service

invent



hp color LaserJet 9500/9500mfp print engine

hp color LaserJet 9500/9500mfp print engine

service

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This manual contains service information for the HP color LaserJet 9500 Series printer and the print engine portion of the HP color LaserJet 9500mfp. For MFP models, you also need the *HP Scanner/ADF Service Manual for the HP LaserJet 9000mfp/9000Lmfp/9040mfp/ 9050mfp/9500mfp* (PN C8449-90955) and the *2,000-sheet Side Input Tray Service Manual* (PN Q1891-90901) for complete MFP service information.

A complete service manual bundle is available by ordering the *Service Bundle for HP Color LaserJet 9500/9500mfp* part number C8549-99001. The service bundle includes the manuals listed above, this print engine manual, and the *Paper Handling Accessories Service Addendum* (PN C85693-90002).

Throughout this document, the term “printer” is used to refer to both the HP LaserJet 9500 Series printer models *and* the HP LaserJet 9500mfp. Make sure to read the headings and text carefully to understand the context of the term.

Table of contents

List of figures

List of tables

1 Product information

Product features . . . 22
Product specifications for the printer . . . 25
- Identification . . . 25
- Specifications . . . 25
- Environmental specifications . . . 26

Product overviews . . . 28
- External assembly locations . . . 28
- Accessories . . . 29

Space requirements . . . 32
- Printer with packaging . . . 32
- Physical dimensions of the printer models and the MFP . . . 33

Printer setup . . . 36
Media specifications . . . 37
- Guidelines for selecting media . . . 37
- Supported media and capacity for input and output . . . 38
- Recommended media . . . 39
- Special media specifications . . . 41
- Storing print media . . . 45
- Testing media specifications . . . 45

Media assessment tools and suppliers . . . 50

2 Service approach

Service approach . . . 52
Parts and supplies . . . 53
- Ordering parts . . . 53
- Ordering supplies . . . 53
- Exchange program . . . 53
- Supplies . . . 53
- World Wide Web . . . 53
- HP service parts information compact disc . . . 54
- Customer care reseller sales and service support center . . . 54
- Ordering related documentation and software . . . 55

Warranty . . . 56
Limited warranty for print cartridge and image drum life . . . 56
Transfer unit and fuser warranty . . . 56
HP maintenance agreements . . . 56
- Onsite service agreements . . . 57

3
Product configuration

Printer control panel layout 60
Control panel menus 62
Menu map 62
Using a menu map 62
Retrieve job menu 63
Information menu 64
Paper handling menu 65
Selecting media for a document 66
Configure device menu 67
Printing submenu 67
PCL submenu 69
Print Quality submenu 70
System Setup submenu 75
Output Setup submenu 77
I/O submenu 77
Resets submenu 80
Diagnostics menu 81
Service menu 86
Service ID 86
Restoring the Service ID 87
Converting the Service ID to an actual date 87
Settings and defaults 88
Configure the control panel display language 88
Configure the input trays 89
Boot key sequences 94
Hard disk reinitialization 94
NVRAM initialization 95
Cold reset 97

4
Product maintenance

Preventative maintenance 100
Image transfer kit 100
Image cleaning kit 100
Image fuser kit 101
Cleaning the printer and accessories 102
General cleaning 102
Cleaning spilled toner 102
Vacuum specifications 102
First aid measures 103
Cleaning procedures 104
Cleaning the post charger 104
Cleaning the separation guide, feed guide, and front fuser guide 104
Cleaning the fuser input 104
Cleaning the registration roller unit 105
Cleaning the other rollers 105
Cleaning the tray 1 separation pad 105
Print cartridges 106
Non-HP print cartridges and image drums 106
Authenticating print cartridges 106
Storing print cartridges 107
Image drums 108
Storing image drums 108

Firmware upgrades to the printer or MFP . . . 109
Downloading the new firmware from the HP Web site . . . 109
Downloading the new firmware to the printer . . . 109
Remote firmware update through a local Windows® port . . . 110

5
Theory of operation

Basic operation . . . 120
Major printer systems . . . 120
Printer block diagram . . . 121
Sequence of operation . . . 122
Timing charts . . . 124
Wiring diagrams . . . 126
Flat flexible cable signals . . . 130
Connector location . . . 138
Engine-control system . . . 142
DC controller circuit . . . 143
DC controller operations . . . 146
T driver circuit . . . 147
Fuser control circuit . . . 148
Low-voltage power supply . . . 149
High-voltage power supply circuits . . . 150
Post charger power supply unit . . . 150
Motors and fans . . . 151
Switches, solenoids, clutches, and sensors . . . 154
Formatter . . . 158
Formatter heartbeat LED . . . 159
DIMM slots . . . 159
Laser/scanner system . . . 160
Dual-beam method . . . 161
Laser control . . . 162
Scanner-motor control . . . 166
Color-plane registration calibration control . . . 167
Image formation system . . . 170
Electrophotographic process . . . 170
Image stabilization control . . . 178
Paper-path system . . . 181
Pickup/feed unit . . . 183
Jam detection . . . 190
Tray 4 for the HP LaserJet 9500 Series printer . . . 192
Tray 4 driver PCB . . . 192
Power supply . . . 192
Sequence of operation . . . 193
Pickup and feed . . . 193
Media level and size detection . . . 193
Jam detection . . . 193

6
Removal and replacement

Introduction 197
Removal and replacement strategy 197
General cautions during removal and replacement 197
Electrostatic discharge 198
Required tools 198
Flat flexible cable caution 199
DC controller and cable/connector damage areas 200
Potential damage areas while servicing 200
Consumables 201
Toner cartridges (print cartridges) 201
Process cartridges (image drums) 203
Waste toner bottle (toner collection bottle) 205
Transfer cleaner (cleaning blade) 206
Transfer roller 207
External covers 208
Control panel overlay 208
Control panel 209
Right upper cover 210
Left upper cover 212
Top right cover 213
Top left cover 215
Front doors 217
Fuser door 218
Intermediate transfer belt (ITB) door 220
Left back cover 224
Left lower cover 225
Right back cover 227
Back cover 228
Major assemblies 229
Process cartridge (image drum) door 229
Laser/scanner assembly 231
Printing a laser/scanner adjustment page 233
Reading a laser/scanner adjustment page 235
Adjusting the laser/scanner assemblies 237
Delivery unit 249
Delivery unit sensor 253
Vertical feed unit 254
Duplexer 258
Fuser 259
Intermediate transfer belt (ITB) 260
Density and registration sensor assembly 262
Right back fan 265
Right front fan 266
Secondary transfer assembly (T2) 267
Pickup unit 272
Temperature and humidity sensor 280
High-voltage power supply 281
Low-voltage power supply 282
Registration assembly 283
Delivery fan 290
Fuser fan 291
P-crg (image drum) drive assembly 292
T-crg (print cartridge) drive assembly 296
Fuser motor 298
Fuser drive assembly 299
DC controller 300

Formatter PCB . . . 302
Formatter cage . . . 304
High-voltage contact . . . 306
Post charger power supply . . . 307
Tray 1 pickup roller . . . 309
Tray 1 separation pad . . . 310
Left door switch . . . 311
Right door switch (front and right side doors) . . . 312
ITB sensor . . . 313
Upper left door sensor . . . 314
Fuser front paper sensor . . . 315
Fuser sensor PCA . . . 316
2,000-sheet tray 4 for the HP LaserJet 9500hdn printer . . . 317
Left side cover . . . 318
Right side cover . . . 319
Back covers . . . 320
Tray 4 . . . 321
Rollers (pickup, feed, and separation) . . . 322
Registration assembly . . . 323
Drive motor . . . 324
Drive assembly . . . 324
Controller board . . . 325
Paper-size detection switch PCB . . . 326
Power supply . . . 327
Pickup assembly . . . 328
Paper connecting unit . . . 329

7 Troubleshooting

Introduction . . . 334
Troubleshooting process . . . 334
Pre-troubleshooting checklist . . . 334
Power checks . . . 336
Control panel checks . . . 336
Troubleshooting tools and procedures . . . 337
Hardware and electrical troubleshooting tools . . . 337
Image-formation and print-quality troubleshooting tools . . . 359
Sample defects and solutions . . . 366
Media and paper-path troubleshooting tools . . . 403
Tests for troubleshooting paper-path problems . . . 413
Noise-troubleshooting tools . . . 414
Control panel messages for the HP LaserJet 9500 Series printer . . . 415
Control panel and event log message format . . . 416
Event log page . . . 416
Error message interpretation . . . 419
Data and communication troubleshooting tools . . . 466
Troubleshooting tools for the HP LaserJet 9500hdn printer tray 4 . . . 469

8
Parts and diagrams

Introduction 475
Ordering parts 475
Unique parts 476
Kits, supplies, accessories, exchange parts, and documentation 479
Hardware identification 483
Illustrations and parts lists 484
External covers and panels 484
Left cover assembly 488
Right door assembly 489
Internal components (1 of 9) 490
Internal components (2 of 9) 492
Internal components (3 of 9) 494
Internal components (4 of 9) 496
Internal components (5 of 9) 498
Internal components (6 of 9) 500
Internal components (7 of 9) 502
Internal components (8 of 9) 504
Internal components (9 of 9) 506
Registration drive assembly 508
Process cartridge drive assembly (image drum drive) 509
Toner cartridge drive assembly (print cartridge drive) 510
Fuser drive assembly 512
Cassette assembly 514
Paper pickup assembly (1 of 3) 516
Paper pickup assembly (2 of 3) 518
Paper pickup assembly (3 of 3) 520
Manual feed pickup assembly (tray 1) (1 of 2) 522
Manual feed pickup assembly (tray 1) (2 of 2) 524
Registration assembly 526
Secondary transfer assembly (T2) (1 of 2) 528
Secondary transfer assembly (T2) (2 of 2) 530
Delivery feed assembly 531
Face down delivery assembly 532
Delivery cover assembly 533
Fuser assembly 534
PCB assemblies 535
Tray 4 536
Tray 4 main body 536
Tray 4 drive assembly 540
Tray 4 PCA location 541
Pedestal 542
Pedestal main body (1 of 2) 542
Pedestal main body (2 of 2) 543
Master parts lists 544
Alphabetical parts list 544
Numerical parts list 550

Index

List of figures

Figure 1. Sample identification label . . . 25
Figure 2. Front and right side assembly locations (HP LJ 9500 Series printer) . . . 28
Figure 3. Back and left side assembly locations (HP LJ 9500 Series printer) . . . 28
Figure 4. Accessories for the HP LJ 9500 Series printer . . . 29
Figure 5. Front and right side view (HP LJ 9500mfp) . . . 30
Figure 6. Back and left side view (HP LJ 9500mfp) . . . 31
Figure 7. HP color LaserJet 9500n printer dimensions (top and front views) . . . 33
Figure 8. HP color LaserJet 9500hdn printer dimensions (top and front views) . . . 34
Figure 9. HP color LaserJet 9500mfp dimensions . . . 35
Figure 10. Sample seams . . . 41
Figure 11. Adhesive labels . . . 42
Figure 12. Long, short, and diagonal grain curl . . . 48
Figure 13. Measuring curl . . . 49
Figure 14. Control panel layout . . . 60
Figure 15. Printable area from edges . . . 93
Figure 16. Maximum printable area . . . 93
Figure 17. Cleaning the fuser input (step 5) . . . 104
Figure 18. Printer systems . . . 120
Figure 19. Printer components . . . 121
Figure 20. Power-on block diagram . . . 122
Figure 21. Timing chart (1 of 2) . . . 124
Figure 22. Timing chart (2 of 2) . . . 125
Figure 23. Wiring diagram (1 of 4) . . . 126
Figure 24. Wiring diagram (2 of 4) . . . 127
Figure 25. Wiring diagram (3 of 4) . . . 128
Figure 26. Wiring diagram (4 of 4) . . . 129
Figure 27. Connector locations for the HP LaserJet 9500 Series printer (1 of 4) . . . 138
Figure 28. Connector locations for the HP LaserJet 9500 Series printer (2 of 4) . . . 139
Figure 29. Connector locations for the HP LaserJet 9500 Series printer (3 of 4) . . . 140
Figure 30. Connector locations for the HP LaserJet 9500 Series printer (4 of 4) . . . 141
Figure 31. Engine-control system . . . 142
Figure 32. DC controller circuit (1 of 2) . . . 143
Figure 33. DC controller circuit (2 of 2) . . . 144
Figure 34. T driver circuit . . . 147
Figure 35. Fuser control circuit . . . 148
Figure 36. Low-voltage power supply circuit . . . 149
Figure 37. High-voltage power supply circuit . . . 150
Figure 38. Motors and fans . . . 151
Figure 39. Switches, solenoids, and clutches . . . 154
Figure 40. Sensors . . . 154
Figure 41. Formatter system . . . 158
Figure 42. Laser/scanner system . . . 160
Figure 43. Dual-beam method . . . 161
Figure 44. Laser control . . . 162
Figure 45. Image mask control . . . 164
Figure 46. Scanner motor control . . . 166
Figure 47. Color-plane registration (CPR) adjustment . . . 168
Figure 48. Laser beam skew calibration . . . 169
Figure 49. EP process main components . . . 170

Figure 50. Primary charging (step 1) 171
Figure 51. Laser writing latent image (step 2) 171
Figure 52. Developing (step 3) 172
Figure 53. Primary transfer (step 4) 173
Figure 54. Post charging (step 5) 174
Figure 55. Secondary transfer (step 6) 174
Figure 56. Separation (step 7) 175
Figure 57. Fusing (step 8) 175
Figure 58. ITB cleaning (step 9) 176
Figure 59. OPC cleaning 176
Figure 60. OPC cleaning toner collection (step 11) 177
Figure 61. OPC cleaning toner not charged by brushes (step 12) 177
Figure 62. Image-density-detection control 179
Figure 63. Paper-path system motors, clutches, and solenoids 181
Figure 64. Paper-path system switches, sensors, and PCA 182
Figure 65. Cassette pickup 184
Figure 66. Lifting-up operation 185
Figure 67. Tray 1 paper pickup 186
Figure 68. Tray 1 paper-width detection 187
Figure 69. Tray 1 last-paper detection 188
Figure 70. Tray 1 paper feed 189
Figure 71. Tray 4 block diagram (LJ 9500hdn) 192
Figure 72. Remove the FFC 199
Figure 73. DC controller and cable/connector damage areas 200
Figure 74. Gain access to the toner cartridges 201
Figure 75. Rotate the toner cartridge lever 201
Figure 76. Remove the toner cartridge 202
Figure 77. Gain access to the process cartridge door 203
Figure 78. Rotate the process cartridge door dial 203
Figure 79. Open the process cartridge door 204
Figure 80. Remove the process cartridges 204
Figure 81. Remove the waste toner bottle 205
Figure 82. Unlock the transfer cleaner 206
Figure 83. Remove the transfer cleaner 206
Figure 84. Disengage the ITB to release the transfer roller 207
Figure 85. Remove the transfer roller 207
Figure 86. Remove the control panel overlay 208
Figure 87. Release the control panel 209
Figure 88. Remove the control panel 209
Figure 89. Gain access to the right upper cover mounting screws 210
Figure 90. Remove the right upper cover mounting screws 210
Figure 91. Remove the right upper cover 211
Figure 92. Gain access the left upper cover mounting screws 212
Figure 93. Remove the left upper cover mounting screws 212
Figure 94. Remove the top right cover mounting screws 213
Figure 95. Remove the top right cover 213
Figure 96. Reinstalling the top right cover 214
Figure 97. Remove the top left cover mounting screws (1 of 2) 215
Figure 98. Remove the top left cover mounting screws (2 of 2) 215
Figure 99. Remove the top left cover 216
Figure 100. Reinstall the top left cover 216
Figure 101. Remove the front doors 217
Figure 102. Gain access to the fuser 218
Figure 103. Release the fuser door pistons 218
Figure 104. Remove the fuser door 219
Figure 105. Release the right lower door 220
Figure 106. Remove the right lower door assembly 220
Figure 107. Open the ITB door 221
Figure 108. Remove the wire harness shield 221

Figure 109. Disconnect the ITB door wire harness 222
Figure 110. Gain access to the ITB door mounting screws. 222
Figure 111. Remove the ITB door mounting screws 223
Figure 112. Remove the left back cover 224
Figure 113. Remove the left lower cover mounting screws. 225
Figure 114. Remove the front left cover 225
Figure 115. Release the left lower cover tabs 226
Figure 116. Remove the right back cover 227
Figure 117. Remove the back cover 228
Figure 118. Unclip the process cartridge door hinge pins 229
Figure 119. Unlock the process cartridge door 229
Figure 120. Remove the process cartridge door hinge pins 230
Figure 121. Remove the process cartridge door 230
Figure 122. Disconnect a laser/scanner assembly 231
Figure 123. Do not loosen the laser/scanner adjustment screws 231
Figure 124. Reinstall the laser/scanner assembly. 232
Figure 125. Cover the laser/scanners to prevent a light leak 233
Figure 126. Prepare to print a laser/scanner adjustment page 234
Figure 127. Reading the laser/scanner adjustment page 235
Figure 128. Interpreting the laser/scanner adjustment page. 236
Figure 129. Laser/scanner adjustment page step 1 238
Figure 130. Placing the initial laser/scanner S-shims 239
Figure 131. Install the laser/scanner adjustment plate 239
Figure 132. Position the laser/scanner adjustment plate 240
Figure 133. Add or remove laser/scanner adjustment S-shims 240
Figure 134. Position the laser/scanner assembly 241
Figure 135. Tighten the laser/scanner assembly mounting screws 241
Figure 136. Reading the laser/scanner adjustment step 2 images 242
Figure 137. Laser/scanner adjustment page step 2 243
Figure 138. Remove the laser/scanner assembly mounting screws 244
Figure 139. Remove the laser/scanner assembly shim retainers and shims 244
Figure 140. Add or remove the laser/scanner adjustment shims 245
Figure 141. Replace the laser/scanner adjustment shim retainers and shims 246
Figure 142. Tighten the laser/scanner assembly mounting screws 247
Figure 143. Print another laser/scanner adjustment page 248
Figure 144. Gain access to the delivery unit 249
Figure 145. Remove the left side front cover 249
Figure 146. Remove the delivery unit shields 250
Figure 147. Disconnect the delivery unit connectors. 250
Figure 148. Remove the delivery unit mounting screws (1 of 2) 251
Figure 149. Remove the delivery unit mounting screws (2 of 2) 251
Figure 150. Remove the delivery unit 252
Figure 151. Remove the delivery unit sensor 253
Figure 152. Gain access to the vertical feed unit 254
Figure 153. Remove the paper path access door 254
Figure 154. Gain access to the left side middle cover mounting screws. 255
Figure 155. Remove the left side middle cover mounting screws 255
Figure 156. Remove the left side middle cover mounting bracket 256
Figure 157. Remove the vertical feed unit mounting screws. 256
Figure 158. Remove the vertical feed unit. 257
Figure 159. Gain access to the duplexer. 258
Figure 160. Remove the duplexer 258
Figure 161. Unlock the fuser 259
Figure 162. Remove the fuser. 259
Figure 163. Release the ITB 260
Figure 164. Open the ITB door 260
Figure 165. Slide the ITB out of the printer 261
Figure 166. Remove the ITB 261
Figure 167. Remove the right front cover 262

Figure 168. Remove the density and registration sensor mounting screws 262
Figure 169. Disconnect the density and registration sensor connector 263
Figure 170. Unclip the density and registration sensor wire retainers 263
Figure 171. Release the density and registration sensor assembly 264
Figure 172. Remove the density and registration sensor assembly 264
Figure 173. Remove the right back fan 265
Figure 174. Remove the right front fan 266
Figure 175. Remove the T2 cam access door 267
Figure 176. Remove the T2 bearing surface 267
Figure 177. Remove the T2 link cover 268
Figure 178. Remove the T2 cam spring 268
Figure 179. Remove the T2 wire harness cover 269
Figure 180. Remove the T2 link (1 of 2) 269
Figure 181. Remove the T2 link (2 of 2) 270
Figure 182. Remove the T2 assembly 271
Figure 183. Release the right lower door 272
Figure 184. Remove the right lower door 272
Figure 185. Remove the right front cover 273
Figure 186. Open the ITB door 273
Figure 187. Remove the wire harness shield 274
Figure 188. Disconnect the ITB door wire harness 274
Figure 189. Gain access to the ITB door mounting screws 275
Figure 190. Remove the ITB door 275
Figure 191. Remove the front lower right cover 276
Figure 192. Remove the vertical transfer unit 276
Figure 193. Remove the right lower cover 277
Figure 194. Remove the paper path door stop 277
Figure 195. Remove the tray guide mounting screws 278
Figure 196. Remove the tray guides 278
Figure 197. Disconnect the pickup unit connectors 279
Figure 198. Remove the pickup unit 279
Figure 199. Remove the temperature and humidity sensor cover 280
Figure 200. Remove the temperature and humidity sensor 280
Figure 201. Remove the high-voltage power supply 281
Figure 202. Disconnect the low-voltage power supply 282
Figure 203. Remove the low-voltage power supply 282
Figure 204. Disconnect the registration assembly motor 283
Figure 205. Remove the registration assembly motor 283
Figure 206. Remove two wire harness covers 284
Figure 207. Gain access to the green ITB release lever 284
Figure 208. Lower the ITB release lever 285
Figure 209. Release the right back ITB lifting link 285
Figure 210. Remove the right back ITB lifting link 286
Figure 211. Disconnect the registration assembly connector 286
Figure 212. Remove the registration assembly plate mounting screws 287
Figure 213. Remove the registration assembly plate (1 of 2) 287
Figure 214. Remove the registration assembly plate (2 of 2) 288
Figure 215. Remove the registration assembly mounting screws 288
Figure 216. Disconnect the registration assembly connectors 289
Figure 217. Remove the registration assembly 289
Figure 218. Remove the delivery fan 290
Figure 219. Remove the fuser fan 291
Figure 220. Disconnect the P-crg drive assembly connectors 292
Figure 221. Remove the right back ITB lift link (1 of 2) 293
Figure 222. Remove the right back ITB lift link (2 of 2) 293
Figure 223. Disconnect the P-crg drive assembly 294
Figure 224. Remove the P-crg drive assembly mounting screws 294
Figure 225. Disconnect the T-crg drive assembly 296
Figure 226. Remove the T-crg drive assembly mounting screws 297

Figure 227. Remove the fuser motor. . . . 298
Figure 228. Remove the fuser drive assembly mounting screws . . . 299
Figure 229. Disconnect the DC controller connectors. . . . 300
Figure 230. Remove the DC controller FFCs . . . 300
Figure 231. Remove the DC controller mounting screws . . . 301
Figure 232. Verify that the DC controller connectors and FFCs are connected properly . . . 301
Figure 233. Remove the formatter PCB mounting screws . . . 302
Figure 234. Remove the formatter PCB . . . 303
Figure 235. Remove the formatter cage mounting screws . . . 304
Figure 236. Unclip the formatter cage wire retainers . . . 304
Figure 237. Unplug the formatter PCB connector. . . . 305
Figure 238. Remove the formatter cage mounting screws . . . 305
Figure 239. Remove the high-voltage contact. . . . 306
Figure 240. Disconnect the post charger connectors . . . 307
Figure 241. Remove the cable shield . . . 307
Figure 242. Remove the post charger mounting screw. . . . 308
Figure 243. Remove the tray 1 pickup roller . . . 309
Figure 244. Unhook the tray 1 separation pad . . . 310
Figure 245. Remove the tray 1 separation pad. . . . 310
Figure 246. Remove the left door switch cover. . . . 311
Figure 247. Remove the left door switch mounting screws. . . . 311
Figure 248. Remove the right door switch mounting screws. . . . 312
Figure 249. Unhook the ITB sensor cable cover. . . . 313
Figure 250. Disconnect the ITB sensor connector . . . 313
Figure 251. Disconnect the upper left door sensor . . . 314
Figure 252. Remove the fuser front paper sensor mounting screws. . . . 315
Figure 253. Disconnect the fuser front paper sensor . . . 315
Figure 254. Remove the fuser sensor PCA mounting screws. . . . 316
Figure 255. Disconnect the fuser sensor PCA . . . 316
Figure 256. View of front and right side. . . . 317
Figure 257. Removing the left side cover . . . 318
Figure 258. Removing the right side cover . . . 319
Figure 259. Removing the back covers. . . . 320
Figure 260. Removing tray 4. . . . 321
Figure 261. Removing the rollers . . . 322
Figure 262. Removing the registration assembly (1 of 2) . . . 323
Figure 263. Removing the registration assembly (2 of 2) . . . 323
Figure 264. Removing the drive motor . . . 324
Figure 265. Removing the drive assembly . . . 324
Figure 266. Removing the controller board (1 of 2). . . . 325
Figure 267. Removing the controller board (2 of 2). . . . 325
Figure 268. Removing the paper-size switch PCB (1 of 2) . . . 326
Figure 269. Removing the paper-size switch PCB (2 of 2) . . . 326
Figure 270. Removing the power supply. . . . 327
Figure 271. Removing the pickup assembly (1 of 2). . . . 328
Figure 272. Removing the pickup assembly (2 of 2). . . . 328
Figure 273. Removing the paper connecting unit . . . 329
Figure 274. Engine-test button . . . 350
Figure 275. Engine test print page . . . 351
Figure 276. Sample configuration page . . . 353
Figure 277. Sample supplies status page (1 of 2). . . . 354
Figure 278. Sample supplies status page (2 of 2). . . . 355
Figure 279. Sample usage page. . . . 356
Figure 280. Sample file directory page . . . 357
Figure 281. Print-quality assessment page (1 of 2). . . . 361
Figure 282. Print-quality assessment page (2 of 2). . . . 362
Figure 283. Print-quality assessment page attributes. . . . 363
Figure 284. Color band test page . . . 364
Figure 285. Engine test print page . . . 365

Figure 286. Repeating marks (98 mm) 367
Figure 287. Repeating marks (45 mm) 368
Figure 288. Lines and bands 371
Figure 289. Lines, streaks, or scratches appear parallel to feed direction (1 of 2) 374
Figure 290. Lines, streaks, or scratches appear parallel to feed direction (2 of 2) 375
Figure 291. Diagonal bands or lines 378
Figure 292. Light or faint image and dropouts 380
Figure 293. Wavy brush marks 384
Figure 294. Color plane misregistration 385
Figure 295. Primary color covers entire page 387
Figure 296. Ghosted image (98 mm) 388
Figure 297. Ghosted image (140 mm) 389
Figure 298. Distorted or misplaced image 391
Figure 299. Poorly fused image (1 of 2) 392
Figure 300. Poorly fused image (2 of 2) 393
Figure 301. Missing color plane 394
Figure 302. Blank 395
Figure 303. Hand or fingerprints 396
Figure 304. Fine, yellow dot background 397
Figure 305. Toner halos or explosions 398
Figure 306. Paper-path jam sensors 403
Figure 307. Example of events on the event log 417
Figure 308. Sample event log page 418
Figure 309. Sample Jetdirect page 468
Figure 310. Parts that are unique to the MFP (1 of 2) 477
Figure 311. Parts that are unique to the MFP (2 of 2) 478
Figure 312. External covers and panels (1 of 2) 484
Figure 313. External covers and panels (2 of 2) 486
Figure 314. Left cover assembly 488
Figure 315. Right door assembly 489
Figure 316. Internal components (1 of 9) 490
Figure 317. Internal components (2 of 9) 492
Figure 318. Internal components (3 of 9) 494
Figure 319. Internal components (4 of 9) 496
Figure 320. Internal components (5 of 9) 498
Figure 321. Internal components (6 of 9) 500
Figure 322. Internal components (7 of 9) 502
Figure 323. Internal components (8 of 9) 504
Figure 324. Internal components (9 of 9) 506
Figure 325. Registration drive assembly 508
Figure 326. Process cartridge drive assembly (image drum drive) 509
Figure 327. Toner cartridge drive assembly (print cartridge drive) 510
Figure 328. Fuser drive assembly 512
Figure 329. Cassette assembly 514
Figure 330. Paper pickup assembly (1 of 3) 516
Figure 331. Paper pickup assembly (2 of 3) 518
Figure 332. Paper pickup assembly (3 of 3) 520
Figure 333. Manual feed pickup assembly (tray 1) (1 of 2) 522
Figure 334. Manual feed pickup assembly (tray 1) (2 of 2) 524
Figure 335. Registration assembly 526
Figure 336. Secondary transfer assembly (T2) (1 of 2) 528
Figure 337. Secondary transfer assembly (T2) (2 of 2) 530
Figure 338. Delivery feed assembly 531
Figure 339. Face down delivery assembly 532
Figure 340. Delivery cover assembly 533
Figure 341. Fuser assembly 534
Figure 342. PCB assemblies 535
Figure 343. Tray 4 main body (1 of 2) 536
Figure 344. Tray 4 main body (2 of 2) 538

Figure 345. Tray 4 drive assembly 540
Figure 346. Tray 4 PCA location 541
Figure 347. Pedestal main body (1 of 2) 542
Figure 348. Pedestal main body (2 of 2) 543

List of tables

Table 1. Features of the HP color LaserJet 9500 series printer . . . 23
Table 2. Out-of-box specifications . . . 25
Table 3. Packaged specifications . . . 26
Table 4. Power requirements and circuit capacity . . . 26
Table 5. Power consumption . . . 26
Table 6. Environmental specifications . . . 27
Table 7. Noise level specifications . . . 27
Table 8. Supported standard media sizes . . . 38
Table 9. Maximum custom sizes . . . 38
Table 10. Minimum custom sizes . . . 38
Table 11. Supported media weights . . . 38
Table 12. Input tray capacities . . . 38
Table 13. Output bin capacities . . . 38
Table 14. Recommended media . . . 39
Table 15. Media weight, finish, and type . . . 41
Table 16. Determining basis weight of paper . . . 46
Table 17. Paper weight equivalence . . . 46
Table 18. Tools and suppliers . . . 50
Table 19. Related documentation and software . . . 55
Table 20. HP color LaserJet 9500 Series printer control panel features . . . 60
Table 21. Retrieve job menu . . . 63
Table 22. Information menu . . . 64
Table 23. Paper handling menu default settings . . . 65
Table 24. Configure device menu . . . 67
Table 25. PCL submenu . . . 69
Table 26. Print Quality menu . . . 70
Table 27. Description of print modes . . . 73
Table 28. System Setup submenu . . . 75
Table 29. Output Setup submenu . . . 77
Table 30. I/O submenu . . . 77
Table 31. Parallel Input submenu . . . 77
Table 32. EIO submenu . . . 78
Table 33. Resets submenu . . . 80
Table 34. Diagnostics menu . . . 81
Table 35. Component test values . . . 85
Table 36. Service menu . . . 86
Table 37. Maximum custom sizes . . . 92
Table 38. Minimum custom sizes . . . 92
Table 39. Update messages . . . 116
Table 40. Troubleshooting a firmware update . . . 116
Table 41. Troubleshooting a firmware update failure . . . 116
Table 42. Printer components . . . 121
Table 43. Power-on sequence . . . 122
Table 44. Normal sequence of operation . . . 123
Table 45. Failure sequence of operation . . . 123
Table 46. FFC input/output signals on the DC controller . . . 130
Table 47. Motors, fans, clutches, solenoids, and sensors . . . 144
Table 48. Motors and fans . . . 151
Table 49. Switches, solenoids, clutches, and sensors . . . 155

Table 50. Hardware table 198
Table 51. Common torque values 198
Table 52. Pre-troubleshooting checklist 334
Table 53. Power checks 336
Table 54. Repeating print-quality defect dimensions 365
Table 55. Repeating marks 369
Table 56. Lines and bands 372
Table 57. Description 372
Table 58. Lines, streaks, or scratches appear parallel to feed direction 375
Table 59. Diagonal bands or lines 379
Table 60. Light or faint image and dropouts 381
Table 61. Wavy brush marks 384
Table 62. Color plane misregistration 386
Table 63. Possible causes 386
Table 64. Primary color covers entire page 387
Table 65. Ghosted image 390
Table 66. Distorted or misplaced image 391
Table 67. Poorly fused image 393
Table 68. Missing color plane 394
Table 69. Blank 395
Table 70. Hand or fingerprints 396
Table 71. Fine, yellow dot background 397
Table 72. Toner halos or explosions 399
Table 73. Paper-path jam sensors 404
Table 74. Media jams by location 404
Table 75. General jam troubleshooting 411
Table 76. Alphabetical error messages 419
Table 77. Numerical error messages for the HP LaserJet 9500 Series printer 431
Table 78. DIP switch settings 469
Table 79. Tray 4 light pattern interpretation 471
Table 80. Term decoder 476
Table 81. Parts that are unique to the HP color LaserJet 9500 or 9500mfp 476
Table 82. Parts that are unique to the MFP (1 of 2) 477
Table 83. Parts that are unique to the MFP (2 of 2) 478
Table 84. Kits and supplies 479
Table 85. Accessories, exchange parts, and documentation 479
Table 86. Common hardware 483
Table 87. Common torque values 483
Table 88. External covers and panels (1 of 2) 485
Table 89. External covers and panels (2 of 2) 487
Table 90. Left cover assembly 488
Table 91. Right door assembly 489
Table 92. Internal components (1 of 9) 491
Table 93. Internal components (2 of 9) 493
Table 94. Internal components (3 of 9) 495
Table 95. Internal components (4 of 9) 497
Table 96. Internal components (5 of 9) 499
Table 97. Internal components (6 of 9) 501
Table 98. Internal components (7 of 9) 503
Table 99. Internal components (8 of 9) 505
Table 100. Internal components (9 of 9) 507
Table 101. Registration drive assembly 508
Table 102. Process cartridge drive assembly (image drum drive) 509
Table 103. Toner cartridge drive assembly (print cartridge drive) 511
Table 104. Fuser drive assembly 513
Table 105. Cassette assembly 515
Table 106. Paper pickup assembly (1 of 3) 517
Table 107. Paper pickup assembly (2 of 3) 519
Table 108. Paper pickup assembly (3 of 3) 521

Table 109. Manual feed pickup assembly (tray 1) (1 of 2) 523
Table 110. Manual feed pickup assembly (tray 1) (2 of 2) 525
Table 111. Registration assembly 527
Table 112. Secondary transfer assembly (T2) (1 of 2) 529
Table 113. Secondary transfer assembly (T2) (2 of 2) 530
Table 114. Delivery feed assembly 531
Table 115. Face down delivery feed assembly 532
Table 116. Delivery cover assembly 533
Table 117. Fuser assembly 534
Table 118. PCB assemblies 535
Table 119. Tray 4 main body (1 of 2) 537
Table 120. Tray 4 main body (2 of 2) 539
Table 121. Tray 4 drive assembly 540
Table 122. Tray 4 PCA location 541
Table 123. Pedestal main body (1 of 2)l 542
Table 124. Pedestal main body (2 of 2 543
Table 125. Alphabetical parts list 544
Table 126. Numerical parts list 550

1 Product information

Chapter contents

Product features 22
- Features of the HP color LaserJet 9500 series printer 23
- Features of the HP Color LaserJet 9500mfp 24

Product specifications for the printer 25
- Identification 25
- Specifications 25
- Environmental specifications 26

Product overviews 28
- External assembly locations 28
- Accessories 29

Space requirements 32
- Printer with packaging. 32
- Physical dimensions of the printer models and the MFP 33

Printer setup 36

Media specifications 37
- Guidelines for selecting media 37
- Supported media and capacity for input and output 38
- Recommended media. 39
- Special media specifications. 41
- Storing print media 45
- Testing media specifications 45

Media assessment tools and suppliers 50

Product features

This manual contains service information for the HP color LaserJet 9500 Series printer and the print engine portion of the HP color LaserJet 9500mfp. For MFP models, you also need the *HP Scanner/ ADF Service Manual for the HP LaserJet 9000mfp/9000Lmfp/9040mfp/9050mfp/9500mfp* (PN C8449-90955) and the *2,000-sheet Side Input Tray Service Manual* (PN Q1891-90901) for complete MFP service information.

Throughout this document, the term “printer” is used to refer to both the HP LaserJet 9500 Series printer models *and* the HP LaserJet 9500mfp. Make sure to read the headings and text carefully to understand the context of the term.



HP Color LaserJet 9500n printer (C8546A)

The HP color LaserJet 9500n printer comes standard with a 128-MB RAM DIMM, wide-format printing capability, tray 1 (a 100-sheet multipurpose tray), tray 2 and tray 3 (500-sheet trays), and an HP Jetdirect print server.



HP Color LaserJet 9500hdn printer (C8547A)

The HP color LaserJet 9500hdn printer comes standard with a 256-MB RAM DIMM, a 20-GB EIO hard disk, wide-format printing capability, tray 1 (a 100-sheet multipurpose tray), tray 2 and tray 3 (500-sheet trays), tray 4 (a 2,000-sheet feeder), an HP Jetdirect print server, and a duplexer (for printing on both sides of media).



HP Color LaserJet 9500mfp (C8549A)

The HP color LaserJet 9500hdn printer comes standard with a 512-MB RAM DIMM, a 20-GB EIO hard disk, wide-format printing capability, tray 1 (a 100-sheet multipurpose tray), tray 2 and tray 3 (500-sheet trays), tray 4 (a side 2,000-sheet feeder), one of five finishing devices, an HP Jetdirect print server, and a duplexer (for printing on both sides of media).

Note

This manual is used to service the entire HP color LaserJet 9500 Series printer and to service the HP color LaserJet 9500mfp *print engine* only. To service the ADF/scanner portion of the HP color LaserJet 9500mfp, see your *HP Scanner/ADF Service Manual for the HP LaserJet 9000mfp/9000Lmfp/ 9040mfp/9050mfp/9500mfp* (PN C8549-90955). To service the 2,000-sheet side-input tray, see your *2,000-sheet Side-input Tray Service Manual* (PN Q1891-90901).

A complete service manual bundle is available by ordering the *Service Bundle for HP Color LaserJet 9500/9500mfp* (PN C8549-99001). The service bundle includes the manuals listed above, this print engine manual, and the *Paper Handling Accessories Service Addendum* (PN C85693-90002).

Features of the HP color LaserJet 9500 series printer

Table 1. Features of the HP color LaserJet 9500 series printer

Speed	• Up to 24 pages per minute (ppm) for letter- or A4-size media • Half-speed for glossy or heavy media • First page out in less than 17 seconds • Duplexes up to 24 sides per minute for letter- or A4-size media
Resolution	• 600-by-600 dots per inch (dpi) with Resolution Enhancement technology (REt) • HP ImageRet 4800 • Up to 256 levels of gray
Consumables	• Four no-pull-tab print cartridges • Four image drums
Language and fonts	• PostScript® (PS) Level 3 emulation with 35 built-in PS language fonts • HP printer command language (PCL) 6 driver • HP PCL 5c driver for compatibility with previous products • Printer job language (PJL) • Printer management language • 80 scalable TrueType typefaces • Direct .pdf printing
Enhanced memory and memory expansion	• Memory Enhancement technology (MEt) automatically compresses data to use RAM more efficiently • 128 MB of RAM, expandable to 384 MB by using industry-standard 168-pin DIMM
Functions	• Tray 1 supports up to 100 sheets or 10 envelopes for automatic and manual feeding of paper envelopes, labels, transparencies, custom-sized media (98 by 191 mm [3.8 by 7.5 in] to 312 by 470 mm [12.3 by 18.5 in]), and heavy paper • Tray 2 and tray 3 support up to 500 sheets of media • Tray 4 supports letter, legal, B4, A4, 11-by-17 inch, A3, executive, B5, and custom (182 by 210 mm [7.2 by 8.3 in] to 297 by 431.8 mm [11.7 by 17 in]) print media • Two-sided printing (duplex printing) available • Wide-format printing • Glossy printing and document finishing options (hdn model only)
Expandability	• HP color LaserJet 9500 duplexer (standard in the 9500hdn model) • 3,000-sheet stapler/stacker (for the 9500hdn model only) • 3,000-sheet stacker (for the 9500hdn model only) • Multifunction finisher (for the 9500hdn model only) • Enhanced input/output (EIO) cards • DIMM slots for adding memory and fonts • Accepts a 10-GB hard disk for RIP Once capability, job retention features, and font storage (the hard disk is standard on the 9500hdn model)
Wireless printing	• Supports wireless printing with the installation of a Fast InfraRed Connect pod (IrDA compliant) • Wireless EIO card
Interface connection	• Bidirectional ECP type-C parallel port (IEEE-1284 compliant) • Three EIO slots for installation of a hard-disk accessory or print server • Foreign interface connector • HP Jet-Link connector
Networking	• HP 615N Jetdirect print server
Maximum monthly duty cycle	• 200,000 images per month

Features of the HP Color LaserJet 9500mfp

The HP color LaserJet 9500 Series printer and the HP color LaserJet 9500mfp share most of the same features. The following list specifies which features are different from those on the printer or unique to the MFP:

- The MFP includes no top output tray and therefore has no paper path components to top output tray
- The MFP control panel has different features. See the *HP Scanner/ADF Service Manual for the HP LaserJet 9000mfp/9000Lmfp/9040mfp/9050mfp/9500mfp* for information about the control panel configuration.
- The 2,000-sheet feeder tray 4 is a side delivery feeder.
- A finishing device is required on the MFP.
- The MFP formatter differs from the printer formatter.

Product specifications for the printer

Identification

Note See the *HP Scanner/ADF Service Manual for the HP LaserJet 9000mfp/9000Lmfp/9040mfp/9050mfp/9500mfp* (PN C8549-90955) for information that is specific to the MFP version.

For the HP color LaserJet 9500 Series printer, a user-accessible label is located inside the right door of the print engine. The model number is alphanumeric, such as C8547A.

The serial number contains information about the country/region of origin and the revision level, production code, and production number of the printer. An example of a serial number is USBB123456.

The identification label also contains electrical information and regulatory information (see figure 1).

Note The electrical information and regulatory information vary by country/region.

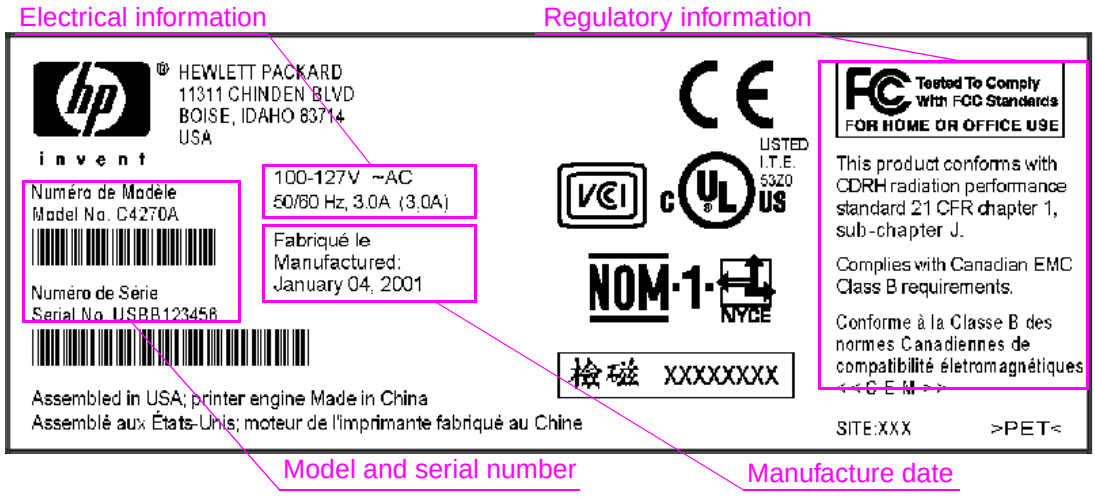


Figure 1. Sample identification label

Specifications

Note See the *HP Scanner/ADF Service Manual for the HP LaserJet 9000mfp/9000Lmfp/9040mfp/9050mfp/9500mfp* (PN C8549-90955) for information that is specific to the MFP version.

Table 2. Out-of-box specifications

Specification	HP color LaserJet 9500n	HP color LaserJet 9500hdn
Height	887 mm (34.9 inches)	1,212 mm (47.8 inches)
Width	682 mm (26.9 inches)	682 mm (26.9 inches)
Depth	767 mm (30.2 inches)	767 mm (30.2 inches)
Weight without print cartridges and image drums	100 kg (221 lb)	130 kg (287 lb)
Weight with print cartridges and image drums in packaging	174 kg (383 lb)	198 kg (436 lb)

Table 3. Packaged specifications

Specification	HP color LaserJet 9500n	HP color LaserJet 9500hdn
Height	1,313 mm (51.7 inches)	1,488 mm (58.6 inches)
Width	1,200 mm (47.2 inches)	1,200 mm (47.2 inches)
Depth	1,022 mm (40.2 inches)	1,022 mm (40.2 inches)

Table 4. Power requirements and circuit capacity

	110-volt models	220-volt models
Power requirements	100 to 127 V (+/- 10%) 50 to 60 Hz (+/- 2 Hz)	220 to 240 V (+/- 10%) 50 to 60 Hz (+/- 2 Hz)
Minimum recommended circuit capacity	15.0 Amps (dedicated circuit)	10.0 Amps (dedicated circuit)

WARNING! Power requirements are based on the country/region where the printer is sold. Do not convert operating voltages. This can damage the printer and void the product warranty.

Table 5. Power consumption

Printer state	HP color LaserJet 9500n	HP color LaserJet 9500hdn
Printing (24 ppm)	722 W	741 W
Standby (Ready)	171 W	173 W
Low PowerSave (ENERGY STAR®)	69 W	69 W
High PowerSave (Blue Angel)	32 W	32 W
Off	<2 W	<2 W

Environmental specifications

The environmental specifications must be maintained to ensure the proper operation of the printer. Consider the following points before installing the printer:

- Install the printer in a well-ventilated, dust-free area.
- Install the printer on a level, flat surface that can support its size and weight. Do not install on carpet or on other soft surfaces. Make sure that all four printer feet are level.
- Install the printer where temperature and humidity are stable, with no abrupt changes (away from water sources, humidifiers, air conditioners, refrigerators, or other major appliances).
- Install the printer away from direct sunlight, areas that experience vibration, open flames, ammonia fumes, ultrasonic heaters, and devices that emit a magnetic field. If the printer is placed near a window, make sure that the window has a curtain or blind to block direct sunlight.
- Maintain enough space around the printer for proper access and ventilation.

Table 6. Environmental specifications

	Allowable condition	Recommended condition
Operating temperature	10° to 30° Celsius (C) (50° to 86° Fahrenheit [F])	20° to 26°C (68° to 79°F)
Relative humidity	10 to 80 percent	20 to 50 percent
Storage temperature	15° to 30°C (59° to 86°F)	20° to 26°C (68° to 79°F)
Storage humidity	5 percent to 95 percent	5 percent to 95 percent

Table 7. Noise level specifications

Acoustics	Printing (24 ppm)	PowerSave
Sound power level	L_{WAd} = 67 dB(A)	essentially inaudible
Sound pressure level, L_{pAm} (Bystander position)	L_{pAm} = 50 dB(A)	essentially inaudible

Note Testing per International Standards Organization (ISO) 9296.

External assembly locations

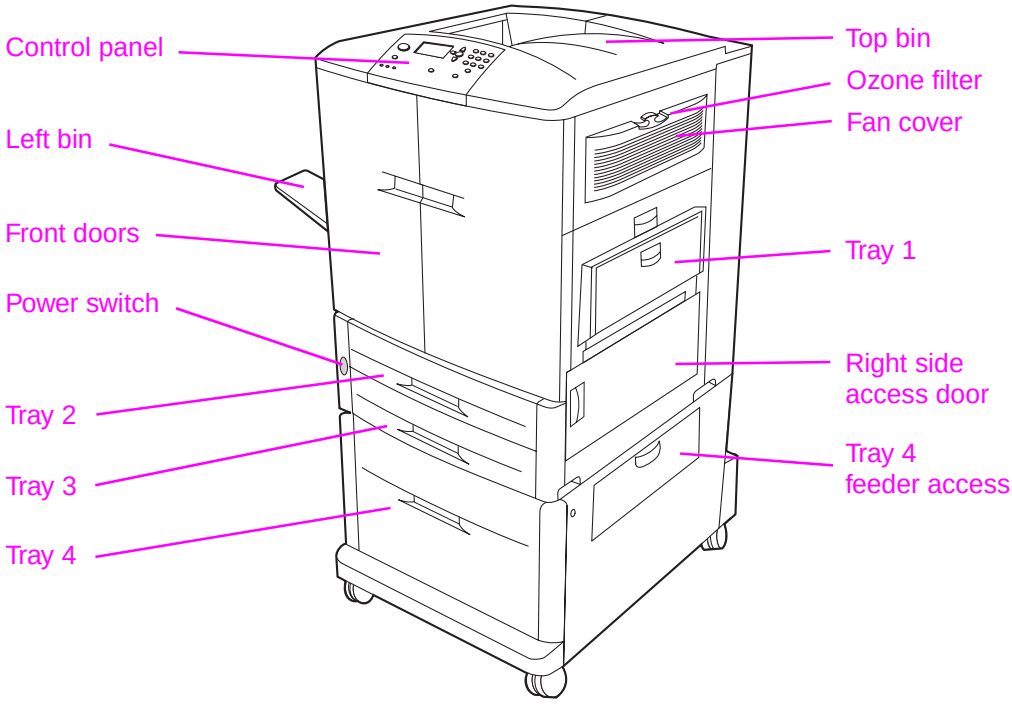


Figure 2. **Front and right side assembly locations (HP LJ 9500 Series printer)**

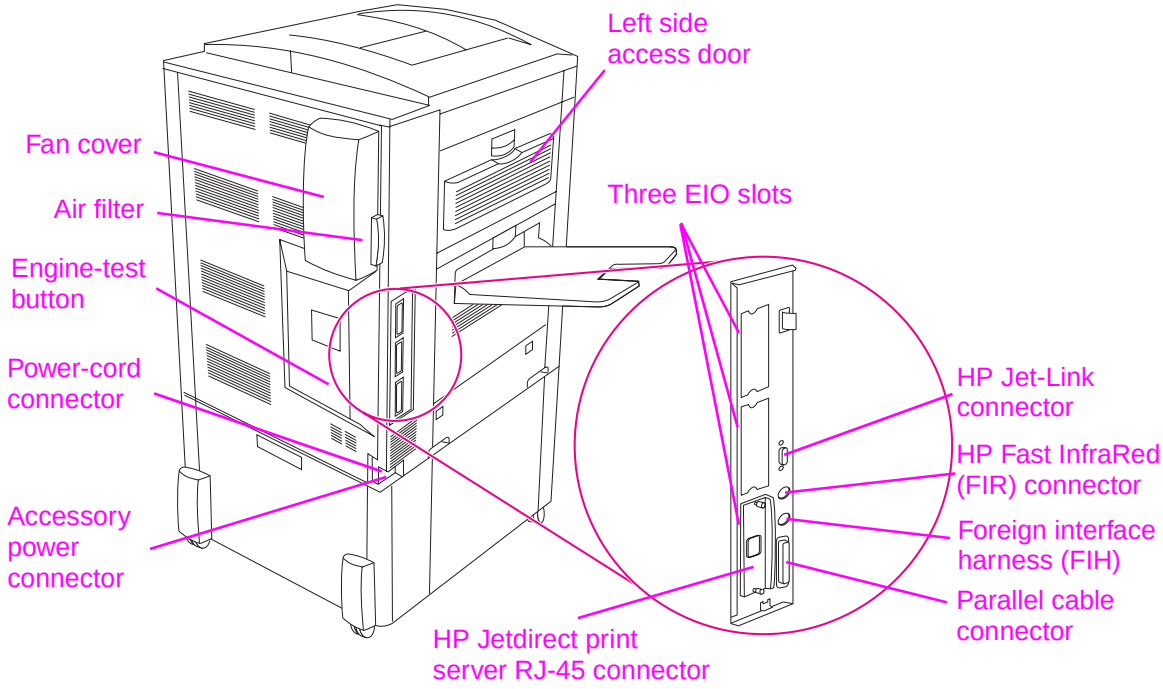
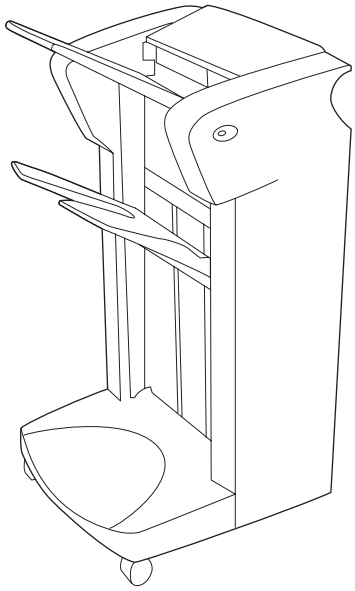
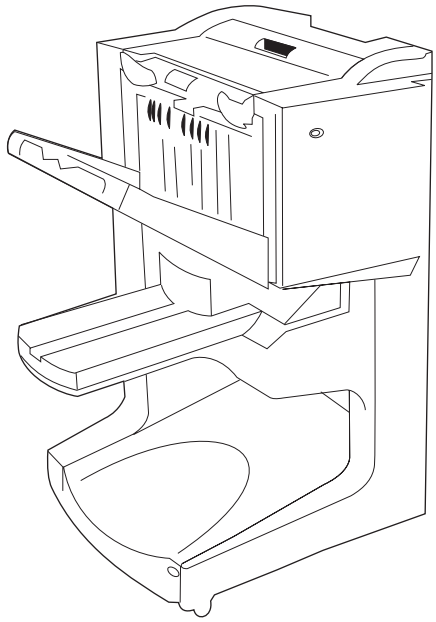


Figure 3. **Back and left side assembly locations (HP LJ 9500 Series printer)**

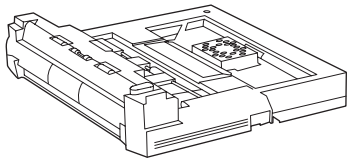
Accessories



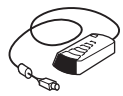
3,000-sheet stapler/stacker (C8085A)
or 3,000-sheet stacker (C8084A)



Multifunction finisher (C8088A)



Duplexer (C9674A)



HP Fast InfraRed
receiver (FIR) (C4103A)

Figure 4. **Accessories for the HP LJ 9500 Series printer**

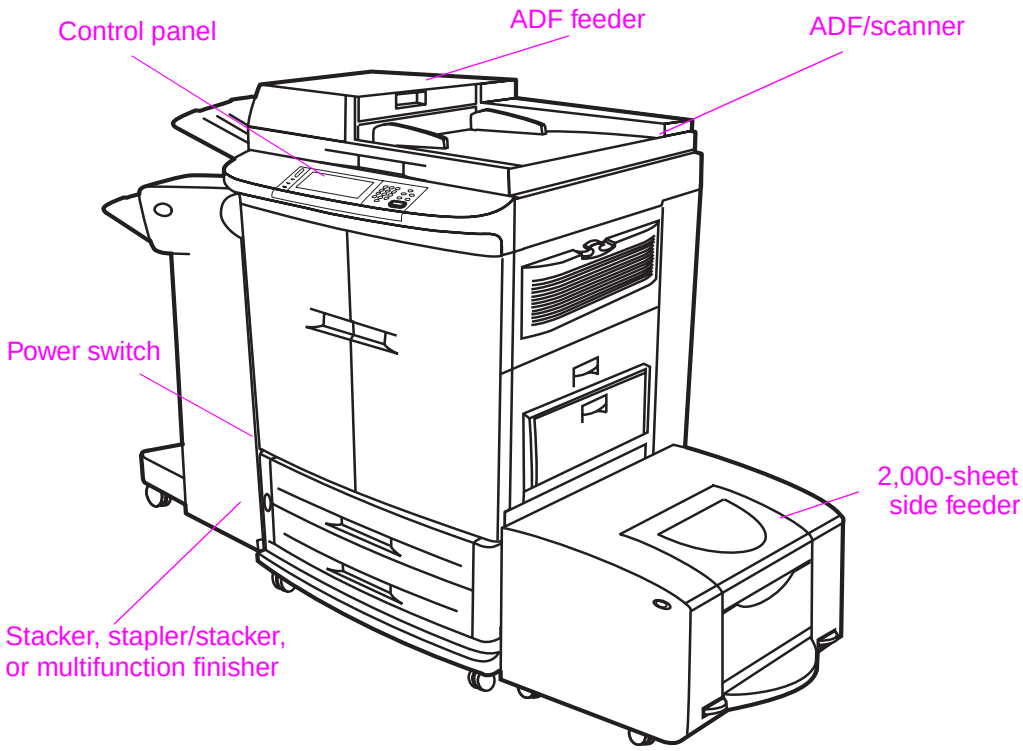


Figure 5. **Front and right side view (HP LJ 9500mfp)**

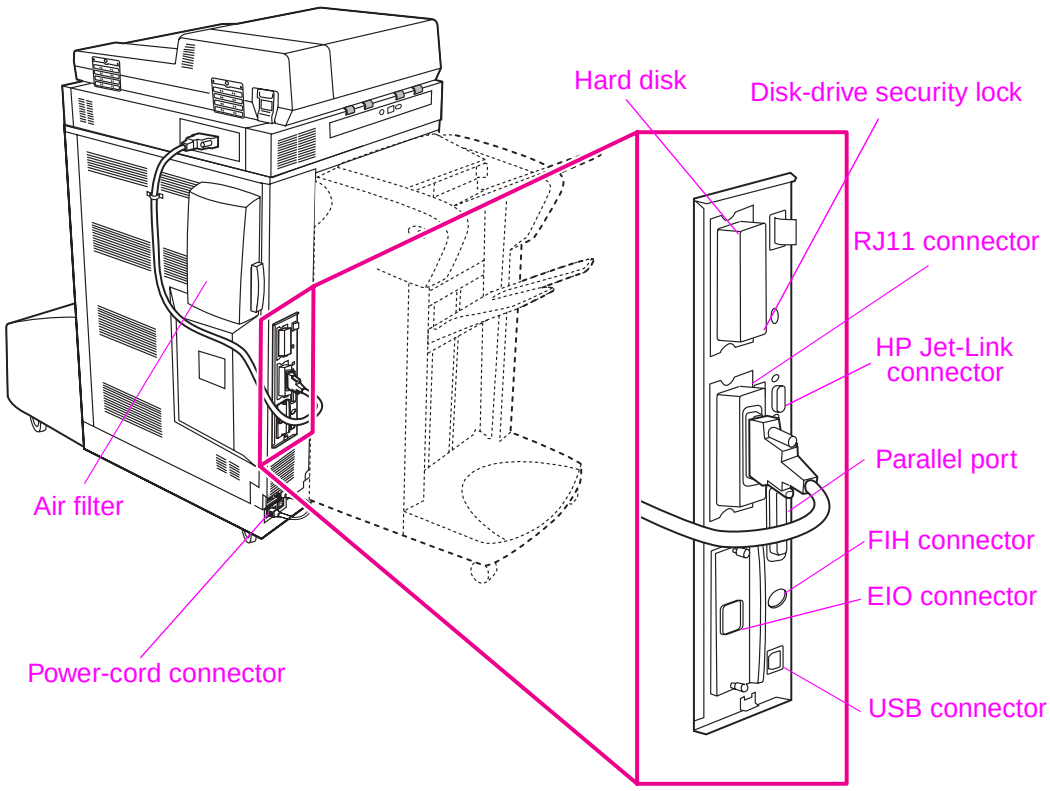


Figure 6. **Back and left side view (HP LJ 9500mfp)**

Space requirements

Note See the *HP Scanner/ADF Service Manual for the HP LaserJet 9000mfp/9000Lmfp/9040mfp/9050mfp/9500mfp* (PN C8549-90955) for information that is specific to the MFP version.

Printer with packaging

The shipping box that contains the HP color LaserJet 9500 series printer is 1,200 mm (47.2 inches) wide and 1,022 mm (40.2 inches) deep. The shipping box that contains the HP color LaserJet 9500n is 1,313 mm (51.7 inches) high, and the shipping box that contains the HP color LaserJet 9500hdn is 1,488 mm (58.6 inches) high. The in-box weight of the HP color LaserJet 9500n is 174 kg (383 lb), and the in-box weight of the HP color LaserJet 9500hdn is 198 kg (436 lb).The customer must locate a door or receiving area that is large enough to accept delivery of the shipping box.

Note Before removing the printer from the box, make sure that adequate space is available to unpack the printer and to roll the product off of the shipping pallet. At least 10 feet of clearance around the box is required to remove all of the shipping materials.

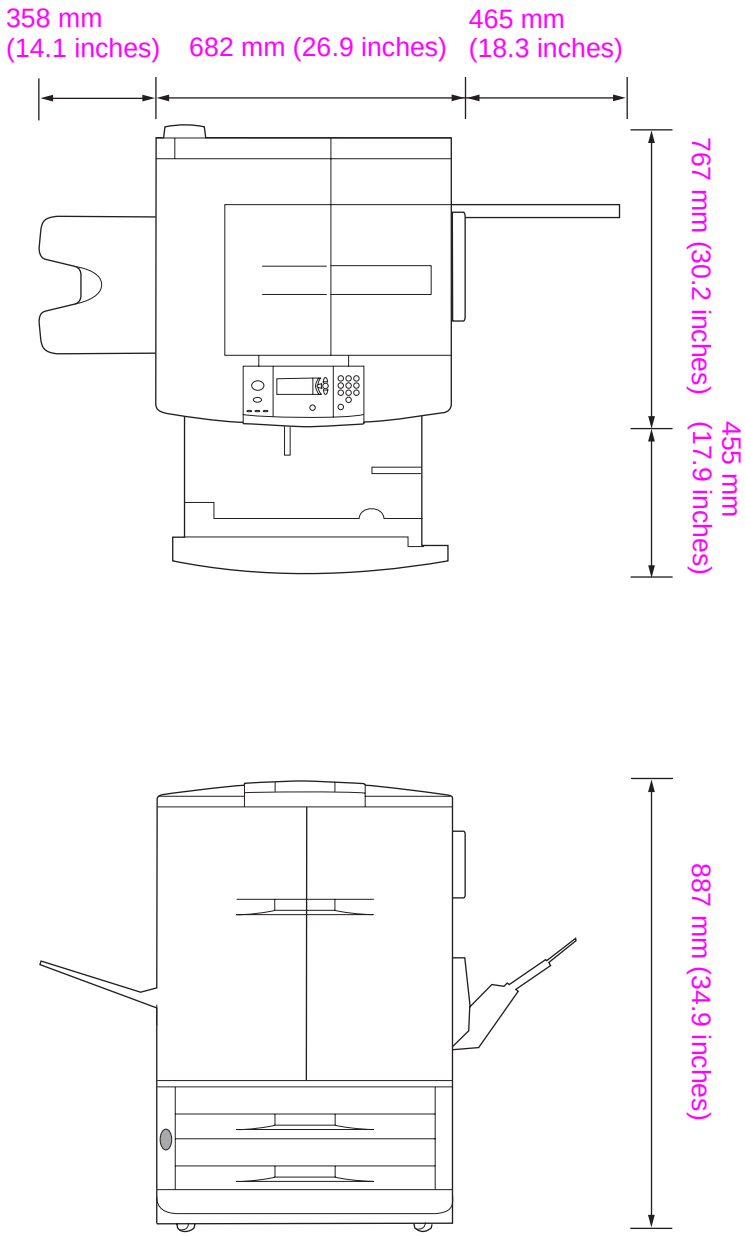


Figure 7. **HP color LaserJet 9500n printer dimensions (top and front views)**

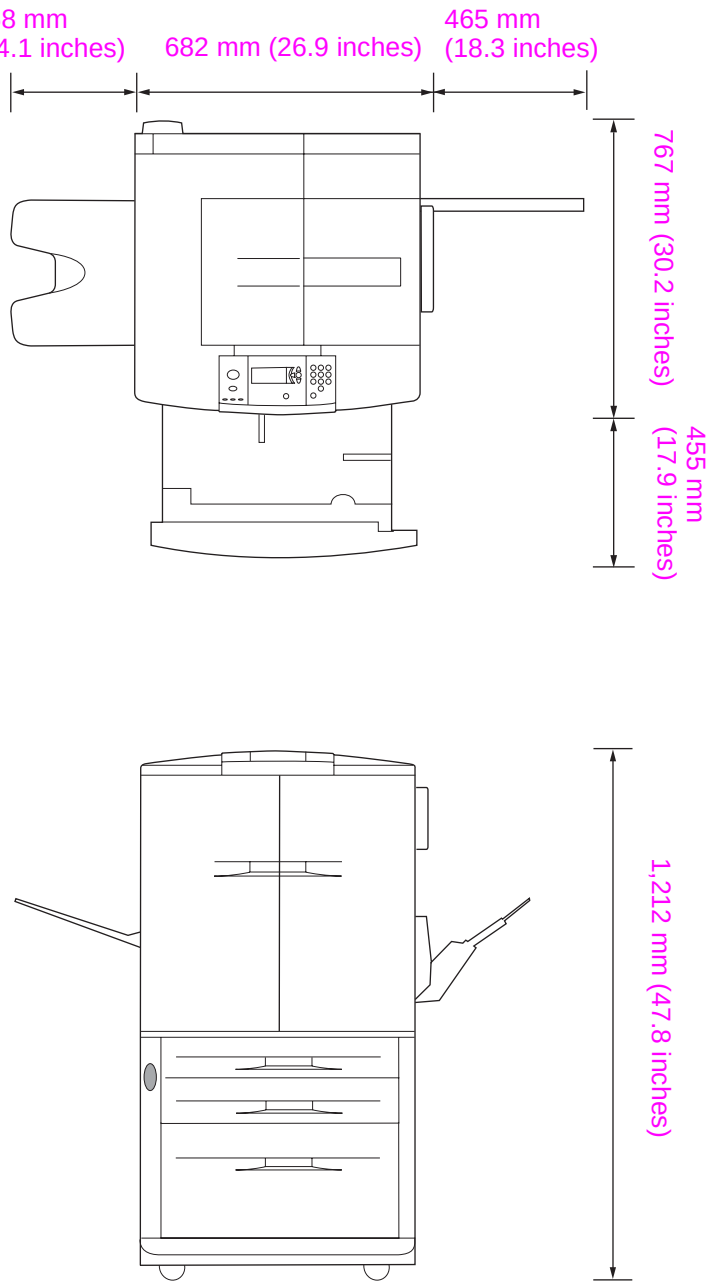


Figure 8. **HP color LaserJet 9500hdn printer dimensions (top and front views)**

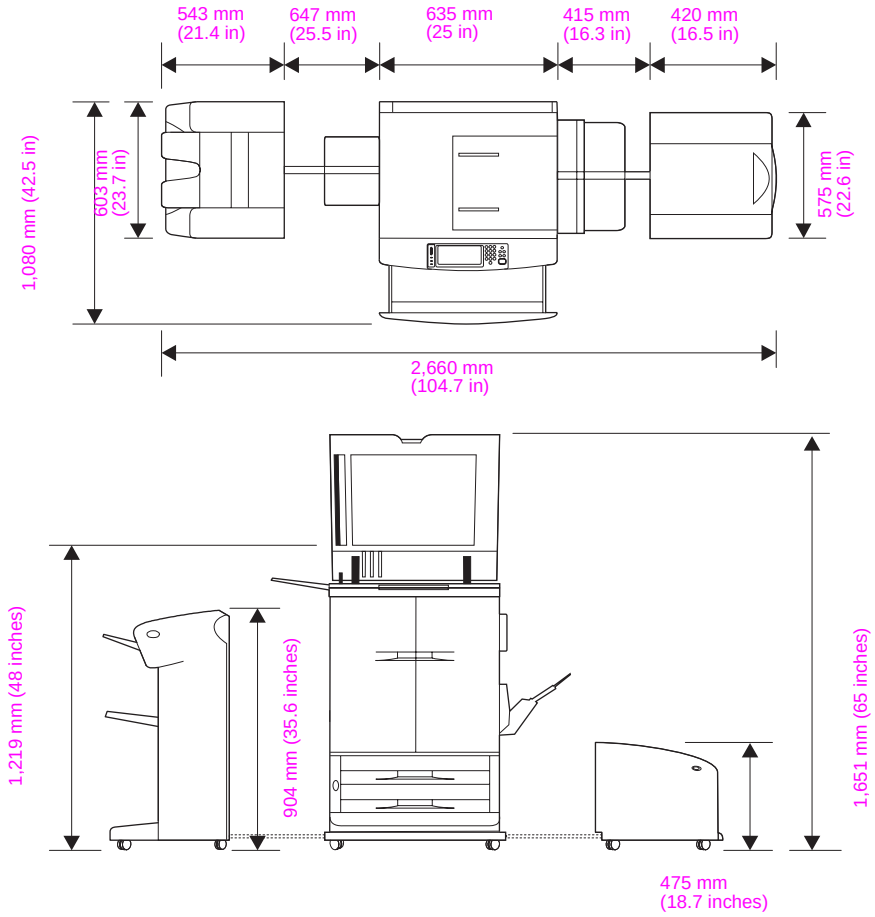


Figure 9. **HP color LaserJet 9500mfp dimensions**

Printer setup

Note See the *HP Scanner/ADF Service Manual for the HP LaserJet 9000mfp/9000Lmfp/9040mfp/9050mfp/9500mfp* (PN C8549-90955) for information about the MFP.

The initial printer setup includes the following steps:

- Remove the printer from the box.
- Set up and install the printer. See the *HP color LaserJet 9500 User Reference Guide* at http://www.hp.com/support/lj9500.
- Set up and install the finishing device (for the 9500hdn only). See the install guide that came with the finishing device.

The shipping box contains the following items:

- HP color LaserJet 9500 series printer
- One power cord
- Control panel overlay
- Consumables box
  - Four print cartridges
  - Four image drums
  - One image cleaning blade
  - One toner collection bottle
- Printer software on CD-ROM (includes the *HP color LaserJet 9500 User Reference Guide*)
- *Start* guide

Note The finishing device is delivered in a separate box (optional for the 9500hdn model only).

The HP color LaserJet 9500hdn is delivered with the duplexer, hard disk, network card, and tray 4 installed.

Media specifications

Before purchasing large quantities of print media, make sure that it meets the requirements specified in this service manual and in the *HP color LaserJet 9500 User Reference Guide*. Always test the print media before buying large quantities.

Hewlett-Packard neither warrants nor recommends the use of a particular brand of paper or print media other than HP media. Media properties are subject to manufacturing changes, and HP has no control over such changes. Although testing the media helps to characterize the performance and the manufacturer's process quality, the customer assumes all responsibility for the quality and performance of media.

CAUTION Using print media that does not meet HP specifications might cause problems for the product, requiring repair. Such repair is not covered by the Hewlett-Packard warranty or service agreements.

The HP color LaserJet 9500 series printers accept a variety of media, such as cut-sheet paper (including up to 100 percent recycled fiber-content paper), envelopes, labels, transparencies, and custom-size paper. Properties such as weight, composition, grain, and moisture content are important factors affecting printer performance and output quality. Media that does not meet the guidelines outlined in this manual and in the print media guide can cause the following problems:

- poor print quality
- increased jams
- premature wear on the printer, requiring repair

Guidelines for selecting media

This product accepts a variety of media, such as cut-sheet paper (including recycled paper), envelopes, labels, transparencies, and custom-size paper. Properties such as weight, grain, and moisture content are important factors that affect product performance and print quality.

Selecting media by type and size at the control panel and in the printer driver results in significantly better print quality for heavy paper and glossy paper. Using the wrong setting can result in unsatisfactory print quality. Always print by type for special print media such as labels or transparencies. Always print by size for envelopes.

The product can use a variety of paper and other print media in accordance with the guidelines in this manual. Paper that does not meet these guidelines can cause the following problems:

- poor print quality
- media jams and multiple-sheet feeds
- premature wear on the printer, requiring repair

Note Some print media might meet all of the guidelines in this manual and still not produce satisfactory results. This might be the result of improper handling, unacceptable temperature and humidity levels, or other variables over which HP has no control.

If you are unsure what type of paper you are loading (such as bond or recycled), check the label on the package of paper.

- See "Basis weight field test" on page 46 for information about measuring basis weight.
- See "Caliper field test" on page 48 for information about measuring caliper.
- See "Paper finish field test" on page 48 for information about smoothness.

Hint Do not purchase more media than can be easily used in a short time (about 3 months). Media that is stored for long periods experiences heat and moisture extremes that can be damaging. Planning is important to prevent damage to a large supply of media.

Supported media and capacity for input and output

Note The leading edge is listed first in the dimension measurements.

Table 8. Supported standard media sizes

Printing task	Tray 1	Tray 2 and tray 3	Tray 4
Simplex, and manual and auto duplex	• letter, legal, executive, ISO A3, ISO A4, ISO A5, 11 by 17, JIS B5, JIS B4, JPostD, 8K, 16K	• letter, legal, executive, ISO A3, ISO A4, ISO A5, JIS B4, JIS B5, 11 by 17	• letter, legal, executive, ISO A3, ISO A4, 11 by 17, JIS B4, JIS B5

Table 9. Maximum custom sizes

Printing task	Tray 1	Tray 2 and tray 3	Tray 4
Simplex, and manual and auto duplex	• 306 by 470 mm (12.05 by 18.5 inches)	• 297 by 432 mm (11.7 by 17 inches)	• 297 by 432 mm (11.7 by 17 inches)

Table 10. Minimum custom sizes

Printing task	Tray 1	Tray 2 and tray 3	Tray 4
Simplex and manual duplex	• 98 by 170 mm (3.9 by 6.7 inches)	• 148 by 210 mm (5.8 by 8.3 inches)	• 182 by 210 mm (7.2 by 8.3 inches)
Auto duplex	• 148 by 210 mm (5.8 by 8.3 inches)	• 148 by 210 mm (5.8 by 8.3 inches)	• 182 by 210 mm (7.2 by 8.3 inches)

Table 11. Supported media weights

Printing task	Tray 1	Tray 2 and tray 3	Tray 4
Simplex and manual duplex	• 64 to 220 g/m^2 (17- to 58-lb bond)	• 64 to 200 g/m^2 (17- to 53-lb bond)	• 64 to 200 g/m^2 (17- to 53-lb bond)
Auto duplex	• 64 to 200 g/m^2 (17- to 53-lb bond)	• 64 to 200 g/m^2 (17- to 53-lb bond)	• 64 to 200 g/m^2 (17- to 53-lb bond)

Table 12. Input tray capacities

Type of media	Tray 1	Tray 2 and tray 3	Tray 4
Cut sheets	• up to 100 sheets (10 mm total height, 5 mm total height for media that is 200 g/m^2 [53-lb bond] or heavier)	Up to 500 sheets	Up to 2,000 sheets
Envelopes	• up to 10 envelopes (10 mm total height)	Not supported	Not supported

Table 13. Output bin capacities

Bin	75 g/m^2 (20-lb bond)	Transparencies
Top bin (face down)	• up to 500 sheets	Up to 50 sheets
Left bin (face up)	• up to 100 sheets	Up to 10 sheets

CAUTION Do not use paper that is heavier than 200 g/m^2 (53-lb bond) for duplex printing. Damage to the product and jams might result.

Recommended media

The media types that are listed in the following table meet these criteria:

- They have been tested in this product.
- They have proven to be of good quality.
- They work well with the product's settings.

Ordering recommended media

The product numbers for media are listed in parentheses after the media sizes. Use these product numbers when ordering media.

All of the HP-brand media is available at www.hpshopping.com or from your local office supplies retailer.

The product supports the StoraEnso paper that is listed in the table. It is available through your local office products supplier.

Note

Set the type at the control panel when you load the trays, and in the printer driver when you print your print job.

Table 14. Recommended media

Recommended media	Type	Characteristics
HP High Gloss Laser Paper letter (Q2419A) 11 by 17 (tabloid) (Q2420A) A4 (Q2421A) A3 (Q2422A)	HP HEAVY GLOSSY	120 g/m^2 (32-lb bond), 200 sheets, high-gloss finish coating on both sides, 95 bright Use for: brochures, catalogs, business plans, photographs, and images
HP Premium Cover Paper letter (Q2413A) A4 (Q2414A)	CARDSTOCK >164 g/m^2	200 g/m^2 (75-lb cover), 100 sheets, super-smooth matte finish on both sides, 96 bright Use for: postcards and document covers
HP Color Laser Paper letter (HPL245R) 11 by 17 (tabloid) (HPL2417)	PLAIN	90 g/m^2 (24-lb bond), 500 sheets, smooth matte finish on both sides, 96 bright Use for: newsletters and color documents
HP Color Laser Paper 105 g/m^2 (28-lb bond) letter (HPL285R) 11 by 17 (tabloid) (HPL2817)	PLAIN	105 g/m^2 (28-lb bond), 500 sheets, smooth matte finish on both sides, 96 bright Use for: newsletters and color documents
HP Soft Gloss Laser Paper letter (C4179A) A4 (C4179B) **Note** HP Soft Gloss Laser Paper is designed specifically for use with the HP color LaserJet 9500 series printers.	HP HEAVY GLOSSY	120 g/m^2 (32-lb bond), 200 sheets, satin finish coating on both sides, 96 bright Use for: flyers, handouts, sales briefs, proposals, and color images

Table 14. Recommended media (continued)

Recommended media	Type	Characteristics
HP Soft Gloss LaserPaper 105 g/m^2 (28-lb bond) letter (Q2415A) 11 by 17 (tabloid) (Q2416A) A4 (Q2417A) A3 (Q2418A)	GLOSSY 75-105 g/m^2	105 g/m^2 (28-lb bond), 500 sheets, satin finish coating on both sides, 96 bright Use for: flyers, handouts, sales briefs, proposals, and color images
HP Premium Choice LaserJet Paper letter (HPU1132) 11 by 17 (tabloid) (HPU1732) A4 (CHP410) A4 (Asia) (Q2397A) A3 (Asia) (Q2396A)	HEAVY 106-163 g/m^2	120 g/m^2 (32-lb bond), 500 sheets (250 sheets for 11 by 17), matte finish on both sides, 98 bright Use for: proposals and charts
HP Premium Choice LaserJet Paper 160 g/m^2 (42-lb bond) A4 (Europe) (CHP413) A3 (Europe) (CHP421)	HEAVY 106-163 g/m^2	160 g/m^2 (42-lb bond), 250 sheets, matte finish on both sides 98 bright Use for: proposals and charts
HP LaserJet Paper letter (HPJ1124) 3-hole prepunched (HPJ113H) legal (HPJ1424) 11 by 17 (tabloid) (HPJ1724) A4 (Europe) (CHP310)	PLAIN	90 g/m^2 (24-lb bond), 500 sheets, matte finish on both sides, 96 bright Use for: reports, user manuals, letterhead, and correspondence
HP Office Recycled Paper letter (HPE1120) 3-hole prepunched (HPE113H) legal (HPE1420)	PLAIN	75 g/m^2 (20-lb bond), 500 sheets, matte finish on both sides, contains 30 percent post-consumer content (satisfies U.S. Executive Order 13101), 87 bright Use for: training manuals and general office printing
HP Tough Paper letter (Q1298A) A4 (Q1298B)	TOUGH PAPER	5 mil thick (approximately 44-lb bond equivalent), 50 sheets, satin finish coating on both sides, waterproof, tearproof Use for: signs, maps, restaurant menus, waterproof documents, and tearproof documents
HP Color LaserJet Transparencies letter (C2934A) A4 (C2936A)	TRANSPARENCY	5 il thick, 50 sheets, premium coated both sides Use for: transparencies
StoraEnso Futura Laser Cover 11 by 17 (01109)	NON HP HEAVY GLOSSY	163 g/m^2 (60-lb cover), 250 sheets, coated, premium white Use for: document cover

Table 15. Media weight, finish, and type

Weight	Finish	Type
Less than 75 g/m² (20-lb bond)	any	LIGHT<75 g/m
75 g/m ² (20-lb bond) to 105 g/m² (28-lb bond)	matte	PLAIN
75 g/m ² (20-lb bond) to 105 g/m² (28-lb bond)	glossy	GLOSSY 75-105 g/m
106 g/m² (29-lb bond) to 163 g/m² (43-lb bond)	matte	HEAVY 106-163 g/m
106 g/m² (29-lb bond) to 163 g/m² (43-lb bond)	glossy	HP HEAVY GLOSSY (if using HP-brand media) NON HP HEAVY GLOSSY (if using non-HP-brand media)
164 g/m² (44-lb bond) and heavier	any	CARDSTOCK>164 g/m

Special media specifications

Envelope specifications

Successful printing on envelopes depends upon the quality of the envelopes. Envelope fold lines can vary considerably, not only between manufacturers, but also within a box from the same manufacturer. When selecting envelopes, consider the following components:

- **Construction:** Prior to printing, envelopes should lie flat with less than 6 mm (0.25 inch) curl, and have well-constructed seams.
- **Condition:** Envelopes should not be wrinkled, nicked, or otherwise damaged.
- **Temperature:** Envelopes should be compatible with the heat and pressure produced by the printer.

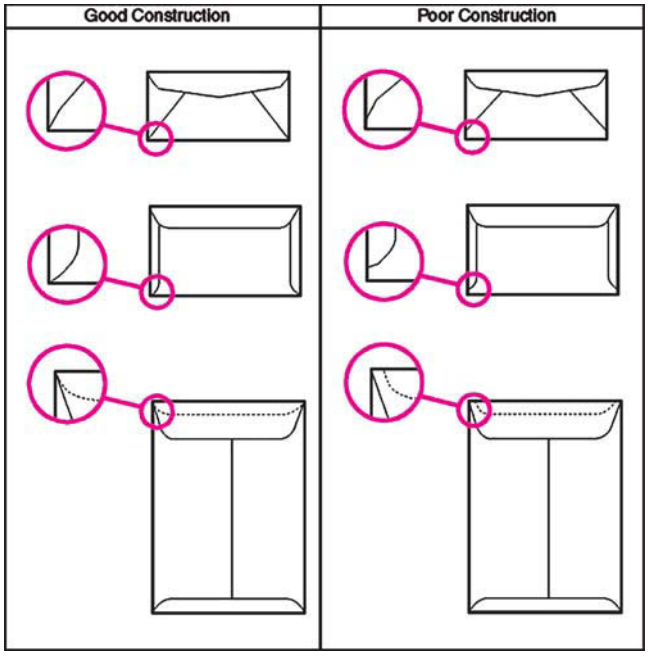


Figure 10. Sample seams

Note Print on envelopes from tray 1 only. Send envelopes straight through the printer, entering at tray 1 and exiting from the face-up bin.

For the best print quality, position margins no closer than 15 mm (0.6 inch) from the edges of the envelope. Avoid printing over the area where the envelope seams meet.

Envelopes with adhesive strips or multiple flaps

Envelopes with a peel-off adhesive strip, or with more than one flap that folds over to seal, must use adhesives that are compatible with the heat and pressure of the printer. The extra flaps might cause wrinkling, creasing, or jams.

Label specifications

CAUTION To avoid damaging the printer, use only labels that are recommended for laser printers. Never print on the same sheet of labels more than once and never print on a partial sheet of labels.

When selecting labels, consider the quality of each component:

- **Adhesives:** The adhesive material should be stable at 200° C (392° F), which is the printer fusing temperature.
- **Arrangement:** Do not use labels that have exposed backing between them. Labels can peel off sheets with spaces between the labels, causing jams.
- **Curl:** Prior to printing, labels must lie flat with no more than 13 mm (0.5 inch) of curl in any direction.
- **Condition:** Do not use labels that have wrinkles, bubbles, or other indications of separation.

Note Use only tray 1 to print on labels. Send labels straight through the printer, entering at tray 1 and exiting from the face-up bin.

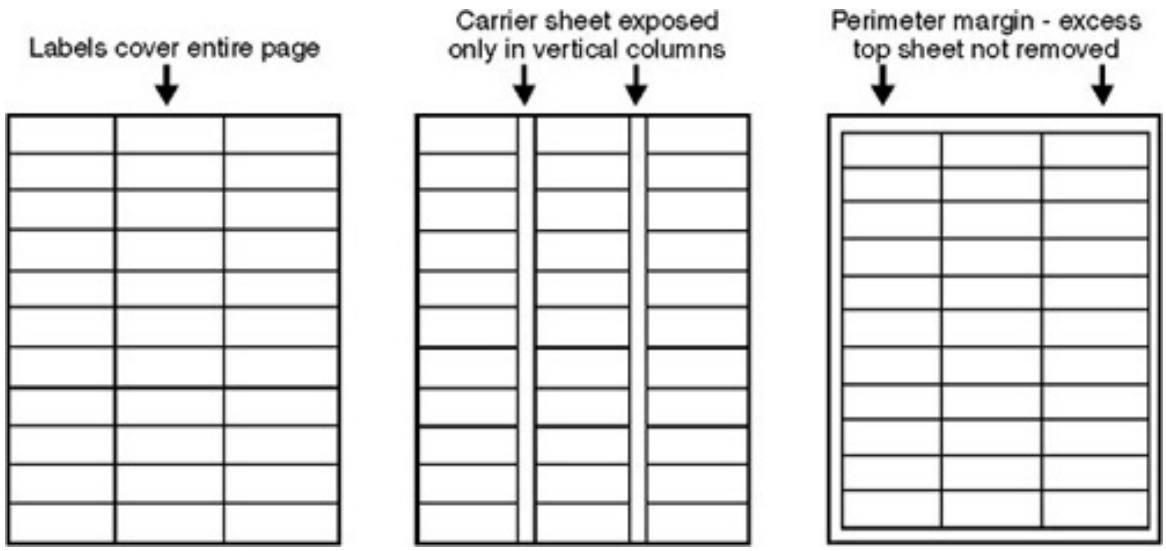


Figure 11. **Adhesive labels**

Card stock construction

When selecting card stock, consider the quality of each component:

- **Smoothness:** 135- to 220-g/m^2 (36- to 58-lb bond) card stock should have a smoothness rating of 100 to 180 Sheffield.
- **Curl:** Card stock should lie flat with less than 5 mm (0.2 inch) of curl.
- **Condition:** Make sure that the card stock is not wrinkled, nicked, or otherwise damaged.
- **Size:** See “Supported media and capacity for input and output” on page 38.
- **Weight:** Card stock of 200 g/m^2 (53 lb) or less can be loaded in any tray. Card stock heavier than 200 g/m^2 (53 lb) must be printed from tray 1.

Note When printing on card stock, make sure to set the CARDSTOCK type at the control panel when you load the tray, and in the printer driver when you print your print job.

Transparency specifications

To avoid damaging the printer, use only transparencies that are recommended for use in color laser printers.

- **Construction:** Prior to printing, transparencies should lie flat with less than 10 mm (0.39 inch) curl.
- **Condition:** Transparencies should not be wrinkled, nicked, or otherwise damaged.
- **Temperature:** Transparencies should be stable at 190° C (374° F), which is the printer fusing temperature.
- **Size:** 5 mm thick (0.005 inch)

Note If problems occur while printing on transparencies, use tray 1. Send transparencies straight through the printer, entering at tray 1 and exiting from the face-up bin.

CAUTION Transparencies used in the printer must be able to withstand 190° C (374° F), the printer fusing temperature.

Preprinted forms and special letterhead

Many preprinted forms and special letterhead papers perform well in HP LaserJet printers. However, these papers undergo processes that alter their original characteristics, and care must be taken to ensure they conform to HP specifications. All special papers should be wrapped in moisture-proof wrapping when purchased from the paper converter or printing house.

Forms and letterhead must be printed with inks that conform to the following specifications:

- Only use ink that is heat-resistant, and that will not melt, scorch, or release hazardous emissions when subjected to 200° C (392° F) for 0.1 second.
- Inks must have resistance to silicon oils, and must not be affected by resin components in toner.
- Inks must not be flammable.
- Inks must not “offset” (transfer from the printed paper onto the printer, contaminating internal printer components). The principle cause of offset is ink that is not fully dried or that cannot withstand the printer fusing temperature.

Note Do not use forms or letterhead that was produced by using low-temperature inks (the kind used with thermography).

Embossed media

Embossed media is not recommended for use in HP LaserJet products. Media is embossed by stamping an image into the media by compressing the media fibers together at approximately 200° C (392° F), and sometimes by applying a thin metal foil to the surface. The product fusing process can loosen the foil; loose foil can interfere with the mechanical and electronic operation of the product.

Embossed paper, with or without foil, can also cause multifeed jams. Multiple embossed print media sheets tend to stick to one another.

Glossy media

Keep these considerations in mind when selecting or printing on glossy media:

- Print quality can vary with the media used. For best results, use HP-brand glossy media.
- When using media that has only one glossy side, make sure to orient the media so that the printer prints on the glossy side.

Note

When printing on glossy media that is between 75 g/m^2 (20-lb bond) and 105 g/m^2 (28-lb bond) in weight, make sure to set the `GLOSSY` type at the control panel when you load the tray, and in the printer driver when you print your print job.

When printing on HP-brand glossy media that is between 106 g/m^2 (29-lb bond) and 163 g/m^2 (43-lb bond) in weight, make sure to set the `HP HEAVY GLOSSY` type at the control panel when you load the tray, and in the printer driver when you print your print job.

When printing on non HP-brand glossy media that is between 106 g/m^2 (29-lb bond) and 163 g/m^2 (43-lb bond) in weight, make sure to set the `NON HP HEAVY GLOSSY` type at the control panel when you load the tray, and in the printer driver when you print your print job.

Media with cutouts or perforations

Avoid media with cutouts or perforations for these reasons:

- Cut fibers absorb more moisture and can increase waviness and media curl. This decreases the print quality near the cutout or perforated area.
- Cutting knives leave a sharp edge on the cutout or perforation. If the sharp edge is facing the print cartridge drum during printing, it can scratch the drum surface.
- If printing occurs over a cutout hole, the transfer roller is contaminated with unused toner, creating light streaks on the paper.

Chemically treated media

Coatings such as lacquers, polymers, laminations, or other chemicals protect the paper, but can cause problems in the fuser and transfer areas of HP LaserJet products. The surface resistivity and moisture content can be greatly altered, resulting in print-quality problems. Hard surface coatings increase wear on the rollers and media guides. All chemically treated media must meet Hewlett-Packard specifications for fusing compatibility.

Synthetic media

Synthetic media (those manufactured from man-made fibers) do not perform as well as bond media in any printer or MFP, especially HP LaserJet products. All synthetic media must meet Hewlett-Packard specifications, especially for caliper and fusing compatibility.

Other special media

- Non-standard sizes. Check minimum and maximum supported sizes on page 38.
- Carbonless media. Carbonless media (NCR) is not supported by HP LaserJet products.
- Recycled media. Choose recycled media that meets Hewlett-Packard specifications. Note that recycled media might not be as bright as indicated in the specifications. Hewlett-Packard recommends that recycled media contain no more than 5 percent groundwood. See “Testing media specifications” on page 45.

Storing print media

Ideally, the printing and media storage environment should be at or near room temperature, and should not be too dry or too humid. Remember that paper is hygroscopic; it absorbs and loses moisture rapidly.

Heat works with humidity to damage paper. Heat causes the moisture in paper to evaporate, while cold causes it to condense on the sheets. Heating systems and air conditioners remove most of the humidity from a room. As a paper package is opened and used, it loses moisture, causing streaks and smudging. Humid weather or water coolers can cause the humidity in a room to increase. As a package of paper is opened and used, it absorbs any excess moisture, causing light print and dropouts. Also, as paper loses and gains moisture, it can distort. This can cause jams.

Therefore, paper storage and handling are as important as the paper-making process itself. Paper storage environmental conditions directly affect the feed operation.

Users should not purchase more paper than can easily be used in a short time (about three months). Paper stored for long periods might experience heat and moisture extremes, which can cause damage. Planning is important to prevent damage to a large supply of paper.

Unopened paper in sealed packages can remain stable for several months before use. Opened packages of paper have more potential for environmental damage, especially if they are not wrapped with a moisture-proof barrier.

The paper storage environment should be correctly maintained to ensure optimum printer performance. The required condition is 20° to 24° C (68° to 75° F), with a relative humidity of 45 percent to 55 percent. The following guidelines should be helpful when evaluating the paper’s storage environment:

- Paper should be stored at or near room temperature.
- The air should not be too dry or too humid (because of the hygroscopic properties of paper).
- The best way to store an opened package of paper is to rewrap it tightly in its moisture-proof wrapping. If the printer environment is subject to extremes, unwrap only the amount of paper to be used during the day's operation to prevent unwanted moisture changes.

Envelope storage

Proper storage of envelopes contributes to good print quality. Envelopes should be stored flat. If air is trapped in an envelope, and creates an air bubble, then the envelope might wrinkle during printing.

Testing media specifications

The following tests describe ways to evaluate media with respect to the specifications listed in this manual, and the *HP LaserJet Printer Family Print Media Guide.* See “Media assessment tools and suppliers” on page 50 for help obtaining the tools that are needed to perform these tests.

Basis weight field test

The basis weight should be indicated on the package label. If the label is not available, a simple field test can determine the basis weight of paper. The basis weight of paper is equal to the weight of 2,000 sheets of paper, or about four full packages. Weigh a full package on a postal scale and then multiply that weight by four. Or weigh 10 sheets of paper, divide that weight by 10, multiply by 2,000, and then divide by 16.

Example

10 sheets weigh 1.6 ounces ÷ 10
0.16 ounce x 2,000 = 320 ounces
320 ounces ÷ 16 ounce/lb = 20 lb paper (letter only)

Table 16. Determining basis weight of paper

Amount	Formula
Four packages	weight = basis weight
One package	weight x 4 = basis weight
10 sheets	(weight divided by 10) x 2,000 and then divided by 16 = basis weight

Metric sizes

For metric-size paper (A4), use the following method to determine basis weight.

Take 16 sheets of A4 paper and weigh them. One square meter of paper contains approximately 16 A4 size sheets. Compare this weight to the appropriate weight in the paper weight equivalence table.

Paper weight equivalence table

Use this table to determine approximate equivalent points in weight specifications other than U.S. bond weight. For example, to determine the equivalent of 20 lb U.S. bond-weight paper in U.S. cover-weight paper, locate the bond weight (in row 3, second column) and scan across the row to the cover weight (in the fourth column). The equivalent is 28 lb. Shaded areas indicate a standard weight for that grade.

Table 17. Paper weight equivalence

U.S. post-card thickness (mm)	U.S. bond weight (lb)	U.S. text/ book weight (lb)	U.S. cover weight (lb)	U.S. bristol weight (lb)	U.S. index weight (lb)	U.S. tag weight (lb)	Europe metric weight (g/m^2)	Japan metric weight (g/m^2)
	17	43	24	29	35	39	64	64
	20	50	28	34	42	46	75	75
	21	54	30	36	44	49	80	80
	22	56	31	38	46	51	81	81
	24	60	33	41	50	55	90	90
	27	68	37	45	55	61	100	100
	28	70	39	49	58	65	105	105
	32	80	44	55	67	74	120	120
	34	86	47	58	71	79	128	128
	36	90	50	62	75	83	135	135
0.18	39	100	55	67	82	91	148	148
0.19	42	107	58	72	87	97	157	157
0.20	43	110	60	74	90	100	163	163

Table 17. Paper weight equivalence (continued)

U.S. post-card thickness (mm)	U.S. bond weight (lb)	U.S. text/ book weight (lb)	U.S. cover weight (lb)	U.S. bristol weight (lb)	U.S. index weight (lb)	U.S. tag weight (lb)	Europe metric weight (g/m^2)	Japan metric weight (g/m^2)
0.23	47	119	65	80	97	108	176	176
	53	134	74	90	110	122	199	199
	54	137	75	93	113	125	203	203
	58	146	80	98	120	133	216	216
	65	165	90	111	135	150	244	244
	66	169	92	114	138	154	250	250
	67	171	94	115	140	155	253	253
	70	178	98	120	146	162	264	264
	72	183	100	123	150	166	271	271

Note The U.S. postcard measurements are approximate. Use for reference only.

Caliper field test

The specified caliper differs according to the type of media used. Caliper can be measured in the field by using a micrometer.

CAUTION Never use the coarse adjustment end of the micrometer when measuring for caliper. The coarse adjustment will compress the paper fibers, resulting in an inaccurate reading. For example, if the fibers are compressed, 6 mm (0.24 inch) paper could measure as little as 3 mm (0.12 inch). Always use the fine adjustment to measure caliper.

Using the fine adjustment, slide the micrometer along the edge of the paper and measure at one end. To double-check the accuracy of the reading, always measure again at the opposite end of the paper.

Paper finish field test

Paper finish, or smoothness, can be accurately measured with a Sheffield meter. If this tool is not available, a new U.S. dollar bill can be used as a benchmark for comparing paper texture. A dollar bill has a finish of 350 Sheffields. If paper feels rougher than a dollar bill, it is recommended that users do not continually use this paper in the printer.

Moisture content field test

Specification: Use paper with 4 percent to 6 percent moisture content.

A package or a sheet of paper can be measured with a moisture meter. In general, only evaluate customer storage environment when trying to determine if excess moisture or dryness is the cause of a problem with paper.

Grain field test

Grain direction is usually specified on the package label (written out “long” or “short”). The paper dimensions listed on the label also indicate grain direction. For example, short-grain letter-size paper labels are marked “11 by 8.5,” and long-grain paper labels are marked “8.5 by 11."

If grain direction is not included on the package label, it can be determined by a simple wet test. Cut a small square from the corner of a sheet of paper, wet it, and observe the manner in which it curls.

Envelopes should have a diagonal grain, which gives them the best stability. To determine this, cut a square section from one corner of an envelope. Wet this section and observe the manner in which it curls. On diagonal grain envelopes, the two opposite corners will curl toward each other.

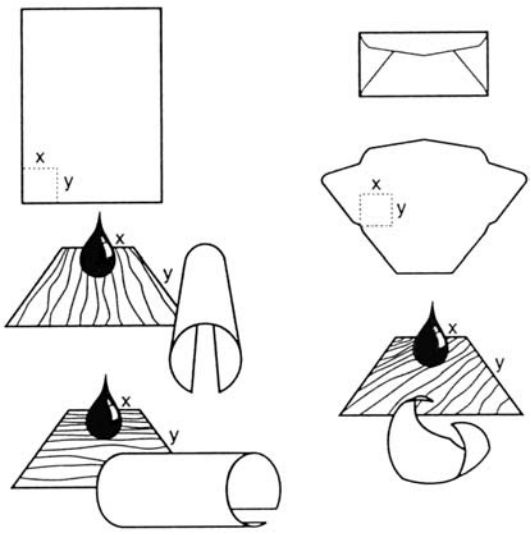


Figure 12. **Long, short, and diagonal grain curl**

Curl field test

To check for paper curl, place a single sheet of paper on a flat surface and measure curl at the greatest deflection, holding a ruler perpendicular to the flat surface.

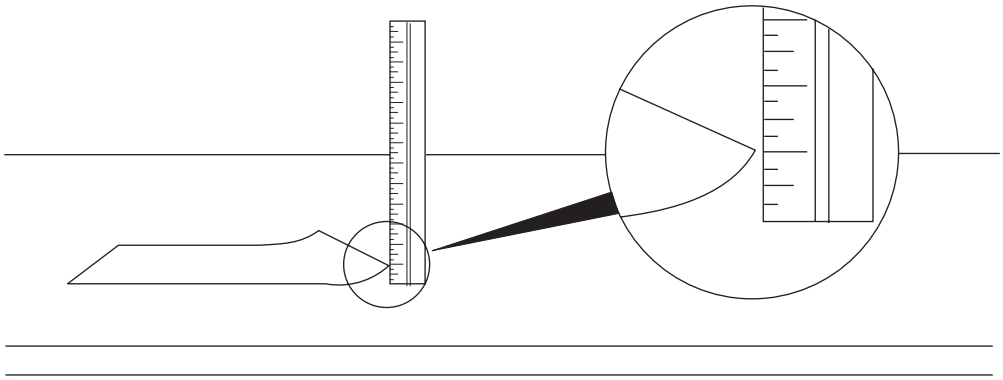


Figure 13. **Measuring curl**

Cut edge condition field test

The condition of the cut edge can be easily observed with an eye loop. Under magnification, a good edge will appear even. A poorly cut edge will show fraying, jagged edges, compressed fibers, and other damage.

Furnish (fiber composition) field test

Use paper made from 100 percent chemical wood pulp and/or cotton fiber. Recycled paper made with no more than 5 percent groundwood is also acceptable.

Read the package label to determine the fiber composition of the paper. Paper is usually specified as xerographic bond (suitable for copiers or laser printers) or cotton bond. Cotton bond paper of 25 percent, 50 percent, or 100 percent will be indicated on a watermark. If paper is less than 25 percent cotton bond, the watermark will not indicate a percentage. A wood pulp test kit can also be used to test fiber composition.

Fusing compatibility field test

Inspect the rollers for colored ink buildup from preprinted logos or letterhead, and for toner buildup or spots. Inspect printed output for repetitive defects and smearing. If necessary, have users contact the forms vendor to ensure paper fusing compatibility with HP LaserJet printers.

Media assessment tools and suppliers

Hewlett-Packard neither warrants nor recommends a particular manufacturer, supplier, or tool. Products are subject to change, and HP has no control over such changes. However, the following table of tools and their suppliers is provided for convenience.

Table 18. Tools and suppliers

Tool	Part Number	Supplier Address
Paper moisture meter	2RRDMP	Mitchell Instrument 1570DDD Cheroke St. San Marcos, CA 92069-2433
Single-sheet clamp probe	2R43E	Mitchell Instrument 1570DDD Cheroke St. San Marcos, CA 92069-2433
Temperature/humidity meter	#3T331	Industrial Motor Service 2000 Albright Montgomery, IL 60538
Sheffield tester: precisionaire column	TM 58-25-01	TMI Testing Machines Inc. 400 Bayview Avenue Amityville, NY 11701 (516) 842-5400
Sheffield tester: smooth check gauge	TM 58-25-02	TMI Testing Machines Inc. 400 Bayview Avenue Amityville, NY 11701 (516) 842-5400
Wood pulp test kit	4280-2	Shape Products 1127 57th Avenue Oakland, CA 94621 (800) 444-0015
pH test kit	4360-2	Shape Products 1127 57th Avenue Oakland, CA 94621 (800) 444-0015
Resistivity test tool: precision current/resistance meter	278	Monroe Electronics 100 Housel Avenue PO Box 100 Lyndonville, NY 14098 (800) 821-6001
Resistivity test tool: surface resistivity probe	96117-1	Monroe Electronics 100 Housel Avenue PO Box 100 Lyndonville, NY 14098 (800) 821-6001

2 Service approach

Chapter contents

Service approach 52
Parts and supplies 53
- Ordering parts 53
- Ordering supplies 53
- Exchange program 53
- Supplies 53
- World Wide Web 53
- HP service parts information compact disc 54
- Customer care reseller sales and service support center 54
- Ordering related documentation and software 55

Warranty 56
Limited warranty for print cartridge and image drum life 56
Transfer unit and fuser warranty 56
HP maintenance agreements 56
- Onsite service agreements 57

Service approach

Note

This manual is used to service the entire HP color LaserJet 9500 Series printer and to service the HP color LaserJet 9500mfp *print engine* only. To service the ADF/scanner portion of the HP color LaserJet 9500mfp, see your *HP Scanner/ADF Service Manual for the HP LaserJet 9000mfp/9000Lmfp/ 9040mfp/9050mfp/9500mfp* (PN C8549-90955). To service the 2,000-sheet side-input tray, see your *2,000-sheet Side-Input Tray Service Manual* (PN Q1891-90901).

A complete service manual bundle is available by ordering the *Service Bundle for HP Color LaserJet 9500/9500mfp* (PN C8549-99001). The service bundle includes the manuals listed above, this print engine manual, and the *Paper Handling Accessories Service Addendum* (PN C85693-90002).

Throughout this document, the term “printer” is used to refer to both the HP LaserJet 9500 Series printer models *and* the HP LaserJet 9500mfp. Make sure to read the headings and text carefully to understand the context of the term.

The HP color LaserJet 9500 is designed to be diagnosed over the phone, and repaired in the field. Repair of the printer normally begins with a three-step process:

1. Isolate the problem to the major system (the host computer, the network or server, or the printer).
2. Isolate the problem to the print engine, the input device, the ADF/scan engine, or the finishing device. See the proceeding note.
3. Troubleshoot a print-engine problem by using the troubleshooting procedures described in chapter 7 of this manual.

After a faulty part is located, repair is usually accomplished by assembly-level replacement of field replaceable units (FRUs). Some mechanical assemblies can be repaired at the subassembly level. Hewlett-Packard does not support replacement of components on the printed circuit assemblies. Some parts can be installed by the customer.

Parts and supplies

Ordering parts

Ordering Parts in chapter 8 of this manual contains FRU and replacement part numbers. Order replacement parts from Hewlett-Packard Customer Support-Americas (HPCS-A) or Hewlett-Packard Customer Support-Europe (HPCS-E).

All standard part numbers listed are stocked and can be ordered from HP's Customer Services and Support Organization. Use the following website to search for HP product parts by using the HP product name, model number, or part number, or by choosing an HP product from a list.

www.partsurfer.hp.com

To order parts, go to the following website:

www.hp.com/buy/parts

Consumables and accessories can be ordered from Hewlett-Packard.

Supplies, accessories, and consumables can be ordered from the following websites

- North America: www.hp.com/sbso/product/supplies
- Canada: www.hp.ca/catalog/supplies
- Europe: www.hp.com/go/supplies
- Asia Pacific: www.hp.com/paper

Ordering supplies

Order supplies directly from Hewlett-Packard. The following are phone numbers for ordering supplies:

- U.S. (1) (800) 538-8787
- Canada (1) (800) 387-3154; Toronto (1) (416) 671-8383
- United Kingdom 0734-441212

Exchange program

Hewlett-Packard might offer remanufactured assemblies for parts. These can be ordered through Parts Direct Ordering.

Supplies

Media and print cartridges can be ordered directly from Hewlett-Packard. See chapter 8 for ordering information.

World Wide Web

Printer drivers, updated HP printer software, and product and support information can be obtained from one of the following websites:

In the U.S.: www.hp.com/support/lj9500

Printer drivers can be obtained from the following sites:

- www.hp.com then select the appropriate country/region
- www.hp.com/go/lj9500_software

HP service parts information compact disc

This powerful, CD-ROM-based parts information tool is designed to give users fast, easy access to parts information such as pricing and recommended stocking lists for a wide range of HP products. To subscribe to this quarterly service in the U.S. or Canada, call (800) 336-5987. In Asia Pacific, call (65) 740-4484. Parts identification and pricing information can also be checked via the World Wide Web at www.partsurfer.hp.com.

Customer care reseller sales and service support center

The Customer Care Reseller Sales and Support Center is available to assist resellers and service technicians. To reach this support center, call (1) (800) 544-9976.

HP authorized resellers and support

To locate authorized HP resellers and support, call (1) (800) 243-9816 in the U.S. or (1) (800) 387-3867 in Canada.

HP service agreements

Call (1) (800) 743-8305 in the U.S. or (1) (800) 268-1221 in Canada.

Other areas

Outside of North America and Europe, contact the local HP sales office for assistance in obtaining technical support for resellers and service technicians.

Ordering related documentation and software

Table 19 shows where to order related documentation and software. Telephone numbers for the various sources are:

- HPCS-A:
  (1)(800) 227-8164 (U.S. only)
- HPCS-E:
  (49 7031) 14 2253
- HP Distribution Center (HPD) (661) 257-5565.
  Fax: (805) 257-6995

Table 19. Related documentation and software

Description	Part number
HP LaserJet Family Print Media Guide	5963-7863
HP JetDirect Print Server Administrator's Guide	5971-3257
PCL/PJL Technical Reference Package	5021-0377

Note End-user documentation is available electronically at http://www.hp.com/support/lj9500

Warranty

For warranty information and requirements, see the *HP color LaserJet 9500 Use Guide*.

Limited warranty for print cartridge and image drum life

This HP product is warranted to be free from defects in materials and workmanship during its useful life (end of life is indicated by a printer control panel low-life message).

This warranty does not cover products that have been modified, refurbished, remanufactured, misused, or tampered with in any way.

This limited warranty gives you specific legal rights. You may have other rights which vary from state to state, province to province, and country/region to country/region.

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In the event that your product proves to be defective, please return to place of purchase with a written description of the problem.

Transfer unit and fuser warranty

This HP product is warranted to be free from defects in materials and workmanship for one year or until the product control panel indicates a low-life message, whichever occurs first.

This warranty does not cover products that have been modified, refurbished, remanufactured, misused, or tampered with in any way.

This limited warranty gives you specific legal rights. You may have other rights which vary from state to state, province to province, and country/region to country/region.

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In the event that your product proves to be defective, please return to place of purchase with a written description of the problem.

HP maintenance agreements

Hewlett-Packard has several types of maintenance agreements that meet a wide range of support needs. Maintenance agreements are not part of the standard warranty. Support services may vary by area. Check with your local HP dealer to determine the services available to you.

Onsite service agreements

To provide you with the level of support best suited to your needs, HP offers the following onsite service agreements, with three response times.

- next business day onsite, HW support, four years
- next business day onsite, HW support, five years
- four-hour, 13 x 5 onsite, HW support, four years
- four-hour, 13 x 5 onsite, HW support, five years

For more information about HP service agreements, call (1) (800) 271-3113 (U.S.) or (1) (800) 268-1221 (Canada).

Priority onsite service

This agreement provides four-hour service response to your site for calls made during normal HP business hours.

Next-day onsite service

This agreement provides support by the next working day following a service request. Extended coverage hours and extended travel beyond HP's designated service zones are available on most onsite agreements (for additional charges).

Weekly (volume) onsite service

This agreement provides scheduled weekly onsite visits for organizations that own or lease many HP products. This agreement is designated for sites that use 25 or more workstation products, including printers, MFPs, plotters, computers, and disk drives.

3 Product configuration

Chapter contents

Printer control panel layout 60
Control panel menus 62
- Menu map 62
- Using a menu map 62

Retrieve job menu 63
Information menu 64
Paper handling menu 65
- Selecting media for a document 66

Configure device menu 67
- Printing submenu 67
- PCL submenu 69
- Print Quality submenu 70
- System Setup submenu 75
- Output Setup submenu 77
- I/O submenu 77
- Parallel Input submenu 77
- EIO submenu 78
- Resets submenu 80

Diagnostics menu 81
Service menu 86
- Service ID 86
- Restoring the Service ID 87
- Converting the Service ID to an actual date 87

Settings and defaults 88
- Configure the control panel display language 88
- Configure the input trays 89

Boot key sequences 94
- Hard disk reinitialization 94
- NVRAM initialization 95
- Cold reset 97

Printer control panel layout

Note

The control panel for the MFP is different from the printer control panel that is described in this section. See the *HP Scanner/ADF Service Manual for the HP LaserJet 9000mfp/9000Lmfp/9040mfp/9050mfp/9500mfp* (PN C8549-90955) for information about the MFP control panel.

The printer control panel includes three indicator lights; four navigation buttons; a help button; a PAUSE/RESUME button; a CANCEL JOB button; a numeric keypad; and a graphical display that shows up to four lines of text, supplies-status indicators, and printer animations.

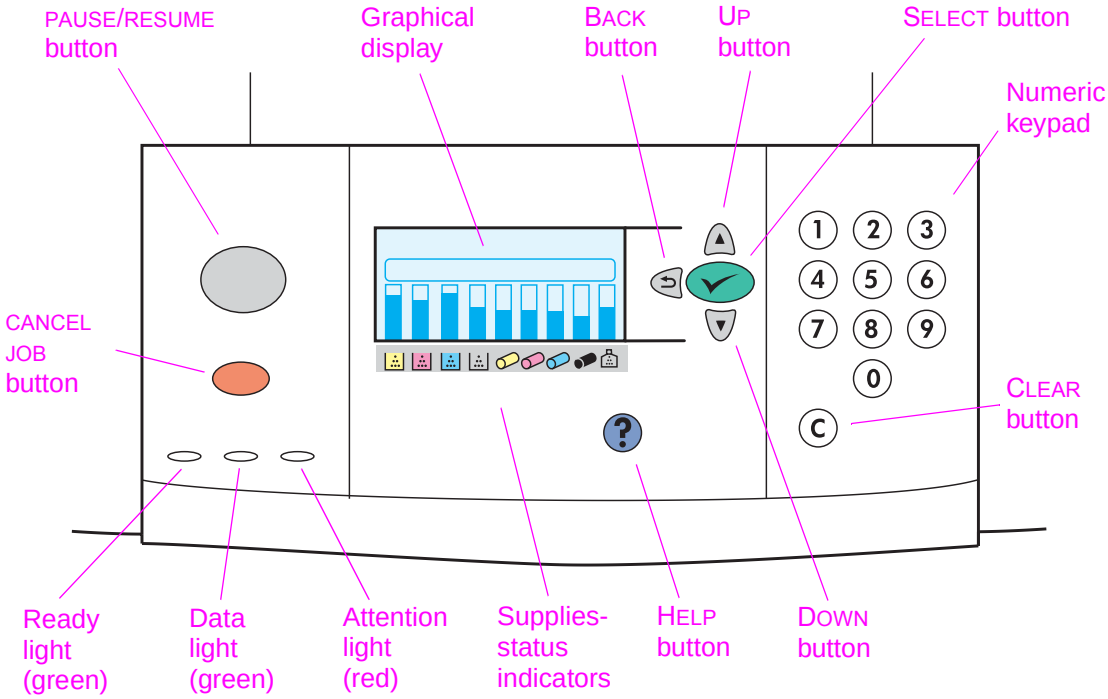


Figure 14. **Control panel layout**

Table 20. HP color LaserJet 9500 Series printer control panel features

Feature or key	Function
✓ (Select)	• Opens the main menu. • Saves the selected value for that item. An asterisk (*) appears next to the selection, indicating that it is the new default. The default settings remain when the printer is switched off or is reset (unless you restore the factory defaults from the RESETS menu). • Performs the action associated with the item that is highlighted on the graphical display.
⮌ (Back)	• Backs up one level in the menu tree or clears a numeric value.
▲ (Up)	• Navigates to the previous item in the list.
▼ (Down)	• Navigates to the next item in the list.
C (CLEAR)	• Returns a numeric entry to its previous value.

Table 20. HP color LaserJet 9500 Series printer control panel features (continued)

Feature or key	Function
? (HELP)	• Provides information about the current message on the graphical display.
CANCEL JOB STOP (MFP)	• Cancels the current print job in process. The time it takes to cancel the job depends on the size of the print job.
PAUSE/RESUME	• Returns the printer to the ready state (or to printing) from the menus or the online help. • Toggles between PAUSE and RESUME.
Numeric keypad	• Can be used to type numeric values or menu shortcuts.

Control panel menus

Note The control panel for the MFP has a physical and touch screen MENU button on the control panel that can be used to open the menus. For the MFP, use the MENU button in place of ✓ to open the menus. Also, the MFP STOP button is the equivalent of the CANCEL JOB button on the LJ 9500.

