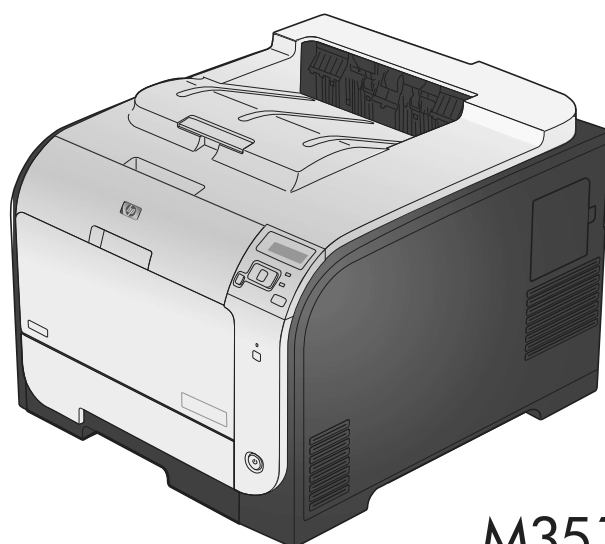




# LASERJET PRO 300 COLOR LASERJET PRO 400 COLOR

## Service Manual



M351  
M451





# HP LaserJet Pro 300 color M351 and HP LaserJet Pro 400 color M451 Printers

Service Manual

## Copyright and License

© 2012 Copyright Hewlett-Packard Development Company, L.P.

Reproduction, adaptation, or translation without prior written permission is prohibited, except as allowed under the copyright laws.

The information contained herein is subject to change without notice.

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

Part number: CE955-90964

Edition 2, 1/2012

## Trademark Credits


Microsoft®, Windows®, Windows® XP, and Windows Vista® are U.S. registered trademarks of Microsoft Corporation.

ENERGY STAR and the ENERGY STAR mark are registered U.S. marks.





## Conventions used in this guide

---

 **TIP:** Tips provide helpful hints or shortcuts.

 **NOTE:** Notes provide important information to explain a concept or to complete a task.

 **CAUTION:** Cautions indicate procedures that you should follow to avoid losing data or damaging the product.

 **WARNING!** Warnings alert you to specific procedures that you should follow to avoid personal injury, catastrophic loss of data, or extensive damage to the product.

---



---

# Table of contents

1 Removal and replacement .....	1
Removal and replacement strategy .....	2
Introduction .....	2
Removal and replacement strategy .....	2
Electrostatic discharge .....	3
Required tools .....	4
Types of screws .....	5
Service approach .....	6
Before performing service .....	6
After performing service .....	6
Post-service test .....	6
Print-quality test .....	6
Parts removal order .....	7
Removal and replacement procedures .....	8
Tray 2 cassette .....	8
Rollers and pads .....	9
Replace the transfer roller .....	9
Replace the pickup roller .....	10
Repalce the separation roller .....	12
Reinstall the separation roller .....	14
Replace the pickup roller and separation pad (Tray 1) .....	15
Main assemblies .....	18
Print-cartridge drawer .....	18
DIMM cover .....	20
Right cover .....	21
Reinstall the right cover .....	23
Rear-upper cover (duplex product) .....	24
Rear-door stopper and link caps (simplex product) .....	25
Rear door (simplex product) .....	26
Rear door (duplex product) .....	28
Rear cover and feed guide (simplex product) .....	30
Remove the rear cover and feed guide (simplex product) .....	30

Rear-lower cover and rear-door links (duplex product) .....	34
Remove the rear-lower cover and rear-door links (duplex product) ...	34
Rear-door rib assembly (duplex product) .....	38
Remove the rear-door rib assembly (duplex product) .....	38
Link guide .....	40
Upper-cover assembly .....	41
Reinstall the upper cover .....	43
Left cover .....	44
Remove the left cover .....	44
Reinstall the left cover .....	46
Right-front cover and power button .....	47
Remove the right-front cover and power button .....	47
Paper-feed guide assembly .....	48
Control-panel assembly .....	50
Remove the control-panel assembly .....	50
Right panel .....	52
Remove the right panel .....	52
Front-door assembly .....	57
Remove the front-door assembly .....	57
Reinstall the front-door assembly .....	62
Intermediate transfer belt (ITB) .....	64
Reinstall the ITB .....	67
Drum motor (M1) and developer motor (M2) .....	68
Reinstall the drum motor (M1) and developer motor (M2) .....	71
Intermediate PCA .....	72
Remove the intermediate PCA .....	72
Formatter PCA .....	74
Special considerations .....	74
Remove the formatter PCA .....	74
DC controller PCA .....	76
Special considerations .....	76
Remove the DC controller PCA .....	76
Fuser motor assembly .....	78
Remove the fuser motor assembly .....	78
Reinstall the fuser motor assembly .....	80
High-voltage power-supply PCA .....	81
Remove the high-voltage power-supply PCA .....	81
Color-misregistration sensor assembly PCA .....	84
Remove the color-misregistration sensor assembly PCA .....	84
Reinstall the color-misregistration sensor assembly .....	86
Fan .....	88

Duplex reverse-drive assembly .....	89
Remove the duplex reverse-drive assembly .....	89
Fuser .....	92
Remove the fuser .....	92
Reinstall the fuser .....	97
Paper-delivery assembly .....	98
Remove the paper-delivery assembly .....	98
<b>2 Solve problems .....</b>	<b>101</b>
Solve problems checklist .....	102
Menu map .....	102
Troubleshooting process .....	103
Pretroubleshooting checklist .....	103
Power-on checks .....	105
Tools for troubleshooting .....	106
Engine diagnostics .....	106
Diagrams .....	106
Plug/jack locations .....	106
Location of connectors .....	107
DC controller PCA .....	107
Location of major components .....	108
Major components .....	108
Solenoids, clutches, and sensors .....	109
Rollers .....	111
Motors and fans .....	112
PCAs .....	113
General timing charts .....	114
General circuit diagram .....	115
CPU/ASIC diagrams .....	116
HVT/Toner EMP diagram .....	118
Driver PCA diagram .....	119
Duplexer PCA diagram .....	120
FSR diagram .....	121
Internal print quality test pages .....	122
Print quality troubleshooting page .....	122
Print quality assessment page .....	122
Print the configuration page .....	122
Print-quality troubleshooting tools .....	123
Repetitive image defects .....	123
Calibrate the product .....	123
Control panel menus .....	124

Reports menu .....	124
Quick Forms menu .....	124
System Setup menu .....	125
Service menu .....	129
Network Setup menu .....	130
Interpret control panel messages .....	132
Control panel message types .....	132
Control panel messages .....	132
10.XXXX Supply error .....	132
49 Error Turn off then on .....	132
50.X Fuser error Turn off then on .....	133
51.XX Error Turn off then on .....	133
54.XX Error Turn off then on .....	133
55.X Error Turn off then on .....	134
57 Fan error Turn off then on .....	134
59.X Error Turn off then on .....	134
79 Error Turn off then on .....	134
79 Service error Turn off then on .....	135
Black cartridge low .....	135
Black in wrong position .....	135
Black very low .....	135
Cleaning . . . .....	136
Cyan cartridge low .....	136
Cyan in wrong position .....	136
Cyan very low .....	136
Device error Press [OK] .....	137
Front door open .....	137
Genuine HP supply installed .....	137
Incompatible <color> .....	137
Incorrect supplies .....	137
Install <color> cartridge .....	138
Invalid driver Press [OK] .....	138
Jam in <location> .....	138
Jam in tray # Clear jam and then Press [OK] .....	138
Load tray # <TYPE> <SIZE> .....	138
Load tray 1 plain <SIZE> Cleaning Mode [OK] to start .....	139
Load tray <X> Press [OK] for available media .....	139
Load tray 1 <TYPE> <SIZE> .....	139
Magenta cartridge low .....	139
Magenta in wrong position .....	139
Magenta very low .....	140

Manual duplex Load tray <X> Press [OK] .....	140
Manual feed <TYPE> <SIZE> Press [OK] for available media .....	140
Memory is low Press [OK] .....	140
Misprint Press [OK] .....	141
Print failure, press OK. If error repeats, turn off then on. ....	141
Rear door open .....	141
Remove shipping lock from <color> cartridge .....	141
Remove shipping locks from cartridges .....	141
Replace <color> .....	142
Supplies low .....	142
Unexpected size in tray # Load <size> Press [OK] .....	142
Unsupported <color> Press [OK] to continue .....	142
Used <color> in use .....	143
Used <color> installed Press [OK] to continue .....	143
Used supplies in use .....	143
Yellow cartridge low .....	143
Yellow in wrong position .....	143
Yellow very low .....	144
Event log messages .....	145
Clear jams .....	147
Common causes of jams .....	147
Jam locations .....	147
Clear jams in Tray 1 .....	148
Clear jams in Tray 2 .....	149
Clear jams in the fuser area .....	150
Clear jams in the output bin .....	152
Clear jams in the duplexer (duplexing models only) .....	152
Solve paper-handling problems .....	155
The product picks up multiple sheets of paper .....	155
The product does not pick up paper .....	155
Solve image-quality problems .....	156
Print quality examples .....	156
Color image defects .....	160
Clean the product .....	162
Clean the pickup and separation rollers .....	162
Clean the paper path .....	162
Solve performance problems .....	163
Factors affecting print performance .....	163
Print speeds .....	164
The product does not print or it prints slowly .....	165
The product does not print .....	165

The product prints slowly .....	166
Solve product connectivity problems .....	167
Solve direct-connect problems .....	167
Solve network problems .....	167
Poor physical connection .....	167
The computer is using the incorrect IP address for the product .....	167
The computer is unable to communicate with the product .....	168
The product is using incorrect link and duplex settings for the network .....	168
New software programs might be causing compatibility problems .....	168
The computer or workstation might be set up incorrectly .....	168
The product is disabled, or other network settings are incorrect .....	168
Solve wireless network problems .....	169
Wireless connectivity checklist .....	169
The control panel displays the message: The wireless feature on this product has been turned off .....	170
The product does not print after the wireless configuration completes .....	170
The product does not print, and the computer has a third-party firewall installed .....	170
The wireless connection does not work after moving the wireless router or product .....	170
Cannot connect more computers to the wireless product .....	171
The wireless product loses communication when connected to a VPN .....	171
The network does not appear in the wireless networks list .....	171
The wireless network is not functioning .....	172
Service mode functions .....	173
Service menu .....	173
Secondary service menu .....	174
Open the secondary service menu .....	174
Secondary service menu structure .....	174
Product resets .....	175
Restore factory-set defaults .....	175
NVRAM initialization .....	175
Cold reset .....	176
Product updates .....	176
<b>3 Parts and diagrams .....</b>	<b>177</b>
Order parts by authorized service providers .....	178
Orderable parts .....	178
Whole unit replacement .....	178
Related documentation and software .....	179
Supplies and accessories .....	179



Service parts .....	180
How to use the parts lists and diagrams .....	181
Covers .....	182
Internal assemblies .....	184
Internal assemblies (1 of 5) .....	184
Internal assemblies (2 of 5) .....	186
Internal components (3 of 5) .....	188
Internal assemblies (4 of 5) .....	190
Internal assemblies (5 of 5) .....	192
Internal assemblies (simplex models) .....	194
Internal assemblies (duplex models) .....	196
PCAs .....	198
Input device(s) .....	200
250-sheet paper feeder (optional Tray 3) .....	200
Alphabetical parts list .....	202
Numerical parts list .....	205
<b>Appendix A Service and support .....</b>	<b>209</b>
Hewlett-Packard limited warranty statement .....	210
HP's Premium Protection Warranty: LaserJet print cartridge limited warranty statement .....	212
Data stored on the print cartridge .....	213
End User License Agreement .....	214
OpenSSL .....	217
Customer support .....	218
Repack the product .....	219
<b>Appendix B Product specifications .....</b>	<b>221</b>
Physical specifications .....	222
Power consumption, electrical specifications, and acoustic emissions .....	222
Environmental specifications .....	222
<b>Appendix C Regulatory information .....</b>	<b>223</b>
FCC regulations .....	224
Environmental product stewardship program .....	225
Protecting the environment .....	225
Ozone production .....	225
Power consumption .....	225
Toner consumption .....	225
Paper use .....	225
Plastics .....	225

HP LaserJet print supplies .....	226
Return and recycling instructions .....	226
United States and Puerto Rico .....	226
Multiple returns (more than one cartridge) .....	226
Single returns .....	226
Shipping .....	226
Non-U.S. returns .....	227
Paper .....	227
Material restrictions .....	227
Disposal of waste equipment by users in private households in the European Union .....	228
Chemical substances .....	228
Material Safety Data Sheet (MSDS) .....	228
For more information .....	229
Declaration of conformity .....	230
Declaration of conformity (wireless models) .....	232
Certificate of volatility .....	234
Types of memory .....	234
Volatile memory .....	234
Non-volatile memory .....	234
Safety statements .....	235
Laser safety .....	235
Canadian DOC regulations .....	235
VCCI statement (Japan) .....	235
Power cord instructions .....	235
Power cord statement (Japan) .....	235
EMC statement (Korea) .....	236
Laser statement for Finland .....	236
GS statement (Germany) .....	237
Substances Table (China) .....	237
Restriction on Hazardous Substances statement (Turkey) .....	237
Restriction on Hazardous Substances statement (Ukraine) .....	237
Additional statements for wireless products .....	238
FCC compliance statement—United States .....	238
Australia statement .....	238
Brazil ANATEL statement .....	238
Canadian statements .....	238
European Union regulatory notice .....	238
Notice for use in France .....	239
Notice for use in Russia .....	239
Korean statement .....	239
Taiwan statement .....	240

Vietnam Telecom wired/wireless marking for ICTQC Type approved products .....	240
Index .....	241



---

# List of tables

Table 1-1	Common fasteners .....	5
Table 2-1	DC controller connectors .....	107
Table 2-2	Major components .....	108
Table 2-3	Solenoid, clutches, and sensors .....	109
Table 2-4	Rollers .....	111
Table 2-5	PCAs .....	113
Table 2-6	Repetitive image defects .....	123
Table 2-7	Event-log messages .....	145
Table 2-8	2ndary Service menu .....	174
Table 3-1	Order parts, accessories, and supplies .....	178
Table 3-2	Pro 300 Color M351a .....	178
Table 3-3	Pro 400 Color MFP M451dn .....	178
Table 3-4	Pro 400 ColorMFP M451nw .....	178
Table 3-5	Pro 400 ColorMFP M451dw .....	178
Table 3-6	Related documentation and software .....	179
Table 3-7	Covers <sup>1,2</sup> .....	183
Table 3-8	Internal assemblies (1 of 7) .....	185
Table 3-9	Internal assemblies (2 of 7) .....	187
Table 3-10	Internal assemblies (3 of 7) .....	189
Table 3-11	Internal assemblies (4 of 7) .....	191
Table 3-12	Internal assemblies (5 of 7) .....	193
Table 3-13	Internal assemblies (simplex models) .....	195
Table 3-14	Internal assemblies (duplex models) .....	197
Table 3-15	PCAs .....	199
Table 3-16	250-sheet paper feeder (optional Tray 3) .....	201
Table 3-17	Alphabetical parts list .....	202
Table 3-18	Numerical parts list .....	205
Table B-1	Physical specifications .....	222
Table B-2	Operating-environment specifications .....	222



---

# List of figures

Figure 1-1	Phillips and pozidrive screwdriver comparison .....	4
Figure 1-2	Parts removal order (1 of 2) .....	7
Figure 1-3	Parts removal order (2 of 2) .....	7
Figure 1-4	Remove the Tray 2 cassette .....	8
Figure 1-5	Remove the pickup roller (1 of 2) .....	11
Figure 1-6	Remove the pickup roller (2 of 2) .....	11
Figure 1-7	Remove the separation roller (1 of 3) .....	12
Figure 1-8	Remove the separation roller (2 of 3) .....	13
Figure 1-9	Remove the separation roller (3 of 3) .....	13
Figure 1-10	Reinstall the separation roller .....	14
Figure 1-11	Remove the Tray 1 paper-pickup roller (1 of 3) .....	16
Figure 1-12	Remove the Tray 1 paper-pickup roller (2 of 3) .....	16
Figure 1-13	Remove the Tray 1 paper-pickup roller (3 of 3) .....	17
Figure 1-14	Remove the Tray 1 separation pad .....	17
Figure 1-15	Remove the print-cartridge drawer (1 of 3) .....	18
Figure 1-16	Remove the print-cartridge drawer (2 of 3) .....	18
Figure 1-17	Remove the print-cartridge drawer (3 of 3) .....	19
Figure 1-18	Remove the DIMM cover .....	20
Figure 1-19	Remove the right cover (1 of 5) .....	21
Figure 1-20	Remove the right cover (2 of 5) .....	21
Figure 1-21	Remove the right cover (3 of 5) .....	22
Figure 1-22	Remove the right cover (4 of 5) .....	22
Figure 1-23	Remove the right cover (5 of 5) .....	23
Figure 1-24	Reinstall the right cover .....	23
Figure 1-25	Remove the rear-upper cover (1 of 2) .....	24
Figure 1-26	Remove the rear-upper cover (2 of 2) .....	24
Figure 1-27	Remove the rear-door stopper and link caps (simplex product) (1 of 2) .....	25
Figure 1-28	Remove the rear-door stopper and link cap (simplex product) (2 of 2) .....	25
Figure 1-29	Remove the rear door (simplex product) (1 of 4) .....	26
Figure 1-30	Remove the rear door (simplex product) (2 of 4) .....	26
Figure 1-31	Remove the rear door (simplex product) (3 of 4) .....	27
Figure 1-32	Remove the rear door (simplex product) (4 of 4) .....	27

