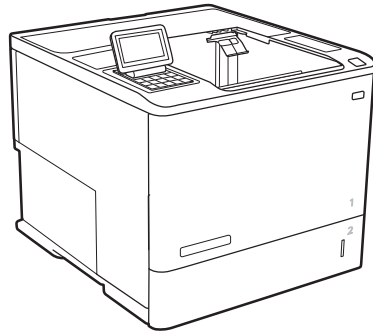


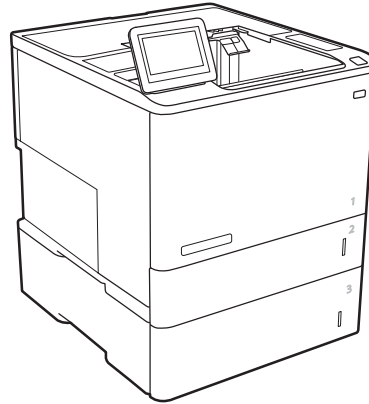


LaserJet Enterprise M607, M608, M609 LaserJet Enterprise MFP M631, M632, M633

Troubleshooting Manual



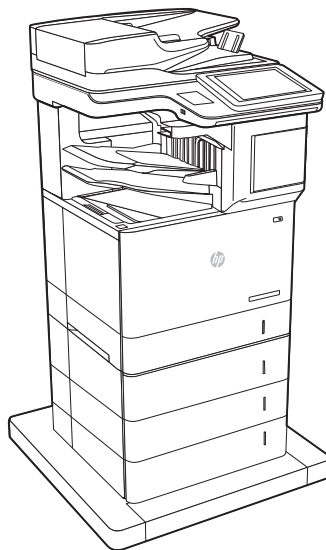
M607n, M607dn,
M608n, M608dn, M608dh, M609dn



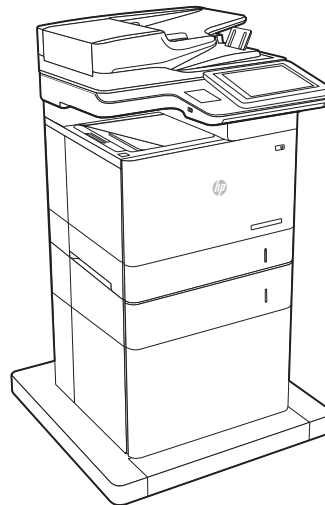
M608x, M609x



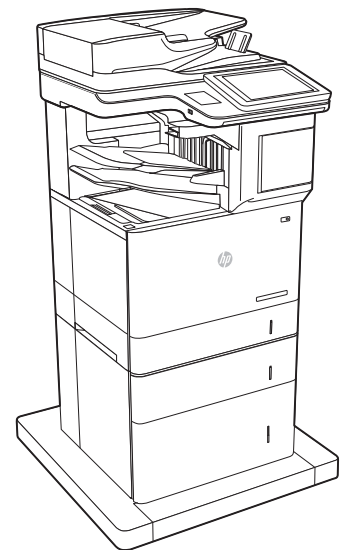
M631dn
Flow M631h
M632h
M633fh



M631z



M632fht



Flow M632z
Flow M633z



www.hp.com/support/ljM607
www.hp.com/support/ljM608
www.hp.com/support/ljM609

www.hp.com/support/ljM631MFP
www.hp.com/support/ljM632MFP
www.hp.com/support/ljM633MFP

For printer part removal procedures and parts diagrams information, see the Repair Manual.



**HP LaserJet Enterprise M607, M608, M609.
MFP M631, MFP M632, MFP M633**

Troubleshooting Manual

Copyright and License

© Copyright 2017 HP 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.

Edition 1, 5/2017


Trademark Credits


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

Conventions used in this guide


 **TIP:** Helpful hints or shortcuts.

Reinstallation tip: Reinstallation helpful hints, shortcuts, or considerations.

 **NOTE:** Information that explains a concept or how to complete a task.

 **IMPORTANT:** Information that help the user to avoid potential printer error conditions.

 **CAUTION:** Procedures that the user must follow to avoid losing data or damaging the printer.

 **WARNING!** Procedures that the user must follow to avoid personal injury, catastrophic loss of data, or extensive damage to the printer.

For additional service and support information

HP service personnel, go to the Service Access Work Bench (SAW) at <http://sawpro.glb.itcs.hp.com>.

Channel partners, go to HP Channel Services Network (CSN) at www.hp.com/partners/csn.

At these locations, find information on the following topics:

- Install and configure
- Printer specifications
- Up-to-date control panel message (CPMD) troubleshooting
- Solutions for printer issues and emerging issues
- Remove and replace part instructions and videos
- Service advisories
- Warranty and regulatory information

Channel partners, access training materials in the HP University and Partner Learning Center at <https://content.ext.hp.com/sites/LMS/HPU.page>.