Press ▲ or ▼ to cycle through the control panel menus. Each menu is described in a separate table in this section. Menu items appear only if their associated option is installed, or if their functions are activated.

All menus and their associated items are available when the product is online. In menu mode, if no buttons are touched for approximately 30 seconds, the system automatically returns to the top level and displays either an existing error or one of the following items:

- READY, if the product is online.
- OFFLINE, if the product is offline.

Menu map

From the control panel, you can print a menu map that shows the current printer menus and settings. Additional menu items can appear in the control panel, depending on the options that are currently installed in the printer. The following is a list of menus available from the control panel, and where to find information about each.

- Retrieve job menu (page 63)
- Information menu (page 64)
- Paper handling menu (page 65)
- Configure device menu (page 67)
- Diagnostics menu (page 81)

Using a menu map

To see the current settings for the menus and items that are available in the control panel, print a control panel menu map. Values that appear with an asterisk (*) next to them are the currently selected values for a setting. Many of these values can be overridden from the print driver or a user software program.

The content of the menu map varies, depending on the optional accessories that are currently installed in the printer. For a complete list of accessories or to change a control panel item and possible values, see “Configure device menu” on page 67.

Select an item from the menu map

1. Press ✓ or MENU (MFP version).
2. Press ▲ or ▼ to scroll to the required menu, and then press ✓.
3. Press ▲ or ▼ to scroll to the appropriate page, and then press ✓.

Retrieve job menu

Note If no private, stored, quick copy, or proof and hold jobs are on the product hard disk or in RAM memory, the message NO STORED JOBS appears when the Retrieve Job menu is selected.

Table 21. Retrieve job menu

Item	Explanation
USER 1 (X1) USER 2 (X2) USER 3 (X3) USER 4 (X4) USER 5 (X5) USER 6 (X6)	Use this item to see the job names for the username you select. The (X) notation tells you the number of stored print jobs for that user.
<USER NAME> ALL PRIVATE JOBS JOB 1 JOB 2 JOB 3 JOB 4	Use this item to select which print jobs to work with. Select the ALL PRIVATE JOBS option to see a list of all the print jobs for that user that require a PIN.
<JOB NAME> PRINT DELETE	Use this item to print or delete the selected job. If the job requires a PIN to be printed, 🔒 appears next to the PRINT command, and a PIN must be provided. If a job requires a PIN to be deleted, 🔒 appears next to the DELETE command, and a PIN must be provided. If you select PRINT, the printer prompts you to specify the number of copies to print (1 to 32,000)

Information menu

To select an information item, scroll to the page that you want and then press ✓ (LJ 9500), or touch the screen (LJ 9500mfp).

Table 22. Information menu

Item	Explanation
PRINT MENU MAP	Generates a menu map that shows layout and current settings of the control menu items. The printer backs up one screen to SET FRONT TO BACK when the page is completed.
PRINT CONFIGURATION	Generates a page that provides details about the current configuration of the printer. The printer returns to the online READY state when the page is completed.
PRINT SUPPLIES STATUS	Generates a page that shows the number of pages remaining for each supply in the printer. The printer returns to the online READY state when the page is completed.
SUPPLIES STATUS	Shows a scrollable list of supplies and the status of each supply on the control panel. The printer returns to READY when you exit the menu.
PRINT FILE DIRECTORY	Generates a directory page that contains information for all installed mass-storage devices. The directory page does not include information for the printer's ROM. The printer returns to the online READY state when the page is completed.
PRINT USAGE PAGE	Generates a page that contains information that could be used for cost accounting. This item is available only if a hard disk is installed. The printer returns to the online READY state when the page is completed.
PRINT DEMO	Generates a demonstration test page that describes printer features. The printer returns to READY when you exit the menu.
PRINT FILE DIRECTORY	Generates a page that lists the contents of the hard disk drive (if installed).
PRINT PCL FONT LIST	Generates a typeface list of all PCL fonts available on the printer. The printer returns to the online READY state when the page is completed.
PRINT PS FONT LIST	Generates a typeface list of all PS fonts available on the printer. The printer returns to the online READY state when the page is completed.
PRINT RGB SAMPLES	**MFP only.** Generates a set of RGB sample pages for color matching.
PRINT CMYK SAMPLES	**MFP only.** Generates a set of RGB sample pages for color matching.

Paper handling menu

When paper-handling settings are correctly configured through the control panel, you can print by selecting the type and size of media in the printer driver or software program.

Table 23. Paper handling menu default settings

Item	Values	Explanation
TRAY <N> SIZE=*ANY SIZE Tray 4 for the MFP is the 2,000-sheet side input tray, which only supports letter, A4, rotated letter, and rotated A4 media sizes.	*ANY SIZE LETTER LETTER ROTATED LEGAL EXECUTIVE 8.5X13 11X17 A3 A4 A4 ROTATED A5 B5(ISO) B5(JIS) B4(JIS) EXECUTIVE(JIS) DPOSTCARD(JIS) 8K 16K ENVELOPE #10 ENVELOPE MONARCH ENVELOPE C5 ENVELOPE DL ENVELOPE B5 CUSTOM ANY CUSTOM	Use this item to set the paper size for tray 1, tray 2, tray 3, and tray 4 (if installed). TRAY <N> indicates the appropriate tray number. **Note** ENVELOPE #10, ENVELOPE MONARCH, ENVELOPE C5, ENVELOPE DL, DPOSTCARD (JIS), and ENVELOPE B5 appear for tray 1 only. **Note** ANY SIZE prints on any supported size of media, CUSTOM is used to configure a custom size specific to X and Y, and using ANY CUSTOM assumes that the maximum paper size is being used and prints on any size of media.
TRAY <N> TYPE=*ANY TYPE	*ANY TYPE PLAIN PREPRINTED LETTERHEAD TRANSPARENCY PREPUNCHED LABELS BOND RECYCLED COLOR LIGHT < 75 g/m^2 HEAVY 106-163 g/m^2 CARD STOCK > 164 g/m^2 GLOSSY 75-105 g/m^2 HEAVY GLOSSY NON HP HEAVY GLOSSY HIGH GLOSS IMAGES **Note** Some printers might require a firmware upgrade to support the HIGH GLOSS IMAGES setting. TOUGH PAPER ENVELOPE	Use this item to specify the type of media in each tray. TRAY <N> indicates the appropriate tray number. **Note** For the ANY TYPE value, the printer prints on the media that is loaded regardless of the media type that the driver requests. **Note** The media types might be mapped to different print modes in the CONFIGURE DEVICE, PRINT QUALITY, and PRINT MODE menu. **Note** Selecting a media type from this menu causes the printer to use the print mode that is assigned to requested paper type in the CONFIGURE DEVICE, PRINT QUALITY, PRINT MODES menu. See page 70. See table 27 on page 73 for a description of print modes and when to use them.

Table 23. Paper handling menu default settings (continued)

Item	Values	Explanation
TRAY <N> CUSTOM	UNIT OF MEASURE X DIMENSION Y DIMENSION	This message appears when the custom switch is in the CUSTOM position and you select CUSTOM from the list of media sizes. The values listed are available in a pop-up menu from which you choose either millimeters or inches as the unit measure and also set the X and Y dimensions of the custom paper size.

Selecting media for a document

See “Media specifications” on page 37 for more information.

Configure device menu

The configure device menu contains all of the administrative functions.

Printing submenu

Some items in this menu are available in a software program or the printer driver (if the appropriate printer driver is installed). Printer driver and software program settings override control panel settings.

Table 24. Configure device menu

Item and default setting	Values	Explanation
COPIES=1	1 TO 32,000	Set the default number of copies by specifying any number from 1 to 32,000. Use the numeric keypad to specify the number of copies. **Note** It is best to set the number of copies in the printer driver or software program. (Printer driver and software settings override control panel settings.)
DEFAULT PAPER SIZE= LETTER	LETTER LEGAL EXECUTIVE 8.5X13 11X17 A3 A4 A5 B5(1S0) B5(JIS) B4(JIS) EXECUTIVE(JIS) DPOSTCARD(JIS) 8K 16K ENVELOPE #10 ENVELOPE MONARCH ENVELOPE C5 ENVELOPE DL ENVELOPE B5 CUSTOM ANY CUSTOM	This value is used only if no paper size was sent with the job. Set the default size for which media and envelopes to print on if no size is selected for the print job. (The item name changes from media to envelope as you scroll through the available sizes.)
DEFAULT CUSTOM PAPER SIZE	UNIT OF MEASURE X DIMENSION Y DIMENSION	Use this item to set a custom paper size for any of the installed trays. This menu only appears when the selected tray custom switch is in the “custom” position. Select the X and Y dimensions of the custom paper size by using the ruler labels in the trays.
PAPER DESTINATION= STANDARD OUTPUT BIN	STANDARD OUTPUT BIN FACE UP OPTIONAL BIN	Use this item to configure the output media bin destination. Only the installed bins appear on the menu.

Table 24. Configure device menu (continued)

Item and default setting	Values	Explanation
DUPLEX=OFF	OFF ON	This item appears only when a duplexer is installed. Set the value to ON to print on both sides (duplex) or OFF to print on one side (simplex) of a sheet of paper. **Note** It is best to set the duplex option in the printer driver or software program. (Printer driver and software settings override control panel settings.)
BINDING=LONG EDGE **Note** The menu item appears only if DUPLEX=ON.	LONG EDGE SHORT EDGE	Use this item to change the binding edge for duplex printing. **Note** It is best to set the binding layout in the printer driver or software program. (Printer driver and software settings override control panel settings.)
OVERRIDE A4/ LETTER=NO	YES NO	Use this item to print on letter-size media when an A4 job is sent but no A4-size media is loaded in the printer (or to print on A4-size media when a letter job is sent but no letter-size media is loaded in the printer).
MANUAL FEED=OFF	OFF ON	Use this item to feed the media manually from tray 1 rather than automatically from another tray. When MANUAL FEED=ON and tray 1 is empty, the printer goes offline when it receives a print job. The message MANUALLY FEED [PAPER SIZE] then appears on the control panel.
COURIER FONT=REGULAR	REGULAR DARK	Use this item to select the version of Courier font to use: • REGULAR is the internal Courier font that is available on the HP LaserJet 4 Series and later printers. • DARK is the internal Courier font that is available on the HP LaserJet III Series printers. Both fonts are *not* available at the same time.
WIDE A4=NO	YES NO	The Wide A4 setting changes the number of characters that can be printed on a single line of A4 media. YES: Up to 80 10-pitch characters can be printed on one line. NO: Up to 78 10-pitch characters can be printed on one line.
PRINT PS ERRORS=OFF	ON OFF	Select ON to print the PS error page when PS errors occur.
PCL		Use this item to open PCL submenu items (see page 69).

PCL submenu

Gain access to this submenu through the Printing submenu. Some items in this menu can be opened in a software program, or in the printer driver (if the appropriate printer driver is installed). Printer driver and software settings override control panel settings.

Note If no private, stored, quick copy, or proof and hold jobs are on the printer hard disk or in RAM memory, the message NO STORED JOBS appears when the menu is selected.

Table 25. PCL submenu

Item and default setting	Values	Explanation
FORM LENGTH	60	Sets vertical spacing from 5 to 128 lines for the default media size. Type the value by using the numeric keypad.
ORIENTATION	PORTRAIT LANDSCAPE	Use this item to select default page orientation. **Note** It is best to set the page orientation in the printer driver or software program. (Printer driver and software settings override control panel settings.)
FONT NUMBER	INTERNAL SOFT SLOT 1 SLOT 2 SLOT 3	INTERNAL: Internal fonts. SOFT: Permanent soft fonts. SLOT 1, 2, or 3: Fonts stored in one of the three DIMM slots.
FONT SOURCES	0-999	The printer assigns a number to each font and lists them on the PCL Font List. The font number appears in the Font # column of the printout.
FONT POINT SIZE= 12.00	4.00 to 999.75	Use the numeric keypad or ▲ or ▼ to specify a value. This item might not appear, depending on the font selected.
SYMBOL SET=PC-8	PC-8	Select any one of several available symbol sets at the printer control panel. A symbol set is a unique grouping of all the characters in a font. PC-8 or PC-850 is recommended for line-drawn characters.
APPEND CR TO LF=NO	YES NO	Select YES to append a carriage return to each line feed encountered in some text print jobs. Some environments, such as UNIX, indicate a new line by using only the line feed control code. Use this option to append the required carriage return to each line feed.
SUPRESS BLANK PAGES	YES NO	Use this item for customers creating their own PCL that might include extra form feeds which print blank pages. Select YES to ignore form feeds if the page is blank.

Print Quality submenu

Table 26. Print Quality menu

Item	Values	Explanation
ADJUST COLOR • CYAN DENSITY • MAGENTA DENSITY • YELLOW DENSITY • RESTORE COLOR VALUES	-5 TO +5	Use this item to control the midtones (solid and very light color fills are *not* affected) for each color plane. The default for each color is zero. A larger negative number can result in lighter or less dense midtones for a particular color plane, and a larger positive number can result in darker or more dense midtones for a color plane. Settings can be adjusted, for each color plane (cyan, magenta, yellow, and black), individually as primary transfer biases are charged. **Note** Newer versions of the printer version and the MFP version firmware allow the primary colors to be individually adjusted for highlight, midtone, and shadow ranges. **Note** The changes are universal, and apply to all printed pages regardless of the media type selected. **Note** The RESTORE COLOR VALUES menu returns the values to the default.
SET REGISTRATION	PRINT TEST PAGE SOURCE ADJUST TRAY 1 ADJUST TRAY 2 ADJUST TRAY 3 ADJUST TRAY 4 (IF INSTALLED)	Use this item to set the printed image at the center of a single-page or duplexed print job. The PRINT TEST option prints a test page. Use the SOURCE option to print a test page from all trays or from specified trays. Use the ADJUST TRAY X options to adjust the image alignment using values between -20 and +20.
PRINT MODES	PLAIN PREPRINTED LETTERHEAD TRANSPARENCY PREPUNCHED LABELS BOND RECYCLED COLOR LIGHT<75 g/m^2 HEAVY 106-163 g/m^2 CARDSTOCK>164 g/m^2 GLOSSY 75-105 g/m^2 HEAVY GLOSSY NON HP HVY GLOSSY HIGH GLOSS IMAGES **Note** Some printers might require a firmware upgrade to support the HIGH GLOSS IMAGES setting. TOUGHPAPER ENVELOPE RESTORE MODES	Use this item to associate print modes with individual media types in order to optimize print quality. For this menu option, the print mode can only be changed at the control panel. See the “Description” column in table 27, “Description of print modes” on page 73.

Table 26. Print Quality menu (continued)

Item	Values	Explanation
OPTIMIZE	TRANSFER DOWN 1 TRANSFER DOWN 2 TRANSFER UP 1 TRANSFER UP 2 LEADING EDGE DOWN LEADING EDGE UP HIGH COVERAGE 1 HIGH COVERAGE 2 HIGH COVERAGE 3 RESTORE OPTIMIZE	Use this item to optimize a number of engine parameters for all jobs rather than by media type. Each item can be set to OFF or ON. The default value of each item is OFF. Use the RESTORE OPTIMIZE option to reset all options to the factory default position (OFF). ● TRANSFER DOWN 1, TRANSFER DOWN 2, TRANSFER UP 1, and TRANSFER UP 2: These settings control T2 current to correct for media types that show poor secondary transfer when a predefined media type setting is used. Try the DOWN 1 and DOWN 2 settings first. This might result in a darker image. If it does not, some medias require that the value is set to UP 1 or UP 2. It is possible to set these ON at the same time. If multiple bits are set, the default (all OFF) is used. Using smoother media results in better transfer; exceptionally rough media can show problems that will not be addressed by these settings. ● LEADING EDGE DOWN and LEADING EDGE UP: Use these settings to compensate for poor transfer, missing toner, discharge marks, and mottled appearance on the leading edge of printed pages. To resolve these issues, try setting LEADING EDGE DOWN first; however depending on the media type, you might get better results using LEADING EDGE UP. LEADING EDGE UP set to ON increases the leading edge secondary transfer bias. LEADING EDGE DOWN set to ON decreases the leading edge secondary transfer bias. If the UP and DOWN settings are both set to ON, they are set to OFF. **Note** Try the other media type settings first, because this is a universal setting and applies to all pages that are printed, regardless of the selected media type. ● HIGH COVERAGE 1, HIGH COVERAGE 2, and HIGH COVERAGE 3: HIGH COVERAGE 1 and HIGH COVERAGE 2 control the setting of the yellow dot pattern that is designed to eliminate certain types of banding (47 mm) in high coverage. • HIGH COVERAGE 1: Yellow dots appear in a 10-by-10 mm pattern for half-speed printing, and an 8-by-8 mm pattern for full-speed printing. The default is OFF; when set to ON, the yellow dots are off. If the yellow dots are objectionable and the 47 mm band is acceptable (a line or band is visible once at 47 mm from the start and the stop of a strip of color), turn this item ON. Otherwise, leave this item OFF. • HIGH COVERAGE 2: Yellow dots appear in an 8-by-8 mm pattern for full-speed printing, and 10-by-10 mm for half-speed printing. The default is OFF; when set to ON, the yellow dots are in an 8-by-8 mm pattern for half- and full-speed printing. If a line recurs every 47 mm from the start of a strip in half-speed printing modes, turn this item ON. Otherwise, leave this item OFF.

Table 26. Print Quality menu (continued)

Item	Values	Explanation
OPTIMIZE (continued)		• High coverage 3 helps with 50 mm to 100 mm bands or cardstock band (37 mm from the trailing edge of 11-by-17 [A3] or 115 mm from the trailing edge of letter [A4] on media that is heavier than 120 g/m²) • HIGH COVERAGE 3: This changes the OPC ITB speed mismatch (101.5 percent [OFF] to 102 percent [ON]). The default is OFF. If a line or band recurs at 50 or 100 mm intervals (37 mm from the trailing edge of 11-by-17 (A3) and 115 mm from the trailing edge of letter (A4) on media heavier than 120 g/m^2), turn this item ON for half-speed media types. Do *not* change this setting to ON unless the bands are very objectionable. If you do this 47 mm banding might increase.
CALIBRATE NOW		Select CALIBRATE NOW to start a printer calibration (D-max, D-half, and CPR calibrations are performed). **Note** The MFP includes a QUICK CALIBRATE NOW option that takes less time to calibrate the product (the CPR calibration is not performed).
PROCESS CLEANING PAGE		Use this item to print a single blank page that might help clean the fuser rollers after a fuser-related jam.

Table 27. Description of print modes

Print mode	Media type(s) that use this mode by default	Speed	Description	When to use
AUTO SENSE MODE	plain	trans: half opaque: full	Optimized for the media that is detected. If a transparency is detected, printing does not stop, and the correct printing attributes are used for the transparency.	If transparencies are not frequently used in the printer.
AUTO SENSE OFF	preprinted, letterhead, prepunched, bond, recycled, and color	full	Prints on whatever media is in the tray (if a transparency is detected, printing stops and the message UNEXPECTED TYPE IN TRAY X appears).	If transparencies are frequently used in the printer. This mode minimizes the occurrence of unintentional printing on transparencies.
LIGHT MODE	light < 75 g/m²	full	Optimized for light media 60 to 74 g/m².	Use for light media.
HEAVY MODE	heavy (106 to 163 g/m²)	half	• Optimized for heavy media 106 to 163 g/m². • The printer engine operates at half-speed to provide enough heat to correctly fuse the image because heavy media has more mass to heat.	Use for heavy media.
CARDSTOCK MODE	cardstock > 164 g/m²	half	• Optimized for card stock heavier than 164 g/m². • The printer engine operates at half-speed to provide enough heat to correctly fuse the image because heavy media has more mass to heat.	Use for cardstock.
TRANSPARENCY MODE	transparencies	half	• Optimized for transparencies. • The printer engine operates at half-speed to produce a smoother, flatter image that transmits light better.	Use for transparencies.
ENVELOPE MODE	envelopes	full	Optimized for envelopes.	Use for envelopes.
LABEL MODE	labels	half	• Optimized for labels. • The printer engine operates at half-speed to provide enough heat to correctly fuse the image.	Use for labels.
HIGH GLOSS IMAGES	heavy glossy	half	Optimized for heavy, glossy HP media (105 to 163 g/m^2 [28- to 43-lb bond]).	Use for heavy glossy media. **Note** Use this image mode when printing high color saturation images, or images that look better with saturated, vivid colors.
GLOSSY MODE	glossy 75 to 105 g/m²	full	Optimized for glossy media (75 to 105 g/m^2 [20- to 28-lb bond])	Use for normal glossy media.
HEAVY GLOSSY MODE	heavy glossy	half	Optimized for heavy, glossy HP media (105 to 163 g/m^2 [28- to 43-lb bond]).	Use for heavy glossy media.

Table 27. Description of print modes (continued)

Print mode	Media type(s) that use this mode by default	Speed	Description	When to use
NON HP HEAVY GLOSSY MODE	non-heavy glossy	half with pauses	Optimized for heavy, glossy non-HP media (105 to 163 g/m^2 [28- to 43-lb bond]).	Use for non-HP heavy glossy media.
TOUGH PAPER MODE	tough paper	half with pauses	Optimized for glossy film media.	Under normal conditions.
BEST GLOSS MODE	not associated with a media type by default	full with pauses	Pauses printing if the fuser temperature decreases in order to maintain a higher fuser temperature and consistent gloss level.	If you notice changes in print quality when using glossy media, associate the GLOSSY type with this print mode.
BEST HP GLOSS MODE	not associated with a media type by default	half with pauses	Pauses printing if the fuser temperature decreases in order to maintain a higher fuser temperature and consistent gloss level.	If you notice changes in print quality when using HP heavy, glossy media, associate the HEAVY GLOSSY type with this print mode.
BEST NON HP GLOSS MODE	not associated with a media type by default	half with pauses	Pauses printing if the fuser temperature decreases in order to maintain a higher fuser temperature and consistent gloss level.	If you notice changes in print quality when using heavy glossy, media, associate the NON HP HEAVY GLOSSY type with this print mode.
BEST TOUGH PAPER MODE	not associated with a media type by default	half with pauses	Pauses printing if the fuser temperature decreases in order to maintain a higher fuser temperature and consistent gloss level.	If you notice changes in print quality when using HP heavy, glossy media, associate the TOUGH PAPER type with this print mode.
TONER MODE	not associated with a media type by default	full	• Uses less toner in order to reduce toner scatter. • TONER MODE uses a lower density color table for high-resistivity media to avoid toner explosions by applying less toner on a page.	If you are using rough or poor-quality media, and you have noticed toner scatter on your print jobs, associate the media type with this mode.
BLISTERS MODE	not associated with a media type by default	full with pauses	Operates at full-speed but pauses, usually during the first few pages of a print job, to keep the fuser hot. If the fuser is not hot enough gloss can drop and cause the toner to blister with light media.	Use with plain media only. If you notice changes in print quality when using heavy glossy media, associate the PLAIN type with this print mode.
RESTORE MODES			Resets all of the print modes to the factory defaults.	Use this setting to reset all of the print modes to the factory defaults.

System Setup submenu

Items in the System Setup submenu affect the printer function. Configure the printer according to your printing needs.

Table 28. System Setup submenu

Item and default setting	Values	Explanation
JOB STORAGE LIMIT=32	1 TO 100	Use this item to specify the number of jobs that can be stored on the printer hard-disk accessory.
JOB HELD TIMEOUT=OFF	OFF 1 HOUR 4 HOURS 1 DAY 1 WEEK	Use this item to set the amount of time that quick copy, proof and hold, private, and stored jobs are kept before being automatically deleted from the queue.
SHOW ADDRESS	AUTO OFF	Define whether or not the printer's IP address appears on the control panel with the READY message. If AUTO is selected, the IP address of the device is shown if the device is connected to a network.
OPTIMUM SPEED/COST	AUTO SPEED COST PER PAGE	Controls how the engine switches from color mode to monochrome mode. AUTO maps to the default option (SPEED for the HP color LaserJet 9500), SPEED maps to LOOK AHEAD (the printer only switches to mono mode if the next three pages are also only black), and COST PER PAGE maps to ALWAYS SWITCH (the printer switches modes for every page that is different).
TRAY BEHAVIOR	USE REQUESTED TRAY MANUALLY FEED PROMPT	Use this item to specify the behavior of the trays. Each of the options opens its own submenu: USE REQUESTED TRAY • EXCLUSIVELY. The printer does not automatically select another tray when you indicate that a specific tray should be used. • FIRST. The printer pulls media from another tray if the specified tray is empty. MANUALLY FEED PROMPT • ALWAYS. You are prompted to insert media and press ✓ (the 6 button on the MFP) before printing begins. • UNLESS LOADED. You are prompted only if tray 1 is empty.
POWERSAVE TIME=1 HOUR **Note** For an MFP, this item is named SLEEP DELAY.	1 MINUTE 15 MINUTES 30 MINUTES 60 MINUTES 90 MINUTES 2 HOURS 4 HOURS **Note** An MFP has a 45 MINUTES setting option.	Use this item to set how long the printer remains idle before it enters PowerSave mode. PowerSave mode offers the following advantages: • minimizes the amount of power consumed by the printer when it is idle • reduces wear on the printer electronic components (turns off the display backlight) The printer automatically exits PowerSave mode when you send a print job, press a control panel button, open a tray, or open any door. **Note** PowerSave turns off the backlight on the display, but the display is still readable.

Table 28. System Setup submenu (continued)

Item and default setting	Values	Explanation
PERSONALITY= AUTO	AUTO PCL POSTSCRIPT PDF	Use this item to select the default printer language (personality). Possible values are determined by which valid languages are installed in the printer. Normally, you should not change the printer language (the default is AUTO). If you change it to a specific printer language, the printer does not automatically switch from one language to another.
CLEARABLE WARNINGS=JOB	ON JOB	Use this item to set the amount of time that a clearable warning appears on the printer control panel. ON: Warning messages appear on the control panel until ✓ (the 6 button on the MFP) is pressed. JOB: Warning messages appear on the control panel until the end of the job from which they were generated.
AUTO CONTINUE= ON	ON OFF	Use this item to determine how the printer reacts to errors. ON: If an error prevents printing, the message appears and the printer goes offline for 10 seconds before returning online. OFF: If an error prevents printing, the message remains on the display, and the printer does not print until ✓ (the 6 button on the MFP) is pressed. **Note** To stop printing when an installed finishing device is out of staples, set AUTO CONTINUE=OFF.
SUPPLIES LOW= CONTINUE	CONTINUE STOP	Use this item to determine how the printer functions when sensors report a low-supply situation. CONTINUE: The printer continues to print while the SUPPLIES LOW message appears. STOP: The printer goes offline and waits for further action.
JAM RECOVERY= AUTO	AUTO ON OFF	Use this item to determine how the printer functions when a jam occurs. AUTO: The printer automatically selects the best mode for the printer jam recovery (usually ON). This is the default setting. ON: The printer automatically reprints pages after a jam is cleared. OFF: The printer does not reprint pages following a jam. Printing performance might be increased with this setting.
RAM DISK=AUTO **Note** Appears only if the hard disk drive is installed.	AUTO OFF	Use this item to determine how the RAM disk is configured. This item appears only if no optional hard disk is installed and the printer has at least 8 MB of memory. OFF: The RAM disk is disabled. **Note** If the setting is changed from OFF to AUTO, the printer automatically reinitializes when it becomes idle.
LANGUAGE= ENGLISH		Includes all languages in the list. When scrolling through the languages values, LANGUAGE= should be updated so it is presented in the highlighted language.
COLOR SUPPLY OUT HP CLJ 9500mfp only	OFF AUTO CONTINUE BLACK	If this item is set to AUTO CONTINU BLACK, the MFP will continue to print jobs using the black print cartridge when a color cartridge (or cartridges) is out of toner.

Output Setup submenu

Table 29. Output Setup submenu

Item	Values	Explanation
OUTPUT SETUP (VARIES ACCORDING TO FINISHING DEVICE)		The Output Setup submenu appears when the printer has a 3,000-sheet stapler, 3,000-sheet stapler/stacker, or multifunction finisher attached. The menu items and values vary according to which finishing device is installed.

I/O submenu

Items in the I/O (input/output) submenu affect the communication between the printer and the computer.

Table 30. I/O submenu

Item and default setting	Values	Explanation
I/O TIMEOUT=15	5 TO 300	Select the I/O timeout period in seconds. (The I/O timeout refers to the time, measured in seconds, that the printer waits before ending a print job.) Use this setting to adjust the timeout for the best performance. If data from other ports appears in the middle of your print job, increase the timeout value.

Parallel Input submenu

Table 31. Parallel Input submenu

Item and default setting	Values	Explanation
HIGH SPEED=YES	YES NO	The printer accepts faster parallel communications that are used for connections with newer computers.
ADVANCED FUNCTIONS=ON	ON OFF	Turn the bidirectional parallel communication on or off. The default is set for a bidirectional parallel port (IEEE-1284). This setting allows the printer to send status readback messages to the computer. (Turning the parallel advanced functions on might slow the language switching.)

EIO submenu

The EIO (enhanced input/output) submenu appears only when an EIO device, such as an HP Jetdirect print server, is installed in an EIO slot on the printer. The items in the menu depend on the particular finishing device that is installed. If the printer contains an HP Jetdirect print server EIO card, you can configure basic networking parameters by using the EIO menu. These and other parameters can also be configured through HP Web Jetadmin or other network configuration tools (such as Telnet or the embedded Web server).

Table 32. EIO submenu

Item	Values	Explanation
TCP/IP	ENABLE HOST NAME CONFIG METHOD	Use ENABLE to select whether the TCP/IP protocol is enabled (ON) or disabled (OFF). HOST NAME is an alphanumeric string, up to 32 characters in length that identifies the device. This name is listed on the Jetdirect page. The default host name is NPLxxxxxx, where xxxxxx is the last six digits of the LAN hardware (MAC) address. Use CONFIG METHOD submenu to select whether the TCP/IP configuration parameters are set automatically from a network server by using any of these methods: • BOOTP (Bootstrap Protocol) • DHCP (Dynamic Host Configuration Protocol). If selected, and if a DHCP exists, the DHCP RELEASE and DHCP RENEW menus are available to set lease options. • MANUAL. Provides access to parameters that can be manually configured at the printer control panel. If selected, the MANUAL • SETTINGS menu is available to configure the parameters.
IPX/SPX	ENABLE FRAME TYPE SOURCE ROUTING	Use the ENABLE submenu to select whether the IPX/SPX protocol is enabled (ON) or disabled (OFF). Use FRAME TYPE to select the frame type setting for your network. The frame submenu includes these values: • AUTO (default) automatically sets and limits the frame type to the first one detected. • EN_8023, EN_II, EN_8022, and EN_SNAP are the frame type selections for Ethernet networks. • TR_8022, TR_SNAP are the frame type selections for Token Ring networks. The SOURCE ROUTING submenu is for a Token Ring network only. Use it to specify the NetWare Token Ring Source Routing parameter from the following options. AUTO (default): The type of source routing that is required on the network is automatically sensed. OFF: All packets are sent without source routing, and only packets from the same ring are received. ALL ROUTES and SINGLE ROUTES: All packets are sent with source routing (broadcasts and when the route is unknown).
APPLETALK	ENABLE	(Ethernet and Fast Ethernet only) Use this item to select whether the AppleTalk protocol is enabled (ON) or disabled (OFF).
DLC/LLC	ENABLE	Use this item to select whether the DLC/LLC protocol stack is enabled (ON) or disabled (OFF).

Table 32. EIO submenu (continued)

Item	Values	Explanation
LINK SPEED	AUTO 10T HALF 10T FULL 100THALF 100TFULL	(For 10/100Base-TX print servers only) Use this item to select the network link speed and communication mode for the 10/100Base-TX print server. For proper communications, the Jetdirect settings must match the network. AUTO (default): The print server will automatically configure itself to match the network's link speed and communication mode. If it fails, 100TX HALF is set. 10T HALF: 10Mbps, half-duplex operation 10T FULL: 10 Mbps, full-duplex operation 100T HALF: 100 Mbps, half-duplex operation 100T FULL: 100 Mbps, full-duplex operation
SECURE WEB	HTTPS REQUIRED HTTPS OPTIONAL	For configuration management, specify whether the embedded Web server will accept communications using HTTPS (Secure HTTP) only, or both HTTP and HTTPS. HTTPS REQUIRED (default): For secure, encrypted communications, only HTTPS access is accepted. The print server will appear as a secure site. HTTPS OPTIONAL: Access using either HTTP or HTTPS is permitted.
RESET SECURITY	NO YES	Specify whether the current security settings on the print server will be saved or reset to factory defaults. NO (default): The current security settings are maintained. YES: Security settings are reset to factory defaults.

Resets submenu

The items in the Resets submenu clear all memory in the printer, while CANCEL JOB (the STOP button on the MFP) clears only the current job.

Reset the printer only under the following circumstances:

- you want to restore the printer default settings
- communications between the printer and computer has been interrupted
- you are having problems with a port

Note Use this menu with caution. You can lose buffered page data or printer configuration settings when you select these items.

Table 33. Resets submenu

Item	Explanation
RESTORE FACTORY SETTINGS	This item restores most of the factory (default) settings. This item also clears the input buffer for the active I/O. Resetting memory during a print job can result in data loss. This items does not affect network settings that are stored on the HP Jetdirect print server (if installed).
CHARGER CLEANED	This item notifies the printer that the post charger is cleaned.
CLJ 9500: POWERSAVE CLJ 9500mfp: SLEEP MODE	**CLJ 9500**: Use this item to set the sleep mode option. The three settings are OFF, LOW, and HIGH. OFF: Powersave function is off. LOW: Uses more power than the HIGH setting, but the printer reaches the Ready state more quickly. HIGH: This setting saves the most power, but the printer takes longer to reach the Ready state. **CLJ 9500mfp**: The two settings are OFF and ON (ON is the default setting).
RESET SUPPLIES	This item notifies the printer that a new supply kit is installed. Only supplies that the printer cannot detect as changed appear (new cleaning kit, new transfer kit, and new fuser kit).

Diagnostics menu

Note If the printer or MFP is in a product-checking state (for example, during an engine rotation or when coming out of sleep mode) you must wait before attempting to start a diagnostic.

You can use this submenu to isolate parts, and to troubleshoot jam and print-quality issues. See “Engine diagnostic tools” on page 337 in chapter 7 for more information about using these diagnostic tools.

Table 34. Diagnostics menu

Item	Values	Explanation
PRINT EVENT LOG	Prints a page that indicates the most recent printer errors.	Use this item to generate a localized FIFO (first in, first out) list of the 50 most recent entries in the error log. The printed event log shows the error number, page count, error code, and description or personality.
SHOW EVENT LOG	Displays on the control panel a list of the most recent printer errors.	Use this item to scroll through the contents of the event log at the control panel, and to show the 50 most recent events. Use ▲ and ▼ to scroll through the event log contents.
PQ TROUBLESHOOTING	Prints a series of pages that are useful to identify print quality problems (follow the printed instructions).	Use this item to print eight pages to help you identify print-quality problems. The eight pages consist of two pages of instructions, one page for each color (cyan, magenta, yellow, and black), one demo page, and one configuration page.
DISABLE CARTRIDGE CHECK	Prints with one or more image drums removed.	Use this item to isolate defective cartridges by first removing specific image drums, and then printing internal pages or a print job using the remaining image drums.
PAPER PATH TEST	PRINT TEST PAGE SOURCE DESTINATION DUPLEX COPIES SENSORS	**NOTE** The MFP does not use the sensors option in this test. To test MFP sensors, see PAPER PATH SENSORS for the HP LJ 9500mfp in this table. Use this item to generate a test page that is useful for troubleshooting the printer’s paper-handling features. Define the test based on the media source, the output destination, duplex ON or OFF, the number of copies, or if the paper-path sensor status appears on the control panel during the test by selecting any of the options, and then select PRINT TEST PAGE to perform the test. If the SENSORS value is selected, the status of the following sensors appears on the control panel (SENSORS is not an available selection for an MFP; for an MFP, see SENSOR TEST in this table): • A: Tray 2 feed A • B: Tray 2 feed B • C: Tray 3 feed A • D: Tray 3 feed B • E: Pre-registration • F: Pre-T2 • G: Pre-fuser • H: Fuser outlet • I: Duplex reverse • J: Duplex feed • K: Face-down output

Table 34. Diagnostics menu (continued)

Item	Values	Explanation
SENSOR TEST (Interactive)	**Note** A through K appear on the control panel. • A: Pre-registration • B: T2 • C: Paper path • D: Fuser outlet • E: Face-down outlet • F: Face-down capacity full • G: Tray 1 media presence • H: Tray 2 media presence • I: Tray 2 feed sensor A and B • J: Tray 2 X dimension (cross feed direction) • K: Tray 2 Y dimension (cross feed direction) • L: Tray 3 media presence • M: Tray 3 feed sensor A and B • N: Tray 3 X dimension (cross feed direction) • O: Tray 3 Y dimension (feed direction) • P: Lower right door • Q: Right front/upper right door interlock • R: Left front/lower left door interlock • S: Upper left door	Use this item to manually test paper-path sensors and switches for correct operation. When the sensors are manually toggled, the control panel displays the sensor switching from ON to OFF, and from OFF to ON. Note: For an MFP, the I and O values are not an available selection.
PAPER PATH SENSORS (HP LJ 9500mfp only)	**Note** A through N appear on the control panel I is omitted). • A: Upper cassette feed A • B: Upper cassette feed B • C: Lower cassette feed A • D: Lower cassette feed B • E: Pre-registration • F: Pre-T2 • G: Pre-fuser • H: Fuser outlet • J: Duplex reversed • K: Tray 2 Y dimension (cross-feed direction) • M: Media sensor (not OHT = 0, OHT = 3) • N: Media-type-mismatch indication	This item allows you to monitor the activation of the paper path sensors using the control-panel display, as a sheet is being fed. **NOTE** The STOP button cancels this test. Sensors in tray 4 or the 2,000-side input feeder are not tested with this diagnostic. When the MFP is in this mode, any printed page (internal or from a host PC) can be used for the test.

Table 34. Diagnostics menu (continued)

Item	Values	Explanation
COMPONENT TEST	TRANSFER MOTORS BELT ONLY IMAGE DRUM MOTORS CARTRIDGE MOTORS DEVELOPER MOTORS YELLOW LASER SCANNER MAGENTA LASER SCANNER CYAN LASER SCANNER BLACK LASER SCANNER FUSER MOTOR MP PAPER FEED DRIVE UPPER CASSETTE FEED DRIVE LOWER CASSETTE FEED DRIVE PREREGISTRATION REGISTRATION FACE UP SOLENOID REPEAT	**NOTE** You must defeat the right-door interlock before selecting the BELT ONLT component test, so that the ITB can be seen. For the MFP, you must defeat the right-door interlock before selecting the <COLOR> LASER SCANNER component test and place your ear near the print cartridge to hear the scanners rotate. For the MFP, you must remove the finishing device before selecting the FUSER MOTOR test. For the MFP, you must remove the 2,000-sheet side input feeder before selecting the MP PAPER FEED DRIVE test. Component tests exercise individual parts independently to help you isolate failures, noises, print quality problems, and other issues. The results of the test depend on your observation of the printer during the test to determine the source of the problem. When you select one of the components for testing, the printer goes offline and runs the test based on the REPEAT value. Depending on the component that you select, you might be prompted to remove parts from the printer. If you do not remove the correct parts or if you press the CANCEL JOB button (the STOP button on the MFP), the display returns to the Diagnostics menu. When the test is complete, the control panel also returns to the Diagnostics menu. The REPEAT value allows the test to operate once continuously. **Note** See table 35 for more information about the COMPONENT TEST values. **Note** Several of the engine diagnostics require certain pre-conditions to operate. See “Engine diagnostics preconditions” on page 338 in chapter 7.

Table 34. Diagnostics menu (continued)

Item	Values	Explanation
PRINT/STOP TEST	**Note** The operator is prompted to enter a stop time value. Suggested delay times (using letter media): • 0 to 3,000 ms: Earliest page-stop point (60 mm from the top left side of the lower access door) • 1,000 ms: T1 - Y on belt • 1,500 ms: T1 - M on belt • 2,000 ms: T1 - C on belt • 3,000 ms: T1 - K on belt • 4,000 ms: ITB image at post charger • 4,100 ms: Page at pre-registration • 4,500 ms: ITB image is complete for all colors (CMYK) • 5,000 ms: Page at registration (buckled) • 7,000 ms: ITB image and page at mid-secondary transfer • 7,500 ms: Page just prior to duplex diverter • 8,000 ms: Page at mid-fuser • 8,500 ms: Two-third of ITB image cleaned • 12,500 ms: Page partially delivered to face-down tray	Use this item to isolate print quality problems and media handling faults by stopping the printer in the middle of a print cycle to observe the point in the process where the image degrades, or where media jams or is damaged. The range is 0 to 60,000 milliseconds, in increments of 10. **Note** One millisecond equals about 0.15 mm (0.0006 inch) of media travel. Sixty-six milliseconds equals about 10 mm (0.4 inch) of media travel.
COLOR BAND TEST	PRINT TEST PAGE COPIES	Use this item to identify arcing in the high-voltage paths and to isolate print-quality problems to the primary or the secondary transfer areas. The test prints a bar pattern that contains primary and secondary colors. The Color Band Test page should be printed on 11-by-17 or A3 media, if available. If not, letter or A4 media should be used (the larger media is used if it is set as the default media size). Evidence of arcing might not appear until a series of pages has been printed. Use the COPIES option to control how many copies of the internal page to print. The range is 1 to 30.

Table 35. Component test values

Value	Explanation
TRANSFER MOTORS	Use this item to check the four OPC drive motors and the ITB motor without any other printer process operating.
BELT ONLY	Use this item to check the ITB motor, the ITB motor drive train, and the ITB rotation.
IMAGE DRUM MOTORS	Use this item to make sure that the drum motor(s) are turning. This item is also helpful to check the drum motors and drive assemblies when the back of the printer is removed, and to isolate problems in the image drums or the image drum drive assemblies.
CARTRIDGE MOTORS	Use this item to make sure that the cartridge motor(s) are turning. This item is also helpful to check the cartridge motors and drive assemblies when the back of the printer is removed, and to isolate problems in the print cartridges or the print cartridge drive assemblies.
DEVELOPER MOTORS	Use this item to make sure that the developer motor(s) are turning. This item is also helpful to check the developer motors and drive assemblies when the back of the printer is removed, and to isolate problems in the image drums or the image drum developer drive assemblies.
YMCK LASERS	Use this item to make sure that the four laser scanner assemblies are functioning correctly.
FUSER MOTOR	Use this item to test the fuser motor, or any mechanisms that are driven by the fuser motor.
MP PAPER FEED DRIVE	Use this item to test the tray 1 feed motor.
UPPER CASSETTE FEED DRIVE	Use this item to check the pick rollers for tray 2. **Note** M23 rotates clockwise to drive the tray 2 mechanism.
LOWER CASSETTE FEED DRIVE	Use this item to check the pick rollers for tray 3. **Note** M23 rotates counter clockwise to drive the tray 3 mechanism.
PREREGISTRATION	Use this item to test the registration motor (M11) and the associated clutch (CL1) **Note** This clutch can also be tested with the MP PAPER FEED MOTOR test.
REGISTRATION	Use this item to test the registration motor (M11) and the associated clutch (CL2 is ON for this test, but OFF in the MP PAPER FEED MOTOR test).
FACE UP SOLENOID	Use this item to test the face-up solenoid (SL2) for correct functionality.
REPEAT	Use this item to repeat a test continuously.

Service menu

The service menu printer commands should be used only by authorized service personnel. The service menu can only be opened by using the PIN code 04950003. While in the service menu, service technicians can perform the following actions:

- clear the event log
- verify and set the page counts and serial number (these are displayed on the configuration page)
- change the maintenance intervals
- set the cold reset media size

If a stapler/stacker is installed:

- calibrate the staple position
- review and edit the serial number of the output device
- review and edit the page count of the output device

Table 36. Service menu

Item	Explanation
CLEAR EVENT LOG	Clear the event log after maintenance or repairs are accomplished.
TOTAL MONO PAGES	Set the total monochrome page count if the formatter is replaced.
TOTAL COLOR PAGES	Set the total color page count if the formatter is replaced.
REFURBISH PAGE COUNT	Set to retain the page count of a refurbished printer. This allows the regular page count to be set to zero after the printer is refurbished. The refurbished page count number is zero for new printers.
CLEANING KIT COUNT	Set the total cleaning kit page count if the formatter is replaced.
TRANSFER KIT COUNT	Set the total transfer kit page count if the formatter is replaced.
FUSER KIT COUNT	Set the total fuser kit page count if the formatter is replaced.
SERIAL NUMBER	Reset the printer serial number if the formatter is replaced.
SERVICE ID	Establishes the first power-on date for warranty determination.
COLD RESET PAPER	Sets the printer default media size to A4 or letter.
STAPLER/STACKER	Perform a staple position calibration (if the stapler/stacker is attached).

Service ID

This item allows the date that the printer was first used to be shown through the control panel, eliminating the need for customers to keep paper receipts for proof of warranty. Because the printer does not have an internal clock, the service ID date's availability is dependent on the printer being connected to a source that can provide the date, such as the installer, the driver, or the embedded Web server. In cases where the printer is not connected to a date source, the service ID will not be available, and the control panel will display 000000.

Restoring the Service ID

If you replace the formatter, the date is lost. Use this menu item to reset the date to the original date that the printer or MFP was first used. The date format is YYDDD. Calculate the date as follows:

1. To calculate YY, subtract 1990 from the calendar year. For instance, if the printer or MFP was first used in 2002, calculate YY as follows: 2002 – 1990 = 12. YY = 12.
2. To calculate DDD, use the following formula:
   30(calendar month – 1) + calendar day = DDD. If the calendar day is 31, use 30 instead. For instance, if the printer or MFP was first used on October 17, calculate DDD as follows:
   a. Subtract 1 from 10 (October is the tenth month of the year): 10 – 1 = 9.
   b. Multiply 9 by 30: 9 x 30 = 270.
   c. Add 17 to 270: 270 + 17 = 287. Thus, DDD = 287.

Converting the Service ID to an actual date

You can use the printer's Service ID number to determine whether the product is still under warranty. Convert the Service ID into the installation date as follows:

1. Add 1990 to YY to get the actual year that the product was installed.
2. Divide DDD by 30. If a remainder results, add 1 to the result. This is the month.
3. The remainder from the calculation in step 2 is the date.

Using the Service ID 12287 as an example, the date conversion is as follows:

1. 12 + 1990 = 2002, so the year is 2002.
2. 287 divided by 30 = 9 with a remainder of 17. Because a remainder results, add 1 to 9 to get 10, which represents October.
3. The remainder in step 2 is 17, so that is the date.
4. The complete date is 17-October-2002.

Settings and defaults

Note Most of the settings that you send from software programs override printer defaults.

Temporary settings are the values that are set through your software program for the current print job. Temporary settings remain in effect until the current print job is complete.

Control panel defaults are the values that are set by selecting a control panel item and pressing ✓. An asterisk (*) next to the item name indicates that it is now the default. The printer retains default settings even when power is turned off.

Factory defaults are preset at the factory and are the default values for each menu item.

Configure the control panel display language

You can set the printer to show messages and print configuration pages in another supported language. The following are supported languages:

- Czech
- Danish
- Dutch
- English
- Finnish
- French
- German
- Greek
- Hungarian
- Italian
- Japanese
- Korean
- Norwegian
- Portuguese (Brazilian)
- Polish
- Russian
- Simplified Chinese
- Spanish Catillian
- Swedish
- Traditional Chinese
- Turkish

Note You have the option to change the control panel language when the printer is turned on for the first time. If you did not change the control panel language when the printer was turned on for the first time, you can use either of the following procedures to select a new control panel language.

To configure the control panel language (using menus)

1. Press ✓ or MENU (MFP version) to open the menus.
2. Use ▲ or ▼ to scroll to CONFIGURE DEVICE, and then press ✓.
3. Use ▲ or ▼ to scroll to SYSTEM SETUP, and then press ✓.
4. Use ▲ or ▼ to scroll to LANGUAGE, and then press ✓.
5. Use ▲ or ▼ to scroll to the appropriate language, and then press ✓.
6. Press PAUSE/RESUME or EXIT (MFP version) to close the menus.

To configure the control panel language (power-on sequence)

1. Press and hold down ✓ or MENU (MFP version) while turning on the printer power.
2. Use ▲ or ▼ to scroll to LANGUAGE, and then press ✓ (LJ 9500) or touch the screen (LJ 9500mfp).

Note For Japanese, Turkish, Czech, Russian, Hungarian, and Polish, the language selection changes the default symbol set for the specific language. For all other languages, the default symbol set is PC-8.

Configure the input trays

Note The MFP tray 4 (2,000-sheet side-input tray) only supports letter and A4 size media. The MFP does *not* support custom media sizes.

You can configure the HP color LaserJet 9500 Series printer and 9500mfp input trays by type and size. You can load different media in each of the input trays and then request media by type or size.

Note If you have used previous HP LaserJet printers, you might be accustomed to configuring tray 1 to first mode or cassette mode. To duplicate the settings for first mode, configure tray 1 for Size = ANY and Type = ANY. To duplicate the settings for cassette mode, set either the size or type for tray 1 to a setting other than ANY.

The following instructions are used to configure the trays at the printer control panel.

Configuring trays for standard size media

Setting a standard media size and type for tray 1

1. Press ✓ or MENU (MFP version) to open the menus.
2. Use ▲ or ▼ to scroll to PAPER HANDLING, and then press ✓.
3. Use ▲ or ▼ to scroll to TRAY 1 SIZE, and then press ✓.
4. Use ▲ or ▼ to scroll to the media size that you want, and then press ✓.
5. The media type is set to Plain by default. If you want to change this setting, use ▲ or ▼ to scroll to TRAY 1 TYPE, and then press ✓ (LJ 9500) or touch the screen (LJ 9500mfp). Use ▲ or ▼ to scroll to the media type that you want, and then press ✓.
6. Press PAUSE/RESUME or EXIT (MFP version) to close the menus.

Setting a standard media size and type for tray 2, tray 3, or tray 4

When you open and close tray 2, tray 3, or tray 4, the printer detects the media size for that tray, and the printer control panel prompts you to select the media type for that tray. If the printer cannot detect the media size, the printer control panel will prompt you to select a custom size and type. Follow these instructions to set the media size and type for tray 2, tray 3, or tray 4.

1. Open the tray.
2. Make sure that the media guides rest against the stack of media in the tray.
3. Set the custom/standard switch to Standard if both guides are set to the same Standard marking. Otherwise, set the switch to Custom and use the instructions in the following section.

Note If the media size is marked on the tray guide, it is a standard media size. If the media size is not marked on the tray guide, see “Configuring trays for custom size media” on page 91.

4. Close the tray.
5. The printer detects the size of the media in the tray and message `TRAY X [TYPE] [SIZE]` appears. This message alternates with the message `TO CHANGE TYPE PRESS ✓`. The printer sets the media type to Plain by default. If you want to change this setting, use ▲ or ▼ to scroll to the media type that you want, and then press ✓.
6. Press PAUSE/RESUME or `EXIT` (MFP version) to close the menus.

Configuring trays for custom size media

Note When a custom size is set for a tray, it is retained until the custom/standard switch in the tray is returned to Standard.

Setting a custom media size and type for tray 1

1. Press ✓ or MENU (MFP version) to open the menus.
2. Use ▲ or ▼ to scroll to PAPER HANDLING, and then press ✓.
3. Use ▲ or ▼ to scroll to TRAY 1 SIZE, and then press ✓.
4. Use ▲ or ▼ to scroll to CUSTOM, and then press ✓.
5. The message UNIT OF MEASURE = appears, with the Inches setting selected by default. If you want to change this setting, Use ▲ or ▼ to scroll to the Millimeters setting, and then press ✓.
6. The message X DIMENSION = appears, with 12 inches (or 306 millimeters) selected by default. Use the numeric keypad to type the X dimension measurement of your media, and then press ✓.

Note The X dimension is the width of the page as it feeds into the printer. See table 36 and table 37 for maximum and minimum dimension measurements.

7. The message Y DIMENSION = appears, with 18.50 inches (or 470 millimeters) selected by default. Use the numeric keypad to type the Y dimension measurement of your media, and then press ✓.

Note The Y dimension is the length of the page as it feeds into the printer. See table 36 and table 37 for maximum and minimum dimension measurements.

8. The message TRAY 1 SIZE = [X DIMENSION] X [Y DIMENSION] [INCHES OR MILLIMETERS] SETTING SAVED appears.
9. The media type is set to Plain by default. If you want to change this setting, use ▲ or ▼ to scroll to TRAY 1 TYPE, and then press ✓. Use ▲ or ▼ to scroll to the media type that you want, and then press ✓.
10. Press PAUSE/RESUME or EXIT (MFP version) to close the menus.

Setting a custom media size and type for tray 2, tray 3, or tray 4 (printer models only)

1. Open the tray.
2. Make sure that the media guides rest against the stack of media in the tray.
3. Set the custom/standard switch to Custom.

Note If the media size is not marked on the tray guide, it is a custom media size. If the media is marked on the tray guide, see “Setting a standard media size and type for tray 2, tray 3, or tray 4” on page 90.

4. Close the tray.
5. The message TRAY X SIZE = appears, with the Any Custom size selected by default. Use ▲ or ▼ to scroll to the Custom setting, and then press ✓.
6. The message UNIT OF MEASURE = appears, with the Inches setting selected by default. If you want to change this setting, use ▲ or ▼ to scroll to the Millimeters setting, and then press ✓.
7. The message X DIMENSION = appears, with 12 inches (or 306 millimeters) selected by default. Use the numeric keypad to type X dimension measurement of your media, and then press ✓.

Note The X dimension is the width of the page as it feeds into the printer. See table 36 and table 37 for maximum and minimum dimension measurements.

8 The message `Y DIMENSION =` appears, with 18.5 inches (or 470 millimeters) selected by default. Use the numeric keypad to type the Y dimension measurement of your media, and then press ✓ (6).

Note The Y dimension is the length of the page as it feeds into the printer. See table 36 and table 37 for maximum and minimum dimension measurements.

9 The message `TRAY X [X DIMENSION] X [Y DIMENSION] [INCHES OR MILLIMETERS] SIZE SPECIFIED BY USER` appears. This message alternates with the message `PRESS ✓ TO CHANGE TYPE`. The media type is set to Plain by default. If you want to change this setting, use ▲ or ▼ to scroll to the media type that you want, and then press ✓.

10 Press PAUSE/RESUME or `EXIT` (MFP version) to close the menus.

Table 37. Maximum custom sizes

	Tray 1	Tray 2 and tray 3	Tray 4
Simplex and manual duplex	• 306 by 470 mm (12.05 by 18.5 inches)	• 297 by 432 mm (11.7 by 17 inches)	• 297 by 432 mm (11.7 by 17 inches)
Auto duplex	• 306 by 470 mm (12.05 by 18.5 inches)	• 297 by 432 mm (11.7 by 17 inches)	• 297 by 432 mm (11.7 by 17 inches)

Table 38. Minimum custom sizes

	Tray 1	Tray 2 and tray 3	Tray 4
Simplex and manual duplex	• 98 by 170 mm (3.9 by 6.7 inches)	• 148 by 210 mm (5.8 by 8.3 inches)	• 182 by 210 mm (7.2 by 8.3 inches)
Auto duplex	• 148 by 210 mm (5.8 by 8.3 inches)	• 148 by 210 mm (5.8 by 8.3 inches)	• 182 by 210 mm (7.2 by 8.3 inches)

Note The leading edge is listed first in the dimensions (scan direction by feed direction) for maximum custom sizes and minimum custom sizes.

Printable area

The HP color LaserJet 9500 Series printer and the 9500MFP limit the printable area to 4.23 mm (0.17 inch) +/- 2 mm (0.01 inch) from the edges of the media, and also limits the maximum image size to 297 mm by 460 mm (11.7 by 18.1 inches).

Note Margins can be manipulated within a software program to print up to 2 mm (0.01 inch) from the edge of the media. However, print quality might be negatively affected within 5 mm (0.2 inch) from the edge of the media.

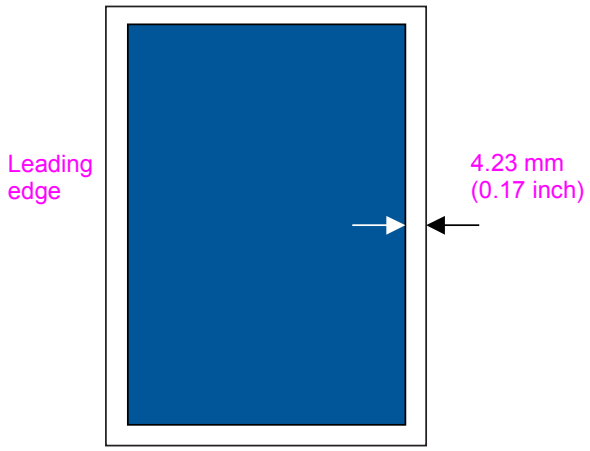


Figure 15. **Printable area from edges**

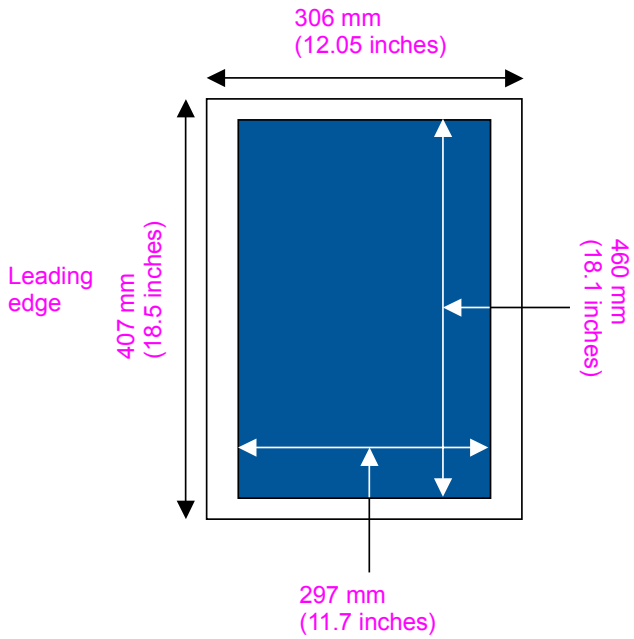


Figure 16. **Maximum printable area**

Boot key sequences

Note The HP color LaserJet 9500mfp uses numeric buttons to accomplish the functions of the arrow and select buttons on the HP color LaserJet 9500 printer. On the MFP use the numeric button 3 as ▲, numeric button 5 as ⮌, numeric button 6 as ✓, and numeric button 9 as ▼ on the MFP.

Hard disk reinitialization

When a hard disk is installed, it must be initialized.

Reinitialize a hard disk using the control panel

1. Turn the printer off.
2. Turn the printer on.
3. Press and hold PAUSE/RESUME (LJ 9500) or START (LJ 9500mfp) on the control panel during the memory count.
4. Hold PAUSE/RESUME (LJ 9500) or START (LJ 9500mfp) down until all three error lights illuminate steadily.
5. Press ⮌ (the 5 button on the MFP) until `INITIALIZE DISKS` appears on the display panel.
6. Press ✓ (the 6 button on the MFP).
7. The printer begins initializing the disk (this might take a moment). The control panel displays the HP event logo and eventually displays `READY`.

Reinitialize a hard disk using PJL commands

Create the following PJL command in MS-DOS EDIT:

Esc E Esc%-12345X@PJL FSINIT VOLUME = “1:”

Copy this to the printer using the DOS command:

copy/b.

Note For this command to take effect, the printer must be turned off and on after sending the command.

Note Both of the above methods set the hard disk to the required state of “`VOLUME 0`."

NVRAM initialization

Note The HP color LaserJet 9500mfp uses numeric buttons to accomplish the functions of the arrow and select buttons on the HP color LaserJet 9500 printer. On the MFP use the numeric button 3 as ▲, numeric button 5 as ⮌, numeric button 6 as ✓, and numeric button 9 as ▼ on the MFP

Note Initializing NVRAM will reset the serial number, the event log, the page counts, the calibration settings, and the EIO card. Use the Service menu to restore the serial number and page counts. You will also need to reconfigure any computers that print to this printer to recognize the printer. Initialize NVRAM only when absolutely necessary. In most situations, use a Cold reset to reset printer variables but still retain the needed values in the service menu.

Before initializing NVRAM, print a configuration page and a supplies status page to gather the following information:

- total page count and color page count
- transfer kit count
- fuser kit count
- serial number

To initialize NVRAM

1. Turn the printer on and watch the control panel display.
2. When the display begins showing the memory count, press and hold ▼ (the 9 button on the MFP) until all three lights on the control panel are lit.
3. Press ▲ (the 3 button on the MFP).
4. Press PAUSE/RESUME (LJ 9500) or START (LJ 9500mfp). The display should show `SKIP DISK LOAD`.
5. Press ▲ (the 3 button on the MFP) until `NVRAM INIT` is highlighted.
6. Press ✓ (the 6 button on the MFP). The printer will initialize NVRAM and then continue its power-on sequence.

Note NVRAM reset can save certain key variables and restore them when the initialization is complete. A hard disk drive must be installed to perform a NVRAM reset. Items that are saved include:

- event/error log
- model number
- model name
- printer name
- printer serial number
- formatter serial number
- service ID (born-on date)
- control panel language
- default paper size
- cold reset paper size
- auto cleaning page size
- total duplex counts
- non-toner consumable counts
- engine page count
- color engine page count
- tray 1 size
- envelope feeder size
- default unit of measure for default custom paper size
- default unit of measure for each tray
- print offset registration settings
- left margin offset (for each media size)
- leading edge margin offset (default)
- usage meter date (count and charges, detail and totals)
- usage page data not related to page counts
- list of last five cartridges installed in the printer
- NVRAM values for pixel count and EPR
- consumables reorder URL

Use the following steps to perform a NVRAM restore:

1. Turn the printer off and replace the formatter.
2. Enter the NVRAM reset key sequence when the printer is turned on for the first time.
3. Critical values are copied from the disk to NVRAM.

The reset only works if the key sequence is entered the first time the printer is turned on after the new board is installed. If the printer is turned on without entering the key sequence, all of the values are set to what is in the NVRAM on the new board and the backup data on the disk is lost.

The hard disk is guaranteed to have the most current data backed up, so the updated data is always accurate. Also, you do not have to wait for an automatic periodic disk sync before turning the printer off to change the formatter.

Note The NVRAM reset sequence resets all NVRAM values when a hard disk drive is not used.

Cold reset

The cold reset clears all data from the printer memory and returns all of the defaults to the factory settings.

CAUTION Performing a cold reset resets the Jetdirect print server configuration. To avoid making changes to your network configuration, remove the HP Jetdirect print server before performing a cold reset.

Note The HP color LaserJet 9500mfp uses numeric buttons to accomplish the functions of the arrow and select buttons on the HP color LaserJet 9500 printer. On the MFP use the numeric button 3 as ▲, numeric button 5 as ⮌, numeric button 6 as ✓, and numeric button 9 as ▼ on the MFP.

Note If possible, print a configuration page and menu map before performing a cold reset. This documents the current settings for later reference.

To perform a cold reset

1. Turn off the printer, and then turn the printer on again.
2. Press and hold ✓ (the 6 button on the MFP) during the memory count.
3. Continue to hold ✓ (the 6 button on the MFP) until all three control panel lights illuminate steadily, and then release ✓ (the 6 button on the MFP).
4. When `SELECT LANGUAGE` appears on the control panel, press ▼ (the 9 button on the MFP).
5. `COLD RESET` appears.
6. Press ✓ (the 6 button on the MFP) while `COLD RESET` appears on the control panel. The cold reset is complete.

To skip disk

Use the skip disk function to turn on the printer without recognizing the hard disk. This is useful for troubleshooting hard disk problems without having to remove the hard disk.

1. Turn off the printer, and then turn the printer on again.
2. Press and hold ▼ (the 9 button on the MFP) during the memory count.
3. Continue to hold ▼ (the 9 button on the MFP) until all three control panel lights illuminate steadily, and then release ▼ (the 9 button on the MFP).
4. Press ▲ (the 3 button on the MFP), and then press PAUSE/RESUME (LJ 9500) or START (LJ 9500mfp).
5. When `SKIP DISK LOAD` appears on the control panel, press ✓ (the 6 button on the MFP).
6. The printer starts without recognizing the hard disk.

To skip calibration

1. Turn off the printer, and then turn the printer on again.
2. Press and hold ▼ (the 9 button on the MFP) during the memory count.
3. Press ▲ (the 3 button on the MFP), and then press PAUSE/RESUME (LJ 9500) or START (LJ 9500mfp).
4. Scroll to `SKIP CALIBRATION`, and then press ✓ (the 6 button on the MFP).
5. The printer starts without calibrating.

4 Product maintenance

Chapter contents

Preventative maintenance 100
- Image transfer kit 100
- Image cleaning kit 100
- Image fuser kit 101

Cleaning the printer and accessories 102
- General cleaning 102

Cleaning procedures 104
- Cleaning the post charger 104
- Cleaning the separation guide, feed guide, and front fuser guide 104
- Cleaning the fuser input 104
- Cleaning the registration roller unit 105
- Cleaning the other rollers 105
- Cleaning the tray 1 separation pad 105

Print cartridges 106
- Non-HP print cartridges and image drums 106
- Authenticating print cartridges 106
- Storing print cartridges 107

Image drums 108
- Storing image drums 108

Firmware upgrades to the printer or MFP 109
- Downloading the new firmware from the HP Web site 109
- Downloading the new firmware to the printer 109
- Remote firmware update through a local Windows® port 110

Preventative maintenance

Note

This manual is used to service the entire HP color LaserJet 9500 Series printer and to service the HP color LaserJet 9500mfp *print engine* only. To service the ADF/scanner portion of the HP color LaserJet 9500mfp, see your *HP Scanner/ADF Service Manual for the HP LaserJet 9000mfp/9000Lmfp/ 9040mfp/9050mfp/9500mfp* (PN C8549-90955). To service the 2,000-sheet side-input tray, see your *2,000-sheet Side-Input Tray Service Manual* (PN Q1891-90901).

A complete service manual bundle is available by ordering the *Service Bundle for HP Color LaserJet 9500/9500mfp* (PN C8549-99001). The service bundle includes the manuals listed above, this print engine manual, and the *Paper Handling Accessories Service Addendum* (PN C85693-90002).

Throughout this document, the term “printer” is used to refer to both the HP LaserJet 9500 Series printer models *and* the HP LaserJet 9500mfp. Make sure to read the headings and text carefully to understand the context of the term.

The image transfer, image cleaning, and image fuser kits are used in a preventative maintenance routine for the printer.

Image transfer kit

The image transfer kit (part number C8555-67901) contains the following parts: the transfer roller, the transfer belt, one charcoal filter, one toner wipe, two small tray rollers, and seven large tray rollers.

The image transfer kit should be replaced after every 200,000 pages of printing. When the counter reaches 200,000 pages, the printer stops printing until the kit is replaced and the count is reset at the control panel.

Hewlett-Packard recommends that you place an order for a replacement image transfer kit when the `ORDER TRANSFER KIT` message first appears on the control panel display.

The product number for the image transfer kit for the HP color LaserJet 9500 Series printer and the 9500mfp is C8555A.

Storing the image transfer kit

- Do not remove the image transfer kit from its package until you are ready to use it. Touching the belt can degrade print quality.
- Store the kit in a cool, dry location. Sudden changes in temperature and humidity can cause condensation to form on the belt, which degrades print quality.
- Store the kit in a horizontal position.

Image cleaning kit

The image cleaning kit (part number C8554-67901) contains one transfer cleaner, one air filter, one toner wipe, and one toner collection bottle.

The entire image cleaning kit should be replaced at or before 50,000 pages of printing. The cleaning kit will need to be replaced earlier than 50,000 pages if you are printing less than 2.5 percent or more than 5 percent toner coverage per color per page. Hewlett-Packard recommends that you place an order for a replacement cleaning kit when `ORDER CLEANING KIT` first appears on the control panel display.

The product number for the cleaning kit for the HP color LaserJet 9500 series printer and the 9500mfp is C8554A.

Image fuser kit

The image fuser kit (part number C8546-69007) contains a fuser. It should be replaced after every 100,000 pages of printing. When the counter reaches 100,000 pages, the printer stops printing until the kit is replaced and the count is reset at the control panel.

Hewlett-Packard recommends that you place an order for a replacement image fuser kit when the `ORDER FUSER KIT` message first appears on the control panel display.

The product number for the image fuser kit for the HP color LaserJet 9500 Series printer and the 9500mfp is C8556A.

Cleaning the printer and accessories

Note This manual contains service information for the HP color LaserJet 9500 Series printer and the print engine portion of the HP color LaserJet 9500mfp. For MFP models, you also need the *HP Scanner/ ADF Service Manual for the HP LaserJet 9000mfp/9000Lmfp/9040mfp/9050mfp/9500mfp* (PN C8449-90955) and the *2,000-sheet Side Input Tray Service Manual* (PN Q1891-90901)for complete MFP service information.

A complete service manual bundle is available by ordering the *Service Bundle Sheet for HP Color LaserJet 9500/9500mfp* (PN C8549-99001). The service bundle includes the manuals listed above, this print engine manual, and the *Paper Handling Accessories Service Addendum* (PN C85693-90002).

To maintain superior print quality and performance, use the following procedures to thoroughly clean the printer and the finishing device.

General cleaning

WARNING! In order to avoid shock hazard, turn the printer off and unplug all power cords before you begin these steps.

CAUTION Do not use ammonia-based cleaners on the printer or finishing device. While cleaning the printer, be careful not to touch the transfer or delivery rollers. Skin oils on the roller can cause print-quality problems.

- clean the outside of the printer with a water-dampened cloth
- clean the inside of the printer with a dry, lint-free cloth

Cleaning spilled toner

Defective print cartridges can develop leaks. After a jam has occurred, some toner might remain on the rollers and guides inside of the printer. The pages that print immediately after the jam can pick up this toner. A blank cleaning page is printed after a jam occurs in the fuser area.

Note To clean skin and clothing of toner spills, remove as much toner as possible with dry tissue, and then wash the clothing in cold water. Hot water causes toner to permanently set into clothing.

Vacuum specifications

Do not vacuum the printer or any spilled toner with a conventional vacuum. Toner particles used in this printer might be too fine for effective vacuuming and could result in damage to the conventional vacuum cleaner.

A vacuum cleaner specifically designed for cleaning toner can be used if it is capable of filtering fine particles (5 microns in diameter).

Dispose of waste toner in accordance with local requirements. Do not discharge toner particles in drains.

First aid measures

- **Ingestion**—If toner is ingested, rinse your mouth thoroughly with water and drink several glasses of water. If irritation occurs, consult a physician.
- **Inhalation**—If toner particles are inhaled, move to fresh air immediately. If irritation occurs, consult a physician.
- **Eye contact**—If toner comes in contact with the eyes, immediately flush them with plenty of water for at least 15 minutes. If irritation occurs, consult a physician.
- **Skin contact**—If toner spills on skin, remove as much toner as possible using dry tissue (more than one might be needed), and then wash the affected area of the skin with cold water. If irritation occurs, consult a physician.

Cleaning procedures

Some print-quality problems can be resolved by cleaning certain printer components rather than replacing a printer part.

Cleaning the post charger

1. Open the right side door.
2. Locate the blue handle of the post charger cleaner on the front left of the image transfer belt.
3. Gently slide the post charger cleaner to the right until it stops. The spring should be compressed.
4. Slide the cleaner to the left back into place.
5. Repeat steps 3 and 4 to clean the post charger a second time.
6. Close the upper right door. If the door does not close, make sure that the blue handle of the post charger cleaner is positioned at the far left of the image transfer belt.

Cleaning the separation guide, feed guide, and front fuser guide

Clean these guides with lint-free cloth. If any dirt or dust cannot be removed, use alcohol on the lint-free cloth.

Cleaning the fuser input

1. Open the front doors of the printer, and then swing the large green lever down.
2. On the front of the printer, locate the blue transfer-roller handle beneath the large green lever. Grasp the handle and pull the roller out of the printer. Set the roller on a clean, flat surface.

CAUTION Do not touch the black foam roller, and be careful not to scratch the underside of the image transfer belt as you remove the roller from the printer.

3. Remove the green tongs and blue brush mounted on the inside of the right front door.
4. Slide the open end of the brush onto the tongs until it snaps into place.
5. Hold the tongs so that the brush is at a 45-degree angle and align the brush with the transfer roller slot. Insert the brush into the slot.

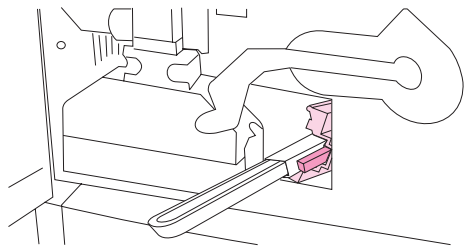


Figure 17. Cleaning the fuser input (step 5)

6. Slide the brush into the transfer roller slot until it stops, and then slide the brush toward you until the brush is almost out of the transfer roller slot.

CAUTION Do not pull up or sideways on the brush. Push and pull the brush straight in and out of the printer.

7. Repeat step 6 three times, and then remove the brush from the printer.

8 Remove the brush from the tongs by raising the snap on the back of the brush and pulling the brush away from the tongs.

9 Replace the tongs and brush on the inside of the right door.

10 Using one hand to support the underside of the transfer roller, turn the roller to a 45-degree angle and align the roller with the slot. Slide the roller into the slot until it stops.

CAUTION Do not touch the black foam roller, and be careful not to scratch the underside of the image transfer belt as you insert the roller into the printer.

11 Swing the green lever up, and then close the front doors.

Cleaning the registration roller unit

- **Registration roller:** Clean the registration roller by using a lint-free cloth. If any dirt or dust cannot be removed, use alcohol on the lint-free cloth.
- **Pre-registration roller:** Clean the registration roller by using a lint-free cloth. If any dirt or dust cannot be removed, use alcohol on the lint-free cloth.

Cleaning the other rollers

Clean these rollers by using a lint-free cloth. If any dirt or dust cannot be removed, use alcohol on the lint-free cloth.

Cleaning the tray 1 separation pad

Clean the tray 1 separation pad by using a lint-free cloth.

Print cartridges

When you use an authentic HP print cartridge, you can obtain the following types of supplies information throughout the cartridge life:

- the amount of cartridge life remaining
- the estimated number of pages remaining
- the number of pages printed
- other supplies information

Authentic HP print cartridges for the HP color LaserJet 9500 series printer have the following part numbers:

Print cartridge	Product number	Part number
Black	C8550A	C8550-67901
Cyan	C8551A	C8551-67901
Yellow	C8552A	C8552-67901
Magenta	C8553A	C8553-67901

Print cartridge life is directly proportional to the coverage of toner on the page. Each color print cartridge prints approximately 25,000 pages of letter-size or A4-size media at 5 percent toner coverage (a full page of text).

Hewlett-Packard recommends that you place an order for a replacement print cartridge when the ORDER <COLOR> CARTRIDGE message first appears on the control panel display.

Non-HP print cartridges and image drums

Hewlett-Packard Company cannot recommend the use of non-HP print cartridges and image drums, either new or remanufactured. Because they are not HP products, HP cannot influence their design or control their quality. Service or repairs that are required as a result of using a non-Hewlett-Packard print cartridge are *not* covered under the printer warranty.

When a non-HP cartridge is installed, the NON HP CARTRIDGE DETECTED message appears on the printer control panel display. You must press the CANCEL JOB (LJ 9500) or the STOP (LJ 9500mfp) to continue printing. The message remains on the control panel display until all of the non-HP cartridges are replaced with authentic HP cartridges. The non-HP cartridge cannot report on the status of the print cartridge, such as the amount of cartridge life remaining, the estimated number of pages remaining, the number of pages printed, and other supplies information.

Non-HP cartridges do not report the ORDER <COLOR> CARTRIDGE and REPLACE <COLOR> CARTRIDGE messages.

Authenticating print cartridges

When you insert a print cartridge in the printer, the printer informs you if the cartridge is not a HP print cartridge. If you insert a used HP cartridge from another HP printer, the printer might print as many as 40 pages before it identifies the cartridge as a genuine HP cartridge and then reactivates the supply-status features. You can override the NON HP CARTRIDGE DETECTED message by pressing the CANCEL JOB (LJ 9500) or the STOP button (LJ9500mfp).

If the printer control panel message states that this is not a genuine HP print cartridge, and you believe you purchased an HP cartridge, call the HP fraud hotline at (1) (887) 219-3183 (toll-free in North America).

Storing print cartridges

Follow these guidelines for storing print cartridges:

- Do not remove the print cartridge from its package until you are ready to use it.
- Store the cartridge in a horizontal position.
- Store the cartridge in a location within a temperature range of 0° to 35° C (32° to 95° F) and a relative humidity range of 35 percent to 85 percent.

If the print cartridge must be removed from the printer, always store the cartridge under the following condition:

- inside the protective bag in which it was originally packaged
- in a dark cabinet, away from direct sunlight
- with the correct side up, and in a horizontal position (not standing on end)
- in a temperature that is listed above
- away from ammonia or other organic-solvent fumes

CAUTION Never ship the printer with print cartridges or image drums installed. Excessive vibration during shipping can cause toner to leak, contaminating the printer.

Image drums

Each color image drum prints approximately 40,000 pages of letter-size or A4-size media. When you use a new HP image drum, you can obtain the following types of supply information throughout its life:

- the amount of image-drum life remaining
- the estimated number of pages remaining
- the number of pages printed
- the other supply information

Authentic HP image drums for the HP color LaserJet 9500 series printer have the following part numbers:

Image drum	Product number	Part number
Black	C8560A	C8560-67901
Cyan	C8561A	C8561-67901
Yellow	C8562A	C8562-67901
Magenta	C8563A	C8563-67901

Hewlett-Packard recommends that you place an order for a replacement image drum when the `ORDER <COLOR> DRUM` message first appears on the control panel display.

Storing image drums

Follow these guidelines for storing image drums:

- Do not remove the drum from its package until you are ready to use it.

CAUTION Never expose the image drum to direct sunlight, or to room light. Bright light and direct sunlight can permanently damage a print cartridge or image drum.

- Store the drum in a horizontal position.
- Store the drum in a dark, dry location with a temperature range of 0° to 35° C (32° to 95° F) and a relative humidity range of 35 percent to 85 percent.
- Avoid exposing the drum to magnetic sources.

Handling instructions

- Do not touch the surface of the photosensitive drum.
- Do not set the drum on carpet. Set the drum on a flat, clean, dust-free surface.
- Do not expose the drum to unnecessary vibrations or shock.
- Do not expose the photosensitive drum to strong light. Blurred areas on the page might indicate that the drum has been exposed to light for too long. This causes permanent damage to the photosensitive drum. If this occurs, replace the drum.
- Never manually rotate the drum, especially in the reverse direction; it can cause internal damage and toner spills.

Firmware upgrades to the printer or MFP

Note Throughout this document, the term “printer” is used to refer to both the HP LaserJet 9500 Series printer models *and* the HP LaserJet 9500mfp. Make sure to read the headings and text carefully to understand the context of the term.

Downloading the new firmware from the HP Web site

For support information about downloading new firmware from the Web, go to: http://www.hp.com/go/clj9500_firmware

Downloading the new firmware to the printer

The printer can receive an.rfu update as long as it is in a `READY` state. The printer waits for all of the I/O channels to become idle before performing the update.

Note The firmware update involves a change in the format of nonvolatile random-access memory (NVRAM). Any menu settings that are changed from the default settings return to default settings and must be changed again if you want settings that are different from the defaults. Examples of settings that are affected in this way are tray types, default symbol sets, and Web access alerts.

The elapsed time for an update depends on the I/O transfer time, as well as the time that it takes for the printer to reinitialize. The I/O transfer time depends on a number of things, including the speed of the host computer that is sending the update and the I/O method (Fast InfraRed Connect [FIR], parallel, or network). The reinitialization time depends on the specific hardware configuration of the printer, such as the number of EIO devices installed, the presence of external paper-handling devices, and the amount of memory installed.

If the remote firmware update process is interrupted before the firmware is downloaded (when `RECEIVING UPGRADE` appears on the control panel), the firmware file must be sent again. If power is lost during the flash DIMM update (when `UPGRADING PRINTER` appears on the control panel), the update is interrupted and the message `RESEND UPGRADE` appears (in English only) on the control panel. The update must be sent only by a computer that is attached to the parallel port of the printer.

Finally, any print jobs ahead of the .rfu job in the queue are printed before the update is processed.

Note The printer automatically turns off and then on again after processing the update.

Remote firmware update through a local Windows® port

If the printer is connected through a local port (USB or parallel), then you can send the .rfu file directly to the printer by using a **Copy** command from a command prompt or an MS-DOS (R) window. At the command prompt, perform the following steps for your operating system.

Windows 95, Windows 98, or Windows Me

1 From a command prompt or in an MS-DOS window, type:
Mode lpt1:,,p

Note If the printer is attached to a parallel port other than LPT1, then substitute the proper LPT port number in the mode command.

2 Press ENTER.

3 The response you receive should be similar to these examples:

- LPT1 Not Rerouted
- Resident portion of MODE loaded
- Infinite retry on parallel printer time-out

4 At a command prompt, type:
copy /b <FILENAME> <PORTNAME>

where <FILENAME> is the name of the .rfu file (including the path) and <PORTNAME> is the name of the appropriate printer port (such as LPT1). For example, C:\>copy/b c:\9500fw.rfu lpt1

Note If the file name or path includes a space, you must enclose the file name or path in quotation marks. For example, type C:\>copy/b "c:\My Documents\9500fw.rfu" lpt1

5 Press ENTER. A message appears on the control panel. See "Messages during the firmware update" on page 116. At the end of the upgrade process, READY appears on the control panel.

6 Print a configuration page and verify that the firmware revision number matches the revision of the current upgrade.

7 Type the word “exit” at the command prompt to close the command window.

Windows NT® 4.0, Windows 2000, Windows XP, or Windows Server 2003

The .rfu file can be sent directly to the printer by typing a copy command at a command prompt or in an MS-DOS window.

1 At a command prompt, type:
copy /b <FILENAME> <PORTNAME>

where <FILENAME> is the name of the .rfu file (including the path) and <PORTNAME> is the name of the appropriate printer port (such as LPT1). For example, C:\>copy/b c:\9500fw.rfu lpt1

Note If the file name or path includes a space, you must enclose the file name or path in quotation marks. For example, type: C:\>copy/b "c:\My Documents\9500fw.rfu" lpt1

2 Press ENTER. A message appears on the control panel. See "Messages during the firmware update" on page 116. At the end of the upgrade process, READY appears on the control panel.

3 At the command prompt, type the word “exit” to close the command window.

Remote firmware update through a Windows network

If the printer is shared on a Windows network, follow these instructions.

1 From a command prompt or in an MS-DOS window, type:
copy /B <FILENAME> \\<COMPUTERNAME>\<SHARENAME>

where <FILENAME> is the name of the .rfu file (including the path), <COMPUTERNAME> is the name of the computer from which the printer is being shared, and <SHARENAME> is the printer share name. For example, C:\>copy /B c:\9500fw.rfu \\your_server\your_computer

Note If the file name or path includes a space, you must enclose the file name or path in quotation marks. For example, type C:\>copy/b "c:\My Documents\9500fw.rfu" \\your_server\your_computer

2 Press ENTER. A message appears on the control panel. See "Messages during the firmware update" on page 116. At the end of the upgrade process, READY appears on the control panel. The message “1 file(s) copied” appears on the computer screen.

Remote firmware update for UNIX® systems

For UNIX systems, any command method that delivers the .rfu file to the printer is acceptable, including the following:

1 At the command prompt, type:
$cp </home/yourmachine/FILENAME/dev/parallel>

where </home/yourmachine/FILENAME> contains the .rfu file.

Remote firmware update using FTP on a direct network connection

If the HP color LaserJet 9500 series printer uses a direct network connection, use file transfer protocol (FTP) to update your HP LaserJet firmware. Complete the following steps for your operating system.

Windows operating systems

1 Take note of the TCP/IP address on the EIO Jetdirect page. The HP Jetdirect page is the second page of the configuration page printout.

Note Before connecting to the printer, make sure that the printer is not in PowerSave mode. Also, make sure that any error messages are cleared from the control panel.

2 Open a command window on your computer.

3 Type:
ftp <TCP/IP PRINTER ADDRESS>

For example, if the TCP/IP address is 192.168.0.90, type ftp 192.168.0.90

4 Press ENTER.

5 When prompted for the user name, press ENTER.

6 When prompted for the password, press ENTER.

7 Type the word “bin” at the command prompt.

8 Press ENTER. The message “200 Types set to I, Using binary mode to transfer files” appears in the command window.

9 Type:
put <FILENAME>

where <FILENAME> is the name of the .rfu file that was downloaded from the Web, including the path. For example, type:
put C:\LJ\9500FW.RFU

and then press ENTER.

Note If the file name or path includes a space, you must enclose the file name or path in quotation marks. For example, type put "c:\My Documents\LJ\9500fw.rfu"

10 The following series of messages appears in the command window:

- 200 PORT command successful
- 150 Opening BINARY mode data connection
- 226 Ready
- 226 Processing Job
- 226 Transfer complete

A message containing transfer speed information appears.

11 The download process begins and the firmware is updated on the printer. This can take about five minutes. Let the process finish without further interaction with the printer or computer.

Note The printer automatically turns off and then on again after processing the upgrade.

12 At the command prompt, type the word “bye” to exit the ftp command.

13 At the command prompt, type the word “exit” to return to the Windows interface.

Mac operating systems

1. Take note of the TCP/IP address on the EIO Jetdirect page. The Jetdirect page is the second page of the configuration page printout.
2. Open a Terminal window on your Macintosh. You can find the Terminal application on the computer hard drive under the Applications/Utilities folder.
3. Type:
   FTP <TCP/IP PRINTER ADDRESS>

   For example, if the TCP/IP address is 192.168.0.90, type FTP 192.168.0.90.
4. Press ENTER.
5. When prompted for a user name and password, press ENTER.
6. Type put:
   <path>

   where <path> is the location where the .rfu file was downloaded from the Web, including the path. For example type put C:\LJ\9500FW.RFU, and then press ENTER.

Note If the file name or path includes a space, you must enclose the file name or path in quotation marks. For example, type put "c:\My Documents\LJFW.RFU"

Note To ensure that the entire proper path to the .rfu file is placed in the **Put** command, type the word “put”, then type a space, and then click and drag the .rfu file on to the terminal window. The complete path to the file will be automatically placed after the **Put** command.

7. The download process begins and the firmware is updated on the printer. This can take about five minutes. Let the process finish without further interaction with the printer or computer.

Note The printer automatically turns off and then turns on again to activate the update.

Remote firmware update using FTP through a browser

Follow the instructions below to use FTP through a browser to update the printer firmware remotely.

Note The following instructions can be used on Windows or Mac operating systems.

1. Open a browser window.
2. In the address line of the browser, type:
   ftp://<IPADDRESS>

   where <IPADDRESS> is the TCP/IP address of your printer. For example, if the TCP/IP address is 192.168.0.90, type FTP 192.168.0.90
3. Locate the .rfu file for the printer.
4. Drag and drop the .rfu file onto the PORT1 icon in the browser window.

Remote firmware update using Fetch (Mac OS 8.6 and OS 9. x only)

For Mac OS 8.6 through 9.x OSs, a shareware program called Fetch provides FTP control for a **Put** command. Download and install the program from:
http://download.cnet.com/downloads/0-10207-100-5250613.html

Follow these instructions to use Fetch.

1. Start the program by clicking on the Fetch icon.
2. Type the IP address of the printer in the Host: box
3. Click the **Put File**s button and browse to the location of the .rfu file.
4. Double-click the file to select it and download it to the printer. A confirmation message appears in the main window.
5. Click **OK**.

Remote firmware update using the HP LaserJet utility (Mac OS 8.6 and OS 9. x only)

Follow these instructions to update the firmware using the HP LaserJet utility.

1. The first step is to make sure you have the tools and files necessary for the update. You will need the HP LaserJet utility and the 9500fw.rfu file, which is the firmware file for the printer.

   The HP LaserJet utility can be found on the HP color LaserJet 9500 printing-system software CD-ROM that came with the printer or MFP. If you do not have the software CD-ROM, you can obtain the HP LaserJet utility by downloading the latest printer installer from http://www.hp.com

   The firmware file (9500fw.rfu) can be downloaded from
   http://www.hp.com/go/clj9500_firmware

   When you have the firmware file and the HP LaserJet utility, you are ready to begin the upgrade process.
2. Launch the HP LaserJet utility.
3. Click **Select Printer** and locate the printer you would like to upgrade on the network.
4. Select the printer on the right side of the dialog box, and click **OK**. An information dialog box for the HP color LaserJet 9500 Series printer or MFP appears.
5. On the left side of the information dialog box, click **Files**. A dialog box appears that allows you to choose a file to be downloaded to the printer.
6. Click **Select File**.
7. Locate the 9500fw.rfu file on your hard disk, and click the file name to highlight it. Then click **Select**. The **Files** dialog box updates showing the 9500fw.rfu file under **File to download**.
8. Click **Download**.

   The HP LaserJet utility starts downloading the file to the printer. A progress bar keeps you updated on how much of the file has been downloaded. When the file is downloading, `RECEIVING UPGRADE` appears on the control panel. After the file downloads to the printer, `PERFORMING UPGRADE` appears on the control panel.

Note The printer automatically turns off and then turns back on again after processing the upgrade.

9. After the printer turns on again and finishes initializing, print a configuration page to make sure that the new firmware is installed. Press 22 on the control panel to print a configuration page.

Remote firmware update using the LPR command

Note This remote firmware update method is for use in Windows NT 4.0, Windows 2000, Windows XP, and Windows Server 2003.

Follow the instructions below to update the printer software remotely by using the LPR command.

1. From a command window, type:
   lpr -P <IPADDRESS> -S <IPADDRESS> -o l <FILENAME>
   or
   lpr -S <IPADDRESS> -Pbinps <FILENAME>

   where <IPADDRESS> can be either the TCP/IP address or the hostname of the printer, and where <FILENAME> is the filename of the .rfu file.

Note The parameter (-o l) consists of a lowercase “O”, not a zero, and a lowercase “L”, not the numeral 1. This parameter sets the transport protocol to binary mode.

2. Press ENTER. A message appears on the control panel. See "Messages during the firmware update" on page 116. At the end of the upgrade process, READY appears on the control panel.
3. Type the word “exit” at the command prompt to close the command window.

Using HP Web Jetadmin to download the firmware to the printer of MFP

This procedure requires that you install HP Web JetAdmin version 7.0 or later on your computer. Complete the following steps to update a single printer through HP Web JetAdmin after downloading the .rfu file from the HP Web site.

1. Start HP Web Jetadmin.
2. Type the TCP/IP address or IP host name of the printer in the **Quick Device Find** field, and then click **Go**. The printer Status window appears.
3. Open the Device Management folder in the drop-down list in the Navigation panel. Navigate to the Device Lists folder.
4. Expand the Device Lists folder and select All Devices. Locate the printer or MFP you want to update in the list and click to select it.
5. Locate the drop-down box for **Device Tools** in the upper-right corner of the window. Select **Update Printer Firmware** from the **Choose Action** list.
6. If the name of the .rfu file is not listed in the **All Available Images** box, click **Browse** in the **Upload New Firmware Image** dialog box and navigate to the location of the .rfu file you downloaded from the Web at the start of this procedure. If the filename is listed, select it.
7. Click **Upload** to move the .rfu file from your hard drive to the HP Web JetAdmin server.
8. Refresh the browser.
9. Select the .rfu file from the **Printer Firmware Update** drop-down menu.
10. Click **Update Firmware**. HP Web Jetadmin sends the selected .rfu file to the printer or MFP. A message appears on the control panel. See "Messages during the firmware update" on page 116. At the end of the upgrade process, READY appears on the control panel.

Note HP Web Jetadmin 6.5 can be used to perform multiple or unattended installations.

1. Start HP Web Jetadmin.
2. Create a device group. A simple way to do this is to follow these steps:
   a. Click **Device Management**, and then click **All Devices**.

b. Shift-click to select the printers and MFPs that you want to be included in the group, and then click **OK**.

c. When prompted, type a name for the new device group, and then click **OK**.

3. To modify several printers in a group, click the group name, and then click **Open**.
4. The drop-down menu for **Device Group Tools** appears in the right side of the window. Scroll if necessary to view it.
5. In the **Device Group Tools** drop-down box, select an action. Type in the appropriate information, and then click **Return to Device Group** when you are finished.

Messages during the firmware update

The product control panel shows three messages that appear during a normal update process.

Table 39. Update messages

Printer message	Explanation
RECEVING UPGRADE	Appears when the printer recognizes the start of an .rfu update and until the printer verifies the validity and integrity of the .rfu update.
UPRGRADING PRINTER	Appears when the printer is reprogramming the firmware.
WAIT FOR PRINTER TO REINITIALIZE	Appears from when the printer finishes reprogramming the DIMM until the printer reinitializes.

Note To verify that the firmware update succeeded, print a new configuration page from the control panel and make sure that the firmware date code on the configuration page has changed.

Troubleshooting a firmware update

The following table lists the causes and results of possible interruptions to the firmware update.

Table 40. Troubleshooting a firmware update

Cause	Result
Control panel cancelled a job.	No update occurred.
A break in the I/O stream occurred during a send.	No update occurred.
A power cycle occurred during RECEVING UPGRADE.	No update occurred.
A power cycle occurred during UPGRADING PRITNER.	No update occurred (resend the update through a parallel port).
A power cycle occurred during WAIT FOR PRINTER TO REINITIALIZE.	The update is complete.

Note Print jobs sent to the printer while an update is in process do not interrupt the update.

The following table lists possible reasons for the failure of a remote firmware update and the corrective action required for each situation.

Table 41. Troubleshooting a firmware update failure

Cause	Action
The .rfu file is corrupted.	The printer recognizes that the file is corrupted and rejects the update. Download the file again and send the new file to the printer. Download the file from: http://www.hp.com/go/clj9500_firmware

Table 41. Troubleshooting a firmware update failure

Cause	Action
The .rfu file contains the wrong printer model.	The printer recognizes the model mismatch and rejects the update. Download the correct file and send it to the printer. Download the file from: http://www.hp.com/go/clj9500_firmware
The upgrade is interrupted.	See table 40.
A flash hardware failure occurred.	The device might have a hardware failure.

5 Theory of operation

Chapter contents

Basic operation 120
- Major printer systems 120
- Printer block diagram 121
- Sequence of operation 122
- Timing charts 124
- Wiring diagrams 126
- Flat flexible cable signals 130
- Connector location 138

Engine-control system 142
- DC controller circuit 143
- DC controller operations 146
- T driver circuit 147
- Fuser control circuit 148
- Low-voltage power supply 149
- High-voltage power supply circuits 150
- Post charger power supply unit 150
- Motors and fans 151
- Switches, solenoids, clutches, and sensors 154

Formatter 158
- Formatter heartbeat LED 159
- DIMM slots 159

Laser/scanner system 160
- Dual-beam method 161
- Laser control 162
- Scanner-motor control 166

Image formation system 170
- Electrophotographic process 170
- Image stabilization control 178

Paper-path system 181
- Pickup/feed unit 183

Jam detection 190

Tray 4 for the HP LaserJet 9500 Series printer 192
- Tray 4 driver PCB 192
- Power supply 192
- Sequence of operation 193
- Pickup and feed 193
- Media level and size detection 193
- Jam detection 193

Note

This manual is used to service the entire HP color LaserJet 9500 Series printer and to service the HP color LaserJet 9500mfp *print engine* only. To service the ADF/scanner portion of the HP color LaserJet 9500mfp, see your *HP Scanner/ADF Service Manual for the HP LaserJet 9000mfp/9000Lmfp/ 9040mfp/9050mfp/9500mfp* (PN C8549-90955). To service the 2,000-sheet side-input tray, see your *2,000-sheet Side-Input Tray Service Manual* (PN Q1891-90901).

A complete service manual bundle is available by ordering the *Service Bundle for HP Color LaserJet 9500/9500mfp* (PN C8549-99001). The service bundle includes the manuals listed above, this print engine manual, and the *Paper Handling Accessories Service Addendum* (PN C85693-90002).

Throughout this document, the term “printer” is used to refer to both the HP LaserJet 9500 Series printer models *and* the HP LaserJet 9500mfp. Make sure to read the headings and text carefully to understand the context of the term.

Major printer systems

This chapter describes the major printer systems that are common to the HP LaserJet 9500 Series printer and the 9500mfp.

This chapter provides information about the following systems:

- engine control (page 142)
- formatter (page 158)
- laser/scanner (page 160)
- image formation (page 170)
- paper pickup (page 181)

Relationships among the four systems are represented in figure 18:

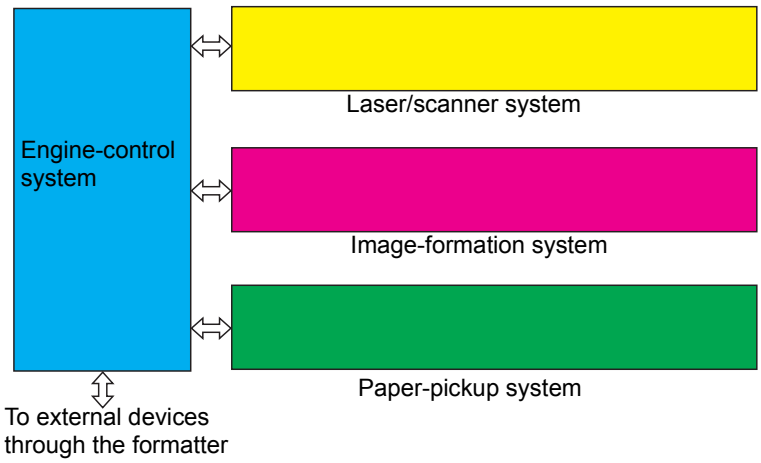


Figure 18. **Printer systems**

Note

In addition to the systems that are described in this chapter the HP color LaserJet 9500mfp model adds the following major printer systems: the scanner/ADF, a finishing device, and a 2,000-sheet side high-capacity feeder. See the *HP Scanner/ADF Service Manual for the HP LaserJet 9000mfp/ 9000Lmfp/9040mfp/9050mfp/9500mfp* (PN C8549-90955), the *2,000-Sheet Side-input Tray Service Manual* (PN Q1891-90901), or the *Paper handling accessories service addendum* (PN Q5693-90002) for information about these systems.

Printer block diagram

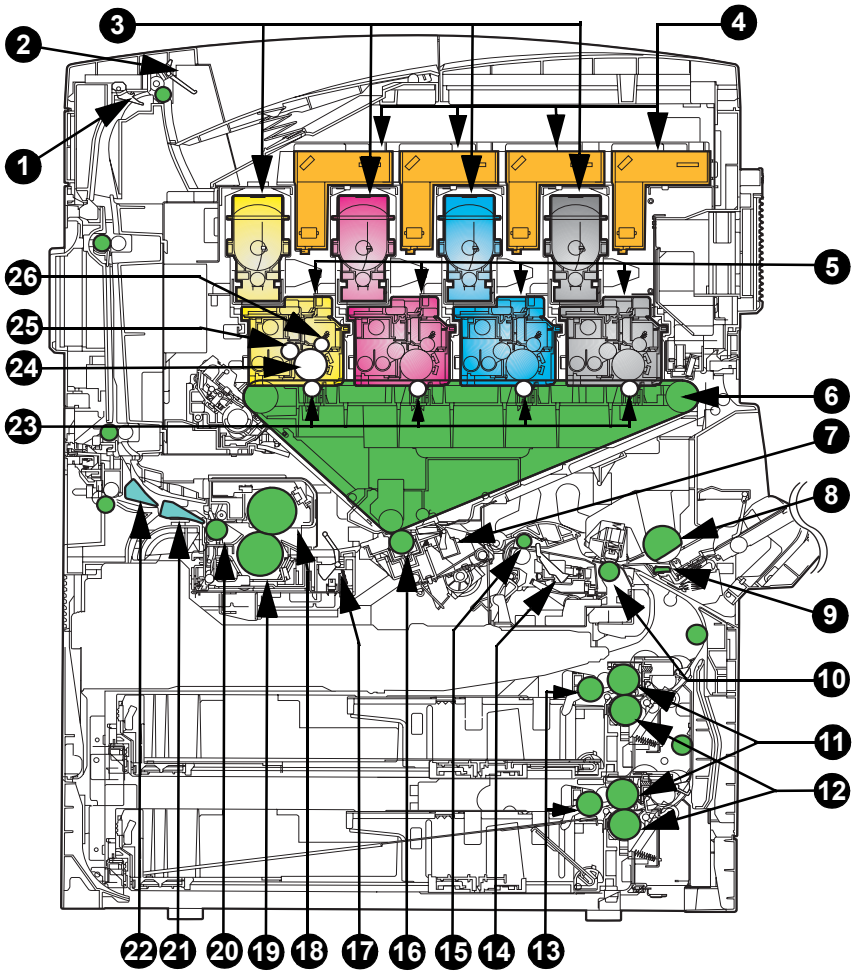


Figure 19. **Printer components**

Table 42. Printer components

Key	Description	Key	Description
1	Face-down tray delivery sensor flag	14	Registration paper sensor flag
2	Face-down tray paper-full sensor flag	15	Registration roller
3	T cartridges (T-CRG; print cartridges)	16	Secondary transfer roller (T2)
4	Laser/scanner assemblies	17	Fusing front paper sensor flag
5	P cartridges (P-CRG; image drums)	18	Fusing roller
6	Intermediate transfer belt (ITB assembly)	19	Pressure roller
7	Secondary transfer assembly	20	Fusing delivery roller
8	Tray 1 pickup roller	21	Duplex deflector
9	Separation pad	22	Face-up deflector
10	Pre-registration roller	23	Primary transfer roller (T1)
11	Feed roller	24	Photosensitive drum
12	Separation roller	25	Developing cylinder
13	Pickup roller	26	Primary charging roller

Sequence of operation

The engine-control system controls the operational sequences. Table 44 describes the sequences. The sequence of operation from the time power is turned on until the printer enters the standby state is described in table 43.

