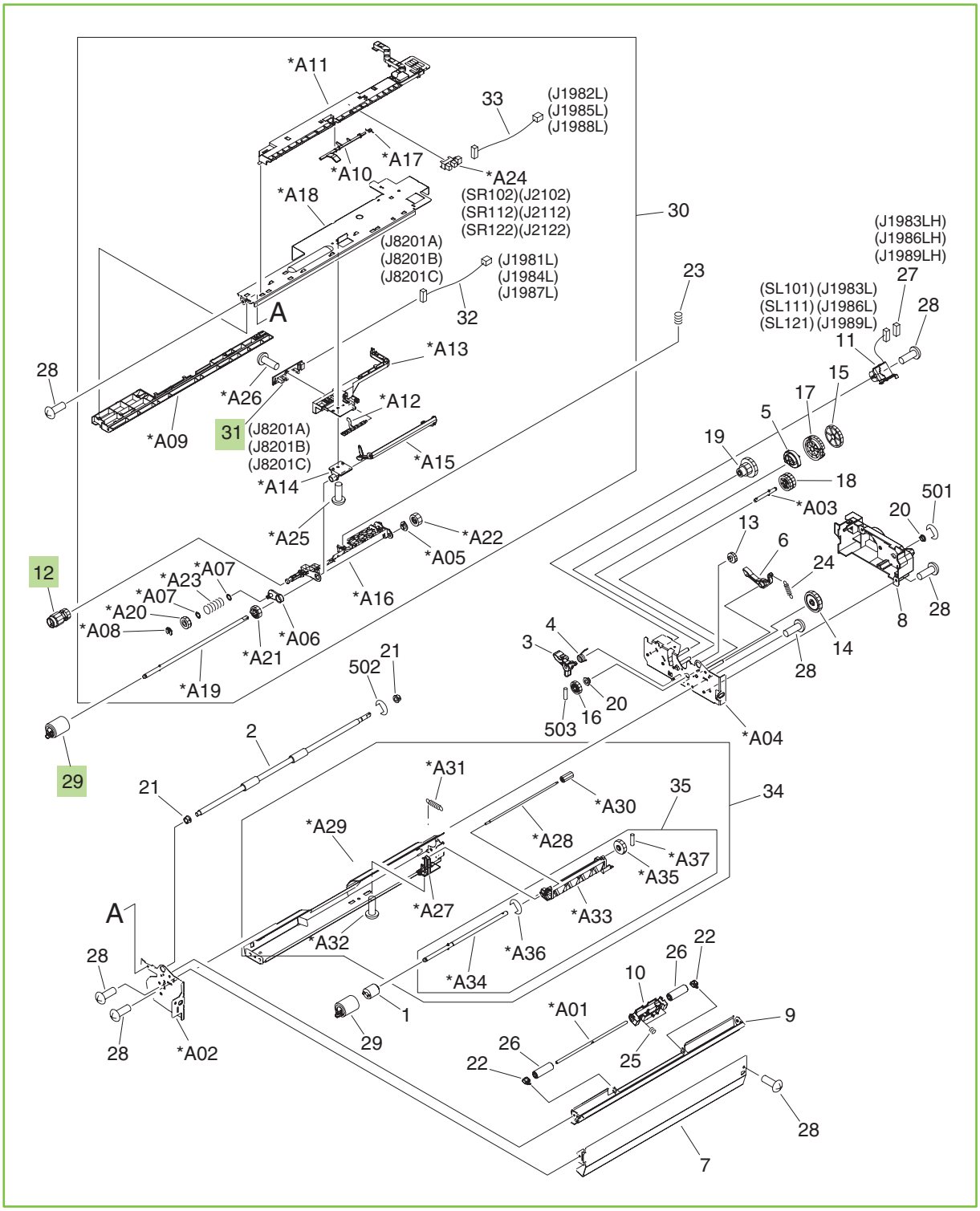


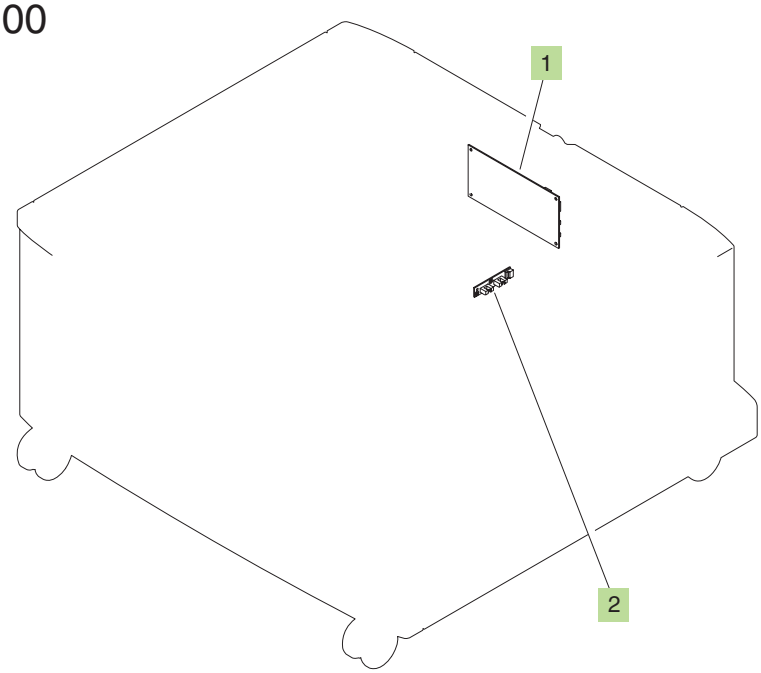
Table 9-27 Input-tray paper-pickup assembly

Ref	Description	Part number	Qty
All	Paper-pickup assembly (1x500-sheet)	RM1-3533-000CN	1
All	Paper-pickup assembly (3x500-sheet)	RM1-3533-000CN	1
12	Roller, paper-pickup	RL1-1289-000CN	1
29	Paper feed-roller assembly	RM1-0037-020CN	2
31	Option paper-sensor PCA assembly	RM1-3570-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-31 Input-tray PCA assembly

1x500



3x500

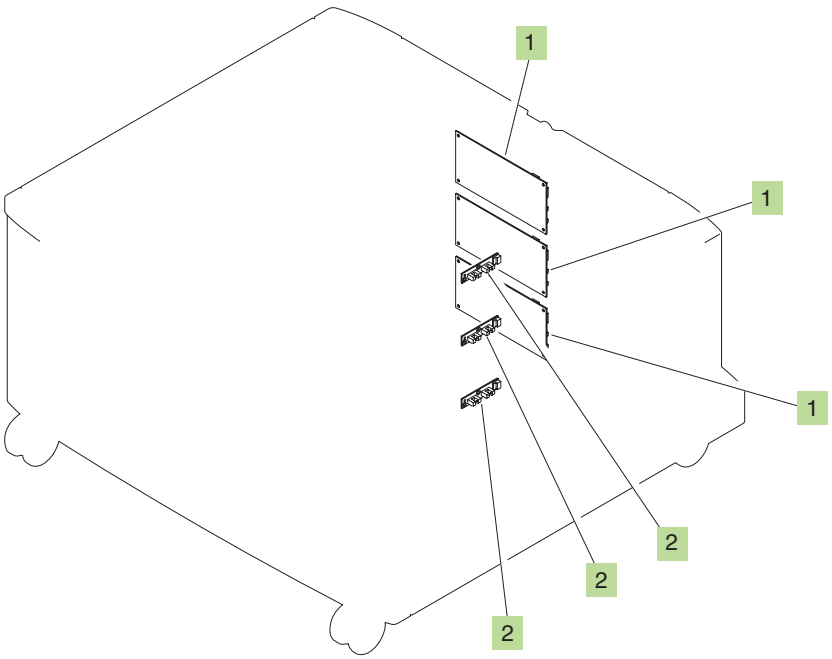


Table 9-28 Input-tray PCA assembly

Ref	Description	Part number	Qty
1	Paper-feed PCA assembly (1x500-sheet)	RM1-3569-000CN	1
1	Paper-feed PCA assembly (3x500-sheet)	RM1-3569-000CN	3

NOTE: Only highlighted parts are orderable.

Output accessories

Intermediate paper-transfer unit (IPTU)

Figure 9-32 Intermediate-feed main body

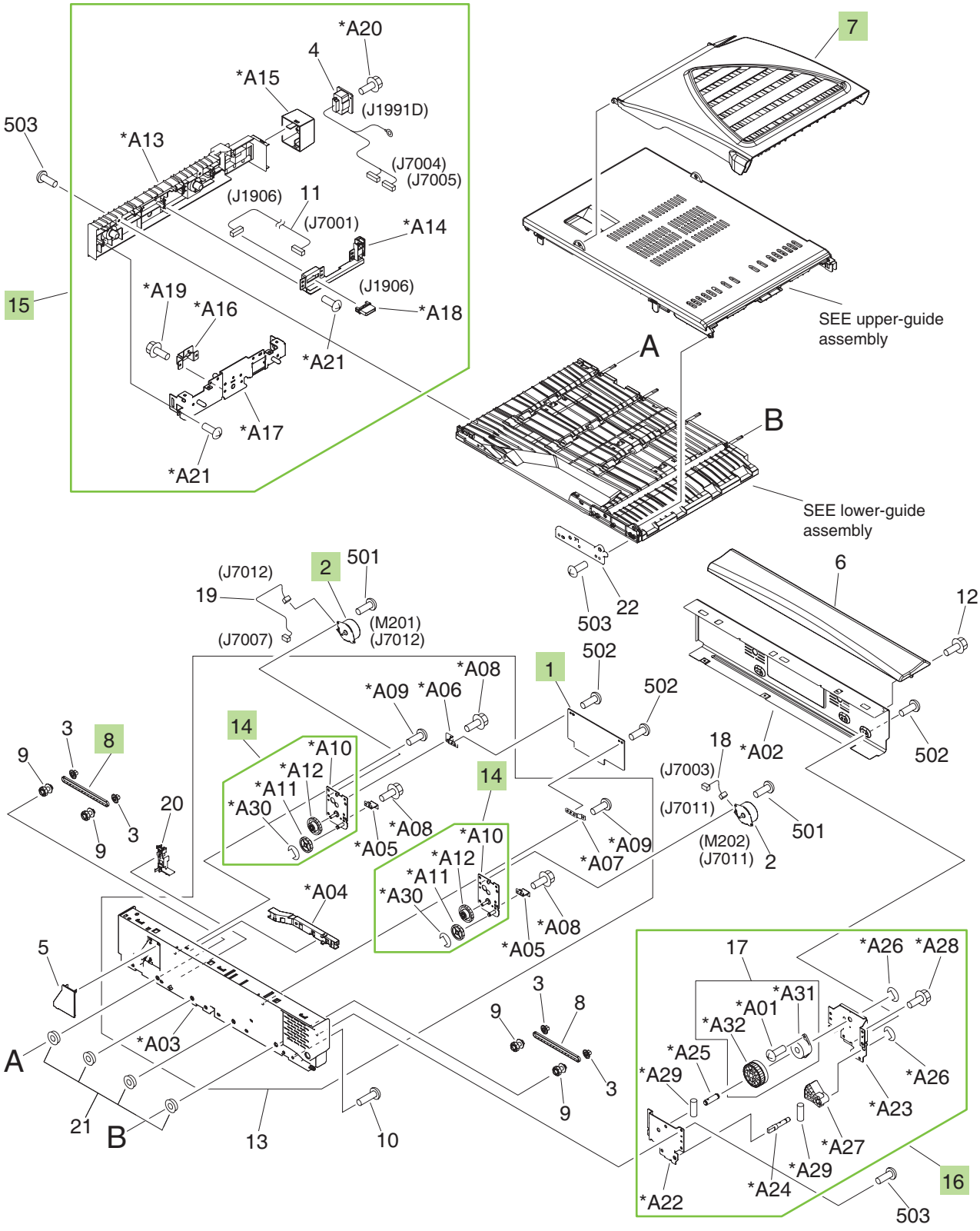


Table 9-29 Intermediate-feed main body

Ref	Description	Part number	Qty
1	Intermediate paper-transfer unit (IPTU)-driver PCA assembly	RM1-3559-000CN	1
2	Motor, stepping, DC	RK2-1320-000CN	2
7	Cover, intermediate-feed SW.	RC1-9667-000CN	1
8	Belt, paper-feed, cogged	RC1-9674-000CN	2
14	Drive-belt assembly	RM1-3684-000CN	2
15	Fin-lock assembly	RM1-3685-000CN	1
16	Damper assembly	RM1-3688-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-33 Intermediate-feed lower-guide assembly

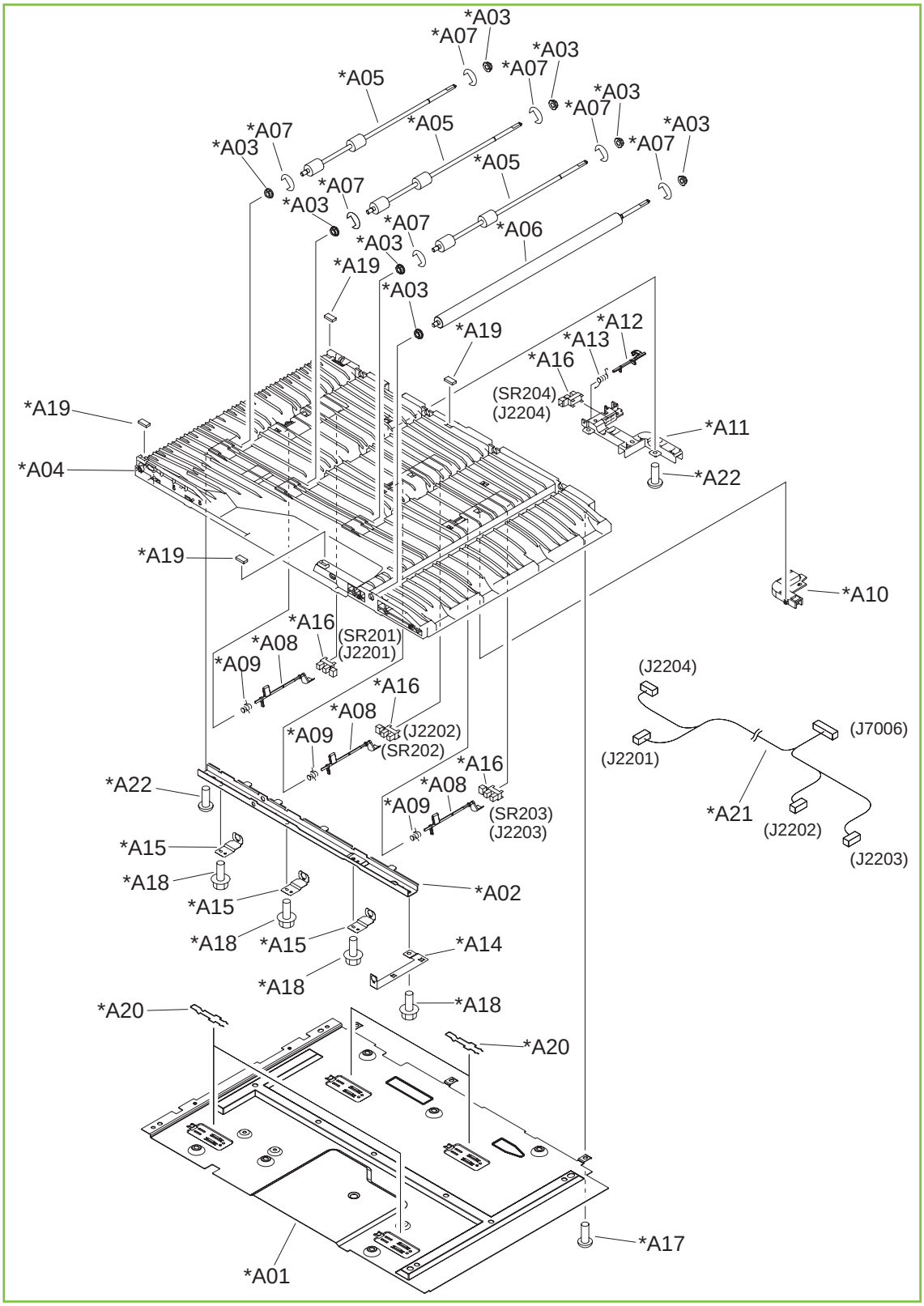


Table 9-30 Intermediate-feed lower-guide assembly

Ref	Description	Part number	Qty
All	Lower-guide assembly	RM1-3686-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-34 Intermediate-feed upper-guide assembly

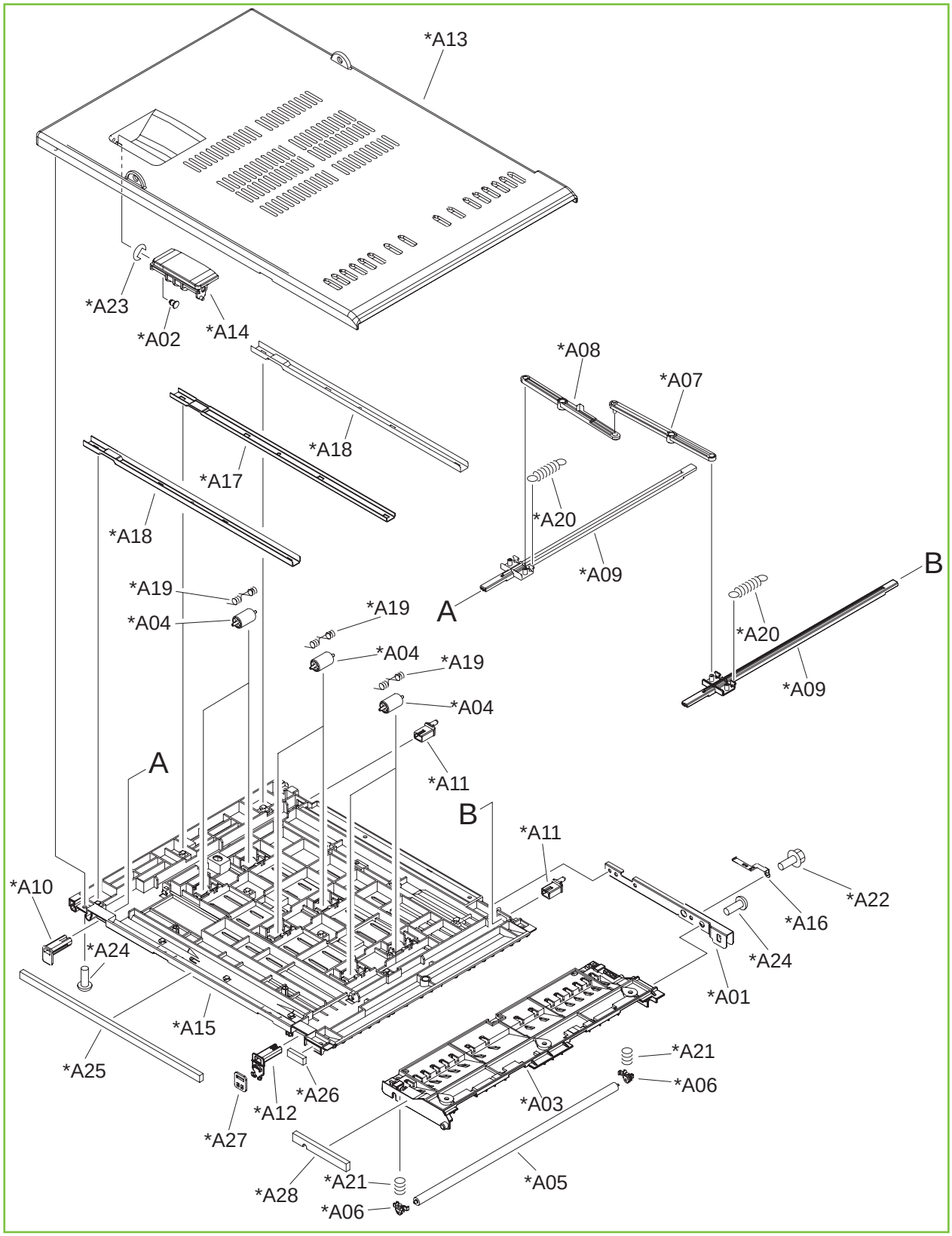


Table 9-31 Intermediate-feed upper-guide assembly

Ref	Description	Part number	Qty
All	Upper-guide assembly	RM1-3687-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-35 PCA assembly

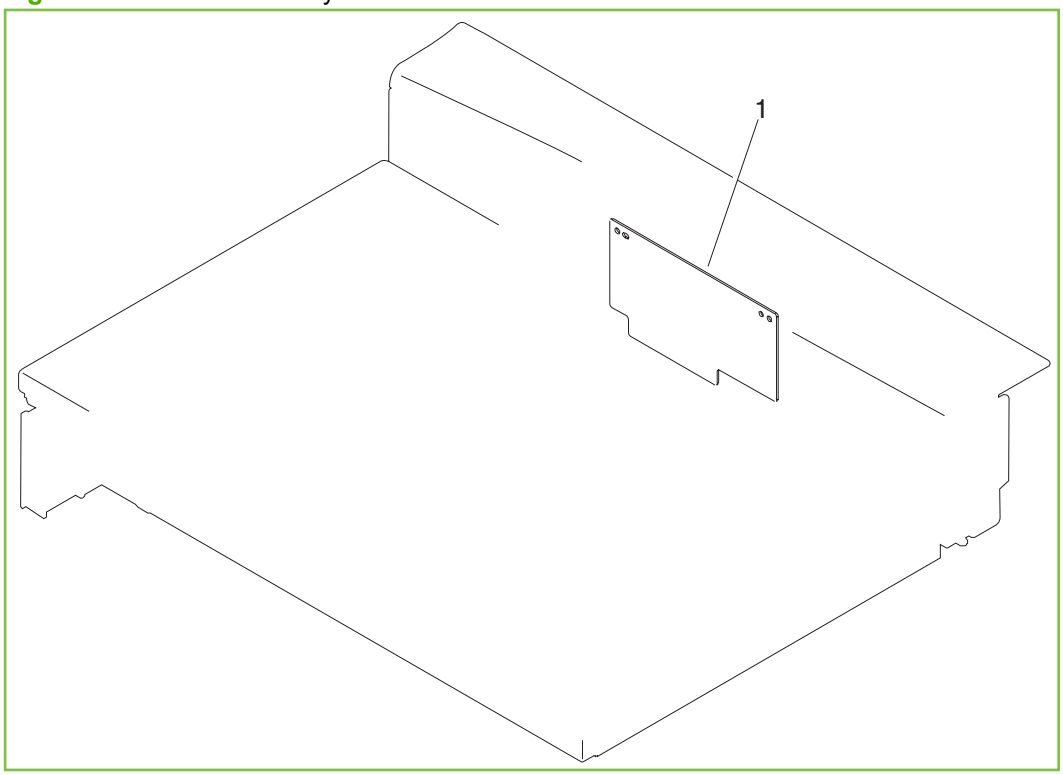


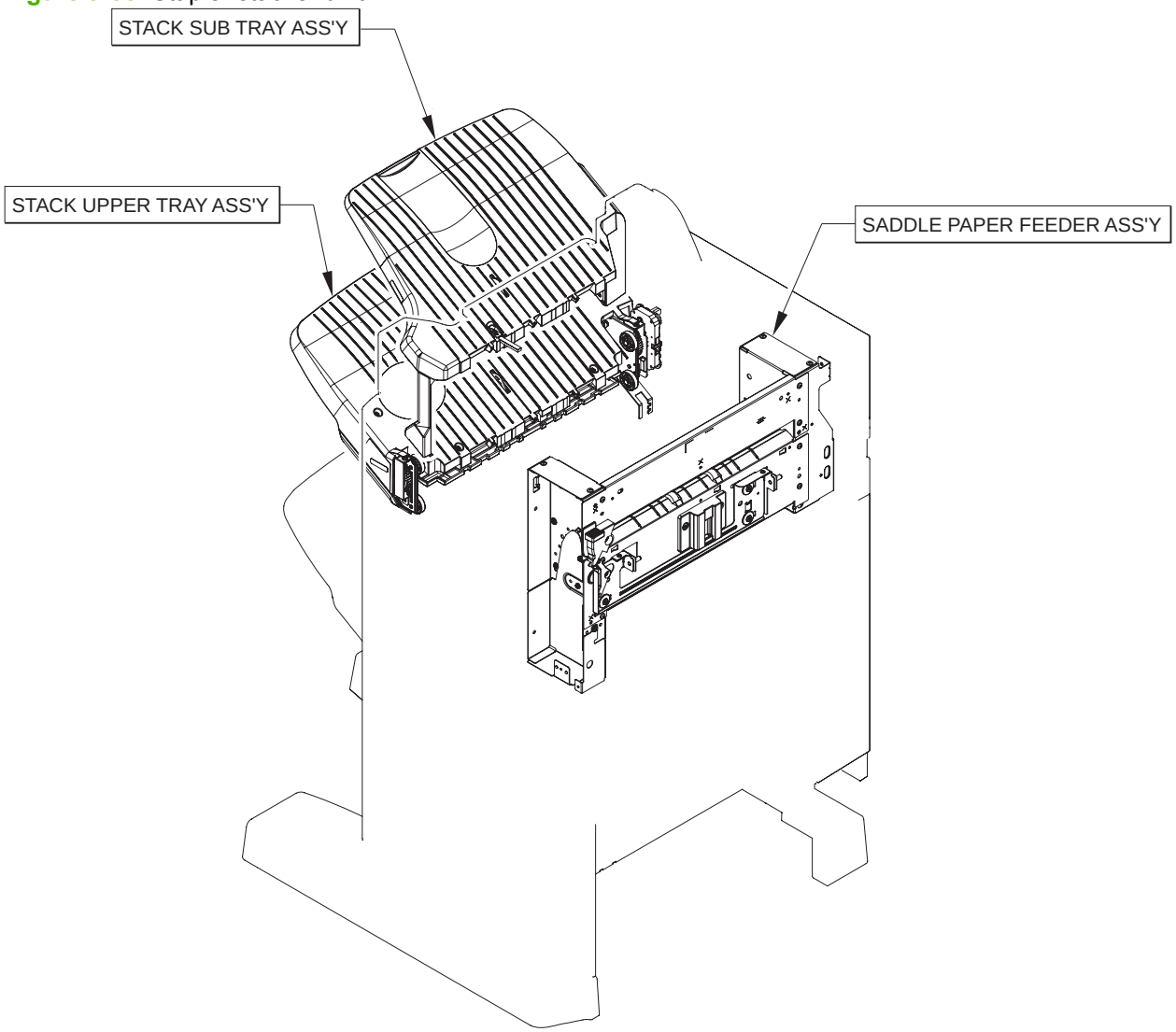
Table 9-32 PCA assembly

Ref	Description	Part number	Qty
1	Intermediate paper-transfer unit (IPTU)-driver PCA assembly	RM1-3559-000CN	1

NOTE: Only highlighted parts are orderable.

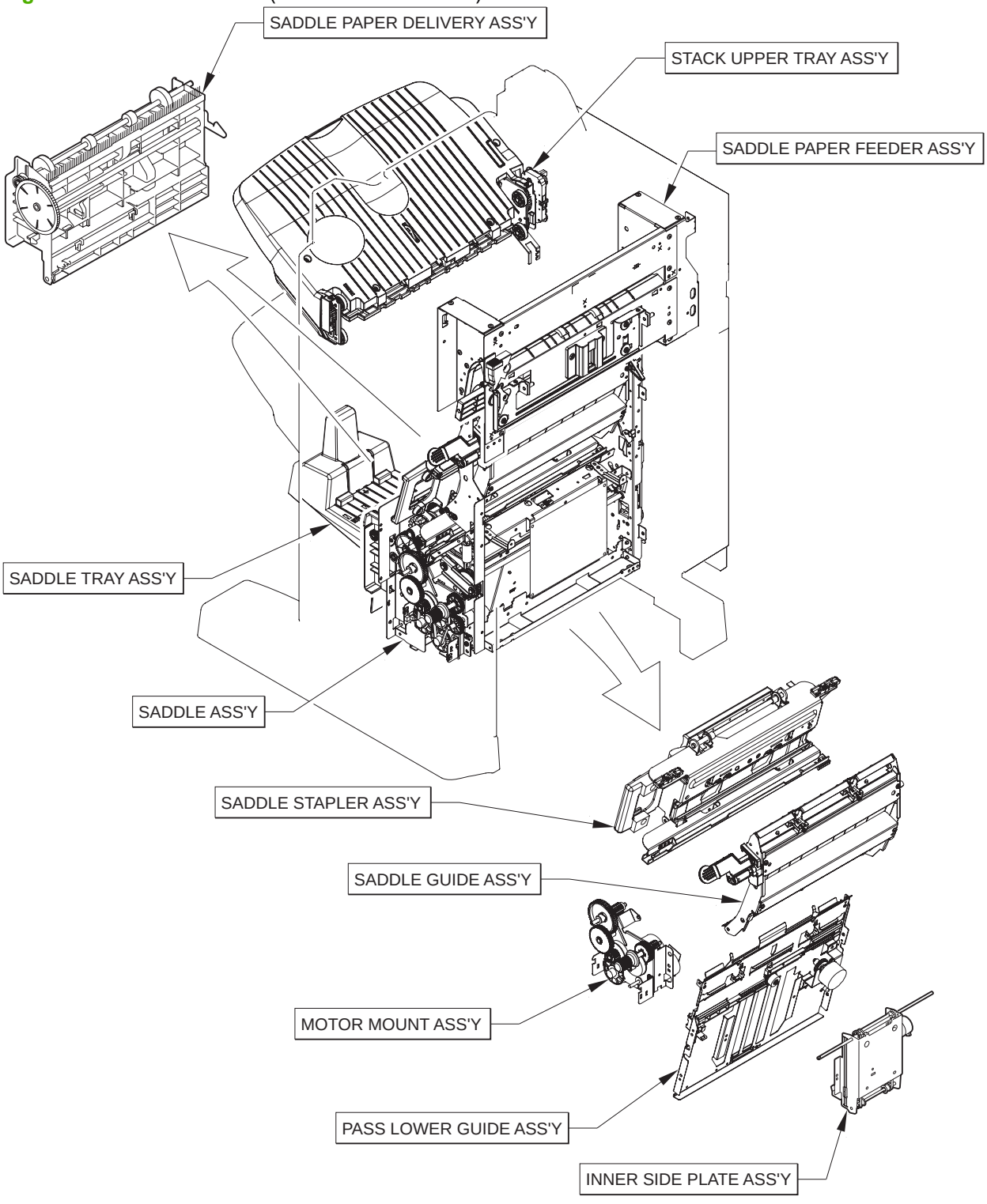
Stapler/stacker and booklet-maker

Figure 9-36 Stapler/stacker unit



NOTE: Only highlighted parts are orderable.

Figure 9-37 Booklet-maker (multi-function finisher) whole unit



NOTE: Only highlighted parts are orderable.

Figure 9-38 External panels and covers (stapler/stacker)

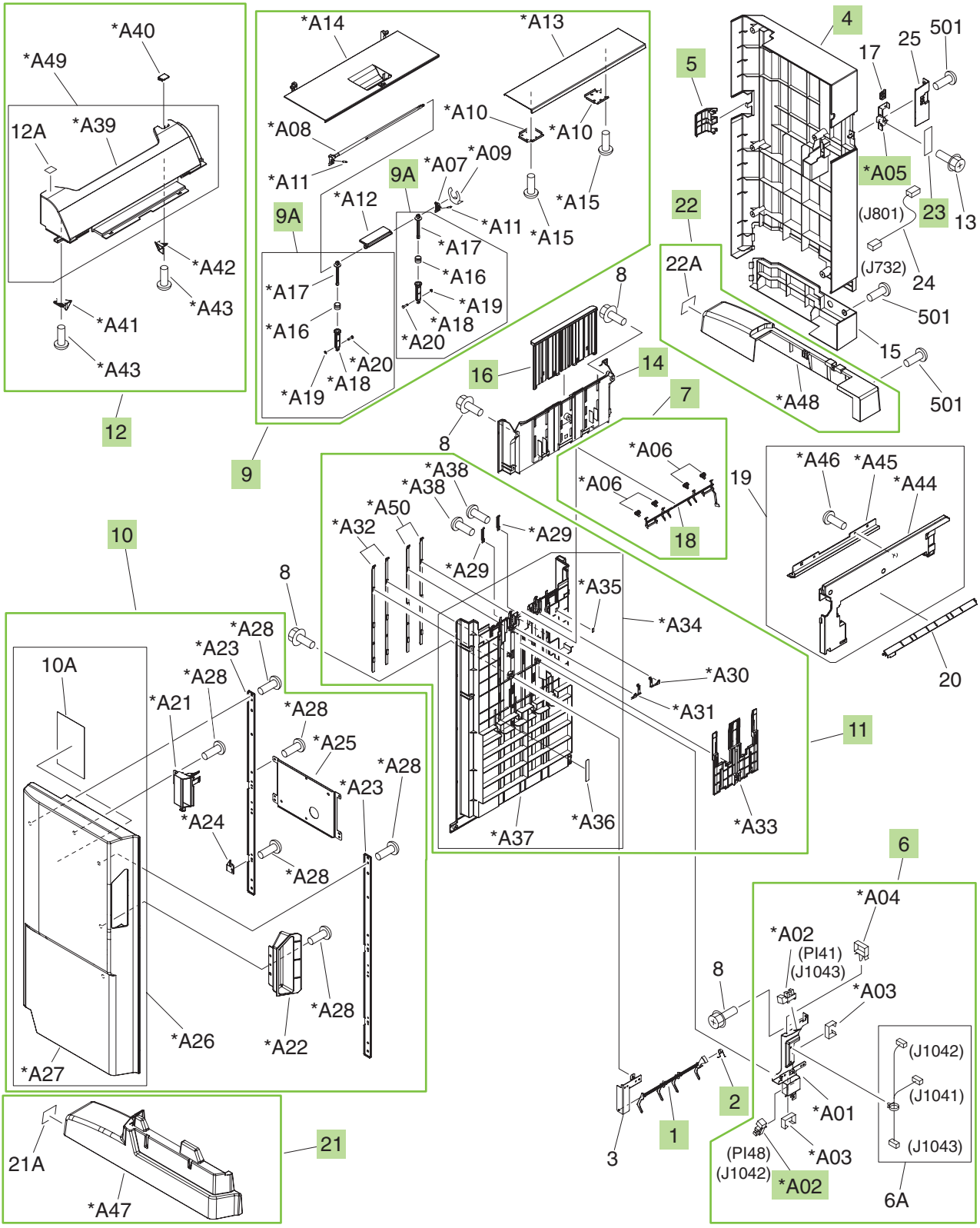


Table 9-33 External panels and covers (stapler/stacker)

Ref	Description	Part number	Qty
1	Flag, paper-sensing sensor	FC5-5004-000CN	1
2	Spring, torsion	FC5-5005-000CN	1
4	Cover, rear	RC2-1278-000CN	1
5	Cover, tray-connector	RC2-1279-000CN	1
6	Paper-face sensor assembly	4G3-0934-000CN	1
7	Paper-face sensing assembly	4G3-1624-000CN	1
9	Top-door (upper-cover) assembly	RM1-4121-000CN	1
9A	Link-slide assembly	4G3-0271-000CN	2
10	Front-door assembly	RM1-4134-000CN	1
11	Lower height-guide assembly	RM1-4135-000CN	1
12	Left upper-cover assembly	RM1-4179-000CN	1
14	Panel, height, upper	RC2-1283-000CN	1
16	Cover, option-slide	RC2-1347-000CN	1
18	Flag, paper-face sensing, upper	FC5-4162-000CN	1
21	Cover, front-lower	RL1-1717-000CN	1
22	Cover, rear-lower	RL1-1718-000CN	1
23	LED-PCA assembly	RM1-4141-000CN	1
A02	Photo interrupter, TLP1242	WG8-5593-000CN	2
A05	Mount, LED-PCA	RC2-1735-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-39 External panels and covers (booklet-maker)

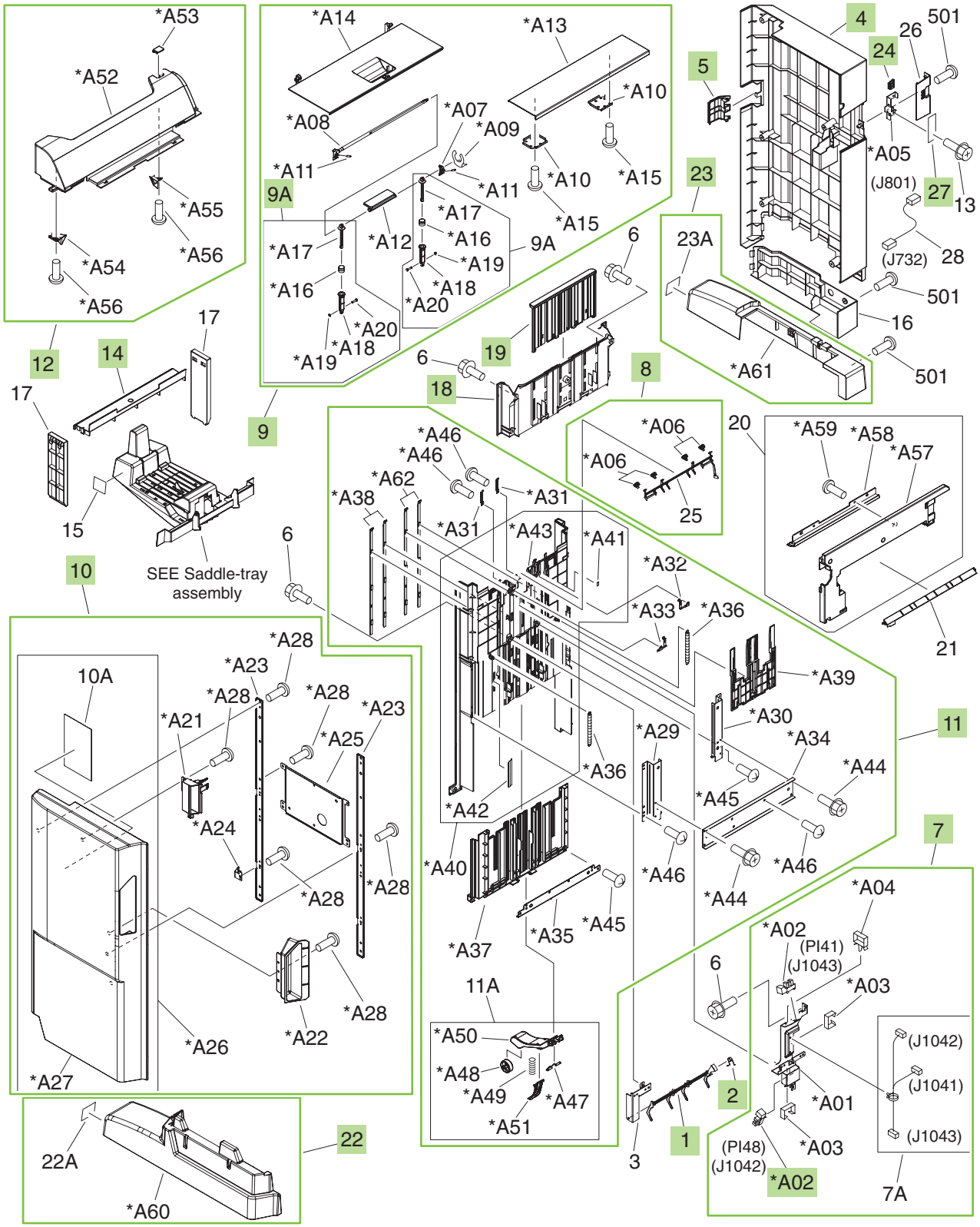


Table 9-34 External panels and covers (booklet-maker)

Ref	Description	Part number	Qty
1	Flag, paper-sensing sensor	FC5-5004-000CN	1
2	Spring, torsion	FC5-5005-000CN	1
4	Cover, rear	RC2-1278-000CN	1
5	Cover, tray-connector	RC2-1279-000CN	1
7	Paper-face sensor assembly	4G3-0934-000CN	1
8	Paper-face sensing assembly	4G3-1624-000CN	1
9	Top-door (upper-cover) assembly	RM1-4121-000CN	1
9A	Link-slide assembly	4G3-0271-000CN	2
10	Front-door assembly	RM1-4122-000CN	1
11	Middle-height cover assembly	RM1-4119-000CN	1
12	Left-upper cover assembly	RM1-4129-000CN	1
14	Cover, left-lower	RC2-1280-000CN	1
18	Panel, height, upper	RC2-1283-000CN	1
19	Guide, side-wall	RC2-1284-000CN	1
22	Cover, front-lower	RL1-1717-000CN	1
23	Cover, rear-lower	RL1-1718-000CN	1
24	Window, LED	RC2-1734-000CN	1
27	LED-PCA assembly	RM1-4141-000CN	1
A02	Photo interrupter, TLP1242	WG8-5593-000CN	2

NOTE: Only highlighted parts are orderable.