To access HP PartSurfer information from any mobile device, go to <http://partsurfermobile.hp.com/> or scan the Quick Response (QR) code below.



Table of contents

1 Theory of operation	1
Related documentation and software	2
Basic operation	3
Sequence of operation	4
Engine-control system	5
DC controller	6
Motors	7
Fans	8
Solenoids	8
Clutches	8
Switches	8
Photointerrupter sensors	10
Sensors	10
LEDs	10
Low-voltage power supply	11
Low-voltage power supply voltages description	12
Over-current/over-voltage protection	12
Safety	12
Low-voltage power supply functions	13
High-voltage power supply	13
High-voltage power supply circuits	13
Fuser control	14
Fuser circuits	15
Fuser control functions	16
Fuser heater protection	18
Laser scanner system	19
Laser/scanner failure detection	20
Safety	20
Image formation system	21
Image-formation process	24
Step 1: Pre-exposure	24
Step 2: Primary charging	25

Step 3: Laser-beam exposure	26
Step 4: Development	26
Step 5: Transfer	27
Step 6: Separation	27
Step 7: Fusing	28
Step 8: Drum cleaning	28
Toner cartridge	29
Design	29
Pickup, feed, and delivery system	30
Photo sensors and switches	33
Motors, clutches, and solenoids	34
Jam detection/prevention	35
Input accessories	38
550-sheet paper feeder (PF)	38
Controller	38
Paper path	38
Pickup and feed components	39
Jam detection	42
2,100-sheet paper deck (HCI)	42
Controller	42
Paper path	42
Pickup and feed components	43
Jam detection	46
1x550, 3x550, 2,550-sheet paper decks (PD)	46
Controller	46
Paper path	46
Pickup and feed components	49
Paper deck jam detection	53
Output accessories	54
2-bin staple stacker multi-bin mailbox (SSMBM)	54
Controller	54
Paper path	54
Motors	55
Fan	56
Delivery functions	56
Delivery operation	56
Jam detection	59
5-bin staple stacker multi bin mailbox (SSMBM)	60
Controller	61
Paper path	61
Motors	63

Fan	63
Delivery functions	63
Delivery operation	64
Jam detection	66
Scanning and image capture system (M631, M632, M633)	69
Document feeder system (M631, M632, M633)	70
Document feed system	70
Sensors in the document feeder	70
Document feeder paper path	71
Document feeder simplex operation	72
Document feeder e-duplex operation	73
Deskew operation	74
Document feeder hinges	74
2 Solve problems	77
Solve problems checklist	79
Solve problems checklist	79
Print menu map	84
Print current settings pages	84
View, print and clear the event log	85
View or print the event log from the Troubleshooting menu	85
View, print, or clear the event log from the Service menu	86
Pre-boot menu options	87
Remote Admin	97
Required software and network connection	97
Connect a remote connection	99
Disconnect a remote connection	103
Troubleshooting process	106
Determine the problem source	106
Pre-troubleshooting checklist	106
Troubleshooting flowchart	107
Power subsystem	108
Power-on checks	108
Power-on troubleshooting overview	109
Control panel checks (touchscreen models)	114
Control-panel diagnostics (touchscreen models)	114
Touchscreen diagnostic mode (touchscreen models)	114
Control-panel system diagnostics (touchscreen models)	119
Control panel diagnostic flowcharts (touchscreen models)	134
Touchscreen black, white, or dim (no image)	135
Touchscreen has an unresponsive zone	136

No control panel sound	137
Home button is unresponsive	138
Hardware integration pocket (HIP) is not functioning (control panel functional)	139
Tools for troubleshooting	140
Individual component diagnostics	141
Tools for troubleshooting: LED diagnostics	141
Understand lights on the formatter	141
Tools for troubleshooting: Engine diagnostics	144
Engine test button	144
Defeating interlocks	145
Disable cartridge check	147
Tools for troubleshooting: Paper path and sensor diagnostic tests	147
Paper path page	147
Paper path sensors test	148
Manual sensor tests	151
Tools for troubleshooting: Print/stop test	153
Tools for troubleshooting: Component tests	155
Individual component diagnostics	155
Tools for troubleshooting: Scanner tests (MFP)	157
Continuous scan test (MFP)	157
Tools for troubleshooting: Scanner tests (MFP)	158
Run fax test (MFP)	158
Diagrams	159
Diagrams: Block diagrams	159
Diagrams Electrical components	159
Diagrams: External plug and port locations	171
Diagrams: Locations of major assemblies	173
Diagrams: General timing chart	193
Diagrams: General circuit diagrams	194
Internal test and information pages	202
Print a configuration page	202
Wireless page	204
HP embedded Jetdirect page	206
Fax accessory page	207
Finding important information on the configuration pages	208
Print a fuser test page	210
Control-panel menus	211
Copy menu (MFP models only)	213
Scan menu (MFP models only)	216
Print menu	217