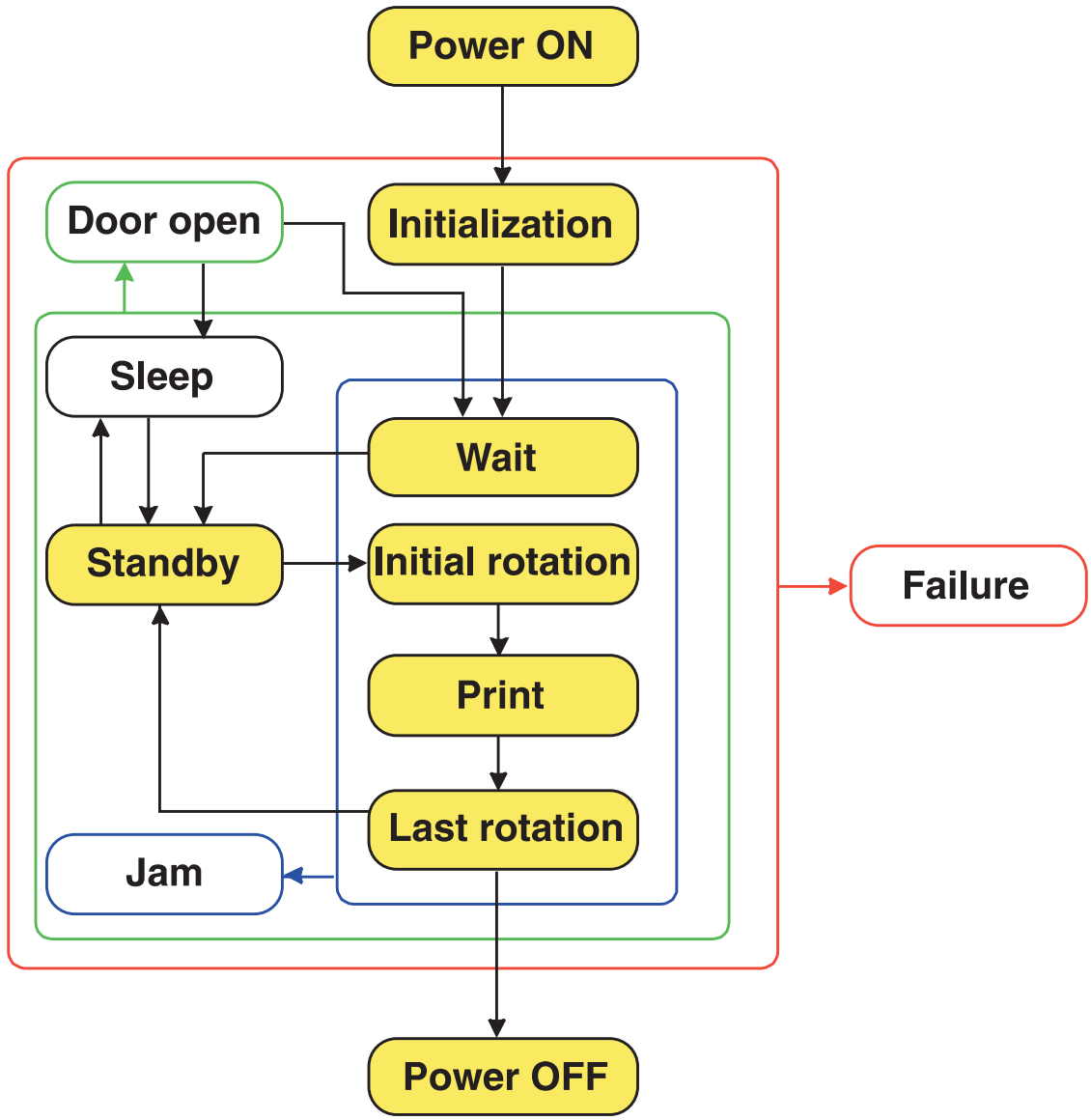


Figure 20. **Power-on block diagram**

Table 43. Power-on sequence

Order	Description	Order	Description
1	Power is turned on	7	Memory tag initializes
2	Main CPU initializes	8	Cartridge memory check occurs
3	Sub-CPU initializes	9	Standby temperature adjustment starts
4	ASIC initializes	10	Residual-paper-jam check occurs
5	All fans turn on	11	High-voltage control check occurs
6	Formatter communication starts	12	Standby mode begins

Table 44. Normal sequence of operation

State	Period	Operation
WAIT	From the time the power is turned on or a door is closed until the secondary transfer roller cleaning is complete	• power on • main CPU, sub CPU, and ASIC initialize • power-supply-fan rotates • memory tags are checked • formatter interface communication starts • high-voltage control sequence (values are set and the secondary transfer roller is cleaned) • adjustment is made to reach the standby temperature • calibrations are performed (D-max, D-half, CPR) • jam/door-open/failure/emergency-stop check is performed
STBY (standby)	From the end of the WAIT or LSTR period until either the print command is sent from the formatter, or the power is turned off	• print-start check is performed (search for print command) • automatic delivery-request check is performed (the formatter commands the feed rollers to eject residual pages in the paper path, and the ITB, fuser, registration, and pickup rollers turn on) • calibrations are performed • door open/failure check is performed
INTR (initial rotation)	From the input of a print reservation command from the formatter until start-up of the primary transfer bias	• motor rotates • fan motors rotate at full speed • laser scanner motor rotates • automatic power control (APC) is adjusted • initial-rotation final check is performed (OPC pre-ghost sequence occurs) • jam/door-open/failure/sleep check is performed
PRINT	From the end of the INTR period until the secondary transfer bias is turned off	• fuser temperature control occurs • TOP signal turns on (engine to formatter output signal) • image control occurs • high-voltage control occurs • paper pickup control occurs • next-page-pickup timing is coordinated • toner is supplied to the drum cartridge • jam/door-open/failure/emergency-stop check
LSTR (last rotation)	From the end of the print operation until the drum motor and the ITB motor stop	• paper pickup control occurs • scanner motor stops • high-voltage control stops • fuser control reverts to standby • fan-motor control occurs

Table 45. Failure sequence of operation

State	Period	Operation

JAM
 	
DOOR OPEN
 	
FAILURE
	From the time the power is turned on until the end of the LSTR period	• TOP signal turns off
		• emergency stops occur:
		  • scanner motor
		  • high-voltage control
		  • fuser control
		  • all motors
		• door-open check occurs

Timing charts

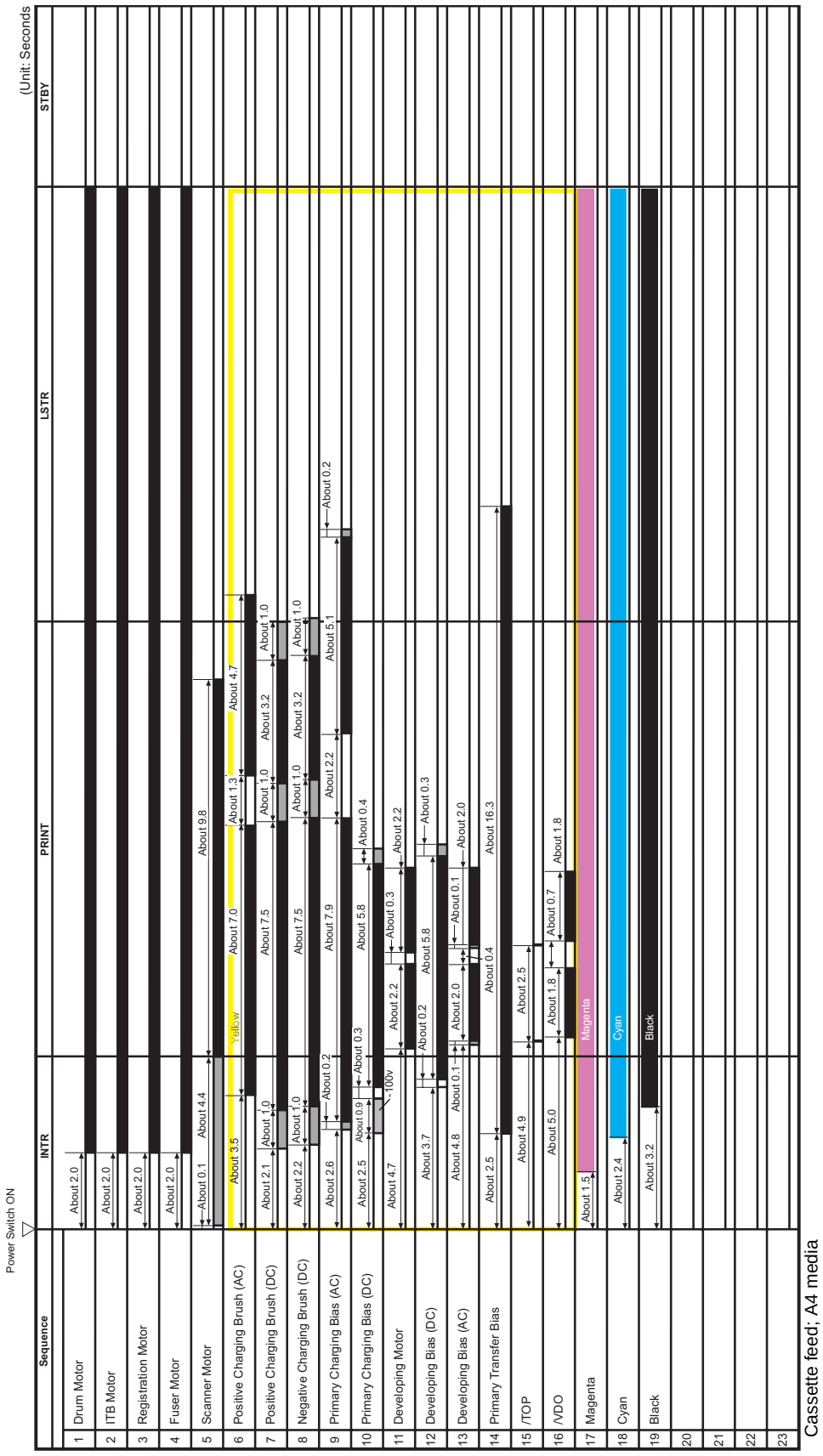


Figure 21. **Timing chart (1 of 2)**

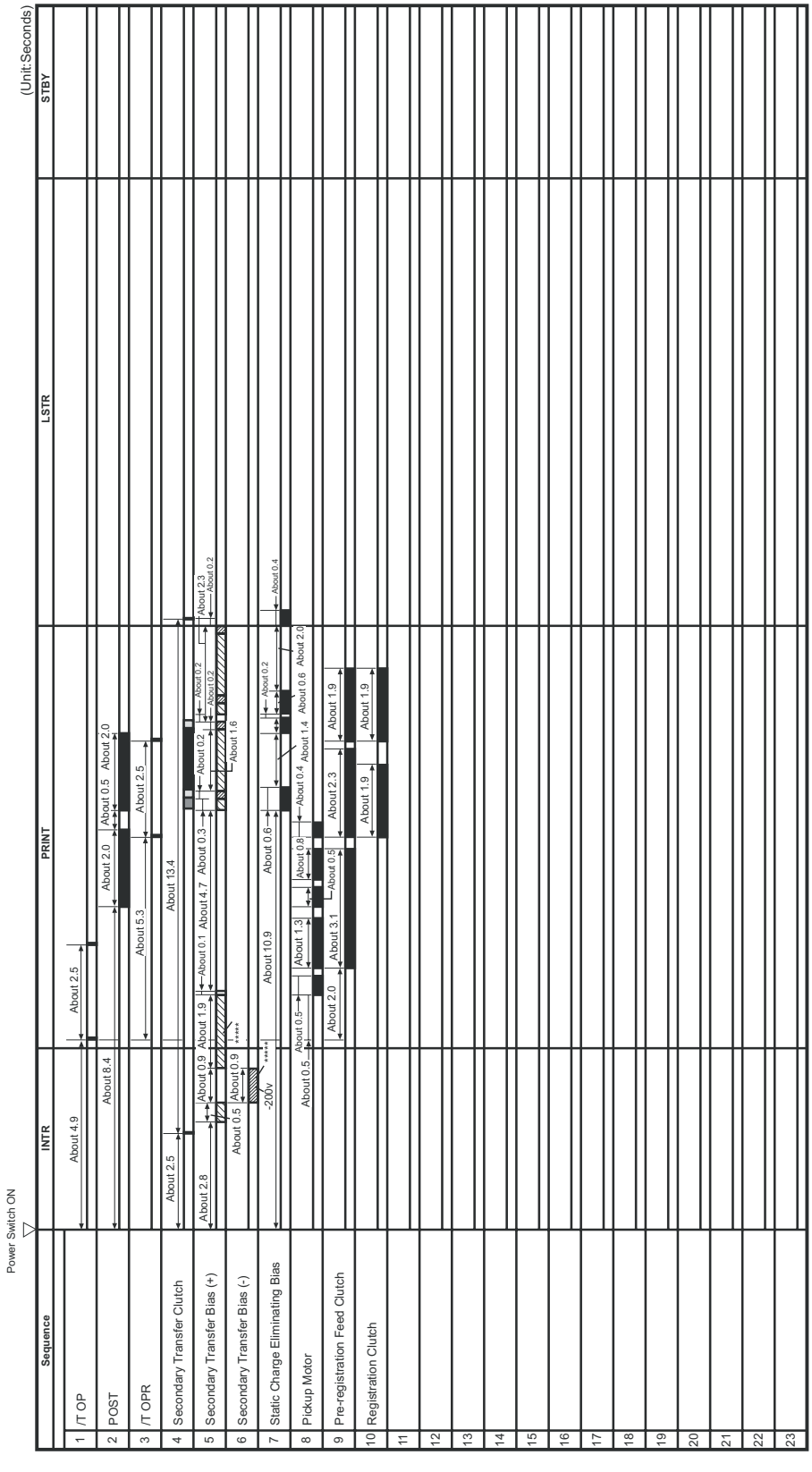


Figure 22. **Timing chart (2 of 2)**

Wiring diagrams

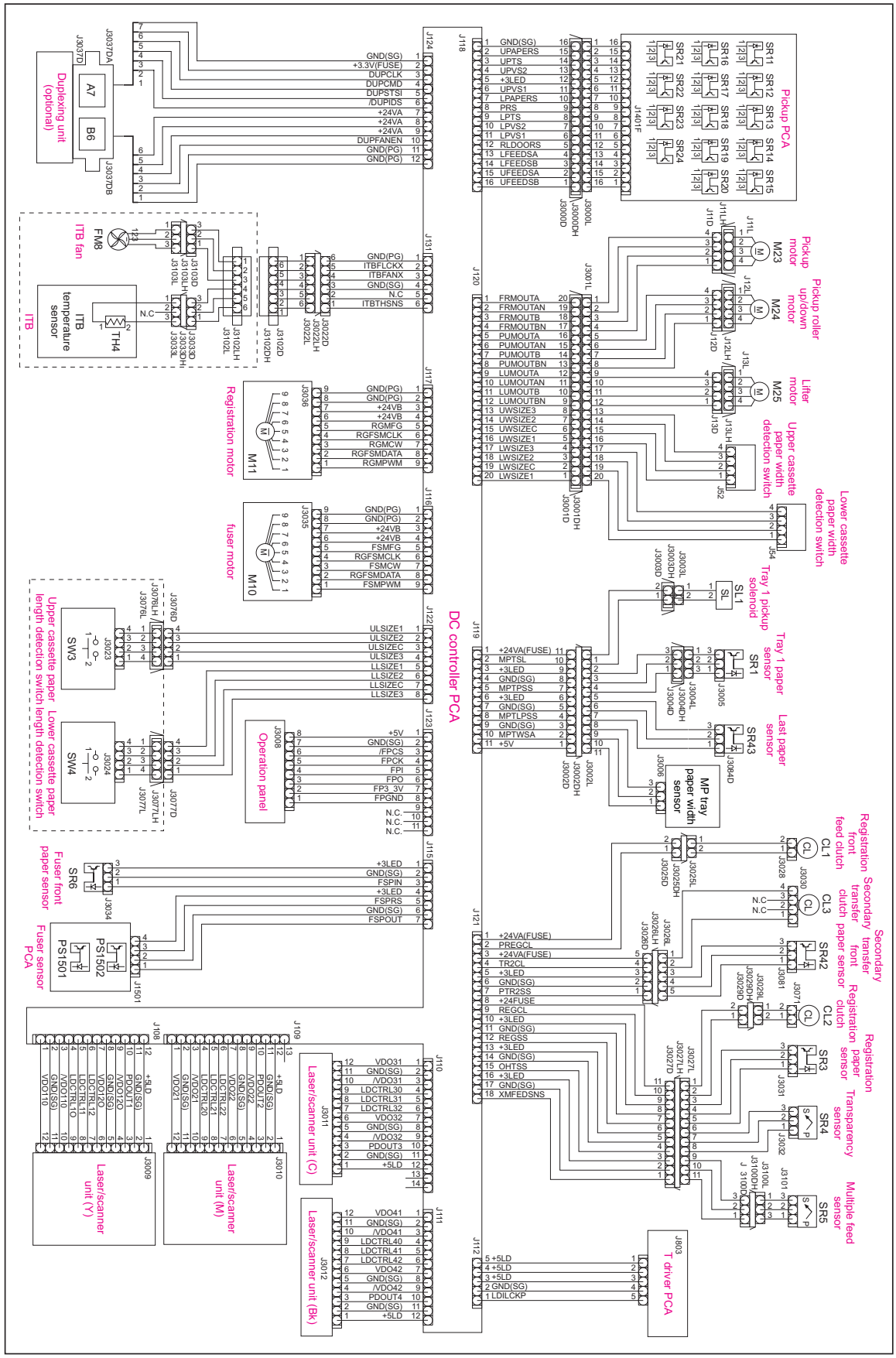


Figure 23. **Wiring diagram (1 of 4)**

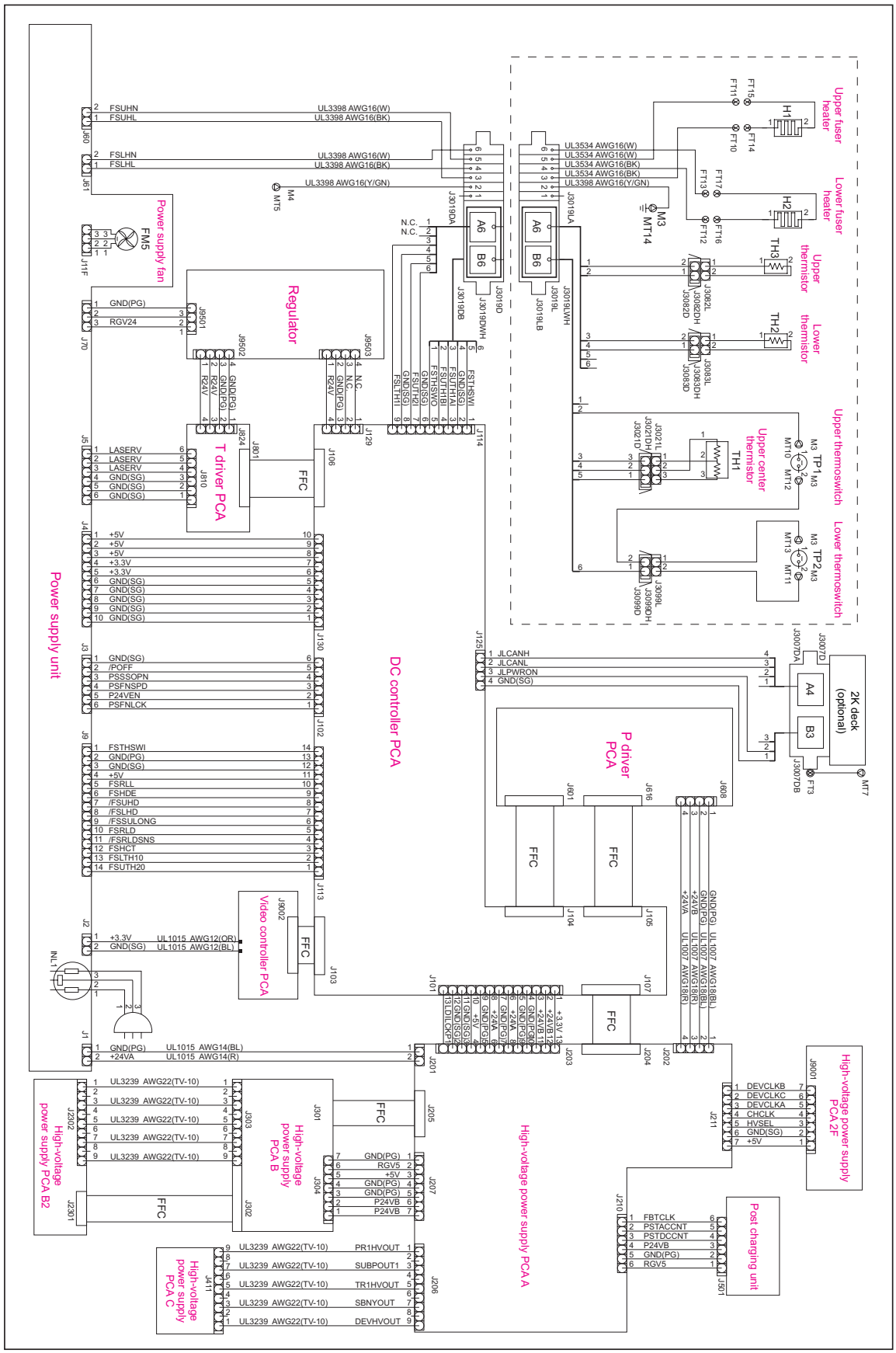


Figure 24. **Wiring diagram (2 of 4)**

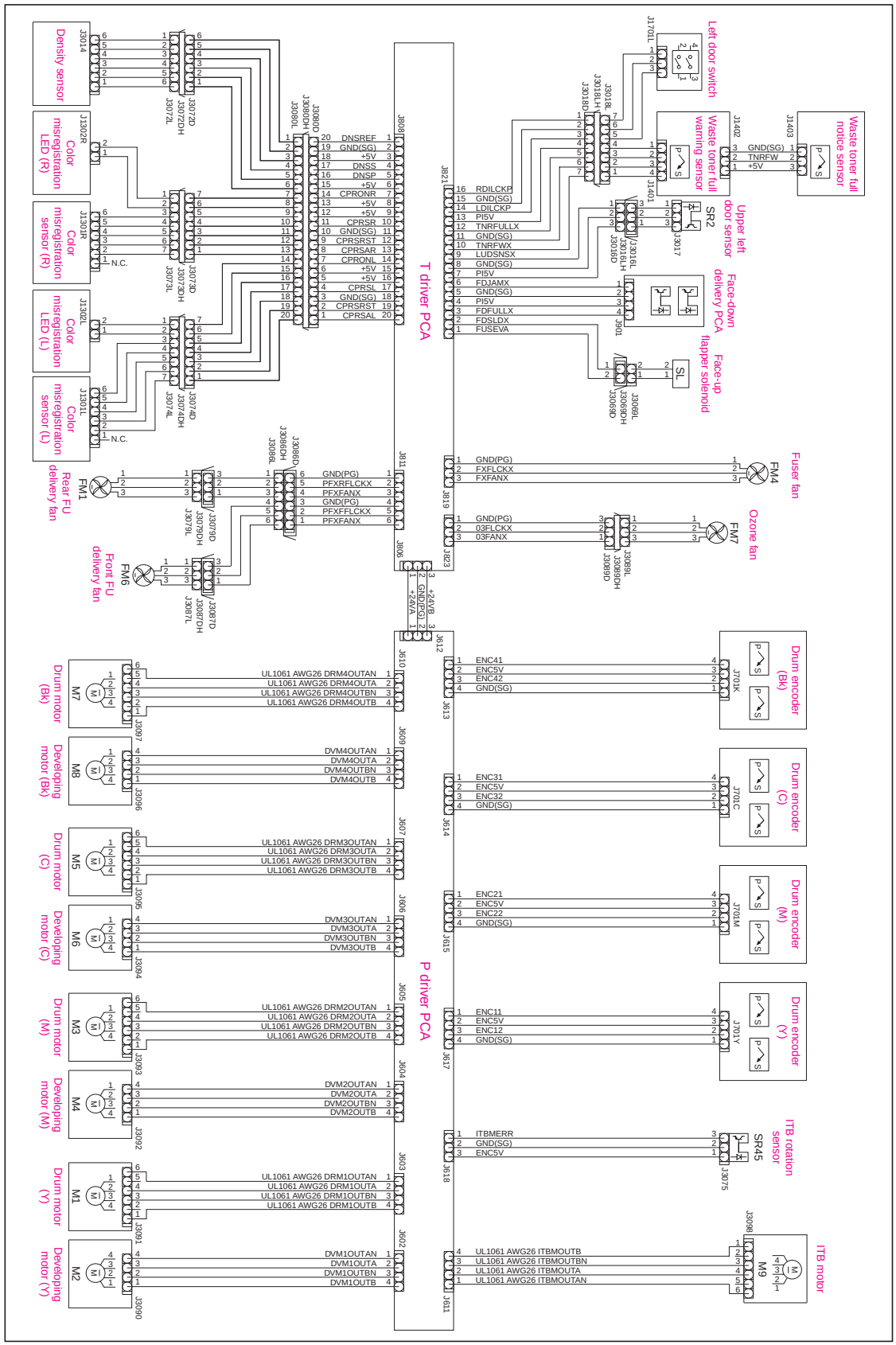


Figure 25. **Wiring diagram (3 of 4)**

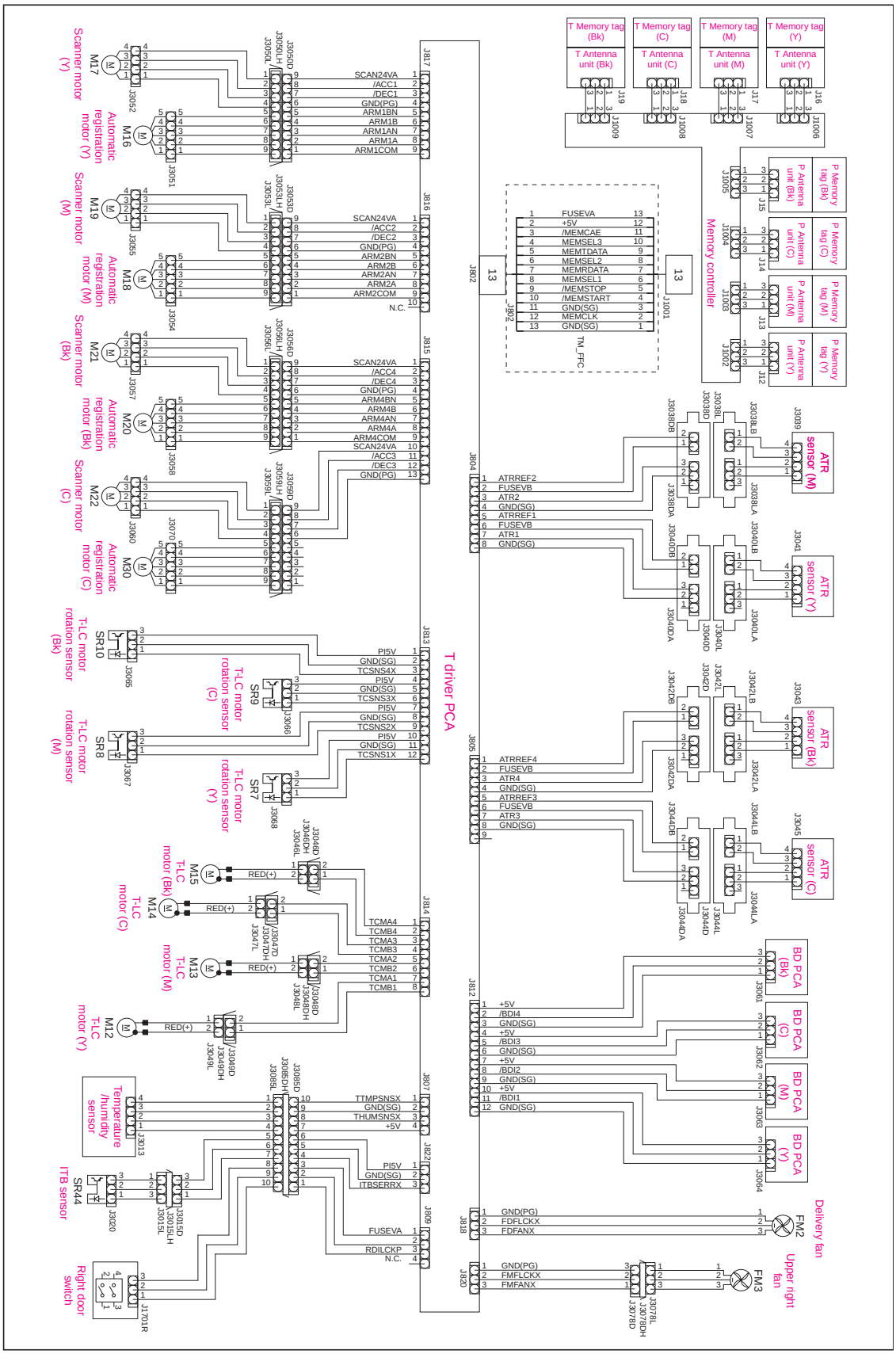


Figure 26. **Wiring diagram (4 of 4)**

Flat flexible cable signals

This table provides information about DC controller connectors, pinouts, and signals. It is also useful for understanding flat flexible cable (FFC) signals that are not detailed on the wiring diagrams.

Table 46. FFC input/output signals on the DC controller

Connector	Pin	Signal name	I/O	Logic	Signal description
J101	1	+3.3 V			
	2	+24 VB			
	3	+24 VB			
	4	GND(PG)			
	5	GND(PG)			
	6	+24 VA			
	7	GND(PG)			
	8	+24 VA			
	9	GND(PG)			
	10	+5 V			
	11	GND(SG)			
	12	GND(SG)			
	13	LDILCKP	O		INTERLOCK RELAY DRIVE signal
J102	1	PSFNLCK	I	High	POWER SUPPLY FAN LOCK DETECTION signal
	2	P24VEN	O		+24 V OUTPUT ENABLE signal
	3	PSFNSPD	O		POWER SUPPLY FAN SPEED SWITCHING signal
	4	PSSSOPN	I	High	SOFT SWITCH OPEN DETECTION signal
	5	/POFF	O	Low	POWER OFF signal
	6	GND(SG)			

Table 46. FFC input/output signals on the DC controller (continued)

Connector	Pin	Signal name	I/O	Logic	Signal description
J103	1	FP3_3V			
	2	FPO	O	High	OPERATIONAL PANEL SERIAL DATA OUTPUT signal
	3	FPI	I	High	OPERATIONAL PANEL SERIAL DATA INPUT signal
	4	FPCK	I		OPERATIONAL PANEL SERIAL CLOCK signal
	5	/FPCS	I	Low	OPERATIONAL CONTROLLER CHIP SELECT signal
	6	FPGND			
	7	+5V			
	8	+5V			
	9	GND(SG)			
	10	VDO41	I	High	VIDEO signal
	11	/VDO41	I	High	VIDEO signal
	12	VDO42	I	High	VIDEO signal
	13	/VDO42	I	Low	VIDEO signal
	14	VDO31	I	High	VIDEO signal
	15	/VDO31	I	Low	VIDEO signal
	16	VDO32	I	High	VIDEO signal
	17	/VDO32	I	Low	VIDEO signal
	18	VDO21	I	High	VIDEO signal
	19	/VDO21	I	Low	VIDEO signal
	20	VDO22	I	High	VIDEO signal
	21	/VDO22	I	Low	VIDEO signal
	22	VDO11	I	High	VIDEO signal
	23	/VDO11	I	Low	VIDEO signal
	24	VDO12	I	High	VIDEO signal
	25	/VDO12	I	Low	VIDEO signal
	26	/VDOEN	O	Low	VDO OUTPUT ENABLE signal
	27	GND(SG)			
	28	/TOP	O	Low	VERTICAL SYNCHRONOUS signal
	29	GND(SG)			
	30	/BDO1	O	Low	BD OUTPUT signal
	31	/BDO2	O	Low	BD OUTPUT signal
	32	/BDO3	O	Low	BD OUTPUT signal
	33	/BDO3	O	Low	BD OUTPUT signal
	34	GND(SG)			
	35	/CCRT	O	Low	STATUS CHANGE NOTIFY signal
	36	SC	I/O	HIgh	STATUS COMMAND signal
	37	SCLK	I		SERIAL CLOCK
	38	/PFED	O	Low	PAPER FEED signal
	39	/TOPR	O	Low	TOP OF PAPER signal
	40	/PDVL	O	Low	PAPER DELIVERY signal
	41	JLPWRON	O	High	PAPER DECK POWER ON signal
	42	JLCANH	I/O	High	PAPER DECK COMMUNICATION signal
	43	JLCANL	I/O	Low	PAPER DECK COMMUNICATION signal
	44	GND(SG)			
	45	/VCRST	O	Low	VIDEO CONTROLLER RESET signal

Table 46. FFC input/output signals on the DC controller (continued)

Connector	Pin	Signal name	I/O	Logic	Signal description
J104	1	GND(SG)			
	2	+5V			
	3	+5V			
	4	DVM1PHB	O	High	DEVELOPING MOTOR DRIVE signal
	5	DVM1VRB	O	High	DEVELOPING MOTOR DRIVE signal
	6	DVM1VRA	O	High	DEVELOPING MOTOR DRIVE signal
	7	DVM1PHA	O	High	DEVELOPING MOTOR DRIVE signal
	8	DRM1PHB	O	High	DRUM MOTOR DRIVE signal
	9	DRM1VRB	O	High	DRUM MOTOR DRIVE signal
	10	DRM1VRA	O	High	DRUM MOTOR DRIVE signal
	11	DRMPHA	O	High	DRUM MOTOR DRIVE signal
	12	DVM2PHB	O	High	DEVELOPING MOTOR DRIVE signal
	13	DVM2VRB	O	High	DEVELOPING MOTOR DRIVE signal
	14	DVM2VRA	O	High	DEVELOPING MOTOR DRIVE signal
	15	DVM2PHA	O	High	DEVELOPING MOTOR DRIVE signal
	16	DRM2PHB	O	High	DRUM MOTOR DRIVE signal
	17	DRM2VRB	O	High	DRUM MOTOR DRIVE signal
	18	DRM2VRA	O	High	DRUM MOTOR DRIVE signal
	19	DRM2PHA	O	High	DRUM MOTOR DRIVE signal
	20	DVM3PHB	O	High	DEVELOPING MOTOR DRIVE signal
	21	DVM3VRB	O	High	DEVELOPING MOTOR DRIVE signal
	22	DVM3VRA	O	High	DEVELOPING MOTOR DRIVE signal
	23	DVM3PHA	O	High	DEVELOPING MOTOR DRIVE signal
	24	DRM3PHB	O	High	DRUM MOTOR DRIVE signal
	25	DRM3VRB	O	High	DRUM MOTOR DRIVE signal
	26	DRM3VRA	O	High	DRUM MOTOR DRIVE signal
	27	DRM3PHA	O	High	DRUM MOTOR DRIVE signal
	28	DVM4PHB	O	High	DEVELOPING MOTOR DRIVE signal
	29	DVM4VRB	O	High	DEVELOPING MOTOR DRIVE signal
	30	DVM4VRA	O	High	DEVELOPING MOTOR DRIVE signal
	31	DVM4PHA	O	High	DEVELOPING MOTOR DRIVE signal
	32	DRM4PHB	O	High	DRUM MOTOR DRIVE signal
	33	DRM4VRB	O	High	DRUM MOTOR DRIVE signal
	34	DRM4VRA	O	High	DRUM MOTOR DRIVE signal
	35	DRM4PHA	O	High	DRUM MOTOR DRIVE signal
	36	ITBMPHB	O	High	ITB MOTOR DRIVE signal
	37	ITBMVRB	O	High	ITB MOTOR DRIVE signal
	38	ITBMVRA	O	High	ITB MOTOR DRIVE signal
	39	ITBMPHA	O	High	ITB MOTOR DRIVE signal
J105	1	ENC21	I		DRUM ENCODER signal
	2	ENC22	I		DRUM ENCODER signal
	3	ENC31	I		DRUM ENCODER signal
	4	ENC32	I		DRUM ENCODER signal
	5	ENC41	I		DRUM ENCODER signal
	6	ENC42	I		DRUM ENCODER signal
	7	GND(SG)			
	8	GND(SG)			
	9	ENCLON	O		DRUM ENCODER ON signal
	10	ENC11	I	High	DRUM ENCODER signal
	11	ENC12	I	High	DRUM ENCODER signal
J106	1	/DEC1	O	Low	SCANNER MOTOR DECELERATION signal
	2	/ACC1	O	Low	SCANNER MOTOR ACCELERATION signal
	3	/DEC2	O	Low	SCANNER MOTOR DECELERATION signal
	4	/ACC2	O	Low	SCANNER MOTOR ACCELERATION signal
	5	/DEC3	O	Low	SCANNER MOTOR DECELERATION signal
	6	/ACC3	O	Low	SCANNER MOTOR ACCELERATION signal
	7	/DEC4	O	Low	SCANNER MOTOR DECELERATION signal
	8	/ACC4	O	Low	SCANNER MOTOR ACCELERATION signal
	9	/BDI1	I	Low	HORIZONTAL SYNCHRONOUS signal

Table 46. FFC input/output signals on the DC controller (continued)

Connector	Pin	Signal name	I/O	Logic	Signal description
J106 continued	10	/BDI2	I	Low	HORIZONTAL SYNCHRONOUS signal
	11	/BDI3	I	Low	HORIZONTAL SYNCHRONOUS signal
	12	/BDI4	I	Low	HORIZONTAL SYNCHRONOUS signal
	13	CPRSL	I		LEFT CPR signal
	14	CPRSR	I		RIGHT CPR signal
	15	+5V			
	16	+5V			
	17	+5V			
	18	GND(SG)			
	19	GND(SG)			
	20	TCCLK	O		T DRIVER SERIAL CLOCK signal
	21	GND(SG)			
	22	TCSTS	1	High	T DRIVER SERIAL DATA signal
	23	/TCTMG	O	Low	T DRIVER TIMING signal
	24	TCCMD	O	High	T DRIVER SERIAL DATA signal
	25	MEMCLK	I		MEMORY CONTROLLER SERIAL CLOCK signal
	26	/MEMSTART	O	Low	MEMORY CONTROLLER OUTPUT START signal
	27	/MEMSTOP	O	Low	MEMORY CONTROLLER OUTPUT STOP signal
	28	MEMSEL1	O		MEMORY CONTROLLER CHANNEL SELECT signal
	29	MEMRDATA	O	High	MEMORY CONTROLLER DATA signal
	30	MEMSEL2	O		MEMORY CONTROLLER CHANNEL SELECT signal
	31	MEMTDATA	O	High	MEMORY CONTROLLER DATA signal
	32	MEMSEL3	O		MEMORY CONTROLLER CHANNEL SELECT signal
	33	/MEMCAE	O	Low	MEMORY CONTROLLER OUTPUT CONTROL signal
	34	DNSS	I		TONER DENSITY SENSOR OUTPUT signal
	35	DNSP	I		TONER DENSITY SENSOR OUTPUT signal
	36	CPRSAR	I		RIGHT CPR SENSOR ANALOG signal
	37	CPRSAL	I		LEFT CPR SENSOR ANALOG signal
J107	1	DCCLK	O		INVETER TRANSFORMER CLOCK signal
	2	GND(SG)			
	3	FBTCLK	O		FLASHBACK TRANSFORMER CLOCK signal
	4	GND(SG)			
	5	CHCLK	O		PRIMARY CHARGING AC BIAS CLOCK signal
	6	GND(SG)			
	7	DEVCLKA	O		DEVELOPING AC BIAS CLOCK signal
	8	DEVCLKB	O		DEVELOPING AC BIAS CLOCK signal
	9	DEVCLKC	O		DEVELOPING AC BIAS CLOCK signal
	10	GND(SG)			
	11	DADATA	O	High	SERIAL D / A CONVERTER DATA signal
	12	DALD	O	Low	SERIAL D / A CONVERTER LOAD signal
	13	DACLK	O		SERIAL D / A CONVERTER CLOCK signal
	14	GND(SG)			
	15	/HVENBL	O	Low	HIGH-VOLTAGE OUTPUT ENABLE signal
	16	CHISNS1	I		PRIMARY CHARGING CURRENT MONITOR signal
	17	CHISNS2	I		PRIMARY CHARGING CURRENT MONITOR signal
	18	CHISNS3	I		PRIMARY CHARGING CURRENT MONITOR signal
	19	CHISNS4	I		PRIMARY CHARGING CURRENT MONITOR signal
	20	TR1ISNS1	I		PRIMARY TRANSFER CURRENT MONITOR signal
	21	TR1ISNS2	I		PRIMARY TRANSFER CURRENT MONITOR signal
	22	TR1ISNS3	I		PRIMARY TRANSFER CURRENT MONITOR signal
	23	TR1ISNS4	I		PRIMARY TRANSFER CURRENT MONITOR signal
	24	GND(SG)			
	25	TR2ISNS	I		SECONDARY TRANSFER CURRENT MONITOR signal

Table 46. FFC input/output signals on the DC controller (continued)

Connector	Pin	Signal name	I/O	Logic	Signal description
J108	1	VDO11O	O	High	VIDEO signal
	2	GND(SG)			
	3	/VDO11O	O	Low	VIDEO signal
	4	LDCTRL10	O		LASER CONTROL signal
	5	LDCTRL11	O		LASER CONTROL signal
	6	LDCTRL12	O		LASER CONTROL signal
	7	VDO12O	O	High	VIDEO signal
	8	GND(SG)			
	9	/VDO12O	O	Low	VIDEO signal
	10	PDOOUT1	I		LASER INTENSITY MONITOR signal
	11	GND(SG)			
	12	+5LD			
J109	1	VDO21	O	High	VIDEO signal
	2	GND(SG)			
	3	/VDO21	O	Low	VIDEO signal
	4	LDCTRL20	O		LASER CONTROL signal
	5	LDCTRL21	O		LASER CONTROL signal
	6	LDCTRL22	O		LASER CONTROL signal
	7	VDO22	O	High	VIDEO signal
	8	GND(SG)			
	9	/VDO22	O	Low	VIDEO signal
	10	PDOUT2	I		LASER INTENSITY MONITOR signal
	11	GND(SG)			
	12	+5LD			
J110	1	VDO31	O	High	VIDEO signal
	2	GND(SG)			
	3	/VDO31	O	Low	VIDEO signal
	4	LDCTRL30	O		LASER CONTROL signal
	5	LDCTRL31	O		LASER CONTROL signal
	6	LDCTRL32	O		LASER CONTROL signal
	7	VDO32	O	High	VIDEO signal
	8	GND(SG)			
	9	/VDO32	O	Low	VIDEO signal
	10	PDOUT3	I		LASER INTENSITY MONITOR signal
	11	GND(SG)			
	12	+5LD			
J111	1	VDO41	O	High	VIDEO signal
	2	GND(SG)			
	3	/VDO41	O	Low	VIDEO signal
	4	LDCTRL40	O		LASER CONTROL signal
	5	LDCTRL41	O		LASER CONTROL signal
	6	LDCTRL42	O		LASER CONTROL signal
	7	VDO42	O	High	VIDEO signal
	8	GND(SG)			
	9	/VDO42	O	Low	VIDEO signal
	10	PDOUT4	I		LASER INTENSITY MONITOR signal
	11	GND(SG)			
	12	+5LD			
J112	1	LDILCKP	I		LEFT DOOR SWITCH signal
	2	GND(SG)			
	3	+5LD			
	4	+5LD			
	5	+5LD			
J113	1	FSUTH20	I		FIXING ROLLER TEMPERATURE DETECTION signal
	2	FSLTH10	I		FIXING ROLLER TEMPERATURE DETECTION signal
	3	FSHCT	I		HEATER CURRENT signal
	4	/FSRLDSNS	I	Low	RELAY DRIVE signal
	5	FSRLD	O	High	RELAY DRIVE signal

Table 46. FFC input/output signals on the DC controller (continued)

Connector	Pin	Signal name	I/O	Logic	Signal description
J113	6	/FSSULONG	O	Low	SLOW-UP CIRCUIT DRIVE signal
continued	7	/FSLHD	O	Low	PRESSURE ROLLER TEMPERATURE CONTROL signal
	8	/FSUHD	O	Low	FIXING ROLLER TEMPERATURE CONTROL signal
	9	FSHDE	O		INVERTER OUTPUT ENABLE signal
	10	FSRLL	I		RELAY TEST signal
	11	+5V			
	12	GND(SG)			
	13	GND(PG)			
	14	FSTHSWI	I	High	THERMOSWITCH INPUT signal
J114	1	FSTHSWI	I		THERMOSWITCH INPUT signal
	2	GND(SG)			
	3	FSUTH1AI	I		FIXING ROLLER TEMPERATURE DETECTION signal
	4	FSUTH1BI	I		FIXING ROLLER TEMPERATURE DETECTION signal
	5	FSTHSWO	O		THERMOSWITCH OUTPUT signal
	6	GND(SG)			
	7	FSUTH21	I		FIXING ROLLER TEMPERATURE DETECTION signal
	8	GND(SG)			
	9	FSLTH1I	I		PRESSURE ROLLER TEMPERATURE DETECTION signal
J115	1	+3LED			
	2	GND(SG)			
	3	FSPIN	I	High	FRONT FIXING PAPER DETECTION signal
	4	+3LED			
	5	FSPRS	I	High	FIXING PRESSURE DETECTION signal
	6	GND(SG)			
	7	FSPOUT	I	High	FIXING DELIVERY PAPER DETECTION signal
J116	1	GND(PG)			
	2	GND(PG)			
	3	+24VB			
	4	+24VB			
	5	FSMFG	I		FIXING MOTOR SPEED signal
	6	RGFSMCLK	O		MOTOR COMMAND CLOCK signal
	7	FSMCW	O	Low	FIXING MOTOR SELECT signal
	8	RGFSMDATA	O	High	MOTOR COMMAND DATA signal
	9	FSMPWM	O		FIXING MOTOR PWM signal
J117	1	GND(PG)			
	2	GND(PG)			
	3	+24VB			
	4	+24VB			
	5	RGMFG	I		REGISTRATION MOTOR SPEED signal
	6	RGFSMCLK	O		MOTOR COMMAND CLOCK signal
	7	RGMCW	O		REGISTRATION MOTOR SELECT signal
	8	RGFSMDATA	O	High	MOTOR COMMAND DATA signal
	9	RGMPWM	O		REGISTRATION MOTOR PWM signal

Table 46. FFC input/output signals on the DC controller (continued)

Connector	Pin	Signal name	I/O	Logic	Signal description
J118	1	GND(SG)			
	2	UPAPERS	I	High	UPPER CASSETTE PAPER OUT DETECTION signal
	3	UPTS	I	High	UPPER CASSETTE PAPER SURFACE LEVEL signal
	4	UPVS2	I	High	UPPER CASSETTE PAPER LEVEL DETECTION signal
	5	+3LED			
	6	UPVS1	I	High	UPPER CASSETTE PAPER LEVEL DETECTION signal
	7	LPAPERS	I	High	LOWER CASSETTE PAPER OUT DETECTION signal
	8	PRS	I	High	PICKUP SHAFT HOME POSITION DETECTION signal
	9	LPTS	I	High	LOWER CASSETTE PAPER SURFACE LEVEL signal
	10	LPVS2	I	High	LOWER CASSETTE PAPER LEVEL DETECTION signal
	11	LPVS1	I	High	LOWER CASSETTE PAPER LEVEL DETECTION signal
	12	RLDOORS	I	High	RIGHT DOOR OPEN DETECTION signal
	13	LFEEDSA	I	High	LOWER CASSETTE PAPER FEED DETECTION signal
	14	LFEEDSB	I	High	LOWER CASSETTE PAPER FEED DETECTION signaL
	15	UFEEDSA	I	High	UPPER CASSETTE PAPER FEED DETECTION signal
	16	UFEEDSB	I	High	UPPER CASSETTE PAPER FEED DETECTION signal
J119	1	+24VA(FUSE)			
	2	MPTSL	O		MULTIPURPOSE TRAY PICKUP SOLENOID DRIVE signal
	3	+3LED			
	4	GND(SG)			
	5	MPTPSS			
	6	+3LED			
	7	GND(SG)			
	8	MPTLPSS	I	High	LAST PAPER DETECTION signal
	9	GND(SG)			
	10	MPTWSA	I	High	MULTIPURPOSE TRAY PAPER WIDTH signal
	11	+5V			
J120	1	FRMOUTA	O		PICKUP MOTOR DRIVE signal
	2	FRMOUTAN	O		PICKUP MOTOR DRIVE signal
	3	FRMOUTB	O		PICKUP MOTOR DRIVE signal
	4	FRMOUTBN	O		PICKUP MOTOR DRIVE signal
	5	PUMOUTA	O		PICKUP ROLLER UP / DOWN MOTOR DRIVE signal
	6	PUMOUTAN	O		PICKUP ROLLER UP / DOWN MOTOR DRIVE signal
	7	PUMOUTB	O		PICKUP ROLLER UP / DOWN MOTOR DRIVE signal
	8	PUMOUTBN	O		PICKUP ROLLER UP / DOWN MOTOR DRIVE signal
	9	LUMOUTA	O		LIFTER MOTOR DRIVE signal
	10	LUMOUTAN	O		LIFTER MOTOR DRIVE signal
	11	LUMOUTB	O		LIFTER MOTOR DRIVE signal
	12	LUMOUTBN	O		LIFTER MOTOR DRIVE signal
	13	UWSIZE3	O		UPPER CASSETTE PAPER WIDTH DETECTION signal
	14	UWSIZE2	O		UPPER CASSETTE PAPER WIDTH DETECTION signal
	15	UWSIZEC	I		UPPER CASSETTE PAPER WIDTH DETECTION signal
	16	UWSIZE1	O		UPPER CASSETTE PAPER WIDTH DETECTION signal
	17	LWSIZE3	O		UPPER CASSETTE PAPER WIDTH DETECTION signal
	18	LWSIZE2	O		LOWER CASSETTE PAPER WIDTH DETECTION signal
	19	LWSIZEC	I		LOWER CASSETTE PAPER WIDTH DETECTION signal
	20	LWSIZE1	O		LOWER CASSETTE PAPER WIDTH DETECTION signal
J121	1	+24VA(FUSE)			
	2	PREGCL	O		PRE-REGISTRATION FEED CLUTCH DRIVE signal
	3	+24VA(FUSE)			
	4	TR2CL	O		SECONDARY TRANSFER CLUTCH DRIVE signal
	5	+3LED			
	6	GND(SG)			
	7	PTRSS	I	High	SECONDARY TRANSFER FRONT PAPER DETECT signal
	8	+24FUSE			
	9	REGCL	O		REGISTRATION CLUTCH DRIVE signal
	10	+3LED			
	11	GND(SG)			
	12	REGSS	I		REGISTRATION PAPER DETECTION signal

Table 46. FFC input/output signals on the DC controller (continued)

Connector	Pin	Signal name	I/O	Logic	Signal description
J121 continued	13	+3LED			
	14	GND(SG)			
	15	OHTSS	I		TRANSPARENCY DETECTION signal
	16	+3LED			
	17	GND(SG)			
	18	XMFEDSNS	I		MULTIPLE FEED DETECTION signal
J122	1	ULSIZE1	I		UPPER CASSETTE PAPER LENGTH DETECTION signal
	2	ULSIZE2	I		UPPER CASSETTE PAPER LENGTH DETECTION signal
	3	ULSIZEC	I		UPPER CASSETTE PAPER LENGTH DETECTION signal
	4	ULSIZE3	I		UPPER CASSETTE PAPER LENGTH DETECTION signal
	5	LLSIZE1	I		LOWER CASSETTE PAPER LENGTH DETECTION signal
	6	LLSIZE2	I		LOWER CASSETTE PAPER LENGTH DETECTION signal
	7	LLSIZEC	I		LOWER CASSETTE PAPER LENGTH DETECTION
	8	LLSIZE3	I		LOWER CASSETTE PAPER LENGTH DETECTION signal
J123	1	+5V			
	2	GND(SG)			
	3	/FPCS	O	Low	OPERATION PANEL CONTROLLER CHIP SELECT signal
	4	FPCK	O		OPERATION PANEL SERIAL CLOCK signal
	5	FPI	O	High	OPERATION PANEL SEIAL DATA signal
	6	FPO	I	High	OPERATION PANEL SERIAL DATA signal
	7	FP3_3V			
	8	FPGND			
	9	N.C.			
	10	N.C.			
	11	N.C.			
J124	1	GND(SG)			
	2	+3.3V(FUSE)			
	3	DUPCLK	O		DUPLEXING UNIT STATUS CLOCK signal
	4	DUPCMD	O	High	DUPLEXING UNIT SERIAL DATA signal
	5	DUPSTSI	I	High	DUPLEXING UNIT SERIAL DATA signal
	6	/DUPIDS	I	Low	DUPLEXING UNIT DETECTION signal
	7	+24VA			
	8	+24VA			
	9	+24VA			
	10	DUPFANEN	O	High	DUPLEXING UNIT FAN ENABLE signal
	11	GND(PG)			
	12	GND(PG)			
J125	1	JLCANH	I/O	High	PAPER DECK SERIAL DATA signal
	2	JLCANL	I/O	Low	PAPER DECK SERIAL DATA signal
	3	JLPWRON	O	High	PAPER DECK POWER ON signal
	4	GND(SG)			
J130	1	GND(SG)			
	2	GND(SG)			
	3	GND(SG)			
	4	GND(SG)			
	5	GND(SG)			
	6	+3.3V			
	7	+3.3V			
	8	+5V			
	9	+5V			
	10	+5V			
J131	1	GND(PG)			
	2	ITBFLCKX	I	High	ITB FAN LOCK DETECTION signal
	3	ITBFANX	O		ITB FAN DRIVE signal
	4	GND(SG)			
	5	N.C.			
	6	ITBTHSNS	I	High	ITB TEMPERATURE DETECTION signal

Connector location

Note See the *HP Scanner/ADF Service Manual for the HP LaserJet 9000mfp/9000Lmfp/9040mfp/9050mfp/9500mfp* (PN C8449-90955) and the *2,000-sheet Side Input Tray Service manual* (PN Q1891-90901) for connector locations in the MFP and 2,000-sheet side-input tray 4.

Note For an MFP, J811 is not used.

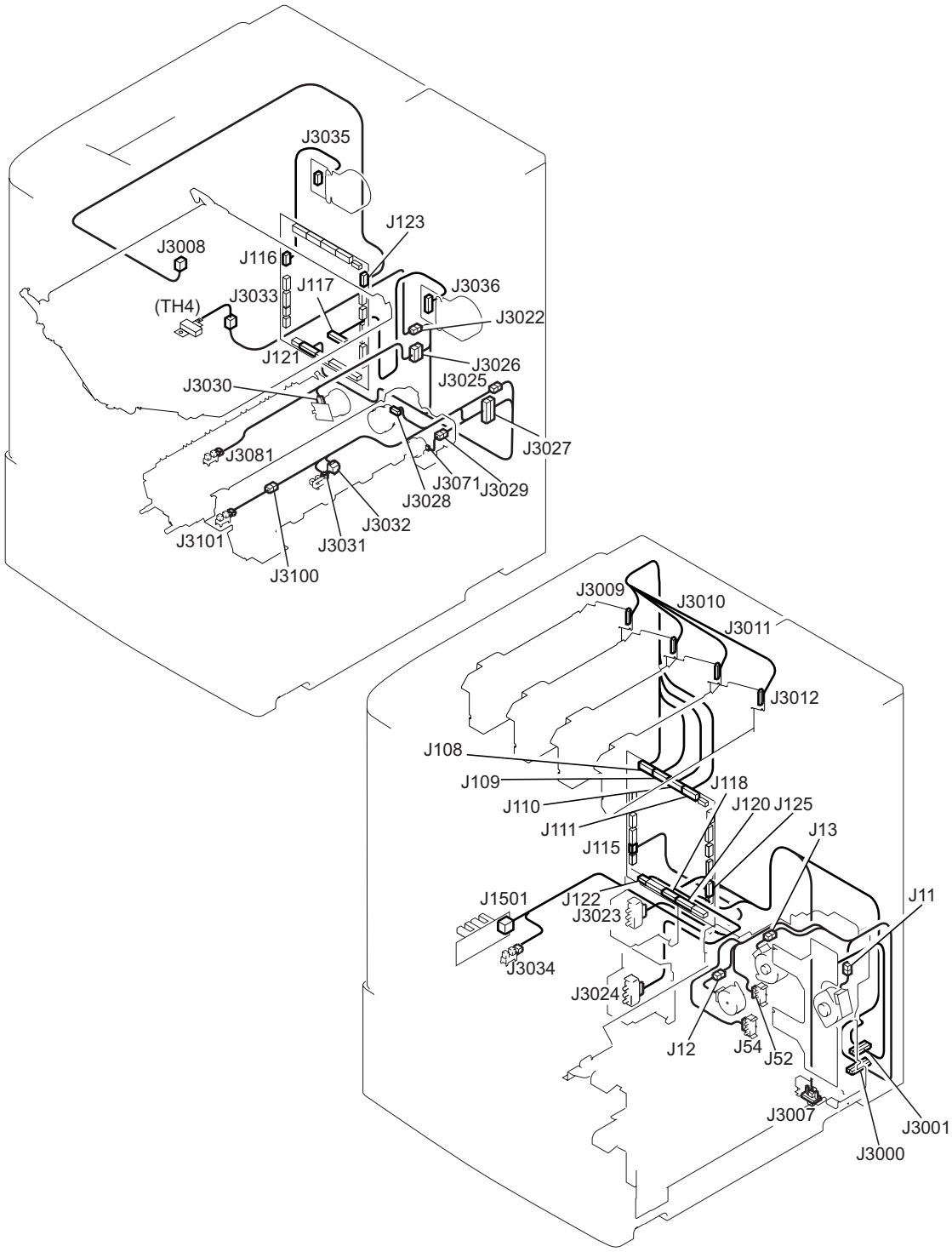


Figure 27. Connector locations for the HP LaserJet 9500 Series printer (1 of 4)

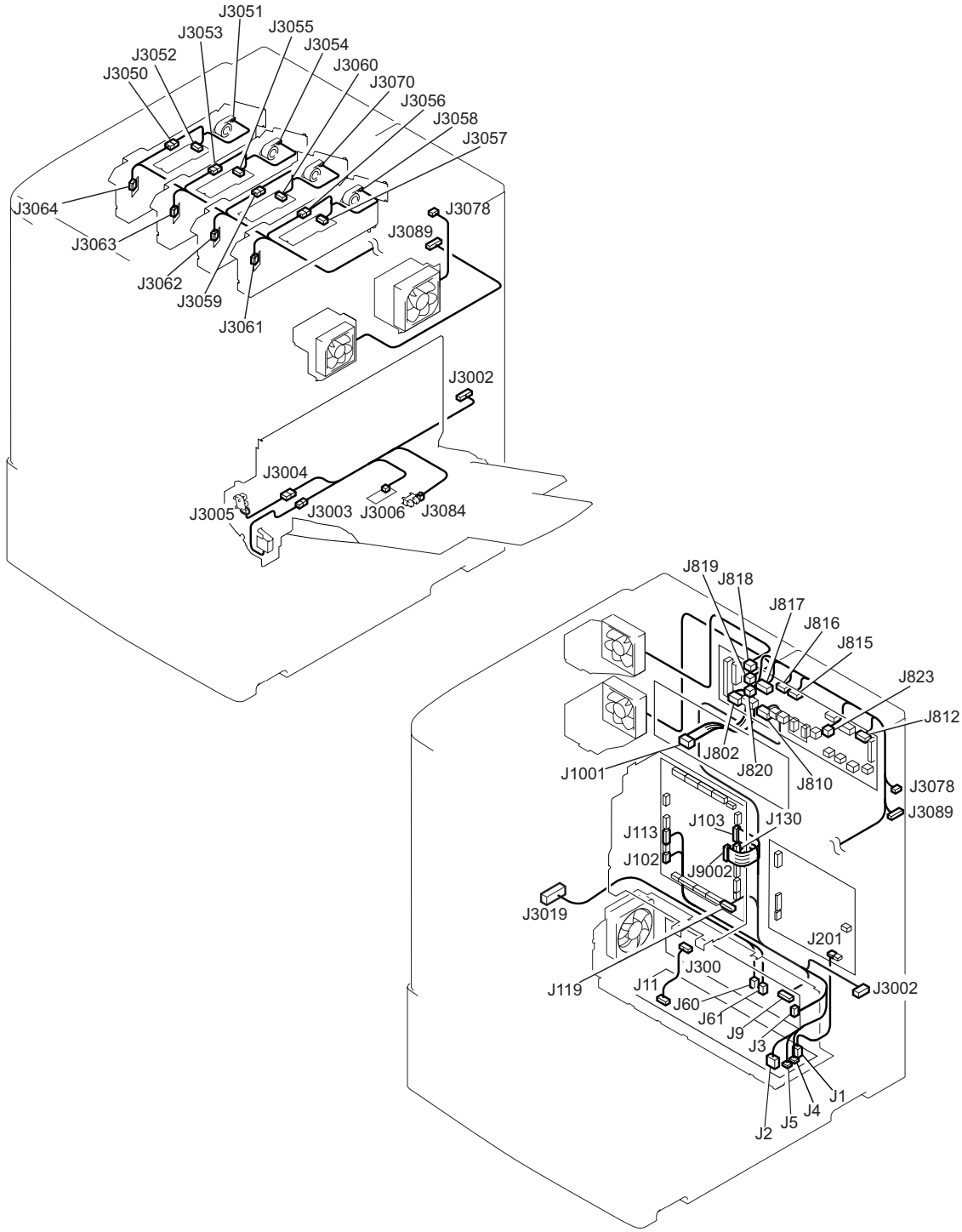


Figure 28. **Connector locations for the HP LaserJet 9500 Series printer (2 of 4)**

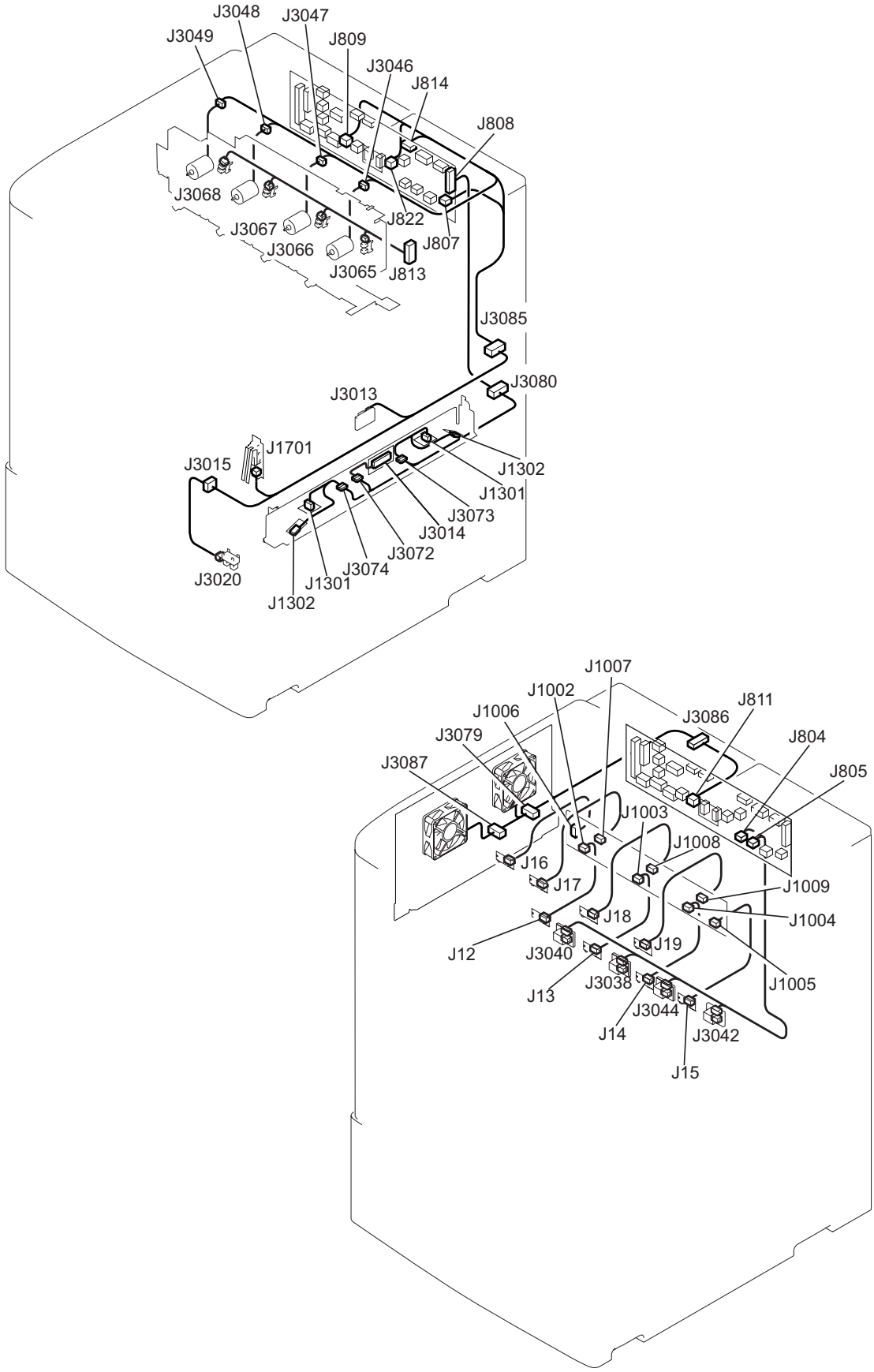


Figure 29. **Connector locations for the HP LaserJet 9500 Series printer (3 of 4)**

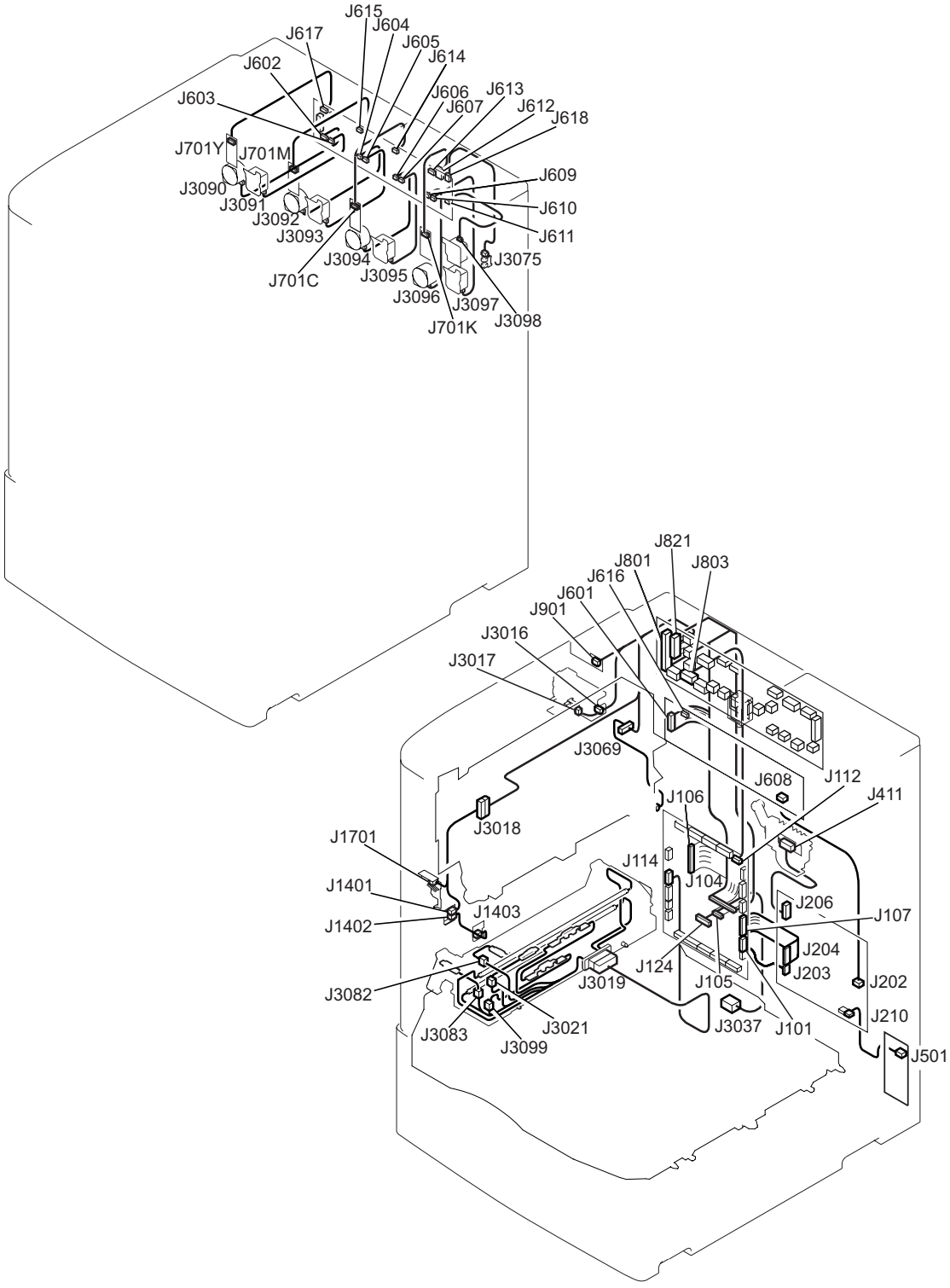


Figure 30. **Connector locations for the HP LaserJet 9500 Series printer (4 of 4)**

Engine-control system

The engine-control system coordinates the laser/scanner, image-formation, and paper-pickup systems according to the instructions it receives from the formatter. The engine-control system consists of the DC controller printed circuit assembly (PCA), the T driver PCA, the high-voltage power-supply PCA, the fuser power supply PCA, and the low-voltage power-supply unit.

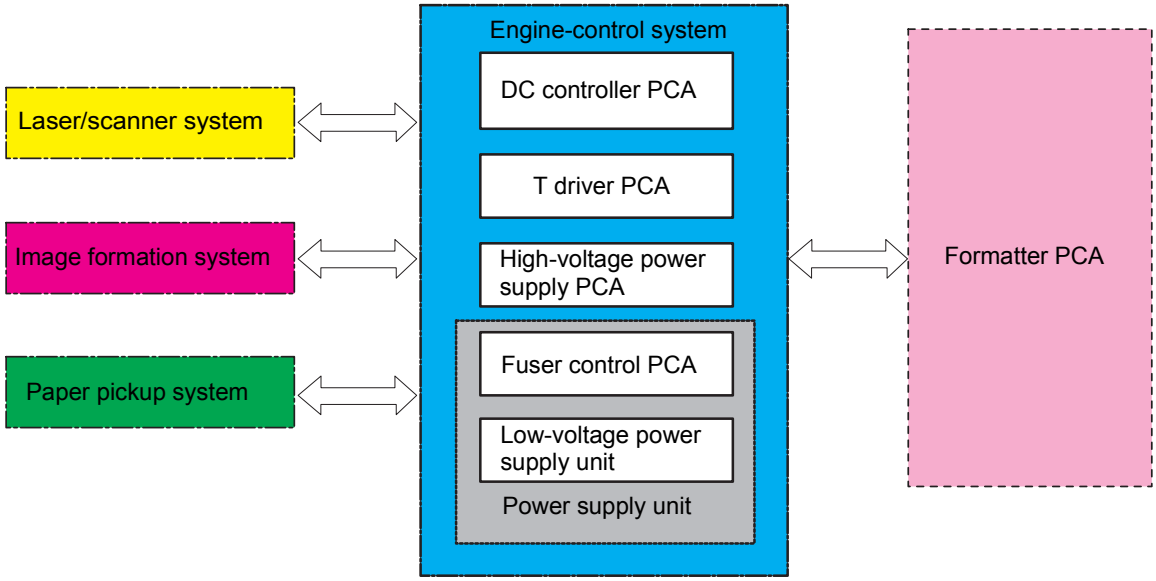


Figure 31. **Engine-control system**

DC controller circuit

The DC controller circuit controls the printer operational sequences. Motors, fans, clutches, solenoids, and sensors are listed in table 47.

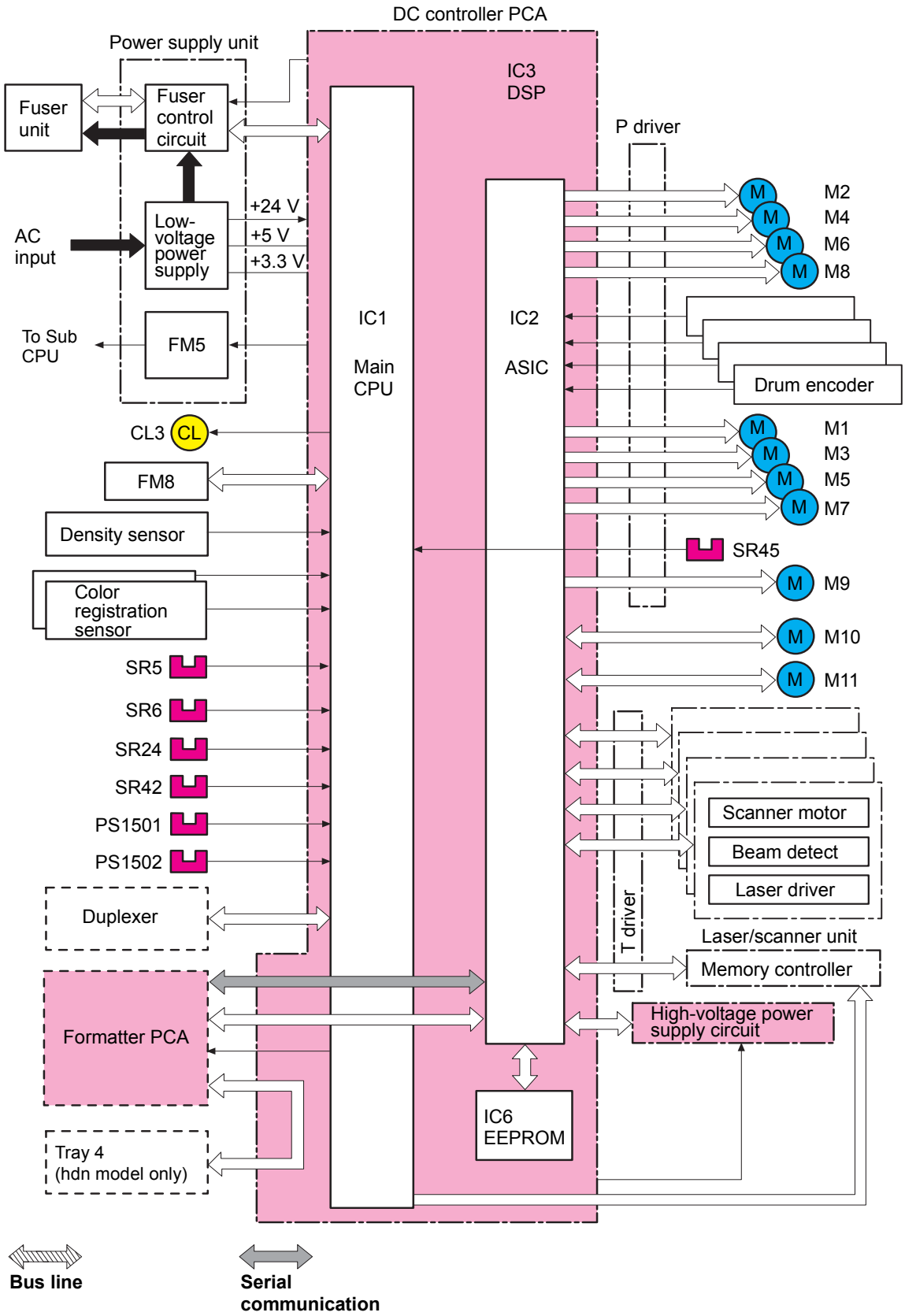


Figure 32. **DC controller circuit (1 of 2)**

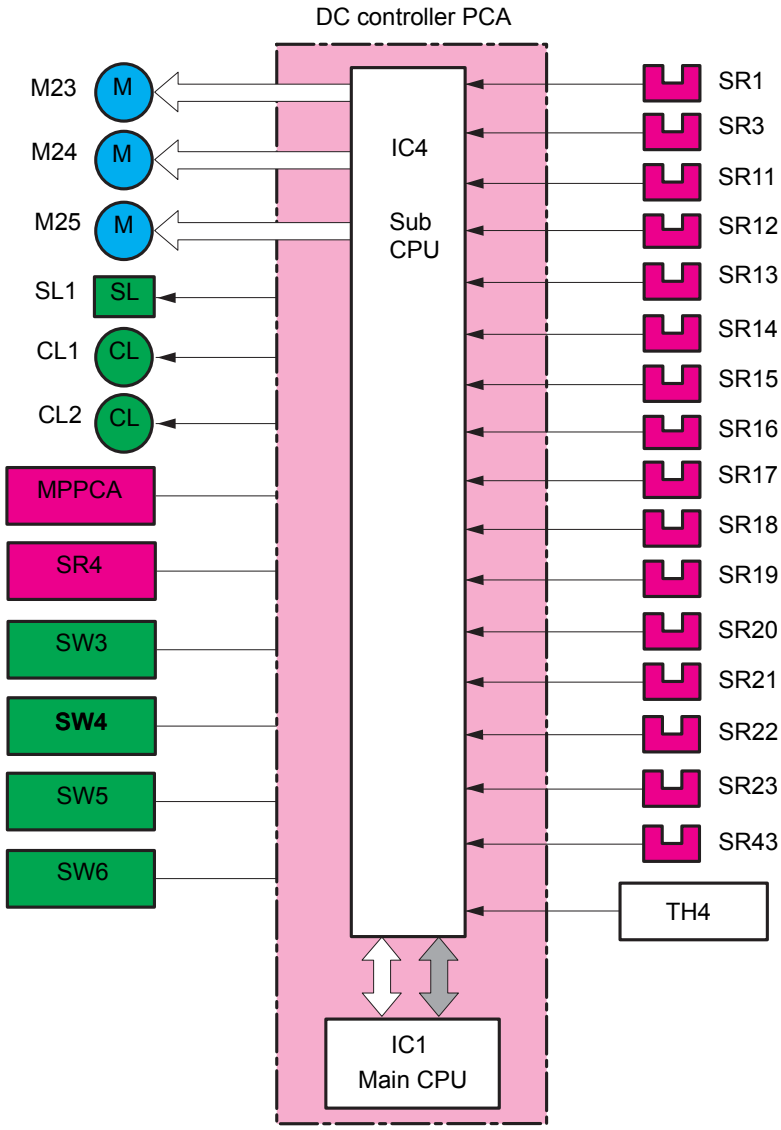


Figure 33. **DC controller circuit (2 of 2)**

Table 47. Motors, fans, clutches, solenoids, and sensors

Number	Description
M1 M3 M5 M7	Drum motor (yellow) Drum motor (magenta) Drum motor (cyan) Drum motor (black)
M2 M4 M6 M8	Developing motor (yellow) Developing motor (magenta) Developing motor (cyan) Developing motor (black)
M9	ITB motor
M10	Registration motor
M11	Fusing motor
M23	Pickup roller up/down motor

Table 47. Motors, fans, clutches, solenoids, and sensors (continued)

Number	Description
M24	Pickup motor
M25	Lifter motor
FM5	Power supply fan
FM8	ITB fan
CL1	Pre-registration feed clutch
CL2	Registration clutch
CL3	Secondary transfer clutch
SL1	Tray 1 pickup solenoid
SR1	Tray 1 paper sensor
SR3	Registration paper sensor
SR4	Transparency sensor
SR5	Multifeed sensor
SR6	Front fusing paper sensor
SR11	Tray 2 feed sensor A
SR12	Tray 2 feed sensor B
SR13	Tray 3 feed sensor A
SR14	Tray 3 feed sensor B
SR15	Tray 2 paper level sensor 1
SR16	Tray 2 paper level sensor 2
SR17	Tray 3 paper level sensor 1
SR18	Tray 3 paper level sensor 2
SR19	Tray 2 paper surface sensor
SR20	Tray 2 paper sensor
SR21	Tray 3 paper surface sensor
SR22	Tray 3 paper sensor
SR23	Pickup roller shaft home-position sensor
SR24	Lower right door sensor
SR42	Front secondary transfer paper sensor
SR43	Last paper sensor
SR45	ITB rotation sensor
PS1501	Fuser delivery paper sensor
PS1502	Engaging/disengaging sensor
SW3	Tray 2 paper length detection switch
SW5	Tray 2 paper width detection switch
SW4	Tray 3 paper length detection switch
SW6	Tray 3 paper width detection switch
MPPCA	Multipurpose tray (tray 1) paper width sensor
TH4	ITB temperature sensor

DC controller operations

- The main CPU (IC1) on the DC controller PCA controls the following printer and MFP operations:
  - sequence of the printer
  - communication with the formatter
  - high-voltage power-supply circuit operation
  - fuser control circuit operation
  - loading and sensor operation
  - communication with the duplexer (if installed)
  - communication with the memory tag
  - communication with the ASIC, sub CPU, and t-CPU
- The ASIC (IC2) on the DC controller PCA controls the following printer operations, according to instructions from the main CPU:
  - laser/scanner operation
  - communication with the formatter
  - high-voltage power-supply circuit operation
  - rotation of the fuser/delivery motor and drum motor
  - operation of the motors and sensors
  - communication with the memory tag
  - communication with the DSP
- The DSP (IC3) controls the following printer operations, through the ASIC:
  - operation of the developing motors (Y, M, C, K)
  - operation of the drum motor (Y, M, C, K)
  - operation of the ITB motor
  - operation of the registration motor
  - operation of the fuser motor
  - operation of the drum encoder
- The sub CPU (IC4) controls the following printer operations, according to instructions from the main CPU:
  - loading
  - operation of the sensors and switches
- The EEPROM (IC6) stores backup data.

T driver circuit

The T driver circuit controls motors and fans according to the main CPU in the DC controller.

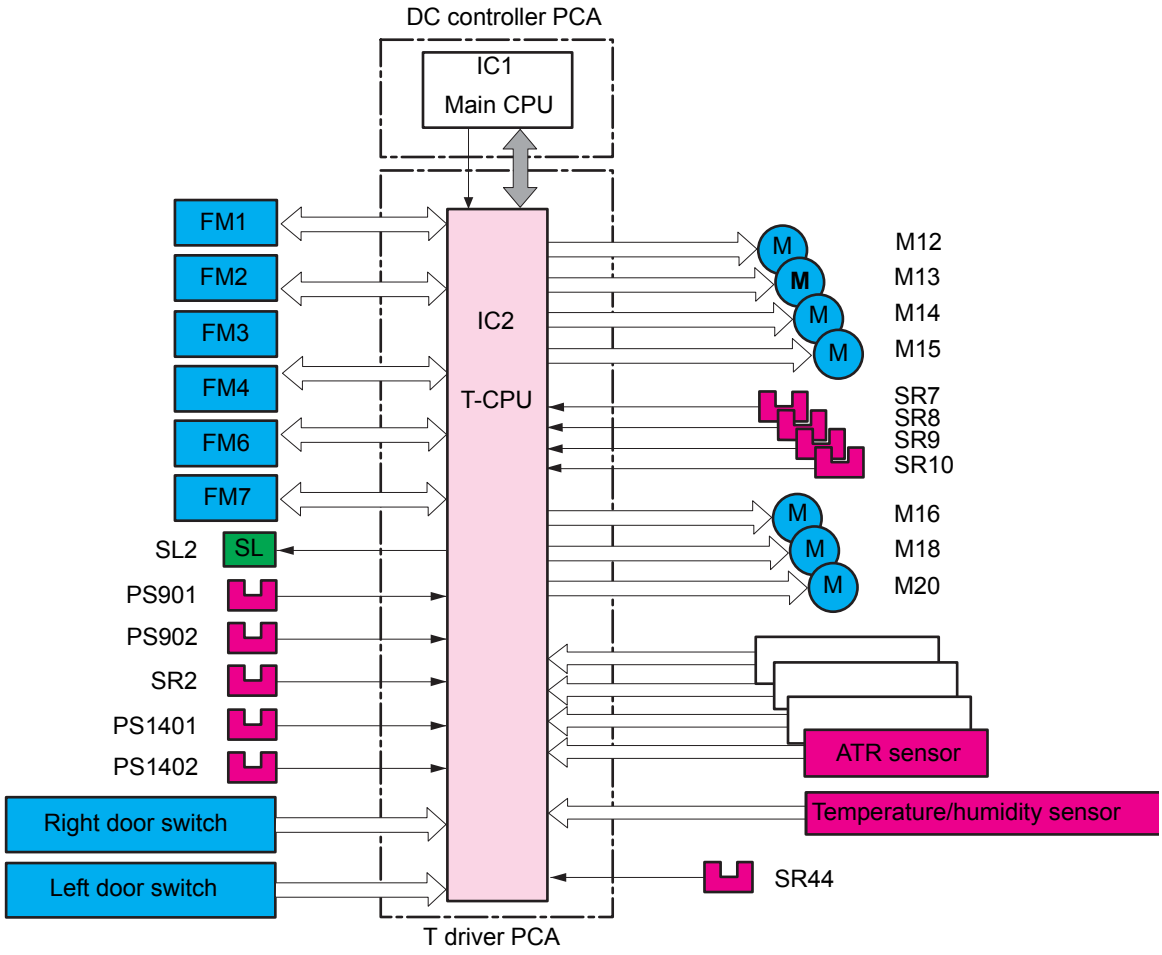


Figure 34. **T driver circuit**

Fuser control circuit

The fuser control circuit consists of the following components:

- two heaters (H1 and H2)
- three thermistors (TH1, TH2, and TH3)
- two thermoswitches (TP1 and TP2)

Note The fuser temperature control circuit and safety circuit control the temperature of the fuser control circuit.

Heater H1 heats the fuser roller and H2 heats the pressure roller. The upper-center thermistor (TH1) monitors the fuser roller surface temperature, the lower-edge thermistor (TH2) monitors the pressure roller surface temperature, and the upper-edge thermistor (TH3) detects temperature increases at one end of the fuser roller.

Two thermal switches guard against the two heaters overheating by turning off power to the heaters when the temperature increases abnormally. The upper thermoswitch (TP1) is in the center of the fuser roller, and the lower thermoswitch (TP2) is in the center of the pressure roller.

Note After turning off the printer or MFP, wait a few seconds before unplugging the power cord to allow fuser-roller alienation. If the printer or MFP is running hot, wait at least five minutes before unplugging the power cord. This allows the fans to cool the fuser control circuit.

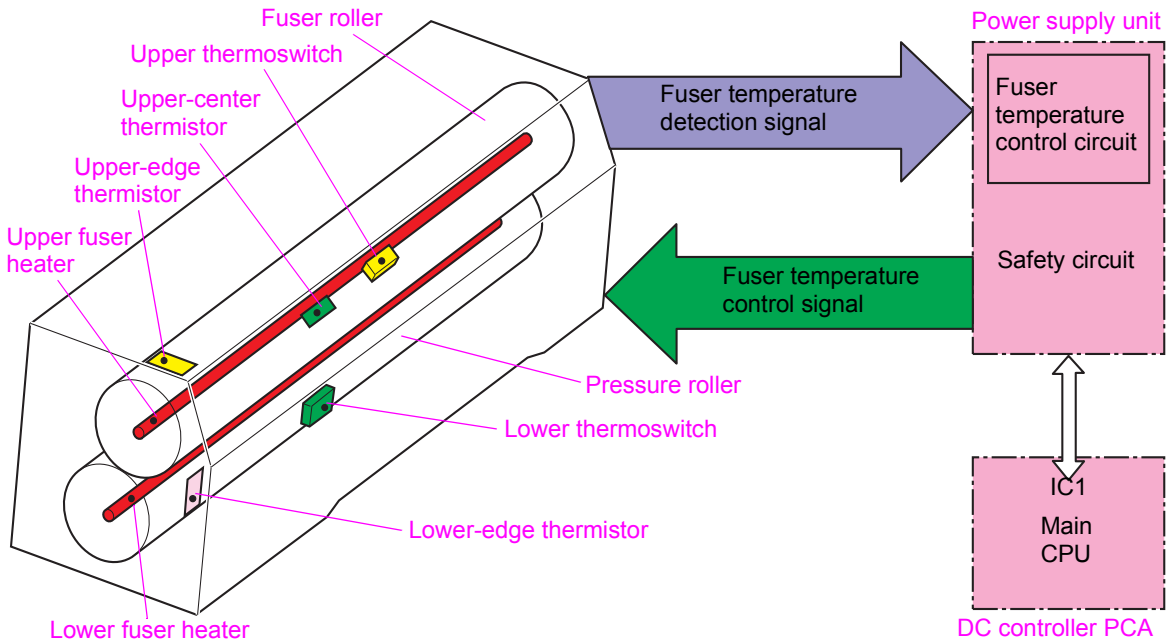


Figure 35. **Fuser control circuit**

Low-voltage power supply

The low-voltage power supply converts AC voltage from the power source to DC voltage when the printer is turned on. The AC power is converted as follows:

- +24 VDC for motors, solenoids, clutches, and the high-voltage power-supply circuit
- +5 VDC for the laser/scanner PCA, the Beam detect PCA, and the formatter
- +3.3 VDC for the formatter, sensors, and the ICs on the DC controller PCA

The +24 VDC consists of the following voltages:

- +24 VA (is constantly supplied from the low-voltage power-supply circuit)
- +24 VB (stops the power supply when the interlock switch is turned off)

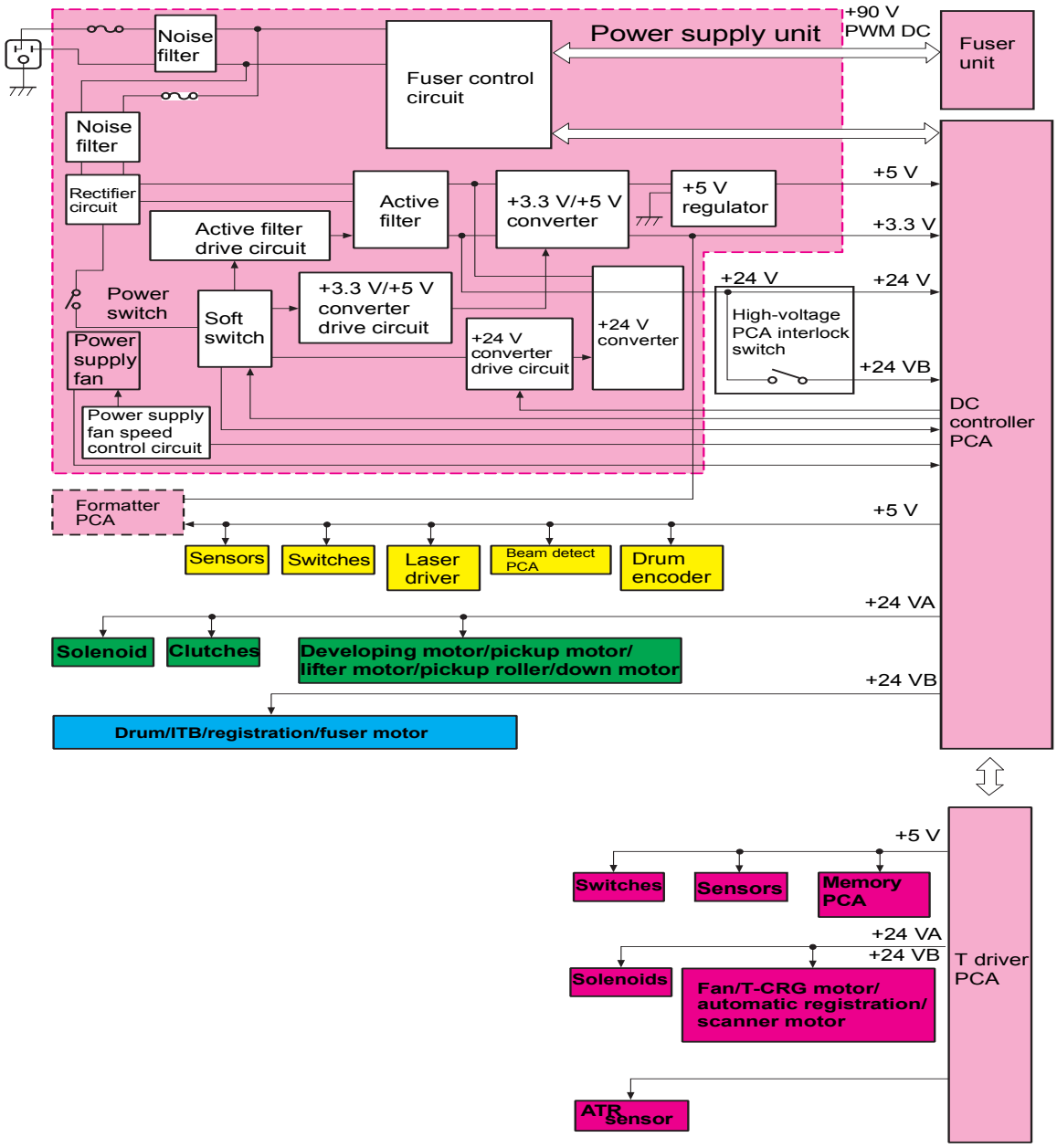


Figure 36. **Low-voltage power supply circuit**

High-voltage power supply circuits

The high-voltage power supply applies a high-voltage bias to the four positive cleaning brushes, the four negative cleaning brushes, the four primary charging rollers, the post charging unit, the four developing cylinders, the four primary transfer rollers, the secondary transfer roller, and the static charge eliminator. The main CPU (IC1) in the DC controller generates the high-voltage bias by controlling the high-voltage power supply PCA through the ASIC (IC2).

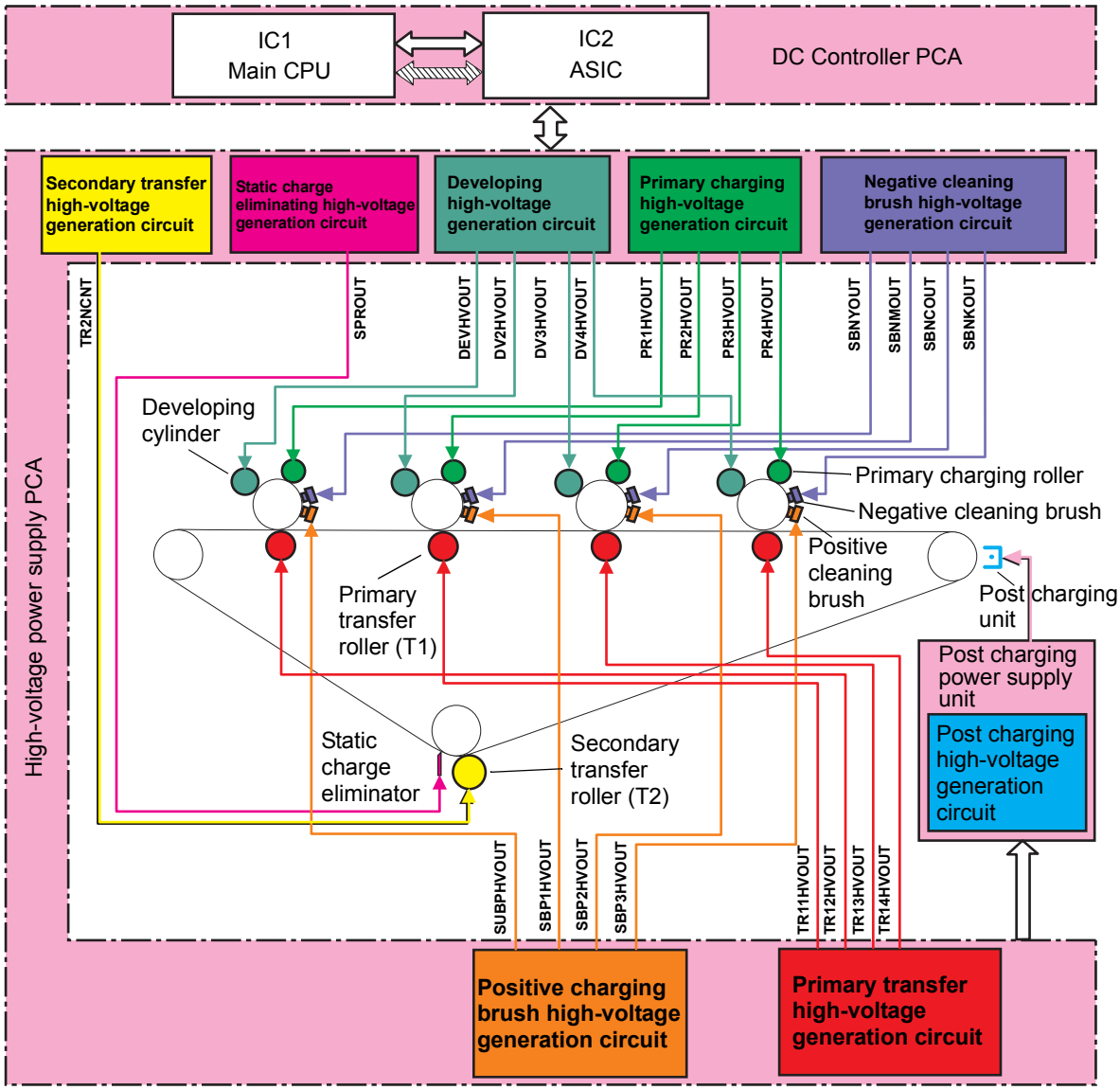


Figure 37. **High-voltage power supply circuit**

Post charger power supply unit

The corona power supply provides high-voltage power to the post charger power supply unit.

Motors and fans

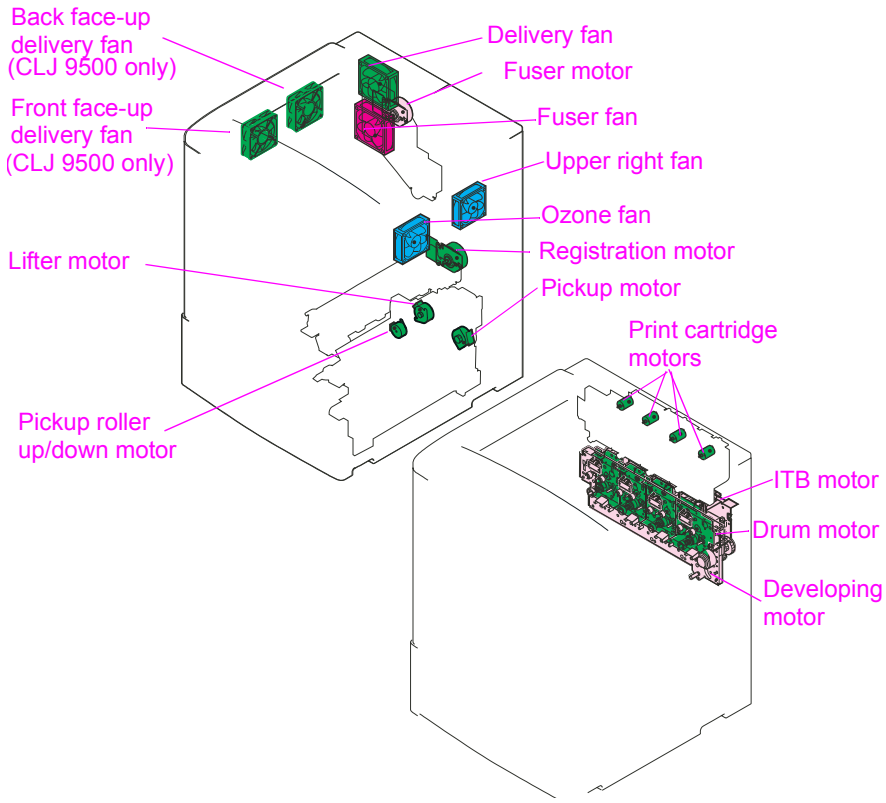


Figure 38. **Motors and fans**

Table 48. Motors and fans

Number	Description	Function	Type	Direction/ speed	Controlled by	Failure detection	Service part number
M1 M3 M5 M7	Y drum motor M drum motor C drum motor K drum motor	Drive the photosensitive drum, primary charging roller, charging brushes, and primary charging roller cleaner.	Stepping motor	• Clockwise • Half- and full-speed	DC controller	By encoder	RG5-6188-000CN
M2 M4 M6 M8	Y developing motor M developing motor C developing motor K developing motor	Drive the developing cylinder and screw.	Stepping motor	• Clockwise • Half- and full-speed	DC controller	By ATR sensor	RG5-6188-000CN
M9	ITB motor	Drives the ITB.	Stepping motor	• Clockwise Half- and full-speed	DC controller	By encoder	RG5-6188-000CN

Table 48. Motors and fans (continued)

Number	Description	Function	Type	Direction/ speed	Controlled by	Failure detection	Service part number
M10	Fuser motor	Drives the fuser rollers and the delivery roller. Also releases the fuser roller pressure by reversing, which makes a cracking noise.	DC motor	• Clockwise and counter-clockwise • Half- and full-speed	DC controller	Yes	RH7-1519-000CN
M11	Registration motor	Drives the secondary transfer roller and the registration roller.	DC motor	• Clockwise • Half- and full-speed	DC controller	Yes	RH7-1518-000CN
M12 M13 M14 M15	Y print cartridge motor M print cartridge motor C print cartridge motor K print cartridge motor	Drive the print cartridges.	DC motor	• Clockwise • One speed	T driver	By rotation sensor	RG5-6022-000CN
M16 M18 M20 M30	Y automatic registration laser motor M automatic registration laser motor K automatic registration laser motor C automatic registration laser motor (not used because it is the reference color)	Drive cam for the automatic registration adjustment of the four laser assemblies.	Stepping motor	• Clockwise and counter-clockwise • One speed	T driver	No	RG5-6181-000CN
M23	Pickup roller up/down motor	Drives the pickup and feed rollers.	Stepping motor	• Clockwise and counter-clockwise • One speed	DC controller	No	RG5-6097-000CN

Table 48. Motors and fans (continued)

Number	Description	Function	Type	Direction/ speed	Controlled by	Failure detection	Service part number
M24	Pickup motor	Drives the pickup roller up-and-down arm.	Stepping motor	• Clockwise and counter-clockwise • One speed	DC controller	No	RG5-6097-000CN
M25	Lifter motor	Drives the tray lifter.	Stepping motor	• Clockwise and counter-clockwise • One speed	DC controller	No	RG5-6097-000CN
FM1 CLJ 9500 only	Back face-up delivery fan	Cools the face-up delivery unit.	DC motor		T driver	Yes	RH7-1546-000CN
FM2	Delivery fan	Cools the delivery unit and the scanner area.	DC motor		T driver	Yes	RH7-1521-000CN
FM3	Upper right fan	Cools the ITB unit.	DC motor		T driver	Yes	RH7-1544-000CN
FM4	Fusing fan	Cools the fuser and print cartridge area.	DC motor		T driver	Yes	RH7-1522-000CN
FM5	Power supply fan	Cools the low-voltage power supply.	DC motor	• Half- and full-speed	DC controller	Yes	RH3-2236-000CN (110 V) RH3-2237-000CN (220 V)
FM6 CLJ 9500 only	Front face-up delivery fan	Cools the face-up delivery.	DC motor		T driver	Yes	RH7-1546-000CN
FM7	Ozone fan	Ventilation for the post charger unit.	DC motor		T driver	Yes	RH7-1564-000CN
FM8	ITB fan	Cools the ITB.	DC motor	• One speed		No	RG5-6180-000CN

Note The HP color LaserJet 9500 duplex unit does *not* have a fan even though it has a fan housing.

Switches, solenoids, clutches, and sensors

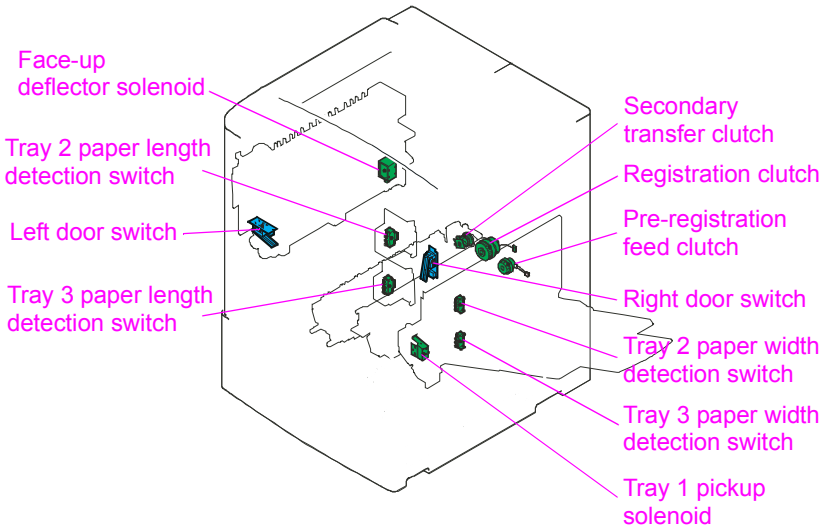


Figure 39. **Switches, solenoids, and clutches**

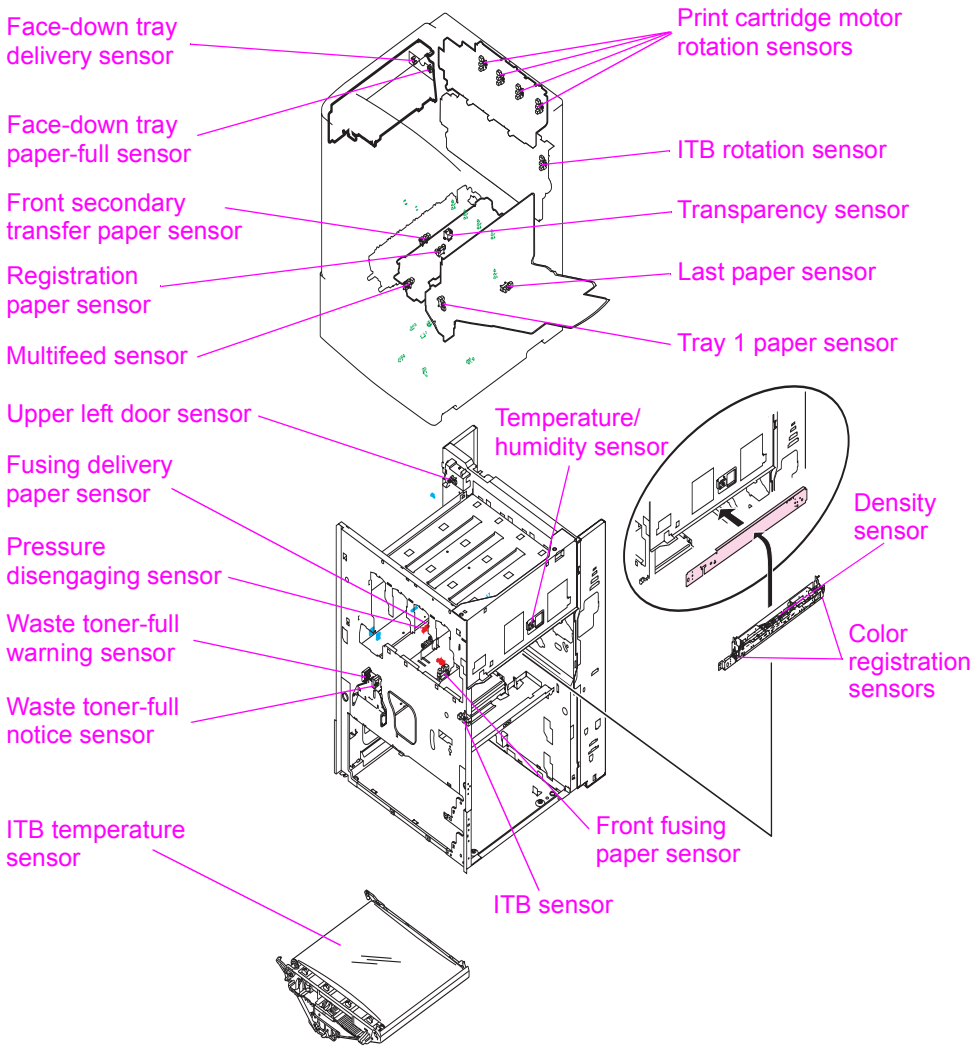


Figure 40. **Sensors**

Table 49. Switches, solenoids, clutches, and sensors

Number	Description	Controlled by	Service part number
SW3	Tray 2 paper length detection switch	DC controller	RG5-6097-000CN Paper pickup assy.
SW4	Tray 3 paper length detection switch	DC controller	RG5-6097-000CN Paper pickup assy.
SW5	Tray 2 paper width detection switch	DC controller	RG5-6097-000CN Paper pickup assy.
SW6	Tray 3 paper width detection switch	DC controller	RG5-6097-000CN Paper pickup assy.
SL1	Tray 1 pickup solenoid	DC controller	RG5-6090-00CN Manual feed paper pickup assy.
SL2	Face-up deflector solenoid	T driver	RG5-6150-000CN Delivery feed assy.
CL1	Pre-registration feed clutch	DC controller	RG5-6016-000CN Registration assy.
CL2	Registration clutch	DC controller	RG5-6016-000CN Registration assy.
CL3	Secondary transfer clutch	DC controller	RG5-6179-000CN Secondary transfer assy.
MPPCA	Multipurpose tray (tray 1) paper width sensor	DC controller	RG5-6090-00CN Manual feed paper pickup assy.
PS901 (CLJ 9500 only)	Face-down bin paper delivery sensor	T driver	RG5-6017-000CN Face-down delivery assy.
PS902 (CLJ 9500 only)	Face-down bin paper-full sensor	T driver	RG5-6017-000CN Face-down delivery assy.
PS1401	Waste toner-full notice sensor	DC controller	RG5-6038-000CN Waste sensor assy.
PS1402	Waste toner-full warning sensor	DC controller	RG5-6038-000CN Waste sensor assy.
PS1501	Fuser delivery paper sensor	DC controller	RG5-6038-000CN Waste sensor assy.
PS1502	Engaging/disengaging sensor	DC controller	RG5-6038-000CN Waste sensor assy.
SR1	Tray 1 paper sensor	DC controller	RG5-6090-000CN M-feed paper pickup assy.
SR2	Upper left door sensor	DC controller	RG5-6152-000CN Paper delivery sensor assy
SR3	Registration paper sensor	DC controller	RG5-6016-000CN Registration assy
SR4	Transparency sensor	DC controller	RG5-6016-000CN Registration assy

Table 49. Switches, solenoids, clutches, and sensors (continued)

Number	Description	Controlled by	Service part number
SR5	Multifeed sensor	DC controller	RG5-6016-000CN Registration assy
SR6	Front fusing paper sensor	DC controller	WG8-5362-00CN Photo interrupter
SR7 SR8 SR9 SR10	Print cartridge motor rotation sensor	DC controller	RG5-6022-000CN Toner cartridge drive assy. OR WG8-5362-000CN Photo interrupter
SR11	Tray 2 feed sensor A	DC controller	RG5-6097-000CN Paper pickup assy.
SR12	Tray 2 feed sensor B	DC controller	RG5-6097-000CN Paper pickup assy.
SR13	Tray 3 feed sensor A	DC controller	RG5-6097-000CN Paper pickup assy.
SR14	Tray 3 feed sensor B	DC controller	RG5-6097-000CN Paper pickup assy.
SR15	Tray 2 paper level sensor 1	DC controller	RG5-6097-000CN Paper pickup assy.
SR16	Tray 2 paper level sensor 2	DC controller	RG5-6097-000CN Paper pickup assy.
SR17	Tray 3 paper level sensor 1	DC controller	RG5-6097-000CN Paper pickup assy.
SR18	Tray 3 paper level sensor 2	DC controller	RG5-6097-000CN Paper pickup assy.
SR19	Tray 2 paper surface sensor	DC controller	RG5-6097-000CN Paper pickup assy.
SR20	Tray 2 paper sensor	DC controller	RG5-6097-000CN Paper pickup assy.
SR21	Tray 3 paper surface sensor	DC controller	RG5-6097-000CN Paper pickup assy.
SR22	Tray 3 paper sensor	DC controller	RG5-6097-000CN Paper pickup assy.
SR23	Pickup roller shaft home-position sensor	DC controller	RG5-6097-000CN Paper pickup assy.
SR24	Lower right door sensor	DC controller	RG5-6097-000CN Paper pickup assy.
SR42	Front secondary transfer paper sensor	DC controller	RG5-6179-000CN Secondary transfer assy.
SR43	Last paper sensor	DC controller	RG5-6090-000CN Manual feed paper pickup assy.
SR44	ITB sensor	DC controller	WG8-5362-000CN Photo interrupter
SR45	ITB rotation sensor	DC controller	RG5-6188-000CN Process cartridge drive assy.

Table 49. Switches, solenoids, clutches, and sensors (continued)

Number	Description	Controlled by	Service part number
TH4	ITB temperature sensor	DC controller	RG5-6180-000CN ITB assy.
N/A	Temperature/humidity sensor	DC controller	RG5-6153-000CN Humidity sensor assy.
N/A	Density sensor	DC controller	RG5-6123-000CN Registration assy.
N/A	Color registration sensor	DC controller	RG5-6123-000CN Registration assy.

Formatter

Note The formatter in the HP LaserJet 9500 Series printer is similar to the formatter in the HP LaserJet 9500mfp, but the formatter is not an interchangeable component. Do not install an LJ 9500 formatter into an LJ 9500mfp or a MFP formatter into an LJ 9500.

The formatter is responsible for the following functions:

- receiving and processing print data from the various printer interfaces
- monitoring control panel inputs and relaying printer status and error information (through the control panel and the bidirectional I/O)
- developing and coordinating data placement and timing with the print engine
- storing font information
- communicating with the host computer through the bidirectional interface
- controlling the PowerSave mode

The formatter continuously monitors the printer through the video interface. When the printer is ready to print, the formatter sends a signal to the DC controller, which turns the laser on or off based on the signal.

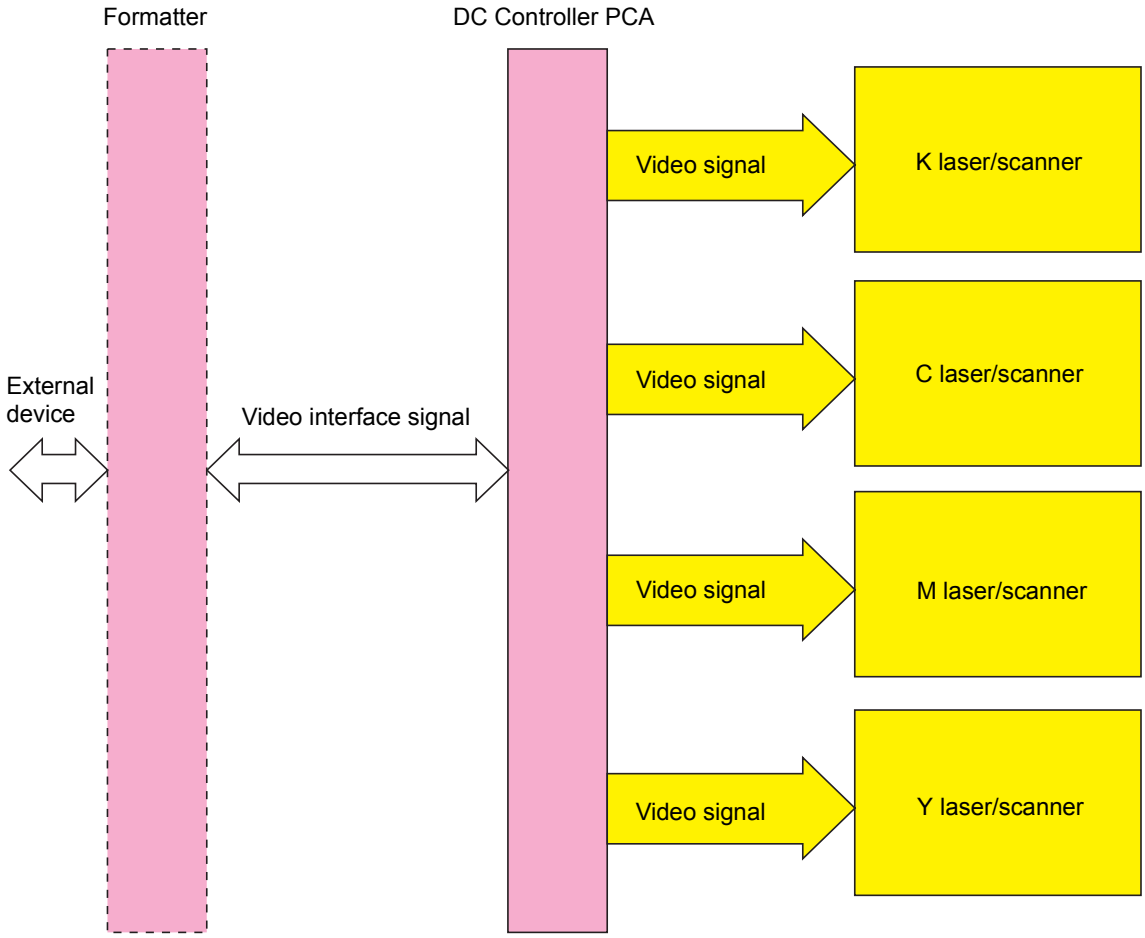


Figure 41. Formatter system

Formatter heartbeat LED

The formatter heartbeat LED indicates that the formatter hardware passed its own initial tests and is operating correctly. See “Formatter heartbeat LED” on page 351 for more information.

Note The formatter heartbeat LED does not indicate that the firmware is operating correctly.

If the formatter heartbeat LED is visible, check other printer systems for problems and consider performing a firmware upgrade. See “Firmware upgrades to the printer or MFP” on page 109.

DIMM slots

The HP LaserJet 9500 formatter has five dual inline memory module (DIMM) slots: J1 (firmware DIMM); J2, J3, and J4 (available for memory upgrades); and J5 (available only for forms and fonts, not memory upgrade). Four of these are 168-pin slots, and one is a 100-pin slot. Only four DIMMs can be loaded at a time, and the fifth DIMM slot (100-pin) is equivalent to the fourth slot (168-pin). If all five slots are filled, a `53.10.05` error appears on the control panel.

Note The MFP version of the HP LJ 9500 printer uses a different formatter and formatter part number. A Compact Flash memory card is used for firmware memory storage in the MFP. The MFP uses a 512 MB RAM DIMM and is not expandable, even though DIMM slots are available on the formatter PCA. The open Compact Flash slots on the formatter are used for fonts or third-party programs.

Laser/scanner system

The laser/scanner system is the laser/scanner unit that forms a latent image on the photosensitive drum based on the VDO and /VDO signals sent from the formatter. This product contains four laser/scanner units (one for each color), and each laser/scanner unit is structured the same.

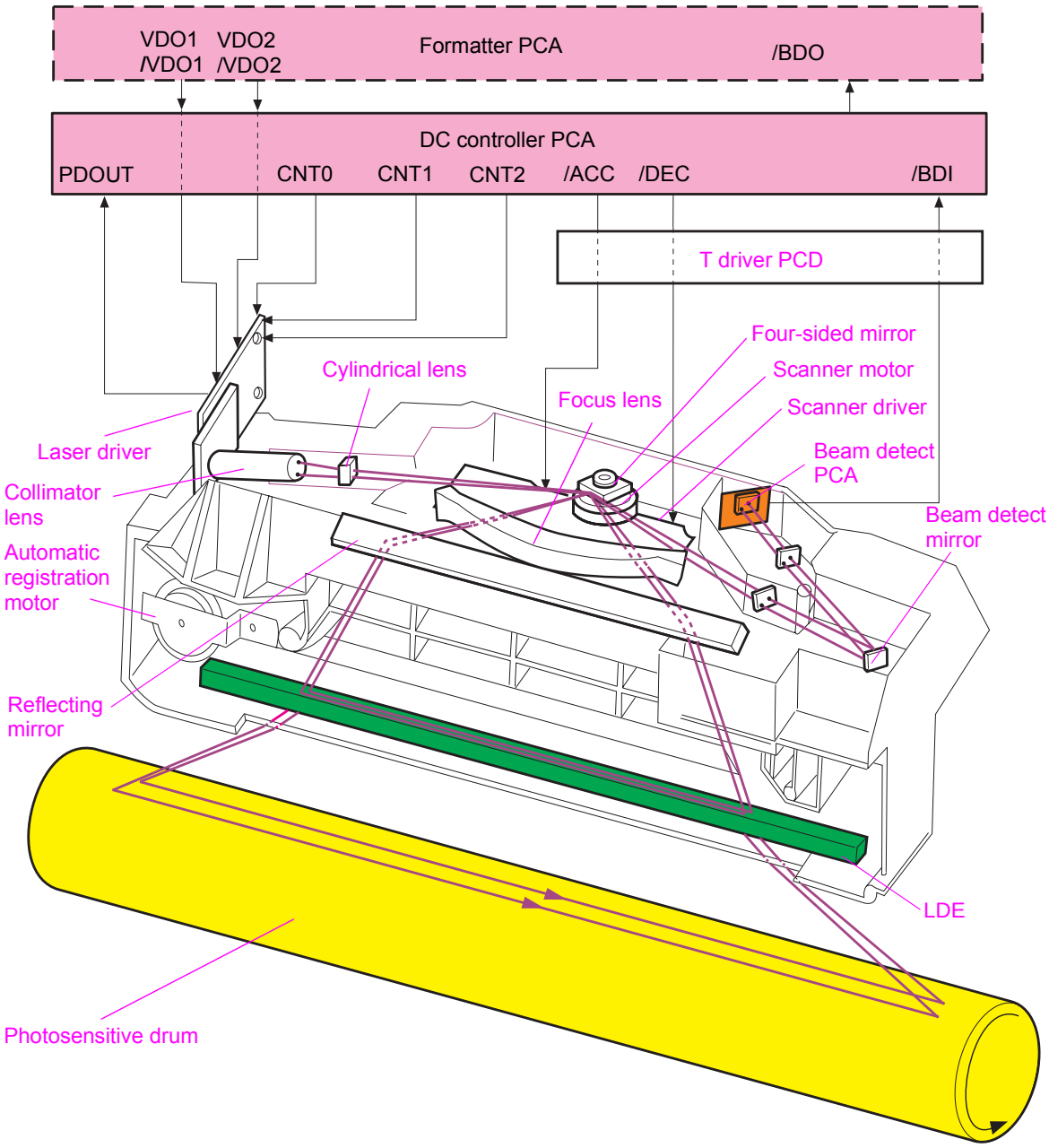


Figure 42. **Laser/scanner system**

Dual-beam method

The laser/scanner unit contains two laser diodes in the laser unit. The printer employs the “dual-beam method,” which scans two lines simultaneously.

Based on signals it receives from the DC controller and the formatter, the laser/scanner PCA in turn signals the two laser diodes to emit laser beams. The beams strike a four-sided mirror that rotates at a constant speed through the collimator lens and cylindrical lens. The beams reflect off of the mirror, pass through a focusing lens and a reflective mirror, and focus on the photosensitive drum.

The scanning mirror, rotating at a constant speed, reflects the laser beams, which scan across the drum at a constant speed. Then, a latent image is formed on the drum surface by constant-speed rotation of the photosensitive drum and constant-speed scanning of the laser beams.

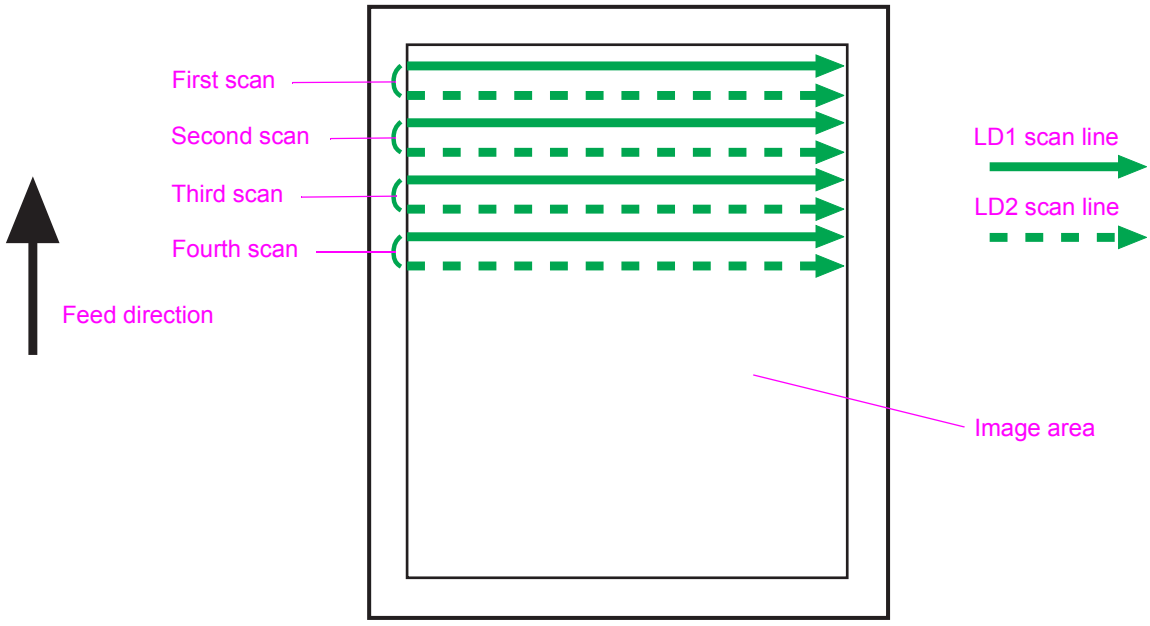


Figure 43. **Dual-beam method**

Laser control

The laser control turns the two laser diodes (LD1 and LD2) on and controls the specific amount of light. The amount of light is based on the video (VDO1, /VDO1, VDO2, and /VDO2) signals that the formatter sends through the DC controller to the laser drive circuit in the laser driver IC.

The laser control (CNT0, CNT1, and CNT2) sends the ASIC (IC2) signals to the logic circuit in the laser driver IC. The laser driver IC then performs the automatic emission control of the laser diodes (APC), the image mask control, and a forced light emission of each laser diode.