Figure 9-40 Finisher main body (1 of 5) (stapler/stacker and booklet-maker)

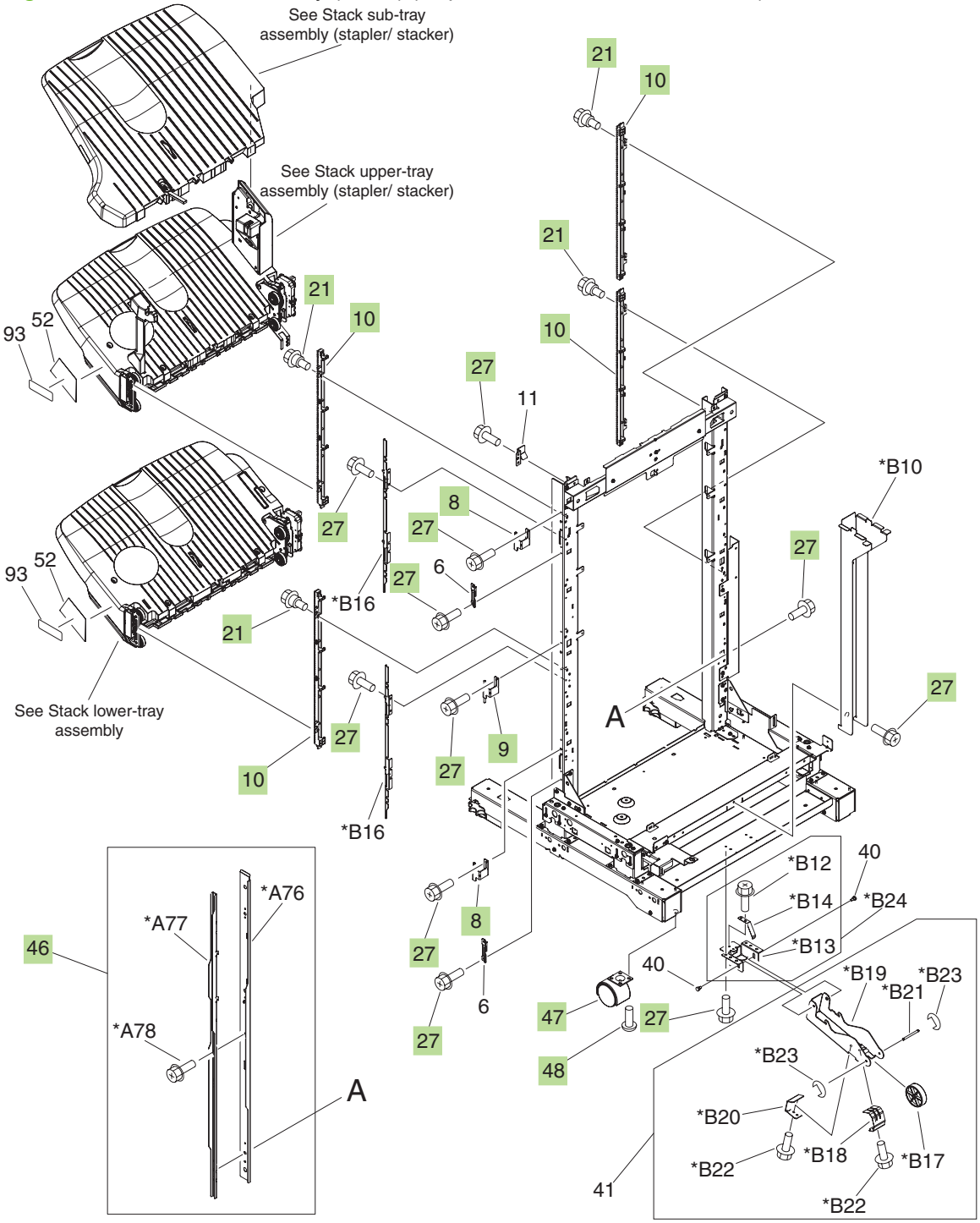


Figure 9-41 Finisher main body (2 of 5) (stapler/stacker and booklet-maker)

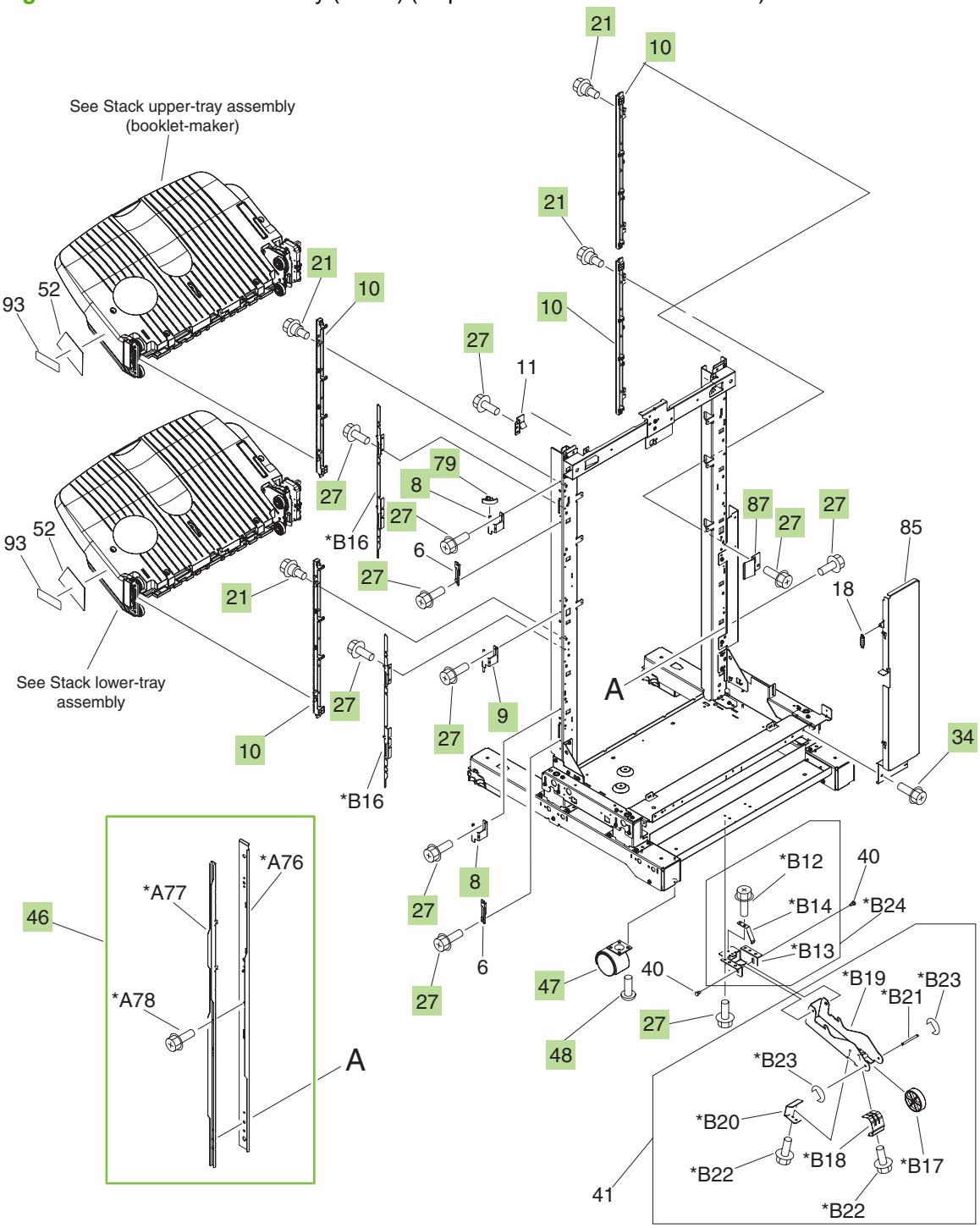


Figure 9-42 Finisher main body (3 of 5) (stapler/stacker and booklet-maker)

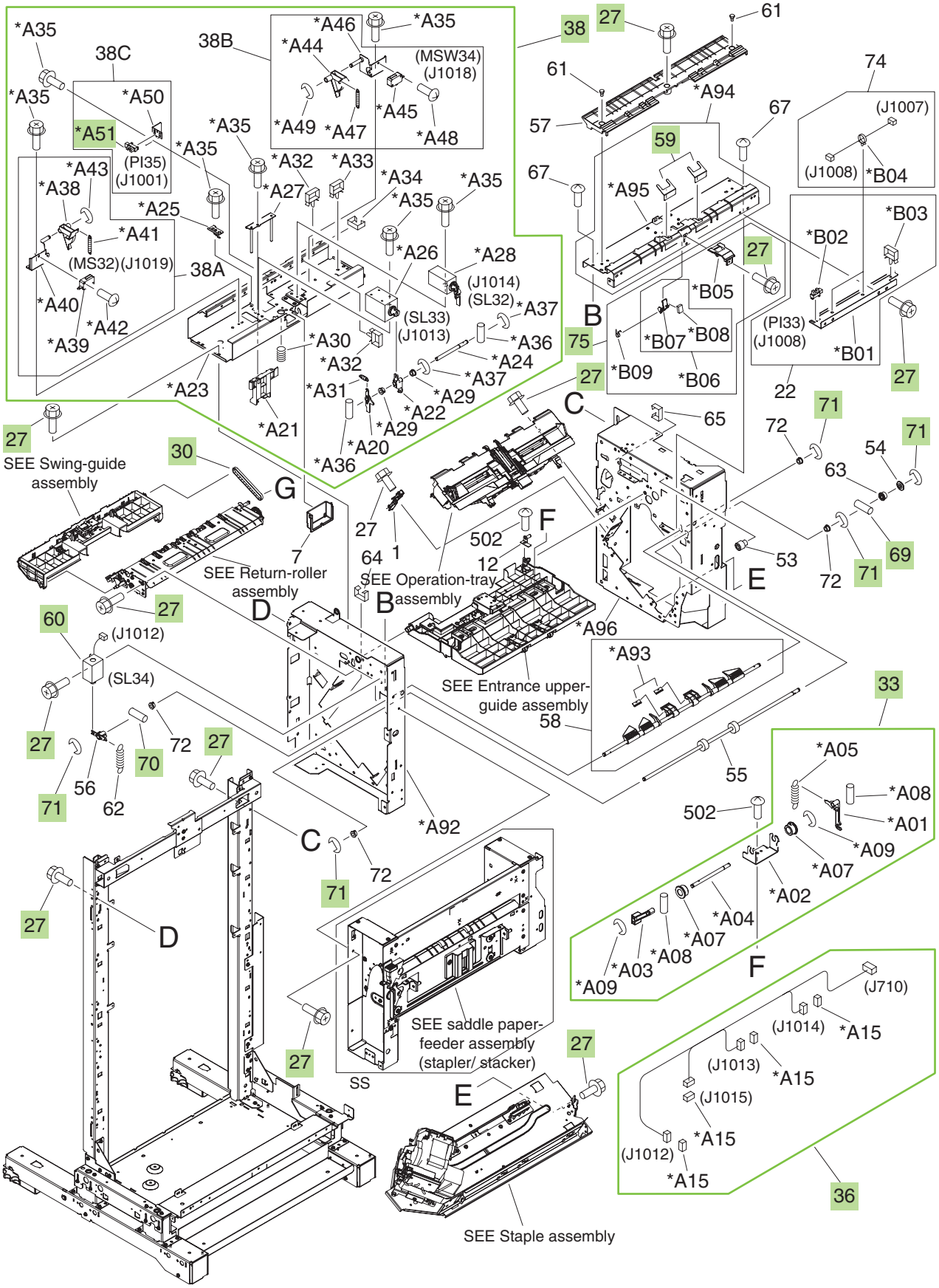


Figure 9-43 Finisher main body (4 of 5) (stapler/stacker and booklet-maker)

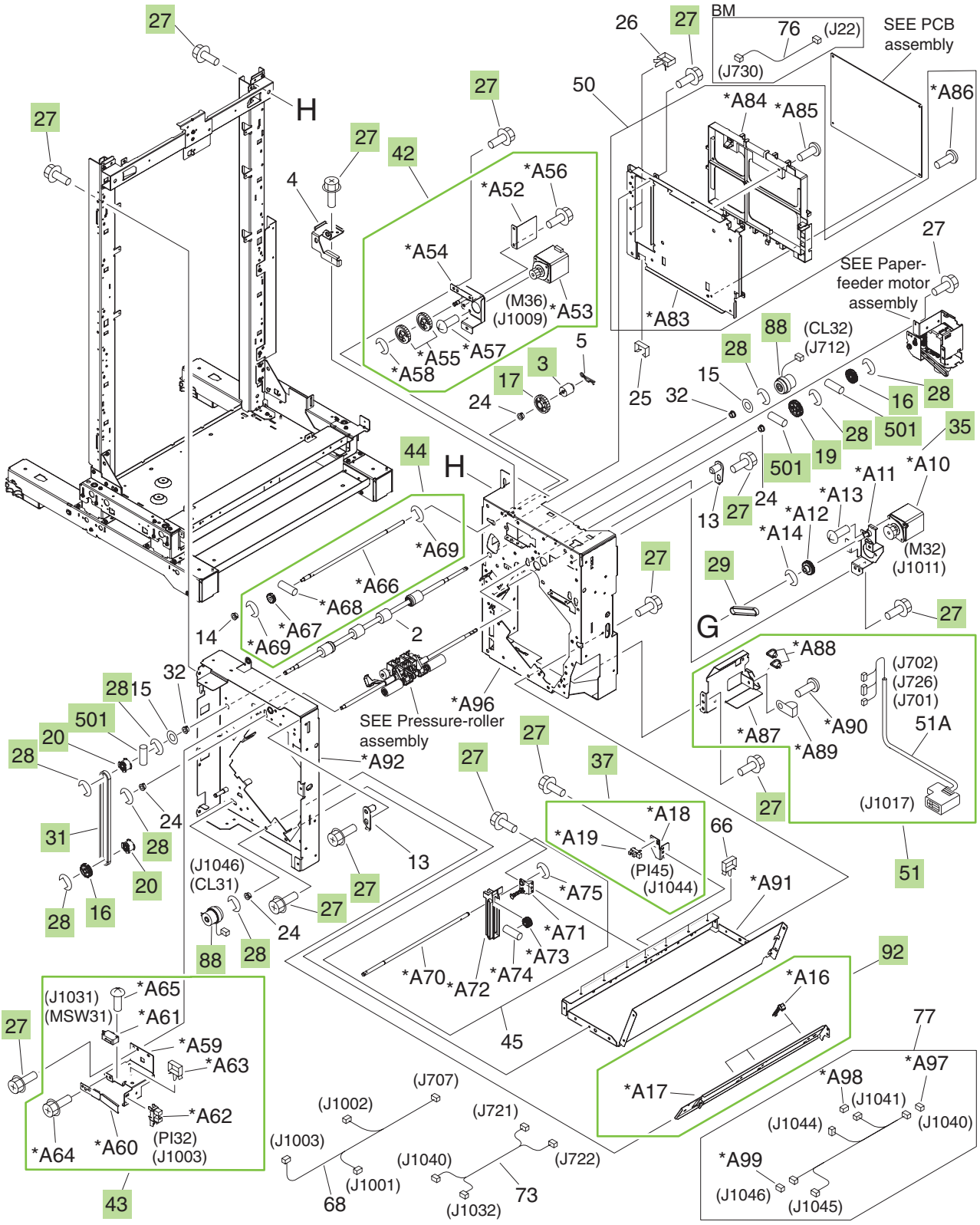


Figure 9-44 Finisher main body (5 of 5) (stapler/stacker and booklet-maker)

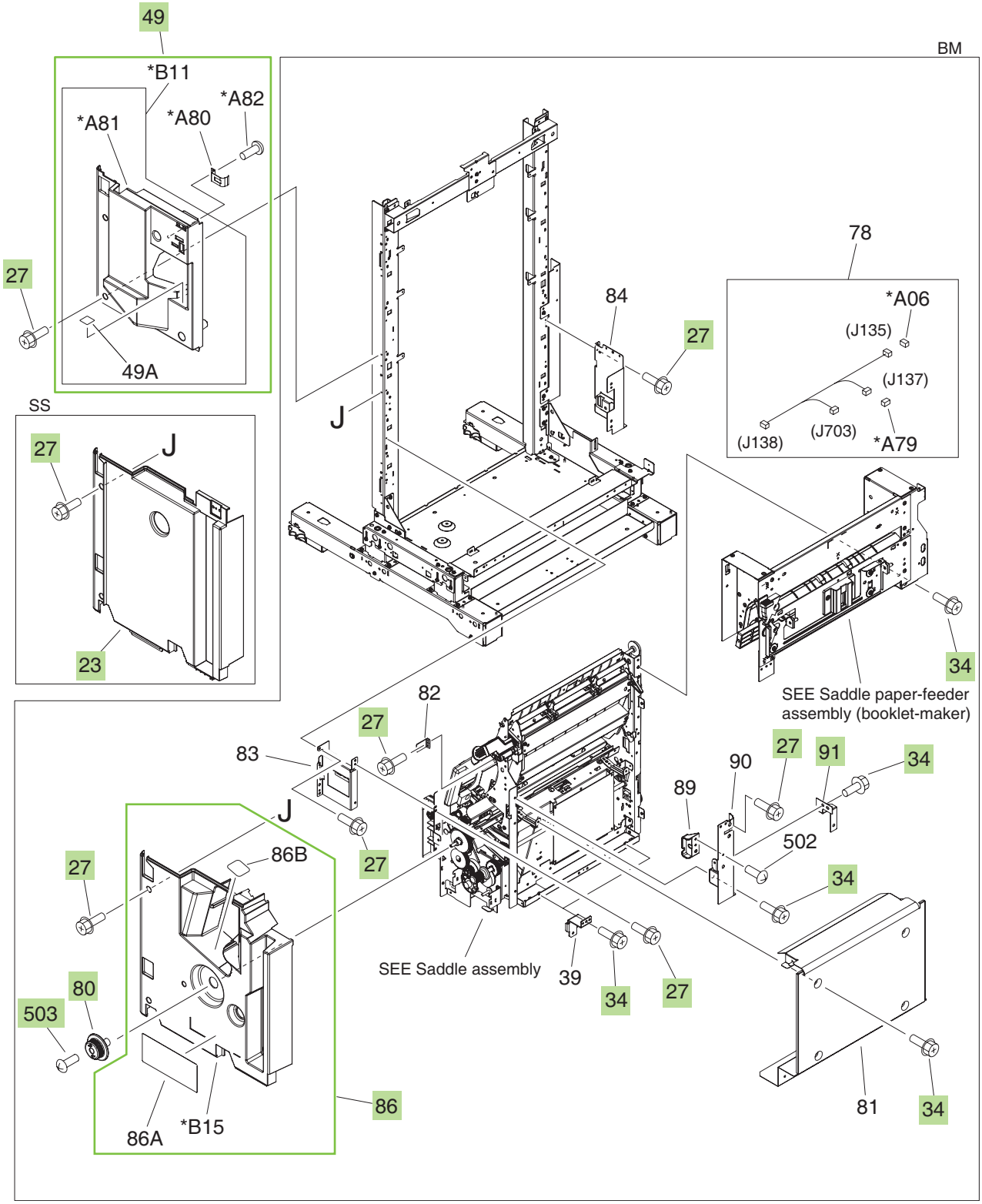


Table 9-35 Finisher main body (stapler/stacker and booklet-maker)

Ref	Description	Part number	Qty
3	Limiter, torque	FC5-3657-000CN	1
8	Hinge, front-door, 1	FC5-4991-030CN	2
9	Hinge, front-door, 2	FC5-4992-030CN	1
10	Rack, rail	FC5-5436-000CN	4
16	Gear, 30T	FU5-0428-000CN	2
17	Gear, 40T	FU5-0454-000CN	1
19	Gear, 29T	FU5-2399-000CN	1
20	Pulley, 20T	FU5-3086-000CN	2
21	Screw, RS stepped, M3	FU9-9059-000CN	8
23	Cover, internal, lower (stapler/stacker only)	RC2-1351-000CN	1
27	Screw, RS, M3x8	XA9-1386-000CN	83
28	Ring, E	XD9-0136-000CN	10
29	Belt, timing, cogged	XF2-1607-860CN	1
30	Belt, timing	XF2-1608-840CN	1
31	Belt, timing, cogged	XF9-0748-000CN	1
33	Upper-cover lock assembly	4G3-0210-000CN	1
34	Screw, RS, M4x8 (booklet-maker only)	XA9-0732-000CN	18
35	Stack-ejection motor assembly	4G3-0769-000CN	1
36	Cable, solenoid	FG3-2892-000CN	1
37	Shutter H.P.-sensor assembly	FM2-1401-000CN	1
38	Upper-crossmember assembly	RM1-4180-000CN	1
42	Press-motor assembly	FM2-1409-000CN	1
43	Sensor/switch assembly	FM2-1417-000CN	1
44	Swing-press shaft assembly	FM2-1423-000CN	1
46	Area-sensor flag assembly	RM1-4107-000CN	1
47	Caster, universal	RC2-1315-000CN	4
48	Screw, with washer, M5x12	XA9-0912-000CN	12
49	Inner-cover assembly	RM1-4123-000CN	1
51	Cable-mount lattice assembly	RM1-4128-000CN	1
59	Sheet, entrance-guide	FC5-5542-000CN	2
60	Solenoid	FL2-0821-000CN	1
69	Pin, dowel	XD3-2200-102CN	1
70	Pin, dowel	XD3-2200-142CN	1
71	Ring, E	XD9-0136-000CN	5

Table 9-35 Finisher main body (stapler/stacker and booklet-maker) (continued)

Ref	Description	Part number	Qty
75	Entrance-sensor flag assembly	FM2-0718-000CN	1
79	Plate, hinge-stop (booklet-maker only)	4A3-4715-000CN	1
80	Knob (booklet-maker only)	FB3-7881-000CN	1
86	Cover, internal, lower (booklet-maker only)	RL1-1477-000CN	1
87	Plate, grounding (booklet-maker only)	4A3-1955-000CN	1
88	Clutch, electromagnetic	4H3-0370-000CN	2
91	Plate, grounding (booklet-maker only)	RC2-1536-000CN	1
92	Flexible-cable mount assembly	FM2-0720-000CN	1
501	Pin	XD3-2200-102CN	4
503	Screw, TP, M3x6 (booklet-maker only)	XB6-7300-607CN	1
A51	Photo interrupter, TLP1242	WG8-5593-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-45 Output bin 1 (stack upper-tray assembly) (1 of 2) (stapler/stacker)

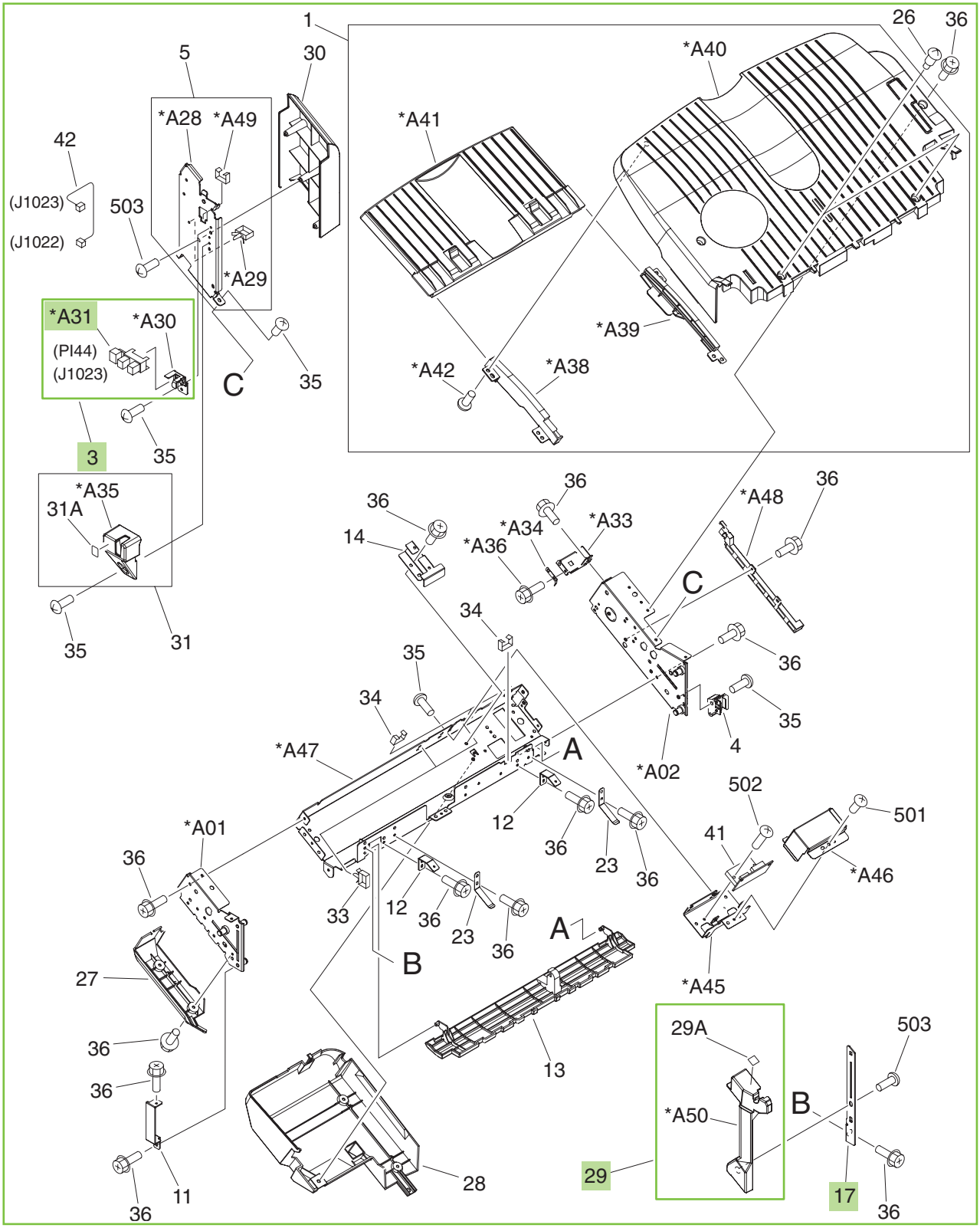


Figure 9-46 Output bin 1 (stack upper-tray assembly) (2 of 2) (stapler/stacker)

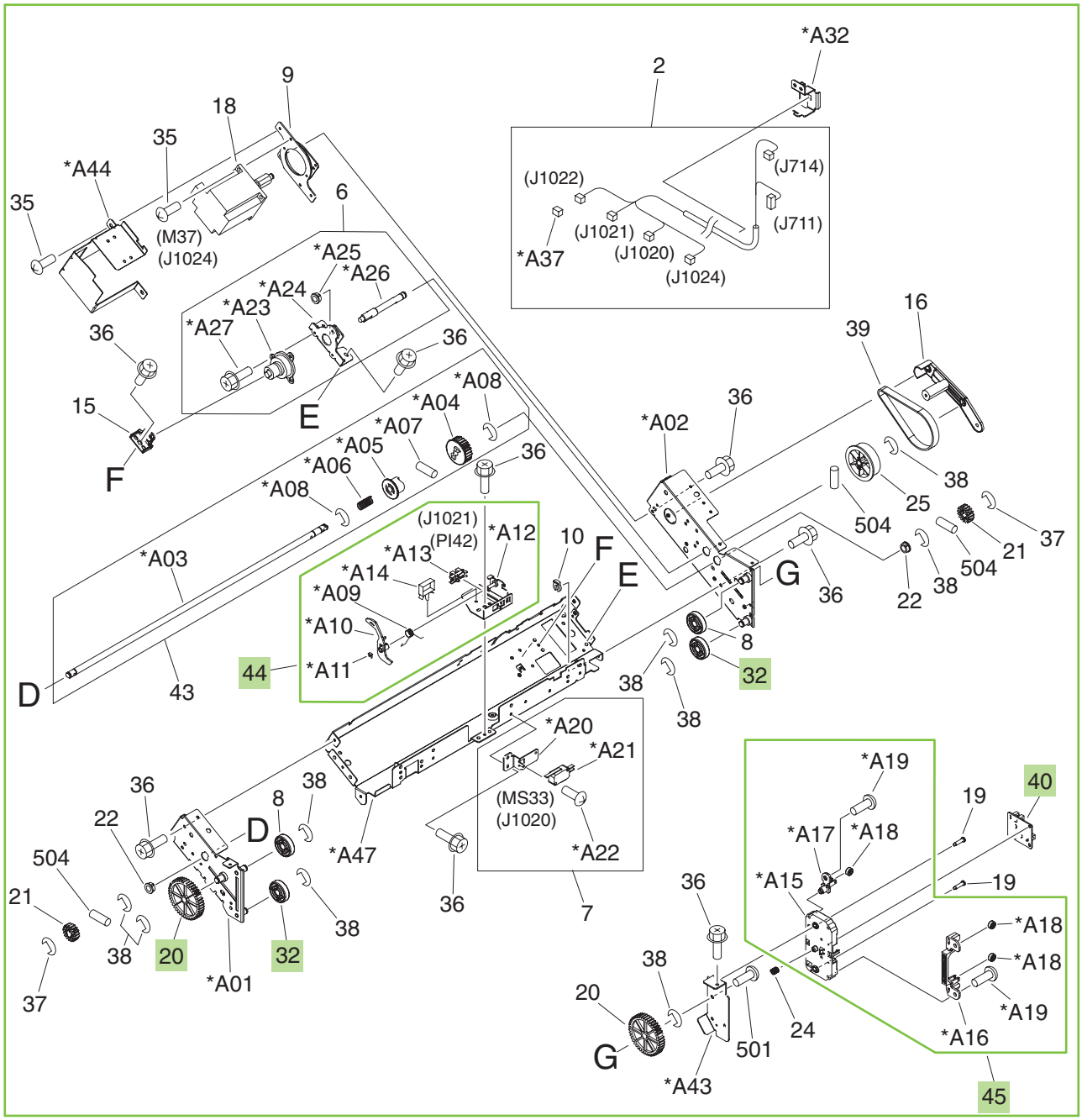


Table 9-36 Output bin 1 (stack upper-tray assembly) (stapler/stacker)

Ref	Description	Part number	Qty
All	Stack upper-tray assembly	RM1-4101-000CN	1
3	Option-sensor assembly	FM2-1708-000CN	1
17	Plate, option-tray, front	FC5-6978-000CN	1
20	Gear, 44T	FU5-0435-000CN	2
29	Cover, option-tray, front	RL1-2210-000CN	1
32	Roller, tray-guide	RU5-6035-000CN	2
40	Area-sensor PCA assembly	4G1-1498-000CN	1
44	Paper-sensor assembly	FM2-0707-000CN	1
45	Area-sensor holder assembly	FM2-0709-000CN	1
A31	Photo interrupter, TLP1242	WG8-5593-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-47 Output bin 1 (stack upper-tray assembly) (1 of 2) (booklet-maker)

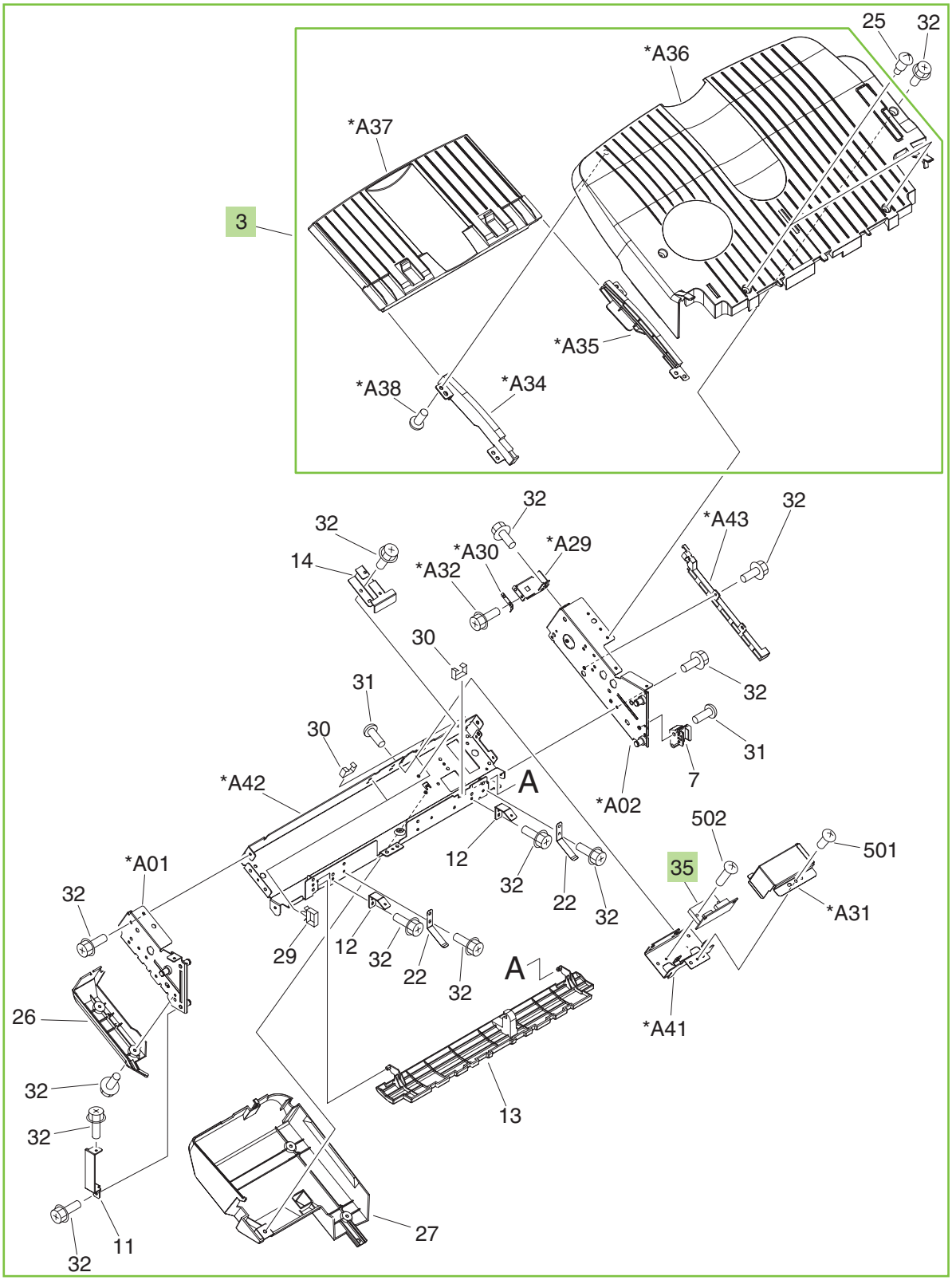


Figure 9-48 Output bin 1 (stack upper-tray assembly) (2 of 2) (booklet-maker)

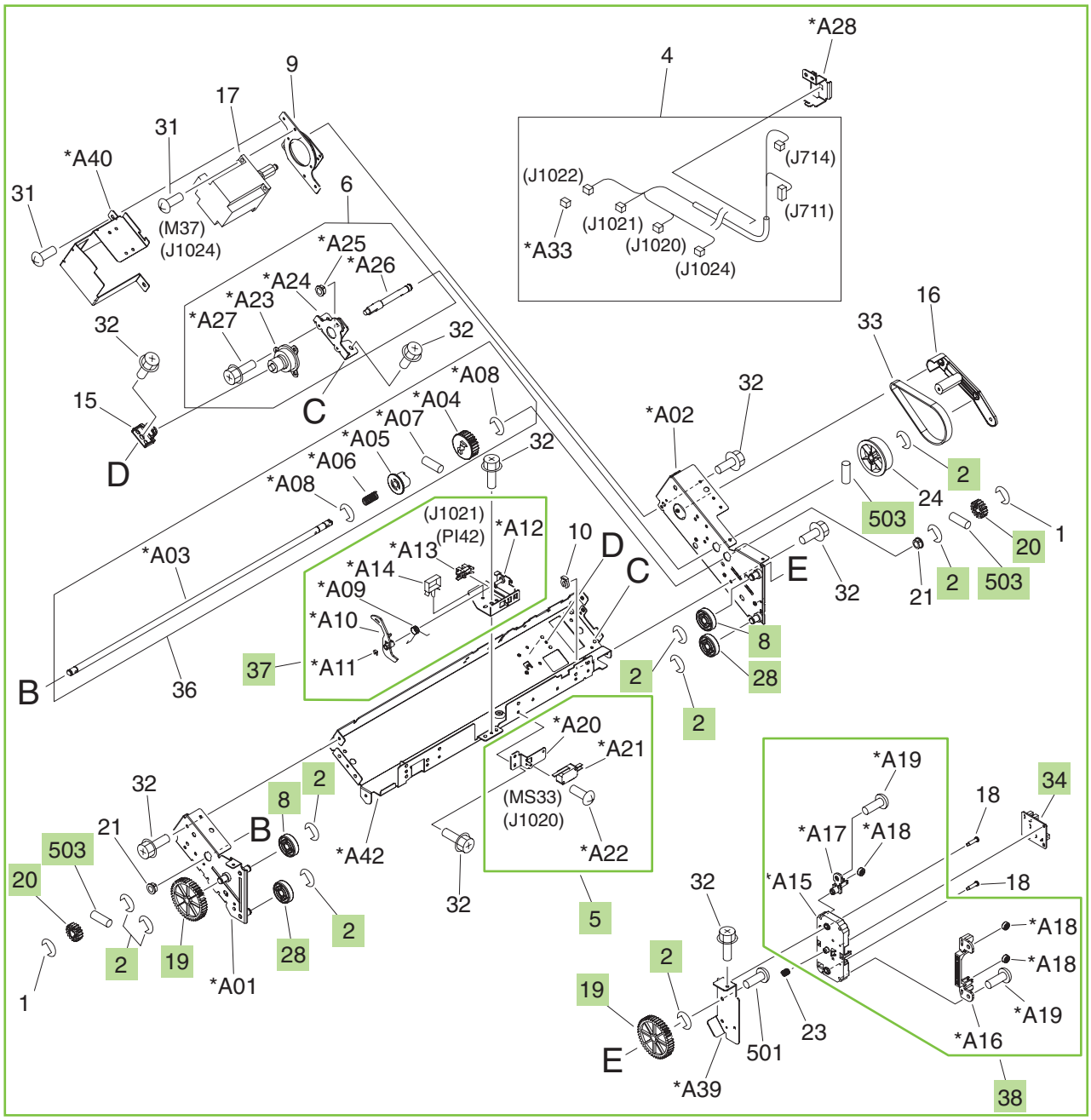


Table 9-37 Output bin 1 (stack upper-tray assembly) (booklet-maker)

Ref	Description	Part number	Qty
All	Stack upper-tray assembly	RM1-4102-000CN	1
2	Ring, E	XD9-0137-000CN	9
3	Stack-tray assembly	RM1-4104-000CN	1
5	Approach-switch assembly	FM2-0710-000CN	1
8	Roller, tray-guide	FC5-4221-000CN	2
19	Gear, 44T	FU5-0435-000CN	2
20	Gear, 17T	FU5-0457-000CN	2
28	Roller, tray-guide	RU5-6035-000CN	2
34	Area-sensor PCA assembly	4G1-1498-000CN	1
35	Tray-driver PCA assembly	FG3-2887-000CN	1
37	Paper-sensor assembly	FM2-0707-000CN	1
38	Area-sensor holder assembly	FM2-0709-000CN	1
503	Pin, dowel	XD3-2300-142CN	3

NOTE: Only highlighted parts are orderable.

Figure 9-49 Output bin 2 (stack lower-tray assembly) (1 of 2) (stapler/stacker and booklet-maker)

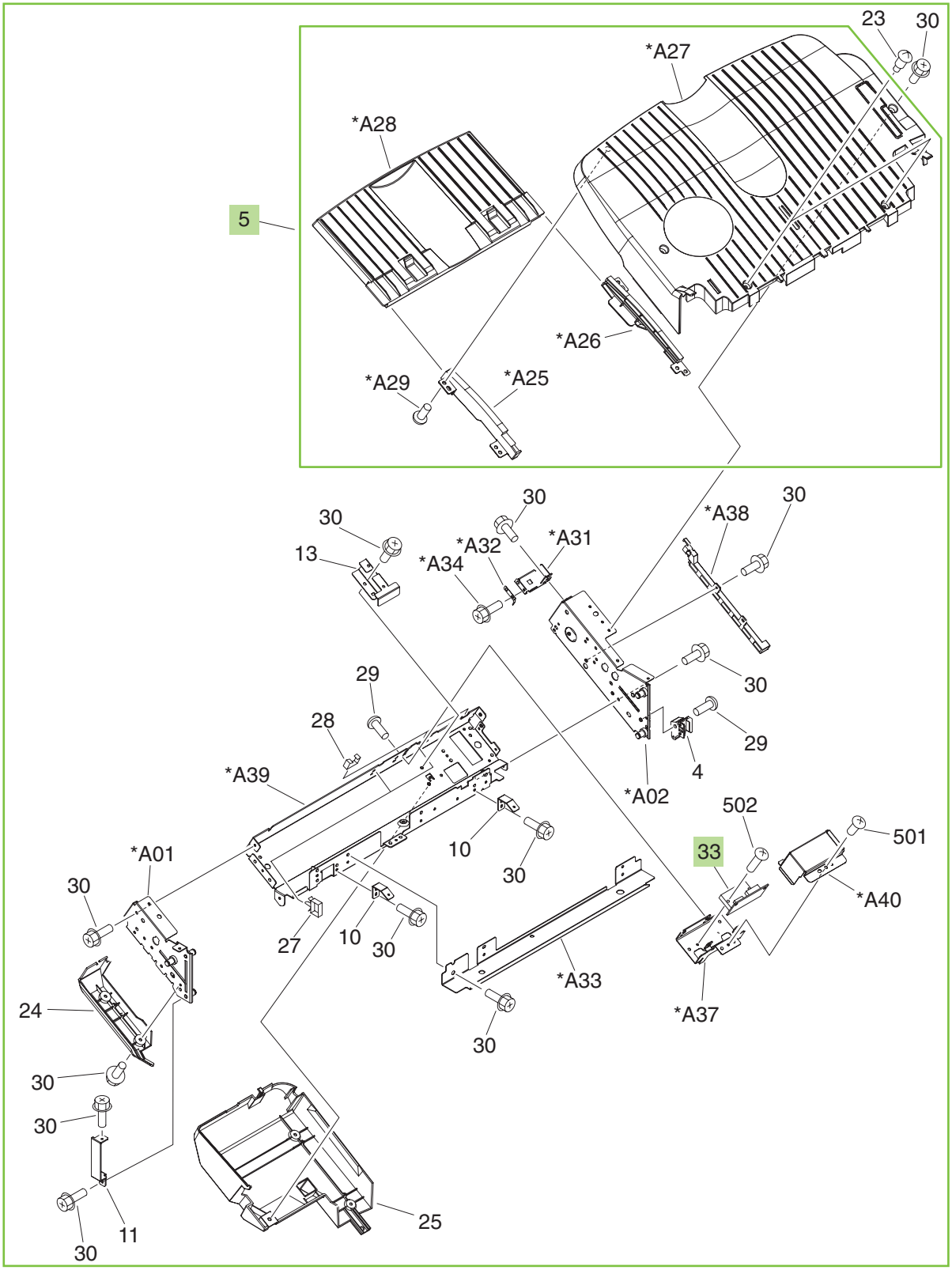


Figure 9-50 Output bin 2 (stack lower-tray assembly) (2 of 2) (stapler/stacker and booklet-maker)

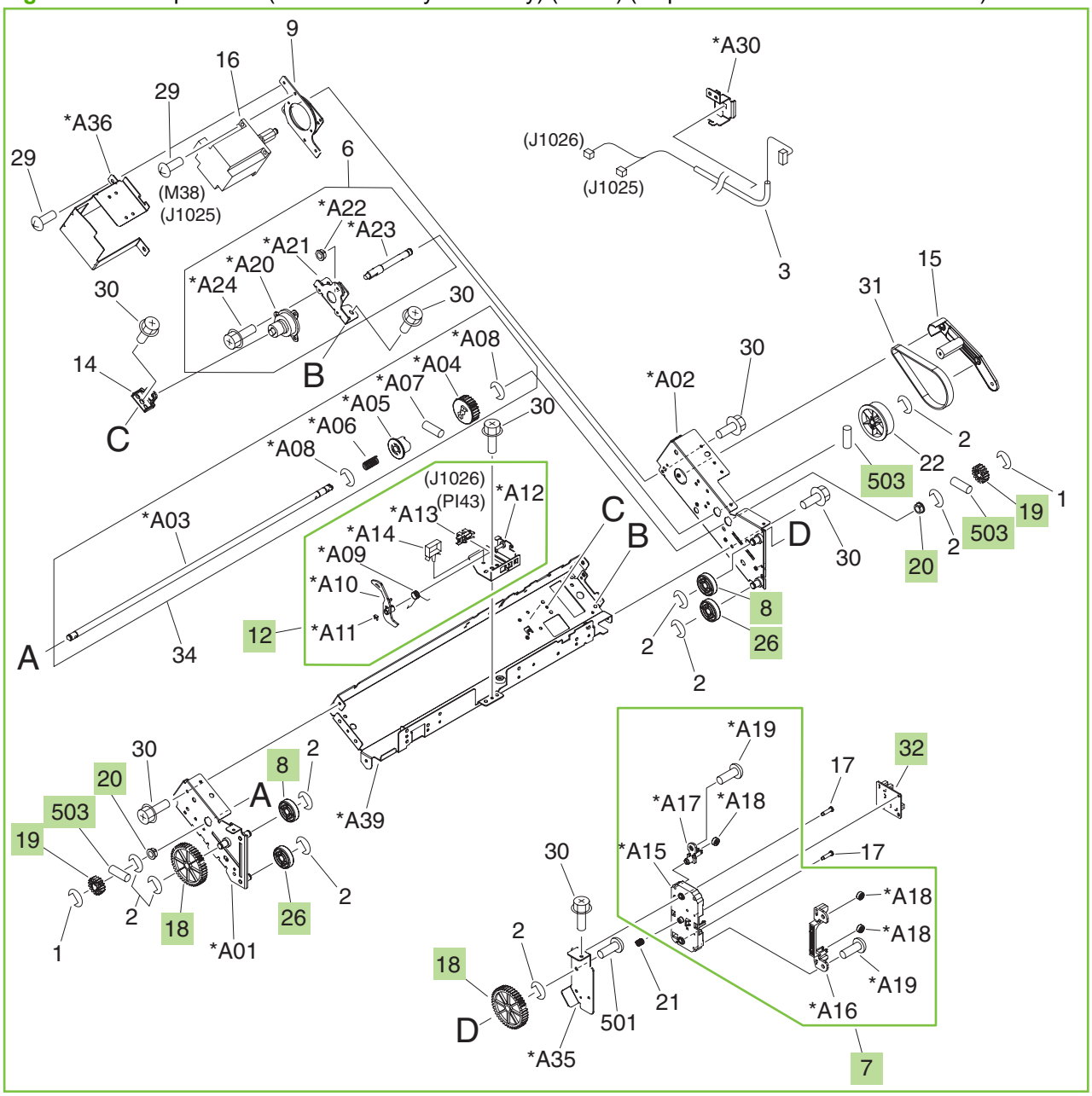


Table 9-38 Output bin 2 (stack lower-tray assembly) (stapler/stacker and booklet-maker)

Ref	Description	Part number	Qty
All	Stack lower-tray assembly	RM1-4105-000CN	1
5	Stack-tray assembly	RM1-4104-000CN	1
7	Area-sensor holder assembly	FM2-0709-000CN	1
8	Roller, tray-guide	FC5-4221-000CN	2
12	Paper-sensor assembly	FM2-0707-000CN	1
18	Gear, 44T	FU5-0435-000CN	2
19	Gear, 17T	FU5-0457-000CN	2
20	Bushing	FU5-1169-000CN	2
26	Roller, tray-guide	RU5-6035-000CN	2
32	Area-sensor PCA assembly	4G1-1498-000CN	1
33	Tray-driver PCA assembly	FG3-2887-000CN	1
503	Pin, dowel	XD3-2300-142CN	3

NOTE: Only highlighted parts are orderable.