Figure 1-33	Remove the rear door (duplex product) (1 of 4) .....	28
Figure 1-34	Remove the rear door (duplex product) (2 of 4) .....	28
Figure 1-35	Remove the rear door (duplex product) (3 of 4) .....	29
Figure 1-36	Remove the rear door (duplex product) (4 of 4) .....	29
Figure 1-37	Remove the rear cover and feed guide (simplex product) (1 of 6) .....	30
Figure 1-38	Remove the rear cover and feed guide (simplex product) (2 of 6) .....	31
Figure 1-39	Remove the rear cover and feed guide (simplex product) (3 of 6) .....	31
Figure 1-40	Remove the rear cover and feed guide (simplex product) (4 of 6) .....	32
Figure 1-41	Remove the rear cover and feed guide (simplex product) (5 of 6) .....	33
Figure 1-42	Remove the rear cover and feed guide (simplex product) (6 of 6) .....	33
Figure 1-43	Remove the rear-lower cover and rear-door links (duplex product) (1 of 6) .....	34
Figure 1-44	Remove the rear-lower cover and rear-door links (duplex product) (2 of 6) .....	35
Figure 1-45	Remove the rear-lower cover and rear-door links (duplex product) (3 of 6) .....	35
Figure 1-46	Remove the rear-lower cover and link-guides (duplex product) (4 of 6) .....	36
Figure 1-47	Remove the rear-lower cover and link-guides (duplex product) (5 of 6) .....	36
Figure 1-48	Remove the rear-lower cover and rear-door links (duplex product) (6 of 6) .....	37
Figure 1-49	Remove the rear-door rib assembly (duplex product) (1 of 3) .....	38
Figure 1-50	Remove the rear-door rib assembly (duplex product) (2 of 3) .....	39
Figure 1-51	Remove the rear-door rib assembly (duplex product) (3 of 3) .....	39
Figure 1-52	Replace the link guide (simplex products) .....	40
Figure 1-53	Replace the link guide (duplex products) .....	40
Figure 1-54	Remove the upper-cover assembly (1 of 4) .....	41
Figure 1-55	Remove the upper-cover assembly (2 of 4) .....	41
Figure 1-56	Remove the upper-cover assembly (3 of 4) .....	42
Figure 1-57	Remove the upper-cover assembly (4 of 4) .....	42
Figure 1-58	Upper-cover tabs correctly seated .....	43
Figure 1-59	Upper-cover tabs <i>not</i> correctly seated .....	43
Figure 1-60	Remove the left cover (1 of 3) .....	44
Figure 1-61	Remove the left cover (2 of 3) .....	45
Figure 1-62	Remove the left cover (3 of 3) .....	45
Figure 1-63	Reinstall the left cover (1 of 2) .....	46
Figure 1-64	Reinstall the left cover (2 of 2) .....	46
Figure 1-65	Remove the right-front cover and power button (1 of 2) .....	47
Figure 1-66	Remove the right-front cover and power button (2 of 2) .....	48
Figure 1-67	Remove the feed assembly (1 of 2) .....	48
Figure 1-68	Remove the feed assembly (2 of 2) .....	49
Figure 1-69	Remove the control-panel assembly (1 of 3) .....	50
Figure 1-70	Remove the control-panel assembly (2 of 3) .....	51
Figure 1-71	Remove the control-panel assembly (3 of 3) .....	51
Figure 1-72	Remove the right panel (1 of 8) .....	52
Figure 1-73	Remove the right panel (2 of 8) .....	53



Figure 1-74	Remove the right panel (3 of 8)	53
Figure 1-75	Remove the right panel (4 of 8)	54
Figure 1-76	Remove the right panel (5 of 8)	54
Figure 1-77	Remove the right panel (6 of 8)	55
Figure 1-78	Remove the right panel (7 of 8)	55
Figure 1-79	Remove the right panel (8 of 8)	56
Figure 1-80	Remove the front-door assembly (1 of 10)	57
Figure 1-81	Remove the front-door assembly (2 of 10)	58
Figure 1-82	Remove the front-door assembly (3 of 10)	58
Figure 1-83	Remove the front-door assembly (4 of 10)	59
Figure 1-84	Remove the front-door assembly (5 of 10)	59
Figure 1-85	Remove the front-door assembly (6 of 10)	60
Figure 1-86	Remove the front-door assembly (7 of 10)	60
Figure 1-87	Remove the front-door assembly (8 of 10)	61
Figure 1-88	Remove the front-door assembly (9 of 10)	61
Figure 1-89	Remove the front-door assembly (10 of 10)	62
Figure 1-90	Reinstall the front-door assembly (1 of 2)	62
Figure 1-91	Reinstall the front-door assembly (2 of 2)	63
Figure 1-92	Remove the ITB (1 of 6)	64
Figure 1-93	Remove the ITB (2 of 6)	64
Figure 1-94	Remove the ITB (3 of 6)	65
Figure 1-95	Remove the ITB (4 of 6)	65
Figure 1-96	Remove the ITB (5 of 6)	66
Figure 1-97	Remove the ITB (6 of 6)	66
Figure 1-98	Reinstall the ITB	67
Figure 1-99	Remove motor M1 or motor M2 (1 of 5)	68
Figure 1-100	Remove motor M1 and motor M2 (2 of 5)	69
Figure 1-101	Remove motor M1 and motor M2 (3 of 5)	69
Figure 1-102	Remove motor M1 and motor M2 (4 of 5)	70
Figure 1-103	Remove motor M1 and motor M2 (5 of 5)	70
Figure 1-104	Reinstall the motor M1 and motor M2 wire-harness retainer	71
Figure 1-105	Remove the Intermediate PCA (1 of 2)	72
Figure 1-106	Remove the Intermediate PCA (2 of 2)	73
Figure 1-107	Remove the formatter PCA (1 of 2)	75
Figure 1-108	Remove the formatter PCA (2 of 2)	75
Figure 1-109	Remove the DC controller PCA (1 of 2)	77
Figure 1-110	Remove the DC controller PCA (2 of 2)	77
Figure 1-111	Remove the fuser motor assembly (1 of 4)	78
Figure 1-112	Remove the fuser motor assembly (2 of 4)	79
Figure 1-113	Remove the fuser motor assembly (3 of 4)	79
Figure 1-114	Remove the fuser motor assembly (4 of 4)	80

Figure 1-115	Reinstall the fuser motor assembly .....	80
Figure 1-116	Remove the high-voltage power-supply PCA (1 of 5) .....	81
Figure 1-117	Remove the high-voltage power-supply PCA (2 of 5) .....	82
Figure 1-118	Remove the high-voltage power-supply PCA (3 of 5) .....	82
Figure 1-119	Remove the high-voltage power-supply PCA (4 of 5) .....	83
Figure 1-120	Remove the high-voltage power-supply PCA (5 of 5) .....	83
Figure 1-121	Remove the color-misregistration sensor assembly PCA (1 of 4) .....	84
Figure 1-122	Remove the color-misregistration sensor assembly PCA (2 of 4) .....	85
Figure 1-123	Remove the color-misregistration sensor assembly PCA (3 of 4) .....	85
Figure 1-124	Remove the color-misregistration sensor assembly PCA (4 of 4) .....	86
Figure 1-125	Reinstall the color-misregistration sensor assembly PCA (1 of 2) .....	86
Figure 1-126	Reinstall the color-misregistration sensor assembly PCA (2 of 2) .....	87
Figure 1-127	Remove the fan (1 of 2) .....	88
Figure 1-128	Remove the fan (2 of 2) .....	88
Figure 1-129	Remove the duplex reverse-drive assembly (1 of 4) .....	89
Figure 1-130	Remove the duplex reverse-drive assembly (2 of 4) .....	90
Figure 1-131	Remove the duplex reverse-drive assembly (3 of 4) .....	90
Figure 1-132	Remove the duplex reverse-drive assembly (4 of 4) .....	91
Figure 1-133	Remove the fuser (1 of 8) .....	92
Figure 1-134	Remove the fuser (2 of 8) .....	93
Figure 1-135	Remove the fuser (3 of 8) .....	93
Figure 1-136	Remove the fuser (4 of 8) .....	94
Figure 1-137	Remove the fuser (5 of 8) .....	94
Figure 1-138	Remove the fuser (6 of 8) .....	95
Figure 1-139	Remove the fuser (7 of 8) .....	95
Figure 1-140	Remove the fuser (8 of 8) .....	96
Figure 1-141	Reinstall the fuser .....	97
Figure 1-142	Remove the paper-delivery assembly (1 of 4) .....	98
Figure 1-143	Remove the paper-delivery assembly (2 of 4) .....	99
Figure 1-144	Remove the paper-delivery assembly (3 of 4) .....	99
Figure 1-145	Remove the paper-delivery assembly (4 of 4) .....	100
Figure 2-1	Engine test button location .....	106
Figure 2-2	DC controller connectors .....	107
Figure 2-3	Major components .....	108
Figure 2-4	Solenoid, clutches, and sensors .....	109
Figure 2-5	Rollers .....	111
Figure 2-6	Motors and fans .....	112
Figure 2-7	PCAs .....	113
Figure 2-8	Timing diagram .....	114
Figure 2-9	Circuit diagram .....	115
Figure 2-10	CPU diagram .....	116

Figure 2-11	ASIC diagram .....	117
Figure 2-12	HVT/Toner EMP diagram .....	118
Figure 2-13	Driver PCA diagram .....	119
Figure 2-14	Duplexer PCA diagram .....	120
Figure 2-15	FSR diagram .....	121
Figure 3-1	Covers, panels, and doors .....	182
Figure 3-2	Internal assemblies (1 of 7) .....	184
Figure 3-3	Internal assemblies (2 of 7) .....	186
Figure 3-4	Internal assemblies (3 of 7) .....	188
Figure 3-5	Internal assemblies (4 of 7) .....	190
Figure 3-6	Internal assemblies (5 of 7) .....	192
Figure 3-7	Internal assemblies (simplex models) .....	194
Figure 3-8	Internal assemblies (duplex models) .....	196
Figure 3-9	PCAs .....	198
Figure 3-10	250-sheet paper feeder (optional Tray 3) .....	200



---

# 1 Removal and replacement

- Removal and replacement strategy
- Service approach
- Removal and replacement procedures

# Removal and replacement strategy

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

Replacing FRUs is generally the reverse of removal procedures. Occasionally, notes and tips are included to provide directions for difficult or critical replacement procedures.

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

Note the length, diameter, color, type, and location of each screw. Be sure to return each screw to its original location during reassembly.

Incorrectly routed or loose wire harnesses can interfere with other internal components and can become damaged or broken. Frayed or pinched harness wires can be difficult to find. When replacing wire harnesses, always use the provided wire loops, lance points, or wire-harness guides.

## Introduction

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


Replacing FRUs is generally the reverse of removal. Occasionally, notes and tips are included to provide directions for difficult or critical replacement procedures.

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

Note the length, diameter, color, type, and location of each screw. Be sure to return each screw to its original location during reassembly.


Incorrectly routed or loose wire harnesses can interfere with other internal components and can become damaged or broken. Frayed or pinched harness wires can be difficult to find. When replacing wire harnesses, always use the provided wire loops, lance points, or wire-harness guides and retainers.


## Removal and replacement strategy


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

Never operate or service the product 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:** Do not bend or fold the flat flexible cables (FFCs) during removal or installation. Also, do not straighten pre-folds in the FFCs. You *must* fully seat all FFCs in their connectors. Failure to fully seat an FFC into a connector can cause a short circuit in a PCA.



 **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.

 **TIP:** For clarity, some photos in this chapter show components removed that would not be removed to service the product. If necessary, remove the components listed at the beginning of a procedure before proceeding to service the product.

---

## Electrostatic discharge

---


 **CAUTION:**  Some parts are sensitive to electrostatic discharge (ESD). Look for the ESD reminder when removing product parts. Always perform service work at an ESD-protected workstation or mat, or use an ESD strap. If an ESD workstation, mat, or strap 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 product.

---

## Required tools

- #2 Phillips screwdriver with a magnetic tip and a 152-mm (6-inch) shaft length
- Precision, slotted screwdriver with a 1 mm (0.04 in) blade width

 **NOTE:** This fine-point tool is required to release the front-door pins. The width of the blade must be 2 mm (0.08 in) or less to be able to push the door pins out of the mounting holes.

- Small, slotted screwdriver
- Needle-nose pliers
- ESD mat (if one is available)
- Penlight (optional)


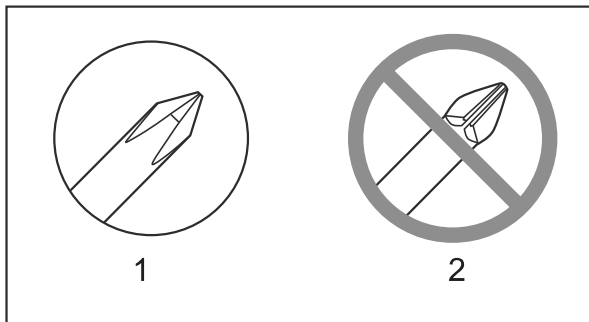
 **CAUTION:** Always use a Phillips screwdriver (callout 1). Do not use a pozidrive screwdriver (callout 2) or any motorized screwdriver. These can damage screws or screw threads.

Figure 1-1 Phillips and pozidrive screwdriver comparison




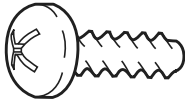

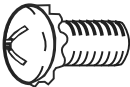
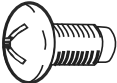


# Types of screws

**⚠ WARNING!** Make sure that components are replaced with the correct screw type. Using the incorrect screw (for example, substituting a long screw for the correct shorter screw) can cause damage to the product or interfere with product operation. Do not intermix screws that are removed from one component with the screws that are removed from another component.

**📝 NOTE:** The screw illustrations in the following table are for reference only. Screws might vary in size and appearance from those shown in this table.

Table 1-1 Common fasteners

Example	Description	Size	Part Number
	Screw, with washer	M3X8	XA9-1420-000CN
		M4X6	XB2-7400-605CN
		M4X12	XA9-1422-000CN
	Screw, tapping, truss head	M4X10	XB4-7401-005CN
		M4X15	XB4-7401-609CN
	Screw, TP	M3X4	XB6-7300-405CN
		M3X6	XB6-7300-605CN
	Screw, D	M3X6	XA9-1670-000CN
		M3X8	XA9-1671-000CN
	Screw, machine	M3X4	XB6-7300-409CN
	Screw, machine, flat head	M3X4	XA9-0679-000CN
	Screw, machine, flanged pan head	M3X6	XB6-7300-805CN

6 mm   8 mm   10 mm   12 mm   M 3   M 4

↔   ↔   ↔   ↔   ○   ○

# Service approach

## Before performing service

- Remove all media from the product.
- Turn off the power using the power button.
- Unplug the power cable and interface cable or cables.
- 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.
- Remove the toner cartridges.
- Remove the Tray 2 cassette.

## After performing service

- Connect the interface cables, and then plug in the power cable.
- Reinstall the toner cartridges.
- Reinstall the Tray 2 cassette.

## Post-service test

After service has been completed, perform the following test to verify that the repair or replacement was successful.

## Print-quality test

1. Verify that you have completed the necessary reassembly steps.
2. Make sure that the input tray contains clean, unmarked paper.
3. Attach the power cord and interface cable, and then turn on the product.
4. Verify that the expected startup sounds occur.
5. Print a configuration page, and then verify that the expected printing sounds occur.
6. Use the control-panel menus to calibrate the product.
7. Print a diagnostic page, and then verify that the print quality is as expected.
8. Send a print job from the host computer, and then verify that the output meets expectations.
9. If necessary, restore any customer-specified settings.
10. Clean the outside of the product with a damp cloth.

# Parts removal order

Figure 1-2 Parts removal order (1 of 2)

Component	Remove	Remove	Remove	Remove	Remove	Remove	Remove
Pickup roller	Tray 2						
Separation roller	Tray 2						
Pickup roller and separation pad (Tray 1)	Tray 2						
Print cartridge drawer							
DIMM cover							
Right cover	DIMM cover						
Rear-upper cover (duplex product)							
Rear-door stopper and link caps (simplex product)							
Rear door (simplex product)							
Rear door (duplex product)							
Rear cover and feed guide (simplex product)	Rear-door stopper	Rear door	Right cover				
Rear-lower cover and Rear door link (duplex product)	Right cover	Rear-upper cover	Rear door				
Rear door rib assembly (duplex product)	Right cover	Rear-upper cover	Rear door	Rear-lower cover			
Link guide							
Upper-cover assembly	Rear-upper cover						
Left cover	Right cover	Rear cover	Rear-lower cover	Upper-cover assembly			
Right-front cover and power button	Right cover	Rear-upper cover	Upper-cover assembly	Control-panel assembly	Right panel		
Paper-feed guide assembly							
Control-panel assembly	Right cover	Rear-upper cover	Upper-cover assembly				
Right panel	Right cover	Rear-upper cover	Upper-cover assembly	Control-panel assembly			
Front door assembly	Print-cartridge drawer	Right cover	Upper-cover assembly	Left cover	Rear door (simplex product)	Rear cover (simplex products)	Rear-upper cover (duplex product)
Intermediate transfer belt (ITB)	Print-cartridge drawer						Rear door (duplex product)
Drum motor (MT) and developer motor (MD)	Right cover						Rear-lower cover (duplex products)
Intermediate PCA	Right cover	Upper-cover assembly	Right panel				Control-panel assembly
Formatter PCA	Right cover	Upper-cover assembly	Right panel				Right panel
DC controller PCA	Right cover	Upper-cover assembly	Right panel				
Fuser-motor assembly (simplex products)	Right cover	Formatter PCA	Rear-upper cover	Rear door	Rear cover	Upper-cover assembly	Control-panel assembly
High-voltage power-supply PCA (simplex products)	Right cover	Upper-cover assembly	Left cover	Rear-lower cover (duplex products)	Rear door (simplex products)	Rear cover (simplex products)	
Color-miscellaneous sensor assembly (simplex products)	Print-cartridge drawer	Right cover	Upper-cover assembly	Left cover	Rear-lower cover	Rear door (simplex product)	Rear cover (simplex products)
							High-voltage power-supply PCA

Figure 1-3 Parts removal order (2 of 2)

Fan	Right cover						
Duplex-reverse drive assembly (simplex products)	Right cover	Rear-upper cover	Rear door (simplex product)	Rear door (duplex product)	Rear cover (simplex products)	Rear-lower cover (duplex products)	Upper-cover assembly
Fuser (simplex products)	Right cover	Rear-upper cover (duplex product)	Rear door (simplex product)	Rear cover (simplex products)	Upper-cover assembly	Left cover	Rear cover
Paper-delivery assembly (simplex products)	Right cover	Rear-upper cover (duplex product)	Rear door (simplex product)	Rear cover (simplex products)	Upper-cover assembly	Left cover	Rear-lower cover (duplex products)

# Removal and replacement procedures

## Tray 2 cassette

Pull the tray straight out of the product to remove it.

Figure 1-4 Remove the Tray 2 cassette



## Rollers and pads


### Replace the transfer roller

The transfer roller is a component of the paper-feed assembly and not available as an individual part. To remove and replace the transfer roller, install a replacement paper-feed assembly. See [Paper-feed guide assembly on page 48](#).

## Replace the pickup roller

The roller must be rotated into the service position to remove it.


---

 **CAUTION:** Avoid touching the spongy roller surface unless you are going to replace the roller. Skin oils on the roller can cause paper-pickup problems.

---

1. Turn the product on, and wait for it to reach the **Ready** state. Perform the following steps to rotate the roller to the service position.

---

 **NOTE:** If you have removed **Tray 2** to service the product, reinstall the tray before turning the product on.

---

 **TIP:** The following steps rotate the engine paper-pickup roller *and* the **Tray 1** paper-pickup roller into the service position.

---


- a. Open the **2ndry Service** menu by pressing the **Left Arrow** ◀ button and the **Cancel** button simultaneously.

- b. Use the arrow buttons to select **Pick roller**, and then press the **OK** button.

Press the **OK** button again to confirm that you want the roller to rotate.

- c. Listen for the roller to rotate. When the roller is done rotating, unplug the power cord, and then place the power button in the off position.

---

 **CAUTION:** It is important to place the power button in the off position *after* unplugging the power cord so that the product power does not come on immediately when the power cord is plugged in again.

---

- d. Remove **Tray 2**.

- e. Perform the remaining steps in this procedure to remove the roller. After replacing the roller, plug the power cord into the product, and then use the power button to turn the product on.

2. Carefully raise the front of the product.

**⚠ WARNING!** Do not place the product face-up resting on the rear cover and rear door. Excess toner might enter the laser/scanner assembly and contaminate the mirrors, causing print-quality problems. The laser/scanner is not a FRU. If the laser/scanner mirrors are contaminated, the entire product must be replaced.