The logic circuit performs the following functions:

- starts the print mode when all of the laser control signals are “high”
- turns on or turns off the laser diodes according to the video signals

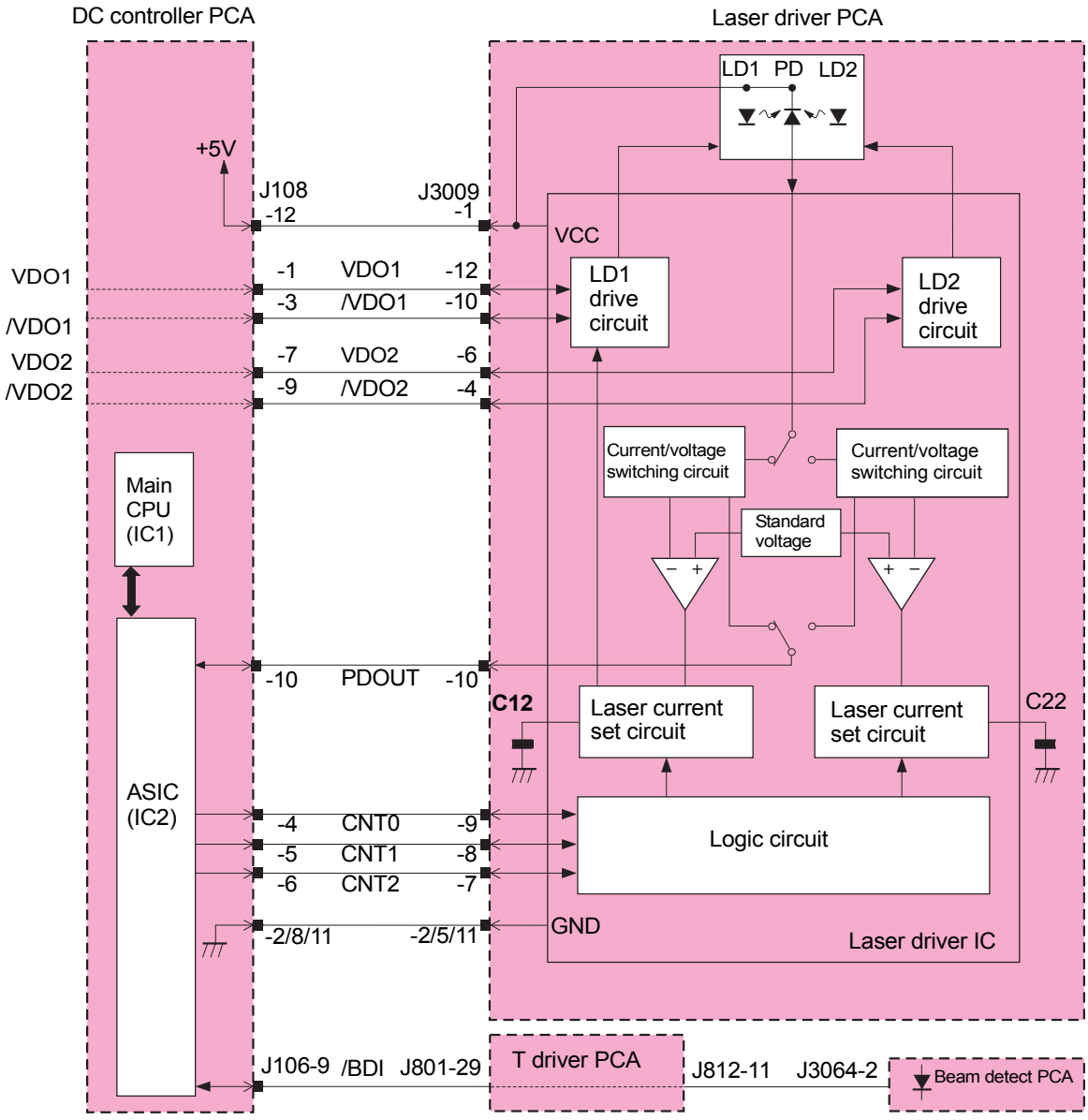


Figure 44. **Laser control**

Laser diode automatic light emission control

The laser diode automatic light emission control (APC) emits a specified amount of light from the laser diodes. This is performed in the laser driver IC, and is based on the laser control signals that the DC controller sends.

Two types of APCs are involved:

- initial APC
  - is performed during primary rotation
  - adjusts the amount of laser light
  - detects laser failures
- between-lines APC
  - is performed during printing
  - performs the laser light amount adjustment for one line before the line begins printing

When the CNT0 signal is low, the CNT1 signal is high, and the CNT2 signal is low, the laser driver IC goes into sample mode for laser diode 1 (LD1) which forces LD1 to emit light. When the CNT0 signal is high, the CNT1 signal is low, and the CNT2 signal is L, the laser driver IC goes into the sample mode for laser diode 2 (LD2), which forces LD2 to emit light. The photo diode (PD) detects the amount of emitted light from each laser diode, and the amount is compared to the standard voltage through the current/voltage convert circuit.

If the amount of light that the laser diodes emit is larger than the standard voltage, the condensers (C12 and C22) discharge to decrease the laser current. If the amount of light that the laser diodes emit is smaller than the standard voltage, C12 or C22 charges to increase the laser current. When the laser light voltage amount equals the standard voltage amount, the emitted laser diode-light amount equals the target laser-light amount.

Note When the CNT0 signal is high, the CNT1 signal is high, and the CNT2 signal is low, LD1 and LD2 are automatically turned off and the sample hold circuit enters the hold state (image mask state). Also, the laser driver IC converts the controlled laser light amount to the C12 and C22 voltages and stores the amounts.

Image mask control

The image mask control is used to avoid the laser beam emission on a non-image area during periods other than the unblanking period.

When the CNT0 and the CNT1 signals are high, and the CNT2 signal is low, all of the signals from the CPT to the laser driver IC, LD1, and LD2 are turned off automatically. The sample-hold circuit then enters the image mask state. During the image mask state, LD1 and LD2 do not emit light even if the VDO1, /VDO1, VDO2, and /VDO2 signals are sent.

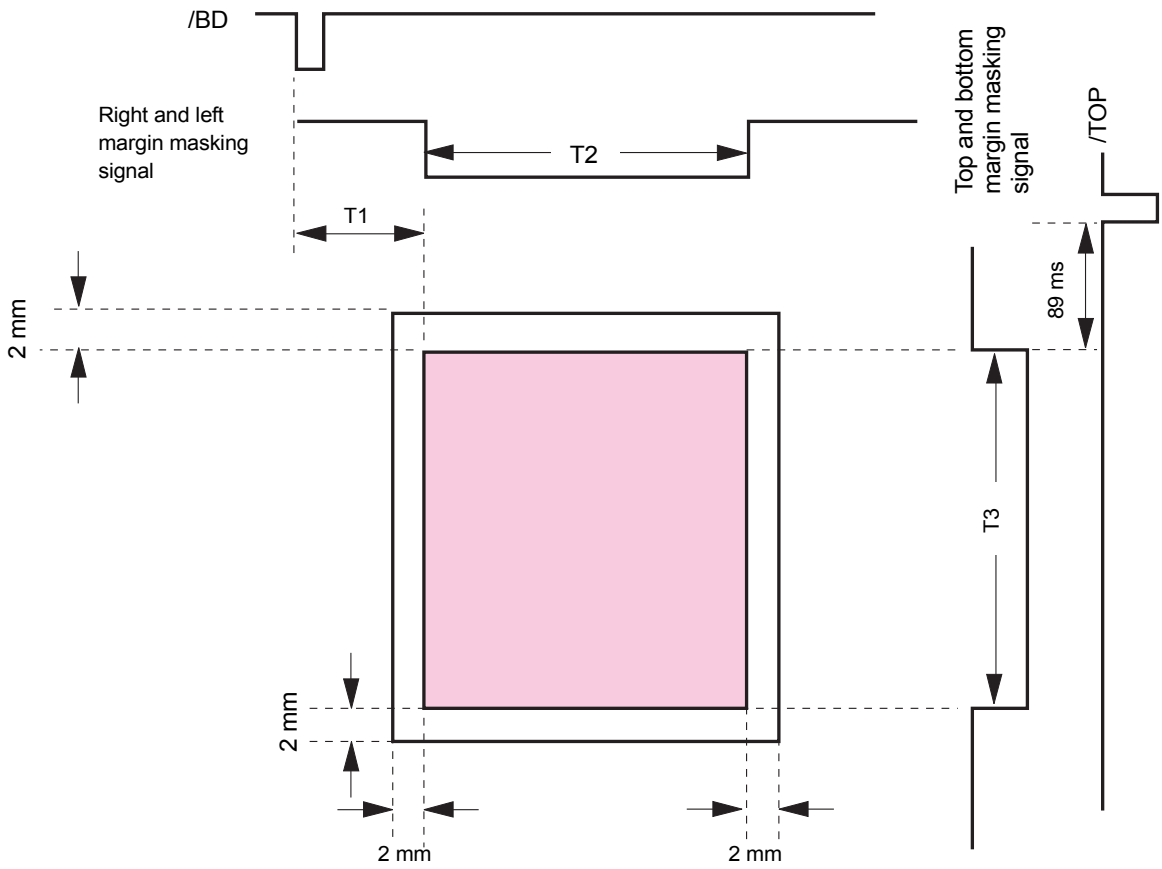


Figure 45. **Image mask control**

Horizontal synchronous control

The horizontal synchronous control aligns the writing position in the image horizontal direction. The ASIC generates the unblanking signal in the main CPU based on the BD input (/BDI) signal that the Beam detect PCA sends. Then, the ASIC controls the laser control signals and forcefully emits light from LD1 and LD2 during the unblanking period.

A small, fixed mirror (Beam detect mirror) is located at the scanning ending position in the optical path of the laser beam. The Beam detect mirror reflects each laser beam and the beams are sent to the Beam detect PCA in the laser/scanner unit. By detecting the laser beam, the Beam detect circuit PCA generates a /BDI signal. Based on the /BDI signal, the ASIC in the DC controller generates a horizontal sync (/BDO) signal. After inputting the /BDO signal, the formatter outputs the video signals to the DC controller to align the starting position in the image horizontal direction.

Laser failure detection

This printer performs a correct laser control by detecting the laser control status from the DC controller. The laser failure detection determines a laser failure, Beam detect failure, and Beam detect error from the ASIC in the DC controller, which monitors the laser current monitor (PDOUT) signal and the /BDI signal.

The CPU determines a laser/scanner failure if the following occur:

- the PDOUT signal is not detected during the APC period
- the /BDI signal is not detected during print operation

The CPU determines a Beam detect error if the following occurs:

- a determined period of the /BDI signal is out of a specified range during a print operation

Scanner-motor control

The scanner-motor control rotates the scanner motor so the laser can strike the laser beam at a correct position on the photosensitive drum.

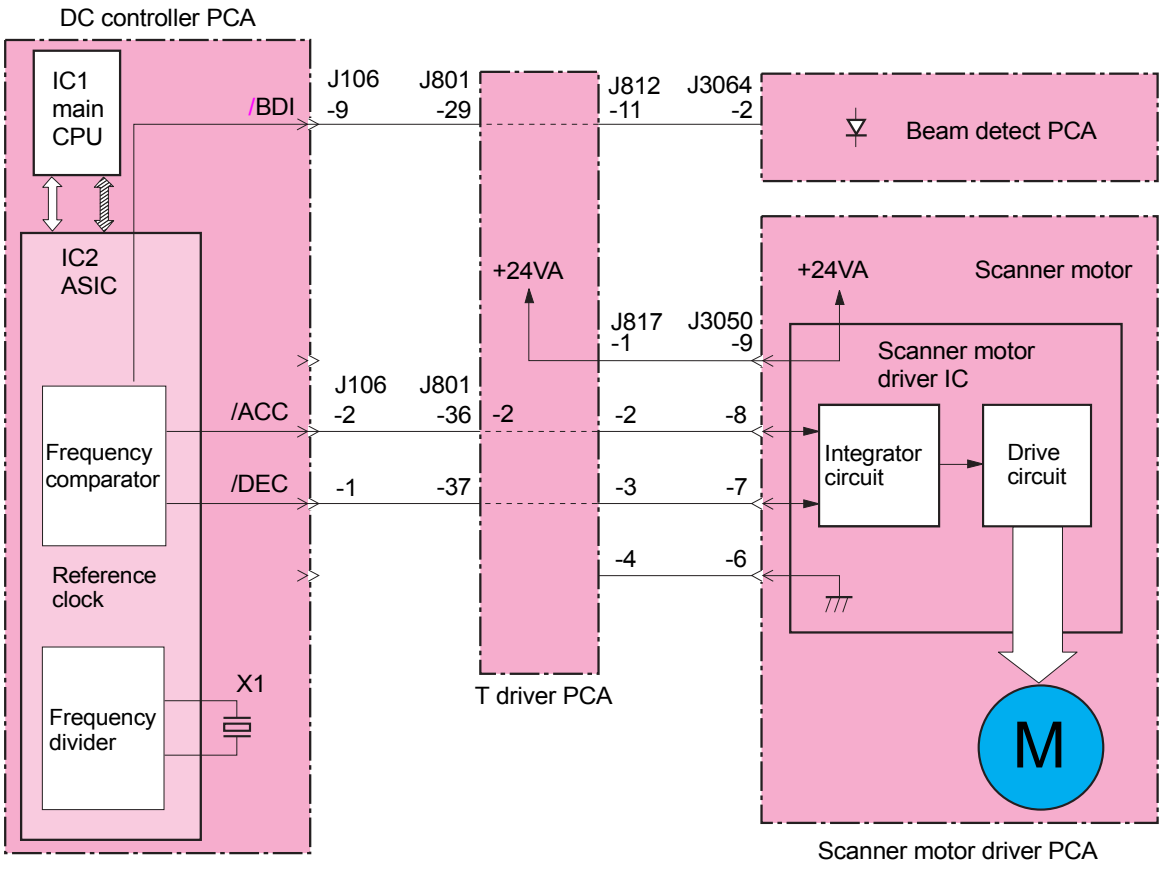


Figure 46. **Scanner motor control**

Scanner-motor-speed control

The scanner-motor-speed control rotates the scanner motor at a constant speed. This control is a function of the DC controller controlling the scanner-motor-driver IC. The scanner motor, which is integrated with the scanner motor drive circuit, is a three-phase, 12-pole, DC, brushless motor with a built-in hall device.

The scanner motor speed control process includes the following functions:

1. When the printer is turned on, the ASIC on the DC controller generates the standard clock based on oscillation frequency of the oscillator through the main CPU.
2. When the main CPU receives a print command, the ASIC sets the scanner motor acceleration (/ACC) signal to low, and then the scanner driver IC rotates the scanner motor. The scanner motor revolutions increase while the /ACC signal is low.
3. When the scanner motor rotates, the DC controller forcefully emits a laser and the /BDI signal is sent from the Beam detect PCA.
4. By using the frequency comparator, the ASIC compares the frequency of the /BDI signal to the frequency of the reference clock.
5. To control the /ACC signal and /DEC signal, the ASIC controls the scanner revolution so that the scanner motor revolution reaches the set rotation counts.
6. The /DEC signal is set to low to decrease the motor revolutions in order for the scanner to stop.

Scanner motor failure detection

The main CPU monitors the /BDI signal that is sent from the beam detect PCA to determine the scanner rotation speed. If the /BDI signal is not detected during print operation, the main CPU has identified a beam detect error and stops the print engine. Then, the main CPU transfers the error information to the formatter.

Color-plane registration calibration control

The color-plane registration (CPR) sensors detect CPR. For each color, the DC controller adjusts the vertical scanning writing position and the vertical scanning skew, and the formatter adjusts the horizontal scanning writing position and horizontal scanning magnification.

The CPR calibration control performs the following functions:

- image CPR range adjustment
- laser-beam-skew calibration

Image CPR adjustment

Image CPR adjustment information is adjusted for each color. This adjustment includes the following functions:

- determination of the horizontal scanning writing position
- determination of the horizontal scanning magnification
- determination of the vertical scanning writing position
- determination of the vertical scanning skew

The DC controller and formatter measure the CPR range in the horizontal and vertical scanning directions. They use the CPR sensors to adjust the CPR based on information from the measurement results. The DC controller writes CPR detection patterns in four colors on the ITB in response to the commands from the formatter when the following occur:

- the printer is turned on
- the P-crg or the ITB is inserted or removed
- temperature change inside the printer is out of the specified range.

The DC controller uses the detection pattern positions that the CPR sensors measure to calculate the CPR range. The DC controller obtains the CPR information, and sends the information for each color to the formatter.

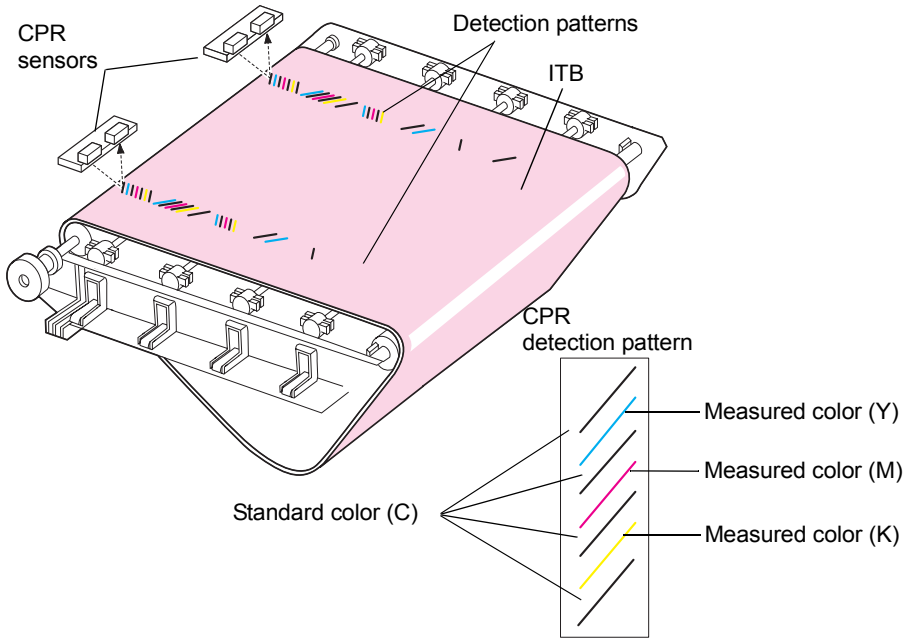


Figure 47. **Color-plane registration (CPR) adjustment**

Laser-beam-skew calibration

To calibrate the laser-beam-skew, the laser beam scanning line (vertical scanning skew) on the photosensitive drum is calibrated. The vertical scanning skew is adjusted by shifting the long diffractive element (LDE) in the laser/scanner unit.

The cam rotates when the automatic registration motor rotates. One end of the LDE is fixed and the other end is pressed against the cam so that the LDE changes its horizontal angle as the cam rotates. The horizontal scanning skew is adjusted by changing an angle of the LDE by rotating the automatic registration motor clockwise or counterclockwise.

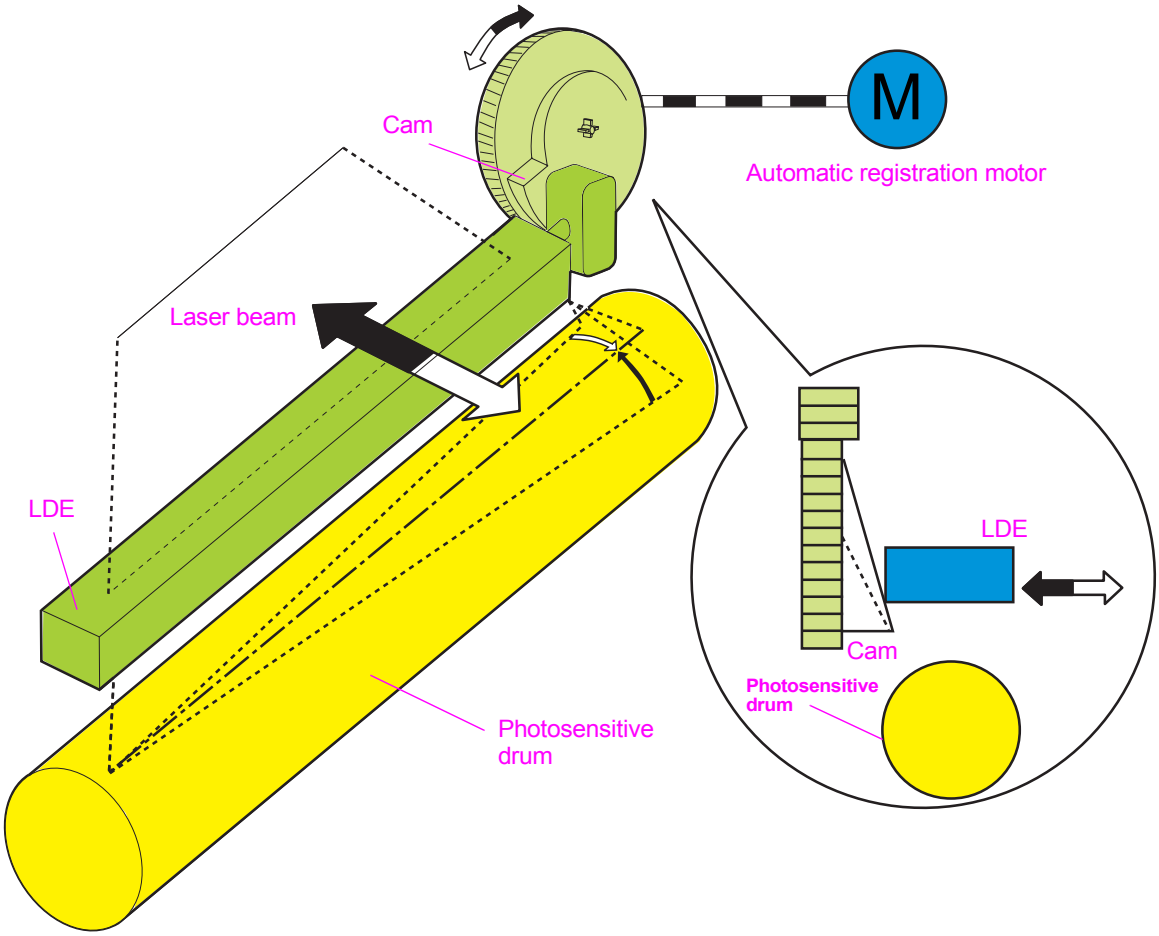


Figure 48. **Laser beam skew calibration**

Laser adjustment

The following two types of alignment that are adjusted manually:

- inter-dot runout (lengthens the scan line)
- parallelism

Note See Adjusting the laser/scanner assemblies (page 237) for more information about these adjustments.

Electrophotographic process

Note

The following are the main components of the electrophotographic (EP) process:

- four lasers
- four print cartridges
- four image drum cartridges
- the ITB
- the post charger
- the secondary transfer roller
- the fuser
- the cleaning blade assembly

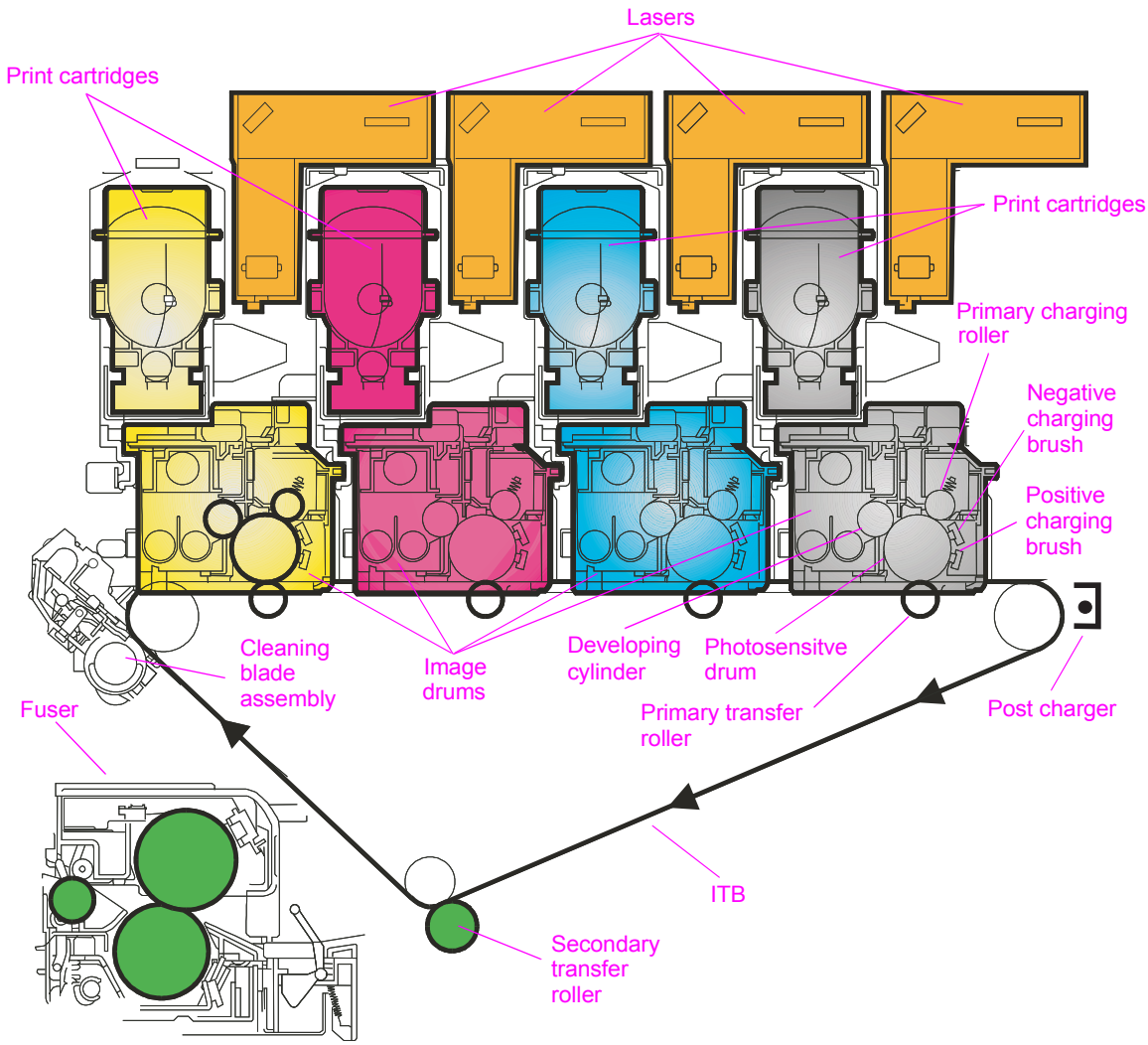


Figure 49. **EP process main components**

Step 1

1 The primary charge roller is given a negative charge.

2 On the image drum, ac bias is applied to replace uneven and previously charged areas with an even, negative charge.

3 The dc bias is applied to control density.

Note This procedure occurs in the same way for all four image drums.

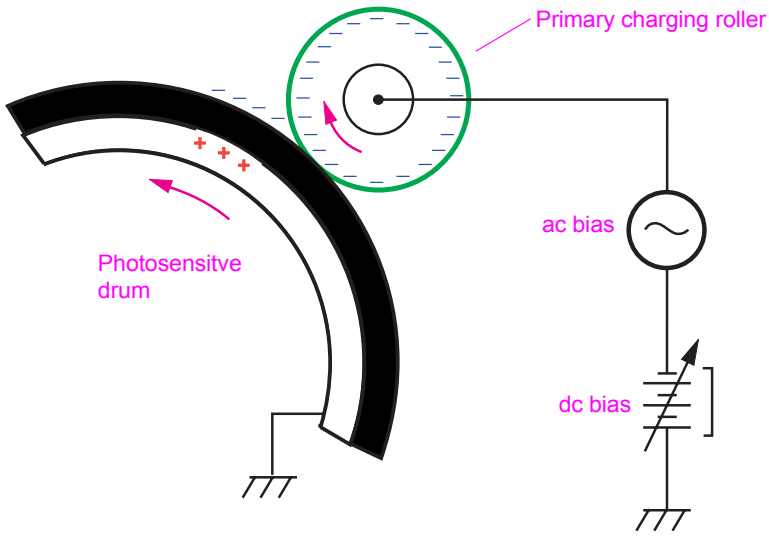


Figure 50. **Primary charging (step 1)**

Step 2

1 A laser beam strikes the charged surface of the OPC to write a latent image.

2 Areas that are exposed to the laser strikes are neutralized and attract toner.

Note This procedure occurs in the same way for all four image drums.

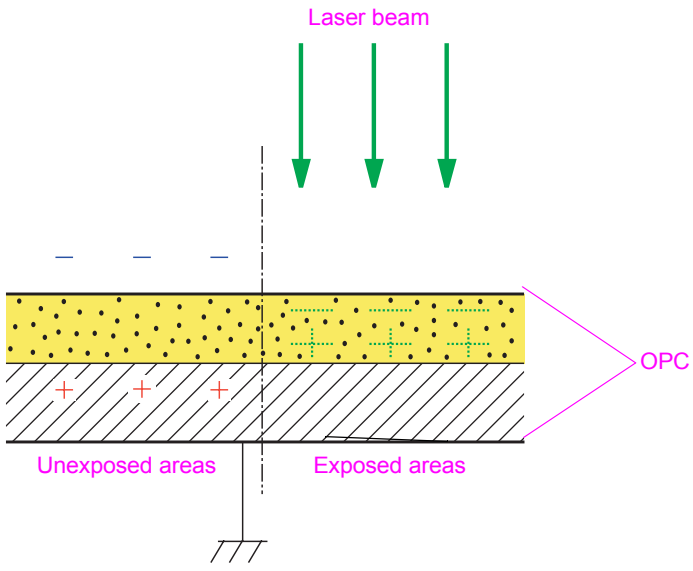


Figure 51. **Laser writing latent image (step 2)**

Step 3

1. The appropriate amount of toner is fed from the print cartridge into the image drum.
2. When in the image drum, the non-magnetic toner is mixed with the magnetic carrier.
3. The mixing process of the two augers applies a negative charge to the toner particles.
4. The magnet inside the developing cylinder and the applied biases attract the magnetic carrier, creating brush-like fibers of magnetic carrier.
5. The developing cylinder rotates the carrier brushes past a doctor blade, which trims the brushes to an even and specified height.
6. Toner is picked up, and then brushed onto the OPC as the developing cylinder rotates.
7. Toner transfers from the brushes to the laser-discharged OPC surfaces.
8. As the toner is used, the automatic toner replenishment (ATR) sensor in the P cartridge detects the toner-to-carrier ratio. The T-cartridge augers turn to feed the amount of toner into the P cartridge.

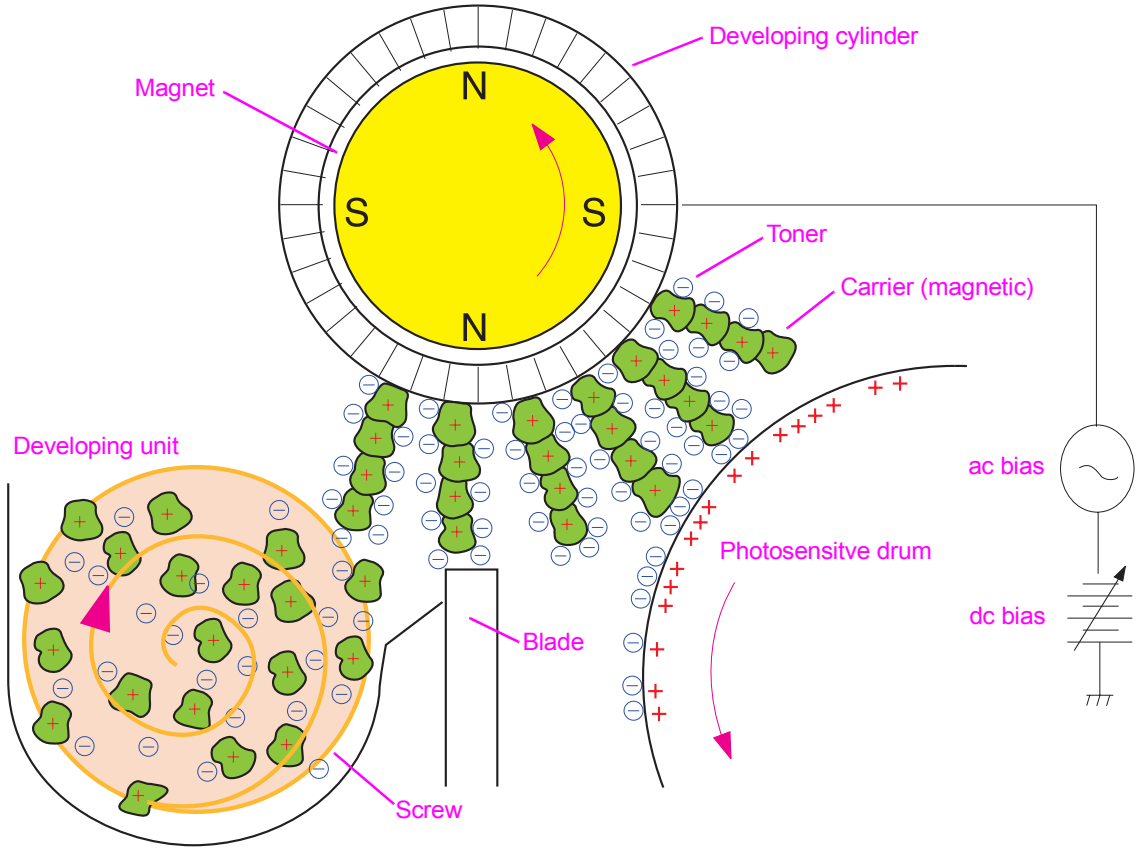


Figure 52. **Developing (step 3)**

Step 4

1. The ITB starts without bias, and then positive bias is applied to the primary transfer roller (T1).
2. Negatively-charged toner on the image drum is attracted to the positive charge on the primary transfer roller and to the ITB surface.
3. After T1 transfer, a static charge eliminator drops the positive charge on the ITB to keep from transferring toner too early at the next T1 station.

Note This procedure is repeated for each primary color in the order of YMCK, and creates piles of four toner colors on the belt.

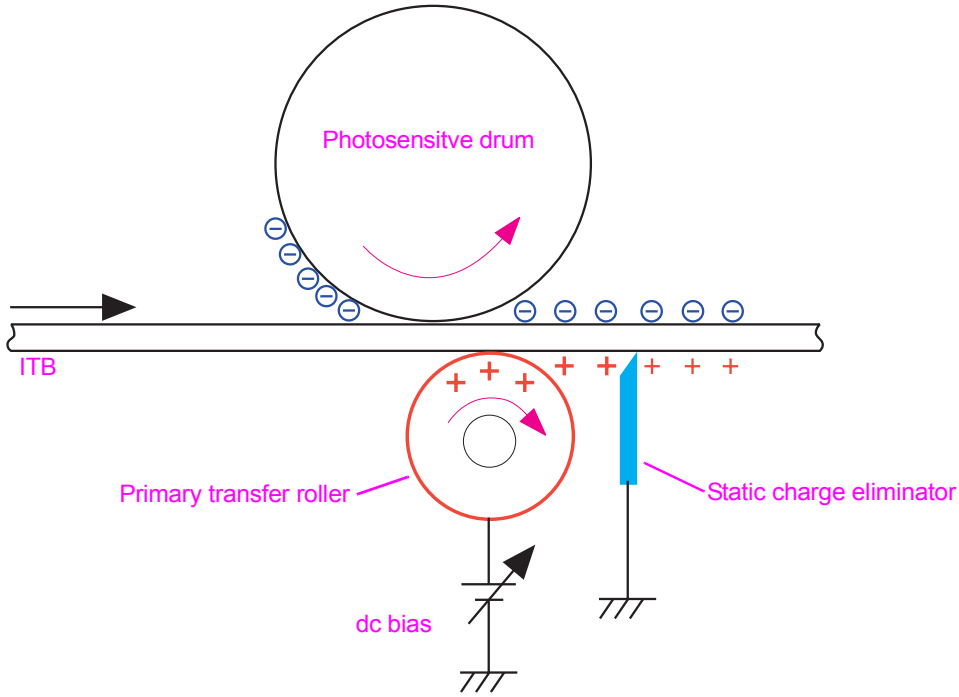


Figure 53. Primary transfer (step 4)

Step 5

1 The post charger applies an increased negative charge and a more even charge to the toner piles.

Note This procedure is similar to what happens in the HP color LaserJet 8550.

The post charger is not used for all printed pages.

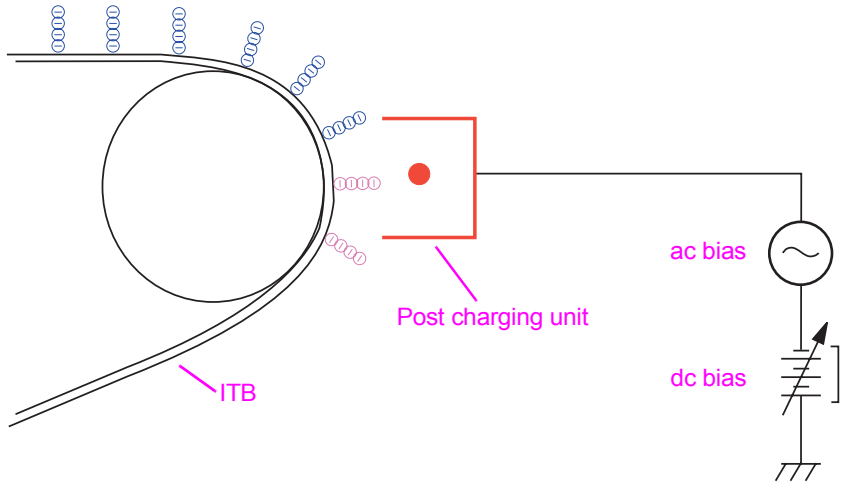


Figure 54. Post charging (step 5)

Step 6

1 Media is fed between a nip that is formed by the ITB, secondary transfer backing roller (T2 backing roller), and the image transfer roller (T2 roller).

2 Positive bias is applied to the T2 roller. This attracts the negatively charged toner piles from the ITB to the media.

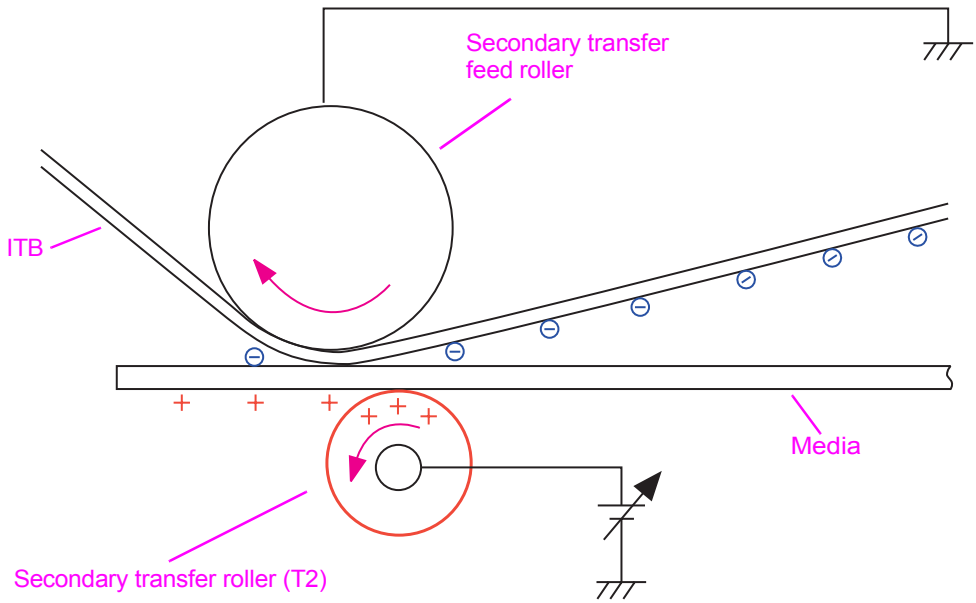


Figure 55. Secondary transfer (step 6)

Step 7

1 The media is separated from the ITB.

2 The static charge eliminator stabilizes the toner on the media before the fusing phase.

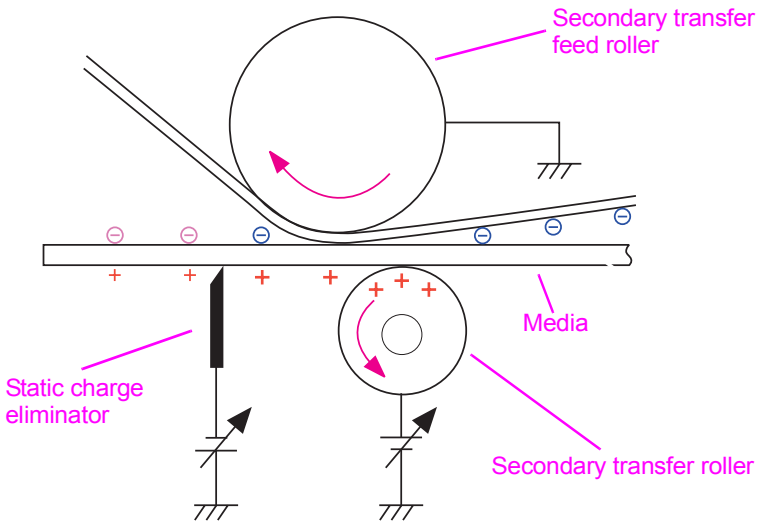


Figure 56. **Separation (step 7)**

Step 8

1 Heat and pressure are applied to melt toner to the media.

Note The two fuser rollers are rubber-coated to handle thick media and for improved gloss levels.

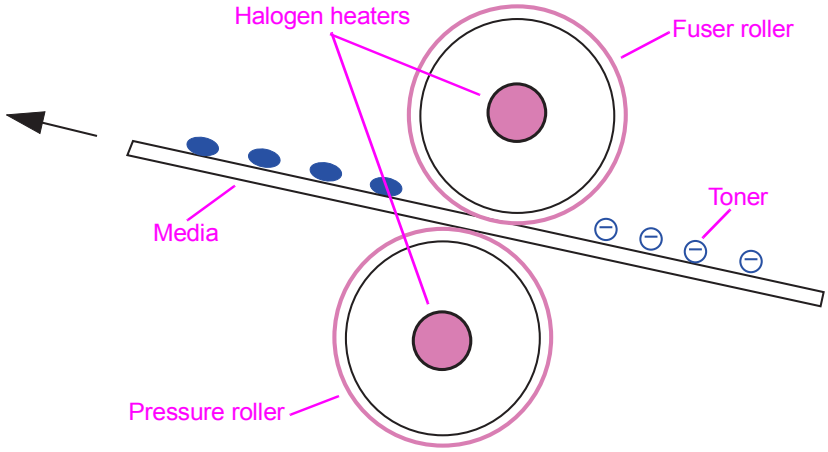


Figure 57. **Fusing (step 8)**

Step 9

1 The cleaning blade rides on the ITB and scrapes off any residual toner remaining from the secondary transfer roller.

2 Falling toner is directed to an auger by the waste toner collection sheet.

3 The auger moves the toner into the toner collection bottle.

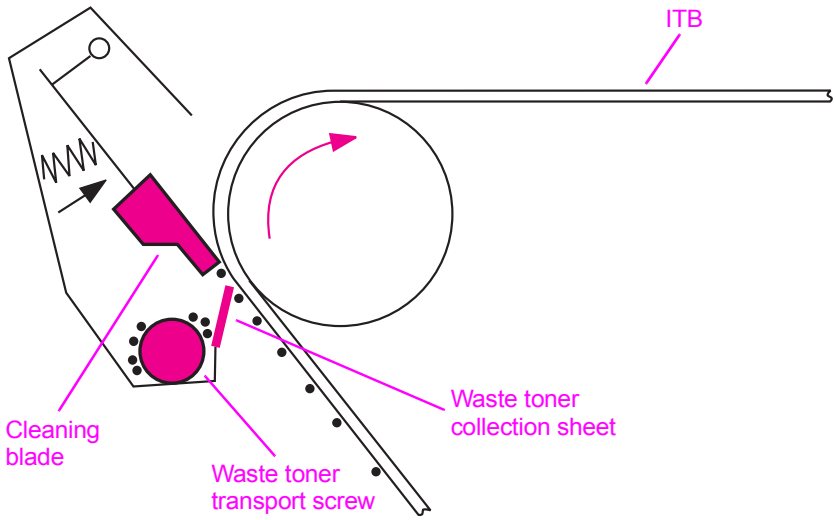


Figure 58. **ITB cleaning (step 9)**

Step 10

1 To clean residual toner from the OPC, two brushes apply charge to the residual toner. The first charge is positive, and the second charge is negative.

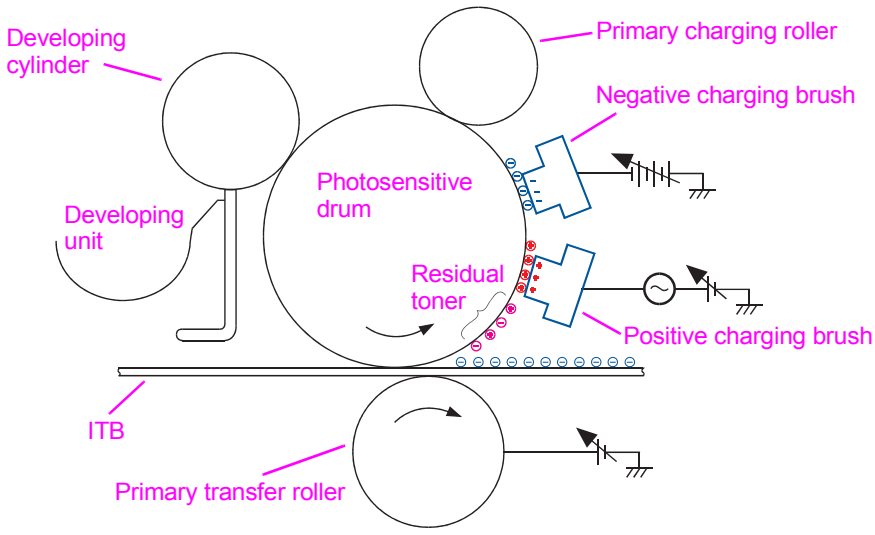


Figure 59. **OPC cleaning**

Step 11

1 Negatively charged toner passes the charging roller where the carrier brushes pick it off of the OPC, and then it is returned to be used again.

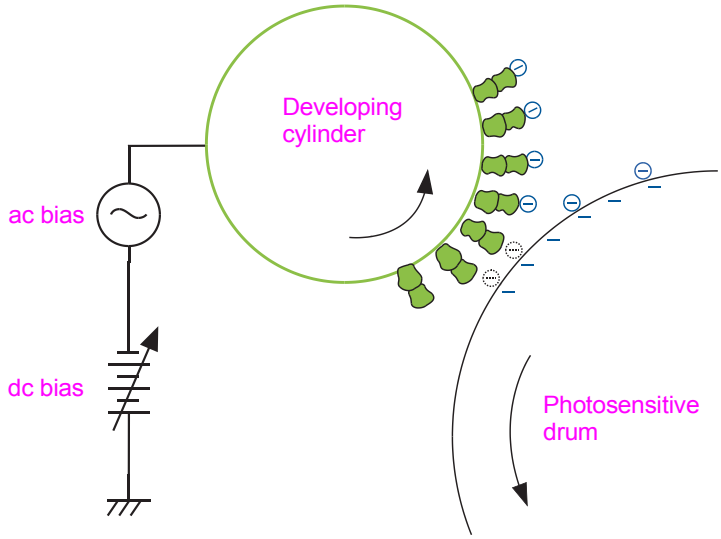


Figure 60. OPC cleaning toner collection (step 11)

Step 12

1 During the OPC cleaning, some positively charged toner that was not charged negatively in step 10 adheres to the primary charging roller (these particles adhere to the primary charging roller).

2 When the particles go around the primary charging roller, the particles are rubbed by the primary charging cleaner and receive a negative charge.

3 The toner particles transfer back to the OPC surface, and are lifted off of the OPC by the carrier brushes (such as step 11).

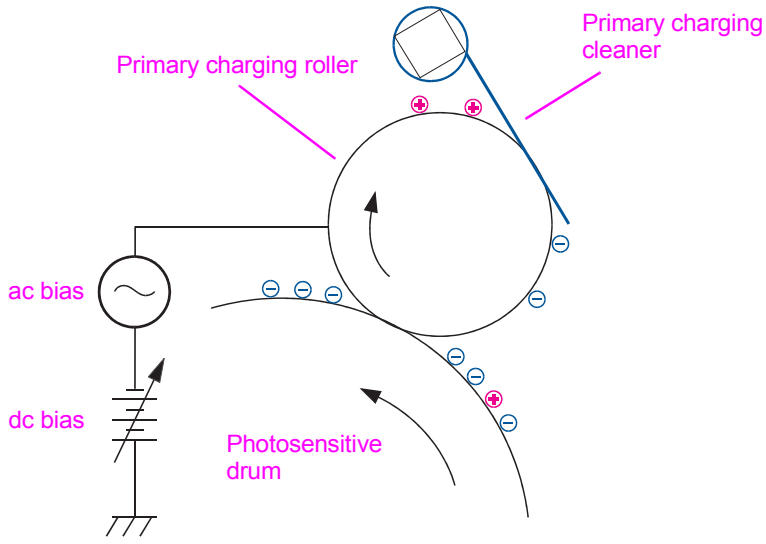


Figure 61. OPC cleaning toner not charged by brushes (step 12)

Image stabilization control

The image stabilization control reduces image density variations (for example, those that result from deteriorations of the photosensitive drum or carrier). Three types of image stabilization control are available:

- environment calibration control
- image-density calibration control (D-max)
- image halftone calibration control (D-half)

Environment calibration control

The DC controller determines the printer environment based on an interior temperature and humidity signal. The DC controller performs the following actions to obtain an optimal image:

- various high-voltage DC bias controls
- ATR sensor control voltage calibration

The environment calibration control is performed at the following times:

- when the printer is turned on
- after replacing the P-crg
- during extreme environmental changes

Image-density-detection control

The image-density-detection control occurs when the density sensor strikes light at the four-color image-density patterns on the ITB, and measures pattern density from the reflected light intensity.

The DC controller controls the density sensor. The sensor is located above the ITB and consists of a LED and a PD.

When the image density is measured, the DC controller emits light from the density sensor. The light strikes the detection patterns. The light receiver PD reads light that is reflected off of the detection patterns and returns it to the DC controller as the image-density detection signal. The two types of image-density control include:

- image-density-calibration control (D-max)
- image-halftone-calibration control (D-half)

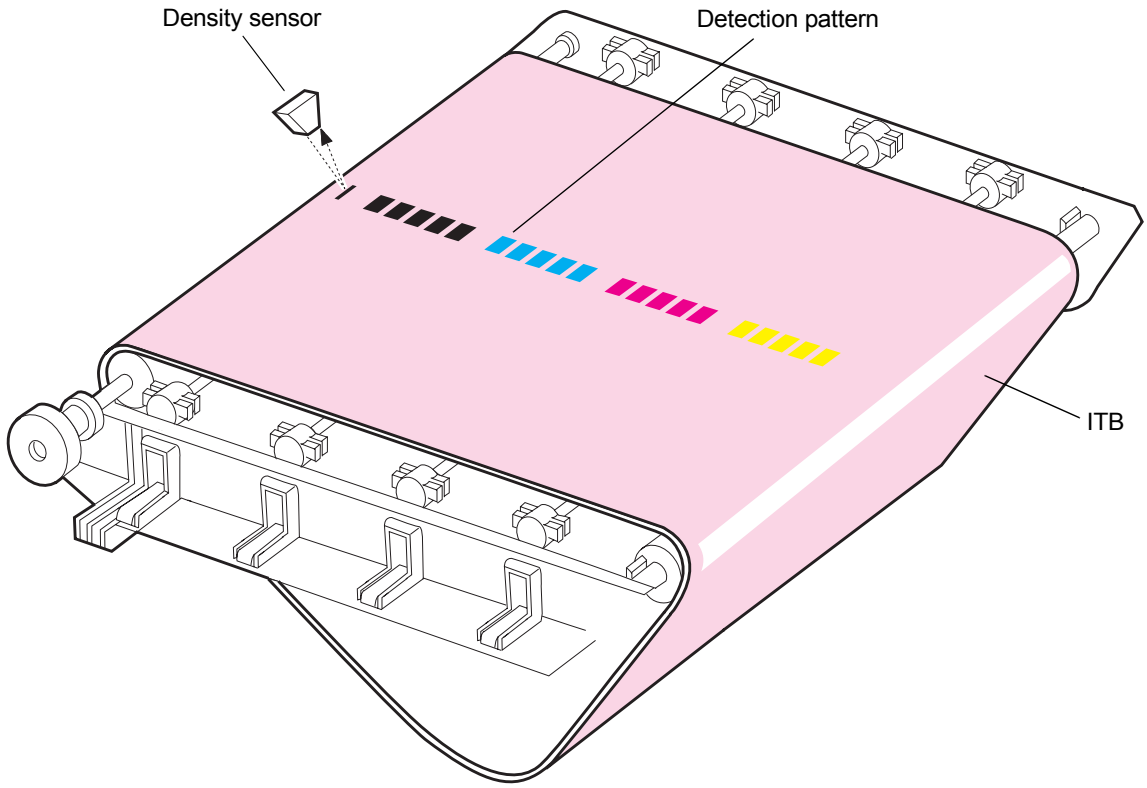


Figure 62. **Image-density-detection control**

Image-density-calibration control

The image-density-calibration control (D-max) stabilizes output-image density. The DC controller performs a D-max as follows when specified conditions are met:

- forms density patterns for colors on the ITB while varying the primary charging bias and the developing bias
- measures the density of the patterns by using the density sensor
- controls the primary charging bias and the developing bias to adjust the four measured density patterns to a correct density

Image density control is performed at the following times:

- the printer is turned on
- the printer is returning from sleep mode
- the printer experienced extreme environmental changes
- the printer is on for a long time
- a specified number of pages have been printed

Image-halftone-calibration control

The image-halftone-calibration control (D-half) occurs when the formatter performs a halftone calibration that is based on the results of the DC controller halftone density measurement. After the D-max is completed, the DC controller and the formatter perform the D-half as follows:

1. The DC controller forms density detection patterns on the photosensitive drum for each color. Optimum primary charging bias and developing bias are determined in the D-max, based on the image data sent from the formatter.
2. The DC controller measures density detection patterns by using the density sensor, and sends the data to the formatter.
3. The formatter performs the halftone calibration, based on the density data, to obtain an ideal halftone image.

Paper-path system

Note The HP LaserJet 9500mfp does not have a face-up delivery tray. The face-up delivery rollers and sensors described in this section will not be found on the MFP.

The paper-path system feeds print media by using different feed rollers. This printer includes three standard paper pickup sources (tray 1, tray 2, and tray 3), and two standard delivery sources (face-up and face-down bins). A tray 4 (2,000-sheet feeder) and optional finishing devices are also available.

The DC controller drives the feed rollers and ITB by controlling four motors, three clutches, and two solenoids. The 10 paper sensors on the paper path detect the reach or the passage of the sheet of media. If the sheet does not reach or pass each sensor within a specified amount of time, the main CPU on the DC controller determines a jam and notifies the formatter.

The paper sensors also detect media in the cassettes and tray 1. The paper-width-detection switch detects the media size in the cassettes, and the paper-width-detection PCA detects the media size in tray 1.

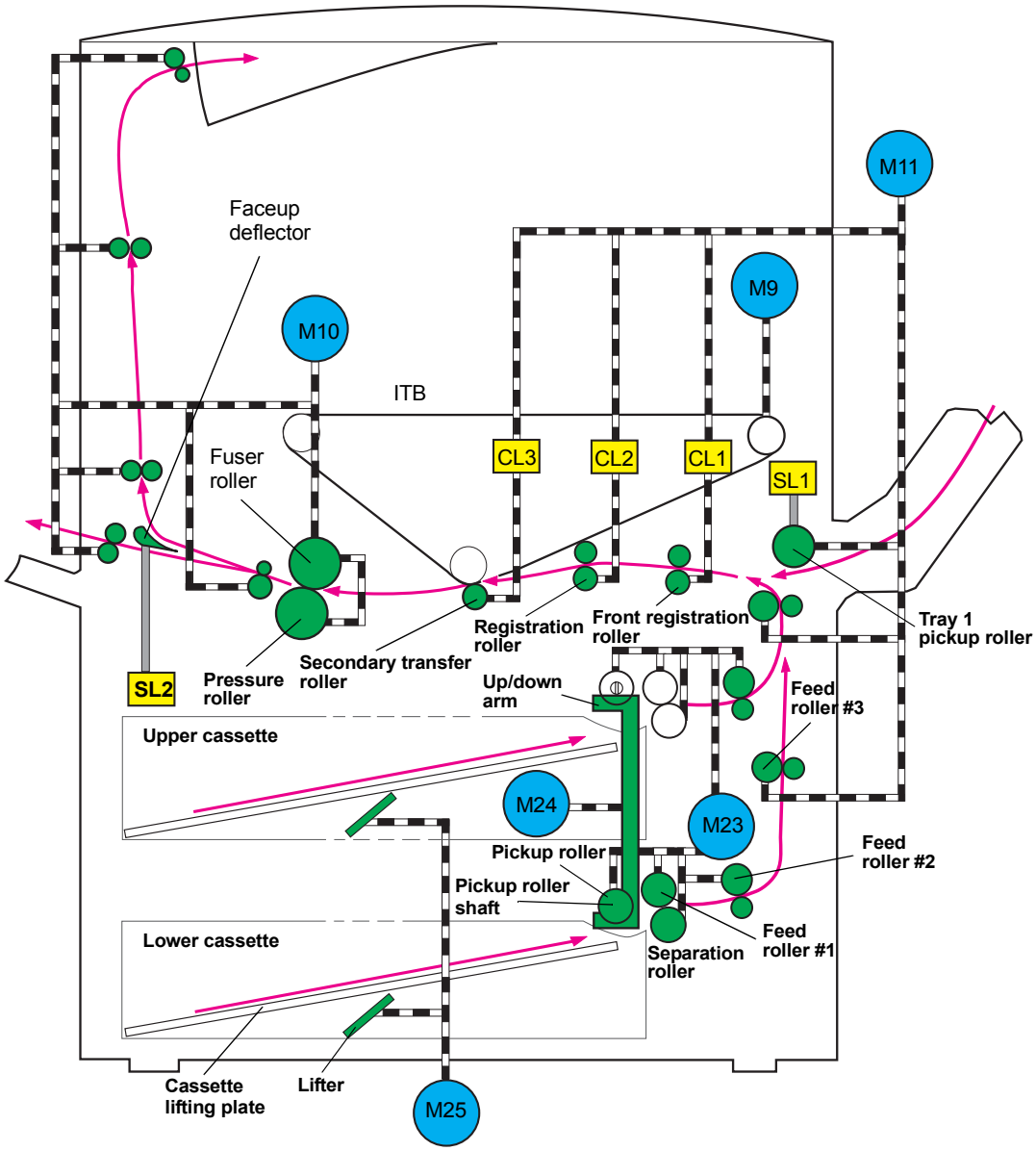


Figure 63. Paper-path system motors, clutches, and solenoids

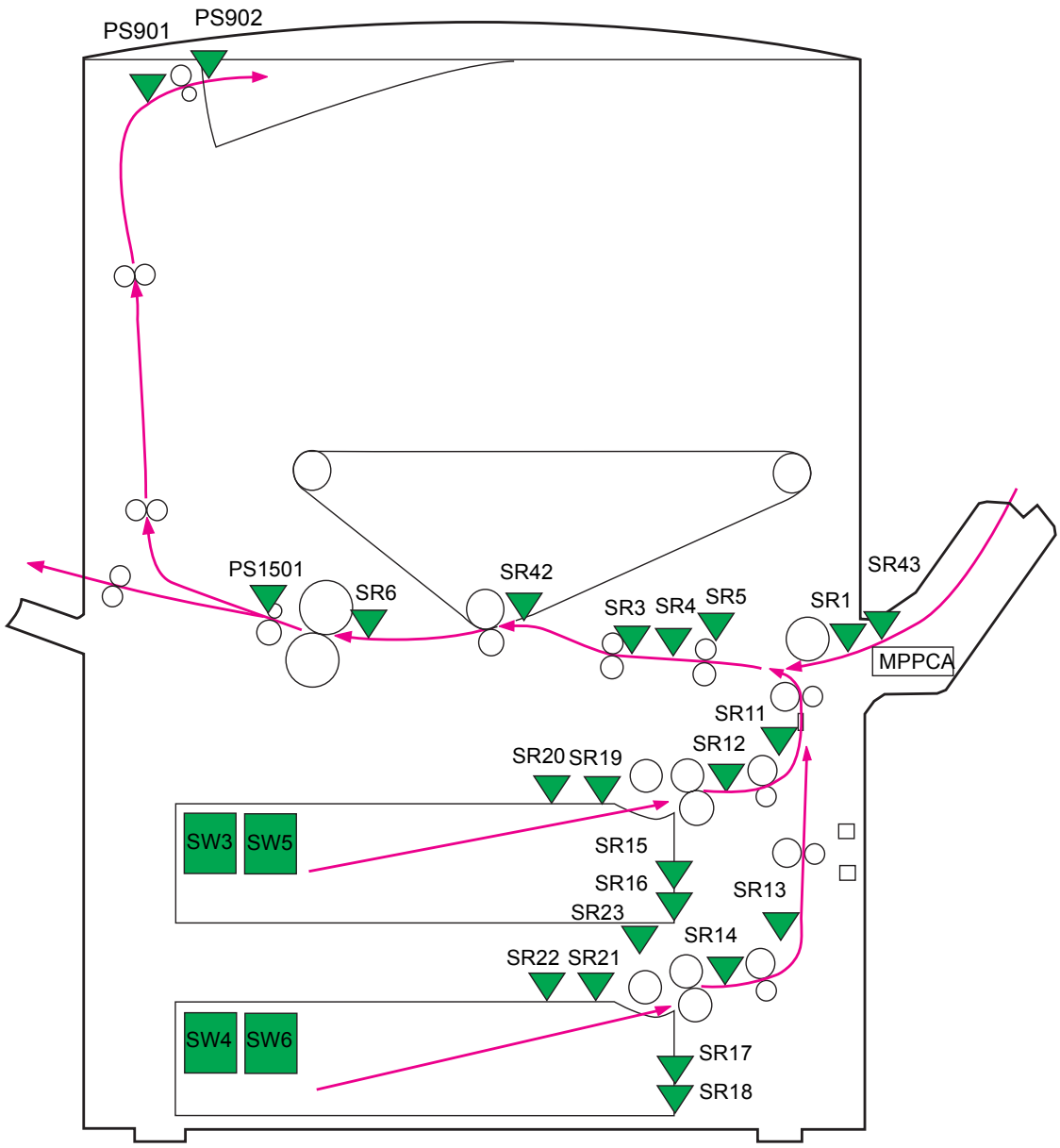


Figure 64. **Paper-path system switches, sensors, and PCA**

Note For more information about the paper-path system, see "Switches, solenoids, clutches, and sensors" on page 154.

Pickup/feed unit

The pickup/feed unit feeds the sheets of media individually from the tray into the printer, and transports each sheet to the fuser. The main mechanisms used in tray pickup and paper feeding are cassette pickup, tray 1 paper pickup, and paper feeding.

Cassette paper size detection/cassette paper detection

This printer utilizes the two universal cassettes: upper cassette and lower cassette. Each cassette determines media size by detecting the length and width of media.

Cassette paper size detection

The DC controller determines media size as standard size when the custom-size lever on the side of the cassette is up. When the lever is down, it is determined as custom size.

- **Standard-sized media:** Media size in the cassette is detected by the paper-width-detection switch and paper-length-detection switch located in the cassette. The DC controller detects statuses of these switches and determines media size. If standard-sized media is not present, the DC controller notifies an incorrect paper size to the formatter.
- **Custom-sized paper:** The DC controller detects the width and length of custom-sized media by utilizing the paper-width-detection switches and registration paper sensor based on the media size specified by the formatter. The length is detected by monitoring the registration paper sensor during a print operation. If the media size differs from the one specified by the formatter, the DC controller notifies an incorrect media size to the formatter after completing a print operation.

Cassette detection

The cassette detection is performed with the paper-width-detection switch. If the cassette is not installed in the printer, all of these switches become “H” and the DC controller determines a cassette absence.

Media size	**Paper-length-detection switches (SW3 and SW4)**			**Paper-width-detection switches (SW5 and SW6)**		
	SIZE 1	SIZE2	SIZE3	WSIZE 1	WSIZE2	WSIZE3
A4 (landscape)	H	H	H	L	H	H
LTR (landscape)	H	H	H	L	L	H
A5 (landscape)	H	H	H	H	L	L
B5 (portrait)	L	L	H	H	L	L
Executive (portrait)	H	L	H	H	L	L
LTR (portrait)	H	L	L	H	L	L
A4 (portrait)	H	H	L	H	L	L
A3	L	H	L	L	L	L
Ledger	L	H	L	L	L	H
B4	L	H	L	H	L	H
Legal	L	H	L	H	L	L
Custom size	L	L	L	-	-	-
No cassette	-	-	-	H	H	H

Cassette pickup

When printing from tray 2 or tray 3, sheets of media are fed into the printer individually. The cassette pickup sequence includes the following:

1. When the printer is turned on, the cassette lifting plate shifts up to the pickup position.
2. The DC controller rotates the pickup roller up/down motor (M23) when the formatter inputs a print command.
3. The M23 rotates clockwise to lower the up/down arm. This allows the pickup roller shaft to descend until it reaches the surface of the media stack.
4. The pickup motor (M24) drives the pickup roller, feed roller, and separation roller so that each rotates.

Note When the rollers rotate clockwise, the M24 drives the pickup roller, feed roller, and separation roller for tray 2 and performs a pickup operation from tray 2. When the rollers rotate counterclockwise, the M24 drives the pickup roller, feed roller, and separation roller for tray 3 and performs a pickup operation from tray 3.

5. The sheets in tray 2 or tray 3 are fed into the printer individually as the pickup roller, feed roller, and separation roller rotate.
6. After a pickup operation is completed, the M24 stops as the M23 begins rotating counterclockwise. The M23 lifts the pickup roller to the pickup position and stops rotating.

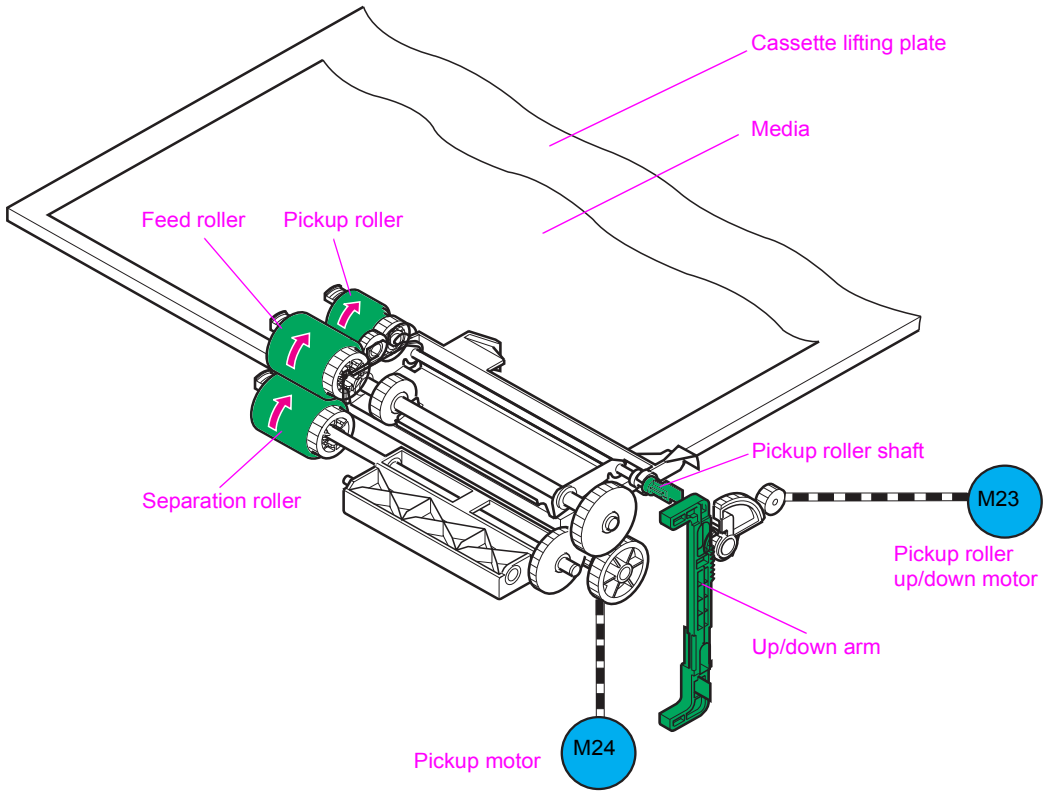


Figure 65. Cassette pickup

Lifting-up operation

The lifting-up operation keeps the surface of the print media stack at a specified position. This stabilizes the pickup operation for any print-media size that the tray holds.

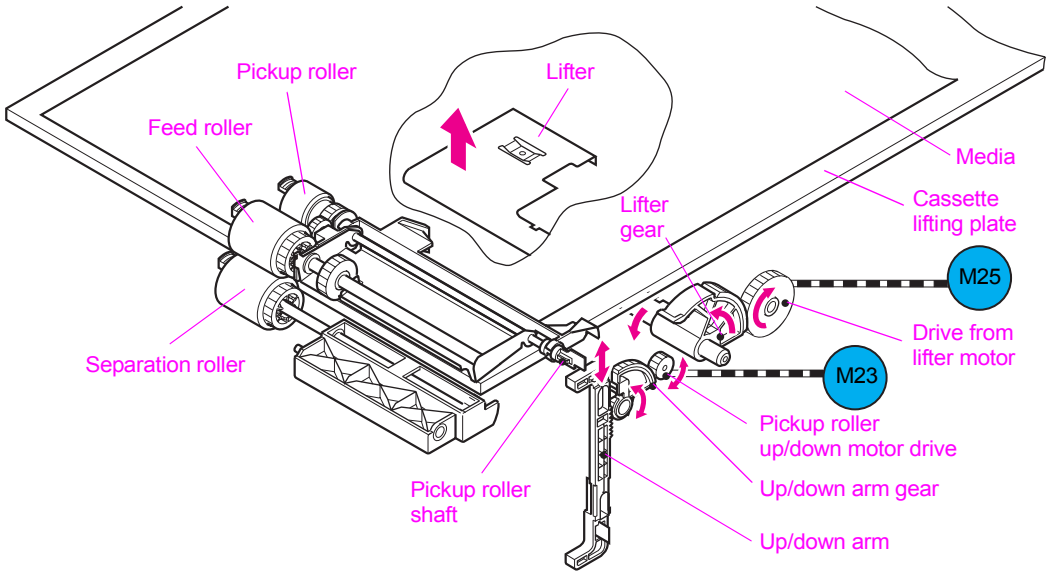


Figure 66. **Lifting-up operation**

Tray 1 paper pickup

When printing from tray 1, pages in the tray are fed individually. The tray 1 pickup operation includes the following steps:

1. The tray 1 paper sensor (PS1301) detects media in tray 1.
2. After a print command is input from the formatter, the DC controller rotates the registration motor (M11).
3. When the DC controller signals the tray 1 pickup solenoid (SL1) to move, the lifting plate (which is now loaded with media) moves up and the media contacts the tray 1 pickup roller.
4. The rotating pickup roller picks up a single page.
5. The single page feeds into the printer after the separation pad clears any multifeed pages.

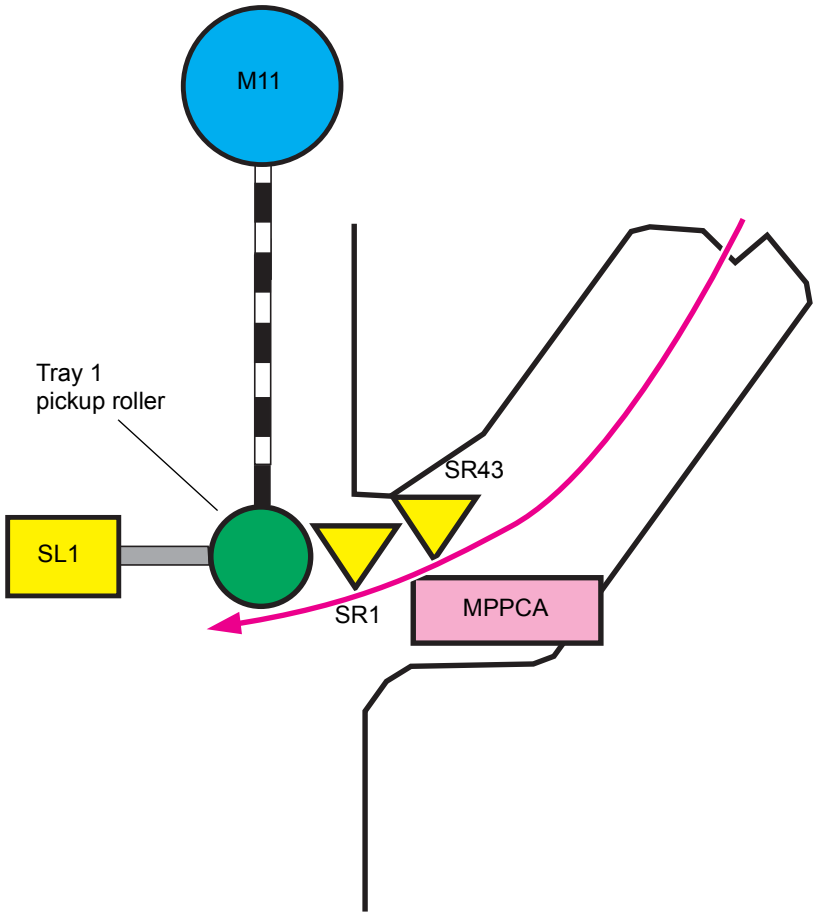


Figure 67. **Tray 1 paper pickup**

Tray 1 paper-width detection

The DC controller detects the paper width by using the tray 1 paper width-detection PCA (MPPCA) in tray 1. The MPPCA has a variable resistor, and the document width is detected by variations in the variable resistor that is interlocked to the document size guide.

If the detected width differs from the width that is specified by the formatter, the DC controller determines a paper-size discrepancy, indicates this to the formatter, and stops the printer.

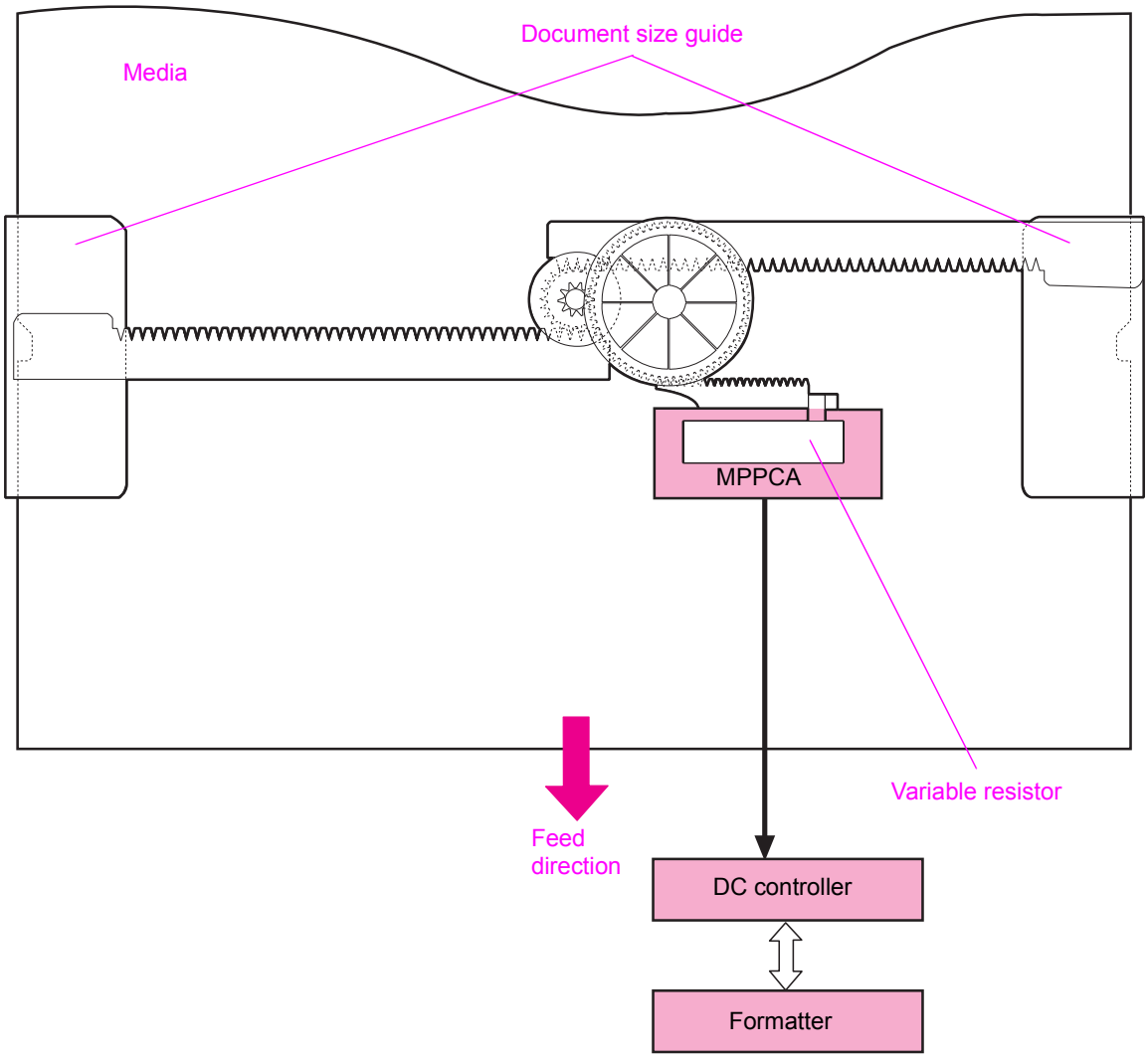


Figure 68. **Tray 1 paper-width detection**

Tray 1 last-paper detection

This printer can detect if the last sheet of paper in the tray is the next to be fed.

The feed distance between the tray 1 paper sensor and the registration roller is short. If the last page is fed during continuous printing, the DC controller begins to write the next image before it detects that tray 1 is out of paper. Because of this, the tray 1 last-paper detection detects that the tray is out of paper before image writing to avoid soiling the photosensitive drum and the ITB. This detection is performed with the last paper sensor (SR43) monitoring rotations of the last-paper-detection roller located on tray 1.

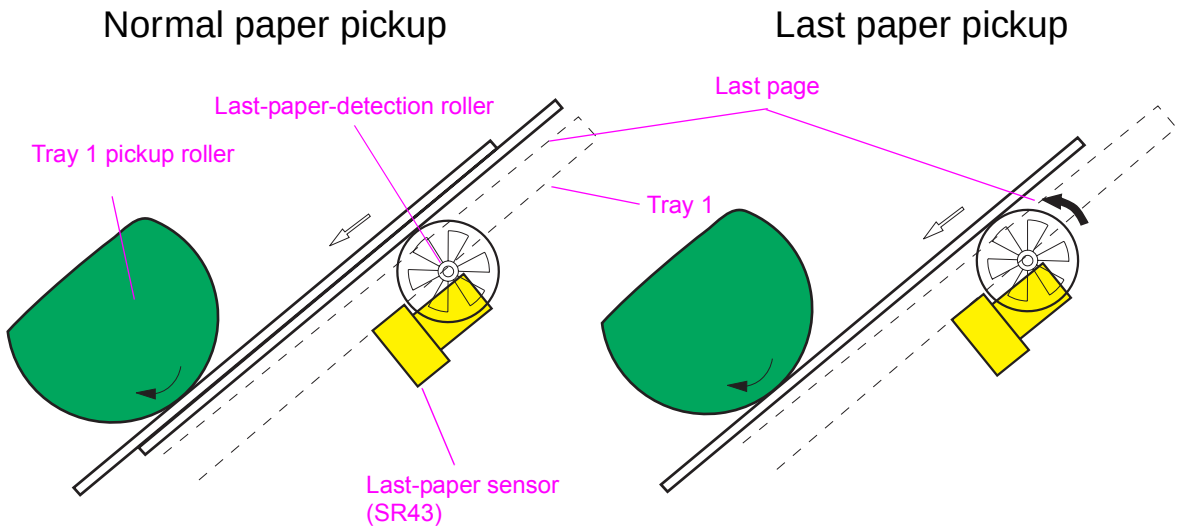


Figure 69. **Tray 1 last-paper detection**

Paper pickup and feed

The diagram indicates the paper path from the internal trays to the registration, secondary transfer, and fuser. It also indicates the drive relationships between the clutches and the paper path motors.

Note The preregistration motor does *not* provide any registration function.

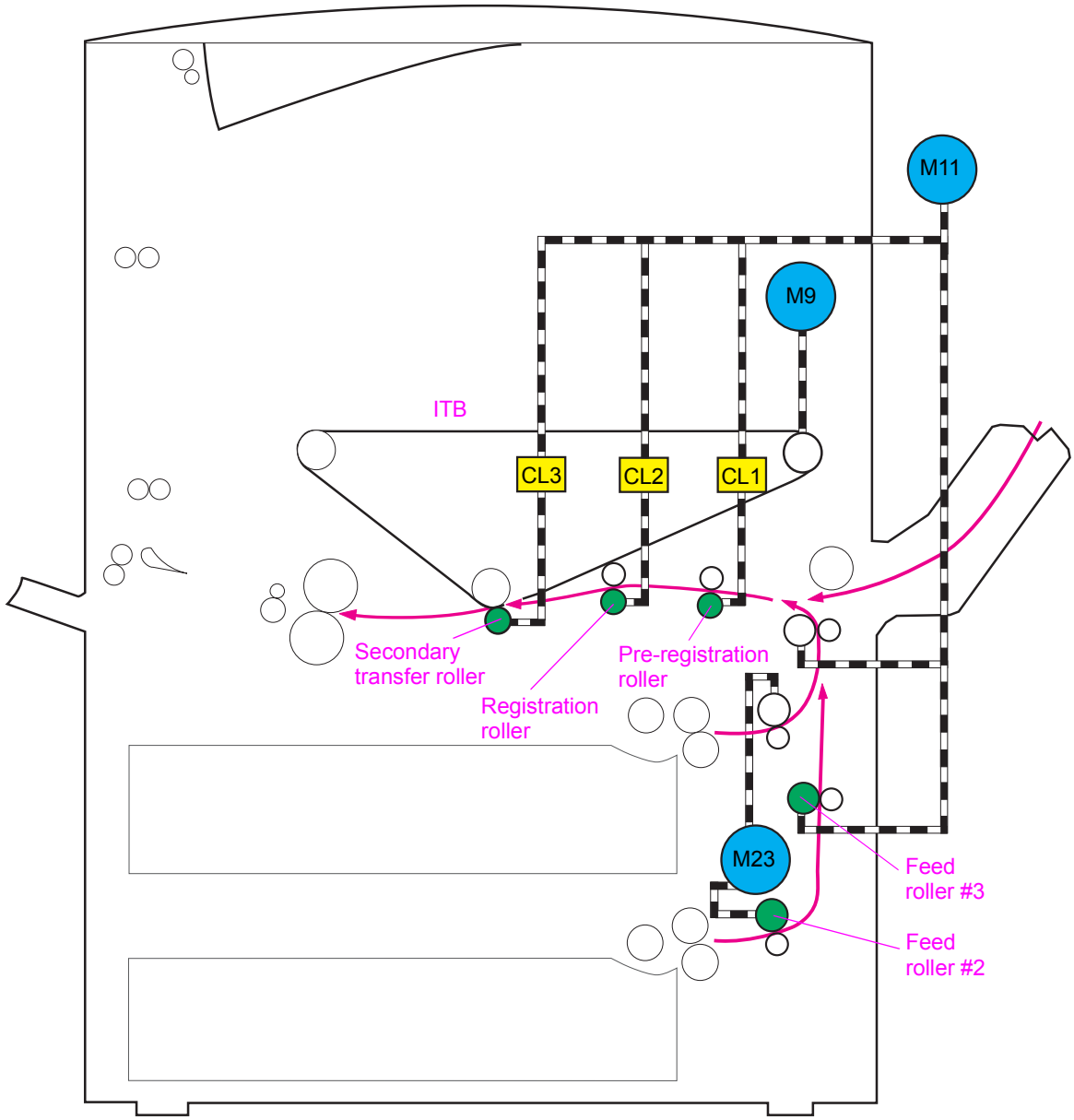


Figure 70. **Tray 1 paper feed**

Jam detection

The following paper sensors detect the presence of media and whether it is fed correctly:

- Tray 2 feed sensor A/B (SR11; SR12)
- Tray 3 feed sensor A/B (SR13;SR14)
- Registration paper sensor (SR3)
- T2 input sensor (SR42)
- Fuser input sensor (SR6)
- Fuser output sensor (PS1501)
- Face-down bin output sensor (PS901)
- Duplexer media reverse sensor (SR33)
- Duplex media path sensor (SR31)
- Duplexer media refeed sensor (SR30)
- Multifeed sensor (SR5)

The main CPU in the DC controller determines if a paper jam has occurred by using the timing stored in the main CPU to check for the presence of media at the sensor. If the main CPU identifies a paper jam, the main CPU stops the print operation and communicates a jam to the formatter.

The printer detects jams according to the following conditions:

- **Pickup delay jam 1.** Media does not reach the SR11 or the SR13 within a specified period after paper pickup begins.
- **Pickup delay jam 2.** Media does not reach the SR3 within a specified period after paper pickup begins.
- **ITB wrapping jam.** Media does not reach the SR6 within a specified period after paper pickup begins.
- **Fuser delivery delay jam.** Media does not reach the PS1501 within a specified period after paper pickup begins.
- **Fuser delivery stationary jam.** Media does not clear the PS1501 within a specified period after it reaches the PS1501.
- **Face-down delivery delay jam.** The leading edge of the media does not reach the face-down bin paper delivery sensor (PS901) within a specified period after paper pickup begins.
- **Face-down delivery stationary jam.** The leading edge of the media does not clear the PS901 within a specified time after it has reached the PS901.
- **Door open jam.** Any of the following sensors detect media upon opening or closing the door:
  - Tray 2 feed sensor A (SR11)
  - Tray 2 feed sensor B (SR12)
  - Tray 3 feed sensor A (SR13)
  - Tray 3 feed sensor B (SR14)
  - Registration paper sensor (SR3)
  - Fuser delivery paper sensor (PS1501)
  - Face-down bin paper delivery sensor (PS901)

- **Residual-paper jam.** Any of the following conditions determine a residual-paper jam if the listed sensors detect the media:
  - The printer is turned on.
  - The printer is returning from SLEEP mode.
  - A door is closed after a jam occurs.
    - Tray 2 feed sensor A (SR11)
    - Tray 3 feed sensor A (SR13)
    - Front fusing paper sensor (SR6)
    - Front secondary transfer paper sensor (SR42)
    - Fuser delivery paper sensor (PS1501)
- **Paper undeliverable jam.** The SR3 detects that the media that is longer than what the formatter specified.
- **Fuser unit wrapping jam.** Media reaches the PS1501 within a specified period after the paper pickup, and the PS1501 detects paper-out within the minimum specified period after detecting the media.

Tray 4 for the HP LaserJet 9500 Series printer

Note The MFP uses a 2,000-sheet side-input feeder as tray 4. For information about the MFP feeder, see the *2,000-Sheet Side-input Tray Service Manual* (PN Q1891-90901).

Tray 4 is a 2000-sheet feeder that picks up and feeds media into the printer. It is available only for the HP color LaserJet 9500hdn printer.

Tray 4 driver PCB

A driver PCB in the tray holds a 16-bit microcomputer (IC1) that controls its operational sequence and serial communications with the formatter. The driver PCB drives the motors and clutch according to commands sent from the formatter.

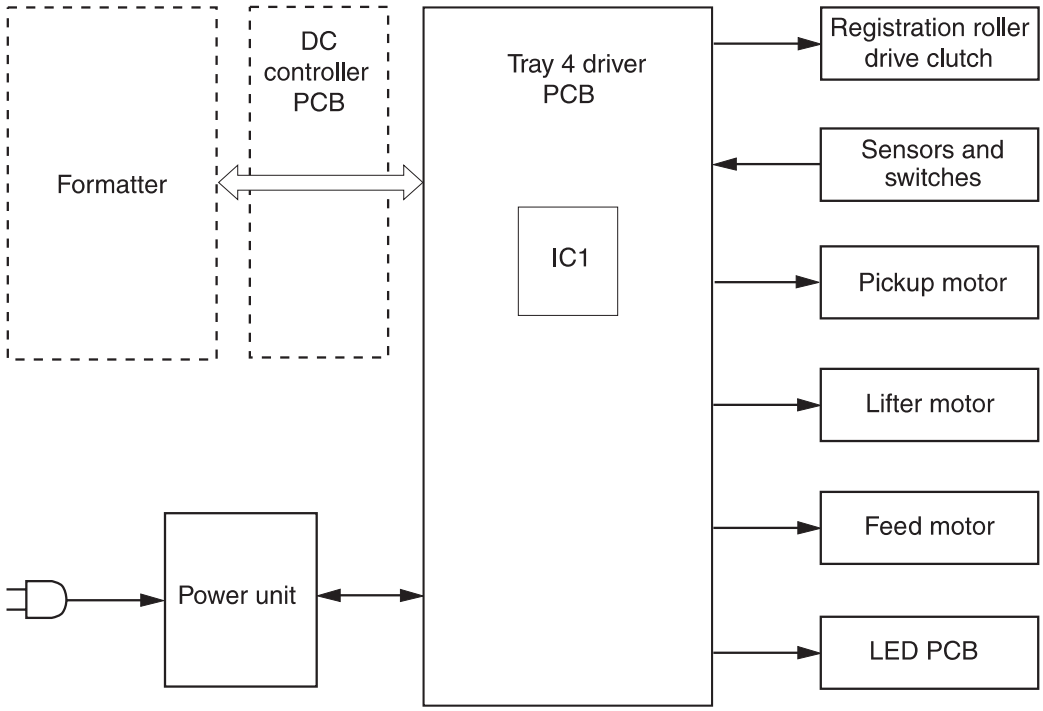


Figure 71. **Tray 4 block diagram (LJ 9500hdn)**

Power supply

Tray 4 employs a remote switch method for the power supply unit. The formatter sends a power-on signal to the power supply unit through the driver PCB. When the signal is received, the power supply unit supplies +24VDC and +5VDC to the driver PCB. +24V is then supplied to the lifter, feed, and pickup motors to drive them. The +5V is supplied to the sensors and also to the ICs on the driver PCB.

The power unit utilizes a stand-alone switch so that tray 4 can be powered on without turning on the printer. This switch is used for stand-alone diagnostics. See "Tray 4 standalone running test (LJ 9500)" in chapter 7.

Sequence of operation

When tray 4 is loaded with paper and closed, the paper deck starts lifting the paper to the pickup position. When the formatter instructs tray 4 to deliver paper, the drive rollers pick up a sheet of paper and feed it to the registration assembly. The tray 4 registration assembly adjusts the skew and transports the paper to the printer.

Pickup and feed

The formatter sends a signal to the driver PCB to start driving the pickup and feed motors. Rotated by the rollers, the pickup roller picks up a sheet of paper, the separation roller removes any excessive sheets, and the feed roller transports the paper to the registration roller unit.

After the paper enters the registration roller unit, the registration roller corrects the paper skew and the second feed roller feeds the paper to the printer.

When the paper reaches the merge-point in the printer, the driver PCB checks for a merge-point permission command sent from the formatter. If the signal is detected, tray 4 will continue feeding paper to the printer. If the signal is not detected, tray 4 stops feeding paper until the signal is received.

Media level and size detection

The paper level is detected by the paper level sensors (PS21 to 23) on the paper level sensor PCB. The combination of these sensors determines the level of the print paper loaded in the tray.

The paper size is detected by the paper size detection switches (SW11 to 15) on the paper size detection switch PCB. The combination of these switches determines the paper size.

The tray sends the size and level information to the printer formatter.

Jam detection

The tray determines a jam by monitoring the presence of paper in the sensor areas at specific times stored in the CPU. If the CPU determines a jam under the following conditions, the tray stops feeding operations and notifies the formatter.

- **Residual jam**. The registration paper sensor (PS11) or jam sensor (PS103) detects paper during the warm-up period.
- **Pickup delay jam**. The between page sensor (PS12) does not detect paper after receiving a print command or the PS12 sensor detects paper, but the registration paper sensor (PS11) does not.
- **Pickup stationary jam**. The edge does not clear the registration paper sensor (PS11) after the between page sensor (PS12) detects the trailing edge of the paper.
- **Feed delay jam**. The jam sensor (PS103) does not detect paper after the start of the registration rollers.
- **Feed stationary jam**. The trailing edge of the paper does not pass through the jam sensor (PS103) after the registration rollers are turned off.

6 Removal and replacement

Chapter contents

Introduction 197
- Removal and replacement strategy 197
- General cautions during removal and replacement 197
- Electrostatic discharge 198
- Required tools 198
- Flat flexible cable caution 199
- DC controller and cable/connector damage areas 200
- Potential damage areas while servicing 200

Consumables 201
- Toner cartridges (print cartridges) 201
- Process cartridges (image drums) 203
- Waste toner bottle (toner collection bottle) 205
- Transfer cleaner (cleaning blade) 206
- Transfer roller 207

External covers 208
- Control panel overlay 208
- Control panel 209
- Right upper cover 210
- Left upper cover 212
- Top right cover 213
- Top left cover 215
- Front doors 217
- Intermediate transfer belt (ITB) door 220
- Left back cover 224
- Left lower cover 225
- Right back cover 227
- Back cover 228

Major assemblies 229
- Process cartridge (image drum) door 229
- Laser/scanner assembly 231
- Printing a laser/scanner adjustment page 233
- Reading a laser/scanner adjustment page 235
- Adjusting the laser/scanner assemblies 237
- Delivery unit 249
- Delivery unit sensor 253
- Vertical feed unit 254
- Duplexer 258
- Fuser 259
- Intermediate transfer belt (ITB) 260
- Density and registration sensor assembly 262
- Right back fan 265
- Right front fan 266
- Secondary transfer assembly (T2) 267

Pickup unit 272
Temperature and humidity sensor 280
High-voltage power supply 281
Low-voltage power supply 282
Registration assembly 283
Delivery fan 290
Fuser fan 291
P-crg (image drum) drive assembly 292
T-crg (print cartridge) drive assembly 296
Fuser motor 298
Fuser drive assembly 299
DC controller 300
Formatter PCB 302
Formatter cage 304
High-voltage contact 306
Post charger power supply 307
Tray 1 pickup roller 309
Tray 1 separation pad 310
Left door switch 311
Right door switch (front and right side doors) 312
ITB sensor 313
Upper left door sensor 314
Fuser front paper sensor 315
Fuser sensor PCA 316
2,000-sheet tray 4 for the HP LaserJet 9500hdn printer 317
Left side cover 318
Right side cover 319
Back covers 320
Tray 4 321
Rollers (pickup, feed, and separation) 322
Registration assembly 323
Drive motor 324
Drive assembly 324
Controller board 325
Paper-size detection switch PCB 326
Power supply 327
Pickup assembly 328
Paper connecting unit 329

Introduction

WARNING! When the power is turned off by using the power switch on the HP LaserJet 9500mfp, the AC voltage to the Scanner/ADF unit is still present. To avoid injury, you must unplug the power cord from the wall receptacle before servicing the MFP.

Removal and replacement strategy

This chapter documents the removal and replacement of field replaceable units (FRUs) for the printer models and for the print engine system of the MFP.

Note For removal and replacement instructions for the scanner/ADF portion of the MFP, see the *HP Scanner/ADF Service Manual for the HP LaserJet 9000mfp/9000Lmfp/9040mfp/9050mfp/9500mfp* (PN C8549-90955). For removal and replacement instructions for the 2,000-sheet side feeder, see the *2,000-sheet Side-input Tray Service* Manual (PN Q1891-90901). For removal and replacement instructions for the finishing device, see the *Paper Handling Accessories Service Addendum* (PN Q5693-90002).

A complete service manual bundle is available by ordering the *Service Bundle for HP Color LaserJet 9500/9500mfp* (PN C8549-99001). The service bundle includes the manuals listed above, this print engine manual, and the *Paper Handling Accessories Service Addendum* (PN C85693-90002).

Throughout this document, the term “printer” is used to refer to both the HP LaserJet 9500 Series printer models *and* the HP LaserJet 9500mfp. Make sure to read the headings and text carefully to understand the context of the term.

Replace parts in the reverse order of their removal. Directions for difficult or critical replacement procedures are included.

General cautions during removal and replacement

Before removing or replacing assemblies and parts:

- make sure that the printer is turned off
- disconnect all cables and cords
- use caution, the printer can have sharp sheet-metal edges

If the printer has been running continuously prior to servicing, turn the power off but allow the printer to remain plugged in with the cooling fans running for at least 10 minutes before unplugging the power cord.

CAUTION Exercise caution when removing and replacing the ITB. Place it on a flat, clean surface because the belt is exposed on the bottom of the assembly. Make sure that you do not disturb the toner in the toner collection bottle. Toner and static charges might dust and block the sensor widows.

Note Always remove the image drums before removing or replacing assemblies and parts that are near the drums. **IMPORTANT**: Put the image drums in the original protective plastic sleeves, or, if the sleeves are not available, place the image drums right-side up on a hard, flat, clean surface. Do not place the image drums on carpet or a dusty surface because contaminants (such as dust and fibers) can stick to the OPC and diminish print quality. Light can damage the image drums.

Note Note the lengths, diameters, and locations of screws. 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 locate. When replacing wire harnesses, always use the provided wire loops, lance points, or wire-harness guides.

Electrostatic discharge

CAUTION



The printer contains parts that are sensitive to electrostatic discharge (ESD). Always service the printer at an ESD-protected workstation, or use an ESD mat.

Watch for the ESD symbol (shown at left) to identify the parts that are sensitive to ESD. Protect these parts by using an ESD wrist strap and protective ESD pouches.

Required tools

The following tools are needed to service the printer and the finishing device:

- #2 Phillips screwdriver with magnetic tip (one short-reach and one long-reach)
- Small flatblade screwdriver; Small needle-nose pliers
- ESD mat and wrist strap; Penlight

CAUTION

A PoziDriv screwdriver will damage screw heads on the printer. Be sure to use a #2 Phillips screwdriver. If you have an electric or multi-speed screwdriver, use a torque limiter or set the clutch to apply low torque.

Table 50. Hardware table

Example	Type and uses

	• Long aluminum finish (M 3 x 8)
	  ◦ Plastic to sheet metal
	  ◦ Long reach sheet metal (P-cartridge motor assembly)
	• Short brass finish (M 3 x 6)
	  ◦ Sheet metal to sheet metal
	• Short black finish (M 3 x 8)
	  ◦ Laser/scanner assemblies
	• Self-threading brass finish (M4)
	  ◦ Sheet metal to plastic

Table 51. Common torque values

Material	HP recommended torque value
Plastic to metal	5.5 lb-inch
Metal to metal	10 lb-inch
PCBA	5.5 lb-inch
Plastic to plastic	5.5 lb-inch

Flat flexible cable caution

Flat flexible cables (FFCs) can break easily because you must unlatch them. FFCs are easy to crease, cut, bend, or rip.

The following are steps for removing the FFCs:

1. Locate the FFC connection.
2. Use your finger to open the cover.
3. Gently pull the cable.
4. Remove the cable.

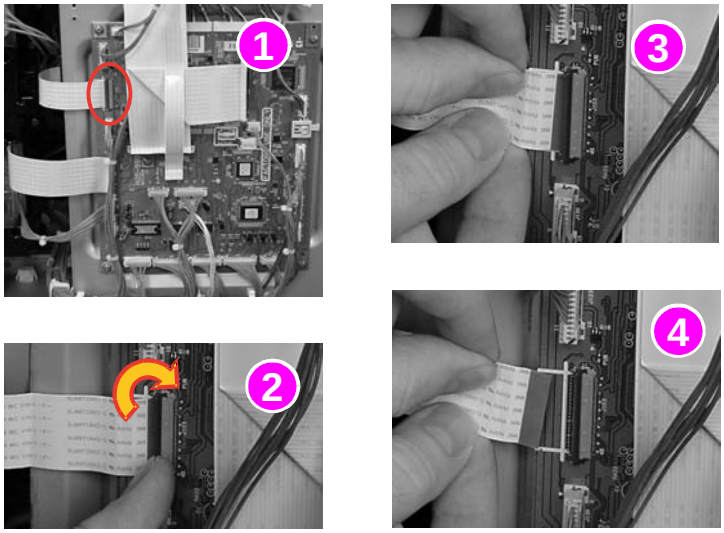


Figure 72. **Remove the FFC**

To reinstall

Make sure that you align the FFC correctly and that the cable remains completely inserted and correctly registered when you are fastening the cover or the lock. A partially seated FFC can cause irreparable damage to the cartridge e-labels and can cause motor stall errors.

DC controller and cable/connector damage areas

Note When replacing the DC controller, connect and check each of the 25 connectors by pressing each one of them.

CAUTION Do not open the FFC covers until you know exactly how to unlatch the connector. The DC controller can be permanently damaged if the brown retainer is broken while lifting the white retainer.

A. This type of connector can break easily because you must unlatch them.

B. Lift-and-pull removal makes this connector easy to break. Also, it is easy to damage the cable when you lift the white retainer.

C. This type of connector is easier to remove than the other two types. Simply pull the cable out or push it in.

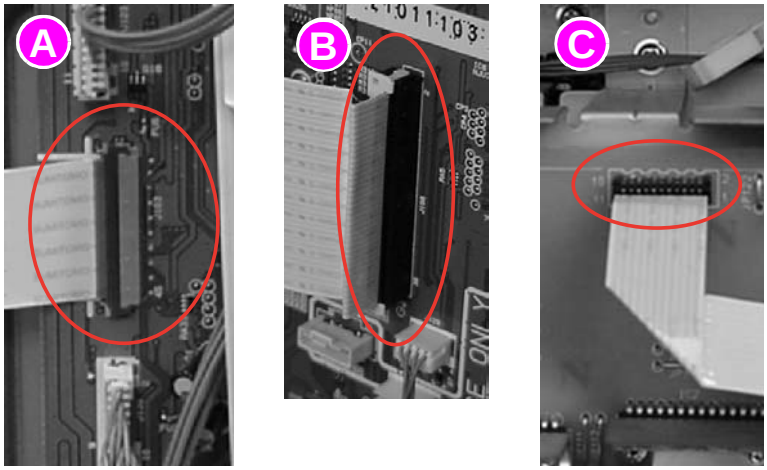


Figure 73. **DC controller and cable/connector damage areas**

CAUTION Stabilize the DC controller board to counter resistance while pulling on the copper wire connectors. Grasp the entire harness and pull on the wires perpendicular and evenly to avoid tearing out a single wire.

Potential damage areas while servicing

The following are potential areas for damage while the printer is being serviced:

- the print cartridge bottoms (remove the print cartridges when servicing areas near them)
- the white plastic tab on the P-cartridge drive assembly (drives the ITB)
- the ITB
- the toner collection bottle
- the tower on the T-drive assembly
- the P-cartridge drive assembly

Toner cartridges (print cartridges)

1 Open the front doors.



Figure 74. **Gain access to the toner cartridges**

2 Rotate the blue lever clockwise.



Figure 75. **Rotate the toner cartridge lever**

3 Pull the toner cartridge out.

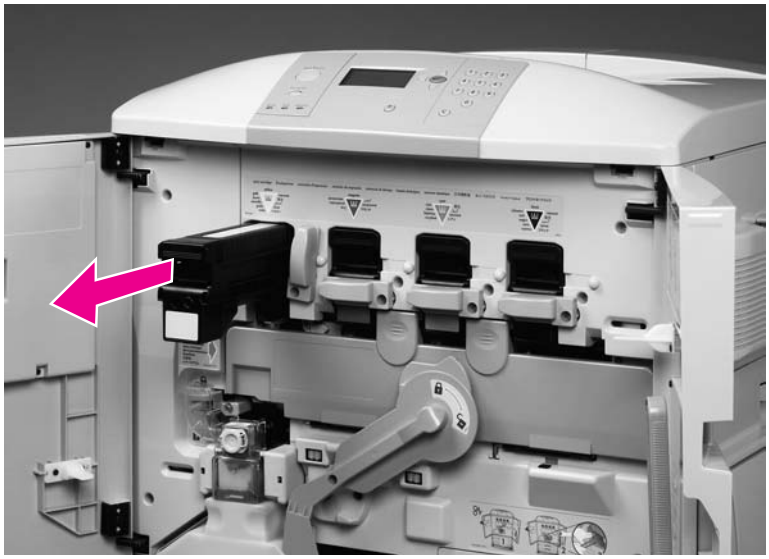


Figure 76. **Remove the toner cartridge**

Note If necessary, repeat these steps for the other three toner cartridges.

Process cartridges (image drums)

Note Image drums must be placed face-down on a flat, clean surface.

1 Rotate the green lever clockwise.

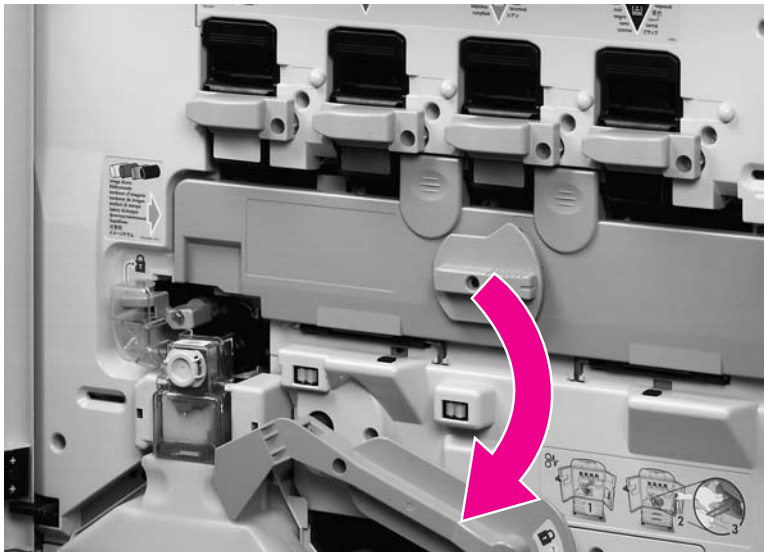


Figure 77. **Gain access to the process cartridge door**

2 Rotate the blue dial counterclockwise.

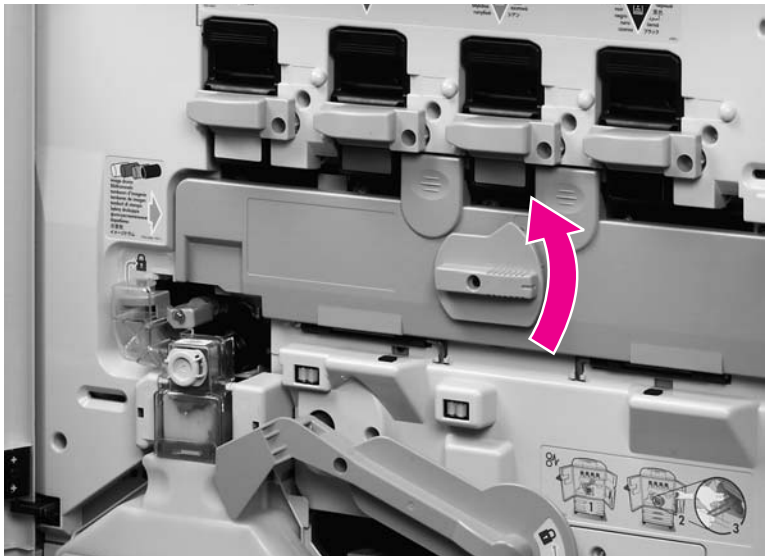


Figure 78. **Rotate the process cartridge door dial**

3 Open the process cartridge door.

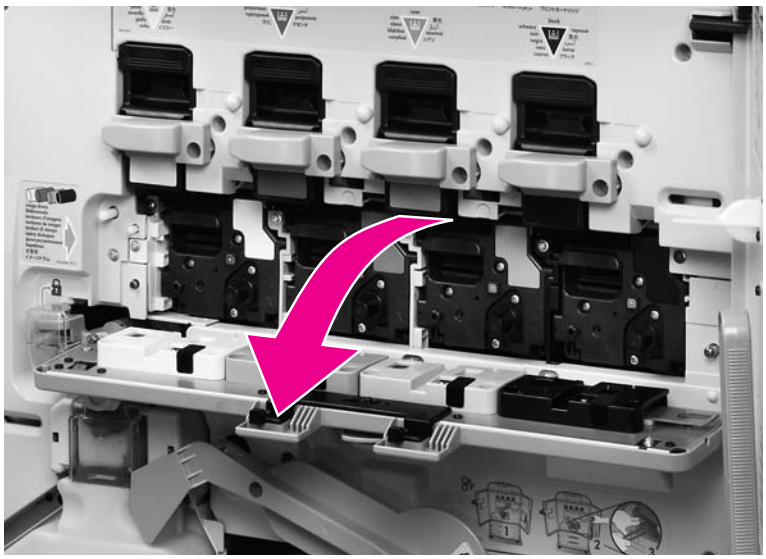


Figure 79. **Open the process cartridge door**

4 Pull the process cartridge out.

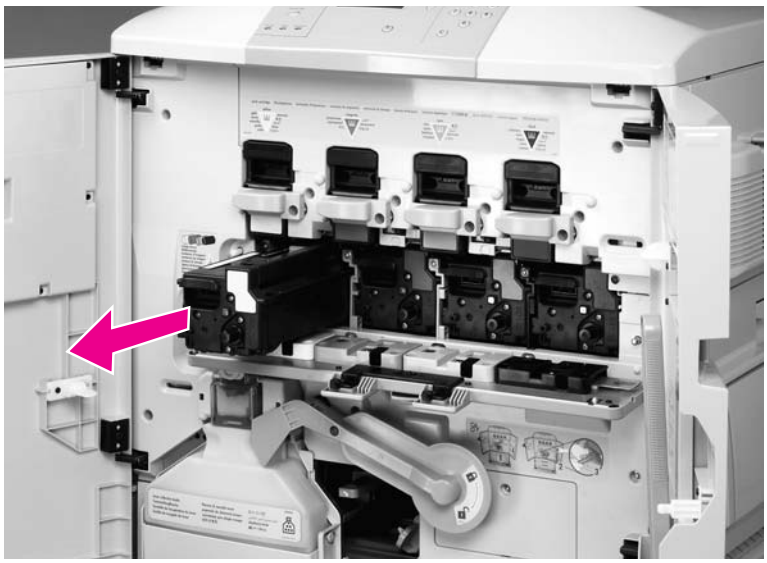


Figure 80. **Remove the process cartridges**

Note If necessary, repeat these steps for the other three process cartridges.

Waste toner bottle (toner collection bottle)

1 Hold the top of the waste toner bottle and pull it out.



Figure 81. **Remove the waste toner bottle**

Transfer cleaner (cleaning blade)

1 Rotate the blue lever down.

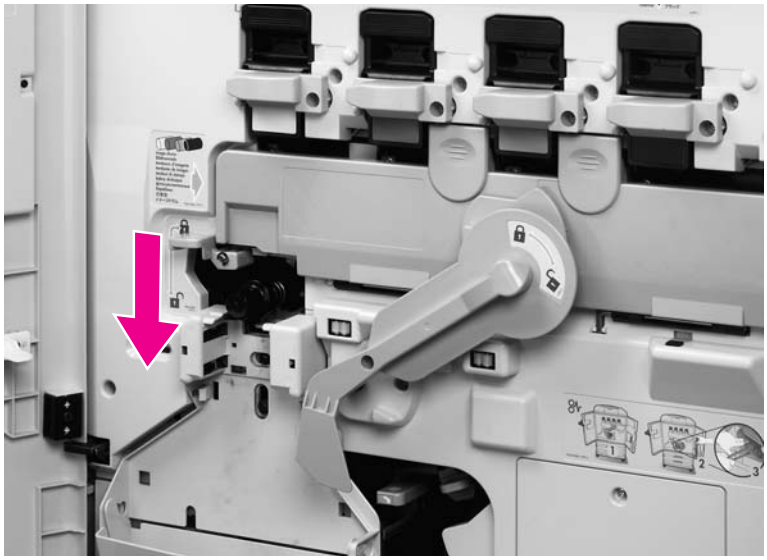


Figure 82. **Unlock the transfer cleaner**

2 Pull out the transfer cleaner.

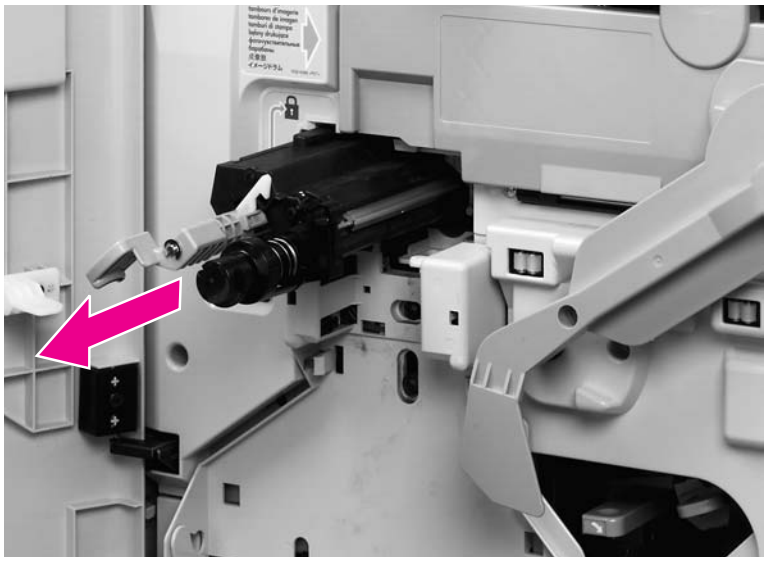


Figure 83. **Remove the transfer cleaner**

Transfer roller

Note Do not touch the surface of the transfer roller.