HP JetAdvantage menu (MFP models only)	218
Quick Sets menu (MFP models only)	219
Contacts menu (fax models only)	220
Supplies menu	221
Trays menu	223
Reports menu	226
Settings menu	228
Support Tools menu	233
Control panel message document (CPMD)	240
Control-panel messages and event log entries	240
Improve print quality	241
Improve print quality	241
Introduction	241
Print from a different software program	241
Check the paper-type setting for the print job	241
Check the paper type setting (Windows)	241
Check the paper type setting (OS X)	242
Check toner-cartridge status	242
Print a cleaning page	242
Visually inspect the toner cartridge	243
Check paper and the printing environment	243
Step one: Use paper that meets HP specifications	243
Step two: Check the environment	243
Step three: Set the individual tray alignment	244
Try a different print driver	244
Check the EconoMode settings	245
Adjust print density	245
Print quality troubleshooting guide	247
Introduction	248
Toner cartridges	249
Check toner-cartridge status	249
Visually inspect the toner cartridge or cartridges	249
Check the paper-type setting for the print job	250
Check paper and the printing environment	250
Information to collect	251
Product specific image defects	251
Resolving print quality problems	251
Introduction	251
Troubleshoot print quality problems	252
Repetitive image defect ruler	259
Use a ruler to measure between repetitive defects	260

Printer specific image defects	263
Image defect events	263
Clean the printer	279
Clean the paper path	279
Print a cleaning page	279
Check the scanner glass for dirt and smudges (MFP)	280
Clean the pickup rollers and separation pad in the document feeder (MFP)	282
Clean the Tray 1 roller and separation pad	284
Step 1: Clean the Tray 1 roller	284
Step 2: Clean the separation pad assembly	285
Clean the Tray 2-X rollers	287
Step 1: Clean the Tray 2-X rollers	287
Solve paper handling problems	294
Printer feeds incorrect page size	294
Printer pulls from incorrect tray	294
Printer will not duplex or duplexes incorrectly	294
Paper does not feed from Tray 2-X	295
Output is curled or wrinkled	295
Printer does not pick up paper or misfeeds	296
The printer does not pick up paper	296
The printer picks up multiple sheets of paper	297
The document feeder jams, skews, or picks up multiple sheets of paper (MFP)	297
Paper does not feed automatically	297
Clear paper jams	299
Paper path jam sensor locations	300
Paper jam locations (M631, M632, and M633)	307
Paper jam locations (M607, M608, and M609)	308
Auto-navigation for clearing jams	308
Experiencing frequent or recurring paper jams?	308
Clear paper jams in the document feeder	310
Clear paper jams in Tray 1 (M631, M632, and M633)	312
Clear paper jams in Tray 1 (M607, M608, and M609)	312
Clear paper jams in Trays 2, 3, 4, or 5 (M631, 632, and 633)	317
Clear paper jams in Trays 2, 3, or 4 (M607, M608, and M609)	317
Clear paper jams in the 2,550-sheet high-capacity input tray (M631, M632, and M633)	325
Clear paper jams in the 2,100-sheet high-capacity input tray (M607, M608, and M609)	325
Clear paper jams in the right door and fuser area (M631, M632, and M633)	331
Clear paper jams in the rear door and fuser area (M607, M608, and M609)	334
Clear paper jams in the output bin (M631, M632, and M633)	337

Clear paper jams in the output bin (M607, M608, and M609)	337
Clear paper jams in the duplexer (M631, M632, and M631)	339
Clear paper jams in the duplexer (M607, M608, and M609)	341
Clear paper jams in the envelope feeder (M631, M632, and M633)	343
Clear paper jams in the envelope feeder (M607, M608, and M609)	343
Clear paper jams in the HP Stapling Mailbox (M631, M632, and M633)	347
Clear paper jams in the HP Stapling Mailbox accessory (M607, M608, and M609)	347
Clear staple jams (M631, M632, and M633)	350
Clear staple jams (M607, M608, and M609)	350
Change jam recovery	356
Solve performance problems	357
Factors affecting print performance	357
Print speeds	358
The printer does not print or it prints slowly	359
The printer prints slowly	359
Solve connectivity problems	361
Solve wired network problems	361
Introduction	361
Poor physical connection	361
The computer is unable to communicate with the printer	361
The printer is using incorrect link and duplex settings for the network	362
New software programs might be causing compatibility problems	362
The computer or workstation might be set up incorrectly	362
The printer is disabled, or other network settings are incorrect	362
Solve wireless network problems	362
Introduction	363
Wireless connectivity checklist	363
The printer does not print after the wireless configuration completes	364
The printer does not print, and the computer has a third-party firewall installed	364
The wireless connection does not work after moving the wireless router or printer	364
Cannot connect more computers to the wireless printer	364
The wireless printer loses communication when connected to a VPN	365
The network does not appear in the wireless networks list	365
The wireless network is not functioning	365
Reduce interference on a wireless network	365
Service mode functions	366
Service menu	366
Printer resets	371
Restore factory-set defaults	371
Printer cold reset	371
Format Disk and Partial Clean functions	373