Figure 9-51 Top output bin (stack sub-tray assembly) (stapler/stacker)

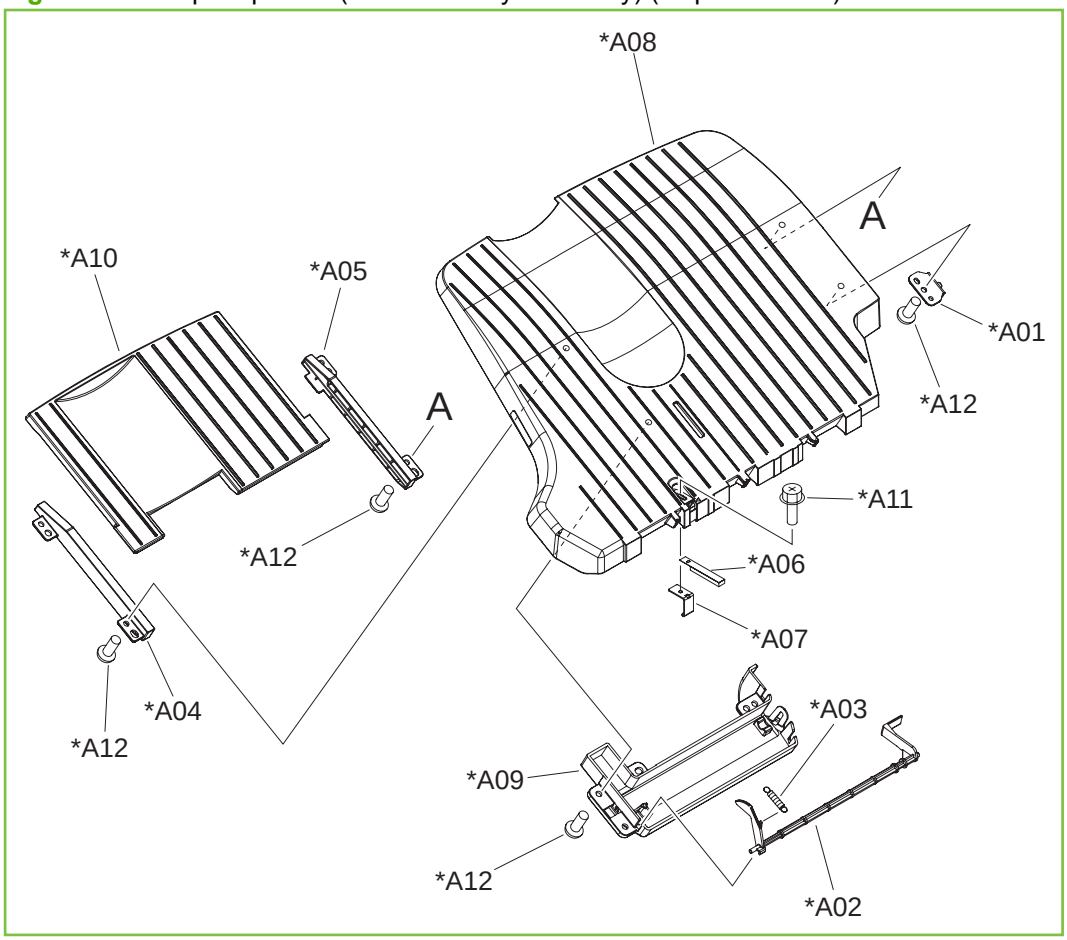


Table 9-39 Top output bin (stack sub-tray assembly) (stapler/stacker)

Ref	Description	Part number	Qty
All	Stack sub-tray assembly	RM1-4115-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-52 Operation-tray assembly (1 of 2) (stapler/stacker and booklet-maker)

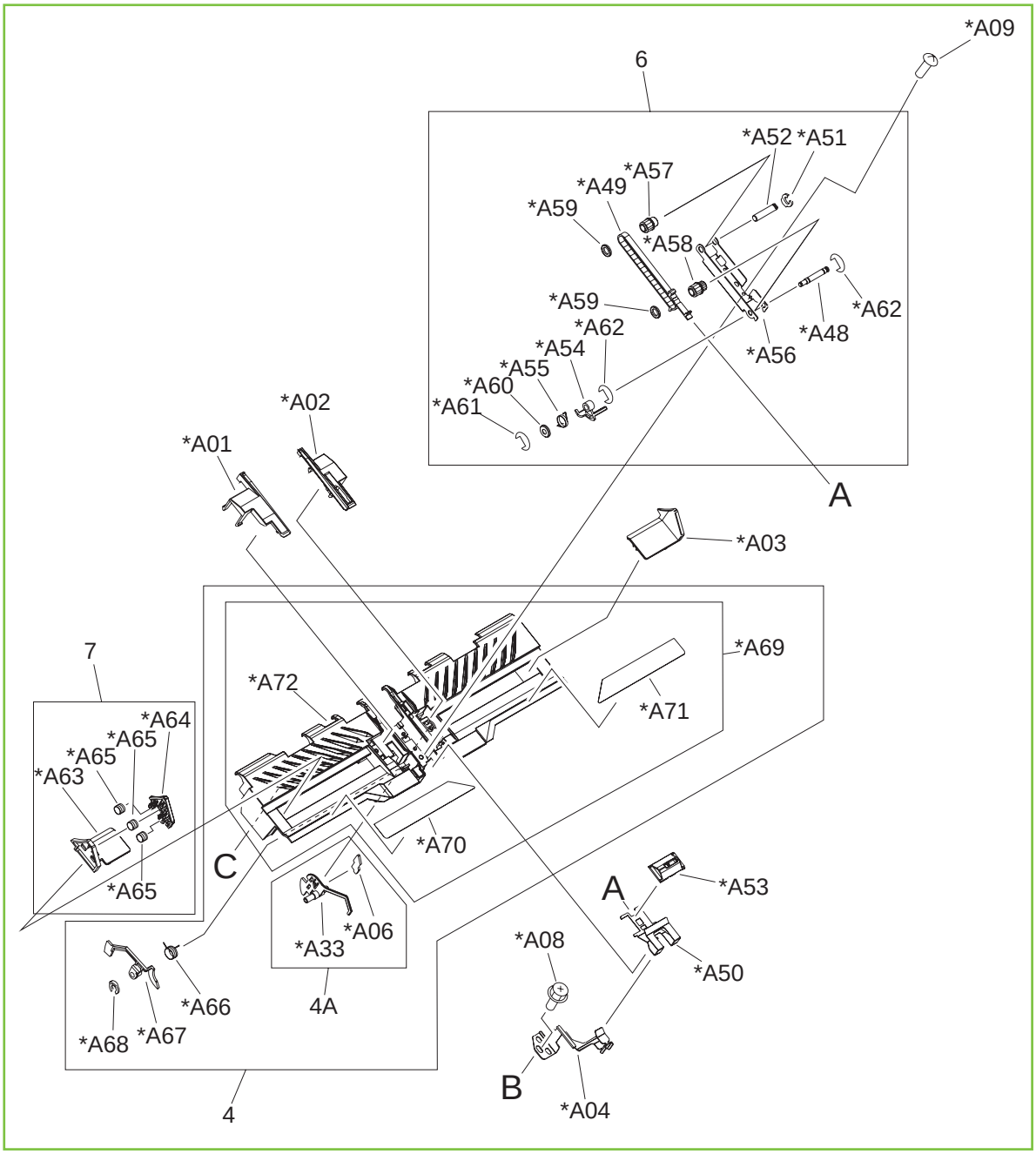


Figure 9-53 Operation-tray assembly (2 of 2) (stapler/stacker and booklet-maker)

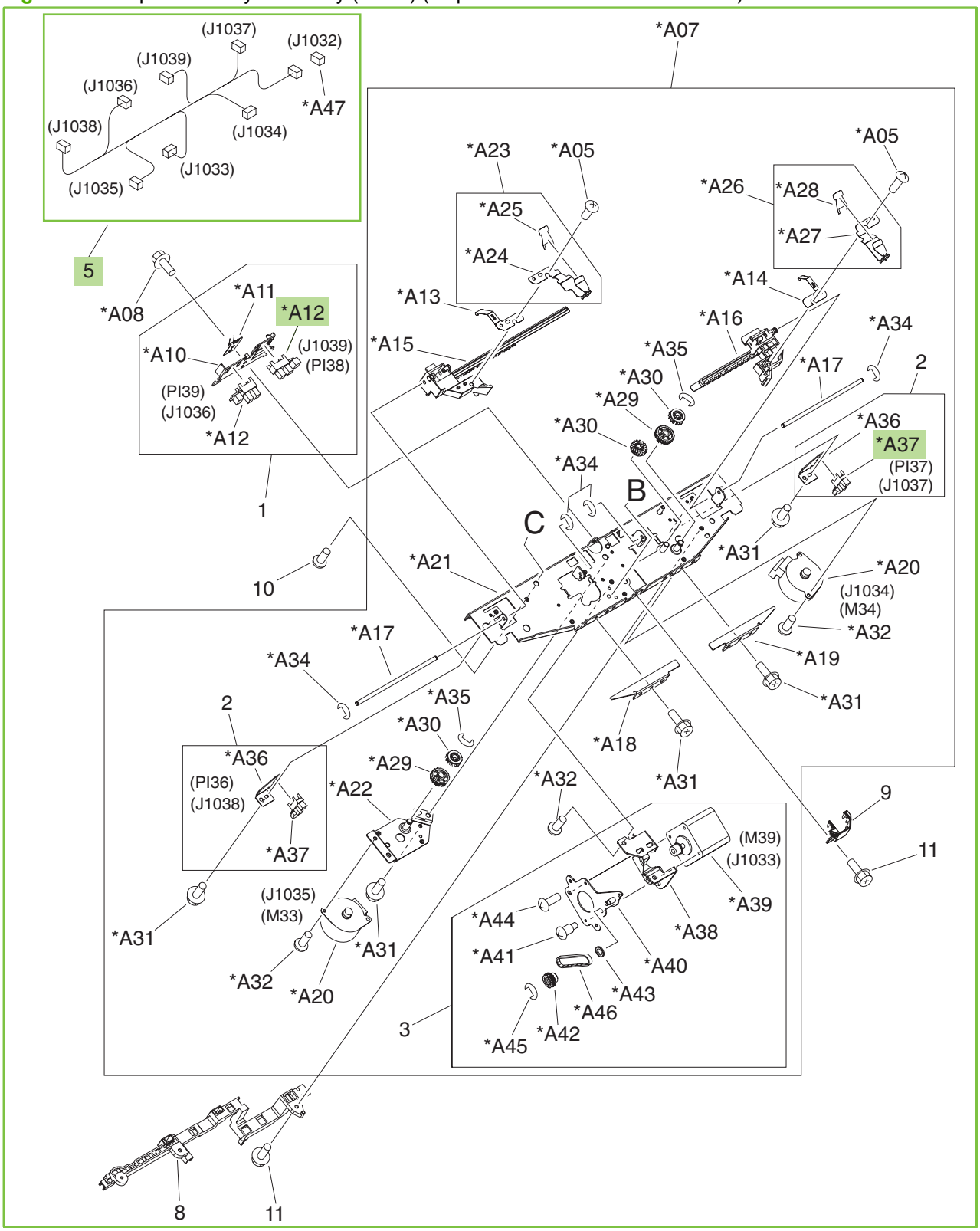


Table 9-40 Operation-tray assembly (stapler/stacker and booklet-maker)

Ref	Description	Part number	Qty
All	Operation-tray assembly	RM1-4125-000CN	1
5	Cable, operation-tray	FG3-2903-000CN	1
A12	Photo interrupter, TLP1242	WG8-5593-000CN	2
A37	Photo interrupter, TLP1242	WG8-5593-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-54 Paper-feeder motor assembly (stapler/stacker and booklet-maker)

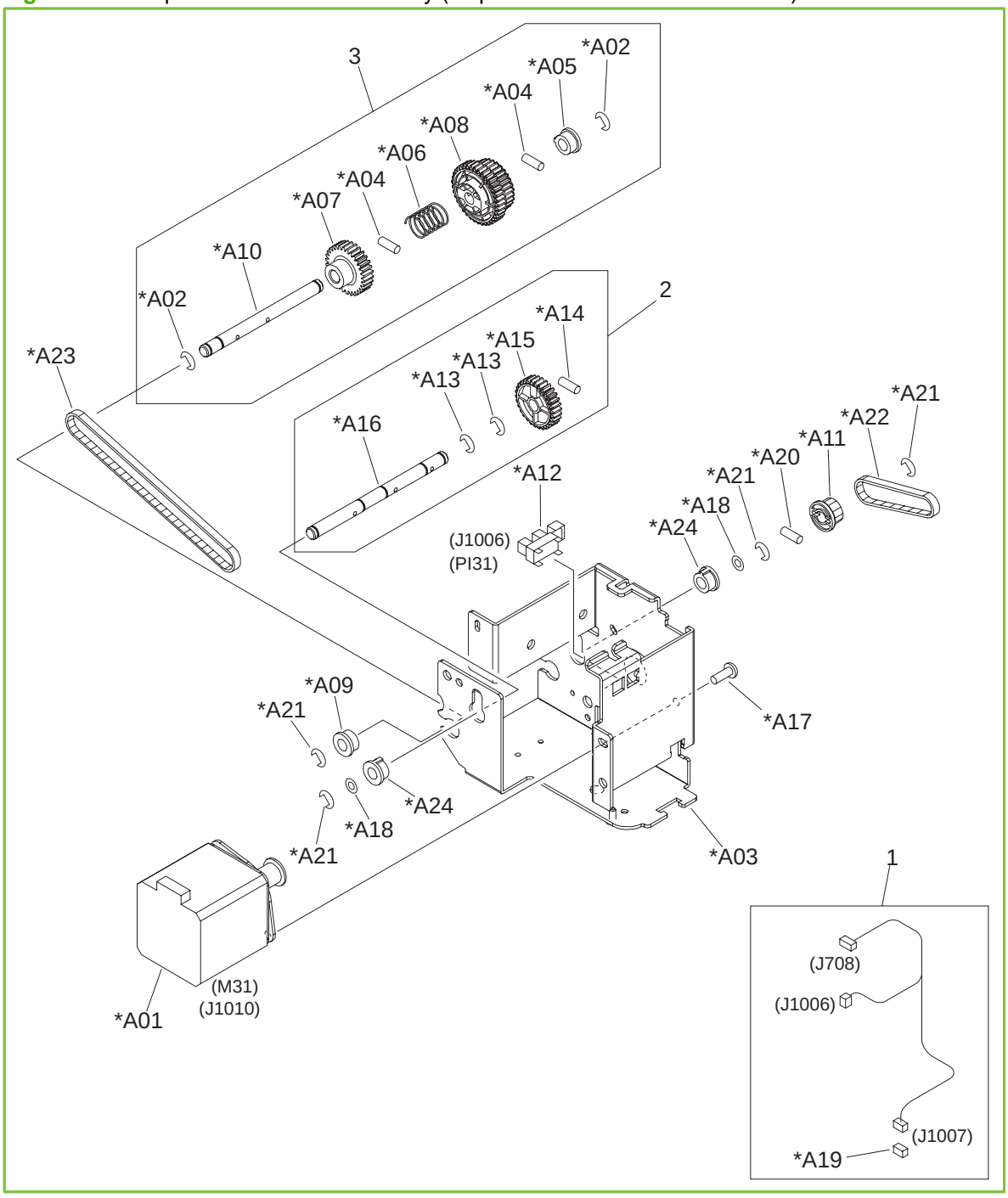


Table 9-41 Paper-feeder motor assembly (stapler/stacker and booklet-maker)

Ref	Description	Part number	Qty
All	Paper-feeder motor assembly	RM1-4175-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-55 Return-roller assembly (stapler/stacker and booklet-maker)

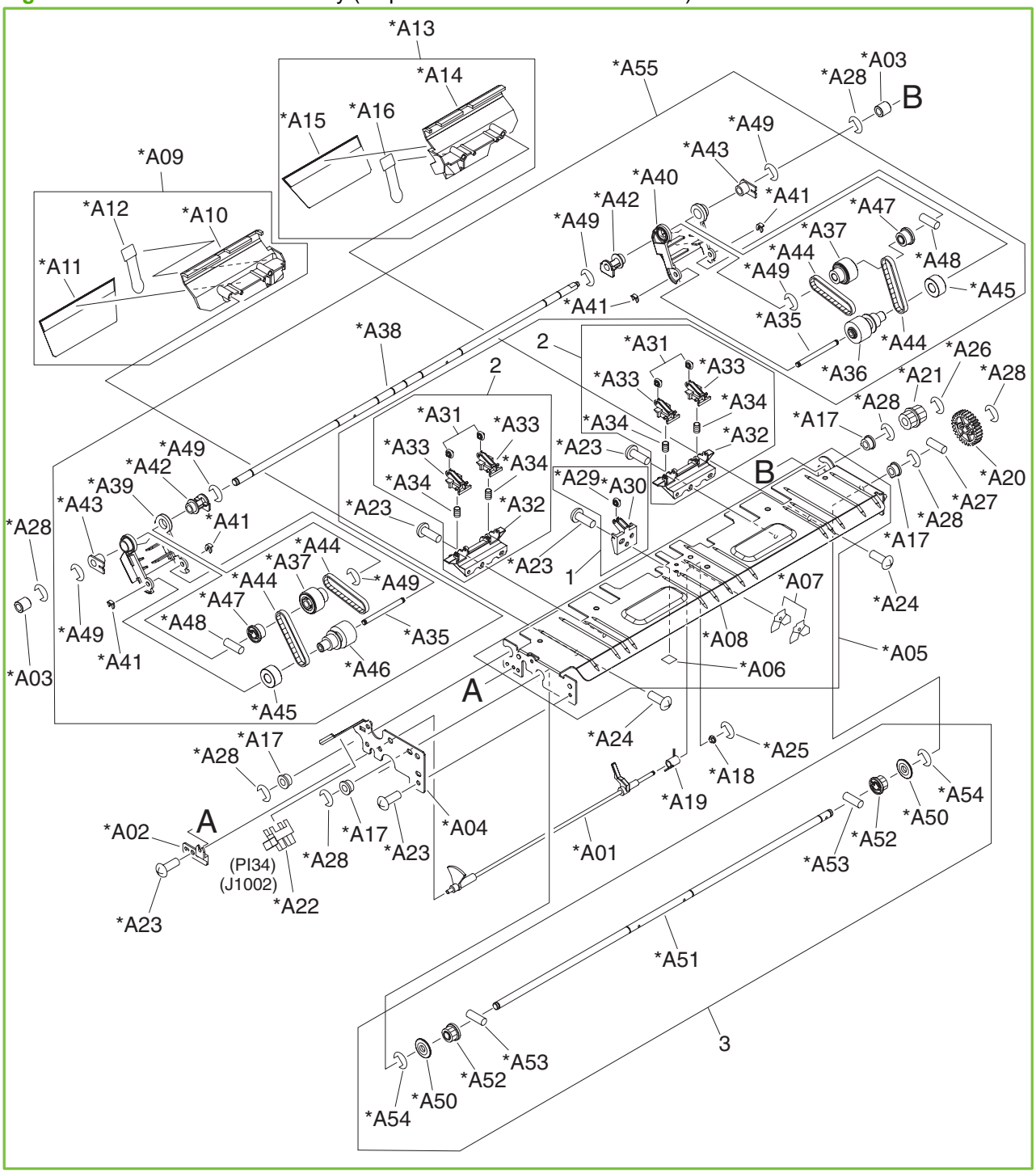


Table 9-42 Return-roller assembly (stapler/stacker and booklet-maker)

Ref	Description	Part number	Qty
All	Return-roller assembly	FM2-0725-090CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-56 Pressure-roller assembly (stapler/stacker and booklet-maker)

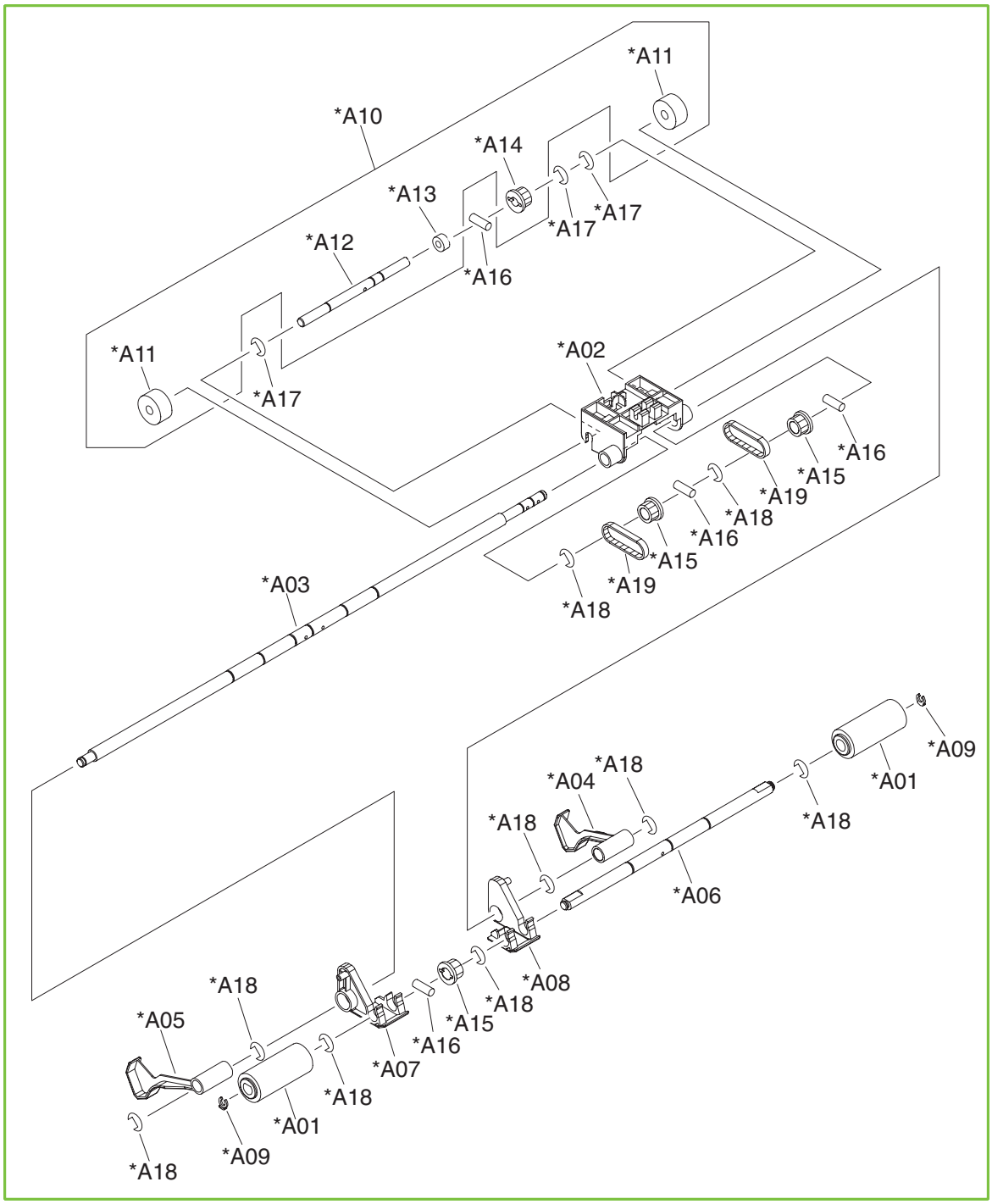


Table 9-43 Pressure-roller assembly (stapler/stacker and booklet-maker)

Ref	Description	Part number	Qty
All	Pressure-roller assembly	FM2-0730-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-57 Swing-guide assembly (stapler/stacker and booklet-maker)

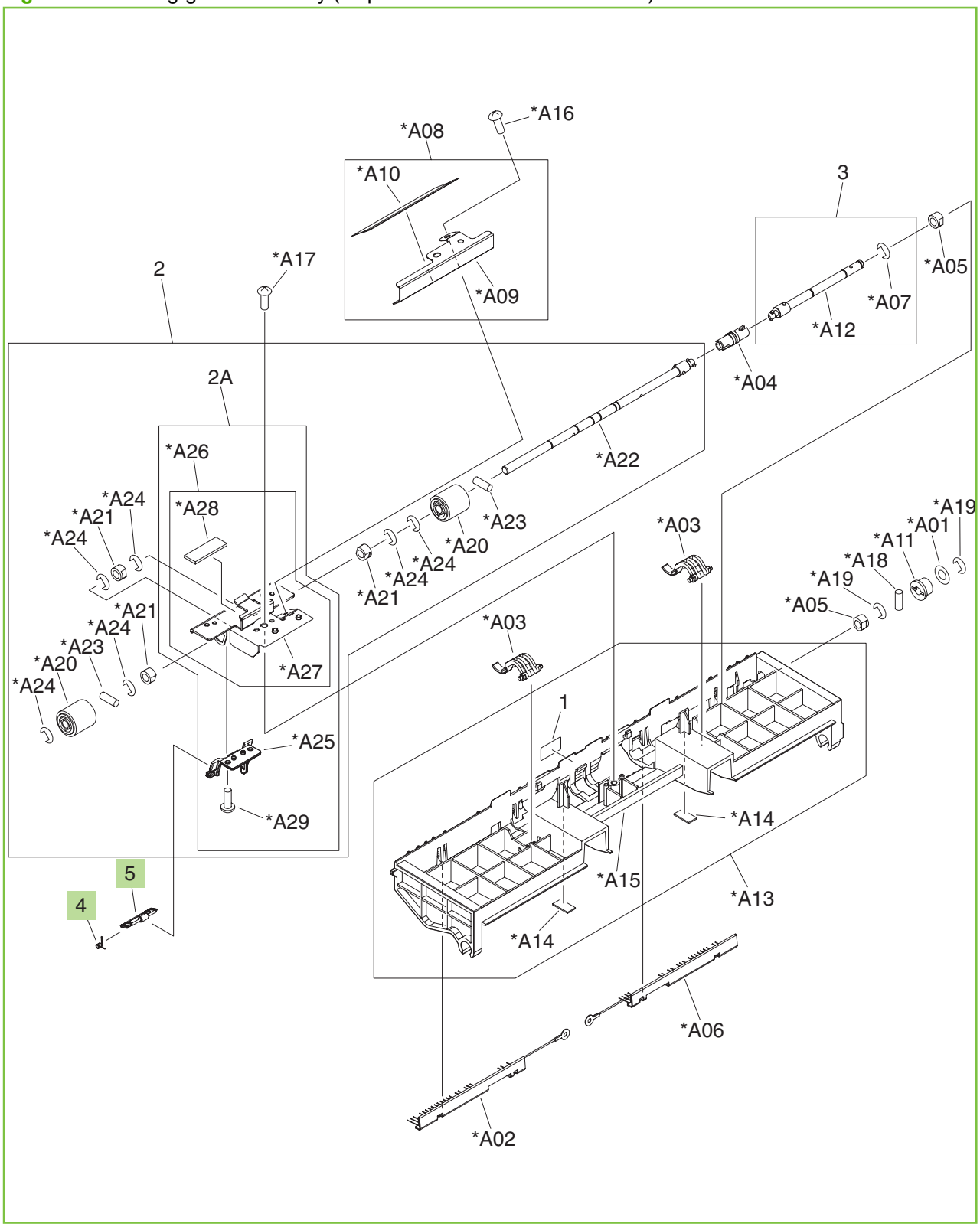


Table 9-44 Swing-guide assembly (stapler/stacker and booklet-maker)

Ref	Description	Part number	Qty
All	Swing-guide assembly	RM1-4108-000CN	1
4	Spring, torsion	FC5-6857-000CN	1
5	Arm, paper-delivery gate	RC2-1293-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-58 Entrance upper-guide assembly (stapler/stacker and booklet-maker)

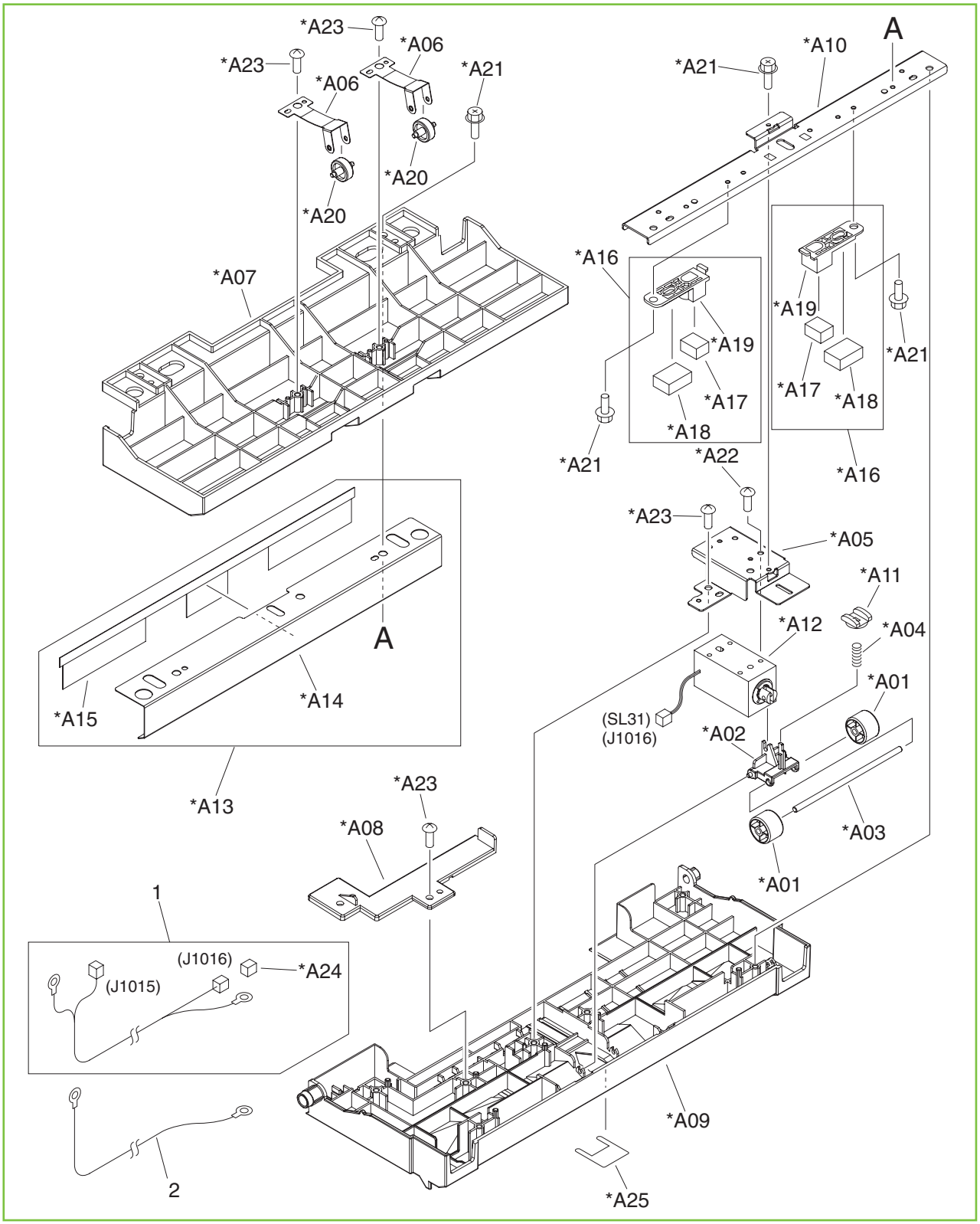


Table 9-45 Entrance upper-guide assembly (stapler/stacker and booklet-maker)

Ref	Description	Part number	Qty
All	Entrance upper-guide assembly	RM1-4172-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-59 Staple assembly (stapler/stacker and booklet-maker)

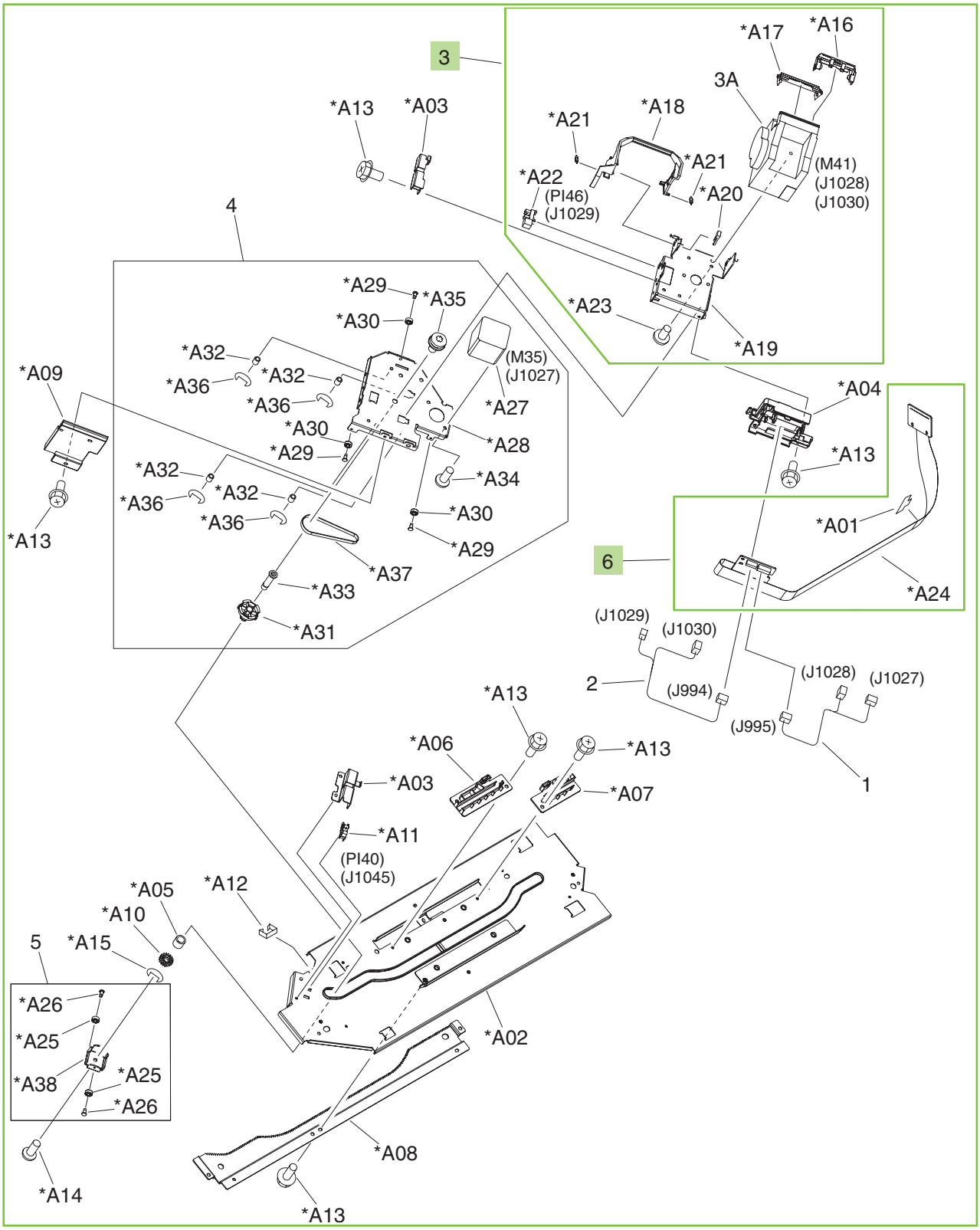


Table 9-46 Staple assembly (stapler/stacker and booklet-maker)

Ref	Description	Part number	Qty
All	Staple assembly	FM2-0721-000CN	1
3	Stapler sub-assembly	FM2-0722-000CN	1
	5000-staple replacement cartridge	C8091-67901	1
	2000-staple cartridge (for booklet making)	CC383-67901	1
6	Cable, staple-connecting assembly	4G3-1777-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-60 Saddle assembly (1 of 4) (booklet-maker)

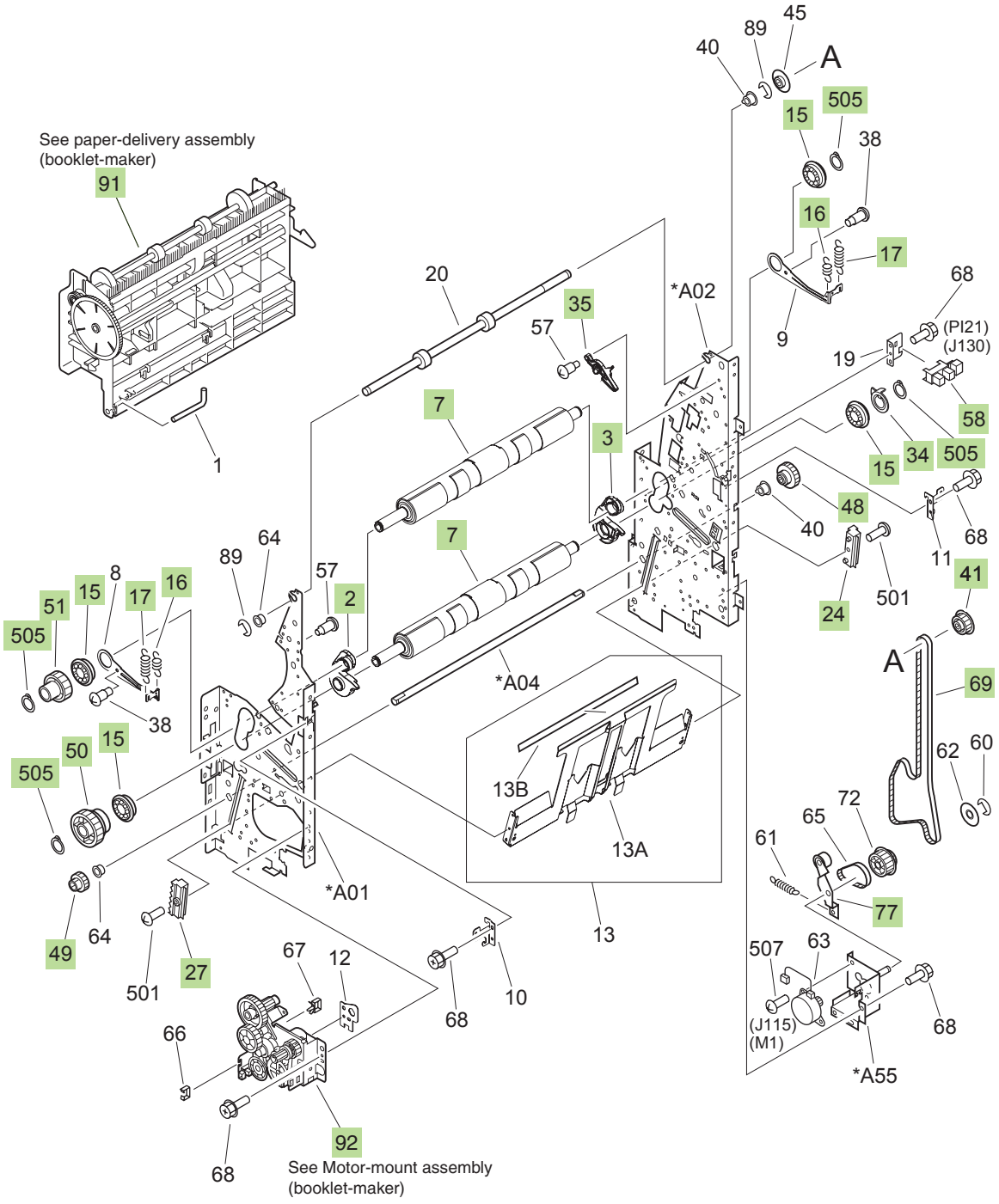


Figure 9-61 Saddle assembly (2 of 4) (booklet-maker)

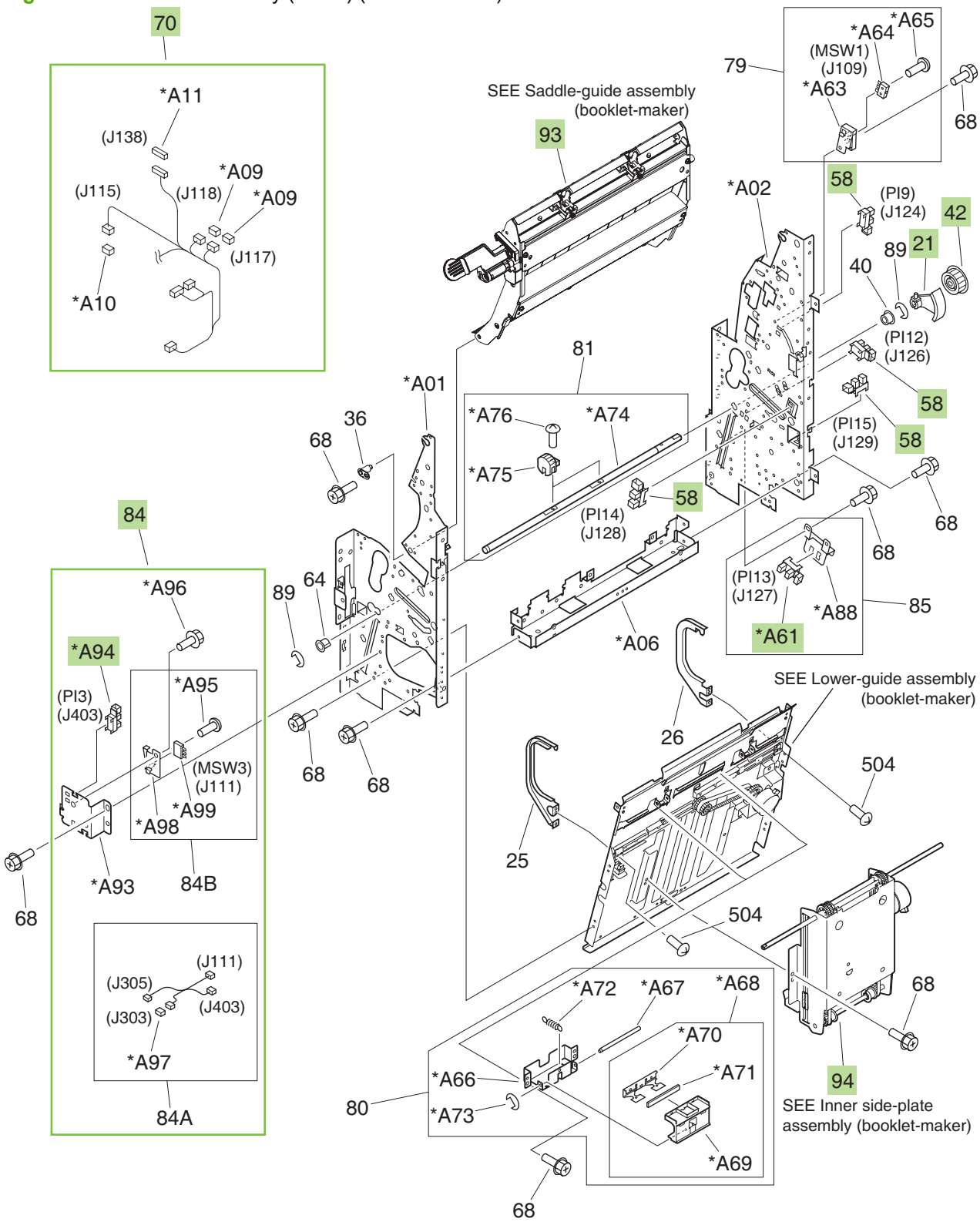


Figure 9-62 Saddle assembly (3 of 4) (booklet-maker)