1 Rotate the green lever clockwise.

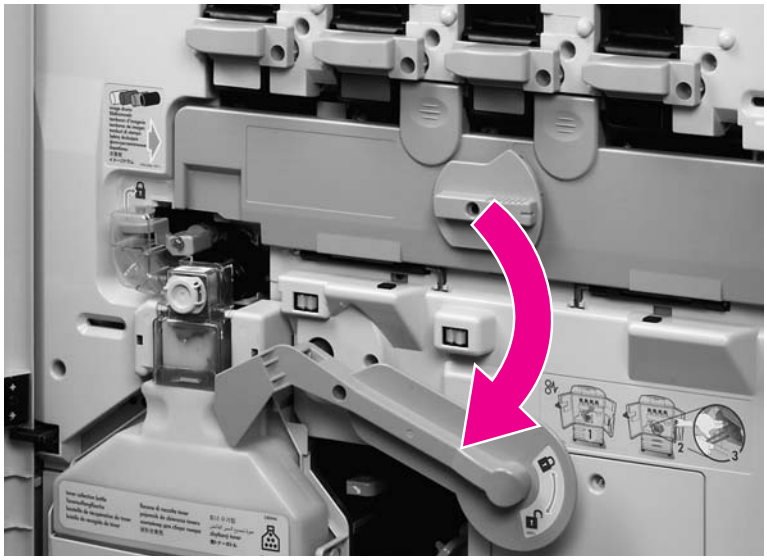


Figure 84. **Disengage the ITB to release the transfer roller**

2 Grasp the blue tab and pull the transfer roller out.



Figure 85. **Remove the transfer roller**

Control panel overlay

1 Insert a small screwdriver and remove the control panel overlay.



Figure 86. **Remove the control panel overlay**

Control panel

1 Open the front doors.

2 Release two tabs on the underside of the control panel by pulling them toward the front of the printer.



Figure 87. Release the control panel

3 Lift the control panel straight up.

4 Unplug the cable connector (callout 1) on the underside of the control panel.

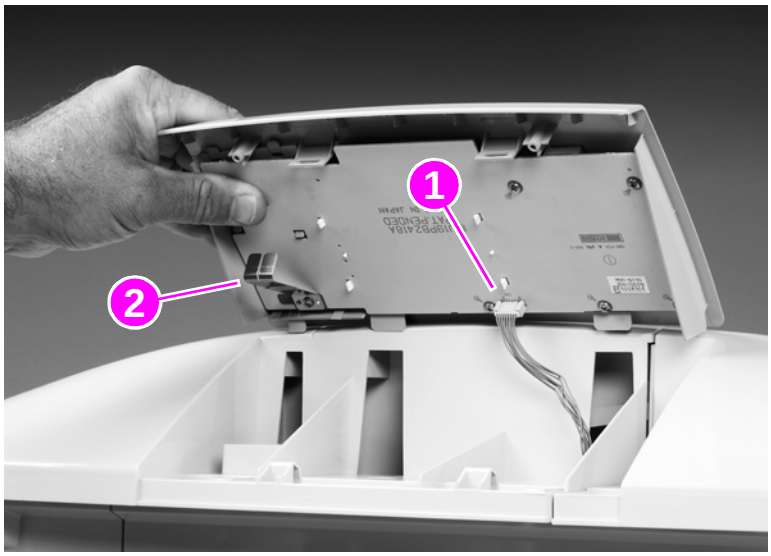


Figure 88. Remove the control panel

5 Remove the control panel from the printer.

To reinstall

Make sure that you do not bend the grounding strip (callout 2) on the control panel.

Right upper cover

1 Remove the ozone filter (callout 1).

2 Open the right intermediate transfer belt (ITB) door.

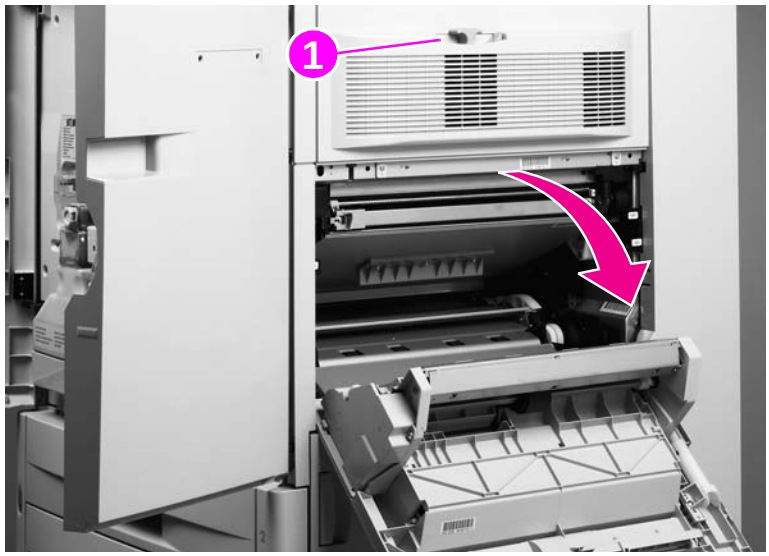


Figure 89. **Gain access to the right upper cover mounting screws**

3 Remove two screws (callout 2).

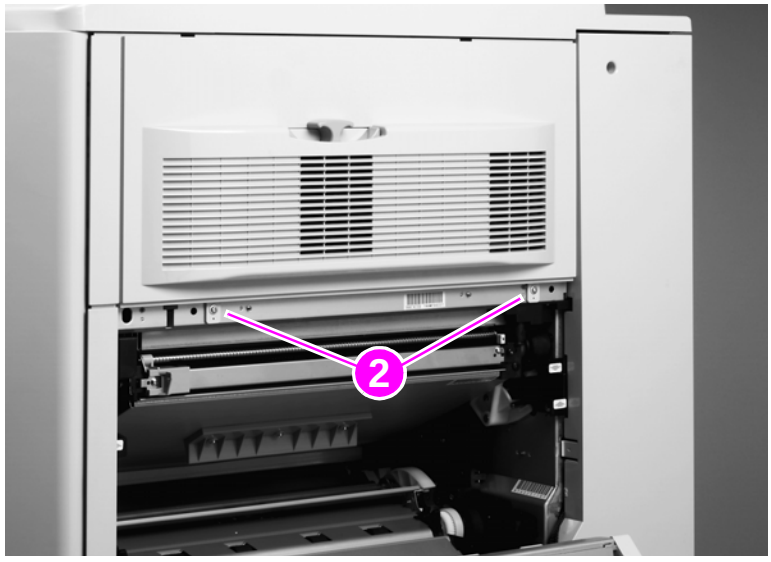


Figure 90. **Remove the right upper cover mounting screws**

4 Pull out the bottom of the right upper cover and remove it.

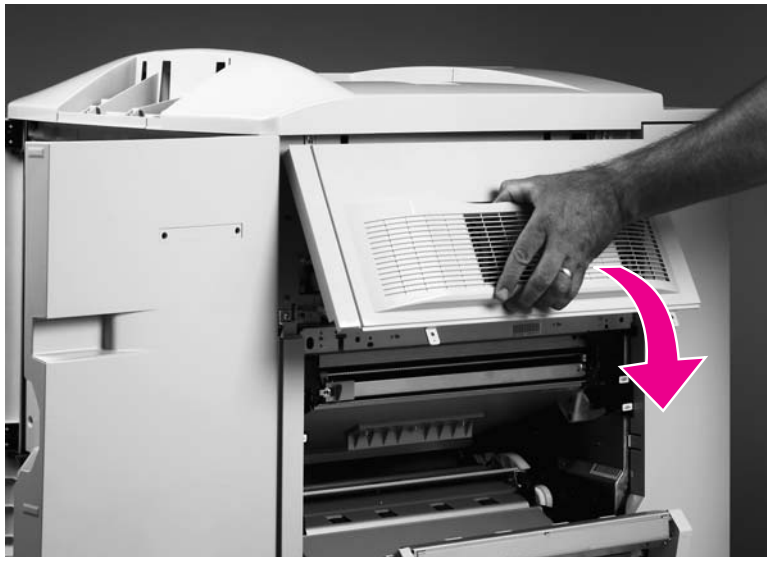


Figure 91. **Remove the right upper cover**

Left upper cover

1 Open the left upper door.

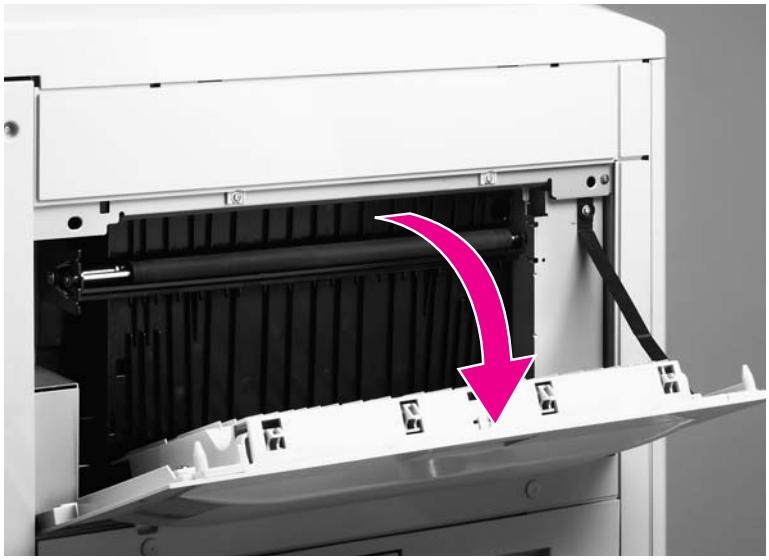


Figure 92. **Gain access the left upper cover mounting screws**

2 Remove two screws (callout 1).

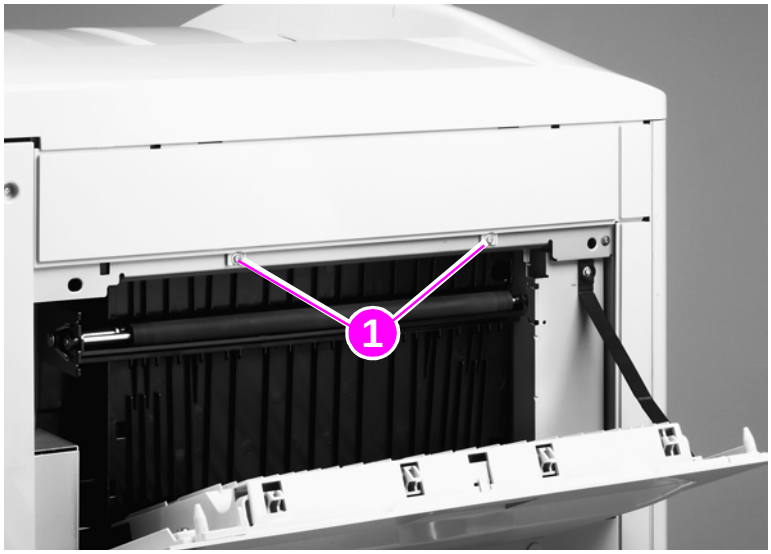


Figure 93. **Remove the left upper cover mounting screws**

3 Remove the left upper cover.

Top right cover

1 Remove the following assemblies:

- Control panel. See page 208.
- Right upper cover. See page 210.

2 Open the front doors.

3 Remove two screws (callout 1).

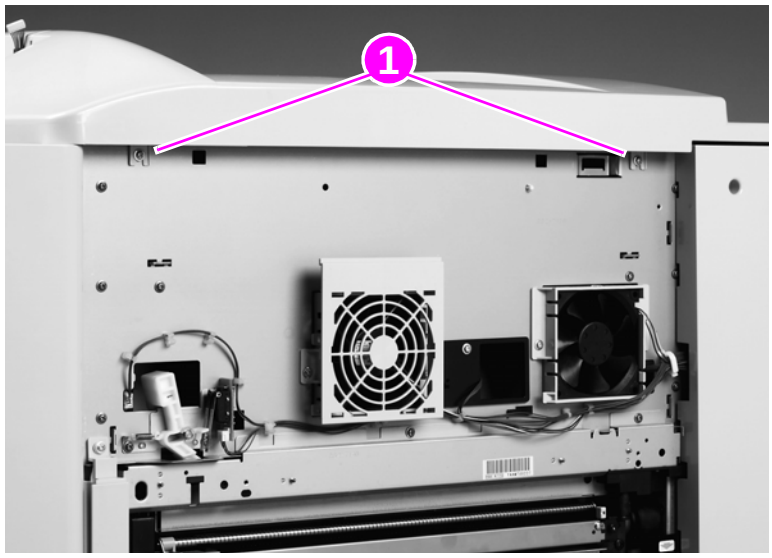


Figure 94. **Remove the top right cover mounting screws**

4 Remove the top right cover.

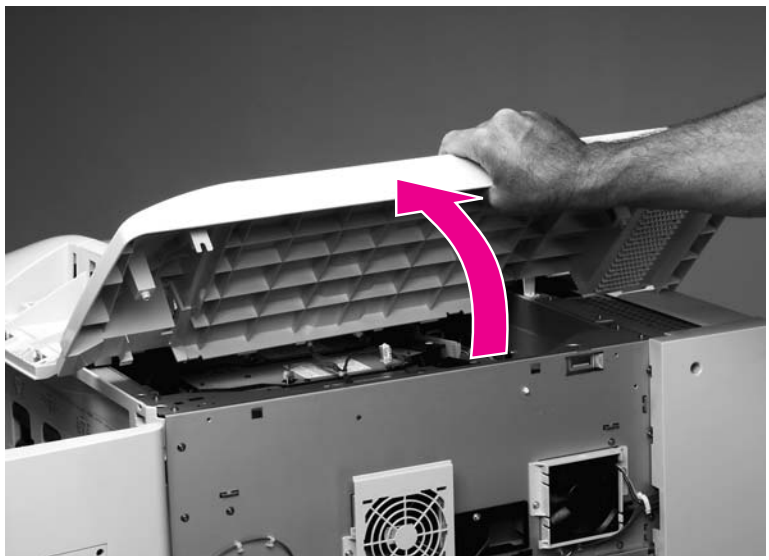


Figure 95. **Remove the top right cover**

To reinstall

Make sure that the tabs and locator pins are lined up correctly (callout 2).

Hint Loosen the front middle screw (callout 3) so the tabs are easier to insert.

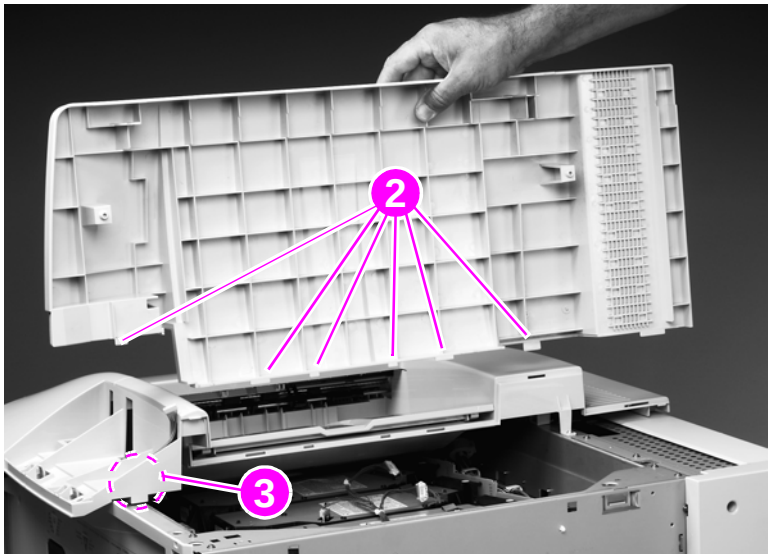


Figure 96. **Reinstalling the top right cover**

Top left cover

1 Remove the following covers:

- Left upper cover. See page 212.
- Top right cover. See page 213.

2 Remove two screws (callout 1).

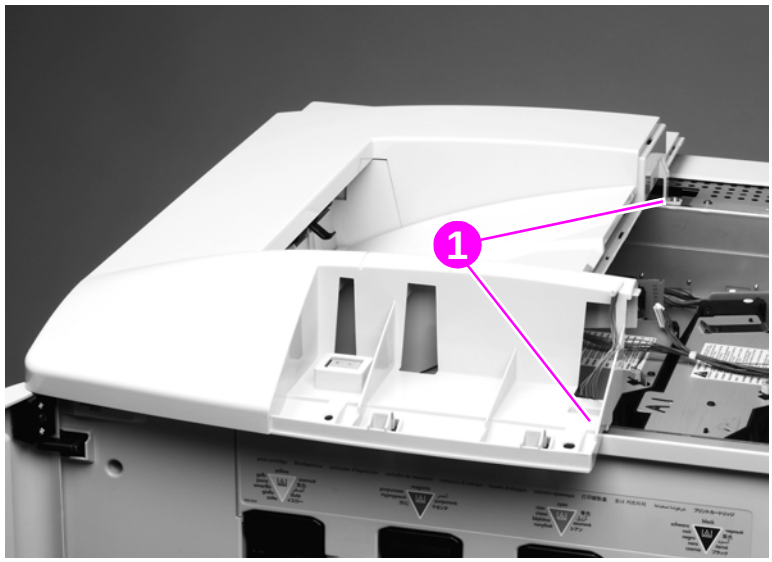


Figure 97. **Remove the top left cover mounting screws (1 of 2)**

3 Remove two screws (callout 2).

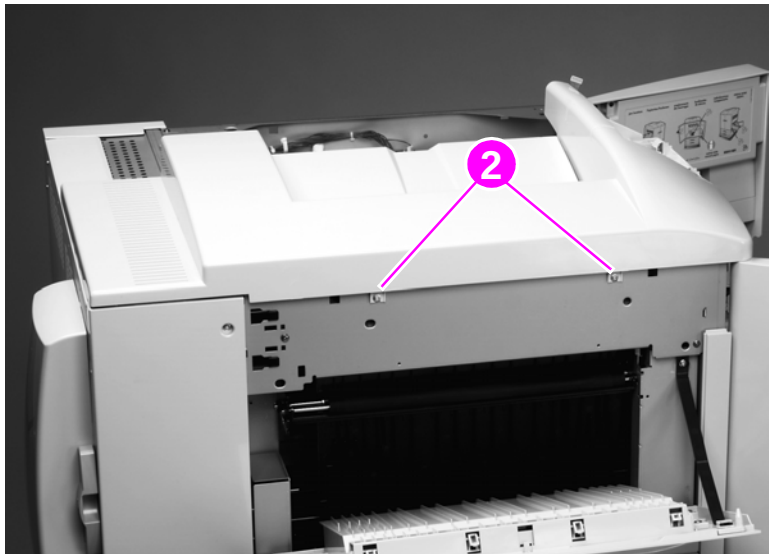


Figure 98. **Remove the top left cover mounting screws (2 of 2)**

4 Lift up the top left cover and remove it to your right.

CAUTION Be careful not to damage the face-down output tray-full sensor and the control panel cable.

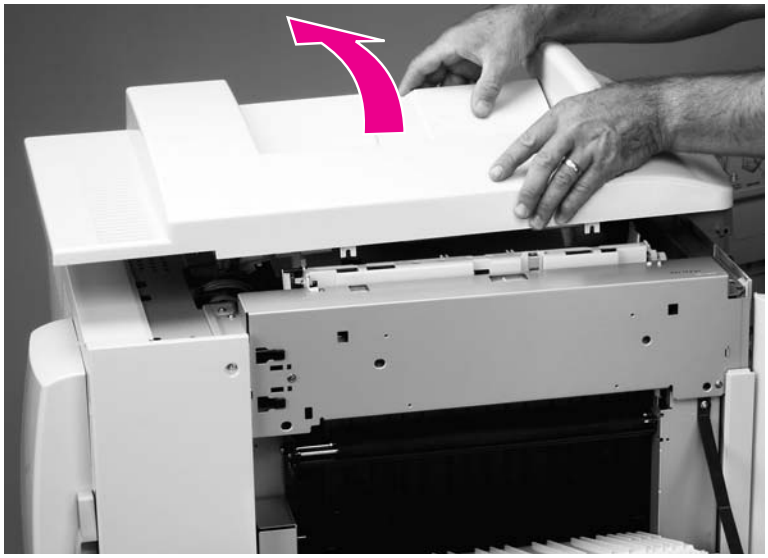


Figure 99. **Remove the top left cover**

To reinstall

Make sure that the spring is correctly positioned in the pedestal clips, and that the top of the spring is correctly positioned on the plastic cross hairs.

CAUTION Make sure that the output tray-full sensor (callout 3) is above the output bin, and be careful not to damage the control panel cable.

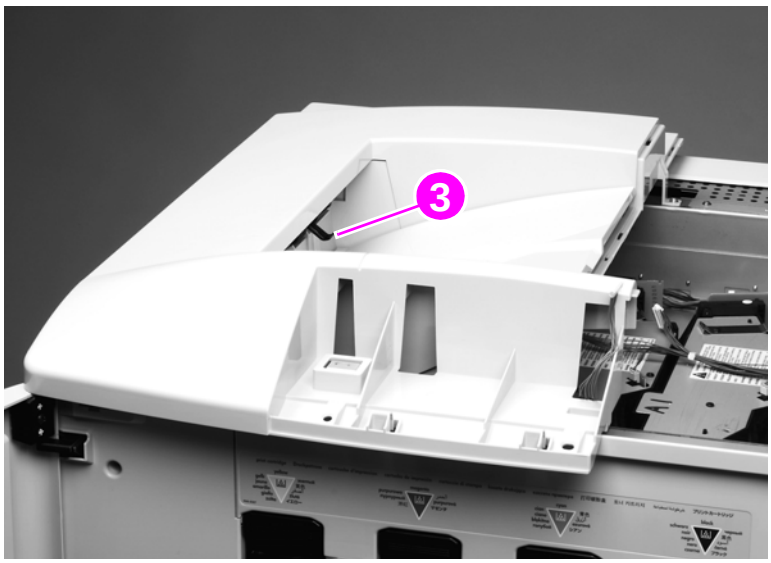


Figure 100. **Reinstall the top left cover**

Front doors

1 Remove the following covers:

- Right top cover. See page 213.
- Left top cover. See page 215.

2 Lift up and remove the front door.

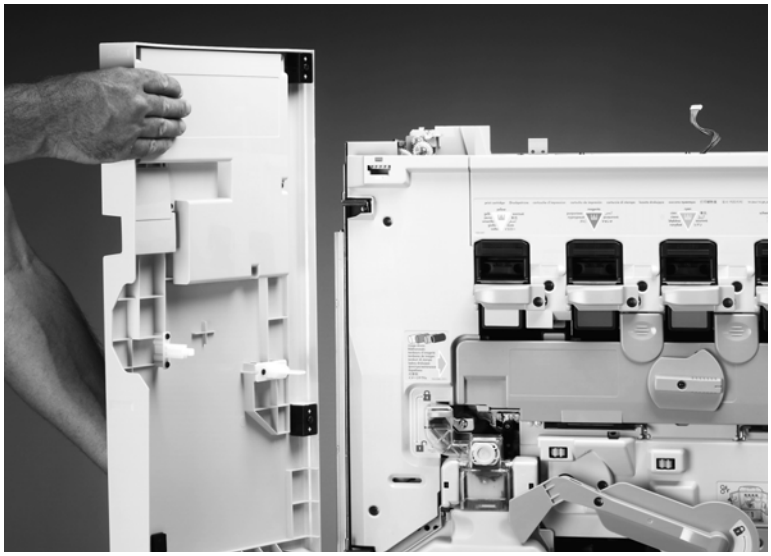


Figure 101. **Remove the front doors**

Fuser door

1 Open the fuser access door.

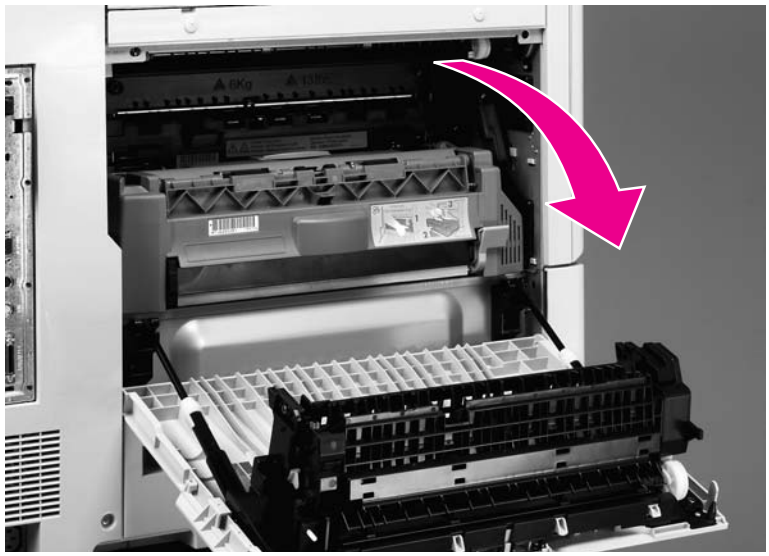


Figure 102. **Gain access to the fuser**

2 Push the spring-loaded door rod down and to the back to remove it from the bracket (callout 1).

Hint Hold the door with one hand while holding the rod with your other hand.

CAUTION The rods are under tension and the pins in the rods are not secure.

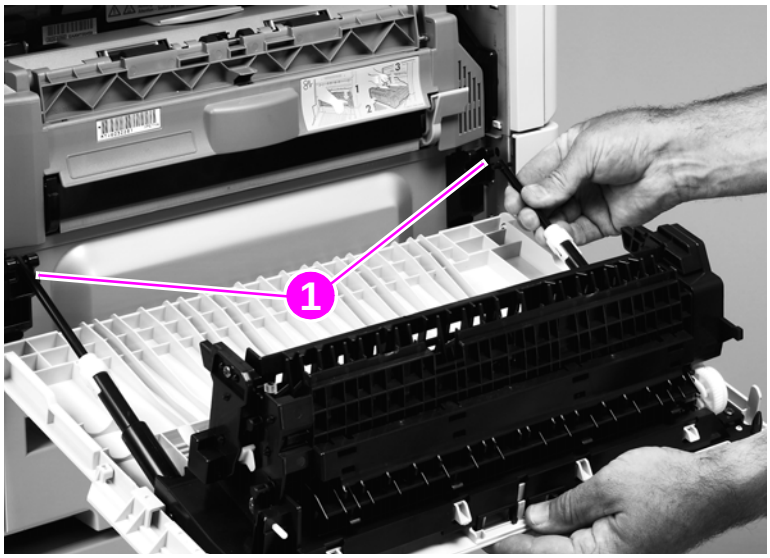


Figure 103. **Release the fuser door pistons**

3 Align the flat side of the pivot hole on the left side of the door with the flat sides of the pivot pin.

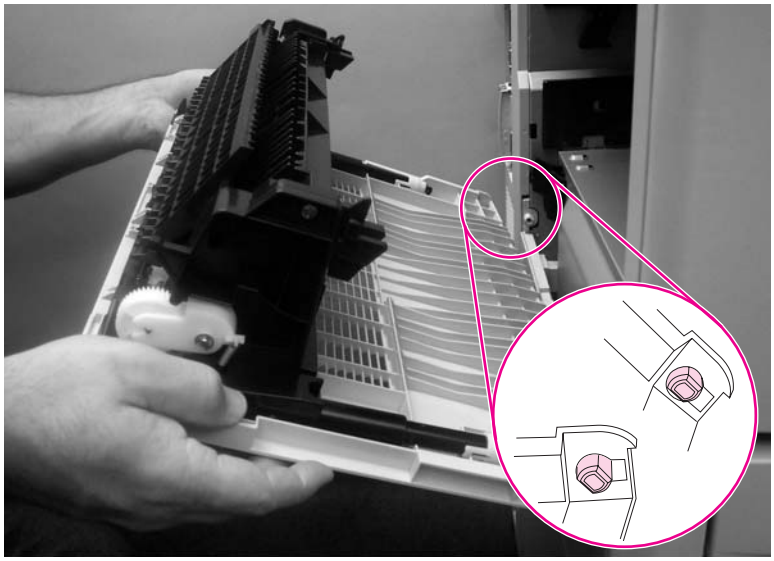


Figure 104. Remove the fuser door

4 Rotate the door away from the printer.

5 Remove the fuser door.

Intermediate transfer belt (ITB) door

1 Remove the right back cover. See page 227.

2 Open the right lower door assembly, and remove one screw (callout 1) on the retaining strap of the door assembly.

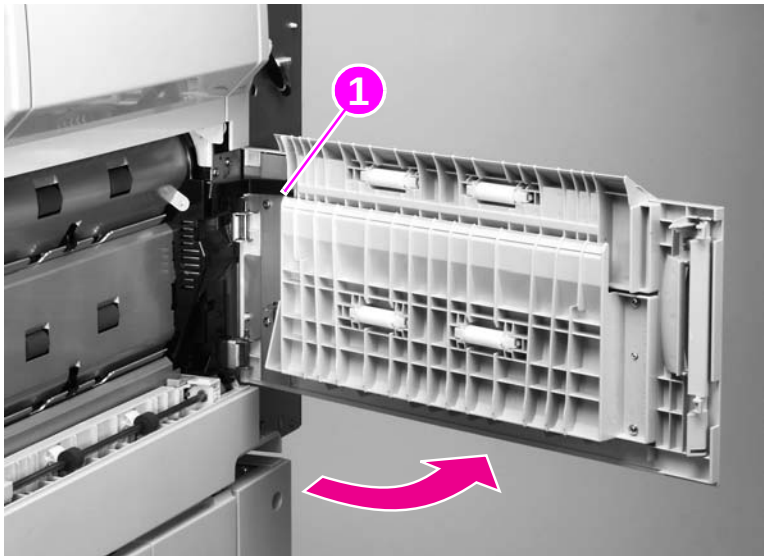


Figure 105. **Release the right lower door**

3 Remove the right lower door assembly.

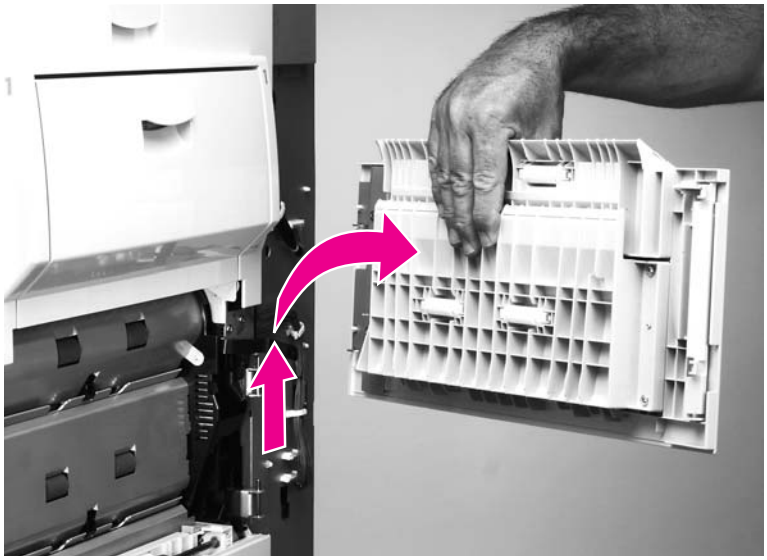


Figure 106. **Remove the right lower door assembly**

4 Open the right upper door (ITB access door).

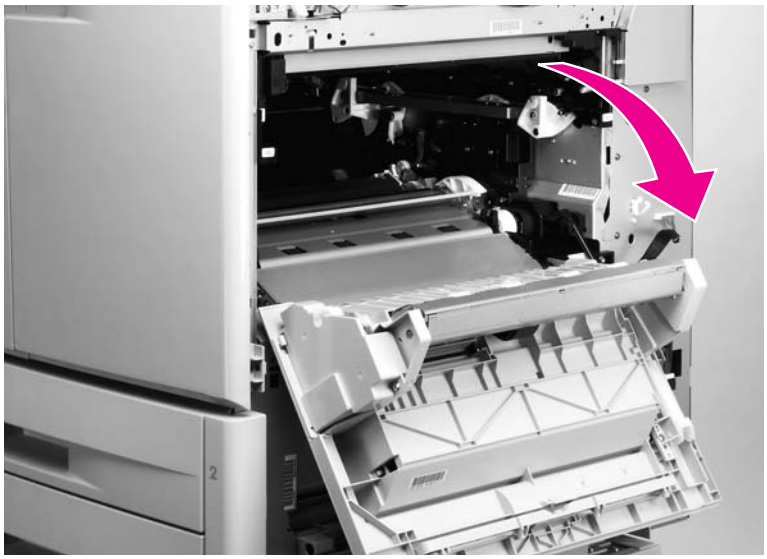


Figure 107. Open the ITB door

5 Remove seven screws (callout 2).

6 Remove the shield (callout 3).

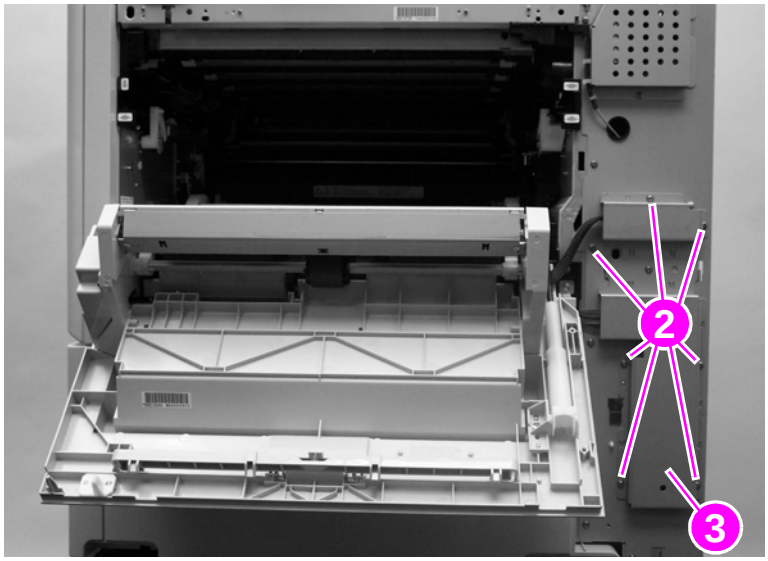


Figure 108. Remove the wire harness shield

7 Disconnect one cable connector (callout 4), and unclip one wire harness (callout 5).

8 Push the spring-loaded door rod down and to the back to remove it from the bracket (callout 6).

Hint Hold the door with your left hand while holding the rod with your right hand.

CAUTION The rod is under tension and the pins in the rod are not secure.

Note Do not remove the pin from the rod.

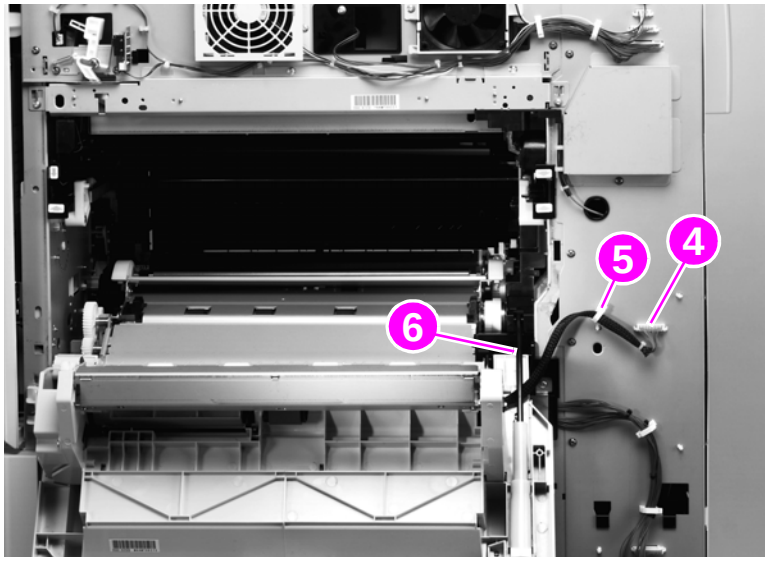


Figure 109. Disconnect the ITB door wire harness

9 Close the right upper door.

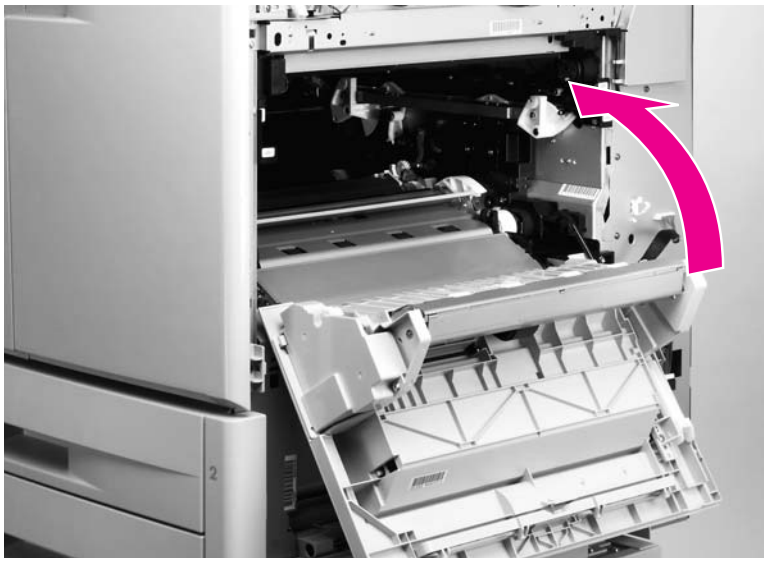


Figure 110. Gain access to the ITB door mounting screws

10 Remove three screws (callout 7).

11 Open the right upper door slightly and remove the bracket (callout 8).

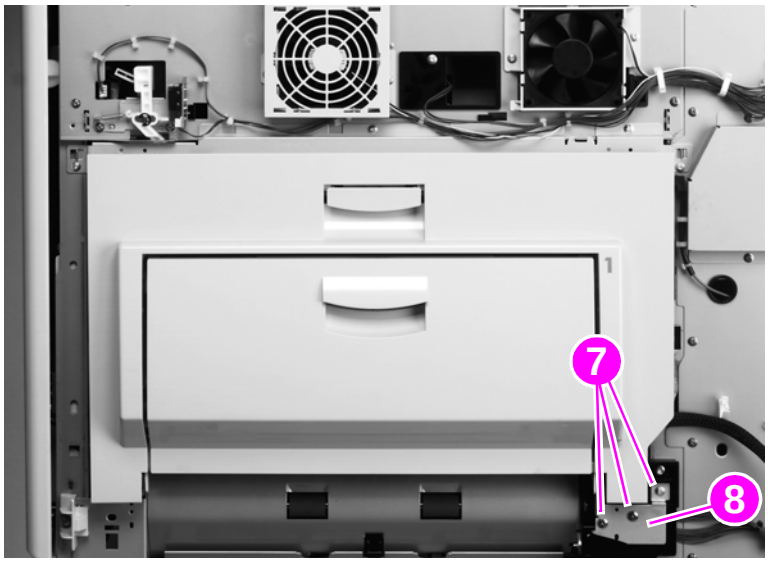


Figure 111. **Remove the ITB door mounting screws**

12 Shift the ITB door toward the back of the printer and remove it.

Left back cover

1 Remove 8 screws (callout 1).

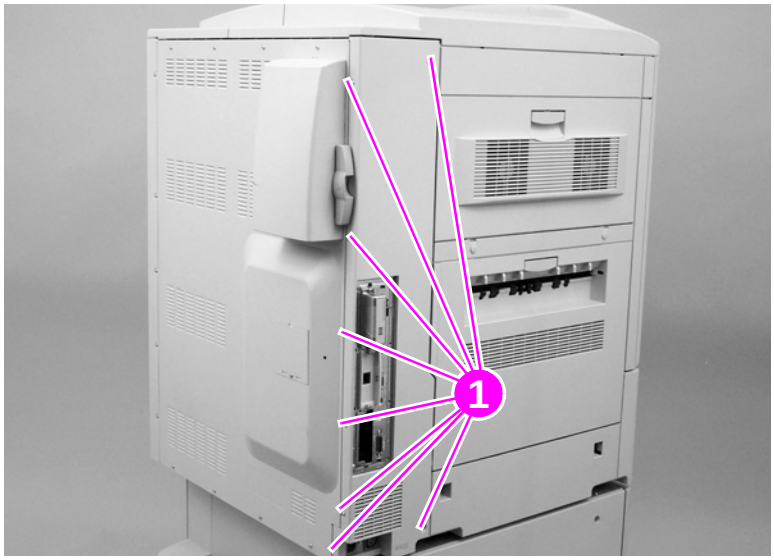


Figure 112. **Remove the left back cover**

2 Remove the left back cover.

Left lower cover

1 Remove the following assemblies:

- Fuser door. See page 218.
- Left back cover. See page 224.

2 Remove four screws (callout 1).

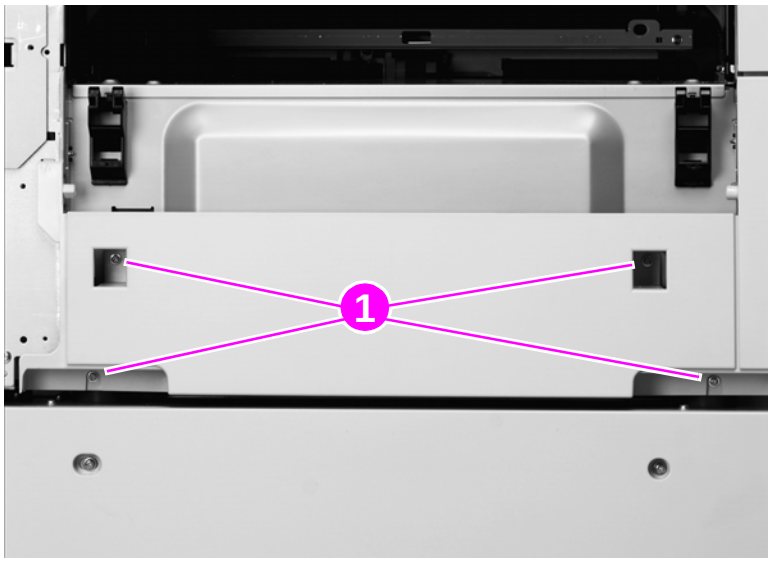


Figure 113. **Remove the left lower cover mounting screws**

3 Remove tray 2 and tray 3.

4 Remove one screw (callout 2), and remove the front left cover (callout 3).

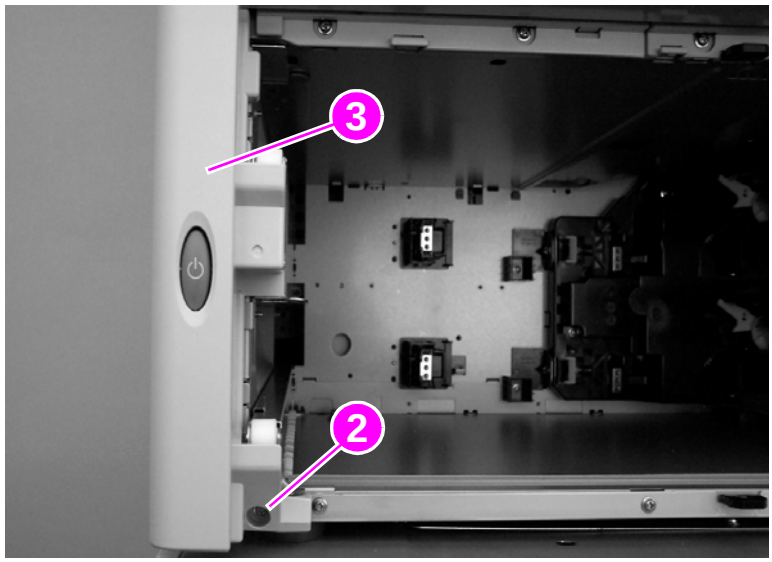


Figure 114. **Remove the front left cover**

5 Depress two tabs (callout 4).

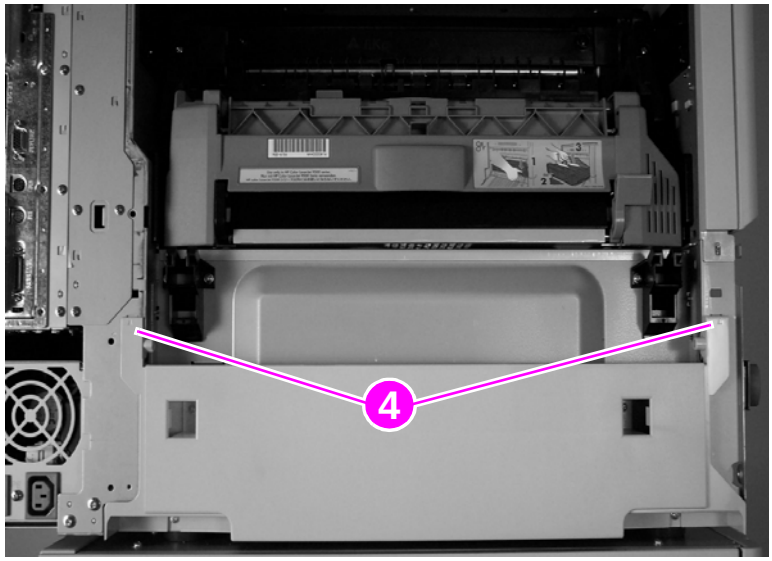


Figure 115. **Release the left lower cover tabs**

6 Remove the left lower cover.

Right back cover

1 Remove seven screws (callout 1), and depress the tab (callout 2) near the ITB access door.

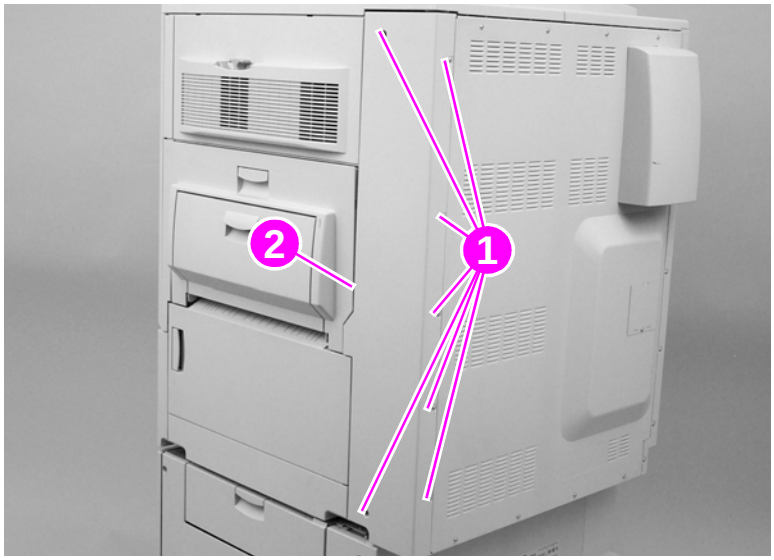


Figure 116. **Remove the right back cover**

2 Remove the right back cover.

Back cover

1 Remove following covers:

- Left back cover. See page 224.
- Right back cover. See page 227.

2 Remove one filter (callout 1), and remove eight screws (callout 2).

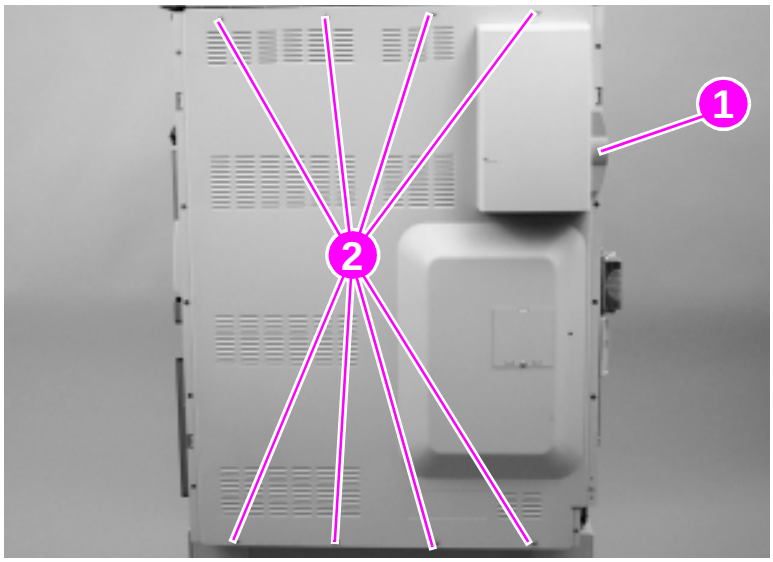


Figure 117. **Remove the back cover**

3 Remove the back cover.

Process cartridge (image drum) door

1 Remove the four process cartridges. See page 203.

2 Rotate the green lever down.

3 Unclip the drum door hinge pins (callout 1) with a screwdriver.

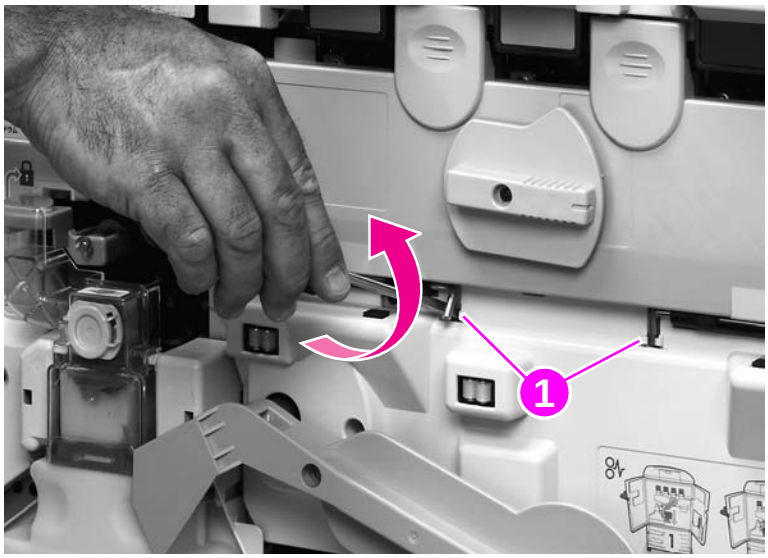


Figure 118. **Unclip the process cartridge door hinge pins**

4 Unlock the process cartridge door.

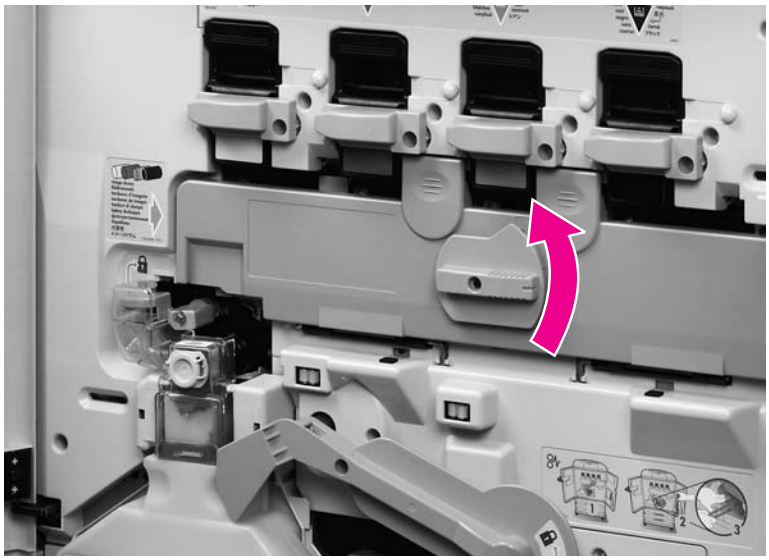


Figure 119. **Unlock the process cartridge door**

5 Open the process cartridge door halfway.

6 Remove the hinge pins.

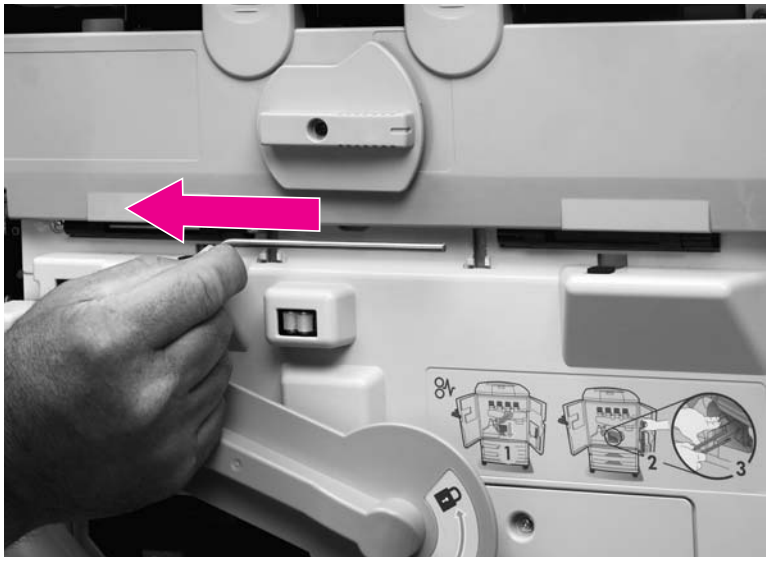


Figure 120. **Remove the process cartridge door hinge pins**

7 Remove the process cartridge door.

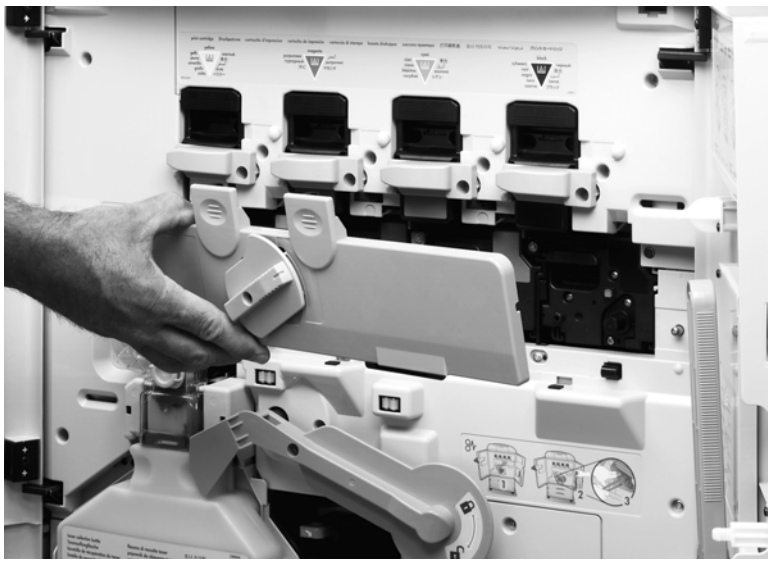


Figure 121. **Remove the process cartridge door**

Note After replacing the process cartridge door, print a laser alignment test page and, if necessary, perform a laser alignment procedure. See page 233.

Laser/scanner assembly

1 Remove the following covers:

- Top right cover. See page 213.
- Top left cover. See page 215.
- MFP only: remove the scanner/ADF assembly (see the *Scanner Service Manual for the HP LaserJet 9000/9000Lmfp/9040mfp/9050mfp/9500mfp*)

2 Disconnect three connectors (callout 1), and remove four black screws (callout 2).

Note Depending on which laser/scanner assembly needs to be removed, disconnect the appropriate connectors from the other laser/scanner assemblies.

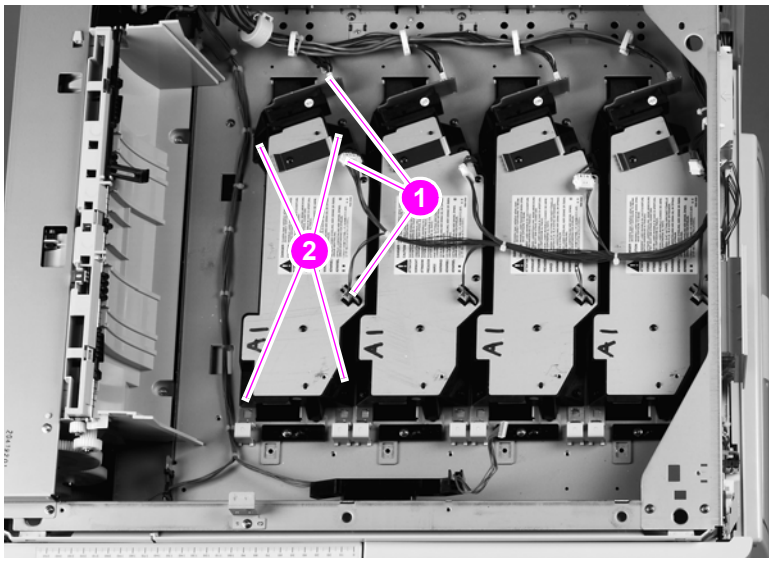


Figure 122. Disconnect a laser/scanner assembly

CAUTION Do *not* remove the four black screws called out in figure 123.

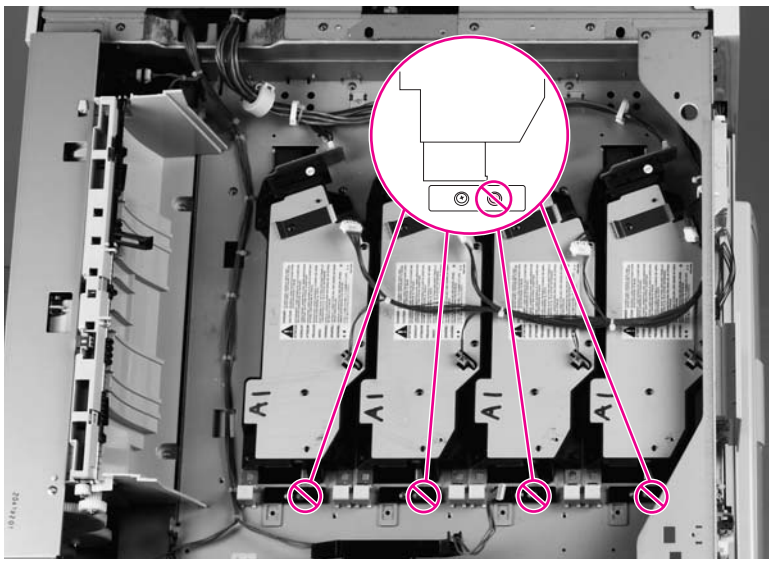


Figure 123. Do not loosen the laser/scanner adjustment screws

3 Remove the laser/scanner assembly.

To reinstall

Make sure that the two metal shim stacks (callout 3) are not covering the laser/scanner mounting screw-holes.

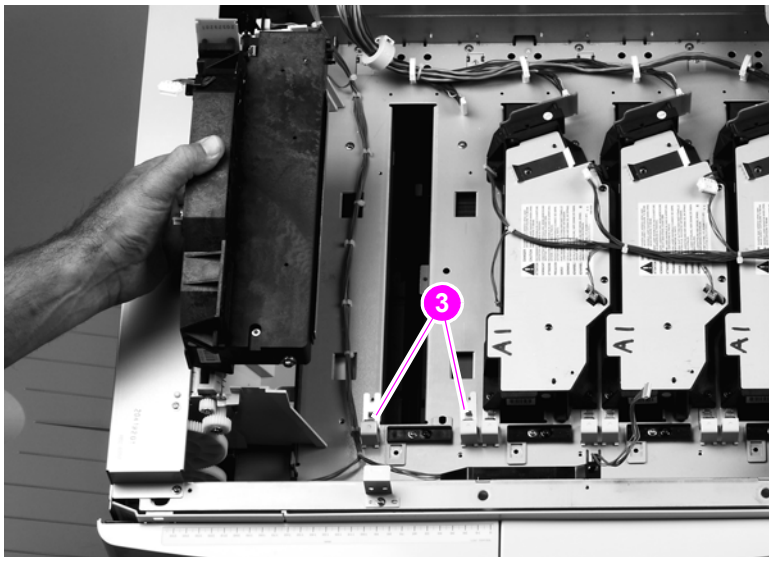


Figure 124. **Reinstall the laser/scanner assembly**

Note Print a laser/scanner adjustment test page before reinstalling the top right cover and the top left cover. See page 233.

Printing a laser/scanner adjustment page

Note A laser/scanner adjustment page can be printed without reconnecting the control panel. However, when the control panel is connected you can read printer error messages (if any errors occur) and know when the printer reaches the READY state.

This procedure can only be performed on printer models. It cannot be performed on the MFP version.

This procedure can only be performed using A4- or letter-size media. Using A3 or 11-by-17 media gives invalid results.

Note MFP only: the control panel cannot be reconnected with the scanner/ADF assembly removed. You must print the laser/scanner adjustment page and make any required adjustments with the scanner/ADF assembly removed.

1. Turn the printer off.
2. Completely cover the laser/scanner assemblies with two layers of paper to prevent light from leaking into the printer. A light leak might affect the adjustment values on the test page.

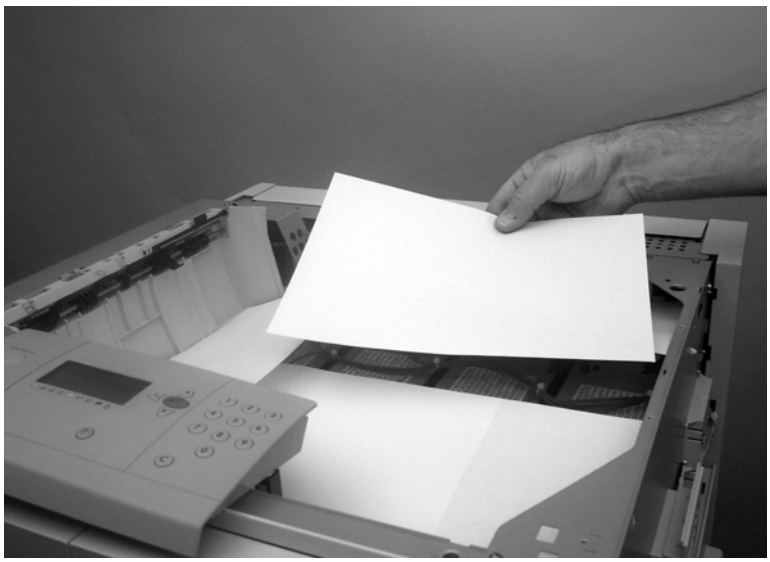


Figure 125. **Cover the laser/scanners to prevent a light leak**

3 Using a small, non-metallic, flatblade screwdriver (or similar tool), depress the engine test button, making sure to press straight in to avoid damaging the DC controller board. Turn the printer on. Continue to depress the test button for about three to five seconds while the printer initializes. Release the engine test button and wait for the printer to come to the READY state.



Figure 126. Prepare to print a laser/scanner adjustment page

4 When the printer completes its initialization and calibration sequence and it reaches the READY state, depress and release the engine test button. The printer performs an internal calibration, and then a laser/scanner adjustment page prints.

Reading a laser/scanner adjustment page

CAUTION Do not attempt to adjust the laser/scanner assemblies unless the laser/scanner adjustment page indicates that a laser/scanner needs adjustment. See “Printing a laser/scanner adjustment page” on page 233.

Overview

Two possible adjustments can be made to a laser/scanner assembly. These adjustments *must* be made in the correct sequence. The first adjustment is identified as *Laser Scanner Adjustment Step 1* on the laser/scanner adjustment page. The second adjustment is identified as *Laser Scanner Adjustment Step 2* on the laser/scanner adjustment page.

1 Look at the laser/scanner adjustment page. If the numbers under the *Laser/Scanner Adjustment Step 1* are all zeros (callout 1; figure 127) and the center of the three gray bands under the *Laser Scanner Adjustment Step 2* are inside of the zero range for all three colors (callout 2; figure 127), then no adjustment is required and this procedure is complete.

Note The laser/scanner adjustment page has examples to help interpret the position of the gray bands (callout 3; figure 127). An example of “Adjustment required” is located on the left side of the page. An example of “No adjustment required” is located on the right side of the page.

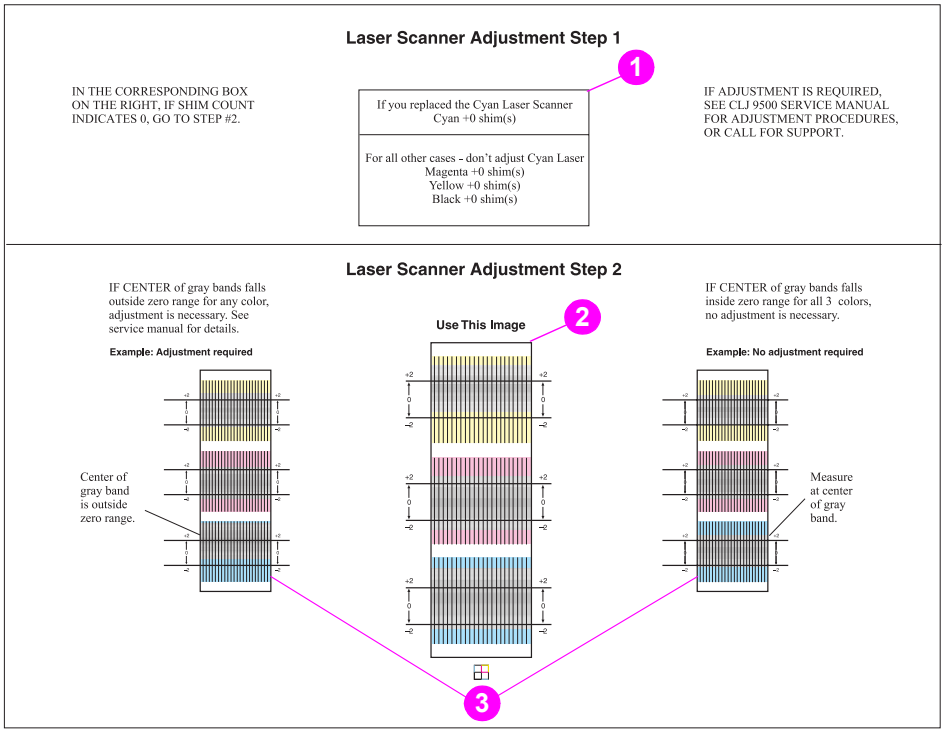


Figure 127. Reading the laser/scanner adjustment page

2 If any of the numbers under the *Laser/Scanner Adjustment Step 1* is *not* a zero (callout 4; figure 128) or if the center of any of the three gray bands under the *Laser/Scanner Adjustment Step 2* is outside of the zero range for any of the three colors (callout 5; figure 128), a laser/scanner adjustment is required.

Note The position of the center of the gray bands under the *Laser/Scanner Adjustment Step 2* are interpreted as shown in figure 128. Callout 6 shows that the center of the gray band for the magenta laser/scanner falls outside of the zero range, meaning that a laser/scanner adjustment is required. Callout 7 shows that the center of the gray band falls inside of the zero range, meaning that a laser/scanner adjustment is not required.

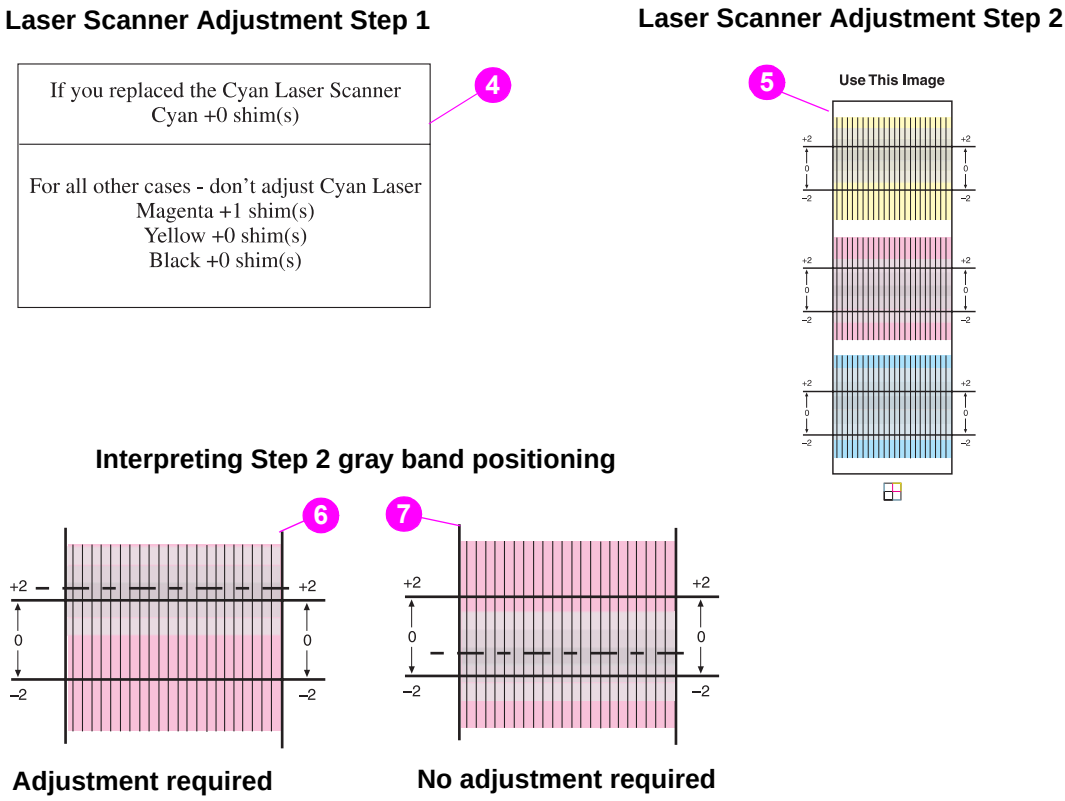


Figure 128. Interpreting the laser/scanner adjustment page

3 If an adjustment is required, see Adjusting the laser/scanner assemblies (page 237).

Adjusting the laser/scanner assemblies

CAUTION Do *not* attempt to adjust the laser/scanner assemblies unless the laser/scanner adjustment page indicates that a laser/scanner requires adjustments. See “Printing a laser/scanner adjustment page” on page 233.

Overview

Laser/scanners might need to be adjusted if a laser/scanner assembly (RG5-6181-000CN), the process cartridge drive assembly (image drum drive assembly) (RG5-6188-000CN), or the image drum door (RG5-6182-000CN) is replaced.

Adjusting the laser/scanner assemblies requires that you print a laser/scanner adjustment page (see "Printing a laser/scanner adjustment page") and use several special tools that are included with the replacement laser/scanner assemblies, process cartridge drum drive assembly (image drum drive assembly), and image drum door.

Two possible adjustments that can be made to a laser/scanner assembly. These adjustments *must* be made in the correct sequence. The first adjustment is identified as *Laser Scanner Adjustment Step 1* on the laser/scanner adjustment page. The second adjustment is identified as *Laser Scanner Adjustment Step 2* on the laser/scanner adjustment page.

Hint When adjusting the laser/scanner assemblies you might have to print multiple laser/scanner adjustment pages. Information on the page will change as you make fine adjustments to the laser/scanner assemblies.

Avoid using previously printed pages, which might not reflect the current adjustment of a laser/scanner, by numbering each page after it prints or throwing away previously printed pages. Always make sure that you are using the most recent adjustment page that you printed.

Laser scanner adjustment step 1

CAUTION Make sure that you do not lose any shims inside the printer. Shims that remain inside the printer can damage the printer.

Hint If you are unsure of how to interpret the *Laser Scanner Adjustment Step 1* part of the adjustment page, see figure 128.

1. Print a laser/scanner page (See "Printing a laser/scanner adjustment page" on page 233).
2. Locate the box on the laser/scanner adjustment page under the *Laser Scanner Adjustment Step 1* heading (callout 1). If all of the listed laser scanners indicate that zero shims are needed, the step 1 adjustment is *not* required. Proceed to Laser/scanner adjustment step 2 (page 242).

If any of the results under the *Laser Scanner Adjustment Step 1* heading indicate a number other than zero, proceed to the next step.

Note If a laser/scanner assembly is replaced, it will usually be the one that requires adjustment. If the cyan laser/scanner is replaced, read the top of the step 1 box and ignore the magenta, the yellow, and the black laser/scanner numbers that are indicated in the bottom half of the box. Make sure that the cyan laser/scanner is adjusted correctly before attempting to adjust the other assemblies. Adjust laser/scanner assemblies one at a time (after the cyan laser/scanner is properly adjusted), printing a new laser/scanner adjustment page after every addition or removal of shims.

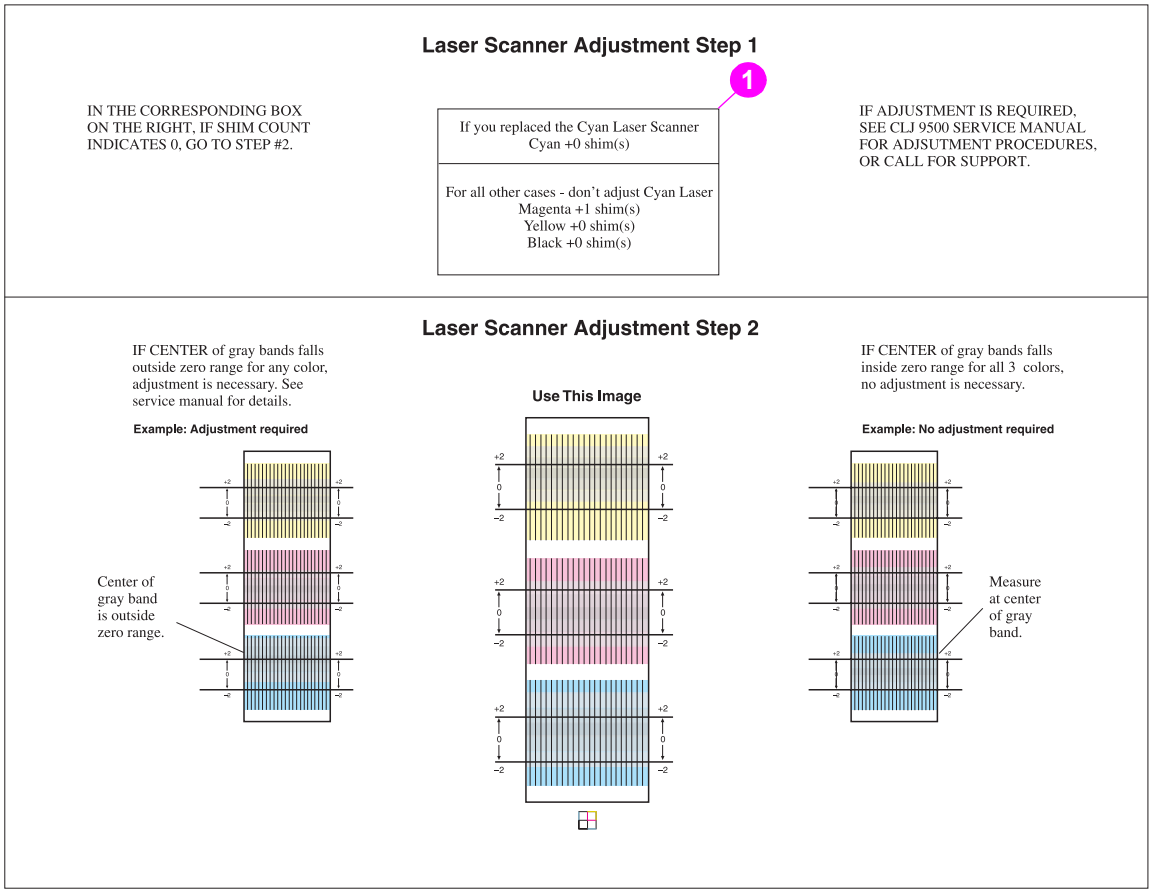


Figure 129. **Laser/scanner adjustment page step 1**

3 Place two S-shims on the edge of the black plastic shim guide (callout 2).

Note Make sure you do not drop the shims into the sheet-metal opening.

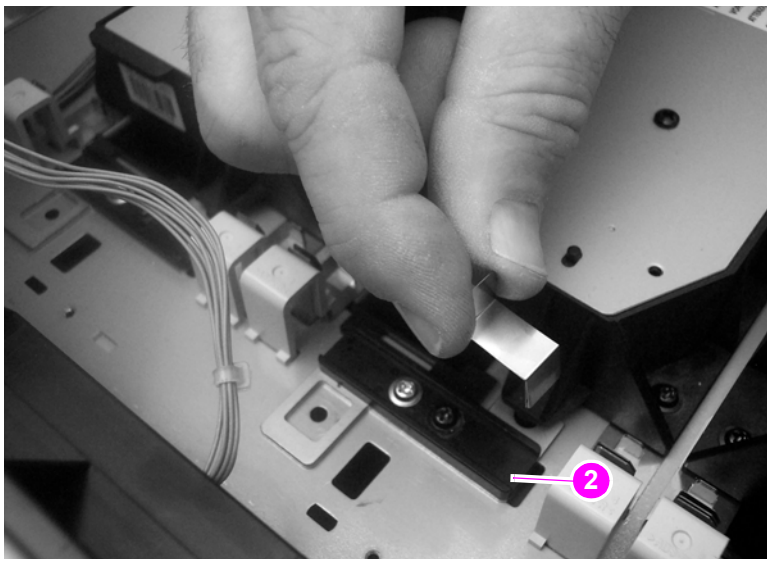


Figure 130. Placing the initial laser/scanner S-shims

4 Place the metal adjustment plate (callout 3) in the printer. Loosely secure the plate with a screw.

Note A screw is not provided with the tool kit. Use one of the screws that you removed when the top covers were removed.

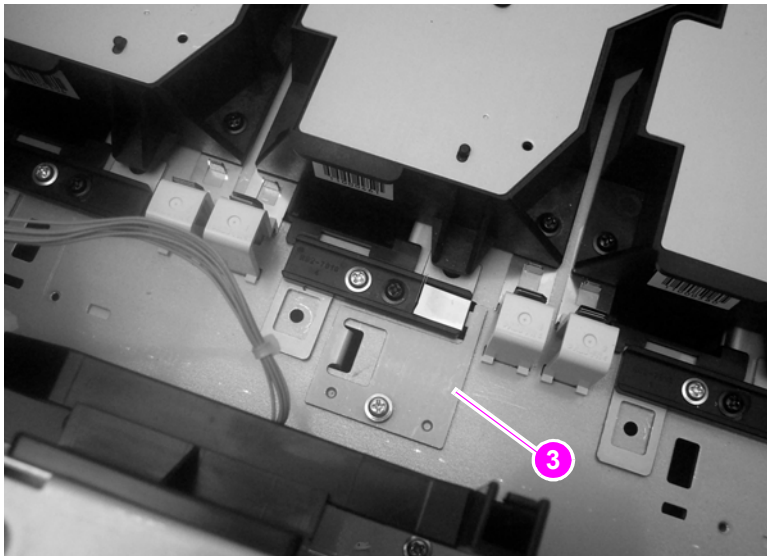


Figure 131. Install the laser/scanner adjustment plate

5 Use the spring tool (callout 4) to force the adjustment plate against the shims (callout 5), and then tighten the screw that secures the metal adjustment plate. Remove the spring tool.

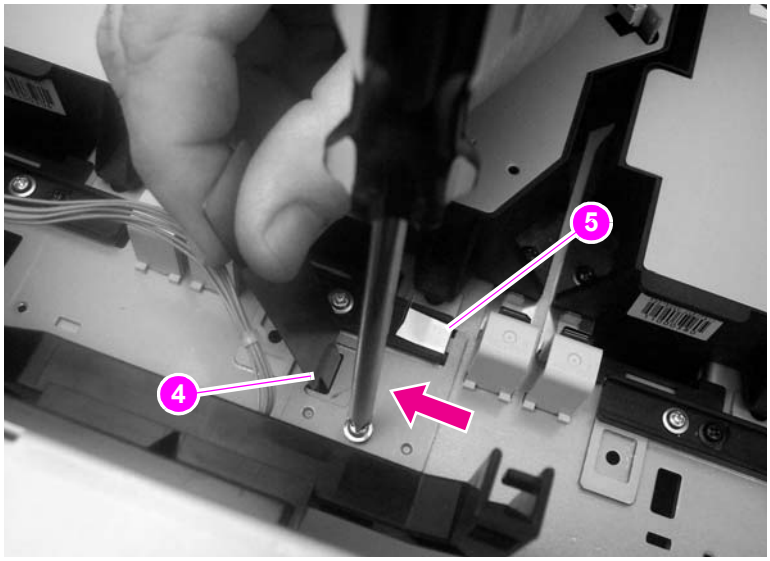


Figure 132. **Position the laser/scanner adjustment plate**

6 Loosen the four black laser/scanner mounting screws (callout 6) and the black laser/scanner adjustment screw (callout 7). Slide the laser/scanner assembly to the left, away from the S-shims.

If you replaced the cyan laser/scanner assembly, look at the top half of the step 1 box on the adjustment page (callout 1 on figure 129). If you replaced any of the other laser/scanner assemblies, look at the bottom half of the step 1 box on the adjustment page (callout 1 on figure 129).

Add or remove the number of S-shims that is indicated on the laser/scanner adjustment page to or from the S-shims on the black plastic shim guide.

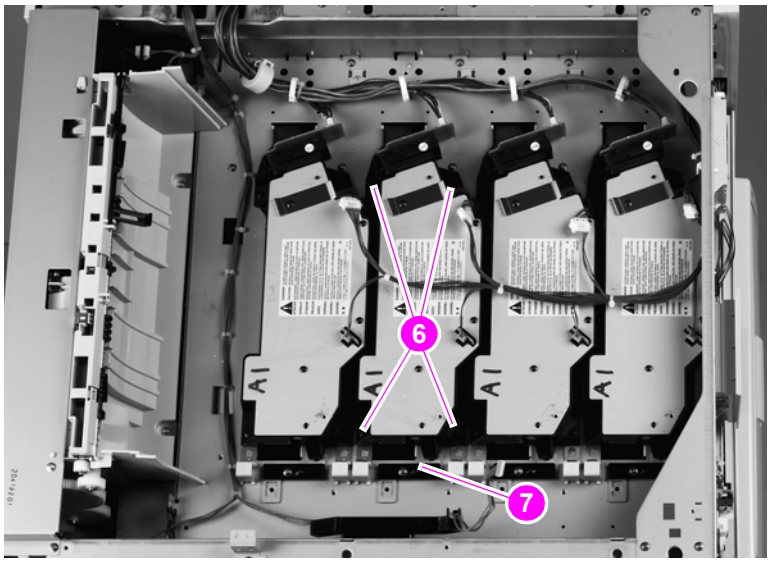


Figure 133. **Add or remove laser/scanner adjustment S-shims**

7 Slide the laser/scanner tightly against the plate and the S-shims (if any remain), and use the spring tool (callout 8) to keep the laser/scanner snug against the plate or the S-shims.

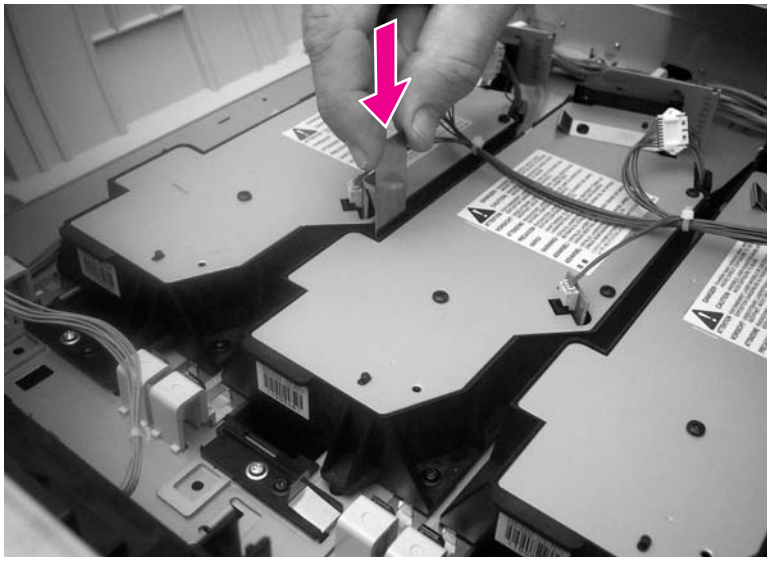


Figure 134. Position the laser/scanner assembly

8 Tighten the four black laser/scanner mounting screws (callout 9) and tighten the black adjustment screw (callout 10).

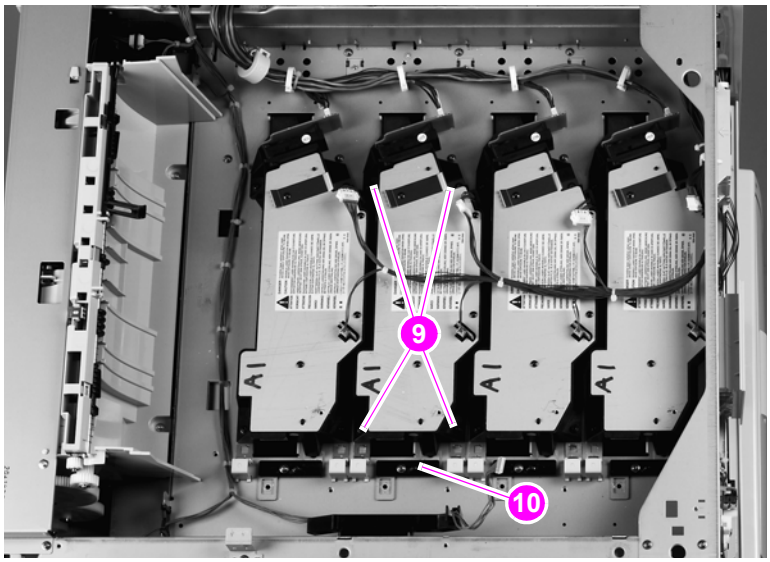


Figure 135. Tighten the laser/scanner assembly mounting screws

9 Cover the top of the printer to prevent light leaks, and then print another laser/scanner adjustment page (see page 233). If the numbers under the *Laser Scanner Adjustment Step 1* heading indicate that the laser/scanners do not require further adjustments (all are zeros), the first adjustment is complete.

Note Make sure that you remove the adjustment plate and screw from the laser/scanner bed.

10 If further adjustment is required for the remaining laser/scanner assemblies, repeat *Laser Scanner Adjustment Step 1*.

CAUTION If the step 1 adjustment must be repeated, make sure you install the first two S-shims.

Laser/scanner adjustment step 2

CAUTION Make sure that you do not lose any shims inside the printer.

Note The laser/scanner adjustment page has examples to help interpret the position of the gray bands. An example of "Adjustment required" is located on the left side of the page. An example of "No adjustment required" is located on the right side of the page.

Note The position of the center of the gray bands under the *Laser Scanner Adjustment Step 2* is interpreted as shown in figure 128. Callout 1 shows that the center of the gray band falls outside of the zero range, meaning that a laser/scanner adjustment is required. Callout 2 shows that the center of the gray band falls inside of the zero range, meaning that a laser/scanner adjustment is not required.

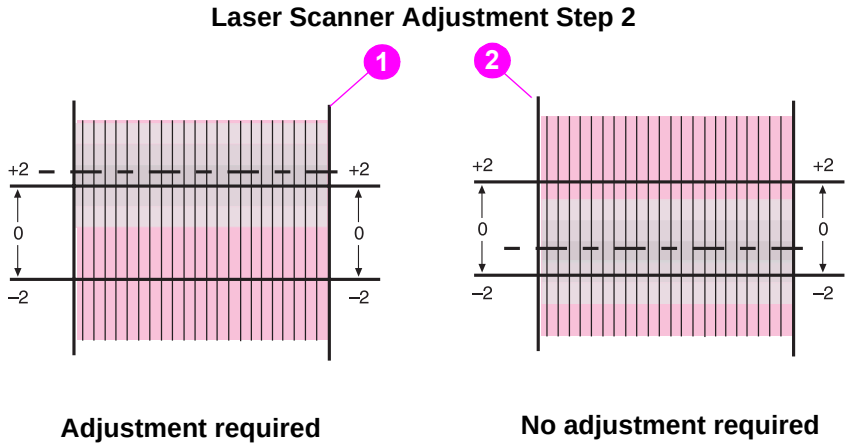


Figure 136. **Reading the laser/scanner adjustment step 2 images**

1 Print the laser/scanner adjustment page (see page 233).

2 Locate the box that appears on the adjustment page under the *Laser Scanner Adjustment Step 2* heading (callout 3). If centers of the gray bands are at zero for all three colors, no adjustment is required and the second adjustment is complete.

If the center of the gray bands falls outside of the zero range, adjustment is required. If one of the colors (Y, M, or C) is out of the zero range, adjust the laser for that color as described. If all three colors (Y, M, and C) are out of the zero range in the same direction, you might only have to adjust the black laser. In this case, the number of shims that you add or subtract is the reverse of the indication. That is, you add shims if the indication is negative or remove shims if the indication is positive. Proceed to the next step.

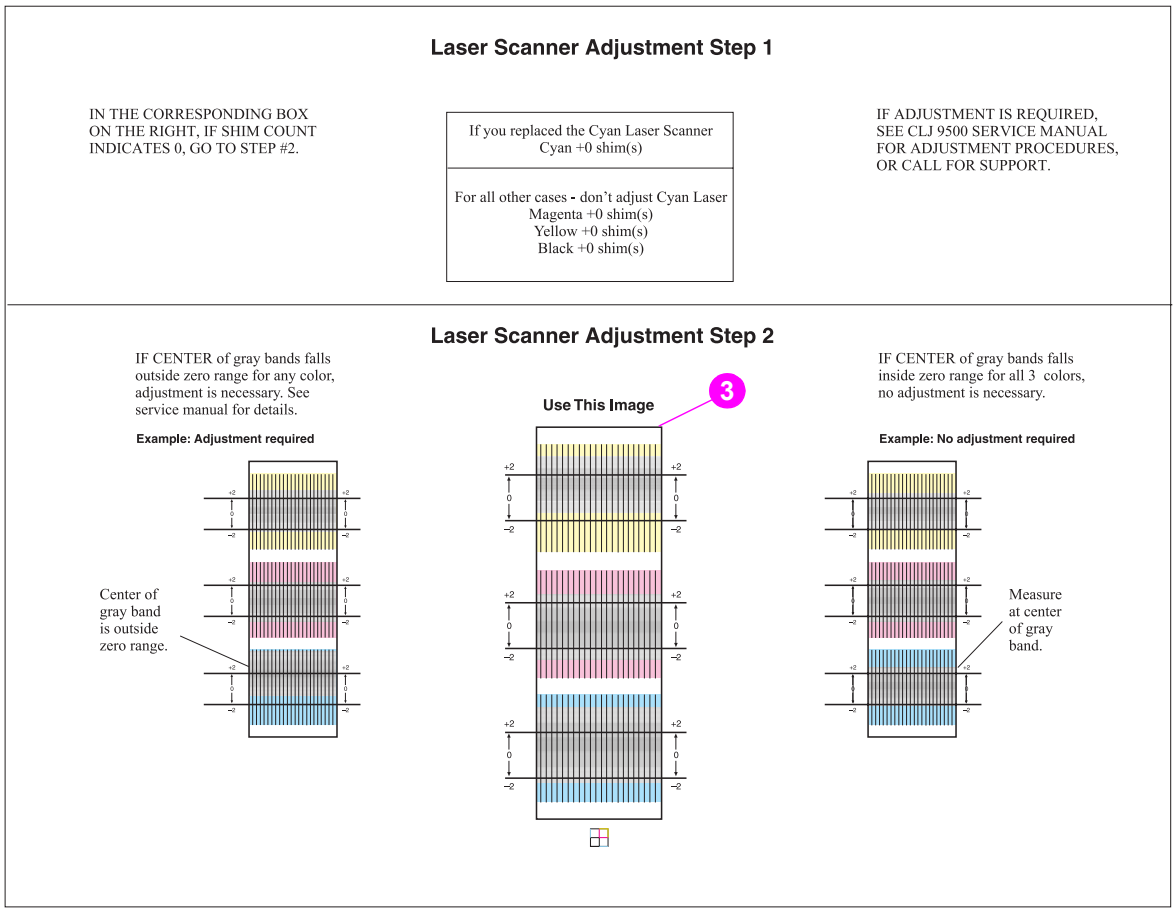


Figure 137. Laser/scanner adjustment page step 2

3 Remove the four black laser/scanner mounting screws (callout 4) for the selected laser/scanner.

CAUTION Do *not* loosen the one black laser/scanner adjustment screw (callout 5).

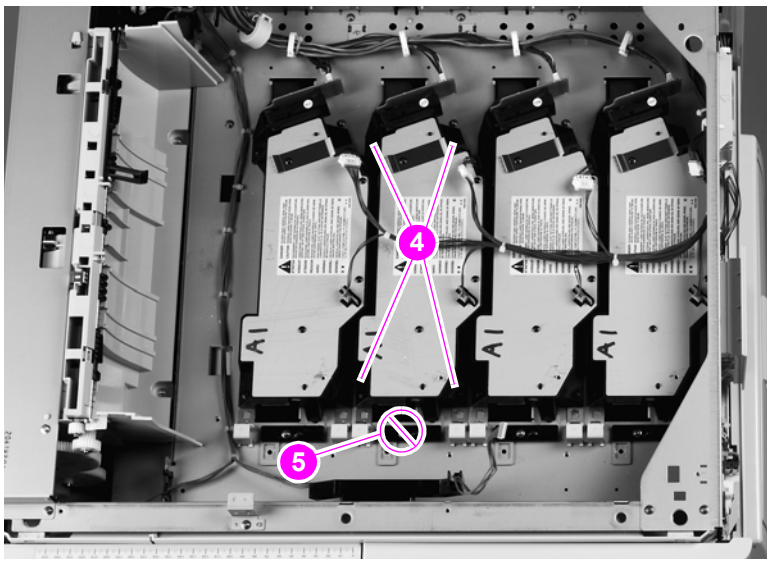


Figure 138. Remove the laser/scanner assembly mounting screws

4 Lift up the laser/scanner assembly slightly. Pinch one of the two plastic shim retainers and pull the retainer and shim pile (callout 6) out of the printer. Repeat for the second retainer and shim pile (callout 7).

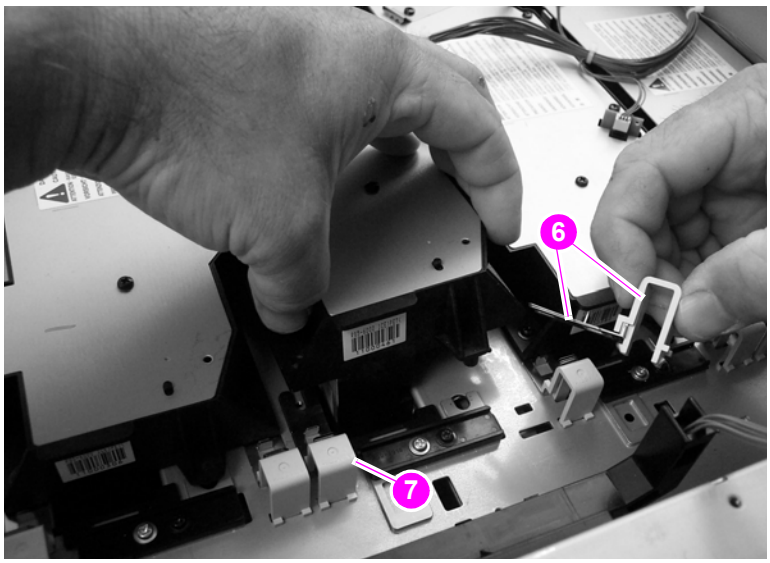


Figure 139. Remove the laser/scanner assembly shim retainers and shims

5 Add or remove the required number of shims from the two shim piles.

Note If all three colors (Y, M, and C) are outside of the zero range by the same amount, you can simply adjust the black laser, rather than the other three, to align all four laser scanners. In this instance, the number of shims added or subtracted is reversed, and black is the reference color for this adjustment.

CAUTION Always add or subtract shims from the *top* of the shim pile. The bottom shim might include a half-width, factory-installed shim that *must* stay in place.

Make sure that you add or remove the same number of shims from the top of each shim pile. If the number of shims is not equal, the laser/scanner will not be parallel to the printer frame when it is installed.

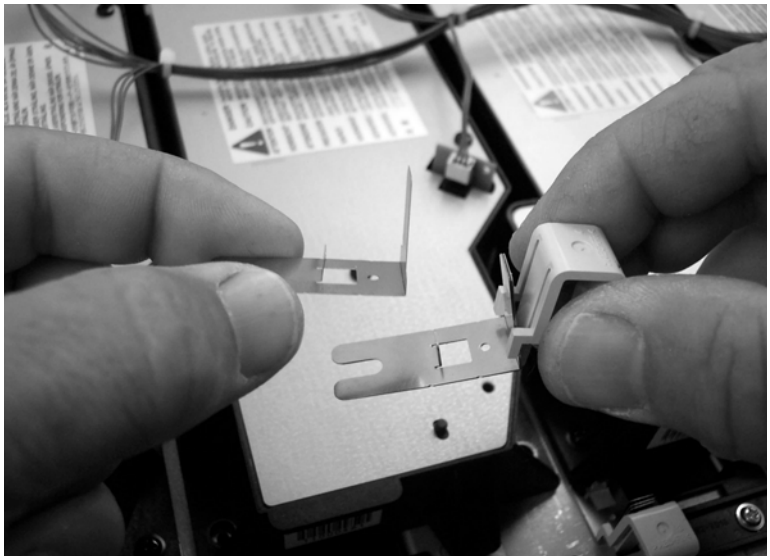


Figure 140. Add or remove the laser/scanner adjustment shims

6 Lift up the laser/scanner assembly slightly. Carefully slide the two retainers and shim piles back into position under the left and right side of the laser/scanner assembly. Snap the two plastic shim retainers into place.

CAUTION Make sure that the shims do not cover the laser/scanner mounting screw-holes. If they cover the holes, the shims might be bent or damaged when the laser/scanner assembly is installed. Dispose of any bent or damaged shims and replace them with smooth, flat, undamaged shims.

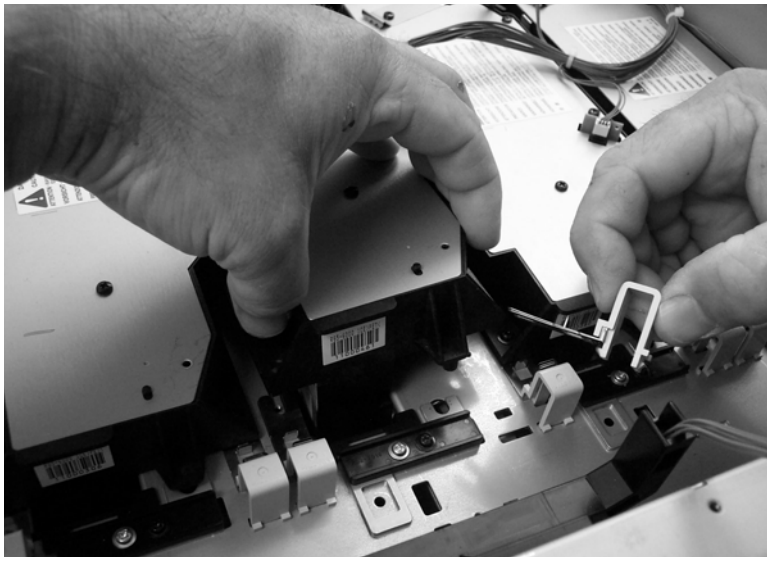


Figure 141. **Replace the laser/scanner adjustment shim retainers and shims**

7 Tighten the four black laser/scanner mounting screws (callout 8).

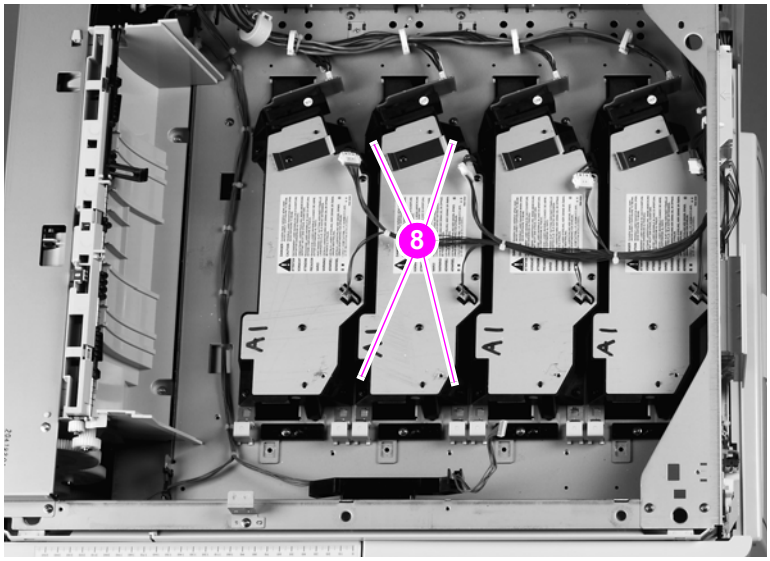


Figure 142. **Tighten the laser/scanner assembly mounting screws**

8 Print another laser/scanner adjustment page (see page 233). Make sure that you cover the top of the printer to prevent light leaks.

CAUTION Make sure that you do not use previously printed laser/scanner adjustment pages to check for the correct laser/scanner adjustment.

9 If all of the centers of the three gray bands under the *Laser Scanner Adjustment Step 2* heading are inside of the zero range for all of the three colors (callout 9), the step 2 adjustment is complete. Replace the printer covers.

10 If any of the centers of the three gray bands under the *Laser Scanner Adjustment Step 2* heading are outside of the zero range for any of the three colors (callout 9), repeat the step 2 adjustment procedure.

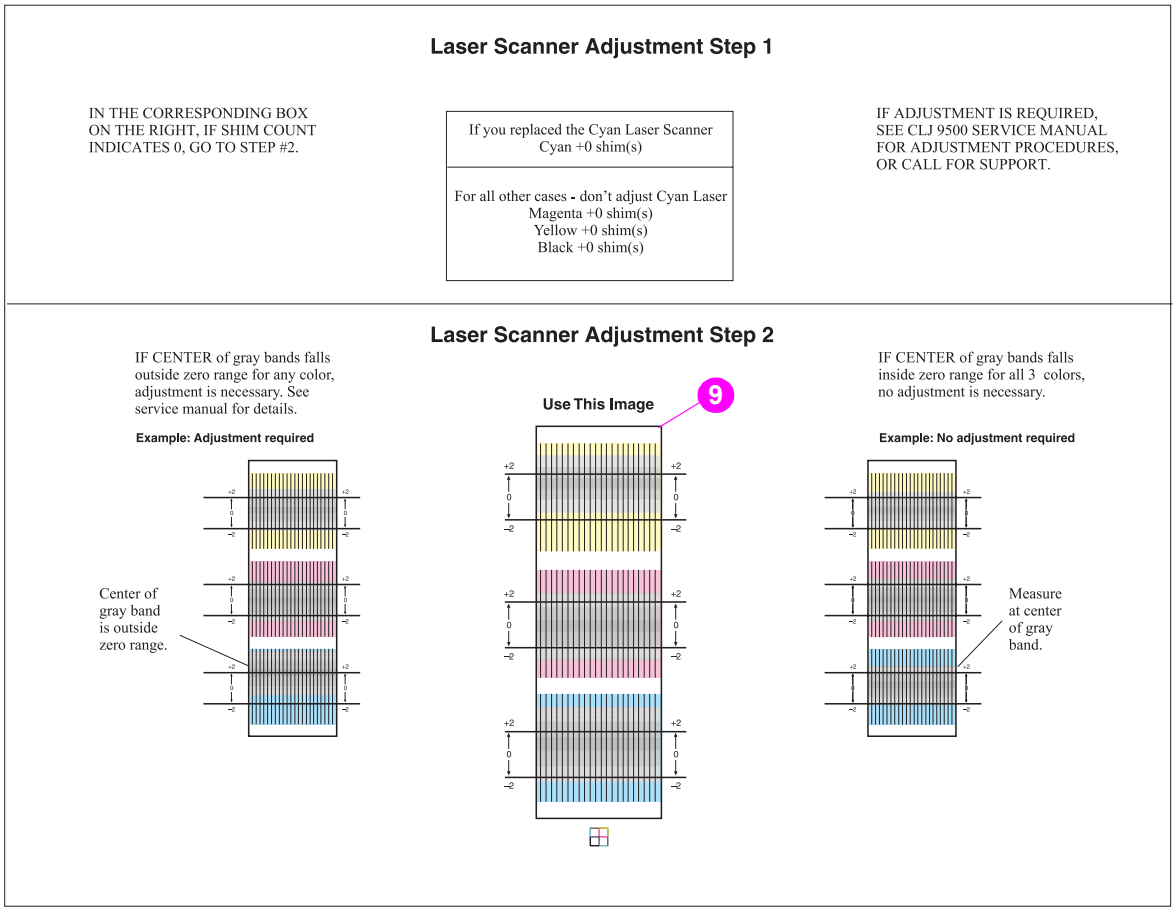


Figure 143. **Print another laser/scanner adjustment page**

Delivery unit

1 Remove the following covers:

- Top left cover. See page 215.
- Left back cover. See page 224.

2 Open the fuser access door.

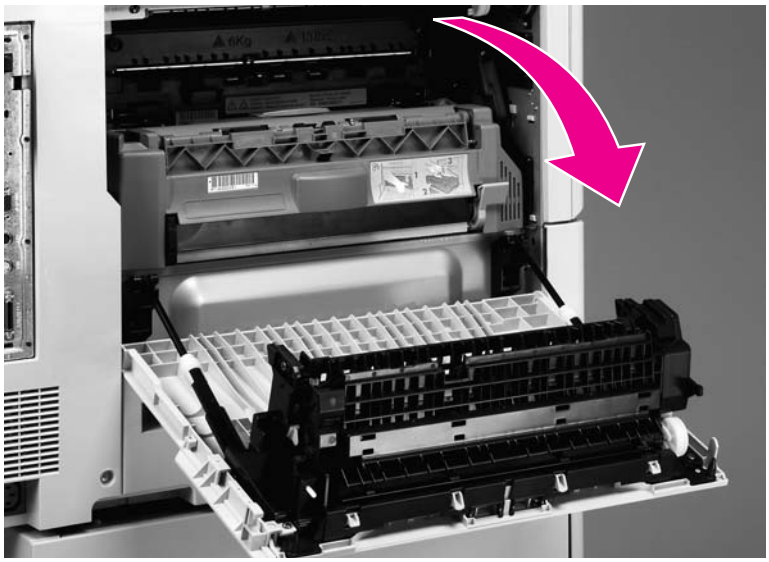


Figure 144. **Gain access to the delivery unit**

3 Push down the top of the left side front cover, and remove it by pulling out from the middle of the cover.

Hint Removing the left front door might make it easier to remove the left side front cover.

Note Make sure to depress the tab at the top of the left side front cover so that the plastic pin can be removed.



Figure 145. **Remove the left side front cover**

4 Remove four screws (callout 1) and two shields (callout 2).

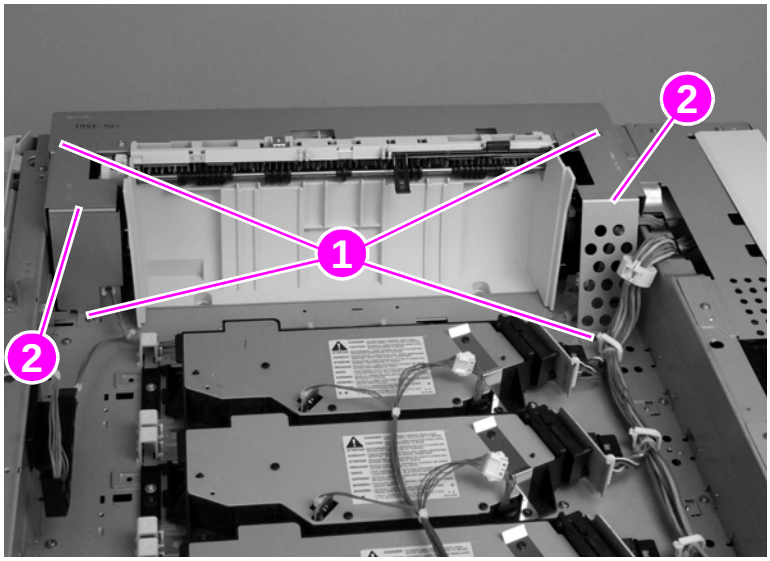


Figure 146. **Remove the delivery unit shields**

5 Disconnect two connectors (callout 3).

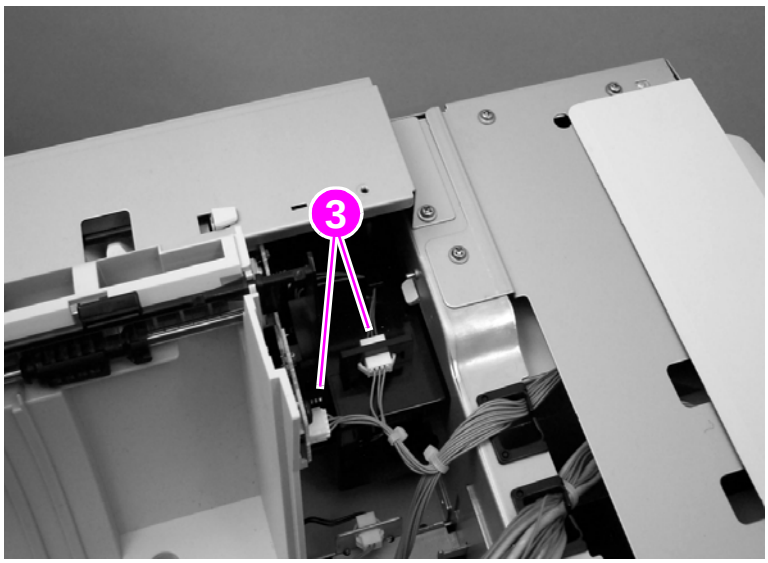


Figure 147. **Disconnect the delivery unit connectors**

6 Remove five screws (callout 4)

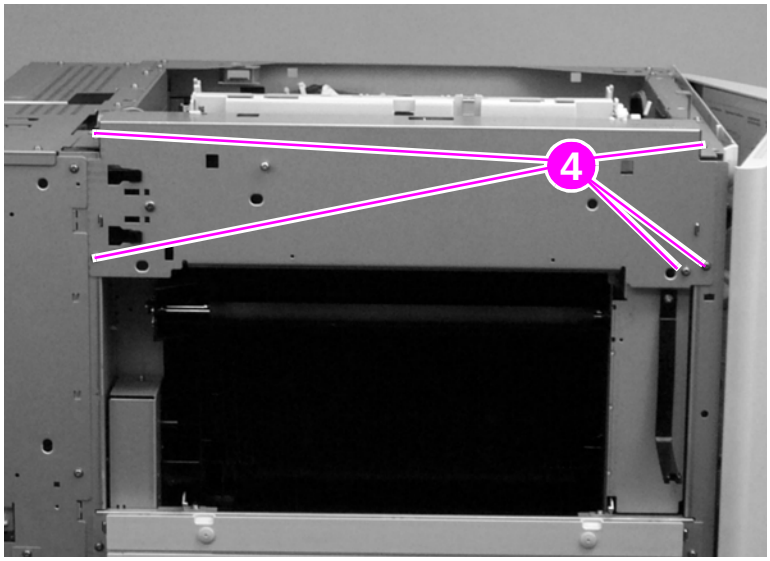


Figure 148. **Remove the delivery unit mounting screws (1 of 2)**

7 Remove two screws (callout 5).

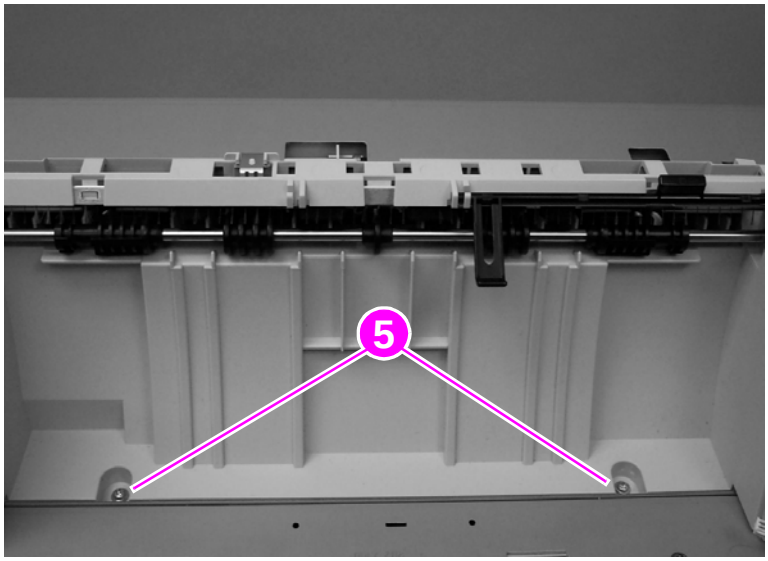


Figure 149. **Remove the delivery unit mounting screws (2 of 2)**

8 Remove the delivery unit.

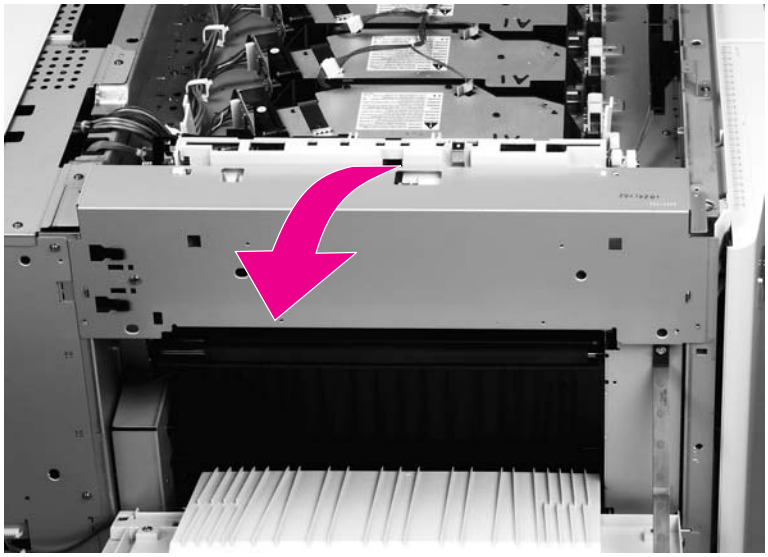


Figure 150. **Remove the delivery unit**

Delivery unit sensor

1 Perform steps 1 through 8 for the delivery unit. See page 249.

2 Remove one screw (callout 1).

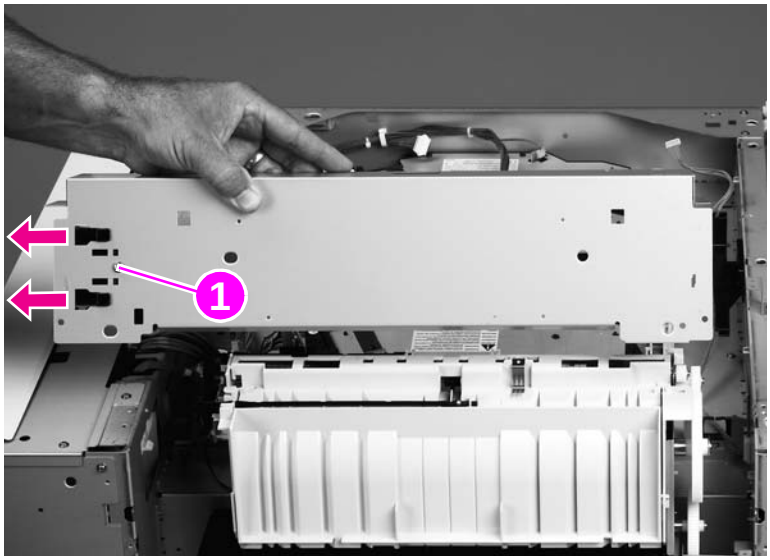


Figure 151. Remove the delivery unit sensor

3 Remove the delivery unit sensor.

To reinstall

Install the delivery unit sensor on the replacement delivery unit.