Active and repository firmware locations	373
Partial Clean	373
Execute a Partial Clean	374
Format Disk	374
Execute a Format Disk	375
Firmware upgrades	377
Determine the installed revision of firmware	378
Perform a firmware upgrade	380
HP Embedded Web Server	380
USB flash drive (control-panel menu)	381
USB flash drive (Pre-boot menu)	383
Solve fax problems (M631, M632, M633)	385
Solve email problems (M631, M632, M633)	385
Appendix A Printer specifications	387
Printer dimensions	388
Printer dimensions (M607, M608, M609)	388
Printer dimensions (M631, M632, M633)	391
Printer space requirements	394
Power consumption, electrical specifications, and acoustic emissions	394
Operating environment range	394
Certificate of Volatility	395
Index	399

List of tables

Table 1-1	Sequence of operation	4
Table 1-2	Motors	7
Table 1-3	Fans	8
Table 1-4	Solenoids	8
Table 1-5	Clutches	8
Table 1-6	Switches	8
Table 1-7	Photointerrupter sensors	10
Table 1-8	Sensors	10
Table 1-9	LEDs	10
Table 1-10	Converted DC voltages	12
Table 1-11	Low-voltage power supply functions	13
Table 1-12	High-voltage power supply circuits	14
Table 1-13	Fuser components	15
Table 1-14	Fuser-control functions	18
Table 1-15	Motors	22
Table 1-16	Sensors	23
Table 1-17	Image formation process	24
Table 1-18	Toner cartridge functions	29
Table 1-19	Pickup, feed, and delivery functions	32
Table 1-20	Photo sensors and switches	33
Table 1-21	Motors, solenoids, and clutches	34
Table 1-22	Paper path sensors	37
Table 1-23	Jams that the printer detects	37
Table 1-24	Pickup and feed components for the 550-sheet PF	40
Table 1-25	Pickup and feed functions for the 550-sheet PF	40
Table 1-26	Pickup and feed components for the 2,100-sheet HCI	44
Table 1-27	Paper pickup and feed functions for the 2,100-sheet HCI	45
Table 1-28	Pickup and feed components for 1x550 paper deck and 3x550 paper deck	50
Table 1-29	Pickup and feed components for the 2,550-sheet paper deck	52
Table 1-30	Pickup and feed functions for the 1x550, 3x550, and 2,550 paper decks	53
Table 1-31	Motors for the 2-bin SSMBM	56
Table 1-32	Fan for the 2-bin SSMBM	56

Table 1-33	Delivery functions for the SSMBM	56
Table 1-34	Motors and solenoids for the 2-bin SSMBM	57
Table 1-35	Sensors and switches for the 2-bin SSMBM	58
Table 1-36	Motors for the 5-bin SSMBM	63
Table 1-37	Fan for SSMBM	63
Table 1-38	Delivery functions for the SSMBM	63
Table 1-39	Motors and solenoids for the 5-bin SSMBM	64
Table 1-40	Sensors and switches for the 5-bin SSMBM	66
Table 1-41	Document feeder sensors	71
Table 1-42	Document feeder paper path	71
Table 2-1	Pre-boot menu options (1 of 7)	90
Table 2-2	Pre-boot menu options (2 of 7)	91
Table 2-3	Pre-boot menu options (3 of 7)	92
Table 2-4	Pre-boot menu options (4 of 7)	93
Table 2-5	Pre-boot menu options (5 of 7)	93
Table 2-6	Pre-boot menu options (6 of 7)	94
Table 2-7	Pre-boot menu options (7 of 7)	95
Table 2-8	Troubleshooting flowchart	107
Table 2-9	Heartbeat LED, printer operational	142
Table 2-10	Printer base, sensors (image formation) block diagram	160
Table 2-11	Printer base, sensors (pickup, feed, and delivery) block diagram	161
Table 2-12	Printer base, motors, solenoids, and clutches block diagram	162
Table 2-13	1x550-sheet paper feeder, electrical components block diagram	163
Table 2-14	1x550-sheet and 3x550-sheet paper decks, electrical components block diagram	164
Table 2-15	2,550-sheet paper deck, electrical components block diagram	166
Table 2-16	Stapler stacker multi bin mailbox (5 bin; SSBM), motors and solenoids block diagram	167
Table 2-17	Stapler stacker multi bin mailbox (5 bin; SSBM), sensors and switches block diagram	168
Table 2-18	Stapler stacker multi bin mailbox (2 bin; SSBM), motors and solenoids block diagram	169
Table 2-19	Stapler stacker multi bin mailbox (2 bin; SSBM), sensors and switches block diagram	170
Table 2-20	External plug and port locations (M607, M608, and M609)	171
Table 2-21	External plug and port locations (M631, M632, and M633)	172
Table 2-22	Printer base (M607, M608, and M609), main assemblies (1 of 2)	173
Table 2-23	Printer base (M607, M608, and M609), main assemblies (2 of 2)	174
Table 2-24	Printer base (M631, M632, and M633), main assemblies (1 of 2)	175
Table 2-25	Printer base (M631, M632, and M633), main assemblies (2 of 2)	176
Table 2-26	Printer base, printed circuit assemblies (PCAs)	176
Table 2-27	Printer base (M607, M608, and M609), roller assemblies	177
Table 2-28	Printer base (M631, M632, and M633), roller assemblies	178
Table 2-29	1x550-sheet paper feeder, main assemblies	179
Table 2-30	1x550-sheet paper feeder (M631/M632/M633 envelope feeder), main assemblies	180
Table 2-31	1x550-sheet paper feeder, printed circuit assemblies (PCAs)	181