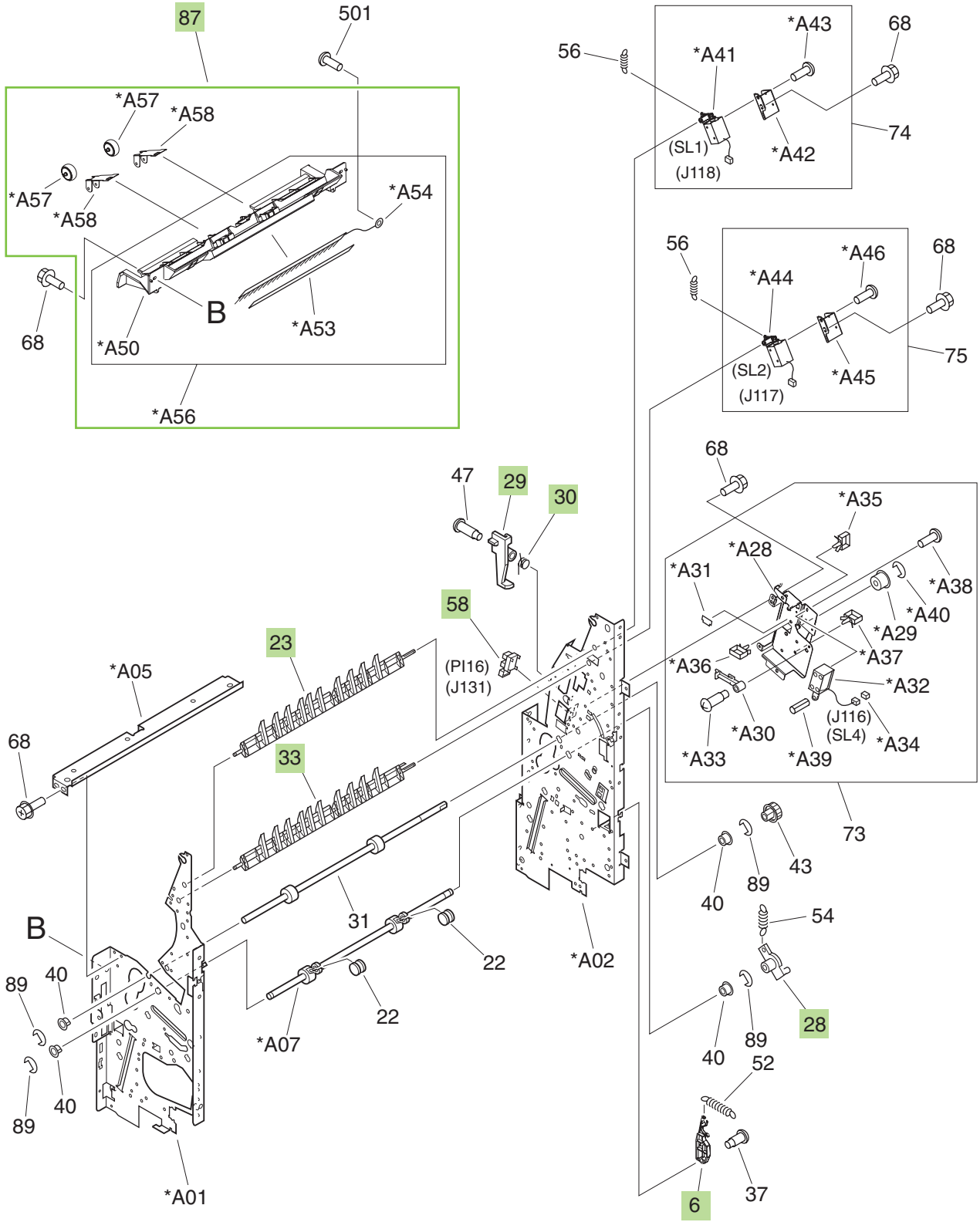


Figure 9-63 Saddle assembly (4 of 4) (booklet-maker)

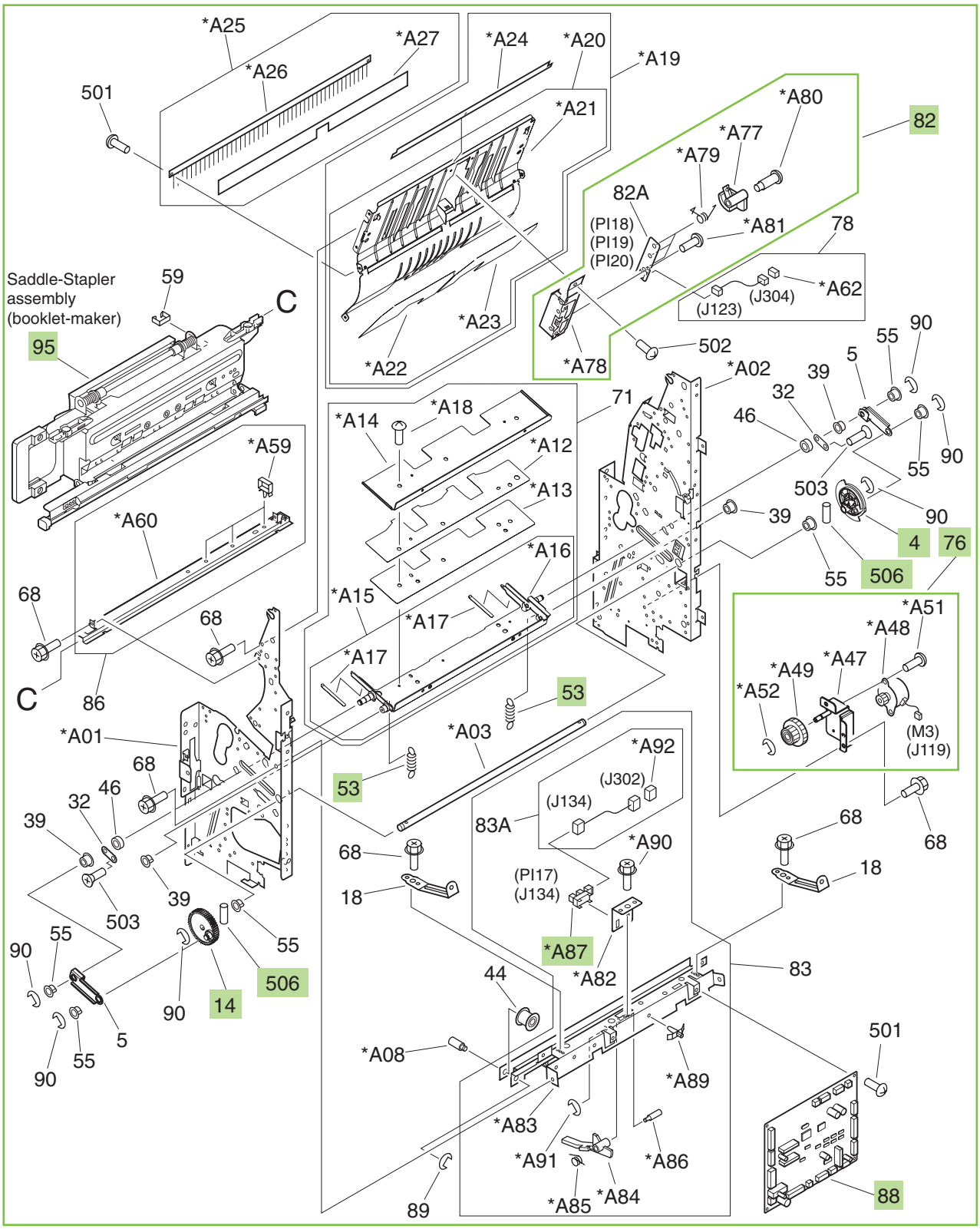


Table 9-47 Saddle assembly (booklet-maker)

Ref	Description	Part number	Qty
2	Arm, adjustment, front	4A3-1763-000CN	1
3	Arm, adjustment, rear	4A3-1764-000CN	1
4	Plate, rotation	4A3-1779-000CN	1
6	Lever, stopper	4A3-1782-000CN	1
7	Roller, folding	4A3-1783-000CN	2
14	Gear, 50T	4S3-0171-000CN	1
15	Bearing, ball, 6902ZZNR	4S3-1050-000CN	4
16	Spring, tension	4S3-2116-000CN	2
17	Spring, tension	4S3-2117-000CN	2
21	Flag, roller	FB3-7925-030CN	1
23	Deflector	FB3-7928-020CN	1
24	Rack, rear	FB3-7934-000CN	1
27	Rack, front	FB3-7967-000CN	1
28	Holder, roller, 2	FB3-7973-000CN	1
29	Flag, sensor	FB3-7979-000CN	1
30	Spring, torsion	FB3-7980-000CN	1
33	Deflector	FB5-2697-000CN	1
34	Flag, sensor	FB5-5937-020CN	1
35	Claw, latch, right	FC5-5021-000CN	1
41	Pulley, 30T	FS5-3576-000CN	1
42	Pulley, 39T	FS5-3577-000CN	1
48	Gear, 16T/33T	FS6-0822-000CN	1
49	Gear, 16T	FS6-0823-000CN	1
50	Gear, 16T/56T	FS6-0829-000CN	1
51	Gear, 16T	FS6-0830-000CN	1
53	Spring, tension	FS6-2582-000CN	2
58	Photo interrupter, TLP1242	WG8-5593-000CN	6
69	Belt, timing	XF2-3837-340CN	1
70	Cable, saddle-unit	4G1-2283-000CN	1
76	Guide-motor assembly	4G3-0725-000CN	1
77	Plate, tension	FF5-5805-040CN	1
82	Rear-end sensor assembly	FM2-0763-000CN	1
84	Delivery-switch mount assembly	FM2-1639-000CN	1
87	Upper delivery-guide assembly	RM1-4131-000CN	1

Table 9-47 Saddle assembly (booklet-maker) (continued)

Ref	Description	Part number	Qty
88	Saddle-controller PCA assembly	RM1-4140-000CN	1
91	Saddle paper-delivery assembly	RM1-4130-000CN	1
92	Motor-mount assembly	4G3-0670-000CN	1
93	Saddle-guide assembly	FM2-0756-000CN	1
94	Inner side-plate assembly	4G3-0671-000CN	1
95	Saddle-stapler assembly	RM1-4178-000CN	1
505	Ring, C, external	XD2-3100-152CN	4
506	Pin, dowel	XD3-2300-202CN	2
A61	Photo interrupter, TLP1242	WG8-5593-000CN	1
A87	Photo interrupter, TLP1242	WG8-5593-000CN	1
A94	Photo interrupter, TLP1242	WG8-5593-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-64 Saddle-tray assembly (booklet-maker)

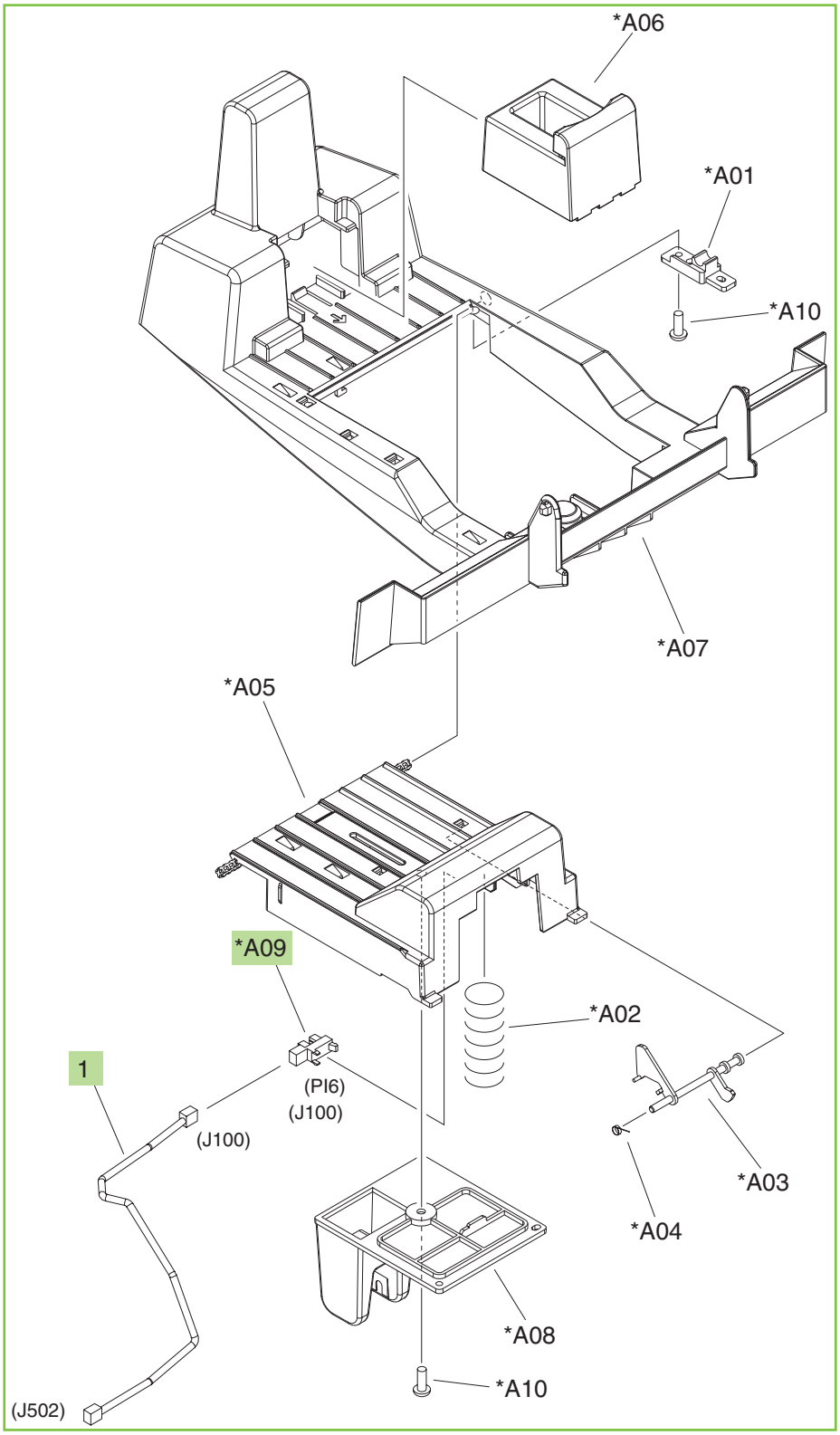


Table 9-48 Saddle-tray assembly (booklet-maker)

Ref	Description	Part number	Qty
All	Booklet-output bin (saddle-tray assembly)	RM1-4113-000CN	1
1	Cable, sensor	4G1-2285-000CN	1
A09	Photo interrupter, TLP1242	WG8-5593-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-65 Saddle-guide assembly (booklet-maker)

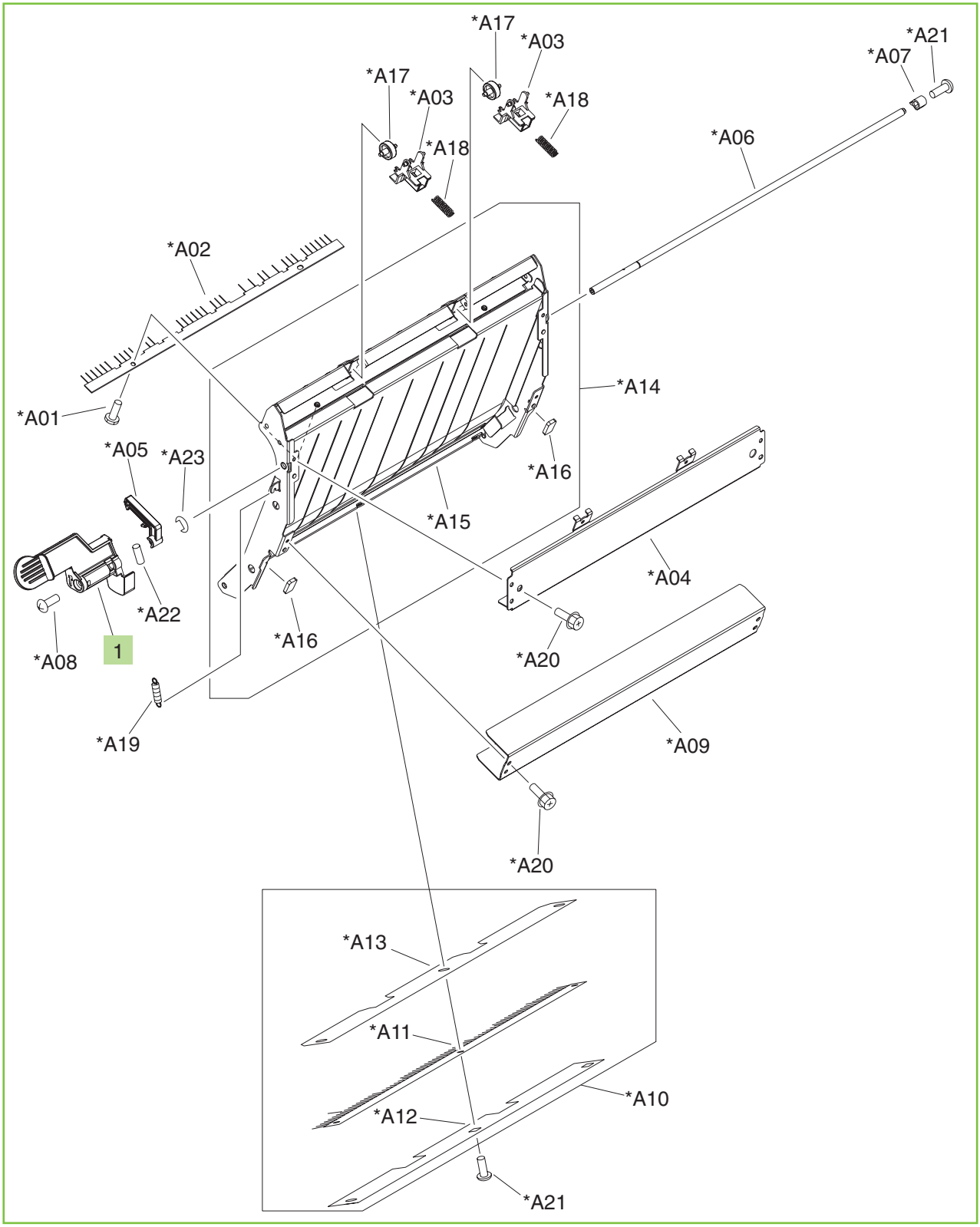


Table 9-49 Saddle-guide assembly (booklet-maker)

Ref	Description	Part number	Qty
All	Saddle-guide assembly	FM2-5024-000CN	1
1	Knob, latch	FC5-5024-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-66 Saddle-stapler assembly (booklet-maker)

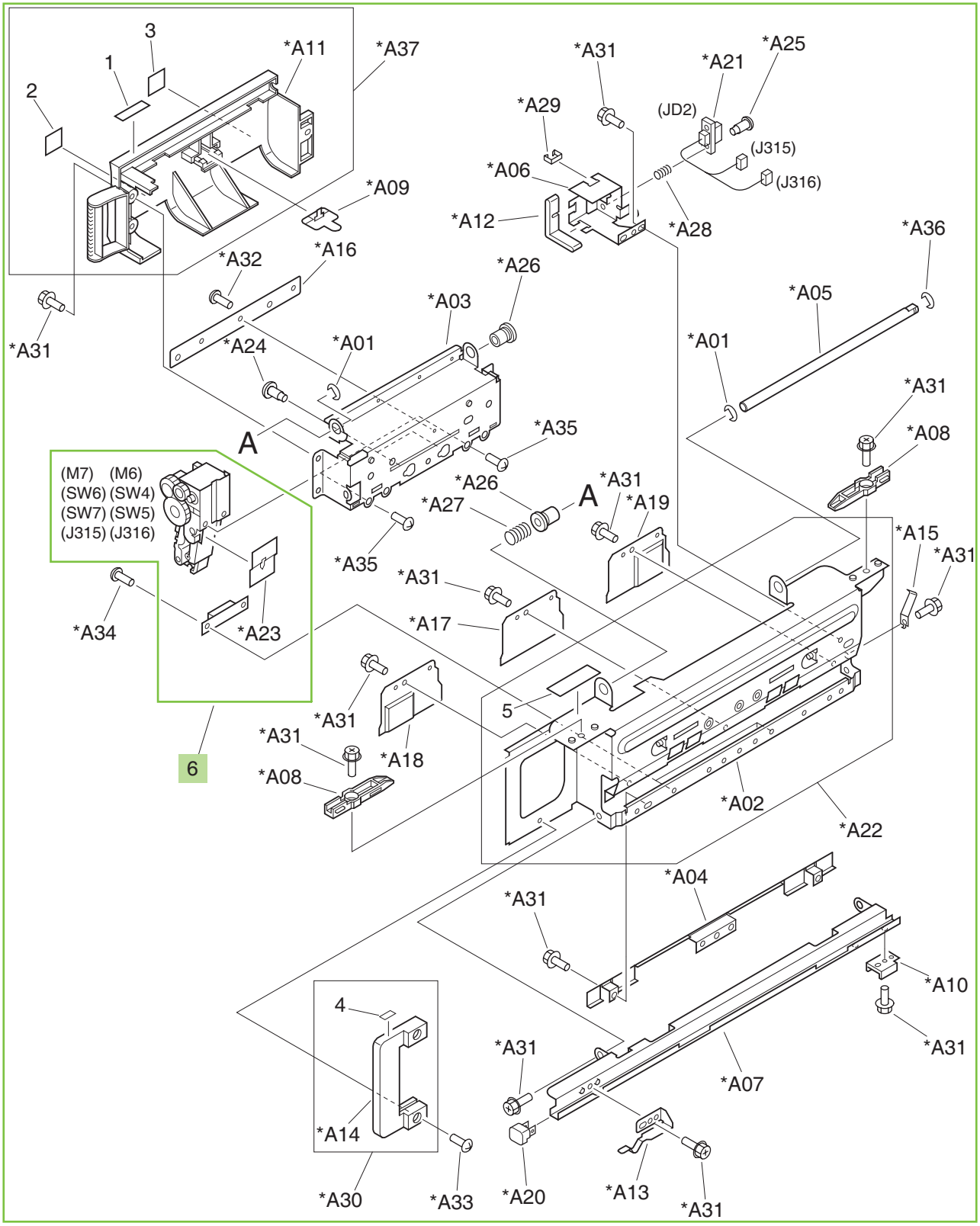


Table 9-50 Saddle-stapler assembly (booklet-maker)

Ref	Description	Part number	Qty
All	Saddle-stapler assembly	RM1-4178-000CN	1
6	Stapler unit	FL2-0846-000CN	2
	5000-staple replacement cartridge	C8091-67901	1
	2000-staple cartridge (for booklet making)	CC383-67901	1

NOTE: Only highlighted parts are orderable.

Figure 9-67 Saddle paper-feeder assembly (stapler/stacker)

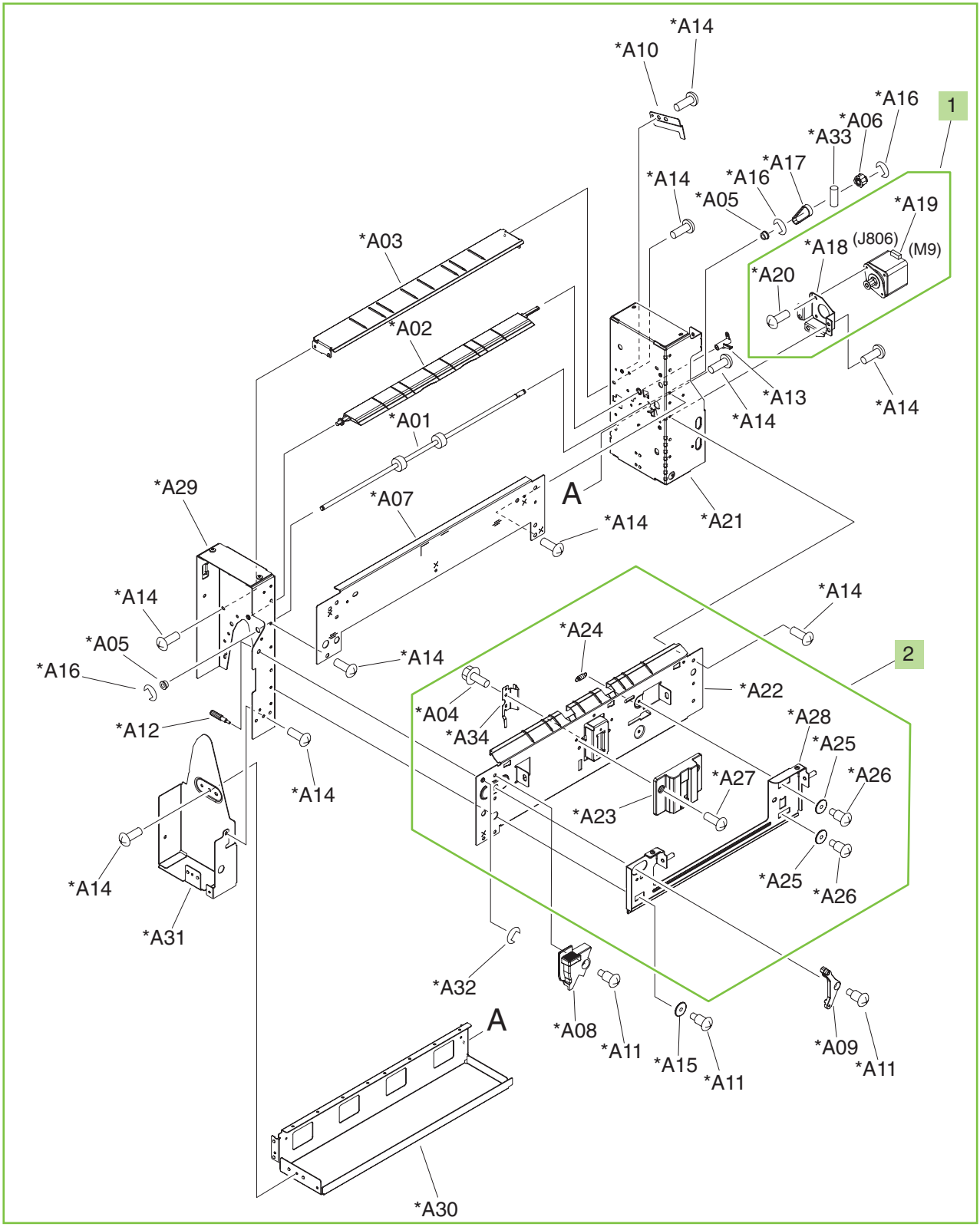


Table 9-51 Saddle paper-feeder assembly (stapler/stacker)

Ref	Description	Part number	Qty
All	Saddle paper-feeder assembly	RM1-4136-000CN	1
1	Saddle-motor assembly	FM2-0737-000CN	1
2	Entrance lower-guide assembly	RM1-4110-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-68 Saddle paper-feeder assembly (booklet-maker)

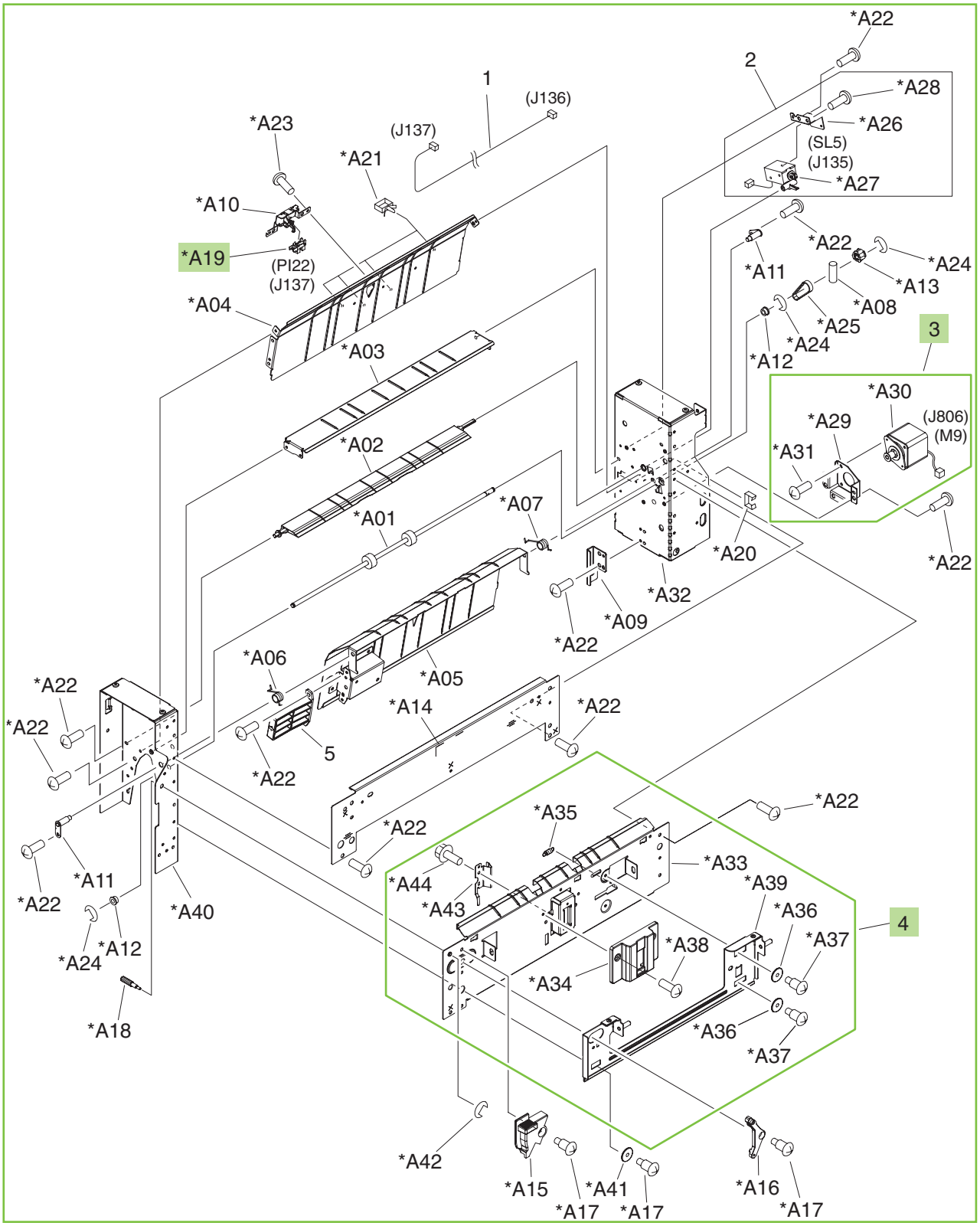


Table 9-52 Saddle paper-feeder assembly (booklet-maker)

Ref	Description	Part number	Qty
All	Saddle paper-feeder assembly	RM1-4109-000CN	1
3	Saddle-motor assembly	FM2-0737-000CN	1
4	Entrance lower-guide assembly	RM1-4110-000CN	1
A19	Photo interrupter, TLP1242	WG8-5593-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-69 Pass lower-guide assembly (booklet-maker)

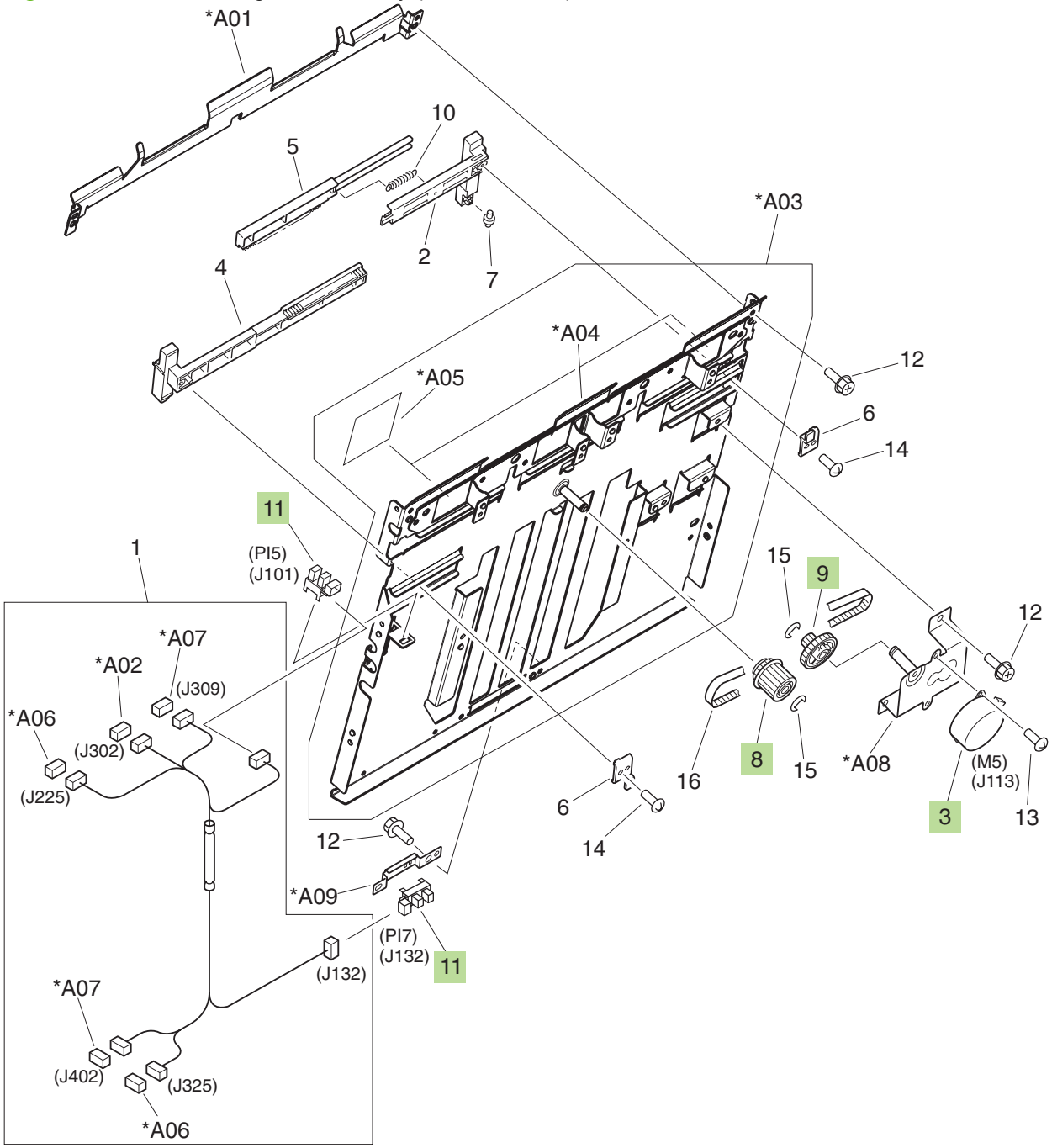


Table 9-53 Pass lower-guide assembly (booklet-maker)

Ref	Description	Part number	Qty
3	Motor, stepping	4K1-1103-000CN	1
8	Pulley, 32T/gear, 16T	FS6-0814-000CN	1
9	Pulley, 16T/gear, 32T	FS6-0815-000CN	1
11	Photo interrupter, TLP1242	WG8-5593-000CN	2

NOTE: Only highlighted parts are orderable.

Figure 9-70 Inner side-plate assembly (booklet-maker)

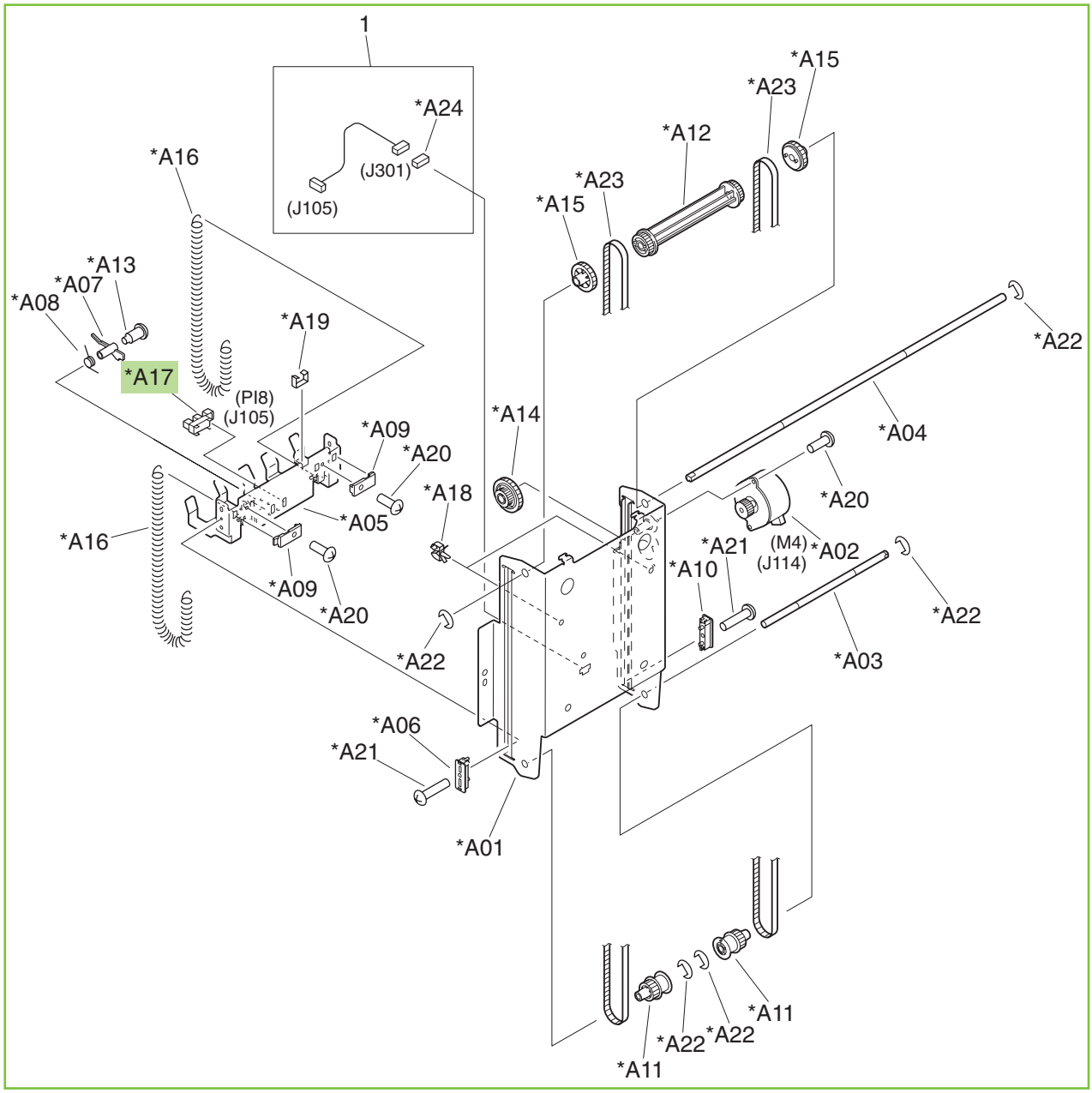


Table 9-54 Inner side-plate assembly (booklet-maker)

Ref	Description	Part number	Qty
All	Inner side-plate assembly	4G3-0671-000CN	1
A17	Photo interrupter, TLP1242	WG8-5593-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-71 Saddle paper-delivery assembly (booklet-maker)

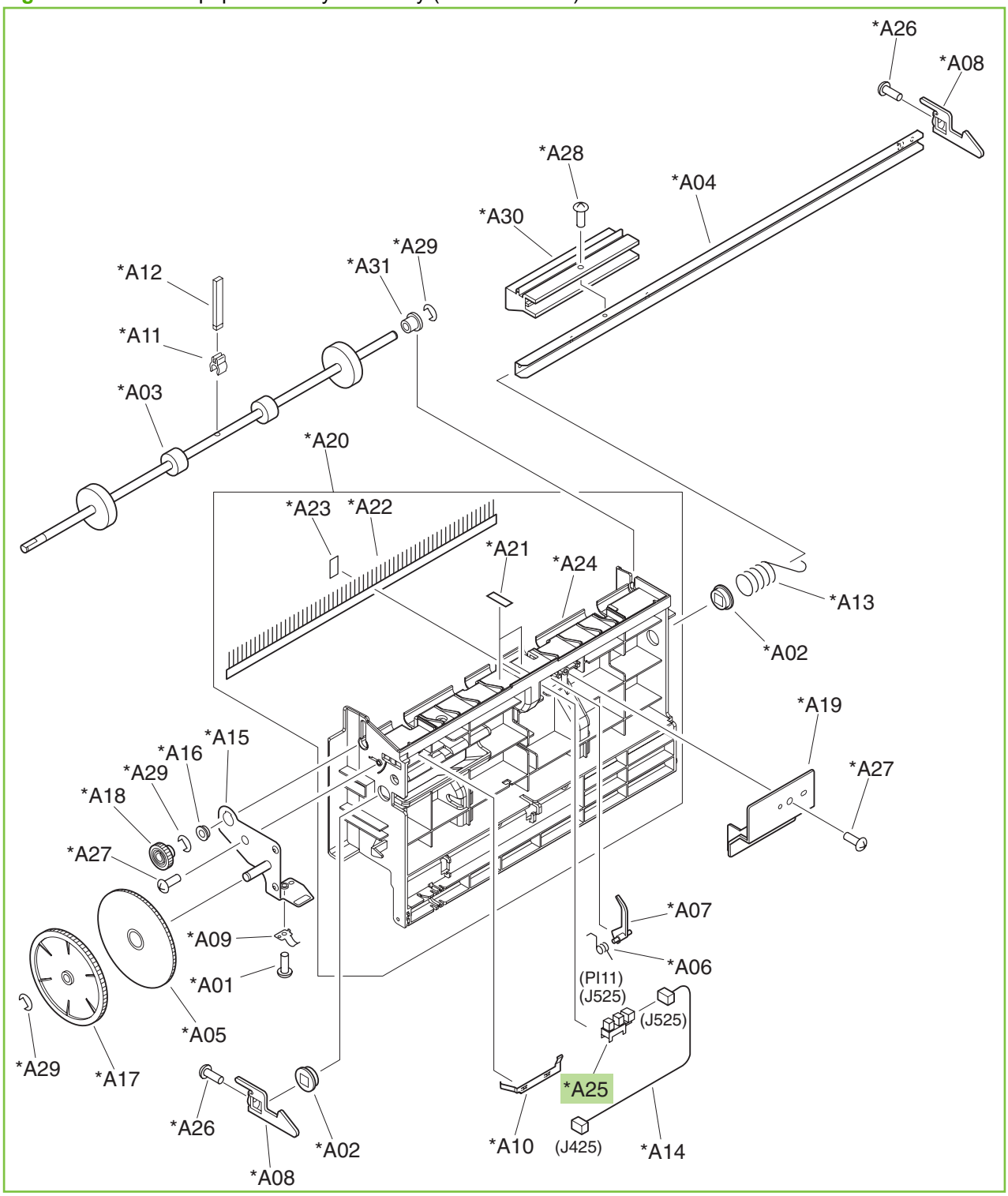


Table 9-55 Saddle paper-delivery assembly (booklet-maker)

Ref	Description	Part number	Qty
All	Saddle paper-delivery assembly	RM1-4130-000CN	1
A25	Photo interrupter, TLP1242	WG8-5593-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-72 Motor-mount assembly (booklet-maker)

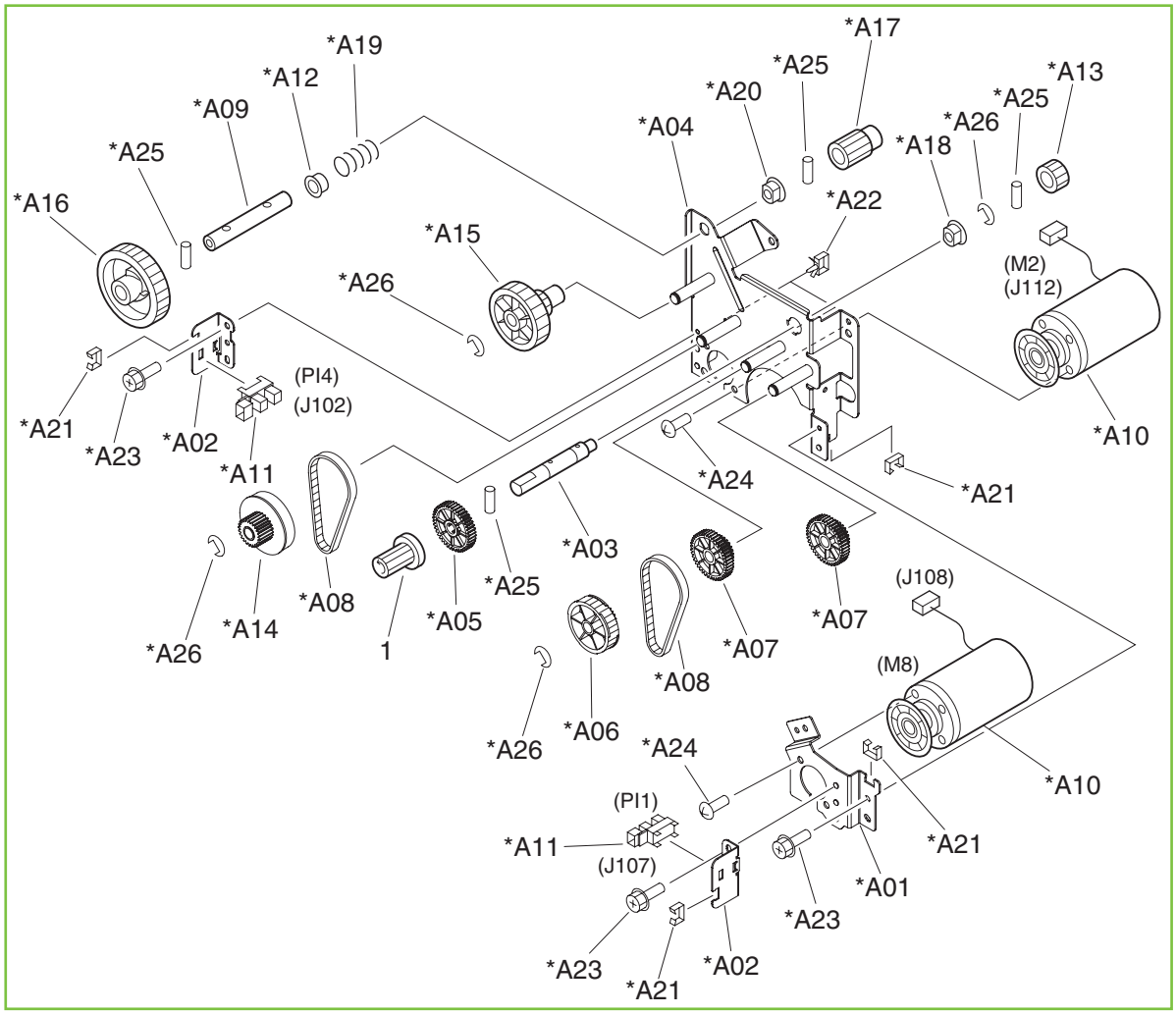


Table 9-56 Motor-mount assembly (booklet-maker)

Ref	Description	Part number	Qty
All	Motor-mount assembly	4G3-0670-000CN	1

NOTE: Only highlighted parts are orderable.