**⚠ CAUTION:** Do not lift the product by grasping the front door and **Tray 2** cavity.

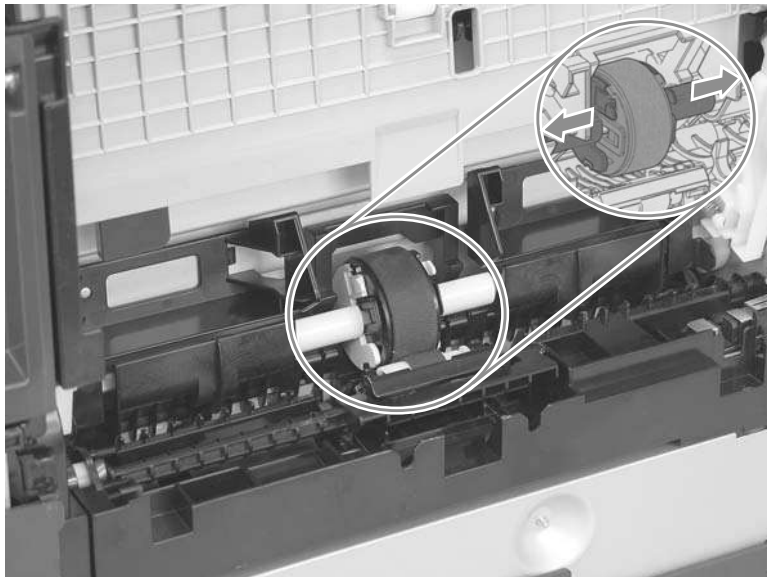
**📝 NOTE:** The roller is located inside the tray cavity.

Figure 1-5 Remove the pickup roller (1 of 2)



3. Release the two white plastic locking tabs and remove the pickup roller.

Figure 1-6 Remove the pickup roller (2 of 2)



## Repalce the separation roller

**⚠ CAUTION:** Avoid touching the spongy roller surface unless you are going to replace the roller. Skin oils on the roller can cause paper-pickup problems.

---

1. Remove **Tray 2** (if installed), and then carefully raise the front of the product.

**⚠ WARNING!** Do not place the product face-up resting on the rear cover and rear door. Excess toner might enter the laser/scanner assembly and contaminate the mirrors, causing print-quality problems. The laser/scanner is not a FRU. If the laser/scanner mirrors are contaminated, the entire product must be replaced.

**⚠ CAUTION:** Do not lift the product by grasping the front door and **Tray 2** cavity.

**📝 NOTE:** The roller is located inside the tray cavity.

---

Figure 1-7 Remove the separation roller (1 of 3)





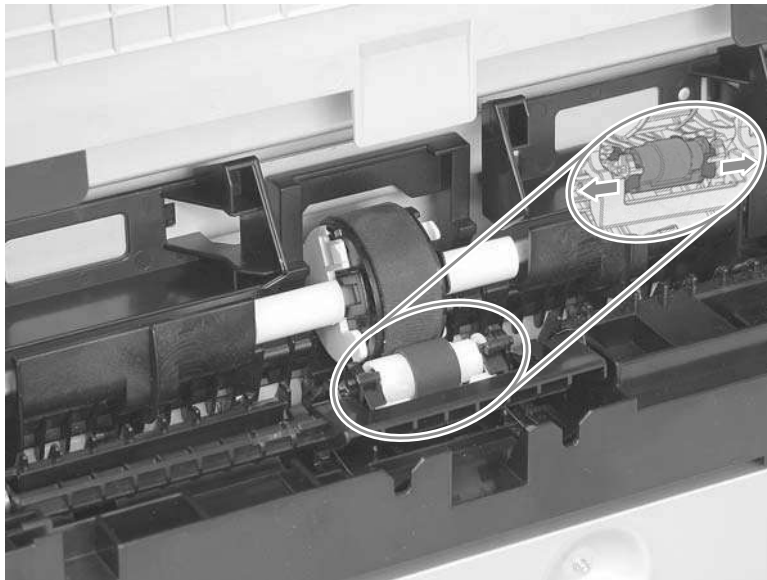
2. Release the two roller-cover locking pins, and then remove the cover.

Figure 1-8 Remove the separation roller (2 of 3)



3. Release the roller holder to release the roller-locking pins. Remove the separation roller.

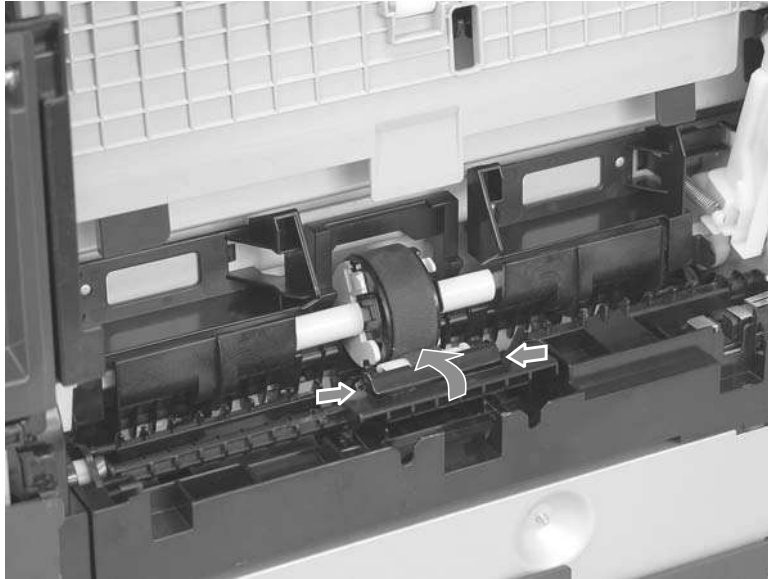
Figure 1-9 Remove the separation roller (3 of 3)



### Reinstall the separation roller

1. Install the replacement separation roller.
2. Reinstall the separation roller cover on the locking pins, and then rotate it toward the roller until you hear it snap into place.


Figure 1-10 Reinstall the separation roller




## Replace the pickup roller and separation pad (Tray 1)

The roller must be rotated into the service position to remove it.

---


 **CAUTION:** Avoid touching the spongy roller surface unless you are going to replace the roller. Skin oils on the roller can cause paper pickup problems.

 **NOTE:** Always replace the separation pad when replacing the paper-pickup roller.

---

1. Turn the product on, and wait for it to reach the **Ready** state. Perform the following steps to rotate the roller to the service position.

---

 **NOTE:** If you have removed **Tray 2** to service the product, reinstall the tray before turning the product on.

 **TIP:** The following steps rotate the engine paper-pickup roller *and* the **Tray 1** paper-pickup roller into the service position.


---

- a. Open the **2ndry Service** menu by pressing the Left Arrow ◀ button and the **Cancel** button simultaneously.
- b. Use the arrow buttons to select **Pick roller**, and then press the **OK** button.

Press the **OK** button again to confirm that you want the roller to rotate.

- c. Listen for the roller to rotate. When the roller is done rotating, unplug the power cord, and then place the power button in the off position.

---

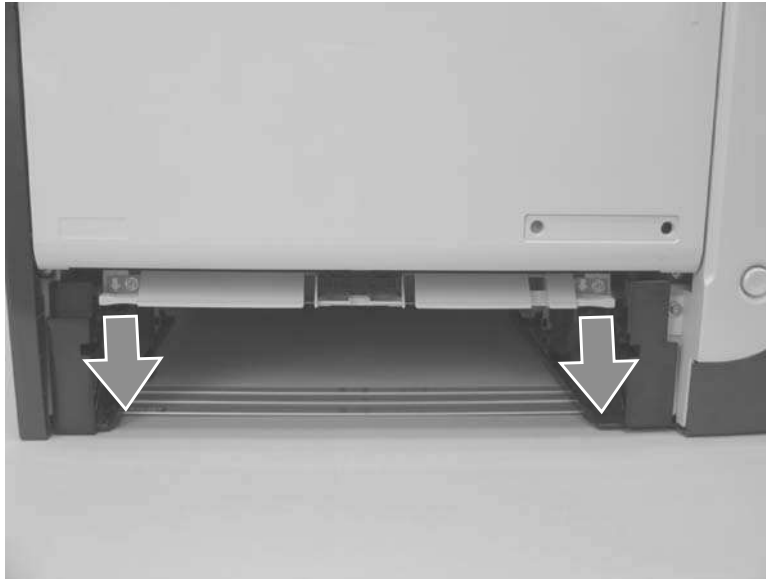
 **CAUTION:** It is important to place the power button in the off position *after* unplugging the power cord so that the product power does not come on immediately when the power cord is plugged in again.

---

- d. Remove **Tray 2**.
- e. Perform the remaining steps in this procedure to remove the roller. After replacing the roller, plug the power cord into the product, and then use the power button to turn the product on.

2. Lower the Tray 1 paper-pickup assembly by pushing down on the edges of the assembly.

Figure 1-11 Remove the Tray 1 paper-pickup roller (1 of 3)



3. Carefully raise the front of the product.

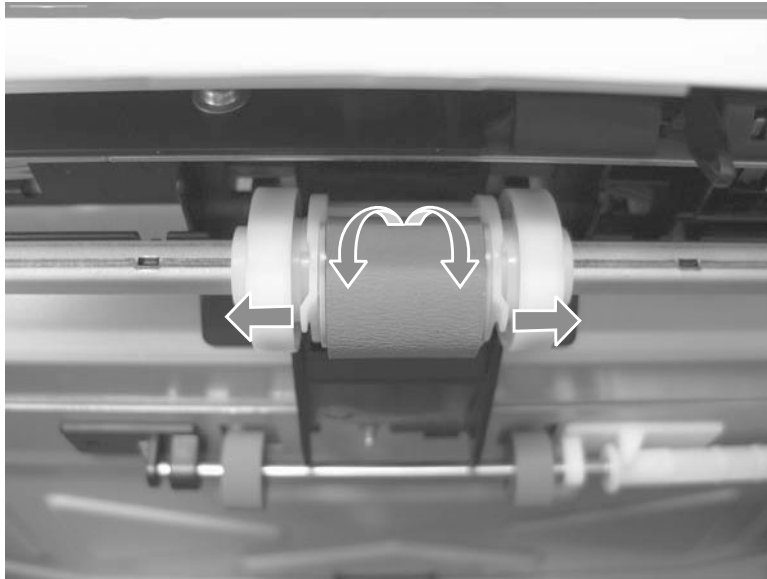
**⚠ WARNING!** Do not place the product face-up resting on the rear cover and rear door. Excess toner might enter the laser/scanner assembly and contaminate the mirrors, causing print-quality problems. The laser/scanner is not a FRU. If the laser/scanner mirrors are contaminated, the entire product must be replaced.

Figure 1-12 Remove the Tray 1 paper-pickup roller (2 of 3)



4. Release two tabs, and then rotate the roller away from the product to remove it.

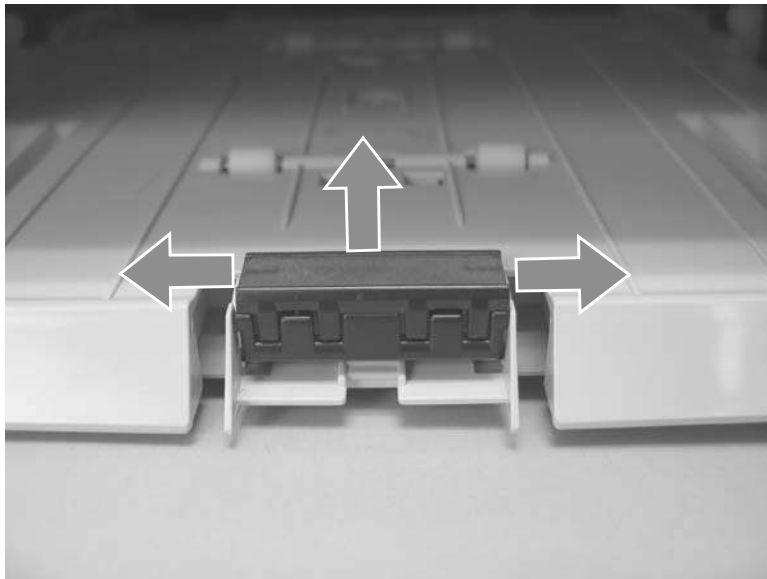
**Figure 1-13** Remove the Tray 1 paper-pickup roller (3 of 3)



5. Release the retainer tabs, and then remove the separation pad from the base.

**CAUTION:** The Tray 1 separation-pad spring is not captive. Do not lose the spring when the separation pad is removed.

**Figure 1-14** Remove the Tray 1 separation pad



## Main assemblies

### Print-cartridge drawer

1. Open the front door.
2. Partially pull out the print-cartridge drawer, and then use a small, flat-blade screwdriver to release one tab (callout 1) on the left side of the product.

Figure 1-15 Remove the print-cartridge drawer (1 of 3)



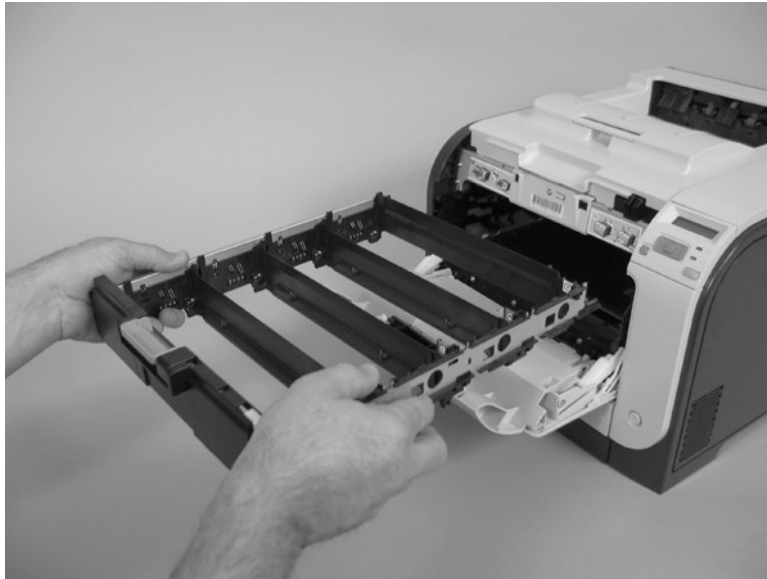
3. Carefully rotate the print-cartridge drawer toward the right side of the product to release it.

Figure 1-16 Remove the print-cartridge drawer (2 of 3)



4. Pull the print-cartridge drawer out of the product to remove it.

**Figure 1-17** Remove the print-cartridge drawer (3 of 3)



## DIMM cover

1. Open the DIMM cover.
2. Lift the cover up to release it, and then remove the cover.

Figure 1-18 Remove the DIMM cover





## Right cover

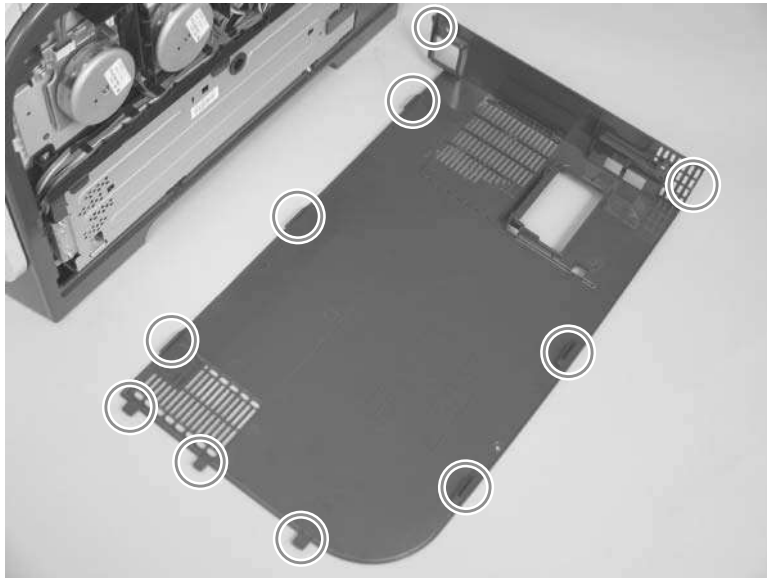
1. Remove the DIMM cover. See [DIMM cover on page 20](#).
2. Open the rear cover, and then remove three screws (callout 1).

Figure 1-19 Remove the right cover (1 of 5)



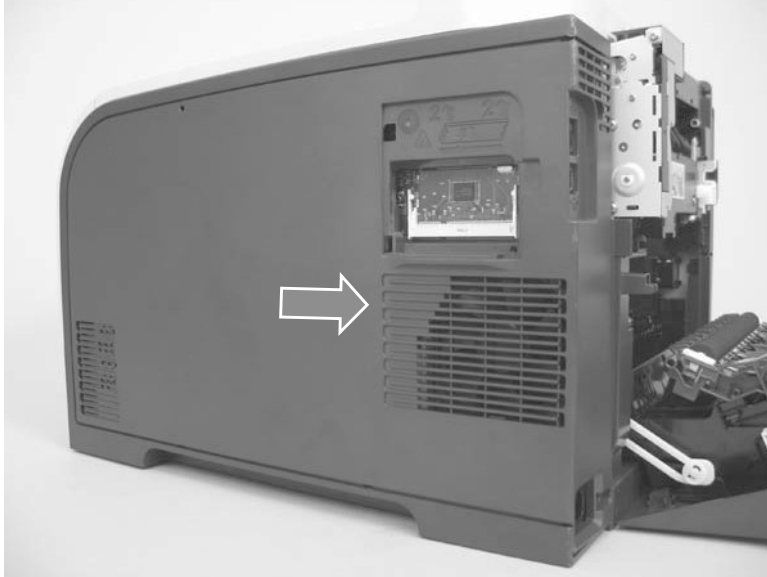
3. Before you proceed, take note of the mounting tab locations on the back of the cover.

Figure 1-20 Remove the right cover (2 of 5)



4. Slide the right cover toward the back of the product.

Figure 1-21 Remove the right cover (3 of 5)



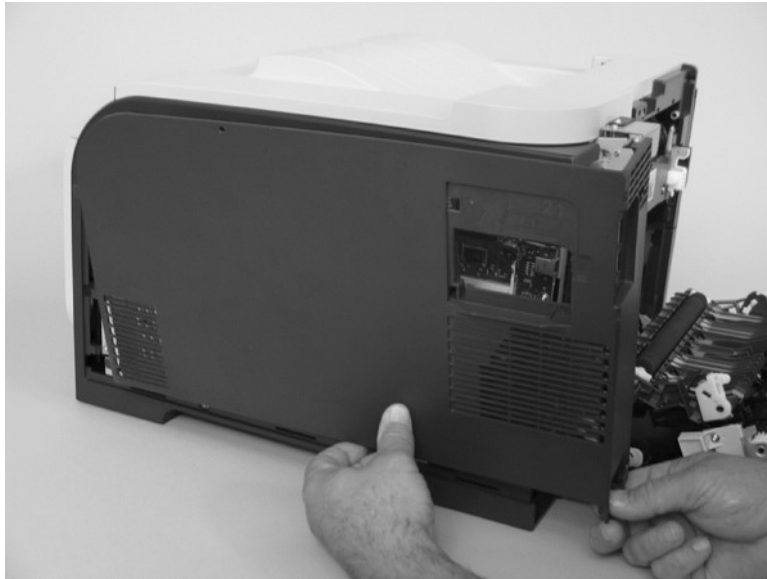
5. Release one tab (callout 1).