Table 2-32	1x550-sheet paper deck, main assemblies (1 of 2)	182
Table 2-33	1x550-sheet paper deck, main assemblies (2 of 2)	183
Table 2-34	1x550-sheet paper deck, printed circuit assemblies (PCAs)	184
Table 2-35	3x550-sheet paper deck, main assemblies (1 of 2)	185
Table 2-36	3x550-sheet paper deck, main assemblies (2 of 2)	186
Table 2-37	3x550-sheet paper deck, printed circuit assemblies (PCAs)	187
Table 2-38	2,100-sheet paper deck (M607/M608/M609), main assemblies	188
Table 2-39	2,100-sheet paper deck (M607/M608/M609), printed circuit assemblies (PCAs)	189
Table 2-40	2,550-sheet paper deck (M631/M632/M633), main assemblies (1 of 2)	190
Table 2-41	2,550-sheet paper deck (M631/M632/M633), main assemblies (2 of 2)	191
Table 2-42	2,550-sheet paper deck (M631/M632/M633), printed circuit assemblies (PCAs)	192
Table 2-43	Configuration page	203
Table 2-44	Wireless page (1 of 2)	204
Table 2-45	Wireless page (2 of 2)	205
Table 2-46	HP embedded Jetdirect page	206
Table 2-47	Fax accessory page (1 of 2)	207
Table 2-48	Fax accessory page (2 of 2)	208
Table 2-49	Important information on the configuration pages	208
Table 2-50	Copy menu (MFP models only)	213
Table 2-51	Scan menu (MFP models only)	216
Table 2-52	Print menu	217
Table 2-53	HP JetAdvantage menu (MFP models only)	218
Table 2-54	Contacts menu (fax models only)	220
Table 2-55	Supplies menu (fax models only)	221
Table 2-56	Trays menu	223
Table 2-57	Reports menu (fax models only)	226
Table 2-58	Settings menu (fax models only)	228
Table 2-59	Support Tools menu	233
Table 2-60	Image defects table quick reference	252
Table 2-61	Light print	254
Table 2-62	Gray background or dark print	254
Table 2-63	Blank page — No print	255
Table 2-64	Black page	255
Table 2-65	Banding defects	256
Table 2-66	Streak defects	256
Table 2-67	Fixing/fuser defects	257
Table 2-68	Image placement defects	257
Table 2-69	Color plane registrations defects (color models only)	258
Table 2-70	Output defects	258
Table 2-71	Repetitive defects	259
Table 2-72	Printer feeds incorrect page size	294

Table 2-73	Printer pulls from incorrect tray	294
Table 2-74	Printer will not duplex (print 2-sided jobs) or duplexes incorrectly	294
Table 2-75	Paper does not feed from Tray 2-X	295
Table 2-76	Output is curled or wrinkled	295
Table 2-77	Paper does not feed automatically	297
Table 2-78	Printer base, sensors (pickup, feed, and delivery) block diagram	300
Table 2-79	1x550-sheet paper feeder, electrical components block diagram	301
Table 2-80	1x550-sheet and 3x550-sheet paper decks, electrical components block diagram	302
Table 2-81	2,550-sheet paper deck, electrical components block diagram	304
Table 2-82	Stapler stacker multi bin mailbox (5 bin; SSBM), sensors and switches block diagram	305
Table 2-83	Stapler stacker multi bin mailbox (2 bin; SSBM), sensors and switches block diagram	306
Table 2-84	Solve performance problems	357
Table 2-85	Service menu	367
Table A-1	Dimensions for M607n, M607dn, M608n, M608dn, M609dn models	388
Table A-2	Dimensions for M6608x, M609x	388
Table A-3	Dimensions for the 1x550-sheet paper feeder	388
Table A-4	Dimensions for the printer with a 1x550-sheet paper feeder	388
Table A-5	Dimensions for the 2,100-sheet HCI with stand	389
Table A-6	Dimensions for the printer with a 2,100-sheet HCI with stand	389
Table A-7	Dimensions for the envelope feeder	389
Table A-8	Dimensions for the printer with an envelope feeder	389
Table A-9	Dimensions for the HP Stapling Mailbox	389
Table A-10	Dimensions for the printer with an HP Stapling Mailbox	390
Table A-11	Dimensions for base models (M631dn, M631h Flow, M632h, M633fh)	391
Table A-12	Dimensions for M631z	391
Table A-13	Dimensions for M632fht	391
Table A-14	Dimensions for M632z Flow, M633z Flow	391
Table A-15	Dimensions for the 1x550-sheet paper feeder	391
Table A-16	Dimensions for the printer with a 1x550-sheet paper feeder	392
Table A-17	Dimensions for the 1x550-sheet feeder with printer stand	392
Table A-18	Dimensions for the printer with a 1x550-sheet feeder with printer stand	392
Table A-19	Dimensions for the 1x550-sheet feeder and 2,100-sheet HCI with stand	392
Table A-20	Dimensions for the printer with a 1x550-sheet feeder and 2,100-sheet HCI with stand	393
Table A-21	Dimensions for the envelope feeder cassette	393
Table A-22	Dimensions for the printer with an envelope feeder	393
Table A-23	Dimensions for the printer with an HP Stapling Mailbox	393
Table A-24	Operating environment range	394