Vertical feed unit

1 Remove the following covers and assemblies:

- Top left cover. See page 215.
- Delivery unit. See page 249.

2 Disconnect one connector (callout 1), and one retaining strap (callout 2), and remove one screw on the holding clamp (callout 3).

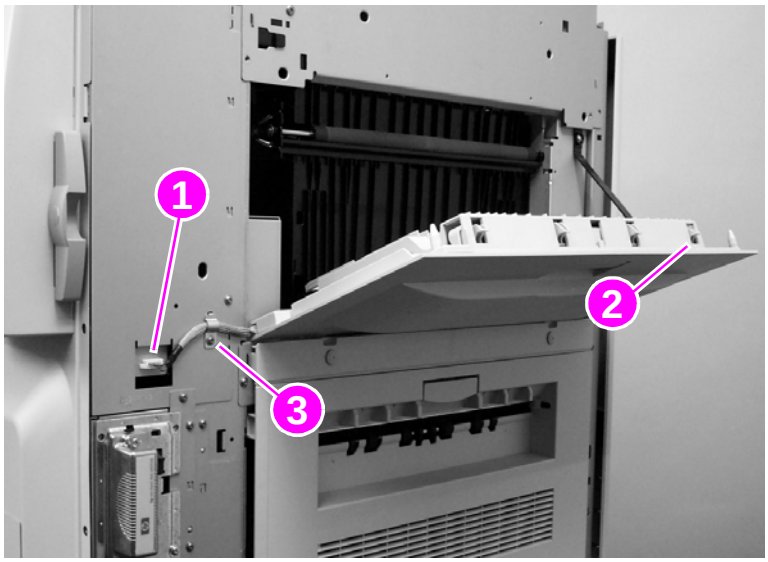


Figure 152. **Gain access to the vertical feed unit**

3 Lower the paper-path access door to a horizontal position.

4 To remove the door, pull the right side of the paper-path access door to the right.

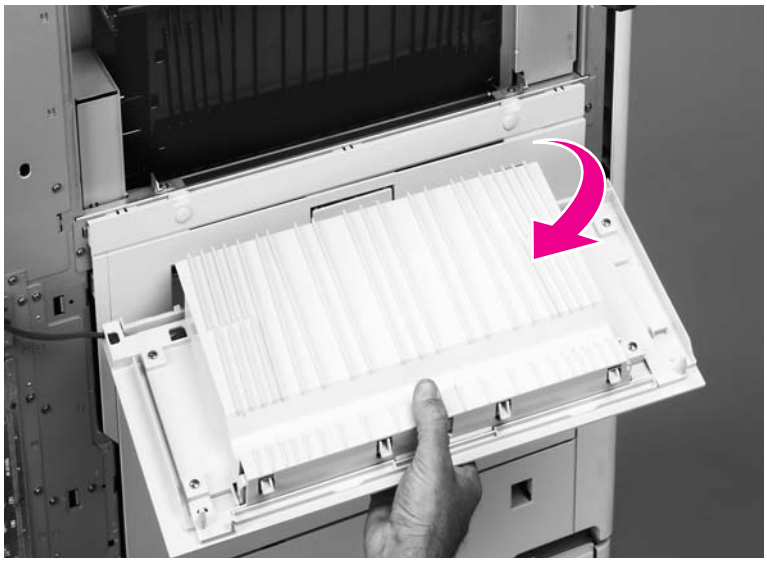


Figure 153. **Remove the paper path access door**

5 Open the fuser access door.

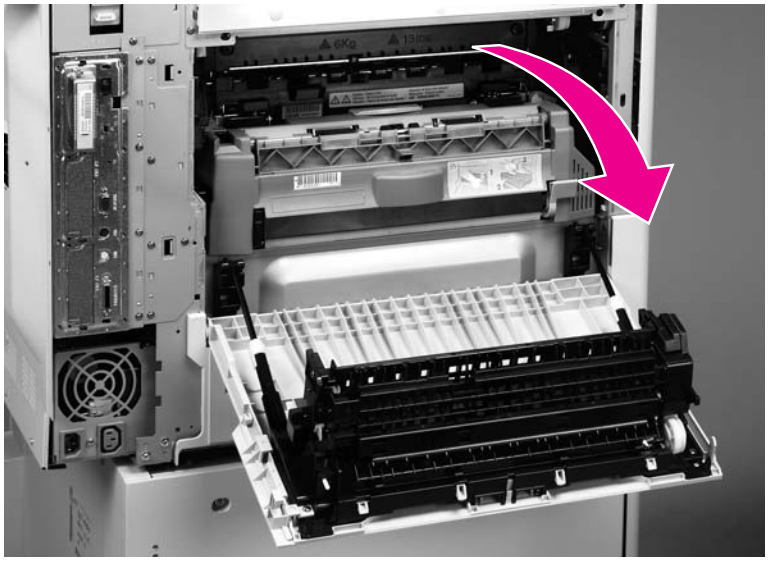


Figure 154. **Gain access to the left side middle cover mounting screws**

6 Remove two screws (callout 4).

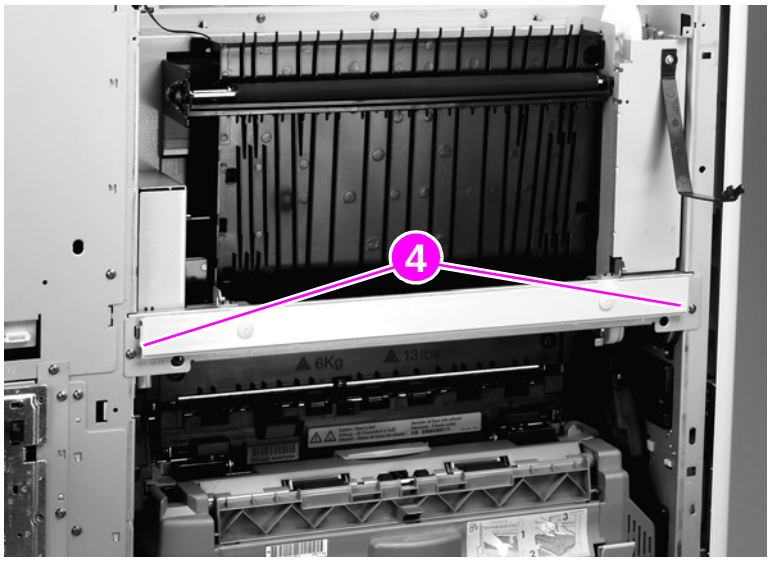


Figure 155. **Remove the left side middle cover mounting screws**

7 Remove the left side middle cover mounting bracket.

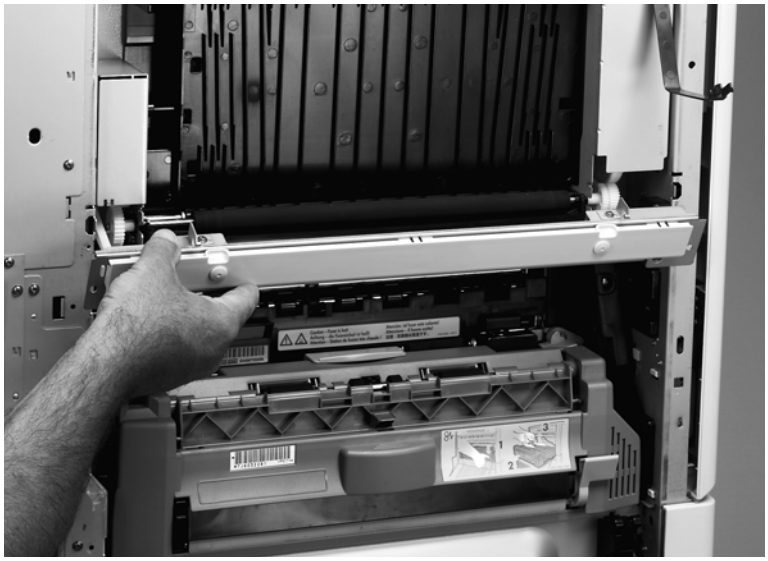


Figure 156. **Remove the left side middle cover mounting bracket**

8 Remove three screws (callout 5), and disconnect one connector (callout 6).

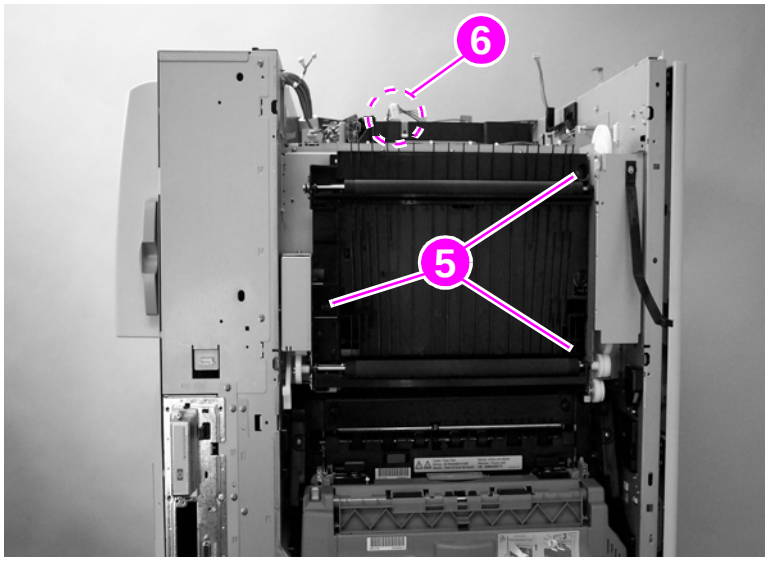


Figure 157. **Remove the vertical feed unit mounting screws**

9 Remove the vertical feed unit.

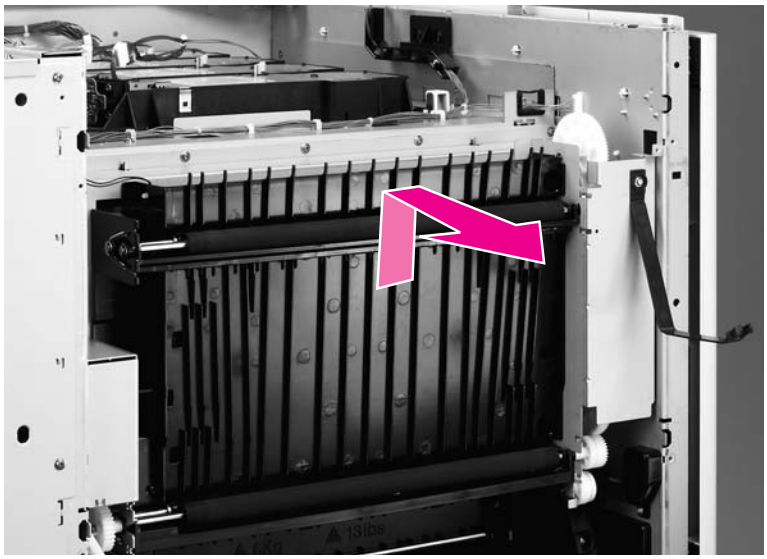


Figure 158. **Remove the vertical feed unit**

Note When replacing the vertical feed unit, make sure to reconnect the connector.

Duplexer

1 Open the fuser access door.

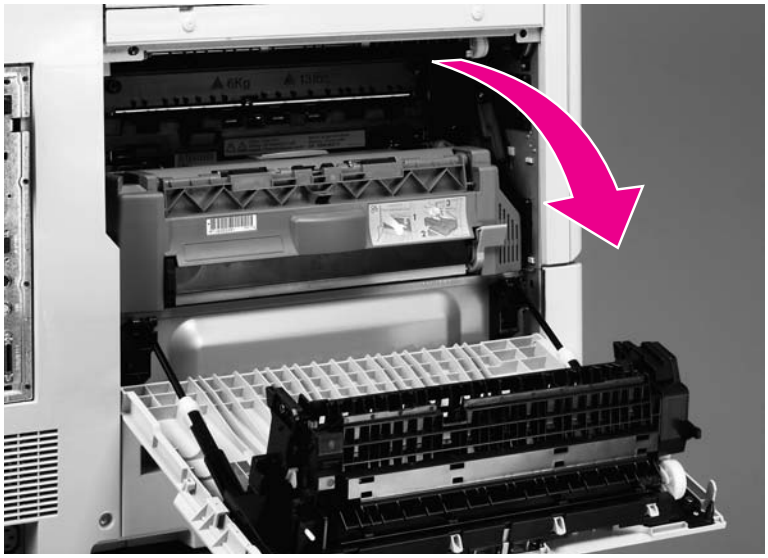


Figure 159. **Gain access to the duplexer**

2 Depress the green lever (callout 1), and pull the duplexer out until it stops.



Figure 160. **Remove the duplexer**

3 Tilt the duplexer up and remove it.

Fuser

1 Remove the duplexer. See page 258.

2 Rotate the two blue tabs inward.

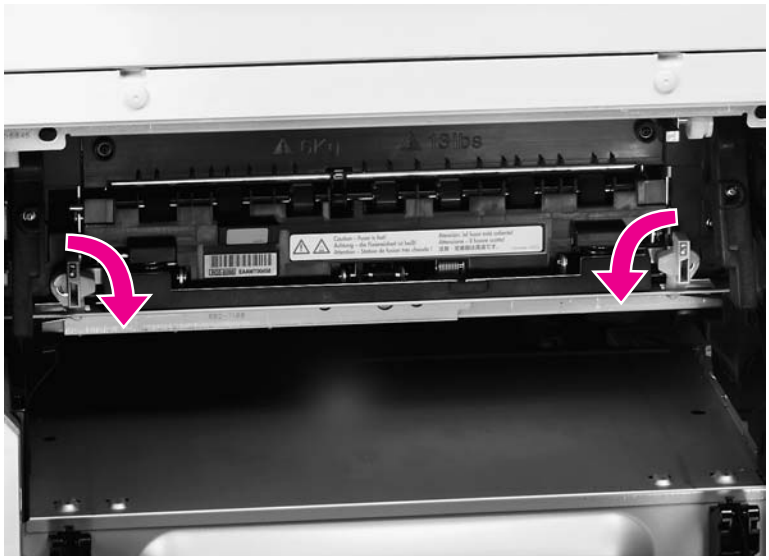


Figure 161. Unlock the fuser

3 Slightly lift up the fuser and pull it out.



Figure 162. Remove the fuser

Intermediate transfer belt (ITB)

1 Open the front doors.

Note Make sure that the green handle is down.

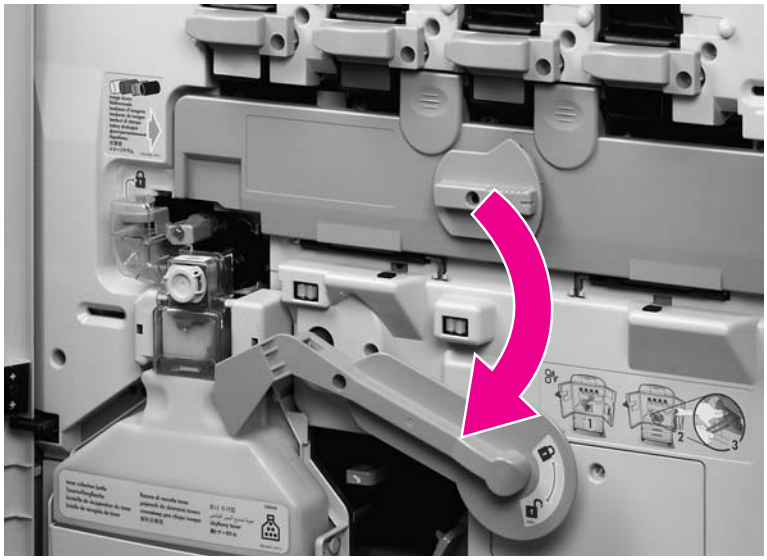


Figure 163. **Release the ITB**

2 Open the ITB door.



Figure 164. **Open the ITB door**

3 Grasp the blue handle, and slide the ITB out until it stops.

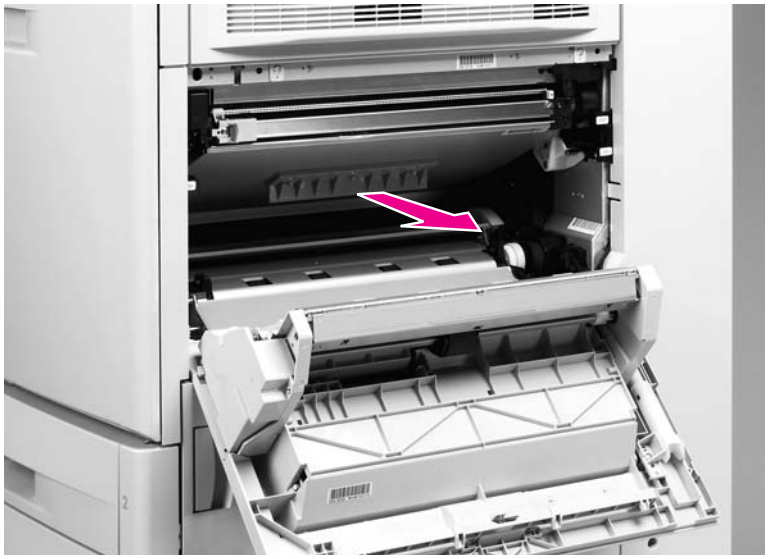


Figure 165. **Slide the ITB out of the printer**

CAUTION Do not let anything touch the surface of the ITB.

4 Depress the two blue levers (callout 1), and remove the ITB.

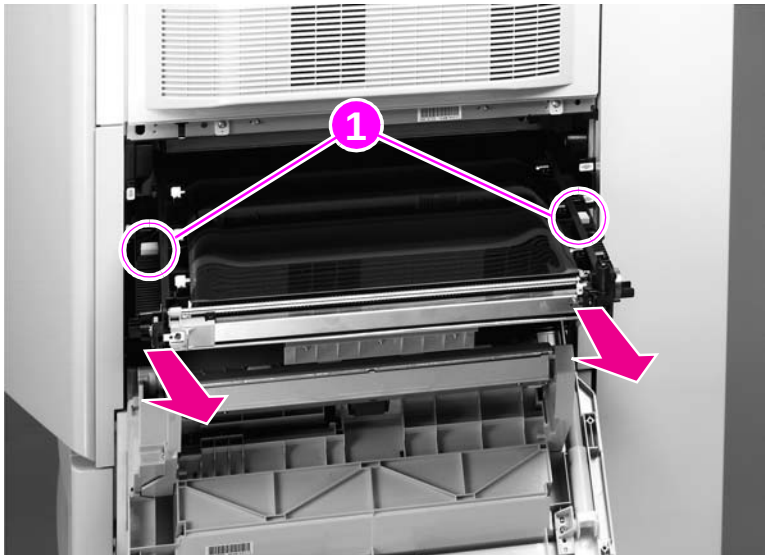


Figure 166. **Remove the ITB**

CAUTION Make sure that you set the ITB on a flat, clean surface.

Density and registration sensor assembly

1 Remove the following covers and FRUs:

- Upper right cover. See page 210.
- Right back cover. See page 227.
- Back cover. See page 228.
- Intermediate transfer belt (ITB). See page 260.

2 Remove one screw (callout 1), and remove the right front cover (callout 2).

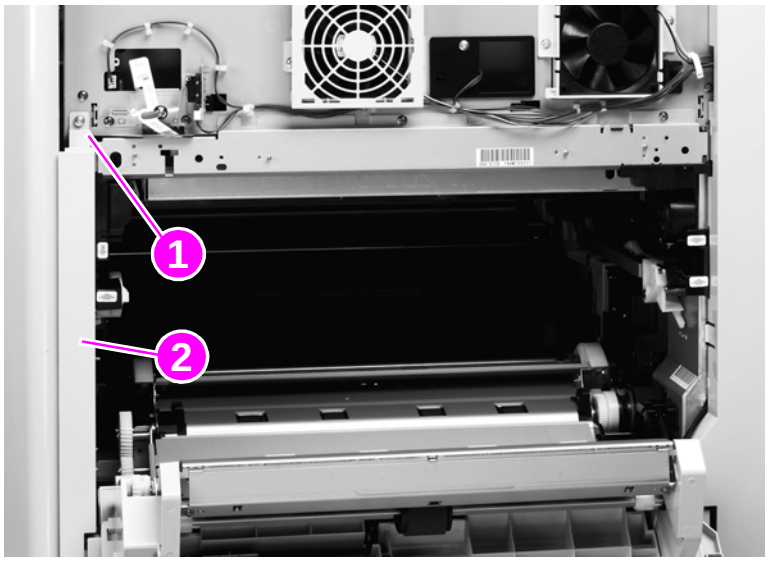


Figure 167. **Remove the right front cover**

3 Remove four screws (callout 4).

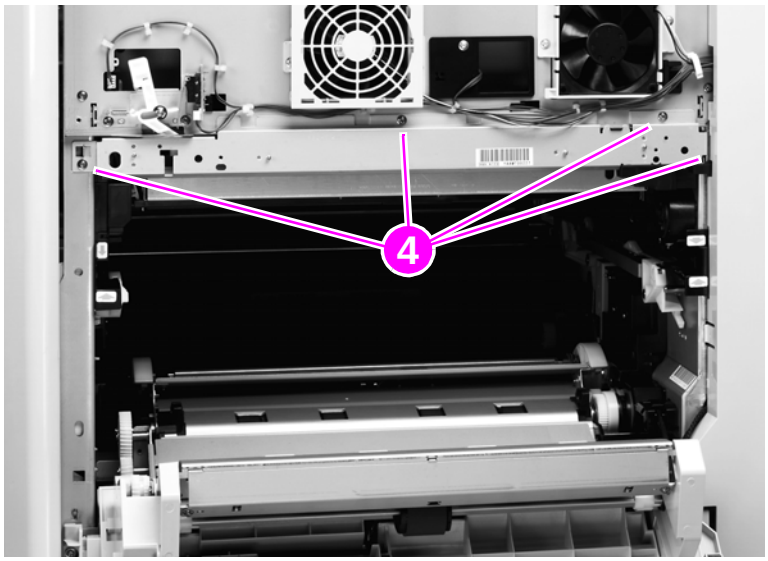


Figure 168. **Remove the density and registration sensor mounting screws**

4 Disconnect one connector (callout 5) and two clips (callout 6) from the post charger power supply.

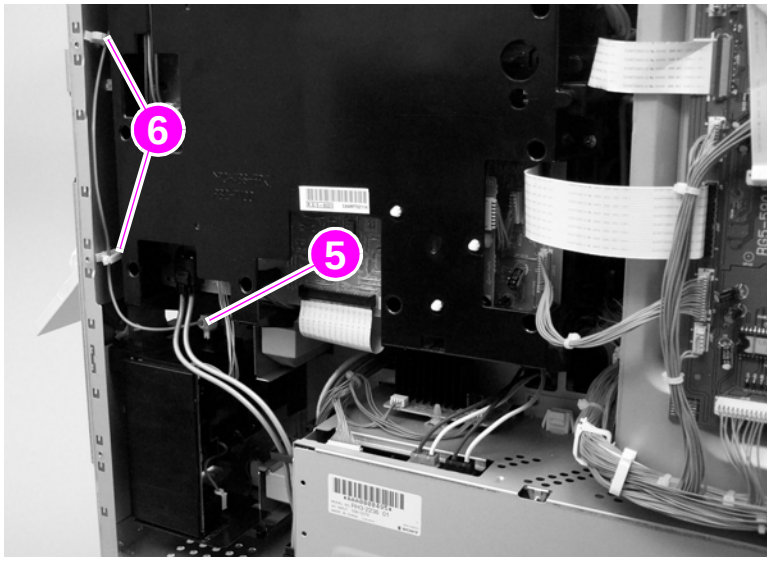


Figure 169. **Disconnect the density and registration sensor connector**

5 Unclip two wire retainers (callout 7) and feed the wire through the hole in the chassis (callout 8; in this picture, the wire has already been passed through the hole in the chassis).

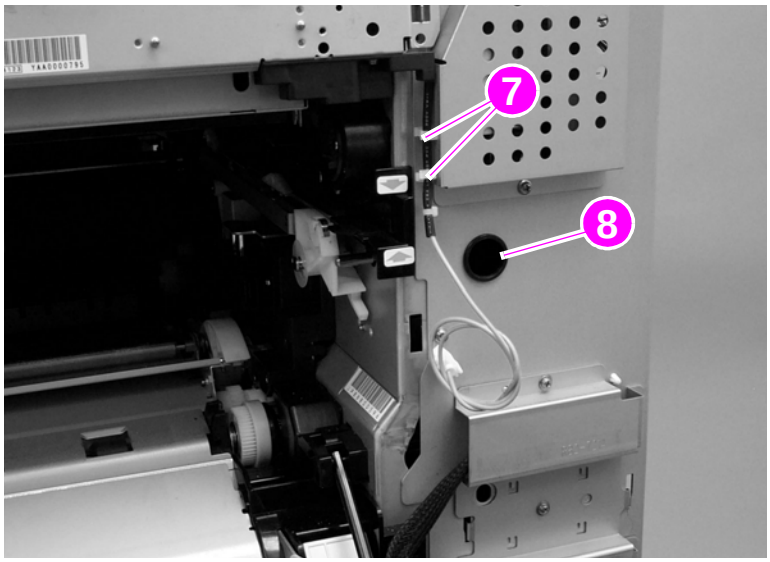


Figure 170. **Unclip the density and registration sensor wire retainers**

6 Open the right front door to release the density and registration shutter. Remove the density and registration sensor assembly from the printer.

CAUTION When removing the density and registration sensor assembly, do not damage the sensor shutter where it contacts the front right door shutter lever (make sure you re-link this assembly when reinstalling).

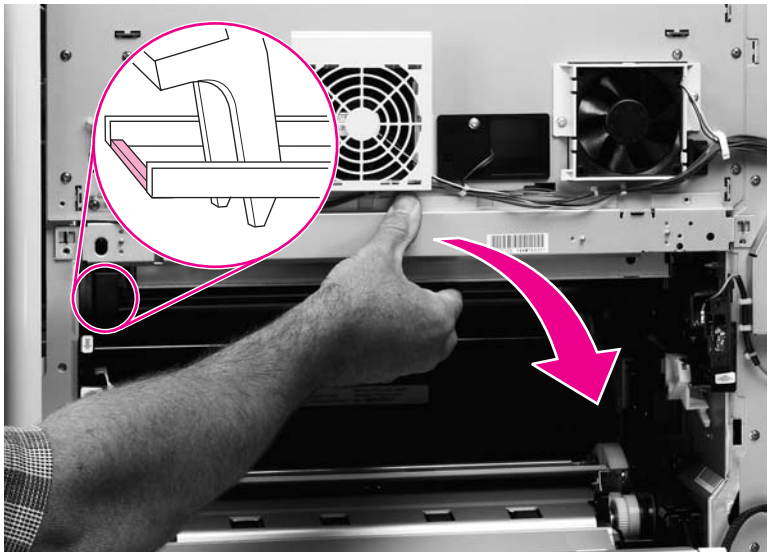


Figure 171. Release the density and registration sensor assembly

7 Disconnect three connectors (callout 9), unclip four cable clamps (callout 10), and thread the harness out.

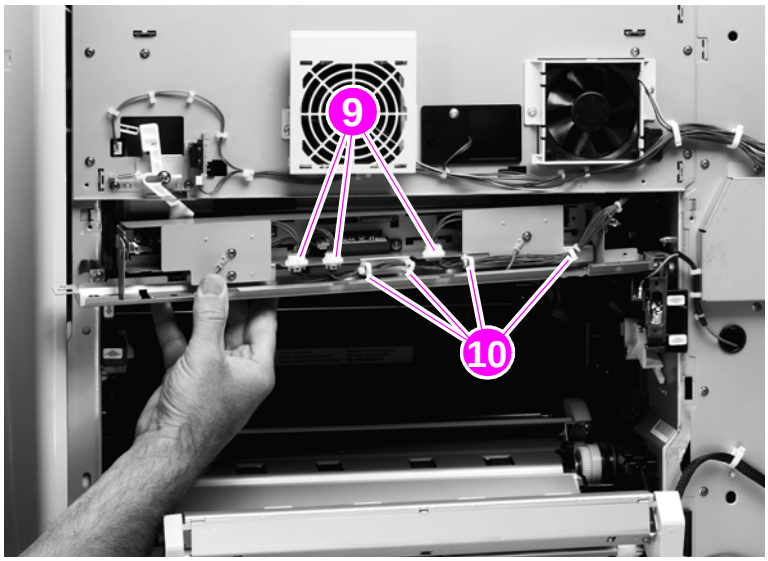


Figure 172. Remove the density and registration sensor assembly

8 Remove the density and registration sensor.

CAUTION Make sure that you do not bend the copper grounding strip. Make sure not to pinch any wires when reinstalling the density and registration sensor.

Make sure that the sensor shutter assembly is linked correctly to the front right door lever so the shutter moves to the open position when the door is closed. If the printer continuously tries to self-calibrate after this assembly is replaced, verify that the shutter is correctly linked to the door, is not damaged, and can freely move to the open position.

Right back fan

1 Remove the following covers:

- Right upper cover. See page 210.
- Right back cover. See page 227.

2 Disconnect one connector (callout 1) and unclip one wire clip (callout 2).

3 Remove one screw (callout 3) and one metal harness retainer (callout 4).

4 Remove two screws (callout 5).

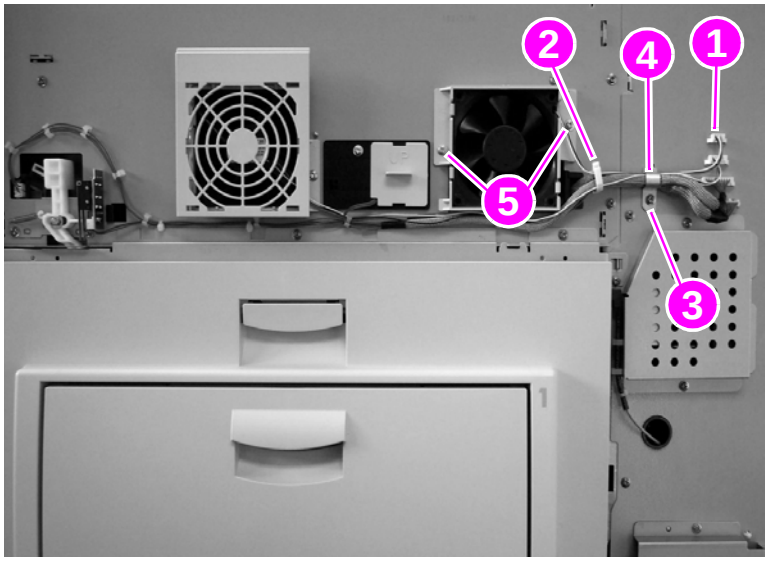


Figure 173. Remove the right back fan

5 Remove the right back fan.

Right front fan

1 Remove the following covers:

- Right upper cover. See page 210.
- Right back cover. See page 227.

2 Disconnect one connector (callout 1) and Unclip one wire clip (callout 2).

3 Remove one screw (callout 3) and one metal harness retainer (callout 4).

4 Remove two screws (callout 5).

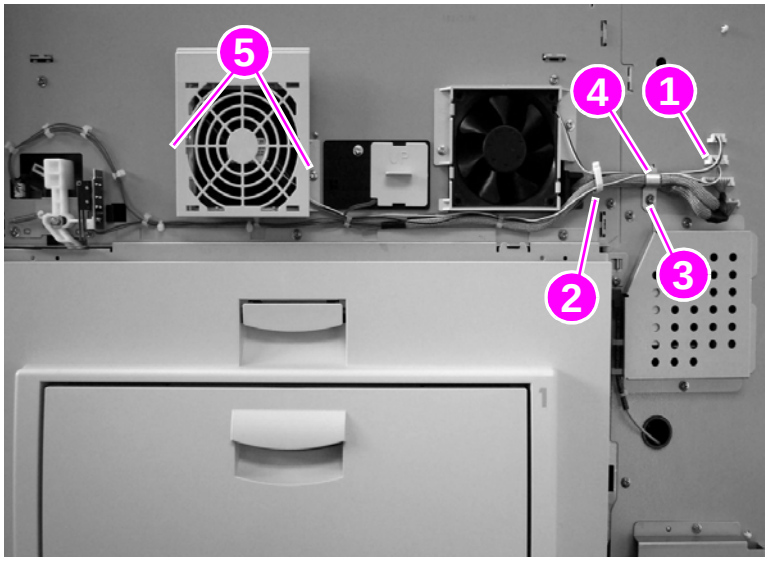


Figure 174. **Remove the right front fan**

5 Remove the right front fan.

Secondary transfer assembly (T2)

1 Remove the following FRUs:

- Four process cartridges. See page 203.
- Transfer roller. See page 207.
- Duplexer. See page 258.
- Fuser. See page 259.
- Intermediate transfer belt. See page 260.

Hint Removing the front right door might make it easier to remove the secondary transfer assembly.

2 Remove one screw (callout 1), and remove the T2 access cover (callout 2).

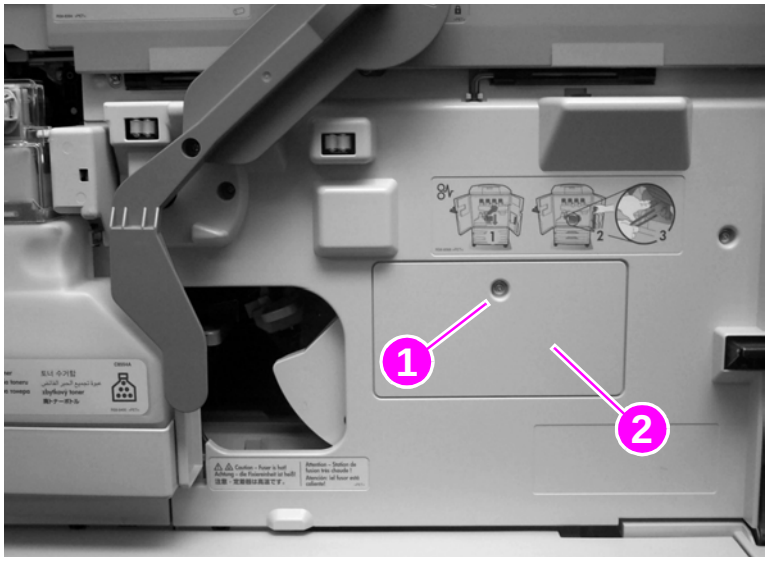


Figure 175. Remove the T2 cam access door

3 Remove two screws (callout 3), and remove the plastic bearing surface (callout 4).

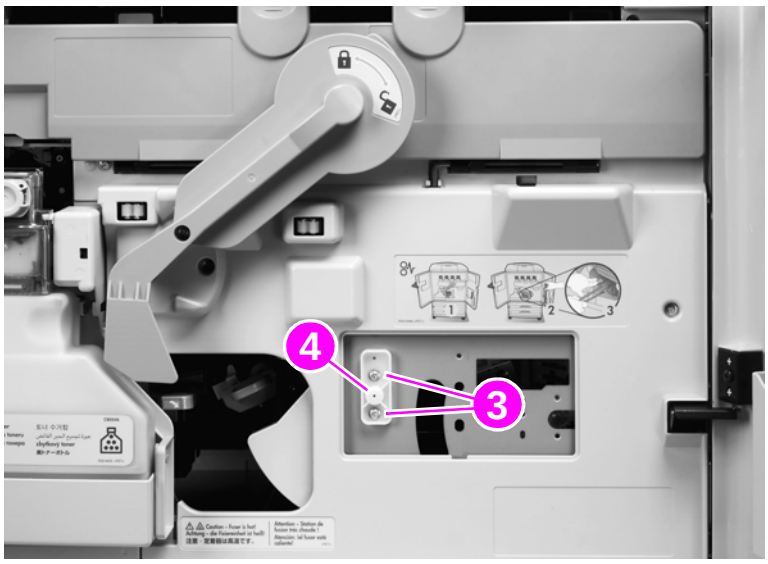


Figure 176. Remove the T2 bearing surface

4 Remove the link cover (callout 5).

Note The green lever must be up.

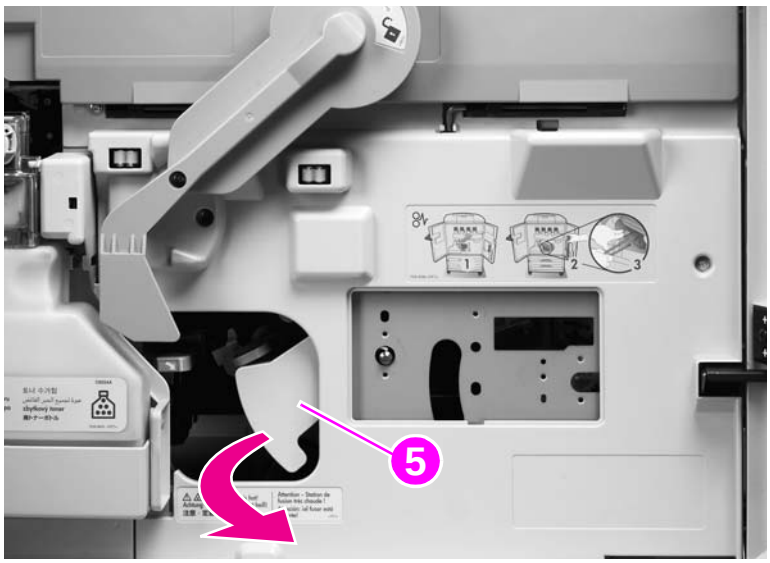


Figure 177. Remove the T2 link cover

5 Slide the spring (callout 6) off the shaft to the left and out of the chassis.

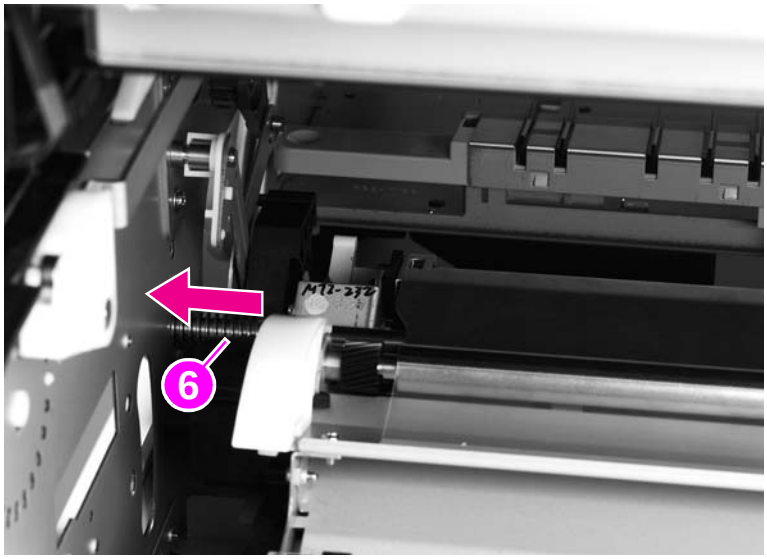


Figure 178. Remove the T2 cam spring

6 Lower the green handle.

7 Remove the cable cover by pinching its sides (callout 7).

CAUTION Make sure to remove the cable cover carefully, because the cables are retained in the channel on the right side of the cover.

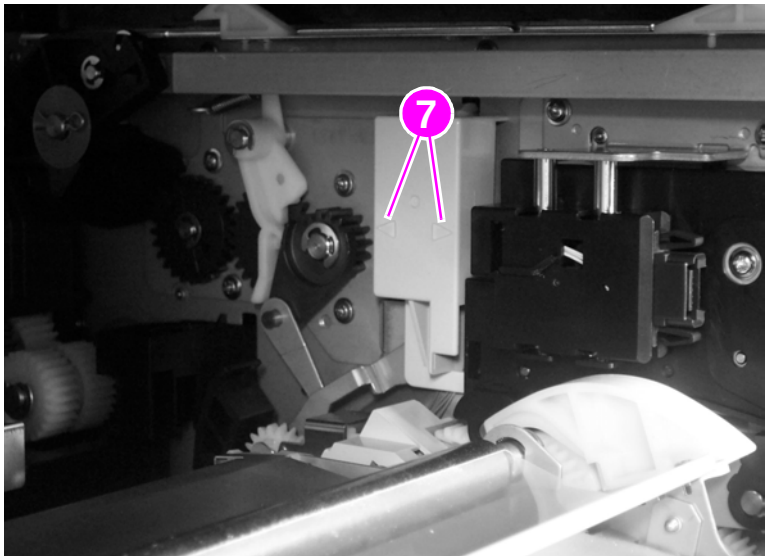


Figure 179. **Remove the T2 wire harness cover**

8 Disconnect one connector (callout 8), and remove two links (callout 9 and 10).

Note Remove the link (callout 9) by lifting it up and pulling it away from the shaft. Remove the link (callout 10) from the shaft by sliding it directly off the shaft.

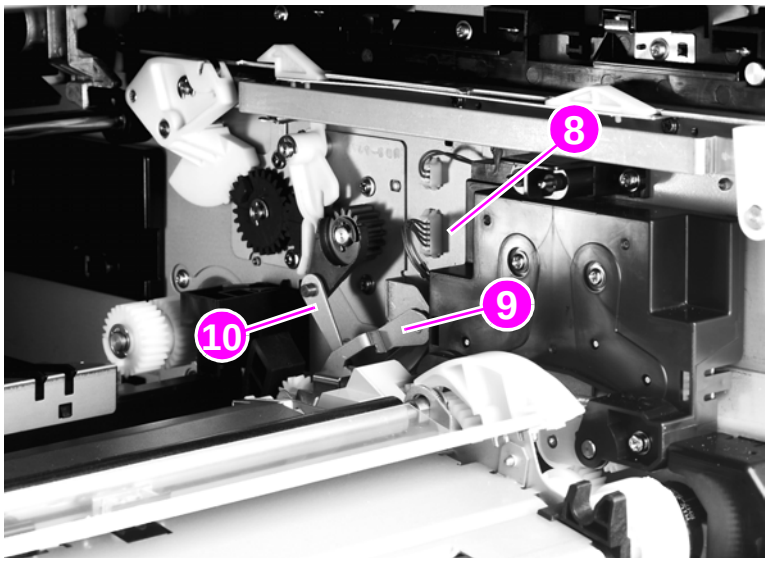


Figure 180. **Remove the T2 link (1 of 2)**

9 Remove the closest link (callout 11) first. Remove the link by unsnapping the plastic collar and sliding the link out. This link (callout 11) is not captive

CAUTION This link is *not* included when ordering a replacement or exchange secondary transfer assembly. Do not lose this link.

10 Remove the other link (callout 12) by pushing the link up and pulling it out.

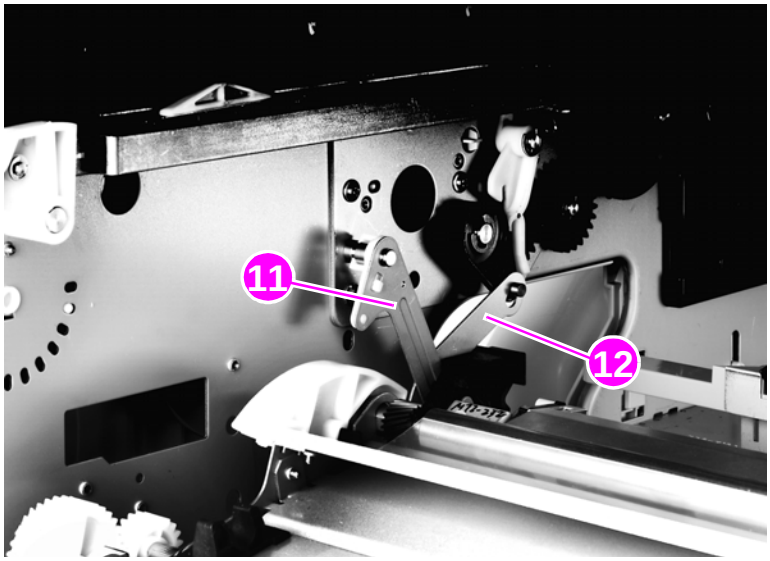


Figure 181. Remove the T2 link (2 of 2)

11 To remove the secondary transfer assembly:

a Position yourself on the right (ITB access) side of the printer.

b Grasp the secondary transfer assembly with both hands.

c Rotate the secondary transfer assembly up and toward you.

d Slide the secondary transfer assembly to the left.

e Swing the right side of the secondary transfer assembly up and toward you.

f Remove the secondary transfer assembly.

CAUTION Make sure that you do not bend the links.

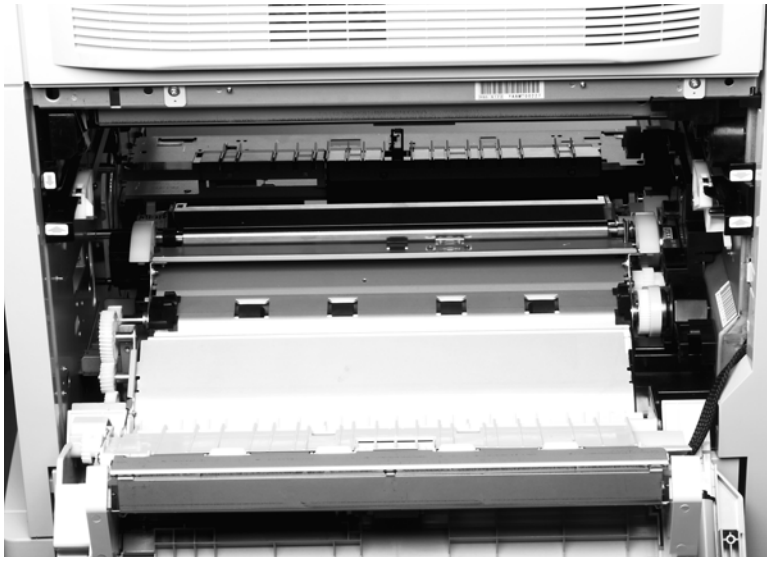


Figure 182. **Remove the T2 assembly**

To reinstall

- Make sure that the four links are positioned upward.
- Make sure that the green lever is down.
- Locate the secondary transfer assembly shaft hole before replacing the assembly.
- The reinstall motion is the opposite of the removal motion.
- Make sure that the connector is not entangled when reinstalling the links.
- Make sure that the four links are reinstalled correctly and functioning properly. Test this by gently rotating the green lever to verify that motion is not impeded.

CAUTION Do not force the green lever if it does not rotate easily.

- Make sure that both connectors are firmly seated and that the cover does not pinch the wires. The cover must be installed, because it retains a link.
- To reinstall the finger guard, pull back on the spring and push the finger guard onto the large shaft.

Note The finger guard must be seated correctly on two shafts.

Pickup unit

1 Remove the following covers:

- Right upper cover. See page 210.
- Back cover. See page 228.

2 Open the right lower door assembly, and remove one screw (callout 1) on the retaining strap of the right lower door assembly.

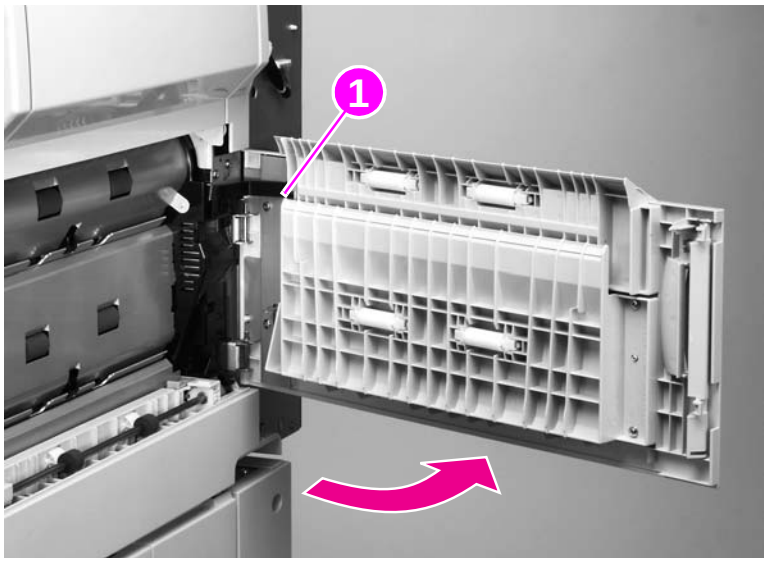


Figure 183. **Release the right lower door**

3 Remove the right lower door assembly.

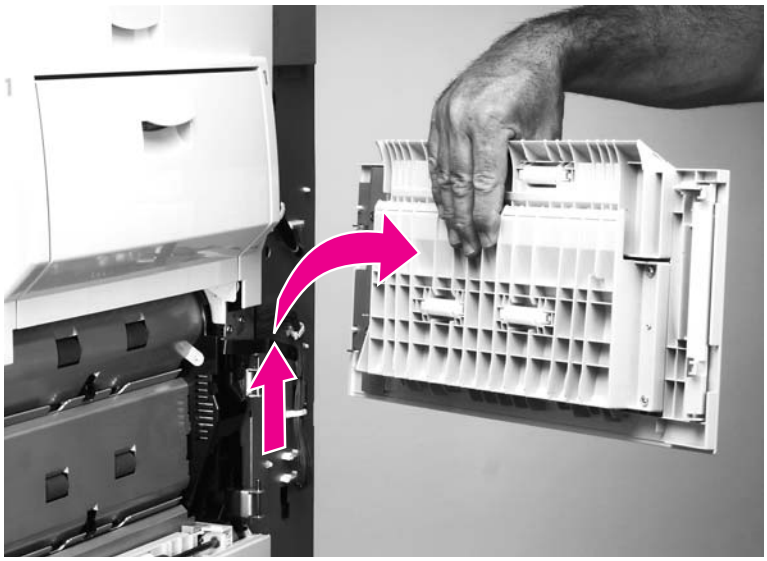


Figure 184. **Remove the right lower door**

4 Remove one screw (callout 2). Lift the right front cover (callout 3) up and then away from the printer.

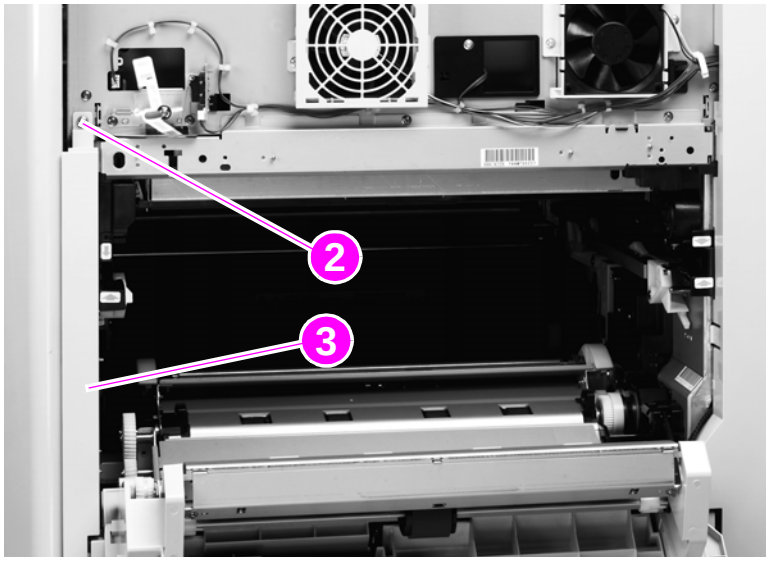


Figure 185. **Remove the right front cover**

5 Open the ITB door.

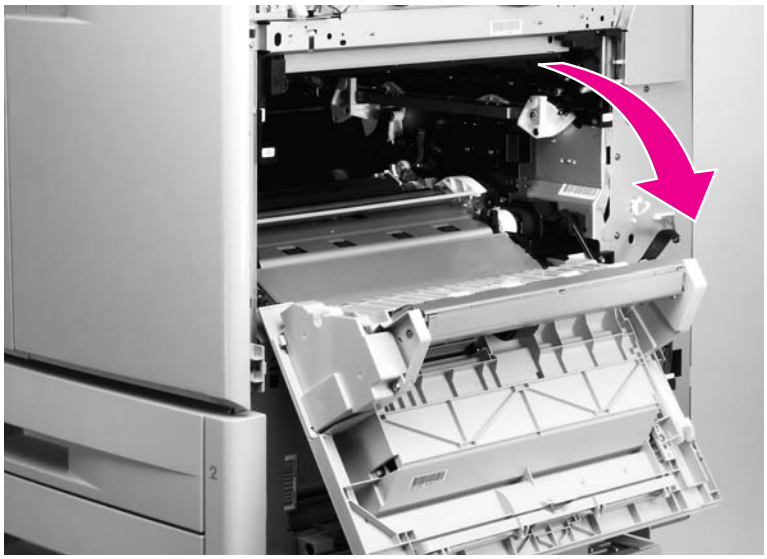


Figure 186. **Open the ITB door**

6 Remove seven screws (callout 4).

7 Remove the shield (callout 5).

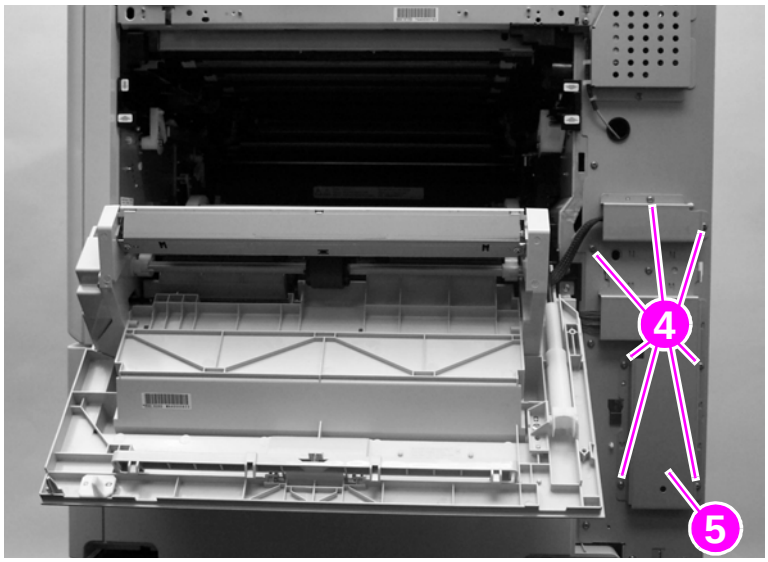


Figure 187. **Remove the wire harness shield**

8 Disconnect one cable connector (callout 6), and unclip one wire harness (callout 7).

9 Push the spring-loaded door rod down and to the back to remove it from the bracket (callout 8).

Hint Hold the door with your left hand while holding the rod with your right hand.

CAUTION The rod is under tension and the pins in the rod are not secure.

Note Do not remove the pin from the rod.

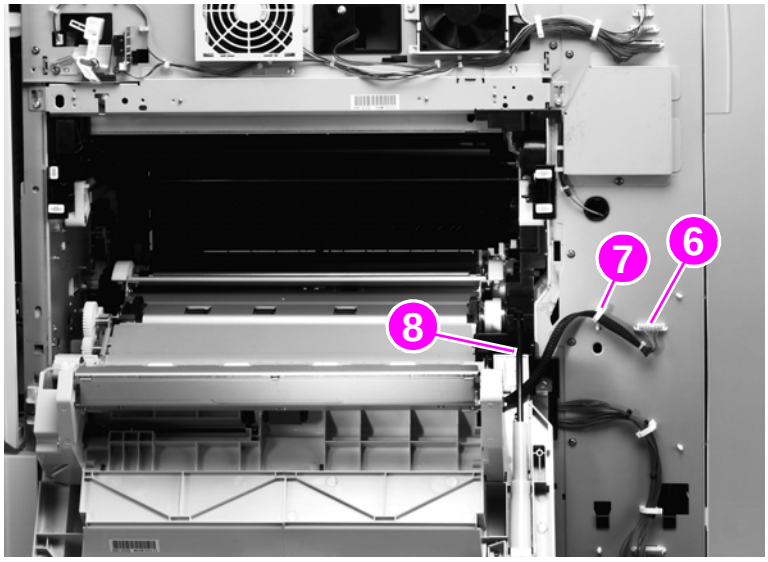


Figure 188. **Disconnect the ITB door wire harness**

10 Close the right upper door.



Figure 189. **Gain access to the ITB door mounting screws**

11 Remove three screws (callout 9).

12 Open the right upper door slightly and remove the bracket (callout 10).

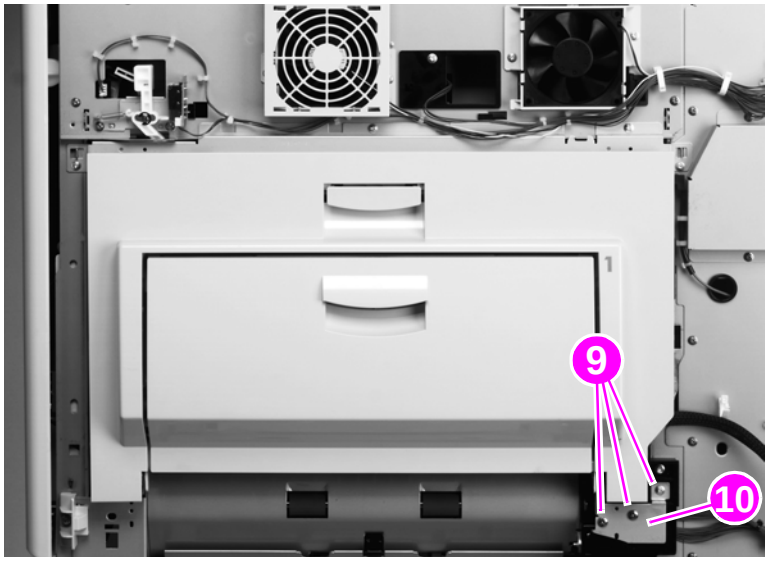


Figure 190. **Remove the ITB door**

13 Shift the ITB door toward the back of the printer and remove it.

14 Remove tray 2 and tray 3.

15 Remove two screws (callout 11) on the front of the printer.

16 Unhook the tab (callout 12) and disconnect the hook (callout 13).

17 Remove the lower right corner cover.

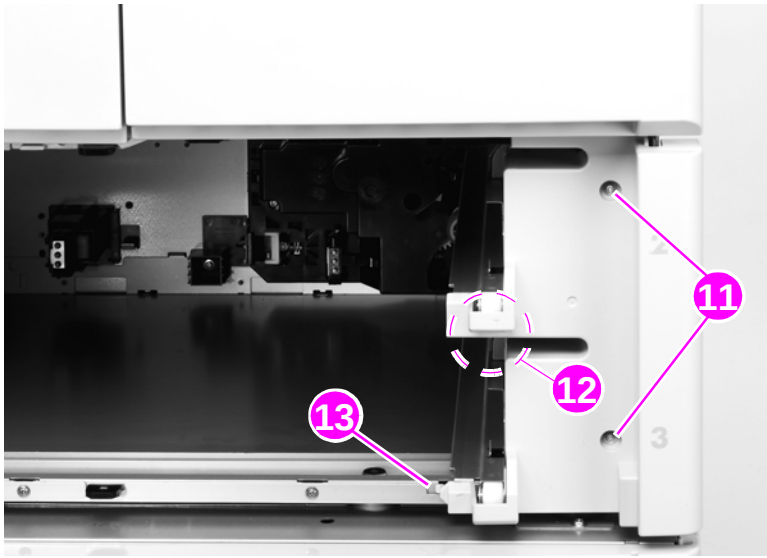


Figure 191. **Remove the front lower right cover**

18 Remove the paper path connection unit.

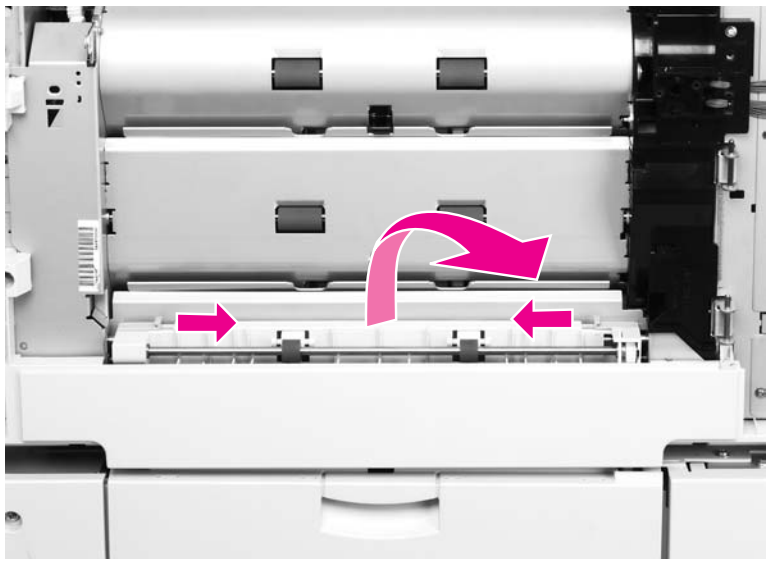


Figure 192. **Remove the vertical transfer unit**

19 Remove three screws (callout 14) and remove the right lower cover (callout 15).

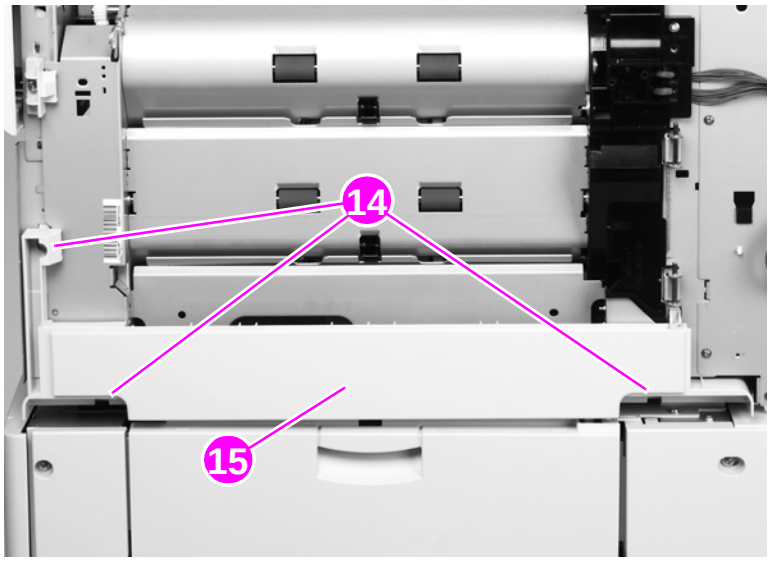


Figure 193. **Remove the right lower cover**

20 Remove one screw (callout 16) and remove the door stop (callout 17).

Hint Make sure that you orient the door stop correctly when you reinstall it.

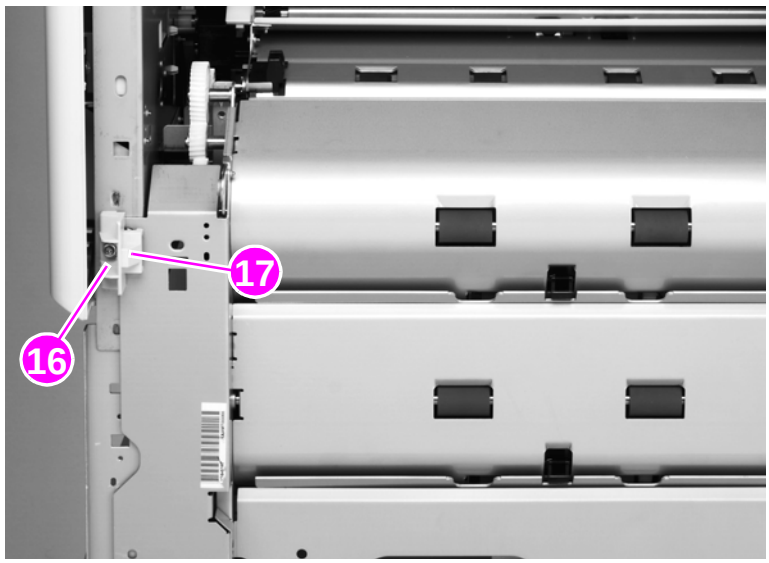


Figure 194. **Remove the paper path door stop**

21 Remove four screws (callout 18) on the front of the printer.

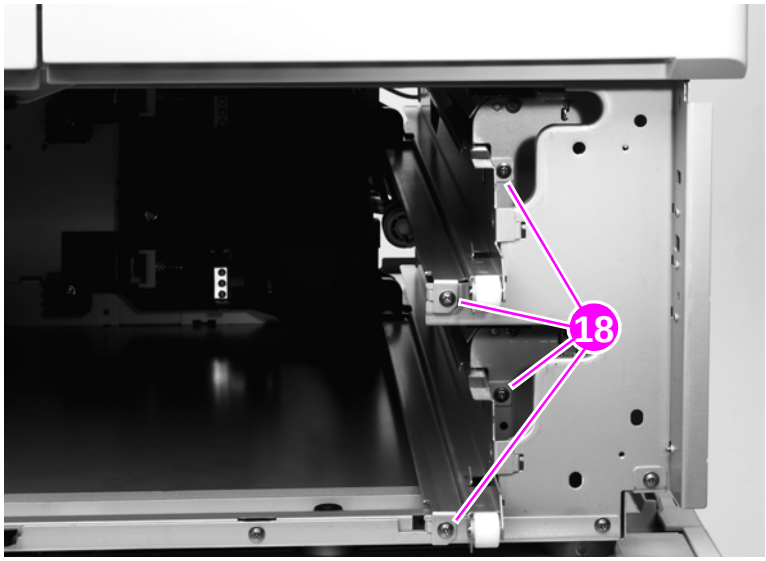


Figure 195. **Remove the tray guide mounting screws**

22 Remove the tray 2 and tray 3 cassette guides.

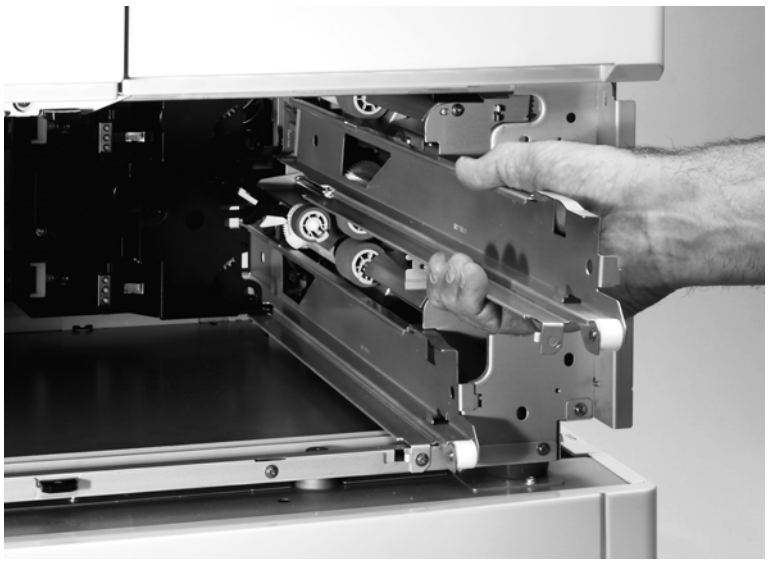


Figure 196. **Remove the tray guides**

23 Remove five screws (callout 19), disconnect two connectors (callout 20), and disconnect two wire clips (callout 21).

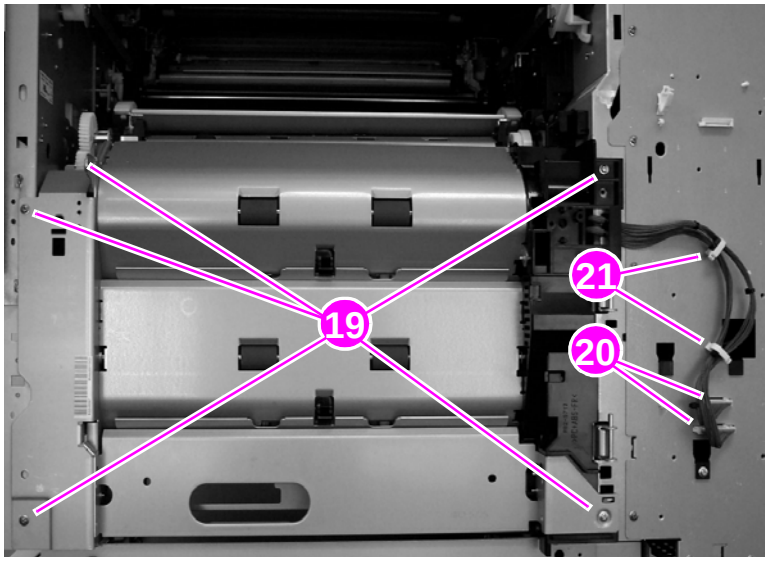


Figure 197. **Disconnect the pickup unit connectors**

24 Remove the pickup unit.

Note You might need to use a slight amount of force when pulling out the pickup unit.

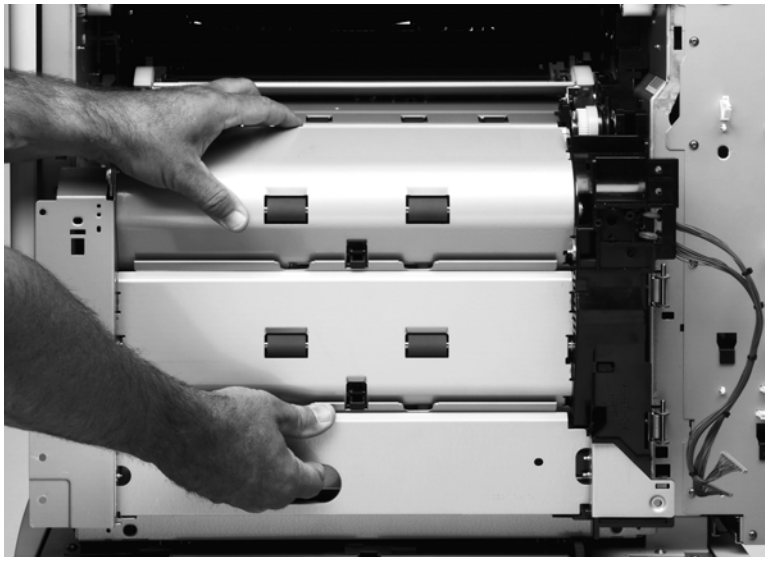


Figure 198. **Remove the pickup unit**

Temperature and humidity sensor

1 Remove the right upper cover. See page 210.

2 Remove the white, plastic cover labeled “Up” (callout 1).

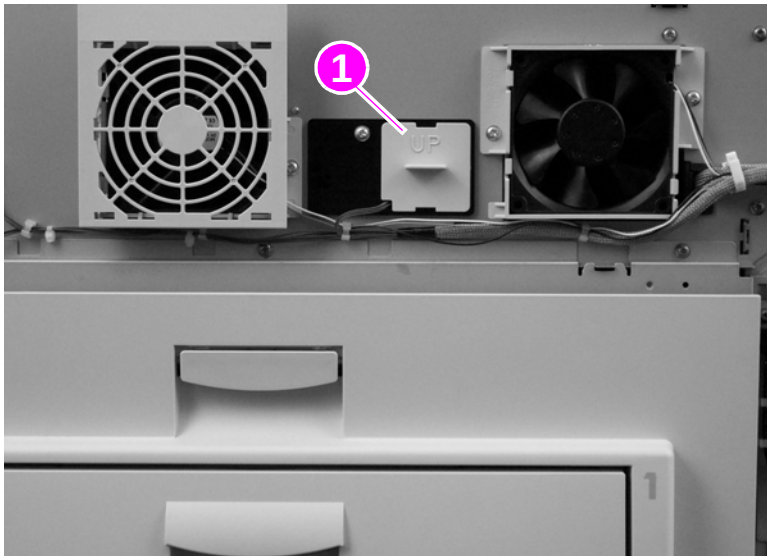


Figure 199. Remove the temperature and humidity sensor cover

3 Remove one screw (callout 2), and disconnect one connector (callout 3).

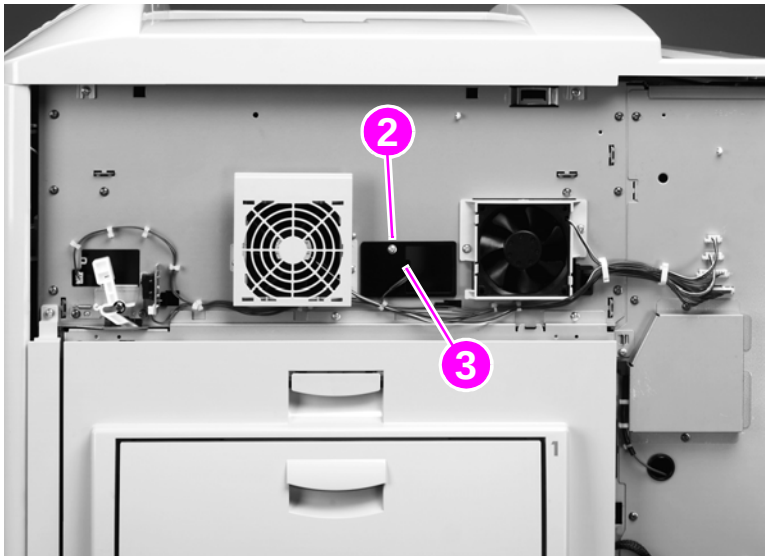


Figure 200. Remove the temperature and humidity sensor

4 Remove the temperature and humidity sensor.

To reinstall

Make sure to reinstall the sensor before reinstalling the white, plastic cover.

High-voltage power supply

1 Remove the back cover. See page 228.

2 Disconnect four connectors (callout 1), remove one ribbon cable (callout 2), and remove five black screws (callout 3).

CAUTION *Do not* remove any of the copper screws around the high-voltage power supply. All of the high-voltage power supply mounting screws are black.

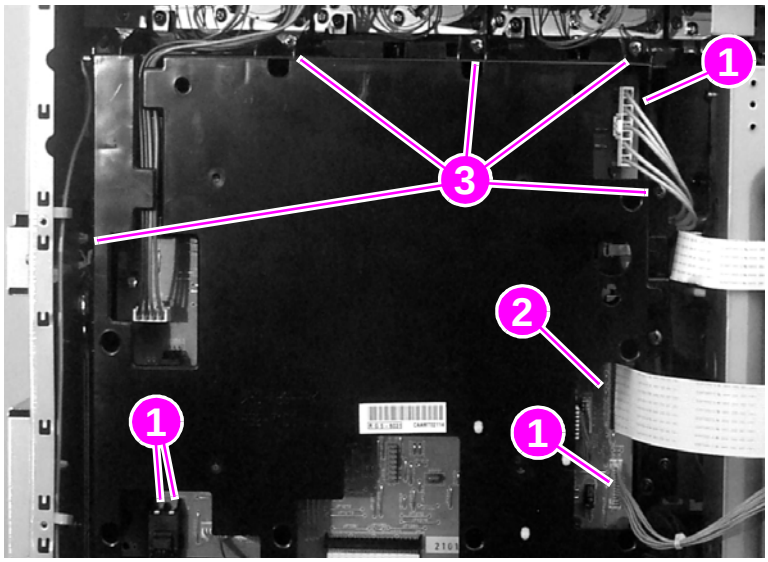


Figure 201. Remove the high-voltage power supply

3 Rotate the top of the high-voltage power supply outward.

4 Shift the high-voltage power supply to one side until the pivot pin releases.

5 Remove the high-voltage power supply.

Low-voltage power supply

1 Remove the back cover. See page 228.

2 Disconnect 12 connectors, disconnect two wire clips (callout 1), and remove one screw (callout 2).

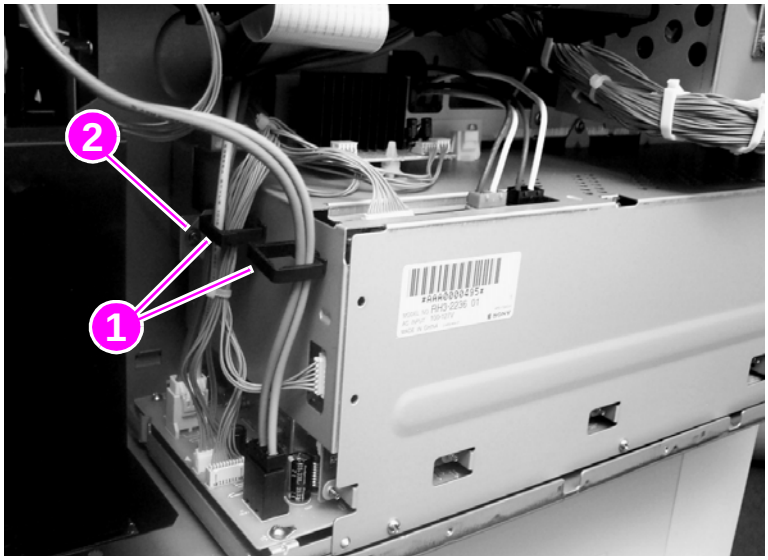


Figure 202. **Disconnect the low-voltage power supply**

3 Remove four screws (callout 3).

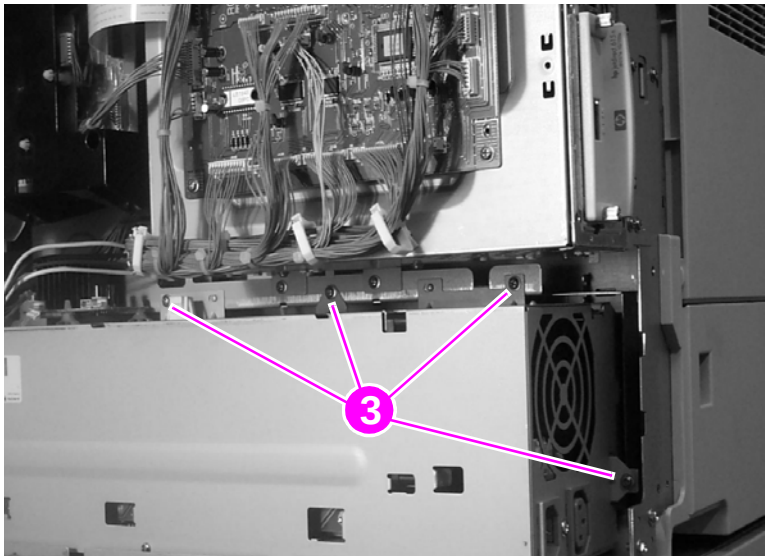


Figure 203. **Remove the low-voltage power supply**

4 Remove the low-voltage power supply.

Registration assembly

1 Remove the following FRUs:

- Pickup unit. See page 272.
- High-voltage power supply. See page 281.

2 Disconnect one connector (callout 1) and remove three screws (callout 2).

Hint Mark the screw holes on the chassis before removing the screws.

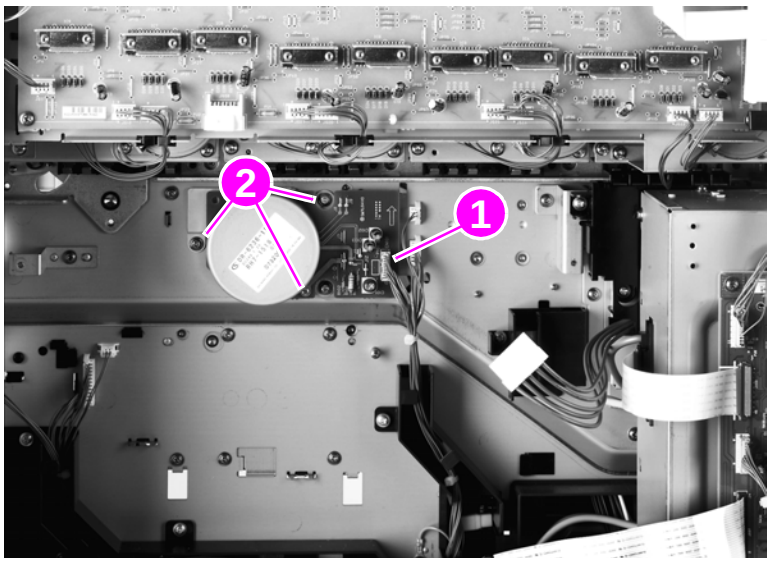


Figure 204. **Disconnect the registration assembly motor**

3 Remove the registration motor.

4 Remove three screws (callout 3) from the registration drive assembly.

Note The registration drive assembly is removed in step 10.

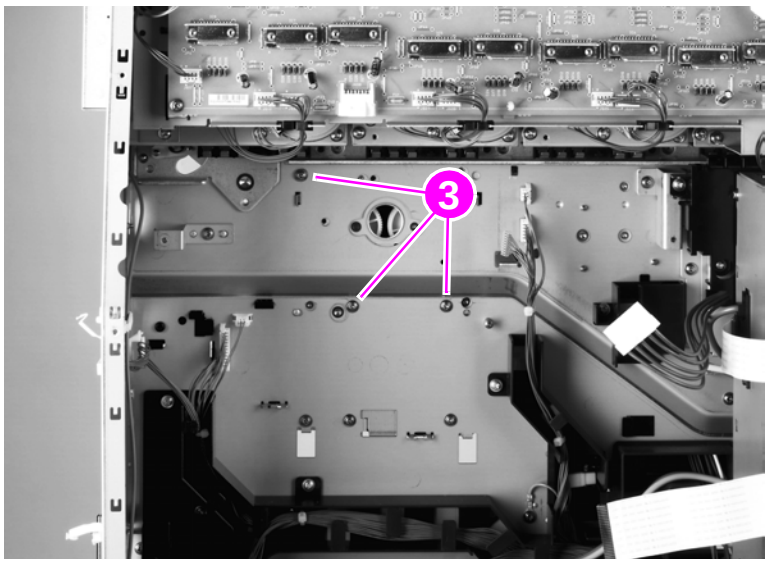


Figure 205. **Remove the registration assembly motor**

5 Remove two covers (callout 4).

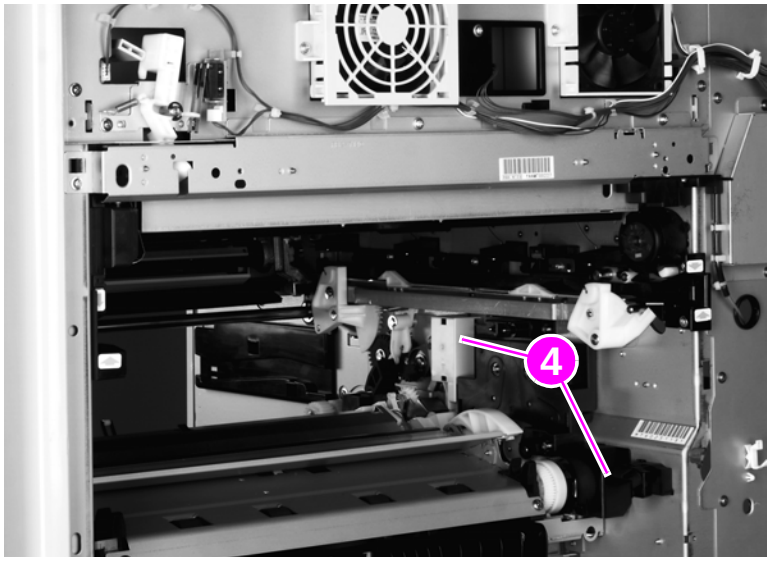


Figure 206. **Remove two wire harness covers**

6 Open the front doors.



Figure 207. **Gain access to the green ITB release lever**

7 Push the green handle down.

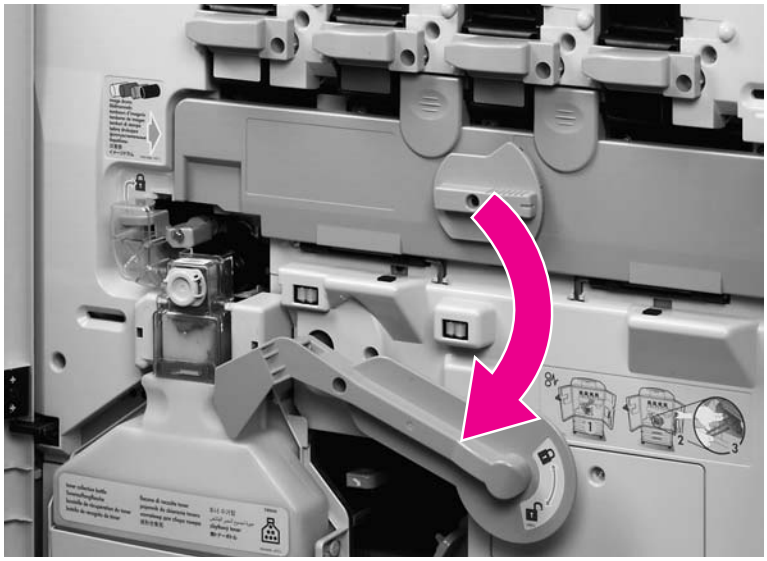


Figure 208. **Lower the ITB release lever**

8 Use the following steps to remove the right back ITB lift link:

CAUTION *Do not* remove the e-ring (callout 5) from the claw assembly.

a Remove the retainer clip and washer by using needlenose pliers (callout 6).

b Use a small flatblade screwdriver to lift and unclip the retaining claw (callout 7) on the white, plastic cam assembly.

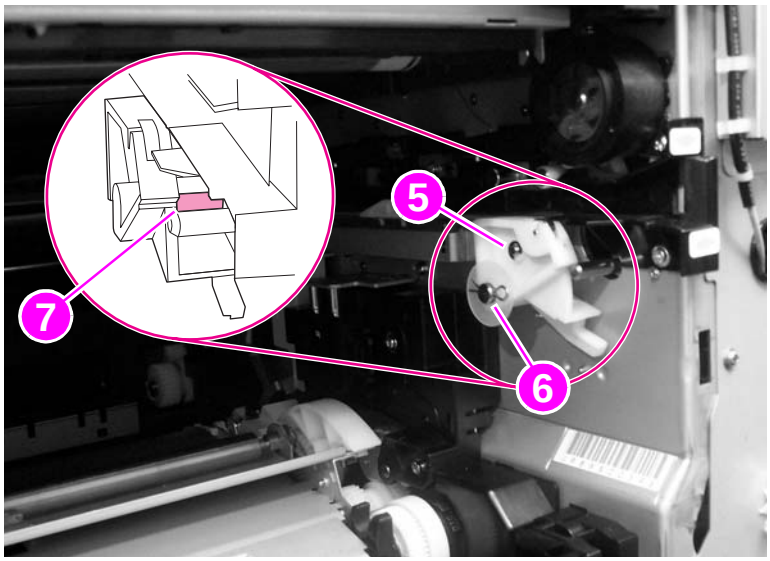


Figure 209. **Release the right back ITB lifting link**

c Slide the right back ITB lift link to the left and off.

CAUTION Make sure that you do not bend the right back ITB lift claw by pulling out too far.



Figure 210. Remove the right back ITB lifting link

9 Disconnect one wire connector (callout 8).

10 Remove the registration drive assembly (callout 9).

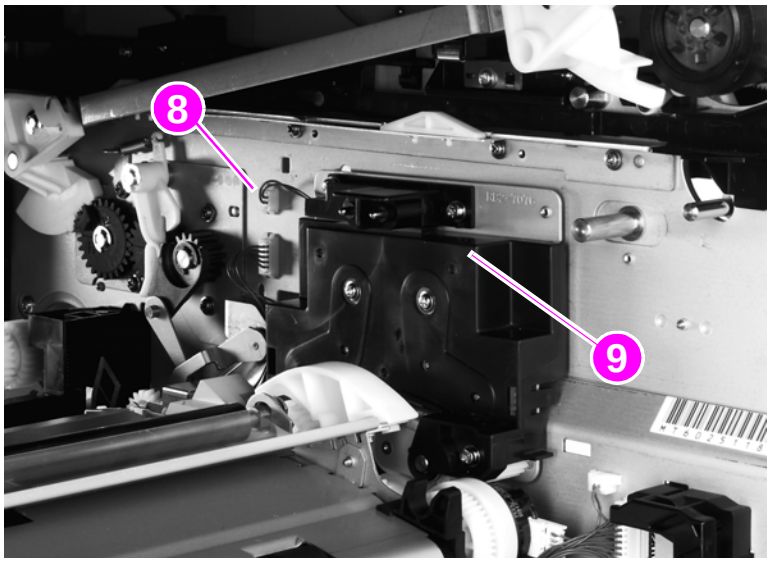


Figure 211. Disconnect the registration assembly connector

11 Remove two screws (callout 10).

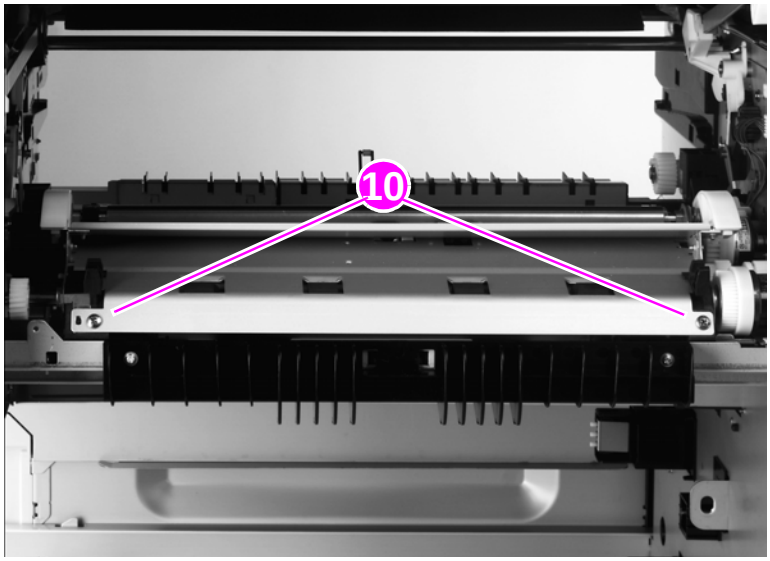


Figure 212. **Remove the registration assembly plate mounting screws**

12 Slide the plate toward the back of the printer.

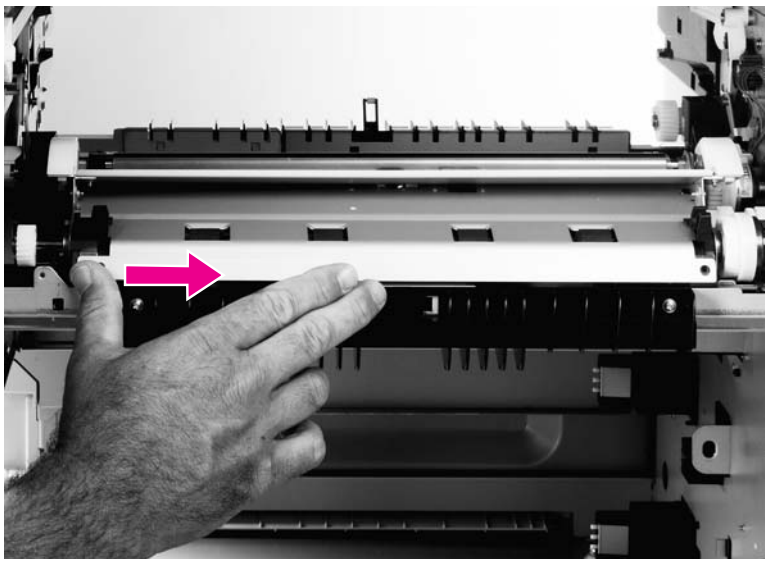


Figure 213. **Remove the registration assembly plate (1 of 2)**

13 Lift up the left side of the plate, slide it toward the front of the printer, and remove it.

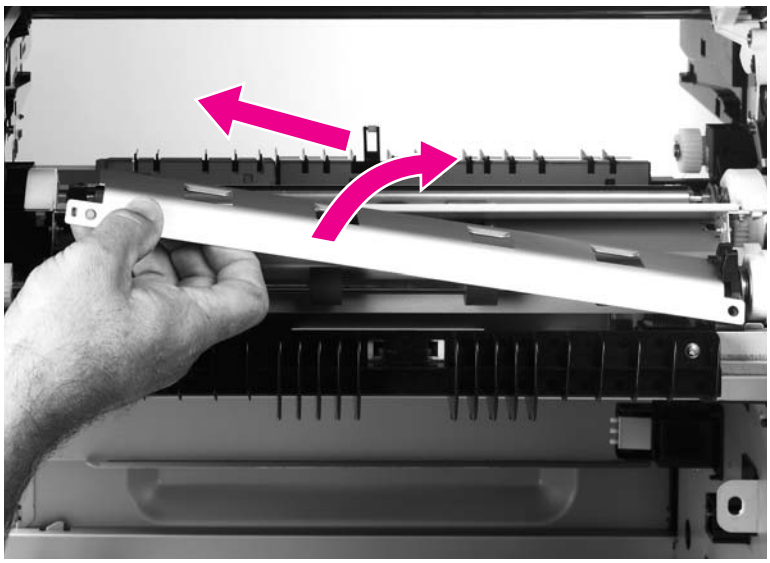


Figure 214. **Remove the registration assembly plate (2 of 2)**

14 Remove three screws (callout 11).

CAUTION Make sure that the black process cartridge (image drum) is removed. The handle of a long-blade screw driver can damage the process cartridge if it contacts the cartridge when you are removing these screws.

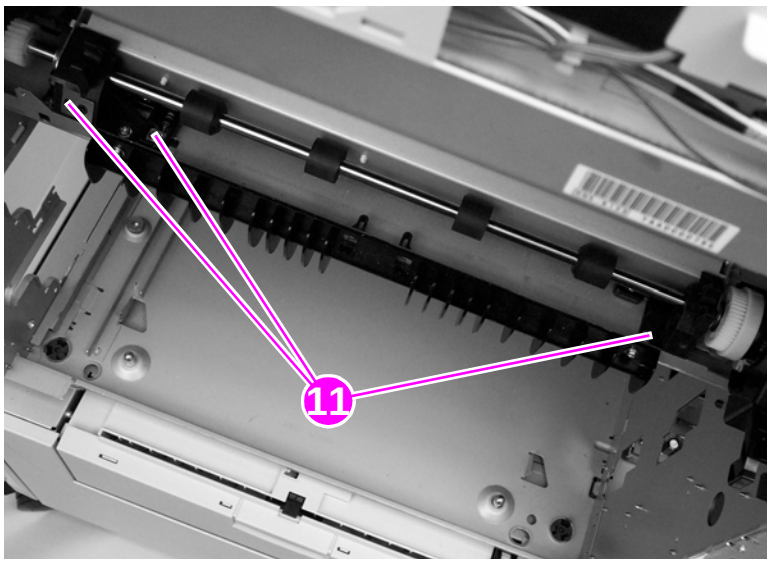


Figure 215. **Remove the registration assembly mounting screws**

15 Disconnect two connectors (callout 12).

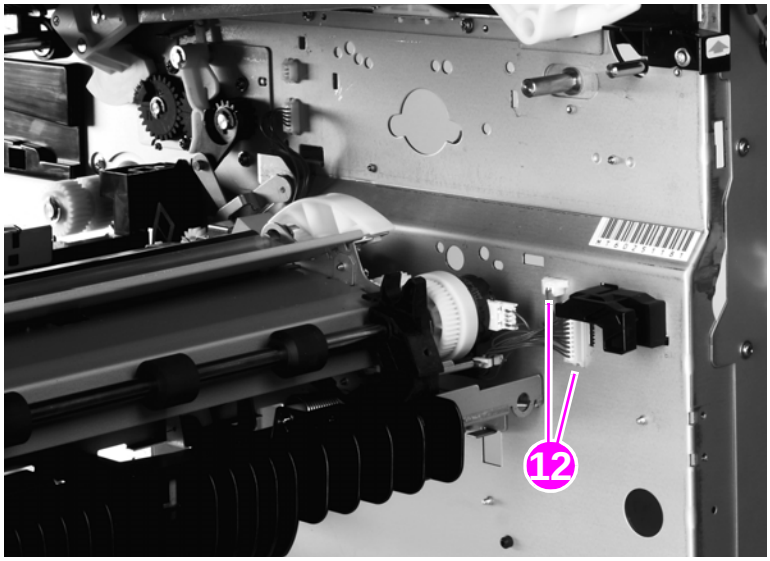


Figure 216. **Disconnect the registration assembly connectors**

16 Lift the front of the registration assembly and unhook two white claws (callout 13).

17 Remove the registration assembly.

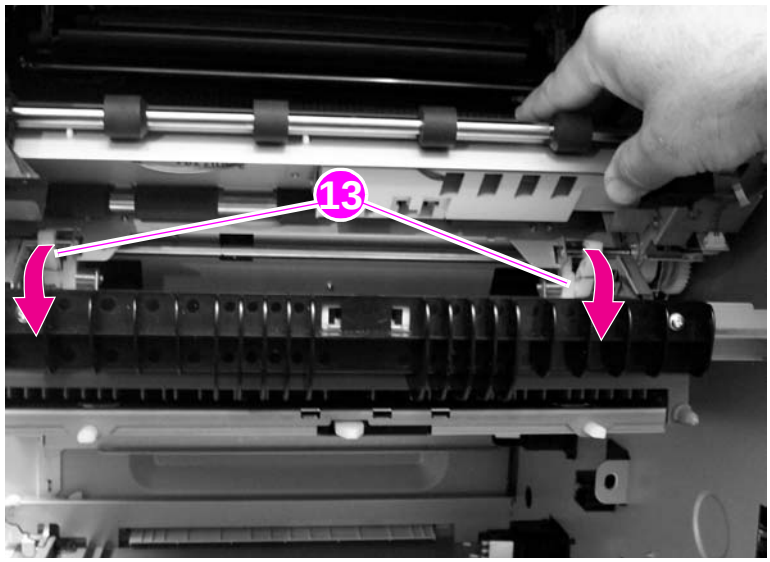


Figure 217. **Remove the registration assembly**

To reinstall

- Make sure that you replace the back of the registration assembly first.
- Make sure that the two white claws are hooked correctly.

Delivery fan

1 Remove the back cover. See page 228.

2 Disconnect one connector (callout 1).

3 Pry the two hooks (callout 2) away from the delivery fan.

Note If you need to remove the duct, remove one screw (callout 3) and unhook the duct from the chassis. A long-shaft screwdriver might be needed.

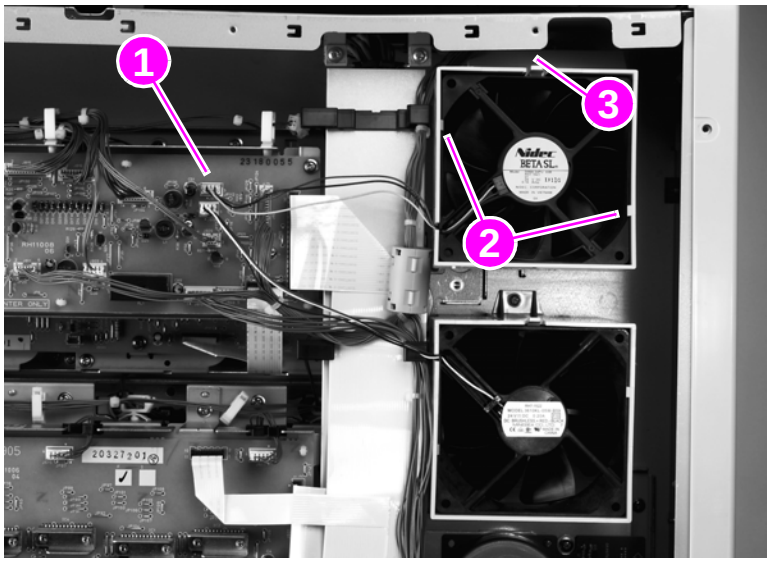


Figure 218. Remove the delivery fan

4 Remove the delivery fan.

Fuser fan

1 Remove the back cover. See page 228.

2 Disconnect one connector (callout 1).

3 Pry the two hooks (callout 2) away from the fuser fan.

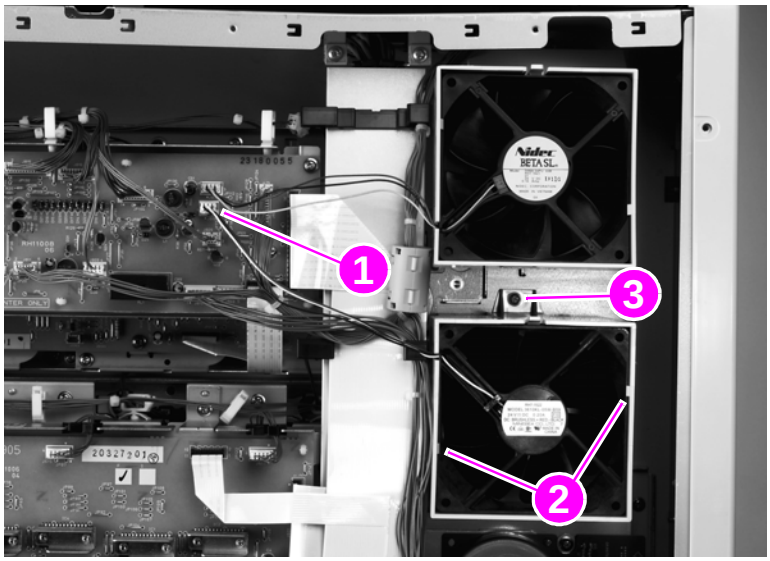


Figure 219. Remove the fuser fan

4 Remove the fuser fan.

Note If you need to remove the duct, remove one screw (callout 3) and unhook the duct from the chassis. A long-shaft screwdriver might be needed.

P-crg (image drum) drive assembly

CAUTION The P-crg drive assembly is heavy. Do not drop the assembly when you remove it. You *must* remove the four process cartridges (image drums) before removing the P-crg drive assembly. See page 203.

1 Remove the following covers and FRUs:

- Back cover. See page 228.
- Intermediate transfer belt. See page 260.
- Delivery fan. See page 290.
- Fuser fan and duct. See page 291.
- High voltage power supply. See page 281.
- High voltage contact. See page 306.

2 Remove three screws (callout 1). Disconnect two flat cables from the cable channel to the P-crg assembly (callout 2). Move the cable channel to the right, away from the P-crg assembly.

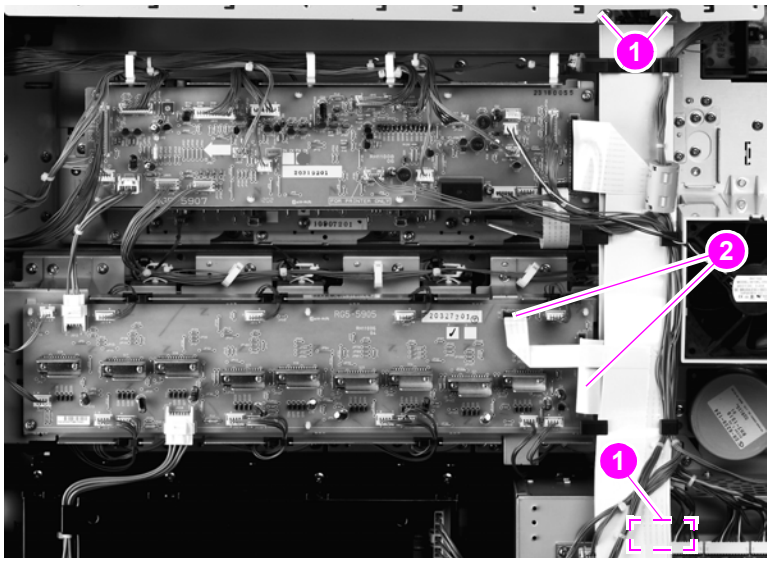


Figure 220. **Disconnect the P-crg drive assembly connectors**

3 Use the following steps to remove the right back ITB lift link:

CAUTION Do *not* remove the e-ring (callout 5) from the cam assembly.

a Remove the retainer clip and washer by using needlenose pliers (callout 3).

b Use a small flatblade screwdriver to lift and unclip the retaining claw (callout 4) on the white, plastic cam assembly.

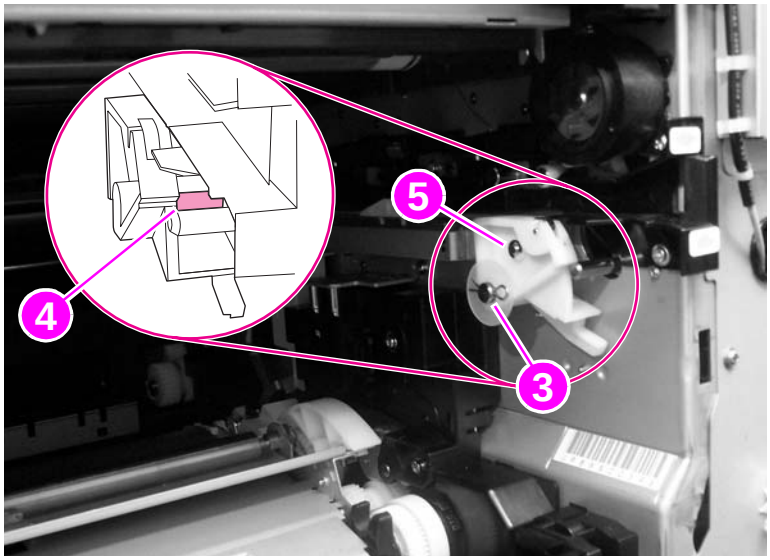


Figure 221. Remove the right back ITB lift link (1 of 2)

c Slide the right back ITB lift cam to the left and off.

CAUTION Make sure that you do not bend the right back ITB lift linkage by pulling out too far.



Figure 222. Remove the right back ITB lift link (2 of 2)

4 Disconnect the P-crg drive assembly connectors (callout 6; ribbon cables are not shown). Unhook the wire clips as required.

CAUTION Make sure that you remove the P-crg drive assembly connectors carefully. The connectors and ribbon cables can break easily, particularly the three lead connectors from the p-crg drive assembly. Pull each wire with equal force and make sure to pull the connectors straight out and perpendicular to the board. Failing to properly remove the connectors might result in broken connectors, broken solder pads, or board leads.

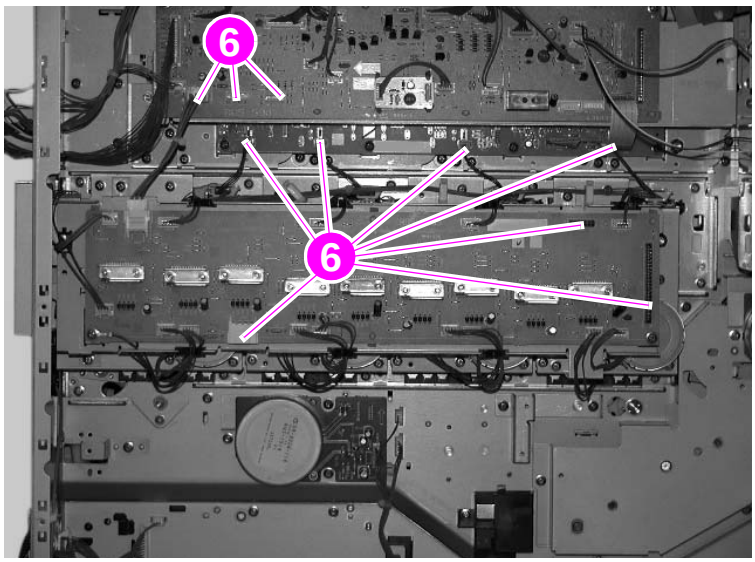


Figure 223. Disconnect the P-crg drive assembly

5 Remove twelve screws (callout 7).

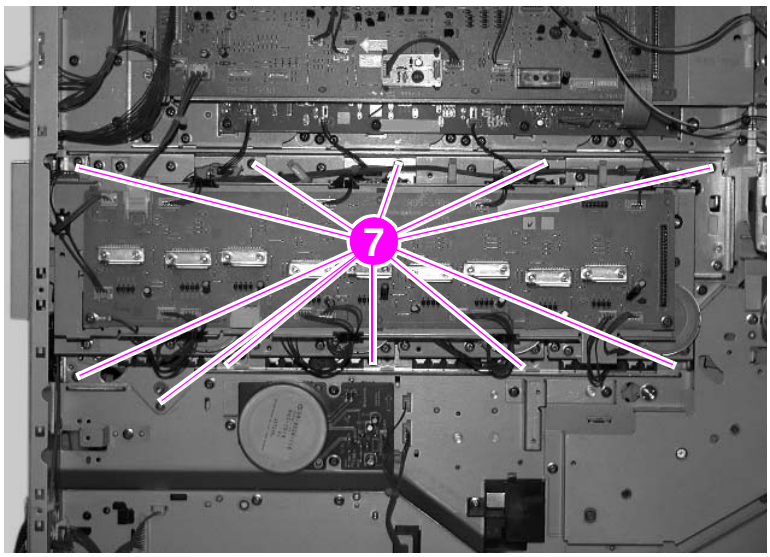


Figure 224. Remove the P-crg drive assembly mounting screws

CAUTION The P-crg drive assembly is heavy.

Place the assembly upside-down on a table to avoid damage to the assembly.

Do not bend the high-voltage leaf spring on the backside of the assembly.

6 Lift the P-crg drive assembly off of the retaining hooks and remove it.

7 Print a laser/scanner adjustment test page. Make sure that all of the laser/scanners are adjusted correctly. See page 233.

T-crg (print cartridge) drive assembly

Note You *must* remove the four toner cartridges (print cartridges) prior to removing the T-crg drive assembly. See page 201.

1 Remove the following covers and FRUs:

- Back cover. See page 228.
- Delivery fan and fan duct. See page 290.
- Fuser fan and duct. See page 291.

2 Remove three screws (callout 1). Disconnect two flat cables from the cable channel to the P-crg assembly (callout 2). Move the cable channel to the right, away from the T-crg assembly.

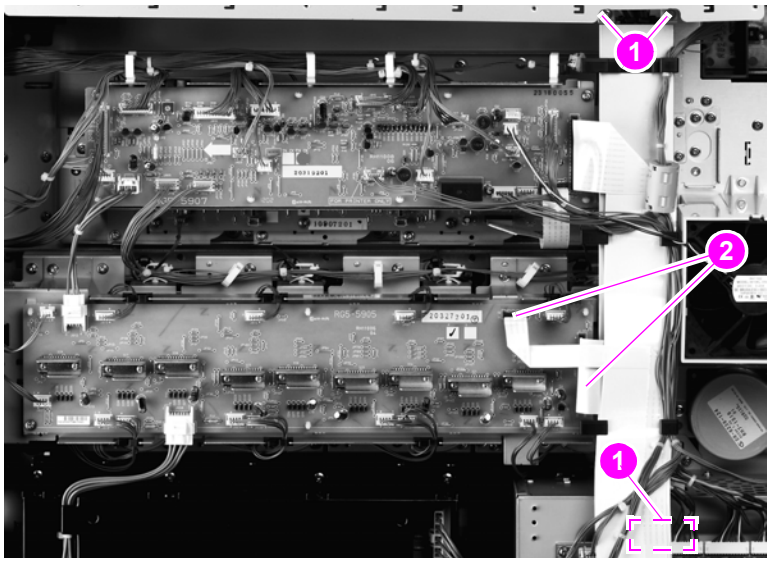


Figure 225. **Disconnect the T-crg drive assembly**

3 Disconnect all cable connectors except J813, J814, and J802. Remove 10 screws (callout 3).

CAUTION Make sure that the T-crg drive assembly cable connectors are removed carefully. The connectors can break easily. Make sure that you remove the T-crg drive assembly connectors carefully. The connectors and ribbon cables can break easily, particularly the three lead connectors from the T-crg drive assembly. Pull each wire with equal force and make sure to pull the connectors straight out and perpendicular to the board. Failing to properly remove the connectors might result in broken connectors, broken solder pads, or board leads.

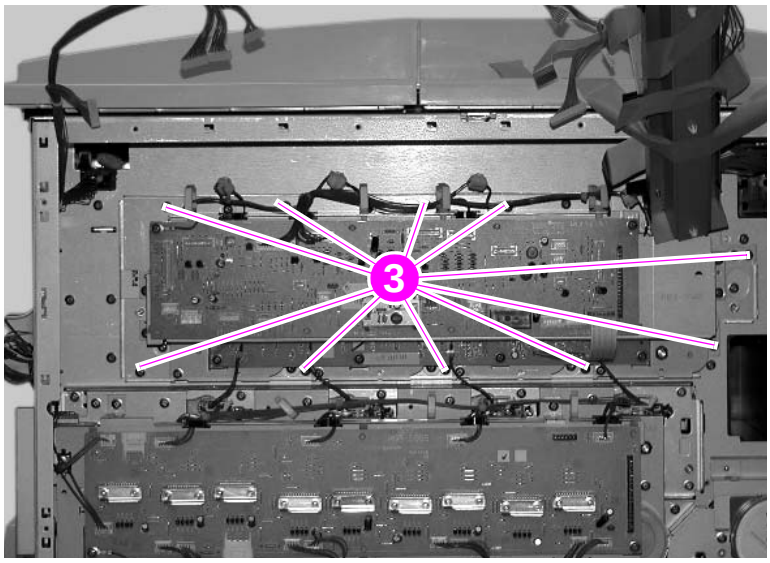


Figure 226. **Remove the T-crg drive assembly mounting screws**

4 Lift the T-crg drive assembly off of the retaining hooks and remove it.

CAUTION Place the assembly upside-down on a table to avoid damage to the assembly.

Fuser motor

1 Remove the back cover. See page 228.

2 Remove three screws (callout 1), and disconnect one connector (callout 2).

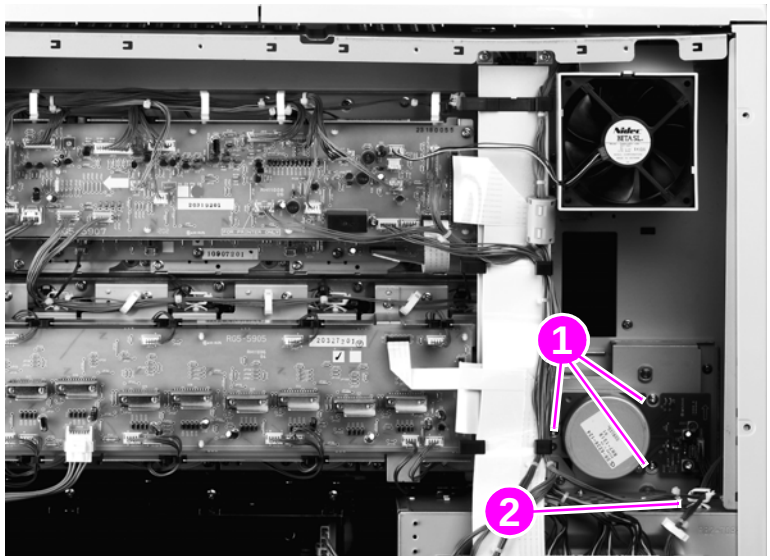


Figure 227. **Remove the fuser motor**

3 Remove the fuser motor.

Fuser drive assembly

1 Remove the following covers and FRUs:

- Back cover. See page 228.
- Fuser motor. See page 298.
- Formatter cage. See page 304.
- High voltage contact. See page 306.