Figure 1-22 Remove the right cover (4 of 5)




6. Remove the right cover.

**Figure 1-23** Remove the right cover (5 of 5)

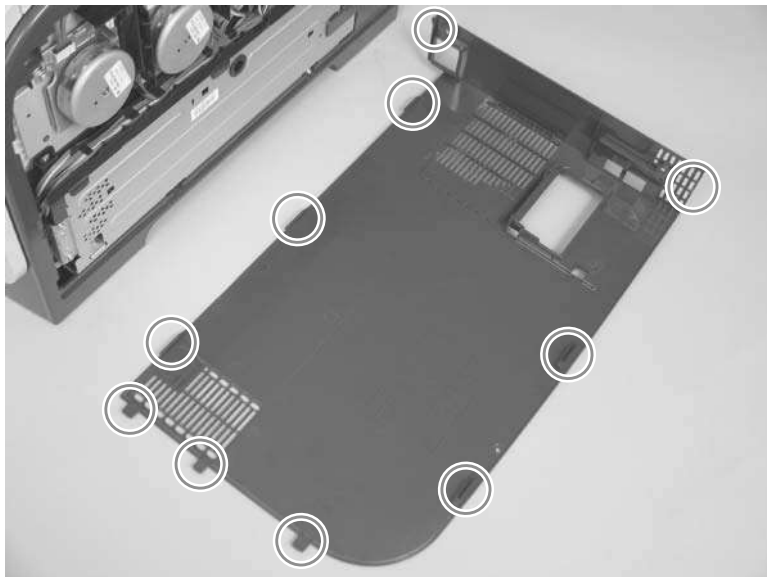


#### Reinstall the right cover

 **NOTE:** Do not reinstall the DIMM cover before reinstalling the right cover. The cover will interfere with the product chassis and prevent the correct installation of the right cover.

- Before you reinstall the right cover, take note of the mounting tab locations on the back of the cover.

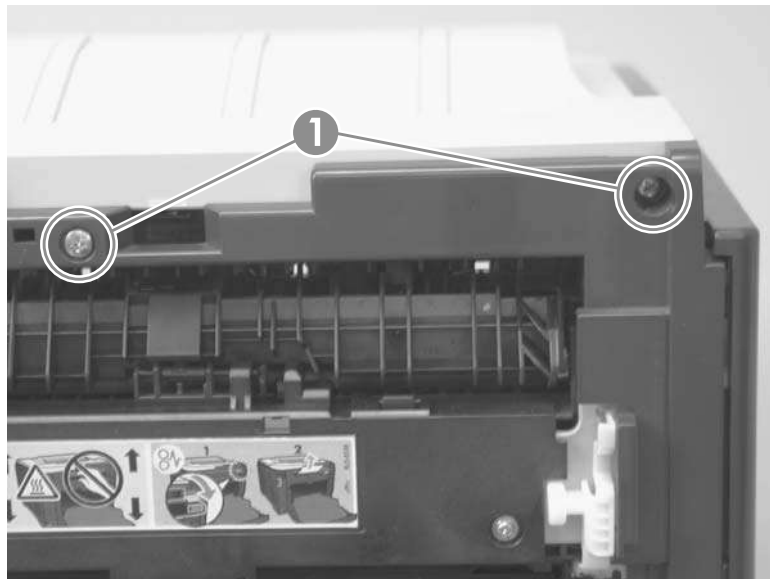
**Figure 1-24** Reinstall the right cover



## Rear-upper cover (duplex product)

1. Open the rear cover.
2. Remove two screws (callout 1).

Figure 1-25 Remove the rear-upper cover (1 of 2)




3. Slightly separate the cover from the product, and rotate the cover down and then away from the product to remove it.

Figure 1-26 Remove the rear-upper cover (2 of 2)



## Rear-door stopper and link caps (simplex product)

1. Open the rear door.
2. Use a pair of needle-nose pliers to release two tabs, and then remove the link cap.

 **TIP:** It might be easier to remove the link caps if you remove the feed assembly. See [Paper-feed guide assembly on page 48](#).

**Figure 1-27** Remove the rear-door stopper and link caps (simplex product) (1 of 2)



3. Use a small, flat-blade screwdriver to carefully remove the remaining link cap, and then remove the rear-door stopper.

**Figure 1-28** Remove the rear-door stopper and link cap (simplex product) (2 of 2)



## Rear door (simplex product)

1. Open the rear door.
2. Use a pair of needle-nose pliers to release two tabs, and then remove the link cap.


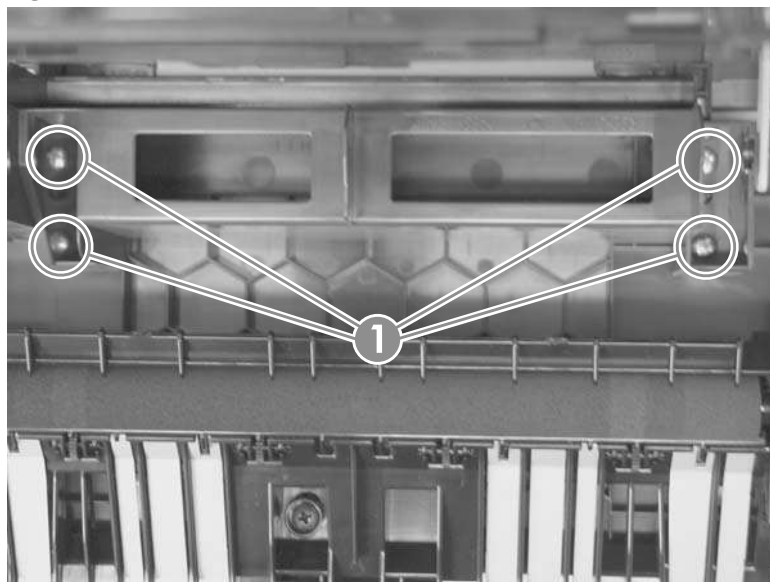
 **TIP:** It might be easier to remove the link cap if you remove the feed assembly. See [Paper-feed guide assembly on page 48](#).

Figure 1-29 Remove the rear door (simplex product) (1 of 4)



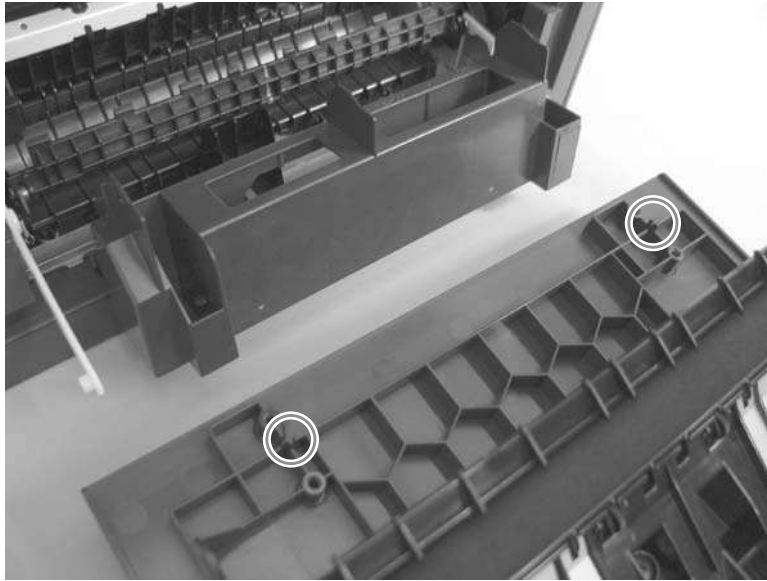
3. Remove four screws (callout 1).

Figure 1-30 Remove the rear door (simplex product) (2 of 4)



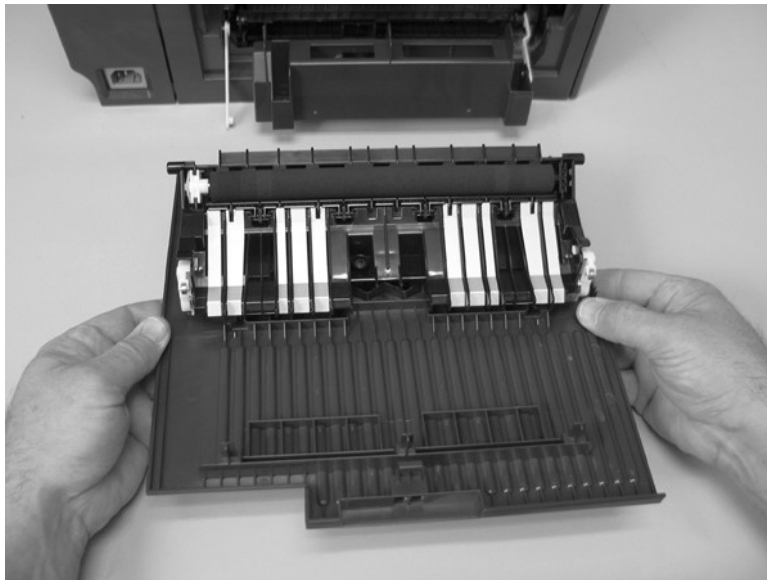
4. Before you remove the rear door, take note of the alignment pins on the door.

**Figure 1-31** Remove the rear door (simplex product) (3 of 4)



5. Remove the rear door.

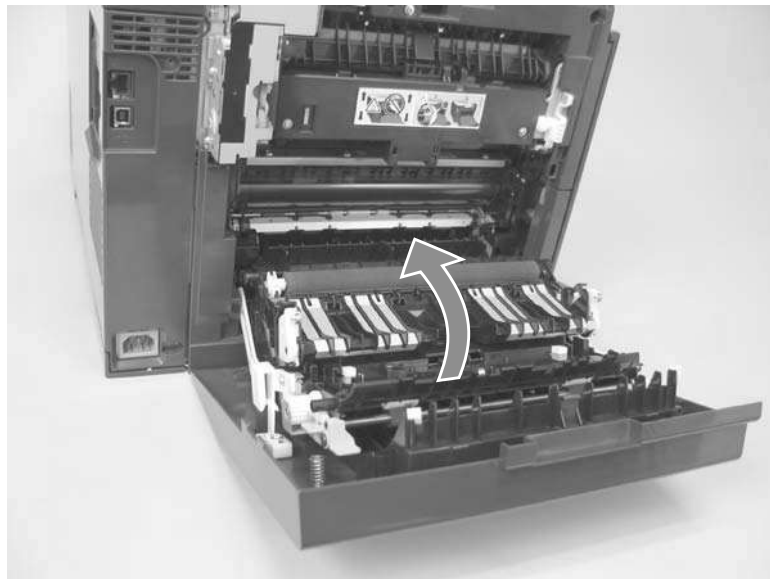
**Figure 1-32** Remove the rear door (simplex product) (4 of 4)



## Rear door (duplex product)

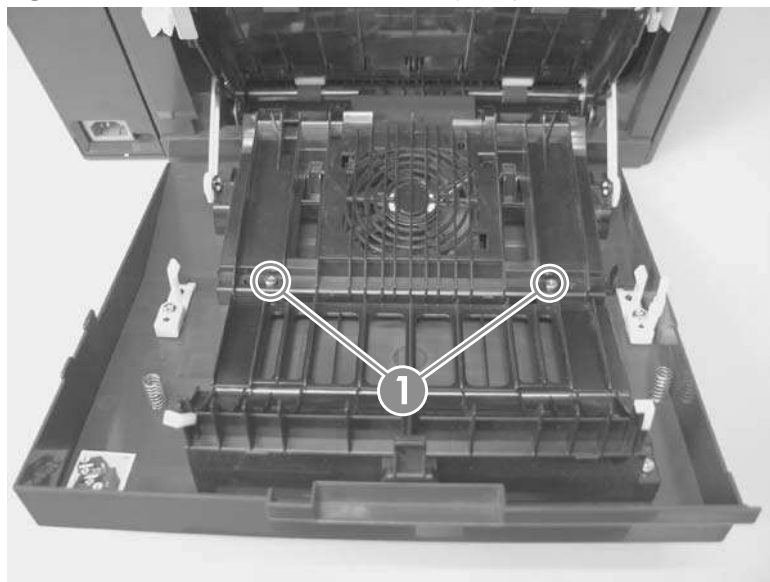
1. Open the rear door.
2. Use the green handle to close the duplex-feed assembly.

Figure 1-33 Remove the rear door (duplex product) (1 of 4)



3. Remove two screws (callout 1).

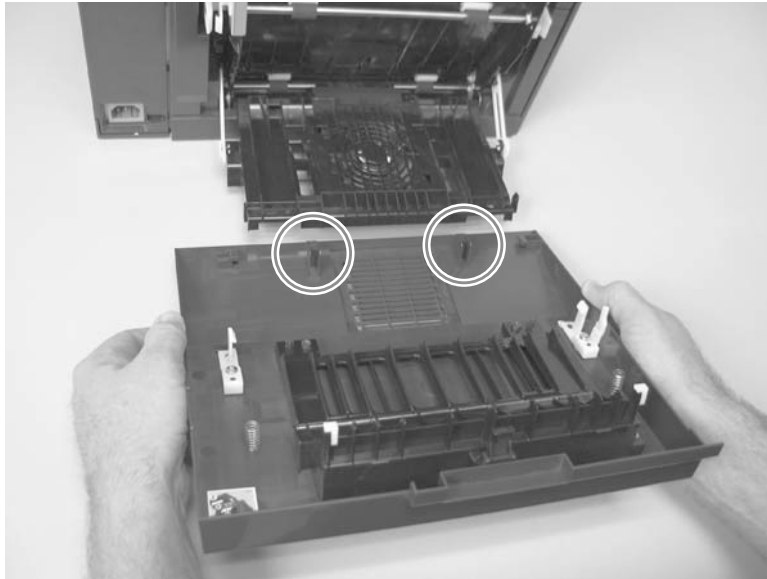
Figure 1-34 Remove the rear door (duplex product) (2 of 4)





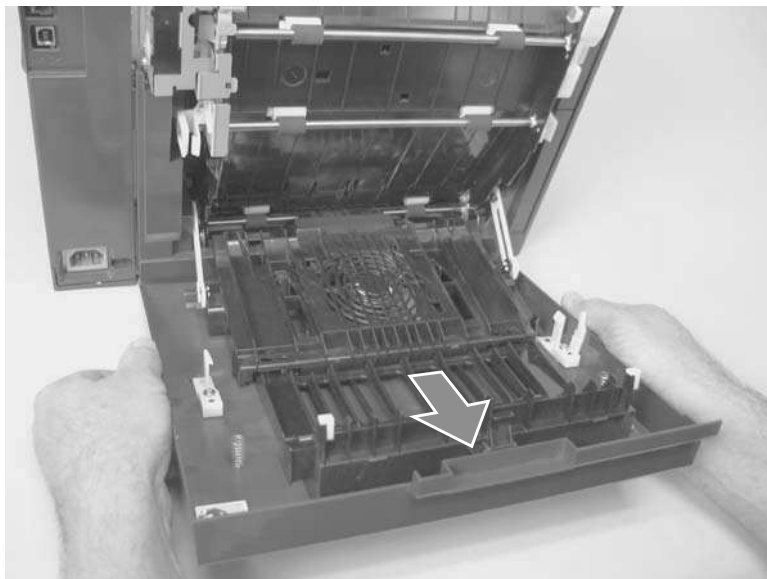
4. Before you remove the rear door, take note of the mounting tabs on the door.

Figure 1-35 Remove the rear door (duplex product) (3 of 4)



5. Slide the door away from the product to release two tabs, and then remove the door.

Figure 1-36 Remove the rear door (duplex product) (4 of 4)



## Rear cover and feed guide (simplex product)

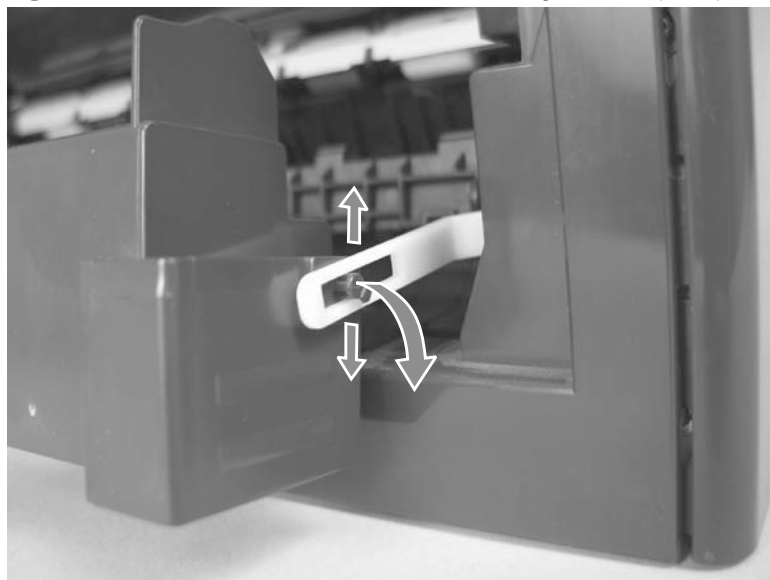
Before proceeding, remove the following components:

- Rear-door stopper. See [Rear-door stopper and link caps \(simplex product\) on page 25](#).
- Rear door. See [Rear door \(simplex product\) on page 26](#).
- Right cover. See [Right cover on page 21](#).

### Remove the rear cover and feed guide (simplex product)

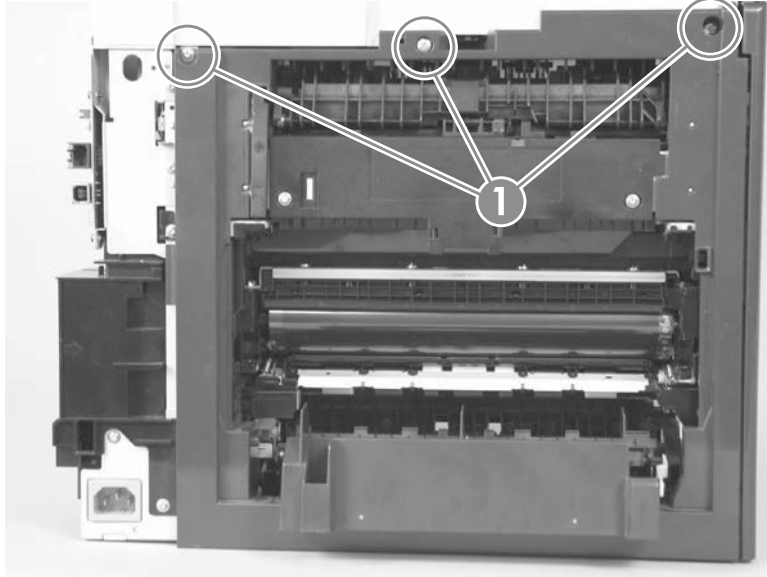
1. Carefully release the link guide from the pivot pin on the feed guide.