Figure 9-73 PCA assembly

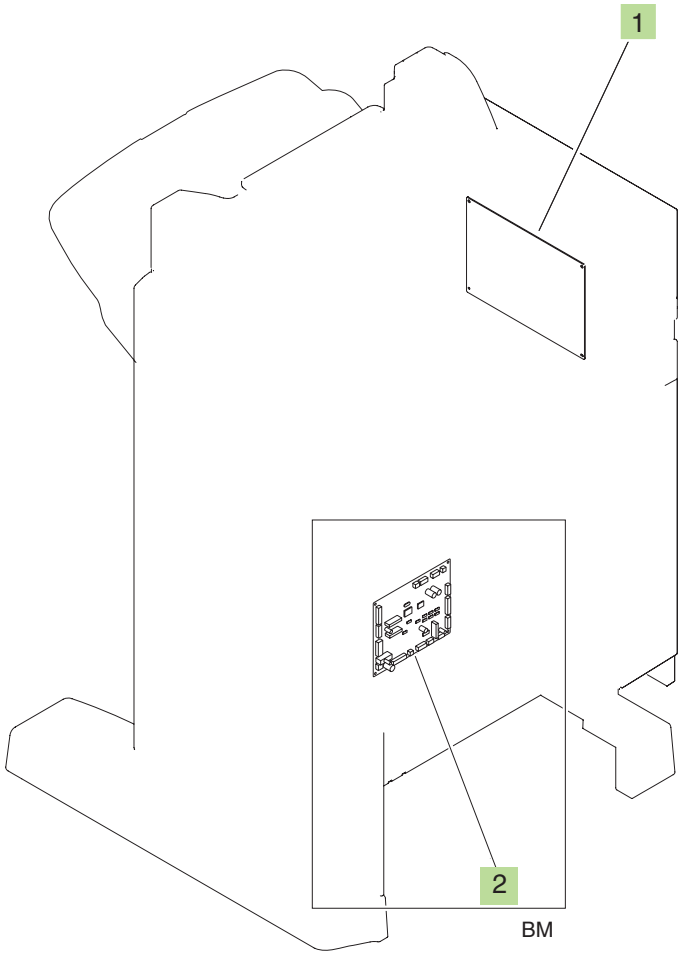


Table 9-57 PCA assembly

Ref	Description	Part number	Qty
1	Main controller PCA assembly (stapler/stacker and booklet-maker)	RM1-4139-000CN	1
2	Saddle-controller PCA assembly (booklet-maker)	RM1-4140-000CN	1

NOTE: Only highlighted parts are orderable.

Alphabetical parts list

Table 9-58 Alphabetical parts list

Description	Part number	Table and page
2000-staple cartridge (for booklet making)	CC383-67901	Staple assembly (stapler/ stacker and booklet-maker) on page 897
2000-staple cartridge (for booklet making)	CC383-67901	Saddle-stapler assembly (booklet-maker) on page 911
2nd-transfer-roller assembly	RM1-3319-000CN	Printer internal components (3 of 7) on page 797
5000-staple replacement cartridge	C8091-67901	Staple assembly (stapler/ stacker and booklet-maker) on page 897
5000-staple replacement cartridge	C8091-67901	Saddle-stapler assembly (booklet-maker) on page 911
Approach-switch assembly	FM2-0710-000CN	Output bin 1 (stack upper-tray assembly) (booklet-maker) on page 877
Area-sensor flag assembly	RM1-4107-000CN	Finisher main body (stapler/ stacker and booklet-maker) on page 869
Area-sensor holder assembly	FM2-0709-000CN	Output bin 1 (stack upper-tray assembly) (stapler/stacker) on page 873
Area-sensor holder assembly	FM2-0709-000CN	Output bin 1 (stack upper-tray assembly) (booklet-maker) on page 877
Area-sensor holder assembly	FM2-0709-000CN	Output bin 2 (stack lower-tray assembly) (stapler/stacker and booklet-maker) on page 881
Area-sensor PCA assembly	4G1-1498-000CN	Output bin 1 (stack upper-tray assembly) (stapler/stacker) on page 873
Area-sensor PCA assembly	4G1-1498-000CN	Output bin 1 (stack upper-tray assembly) (booklet-maker) on page 877
Area-sensor PCA assembly	4G1-1498-000CN	Output bin 2 (stack lower-tray assembly) (stapler/stacker and booklet-maker) on page 881
Arm, 1st-estrangement	RC1-9189-000CN	Printer internal components (3 of 7) on page 797
Arm, adjustment, front	4A3-1763-000CN	Saddle assembly (booklet-maker) on page 903
Arm, adjustment, rear	4A3-1764-000CN	Saddle assembly (booklet-maker) on page 903
Arm, lock	RC1-9913-000CN	Input-tray main body (1x500-sheet) on page 835

Table 9-58 Alphabetical parts list (continued)

Description	Part number	Table and page
Arm, lock	RC1-9913-000CN	Input-tray main body (3x500-sheet) on page 839
Arm, paper-delivery gate	RC2-1293-000CN	Swing-guide assembly (stapler/stacker and booklet-maker) on page 893
Auto-close assembly, 1x500-sheet	RM1-3531-040CN	Input-tray auto-close assembly on page 843
Auto-close assembly, 3x500-sheet	RM1-3531-040CN	Input-tray auto-close assembly on page 843
Band, door	RC1-9043-000CN	Printer front-door assembly on page 789
Bearing, ball	XG9-0586-000CN	Printer internal components (4 of 7) on page 799
Bearing, ball, 6902ZZNR	4S3-1050-000CN	Saddle assembly (booklet-maker) on page 903
Belt, paper-feed, cogged	RC1-9674-000CN	Intermediate-feed main body on page 851
Belt, timing	XF2-1608-840CN	Finisher main body (stapler/stacker and booklet-maker) on page 869
Belt, timing	XF2-3837-340CN	Saddle assembly (booklet-maker) on page 903
Belt, timing, cogged	XF2-1607-860CN	Finisher main body (stapler/stacker and booklet-maker) on page 869
Belt, timing, cogged	XF9-0748-000CN	Finisher main body (stapler/stacker and booklet-maker) on page 869
Block, reinforcement (simplex)	RC1-9354-000CN	Printer internal components (2 of 7) on page 795
Booklet-output bin (saddle-tray assembly)	RM1-4113-000CN	Saddle-tray assembly (booklet-maker) on page 907
Bushing	RC1-8734-000CN	Printer internal components (3 of 7) on page 797
Bushing	RC1-9915-000CN	Input-tray main body (1x500-sheet) on page 835
Bushing	RC1-9915-000CN	Input-tray main body (3x500-sheet) on page 839
Bushing	FU5-1169-000CN	Output bin 2 (stack lower-tray assembly) (stapler/stacker and booklet-maker) on page 881
Button, main-switch	RC1-9300-000CN	Printer internal components (7 of 7) on page 807
Cable TP/T2 open-sensor	RM1-5030-000CN	Printer internal components (7 of 7) on page 807

Table 9-58 Alphabetical parts list (continued)

Description	Part number	Table and page
Cable, fixing open-sensor	RM1-5029-000CN	Printer internal components (5 of 7) on page 803
Cable, flexible flat	RK2-1356-000CN	Printer internal components (6 of 7) on page 805
Cable, laser flexible flat	RK2-1354-000CN	Printer internal components (2 of 7) on page 795
Cable, laser flexible flat	RK2-1355-000CN	Printer internal components (2 of 7) on page 795
Cable, operation-tray	FG3-2903-000CN	Operation-tray assembly (stapler/stacker and booklet-maker) on page 885
Cable, option-sensor PCA connect	RM1-3574-000CN	Input-tray main body (1x500-sheet) on page 835
Cable, option-sensor PCA connect	RM1-3574-000CN	Input-tray main body (3x500-sheet) on page 839
Cable, paper-pickup option	RM1-3575-000CN	Input-tray main body (1x500-sheet) on page 835
Cable, paper-pickup option	RM1-3575-000CN	Input-tray main body (3x500-sheet) on page 839
Cable, paper-pickup-option drawer	RM1-3571-000CN	Input-tray main body (3x500-sheet) on page 839
Cable, pickup-option door switch	RM1-3572-000CN	Input-tray main body (1x500-sheet) on page 835
Cable, pickup-option door switch	RM1-3572-000CN	Input-tray main body (3x500-sheet) on page 839
Cable, pickup-option drawer	RM1-3571-000CN	Input-tray main body (1x500-sheet) on page 835
Cable, pickup-option lifter unit	RM1-3576-000CN	Input-tray auto-close assembly on page 843
Cable, pickup-option PCA connect	RM1-3573-000CN	Input-tray main body (3x500-sheet) on page 839
Cable, saddle-unit	4G1-2283-000CN	Saddle assembly (booklet-maker) on page 903
Cable, sensor	4G1-2285-000CN	Saddle-tray assembly (booklet-maker) on page 907
Cable, solenoid	FG3-2892-000CN	Finisher main body (stapler/stacker and booklet-maker) on page 869
Cable, staple-connecting assembly	4G3-1777-000CN	Staple assembly (stapler/stacker and booklet-maker) on page 897
Cable-mount lattice assembly	RM1-4128-000CN	Finisher main body (stapler/stacker and booklet-maker) on page 869
Cartridge contact-holder assembly	RM1-3254-000CN	Printer internal components (7 of 7) on page 807

Table 9-58 Alphabetical parts list (continued)

Description	Part number	Table and page
Cartridge-interface assembly kit with service document	Q3931-67917	Printer internal components (7 of 7) on page 807
Cassette (1x500-sheet)	RM1-3529-000CN	Input-tray cassette on page 845
Cassette (3x500-sheet)	RM1-3529-000CN	Input-tray cassette on page 845
Cassette paper-pickup assembly (includes 1 pick and 2 feed rollers)	RM1-3206-000CN	Printer cassette paper-pickup assembly on page 815
Cassette-assembly kit	Q3931-67918	Printer cassette on page 813
Caster, double-lock, front	RC1-9896-000CN	Input-tray main body (1x500-sheet) on page 835
Caster, double-lock, front	RC1-9896-000CN	Input-tray main body (3x500-sheet) on page 839
Caster, rear	RC1-9917-000CN	Input-tray main body (1x500-sheet) on page 835
Caster, rear	RC1-9917-000CN	Input-tray main body (3x500-sheet) on page 839
Caster, universal	RC2-1315-000CN	Finisher main body (stapler/stacker and booklet-maker) on page 869
Clamp, cable	WT2-5738-000CN	Input-tray main body (1x500-sheet) on page 835
Clamp, cable	WT2-5738-000CN	Input-tray main body (3x500-sheet) on page 839
Clamp, FFC	WT2-5912-000CN	Printer internal components (2 of 7) on page 795
Clamp, formatter cable	RC1-9261-000CN	Printer internal components (7 of 7) on page 807
Claw, latch, right	FC5-5021-000CN	Saddle assembly (booklet-maker) on page 903
Clutch, electromagnetic	4H3-0370-000CN	Finisher main body (stapler/stacker and booklet-maker) on page 869
Color-plane-registration joint cable	RM1-3624-000CN	Printer internal components (6 of 7) on page 805
Color-plane-registration sensor assembly	RM1-3258-000CN	Printer internal components (3 of 7) on page 797
Connector, drawer	VS1-7258-000CN	Printer internal components (5 of 7) on page 803
Connector, drawer	VS1-7257-012CN	Input-tray main body (1x500-sheet) on page 835
Connector, drawer	VS1-7257-012CN	Input-tray main body (3x500-sheet) on page 839
Connector, snap-tight	VS1-7177-002CN	Printer internal components (2 of 7) on page 795

Table 9-58 Alphabetical parts list (continued)

Description	Part number	Table and page
Connector, snap-tight	VS1-7177-003CN	Printer internal components (4 of 7) on page 799
Control-panel unit	RM1-4516-000CN	Printer external covers and panels on page 787
Cover, blanking (simplex)	RC1-9362-000CN	Printer external covers and panels on page 787
Cover, cassette back-end	RC1-9201-000CN	Printer internal components (5 of 7) on page 803
Cover, face-down	Q3931-67905	Printer external covers and panels on page 787
Cover, face-down drive	RC1-9360-000CN	Printer external covers and panels on page 787
Cover, front-lower	RL1-1717-000CN	External panels and covers (stapler/stacker) on page 861
Cover, front-lower	RL1-1717-000CN	External panels and covers (booklet-maker) on page 863
Cover, front-upper	RC1-9873-000CN	Input-tray main body (1x500-sheet) on page 835
Cover, front-upper	RC1-9873-000CN	Input-tray main body (3x500-sheet) on page 839
Cover, intermediate-feed SW.	RC1-9667-000CN	Intermediate-feed main body on page 851
Cover, internal, lower (booklet-maker only)	RL1-1477-000CN	Finisher main body (stapler/stacker and booklet-maker) on page 869
Cover, internal, lower (stapler/stacker only)	RC2-1351-000CN	Finisher main body (stapler/stacker and booklet-maker) on page 869
Cover, internal, right	RC1-9348-000CN	Printer internal components (3 of 7) on page 797
Cover, left	RC1-9336-000CN	Printer external covers and panels on page 787
Cover, left	RC1-9872-000CN	Input-tray main body (1x500-sheet) on page 835
Cover, left	RC1-9872-000CN	Input-tray main body (3x500-sheet) on page 839
Cover, left-lower	RC2-1280-000CN	External panels and covers (booklet-maker) on page 863
Cover, main-switch	RC1-9211-000CN	Printer internal components (7 of 7) on page 807
Cover, motor	RC1-9511-000CN	Printer right-door assembly on page 791
Cover, multi-purpose blanking	RC1-8527-000CN	Printer right-door assembly on page 791

Table 9-58 Alphabetical parts list (continued)

Description	Part number	Table and page
Cover, option-slide	RC2-1347-000CN	External panels and covers (stapler/stacker) on page 861
Cover, option-tray, front	RL1-2210-000CN	Output bin 1 (stack upper-tray assembly) (stapler/stacker) on page 873
Cover, panel	RC1-9341-000CN	Printer external covers and panels on page 787
Cover, rear	RL1-1210-000CN	Printer external covers and panels on page 787
Cover, rear	RC1-9871-000CN	Input-tray main body (1x500-sheet) on page 835
Cover, rear	RC1-9871-000CN	Input-tray main body (3x500-sheet) on page 839
Cover, rear	RC2-1278-000CN	External panels and covers (stapler/stacker) on page 861
Cover, rear	RC2-1278-000CN	External panels and covers (booklet-maker) on page 863
Cover, rear-left	RC1-9344-000CN	Printer external covers and panels on page 787
Cover, rear-lower	RL1-1718-000CN	External panels and covers (stapler/stacker) on page 861
Cover, rear-lower	RL1-1718-000CN	External panels and covers (booklet-maker) on page 863
Cover, rear-upper	RC1-9342-000CN	Printer external covers and panels on page 787
Cover, right-front	RL1-1322-000CN	Input-tray main body (1x500-sheet) on page 835
Cover, right-front	RL1-1321-000CN	Input-tray main body (3x500-sheet) on page 839
Cover, right-lower	RC1-9874-000CN	Input-tray main body (1x500-sheet) on page 835
Cover, right-lower	RC1-9874-000CN	Input-tray main body (3x500-sheet) on page 839
Cover, right-upper	RC1-9339-000CN	Printer external covers and panels on page 787
Cover, tray-connector	RC2-1279-000CN	External panels and covers (stapler/stacker) on page 861
Cover, tray-connector	RC2-1279-000CN	External panels and covers (booklet-maker) on page 863
Damper assembly	RM1-3688-000CN	Intermediate-feed main body on page 851
Damper, gear	RC1-8925-000CN	Printer internal components (4 of 7) on page 799
DC controller kit with service document	Q3931-67922	Printer PCA assembly location on page 831

Table 9-58 Alphabetical parts list (continued)

Description	Part number	Table and page
DC motor assembly	RM1-4519-000CN	Printer internal components (4 of 7) on page 799
DC-controller kit with service document	Q3931-67916	Printer internal components (6 of 7) on page 805
DC-controller power cable	RM1-3610-000CN	Printer internal components (6 of 7) on page 805
Deflector	FB3-7928-020CN	Saddle assembly (booklet-maker) on page 903
Deflector	FB5-2697-000CN	Saddle assembly (booklet-maker) on page 903
Delivery-switch mount assembly	FM2-1639-000CN	Saddle assembly (booklet-maker) on page 903
Door, stock	RC1-9921-000CN	Input-tray main body (1x500-sheet) on page 835
Drive-belt assembly	RM1-3684-000CN	Intermediate-feed main body on page 851
Drum-motor assembly	RM1-3286-000CN	Printer internal components (4 of 7) on page 799
Duct, air	RC1-8961-000CN	Printer internal components (4 of 7) on page 799
Duct, cartridge	RC1-9276-000CN	Printer internal components (4 of 7) on page 799
Duct, face-down joint	RC1-8964-000CN	Printer internal components (4 of 7) on page 799
Duct, scanner	RC1-9334-000CN	Printer internal components (2 of 7) on page 795
Duct, scanner-fan	RC1-9309-000CN	Printer internal components (4 of 7) on page 799
Duplex-switchback tray assembly kit	Q3931-67921	Printer duplexing-tray assembly on page 827
Duplexing-feed assembly	RM1-3665-000CN	Printer duplexing-feed assembly on page 829
Duplexing-reverse assembly	RM1-3652-000CN	Printer duplexing-reverse assembly on page 825
Entrance lower-guide assembly	RM1-4110-000CN	Saddle paper-feeder assembly (stapler/stacker) on page 913
Entrance lower-guide assembly	RM1-4110-000CN	Saddle paper-feeder assembly (booklet-maker) on page 915
Entrance upper-guide assembly	RM1-4172-000CN	Entrance upper-guide assembly (stapler/stacker and booklet-maker) on page 895
Entrance-sensor flag assembly	FM2-0718-000CN	Finisher main body (stapler/stacker and booklet-maker) on page 869

Table 9-58 Alphabetical parts list (continued)

Description	Part number	Table and page
Face-down end-tray assembly	RM1-3340-000CN	Printer external covers and panels on page 787
Face-down full-flag assembly	RM1-4391-000CN	Printer face-down paper-delivery assembly on page 823
Face-down paper-delivery assembly	RM1-3293-000CN	Printer face-down paper-delivery assembly on page 823
Face-down unit-1 cable	RM1-3390-000CN	Printer internal components (7 of 7) on page 807
Face-down unit-2 cable	RM1-3391-000CN	Printer internal components (7 of 7) on page 807
Fan	RK2-1377-000CN	Printer internal components (4 of 7) on page 799
Fan	RK2-1382-000CN	Printer internal components (4 of 7) on page 799
Fan	RK2-1378-000CN	Printer internal components (4 of 7) on page 799
Fan	RK2-1378-000CN	Printer internal components (5 of 7) on page 803
Fan	RK2-1378-000CN	Printer duplexing-reverse assembly on page 825
Fan assembly	RM1-3364-000CN	Printer internal components (2 of 7) on page 795
Filter unit, air	RC1-9313-000CN	Printer external covers and panels on page 787
Fin-lock assembly	RM1-3685-000CN	Intermediate-feed main body on page 851
Fixing assembly kit, 110-127V	Q3931-67914	Printer internal components (4 of 7) on page 799
Fixing assembly kit, 220-240V	Q3931-67915	Printer internal components (4 of 7) on page 799
Fixing one-way gear assembly	RM1-3247-000CN	Printer internal components (4 of 7) on page 799
Fixing power-supply assembly	RM1-3218-000CN	Printer internal components (7 of 7) on page 807
Fixing power-supply assembly	RM1-3218-000CN	Printer PCA assembly location on page 831
Fixing-bias cable assembly	RM1-4409-000CN	Printer internal components (7 of 7) on page 807
Fixing-fan cover assembly	RM1-5950-000CN	Printer external covers and panels on page 787
Fixing-joint cable	RM1-3612-000CN	Printer internal components (7 of 7) on page 807

Table 9-58 Alphabetical parts list (continued)

Description	Part number	Table and page
Fixing-motor cable	RM1-3217-000CN	Printer internal components (6 of 7) on page 805
Flag, paper-face sensing, upper	FC5-4162-000CN	External panels and covers (stapler/stacker) on page 861
Flag, paper-sensing sensor	FC5-5004-000CN	External panels and covers (stapler/stacker) on page 861
Flag, paper-sensing sensor	FC5-5004-000CN	External panels and covers (booklet-maker) on page 863
Flag, roller	FB3-7925-030CN	Saddle assembly (booklet-maker) on page 903
Flag, sensor	FB3-7979-000CN	Saddle assembly (booklet-maker) on page 903
Flag, sensor	FB5-5937-020CN	Saddle assembly (booklet-maker) on page 903
Flexible-cable mount assembly	FM2-0720-000CN	Finisher main body (stapler/stacker and booklet-maker) on page 869
Foot, rubber	RC1-9208-000CN	Printer internal components (6 of 7) on page 805
Formatter-case assembly	RM1-3253-000CN	Printer internal components (6 of 7) on page 805
Front cable	RM1-3617-000CN	Printer internal components (6 of 7) on page 805
Front-door assembly	RM1-3356-000CN	Printer front-door assembly on page 789
Front-door assembly	RM1-4134-000CN	External panels and covers (stapler/stacker) on page 861
Front-door assembly	RM1-4122-000CN	External panels and covers (booklet-maker) on page 863
Gear, 16T	FS6-0823-000CN	Saddle assembly (booklet-maker) on page 903
Gear, 16T	FS6-0830-000CN	Saddle assembly (booklet-maker) on page 903
Gear, 16T/33T	FS6-0822-000CN	Saddle assembly (booklet-maker) on page 903
Gear, 16T/56T	FS6-0829-000CN	Saddle assembly (booklet-maker) on page 903
Gear, 17T	FU5-0457-000CN	Output bin 1 (stack upper-tray assembly) (booklet-maker) on page 877
Gear, 17T	FU5-0457-000CN	Output bin 2 (stack lower-tray assembly) (stapler/stacker and booklet-maker) on page 881
Gear, 29T	FU5-2399-000CN	Finisher main body (stapler/stacker and booklet-maker) on page 869

Table 9-58 Alphabetical parts list (continued)

Description	Part number	Table and page
Gear, 30T	FU5-0428-000CN	Finisher main body (stapler/ stacker and booklet-maker) on page 869
Gear, 34T	RU5-0791-000CN	Printer internal components (4 of 7) on page 799
Gear, 40T	FU5-0454-000CN	Finisher main body (stapler/ stacker and booklet-maker) on page 869
Gear, 44T	FU5-0435-000CN	Output bin 1 (stack upper-tray assembly) (stapler/stacker) on page 873
Gear, 44T	FU5-0435-000CN	Output bin 1 (stack upper-tray assembly) (booklet-maker) on page 877
Gear, 44T	FU5-0435-000CN	Output bin 2 (stack lower-tray assembly) (stapler/stacker and booklet-maker) on page 881
Gear, 50T	4S3-0171-000CN	Saddle assembly (booklet-maker) on page 903
Gear, 83T/25T	RU5-0790-000CN	Printer internal components (4 of 7) on page 799
Grip-support front assembly	RM1-3225-000CN	Printer internal components (2 of 7) on page 795
Grip-support rear assembly	RM1-3226-000CN	Printer internal components (2 of 7) on page 795
Guide, cable	RC1-9329-000CN	Printer internal components (6 of 7) on page 805
Guide, cable, A	RC1-9306-000CN	Printer internal components (7 of 7) on page 807
Guide, cable, B	RC1-9307-000CN	Printer internal components (6 of 7) on page 805
Guide, cable, C	RC1-9308-000CN	Printer internal components (6 of 7) on page 805
Guide, cable, D	RC1-9312-000CN	Printer internal components (6 of 7) on page 805
Guide, cable, E	RC1-9318-000CN	Printer internal components (6 of 7) on page 805
Guide, cable, F	RC1-9323-000CN	Printer internal components (7 of 7) on page 807
Guide, duplexing-feed, upper (duplex)	RL1-1335-000CN	Printer right-door assembly on page 791
Guide, face-down inner	RC1-8959-000CN	Printer internal components (2 of 7) on page 795
Guide, fixing-cable	RC1-9332-000CN	Printer internal components (7 of 7) on page 807

Table 9-58 Alphabetical parts list (continued)

Description	Part number	Table and page
Guide, intermediate transfer belt (ITB)-entrance, front	RC1-9185-000CN	Printer internal components (3 of 7) on page 797
Guide, intermediate transfer belt (ITB)-entrance, rear	RC1-9186-000CN	Printer internal components (3 of 7) on page 797
Guide, multi-purpose, right	RL1-1283-000CN	Printer internal components (2 of 7) on page 795
Guide, multi-purpose, upper	RC1-8526-000CN	Printer multi-purpose paper-pickup assembly on page 817
Guide, paper-feed roller	RC1-9881-000CN	Input-tray main body (1x500-sheet) on page 835
Guide, paper-feed roller	RC1-9881-000CN	Input-tray main body (3x500-sheet) on page 839
Guide, side-wall	RC2-1284-000CN	External panels and covers (booklet-maker) on page 863
Guide-motor assembly	4G3-0725-000CN	Saddle assembly (booklet-maker) on page 903
Guide-sensor assembly	RM1-4400-000CN	Printer internal components (5 of 7) on page 803
High-voltage transfer B PCA assembly	RM1-5475-000CN	Printer internal components (1 of 7) on page 793
High-voltage-transfer A PCA assembly	RM1-3582-000CN	Printer internal components (7 of 7) on page 807
High-voltage-transfer A PCA assembly	RM1-3582-000CN	Printer PCA assembly location on page 831
High-voltage-transfer B PCA assembly	RM1-5475-000CN	Printer PCA assembly location on page 831
Hinge, front-door, 1	FC5-4991-030CN	Finisher main body (stapler/stacker and booklet-maker) on page 869
Hinge, front-door, 2	FC5-4992-030CN	Finisher main body (stapler/stacker and booklet-maker) on page 869
Holder, cartridge-fan	RC1-9277-000CN	Printer internal components (4 of 7) on page 799
Holder, environment-sensor	RC1-9324-000CN	Printer internal components (2 of 7) on page 795
Holder, fixing-fan	RC1-9278-000CN	Printer internal components (4 of 7) on page 799
Holder, high-voltage-connector	RC1-9328-000CN	Printer internal components (7 of 7) on page 807
Holder, roller, 2	FB3-7973-000CN	Saddle assembly (booklet-maker) on page 903
Holder, scanner-fan	RC1-9279-000CN	Printer internal components (4 of 7) on page 799

Table 9-58 Alphabetical parts list (continued)

Description	Part number	Table and page
Holder, scanner-thermistor	RC1-9260-000CN	Printer internal components (2 of 7) on page 795
Inner side-plate assembly	4G3-0671-000CN	Saddle assembly (booklet-maker) on page 903
Inner side-plate assembly	4G3-0671-000CN	Inner side-plate assembly (booklet-maker) on page 919
Inner-cover assembly	RM1-4123-000CN	Finisher main body (stapler/stacker and booklet-maker) on page 869
Interface-joint cable	RM1-3623-000CN	Printer internal components (6 of 7) on page 805
Interlock-switch assembly	RM1-3589-000CN	Printer internal components (2 of 7) on page 795
Intermediate paper-transfer unit (IPTU)-driver PCA assembly	RM1-3559-000CN	Intermediate-feed main body on page 851
Intermediate paper-transfer unit (IPTU)-driver PCA assembly	RM1-3559-000CN	PCA assembly on page 857
Intermediate transfer belt (ITB) assembly	RM1-3307-000CN	Printer internal components (3 of 7) on page 797
Intermediate transfer belt (ITB) duct assembly	RM1-4401-000CN	Printer internal components (5 of 7) on page 803
Intermediate transfer belt (ITB) estrangement-drive assembly	RM1-3280-000CN	Printer internal components (3 of 7) on page 797
Intermediate transfer belt (ITB) lock-support front assembly	RM1-3228-000CN	Printer internal components (3 of 7) on page 797
Intermediate transfer belt (ITB) lock-support rear assembly	RM1-3215-000CN	Printer internal components (3 of 7) on page 797
Intermediate transfer belt (ITB)-drawer assembly	RM1-3240-000CN	Printer internal components (3 of 7) on page 797
Knob (booklet-maker only)	FB3-7881-000CN	Finisher main body (stapler/stacker and booklet-maker) on page 869
Knob, latch	FC5-5024-000CN	Saddle-guide assembly (booklet-maker) on page 909
LED-PCA assembly	RM1-4141-000CN	External panels and covers (stapler/stacker) on page 861
LED-PCA assembly	RM1-4141-000CN	External panels and covers (booklet-maker) on page 863
Left upper-cover assembly	RM1-4179-000CN	External panels and covers (stapler/stacker) on page 861
Left-side wall assembly	RM1-3233-000CN	Printer internal components (1 of 7) on page 793
Left-upper cover assembly	RM1-4129-000CN	External panels and covers (booklet-maker) on page 863
Lever, door-interlock shutter	RC1-9220-000CN	Printer internal components (5 of 7) on page 803

Table 9-58 Alphabetical parts list (continued)

Description	Part number	Table and page
Lever, lock	RC1-9883-000CN	Input-tray main body (1x500-sheet) on page 835
Lever, lock	RC1-9883-000CN	Input-tray main body (3x500-sheet) on page 839
Lever, paper-sensing	RC1-8928-000CN	Printer internal components (5 of 7) on page 803
Lever, stopper	4A3-1782-000CN	Saddle assembly (booklet-maker) on page 903
Lifter-drive-assembly kit	RM1-3222-020CN	Printer lifter-drive assembly on page 811
Limiter, torque	RC1-8519-000CN	Printer multi-purpose paper-pickup assembly on page 817
Limiter, torque	FC5-3657-000CN	Finisher main body (stapler/stacker and booklet-maker) on page 869
Link-slide assembly	4G3-0271-000CN	External panels and covers (stapler/stacker) on page 861
Link-slide assembly	4G3-0271-000CN	External panels and covers (booklet-maker) on page 863
Low-voltage power-supply assembly	RM1-3594-000CN	Printer internal components (5 of 7) on page 803
Low-voltage power-supply assembly	RM1-3594-000CN	Printer PCA assembly location on page 831
Lower height-guide assembly	RM1-4135-000CN	External panels and covers (stapler/stacker) on page 861
Lower-guide assembly	RM1-3686-000CN	Intermediate-feed lower-guide assembly on page 853
Main controller PCA assembly (stapler/stacker and booklet-maker)	RM1-4139-000CN	PCA assembly on page 925
Main drive-unit kit with service document	Q3931-67911	Printer internal components (4 of 7) on page 799
Main switch-holder assembly	RM1-3252-000CN	Printer internal components (7 of 7) on page 807
Memory-tag PCA assembly	RM1-3585-000CN	Printer internal components (4 of 7) on page 799
Memory-tag PCA assembly	RM1-3585-000CN	Printer PCA assembly location on page 831
Middle-height cover assembly	RM1-4119-000CN	External panels and covers (booklet-maker) on page 863
Motor, stepping	4K1-1103-000CN	Pass lower-guide assembly (booklet-maker) on page 917
Motor, stepping, DC	RK2-1366-000CN	Printer internal components (4 of 7) on page 799
Motor, stepping, DC	RK2-1370-000CN	Printer internal components (4 of 7) on page 799

Table 9-58 Alphabetical parts list (continued)

Description	Part number	Table and page
Motor, stepping, DC	RK2-1331-000CN	Input-tray main body (1x500-sheet) on page 835
Motor, stepping, DC	RK2-1331-000CN	Input-tray main body (3x500-sheet) on page 839
Motor, stepping, DC	RK2-1320-000CN	Intermediate-feed main body on page 851
Motor-mount assembly	4G3-0670-000CN	Saddle assembly (booklet-maker) on page 903
Motor-mount assembly	4G3-0670-000CN	Motor-mount assembly (booklet-maker) on page 923
Mount, LED-PCA	RC2-1735-000CN	External panels and covers (stapler/stacker) on page 861
Multi-purpose paper-pickup assembly	RM1-3345-000CN	Printer multi-purpose paper-pickup assembly on page 817
Multi-purpose-drive assembly	RM1-3366-000CN	Printer multi-purpose-drive assembly on page 809
Multi-purpose-guide assembly	RM1-3291-000CN	Printer multi-purpose-guide assembly on page 821
Multi-purpose-tray assembly	RM1-3341-000CN	Printer multi-purpose-tray assembly on page 819
Multi-tray cable	RM1-3630-000CN	Printer multi-purpose-tray assembly on page 819
Operation-tray assembly	RM1-4125-000CN	Operation-tray assembly (stapler/stacker and booklet-maker) on page 885
Option paper-sensor PCA assembly	RM1-3570-000CN	Input-tray paper-pickup assembly on page 847
Option-sensor assembly	FM2-1708-000CN	Output bin 1 (stack upper-tray assembly) (stapler/stacker) on page 873
Panel cable	RM1-3389-000CN	Printer internal components (6 of 7) on page 805
Panel, height, upper	RC2-1283-000CN	External panels and covers (stapler/stacker) on page 861
Panel, height, upper	RC2-1283-000CN	External panels and covers (booklet-maker) on page 863
Panel-joint cable	RM1-3622-000CN	Printer internal components (6 of 7) on page 805
Paper feed-roller assembly	RM1-0037-020CN	Input-tray paper-pickup assembly on page 847
Paper-delivery-guide assembly	RM1-4407-000CN	Printer face-down paper-delivery assembly on page 823
Paper-face sensing assembly	4G3-1624-000CN	External panels and covers (stapler/stacker) on page 861

Table 9-58 Alphabetical parts list (continued)

Description	Part number	Table and page
Paper-face sensing assembly	4G3-1624-000CN	External panels and covers (booklet-maker) on page 863
Paper-face sensor assembly	4G3-0934-000CN	External panels and covers (stapler/stacker) on page 861
Paper-face sensor assembly	4G3-0934-000CN	External panels and covers (booklet-maker) on page 863
Paper-feed PCA assembly	RM1-3569-000CN	Input-tray main body (1x500-sheet) on page 835
Paper-feed PCA assembly	RM1-3569-000CN	Input-tray main body (3x500-sheet) on page 839
Paper-feed PCA assembly (1x500-sheet)	RM1-3569-000CN	Input-tray PCA assembly on page 849
Paper-feed PCA assembly (3x500-sheet)	RM1-3569-000CN	Input-tray PCA assembly on page 849
Paper-feeder motor assembly	RM1-4175-000CN	Paper-feeder motor assembly (stapler/stacker and booklet-maker) on page 887
Paper-pickup assembly (1x500-sheet)	RM1-3533-000CN	Input-tray paper-pickup assembly on page 847
Paper-pickup assembly (3x500-sheet)	RM1-3533-000CN	Input-tray paper-pickup assembly on page 847
Paper-sensor assembly	FM2-0707-000CN	Output bin 1 (stack upper-tray assembly) (stapler/stacker) on page 873
Paper-sensor assembly	FM2-0707-000CN	Output bin 1 (stack upper-tray assembly) (booklet-maker) on page 877
Paper-sensor assembly	FM2-0707-000CN	Output bin 2 (stack lower-tray assembly) (stapler/stacker and booklet-maker) on page 881
Partition-plate assembly, cyan	RM1-3238-000CN	Printer internal components (1 of 7) on page 793
Partition-plate assembly, magenta	RM1-3237-000CN	Printer internal components (1 of 7) on page 793
Partition-plate assembly, yellow	RM1-3235-000CN	Printer internal components (1 of 7) on page 793
Photo interrupter, TLP1242	WG8-5593-000CN	External panels and covers (stapler/stacker) on page 861
Photo interrupter, TLP1242	WG8-5593-000CN	External panels and covers (booklet-maker) on page 863
Photo interrupter, TLP1242	WG8-5593-000CN	Finisher main body (stapler/stacker and booklet-maker) on page 869
Photo interrupter, TLP1242	WG8-5593-000CN	Output bin 1 (stack upper-tray assembly) (stapler/stacker) on page 873

Table 9-58 Alphabetical parts list (continued)

Description	Part number	Table and page
Photo interrupter, TLP1242	WG8-5593-000CN	Operation-tray assembly (stapler/stacker and booklet-maker) on page 885
Photo interrupter, TLP1242	WG8-5593-000CN	Operation-tray assembly (stapler/stacker and booklet-maker) on page 885
Photo interrupter, TLP1242	WG8-5593-000CN	Saddle assembly (booklet-maker) on page 903
Photo interrupter, TLP1242	WG8-5593-000CN	Saddle assembly (booklet-maker) on page 903
Photo interrupter, TLP1242	WG8-5593-000CN	Saddle assembly (booklet-maker) on page 903
Photo interrupter, TLP1242	WG8-5593-000CN	Saddle assembly (booklet-maker) on page 903
Photo interrupter, TLP1242	WG8-5593-000CN	Saddle-tray assembly (booklet-maker) on page 907
Photo interrupter, TLP1242	WG8-5593-000CN	Saddle paper-feeder assembly (booklet-maker) on page 915
Photo interrupter, TLP1242	WG8-5593-000CN	Pass lower-guide assembly (booklet-maker) on page 917
Photo interrupter, TLP1242	WG8-5593-000CN	Inner side-plate assembly (booklet-maker) on page 919
Photo interrupter, TLP1242	WG8-5593-000CN	Saddle paper-delivery assembly (booklet-maker) on page 921
Photo interrupter, TLP1243	WG8-5696-000CN	Printer internal components (2 of 7) on page 795
Photo interrupter, TLP1243	WG8-5696-000CN	Printer internal components (5 of 7) on page 803
Photo interrupter, TLP1243	WG8-5696-000CN	Printer internal components (7 of 7) on page 807
Photo interrupter, TLP1243	WG8-5696-000CN	Printer multi-purpose-guide assembly on page 821
Photo interrupter, TLP1243	WG8-5696-000CN	Printer face-down paper-delivery assembly on page 823
Photo interrupter, TLP1243	WG8-5696-000CN	Printer duplexing-reverse assembly on page 825
Photosensor assembly	RM1-3250-000CN	Printer internal components (2 of 7) on page 795
Pin	XD3-2200-102CN	Finisher main body (stapler/stacker and booklet-maker) on page 869
Pin, dowel	XD9-0240-000CN	Printer internal components (4 of 7) on page 799

Table 9-58 Alphabetical parts list (continued)

Description	Part number	Table and page
Pin, dowel	XD3-2200-102CN	Finisher main body (stapler/ stacker and booklet-maker) on page 869
Pin, dowel	XD3-2200-142CN	Finisher main body (stapler/ stacker and booklet-maker) on page 869
Pin, dowel	XD3-2300-142CN	Output bin 1 (stack upper-tray assembly) (booklet-maker) on page 877
Pin, dowel	XD3-2300-142CN	Output bin 2 (stack lower-tray assembly) (stapler/stacker and booklet-maker) on page 881
Pin, dowel	XD3-2300-202CN	Saddle assembly (booklet-maker) on page 903
Plate, control-panel grounding	RC1-9238-000CN	Printer external covers and panels on page 787
Plate, drawer-guard	RC1-9235-000CN	Printer internal components (5 of 7) on page 803
Plate, fan-fixing, front	RC1-9190-000CN	Printer internal components (5 of 7) on page 803
Plate, fixing-motor	RL1-1216-000CN	Printer internal components (4 of 7) on page 799
Plate, grounding (booklet-maker only)	4A3-1955-000CN	Finisher main body (stapler/ stacker and booklet-maker) on page 869
Plate, grounding (booklet-maker only)	RC2-1536-000CN	Finisher main body (stapler/ stacker and booklet-maker) on page 869
Plate, hinge-stop (booklet-maker only)	4A3-4715-000CN	Finisher main body (stapler/ stacker and booklet-maker) on page 869
Plate, HVT-A (high-voltage transmission) guard	RC1-9326-000CN	Printer internal components (7 of 7) on page 807
Plate, option-tray, front	FC5-6978-000CN	Output bin 1 (stack upper-tray assembly) (stapler/stacker) on page 873
Plate, rotation	4A3-1779-000CN	Saddle assembly (booklet-maker) on page 903
Plate, sensor, front	RC1-9246-000CN	Printer internal components (5 of 7) on page 803
Plate, switch-cover	RC1-9901-000CN	Input-tray main body (1x500-sheet) on page 835
Plate, switch-cover	RC1-9901-000CN	Input-tray main body (3x500-sheet) on page 839
Plate, tension	FF5-5805-040CN	Saddle assembly (booklet-maker) on page 903

Table 9-58 Alphabetical parts list (continued)

Description	Part number	Table and page
Press-motor assembly	FM2-1409-000CN	Finisher main body (stapler/ stacker and booklet-maker) on page 869
Pressure-roller assembly	FM2-0730-000CN	Pressure-roller assembly (stapler/stacker and booklet-maker) on page 891
Pulley, 16T/gear, 32T	FS6-0815-000CN	Pass lower-guide assembly (booklet-maker) on page 917
Pulley, 20T	FU5-3086-000CN	Finisher main body (stapler/ stacker and booklet-maker) on page 869
Pulley, 30T	FS5-3576-000CN	Saddle assembly (booklet-maker) on page 903
Pulley, 32T/gear, 16T	FS6-0814-000CN	Pass lower-guide assembly (booklet-maker) on page 917
Pulley, 39T	FS5-3577-000CN	Saddle assembly (booklet-maker) on page 903
Rack, front	FB3-7967-000CN	Saddle assembly (booklet-maker) on page 903
Rack, rail	FC5-5436-000CN	Finisher main body (stapler/ stacker and booklet-maker) on page 869
Rack, rear	FB3-7934-000CN	Saddle assembly (booklet-maker) on page 903
Rail, cassette, left	RL1-1311-000CN	Input-tray main body (1x500-sheet) on page 835
Rail, cassette, left	RL1-1311-000CN	Input-tray main body (3x500-sheet) on page 839
Rail, cassette, right	RL1-1215-000CN	Printer internal components (5 of 7) on page 803
Rail, cassette, right	RL1-1310-000CN	Input-tray main body (1x500-sheet) on page 835
Rail, cassette, right	RL1-1310-000CN	Input-tray main body (3x500-sheet) on page 839
Rail, fixing, front	RC1-8931-000CN	Printer internal components (4 of 7) on page 799
Rail, fixing, rear	RC1-8939-000CN	Printer internal components (4 of 7) on page 799
Rail, left, top	RL1-1213-000CN	Printer internal components (5 of 7) on page 803
Rail, reverse, rear	RC1-9206-000CN	Printer internal components (2 of 7) on page 795
Rear-cover-mount plate assembly	RM1-3354-000CN	Printer internal components (6 of 7) on page 805
Rear-end sensor assembly	FM2-0763-000CN	Saddle assembly (booklet-maker) on page 903

Table 9-58 Alphabetical parts list (continued)