List of figures

Figure 1-1	Relationship among the main printer systems	3
Figure 1-2	Engine-control system	5
Figure 1-3	DC controller	6
Figure 1-4	Low-voltage power supply circuits	11
Figure 1-5	High-voltage power supply circuits	14
Figure 1-6	Fuser components	15
Figure 1-7	Fuser control	17
Figure 1-8	Laser scanner	19
Figure 1-9	Image formation system	21
Figure 1-10	Motors	22
Figure 1-11	Sensors	23
Figure 1-12	Image formation process	24
Figure 1-13	Pre-exposure	25
Figure 1-14	Primary charging	25
Figure 1-15	Laser-beam exposure	26
Figure 1-16	Developing	26
Figure 1-17	Transfer	27
Figure 1-18	Separation	27
Figure 1-19	Fusing	28
Figure 1-20	Drum cleaning	28
Figure 1-21	Toner cartridge components	29
Figure 1-22	Pickup, feed, and delivery system	31
Figure 1-23	Photo sensors and switches	33
Figure 1-24	Motors, solenoids, and clutches for pickup, feed and delivery system	34
Figure 1-25	Paper path and location of sensors	36
Figure 1-26	Controller for the 550-sheet PF	38
Figure 1-27	Paper path for the 550-sheet PF	39
Figure 1-28	Pickup and feed components for the 550-sheet PF	40
Figure 1-29	Controller for the 2,100-sheet HCl	42
Figure 1-30	Paper path for the 2,100-sheet HCl	43
Figure 1-31	Pickup and feed components for the 2,100-sheet HCl	44
Figure 1-32	Controller for the 1x550, 3x550, and 2,550 paper decks	46

Figure 1-33	Paper path for the 1x550 PD	47
Figure 1-34	Paper path for the 3x550 PD	48
Figure 1-35	Paper path for the 2,550 PD	49
Figure 1-36	Pickup and feed components for 1x550 paper deck and 3x550 paper deck	50
Figure 1-37	Pickup and feed components for the 2,550-sheet paper deck	52
Figure 1-38	SSMBM controller	54
Figure 1-39	Paper path for the 2-bin SSMBM	55
Figure 1-40	Motors and solenoids for the 2-bin SSMBM	57
Figure 1-41	Sensors and switches for the 2-bin SSMBM	58
Figure 1-42	Paper path and location of sensors for the 2-bin SSMBM	60
Figure 1-43	SSMBM controller	61
Figure 1-44	Paper path for the 5-bin SSMBM	62
Figure 1-45	Motors and solenoids for the 5-bin SSMBM	64
Figure 1-46	Sensors and switches for the 5-bin SSMBM	65
Figure 1-47	Paper path and location of sensors for the 5-bin SSMBM	68
Figure 1-48	Document feeder sensors	71
Figure 1-49	Document feeder paper path	71
Figure 1-50	Deskew operation	74
Figure 1-51	Document feeder open (book mode)	75
Figure 1-52	Document feeder open (60° to 80°)	75
Figure 2-1	Open the Pre-boot menu	87
Figure 2-2	Pre-boot menu	88
Figure 2-3	Open the Pre-boot menu	89
Figure 2-4	Open the Control Panel	98
Figure 2-5	Turn Windows features on or off	98
Figure 2-6	Enable the telnet client feature	99
Figure 2-7	Select the +3:Administrator item	100
Figure 2-8	Select the +A:Remote Admin item	100
Figure 2-9	Select the 1:Start Telnet item	100
Figure 2-10	Telnet connecting message	100
Figure 2-11	Telnet error message	101
Figure 2-12	Telnet server function initialized	101
Figure 2-13	Open a command window	102
Figure 2-14	Start a telnet session	102
Figure 2-15	Establish a telnet connection	102
Figure 2-16	Enter the PIN	103
Figure 2-17	Remote Admin window	103
Figure 2-18	Access the administrator menu	104
Figure 2-19	Access the remote admin menu	104
Figure 2-20	Terminate the telnet connection	105
Figure 2-21	Diagnostic-tests access button (small touchscreen)	114