Figure 1-37 Remove the rear cover and feed guide (simplex product) (1 of 6)



2. Remove three screws (callout 1).

Figure 1-38 Remove the rear cover and feed guide (simplex product) (2 of 6)



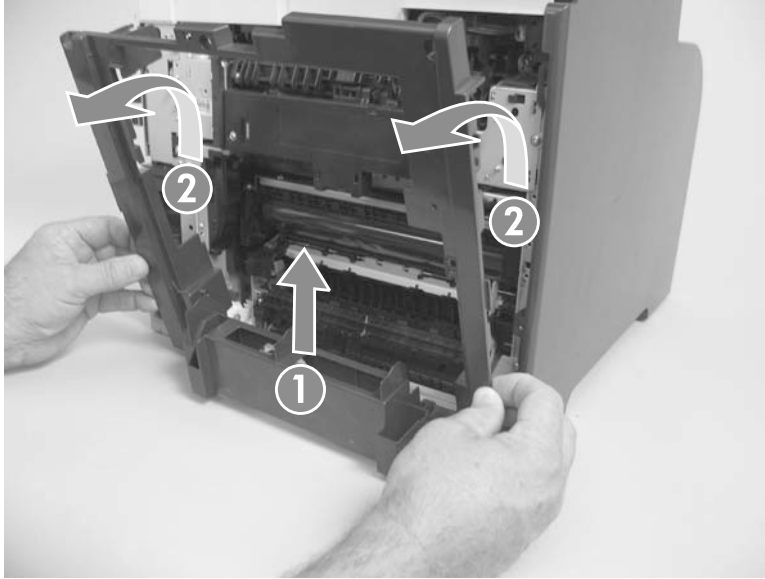
3. Release two tabs (callout 1).


Figure 1-39 Remove the rear cover and feed guide (simplex product) (3 of 6)

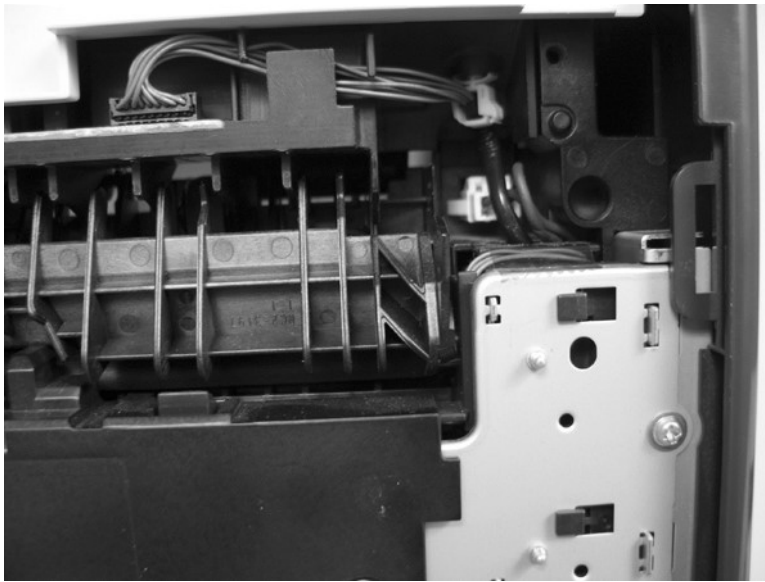


4. Carefully lift the cover up, and then rotate it away from the product to remove it.

Figure 1-40 Remove the rear cover and feed guide (simplex product) (4 of 6)

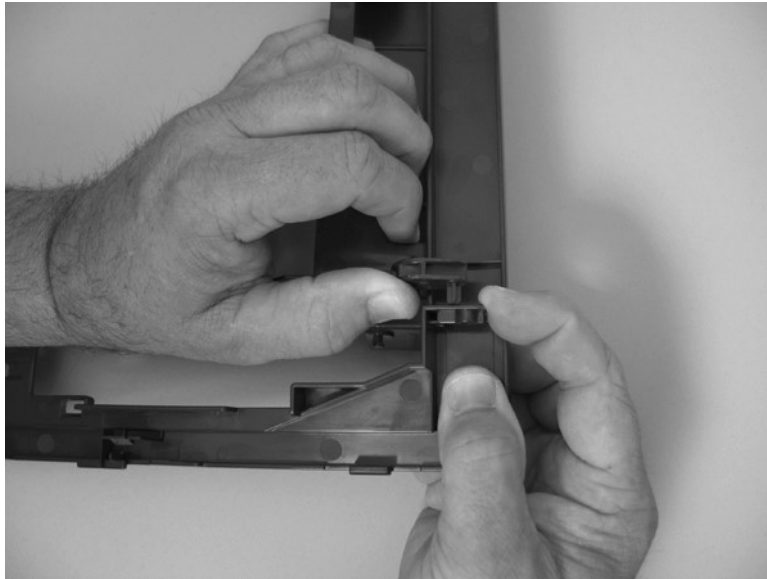


 **Reinstallation tip** Make sure that the wire harnesses at the top of the chassis near the left-side cover are correctly retained so that they are not pinched when the rear cover is reinstalled.



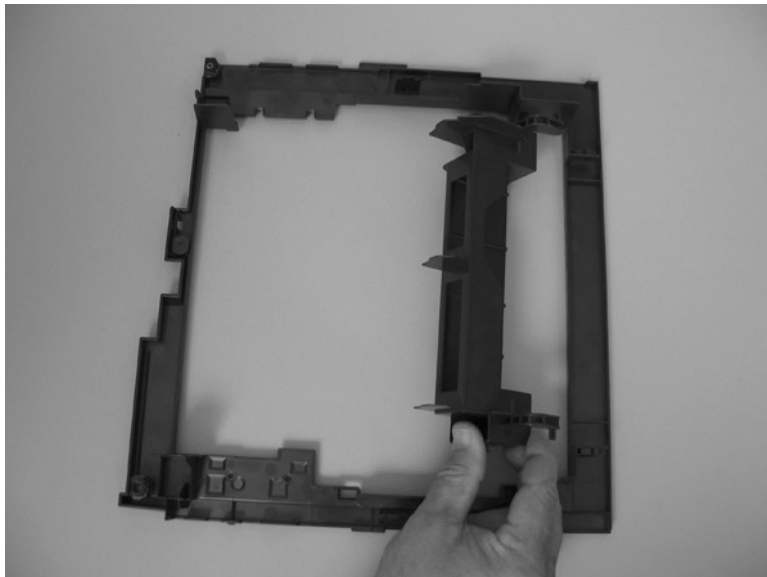
5. Carefully release a feed-guide hinge pin from the rear cover to release the feed guide.

**Figure 1-41** Remove the rear cover and feed guide (simplex product) (5 of 6)



6. Remove the feed guide.

**Figure 1-42** Remove the rear cover and feed guide (simplex product) (6 of 6)



## Rear-lower cover and rear-door links (duplex product)

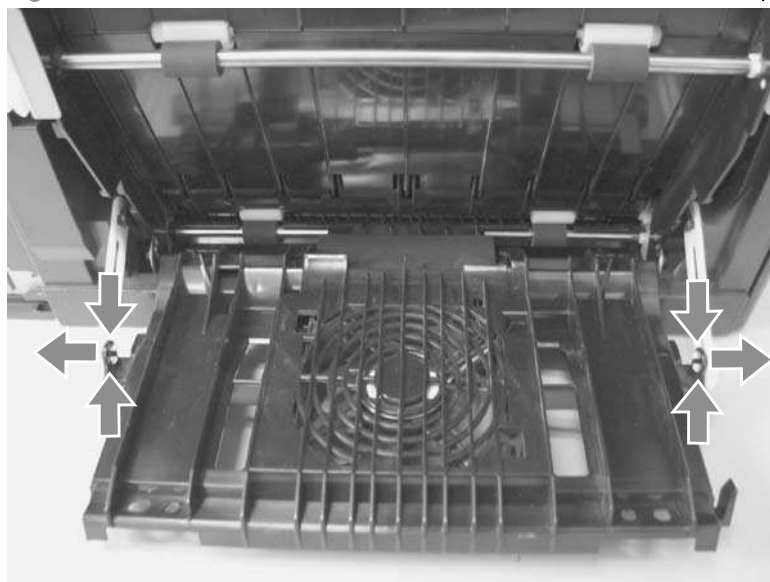
Before proceeding, remove the following components:

- Right cover. See [Right cover on page 21](#).
- Rear-upper cover. See [Rear-upper cover \(duplex product\) on page 24](#).
- Rear door. See [Rear door \(duplex product\) on page 28](#).

### Remove the rear-lower cover and rear-door links (duplex product)

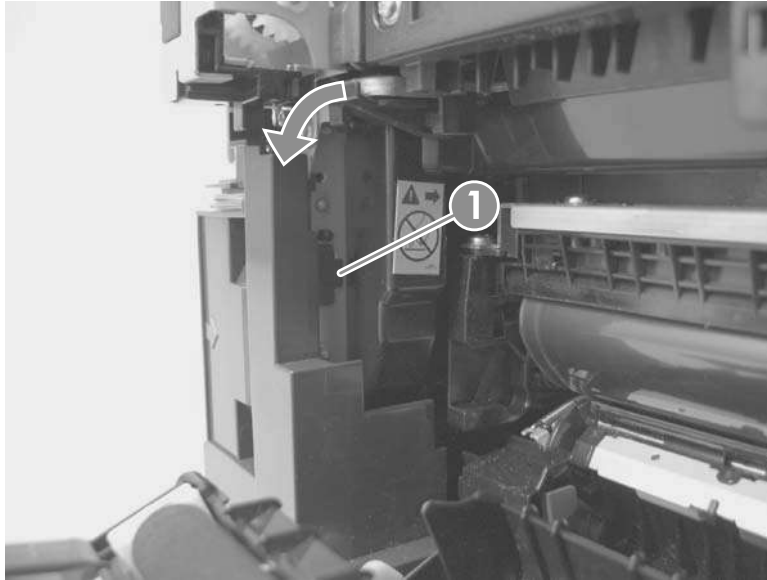
1. Use a pair of needle-nose pliers to release two tabs, and then remove the rear-door link cap. Repeat this step for the remaining rear-door link cap.

Figure 1-43 Remove the rear-lower cover and rear-door links (duplex product) (1 of 6)



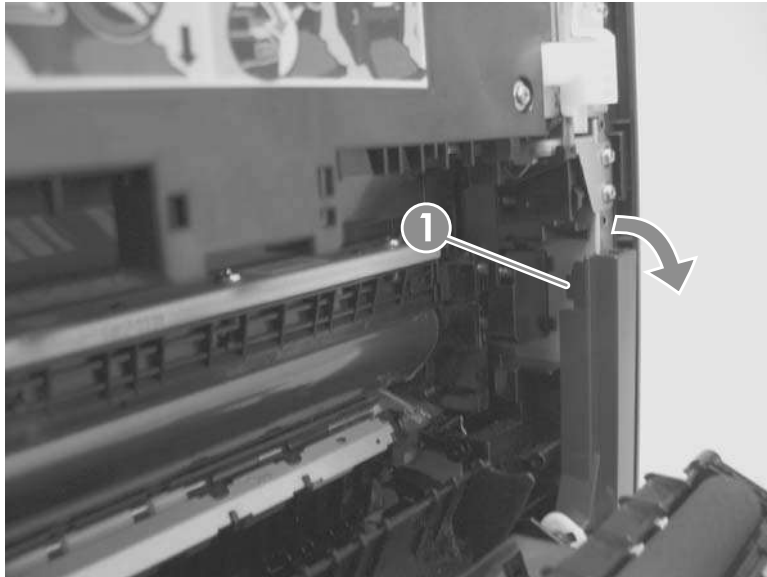
2. Open the duplex-feed assembly, release one tab (callout 1), and then slightly separate the cover from the product.

Figure 1-44 Remove the rear-lower cover and rear-door links (duplex product) (2 of 6)



3. Release one tab (callout 1) and slightly separate the cover from the product.

Figure 1-45 Remove the rear-lower cover and rear-door links (duplex product) (3 of 6)



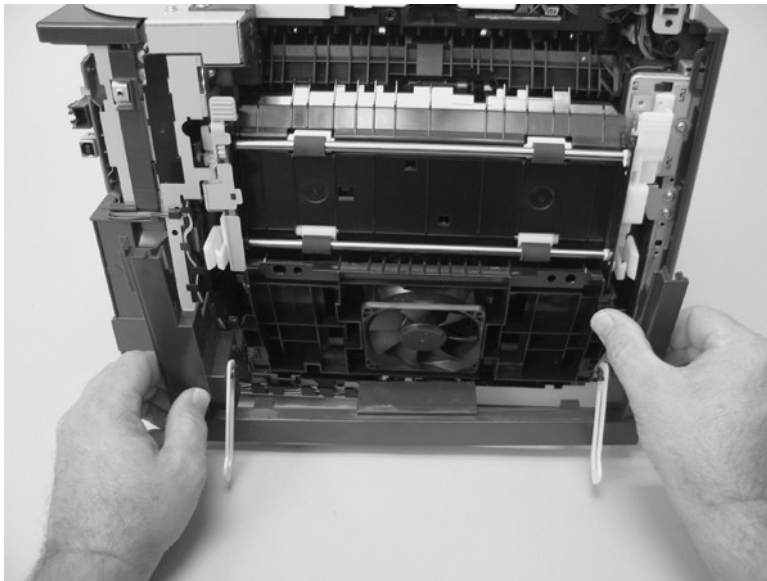
4. Close the duplex assembly, lift up on one side of the cover, and then lift up the other side of the cover to release it.

Figure 1-46 Remove the rear-lower cover and link-guides (duplex product) (4 of 6)




5. Slightly lift up the rear-door rib assembly, and then carefully slide the cover away from the product to remove it.

Figure 1-47 Remove the rear-lower cover and link-guides (duplex product) (5 of 6)



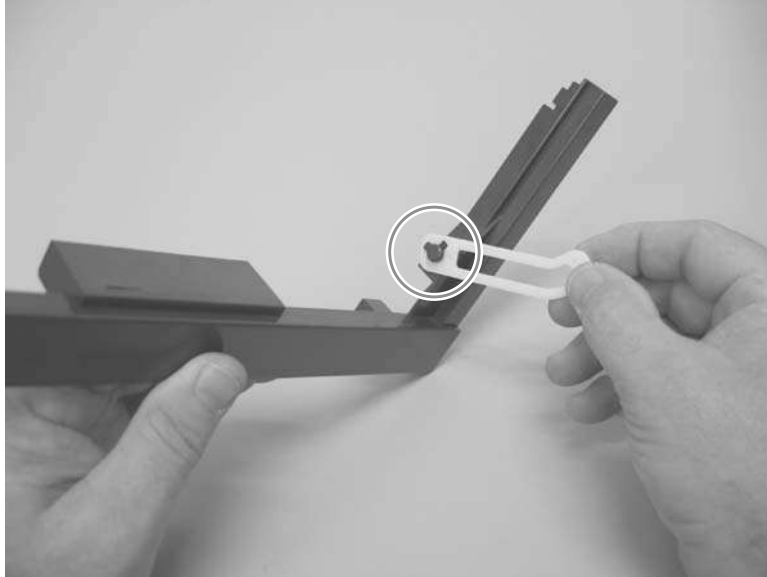


6. Rotate the rear-door link until the slot in the link aligns with the tap on the link-hinge pin, and then remove the rear-door link. Repeat this step for the remaining rear-door link.

 **NOTE:** If you are installing a replacement rear-lower cover, remove the rear-door links from the discarded cover, and then install them on the replacement cover.

---

**Figure 1-48** Remove the rear-lower cover and rear-door links (duplex product) (6 of 6)



## Rear-door rib assembly (duplex product)

Before proceeding, remove the following components:

- Right cover. See [Right cover on page 21](#).
- Rear-upper cover. See [Rear-upper cover \(duplex product\) on page 24](#).
- Rear door. See [Rear door \(duplex product\) on page 28](#).
- Rear-lower cover. See [Rear-lower cover and rear-door links \(duplex product\) on page 34](#).


### Remove the rear-door rib assembly (duplex product)

---

 **NOTE:** The duplex fan (FM2) is a component of the rear-door rib assembly.

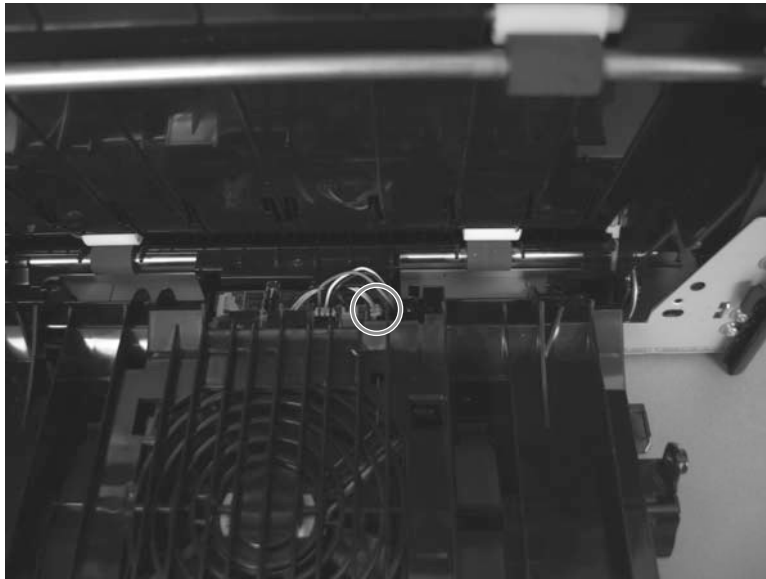
---

1. Disconnect one connector (callout 1).

 **TIP:** The PCA can be dislodged when disconnecting the connector. To secure the PCA, carefully push it towards the inside of the product to clear the mounting tabs near the rib assembly. Slide the PCA towards the rib assembly to position the edge of the PCA under the mounting tabs.