Description	Part number	Table and page
Rear-lower cable	RM1-3618-000CN	Printer internal components (6 of 7) on page 805
Rear-right cover assembly	RM1-4415-000CN	Printer external covers and panels on page 787
Rear-upper cable	RM1-3619-000CN	Printer internal components (6 of 7) on page 805
Registration 2nd-transfer assembly kit with service document	Q3931-67909	Printer internal components (3 of 7) on page 797
Retainer	RC1-8511-000CN	Printer internal components (3 of 7) on page 797
Retainer	RC1-8511-000CN	Printer multi-purpose paper-pickup assembly on page 817
Return-roller assembly	FM2-0725-090CN	Return-roller assembly (stapler/stacker and booklet-maker) on page 889
Right-door assembly	RM1-3538-000CN	Input-tray main body (1x500-sheet) on page 835
Right-door assembly	RM1-3537-000CN	Input-tray main body (3x500-sheet) on page 839
Right-door sub-assembly	RM1-3333-000CN	Printer right-door assembly on page 791
Right-lower cover assembly	RL1-1280-000CN	Printer external covers and panels on page 787
Right-side wall assembly	RM1-3239-000CN	Printer internal components (1 of 7) on page 793
Ring, C, external	XD2-3100-152CN	Saddle assembly (booklet-maker) on page 903
Ring, E	XD9-0234-000CN	Printer internal components (4 of 7) on page 799
Ring, E	XD9-0234-000CN	Printer internal components (5 of 7) on page 803
Ring, E	XD9-0136-000CN	Finisher main body (stapler/stacker and booklet-maker) on page 869
Ring, E	XD9-0136-000CN	Finisher main body (stapler/stacker and booklet-maker) on page 869
Ring, E	XD9-0137-000CN	Output bin 1 (stack upper-tray assembly) (booklet-maker) on page 877
Roller, folding	4A3-1783-000CN	Saddle assembly (booklet-maker) on page 903
Roller, paper-pickup	RL1-1289-000CN	Input-tray paper-pickup assembly on page 847
Roller, rail	RC1-9231-000CN	Input-tray main body (1x500-sheet) on page 835

Table 9-58 Alphabetical parts list (continued)

Description	Part number	Table and page
Roller, rail	RC1-9231-000CN	Input-tray main body (3x500-sheet) on page 839
Roller, tray-guide	RU5-6035-000CN	Output bin 1 (stack upper-tray assembly) (stapler/stacker) on page 873
Roller, tray-guide	FC5-4221-000CN	Output bin 1 (stack upper-tray assembly) (booklet-maker) on page 877
Roller, tray-guide	RU5-6035-000CN	Output bin 1 (stack upper-tray assembly) (booklet-maker) on page 877
Roller, tray-guide	FC5-4221-000CN	Output bin 2 (stack lower-tray assembly) (stapler/stacker and booklet-maker) on page 881
Roller, tray-guide	RU5-6035-000CN	Output bin 2 (stack lower-tray assembly) (stapler/stacker and booklet-maker) on page 881
Saddle paper-delivery assembly	RM1-4130-000CN	Saddle assembly (booklet-maker) on page 903
Saddle paper-delivery assembly	RM1-4130-000CN	Saddle paper-delivery assembly (booklet-maker) on page 921
Saddle paper-feeder assembly	RM1-4136-000CN	Saddle paper-feeder assembly (stapler/stacker) on page 913
Saddle paper-feeder assembly	RM1-4109-000CN	Saddle paper-feeder assembly (booklet-maker) on page 915
Saddle, wire	WT2-5694-000CN	Printer internal components (4 of 7) on page 799
Saddle, wire	WT2-5694-000CN	Input-tray main body (1x500-sheet) on page 835
Saddle, wire	WT2-5694-000CN	Input-tray main body (3x500-sheet) on page 839
Saddle-controller PCA assembly	RM1-4140-000CN	Saddle assembly (booklet-maker) on page 903
Saddle-controller PCA assembly (booklet-maker)	RM1-4140-000CN	PCA assembly on page 925
Saddle-guide assembly	FM2-0756-000CN	Saddle assembly (booklet-maker) on page 903
Saddle-guide assembly	FM2-5024-000CN	Saddle-guide assembly (booklet-maker) on page 909
Saddle-motor assembly	FM2-0737-000CN	Saddle paper-feeder assembly (stapler/stacker) on page 913
Saddle-motor assembly	FM2-0737-000CN	Saddle paper-feeder assembly (booklet-maker) on page 915
Saddle-stapler assembly	RM1-4178-000CN	Saddle assembly (booklet-maker) on page 903

Table 9-58 Alphabetical parts list (continued)

Description	Part number	Table and page
Saddle-stapler assembly	RM1-4178-000CN	Saddle-stapler assembly (booklet-maker) on page 911
Scanner assembly kit (1 scanner assembly per kit) with service document	Q3931-67907	Printer internal components (2 of 7) on page 795
Scanner-joint cable	RM1-3620-000CN	Printer internal components (6 of 7) on page 805
Screw, machined, truss-head, M3x4	XB1-2300-407CN	Printer internal components (4 of 7) on page 799
Screw, machined, truss-head, M4x8	XB1-2400-805CN	Printer internal components (7 of 7) on page 807
Screw, RS stepped, M3	FU9-9059-000CN	Finisher main body (stapler/ stacker and booklet-maker) on page 869
Screw, RS, M13x12	XA9-1801-000CN	Printer internal components (7 of 7) on page 807
Screw, RS, M3x6	XA9-1495-000CN	Printer internal components (1 of 7) on page 793
Screw, RS, M3x6	XA9-1495-000CN	Printer internal components (2 of 7) on page 795
Screw, RS, M3x6	XA9-1495-000CN	Printer internal components (3 of 7) on page 797
Screw, RS, M3x6	XA9-1495-000CN	Printer internal components (4 of 7) on page 799
Screw, RS, M3x6	XA9-1495-000CN	Printer internal components (5 of 7) on page 803
Screw, RS, M3x6	XA9-1495-000CN	Printer internal components (6 of 7) on page 805
Screw, RS, M3x6	XA9-1495-000CN	Printer internal components (7 of 7) on page 807
Screw, RS, M3X6 (duplex)	XA9-1495-000CN	Printer right-door assembly on page 791
Screw, RS, M3x8	XA9-1504-000CN	Printer internal components (1 of 7) on page 793
Screw, RS, M3x8	XA9-1504-000CN	Printer internal components (2 of 7) on page 795
Screw, RS, M3x8	XA9-1449-000CN	Printer internal components (2 of 7) on page 795
Screw, RS, M3x8	XA9-1504-000CN	Printer internal components (3 of 7) on page 797
Screw, RS, M3x8	XA9-1504-000CN	Printer internal components (4 of 7) on page 799
Screw, RS, M3x8	XA9-1504-000CN	Printer internal components (5 of 7) on page 803
Screw, RS, M3x8	XA9-1449-000CN	Printer internal components (6 of 7) on page 805

Table 9-58 Alphabetical parts list (continued)

Description	Part number	Table and page
Screw, RS, M3x8	XA9-1504-000CN	Printer internal components (7 of 7) on page 807
Screw, RS, M3x8	XA9-1386-000CN	Finisher main body (stapler/ stacker and booklet-maker) on page 869
Screw, RS, M4x8	XA9-1448-000CN	Input-tray main body (1x500-sheet) on page 835
Screw, RS, M4x8	XA9-1448-000CN	Input-tray main body (1x500-sheet) on page 835
Screw, RS, M4x8	XA9-1448-000CN	Input-tray main body (3x500-sheet) on page 839
Screw, RS, M4x8	XA9-1448-000CN	Input-tray main body (3x500-sheet) on page 839
Screw, RS, M4x8 (booklet-maker only)	XA9-0732-000CN	Finisher main body (stapler/ stacker and booklet-maker) on page 869
Screw, stepped	RS5-9099-000CN	Input-tray main body (1x500-sheet) on page 835
Screw, stepped	RS5-9099-000CN	Input-tray main body (3x500-sheet) on page 839
Screw, tapping, pan-head, M4x10	XB4-7401-006CN	Input-tray main body (1x500-sheet) on page 835
Screw, tapping, truss-head, M4X10	XB4-7401-005CN	Printer external covers and panels on page 787
Screw, tapping, truss-head, M4X10	XB4-7401-005CN	Printer external covers and panels on page 787
Screw, tapping, truss-head, M4X10	XB4-7401-005CN	Printer right-door assembly on page 791
Screw, tapping, truss-head, M4x10	XB4-7401-005CN	Printer internal components (5 of 7) on page 803
Screw, TP, M3x30	XB6-7303-005CN	Printer internal components (5 of 7) on page 803
Screw, TP, M3x6	XA9-1159-000CN	Printer internal components (4 of 7) on page 799
Screw, TP, M3x6	XA9-1469-000CN	Input-tray main body (1x500-sheet) on page 835
Screw, TP, M3x6	XA9-1469-000CN	Input-tray main body (3x500-sheet) on page 839
Screw, TP, M3x6 (booklet-maker only)	XB6-7300-607CN	Finisher main body (stapler/ stacker and booklet-maker) on page 869
Screw, TP, M4x8	XA9-1300-000CN	Printer internal components (6 of 7) on page 805
Screw, with washer, M3x6	XB2-8300-607CN	Printer internal components (4 of 7) on page 799

Table 9-58 Alphabetical parts list (continued)

Description	Part number	Table and page
Screw, with washer, M3x6	XB2-8300-607CN	Input-tray main body (1x500-sheet) on page 835
Screw, with washer, M3x6	XB2-8300-607CN	Input-tray main body (3x500-sheet) on page 839
Screw, with washer, M4X12	XA9-1422-000CN	Printer right-door assembly on page 791
Screw, with washer, M4X12	XA9-1422-000CN	Printer right-door assembly on page 791
Screw, with washer, M5x12	XA9-0912-000CN	Input-tray main body (1x500-sheet) on page 835
Screw, with washer, M5x12	XA9-0912-000CN	Input-tray main body (3x500-sheet) on page 839
Screw, with washer, M5x12	XA9-0912-000CN	Finisher main body (stapler/stacker and booklet-maker) on page 869
Sensor unit, humidity	RK2-2376-000CN	Printer internal components (2 of 7) on page 795
Sensor/switch assembly	FM2-1417-000CN	Finisher main body (stapler/stacker and booklet-maker) on page 869
Shaft, lock	RC1-9912-000CN	Input-tray main body (1x500-sheet) on page 835
Shaft, lock	RC1-9912-000CN	Input-tray main body (3x500-sheet) on page 839
Sheet, entrance-guide	FC5-5542-000CN	Finisher main body (stapler/stacker and booklet-maker) on page 869
Sheet, fixing-crossmember	RC1-9232-000CN	Printer internal components (2 of 7) on page 795
Shutter H.P.-sensor assembly	FM2-1401-000CN	Finisher main body (stapler/stacker and booklet-maker) on page 869
Solenoid	FL2-0821-000CN	Finisher main body (stapler/stacker and booklet-maker) on page 869
Spring, leaf	RC1-9233-000CN	Printer internal components (1 of 7) on page 793
Spring, tension	RU5-2822-000CN	Printer internal components (2 of 7) on page 795
Spring, tension	RU5-2796-000CN	Printer internal components (5 of 7) on page 803
Spring, tension	4S3-2116-000CN	Saddle assembly (booklet-maker) on page 903
Spring, tension	4S3-2117-000CN	Saddle assembly (booklet-maker) on page 903

Table 9-58 Alphabetical parts list (continued)

Description	Part number	Table and page
Spring, tension	FS6-2582-000CN	Saddle assembly (booklet-maker) on page 903
Spring, torsion	RU5-2825-000CN	Printer internal components (2 of 7) on page 795
Spring, torsion	RC1-9244-000CN	Printer internal components (5 of 7) on page 803
Spring, torsion	FC5-5005-000CN	External panels and covers (stapler/stacker) on page 861
Spring, torsion	FC5-5005-000CN	External panels and covers (booklet-maker) on page 863
Spring, torsion	FC5-6857-000CN	Swing-guide assembly (stapler/stacker and booklet-maker) on page 893
Spring, torsion	FB3-7980-000CN	Saddle assembly (booklet-maker) on page 903
Stack lower-tray assembly	RM1-4105-000CN	Output bin 2 (stack lower-tray assembly) (stapler/stacker and booklet-maker) on page 881
Stack sub-tray assembly	RM1-4115-000CN	Top output bin (stack sub-tray assembly) (stapler/stacker) on page 883
Stack upper-tray assembly	RM1-4101-000CN	Output bin 1 (stack upper-tray assembly) (stapler/stacker) on page 873
Stack upper-tray assembly	RM1-4102-000CN	Output bin 1 (stack upper-tray assembly) (booklet-maker) on page 877
Stack-ejection motor assembly	4G3-0769-000CN	Finisher main body (stapler/stacker and booklet-maker) on page 869
Stack-tray assembly	RM1-4104-000CN	Output bin 1 (stack upper-tray assembly) (booklet-maker) on page 877
Stack-tray assembly	RM1-4104-000CN	Output bin 2 (stack lower-tray assembly) (stapler/stacker and booklet-maker) on page 881
Staple assembly	FM2-0721-000CN	Staple assembly (stapler/stacker and booklet-maker) on page 897
Stapler sub-assembly	FM2-0722-000CN	Staple assembly (stapler/stacker and booklet-maker) on page 897
Stapler unit	FL2-0846-000CN	Saddle-stapler assembly (booklet-maker) on page 911
Stock-box assembly	RM1-3539-000CN	Input-tray main body (1x500-sheet) on page 835

Table 9-58 Alphabetical parts list (continued)

Description	Part number	Table and page
Stopper, right-door	RC1-9882-000CN	Input-tray main body (1x500-sheet) on page 835
Stopper, right-door	RC1-9882-000CN	Input-tray main body (3x500-sheet) on page 839
Support, door-cover (simplex)	RC1-9014-000CN	Printer right-door assembly on page 791
Support, lock-shaft	RC1-9900-000CN	Input-tray main body (1x500-sheet) on page 835
Support, lock-shaft	RC1-9900-000CN	Input-tray main body (3x500-sheet) on page 839
Support, PCA	VT2-0001-008CN	Input-tray main body (1x500-sheet) on page 835
Support, PCA	VT2-0001-008CN	Input-tray main body (3x500-sheet) on page 839
Swing-guide assembly	RM1-4108-000CN	Swing-guide assembly (stapler/stacker and booklet-maker) on page 893
Swing-press shaft assembly	FM2-1423-000CN	Finisher main body (stapler/stacker and booklet-maker) on page 869
Switch, button	WC2-5512-000CN	Input-tray main body (1x500-sheet) on page 835
Switch, button	WC2-5512-000CN	Input-tray main body (3x500-sheet) on page 839
Switchback-cover assembly	RM1-3360-000CN	Printer external covers and panels on page 787
T2 guide-arm assembly	RM1-4411-000CN	Printer internal components (7 of 7) on page 807
Tag PCA-holder assembly	RM1-4402-000CN	Printer internal components (4 of 7) on page 799
Tape, door	RC1-9884-000CN	Input-tray main body (1x500-sheet) on page 835
Tape, door	RC1-9884-000CN	Input-tray main body (3x500-sheet) on page 839
Thermistor unit	RK2-1363-000CN	Printer internal components (2 of 7) on page 795
Thermopile case assembly	RM1-3232-000CN	Printer internal components (2 of 7) on page 795
Toner cartridge drive assembly kit with service document	Q3931-67912	Printer internal components (4 of 7) on page 799
Toner cartridge drive assembly kit with service document	Q3931-67913	Printer internal components (4 of 7) on page 799
Toner-motor cable	RM1-3383-000CN	Printer internal components (4 of 7) on page 799

Table 9-58 Alphabetical parts list (continued)

Description	Part number	Table and page
Toner-motor cable	RM1-3385-000CN	Printer internal components (4 of 7) on page 799
Top-cover assembly	RL1-1284-000CN	Printer internal components (1 of 7) on page 793
Top-door (upper-cover) assembly	RM1-4121-000CN	External panels and covers (stapler/stacker) on page 861
Top-door (upper-cover) assembly	RM1-4121-000CN	External panels and covers (booklet-maker) on page 863
Transfer contact-holder assembly	RM1-3230-000CN	Printer internal components (1 of 7) on page 793
Tray 1 pickup, retard-roller kit	Q3931-67920	Printer multi-purpose paper-pickup assembly on page 817
Tray 2 pickup, feed-roller kit	Q3931-67919	Printer cassette paper-pickup assembly on page 815
Tray-driver PCA assembly	FG3-2887-000CN	Output bin 1 (stack upper-tray assembly) (booklet-maker) on page 877
Tray-driver PCA assembly	FG3-2887-000CN	Output bin 2 (stack lower-tray assembly) (stapler/stacker and booklet-maker) on page 881
Upper delivery-guide assembly	RM1-4131-000CN	Saddle assembly (booklet-maker) on page 903
Upper-cover lock assembly	4G3-0210-000CN	Finisher main body (stapler/stacker and booklet-maker) on page 869
Upper-crossmember assembly	RM1-4180-000CN	Finisher main body (stapler/stacker and booklet-maker) on page 869
Upper-guide assembly	RM1-3687-000CN	Intermediate-feed upper-guide assembly on page 855
Window, LED	RC2-1734-000CN	External panels and covers (booklet-maker) on page 863

Numerical parts list

Table 9-59 Numerical parts list

Part number	Description	Table and page
4A3-1763-000CN	Arm, adjustment, front	Saddle assembly (booklet-maker) on page 903
4A3-1764-000CN	Arm, adjustment, rear	Saddle assembly (booklet-maker) on page 903
4A3-1779-000CN	Plate, rotation	Saddle assembly (booklet-maker) on page 903
4A3-1782-000CN	Lever, stopper	Saddle assembly (booklet-maker) on page 903
4A3-1783-000CN	Roller, folding	Saddle assembly (booklet-maker) on page 903
4A3-1955-000CN	Plate, grounding (booklet-maker only)	Finisher main body (stapler/stacker and booklet-maker) on page 869
4A3-4715-000CN	Plate, hinge-stop (booklet-maker only)	Finisher main body (stapler/stacker and booklet-maker) on page 869
4G1-1498-000CN	Area-sensor PCA assembly	Output bin 1 (stack upper-tray assembly) (stapler/stacker) on page 873
4G1-1498-000CN	Area-sensor PCA assembly	Output bin 1 (stack upper-tray assembly) (booklet-maker) on page 877
4G1-1498-000CN	Area-sensor PCA assembly	Output bin 2 (stack lower-tray assembly) (stapler/stacker and booklet-maker) on page 881
4G1-2283-000CN	Cable, saddle-unit	Saddle assembly (booklet-maker) on page 903
4G1-2285-000CN	Cable, sensor	Saddle-tray assembly (booklet-maker) on page 907
4G3-0210-000CN	Upper-cover lock assembly	Finisher main body (stapler/stacker and booklet-maker) on page 869
4G3-0271-000CN	Link-slide assembly	External panels and covers (stapler/stacker) on page 861
4G3-0271-000CN	Link-slide assembly	External panels and covers (booklet-maker) on page 863
4G3-0670-000CN	Motor-mount assembly	Saddle assembly (booklet-maker) on page 903
4G3-0670-000CN	Motor-mount assembly	Motor-mount assembly (booklet-maker) on page 923
4G3-0671-000CN	Inner side-plate assembly	Saddle assembly (booklet-maker) on page 903

Table 9-59 Numerical parts list (continued)

Part number	Description	Table and page
4G3-0671-000CN	Inner side-plate assembly	Inner side-plate assembly (booklet-maker) on page 919
4G3-0725-000CN	Guide-motor assembly	Saddle assembly (booklet-maker) on page 903
4G3-0769-000CN	Stack-ejection motor assembly	Finisher main body (stapler/stacker and booklet-maker) on page 869
4G3-0934-000CN	Paper-face sensor assembly	External panels and covers (stapler/stacker) on page 861
4G3-0934-000CN	Paper-face sensor assembly	External panels and covers (booklet-maker) on page 863
4G3-1624-000CN	Paper-face sensing assembly	External panels and covers (stapler/stacker) on page 861
4G3-1624-000CN	Paper-face sensing assembly	External panels and covers (booklet-maker) on page 863
4G3-1777-000CN	Cable, staple-connecting assembly	Staple assembly (stapler/stacker and booklet-maker) on page 897
4H3-0370-000CN	Clutch, electromagnetic	Finisher main body (stapler/stacker and booklet-maker) on page 869
4K1-1103-000CN	Motor, stepping	Pass lower-guide assembly (booklet-maker) on page 917
4S3-0171-000CN	Gear, 50T	Saddle assembly (booklet-maker) on page 903
4S3-1050-000CN	Bearing, ball, 6902ZZNR	Saddle assembly (booklet-maker) on page 903
4S3-2116-000CN	Spring, tension	Saddle assembly (booklet-maker) on page 903
4S3-2117-000CN	Spring, tension	Saddle assembly (booklet-maker) on page 903
C8091-67901	5000-staple replacement cartridge	Staple assembly (stapler/stacker and booklet-maker) on page 897
C8091-67901	5000-staple replacement cartridge	Saddle-stapler assembly (booklet-maker) on page 911
CC383-67901	2000-staple cartridge (for booklet making)	Staple assembly (stapler/stacker and booklet-maker) on page 897
CC383-67901	2000-staple cartridge (for booklet making)	Saddle-stapler assembly (booklet-maker) on page 911
FB3-7881-000CN	Knob (booklet-maker only)	Finisher main body (stapler/stacker and booklet-maker) on page 869
FB3-7925-030CN	Flag, roller	Saddle assembly (booklet-maker) on page 903

Table 9-59 Numerical parts list (continued)

Part number	Description	Table and page
FB3-7928-020CN	Deflector	Saddle assembly (booklet-maker) on page 903
FB3-7934-000CN	Rack, rear	Saddle assembly (booklet-maker) on page 903
FB3-7967-000CN	Rack, front	Saddle assembly (booklet-maker) on page 903
FB3-7973-000CN	Holder, roller, 2	Saddle assembly (booklet-maker) on page 903
FB3-7979-000CN	Flag, sensor	Saddle assembly (booklet-maker) on page 903
FB3-7980-000CN	Spring, torsion	Saddle assembly (booklet-maker) on page 903
FB5-2697-000CN	Deflector	Saddle assembly (booklet-maker) on page 903
FB5-5937-020CN	Flag, sensor	Saddle assembly (booklet-maker) on page 903
FC5-3657-000CN	Limiter, torque	Finisher main body (stapler/stacker and booklet-maker) on page 869
FC5-4162-000CN	Flag, paper-face sensing, upper	External panels and covers (stapler/stacker) on page 861
FC5-4221-000CN	Roller, tray-guide	Output bin 1 (stack upper-tray assembly) (booklet-maker) on page 877
FC5-4221-000CN	Roller, tray-guide	Output bin 2 (stack lower-tray assembly) (stapler/stacker and booklet-maker) on page 881
FC5-4991-030CN	Hinge, front-door, 1	Finisher main body (stapler/stacker and booklet-maker) on page 869
FC5-4992-030CN	Hinge, front-door, 2	Finisher main body (stapler/stacker and booklet-maker) on page 869
FC5-5004-000CN	Flag, paper-sensing sensor	External panels and covers (stapler/stacker) on page 861
FC5-5004-000CN	Flag, paper-sensing sensor	External panels and covers (booklet-maker) on page 863
FC5-5005-000CN	Spring, torsion	External panels and covers (stapler/stacker) on page 861
FC5-5005-000CN	Spring, torsion	External panels and covers (booklet-maker) on page 863
FC5-5021-000CN	Claw, latch, right	Saddle assembly (booklet-maker) on page 903
FC5-5024-000CN	Knob, latch	Saddle-guide assembly (booklet-maker) on page 909

Table 9-59 Numerical parts list (continued)

Part number	Description	Table and page
FC5-5436-000CN	Rack, rail	Finisher main body (stapler/ stacker and booklet-maker) on page 869
FC5-5542-000CN	Sheet, entrance-guide	Finisher main body (stapler/ stacker and booklet-maker) on page 869
FC5-6857-000CN	Spring, torsion	Swing-guide assembly (stapler/stacker and booklet-maker) on page 893
FC5-6978-000CN	Plate, option-tray, front	Output bin 1 (stack upper-tray assembly) (stapler/stacker) on page 873
FF5-5805-040CN	Plate, tension	Saddle assembly (booklet-maker) on page 903
FG3-2887-000CN	Tray-driver PCA assembly	Output bin 1 (stack upper-tray assembly) (booklet-maker) on page 877
FG3-2887-000CN	Tray-driver PCA assembly	Output bin 2 (stack lower-tray assembly) (stapler/stacker and booklet-maker) on page 881
FG3-2892-000CN	Cable, solenoid	Finisher main body (stapler/ stacker and booklet-maker) on page 869
FG3-2903-000CN	Cable, operation-tray	Operation-tray assembly (stapler/stacker and booklet-maker) on page 885
FL2-0821-000CN	Solenoid	Finisher main body (stapler/ stacker and booklet-maker) on page 869
FL2-0846-000CN	Stapler unit	Saddle-stapler assembly (booklet-maker) on page 911
FM2-0707-000CN	Paper-sensor assembly	Output bin 1 (stack upper-tray assembly) (stapler/stacker) on page 873
FM2-0707-000CN	Paper-sensor assembly	Output bin 1 (stack upper-tray assembly) (booklet-maker) on page 877
FM2-0707-000CN	Paper-sensor assembly	Output bin 2 (stack lower-tray assembly) (stapler/stacker and booklet-maker) on page 881
FM2-0709-000CN	Area-sensor holder assembly	Output bin 1 (stack upper-tray assembly) (stapler/stacker) on page 873
FM2-0709-000CN	Area-sensor holder assembly	Output bin 1 (stack upper-tray assembly) (booklet-maker) on page 877
FM2-0709-000CN	Area-sensor holder assembly	Output bin 2 (stack lower-tray assembly) (stapler/stacker and booklet-maker) on page 881

Table 9-59 Numerical parts list (continued)

Part number	Description	Table and page
FM2-0710-000CN	Approach-switch assembly	Output bin 1 (stack upper-tray assembly) (booklet-maker) on page 877
FM2-0718-000CN	Entrance-sensor flag assembly	Finisher main body (stapler/ stacker and booklet-maker) on page 869
FM2-0720-000CN	Flexible-cable mount assembly	Finisher main body (stapler/ stacker and booklet-maker) on page 869
FM2-0721-000CN	Staple assembly	Staple assembly (stapler/ stacker and booklet-maker) on page 897
FM2-0722-000CN	Stapler sub-assembly	Staple assembly (stapler/ stacker and booklet-maker) on page 897
FM2-0725-090CN	Return-roller assembly	Return-roller assembly (stapler/stacker and booklet-maker) on page 889
FM2-0730-000CN	Pressure-roller assembly	Pressure-roller assembly (stapler/stacker and booklet-maker) on page 891
FM2-0737-000CN	Saddle-motor assembly	Saddle paper-feeder assembly (stapler/stacker) on page 913
FM2-0737-000CN	Saddle-motor assembly	Saddle paper-feeder assembly (booklet-maker) on page 915
FM2-0756-000CN	Saddle-guide assembly	Saddle assembly (booklet-maker) on page 903
FM2-0763-000CN	Rear-end sensor assembly	Saddle assembly (booklet-maker) on page 903
FM2-1401-000CN	Shutter H.P.-sensor assembly	Finisher main body (stapler/ stacker and booklet-maker) on page 869
FM2-1409-000CN	Press-motor assembly	Finisher main body (stapler/ stacker and booklet-maker) on page 869
FM2-1417-000CN	Sensor/switch assembly	Finisher main body (stapler/ stacker and booklet-maker) on page 869
FM2-1423-000CN	Swing-press shaft assembly	Finisher main body (stapler/ stacker and booklet-maker) on page 869
FM2-1639-000CN	Delivery-switch mount assembly	Saddle assembly (booklet-maker) on page 903
FM2-1708-000CN	Option-sensor assembly	Output bin 1 (stack upper-tray assembly) (stapler/stacker) on page 873
FM2-5024-000CN	Saddle-guide assembly	Saddle-guide assembly (booklet-maker) on page 909

Table 9-59 Numerical parts list (continued)

Part number	Description	Table and page
FS5-3576-000CN	Pulley, 30T	Saddle assembly (booklet-maker) on page 903
FS5-3577-000CN	Pulley, 39T	Saddle assembly (booklet-maker) on page 903
FS6-0814-000CN	Pulley, 32T/gear, 16T	Pass lower-guide assembly (booklet-maker) on page 917
FS6-0815-000CN	Pulley, 16T/gear, 32T	Pass lower-guide assembly (booklet-maker) on page 917
FS6-0822-000CN	Gear, 16T/33T	Saddle assembly (booklet-maker) on page 903
FS6-0823-000CN	Gear, 16T	Saddle assembly (booklet-maker) on page 903
FS6-0829-000CN	Gear, 16T/56T	Saddle assembly (booklet-maker) on page 903
FS6-0830-000CN	Gear, 16T	Saddle assembly (booklet-maker) on page 903
FS6-2582-000CN	Spring, tension	Saddle assembly (booklet-maker) on page 903
FU5-0428-000CN	Gear, 30T	Finisher main body (stapler/stacker and booklet-maker) on page 869
FU5-0435-000CN	Gear, 44T	Output bin 1 (stack upper-tray assembly) (stapler/stacker) on page 873
FU5-0435-000CN	Gear, 44T	Output bin 1 (stack upper-tray assembly) (booklet-maker) on page 877
FU5-0435-000CN	Gear, 44T	Output bin 2 (stack lower-tray assembly) (stapler/stacker and booklet-maker) on page 881
FU5-0454-000CN	Gear, 40T	Finisher main body (stapler/stacker and booklet-maker) on page 869
FU5-0457-000CN	Gear, 17T	Output bin 1 (stack upper-tray assembly) (booklet-maker) on page 877
FU5-0457-000CN	Gear, 17T	Output bin 2 (stack lower-tray assembly) (stapler/stacker and booklet-maker) on page 881
FU5-1169-000CN	Bushing	Output bin 2 (stack lower-tray assembly) (stapler/stacker and booklet-maker) on page 881
FU5-2399-000CN	Gear, 29T	Finisher main body (stapler/stacker and booklet-maker) on page 869

Table 9-59 Numerical parts list (continued)

Part number	Description	Table and page
FU5-3086-000CN	Pulley, 20T	Finisher main body (stapler/ stacker and booklet-maker) on page 869
FU9-9059-000CN	Screw, RS stepped, M3	Finisher main body (stapler/ stacker and booklet-maker) on page 869
Q3931-67905	Cover, face-down	Printer external covers and panels on page 787
Q3931-67907	Scanner assembly kit (1 scanner assembly per kit) with service document	Printer internal components (2 of 7) on page 795
Q3931-67909	Registration 2nd-transfer assembly kit with service document	Printer internal components (3 of 7) on page 797
Q3931-67911	Main drive-unit kit with service document	Printer internal components (4 of 7) on page 799
Q3931-67912	Toner cartridge drive assembly kit with service document	Printer internal components (4 of 7) on page 799
Q3931-67913	Toner cartridge drive assembly kit with service document	Printer internal components (4 of 7) on page 799
Q3931-67914	Fixing assembly kit, 110-127V	Printer internal components (4 of 7) on page 799
Q3931-67915	Fixing assembly kit, 220-240V	Printer internal components (4 of 7) on page 799
Q3931-67916	DC-controller kit with service document	Printer internal components (6 of 7) on page 805
Q3931-67917	Cartridge-interface assembly kit with service document	Printer internal components (7 of 7) on page 807
Q3931-67918	Cassette-assembly kit	Printer cassette on page 813
Q3931-67919	Tray 2 pickup, feed-roller kit	Printer cassette paper-pickup assembly on page 815
Q3931-67920	Tray 1 pickup, retard-roller kit	Printer multi-purpose paper-pickup assembly on page 817
Q3931-67921	Duplex-switchback tray assembly kit	Printer duplexing-tray assembly on page 827
Q3931-67922	DC controller kit with service document	Printer PCA assembly location on page 831
RC1-8511-000CN	Retainer	Printer internal components (3 of 7) on page 797
RC1-8511-000CN	Retainer	Printer multi-purpose paper-pickup assembly on page 817
RC1-8519-000CN	Limiter, torque	Printer multi-purpose paper-pickup assembly on page 817
RC1-8526-000CN	Guide, multi-purpose, upper	Printer multi-purpose paper-pickup assembly on page 817
RC1-8527-000CN	Cover, multi-purpose blanking	Printer right-door assembly on page 791

Table 9-59 Numerical parts list (continued)

Part number	Description	Table and page
RC1-8734-000CN	Bushing	Printer internal components (3 of 7) on page 797
RC1-8925-000CN	Damper, gear	Printer internal components (4 of 7) on page 799
RC1-8928-000CN	Lever, paper-sensing	Printer internal components (5 of 7) on page 803
RC1-8931-000CN	Rail, fixing, front	Printer internal components (4 of 7) on page 799
RC1-8939-000CN	Rail, fixing, rear	Printer internal components (4 of 7) on page 799
RC1-8959-000CN	Guide, face-down inner	Printer internal components (2 of 7) on page 795
RC1-8961-000CN	Duct, air	Printer internal components (4 of 7) on page 799
RC1-8964-000CN	Duct, face-down joint	Printer internal components (4 of 7) on page 799
RC1-9014-000CN	Support, door-cover (simplex)	Printer right-door assembly on page 791
RC1-9043-000CN	Band, door	Printer front-door assembly on page 789
RC1-9185-000CN	Guide, intermediate transfer belt (ITB)-entrance, front	Printer internal components (3 of 7) on page 797
RC1-9186-000CN	Guide, intermediate transfer belt (ITB)-entrance, rear	Printer internal components (3 of 7) on page 797
RC1-9189-000CN	Arm, 1st-estrangement	Printer internal components (3 of 7) on page 797
RC1-9190-000CN	Plate, fan-fixing, front	Printer internal components (5 of 7) on page 803
RC1-9201-000CN	Cover, cassette back-end	Printer internal components (5 of 7) on page 803
RC1-9206-000CN	Rail, reverse, rear	Printer internal components (2 of 7) on page 795
RC1-9208-000CN	Foot, rubber	Printer internal components (6 of 7) on page 805
RC1-9211-000CN	Cover, main-switch	Printer internal components (7 of 7) on page 807
RC1-9220-000CN	Lever, door-interlock shutter	Printer internal components (5 of 7) on page 803
RC1-9231-000CN	Roller, rail	Input-tray main body (1x500-sheet) on page 835
RC1-9231-000CN	Roller, rail	Input-tray main body (3x500-sheet) on page 839
RC1-9232-000CN	Sheet, fixing-crossmember	Printer internal components (2 of 7) on page 795

Table 9-59 Numerical parts list (continued)

Part number	Description	Table and page
RC1-9233-000CN	Spring, leaf	Printer internal components (1 of 7) on page 793
RC1-9235-000CN	Plate, drawer-guard	Printer internal components (5 of 7) on page 803
RC1-9238-000CN	Plate, control-panel grounding	Printer external covers and panels on page 787
RC1-9244-000CN	Spring, torsion	Printer internal components (5 of 7) on page 803
RC1-9246-000CN	Plate, sensor, front	Printer internal components (5 of 7) on page 803
RC1-9260-000CN	Holder, scanner-thermistor	Printer internal components (2 of 7) on page 795
RC1-9261-000CN	Clamp, formatter cable	Printer internal components (7 of 7) on page 807
RC1-9276-000CN	Duct, cartridge	Printer internal components (4 of 7) on page 799
RC1-9277-000CN	Holder, cartridge-fan	Printer internal components (4 of 7) on page 799
RC1-9278-000CN	Holder, fixing-fan	Printer internal components (4 of 7) on page 799
RC1-9279-000CN	Holder, scanner-fan	Printer internal components (4 of 7) on page 799
RC1-9300-000CN	Button, main-switch	Printer internal components (7 of 7) on page 807
RC1-9306-000CN	Guide, cable, A	Printer internal components (7 of 7) on page 807
RC1-9307-000CN	Guide, cable, B	Printer internal components (6 of 7) on page 805
RC1-9308-000CN	Guide, cable, C	Printer internal components (6 of 7) on page 805
RC1-9309-000CN	Duct, scanner-fan	Printer internal components (4 of 7) on page 799
RC1-9312-000CN	Guide, cable, D	Printer internal components (6 of 7) on page 805
RC1-9313-000CN	Filter unit, air	Printer external covers and panels on page 787
RC1-9318-000CN	Guide, cable, E	Printer internal components (6 of 7) on page 805
RC1-9323-000CN	Guide, cable, F	Printer internal components (7 of 7) on page 807
RC1-9324-000CN	Holder, environment-sensor	Printer internal components (2 of 7) on page 795
RC1-9326-000CN	Plate, HVT-A (high-voltage transmission) guard	Printer internal components (7 of 7) on page 807

Table 9-59 Numerical parts list (continued)

Part number	Description	Table and page
RC1-9328-000CN	Holder, high-voltage-connector	Printer internal components (7 of 7) on page 807
RC1-9329-000CN	Guide, cable	Printer internal components (6 of 7) on page 805
RC1-9332-000CN	Guide, fixing-cable	Printer internal components (7 of 7) on page 807
RC1-9334-000CN	Duct, scanner	Printer internal components (2 of 7) on page 795
RC1-9336-000CN	Cover, left	Printer external covers and panels on page 787
RC1-9339-000CN	Cover, right-upper	Printer external covers and panels on page 787
RC1-9341-000CN	Cover, panel	Printer external covers and panels on page 787
RC1-9342-000CN	Cover, rear-upper	Printer external covers and panels on page 787
RC1-9344-000CN	Cover, rear-left	Printer external covers and panels on page 787
RC1-9348-000CN	Cover, internal, right	Printer internal components (3 of 7) on page 797
RC1-9354-000CN	Block, reinforcement (simplex)	Printer internal components (2 of 7) on page 795
RC1-9360-000CN	Cover, face-down drive	Printer external covers and panels on page 787
RC1-9362-000CN	Cover, blanking (simplex)	Printer external covers and panels on page 787
RC1-9511-000CN	Cover, motor	Printer right-door assembly on page 791
RC1-9667-000CN	Cover, intermediate-feed SW.	Intermediate-feed main body on page 851
RC1-9674-000CN	Belt, paper-feed, cogged	Intermediate-feed main body on page 851
RC1-9871-000CN	Cover, rear	Input-tray main body (1x500-sheet) on page 835
RC1-9871-000CN	Cover, rear	Input-tray main body (3x500-sheet) on page 839
RC1-9872-000CN	Cover, left	Input-tray main body (1x500-sheet) on page 835
RC1-9872-000CN	Cover, left	Input-tray main body (3x500-sheet) on page 839
RC1-9873-000CN	Cover, front-upper	Input-tray main body (1x500-sheet) on page 835
RC1-9873-000CN	Cover, front-upper	Input-tray main body (3x500-sheet) on page 839

Table 9-59 Numerical parts list (continued)

Part number	Description	Table and page
RC1-9874-000CN	Cover, right-lower	Input-tray main body (1x500-sheet) on page 835
RC1-9874-000CN	Cover, right-lower	Input-tray main body (3x500-sheet) on page 839
RC1-9881-000CN	Guide, paper-feed roller	Input-tray main body (1x500-sheet) on page 835
RC1-9881-000CN	Guide, paper-feed roller	Input-tray main body (3x500-sheet) on page 839
RC1-9882-000CN	Stopper, right-door	Input-tray main body (1x500-sheet) on page 835
RC1-9882-000CN	Stopper, right-door	Input-tray main body (3x500-sheet) on page 839
RC1-9883-000CN	Lever, lock	Input-tray main body (1x500-sheet) on page 835
RC1-9883-000CN	Lever, lock	Input-tray main body (3x500-sheet) on page 839
RC1-9884-000CN	Tape, door	Input-tray main body (1x500-sheet) on page 835
RC1-9884-000CN	Tape, door	Input-tray main body (3x500-sheet) on page 839
RC1-9896-000CN	Caster, double-lock, front	Input-tray main body (1x500-sheet) on page 835
RC1-9896-000CN	Caster, double-lock, front	Input-tray main body (3x500-sheet) on page 839
RC1-9900-000CN	Support, lock-shaft	Input-tray main body (1x500-sheet) on page 835
RC1-9900-000CN	Support, lock-shaft	Input-tray main body (3x500-sheet) on page 839
RC1-9901-000CN	Plate, switch-cover	Input-tray main body (1x500-sheet) on page 835
RC1-9901-000CN	Plate, switch-cover	Input-tray main body (3x500-sheet) on page 839
RC1-9912-000CN	Shaft, lock	Input-tray main body (1x500-sheet) on page 835
RC1-9912-000CN	Shaft, lock	Input-tray main body (3x500-sheet) on page 839
RC1-9913-000CN	Arm, lock	Input-tray main body (1x500-sheet) on page 835
RC1-9913-000CN	Arm, lock	Input-tray main body (3x500-sheet) on page 839
RC1-9915-000CN	Bushing	Input-tray main body (1x500-sheet) on page 835
RC1-9915-000CN	Bushing	Input-tray main body (3x500-sheet) on page 839

Table 9-59 Numerical parts list (continued)

Part number	Description	Table and page
RC1-9917-000CN	Caster, rear	Input-tray main body (1x500-sheet) on page 835
RC1-9917-000CN	Caster, rear	Input-tray main body (3x500-sheet) on page 839
RC1-9921-000CN	Door, stock	Input-tray main body (1x500-sheet) on page 835
RC2-1278-000CN	Cover, rear	External panels and covers (stapler/stacker) on page 861
RC2-1278-000CN	Cover, rear	External panels and covers (booklet-maker) on page 863
RC2-1279-000CN	Cover, tray-connector	External panels and covers (stapler/stacker) on page 861
RC2-1279-000CN	Cover, tray-connector	External panels and covers (booklet-maker) on page 863
RC2-1280-000CN	Cover, left-lower	External panels and covers (booklet-maker) on page 863
RC2-1283-000CN	Panel, height, upper	External panels and covers (stapler/stacker) on page 861
RC2-1283-000CN	Panel, height, upper	External panels and covers (booklet-maker) on page 863
RC2-1284-000CN	Guide, side-wall	External panels and covers (booklet-maker) on page 863
RC2-1293-000CN	Arm, paper-delivery gate	Swing-guide assembly (stapler/stacker and booklet-maker) on page 893
RC2-1315-000CN	Caster, universal	Finisher main body (stapler/stacker and booklet-maker) on page 869
RC2-1347-000CN	Cover, option-slide	External panels and covers (stapler/stacker) on page 861
RC2-1351-000CN	Cover, internal, lower (stapler/stacker only)	Finisher main body (stapler/stacker and booklet-maker) on page 869
RC2-1536-000CN	Plate, grounding (booklet-maker only)	Finisher main body (stapler/stacker and booklet-maker) on page 869
RC2-1734-000CN	Window, LED	External panels and covers (booklet-maker) on page 863
RC2-1735-000CN	Mount, LED-PCA	External panels and covers (stapler/stacker) on page 861
RK2-1320-000CN	Motor, stepping, DC	Intermediate-feed main body on page 851
RK2-1331-000CN	Motor, stepping, DC	Input-tray main body (1x500-sheet) on page 835
RK2-1331-000CN	Motor, stepping, DC	Input-tray main body (3x500-sheet) on page 839

Table 9-59 Numerical parts list (continued)

Part number	Description	Table and page
RK2-1354-000CN	Cable, laser flexible flat	Printer internal components (2 of 7) on page 795
RK2-1355-000CN	Cable, laser flexible flat	Printer internal components (2 of 7) on page 795
RK2-1356-000CN	Cable, flexible flat	Printer internal components (6 of 7) on page 805
RK2-1363-000CN	Thermistor unit	Printer internal components (2 of 7) on page 795
RK2-1366-000CN	Motor, stepping, DC	Printer internal components (4 of 7) on page 799
RK2-1370-000CN	Motor, stepping, DC	Printer internal components (4 of 7) on page 799
RK2-1377-000CN	Fan	Printer internal components (4 of 7) on page 799
RK2-1378-000CN	Fan	Printer internal components (4 of 7) on page 799
RK2-1378-000CN	Fan	Printer internal components (5 of 7) on page 803
RK2-1378-000CN	Fan	Printer duplexing-reverse assembly on page 825
RK2-1382-000CN	Fan	Printer internal components (4 of 7) on page 799
RK2-2376-000CN	Sensor unit, humidity	Printer internal components (2 of 7) on page 795
RL1-1210-000CN	Cover, rear	Printer external covers and panels on page 787
RL1-1213-000CN	Rail, left, top	Printer internal components (5 of 7) on page 803
RL1-1215-000CN	Rail, cassette, right	Printer internal components (5 of 7) on page 803
RL1-1216-000CN	Plate, fixing-motor	Printer internal components (4 of 7) on page 799
RL1-1280-000CN	Right-lower cover assembly	Printer external covers and panels on page 787
RL1-1283-000CN	Guide, multi-purpose, right	Printer internal components (2 of 7) on page 795
RL1-1284-000CN	Top-cover assembly	Printer internal components (1 of 7) on page 793
RL1-1289-000CN	Roller, paper-pickup	Input-tray paper-pickup assembly on page 847
RL1-1310-000CN	Rail, cassette, right	Input-tray main body (1x500-sheet) on page 835
RL1-1310-000CN	Rail, cassette, right	Input-tray main body (3x500-sheet) on page 839