Figure 2-22	Press the diagnostics-access button (small touchscreen)	115
Figure 2-23	Diagnostic-tests access button (large touchscreen)	115
Figure 2-24	Press the diagnostics-access button (large touchscreen)	116
Figure 2-25	Control-panel version A yellow screen	116
Figure 2-26	Open the Pre-boot menu	119
Figure 2-27	Pre-boot menu	120
Figure 2-28	Access the administration menu	121
Figure 2-29	Access the diagnostics menu	121
Figure 2-30	Open the screen test	122
Figure 2-31	Blue vertical gradient screen	122
Figure 2-32	Open the touch test	126
Figure 2-33	Touch the white grid	126
Figure 2-34	Verify the mark	127
Figure 2-35	Open the softkey test	128
Figure 2-36	Touch the Home button	128
Figure 2-37	Successful test	129
Figure 2-38	Open the backlight test	130
Figure 2-39	Open the sound test	131
Figure 2-40	Do not open the keyboard test	132
Figure 2-41	Open the sound test	133
Figure 2-42	Touchscreen blank, white, or dim (no image)	135
Figure 2-43	Touchscreen has an unresponsive zone	136
Figure 2-44	No control panel sound	137
Figure 2-45	Home button is unresponsive	138
Figure 2-46	Hardware integration pocket (HIP) is not functioning (control panel functional)	139
Figure 2-47	Engine test button (1 of 2)	144
Figure 2-48	Engine test button (2 of 2)	145
Figure 2-49	Defeat the toner cartridge door interlocks	146
Figure 2-50	Defeat the right or rear door interlock	146
Figure 2-51	Printer base, image formation system block diagram	159
Figure 2-52	Printer base, sensors (image formation) block diagram	160
Figure 2-53	Printer base, sensors (pickup, feed, and delivery) block diagram	161
Figure 2-54	Printer base, motors, solenoids, and clutches block diagram	162
Figure 2-55	1x550-sheet paper feeder, electrical components block diagram	163
Figure 2-56	1x550-sheet and 3x550-sheet paper decks, electrical components block diagram	164
Figure 2-57	2,550-sheet paper deck, electrical components block diagram	166
Figure 2-58	Stapler stacker multi bin mailbox (5 bin; SSBM), motors and solenoids block diagram	167
Figure 2-59	Stapler stacker multi bin mailbox (5 bin; SSBM), sensors and switches block diagram	168
Figure 2-60	Stapler stacker multi bin mailbox (2 bin; SSBM), motors and solenoids block diagram	169
Figure 2-61	Stapler stacker multi bin mailbox (2 bin; SSBM), sensors and switches block diagram	170
Figure 2-62	External plug and port locations (M607, M608, and M609)	171

Figure 2-63	External plug and port locations (M631, M632, and M633)	172
Figure 2-64	Printer base (M607, M608, and M609), main assemblies (1 of 2)	173
Figure 2-65	Printer base (M607, M608, and M609), main assemblies (2 of 2)	174
Figure 2-66	Printer base (M631, M632, and M633), main assemblies (1 of 2)	175
Figure 2-67	Printer base (M631, M632, and M633), main assemblies (2 of 2)	176
Figure 2-68	Printer base, printed circuit assemblies (PCAs)	176
Figure 2-69	Printer base (M607, M608, and M609), roller assemblies	177
Figure 2-70	Printer base (M631, M632, and M633), roller assemblies	178
Figure 2-71	1x550-sheet paper feeder, main assemblies	179
Figure 2-72	1x550-sheet paper feeder (M631/M632/M633 envelope feeder), main assemblies	180
Figure 2-73	1x550-sheet paper feeder, printed circuit assemblies (PCAs)	181
Figure 2-74	1x550-sheet paper deck, main assemblies (1 of 2)	182
Figure 2-75	1x550-sheet paper deck, main assemblies (2 of 2)	183
Figure 2-76	1x550-sheet paper deck, printed circuit assemblies (PCAs)	184
Figure 2-77	3x550-sheet paper deck, main assemblies (1 of 2)	185
Figure 2-78	3x550-sheet paper deck, main assemblies (2 of 2)	186
Figure 2-79	3x550-sheet paper deck, printed circuit assemblies (PCAs)	187
Figure 2-80	2,100-sheet paper deck (M607/M608/M609), main assemblies	188
Figure 2-81	2,100-sheet paper deck (M607/M608/M609), printed circuit assemblies (PCAs)	189
Figure 2-82	2,550-sheet paper deck (M631/M632/M633), main assemblies (1 of 2)	190
Figure 2-83	2,550-sheet paper deck (M631/M632/M633), main assemblies (2 of 2)	191
Figure 2-84	2,550-sheet paper deck (M631/M632/M633), printed circuit assemblies (PCAs)	192
Figure 2-85	General timing chart	193
Figure 2-86	General circuit diagram for the printer base (M607, M608, and M609)	194
Figure 2-87	General circuit diagram for the printer base (M631, M623, and M633)	195
Figure 2-88	General circuit diagram for the 550-sheet paper feeder	196
Figure 2-89	General circuit diagram for the 1x550-sheet and 3x-550-sheet paper deck	197
Figure 2-90	General circuit diagram for the 2,100-sheet paper deck	198
Figure 2-91	General circuit diagram for the 2,550-sheet paper deck	199
Figure 2-92	General circuit diagram for the 5 bin stapler stacker multi-bin mail box	200
Figure 2-93	General circuit diagram for the 2 bin stapler stacker multi-bin mail box	201
Figure 2-94	Configuration report	203
Figure 2-95	Wireless page (1 of 2)	204
Figure 2-96	Wireless page (2 of 2)	205
Figure 2-97	HP embedded Jetdirect page	206
Figure 2-98	Fax accessory page (1 of 2)	207
Figure 2-99	Fax accessory page (2 of 2)	208
Figure 2-100	Fuser test page	211
Figure 2-101	Examples of repetitive defects	260
Figure 2-102	Place the ruler on the page	261
Figure 2-103	Locate the next repetitive defect	261