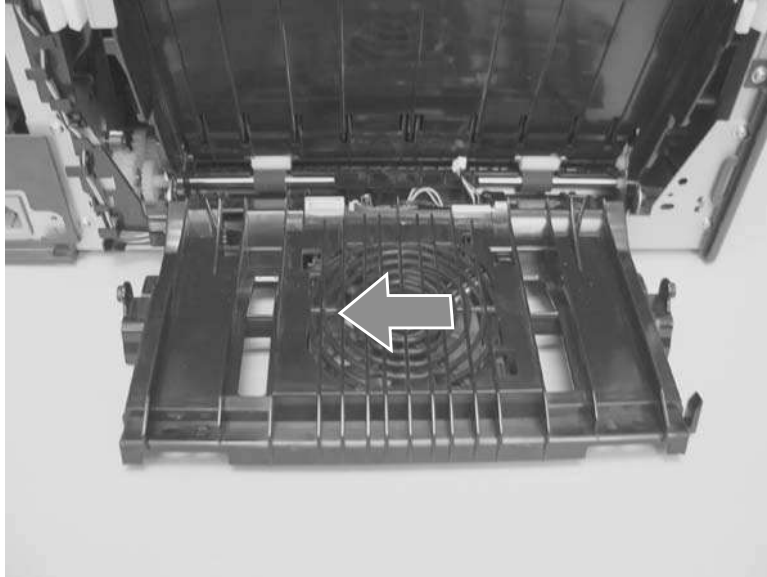
---

**Figure 1-49** Remove the rear-door rib assembly (duplex product) (1 of 3)



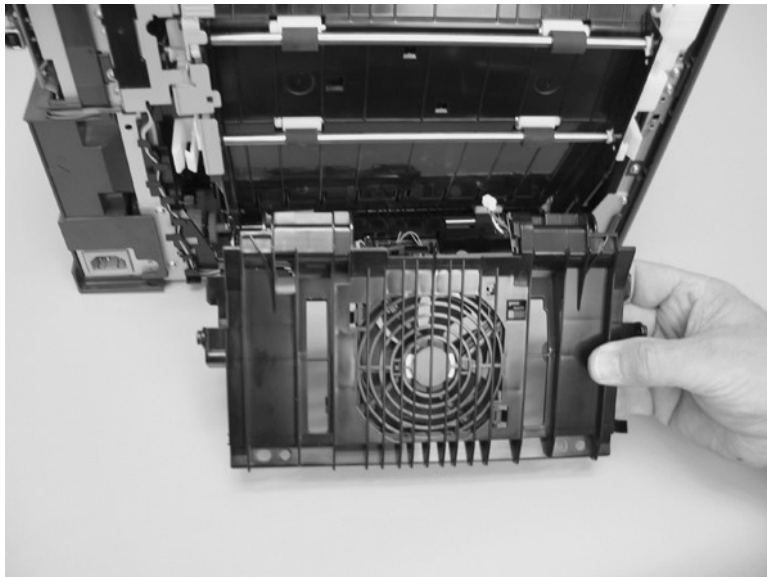
2. Slide the assembly toward the power cord side of the product to release the hinge pin.

**Figure 1-50** Remove the rear-door rib assembly (duplex product) (2 of 3)



3. Remove the assembly.

**Figure 1-51** Remove the rear-door rib assembly (duplex product) (3 of 3)



## Link guide

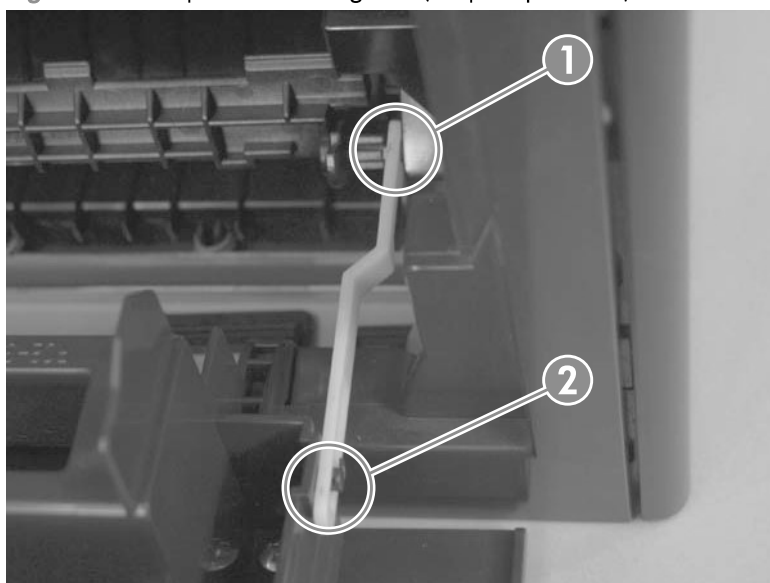
The link guide rarely fails and is not a FRU.

The link is attached to the paper guide (callout 1) and the rear door (simplex products; callout 2) or duplexing feed guide assembly (duplex products; callout 3).

If the link-guide attachment at the rear door or duplexing feed guide assembly fails, replace the appropriate component.

The interior paper guide is not replaceable. If the link guide to paper guide attachment fails, you must replace the entire product.

**Figure 1-52** Replace the link guide (simplex products)



**Figure 1-53** Replace the link guide (duplex products)



## Upper-cover assembly

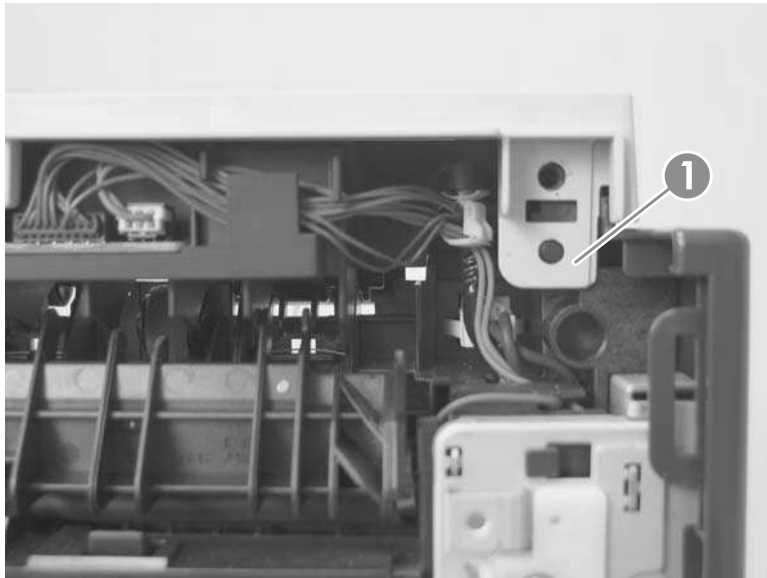
1. Remove the Rear-upper cover. See [Rear-upper cover \(duplex product\) on page 24](#).
2. Remove one screw (callout 1).

Figure 1-54 Remove the upper-cover assembly (1 of 4)



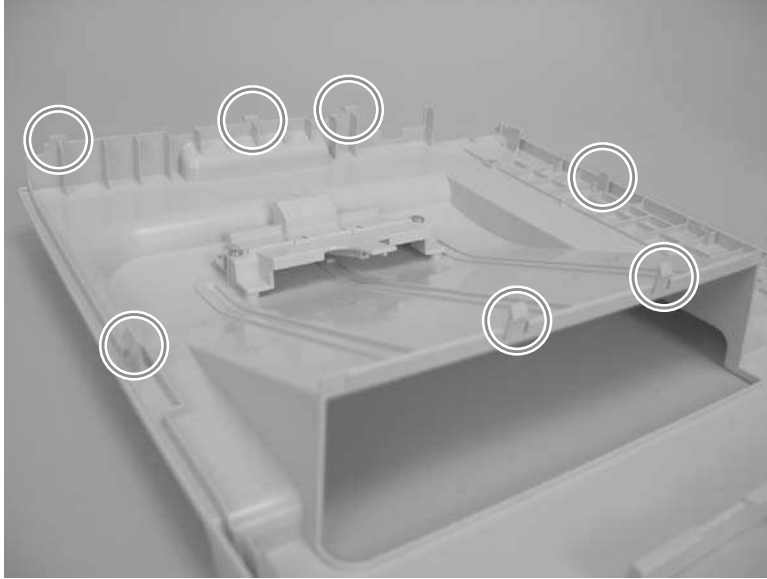
3. Release one tab (callout 1).

Figure 1-55 Remove the upper-cover assembly (2 of 4)



4. Before you proceed, take note of location of the top cover tabs.

Figure 1-56 Remove the upper-cover assembly (3 of 4)



5. Carefully rotate the back side of the top cover up and off of the product to release the tabs, and then remove the cover.

---

 **NOTE:** When you reinstall the upper cover, ensure that all the mounting tabs are correctly seated. See [Reinstall the upper cover on page 43](#).

---

Figure 1-57 Remove the upper-cover assembly (4 of 4)



## Reinstall the upper cover

- When you reinstall the upper cover, ensure that the two tabs in the paper delivery area are fully seated into the chassis.

Figure 1-58 Upper-cover tabs correctly seated

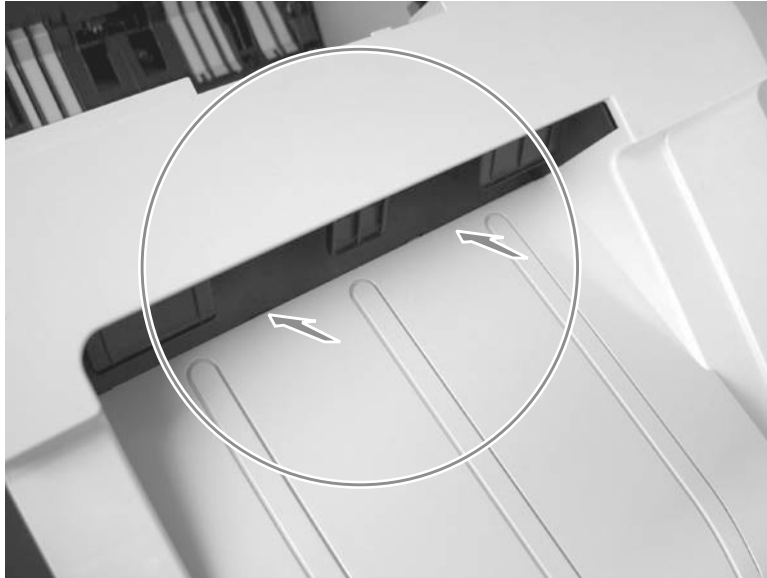
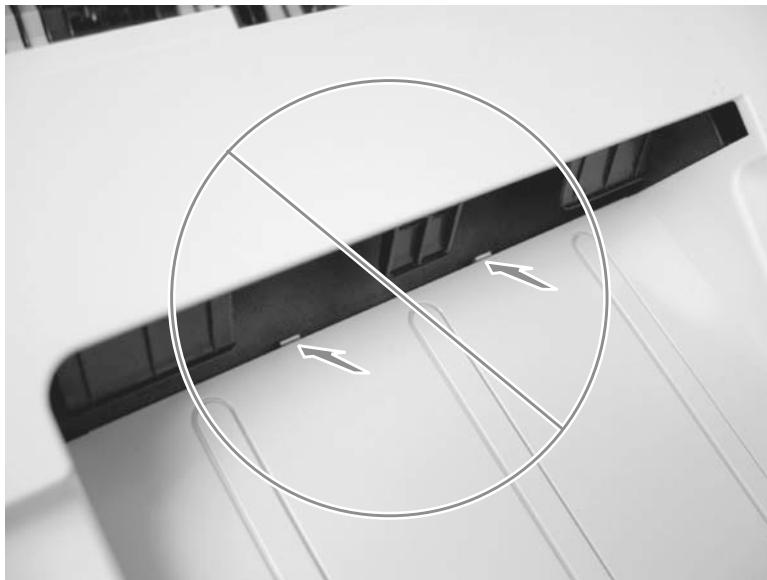


Figure 1-59 Upper-cover tabs *not* correctly seated



## Left cover

Before proceeding, remove the following components:

- Right cover. See [Right cover on page 21](#).
- Rear cover (simplex products). See [Rear cover and feed guide \(simplex product\) on page 30](#).
- Rear-lower cover (duplex products). See [Rear-upper cover \(duplex product\) on page 24](#).
- Upper-cover assembly. See [Upper-cover assembly on page 41](#).

### Remove the left cover

1. Remove one screw (callout 1).

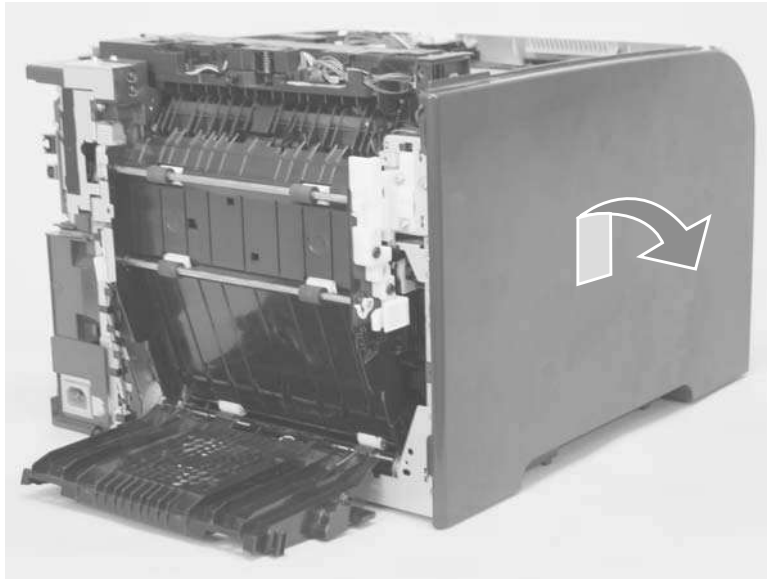
Figure 1-60 Remove the left cover (1 of 3)





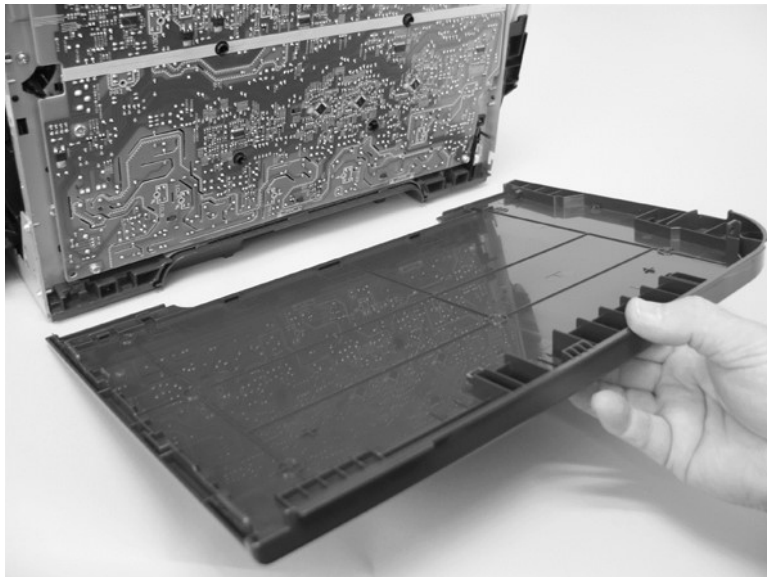
2. Slightly lift up on the cover, and then rotate the top of the cover away from the product.

Figure 1-61 Remove the left cover (2 of 3)



3. Remove the cover.

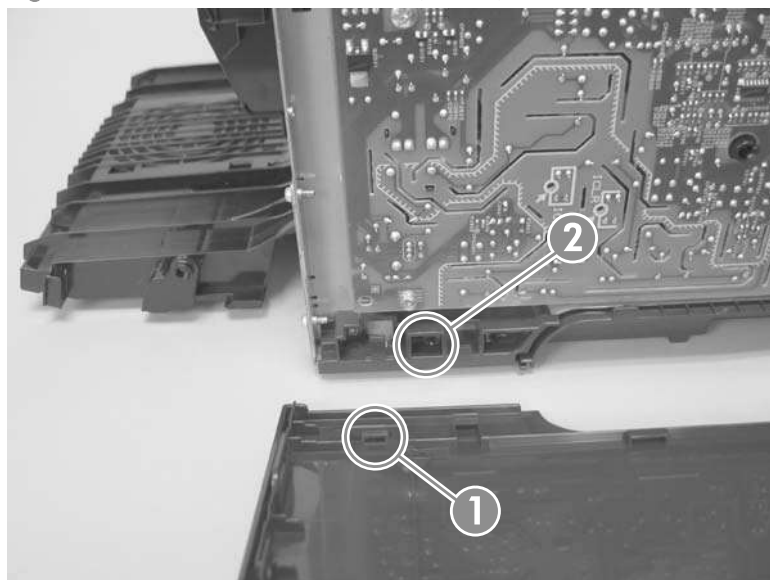
Figure 1-62 Remove the left cover (3 of 3)



## Reinstall the left cover

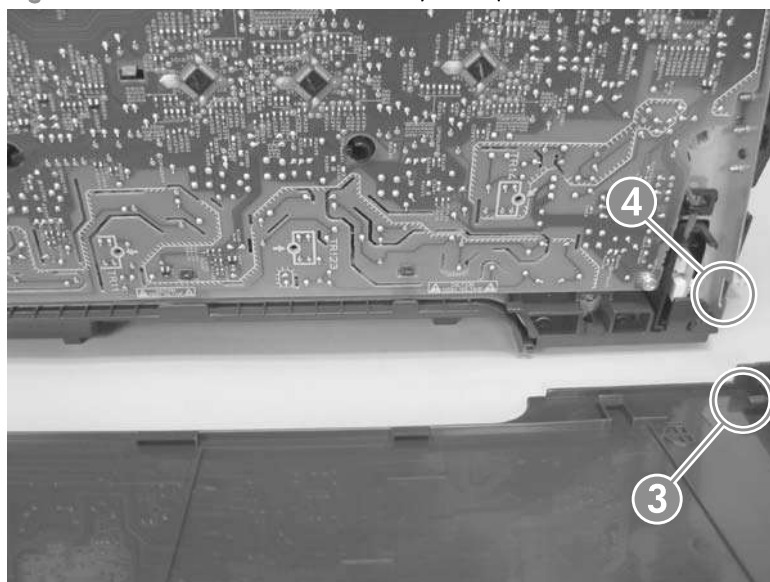
1. When you reinstall the left cover, ensure that the slot in the cover (callout 1) aligns with the tab (callout 2) on the product.

Figure 1-63 Reinstall the left cover (1 of 2)



2. When you reinstall the left cover, ensure that the pin on the cover (callout 1) aligns with the slot (callout 2) in the product.

Figure 1-64 Reinstall the left cover (2 of 2)



## Right-front cover and power button

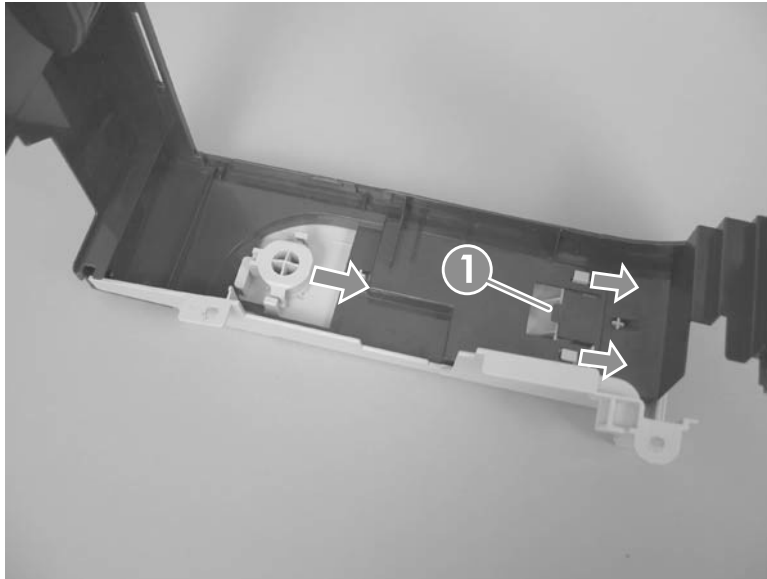
Before proceeding, remove the following components:

- Right cover. See [Right cover on page 21](#).
- Rear-upper cover (duplex products). See [Rear-upper cover \(duplex product\) on page 24](#).
- Upper-cover assembly. See [Upper-cover assembly on page 41](#).
- Control-panel assembly. See [Control-panel assembly on page 50](#).
- Right panel. See [Right panel on page 52](#).