Table 9-59 Numerical parts list (continued)

Part number	Description	Table and page
RL1-1311-000CN	Rail, cassette, left	Input-tray main body (1x500-sheet) on page 835
RL1-1311-000CN	Rail, cassette, left	Input-tray main body (3x500-sheet) on page 839
RL1-1321-000CN	Cover, right-front	Input-tray main body (3x500-sheet) on page 839
RL1-1322-000CN	Cover, right-front	Input-tray main body (1x500-sheet) on page 835
RL1-1335-000CN	Guide, duplexing-feed, upper (duplex)	Printer right-door assembly on page 791
RL1-1477-000CN	Cover, internal, lower (booklet-maker only)	Finisher main body (stapler/stacker and booklet-maker) on page 869
RL1-1717-000CN	Cover, front-lower	External panels and covers (stapler/stacker) on page 861
RL1-1717-000CN	Cover, front-lower	External panels and covers (booklet-maker) on page 863
RL1-1718-000CN	Cover, rear-lower	External panels and covers (stapler/stacker) on page 861
RL1-1718-000CN	Cover, rear-lower	External panels and covers (booklet-maker) on page 863
RL1-2210-000CN	Cover, option-tray, front	Output bin 1 (stack upper-tray assembly) (stapler/stacker) on page 873
RM1-0037-020CN	Paper feed-roller assembly	Input-tray paper-pickup assembly on page 847
RM1-3206-000CN	Cassette paper-pickup assembly (includes 1 pick and 2 feed rollers)	Printer cassette paper-pickup assembly on page 815
RM1-3215-000CN	Intermediate transfer belt (ITB) lock-support rear assembly	Printer internal components (3 of 7) on page 797
RM1-3217-000CN	Fixing-motor cable	Printer internal components (6 of 7) on page 805
RM1-3218-000CN	Fixing power-supply assembly	Printer internal components (7 of 7) on page 807
RM1-3218-000CN	Fixing power-supply assembly	Printer PCA assembly location on page 831
RM1-3222-020CN	Lifter-drive-assembly kit	Printer lifter-drive assembly on page 811
RM1-3225-000CN	Grip-support front assembly	Printer internal components (2 of 7) on page 795
RM1-3226-000CN	Grip-support rear assembly	Printer internal components (2 of 7) on page 795
RM1-3228-000CN	Intermediate transfer belt (ITB) lock-support front assembly	Printer internal components (3 of 7) on page 797

Table 9-59 Numerical parts list (continued)

Part number	Description	Table and page
RM1-3230-000CN	Transfer contact-holder assembly	Printer internal components (1 of 7) on page 793
RM1-3232-000CN	Thermopile case assembly	Printer internal components (2 of 7) on page 795
RM1-3233-000CN	Left-side wall assembly	Printer internal components (1 of 7) on page 793
RM1-3235-000CN	Partition-plate assembly, yellow	Printer internal components (1 of 7) on page 793
RM1-3237-000CN	Partition-plate assembly, magenta	Printer internal components (1 of 7) on page 793
RM1-3238-000CN	Partition-plate assembly, cyan	Printer internal components (1 of 7) on page 793
RM1-3239-000CN	Right-side wall assembly	Printer internal components (1 of 7) on page 793
RM1-3240-000CN	Intermediate transfer belt (ITB)-drawer assembly	Printer internal components (3 of 7) on page 797
RM1-3247-000CN	Fixing one-way gear assembly	Printer internal components (4 of 7) on page 799
RM1-3250-000CN	Photosensor assembly	Printer internal components (2 of 7) on page 795
RM1-3252-000CN	Main switch-holder assembly	Printer internal components (7 of 7) on page 807
RM1-3253-000CN	Formatter-case assembly	Printer internal components (6 of 7) on page 805
RM1-3254-000CN	Cartridge contact-holder assembly	Printer internal components (7 of 7) on page 807
RM1-3258-000CN	Color-plane-registration sensor assembly	Printer internal components (3 of 7) on page 797
RM1-3280-000CN	Intermediate transfer belt (ITB) estrangement-drive assembly	Printer internal components (3 of 7) on page 797
RM1-3286-000CN	Drum-motor assembly	Printer internal components (4 of 7) on page 799
RM1-3291-000CN	Multi-purpose-guide assembly	Printer multi-purpose-guide assembly on page 821
RM1-3293-000CN	Face-down paper-delivery assembly	Printer face-down paper-delivery assembly on page 823
RM1-3307-000CN	Intermediate transfer belt (ITB) assembly	Printer internal components (3 of 7) on page 797
RM1-3319-000CN	2nd-transfer-roller assembly	Printer internal components (3 of 7) on page 797
RM1-3333-000CN	Right-door sub-assembly	Printer right-door assembly on page 791
RM1-3340-000CN	Face-down end-tray assembly	Printer external covers and panels on page 787

Table 9-59 Numerical parts list (continued)

Part number	Description	Table and page
RM1-3341-000CN	Multi-purpose-tray assembly	Printer multi-purpose-tray assembly on page 819
RM1-3345-000CN	Multi-purpose paper-pickup assembly	Printer multi-purpose paper-pickup assembly on page 817
RM1-3354-000CN	Rear-cover-mount plate assembly	Printer internal components (6 of 7) on page 805
RM1-3356-000CN	Front-door assembly	Printer front-door assembly on page 789
RM1-3360-000CN	Switchback-cover assembly	Printer external covers and panels on page 787
RM1-3364-000CN	Fan assembly	Printer internal components (2 of 7) on page 795
RM1-3366-000CN	Multi-purpose-drive assembly	Printer multi-purpose-drive assembly on page 809
RM1-3383-000CN	Toner-motor cable	Printer internal components (4 of 7) on page 799
RM1-3385-000CN	Toner-motor cable	Printer internal components (4 of 7) on page 799
RM1-3389-000CN	Panel cable	Printer internal components (6 of 7) on page 805
RM1-3390-000CN	Face-down unit-1 cable	Printer internal components (7 of 7) on page 807
RM1-3391-000CN	Face-down unit-2 cable	Printer internal components (7 of 7) on page 807
RM1-3529-000CN	Cassette (1x500-sheet)	Input-tray cassette on page 845
RM1-3529-000CN	Cassette (3x500-sheet)	Input-tray cassette on page 845
RM1-3531-040CN	Auto-close assembly, 1x500-sheet	Input-tray auto-close assembly on page 843
RM1-3531-040CN	Auto-close assembly, 3x500-sheet	Input-tray auto-close assembly on page 843
RM1-3533-000CN	Paper-pickup assembly (1x500-sheet)	Input-tray paper-pickup assembly on page 847
RM1-3533-000CN	Paper-pickup assembly (3x500-sheet)	Input-tray paper-pickup assembly on page 847
RM1-3537-000CN	Right-door assembly	Input-tray main body (3x500-sheet) on page 839
RM1-3538-000CN	Right-door assembly	Input-tray main body (1x500-sheet) on page 835
RM1-3539-000CN	Stock-box assembly	Input-tray main body (1x500-sheet) on page 835
RM1-3559-000CN	Intermediate paper-transfer unit (IPTU)-driver PCA assembly	Intermediate-feed main body on page 851

Table 9-59 Numerical parts list (continued)

Part number	Description	Table and page
RM1-3559-000CN	Intermediate paper-transfer unit (IPTU)-driver PCA assembly	PCA assembly on page 857
RM1-3569-000CN	Paper-feed PCA assembly	Input-tray main body (1x500-sheet) on page 835
RM1-3569-000CN	Paper-feed PCA assembly	Input-tray main body (3x500-sheet) on page 839
RM1-3569-000CN	Paper-feed PCA assembly (1x500-sheet)	Input-tray PCA assembly on page 849
RM1-3569-000CN	Paper-feed PCA assembly (3x500-sheet)	Input-tray PCA assembly on page 849
RM1-3570-000CN	Option paper-sensor PCA assembly	Input-tray paper-pickup assembly on page 847
RM1-3571-000CN	Cable, pickup-option drawer	Input-tray main body (1x500-sheet) on page 835
RM1-3571-000CN	Cable, paper-pickup-option drawer	Input-tray main body (3x500-sheet) on page 839
RM1-3572-000CN	Cable, pickup-option door switch	Input-tray main body (1x500-sheet) on page 835
RM1-3572-000CN	Cable, pickup-option door switch	Input-tray main body (3x500-sheet) on page 839
RM1-3573-000CN	Cable, pickup-option PCA connect	Input-tray main body (3x500-sheet) on page 839
RM1-3574-000CN	Cable, option-sensor PCA connect	Input-tray main body (1x500-sheet) on page 835
RM1-3574-000CN	Cable, option-sensor PCA connect	Input-tray main body (3x500-sheet) on page 839
RM1-3575-000CN	Cable, paper-pickup option	Input-tray main body (1x500-sheet) on page 835
RM1-3575-000CN	Cable, paper-pickup option	Input-tray main body (3x500-sheet) on page 839
RM1-3576-000CN	Cable, pickup-option lifter unit	Input-tray auto-close assembly on page 843
RM1-3582-000CN	High-voltage-transfer A PCA assembly	Printer internal components (7 of 7) on page 807
RM1-3582-000CN	High-voltage-transfer A PCA assembly	Printer PCA assembly location on page 831
RM1-3585-000CN	Memory-tag PCA assembly	Printer internal components (4 of 7) on page 799
RM1-3585-000CN	Memory-tag PCA assembly	Printer PCA assembly location on page 831
RM1-3589-000CN	Interlock-switch assembly	Printer internal components (2 of 7) on page 795
RM1-3594-000CN	Low-voltage power-supply assembly	Printer internal components (5 of 7) on page 803

Table 9-59 Numerical parts list (continued)

Part number	Description	Table and page
RM1-3594-000CN	Low-voltage power-supply assembly	Printer PCA assembly location on page 831
RM1-3610-000CN	DC-controller power cable	Printer internal components (6 of 7) on page 805
RM1-3612-000CN	Fixing-joint cable	Printer internal components (7 of 7) on page 807
RM1-3617-000CN	Front cable	Printer internal components (6 of 7) on page 805
RM1-3618-000CN	Rear-lower cable	Printer internal components (6 of 7) on page 805
RM1-3619-000CN	Rear-upper cable	Printer internal components (6 of 7) on page 805
RM1-3620-000CN	Scanner-joint cable	Printer internal components (6 of 7) on page 805
RM1-3622-000CN	Panel-joint cable	Printer internal components (6 of 7) on page 805
RM1-3623-000CN	Interface-joint cable	Printer internal components (6 of 7) on page 805
RM1-3624-000CN	Color-plane-registration joint cable	Printer internal components (6 of 7) on page 805
RM1-3630-000CN	Multi-tray cable	Printer multi-purpose-tray assembly on page 819
RM1-3652-000CN	Duplexing-reverse assembly	Printer duplexing-reverse assembly on page 825
RM1-3665-000CN	Duplexing-feed assembly	Printer duplexing-feed assembly on page 829
RM1-3684-000CN	Drive-belt assembly	Intermediate-feed main body on page 851
RM1-3685-000CN	Fin-lock assembly	Intermediate-feed main body on page 851
RM1-3686-000CN	Lower-guide assembly	Intermediate-feed lower-guide assembly on page 853
RM1-3687-000CN	Upper-guide assembly	Intermediate-feed upper-guide assembly on page 855
RM1-3688-000CN	Damper assembly	Intermediate-feed main body on page 851
RM1-4101-000CN	Stack upper-tray assembly	Output bin 1 (stack upper-tray assembly) (stapler/stacker) on page 873
RM1-4102-000CN	Stack upper-tray assembly	Output bin 1 (stack upper-tray assembly) (booklet-maker) on page 877
RM1-4104-000CN	Stack-tray assembly	Output bin 1 (stack upper-tray assembly) (booklet-maker) on page 877

Table 9-59 Numerical parts list (continued)

Part number	Description	Table and page
RM1-4104-000CN	Stack-tray assembly	Output bin 2 (stack lower-tray assembly) (stapler/stacker and booklet-maker) on page 881
RM1-4105-000CN	Stack lower-tray assembly	Output bin 2 (stack lower-tray assembly) (stapler/stacker and booklet-maker) on page 881
RM1-4107-000CN	Area-sensor flag assembly	Finisher main body (stapler/stacker and booklet-maker) on page 869
RM1-4108-000CN	Swing-guide assembly	Swing-guide assembly (stapler/stacker and booklet-maker) on page 893
RM1-4109-000CN	Saddle paper-feeder assembly	Saddle paper-feeder assembly (booklet-maker) on page 915
RM1-4110-000CN	Entrance lower-guide assembly	Saddle paper-feeder assembly (stapler/stacker) on page 913
RM1-4110-000CN	Entrance lower-guide assembly	Saddle paper-feeder assembly (booklet-maker) on page 915
RM1-4113-000CN	Booklet-output bin (saddle-tray assembly)	Saddle-tray assembly (booklet-maker) on page 907
RM1-4115-000CN	Stack sub-tray assembly	Top output bin (stack sub-tray assembly) (stapler/stacker) on page 883
RM1-4119-000CN	Middle-height cover assembly	External panels and covers (booklet-maker) on page 863
RM1-4121-000CN	Top-door (upper-cover) assembly	External panels and covers (stapler/stacker) on page 861
RM1-4121-000CN	Top-door (upper-cover) assembly	External panels and covers (booklet-maker) on page 863
RM1-4122-000CN	Front-door assembly	External panels and covers (booklet-maker) on page 863
RM1-4123-000CN	Inner-cover assembly	Finisher main body (stapler/stacker and booklet-maker) on page 869
RM1-4125-000CN	Operation-tray assembly	Operation-tray assembly (stapler/stacker and booklet-maker) on page 885
RM1-4128-000CN	Cable-mount lattice assembly	Finisher main body (stapler/stacker and booklet-maker) on page 869
RM1-4129-000CN	Left-upper cover assembly	External panels and covers (booklet-maker) on page 863
RM1-4130-000CN	Saddle paper-delivery assembly	Saddle assembly (booklet-maker) on page 903
RM1-4130-000CN	Saddle paper-delivery assembly	Saddle paper-delivery assembly (booklet-maker) on page 921

Table 9-59 Numerical parts list (continued)

Part number	Description	Table and page
RM1-4131-000CN	Upper delivery-guide assembly	Saddle assembly (booklet-maker) on page 903
RM1-4134-000CN	Front-door assembly	External panels and covers (stapler/stacker) on page 861
RM1-4135-000CN	Lower height-guide assembly	External panels and covers (stapler/stacker) on page 861
RM1-4136-000CN	Saddle paper-feeder assembly	Saddle paper-feeder assembly (stapler/stacker) on page 913
RM1-4139-000CN	Main controller PCA assembly (stapler/stacker and booklet-maker)	PCA assembly on page 925
RM1-4140-000CN	Saddle-controller PCA assembly	Saddle assembly (booklet-maker) on page 903
RM1-4140-000CN	Saddle-controller PCA assembly (booklet-maker)	PCA assembly on page 925
RM1-4141-000CN	LED-PCA assembly	External panels and covers (stapler/stacker) on page 861
RM1-4141-000CN	LED-PCA assembly	External panels and covers (booklet-maker) on page 863
RM1-4172-000CN	Entrance upper-guide assembly	Entrance upper-guide assembly (stapler/stacker and booklet-maker) on page 895
RM1-4175-000CN	Paper-feeder motor assembly	Paper-feeder motor assembly (stapler/stacker and booklet-maker) on page 887
RM1-4178-000CN	Saddle-stapler assembly	Saddle assembly (booklet-maker) on page 903
RM1-4178-000CN	Saddle-stapler assembly	Saddle-stapler assembly (booklet-maker) on page 911
RM1-4179-000CN	Left upper-cover assembly	External panels and covers (stapler/stacker) on page 861
RM1-4180-000CN	Upper-crossmember assembly	Finisher main body (stapler/stacker and booklet-maker) on page 869
RM1-4391-000CN	Face-down full-flag assembly	Printer face-down paper-delivery assembly on page 823
RM1-4400-000CN	Guide-sensor assembly	Printer internal components (5 of 7) on page 803
RM1-4401-000CN	Intermediate transfer belt (ITB) duct assembly	Printer internal components (5 of 7) on page 803
RM1-4402-000CN	Tag PCA-holder assembly	Printer internal components (4 of 7) on page 799
RM1-4407-000CN	Paper-delivery-guide assembly	Printer face-down paper-delivery assembly on page 823
RM1-4409-000CN	Fixing-bias cable assembly	Printer internal components (7 of 7) on page 807

Table 9-59 Numerical parts list (continued)

Part number	Description	Table and page
RM1-4411-000CN	T2 guide-arm assembly	Printer internal components (7 of 7) on page 807
RM1-4415-000CN	Rear-right cover assembly	Printer external covers and panels on page 787
RM1-4516-000CN	Control-panel unit	Printer external covers and panels on page 787
RM1-4519-000CN	DC motor assembly	Printer internal components (4 of 7) on page 799
RM1-5029-000CN	Cable, fixing open-sensor	Printer internal components (5 of 7) on page 803
RM1-5030-000CN	Cable TP/T2 open-sensor	Printer internal components (7 of 7) on page 807
RM1-5475-000CN	High-voltage transfer B PCA assembly	Printer internal components (1 of 7) on page 793
RM1-5475-000CN	High-voltage-transfer B PCA assembly	Printer PCA assembly location on page 831
RM1-5950-000CN	Fixing-fan cover assembly	Printer external covers and panels on page 787
RS5-9099-000CN	Screw, stepped	Input-tray main body (1x500-sheet) on page 835
RS5-9099-000CN	Screw, stepped	Input-tray main body (3x500-sheet) on page 839
RU5-0790-000CN	Gear, 83T/25T	Printer internal components (4 of 7) on page 799
RU5-0791-000CN	Gear, 34T	Printer internal components (4 of 7) on page 799
RU5-2796-000CN	Spring, tension	Printer internal components (5 of 7) on page 803
RU5-2822-000CN	Spring, tension	Printer internal components (2 of 7) on page 795
RU5-2825-000CN	Spring, torsion	Printer internal components (2 of 7) on page 795
RU5-6035-000CN	Roller, tray-guide	Output bin 1 (stack upper-tray assembly) (stapler/stacker) on page 873
RU5-6035-000CN	Roller, tray-guide	Output bin 1 (stack upper-tray assembly) (booklet-maker) on page 877
RU5-6035-000CN	Roller, tray-guide	Output bin 2 (stack lower-tray assembly) (stapler/stacker and booklet-maker) on page 881
VS1-7177-002CN	Connector, snap-tight	Printer internal components (2 of 7) on page 795
VS1-7177-003CN	Connector, snap-tight	Printer internal components (4 of 7) on page 799

Table 9-59 Numerical parts list (continued)

Part number	Description	Table and page
VS1-7257-012CN	Connector, drawer	Input-tray main body (1x500-sheet) on page 835
VS1-7257-012CN	Connector, drawer	Input-tray main body (3x500-sheet) on page 839
VS1-7258-000CN	Connector, drawer	Printer internal components (5 of 7) on page 803
VT2-0001-008CN	Support, PCA	Input-tray main body (1x500-sheet) on page 835
VT2-0001-008CN	Support, PCA	Input-tray main body (3x500-sheet) on page 839
WC2-5512-000CN	Switch, button	Input-tray main body (1x500-sheet) on page 835
WC2-5512-000CN	Switch, button	Input-tray main body (3x500-sheet) on page 839
WG8-5593-000CN	Photo interrupter, TLP1242	External panels and covers (stapler/stacker) on page 861
WG8-5593-000CN	Photo interrupter, TLP1242	External panels and covers (booklet-maker) on page 863
WG8-5593-000CN	Photo interrupter, TLP1242	Finisher main body (stapler/stacker and booklet-maker) on page 869
WG8-5593-000CN	Photo interrupter, TLP1242	Output bin 1 (stack upper-tray assembly) (stapler/stacker) on page 873
WG8-5593-000CN	Photo interrupter, TLP1242	Operation-tray assembly (stapler/stacker and booklet-maker) on page 885
WG8-5593-000CN	Photo interrupter, TLP1242	Operation-tray assembly (stapler/stacker and booklet-maker) on page 885
WG8-5593-000CN	Photo interrupter, TLP1242	Saddle assembly (booklet-maker) on page 903
WG8-5593-000CN	Photo interrupter, TLP1242	Saddle assembly (booklet-maker) on page 903
WG8-5593-000CN	Photo interrupter, TLP1242	Saddle assembly (booklet-maker) on page 903
WG8-5593-000CN	Photo interrupter, TLP1242	Saddle assembly (booklet-maker) on page 903
WG8-5593-000CN	Photo interrupter, TLP1242	Saddle-tray assembly (booklet-maker) on page 907
WG8-5593-000CN	Photo interrupter, TLP1242	Saddle paper-feeder assembly (booklet-maker) on page 915
WG8-5593-000CN	Photo interrupter, TLP1242	Pass lower-guide assembly (booklet-maker) on page 917
WG8-5593-000CN	Photo interrupter, TLP1242	Inner side-plate assembly (booklet-maker) on page 919

Table 9-59 Numerical parts list (continued)

Part number	Description	Table and page
WG8-5593-000CN	Photo interrupter, TLP1242	Saddle paper-delivery assembly (booklet-maker) on page 921
WG8-5696-000CN	Photo interrupter, TLP1243	Printer internal components (2 of 7) on page 795
WG8-5696-000CN	Photo interrupter, TLP1243	Printer internal components (5 of 7) on page 803
WG8-5696-000CN	Photo interrupter, TLP1243	Printer internal components (7 of 7) on page 807
WG8-5696-000CN	Photo interrupter, TLP1243	Printer multi-purpose-guide assembly on page 821
WG8-5696-000CN	Photo interrupter, TLP1243	Printer face-down paper-delivery assembly on page 823
WG8-5696-000CN	Photo interrupter, TLP1243	Printer duplexing-reverse assembly on page 825
WT2-5694-000CN	Saddle, wire	Printer internal components (4 of 7) on page 799
WT2-5694-000CN	Saddle, wire	Input-tray main body (1x500-sheet) on page 835
WT2-5694-000CN	Saddle, wire	Input-tray main body (3x500-sheet) on page 839
WT2-5738-000CN	Clamp, cable	Input-tray main body (1x500-sheet) on page 835
WT2-5738-000CN	Clamp, cable	Input-tray main body (3x500-sheet) on page 839
WT2-5912-000CN	Clamp, FFC	Printer internal components (2 of 7) on page 795
XA9-0732-000CN	Screw, RS, M4x8 (booklet-maker only)	Finisher main body (stapler/stacker and booklet-maker) on page 869
XA9-0912-000CN	Screw, with washer, M5x12	Input-tray main body (1x500-sheet) on page 835
XA9-0912-000CN	Screw, with washer, M5x12	Input-tray main body (3x500-sheet) on page 839
XA9-0912-000CN	Screw, with washer, M5x12	Finisher main body (stapler/stacker and booklet-maker) on page 869
XA9-1159-000CN	Screw, TP, M3x6	Printer internal components (4 of 7) on page 799
XA9-1300-000CN	Screw, TP, M4x8	Printer internal components (6 of 7) on page 805
XA9-1386-000CN	Screw, RS, M3x8	Finisher main body (stapler/stacker and booklet-maker) on page 869

Table 9-59 Numerical parts list (continued)

Part number	Description	Table and page
XA9-1422-000CN	Screw, with washer, M4X12	Printer right-door assembly on page 791
XA9-1422-000CN	Screw, with washer, M4X12	Printer right-door assembly on page 791
XA9-1448-000CN	Screw, RS, M4x8	Input-tray main body (1x500-sheet) on page 835
XA9-1448-000CN	Screw, RS, M4x8	Input-tray main body (1x500-sheet) on page 835
XA9-1448-000CN	Screw, RS, M4x8	Input-tray main body (3x500-sheet) on page 839
XA9-1448-000CN	Screw, RS, M4x8	Input-tray main body (3x500-sheet) on page 839
XA9-1449-000CN	Screw, RS, M3x8	Printer internal components (2 of 7) on page 795
XA9-1449-000CN	Screw, RS, M3x8	Printer internal components (6 of 7) on page 805
XA9-1469-000CN	Screw, TP, M3x6	Input-tray main body (1x500-sheet) on page 835
XA9-1469-000CN	Screw, TP, M3x6	Input-tray main body (3x500-sheet) on page 839
XA9-1495-000CN	Screw, RS, M3X6 (duplex)	Printer right-door assembly on page 791
XA9-1495-000CN	Screw, RS, M3x6	Printer internal components (1 of 7) on page 793
XA9-1495-000CN	Screw, RS, M3x6	Printer internal components (2 of 7) on page 795
XA9-1495-000CN	Screw, RS, M3x6	Printer internal components (3 of 7) on page 797
XA9-1495-000CN	Screw, RS, M3x6	Printer internal components (4 of 7) on page 799
XA9-1495-000CN	Screw, RS, M3x6	Printer internal components (5 of 7) on page 803
XA9-1495-000CN	Screw, RS, M3x6	Printer internal components (6 of 7) on page 805
XA9-1495-000CN	Screw, RS, M3x6	Printer internal components (7 of 7) on page 807
XA9-1504-000CN	Screw, RS, M3x8	Printer internal components (1 of 7) on page 793
XA9-1504-000CN	Screw, RS, M3x8	Printer internal components (2 of 7) on page 795
XA9-1504-000CN	Screw, RS, M3x8	Printer internal components (3 of 7) on page 797
XA9-1504-000CN	Screw, RS, M3x8	Printer internal components (4 of 7) on page 799

Table 9-59 Numerical parts list (continued)

Part number	Description	Table and page
XA9-1504-000CN	Screw, RS, M3x8	Printer internal components (5 of 7) on page 803
XA9-1504-000CN	Screw, RS, M3x8	Printer internal components (7 of 7) on page 807
XA9-1801-000CN	Screw, RS, M13x12	Printer internal components (7 of 7) on page 807
XB1-2300-407CN	Screw, machined, truss-head, M3x4	Printer internal components (4 of 7) on page 799
XB1-2400-805CN	Screw, machined, truss-head, M4x8	Printer internal components (7 of 7) on page 807
XB2-8300-607CN	Screw, with washer, M3x6	Printer internal components (4 of 7) on page 799
XB2-8300-607CN	Screw, with washer, M3x6	Input-tray main body (1x500-sheet) on page 835
XB2-8300-607CN	Screw, with washer, M3x6	Input-tray main body (3x500-sheet) on page 839
XB4-7401-005CN	Screw, tapping, truss-head, M4X10	Printer external covers and panels on page 787
XB4-7401-005CN	Screw, tapping, truss-head, M4X10	Printer external covers and panels on page 787
XB4-7401-005CN	Screw, tapping, truss-head, M4X10	Printer right-door assembly on page 791
XB4-7401-005CN	Screw, tapping, truss-head, M4x10	Printer internal components (5 of 7) on page 803
XB4-7401-006CN	Screw, tapping, pan-head, M4x10	Input-tray main body (1x500-sheet) on page 835
XB6-7300-607CN	Screw, TP, M3x6 (booklet-maker only)	Finisher main body (stapler/ stacker and booklet-maker) on page 869
XB6-7303-005CN	Screw, TP, M3x30	Printer internal components (5 of 7) on page 803
XD2-3100-152CN	Ring, C, external	Saddle assembly (booklet-maker) on page 903
XD3-2200-102CN	Pin, dowel	Finisher main body (stapler/ stacker and booklet-maker) on page 869
XD3-2200-102CN	Pin	Finisher main body (stapler/ stacker and booklet-maker) on page 869
XD3-2200-142CN	Pin, dowel	Finisher main body (stapler/ stacker and booklet-maker) on page 869
XD3-2300-142CN	Pin, dowel	Output bin 1 (stack upper-tray assembly) (booklet-maker) on page 877

Table 9-59 Numerical parts list (continued)

Part number	Description	Table and page
XD3-2300-142CN	Pin, dowel	Output bin 2 (stack lower-tray assembly) (stapler/stacker and booklet-maker) on page 881
XD3-2300-202CN	Pin, dowel	Saddle assembly (booklet-maker) on page 903
XD9-0136-000CN	Ring, E	Finisher main body (stapler/stacker and booklet-maker) on page 869
XD9-0136-000CN	Ring, E	Finisher main body (stapler/stacker and booklet-maker) on page 869
XD9-0137-000CN	Ring, E	Output bin 1 (stack upper-tray assembly) (booklet-maker) on page 877
XD9-0234-000CN	Ring, E	Printer internal components (4 of 7) on page 799
XD9-0234-000CN	Ring, E	Printer internal components (5 of 7) on page 803
XD9-0240-000CN	Pin, dowel	Printer internal components (4 of 7) on page 799
XF2-1607-860CN	Belt, timing, cogged	Finisher main body (stapler/stacker and booklet-maker) on page 869
XF2-1608-840CN	Belt, timing	Finisher main body (stapler/stacker and booklet-maker) on page 869
XF2-3837-340CN	Belt, timing	Saddle assembly (booklet-maker) on page 903
XF9-0748-000CN	Belt, timing, cogged	Finisher main body (stapler/stacker and booklet-maker) on page 869
XG9-0586-000CN	Bearing, ball	Printer internal components (4 of 7) on page 799

A Service and support

Hewlett-Packard limited warranty statement

HP PRODUCT	DURATION OF LIMITED WARRANTY
HP Color LaserJet CP6015 Series product	One-year limited warranty

HP warrants to you, the end-user customer, that HP hardware and accessories will be free from defects in materials and workmanship after the date of purchase, for the period specified above. If HP receives notice of such defects during the warranty period, HP will, at its option, either repair or replace products which prove to be defective. Replacement products may be either new or equivalent in performance to new.

HP warrants to you that HP software will not fail to execute its programming instructions after the date of purchase, for the period specified above, due to defects in material and workmanship when properly installed and used. If HP receives notice of such defects during the warranty period, HP will replace software which does not execute its programming instructions due to such defects.

HP does not warrant that the operation of HP products will be uninterrupted or error free. If HP is unable, within a reasonable time, to repair or replace any product to a condition as warranted, you will be entitled to a refund of the purchase price upon prompt return of the product.

HP products may contain remanufactured parts equivalent to new in performance or may have been subject to incidental use.

Warranty does not apply to defects resulting from (a) improper or inadequate maintenance or calibration, (b) software, interfacing, parts or supplies not supplied by HP, (c) unauthorized modification or misuse, (d) operation outside of the published environmental specifications for the product, or (e) improper site preparation or maintenance.

TO THE EXTENT ALLOWED BY LOCAL LAW, THE ABOVE WARRANTIES ARE EXCLUSIVE AND NO OTHER WARRANTY OR CONDITION, WHETHER WRITTEN OR ORAL, IS EXPRESSED OR IMPLIED AND HP SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, SATISFACTORY QUALITY, AND FITNESS FOR A PARTICULAR PURPOSE. Some countries/regions, states or provinces do not allow limitations on the duration of an implied warranty, so the above limitation or exclusion might not apply to you. This warranty gives you specific legal rights and you might also have other rights that vary from country/region to country/region, state to state, or province to province. HP's limited warranty is valid in any country/region or locality where HP has a support presence for this product and where HP has marketed this product. The level of warranty service you receive may vary according to local standards. HP will not alter form, fit or function of the product to make it operate in a country/region for which it was never intended to function for legal or regulatory reasons.

TO THE EXTENT ALLOWED BY LOCAL LAW, THE REMEDIES IN THIS WARRANTY STATEMENT ARE YOUR SOLE AND EXCLUSIVE REMEDIES. EXCEPT AS INDICATED ABOVE, IN NO EVENT WILL HP OR ITS SUPPLIERS BE LIABLE FOR LOSS OF DATA OR FOR DIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL

(INCLUDING LOST PROFIT OR DATA), OR OTHER DAMAGE, WHETHER BASED IN CONTRACT, TORT, OR OTHERWISE. Some countries/regions, states or provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

THE WARRANTY TERMS CONTAINED IN THIS STATEMENT, EXCEPT TO THE EXTENT LAWFULLY PERMITTED, DO NOT EXCLUDE, RESTRICT OR MODIFY AND ARE IN ADDITION TO THE MANDATORY STATUTORY RIGHTS APPLICABLE TO THE SALE OF THIS PRODUCT TO YOU.

Print cartridge and image drum limited warranty statement

This HP product is warranted to be free from defects in materials and workmanship.

This warranty does not apply to products that (a) have been refilled, refurbished, remanufactured or tampered with in any way, (b) experience problems resulting from misuse, improper storage, or operation outside of the published environmental specifications for the printer product or (c) exhibit wear from ordinary use.

To obtain warranty service, please return the product to place of purchase (with a written description of the problem and print samples) or contact HP customer support. At HP's option, HP will either replace products that prove to be defective or refund your purchase price.

TO THE EXTENT ALLOWED BY LOCAL LAW, THE ABOVE WARRANTY IS EXCLUSIVE AND NO OTHER WARRANTY OR CONDITION, WHETHER WRITTEN OR ORAL, IS EXPRESSED OR IMPLIED AND HP SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, SATISFACTORY QUALITY, AND FITNESS FOR A PARTICULAR PURPOSE.

TO THE EXTENT ALLOWED BY LOCAL LAW, IN NO EVENT WILL HP OR ITS SUPPLIERS BE LIABLE FOR DIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFIT OR DATA), OR OTHER DAMAGE, WHETHER BASED IN CONTRACT, TORT, OR OTHERWISE.

THE WARRANTY TERMS CONTAINED IN THIS STATEMENT, EXCEPT TO THE EXTENT LAWFULLY PERMITTED, DO NOT EXCLUDE, RESTRICT OR MODIFY AND ARE IN ADDITION TO THE MANDATORY STATUTORY RIGHTS APPLICABLE TO THE SALE OF THIS PRODUCT TO YOU.

Color LaserJet Fuser Kit, Transfer Kit, and Roller Kit Limited Warranty Statement

This HP product is warranted to be free from defects in materials and workmanship until the printer provides a low-life indicator on the control panel.

This warranty does not apply to products that (a) have been refurbished, remanufactured or tampered with in any way, (b) experience problems resulting from misuse, improper storage, or operation outside of the published environmental specifications for the printer product or (c) exhibit wear from ordinary use.

To obtain warranty service, please return the product to place of purchase (with a written description of the problem) or contact HP customer support. At HP's option, HP will either replace products that prove to be defective or refund your purchase price.

TO THE EXTENT ALLOWED BY LOCAL LAW, THE ABOVE WARRANTY IS EXCLUSIVE AND NO OTHER WARRANTY OR CONDITION, WHETHER WRITTEN OR ORAL, IS EXPRESSED OR IMPLIED AND HP SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, SATISFACTORY QUALITY, AND FITNESS FOR A PARTICULAR PURPOSE.

TO THE EXTENT ALLOWED BY LOCAL LAW, IN NO EVENT WILL HP OR ITS SUPPLIERS BE LIABLE FOR DIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFIT OR DATA), OR OTHER DAMAGE, WHETHER BASED IN CONTRACT, TORT, OR OTHERWISE.

THE WARRANTY TERMS CONTAINED IN THIS STATEMENT, EXCEPT TO THE EXTENT LAWFULLY PERMITTED, DO NOT EXCLUDE, RESTRICT OR MODIFY AND ARE IN ADDITION TO THE MANDATORY STATUTORY RIGHTS APPLICABLE TO THE SALE OF THIS PRODUCT TO YOU.

Customer self repair warranty service

HP products are designed with many Customer Self Repair (CSR) parts to minimize repair time and allow for greater flexibility in performing defective parts replacement. If during the diagnosis period, HP identifies that the repair can be accomplished by the use of a CSR part, HP will ship that part directly to you for replacement. There are two categories of CSR parts: 1) Parts for which customer self repair is mandatory. If you request HP to replace these parts, you will be charged for the travel and labor costs of this service. 2) Parts for which customer self repair is optional. These parts are also designed for Customer Self Repair. If, however, you require that HP replace them for you, this may be done at no additional charge under the type of warranty service designated for your product.

Based on availability and where geography permits, CSR parts will be shipped for next business day delivery. Same-day or four-hour delivery may be offered at an additional charge where geography permits. If assistance is required, you can call the HP Technical Support Center and a technician will help you over the phone. HP specifies in the materials shipped with a replacement CSR part whether a defective part must be returned to HP. In cases where it is required to return the defective part to HP, you must ship the defective part back to HP within a defined period of time, normally five (5) business days. The defective part must be returned with the associated documentation in the provided shipping material. Failure to return the defective part may result in HP billing you for the replacement. With a customer self repair, HP will pay all shipping and part return costs and determine the courier/carrier to be used.

Customer support

Get telephone support, free during your warranty period, for your country/region Have the product name, serial number, date of purchase, and problem description ready.	Country/region phone numbers are on the flyer that was in the box with your product or at www.hp.com/support/.
Get 24-hour Internet support	www.hp.com/support/cljcp6015
Get support for products used with a Macintosh computer	www.hp.com/go/macosx
Download software utilities, drivers, and electronic information	www.hp.com/go/cljcp6015_software
Order supplies and paper	www.hp.com/go/suresupply
Order genuine HP parts or accessories	www.hp.com/buy/parts
Order additional HP service or maintenance agreements	www.hp.com/go/carepack

Availability of support and service

Around the world, HP provides a variety of service and support options for purchase. Availability of these programs will vary depending upon your location.

HP maintenance agreements

HP has several types of maintenance agreements that meet a wide range of support needs. Maintenance agreements are not part of the standard warranty. Support services may vary by area. Check with your local HP dealer to determine the services available to you.

On-site service agreements

To provide you with the level of support best suited to your needs, HP has on-site service agreements with three response times:

Priority onsite service

This agreement provides 4-hour service response to your site for calls made during normal HP business hours.

Next-day onsite service

This agreement provides support by the next working day following a service request. Extended coverage hours and extended travel beyond HP’s designated service zones are available on most on-site agreements (for additional charges).

Weekly (volume) on-site service

This agreement provides scheduled weekly on-site visits for organizations with many HP products. This agreement is designated for sites using 25 or more workstation products, including printers, plotters, computers, and disk drives.

B Product specifications

- Physical specifications
- Electrical specifications
- Acoustic specifications
- Environmental specifications

Physical specifications

Table B-1 Product dimensions

Product	Height	Depth	Width	Weight[1]
HP Color LaserJet CP6015n	580 mm (22.8 inches)	635 mm (25 inches)	704 mm (27.7 inches)	86.2 kg (190.1 lb)
HP Color LaserJet CP6015dn	580 mm (22.8 inches)	635 mm (25 inches)	704 mm (27.7 inches)	86.2 kg (190.1 lb)
HP Color LaserJet CP6015de	580 mm (22.8 inches)	635 mm (25 inches)	704 mm (27.7 inches)	86.2 kg (190.1 lb)
HP Color LaserJet CP6015x	972.8 mm (38.3 inches)	635 mm (25 inches)	704 mm (27.7 inches)	115.3 kg (254.3 lb)
HP Color LaserJet CP6015xh	972.8 mm (38.3 inches)	635 mm (25 inches)	704 mm (27.7 inches)	119.6 kg (263.6 lb)

[1] Without print cartridge

Table B-2 Product dimensions, with all doors and trays fully opened

Product	Height	Depth	Width
HP Color LaserJet CP6015n	580 mm (22.8 inches)	1079.5 mm (42.5 inches)	983 mm (38.7 inches)
HP Color LaserJet CP6015dn	580 mm (22.8 inches)	1079.5 mm (42.5 inches)	983 mm (38.7 inches)
HP Color LaserJet CP6015de	580 mm (22.8 inches)	1079.5 mm (42.5 inches)	983 mm (38.7 inches)
HP Color LaserJet CP6015x	972.8 mm (38.3 inches)	1079.5 mm (42.5 inches)	983 mm (38.7 inches)
HP Color LaserJet CP6015xh	972.8 mm (38.3 inches)	1079.5 mm (42.5 inches)	983 mm (38.7 inches)

Electrical specifications

⚠ **WARNING!** Power requirements are based on the country/region where the product is sold. Do not convert operating voltages. This can damage the product and void the product warranty.

Table B-3 Power requirements (HP Color LaserJet CP6015 Series)

Specification	110-volt models	230-volt models
Power requirements	100 to 127 volts (± 10%) 50/60 Hz (± 2 Hz)	220 to 240 volts (± 10%) 50/60 Hz (± 2 Hz)
Rated current	12.0 Amps	6.0 Amps

Table B-4 Power consumption HP Color LaserJet CP6015 Series (average, in watts)[1, 2]

Product model	Printing[3]	Ready[4]	Sleep (110V)[5, 6]	Sleep (220V)	Off
HP Color LaserJet CP6015n	1195 W	207 W	18.9 W	21.5 watts	0.1 W
HP Color LaserJet CP6015dn (Europe)	1195 W	207.5 W	(N/A)	21.5 watts	0.2 W
HP Color LaserJet CP6015dn (non-European countries/ regions)	1195 W	207.5 W	18.9 W	N/A	0.1 W
HP Color LaserJet CP6015de	1195 W	50 W	18.9 W	N/A	0.1 W
HP Color LaserJet CP6015x	1195 W	208 W	18.9 W	21.5 watts	0.1 W
HP Color LaserJet CP6015xh	1200 W	211.4 W	19.4 W	22 watts	0.1 W

1 Values subject to change. See www.hp.com/support/cljcp6015 for current information.

2 Power numbers are the highest values measured using all standard voltages.

3 HP Color LaserJet CP6015 series printing speeds are 40 ppm for Letter and 41 ppm for A4 sizes.

4 Heat dissipation in Ready mode = 722 BTU/hour.

5 Default time from Ready mode to Sleep mode = 60 minutes.

6 Recovery time from Sleep mode = less than 125 seconds

Acoustic specifications

Table B-5 Sound power and pressure level[1] (HP Color LaserJet CP6015 Series)

Sound power level	Declared per ISO 9296
Printing[2]	L_{WAd}= 6.9 Bels (A) [69 dB(A)]
Ready	inaudible
Sound pressure level	**Declared per ISO 9296**
Printing[2]	L_{pAm}=54 dB (A)
Ready	inaudible

1 Values subject to change. See www.hp.com/go/cljcp6015_software for current information.

2 HP Color LaserJet CP6015 Series speed is 40 ppm for A4 or Letter-sized paper in either full color or monochrome. Configuration tested (HP Color LaserJet CP6015): Base model, simplex printing with A4 paper size.

Environmental specifications

Environmental condition	Recommended	Allowed	Storage/standby
Temperature (product and print cartridge)	17° to 25°C (62.6° to 77°F)	10° to 30°C (50° to 86°F)	0° to 35°C (32° to 95°F)
Relative humidity	30% to 70% relative humidity (RH)	10% to 80% RH	5% to 95%
Altitude	N/A	0 meters (0 feet) to 2500 meters (8000 feet)	N/A

C Regulatory information

FCC regulations

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If this equipment is not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase separation between equipment and receiver.
- Connect equipment to an outlet on a circuit different from that to which the receiver is located.
- Consult your dealer or an experienced radio/TV technician.

NOTE: Any changes or modifications to the printer that are not expressly approved by HP could void the user's authority to operate this equipment.

Use of a shielded interface cable is required to comply with the Class B limits of Part 15 of FCC rules.

Environmental product stewardship program

Protecting the environment

Hewlett-Packard Company is committed to providing quality products in an environmentally sound manner. This product has been designed with several attributes to minimize impacts on our environment.

Ozone production

This product generates no appreciable ozone gas (O_3).

Power consumption

Power usage drops significantly while in Ready and Sleep mode, which saves natural resources and saves money without affecting the high performance of this product. To determine the ENERGY STAR® qualification status for this product, see the Product Data Sheet or Specifications Sheet. Qualified products are also listed at:

www.hp.com/go/energystar

Paper use

This product's optional automatic duplex feature (two-sided printing) and N-up printing (multiple pages printed on one page) capability can reduce paper usage and the resulting demands on natural resources.

Plastics

Plastic parts over 25 grams are marked according to international standards that enhance the ability to identify plastics for recycling purposes at the end of the product's life.

HP LaserJet print supplies

It's easy to return and recycle your empty HP LaserJet print cartridges—free of charge—with HP Planet Partners. Multilingual program information and instructions are included in every new HP LaserJet print cartridge and supplies package. You help reduce the toll on the environment further when you return multiple cartridges together rather than separately.