Figure 2-104	Determine the defective assembly	262
Figure 2-105	44 mm (44.1 mm) wide pitch banding	264
Figure 2-106	18 mm leading edge blur	265
Figure 2-107	46 mm leading edge blur	266
Figure 2-108	25 mm leading edge blur	267
Figure 2-109	50 mm trailing edge blur	268
Figure 2-110	75 mm trailing edge blur	269
Figure 2-111	104 mm trailing edge blur	270
Figure 2-112	111 mm trailing edge blur	271
Figure 2-113	120 mm trailing edge blue duplex side	272
Figure 2-114	Hot offset	273
Figure 2-115	Mottle/graininess	275
Figure 2-116	Mottle/graininess	277
Figure 2-117	Remove the cover	284
Figure 2-118	Remove the roller	285
Figure 2-119	Move the lift plate out of the way	285
Figure 2-120	Release the cover	286
Figure 2-121	Remove the roller	286
Figure 2-122	Open the tray (M607/M608/M609)	287
Figure 2-123	Open the tray (M631/M632/M633)	287
Figure 2-124	Lower the access cover (Tray 2 rollers)	288
Figure 2-125	Lower the access cover (Tray 3 rollers)	288
Figure 2-126	Lower the access cover (M631z/M632fht/Flow M632z/FlowM633z)	289
Figure 2-127	Locate the separation roller	289
Figure 2-128	Install the separation roller tool	290
Figure 2-129	Slide the roller to the left	290
Figure 2-130	Remove the roller	291
Figure 2-131	Locate the pickup and feed roller	291
Figure 2-132	Unlock the pickup and feed rollers	292
Figure 2-133	Slide the rollers to the left	292
Figure 2-134	Remove the rollers	293
Figure 2-135	Printer base, sensors (pickup, feed, and delivery) block diagram	300
Figure 2-136	1x550-sheet paper feeder, electrical components block diagram	301
Figure 2-137	1x550-sheet and 3x550-sheet paper decks, electrical components block diagram	302
Figure 2-138	2,550-sheet paper deck, electrical components block diagram	304
Figure 2-139	Stapler stacker multi bin mailbox (5 bin; SSBM), sensors and switches block diagram	305
Figure 2-140	Stapler stacker multi bin mailbox (2 bin; SSBM), sensors and switches block diagram	306
Figure 2-141	Open the Pre-boot menu	372
Figure 2-142	Open the Pre-boot menu	374
Figure 2-143	Open the Pre-boot menu	375
Figure 2-144	Configuration report	379

Figure 2-145	Open the Pre-boot menu	383
Figure A-1	Certificate of Volatility (1 of 2; M607, M608, M609)	395
Figure A-2	Certificate of Volatility (2 of 2; M607, M608, M609)	396
Figure A-3	Certificate of Volatility (1 of 2; M631, M632, M633)	397
Figure A-4	Certificate of Volatility (2 of 2; M631, M632, M633)	398

1 Theory of operation

- [Related documentation and software](#)
- [Basic operation](#)
- [Engine-control system](#)
- [Laser scanner system](#)
- [Image formation system](#)
- [Toner cartridge](#)
- [Pickup, feed, and delivery system](#)
- [Input accessories](#)
- [Output accessories](#)
- [Scanning and image capture system \(M631, M632, M633\)](#)
- [Document feeder system \(M631, M632, M633\)](#)