2 Remove four screws (callout 1).

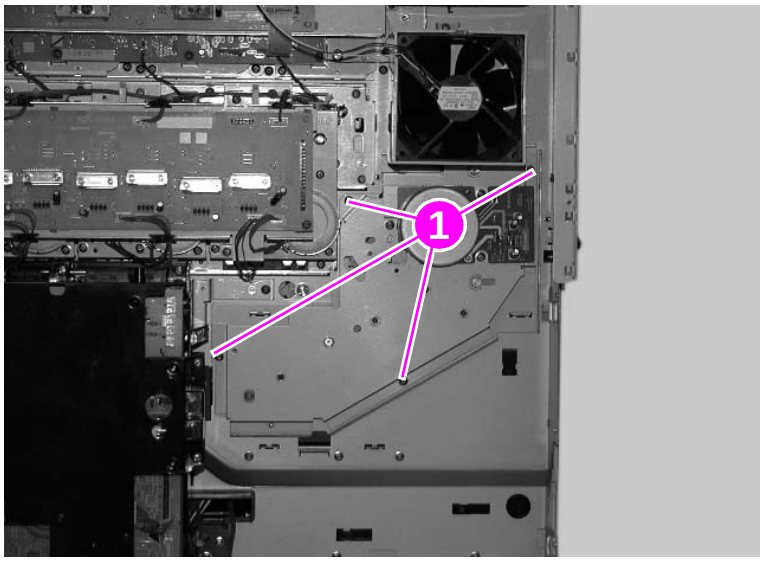


Figure 228. **Remove the fuser drive assembly mounting screws**

3 Remove the fuser drive assembly.

DC controller

1 Remove the back cover. See page 228.

2 Disconnect all of the connectors on the board.

CAUTION Make sure that you remove the DC controller connectors carefully. The connectors and ribbon cables can break easily. Pull each wire with equal force and make sure to pull the connectors straight out and perpendicular to the board. Failing to properly remove the connectors might result in broken connectors, broken solder pads, or board leads.

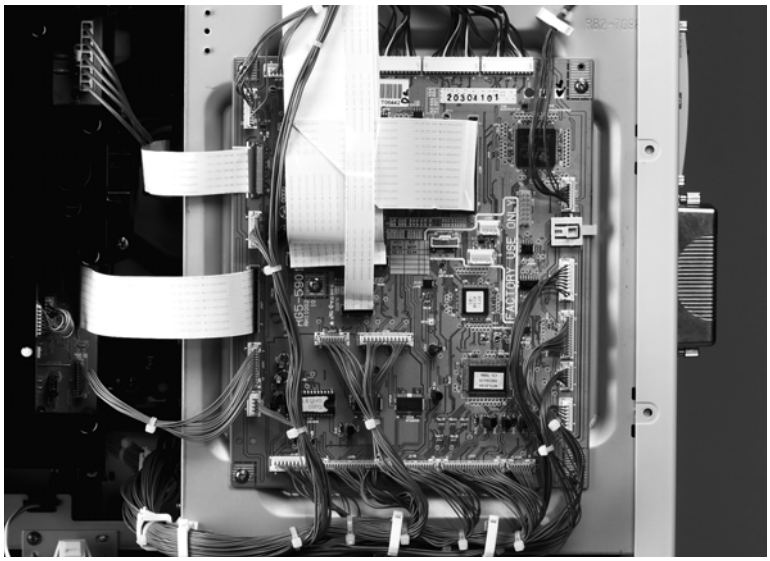


Figure 229. **Disconnect the DC controller connectors**

3 Remove five flat flexible cables (FFCs) (callout 1).

Note The FFCs have three different types of connectors.

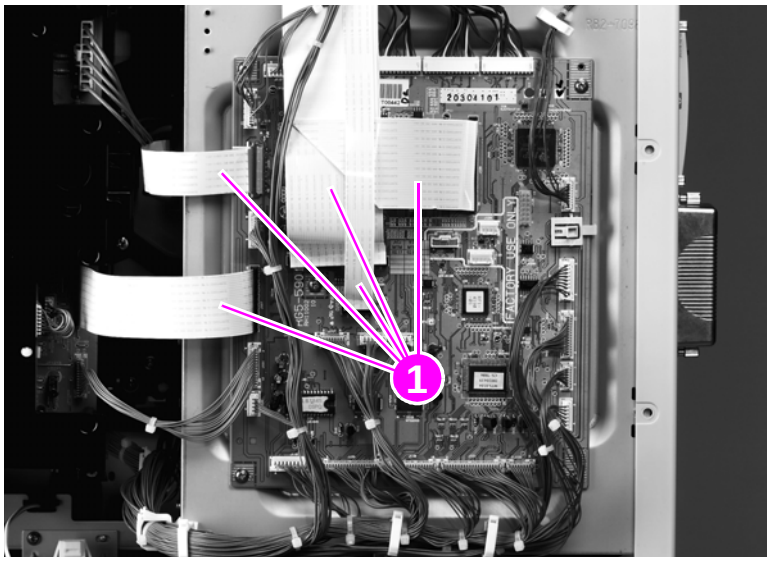


Figure 230. **Remove the DC controller FFCs**

4 Remove five screws (callout 2).

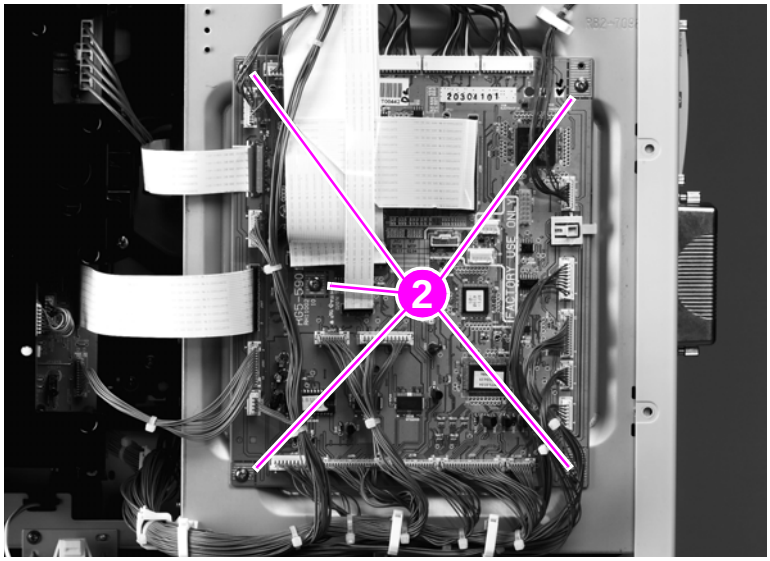


Figure 231. **Remove the DC controller mounting screws**

5 Remove the DC controller.

To reinstall

Make sure that the cables and the FFCs are reinstalled in the correct location, and that they are centered correctly into the connector. Not centering the cables and the FFCs correctly can cause motor, consumables, and other error messages.

Make sure that the FFC does not back out of the connector when the retaining clip is fastened.

CAUTION One of the FFC connectors must be flipped up before removing or reinstalling the FFC.

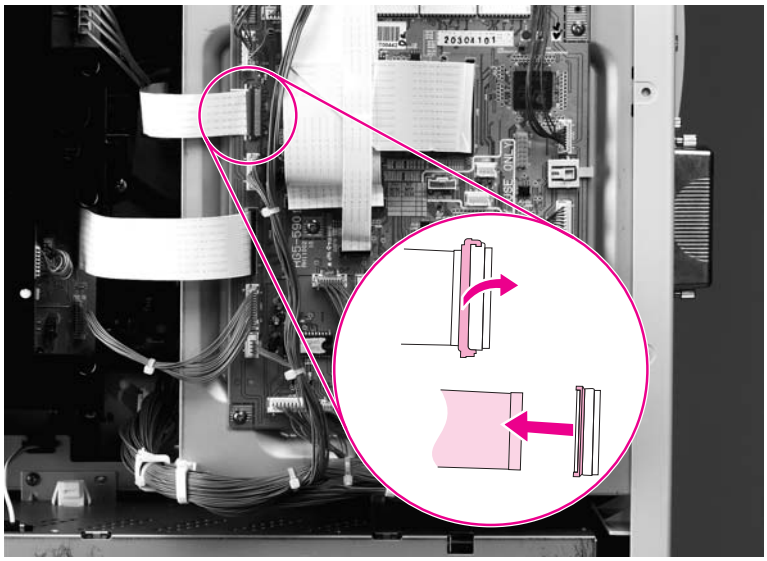


Figure 232. **Verify that the DC controller connectors and FFCs are connected properly**

Formatter PCB

CAUTION When the formatter is replaced (for both the CLJ9500 and the CLJ 9500mfp) remove the firmware DIMM or compact flash memory and install it on the replacement formatter. Transferring the memory form the removed PCB to the replacement PCB will make sure that critical product values (for example, the serial number and page counts) are preserved and kept with the product.

Do not replace the formatter *and* firmware memory at the same time. If both the formatter and firmware memory must be replaced follow three steps. First, install the firmware memory from the removed formatter on the replacement formatter, and then install the replacement formatter in the product. Second, turn the product power on, and then off two times. Third, install the replacement firmware memory on the replacement formatter, reinstall the replacement formatter in the product, and turn the power on.

Note Outdated firmware is the cause of many problems that result in formatter PCB replacement. Both the CLJ 9500 and the CLJ 9500mfp use flashable firmware memory. Up dating the firmware can solve most formatter PCB problems. Before replacing the formatter PCB, try upgrading the firmware. See “Firmware upgrades to the printer or MFP” on page 109.

Note Although they are attached the same way, the formatter for the printer model is different from the one for the MFP. See “Formatter” on page 158.

The formatter in the HP LaserJet 9500 Series printer is similar to the formatter in the HP LaserJet 9500mfp, but the formatter is not an interchangeable component. Do not install a LJ 9500 formatter into a CLJ 9500mfp or a MFP formatter into a CLJ 9500.

1 Remove eight screws (callout 1).

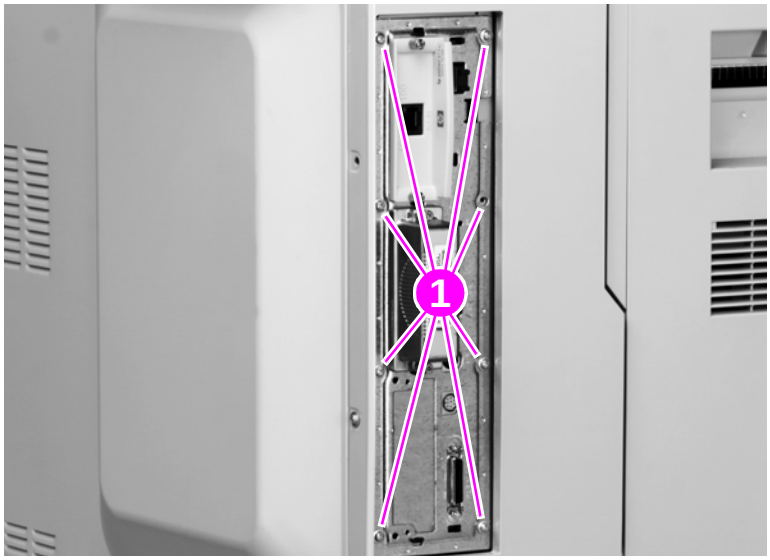


Figure 233. **Remove the formatter PCB mounting screws**

2 Remove the formatter PCB.



Figure 234. **Remove the formatter PCB**

Formatter cage

Note The formatter in the HP LaserJet 9500 Series printer is similar to the formatter in the HP LaserJet 9500mfp, but the formatter is not an interchangeable component. Do not install a LJ 9500 formatter into a LJ 9500mfp or a MFP formatter into a LJ 9500.

1 Remove the following covers and FRUs:

- Back cover. See page 228.
- DC controller. See page 300.
- Formatter PCB. See page 302.

2 Remove three screws (callout 1).

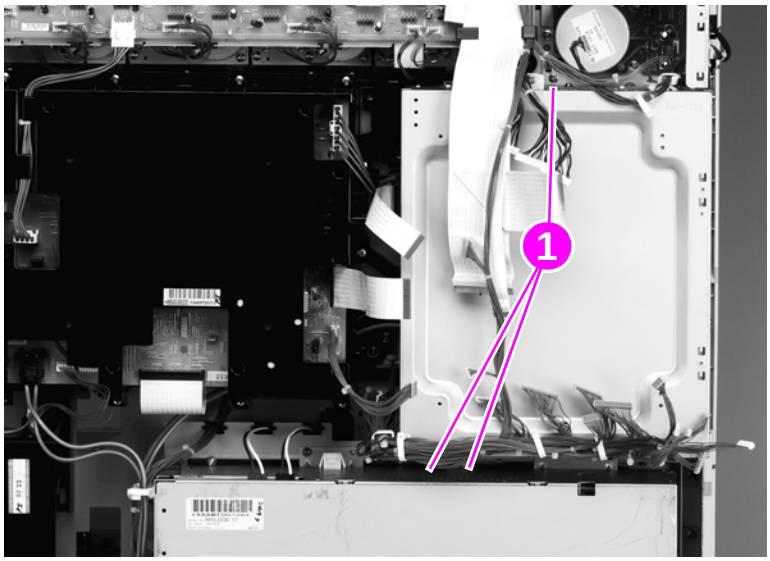


Figure 235. **Remove the formatter cage mounting screws**

3 Unclip six wire harnesses (callout 2).

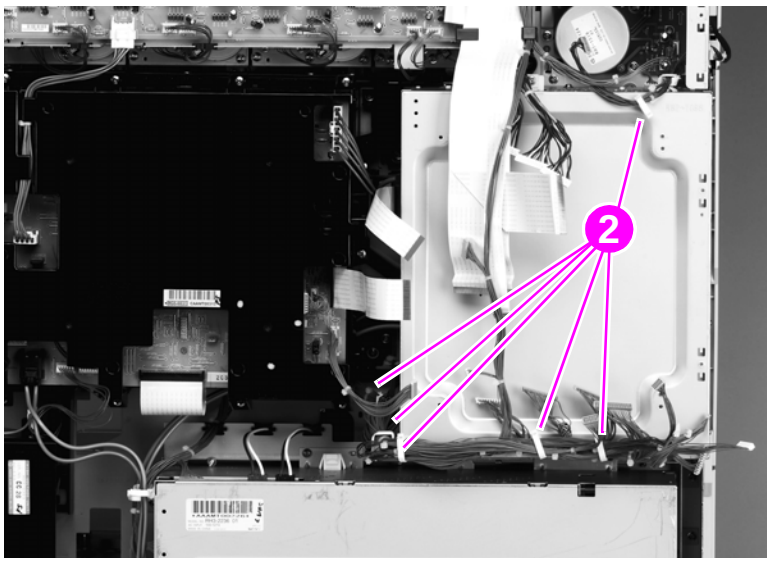


Figure 236. **Unclip the formatter cage wire retainers**

Hint Disconnect the small, flat cable from the formatter connector.

4 Reach inside the formatter cage and squeeze the formatter connector locking tabs. Push the connector out of the cage.

Note Do not pull the cable connector too hard.

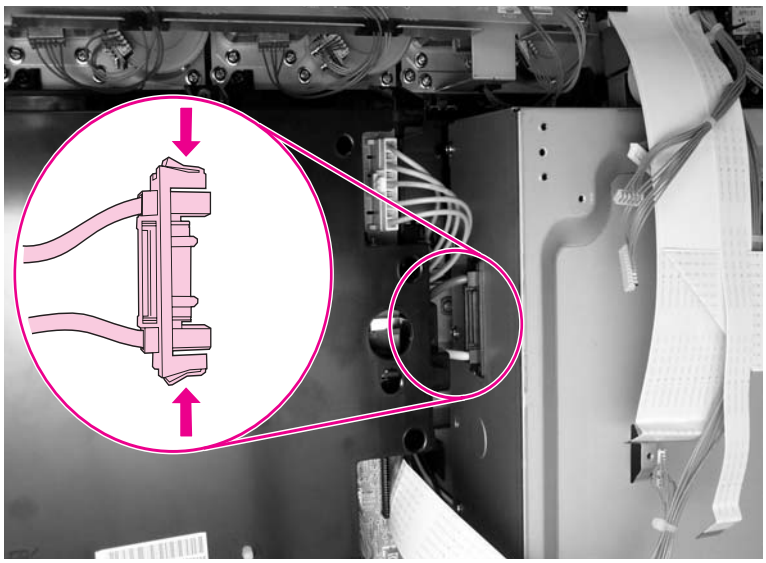


Figure 237. Unplug the formatter PCB connector

5 Remove six screws (callout 4).

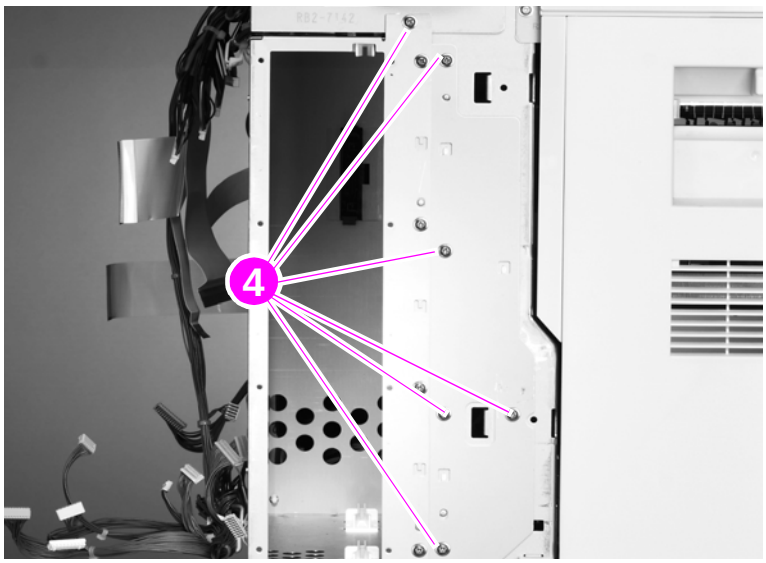


Figure 238. Remove the formatter cage mounting screws

6 Remove the formatter cage.

High-voltage contact

1 Disconnect one connector (callout 1), and remove three screws (callout 2).

Note In this picture, the formatter cage is removed so that you can see the screws more easily. Removing the formatter cage is not required to remove the high-voltage contact. It is, however, much easier to remove the contact when the formatter cage is removed.

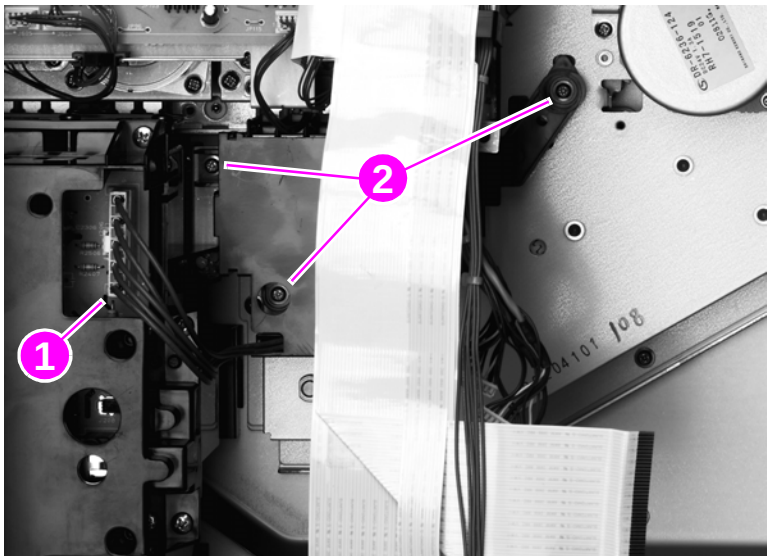


Figure 239. **Remove the high-voltage contact**

2 Remove the high-voltage contact.

Post charger power supply

1 Remove the back cover. See page 228.

2 Disconnect two connectors (callout 1).

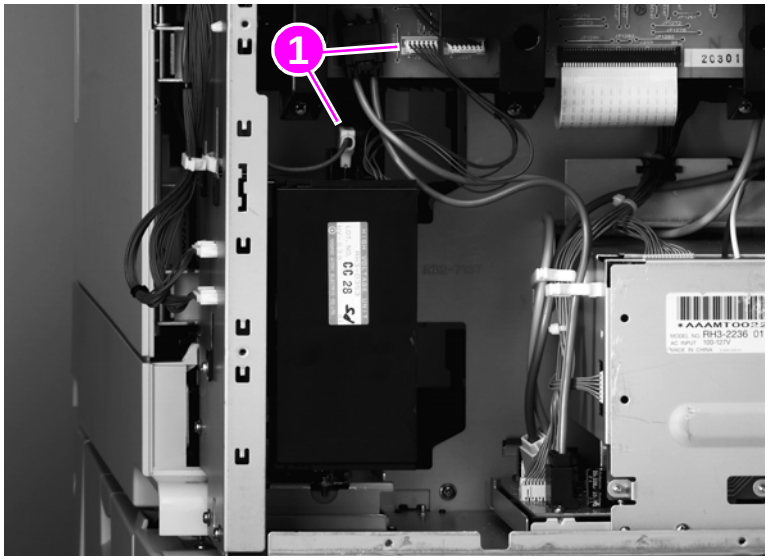


Figure 240. Disconnect the post charger connectors

3 Remove the shield (callout 2).

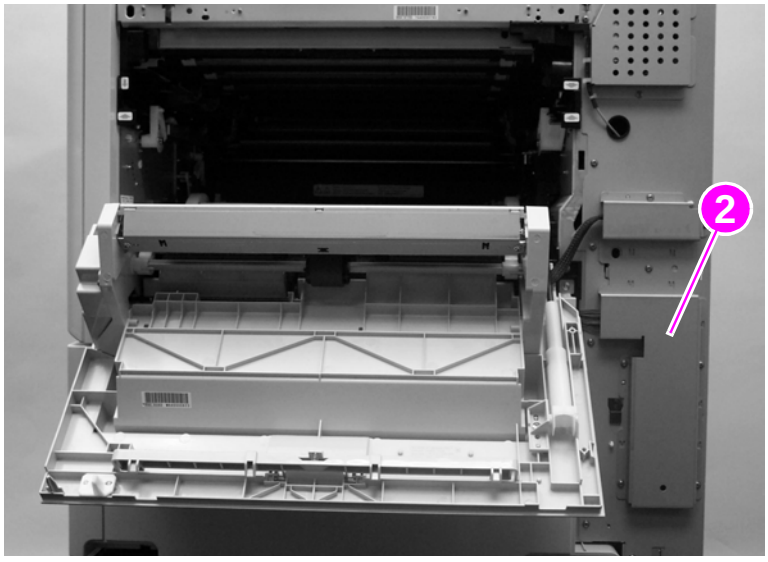


Figure 241. Remove the cable shield

4 Remove one screw (callout 3).

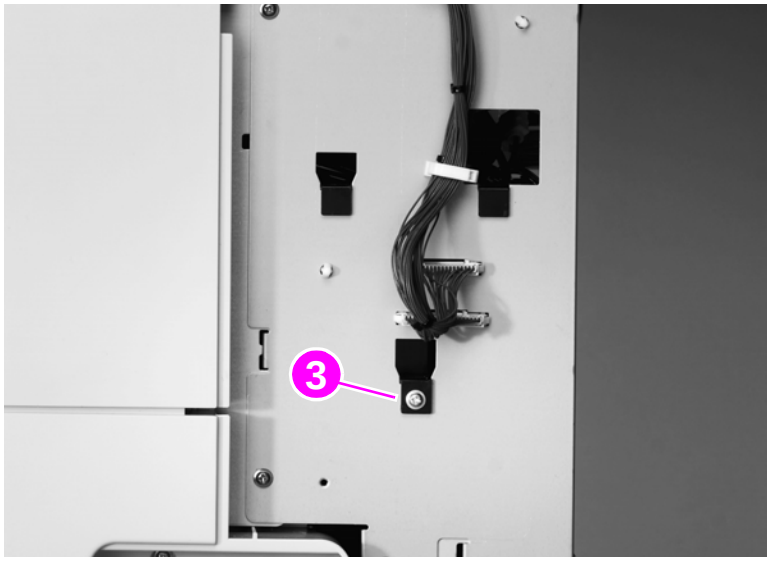


Figure 242. **Remove the post charger mounting screw**

5 Lift up the post charger slightly and remove it.

Tray 1 pickup roller

1 Open the ITB door.

2 Unhook one claw (callout 1), slide the roller holder (callout 2), and remove the tray 1 pickup roller (callout 3).

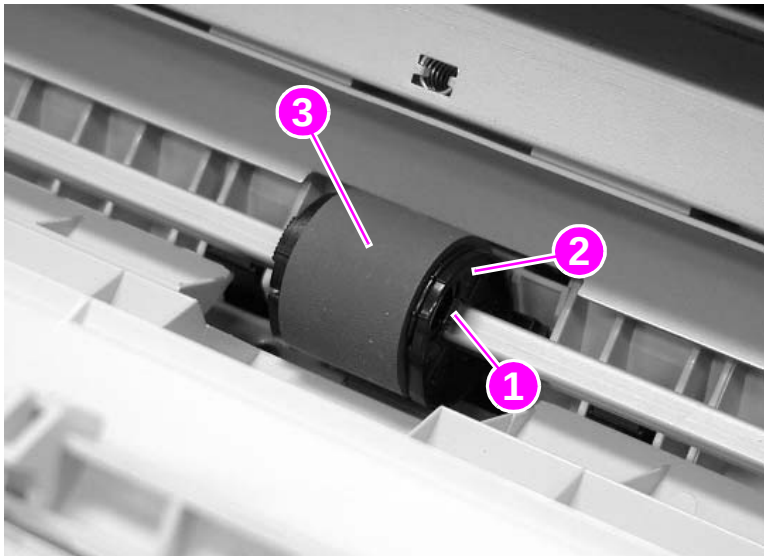


Figure 243. **Remove the tray 1 pickup roller**

Tray 1 separation pad

1 Remove the ITB door.

2 Remove the tray 1 pickup roller. See page 309.

3 Unhook two claws (callout 1), and remove the pad cover (callout 2).

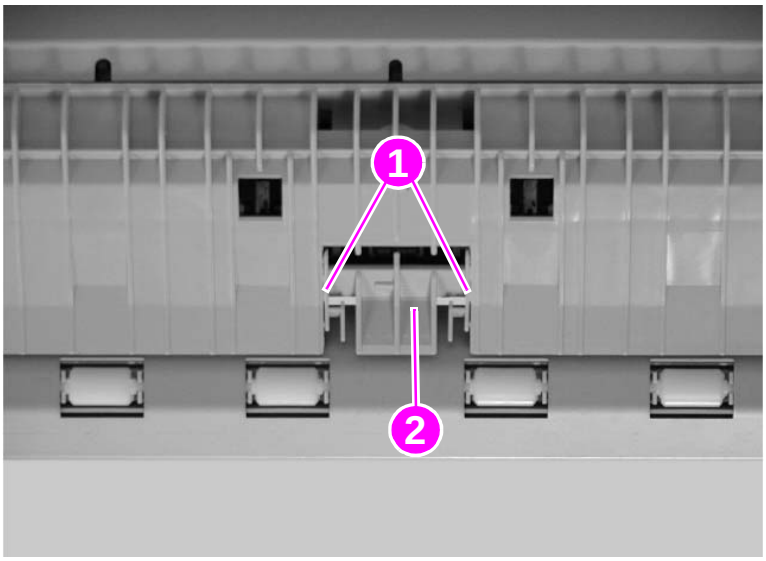


Figure 244. **Unhook the tray 1 separation pad**

4 Unhook two claws (callout 3), and remove the separation pad (callout 4).

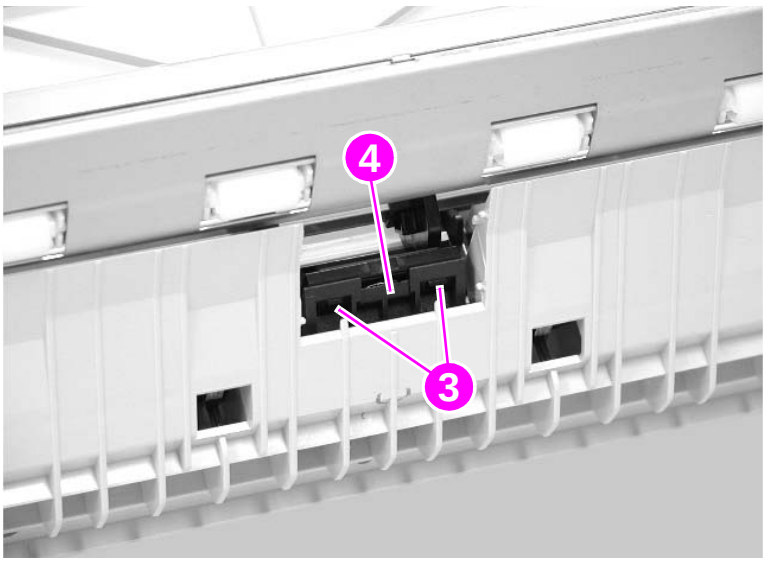


Figure 245. **Remove the tray 1 separation pad**

Left door switch

1 Remove the left front door. See page 217.

2 Remove the ITB cleaner

3 Open the drum door.

4 Remove three screws (callout 1), and remove the inner cover (callout 2).

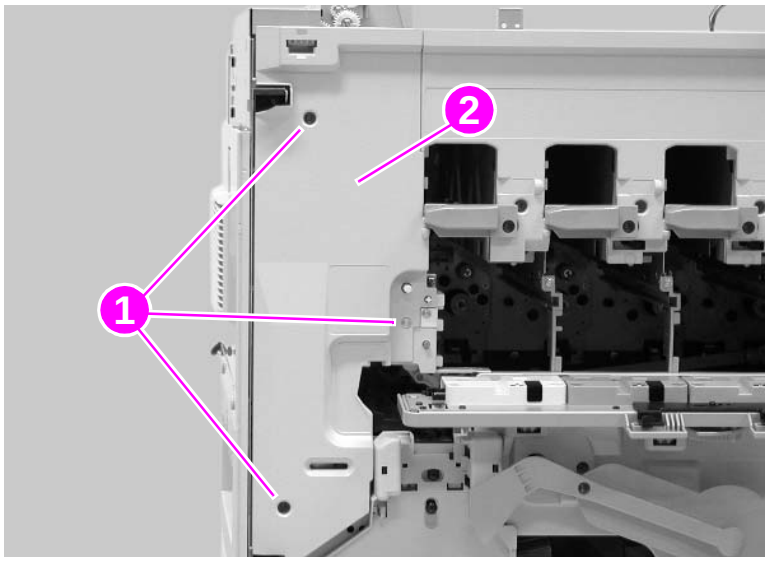


Figure 246. **Remove the left door switch cover**

5 Remove two screws (callout 3), disconnect one connector (callout 4), and remove the left door switch (callout 5).

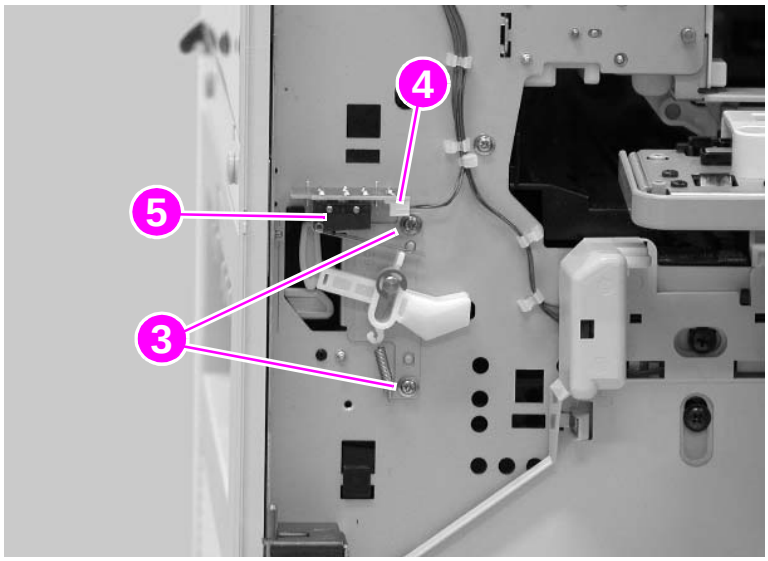


Figure 247. **Remove the left door switch mounting screws**

Right door switch (front and right side doors)

1 Remove the right upper cover. See page 210.

2 Remove two screws (callout 1), disconnect one connector (callout 2), and remove the right door switch (callout 3).

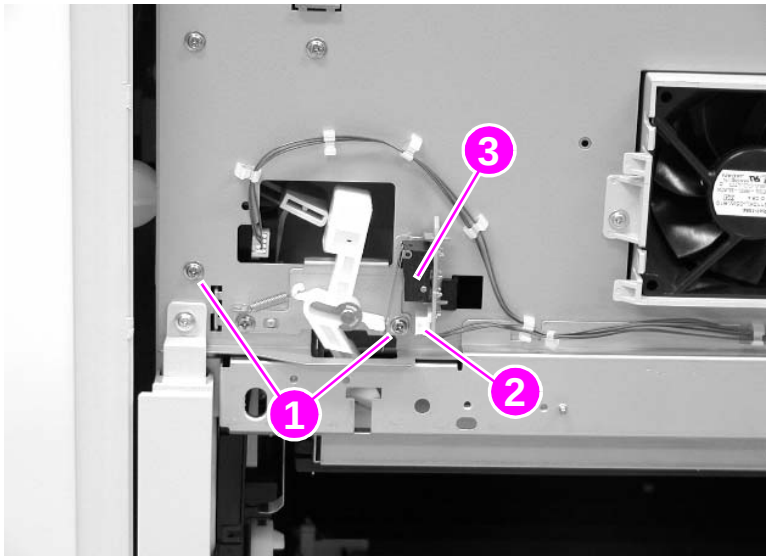


Figure 248. **Remove the right door switch mounting screws**

Hint It is easiest to reconnect the connector *before* fastening the right door switch to the printer chassis.

ITB sensor

1 Remove the density and registration sensor assembly. See page 262.

2 Unhook five claws (callout 1), and remove one cable cover (callout 2).

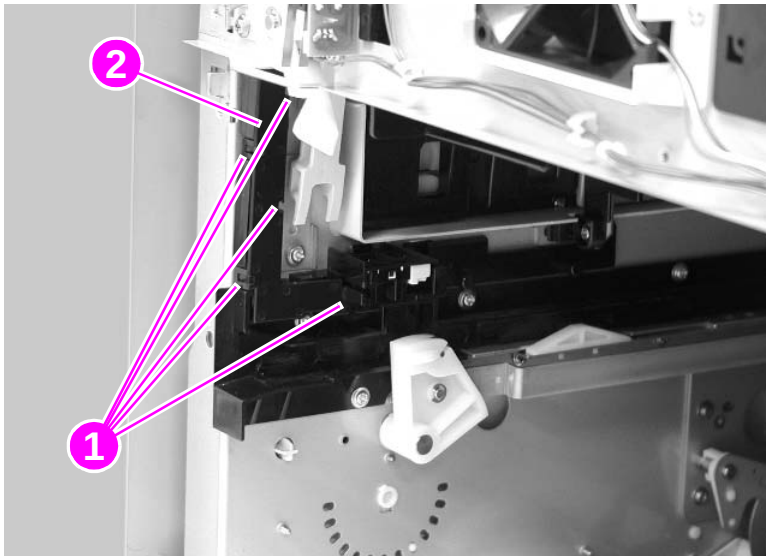


Figure 249. Unhook the ITB sensor cable cover

3 Disconnect one connector (callout 3), and remove the ITB sensor (callout 4).

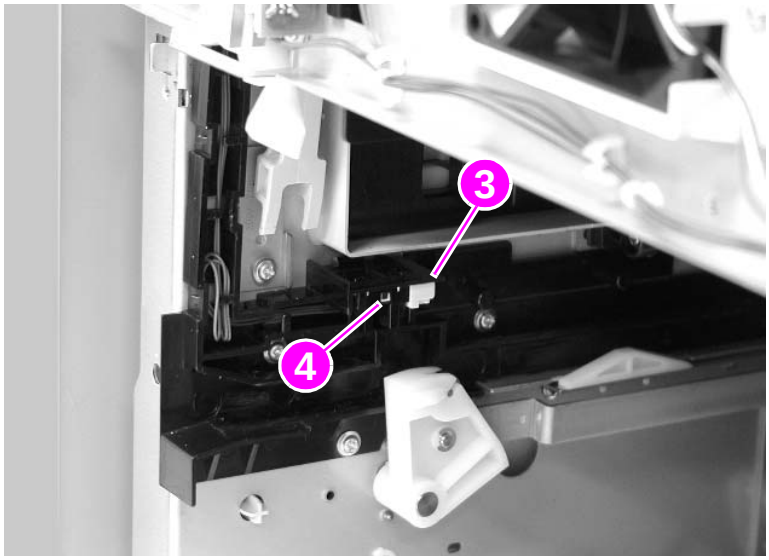


Figure 250. Disconnect the ITB sensor connector

Upper left door sensor

1 Remove the delivery unit. See page 249.

2 Disconnect one connector (callout 1), and remove the upper left door sensor (callout 2).

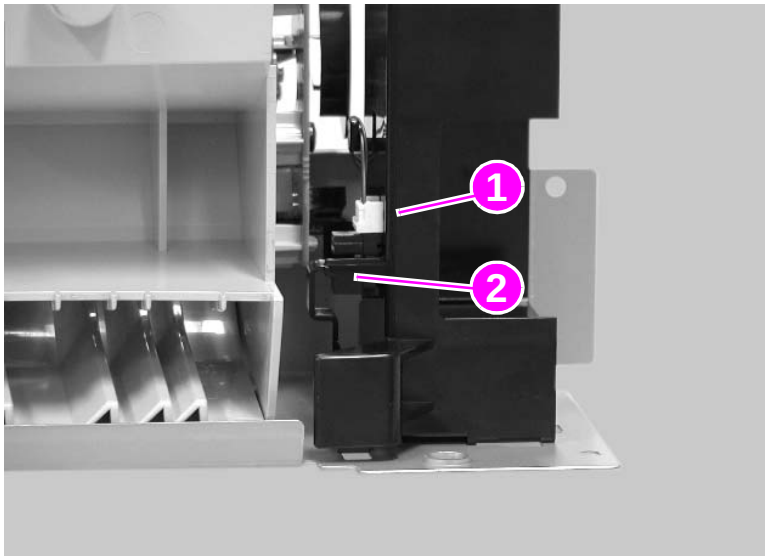


Figure 251. **Disconnect the upper left door sensor**

Fuser front paper sensor

1 Remove the fuser. See page 259.

2 Remove two screws (callout 1), unhook two claws (callout 2), and remove the fuser front guide (callout 3).

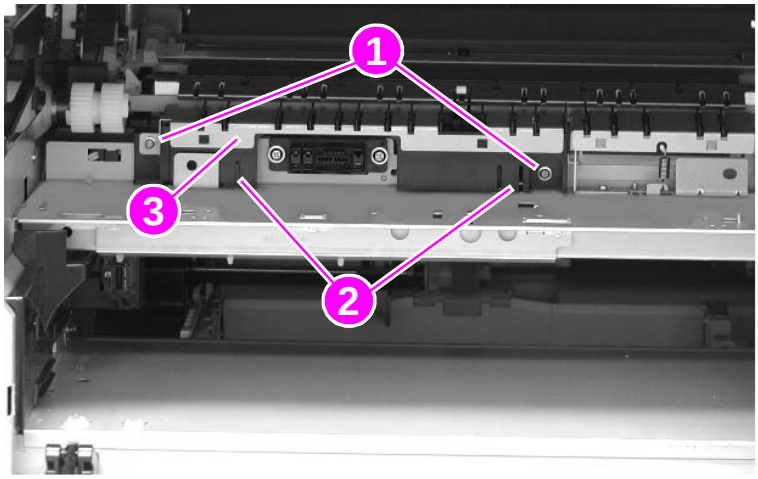


Figure 252. **Remove the fuser front paper sensor mounting screws**

3 Disconnect one connector (callout 4), and remove the fuser front paper sensor (callout 5).

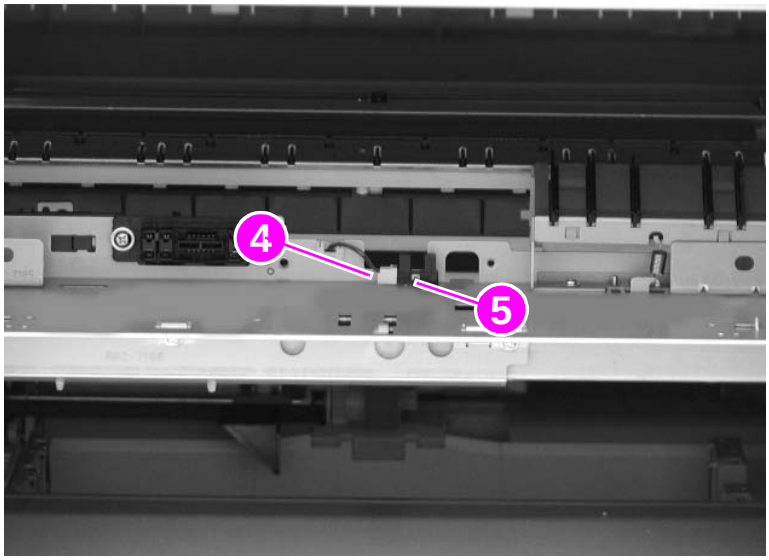


Figure 253. **Disconnect the fuser front paper sensor**

Fuser sensor PCA

1 Open the fuser door.

2 Remove the duplexer (if installed). See page 258.

3 Remove two screws (callout 1), and remove the fuser sensor bracket (callout 2).

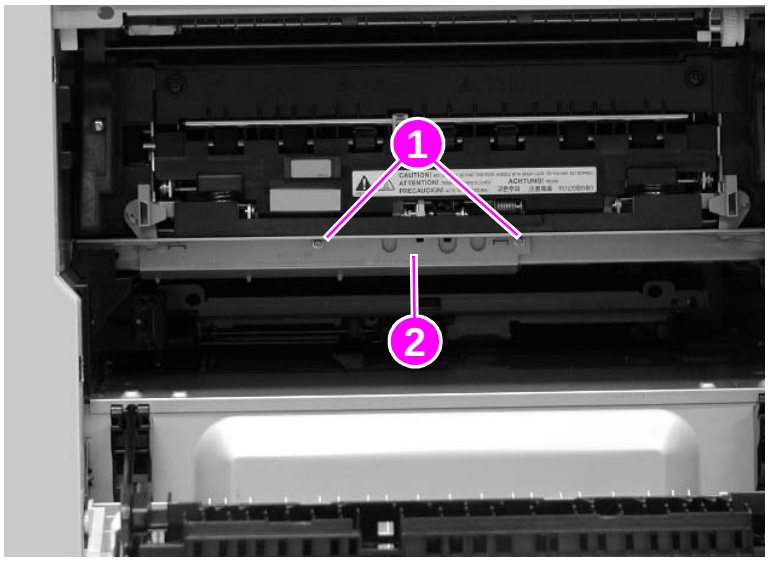


Figure 254. **Remove the fuser sensor PCA mounting screws**

4 Disconnect one connector (callout 3), remove two screws (callout 4), and remove the fuser sensor PCA (callout 5).

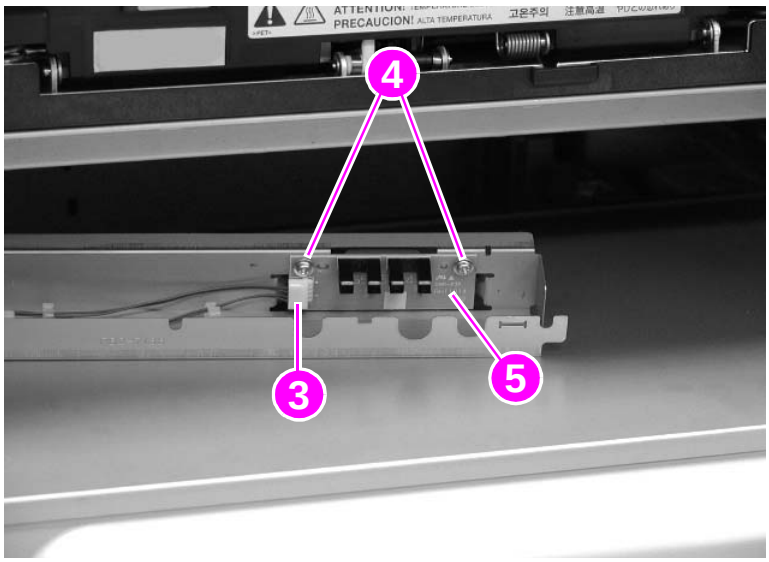


Figure 255. **Disconnect the fuser sensor PCA**

2,000-sheet tray 4 for the HP LaserJet 9500hdn printer

Note The following removal and replacement procedures are for the 2,000-sheet feeder for the LJ 9500hdn printer. For removal and replacement instructions for the MFP 2,000-sheet side feeder, see the *2,000-sheet Side-input Tray Service Manual* (PN Q1891-90901).

Note The printer shown below is not a HP color LaserJet 9500hdn. However, the tray 4 shown is the same one installed on a HP color LaserJet 9500hdn.

The following covers and assemblies can be removed from the 2000-sheet feeder:

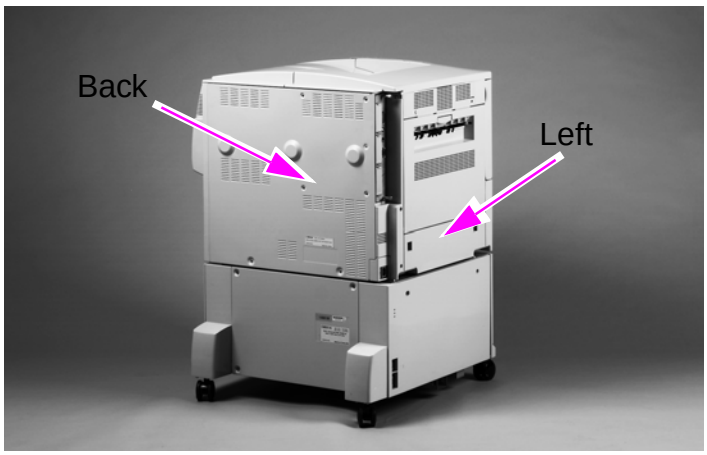
- left side cover
- right side cover
- back covers
- tray assembly
- tray 4 rollers (pickup, feed, and separation)
- registration assembly
- drive motor
- drive assembly
- controller board
- paper-size detection switch PCB
- power supply
- pickup assembly
- paper connecting unit

Front and right side orientation



Figure 256. **View of front and right side**

Back and left side orientation



Left side cover

1 Remove two screws (callout 1) from the left side cover.

2 Pull the top edge of the cover outward.

3 Lift the left side cover up and outward to remove it from the 2000-sheet feeder.

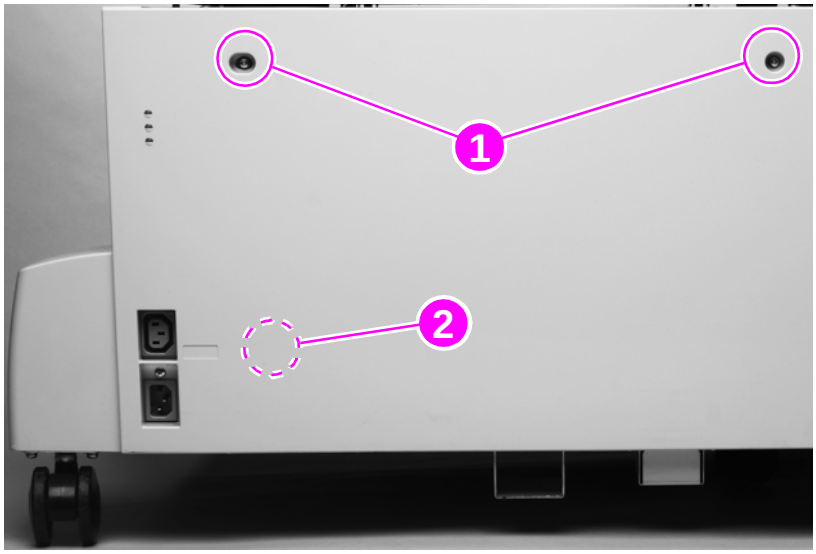


Figure 257. **Removing the left side cover**

To reinstall

Make sure the hook (callout 2) on the inside of the cover connects correctly.

Right side cover

1 Remove two screws (callout 1) from the right side cover.

2 Pull the top edge of the cover outward.

3 Lift the right side cover up and out to remove it from the 2000-sheet feeder.

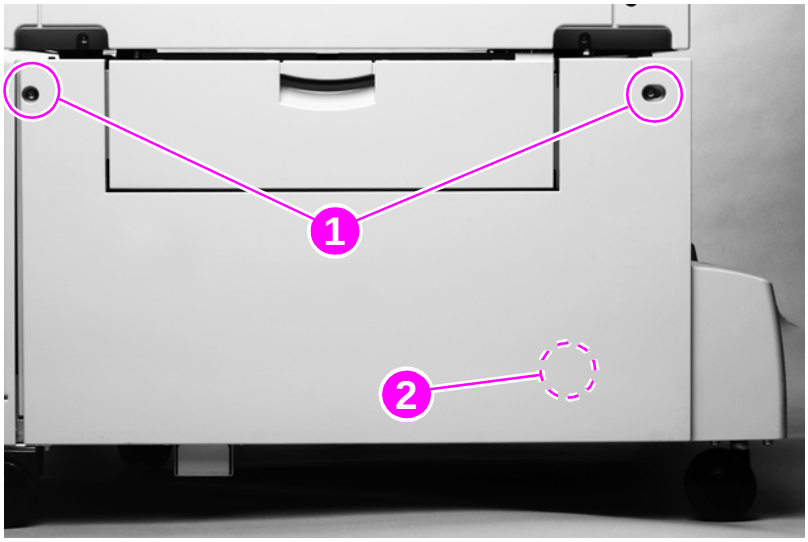


Figure 258. **Removing the right side cover**

To reinstall

Make sure the hook (callout 2) on the inside of the cover connects correctly.

Back covers

Center back cover

1. Remove four screws (callout 1) from the center back cover.
2. Remove the center back cover.

Right back cover

1. Remove the center back cover.
2. Slide the right back cover (callout 2) toward the center to release an interior tab.
3. Lift the right back cover straight up to release a second interior tab.

Note Be sure to keep the right back cover vertically aligned with the 2000-sheet feeder. Otherwise, the second interior tab will not release.

4. Pull the right back cover out to remove it.

Left back cover

1. Remove the center back cover.
2. Slide the left back cover (callout 3) toward the center to release an interior tab.
3. Lift the left back cover straight up to release a second interior tab.

Note Be sure to keep the left back cover vertically aligned with the 2000-sheet feeder. Otherwise, the second interior tab will not release.

4. Pull the left back cover out to remove it.

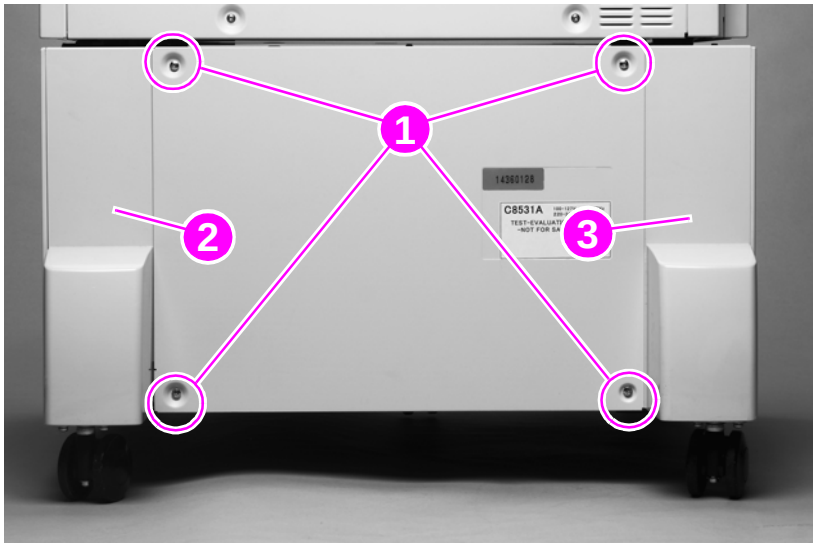


Figure 259. **Removing the back covers**

Tray 4

CAUTION Tray 4 is heavy and can be damaged if dropped. Use both hands when removing the tray.

Note The MFP uses a 2,000-sheet side-input feeder as tray 4. For information about the MFP feeder, see the *2,000-Sheet Side-input Tray Service Manual* (PN Q1891-90901).

1. Open tray 4 (the tray assembly), and remove all paper.
2. Pull the tray assembly out until it stops.
3. Press the release button (callout 1) on the right side of the tray and the release button (not shown) on the left side of the tray.
4. Continue to press the two release buttons, and pull the tray assembly out of the chassis.

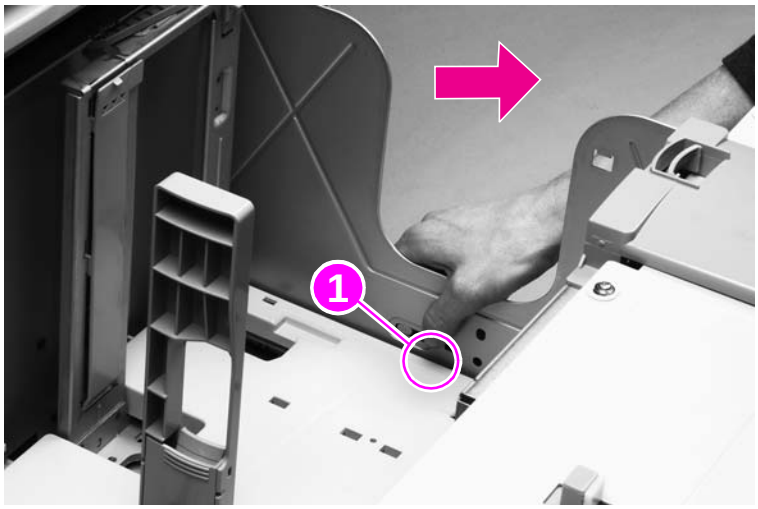


Figure 260. **Removing tray 4**

Rollers (pickup, feed, and separation)

1 Remove tray 4 (page 321).

2 Locate the appropriate roller on the upper right side of the tray cavity. The pickup roller (callout 1), feed roller (callout 2), and separation roller (callout 3) are all type 2 rollers.

Note To gain access to the separation roller, slide the blue roller shield toward the back of the 2000-sheet feeder (as shown in figure 261).

3 Pinch the tab on the end of each roller to release it.

4 Slide the roller off the shaft.

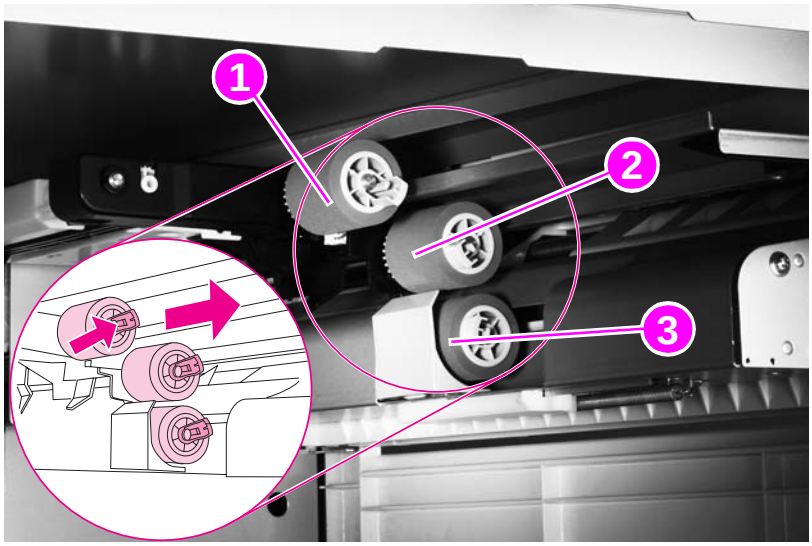


Figure 261. **Removing the rollers**

To reinstall

- You do not need to slide the blue shield back over the separation roller. It will reset automatically.
- Verify that each roller is locked in place by attempting to remove it without first pinching the tab.

Registration assembly

1 Remove the right side cover (page 319).

2 Remove four screws (callout 1).

CAUTION Use care when following step 3. Three cables are connected to the registration assembly.

3 Gently lift the registration assembly off the 2000-sheet feeder, and unplug three connectors (callout 2) from the rear of the registration assembly.

Note If you cannot reach the three cable connectors, remove the center back cover (page 228), remove the right back cover (page 320), and unplug the connectors (figure 263, callout 3) from the back of the 2000-sheet feeder.

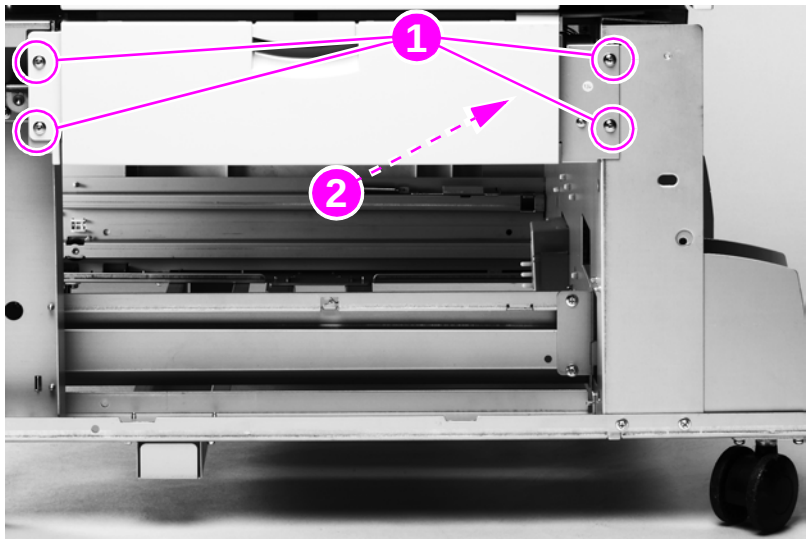


Figure 262. Removing the registration assembly (1 of 2)

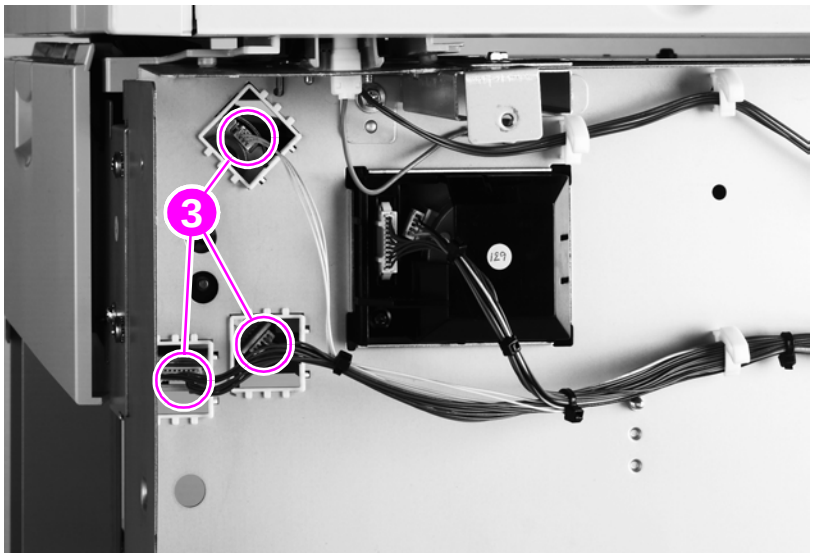


Figure 263. Removing the registration assembly (2 of 2)

Drive motor

1 Remove the center back cover (page 320).

2 Unplug the cable connector (callout 1) from the controller board.

3 Carefully unwind the cable from the cable guides (callout 2).

4 Remove two screws (callout 3).

5 Remove the drive motor from the 2000-sheet feeder.

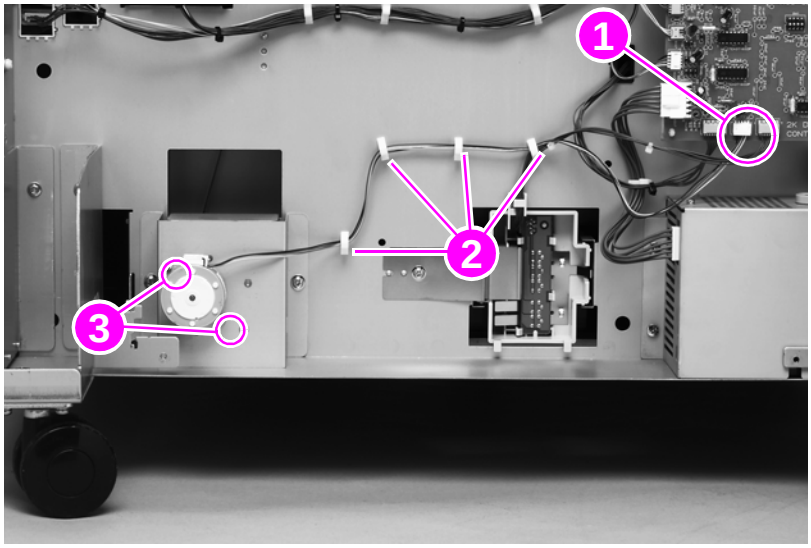


Figure 264. **Removing the drive motor**

Drive assembly

1 Remove the center back cover (page 320).

2 Unplug the cable connector (callout 1) from the controller board.

3 Carefully unwind the cable from the cable guides (callout 2).

4 Remove two screws (callout 3).

5 Remove the drive assembly from the 2000-sheet feeder.

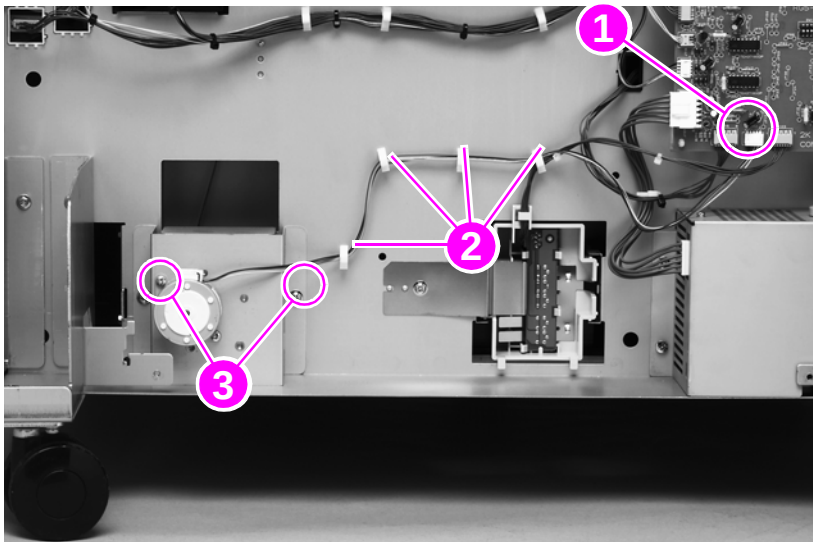


Figure 265. **Removing the drive assembly**

Controller board

1 Remove the center back cover (page 320) and the left back cover (page 320).

2 Unplug eleven connectors (callout 1).

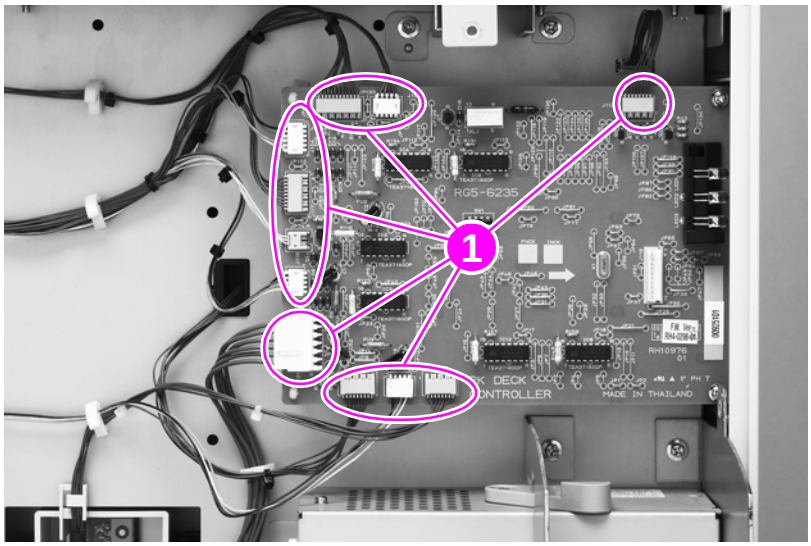


Figure 266. **Removing the controller board (1 of 2)**

3 Remove two screws (callout 2).

4 Release two holding pins (callout 3).

5 Remove the controller board from the 2000-sheet feeder.

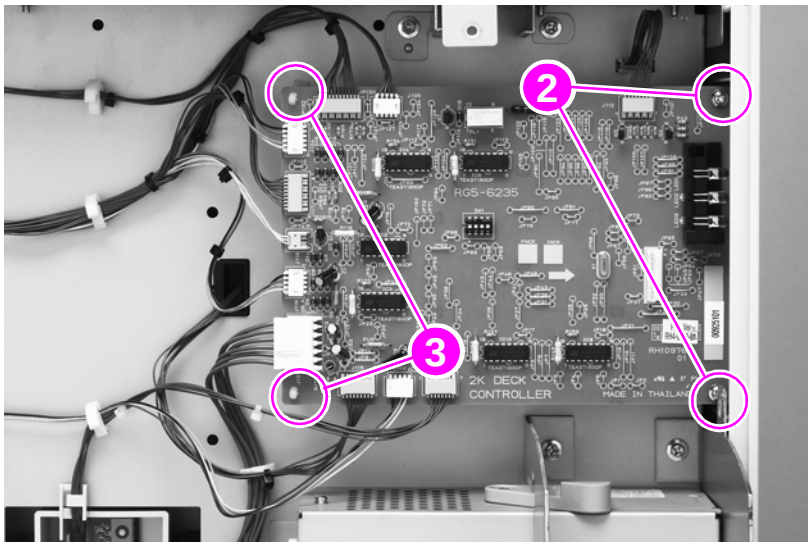


Figure 267. **Removing the controller board (2 of 2)**

Paper-size detection switch PCB

1 Remove the center back cover (page 320).

2 Remove one screw (callout 1) to remove the leaf spring (callout 2).

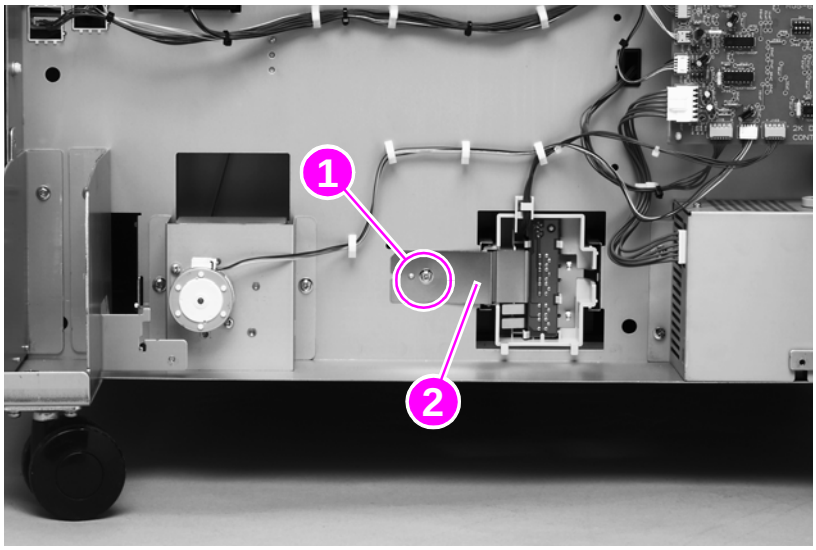


Figure 268. **Removing the paper-size switch PCB (1 of 2)**

3 Release four tabs (callout 3), and remove the PCB from the casing.

4 Unplug the cable connector (callout 4).

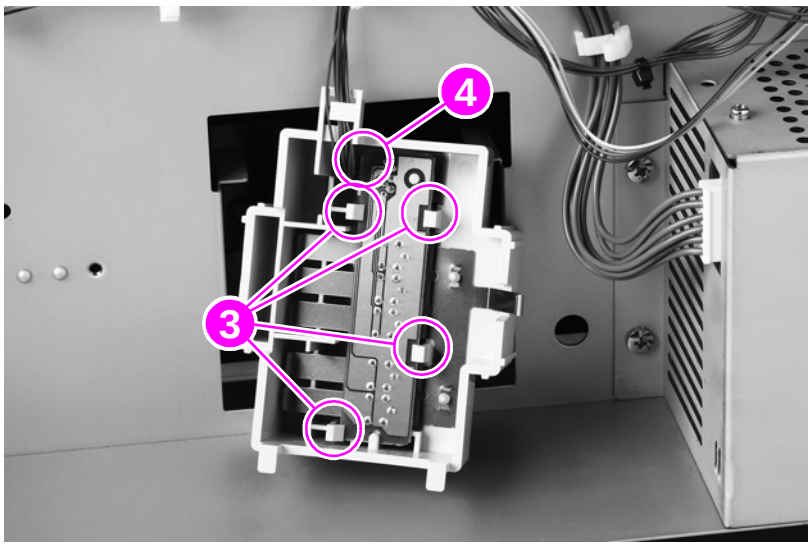


Figure 269. **Removing the paper-size switch PCB (2 of 2)**

To reinstall

Open the paper tray (tray 4) slightly, so that the it does not put pressure on the casing.

Power supply

1 Remove the center back cover (page 320) and the left back cover (page 320).

2 Unplug one connector (callout 1).

3 Remove two screws (callout 2).

4 Slide the power supply to the left to remove it.

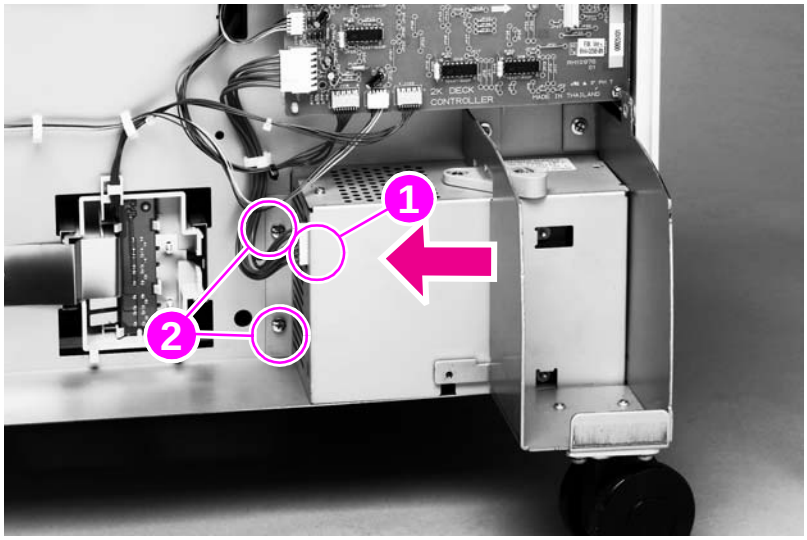


Figure 270. **Removing the power supply**

Pickup assembly

1. Remove the tray assembly (page 321).
2. Remove the right side cover (page 319), the center back cover (page 320), and the right back cover (page 320).
3. Remove the registration assembly (page 323).
4. From the back of the 2000-sheet feeder, unplug two connectors (callout 1).

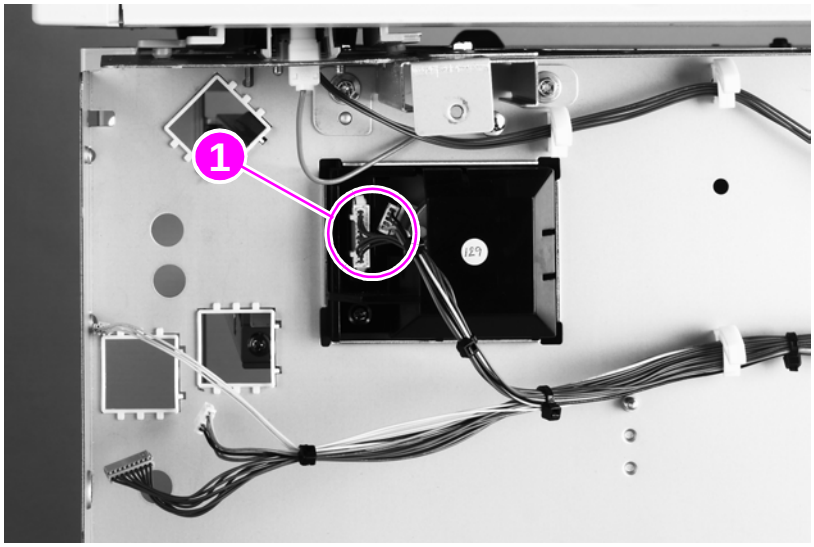


Figure 271. **Removing the pickup assembly (1 of 2)**

5. From the front of the 2000-sheet feeder, remove one screw (callout 2).
6. Lift the pickup assembly off the hook (callout 3) to remove it from the 2000-sheet feeder.

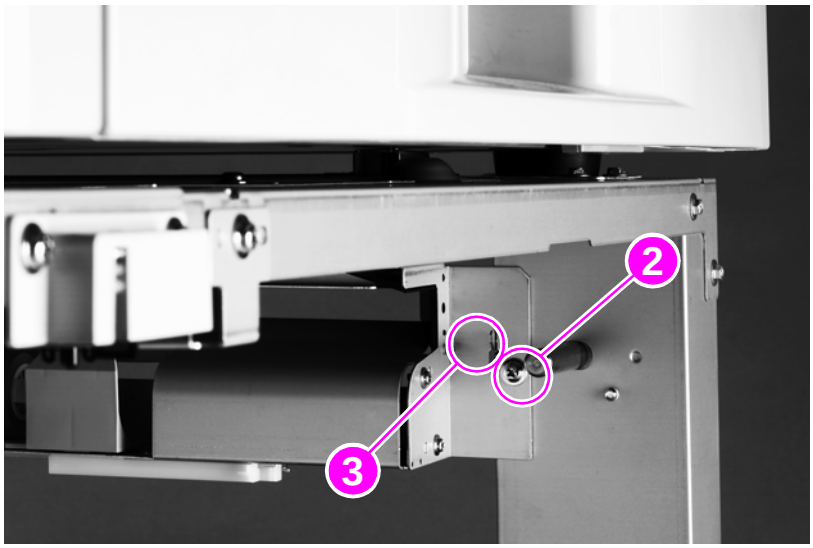


Figure 272. **Removing the pickup assembly (2 of 2)**

Paper connecting unit

1 Release the two levers (callout 1) by pulling them toward the center of the paper connecting unit.

2 Lift the paper connecting unit straight up and remove it.

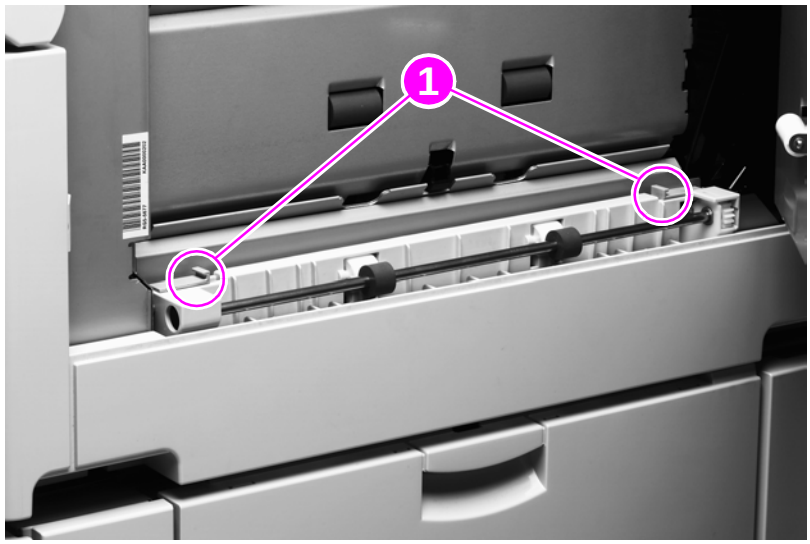


Figure 273. **Removing the paper connecting unit**

7 Troubleshooting

Chapter contents

Introduction 334
Troubleshooting process 334
- Pre-troubleshooting checklist 334
- Power checks 336
- Control panel checks 336
- Troubleshooting tools and procedures 337
- Hardware and electrical troubleshooting tools 337
  - Engine diagnostic tools 337
  - Defeating interlocks 337
  - Engine diagnostics preconditions 338
  - Disable cartridge test 338
  - Print stop test 349
  - Engine-test button 350
  - Sensor test (interactive) 339
  - Engine-test button 350
  - Component test: Belt only test 341
  - Component test: Image drum motors test 342
  - Component test: Print cartridge motors test 343
  - Component test: Developer motors test 344
  - Component test: YMCK laser test 344
  - Component test: Fuser motor test 345
  - Component test: Tray 1 feed motor test 345
  - Component test: Tray 2 feed-drive test 346
  - Component test: Tray 3 feed drive test 347
  - Component test: Pre-registration test 347
  - Component test: Registration test 348
  - Component test: Face-up solenoid test 348
  - Engine-test button 350
  - Engine test print page 364
  - Formatter heartbeat LED 351
  - Information pages 352
  - Configuration page 352
  - Supplies status pages 354
  - Usage page 356
  - File directory page 357
  - Electrical connection and contact failures 358
- Image-formation and print-quality troubleshooting tools 359
  - Print-quality problems associated with the environment 359
  - Reseating consumables 359
  - Cleaning the post charger 359
  - Cleaning the post charger 359
  - Cleaning the fuser input 359
  - Print-quality troubleshooting pages 360

Color band test 364
Engine test print page 364
Laser/scanner adjustment page 365
Door ruler and repeating defect frequencies 365
Sample defects and solutions 366
Repeating marks (98 mm) 367
Repeating marks (45 mm) 368
Lines and bands appear perpendicular to feed direction 371
Lines, streaks or scratches appear parallel to feed direction 374
Diagonal bands or lines 378
Light or faint image and dropouts 380
Wavy brush marks 384
Color plane misregistration 385
Primary color covers entire page 387
Ghosted image (98 mm) 388
Ghosted image (140 mm) 389
Distorted or misplaced image 391
Poorly fused image 392
Missing color plane 394
Blank 395
Hand or fingerprints 395
Fine, yellow dot background 397
Toner halos or explosions occur around solid secondary colors 398
Control panel print-quality adjustments 400
Media and paper-path troubleshooting tools 403
Paper-path jam sensors 403
Determine the problem source: print media or printer 408
Using the straightest paper path 409
Determine if problem is caused by the duplexing process 409
Isolate the source of the jam 409
Determine where media jams occur 409
Determine whether the printer is experiencing misfeeds or multifeed jams 409
Print-quality problems associated with media 409
Isolate a media brand 410
Isolate a media type 410
Wrinkling envelopes 410
Poor fusing 410
Overhead transparency defects 411
Media jam 411
Customer print job 412
Clearing jams 412
Clearing repeated jams 413
Tests for troubleshooting paper-path problems 413
Print stop test 413
Paper-path test 413
Sensor test 413
Tray alignment adjustment 413
Noise-troubleshooting tools 414
Event log page 416
Print an event log 416
Show an event log 417
Interpret an event log 417
Sample event log page 418
Control panel messages for the HP LaserJet 9500 Series printer 415
Control panel and event log message format 416
Error message interpretation 419
Alphabetical error messages for the HP LaserJet 9500 Series printer 419
Numerical error messages for the HP LaserJet 9500 Series printer 431

Data and communication troubleshooting tools 466
Test message 466
EIO troubleshooting 466
Software/network troubleshooting 466
Jetdirect configuration 467
Verify network and server operation 467
Jetdirect page 468
Troubleshooting tools for the HP LaserJet 9500hdn printer tray 4 469
Tray 4 diagnostics label (LJ 9500) 469
Tray 4 motor test (LJ 9500) 469
Tray 4 standalone running test (LJ 9500) 469
Tray 4 sensor test (LJ 9500) 470
Tray 4 light pattern interpretation (LJ 9500) 471
Tray 4 does not print media (LJ 9500) 471

Introduction

This chapter contains information, tools, and procedures to use in isolating, identifying, and correcting problems with the HP color LaserJet 9500 Series printer and these product are designed for effective technician-supported, over-the-phone diagnosis. Always check the online databases for updates to known issues and troubleshooting methods.

Note When troubleshooting the MFP version, first try to isolate the problem to the print or copy function. In most cases, printing the internal print-quality assessment pages will help isolate the problem. Use this manual to troubleshoot print-related issues, and use the *HP Scanner/ADF Service Manual for the HP LaserJet 9000mfp/9000Lmfp/9040mfp/9050mfp/9500mfp* (PN C8449-90955) to troubleshoot copy-related issues.

Troubleshooting process

WARNING! You *must* unplug the HP color LaserJet 9500mfp *before* attempting to service it. When the MFP is plugged into a wall receptacle, the 110 vac cable between the printer and the scanner/ADF carries electrical current even when the MFP is turned off.

The list below describes basic questions to ask the customer to help quickly define the problem(s).

Pre-troubleshooting checklist

Check the following items before diagnosing a malfunction. If a failure is found, the service technician clears the problem and gives the instruction to the customer.

Note Throughout this document, the term “printer” is used to refer to both the HP LaserJet 9500 Series printer models *and* the HP LaserJet 9500mfp. Make sure to read the headings and text carefully to understand the context of the term.

Table 52. Pre-troubleshooting checklist

Environment	• Is the printer installed on a solid, level surface? • Is the power supply voltage within ± 10 volts of the specified power source? • Is the power supply plug inserted in the printer and the outlet? • Is the operating environment within the specified parameters, as listed in chapter 1 of this manual? • Is the printer exposed to direct sunlight? • Is the room temperature kept between 15° C and 30° C, and is the relative humidity between 10 percent and 80 percent? • Is the printer near sites generating ammonia gas, high temperature or high humidity (near a water faucet, kettle, or humidifier, for example), cold places, open flames, and dusty areas?

Table 52. Pre-troubleshooting checklist (continued)

Media	• Is the correct media type selected on the control panel? • Is the media ream broken (slightly bend the stack before loading media)? • Does the customer use only supported media (see table 8 in chapter 1)? • Is the media in good condition (no curls, folds, etc.)? • Is the media stored correctly and within environmental limits? • Is the media type set correctly on the control panel? • Is the media not damp or dirty? • Was the media not opened until it was ready to use? • Is the amount of media in the input source within specifications? • Are the media guides aligned with the media?
Input trays	• Is the amount of media in the tray within specifications? • Is the media set into the tray correctly? • Are the media guides aligned with the media? • Is the tray properly installed in the printer?
Consumables loaded	• Is each print cartridge and image drum properly installed? • Are the intermediate transfer belt (ITB) unit, the fuser unit, the ITB cleaner, the waste toner bottle, and the secondary transfer roller unit installed correctly?
Cover and doors	• Are the covers and doors closed? • Are the front doors, the image drum door, right upper (ITB) door, left upper door, left lower (fuser access) door, paper-path access door, and right lower door closed correctly at power on? • Are the right front cover, left front cover, left upper cover, left cover unit, right cover unit, and right lower cover all closed correctly?
Condensation	• Was an image drum or print cartridge opened soon after being moved from a cold to a warm room? If so, allow the printer to sit at room temperature for one to two hours. • Does condensation occur following a temperature change (particularly in winter following cold storage)? If so, wipe affected parts dry or leave the printer on for 10 to 20 minutes. **Note** Condensation might result in light images or incorrect contrast.
Miscellaneous	• Check for and remove any non-HP components (print cartridges, memory modules, and EIO cards) from the printer. • If hardware or software configuration has not changed, or the problem is not associated with any specific software, contact the Customer Care Center (see Chapter 1). • Remove the printer from the network, and make sure that the failure is associated with the printer before beginning troubleshooting. • For any print-quality issues, calibrate the printer.

Power checks

Table 53. Power checks

Check	What to do
Is the printer plugged in?	**1** Make sure that the printer and the finishing device(s) are plugged into a known good source of ac power.
Is the printer on/off switch set to the on position?	**1** Push the switch to the “on” position. **2** Make sure that the switch is set to low-voltage power supply linkage if a switch problem is suspected.
Is ac power available at the print engine power receptacle?	**1** Make sure that power is available. See “Product specifications for the printer” in Chapter 1. **2** Test outlet with a known good appliance or in a known good power outlet.
Are the printer fans on? Do the printer fans turn on?	**Note** The fan operation is important because all of the fans are controlled by the DC controller PCA. Fans 1 through 6 operate at full speed for 30 seconds during the WAIT period. Fans 1 through 5 slow to half-speed, and fan 6 stops during the STBY period, and when the printer is in PowerSave mode. Make sure that the printer is not in PowerSave mode. Operational fans indicate the following: ● the ac power is present in the printer ● the DC power supply is probably functional (both +24 VDC and +5 VDC are being generated) ● the DC controller PCA is probably functional.

Control panel checks

WARNING! You *must* unplug the HP color LaserJet 9500mfp *before* attempting to service it. When the MFP is plugged into a wall receptacle, the 110 vac cable between the printer and the scanner/ADF carries electrical current even when the MFP is turned off.

It is important to have the control panel functional as soon as possible in the troubleshooting process so that the printer diagnostics can be used to assist in locating printing errors.

The control panel should show `READY`, `PAUSED`, or `POWERSAVE ON`. For information about error messages that appear on the control panel or in the event log, see the event log. If the control panel is blank, see “Event log page” on page 416.

Use the following steps to troubleshoot the control panel if the power checks are successful, but the control panel is still blank:

1. Check connector J3008 on the back of the control panel and connector J123 on the DC controller.
2. Check connector J2103 on the DC controller and J9002 on the formatter.
3. Check the wire harness between J3008 and J123 for damage. Replace the wire harness if necessary.
4. Replace the control panel or the DC controller.

Troubleshooting tools and procedures

WARNING! You *must* unplug the HP color LaserJet 9500mfp *before* attempting to service it. When the MFP is plugged into a wall receptacle, the 110 vac cable between the printer and the scanner/ADF carries electrical current even when the MFP is turned off.

Use these troubleshooting tools and procedures to help diagnose and correct problems with the printer.

The following list identifies the troubleshooting tools used to solve printer problems:

- Hardware and electrical. See page 337.
- Image formation and print quality. See page 359.
- Media and paper-path. See page 403.
- Noise. See page 414.
- Alphabetical error message interpretation. See page 419.
- Numerical error message interpretation. See page 431.
- Data and communication. See page 466.
- Tray 4. See page 469.

Hardware and electrical troubleshooting tools

Diagnosing and troubleshooting the HP color LaserJet 9500 Series printer and the 9500mfp is similar to the procedures for other laser jet printers, but is more complicated because the product uses four print cartridges and four image drums.

Engine diagnostic tools

The engine diagnostic tools include:

- event log (print or show): indicates high-voltage errors and calibration errors
- print-quality troubleshooting: selected in diagnostics, prints print quality pages
- disable cartridge check: prints normally without one or more color plane(s)
- paper-path test: source, destination, duplex, copies, and sensors.
- sensor test
- component test
- print/stop test

Defeating interlocks

Defeating the interlocks might be difficult because the same switch controls the front and side doors on the right side of the printer. To defeat the interlocks, use rolled up paper.

- Front left door switch:

1 Defeat the front left door switch from the inside left (fuser) door and use rolled up paper. The paper should not too long so that it interferes with the diverter assembly.

- Front right door and right top door (ITB access)

1 Open the right top door.

2 Remove the filter.

3 Remove two screws and remove the right upper cover.

4 Insert the rolled up paper into the switch.

Engine diagnostics preconditions

- Interlocks must be defeated if the activity is to be seen.
- Tests that turn the ITB (transfer motors and belt only) require:
  - removal of the ITB
  - installation of the toner collection bottle
- Pull out both trays to exercise either of the two cassette drives.
- At power on, the ITB cleaner must be present. If it is not, the engine reports an erroneous cartridge state that might eventually damage the ITB (by turning the image drum while contacting the ITB).
- The p-carg (image drum) drive test only turns the image drums that are removed to avoid ITB damage.

Disable cartridge test

The disable cartridge test can be used for eliminating drum mechanics, diagnosis of color plane-dependent problems and all repeating defects, and noise problems. This test checks the printer and performs all of the standard initializations (similar to the functions associated with opening and closing a door).

1. Defeat the appropriate interlocks.
2. Press ✓ or MENU (MFP version) to open the menus.
3. Use ▲ or ▼ to scroll to DIAGNOSTICS, and then press ✓.
4. Use ▲ or ▼ to scroll to DISABLE CARTRIDGE CHECK, and then press ✓.
5. Remove one or more of the image drums.
6. Print a job from the control panel or from a connected PC.

The printer ignores the missing image drums which allows the printer to print normally without one or more color planes. To exit the test:

1. Press CANCEL JOB (LJ 9500) or EXIT (LJ 9500mfp).
2. Use ▲ or ▼ to scroll to EXIT DIAGNOSTICS, and then press ✓.
3. The printer will reboot.

Paper-path test (and automatic sensors test)

The paper-path test can be used to make sure that various paper paths are working correctly or to troubleshoot problems with tray configuration. It also allows you to print a page or pages with complete control over source, duplex, and destination.

If the sensors option is ON, you can see the paper-path sensor status when the page is printing. The media jam sensor status is reported if SENSORS is selected. If it is not selected, the normal error message appears and all errors are entered into the event log.

1. Press ✓ or MENU (MFP version) to open the menus.
2. Use ▲ or ▼ to scroll to DIAGNOSTICS, and then press ✓.
3. Use ▲ or ▼ to scroll to PAPER PATH TEST, and then press ✓.
4. Use ▲ or ▼ to select the input tray you want to test, the output bin, the duplexer (if available), and the number of copies. Press ✓ after you set the value for each location.

Note If SENSORS is selected, the printer enters a special diagnostic mode. If you are in the diagnostic mode, the sensor status appears and the SENSORS message will *not* appear as an option.

5 If the SENSORS option is selected, the letters A through K appear on the control panel. The values include:

- A = Tray 2 feed A
- B = Tray 2 feed B
- C = Tray 3 feed A
- D = Tray 3 feed B
- E = Preregistration
- F = Pre-T2
- G = Pre-fuser
- H = Fuser outlet
- I = Duplex reverse
- J = Fuser feed
- K = Face-down output.

6 After selecting the last option, use ▲ or ▼ to scroll to PRINT TEST PAGE, and then press ✓.

Perform the following steps to exit the test if SENSORS is selected:

1 Press CANCEL JOB (LJ 9500) or EXIT (LJ 9500mfp).

2 Use ▲ or ▼ to scroll to EXIT DIAGNOSTICS, and then press ✓.

3 The printer will re-boot.

Sensor test (interactive)

The sensor test can be used to determine if a bad sensor is causing a problem.

Note

If a tray is out and causes a warning message, the message covers the sensor test message. When the warning message is cleared, the sensor test appears.

The duplex re-feed sensor cannot be accessed for manual testing. Testing this sensor can be done by covering the sensor with paper or tape, inserting the duplexer, and running a manual sensor test. Also, this sensor is *not* monitored during the paper-path test with sensors.

1 Defeat the appropriate interlocks.

2 Press ✓ or MENU (MFP version) to open the menus.

3 Use ▲ or ▼ to scroll to DIAGNOSTICS, and then press ✓.

4 Use ▲ or ▼ to scroll to SENSOR TEST, and then press ✓.

5 Touch the sensors and compare the reading on the control panel to the reading on the decoder table. The decoder values include:

- A = Preregister
- B = T2
- C = Paper path
- D = Fuser outlet
- E = Face-down output
- F = Face-down capacity full
- G = Tray 1 media detection
- H = Tray 2 media detection
- I = Tray 2 feed sensor A and B (HP CLJ 9500 only)
- J = Tray 2 X dimension (cross feed direction)
- K =Tray 2 Y dimension (feed direction)
- L = Tray 3 media detection
- M = Tray 3 feed sensor A and B
- N = Tray 3 X dimension (cross feed direction)
- O = Tray 3 Y dimension (feed direction) (HP CLJ 9500 only)
- P = Lower right door
- Q = Right front/upper right door interlock
- R = Left front/lower left door interlock
- S = Upper left door

When the sensors are manually toggled, the control panel shows the sensors going from ON to OFF, and then from OFF to ON.

Note If it is difficult to see the control panel message when toggling the sensors, remove the control panel so it hangs in front of the printer. Also, using a mirror might be helpful.

All of the preconditions might not have been met if the diagnostic fails to operate and you are sent back to the menu.

Perform the following steps to exit the test:

1 Press CANCEL JOB (LJ 9500) or EXIT (LJ 9500mfp).

2 Use ▲ or ▼ to scroll to EXIT DIAGNOSTICS, and then press ✓.

3 The printer will re-boot.

Components test

To repeat any of the following component tests, perform the following steps:

1 Press ✓ or MENU (MFP version) to open the menus.

2 Use ▲ or ▼ to scroll to DIAGNOSTICS, and then press ✓.

3 Use ▲ or ▼ to scroll to COMPONENT TEST, and then press ✓.

4 Use ▲ or ▼ to scroll to REPEAT, and then press ✓.

Component test: Transfer motors test

The transfer motor test can be used to audibly check the four OPC drive motors and the ITB motor when other printer processes are not operating.

Note The ITB lever must be in the “up” position, and the cleaning blade must be removed for this test and other tests that involve the ITB. If the cleaning blade is not removed during the test, the test fails and the printer returns to the previous menu. When the printer is turned on, the ITB cleaner must be installed.

1. Make sure that all of the printer components are installed.
2. Remove the toner collection bottle and the cleaning blade.
3. Replace the toner collection bottle without the cleaning blade.
4. Defeat the appropriate interlocks.
5. Press ✓ or MENU (MFP version) to open the menus.
6. Use ▲ or ▼ to scroll to DIAGNOSTICS, and then press ✓.
7. Use ▲ or ▼ to scroll to COMPONENT TEST, and then press ✓.
8. Use ▲ or ▼ to scroll to TRANSFER MOTORS, and then press ✓.
9. ROTATING MOTORS appears on the control panel.
10. Check the movement of the OPC drive motor and the ITB from the front or the right side of the printer.

Perform the following steps to exit the test:

1. Press CANCEL JOB (LJ 9500) or EXIT (LJ 9500mfp).
2. Use ▲ or ▼ to scroll to EXIT DIAGNOSTICS, and then press ✓.
3. The printer will re-boot.

Component test: Belt only test

The belt only test can be used to audibly and visually check the ITB motor, the ITB drive train, and the rotation of the ITB.

Note The ITB lever must be in the “up” position, and the cleaning blade must be removed for this test and other tests that involve the ITB. If the cleaning blade is not removed during the test, the test fails and the printer returns to the previous menu. When the printer is turned on, the ITB cleaner must be installed.

1. Make sure that all of the printer components are installed.
2. Remove the toner collection bottle and the cleaning blade.
3. Replace the toner collection bottle without the cleaning blade.
4. Remove the four image drums.
5. Defeat the appropriate interlocks.
6. Press ✓ or MENU (MFP version) to open the menus.
7. Use ▲ or ▼ to scroll to DIAGNOSTICS, and then press ✓.
8. Use ▲ or ▼ to scroll to COMPONENT TEST, and then press ✓.
9. Use ▲ or ▼ to scroll to BELT ONLYMOTOR, and then press ✓.
10. ROTATING MOTORS appears on the control panel.
11. Check the movement of the ITB from the front or the right side of the printer.

Perform the following steps to exit the test:

1. Press CANCEL JOB (LJ 9500) or EXIT (LJ 9500mfp).
2. Use ▲ or ▼ to scroll to EXIT DIAGNOSTICS, and then press ✓.
3. The printer will reboot.

Component test: Image drum motors test

The image drum motor test can be used to check that the drum motor(s) are rotating, that the motors and drive assemblies are working correctly, and to isolate image drum and image drum drive assembly problems.

Interface problems can be easily detected, and the image drum motors test is helpful when the back of the printer is removed to check the motors and drive assemblies. This test can also help isolate image drum and image drum drive assembly problems.

The test turns each image drum motor that has the image drum cartridge removed for approximately 10 seconds. If multiple drums are removed, the printer turns the next motor for approximately 10 seconds. This continues until all of the image drum motors have turned.

If you begin the test with the image drums removed and then try to enter the diagnostics menu to select DRUM MOTORS test, you must do this when the CHECKING PRINTER appears on the control panel. If too much time elapses, the printer displays the supplies status information and will not allow the customer to enter the menu structure to select the diagnostic test. If the supplies status information is displayed, open the door and press ✓ (LJ 9500) or MENU (LJ 9500mfp) to open the menus, and then close the door.

Note For the print cartridge motors test and the image drum motors test, the printer will *not* check if the cartridge is installed until a door is opened or closed. If the printer does not recognize that a cartridge is removed, it is probably because the front door interlocks are defeated. Open and close the door that does *not* have the interlocks defeated so the change is recognized.

The image drum motors test works with one or more image drums removed.

1. Defeat the front door interlocks.
2. Open the front doors.
3. Press ✓ or MENU (MFP version) to open the menus.
4. Use ▲ or ▼ to scroll to DIAGNOSTICS, and then press ✓.
5. Use ▲ or ▼ to scroll to COMPONENT TEST, and then press ✓.
6. Use ▲ or ▼ to scroll to DRUM MOTORS, and then press ✓.
7. Remove the image drum(s) that need to be tested.
8. Open and then close one of the doors.

Perform the following steps to exit the test:

1. Replace the image drums.
2. Use ▲ or ▼ to scroll to EXIT DIAGNOSTICS, and then press ✓.
3. The printer will reboot.

Note Pressing CANCEL JOB (LJ 9500) or EXIT (LJ 9500mfp) cancels the test.

Component test: Print cartridge motors test

The print cartridge motor test can be used to visually and audibly check that the print cartridge motor(s) are rotating, that the motors and drive assemblies are working correctly, and to isolate print cartridge and print cartridge drive assembly problems. If multiple print cartridges are removed, the printer turns each motor individually for approximately 10 seconds.

Note For the print cartridge motors test and the image drum motors test, the printer will *not* check if the cartridge is installed until a door is opened or closed. If the printer does not recognize that a cartridge is removed, it is probably because the front door interlocks are defeated. Open and close the door that does *not* have the interlocks defeated so the change is recognized.

If you begin the test with the print cartridges removed and then try to enter the diagnostics menu to select CARTRIDGE MOTORS test, you must do this when the CHECKING PRINTER appears on the control panel. If too much time elapses, the printer displays the supplies status information and will not allow the customer to enter the menu structure to select the diagnostic test. If the supplies status information is displayed, open the door and press ✓ (LJ 9500) or MENU (LJ 9500mfp) to enter the menus, and then close the door.

Note The print cartridge motors test works with one or more print cartridges removed.

1. Defeat the front door interlocks.
2. Open the front doors.
3. Press ✓ or MENU (MFP version) to open the menus.
4. Use ▲ or ▼ to scroll to DIAGNOSTICS, and then press ✓.
5. Use ▲ or ▼ to scroll to COMPONENT TEST, and then press ✓.
6. Use ▲ or ▼ to scroll to CARTRIDGE MOTORS, and then press ✓.
7. Remove one or more of the print cartridges.
8. Open and then close one of the doors that is not interlock defeated.

Perform the following steps to exit the test:

1. Replace the image drums.
2. Use ▲ or ▼ to scroll to EXIT DIAGNOSTICS, and then press ✓.
3. The printer will reboot.

Note Pressing CANCEL JOB (LJ 9500) or EXIT (LJ 9500mfp) cancels the test.

Component test: Developer motors test

The developer motor test can be used to visually and audibly check that the developer motor(s) are rotating, that the motors and drive assemblies are working correctly, and to isolate image drum and image drum developer drive assembly problems. Interface problems can be easily detected, and the developer motors test is helpful when the back of the printer is removed to check the motors and drive assemblies. This test can also help isolate image drum and image drum drive assembly problems.

Each motor is turned in sequence for approximately 10 seconds.

Note For the print cartridge motors test and the image drum motors test, the printer will *not* check if the cartridge is installed until a door is opened or closed. If the printer does not recognize that a cartridge is removed, it is probably because the front door interlocks are defeated. Open and close the door that does *not* have the interlocks defeated so the change is recognized.

Note This test can be performed with the image drums installed or removed.

1. Press ✓ or MENU (MFP version) to open the menus.
2. Use ▲ or ▼ to scroll to DIAGNOSTICS, and then press ✓.
3. Use ▲ or ▼ to scroll to COMPONENT TEST, and then press ✓.
4. Use ▲ or ▼ to scroll to DEVELOPER MOTORS, and then press ✓.

Perform the following steps to exit the test:.

1. Use ▲ or ▼ to scroll to EXIT DIAGNOSTICS, and then press ✓.
2. The printer will reboot.

Note Pressing CANCEL JOB (LJ 9500) or EXIT (LJ 9500mfp) cancels the test.

Component test: YMCK laser test

The YMCK laser test can be used to check the each of the four laser scanner assemblies individually for correct functionality.

1. Press ✓ or MENU (MFP version) to open the menus.
2. Use ▲ or ▼ to scroll to DIAGNOSTICS, and then press ✓.
3. Use ▲ or ▼ to scroll to COMPONENT TEST, and then press ✓.
4. Select YELLOW LASER SCANNER, MAGENTA LASER SCANNER, CYAN LASER SCANNER, or BLACK LASER SCANNER, and then press ✓.
5. The mirror motor of each laser scanner assembly starts up and runs so an audible check can be performed. Check if any of the assemblies sound different.

Perform the following steps to exit the test:

1. Use ▲ or ▼ to scroll to EXIT DIAGNOSTICS, and then press ✓.
2. The printer will reboot.

Note Pressing CANCEL JOB (LJ 9500) or EXIT (LJ 9500mfp) cancels the test.

Component test: Fuser motor test

The fuser motor test can be used to test the fuser motor and all of the mechanisms that it drives. You might remove the fuser during the test in order to isolate the fuser-generated noise.

1. Defeat the appropriate interlocks.
2. Press ✓ or MENU (MFP version) to open the menus.
3. Use ▲ or ▼ to scroll to DIAGNOSTICS, and then press ✓.
4. Use ▲ or ▼ to scroll to COMPONENT TEST, and then press ✓.
5. Use ▲ or ▼ to scroll to FUSER MOTOR, and then press ✓.

Perform the following steps to exit the test:

1. Use ▲ or ▼ to scroll to EXIT DIAGNOSTICS, and then press ✓.
2. The printer will reboot.

Note Pressing CANCEL JOB (LJ 9500) or EXIT (LJ 9500mfp) cancels the test.

Component test: Tray 1 feed motor test

The tray 1 feed motor test can be used to test the tray 1 paper feed motor, the secondary transfer roller, registration roller, and the pre-registration roller motor (which all use the registration motor M11). The clutch starts and stops the drive motor.

Note The tray 1 feed motor test will not operate unless the ITB is engaged and the green lever is “up”.

1. Defeat the right side door (ITB access) interlocks.
2. Press ✓ or MENU (MFP version) to open the menus.
3. Use ▲ or ▼ to scroll to DIAGNOSTICS, and then press ✓.
4. Use ▲ or ▼ to scroll to COMPONENT TEST, and then press ✓.
5. Use ▲ or ▼ to scroll to MP PAPER FEED DRIVE, and then press ✓.
6. MOVING SOLENOID AND MOTOR appears on the control panel.

The motor turns and the tray 1 solenoid will “fire”. The clutch (CL1 on the pre-registration roller) disengages partially into the test. CL2 to the registration roller disengages during the entire test.

Perform the following steps to exit the test:

1. Use ▲ or ▼ to scroll to EXIT DIAGNOSTICS, and then press ✓.
2. The printer will reboot.

Note Pressing CANCEL JOB (LJ 9500) or STOP (LJ 9500mfp) cancels the test.

Component test: Tray 2 feed-drive test

The tray 2 feed-drive test can be used to check the tray 2 pick rollers. M23 rotates clockwise to drive the tray 2 mechanism.

1 Remove tray 2 and tray 3.

Note If tray 2 and tray 3 are not removed the test fails and MOVING SOLENOID AND MOTOR appears on the control panel.

There is not a solenoid, and M24 is not tested.

2 Press ✓ or MENU (MFP version) to open the menus.

3 Use ▲ or ▼ to scroll to DIAGNOSTICS, and then press ✓.

4 Use ▲ or ▼ to scroll to COMPONENT TEST, and then press ✓.

5 Use ▲ or ▼ to scroll to UPPER CASSETTE FEED DRIVE, and then press ✓.

Perform the following steps to exit the test:

1 Use ▲ or ▼ to scroll to EXIT DIAGNOSTICS, and then press ✓.

2 The printer will reboot.

Note Pressing CANCEL JOB (LJ 9500) or EXIT (LJ 9500mfp) cancels the test.

Component test: Tray 3 feed drive test

The tray 3 feed drive test can be used to check the tray 3 pick rollers. M23 rotates counter clockwise to drive the tray 3 mechanism.

1 Remove tray 2 and tray 3.

Note If tray 2 and tray 3 are not removed the test fails and MOVING SOLENOID AND MOTOR appears on the control panel.

There is not a solenoid, and M24 is not tested.

2 Press ✓ or MENU (MFP version) to open the menus.

3 Use ▲ or ▼ to scroll to DIAGNOSTICS, and then press ✓.

4 Use ▲ or ▼ to scroll to COMPONENT TEST, and then press ✓.

5 Use ▲ or ▼ to scroll to LOWER CASSETTE FEED DRIVE, and then press ✓.

Perform the following steps to exit the test:

1 Use ▲ or ▼ to scroll to EXIT DIAGNOSTICS, and then press ✓.

2 The printer will reboot.

Note Pressing CANCEL JOB (LJ 9500) or EXIT (LJ 9500mfp) cancels the test.

Component test: Pre-registration test

The pre-registration test can be used to test M11 with the associated clutch (CL1) engaged. CL1 is also tested during the tray 1 feed motor test.

1 Disable the appropriate interlocks on the right side (ITB access) door.

2 Use ▲ or ▼ to scroll to DIAGNOSTICS, and then press ✓.

3 Use ▲ or ▼ to scroll to COMPONENT TEST, and then press ✓.

4 Use ▲ or ▼ to scroll to PRE-REGISTRATION, and then press ✓.

Perform the following steps to exit the test:

1 Use ▲ or ▼ to scroll to EXIT DIAGNOSTICS, and then press ✓.

2 The printer will reboot.

Note Pressing CANCEL JOB (LJ 9500) or EXIT (LJ 9500mfp) cancels the test.

Component test: Registration test

The registration test can be used to test M11 with the associated clutch (CL2) engaged. CL2 is OFF during the tray 1 feed motor test.

1 Disable the appropriate interlocks on the right side (ITB access) door.

2 Use ▲ or ▼ to scroll to DIAGNOSTICS, and then press ✓.

3 Use ▲ or ▼ to scroll to COMPONENT TEST, and then press ✓.

4 Use ▲ or ▼ to scroll to REGISTRATION, and then press ✓.

Perform the following steps to exit the test:

1 Use ▲ or ▼ to scroll to EXIT DIAGNOSTICS, and then press ✓.

2 The printer will reboot.

Note Pressing CANCEL JOB (LJ 9500) or EXIT (LJ 9500mfp) cancels the test.

Component test: Face-up solenoid test

The face-up solenoid test can be used to test the face-up solenoid (SL2) for correct functionality.

1 Disable the interlocks on the left side (fuser access) door.

2 Use ▲ or ▼ to scroll to DIAGNOSTICS, and then press ✓.

3 Use ▲ or ▼ to scroll to COMPONENT TEST, and then press ✓.

4 Use ▲ or ▼ to scroll to FACE UP SOLENOID, and then press ✓.

5 Check the mechanisms that SL2 drives in the right side (fuser access) door.

The solenoid “fires”, and several seconds later it releases. Defeating the right side interlocks and checking performing a visual test is suggested.

Perform the following steps to exit the test:

1 Use ▲ or ▼ to scroll to EXIT DIAGNOSTICS, and then press ✓.

2 The printer will reboot.

Note Pressing CANCEL JOB (LJ 9500) or EXIT (LJ 9500mfp) cancels the test.

Print stop test

The print stop test can be used to check the image on a belt before a secondary transfer occurs, stopping media at any point in the paper path to check the post-secondary transfer image condition, and to check the media condition at any point on the paper path.

Note Before performing the print stop test, use the control panel to open the CONFIGURE DEVICE menu and then the PRINT submenu. Make sure that the duplex option is set to OFF.

1. Press ✓ or MENU (MFP version) to open the menus.
2. Use ▲ or ▼ to scroll to DIAGNOSTICS, and then press ✓.
3. Use ▲ or ▼ to scroll to PRINT/STOP TEST, and then press ✓.
4. Select the desired millisecond delay (0 to 60,000). The printer displays READY DIAGNOSTIC MODE.
5. Send a print job from the control panel or from a PC.

The suggested delay times include:

- **0 to 3,000 milliseconds**: Earliest page-stop point (60 mm from the top of the left side of the lower access door.
- **1,000 milliseconds**: T1 (Y on belt)
- **1,500 milliseconds**: T1 (M on belt0
- **2,000 milliseconds**: T1 (C on belt)
- **3,000 milliseconds**: T1 (K on belt)
- **4,000 milliseconds**: ITB image at post charger
- **4,100 milliseconds**: Page at pre-registration
- **4,500 milliseconds**: ITB image is complete for all colors (YMCK)
- **5,000 milliseconds**: Page at registration (buckled)
- **7,000 milliseconds**: ITB image and page at mid-secondary transfer
- **7,500 milliseconds**: Page just prior to duplex diverter
- **8,000 milliseconds**: Page at mid-fuser
- **8,500 milliseconds**: Two-thirds of ITB image cleaned
- **12,500 milliseconds**: Page partially delivered to face-down output tray

Note To adjust the delay times, one millisecond equals about 0.14 to 0.15 mm (66 milliseconds for 10 mm) of image or media travel.

6. When the printer stops, remove the ITB.

Note Removing the ITB reduces the chance of toner sticking to the ITB when it is hot. Sticking toner might cause print-quality defects.

Be careful when stopping pages in the T2 area. Do not knock un-fused toner off the page into the printer.

The printer stops about three milliseconds after the specified amount of time expires. Entering 0 immediately stops the page when the top of the page is detected. Also, the suggested delay times are approximate times on a letter-size configuration page, and varies with different media sizes and job size.

After the pages and images are checked, clear the paper path of any remaining media.

Note To exit the test, a power-cycle might be required when the jam is cleared.

Engine-test button

The engine test button is located on the DC controller PCA. You can reach it through a hole (callout 1) at the right rear of the printer by using a small, non-metallic screwdriver or long, thin object.

Note For the MFP, disconnect the finishing device before performing an engine test.

Note If this test is performed with the formatter installed, the printer or MFP will not return to the `READY` state, and a `49 SERVICE ERROR` will appear on the control panel display. To clear the error, turn the power off and then on.

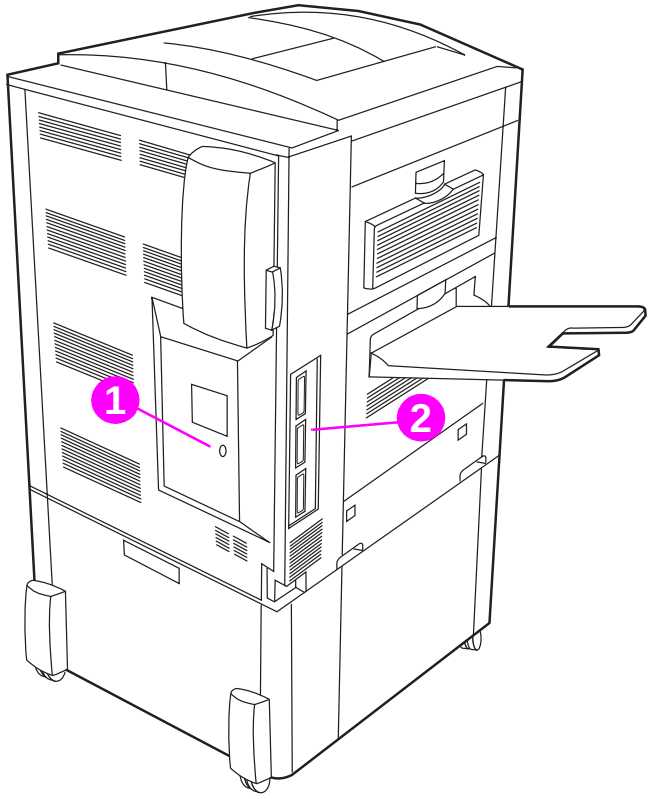


Figure 274. **Engine-test button**

Engine-test-print page

The engine-test-print page verifies that the print engine is functioning correctly. This test is very useful for isolating printer problems because the formatter is completely bypassed during an engine test. The engine-test-print page consists of a full page of horizontal lines across the entire printable area.

Note Media can be picked up from tray 2 or tray 3 if the formatter is installed. Make sure that the tray switch is set to standard size. If the formatter is removed, the tray from which you do *not* want to print must be open. Also, make sure that the print cartridges are installed in the printer.

Note If a finishing device is installed, remove it before performing an engine-test-print page.

Follow these steps to perform an engine test print page if a formatter is installed:

1 Turn the printer on.

2 Use a non-metallic object to press the engine test button.

Note When an engine test is printed with the formatter installed, a 49 error will occur after the page prints.

Follow these steps to perform an engine test print page if a formatter is *not* installed:

1 Turn the printer on, and wait until the printer is idle.

2 Use a non-metallic object to press and hold the engine test button until the printer begins to initialize the EP process.

3 When the printer is idle again, press the engine test button again to print an engine test print page.

If the duplexer is installed, the test pattern is printed on both sides of the page. The page is printed from tray 3 if it is installed. If tray 3 is not installed, the page prints from tray 2.