HP is committed to providing inventive, high-quality products and services that are environmentally sound, from product design and manufacturing to distribution, customer use, and recycling. When you participate in the HP Planet Partners program, we ensure your HP LaserJet print cartridges are recycled properly, processing them to recover plastics and metals for new products and diverting millions of tons of waste from landfills. Please note that the cartridge will not be returned to you. Thank you for being environmentally responsible!

NOTE: Use the return label to return original HP LaserJet print cartridges only. Please do not use this label for HP inkjet cartridges, non-HP cartridges, refilled or remanufactured cartridges, or warranty returns. For information about recycling your HP inkjet cartridges, please go to www.hp.com/recycle.

Return and recycling instructions

United States and Puerto Rico

The enclosed label in the HP LaserJet toner cartridge box is for the return and recycling of one or more HP LaserJet print cartridges after use. Please follow the applicable instructions below.

Multiple returns (more than one cartridge)

1. Package each HP LaserJet print cartridge in its original box and bag.
2. Tape the boxes together using strapping or packaging tape. The package can weigh up to 31 kg (70 lb).
3. Use a single pre-paid shipping label.

OR

1. Use your own suitable box, or request a free bulk collection box from www.hp.com/recycle or 1-800-340-2445 (holds up to 31 kg (70 lb) of HP LaserJet print cartridges).
2. Use a single pre-paid shipping label.

Single returns

1. Package the HP LaserJet print cartridge in its original bag and box.
2. Place the shipping label on the front of the box.

Shipping

For all HP LaserJet print cartridge recycling returns, give the package to UPS during your next delivery or pickup, or take it to an authorized UPS drop-off center. For the location of your local UPS drop-off center, call 1-800-PICKUPS or visit www.ups.com. If you are returning via USPS label, give the package to a U.S. Postal Service carrier or drop off at a U.S. Postal Service Office. For more information, or to order additional labels or boxes for bulk returns, visit www.hp.com/recycle or call 1-800-340-2445. Requested UPS pickup will be charged normal pickup rates. Information subject to change without notice.

Non-U.S. returns

To participate in HP Planet Partners return and recycling program, just follow the simple directions in the recycling guide (found inside the packaging of your new product supply item) or visit www.hp.com/recycle. Select your country/region for information on how to return your HP LaserJet printing supplies.

Paper

This product is capable of using recycled papers when the paper meets the guidelines outlined in the *HP LaserJet Printer Family Print Media Guide*. This product is suitable for the use of recycled paper according to EN12281:2002.

Material restrictions

This HP product contains a battery that may require special handling at end-of-life.

The battery contained in this product includes:

Type	Carbon monofluoride lithium battery
Weight	0.8 grams
Location	Formatter board
User removable	No



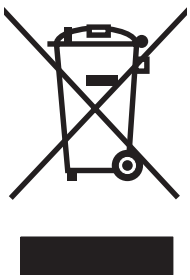


廢電池請回收

This product contains mercury in the fluorescent lamp of the control panel liquid crystal display that might require special handling at end-of-life.

For recycling information you can visit www.hp.com/go/recycle or contact your local authorities or the Electronics Industry Alliance (www.eiae.org).

Disposal of waste equipment by users in private households in the European Union



This symbol on the product or on its packaging indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

Material Safety Data Sheet (MSDS)

Material Safety Data Sheets (MSDS) for supplies containing chemical substances (for example, toner) can be obtained by accessing the HP Web site at www.hp.com/go/msds or www.hp.com/hpinfo/community/environment/productinfo/safety.

For more information

To obtain information about these environmental topics:

- Product environmental profile sheet for this and many related HP products
- HP’s commitment to the environment
- HP’s environmental management system
- HP’s end-of-life product return and recycling program
- Material Safety Data Sheets

Visit www.hp.com/go/environment or www.hp.com/hpinfo/globalcitizenship/environment.

Declaration of Conformity

Declaration of Conformity
according to ISO/IEC 17050–1 and EN 17050–1

Manufacturer's Name:	Hewlett-Packard Company DoC#: BOISB-0601–00–rel. 1.0
Manufacturer's Address:	11311 Chinden Boulevard, Boise, Idaho 83714-1021, USA
declares that the product	
Product Name:	HP Color LaserJet CP6015 series
Accessories	CB 473A — 1x500-sheet input tray/stand CB474A — 3x500-sheet input tray/stand Q6999A — HP Booklet Maker/Finisher Accessory Q6998A — 3–Bin Stapler/Stacker Accessory
Regulatory Model Number:[2)]	BOISB-0601-00
Product Options:	ALL Toner Cartridges/Image Drums: CB380A, CB381A, CB382A, CB383A, CB384A, CB385A, CB386A, CB387A

conforms to the following Product Specifications:

Safety:	IEC 60950-1:2001 / EN60950-1: 2001 + A11 IEC 60825-1:1993 +A1 +A2 / EN 60825-1:1994 +A1 +A2 (Class 1 Laser/LED Product) GB4943-2001
EMC:	CISPR 22:2005 / EN 55022:2006 – Class B[1)] EN 61000-3-2:2000 +A2 EN 61000-3-3:1995 + A1 EN 55024:1998+A1 + A2 FCC Title 47 CFR, Part 15 Class B/ ICES-003, Issue 4 GB9254-1998, GB17625.1–2003

Supplementary Information:

The product herewith complies with the requirements of the EMC Directive 2004/108/EC and the Low Voltage Directive 2006/95/EC, and carries the CE-Marking accordingly.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two Conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

1) The product was tested in a typical configuration with Hewlett-Packard Personal Computer Systems.

2) For regulatory purposes, this product is assigned a Regulatory model number. This number should not be confused with the product name or the product number(s).

Boise, Idaho , USA

February 1, 2008

For regulatory topics only:

European Contact:	Your Local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department HQ-TRE / Standards Europe, Herrenberger Straße 140, D-71034 Böblingen, Germany, (FAX: +49-7031-14-3143)
USA Contact:	Product Regulations Manager, Hewlett-Packard Company, PO Box 15, Mail Stop 160, Boise, Idaho 83707-0015, USA, (Phone: 208-396-6000)

Certificate of volatility

This is a statement regarding the volatility of customer data stored in memory. It also outlines how to erase secure data from the product.

Types of memory

Volatile memory

The product utilizes volatile memory (64MB on the board and 256MB installed, for a total of 320MB) to store customer data during the printing and copying process. When the product is powered off, this volatile memory is erased.

Non-volatile memory

The product utilizes non-volatile memory (EEPROM) to store system control data and user preference settings. No customer print or copy data is stored in non-volatile memory. This non-volatile memory can be cleared and restored to factory defaults by performing a Cold Reset or Restore Factory Defaults from the control panel.

Hard-disk-drive memory

The product contains an internal hard disk drive (40GB or larger) that may retain data after the product is powered off. The product also may contain additional optional compact flash storage, or an external EIO hard disk. Data stored in these devices may be from stored print jobs or third-party solutions. Some of this data can be erased from the control panel of the product, but most must be erased using the Secure Storage Erase features available within HP Web Jetadmin. Secure Storage Erase features comply with U.S. Department of Defense (DOD) specification 5220–22.M.

Safety statements

Laser safety

The Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration has implemented regulations for laser products manufactured since August 1, 1976. Compliance is mandatory for products marketed in the United States. The device is certified as a “Class 1” laser product under the U.S. Department of Health and Human Services (DHHS) Radiation Performance Standard according to the Radiation Control for Health and Safety Act of 1968. Since radiation emitted inside the device is completely confined within protective housings and external covers, the laser beam cannot escape during any phase of normal user operation.

⚠ **WARNING!** Using controls, making adjustments, or performing procedures other than those specified in this user guide may result in exposure to hazardous radiation.

Canadian DOC regulations

Complies with Canadian EMC Class B requirements.

« Conforme à la classe B des normes canadiennes de compatibilité électromagnétiques. « CEM ». »

VCCI statement (Japan)

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＢ情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをして下さい。

Power cord statement (Japan)

製品には、同梱された電源コードをお使い下さい。
同梱された電源コードは、他の製品では使用出来ません。

EMI statement (Korea)

B급 기기 (가정용 정보통신기기)

이 기기는 가정용으로 전자파적합등록을 한 기기로서
주거지역에서는 물론 모든지역에서 사용할 수 있습니다.

Laser statement for Finland

LASERTURVALLISUUS

LUOKAN 1 LASERLAITE

KLASS 1 LASER APPARAT

HP Color LaserJet CP6015 Series-laserkirjoitin on käyttäjän kannalta turvallinen luokan 1 laserlaite. Normaalissa käytössä kirjoittimen suojakotelointi estää lasersäteen pääsyn laitteen ulkopuolelle.

Laitteen turvallisuusluokka on määritetty standardin EN 60825-1 (1994) mukaisesti.

VAROITUS!

Laitteen käyttäminen muulla kuin käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING!

Om apparaten används på annat sätt än i bruksanvisning specificerats, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.

HUOLTO

HP Color LaserJet CP6015 Series-kirjoittimen sisällä ei ole käyttäjän huollettavissa olevia kohteita. Laitteen saa avata ja huoltaa ainoastaan sen huoltamiseen koulutettu henkilö. Tällaiseksi huoltotoimenpiteeksi ei katsota väriainekasetin vaihtamista, paperiradan puhdistusta tai muita käyttäjän käsikirjassa lueteltuja, käyttäjän tehtäväksi tarkoitettuja ylläpitotoimia, jotka voidaan suorittaa ilman erikoistyökaluja.

VARO!

Mikäli kirjoittimen suojakotelo avataan, olet alttiina näkymättömälle lasersäteilylle laitteen ollessa toiminnassa. Älä katso säteeseen.

VARNING!

Om laserprinterns skyddshölje öppnas då apparaten är i funktion, utsättas användaren för osynlig laserstrålning. Betrakta ej strålen.

Tiedot laitteessa käytettävän laserdiodin säteilyominaisuuksista:

Aallonpituus 785-800 nm

Teho 5 mW

Luokan 3B laser

Substances Table (China)

有毒有害物质表

根据中国电子信息产品污染控制管理办法的要求而出台

部件名称	有毒有害物质和元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
打印引擎	X	0	X	X	0	0
控制面板	0	0	0	0	0	0
塑料外壳	0	0	0	0	0	0
格式化板组件	X	0	0	0	0	0
碳粉盒	X	0	0	0	0	0

3043

0：表示在此部件所用的所有同类材料中，所含的此有毒或有害物质均低于 SJ/T11363-2006 的限制要求。

X：表示在此部件所用的所有同类材料中，至少一种所含的此有毒或有害物质高于 SJ/T11363-2006 的限制要求。

注：引用的“环保使用期限”是根据在正常温度和湿度条件下操作使用产品而确定的。

Index

Symbols/Numerics

3-bin mailbox
  capacity 5
  specifications, physical 987
500-sheet input tray
  models including 3
500-sheet trays
  specifications, physical 987
;low-voltage power supply
  stops and interruptions 131

A

AC to DC conversion 131
accessories
  ordering 778
  part numbers 781
accessories installed, information 352
acoustic specifications 990
adjustments after component replacements
  booklet maker 768
  stapler/stacker 768
after-service checklist 188
agreements, maintenance 985
alignment position adjustments, staplers 768
anticounterfeit supplies 84
AppleTalk information 350, 351
AppleTalk settings 40
assemblies, main 537
Attention light
  locating 14
automatic media sensing 67

B

bands, troubleshooting 489
beam detect (BD) failure 135
before-service checklist 188
bias generation
  high-voltage power supply 132
bins
  booklet maker output bins 1 and 2, move 679
  booklet maker output, remove 708
  capacities 5
  face-down output, remove 232
  locating 7
  output, caution when moving 670
  selecting 69
  stapler/stacker 585, 601
  stapler/stacker output bins 1 and 2, move 679
  stapler/stacker output, remove 708
black-only printing mode
  developing roller state 146
  primary transfer roller state 148
blank pages, troubleshooting 353, 488
booklet maker
  adjustments after component replacements 768
  circuit diagrams 763
  configuring 71
  crescent roller, friction prevention 625
  cross section diagram 744, 745
  feed drive system 608
  folding mechanism 627
  folding position, adjust 770
  inlet flappers control 618
  microswitches 751
  motors 755
  operation 607, 614
  overcurrent or overvoltage protection 638
  paper delivery path 587
  paper movement control 621
  PCAs 608, 759
  power supply 637
  saddle stitcher controller PCA 608
  selecting 69
  sensors 748
  sensors and paper sizes 618
  solenoids 753
  solenoids and paper sizes 619
  stacker control system 609
  stacker operation 601, 606
  staple operation 595, 633
  stapler, alignment 768
  stitcher unit 634
  stitcher unit, adjust 773
  troubleshooting 739
  unit control system 611
booklet maker, remove or replace parts. *See* remove or replace parts, booklet maker
bootloader password, clear 508
both sides, printing on
  Show Me How menu 18
box, remove 327
browser requirements
  embedded Web server 78
buttons, control panel
  locating 14

C

cabinet/stand
  specifications, physical 987

cable, USB
part number 783
cables
network, troubleshooting 353
USB, troubleshooting 353
calibration
information, printed 347
instructions 479
media sensor unit 509
reset by NVRAM initialization 510
Canadian DOC regulations 1001
capacity
3-bin mailbox 5
output bins 5
stapler/stacker 5
cartridges
non-HP 84
ordering through embedded Web server 80
recycling 995
storage 84
warranty 981
cartridges, print
part numbers 782
cassette, paper
cassette presence detection 161
lift operation 163
paper presence detection 164
paper-level detection 164
paper-size detection 161
pickup operations 161
See also trays
characters, troubleshooting 491
check pins 760
circuit diagrams
booklet maker 763
general 546
stapler/stacker 763
circuitry. *See* PCAs
cleaning
device 103
exterior 103
fuser 480
page, printing 480
clock
setting 111
clutches, stapler/stacker 756
cold reset 509
color
calibration 151
diagnostic test 507
disengagement for black-only printing 146
misregistration control 152
page count, reset 508
primary transfer roller state 148
sensor control 153
troubleshooting 347, 490
communications, troubleshooting 493
components
booklet maker stacker control system 609
booklet maker unit control system 611
DC controller 120
diagnostic tests 503
diagrams of 511, 537
duplexing unit 175
engine-control system 119
fuser 126
image formation, use during 136
imaging drums 144
intermediate transfer belt (ITB) 147
main assemblies 537
optional input trays 180
pickup, feed, and delivery 156
print cartridge 143
protection for 127, 131
stapler/stacker 583
See also parts
components)
IPTU 581
configuration pages
information 352
printing 348
configurations, models 3
configure device menu 22
connectivity
troubleshooting 353
connectivity features 5
connectivity, troubleshooting 354
connectors
1 x 500-sheet input tray 517
3 x 500-sheet input tray 517
DC controller PCA 511
IPTU 518
PCAs 511
product base 514
contracts, maintenance 985
control panel
buttons 14
I/O menu 38
lights 14, 15
locating 7
locking menus 83
menus 16, 17
messages, listed alphabetically 357
messages, listed numerically 357
messages, respond to 481
messages, types of 356
remove 282
Service menu 49
Show Me How menu 18
cooling
areas and fans 125, 525
copying
quality, troubleshooting 476
speed specifications 4
counterfeit supplies 84
counts
color cycle 508
mono cycle 508
page, reset 508
print engine maintenance 352
refurbish cycle 508
reset after replacing formatter 508
reset by NVRAM initialization 510
See also pages counts
covers, locating 7
covers, remove
booklet maker PCA cover 682
booklet maker, front inside-lower cover 673
booklet maker, front inside-upper cover 672
booklet maker, front-foot cover 671
booklet maker, left-upper cover 674

booklet maker, rear cover 670
face-down 293
front-inner 300
front-lower 317
front-right 322
front-upper 284
IPTU rear cover 649
left 233
lower-left 325
lower-rear 321
rear 224
rear-left 222
rear-right 223
rear-upper 281
reverse 287
right 323
right-upper 285
scanner 294
stapler/stacker PCA cover 682
stapler/stacker, front inside-upper cover 672
stapler/stacker, front-foot cover 671
stapler/stacker, left-upper cover 674
stapler/stacker, rear cover 670
stapler/stacker, rear-foot cover 671
CPU, formatter 117
creases, troubleshooting 492
crooked pages
troubleshooting 491
customer support
embedded Web server links 80
maintenance agreements 985
online 984

D

dark image, troubleshooting 488
Data light
locating 14
date
change setting 409
codes for firmware 352
manufacture 350
product first used 508
date, setting 111
DC controller
fans 123, 525, 526
motors 123, 525, 526
PCA, connectors 511
PCA, remove 246
PCA, signals to and from 550
sensors 122, 518
solenoids 120, 531
status signals from ITB unit 149
switches 121, 534
voltage detection 131
DC motors 123, 526
DC voltages converted from AC 131
Declaration of Conformity 999
defaults, reset 509
defects, repeating 476
density control 153
DHCP 39
diagnostics
component 503
engine 494
LED 494
mode 496
network 41
page, printing 347
stapler/stacker and booklet maker 739
tests to perform 497
See also tests; troubleshooting
diagnostics menu 45
Diagnostics menu options 496
DIMMs (dual inline memory modules)
installing 91
part numbers 782
Disk Erase feature 82
disk initialization 510
DLC/LLC 40
DLC/LLC information 350, 351
DNS settings 39
documentation 2
doors, remove
assembly for front door 301
booklet maker front door 669
booklet maker, top door 676
front door 299
front-lower door 326
right door 319
right-door assembly 308
stapler/stacker front door 669
stapler/stacker, top door 676
double-sided printing
Show Me How menu 18
drive-circuit
power-supply frequency range 129
driver
paper-feeder PCA, remove 333
PCAs 511
drums. *See* imaging drums
ducts
fan duct for cartridge, remove 277
fan duct for laser/scanner, remove 234
ITB duct, remove 318
duplexer
locating 7
Show Me How menu 18
specifications, physical 987
duplexing unit
color-sensor control 153
components 175
duplex switchback tray, remove 286
feed unit, remove 310
jams detected 178
motors 123, 525, 526
reverse unit, remove 290
See also pickup, feed, and delivery
duty cycle 4

E

EIO cards
buffer overflow 373
installing 96
part number 783
reset by NVRAM initialization 510
settings 38
troubleshooting 493
electrical specifications 989
embedded protocol page 351
embedded Web server
assigning a password 82
features 78

energy specifications 989
engine
diagnostics 494
diagnostics mode 496
test page 495
engine-control system
components 119
Enhanced I/O card
part number 783
envelope feeder
specifications, physical 987
envelopes
jams 473
loading in tray 1 59
environment
sensor, remove 248
environment change control 153
environment, specifications 991
Environmental Product Stewardship Program 995
erasing hard disk 82
error messages
control panel, listed alphabetically 357
control panel, listed numerically 357
event log, listed numerically 424
respond to 481
types of 356
See also troubleshooting
ESD (electrostatic discharge) 186
Ethernet cards 5
European Union, waste disposal 997
event log
clear 423, 508
information 352
messages, listed numerically 424
reset by NVRAM initialization 510
sample 423
view or print 422
exhaust fans 125, 525
Explorer, versions supported
embedded Web server 78
extended warranty 985

F

faded print 488
failure detection
drive-circuit 129
fuser 129
ITB sensor-mark detection sensor 150
lasers and scanners 135
motors 123, 526
relays, fuser 130
See also jams
fans
cartridge, remove 262
DC controller 123, 525, 526
exhaust 125, 525
intake 125, 525
IPTU 581
laser/scanner unit, remove 263
laser/scanner, remove 263
product base 525
VOC, remove 289
features 3, 4
feed, paper. *See* pickup, feed, and delivery
firewall settings 41
firmware
date codes 352
version information 350
firmware, upgrading 107
flowcharts
parts removal 189
removal sequence 1 209
removal sequence 2 221
removal sequence 3 238
removal sequence 4 249
removal sequence 4 Sub-1 266
removal sequence 5 278
removal sequence 6 305
removal sequence 7 315
troubleshooting 344
folding
adjust position, booklet maker 770
folding, booklet maker
in stacker unit 628
fonts
included 5
formatter
case, remove 244
lights 494
operations 114, 116
remove and replace 203
resets after replacing 508
formatter cover, locating 7
fraud hotline 84
FRUs (field-replaceable units). *See* remove or replace parts
fuser
cleaning 480
components 126
control circuit function 125
failure detection 129
fan, remove 259
identification 129
life remaining detection 130
motor, remove 230
power-supply unit, remove 264
remove and replace 191
temperature control 127
See also fusing and delivery unit
fusing and delivery unit
operations 173
See also fuser; pickup, feed, and delivery

G

Getting Started Guide 2
graphical display, control panel 14
gray-axis correction 155
guides, documentation 2

H

halftone control 153
hard disk
erasing 82
initialization 510
heartbeat LED 495
heat control for fuser 127
heaters, fuser 126
help, Show Me How menu 18
high-voltage power supply
bias generation 132
circuits 132
operations 131

PCA (A), remove 226
PCA (B), remove 242
See also power supply
HP Customer Care 984
HP Easy Printer Care
opening 75
options 75
using 75
HP fraud hotline 84
HP Jetdirect print server
configuration page 350
firmware updates 109
installing 96
lights 494
models including 3
troubleshooting 493
HP Jetdirect print servers
installing 96
HP Web Jetadmin
firmware updates 108
humidity requirements 991
humidity values, printed 347

I

I/O (input/output) menu 38
I/O menu 38
identification
fuser 129
image drums
replacing 88
image formation process 136
image fuser kit, 110 volt
part number 782
image fuser kit, 220 volt
part number 782
image stabilization controls 153
imaging drums
color drums
disengagement 146
components 144
diagnostic test 498
error conditions 146
motor, remove 257
operations 145
information menu 20
information pages 74
Information tab, embedded Web server 79
initial rotation period 115
initializing
hard disk 510
NVRAM 510
input tray, 1 x 500
connectors 517
installation 206
main parts diagram and list 542
motors 530
remove 319
sensors 523
solenoids 533
switches 535
input tray, 3 x 500
connectors 517
installation 207
main parts and list 543
motors 530
remove 334
sensors 523
solenoids 533
switches 535
input trays
configuring 21
input trays optional
optional, operations 179
installation
1 x 500-sheet input tray 206
3 x 500-sheet input tray 207
date calculation 508
screws 186
verify for optional accessories 348
See also remove or replace parts
installing
EIO cards 96
intake fans 125, 525
interface ports
included 5
locating 10
intermediate paper-transfer unit. *See* IPTU
intermediate transfer belt (ITB)
components 147
home position 148
operations 147
status signals to DC controller 149
intermediate-transfer belt . *See* ITB
Internet Explorer, versions supported
embedded Web server 78
IP address 38
IPSEC status 41
IPTU (intermediate paper-transfer unit)
components 581
connectors 518
feed operation 582
main parts diagram and list 544
motors 531
operations 580
sensors 524
sequence 582
signal flow 581
IPTU (intermediate paper-transfer unit), remove or replace parts. *See* remove or replace parts, IPTU
IPV6 settings 39
IPX/SPX information 350, 351
IPX/SPX settings 40
ITB (intermediate-transfer belt)
caution when handling 197
duct, remove 318
motor, remove 231
remove and replace 196

J

jam-access lever, locating 7
jams
booklet maker 464, 636
causes and solutions by area 430
clearing for each area 429
common causes of 428
detection sensors 177
diagnostic test for 501
duplexer 440
envelopes 473
IPTU 460
locations 429
recovery of pages 470
sensors for each area 430
sensors for IPTU 582
Show Me How menu 18
sorter 462
stacker unit 636

stapler/stacker 604
types detected 177
types detected in IPTU 583
Japanese VCCI statement 1001
Jetadmin
firmware updates 108
Jetadmin, HP Web 81
Jetdirect print server
firmware updates 109
installing 96
models including 3

K

keys, control panel
locating 14
Korean EMI statement 1001

L

LAN-connector 5
languages, printer 5
laser failure 135
laser safety statements 1001
laser/scanner system
assembly for cyan and black, remove 297
assembly for yellow and magenta, remove 295
fan duct, remove 234
operations 134
last rotation period 115
latent image formation 137
LEDs. *See* lights
letter designations, manual sensor test 739
light print, troubleshooting 488
lights
control panel 14
formatter 494
HP Jetdirect print server 494
troubleshooting with 494, 741
lines, troubleshooting 489
link speed 43
loading
Show Me How menu 18
tray 1 59
Trays 2, 3, 4 60
loading media
configuring 59
locking
control panel menus 83
log of events
clear 423
messages, listed numerically 424
sample 423
view or print 422
loop control 173
loose toner, troubleshooting 490
low-voltage power supply
converted DC voltages 131
operations 130
protection for components 131
remove 225
safety provided by 131
See also power supply

M

Macintosh
AppleTalk settings 40
support 984
mailbox, 3-bin
capacity 5
specifications, physical 987
main assemblies, diagrams and lists 537
main parts diagram and list 540
maintenance agreements 985
maintenance kit 782
manual print modes 484
manuals 2
Material Safety Data Sheet (MSDS) 997
mechanism for booklet maker
folding overview 627
media
Show Me How menu 18
supported sizes 52
media sensor unit
calibration 509
memory
features 4
formatter 117
included 3
information 348
NVRAM initialization 510
part numbers 782
Menu button 14
menu map
description 20
menus
configure device 22
diagnostics 45
hierarchy 17
I/O (input/output) 38
information 20
paper handling 21
printing 22
resets 43
retrieve job 19
system setup 29
menus, control panel
I/O 38
locking 83
Service 49
Show Me How 18
messages
control panel, listed alphabetically 357
control panel, listed numerically 357
event log, listed numerically 424
respond to 481
types of 356
microswitches
booklet maker 751
stapler/stacker 750
See also switches
model number 350
models, features 3
monthly duty cycle 4
motors
1 x 500-sheet input tray 530
3 x 500-sheet input tray 530
booklet maker 755
component test 740
DC controller 123, 525, 526
duplexing unit 175
failure detection 123, 526
folding mechanism 627
IPTU 531, 581
optional input trays 180
pickup, feed, and delivery 158
product base 526
stack job offset 592
stapler/stacker 585, 754
stapling 596
stepping 123, 525, 526

motors, remove. *See* remove or replace parts
movement of paper through product. *See* pickup, feed, and delivery
multiple paper feed prevention 165
multipurpose tray. *See* trays

N

Netscape Navigator, versions supported
  embedded Web server 78
Networking tab, embedded Web server 80
networks
  connectivity features 5
  diagnostics 41
  HP embedded Jetdirect configuration page 350
  HP Web Jetadmin 81
  installing EIO cards 96
  link speed 43
  print servers included 3
  protocols 38, 43
  security settings 40
  settings 38
  troubleshooting communications 493
  troubleshooting printing 353, 354
noise in product, diagnose 740
noise specifications 990
non-HP supplies 84
Novell/NetWare information 350, 351
NVRAM
  operations 118
NVRAM (nonvolatile memory)
  initialization 510

O

offset printing. *See* stack job offset
on/off switch, locating 7
online support 984
operating environment specifications 991
operating systems supported 11
operation sequence 114
operations
  formatter 116
  resolution 117
  Sleep mode 116
optional input trays and trays 179
ordering
  part numbers for 781
  supplies and accessories 778
  supplies through embedded Web server 80
output bins
  capacities 5
  locating 7
  selecting 69
output-accessory bridge. *See* IPTU
overcurrent or overvoltage protection
  booklet maker 638
  stacker unit 638
  stapler/stacker 605

P

pages
  blank 353
  count and fuser life 130
  not printing 353
  printing slowly 353
  reprint after jam 470
  skewed 491
pages count
  from product refurbish date 508
  reset 508
  reset by NVRAM initialization 510
  since last maintenance 352
  See also counts
pages per minute 4
paper
  cassette presence detection 161
  default size reset 509
  last-paper, multipupose tray 167
  level detection 164
  load 59
  loading Trays 2, 3, 4, or 5 60, 62, 63
  movement sensors 156, 177
  movement through booklet maker 621
  offset stacking 591
  presence detection 164
  Show Me How menu 18
  size detection 161
  stop in path for testing 507
  supported sizes 52
  type detection 171
  type, specify 479
  types and feed speed control 171
  wrinkled 492
paper feeders
  feed operations 168
  multifeed prevention 165
  skew feed prevention 170
  speed control 171
  troubleshooting 428
paper handling menu 21
paper jams. *See* jams
paper path
  booklet maker 614
  diagnostic test 501
  diagnostic test, manual 502
  sensors, stapler/stacker 585
  stapler/stacker 587
  stapling 597
  stop movement for testing 507
paper-path
  test, sensors 499
parameters, EP, troubleshooting 347
part numbers
  memory 782
  print cartridges 782
parts
  main parts diagram and list 540
  See also components
parts removal or replacement. *See* remove or replace parts
parts repair. *See* repair parts
password
  bootloader, clear 508
  Service menu PIN 508
PCAs (printed circuit assemblies)
  booklet maker 606, 608, 759

output bin, stapler/stacker 603
stapler/stacker 584, 757
PCAs (printed-circuit assemblies)
connectors 511
DC controller, remove 246
high-voltage power supply, remove 226, 242
main parts diagram and list 541
paper-feeder driver, remove 333
print-cartridge driver, remove 236
print-cartridge interface, remove 273, 276
PCAs, remove. *See* remove or replace parts
periods of the operation sequence 114
photosensitive drums. *See* imaging drums
physical specifications 987
pickup, feed and delivery
paper feed operations 168
pickup, feed, and delivery
booklet maker 608, 621
components 156
feed speed control 171
IPTU 582
multipurpose tray pickup 166
overview 156
pickup and feed unit operations 159
pickup motor, remove 332
pickup unit, remove 328
pickup units (middle, lower, upper cassette), remove 335
stapler/stacker 584
troubleshooting 428
See also fusing and delivery unit; duplexing unit
PJL (printer job language) 118
PML (printer management language) 118
port configuration information 350
ports
included 5
locating 10
power
specifications 989
power supply
booklet maker 637
frequency range for drive-circuit 129
fuser, remove 264
stapler/stacker 605
troubleshooting 345
See also low-voltage power supply; high-voltage power supply
power switch, locating 7
power-save mode. *See* sleep settings
pre-troubleshooting checklist 342
pressure roller pressurization control 174
print cartridge
managing 84
print cartridges
components 143
diagnostic test 498
drive units, remove 267, 272
driver PCA, remove 236
error conditions 144
fan unit, remove 262
feed motor for black, remove 260
feed motor for yellow, magenta, cyan, remove 261
interface PCAs, remove 273, 276
non-HP 84
operations 143
ordering through embedded Web server 80
part numbers 782
recycling 995
replacing 86
storage 84
warranty 981
print media
loading in tray 1 59
print quality
built-in troubleshooting pages 485
color misregistration control 152
image stabilization controls 153
manual print modes 484
optimization 478
test pages 347
troubleshooting 476
Print Quality menu options 484
print server card
installing 96
printed-circuit assemblies. *See* PCAs
printer job language (PJL) 118
printer languages 5
printer management language (PML) 118
printer settings
configure 22
printing
modes, manual 484
output bin, selecting 69
period in operation sequence 115
process explained 136
speed specifications 4
stop for testing 507
troubleshooting 353
printing from Tray 2, 3, or 4 60
printing menu 22
printing, both sides. *See* duplexing unit
priority onsite service 985
problem-solving. *See* troubleshooting
processor specifications 117
processor speed 4
product info 1
product status
HP Easy Printer Care 75
protocols, network 38, 43
Proxy Server settings 40

Q

quality. *See* print quality

R

Ready light
locating 14
real-time clock 111

recycling
HP printing supplies returns and environmental program 996
reformat product hard disk 510
regulatory statements
Declaration of Conformity 999
environmental product stewardship program 995
laser statement for Finland 1002
relays, fuser
failure detection 130
remote firmware update (RFU) 107
remove or replace parts
1 x 500-sheet input tray 319
3 x 500-sheet input tray 334
about 186
after-service checklist 188
auto-close unit 331
before-service checklist 188
box 327
cartridge fan unit 262
cartridge-fan duct 277
cautions for handling 186
color-misregistration and image-density sensor unit 302
control panel 282
DC controller PCA 246
duplex switchback tray 286
duplexing feed unit 310
environmental sensor 248
face-down cover 293
face-down delivery unit 291
face-down output bin 232
formatter 203
formatter case 244
front door 299
front-door assembly 301
front-inner cover 300
front-lower cover 317
front-lower door 326
front-right cover 322
front-upper cover 284
FRUs 186
fuser 191
fuser fan 259
fuser motor 230
fuser power-supply unit 264
high-voltage power supply PCA (A) 226
high-voltage power supply PCA (B) 242
image-drum motor 257
ITB 196
ITB duct 318
ITB motor 231
laser/scanner assembly, cyan and black 297
laser/scanner assembly, yellow and magenta 295
laser/scanner fan unit 263
laser/scanner-fan duct 234
left cover 233
lifter drive unit 228
low-voltage power supply 225
lower-left cover 325
lower-rear cover 321
main drive unit 274
multipurpose drive unit 215
paper-feeder driver PCA 333
pickup motor 332
pickup unit 328
pickup units (middle, lower, and upper cassette) 335
pressure-release sensor unit 304
primary-transfer-roller disengagement motor 265
print-cartridge drive unit, cyan and black 272
print-cartridge drive unit, yellow and magenta 267
print-cartridge driver PCA 236
print-cartridge feed motor for black 260
print-cartridge feed motor for yellow, magenta, cyan 261
print-cartridge interface PCA, cyan and black 273
print-cartridge interface PCA, yellow and magenta 276
rear cover 224
rear-left cover 222
rear-right cover 223
rear-upper cover 281
remove 290
replacements not covered 188
reverse cover 287
right cover 323
right door 319
right-door assembly 308
right-upper cover 285
scanner cover 294
screws 186
secondary transfer unit 210
service approach 188
thermopile unit 316
tools, required 187
transfer roller 194
Tray 2 208
Tray-1 guide unit 219
Tray-1 pickup roller 199
Tray-1 pickup unit 312
Tray-2 guide unit 220
Tray-2, -3, -4, and -5 pickup roller 201
Trays 3, 4, and 5 208
VOC fan 289
See also installation
remove or replace parts, booklet maker
booklet maker 665
booklet-delivery output bin 714
buffer rollers 713
document feed system 703
entrance lower-guide assembly 668
entrance upper guide unit 723
front door 669
front inside-lower cover 673
front inside-upper cover 672
front-foot cover 671
grate-shaped lower guide 681
grate-shaped upper guide 678
inlet feed unit 729
left-upper cover 674
operation-tray assembly 703
output bins 708
paper-folding roller 732
PCA cover 682
positioning plate unit 700
pressure roller unit 718
rear cover 670
rear-foot cover 671
return roller unit 716
saddle unit 695

saddle-stapler assembly 699
saddle-stitcher controller PCA 738
stapler 683
stapler assembly 685
swing unit 688
top door 676
upper crossmember unit 692
upper-delivery guide 725
remove or replace parts, IPTU
damper unit 653
driver PCA 663
finisher-lock assembly 659
IPTU 646
left-belt drive unit 657
paper-feed motor 1 661
paper-feed motor 2 662
rear cover 649
reverse guide 648
right-belt drive unit 654
upper-guide assembly 652
remove or replace parts, stapler/stacker
buffer rollers 713
document feed system 703
entrance lower-guide assembly 668
entrance upper guide unit 723
front door 669
front inside-upper cover 672
front-foot cover 671
grate-shaped lower guide 681
grate-shaped upper guide 678
inlet feed unit 726
left-upper cover 674
operation-tray assembly 703
output bins 708
PCA cover 682
pressure roller unit 718
rear cover 670
rear-foot cover 671
return roller unit 716
stacker controller PCA 737
stapler 683
stapler assembly 685
stapler/stacker 665
swing unit 688
top door 676
upper crossmember unit 692
upper output bin 712
remove parts sequence information
overview 189
sequence 1 flowchart 209
sequence 2 flowchart 221
sequence 2A 230
sequence 2B 231
sequence 2C 232
sequence 2D 236
sequence 3 flowchart 238
sequence 3A 248
sequence 4 flowchart 249
sequence 4 Sub-1A 276
sequence 4 Sub-1B 277
sequence 4 Sub-1flowchart 266
sequence 4A 259
sequence 4B 260
sequence 4C 262
sequence 4D 264
sequence 5 flowchart 278
sequence 5A 294
sequence 5B 299
sequence 5C 301
sequence 5D 302
sequence 5E 304
sequence 6 flowchart 305
sequence 7 flowchart 315
repair parts
cautions for handling 186
repairs not supported 186, 188
service approach 188
repeating defects, troubleshooting 476
reset button 14
resets menu 43
resolution
operations 117
specifications 4
troubleshooting quality 476
retrieve job menu 19
reverse and feed control, duplexer 176
rollers
booklet maker, remove 713
crescent rollers, booklet maker 625
paper-folding in booklet maker, caution when reinstalling 736
paper-folding in booklet maker, remove 732
stapler/stacker, remove 713
stapling 597
transfer, remove and replace 194
Tray-1 pickup, replace 199
Tray-2, -3, -4 and -5, pickup rollers, replace 201
ruler, repetitive defect 476

S

safety features
when front door is open 131
safety statements 1001
scanner
cover, remove 294
scanner motor failure 135
scanning
speed specifications 4
screwdrivers, required 187
screws
caution for installing 187
installing 186
types of 187
secondary transfer unit
remove 210
Secondary-transfer-roller unit
operations 151
Secure Disk Erase 82
security
disk erase 82
locking control panel menus 83
network settings 40
security features 6
security settings information 350
sensors
1 x 500-sheet input tray 523
3 x 500-sheet input-tray 523
and paper sizes, booklet maker 618
booklet maker 748
DC controller 122, 518
diagnostic tests 499
duplexing unit 175
folding mechanism 627
IPTU 524, 581
jam 604
jam, by area 430

optional input trays 181
output bin, stapler/stacker 603
paper deck 455
paper, IPTU 460
pickup, feed, and delivery 156
product base 518
stack job offset 592
stacker control system, booklet maker 609
stapler/stacker 585, 746
stapling 596, 597
tests, manual 501, 739
sensors, remove. *See* remove or replace parts
separation of paper. *See* stack job offset
sequence
IPTU 582
sequence of operation 114
sequences
parts removal 189
See also remove parts sequence information
serial number
reset after replacing formatter 508
reset by NVRAM initialization 510
service
agreements 985
service approach 188
Service ID
convert to date 508
restore 508
Service menu options 508
Service menu, control panel 49
Settings tab, embedded Web server 79
Show Me How menu 18
shutter, stapler/stacker 603
signals to and from DC controller PCA 550
skew-feed prevention 170
skewed pages
troubleshooting 491
Sleep button 14
sleep settings
operations 116
power specifications 989
voltage for 131
voltage too high during 131
smeared toner, troubleshooting 491
software
HP Easy Printer Care 75
supported operating systems 11
solenoids
1 x 500-sheet input tray 533
3 x 500-sheet input-tray 533
and paper sizes, booklet maker 619
booklet maker 753
component test 740
DC controller 120, 531
duplexing unit 175
optional input trays 181
pickup, feed, and delivery 158
product base 531
stapler/stacker 752
space requirements 987
special media
guidelines 58
special paper
guidelines 58
specifications
acoustic 990
electrical 989
features 4
operating environment 991
physical 987
speed control, paper feed 171
speed specifications 4
stack job offset, components and operation 591
stacker unit, booklet maker
feed drive system 608
folding of stack 628
movement of stack 628
operation 606
over-current protection 638
PCAs 606
power supply 637
staple operation 633
standard output bin
capacity 5
locating 7
selecting 69
standby period 115
stapler
booklet maker 634
jams, clearing 466
See also stitcher unit; stapler/stacker
stapler stacker
solenoids 752
stapler/stacker
adjustments after component replacements 768
capacity 5
circuit diagrams 763
clutches 756
components 583
configuring 71
control system 585
cross section diagram 743
feed drive system 584
microswitches 750
motors 754
operation, basic 583
output bin operation 601
output bins 585
over-current protection 605
paper delivery path 587
paper path for stapling 597
PCAs 584, 757
power supply 605
selecting 69
sensors 746
shift process, stapler 598
shutter operation 603
specifications, physical 987
stack job offset 591
stacker operation 601
staple operation 595
staple unit operation 598
stapler, alignment 768
troubleshooting 739
stapler/stacker, remove or replace parts. *See* remove or replace parts, stapler/stacker
staples
loading 98, 100
Start button 14
static, precautions for 186
status
embedded Web server 79
HP Easy Printer Care 75
Status button 14

stepping motors 123, 526
stitcher unit
adjust 773
stitcher unit, booklet maker 634
Stop button 14
stop printing for test 507
storage cabinet
specifications, physical 987
storing
print cartridges 84
streaks, troubleshooting 489
subvoltage
low-voltage power supply circuit 131
supplies
counterfeit 84
locating 85
non-HP 84
ordering 778
ordering through embedded Web server 80
part numbers 782
recycling 995
replacement intervals 86
replacing 85
status, viewing with embedded Web server 79
supplies status page
description 20
supplies, status
HP Easy Printer Care 75
support
embedded Web server links 80
maintenance agreements 985
online 984
supported media 52
switch boxes 493
switches
1 x 500-sheet input tray 535
3 x 500-sheet input tray 535
DC controller 121, 534
optional input trays 181
paper-size detection states 162
paper-size, diagnostic test 502
pickup, feed, and delivery 156
product base 534
saddle-stitcher controller PCA 761
stacker controller PCA 761
See also microswitches
system requirements
embedded Web server 78
system setup menu 29

T

TCP/IP information 350
TCP/IP settings
38
technical support
maintenance agreements 985
online 984
temperature
thresholds for fuser components 128, 129
values, printed 347
temperature requirements 991
tests
color band 507
component 740
component tests list and descriptions 504
diagnostic, running 497
disable cartridge check 498
engine 495
manual sensor 501, 739
N-media sensor, values 500
network 41
paper path 501
paper-path sensors 499
print/stop 507
special-mode test 502
See also diagnostics
text, troubleshooting 491
thermistors, fuser 126
thermopiles
remove 316
thermopiles, fuser 126
thermoswitches, fuser 127
thresholds
power-supply frequency, drive-circuit 129
temperature, fuser components 128, 129
time, change setting 409
time, setting 111
timing chart 545
toner
image formation, use during 137
loose, troubleshooting 490
patterns for calibration 152
smeared, troubleshooting 491
toner cartridges. *See* print cartridges
tools required to remove parts 187
top cover
locating 7
Tray 1
guide unit, remove 219
pickup roller, replace 199
pickup unit, remove 312
tray 1
locating 7
Tray 2
guide unit, remove 220
pickup roller, replace 201
remove and replace 208
Tray 3
pickup roller, replace 201
remove and replace 208
Tray 4
pickup roller, replace 201
remove and replace 208
Tray 5
pickup roller, replace 201
remove and replace 208
trays
automatic media sensing 67
configure 66
included 3
load 59
multipurpose, last-paper detection 167
multipurpose, pickup operation 166
Show Me How menu 18
specifications, physical 987
See also cassette, paper
trays, status
HP Easy Printer Care 75
triac-drive circuit
deactivation 128
troubleshooting
blank pages 353
checklist 342, 343

color 347
communications 493
configuration pages for 348
control panel messages, alphabetical list 357
control-panel messages, numerical list 357
diagnostic tests for 497
duplexing 474
EIO cards 493
EP parameters 347
event log, use for 422
event-log messages, numerical list 424
flowchart 344
jams 428
lights for 741
lights, using 494
lines, printed pages 489
messages, alphabetical list of 357
network connectivity 353
network printing 354
overhead transparencies 478
pages not printing 353
pages printing slowly 353
power 345
print quality issues 476
process 342
repeating defects 476
service approach 188
Show Me How menu 18
skewed pages 491
stapler/stacker and booklet maker 739
text 491
toner smear 491
transparencies 473
USB cable 353, 354
wrinkles 492
See also diagnostics; error messages
TrueType fonts included 5
two-sided printing
Show Me How menu 18
typefaces
included 5

U

upgrading firmware 107
usage page
description 20
USB port, troubleshooting 353, 354
User guide 2

V

version, hardware firmware 350
vertical lines, troubleshooting 489
voltage detection
DC controller 131
voltage specifications 989

W

waiting period 114
warning messages 356
warranty
Customer self repair 983
extended 985
print cartridges 981
product 979
warranty date information 508
Web browser requirements
embedded Web server 78
Web Jetadmin
firmware updates 108
Web sites
customer support 984
documentation 2
fraud reports 84
HP Web Jetadmin, downloading 81
Macintosh customer support 984
Material Safety Data Sheet (MSDS) 997
ordering supplies 778
white spots, troubleshooting 488
Windows
supported operating systems 11
wrinkles, troubleshooting 492

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