### Remove the right-front cover and power button

1. Lift up on one tab (callout 1) and then slide the right-front cover toward the top edge of the right panel to separate the cover from the panel.

**Figure 1-65** Remove the right-front cover and power button (1 of 2)




2. Release two tabs (callout 1), and then remove the power button.

Figure 1-66 Remove the right-front cover and power button (2 of 2)



## Paper-feed guide assembly

 **NOTE:** A simplex model is shown below. Duplex and simplex models use the same paper-feed guide assembly, and the removal and replacement processes are identical.

1. Remove one screw (callout 1).


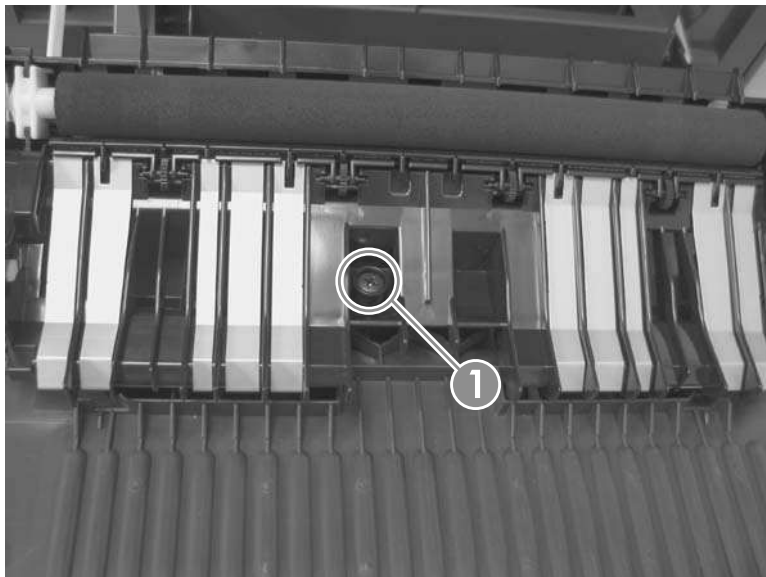
 **CAUTION:** The bushing on this screw is not captive. Do not lose the bushing when the screw is removed.

Figure 1-67 Remove the feed assembly (1 of 2)



2. Remove the feed assembly.

**CAUTION:** Do not touch the black sponge portion of the roller. Skin oils on the roller can cause print-quality problems.

**Reinstallation tip** When the feed assembly is correctly reinstalled, the assembly can move in relation to the door. It should not be secured firmly to the door.

Figure 1-68 Remove the feed assembly (2 of 2)



## Control-panel assembly

Before proceeding, remove the following components:

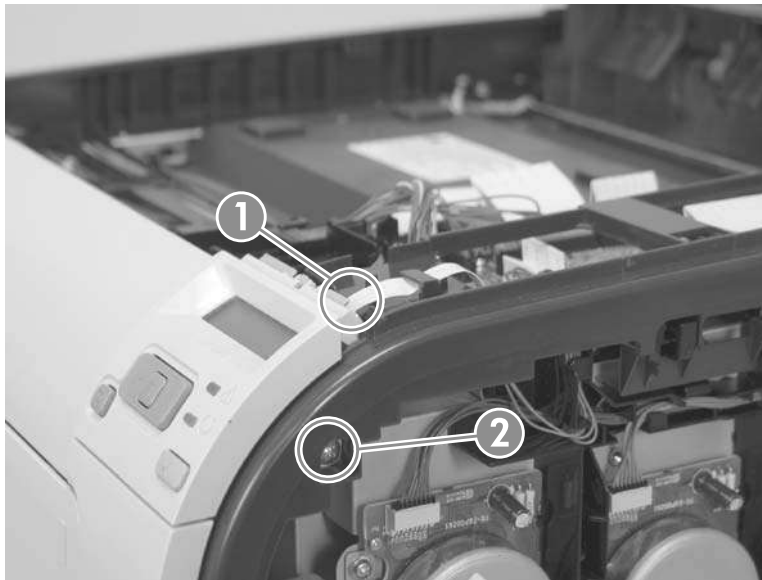
- Right cover. See [Right cover on page 21](#).
- Rear-upper cover (duplex products). See [Rear-upper cover \(duplex product\) on page 24](#).
- Upper-cover assembly. See [Upper-cover assembly on page 41](#).

### Remove the control-panel assembly

**⚠ CAUTION:** Do not bend or fold the flat flexible cables (FFCs) during removal or installation. Also, do not straighten prefolds in the FFCs. You *must* ensure that all FFCs are fully seated in their connectors. Failure to fully seat an FFC into a connector can cause a short circuit in a PCA.

1. Disconnect one FFC (callout 1), and then remove one screw (callout 2).

Figure 1-69 Remove the control-panel assembly (1 of 3)



2. Open the front door, and then remove two screws (callout 1).

Figure 1-70 Remove the control-panel assembly (2 of 3)



3. Remove the control-panel assembly.

Figure 1-71 Remove the control-panel assembly (3 of 3)



## Right panel

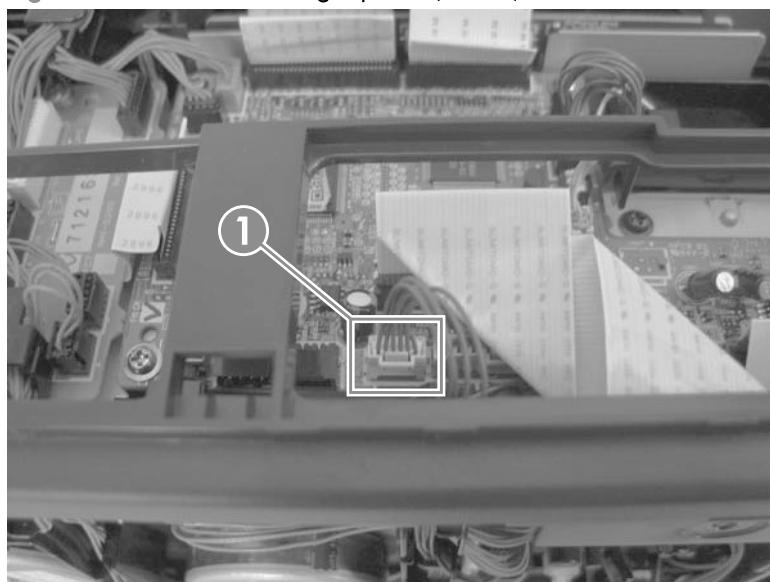
Before proceeding, remove the following components:

- Right cover. See [Right cover on page 21](#).
- Rear-upper cover (duplex products). See [Rear-upper cover \(duplex product\) on page 24](#).
- Upper-cover assembly. See [Upper-cover assembly on page 41](#).
- Control-panel assembly. See [Control-panel assembly on page 50](#).

### Remove the right panel

1. Disconnect one connector (callout 1; J206) on the DC controller.

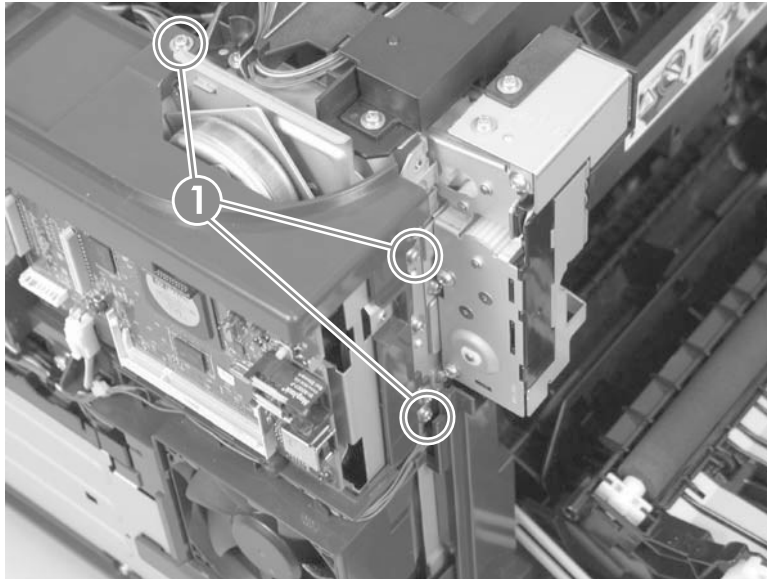
Figure 1-72 Remove the right panel (1 of 8)





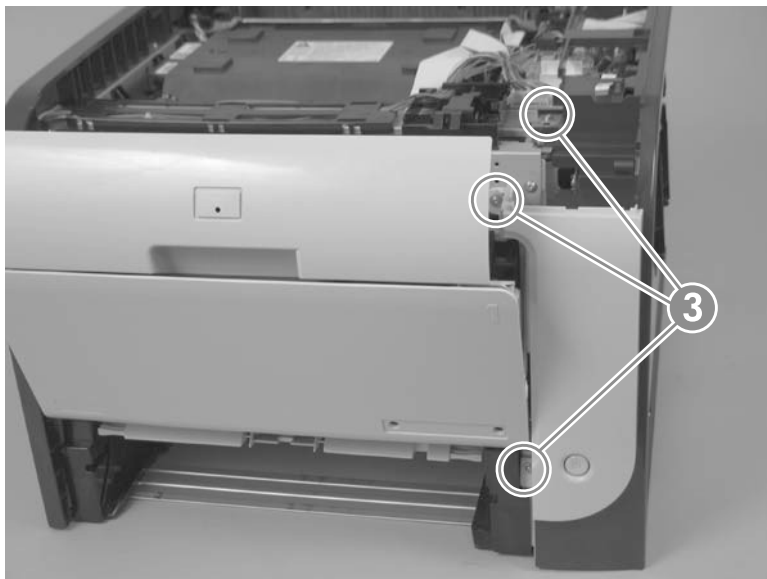
2. Remove three screws (callout 1).

Figure 1-73 Remove the right panel (2 of 8)



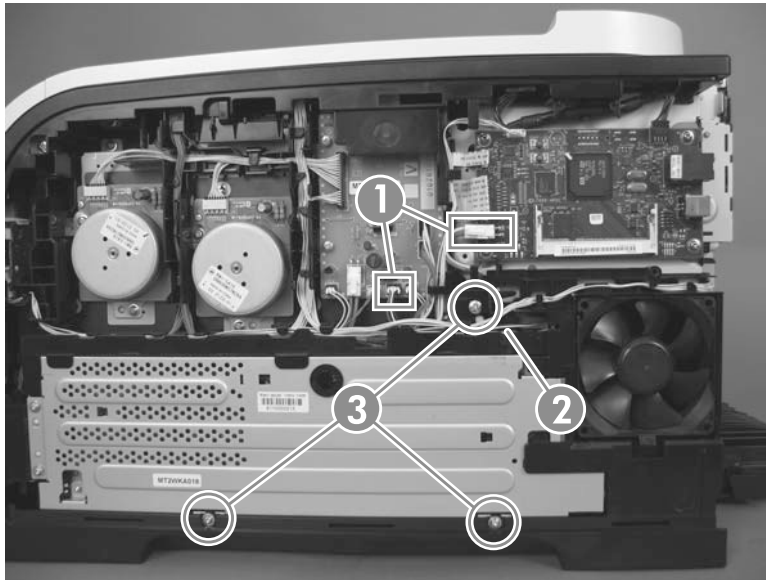
3. Remove three screws (callout 1).

Figure 1-74 Remove the right panel (3 of 8)



4. Disconnect two connectors (callout 1), release the fan wire harness from the guide (callout 2), and then remove three screws (callout 3).

Figure 1-75 Remove the right panel (4 of 8)



5. Place the power button in the on position (callout 1).


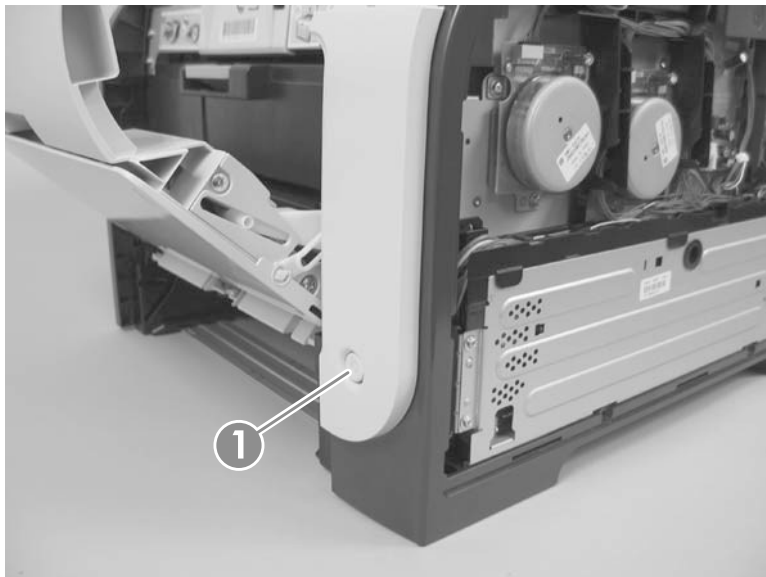
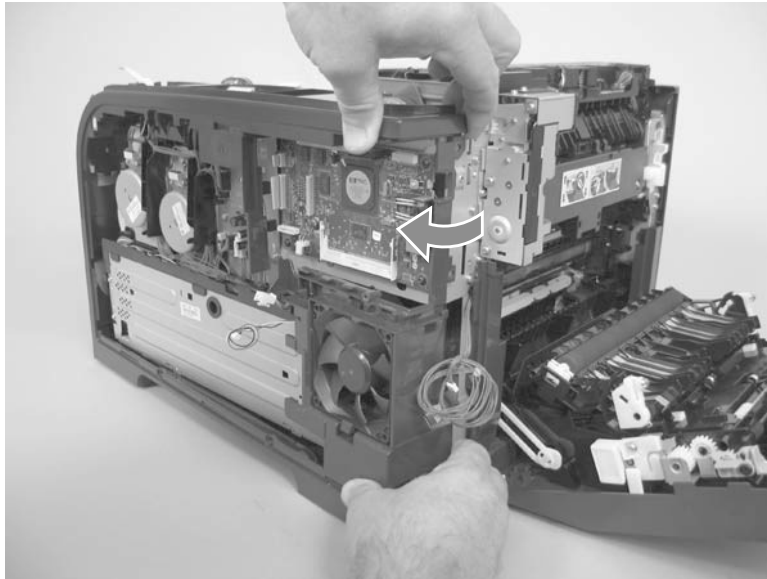
 **TIP:** When you reinstall the panel, ensure that you place the power button in the off position so that the product does not immediately turn on when the power cord is plugged into the wall receptacle.

Figure 1-76 Remove the right panel (5 of 8)



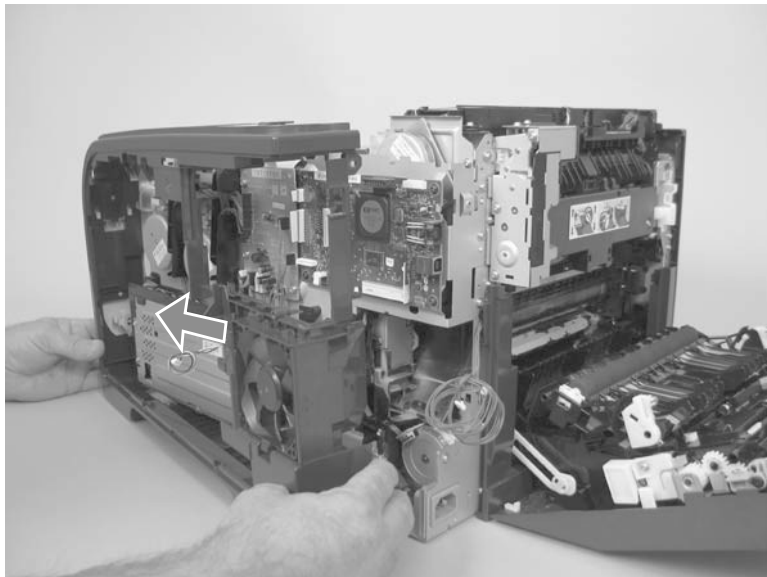
6. Carefully rotate the back edge of the panel away from the product.

**Figure 1-77** Remove the right panel (6 of 8)



7. Carefully push the panel slightly toward the front of the product to release it.

**Figure 1-78** Remove the right panel (7 of 8)



8. Remove the right panel.


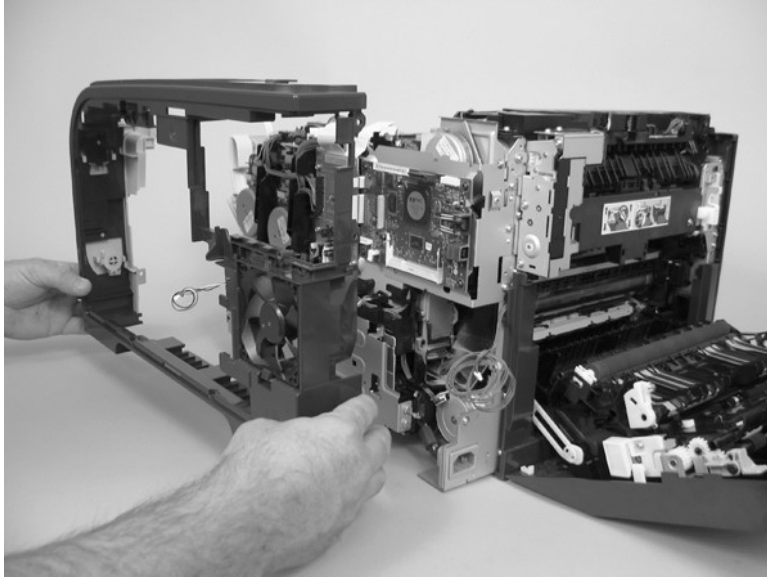
 **NOTE:** If you are replacing the right panel, you must remove the fan and the right-front cover (the cover includes the power button) from the right panel. See [Fan on page 88](#) and [Right-front cover and power button on page 47](#).

Figure 1-79 Remove the right panel (8 of 8)



## Front-door assembly

Before proceeding, remove the following components:

- Print-cartridge drawer. See [Print-cartridge drawer on page 18](#)
- Right cover. See [Right cover on page 21](#).
- Upper-cover assembly. See [Upper-cover assembly on page 41](#).
- Left cover. See [Left cover on page 44](#).
- Rear door (simplex products). See [Rear door \(simplex product\) on page 26](#).
- Rear cover (simplex products). See [Rear cover and feed guide \(simplex product\) on page 30](#).
- Rear-upper cover (duplex products). See [Rear-upper cover \(duplex product\) on page 24](#).
- Rear door (duplex products). See [Rear door \(duplex product\) on page 28](#).
- Rear-lower cover (duplex products). See [Rear-lower cover and rear-door links \(duplex product\) on page 34](#).
- Control-panel. See [Control-panel assembly on page 50](#)
- Right panel. See [Right panel on page 52](#).

### Remove the front-door assembly

1. Find the front-door pin on the left-side door link.

**Figure 1-80** Remove the front-door assembly (1 of 10)



2. Use a precision point screwdriver to push the left-side door pin out of the link.


 **NOTE:** A precision-point screwdriver is required to release the front door pins. The width of the blade must be 2 mm (0.08 in) or less to be able to push the door pins out of the mounting holes.

Figure 1-81 Remove the front-door assembly (2 of 10)



3. Use a precision-point screwdriver to push the right-side door pin out of the link.


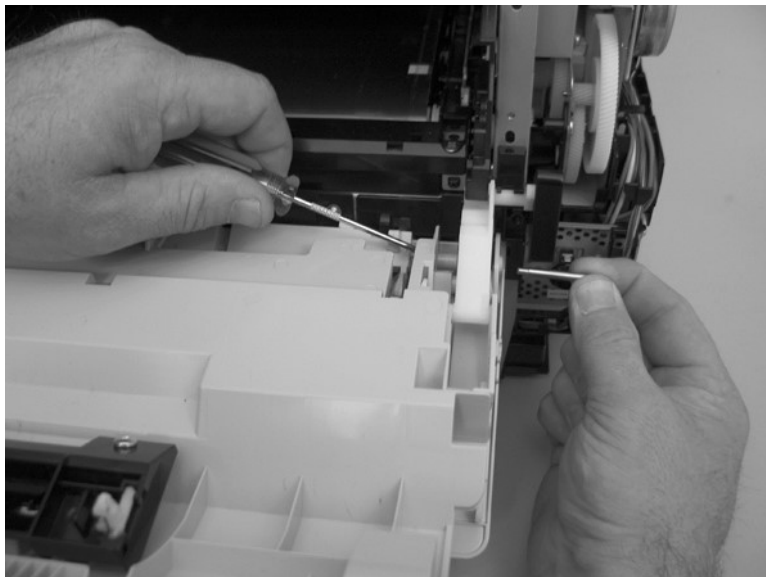
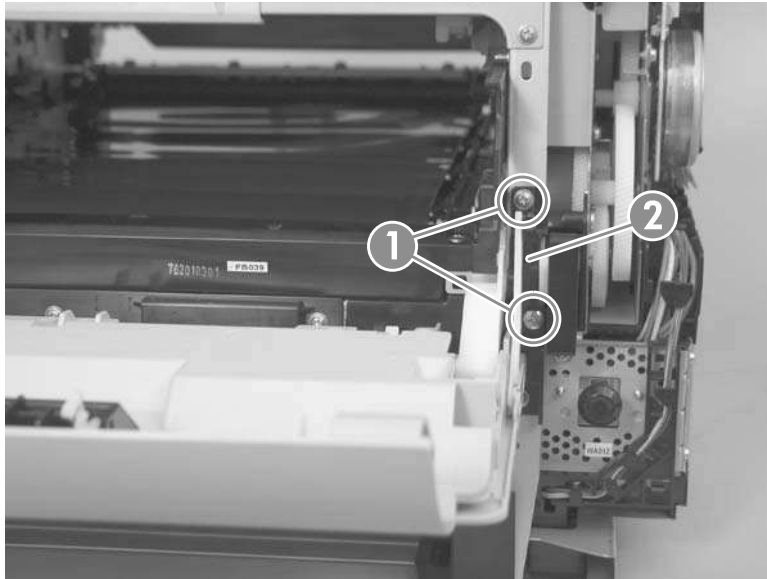
 **NOTE:** A precision-point screwdriver is required to release the front door pins. The width of the blade must be 2 mm (0.08 in) or less to be able to push the door pins out of the mounting holes.

Figure 1-82 Remove the front-door assembly (3 of 10)



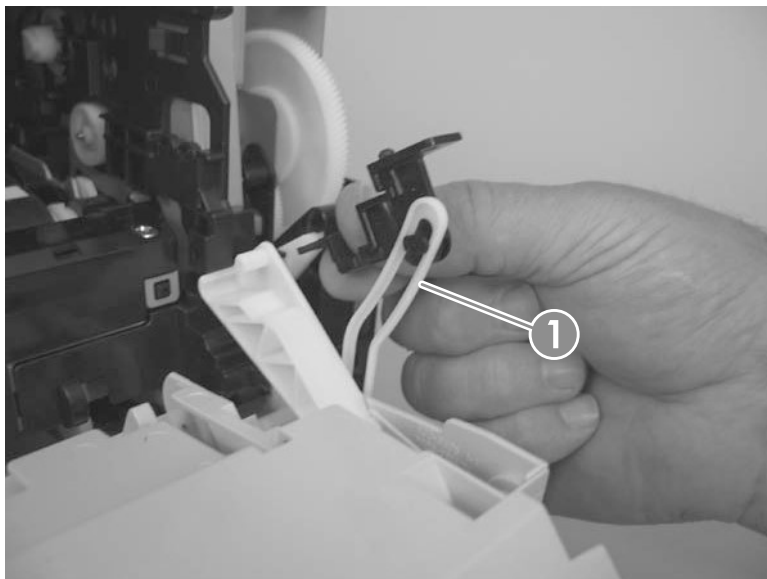
4. Remove two screws (callout 1) and separate the door bushing (callout 2) from the chassis.

Figure 1-83 Remove the front-door assembly (4 of 10)



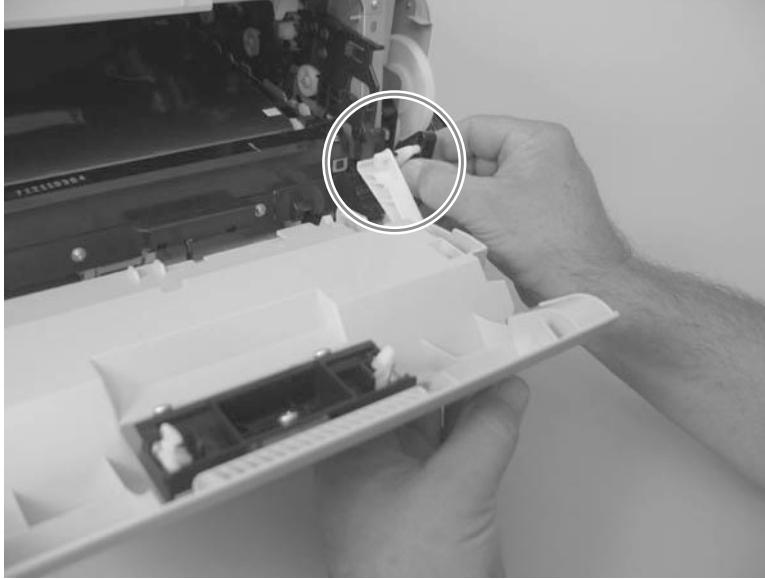
5. Release the bushing from the door-retainer link (callout 1).

Figure 1-84 Remove the front-door assembly (5 of 10)



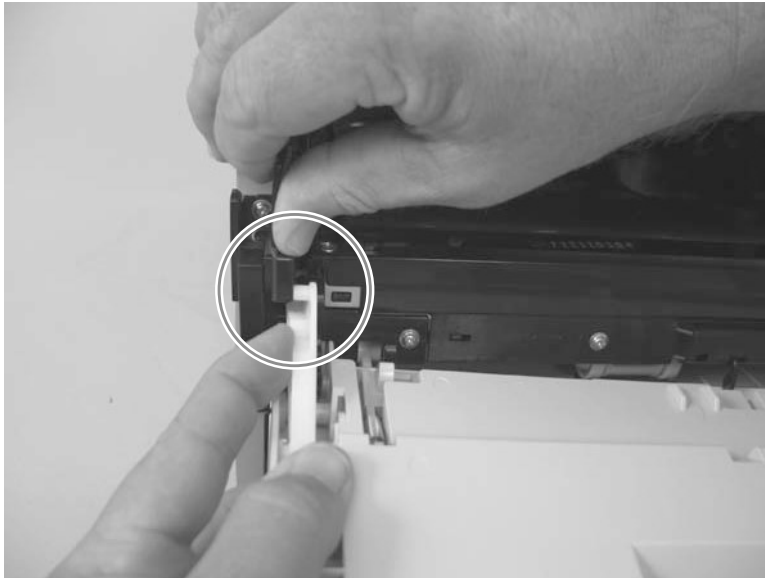
6. Support the door assembly, and carefully release the pin on the right-side link.

Figure 1-85 Remove the front-door assembly (6 of 10)



7. Support the door assembly, and carefully release the upper pin on the left-side link.

Figure 1-86 Remove the front-door assembly (7 of 10)





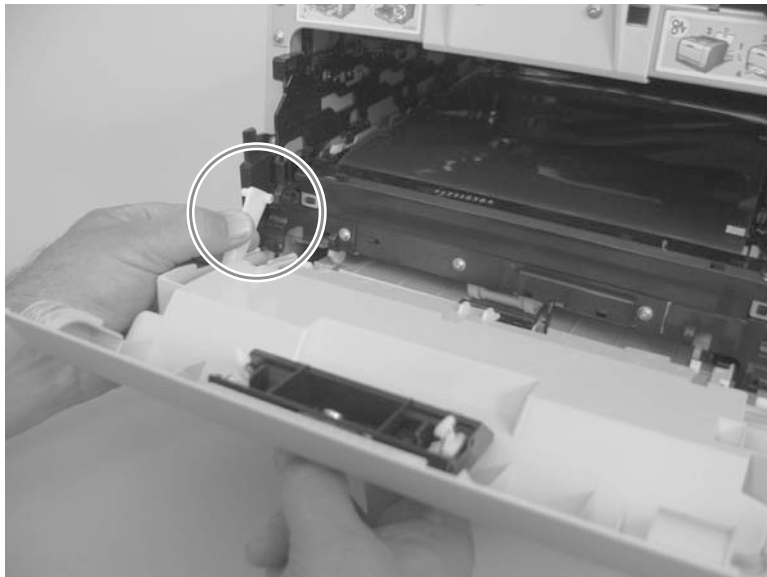
8. Push the black-plastic arm into the product.

Figure 1-87 Remove the front-door assembly (8 of 10)



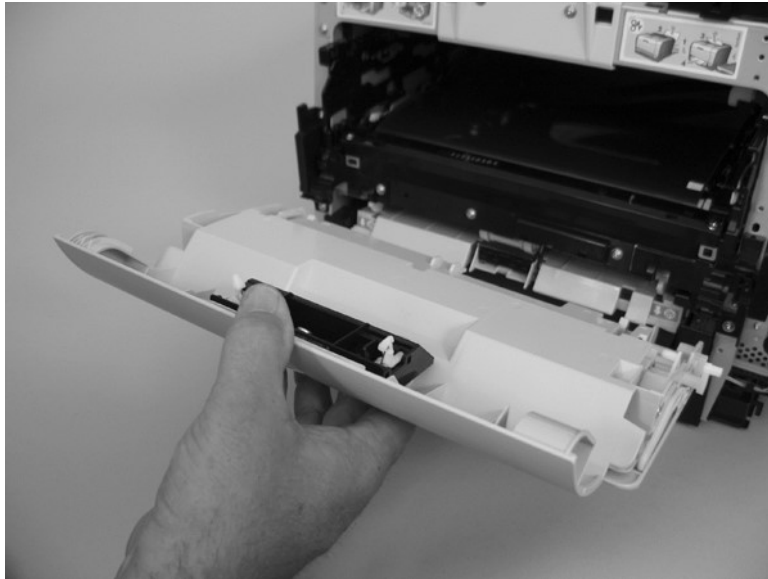
9. Support the door assembly, and carefully release the lower pin on the left-side link.

Figure 1-88 Remove the front-door assembly (9 of 10)



10. Remove the front-door assembly.

Figure 1-89 Remove the front-door assembly (10 of 10)

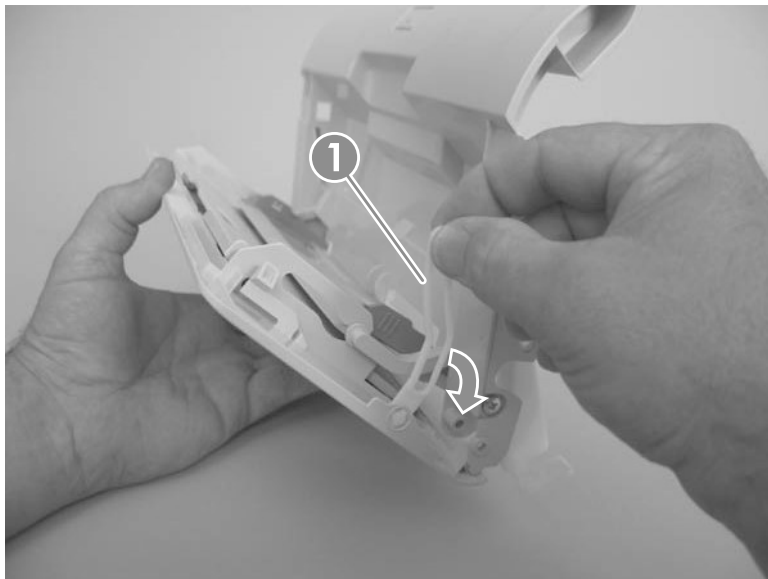


#### Reinstall the front-door assembly

Use this procedure if you are installing a *replacement* front-door assembly.

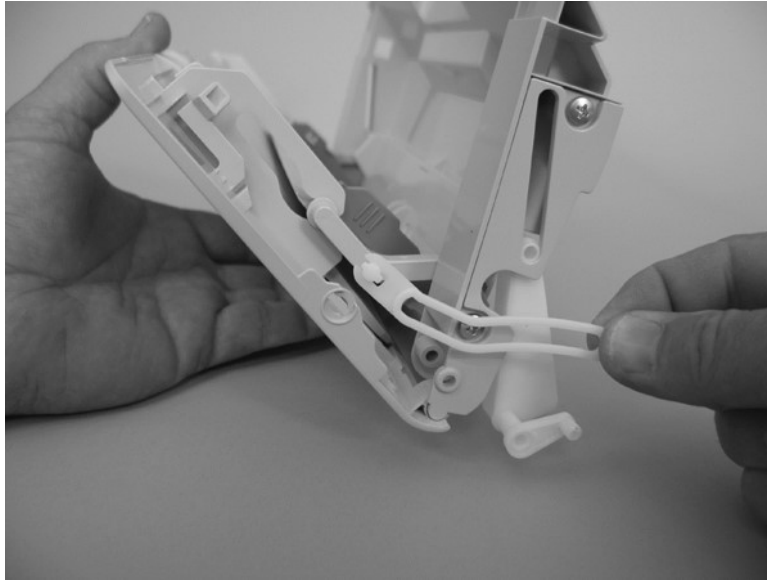
1. Open Tray 1, and then rotate the retainer arm until the tabs on the arm-hinge pin align with the slots in the mounting hole on Tray 1.

Figure 1-90 Reinstall the front-door assembly (1 of 2)



2. Remove the retainer arm from the door assembly, and then install it on the replacement-door assembly.

**Figure 1-91** Reinstall the front-door assembly (2 of 2)



## Intermediate transfer belt (ITB)

1. Remove the print-cartridge drawer. See [Print-cartridge drawer on page 18](#).
2. Open the front door, and then remove two screws (callout 1).

Figure 1-92 Remove the ITB (1 of 6)



3. Carefully rotate the color misregistration sensor away from the ITB.

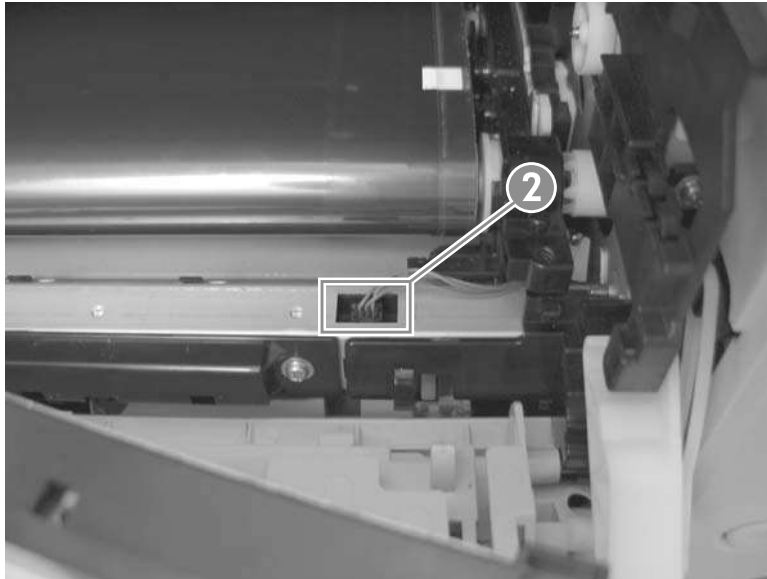
**⚠ CAUTION:** The sensor is still attached to the left side of the product and cannot be completely removed.

Figure 1-93 Remove the ITB (2 of 6)



4. Disconnect one connector (callout 1).

Figure 1-94 Remove the ITB (3 of 6)



5. Carefully lift up on the front of the ITB to release it.

**⚠ CAUTION:** Avoid touching the black plastic transfer belt. Skin oils on the belt might cause print-quality problems. Lift the ITB as shown below by using the hard-plastic edges of the ITB.

Figure 1-95 Remove the ITB (4 of 6)



6. To release the ITB, you might have to pen the rear door, and carefully lift up on the sheet-metal portion (callout 1).

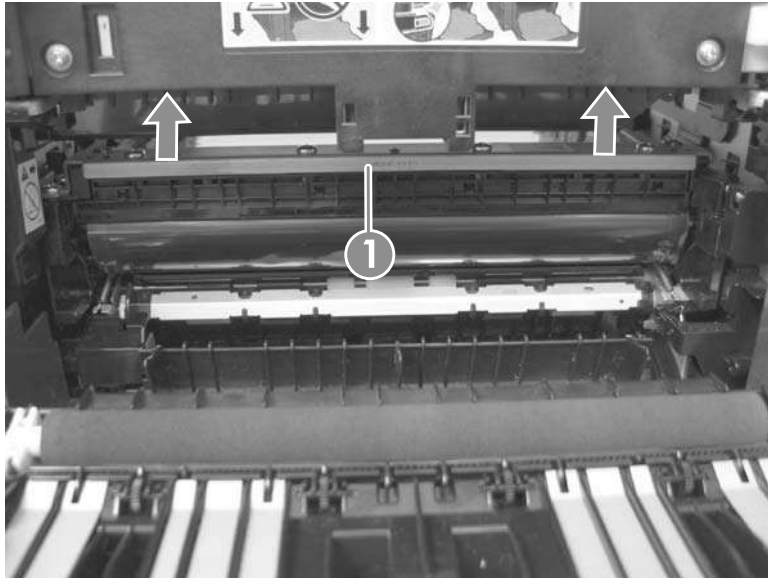
---

**CAUTION:** Avoid touching the black plastic transfer belt. Skin oils on the belt might cause print-quality problems.

**NOTE:** You might need to reach in through the front door and support the front portion of the ITB to keep it from falling back into place as you perform this step.

---

Figure 1-96 Remove the ITB (5 of 6)



7. Carefully pull the ITB straight out of the product to remove it.

---

**CAUTION:** Avoid touching the black plastic transfer belt. Skin oils on the belt might cause print-quality problems. Handle the ITB as shown below.

---

Figure 1-97 Remove the ITB (6 of 6)