Figure 275. Engine test print page

Formatter heartbeat LED

The formatter heartbeat (callout 2 in figure 274) is a blinking light that indicates that the formatter is functioning correctly. The formatter heartbeat is located above the Jet-Link connector on the left side of the printer.

If the LED is off, the formatter hardware is not seated correctly or is not functioning correctly. Re-seat the formatter hardware. If the LED is flashing, the formatter is functioning correctly. Look in other areas for the cause of the problem.

Note Before replacing a formatter, first attempt to upgrade the firmware. See “Firmware upgrades to the printer or MFP” on page 109.

Information pages

Note All of the information pages in this section use a page from the HP LaserJet 9500 Series printer as an example. Pages from the MFP will vary from these examples.

From the control panel, you can print pages that show detailed information about the printer and its current configuration. The following information pages are available:

- Configuration page
- HP Jetdirect page
- Supplies status pages
- File directory page
- Usage page

Note For a complete list of the printer information pages, print a menu map. See “Menu map” in chapter 3.

To select and print items from the information menu:

1. Press ✓ or MENU (MFP version) to open the menus.
2. Use ▲ or ▼ to scroll to INFORMATION, and then press ✓.
3. Use ▲ or ▼ to scroll to the information page that you want, and then press ✓.

Configuration page

Use the configuration page to view current printer settings, to help troubleshoot printer problems, or to verify installation of optional accessories, such as memory (DIMMs) and printer languages.

The content of the configuration page varies, depending on the options that are currently installed in the printer.

If any of the installed devices are not shown on the configuration page, make sure that the Jet-Link cabling is correctly connected and functional, and that dc power is available to the finishing device. Check and reseat suspect cable connections. If any of the cables are replaced, you must turn the printer off and on again to have the printer recognize the finishing device.

Configuration page elements

Figure 276 shows a sample configuration page, which contains information about the following attributes:

A. Printer information (the “Printer Number” is the DC controller firmware version, and the “Firmware Datecode” is the formatter firmware version)

B. Event log

C. Installed personalities and options (indicates installed devices and recognized sizes)

D. Memory

E. Security

F. Media trays and options (indicates installed devices and recognized sizes)

G. Color plane registration marks

H. EP parameters

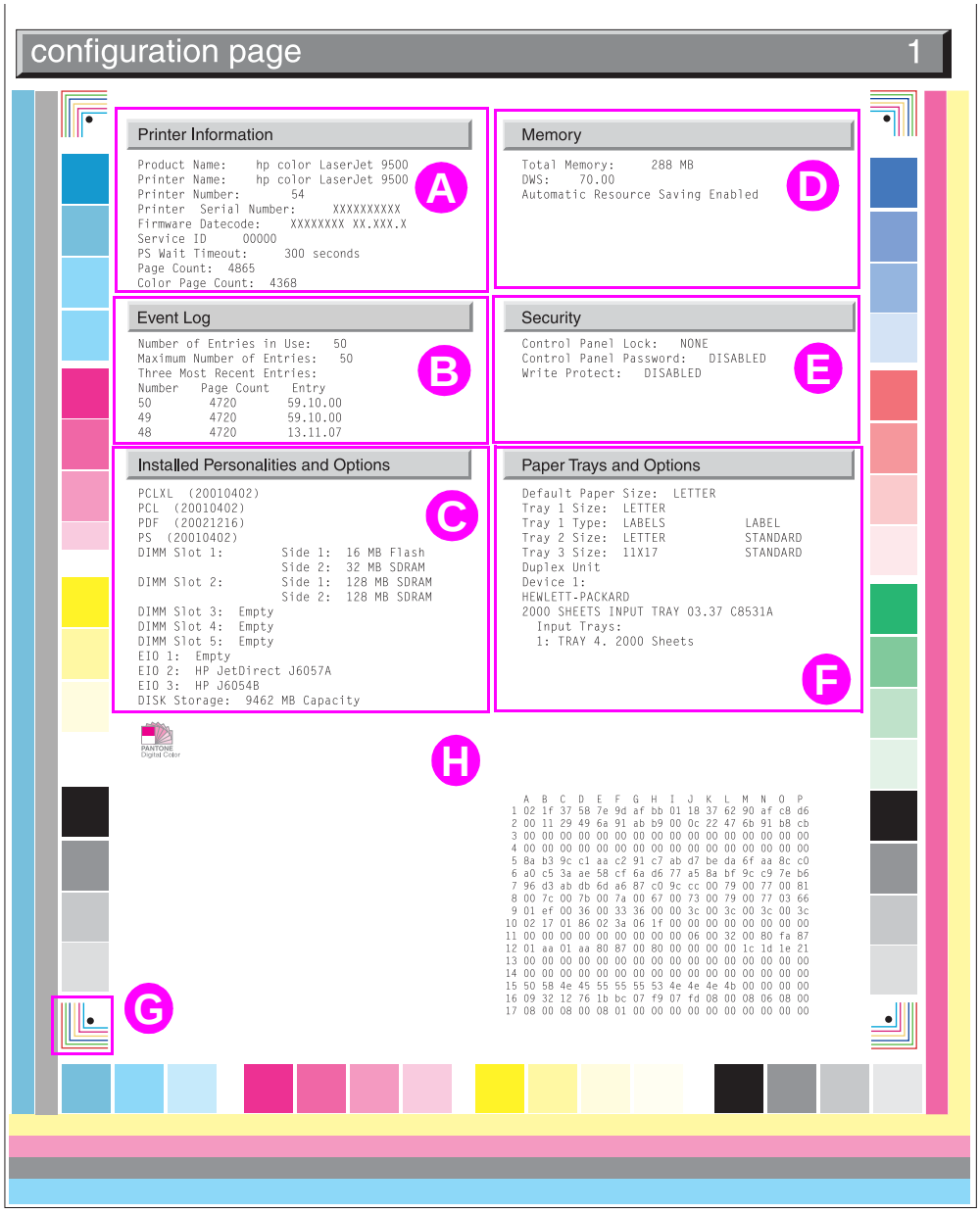


Figure 276. Sample configuration page

Supplies status pages

Use the supplies status pages to view the current printer supply status, to help troubleshoot printer problems, or to verify printer information.

Supplies page 1 elements

A. Ordering information

B. Print cartridge information

C. Image drum information

D. Recycling information

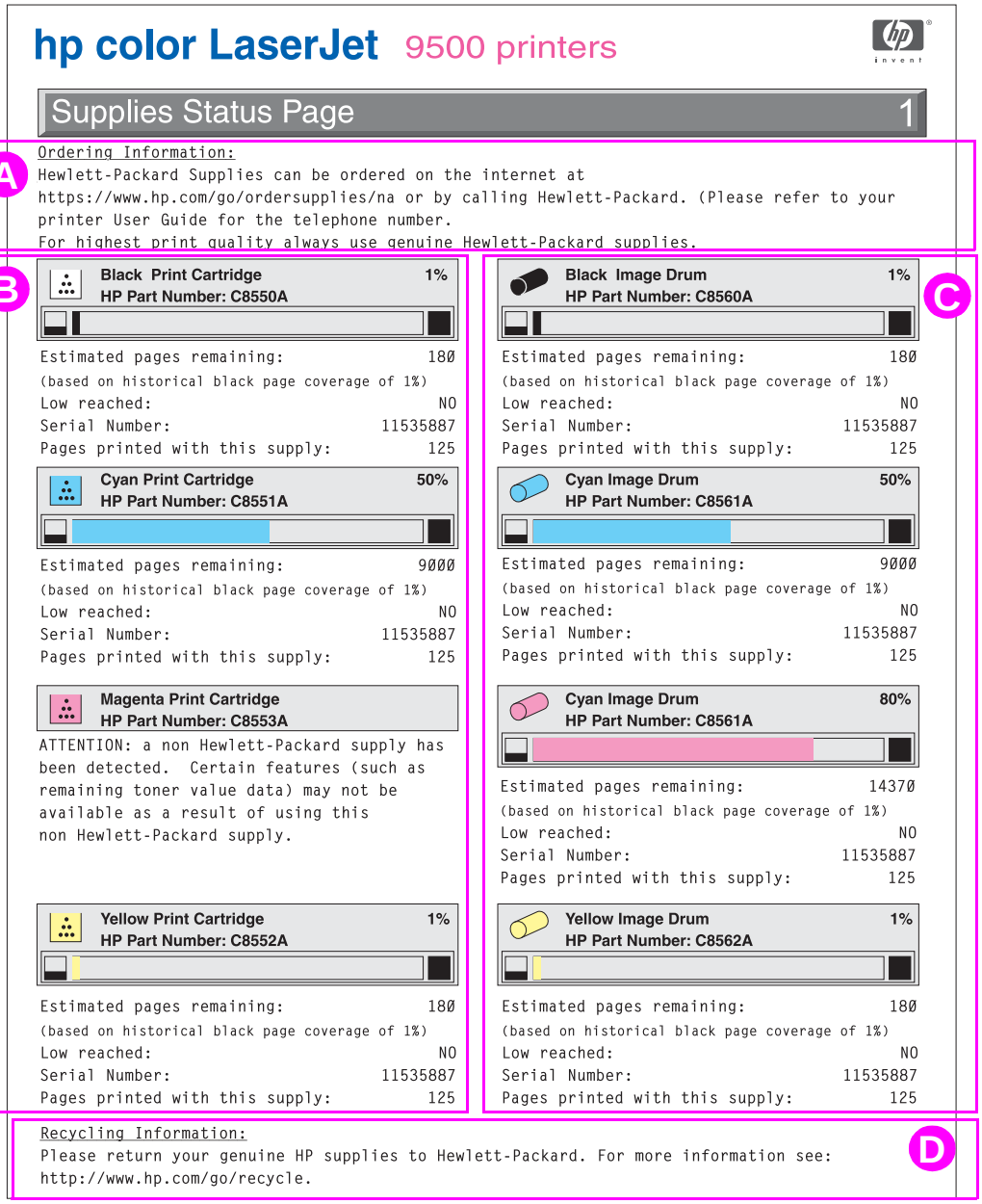


Figure 277. **Sample supplies status page (1 of 2)**

Supplies page 2 elements

A. Ordering information

B. Image transfer kit information

C. Image cleaning kit information

D. Image fuser kit information

E. Recycling information

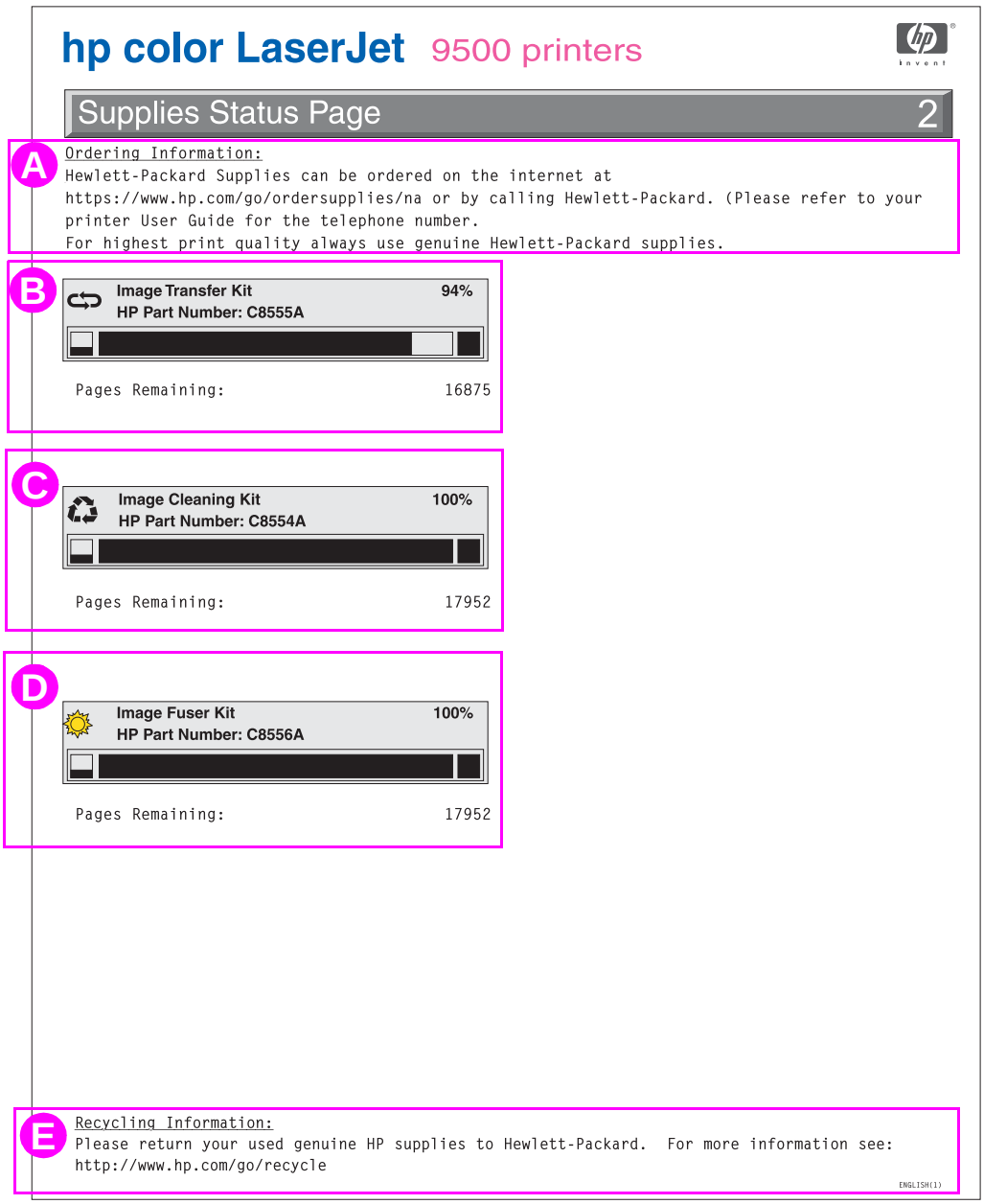


Figure 278. Sample supplies status page (2 of 2)

Usage page

Print a usage page from the control panel (or gain access to the information remotely from HP Web Jetadmin) to determine how many simplex or duplex pages of each media size have been scanned on the copy module and printed on the printer. Average toner coverage is approximated by counting pixels. Jams are not counted. The data cannot be reset manually, and values such as total print and scan impressions, toner coverage, serial number, default language, and default media size are backed up between the printer NVRAM and the hard disk.

The total page count on the usage page does not match the page count on the configuration page. The reasons for this include:

- the configuration page counts “clicks” and the usage pages counts letter/A4 equivalents
- the configuration page counts jammed pages and the usage page does not count jammed pages

hp color LaserJet 9500 printers

usage page (S/N JPBDB00391) 1

Product Name: hp color LaserJet 9500
Printer Name: hp color LaserJet 9500

Usage Totals (equivalent)

PRINTER	SIMPLEX			DUPLEX					TOTAL
Page Size	Mono	Color	Units	Mono	Color	Units	Mono	Color	Total
	**	**	**	**	**	**	0.0	0.0	0.0
LETTER	343	1,484	1.0	797	9,114	2.0	1,937.0	19,712.0	21,649.0
LEGAL	0	0	1.3	0	0	2.6	0.0	0.0	0.0
A4	0	0	1.0	0	0	2.0	0.0	0.0	0.0
EXECUTIVE	0	0	0.8	0	0	1.6	0.0	0.0	0.0
11x17	1	204	2.0	3	37	4.0	14.0	556.0	570.0
A3	0	0	2.0	0	0	4.0	0.0	0.0	0.0
ENVELOPE #10	0	0	0.4	**	**	**	0.0	0.0	0.0
ENVELOPE MONARCH	0	0	0.3	**	**	**	0.0	0.0	0.0
ENVELOPR C5	0	0	0.6	**	**	**	0.0	0.0	0.0
ENVELOPE DL	0	0	0.4	**	**	**	0.0	0.0	0.0
B4(JIS)	0	0	1.5	0	0	3.0	0.0	2.0	2.0
B5(JIS)	0	0	0.7	0	0	1.4	0.0	0.0	0.0
ENVELOPE B5	0	0	0.7	**	**	**	0.0	0.0	0.0
CUSTOM	0	0	1.0	0	0	2.0	0.0	0.0	0.0
DPOSTCARD(JIS)	0	0	1.0	**	**	**	0.0	0.0	0.0
A5	0	0	0.5	0	0	1.0	0.0	0.0	0.0
8K	0	0	1.7	0	0	3.4	0.0	0.0	0.0
16K	0	0	0.8	0	0	1.6	0.0	0.0	0.0
EXECUTIVE(JIS)	0	0	1.1	0	0	2.2	0.0	0.0	0.0
LETTER-R	0	0	1.0	0	0	2.0	0.0	0.0	0.0
A4-R	0	0	1.0	0	0	2.0	0.0	0.0	0.0
B5(ISO)	0	0	1.0	0	0	2.0	0.0	0.0	0.0
8.5X13	0	0	1.1	0	0	2.2	0.0	0.0	0.0
TOTAL PRINTER USAGE							1951.0	20,268.0	22,219.0

Print Modes & Paper Path Usage (actual)

PRINT MODES USAGE

Print Mode	Mono	Color	Total
AUTO SENSE MODE	3105	3105	10377
LIGHT MODE	0	0	0
HEAVY MODE	0	0	0
CARDSTOCK MODE	5	111	116
TRANSPARENCY MODE	5	5	10
ENVELOPE MODE	0	0	0
LABEL MODE	0	0	0
GLOSSY MODE	0	0	0
HP HGLOSSY MODE	7	261	268
TOUGHPAPER MODE	0	0	0
BEST GLOSS MODE	0	0	0
BEST HP HG MODE	0	0	0
BEST TPAPER MODE	0	0	0
TONER MODE	0	0	0
BLISTERS MODE	0	0	0
NHP HGLOSSY MODE	8	117	125
BEST NHP HG MODE	0	167	167
TOTAL			11063

PAPER PATH USAGE

Source	Count
Envelope Feeder	0
Manual Feed Tray	1
MP Tray	37
Tray 1	0
Tray 2	274
Tray 3	579
External Tray	20943
Other	109
TOTAL	21943

Destination	Count
Face Up	1
Face Down	21830
External Bin	0
Other	112
TOTAL	21943

Historical Printer Coverage

Black 2.7% Magenta 1.3%

Cyan 1.5% Yellow 1.5%

Figure 279. Sample usage page

File directory page

Use the file directory page to view current directory structures, to help troubleshoot printer problems, or to verify storage capabilities.

File directory page elements

A. Directory information

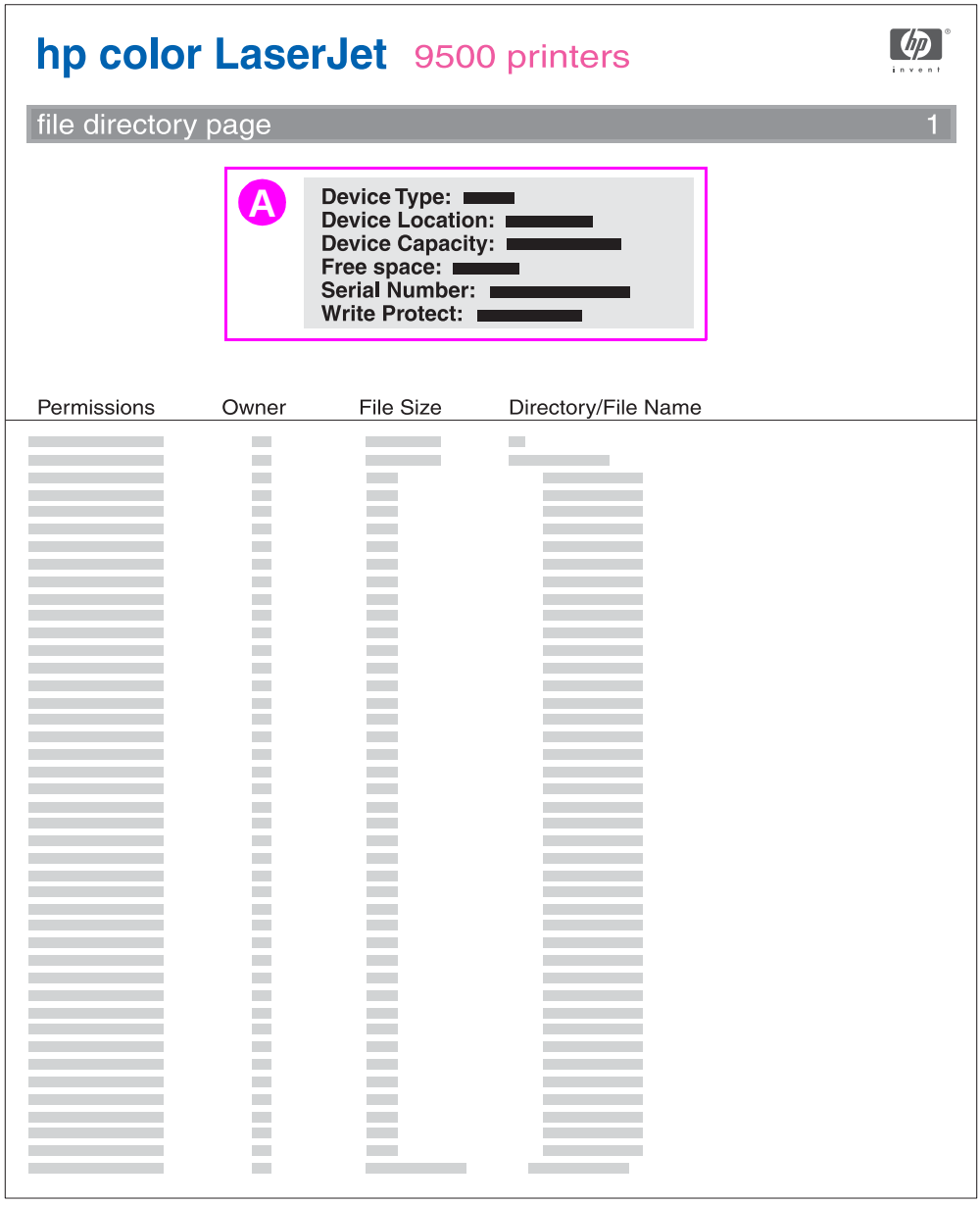


Figure 280. **Sample file directory page**

Electrical connection and contact failures

The printer has 23 high-voltage paths, and each path has four or five connectors. Two signs that indicate that there is a poor electrical connection include high-voltage arcing and a loss of high-voltage bias. Some of the most common connector problems include the following:

- for connectors and flat flexible cables (FFCs):
  - a service reconnection failure
  - shipping/printing microvibrations and corrosion that cause intermittent connections
- image drum (p-crg) internal and external connections
- consumables memory failures and past-life consumables (also refills)

See the following for troubleshooting electrical connection problems:

- Timing charts (page 124) in chapter 5
- Wiring diagrams (page 126) in chapter 5
- DC controller circuit (page 143) in chapter 5
- DC controller operations (page 146) in chapter 5

To fix a connection failure

1. Open and close the doors (including the image drum door).
2. Reseat the consumables.
3. Check for poor contact or corrosion on the consumable and on the door connections.
4. Reseat the connectors, particularly the FFCs, after servicing the printer.
5. Turn the printer on again.

Signs that a bad connection might exist include:

- sensor failures
- motor stalls
- beam detect errors
- OPC velocity errors
- ITB velocity errors
- developer sleeve motor stalls
- cartridge (p and t) memory errors
- scanner velocity errors
- formatter hangs
- CPR failures
- complete color plane dropouts
- dead control panel
- auger marks that change direction
- reversing stepper motors

CAUTION If any of these signs occur or if any of the related PCAs or assemblies are replaced, be careful when disconnecting and reconnecting connectors. The connectors can break easily.

Avoid touching any high-voltage contact. Skin oil can affect the connection.

Note If the problem persists after replacing the connector, remove and reseat all of the FFC cables. If the problem still persists, replace the appropriate ribbon cables.

Image-formation and print-quality troubleshooting tools

The following tools are helpful in solving image-formation and print-quality problems.

Note When troubleshooting an MFP version, you must first determine if the print-quality issue is a print-related or copy-related issue. Print-quality issues that are related to print issues typically affect copied pages also, but copy-related issues might not always appear on printed pages.
If the problem appears on both copied and printed pages, use the troubleshooting procedures in this manual. If the problem appears only on copied pages, see the troubleshooting chapter in the *HP Scanner/ADF Service Manual for the HP LaserJet 9000mfp/9000Lmfp/9040mfp/9050mfp/9500mfp* (PN C8549-90955).

Print-quality problems associated with the environment

The printer is operating in excessively humid or dry conditions. Make sure that the printing environment is within specifications. See “Environmental specifications” on page 26 in chapter 1.

Print-quality problems associated with media

Many print-quality problems and media-damage problems such as excessive curl are caused by using unsupported media, by using supported media with the incorrect media-type settings, or by using unsupported media without a media-type setting. Using supported media and selecting the appropriate type setting from the control panel alleviates many of the print-quality problems that customers encounter.

Note Before troubleshooting print-quality problems, make sure that the customer is using supported media and that they are selecting the appropriate control panel type setting for the media they are using. Also, make sure to select the matching media-type setting in the printer driver to avoid media-type mismatch errors and prompts to load different media.

See “Media specifications” on page 37 in chapter 1 for more information about supported media and media selection.

Reseating consumables

Correct functionality of all of the consumables for the product is dependent on correct seating to provide high-voltage continuity and correct registration. Turn off the printer and reseat the consumables if you suspect high-voltage contact problems or part-registration problems.

Cleaning the post charger

Cleaning the post charger might eliminate some print-quality problems, particularly poor secondary transfer of black. See “Cleaning the post charger” on page 104 in chapter 4 for more information.

Cleaning the fuser input

Cleaning the fuser input might eliminate some print-quality problems, particularly discharge marks and other secondary transfer defects. See “Cleaning the fuser input” on page 104 in chapter 4 for more information.

Print-quality troubleshooting pages

Use the built-in print-quality troubleshooting pages to help diagnose and solve print-quality problems. The pages identify repeating defects, and isolate the repeating defects to a color plane and a consumable. Perform the following steps to print the print-quality troubleshooting pages:

1. Press ✓ or MENU (MFP version) to open the menus.
2. Use ▲ or ▼ to scroll to DIAGNOSTICS, and then press ✓.
3. Use ▲ or ▼ to scroll to PQ TROUBLESHOOTING, and then press ✓.
4. The printer returns to the READY state after printing the print-quality troubleshooting pages.

The print-quality troubleshooting pages include:

- two instruction pages
- five target pages
- one demonstration page (HP CLJ 9500 only)
- one configuration page

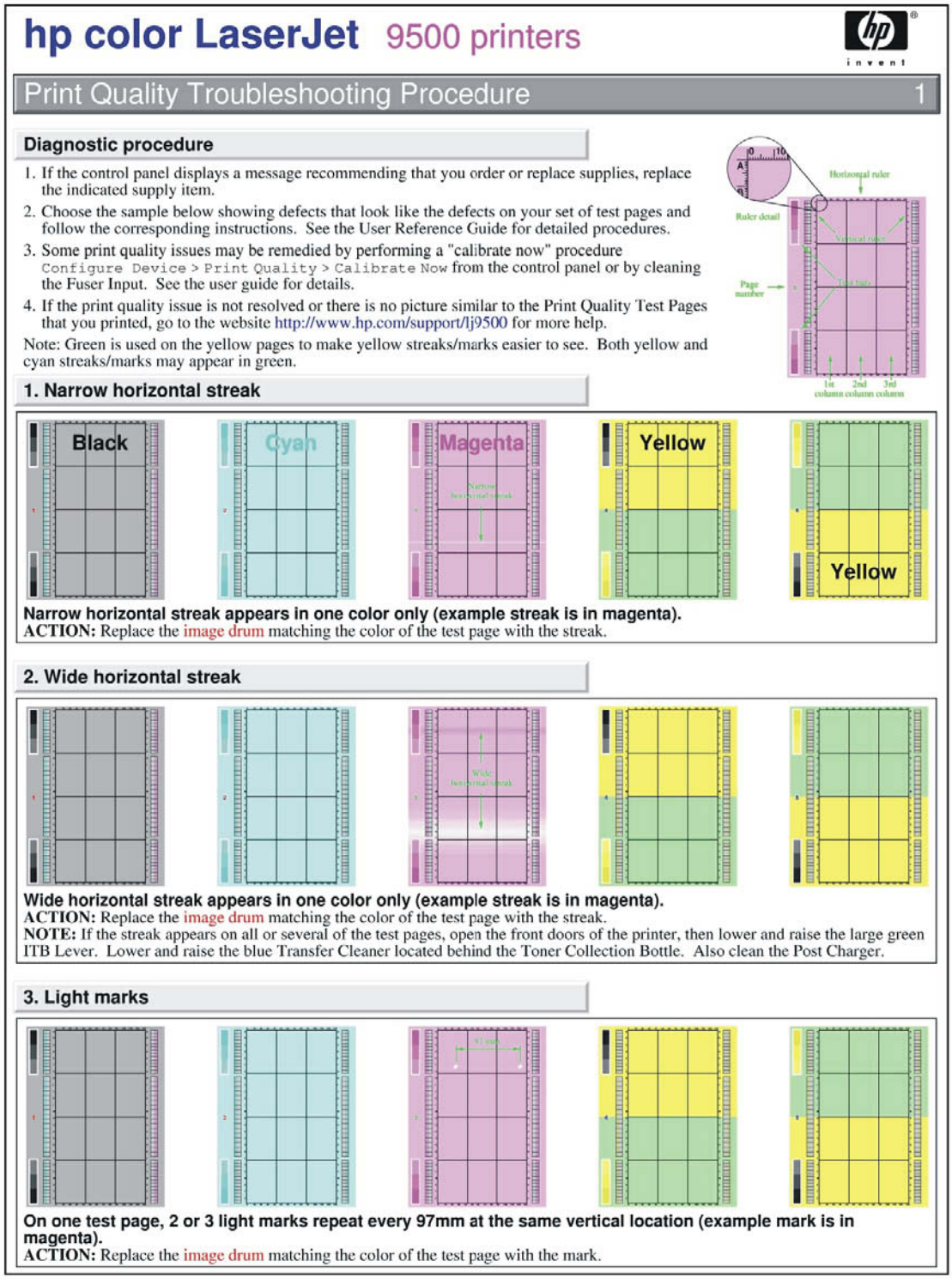


Figure 281. **Print-quality assessment page (1 of 2)**

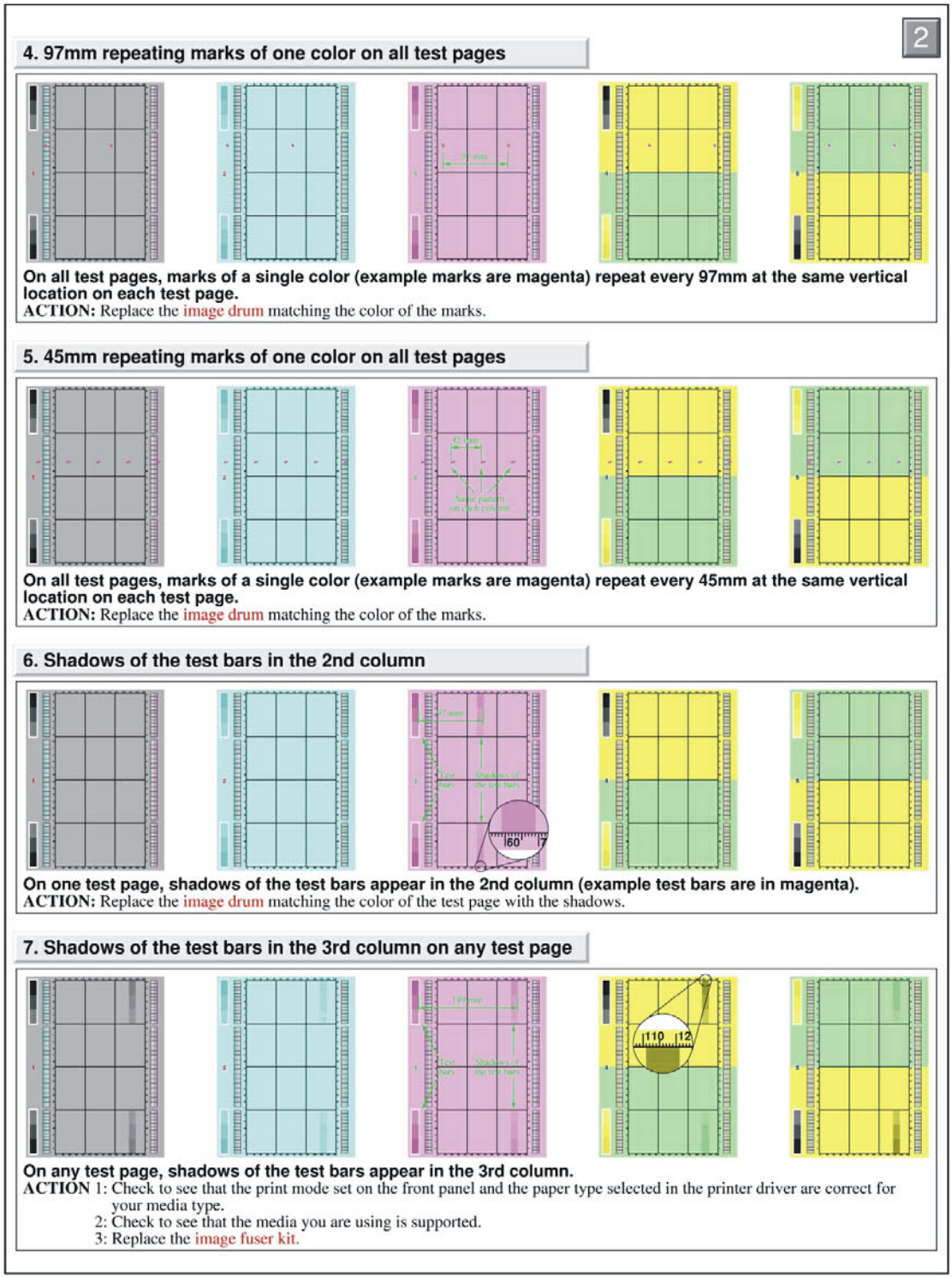


Figure 282. **Print-quality assessment page (2 of 2)**

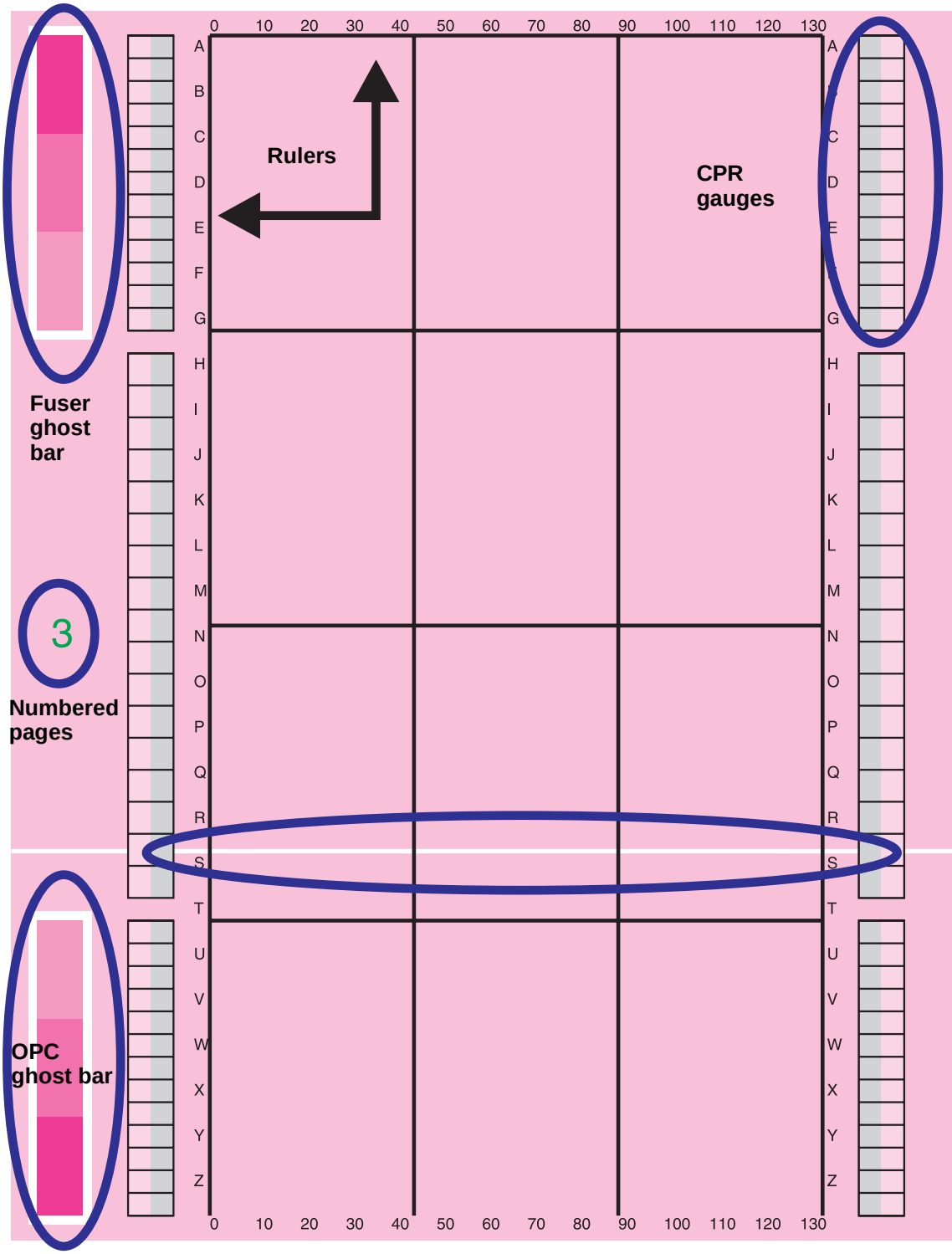


Figure 283. **Print-quality assessment page attributes**

Color band test

The color band test has primary colors (CMYK), secondary colors (RGB), and white arranged in 25 percent fill-stripes that are parallel to the feed direction. The test is useful when troubleshooting high-voltage arcing, as well as color plane separation, secondary color separation, and white (without toner) on the same page. Toner that is visible in the unprintable areas near the edges of the media might indicate that there is an arcing problem.

Note If you are troubleshooting high-voltage arcing, use a half-speed setting for media types (arcs appear more often at half-speed).

Note A color band test is useful in conjunction with a print stop test. See “Print stop test” on page 349 for more information.

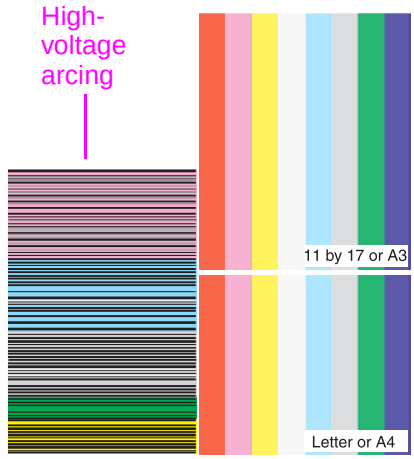


Figure 284. **Color band test page**

Printing a color band test

1. Press ✓ or MENU (MFP version) to open the menus.
2. Use ▲ or ▼ to scroll to DIAGNOSTICS, and then press ✓.
3. Use ▲ or ▼ to scroll to COLOR BAND TEST, and then press ✓.

The color band test prints on A3 or 11-by-17 media if one of those sizes is set as the default media size on the control panel.

Note The media type must be set to PLAIN or ANY for this test to print.

Engine test print page

The engine test print page verifies that the print engine is functioning correctly, and is helpful in troubleshooting print-quality problems. The engine test print prints a full page of horizontal lines across the entire printable area.

Note Media can be picked up from tray 2 or tray 3 if the formatter is installed. If the formatter is removed, the tray from which you do *not* want to print must be open. Also, make sure that the print cartridges are installed in the printer.

Note Make sure that the tray switch is set to standard size.

Follow these steps to perform an engine test print page if a formatter is installed:

1. Turn the printer on.

2 Use a non-metallic object to press the engine test button.

Follow these steps to perform an engine test print page if a formatter is *not* installed:

1 Turn the printer on, and wait until the printer finishes pressurizing the fuser and initializing the EP process.

2 Use a non-metallic object to press the engine test button.

3 When the printer is idle, press the engine test button again to print an engine test print page.

If the duplexer is installed, the test pattern is printed on both sides of the page. The page is printed from tray 3 if it is installed. If tray 3 is not installed, the page prints from tray 2.



Figure 285. Engine test print page

Laser/scanner adjustment page

See “Printing a laser/scanner adjustment page” on page 233 in chapter 6 for information on printing, reading, and interpreting the laser/scanner adjustment page. This page is helpful for assessing and correcting color plane registration problems.

Note This procedure can only be performed using A4- or letter-size media. Using A3 or 11-by-17 media gives invalid results.

Door ruler and repeating defect frequencies

A metric ruler, located on the front left door of the printer, can be used for measuring the frequency of repetitive print-quality defects. The following table describes highlight frequencies and the associated EP process part.

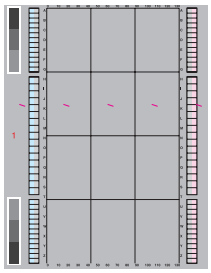
Table 54. Repeating print-quality defect dimensions

K developer (x1)	27 mm (1.06 inches)
CMY developer (x3)	30 mm (1.18 inches)
Charger roller (x4)	45 mm (1.77 inches)
T1 backing roller (x4 on ITB)	52 mm (2.04 inches)
T2 roller	71 mm (2.8 inches)
T2 backing roller (on ITB)	73 mm (2.87 inches)
OPC (x4)	98 mm (3.86 inches)
ITB driver roller	100 mm (3.93 inches)
Cleaning backing roller	100 mm (3.93 inches)
Space between T1s	100 mm (3.93 inches)
Fuser bottom	140 mm (5.51 inches)
Fuser top	148 mm (5.83 inches)

Sample defects and solutions

Note

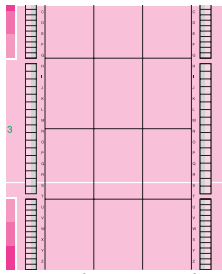
See the *HP Scanner/ADF Service Manual for the HP LaserJet 9000mfp/9000Lmfp/9040mfp/9050mfp/9500mfp* (PN C8549-90955) for sample defects and solutions for the scanner/ADF portion and copy functions of the MFP.



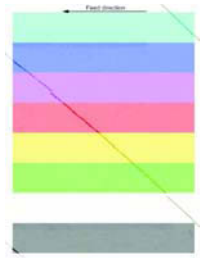
See “Repeating marks (98 mm)” on page 367 and “Repeating marks (45 mm)” on page 368.



See “Lines and bands appear perpendicular to feed direction” on page 371.



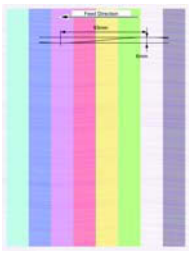
See “Lines, streaks or scratches appear parallel to feed direction” on page 374.



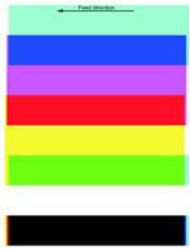
See “Diagonal bands or lines” on page 378.



See “Light or faint image and dropouts” on page 380.



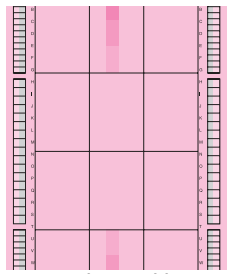
See “Wavy brush marks” on page 384



See “Color plane misregistration” on page 385.



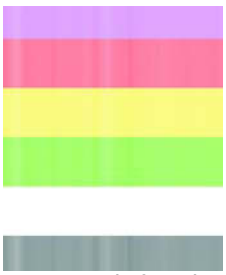
See “Primary color covers entire page” on page 387.



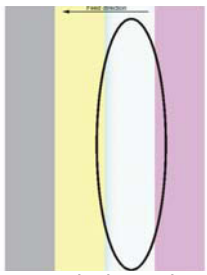
See “Ghosted image (98 mm)” on page 388.



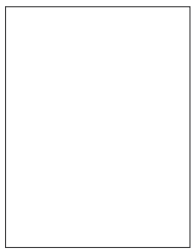
See “Distorted or misplaced image” on page 391.



See “Poorly fused image” on page 392



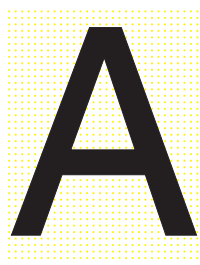
See “Missing color plane” on page 394.



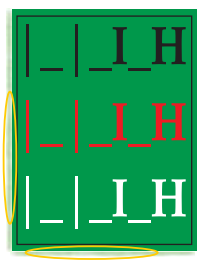
See “Blank” on page 395.



See “Hand or fingerprints” on page 395.



See “Fine, yellow dot background” on page 397.



See “Toner halos or explosions occur around solid secondary colors” on page 398.

Repeating marks (98 mm)

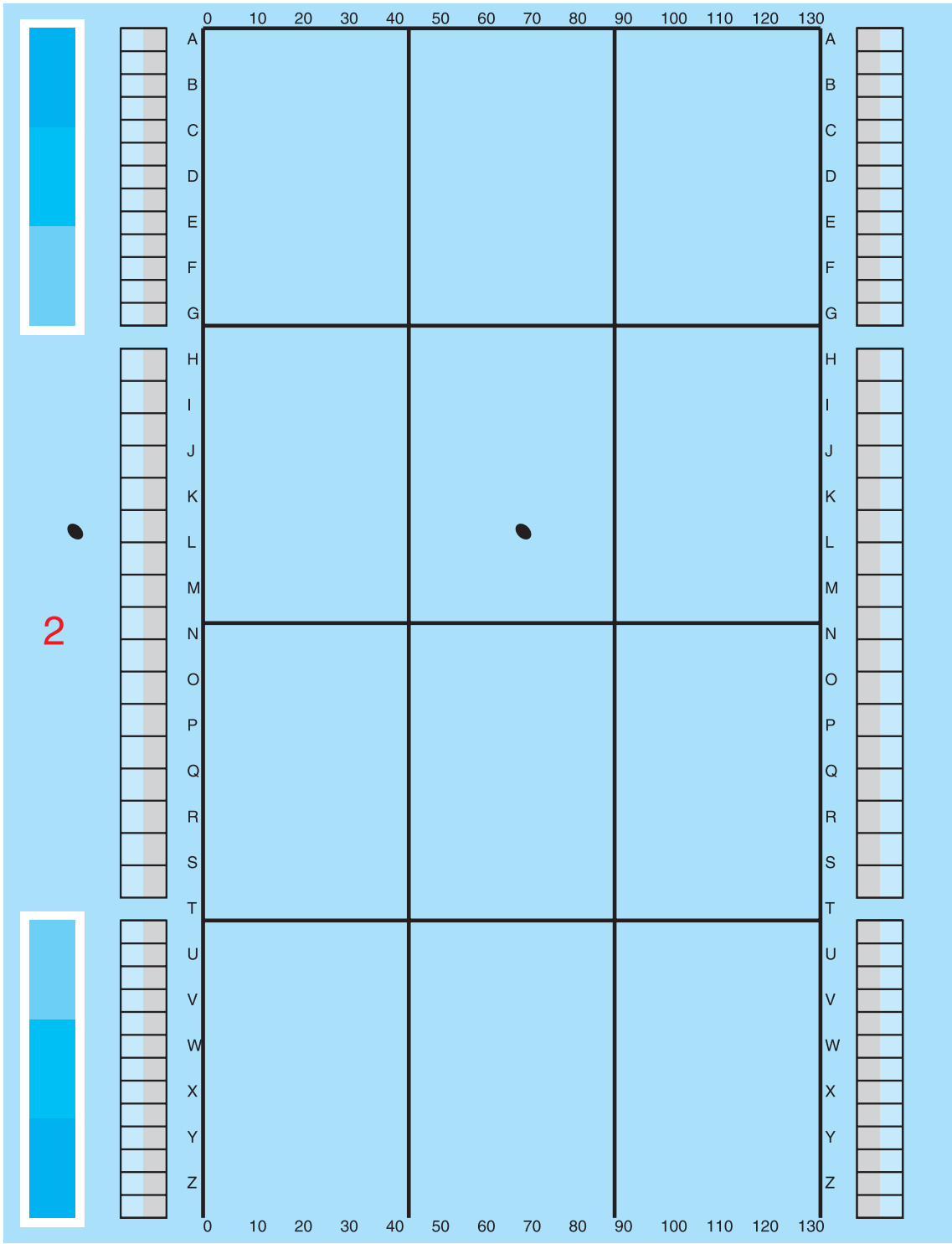


Figure 286. **Repeating marks (98 mm)**

Repeating marks (45 mm)

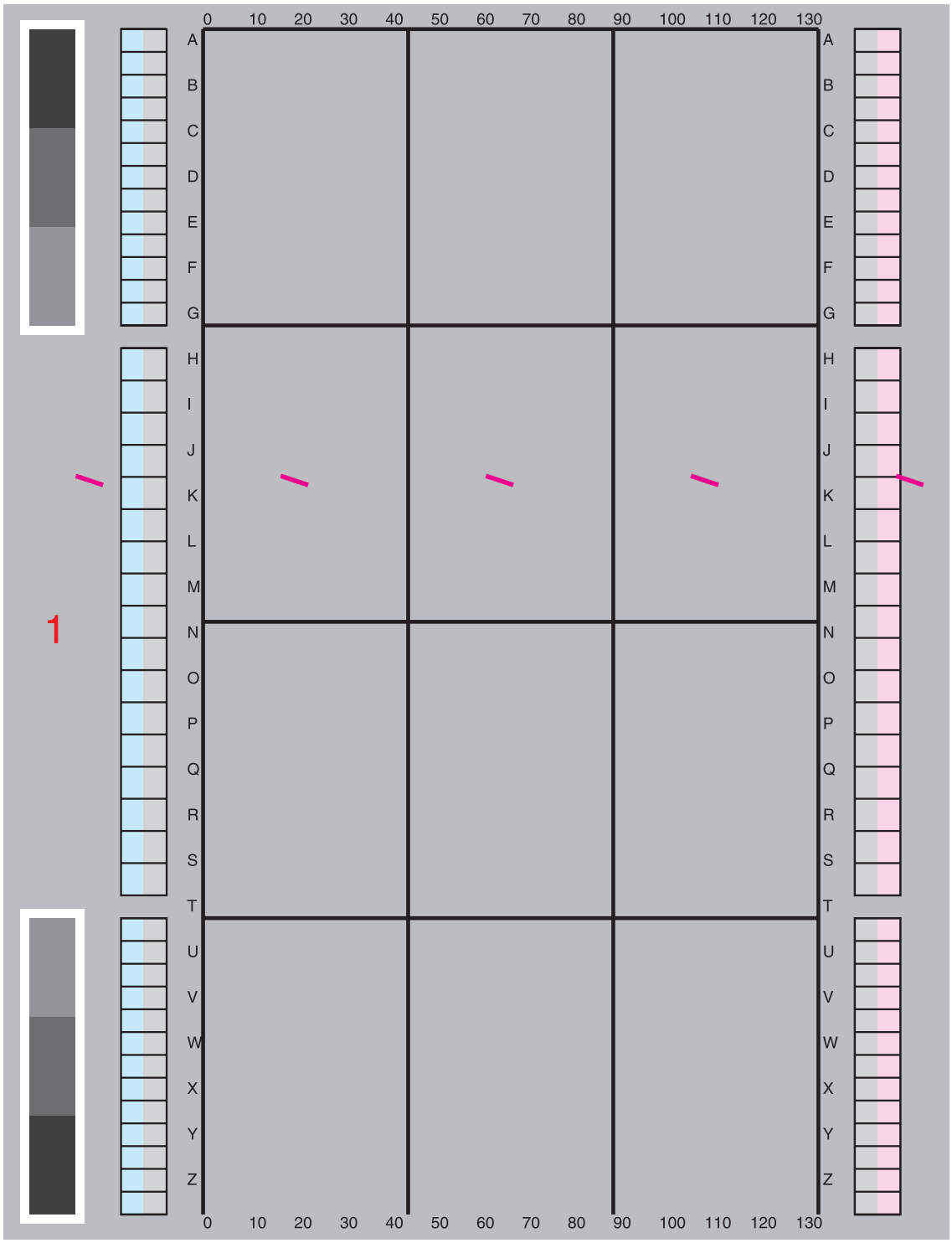


Figure 287. **Repeating marks (45 mm)**

Table 55. Repeating marks

Description	Possible causes	Solution
Marks repeat every 98 mm	Contaminant is stuck to the surface of the OPC or the surface of the OPC is damaged.	**1** Print a set of print-quality troubleshooting pages to isolate the problem to a single color plane. **2** Replace the image drum for the indicated color.
Marks repeat every 45 mm	Contaminant is stuck to the surface of the primary charging roller, or the surface of the primary charging roller is damaged.	**1** Print a set of print-quality troubleshooting pages to isolate the problem to a single color plane. **2** Replace the image drum for the indicated color.
Marks repeat every 52 mm	Contaminant is stuck to the surface of the primary transfer backing roller, or the primary transfer backing roller is damaged.	**1** Print a set of print-quality troubleshooting pages to verify that the problem is isolated to a single color plane. **2** Replace the ITB.
Marks repeat every 30 mm in cyan, magenta, or yellow, or every 27 mm in black	Contaminant is stuck to the surface of the developer sleeve, or the surface of the developer sleeve is damaged.	**1** Print a set of print-quality troubleshooting pages to isolate the problem to a single color plane. **2** Replace the image drum for the indicated color.
Marks repeat every 3 to 4 pages for letter and A4, and every 2 to 3 pages for 11-by-17 and A3 Marks appear in the same position, perpendicular to the feed direction	Contaminant is stuck to the surface of the ITB, or the surface of the ITB is damaged.	**1** Print a set of print-quality troubleshooting pages to make sure that the defect appears in all colors, and that the repeat pattern is every 3 to 4, pages for letter and A4 and every 2 to 3 pages for 11-by-17 and A3. **Note** The marks appear in the same position each time that they occur, perpendicular to the feed direction. **2** Partially remove the ITB and check the surface for contamination or damage by rotating the flywheel on the right side of the belt. **3** If toner is fused to the belt, remove it by gently scraping it off using the edge of a non-serrated coin or similar smooth, rounded edge.
Marks repeat every 71 mm	Contaminant is stuck to the surface of the secondary transfer roller, or the surface of the secondary transfer roller is damaged.	**1** Remove the secondary transfer roller and check the surface for contamination or damage. **2** Clean or replace the secondary transfer roller if necessary.
Marks repeat every 149 mm	Contaminant is stuck to the surface of the upper fuser roller, or the surface of the upper fuser roller is damaged.	**1** Remove the fuser assembly and check the rollers for contamination or damage. **2** Contamination might be removed by gentle cleaning with a soft cloth, or by printing a few blank pages. Run a fuser cleaning page (`CONFIGURE DEVICE`, `PRINT QUALITY`, `PROCESS CLEANING PAGE`). **3** When surface damage exists or contamination cannot be cleaned, replace the fuser assembly. **Note** Always troubleshoot the other components in the printer for the original cause of the contamination or roller damage before installing a new fuser assembly.

Table 55. Repeating marks (continued)

Marks repeat every 140 mm	Contaminant is stuck to the surface of the lower fuser roller, or the surface of the lower fuser roller is damaged.	**1** Remove the fuser assembly and check the rollers for contamination or damage. **2** Contamination might be removed by gentle cleaning with a soft cloth, or by printing a few blank pages. Run a fuser cleaning page (CONFIGURE DEVICE, PRINT QUALITY, PROCESS CLEANING PAGE). **3** When surface damage exists or contamination cannot be cleaned, replace the fuser assembly. **Note** Always troubleshoot the other components in the printer for the original cause of the contamination or roller damage before installing a new fuser assembly.
Marks repeat parallel to the feed direction several times on a page, but with no regular frequency	Contamination exists on the post T2 static charge eliminating comb (fuser inlet).	**1** Lower the green lever, remove the secondary transfer roller, attach the blue brush to the green tongs (both are behind the right front door), and use the brush to clean the post T2 static charge eliminating comb (fuser inlet). **2** Check electrical connections to the secondary transfer unit, and check for a good ground. **3** Replace the high-voltage power supply.

Lines and bands appear perpendicular to feed direction

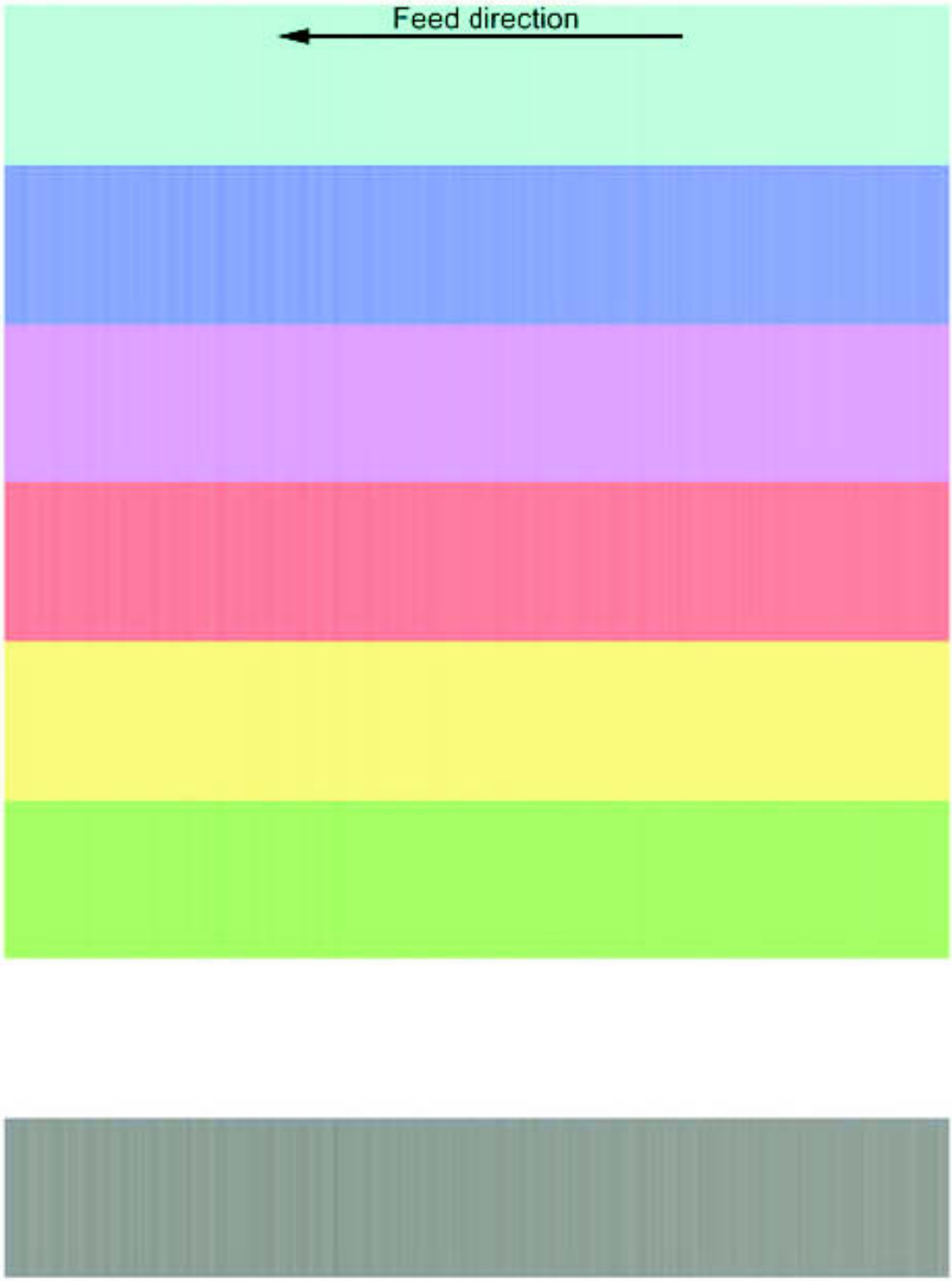


Figure 288. **Lines and bands**

Table 56. Lines and bands

Table 57. Description	Possible cause	Solution
Light or dark lines repeat every 98 mm	Contaminant is stuck to the surface of the OPC, or the surface of the OPC is damaged or has been exposed to light.	**1** Print a set of print-quality troubleshooting pages to isolate the problem to a single color plane. **2** Replace the image drum for the indicated color.
White lines repeat every 3 to 4 pages for letter and A4, and every 2 to 3 pages for 11-by-17 and A3	Contaminant is stuck to the surface of the ITB, or the surface of the ITB is damaged.	**1** Partially remove the ITB and check the surface for contamination or damage by rotating the flywheel on the right side of the belt. **2** If toner is fused to the belt, remove it by gently scraping it off using the edge of a non-serrated coin or similar smooth, rounded edge.
Light lines repeat every 149 mm	Contaminant is stuck to the surface of the upper fuser roller, or the surface of the upper fuser roller is damaged.	**1** Remove the fuser assembly, and check the rollers for contamination or damage. **2** Contamination might be removed by gentle cleaning with a soft cloth, or by printing a few blank pages. Run a fuser cleaning page (CONFIGURE DEVICE, PRINT QUALITY, and PROCESS CLEANING PAGE). **3** When surface damage exists or contamination cannot be cleaned, replace the fuser assembly. **Note** Always troubleshoot the other components in the printer for the original cause of the contamination or roller damage before installing a new fuser assembly.
Light lines repeat every 140 mm	Contaminant is stuck to the surface of the lower fuser roller, or the surface of the lower fuser roller is damaged.	**1** Remove the fuser assembly, and check the rollers for contamination or damage. **2** Contamination might be removed by gentle cleaning with a soft cloth, or by printing a few blank pages. Run a fuser cleaning page (CONFIGURE DEVICE, PRINT QUALITY, PROCESS CLEANING PAGE). **3** When surface damage exists or contamination cannot be cleaned, replace the fuser assembly. **Note** Always troubleshoot the other components in the printer for the original cause of the contamination or roller damage before installing a new fuser assembly.
Bands/dark lines (47 mm band on heavy stock in half-speed mode)	A T1 vibration exists.	**1** Make sure that the media being used is within specifications. See “Media specifications” on page 37 in chapter 1. **2** Make sure that the media type setting on the control panel is appropriate for the media being used. **3** Change the high coverage 2 setting (CONFIGURE DEVICE, OPTIMIZE MENU) to ON, which prints yellow dots in an 8-by-8 mm pattern for half- and full-speed printing (opposed to 8-by-8 mm in full speed and 10-by-10 mm in half speed). **Note** High coverage 1 and high coverage 2 are not mutually exclusive. If both items are turned on, the yellow dots turn off.

Table 56. Lines and bands (continued)

Bands/dark lines (50/ 100 mm bands)	A T1 vibration exists.	**1** Make sure that the media being used is within specifications. See “Media specifications” on page 37 in chapter 1. **2** Make sure that the media type setting on the control panel is appropriate for the media being used. **3** Change the high coverage 3 setting (CONFIGURE DEVICE, OPTIMIZE MENU) to ON, which slightly increases the OPC/ITB speed mismatch.
Bands/dark lines Cardstock band (37 mm from trailing edge of ledger, and 115 mm from trailing edge of letter, on media heavier than 120 g/m² printed in full speed modes)	A T2 nip vibration causes band at T1.	**1** Make sure that the media being used is within specifications. See “Media specifications” on page 37 in chapter 1. **2** Make sure that the media type setting on the control panel is appropriate for the media used. **3** Change the high coverage 3 setting (CONFIGURE DEVICE, OPTIMIZE MENU) to ON, which slightly increases the OPC/ITB speed mismatch.
Bands of gloss or density differences repeating at fuser frequency (149 mm or 140 mm)	A flat spot on the fuser roller is caused by unplugging the printer (rather than using the power button to turn it off).	**1** Correct the cause of the power interruption. **2** Replace the fuser.
Band (scan direction ripple) Dark lines 3 to 5 mm apart perpendicular to the feed direction (lines are heaviest in the middle of the page)	The ITB is defective.	• Replace the ITB.

Lines, streaks or scratches appear parallel to feed direction

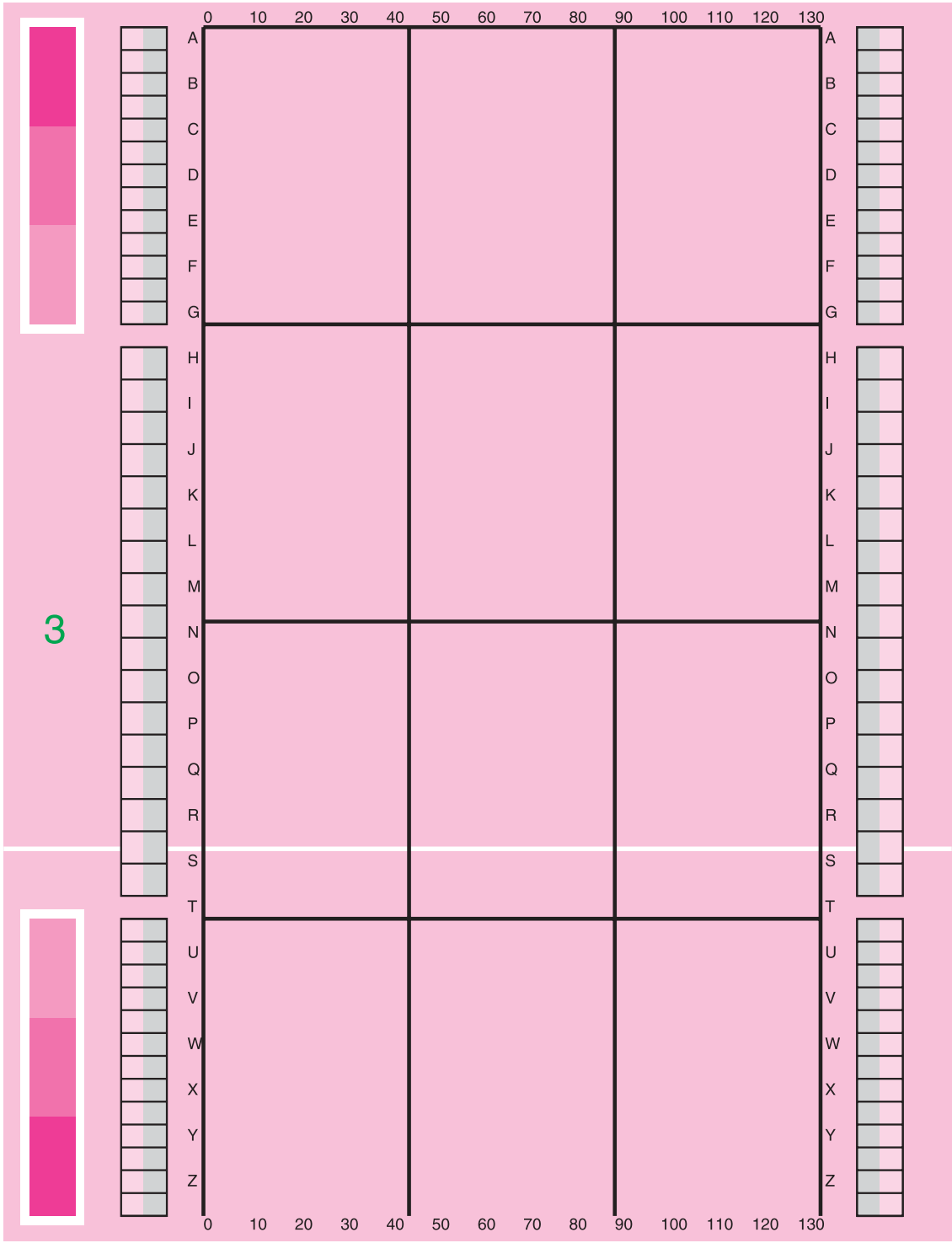


Figure 289. **Lines, streaks, or scratches appear parallel to feed direction (1 of 2)**



Figure 290. **Lines, streaks, or scratches appear parallel to feed direction (2 of 2)**

Table 58. Lines, streaks, or scratches appear parallel to feed direction

Description	Possible causes	Solution
White fine/clear	A laser beam is blocked.	**1** Print a set of print-quality troubleshooting pages to isolate the problem to a single color plane. **2** Remove the laser assembly and the image drum for the indicated color. **3** Use a flashlight to examine the area above the toner cartridge area. Carefully clean the area and remove any obstructions. **4** Check the laser beam path for obstructions. **5** Replace the laser scanner assembly.
	The laser scanner assembly mirror is contaminated.	**1** Print a set of print-quality troubleshooting pages to isolate the problem to a single color plane. **2** Replace the laser scanner assembly.
	A circumference scratch exists on the developing cylinder or on the OPC.	**1** Print a set of print-quality troubleshooting pages to isolate the problem to a single color plane. **2** Replace the image drum for the indicated color.
	A circumference scratch exists on the OPC.	**1** Print a set of print-quality troubleshooting pages to isolate the problem to a single color plane. **2** Replace the image drum for the indicated color.
Clear white (continuous)	A post T1 obstruction is moving toner on the ITB.	**1** Check the areas near the surface of the ITB (post primary transfer to secondary transfer) for obstructions that might move toner. **2** Correct if necessary.
	A post T2 obstruction is moving pre-fused toner on the page.	**1** Check the areas above the media (post secondary transfer to fuser) for obstructions that might move toner. **2** Correct if necessary.

Table 58. Lines, streaks, or scratches appear parallel to feed direction (continued)

	A circumference scratch exists, or there is contamination on the ITB.	**1** Partially remove the ITB and check the surface for contamination or damage by rotating the flywheel on the right side of the belt. **2** If toner is fused to the belt, remove it by gently scraping it off using the edge of a non-serrated coin or similar smooth, rounded edge. **3** Replace the ITB if surface damage exists or contamination cannot be cleaned.
	A circumference scratch exists on the upper fuser roller.	**1** Remove the fuser assembly and check the rollers for contamination or damage. **2** Contamination might be removed by gentle cleaning with a soft cloth or by printing a few blank pages. **3** Run a fuser cleaning page (CONFIGURE DEVICE, PRINT QUALITY, PROCESS CLEANING PAGE). **4** Replace the fuser assembly if surface damage exists or contamination cannot be cleaned. **Note** Always troubleshoot the other components in the printer for the original cause of the contamination or roller damage before installing a new fuser assembly.
	The ITB drive roller is damaged or deformed.	• Replace the ITB.
White wide/ blurred	The post charger is contaminated or damaged.	**1** Clean the post charger assembly. **2** Check the high-voltage path from the post charger power supply to the post charger assembly on the ITB assembly for continuity and good connections. Check for good grounding connections. **3** Check power connection to the post charger power supply. **4** Replace the ITB.
Brown wide streak (sometimes accompanied by a 59.A0 error)	A cleaning blade or seat-latch failure exists.	**1** Remove and reseat the toner collection bottle and the cleaning blade, making sure that both seat and latch correctly. **2** Replace the cleaning blade if necessary. **3** After the cleaning blade fail is corrected, select CALIBRATE NOW on the control panel.
Roller marks (wide streaks parallel to feed direction) on heavy, glossy, or plastic media	• This is usually caused by out-of-specification media. • Post-fuser roller pressure causes different gloss-level streaks and sometimes produces waves in the media.	**1** Make sure that the media being used is within specifications. See “Media specifications” on page 37 in chapter 1. **2** Make sure that the media type setting on the control panel is appropriate for the media being used. **3** Use a straight-through paper path (tray 1 to the face-up bin) and manual duplex to avoid as many post-fuser rollers as possible. **Note** Onsite visits and parts replacement (such as printer parts or consumables) will not help to alleviate roller marks.

Table 58. Lines, streaks, or scratches appear parallel to feed direction (continued)

Line parallel to the feed direction (feed direction ripple) Dotted line parallel to the feed direction (most common in cyan)	The ITB is defective.	• Replace the ITB
Wide streaks of density variation parallel to the feed direction	The ITB is defective (belt wave).	**1** Try a different type of media. **2** Print a darker fill or a different pattern fill. **3** Replace the ITB.
Fine, straight scratches in the fused toner	This usually occurs on very heavy media. Warm, still toner is scratched by media guide ribs.	**1** Make sure that the media being used is within specifications. See “Media specifications” on page 37 in chapter 1. **2** Make sure that the media-type setting on the control panel is appropriate for the media being used. **Note** Selecting the appropriate media-type setting turns on the paper path cooling fans that cool the fused toner faster and lessen the ribbed effect. **3** Media and/or toner dust can accumulate on the diverter and delivery feed assemblies after more than 40,000 pages are printed. Check for contamination and replace the assemblies if necessary. **4** If duplexing, consider manual duplex. **5** Try printing to the face-up bin.

Diagonal bands or lines

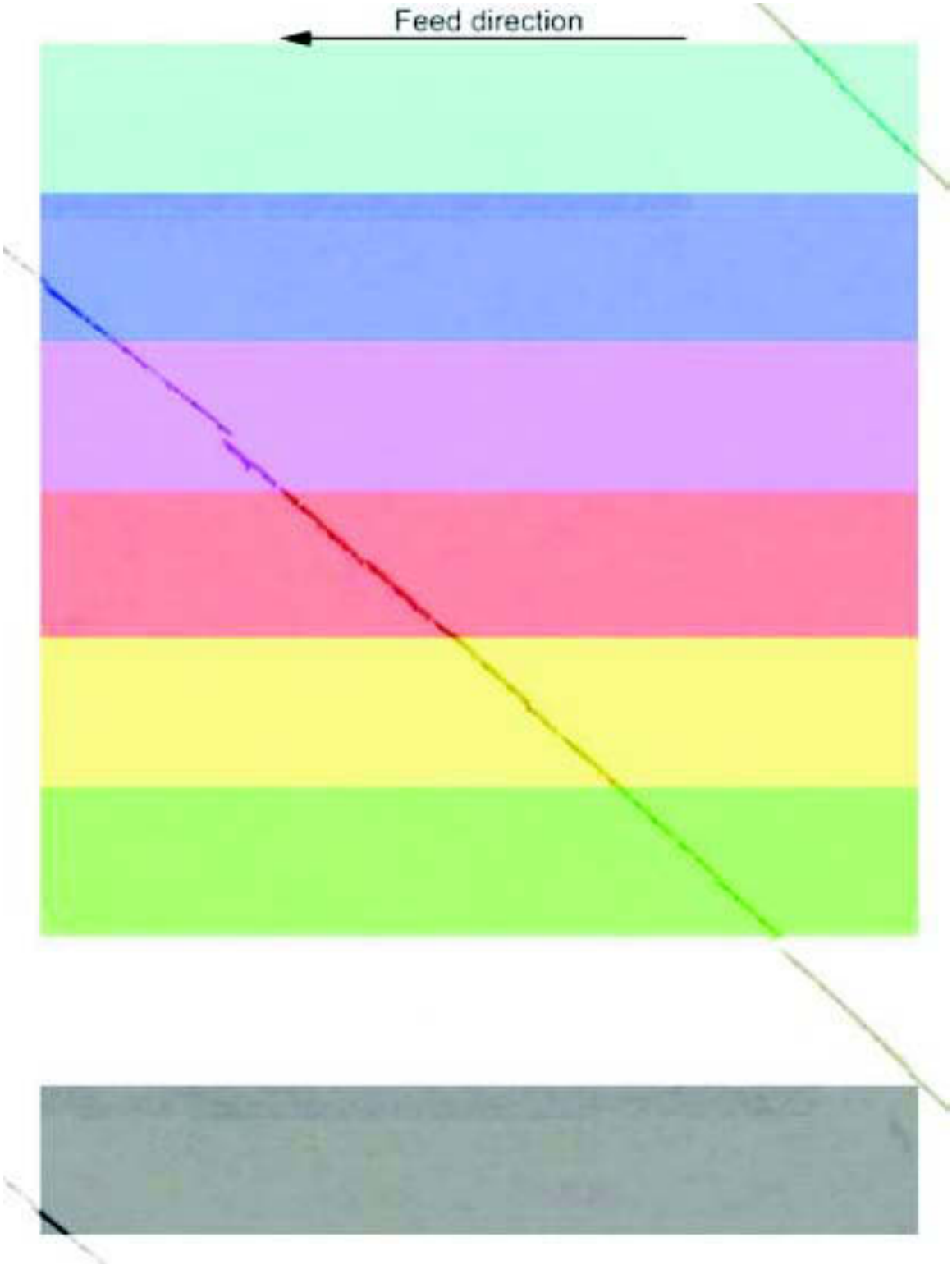


Figure 291. **Diagonal bands or lines**

Table 59. Diagonal bands or lines

Description	Possible causes	Solution
Diagonal banding or an angled plaid-appearing density variation (50 degree angle and are about 15 mm apart)	This might be a temporary problem that occurs in heavy or solid color fill pages printed in large quantities. It is caused by a failure to charge toner evenly.	**1** Print several sets of print-quality troubleshooting pages to try to fix the problem. If this does not work, it isolates the problem to a single color plane. **2** Reseat the image drum that matches the diagonal band pattern color. **3** Check the high-voltage power supply and connections to the image drum. Check for good grounding connections in the image drum door. **4** Replace the image drum matching the diagonal band pattern color.
Pages are marked with diagonal or V-shaped lines of smudged dark brown toner deposits	• The cleaning blade or the ITB is past life recommendations. • The cleaning blade is bent into a backward “J” shape as the ITB runs underneath it. This creates enough drag to possibly cause a registration roller motor or ITB motor abnormal error (see the description of error 59.A0). • Blade tucks appear to be more common when image drums, the cleaning blade, and the ITB are new. The problem is more common in high temperature and high humidity environments. Some blade tucks cause a 59.A0 error before a page is printed. In this case, check the image on the ITB.	**1** Reseat the cleaning blade assembly. **2** Replace the cleaning blade assembly. **3** Replace the ITB if necessary (it is usually not damaged).

Light or faint image and dropouts

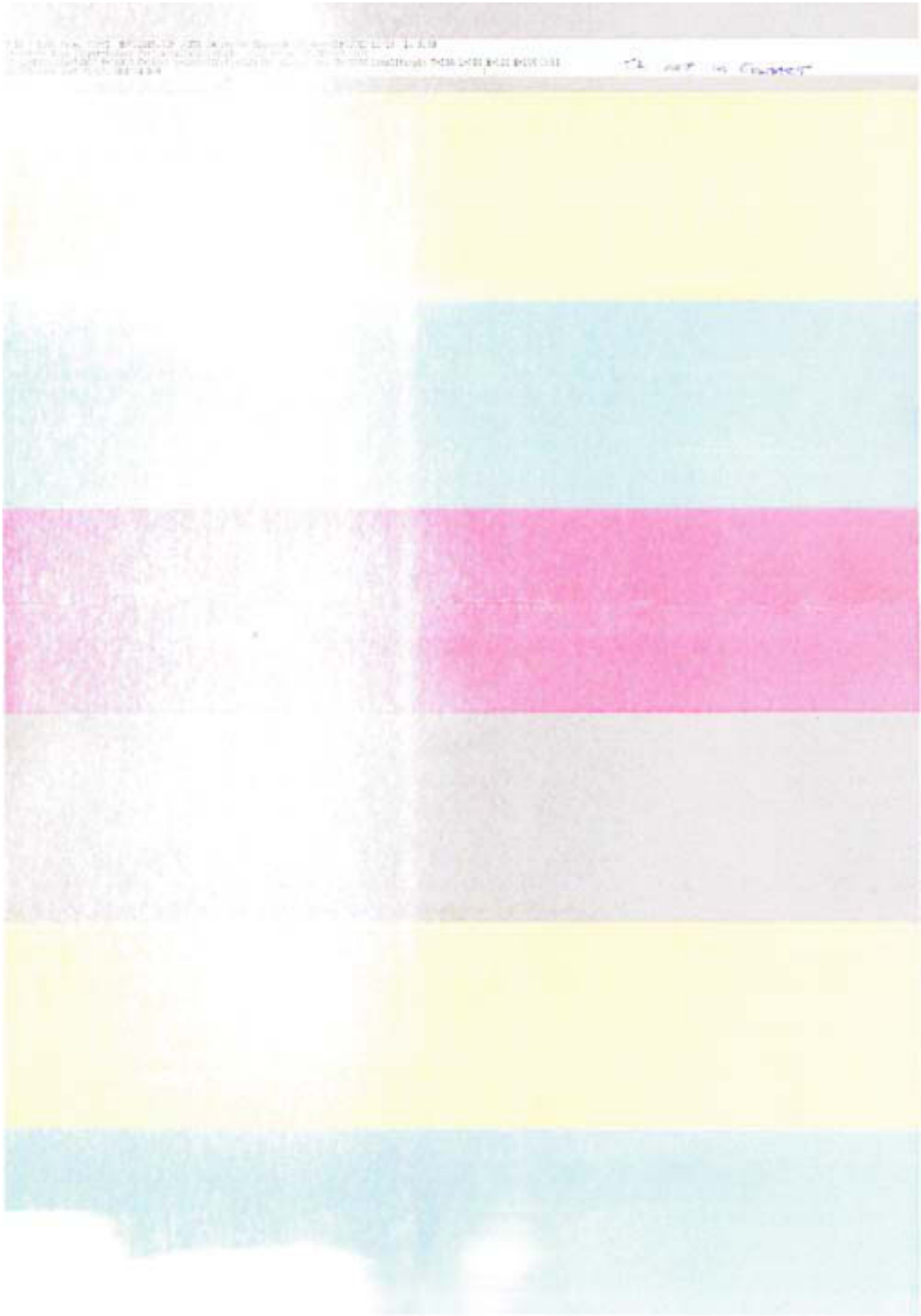


Figure 292. **Light or faint image and dropouts**

Table 60. Light or faint image and dropouts

Description	Possible causes	Solution
Poor primary transfer	• Bad density calibration exists. • Insufficient T1 bias exists for the particular primary color. • Poor contact exists between the high-voltage power supply and the primary transfer roller. • The primary transfer roller is damaged. • The high-voltage power supply is defective.	**1** Print a set of print-quality troubleshooting pages to isolate the problem to a single color plane. **2** Reseat the ITB and the image drum that appears on the print-quality troubleshooting pages. **3** Check the high-voltage paths from the high-voltage power supply to the image drum that appears on the print-quality troubleshooting pages. Check and clean the contacts and the connectors. Check for good grounding connections in the image drum door. **4** Check the event log for calibration failures, and troubleshoot the calibration process if errors are found. Check the density calibration sensor window for blockage or contamination, and then select CALIBRATE NOW on the control panel. **Note** Calibration errors are not reported as errors on the control panel. **5** If the problem is severe, replace the image drum that appears on the print-quality troubleshooting pages. **6** For midtones that are too light, try changing the (color) density setting in the CONFIGURE DEVICE, PRINT QUALITY, ADJUST COLOR menu. Settings can be adjusted for each color plane. • Cyan density = 0 (default), -5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5 • Magenta density = 0 (default), -5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5 • Yellow density = 0 (default), -5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5 • Black density = 0 (default), -5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5 **Note** The default is zero for each color. A lower number might result in lighter or less dense midtones for the particular color plane. A positive number might result in darker or denser midtones for that color plane. **Note** These changes are universal and apply to all printed pages regardless of media type. **Note** These settings control midtones (solid color and very light color fills will not be affected) for each color plane. **7** Replace the ITB. **8** Replace the high-voltage power supply.
	The developer has deteriorated.	**1** Print a set of print-quality troubleshooting pages to isolate the problem to a single color plane. **2** Print 20 pages of solid color in the indicated color. **3** Replace the image drum for the indicated color.

Poor secondary transfer	• Secondary transfer bias is not sufficient for complete transfer on this type of media. • Poor contact exists between the secondary transfer roller and the high-voltage power supply. • Poor ITB ground contact exists. • Bad density calibration exists. • Poor physical contact exists between the ITB and the secondary transfer assembly. • The secondary transfer assembly or the secondary transfer roller is damaged. • The high-voltage power supply is defective. • The post charger is defective.	**1** Make sure that the media being used is within specifications. See “Media specifications” on page 37 in chapter 1. **2** Make sure that the media type setting on the control panel is appropriate for the media being used. **Note** Transfer occurs better on smooth media. Exceptionally rough media will probably encounter secondary transfer problems that cannot be addressed. **3** Remove, check, and reseat the ITB and secondary transfer roller. Replace them if necessary. **4** Check the event log for calibration failures. Check the density calibration sensor window for blockage or contamination, and select CALIBRATE NOW on the control panel. **5** Check the bias contacts between the secondary transfer roller and the high-voltage power supply. Clean or repair them if necessary. **6** Check the event log for calibration errors, and troubleshoot the calibration process if errors are found. **Note** Calibration errors are not reported as errors on the control panel. **7** Clean the post charger assembly. **8** Check the high-voltage path from the post charger power supply to the post charger assembly on the ITB assembly for continuity and good connections. Check for good grounding connections. **9** Check the power connection to the post charger power supply. **10** Change the transfer down/up setting in the CONFIGURE DEVICE, OPTIMIZE menu. Try decreasing the transfer setting (DOWN 1 or DOWN 2). This might result in darker images on certain medias. **Note** Some media might show an opposite reaction to settings. DOWN settings might result in a lighter image, and UP settings might result in a darker image. **Note** Try other media type settings before using this option. Optimize settings are global and apply to all media types. If this is a temporary solution, remember to reset it when the job is complete. **Note** It is possible to set TRANSFER UP 1, 2 and TRANSFER DOWN 1, 2 to ON at the same time. If multiple bits are set, the default is used (all OFF). **11** Replace the secondary transfer assembly. **12** Replace the high-voltage power supply.

Poor leading edge transfer (also missing toner, and discharge marks exist on the leading edge)	Leading edge secondary transfer bias is not sufficient for complete transfer for this particular media.	**1** Make sure that the media being used is within specifications. See “Media specifications” on page 37 in chapter 1. **2** Make sure that the media type setting on the control panel is appropriate for the media being used. **3** Change the LEADING EDGE setting under the CONFIGURE DEVICE, OPTIMIZE, LEADING EDGE DOWN/UP menu. First, try setting LEADING EDGE DOWN to ON. Depending on the type of media, you might get better results setting LEADING EDGE UP to ON. **Note** It is best to try other media types first because this is a universal setting that applies to all pages printed regardless of the media type.

Wavy brush marks

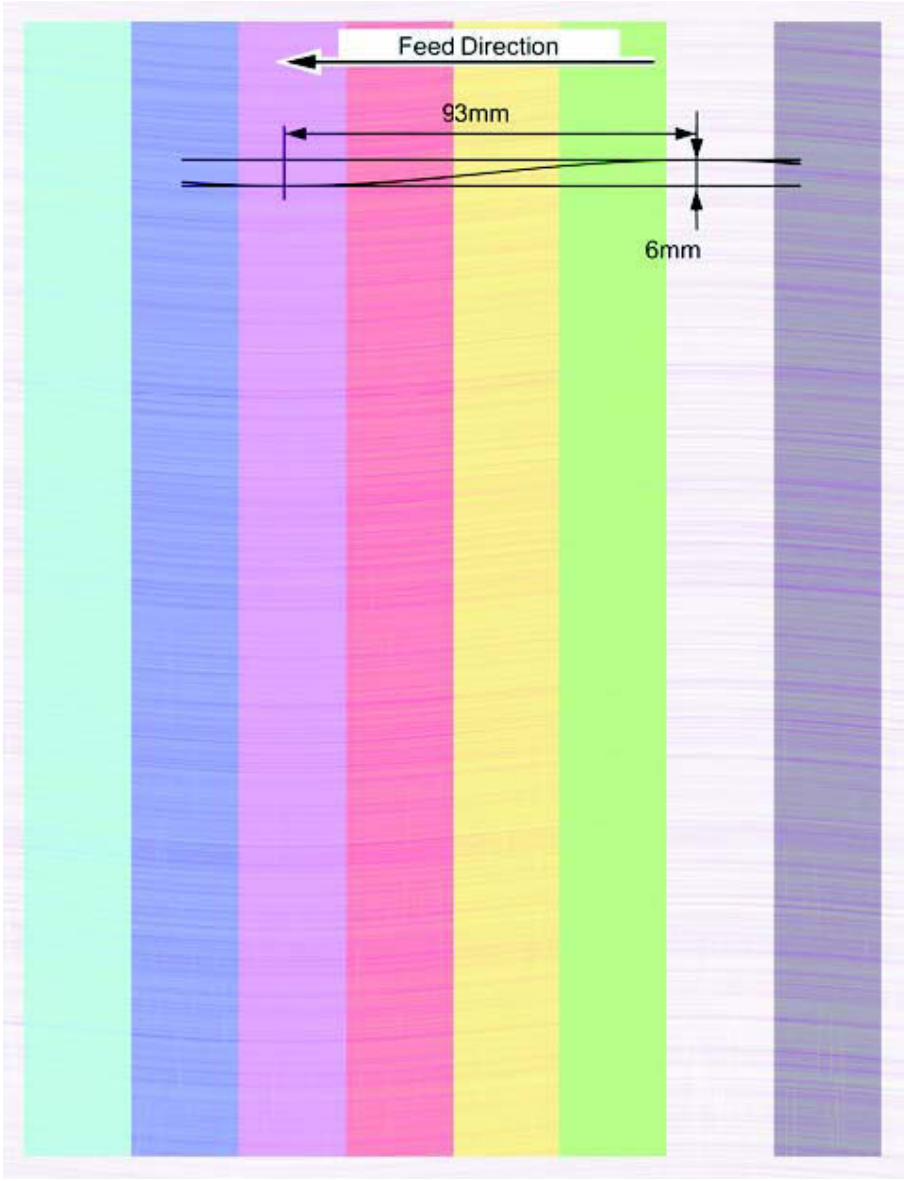


Figure 293. **Wavy brush marks**

Table 61. Wavy brush marks

Description	Possible causes	Solution
Primary color toner background covering the entire page, often with a sinusoidal (brush-like) wave pattern	• Poor developing bias contact exists. • An image drum cleaning brush failure exists because of bad connection or toner overload. • The OPC or carrier has deteriorated. • The high-voltage power supply is defective.	**1** Print a set of print-quality troubleshooting pages to isolate the problem to a single color plane. **2** Reseat the image drum that matches the wavy brush-pattern color. **3** Check the high-voltage power supply and connections to the image drum. Check for good grounding connections in the image drum door. **4** Replace the image drum that matches the wavy brush-pattern color. **5** Replace the high-voltage power supply.

Color plane misregistration

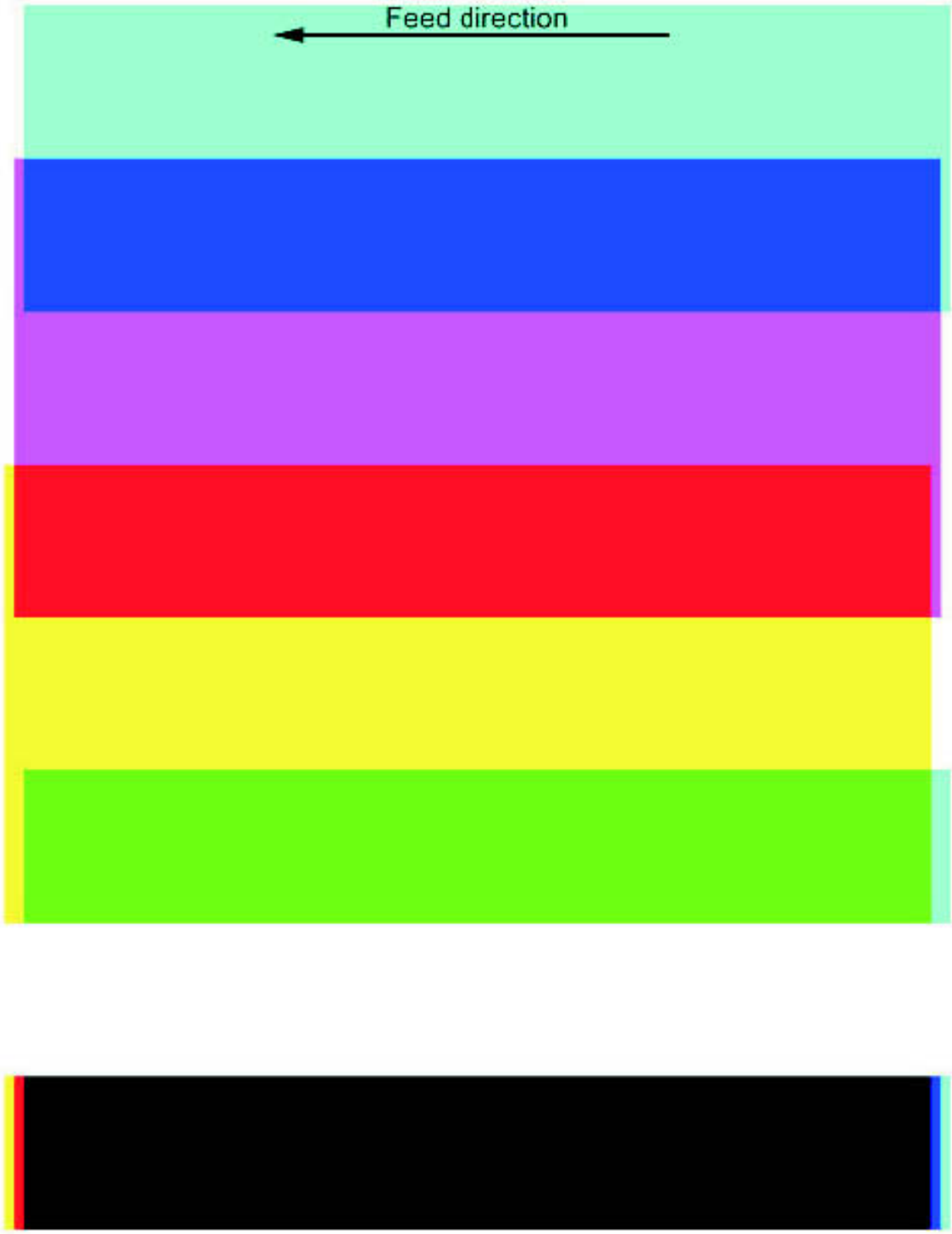


Figure 294. **Color plane misregistration**

Table 62. Color plane misregistration

Description	Table 63. Possible causes	Solution
One primary color plane is misregistered from the other three	• A bad calibration exists. • An image drum is not seated correctly. • A laser scanner is misaligned. • A process cartridge drive assembly is defective. • A laser scanner is defective. • A DC controller PCA is defective.	**1** Print a set of print-quality troubleshooting pages to isolate the problem to a single color plane. **2** Reseat the image drum for the misregistered color. **3** Check the event log for calibration failures, and check the density calibration sensor window for blockage or contamination. **4** Make sure that the sensor window cleaning mechanism is functioning correctly. **5** Open and close the right front door a few times to actuate the sensor window cleaning mechanism, and then select CALIBRATE NOW on the control panel. **6** Print a laser alignment page to determine if a laser scanner is misaligned. Adjust the laser scanner if necessary. **7** Replace the laser scanner of the indicated color. Test the new laser with a laser alignment page and adjust it if necessary. **8** Replace the process cartridge drive assembly. **9** Replace the DC controller PCA.
All primary color planes are mis-registered from each other	• A bad calibration exists. • A sensor window is dirty or blocked. • The ITB or the ITB drive is defective. • The DC controller PCA is defective.	**1** Check the event log for calibration failures, and check the density calibration sensor window for blockage or contamination. **2** Make sure that the sensor window cleaning mechanism is functioning correctly. **3** Open and close the right front door a few times to actuate the sensor window cleaning mechanism, and select CALIBRATE NOW on the control panel. **4** Check the ITB drive mechanism for correct movement. Replace it if necessary. **5** Check the ITB for damage. Replace it if necessary. **6** Replace the DC controller PCA.

Primary color covers entire page

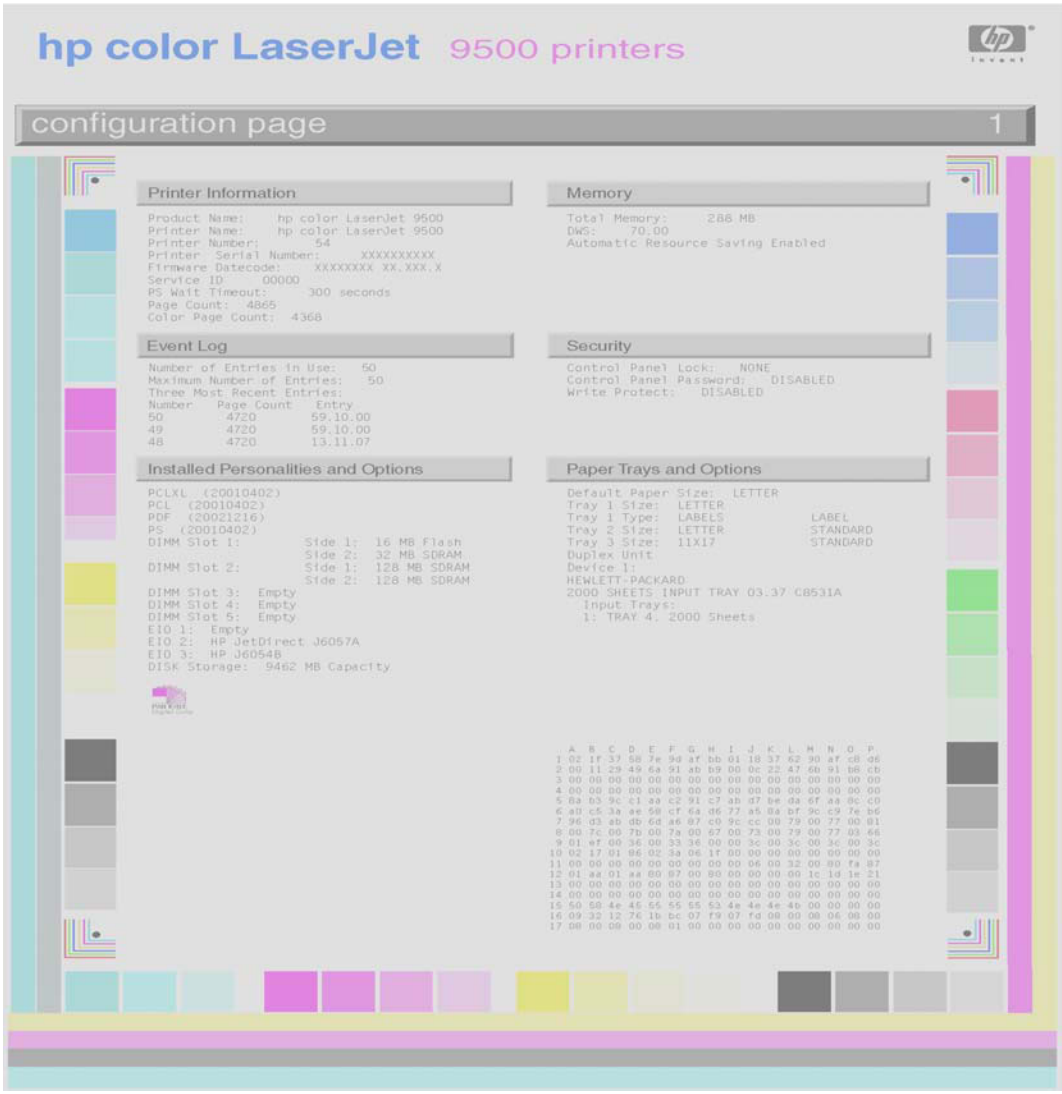


Figure 295. **Primary color covers entire page**

Table 64. Primary color covers entire page

Description	Possible causes	Solution
• A primary color (such as black) covers the entire page regardless of the intended page colors • The background color might have sinusoidal waves, similar to brush marks, in it	• Poor contact exists between the primary charging roller of the indicated color and the high-voltage power supply. • A primary charging roller has deteriorated. • The high-voltage power supply is defective.	**1** Reseat the image drum of the indicated color. **2** Check the high-voltage contacts between the image drum and the print engine. Check for continuity back to the high-voltage power supply. **3** Replace the image drum for the indicated color. **4** Replace the high-voltage power supply.

Ghosted image (98 mm)

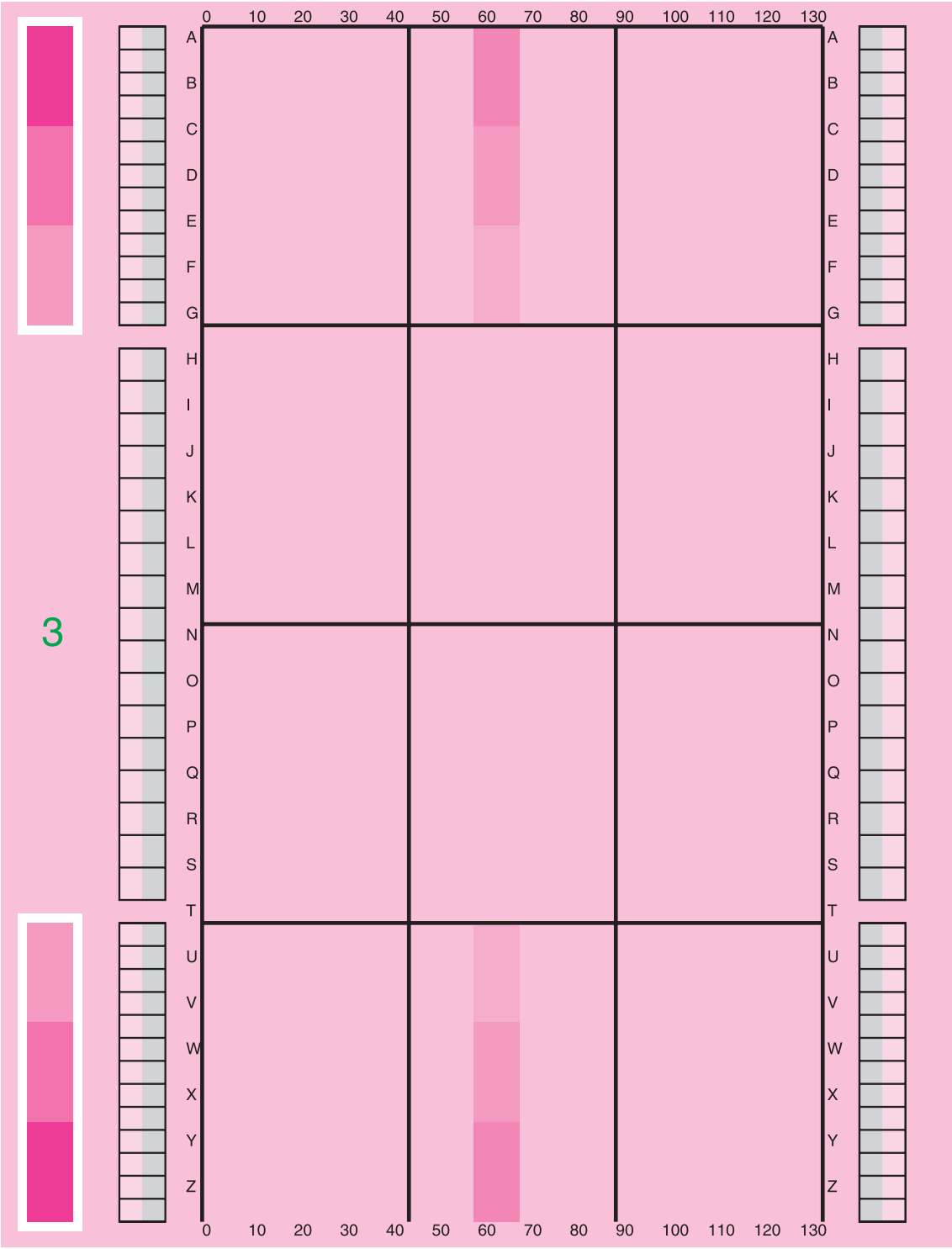


Figure 296. **Ghosted image (98 mm)**

Ghosted image (140 mm)

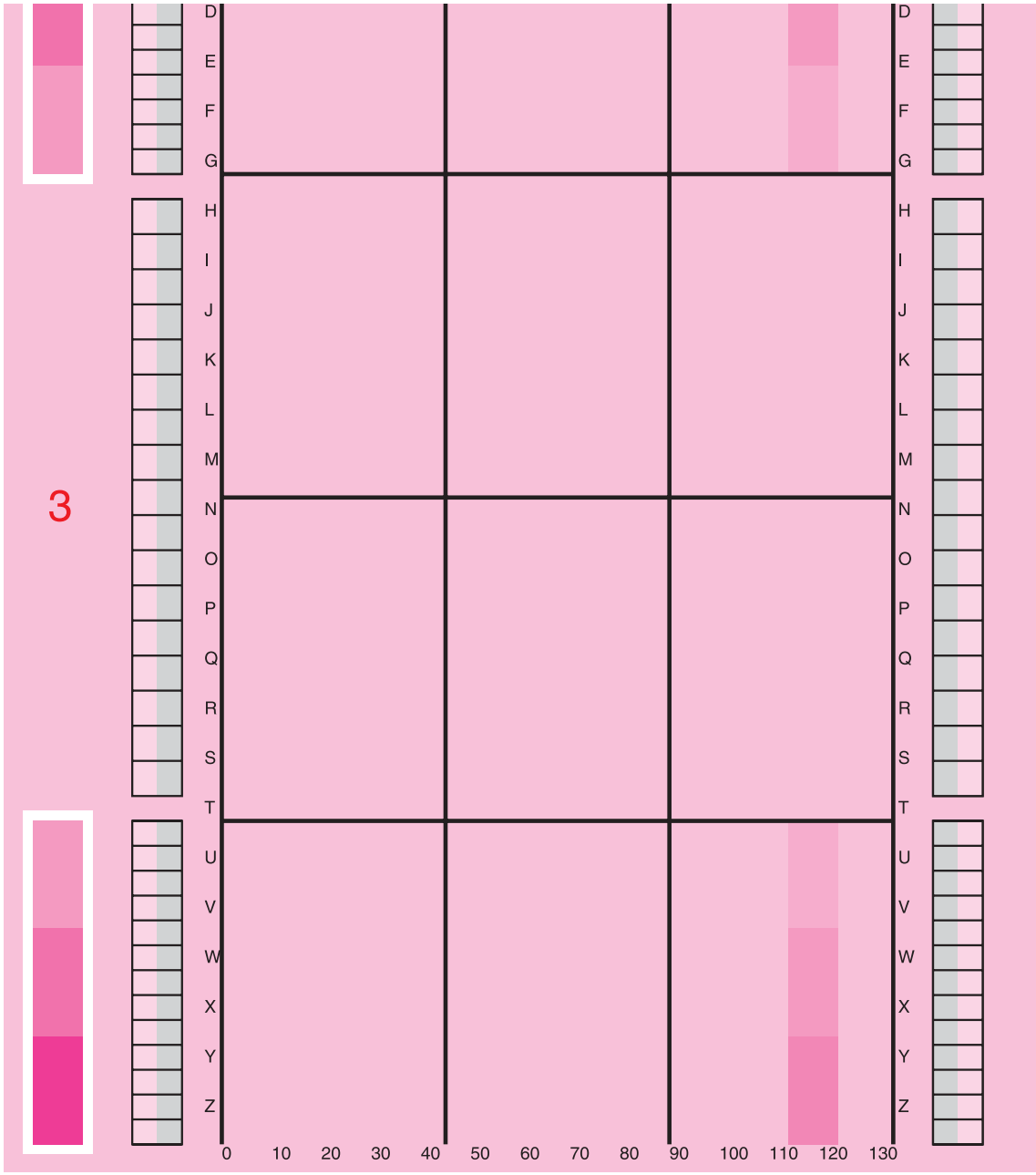


Figure 297. **Ghosted image (140 mm)**

Table 65. Ghosted image

Description	Possible causes	Solution
OPC ghost (ghosted image at 98 mm that can be a positive or negative ghost)	• The OPC ground is poor. • The primary transfer bias contact is poor. • The high-voltage power supply is defective.	**1** Print a set of print-quality troubleshooting pages to isolate the problem to a single color plane, and to isolate fuser ghosts (148 mm repeat) from OPC ghosts (98 mm repeat). Fuser ghosts will ghost into the third column of the print-quality troubleshooting page, and OPC ghosts will ghost into the second column of the print-quality troubleshooting page. **2** For an OPC ghost, remove and reseat the image drum for the indicated color. **3** Check the high-voltage contacts between the image drum and the print engine back to the high-voltage power supply. **4** Replace the image drum for the indicated color. **5** Replace the high-voltage power supply. **Note** Some ghosting cannot be eliminated. In that situation, the customer can change the page layout to avoid the ghosted image.
OPC ghost (ghosted image at 140 mm that can be a positive or negative ghost)		**1** Print a set of print-quality troubleshooting pages to isolate the problem to a single color plane, and to isolate fuser ghosts (140 mm repeat) from OPC ghosts (98 mm repeat). Fuser ghosts will ghost into the third column of the print-quality troubleshooting page, and OPC ghosts will ghost into the second column of the print-quality troubleshooting page. **2** Make sure that media being used is within specifications. See “Media specifications” on page 37 in chapter 1. **3** Make sure that the media type setting on the control panel is appropriate for the media being used. **4** Remove the fuser assembly and check the rollers for contamination or damage. **5** Contamination might be removed by gentle cleaning with a soft cloth, or by printing a few blank pages. Run a fuser cleaning page (CONFIGURE DEVICE, PRINT QUALITY, PROCESS CLEANING PAGE). **6** Replace the fuser assembly if surface damage exists or contamination cannot be cleaned. **Note** Always troubleshoot the other components in the printer for the original cause of the contamination or roller damage before installing a new fuser assembly. **Note** Some ghosting cannot be eliminated. In that situation, the customer can change the page layout to avoid the ghosted image.

Distorted or misplaced image



Figure 298. **Distorted or misplaced image**

Table 66. Distorted or misplaced image

Description	Possible causes	Solution
Entire image is misplaced, distorted, or skewed on the page	• The media is out of specification. • Paper-path or feed problems exist. • A tray is damaged or needs an adjustment. • The laser scanner is faulty. • The DC controller PCA is faulty.	**1** Print a set of print-quality troubleshooting pages to isolate the problem to a single color plane. **2** If a media-feed problem is suspected, make sure that the media being used is within specifications. See “Media specifications” on page 37 in chapter 1. **3** Check the paper path for obstructions, and check the feed rollers for damage. **4** Feed media from different trays to isolate the problem. **5** If the problem can be isolated to a single color plane with the print-quality troubleshooting pages, reseat the image drum for the indicated color. **6** Replace the indicated laser scanner if necessary. **7** Replace the DC controller PCA.

Poorly fused image

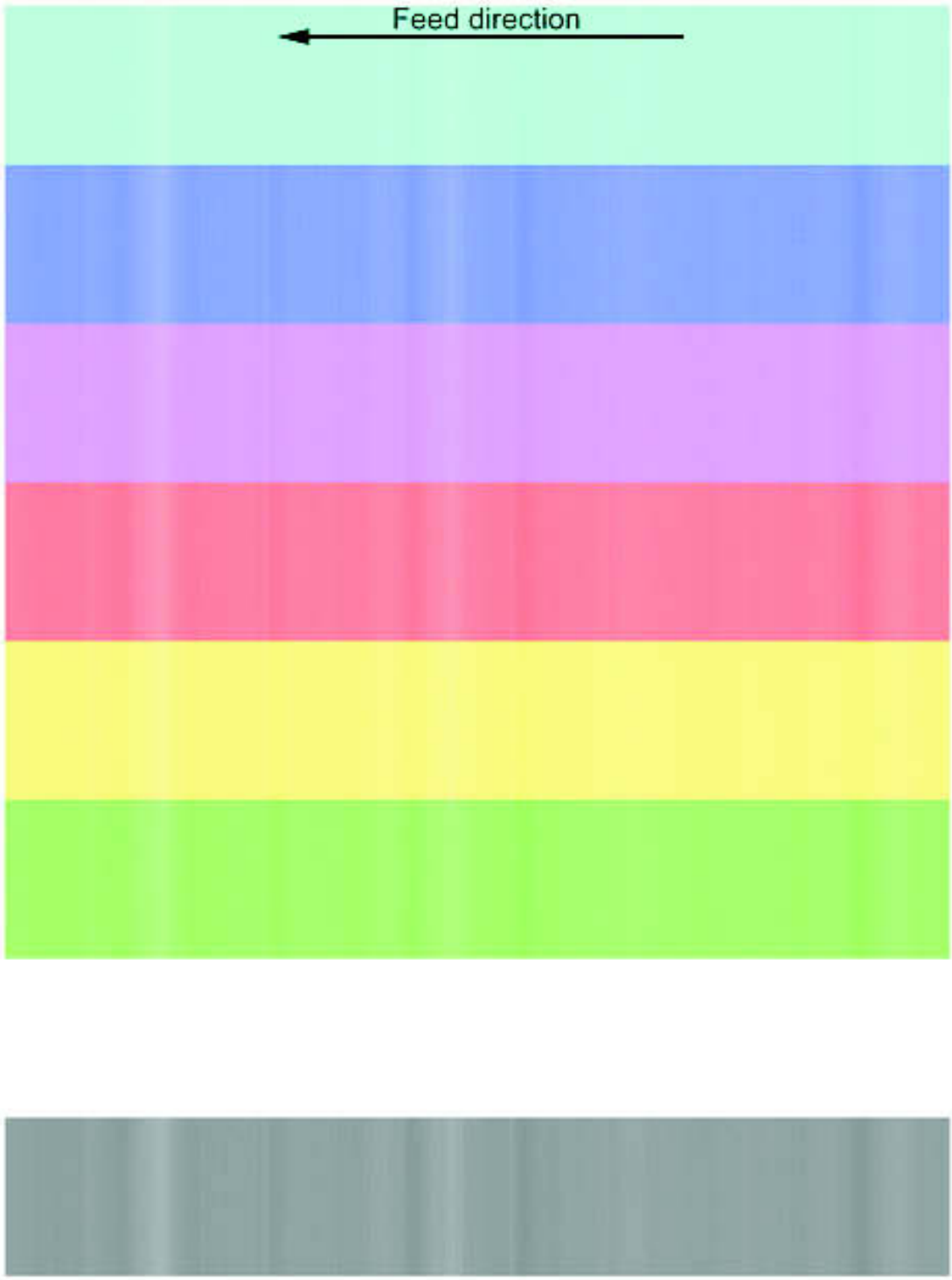


Figure 299. **Poorly fused image (1 of 2)**



Figure 300. **Poorly fused image (2 of 2)**

Table 67. Poorly fused image

Description	Possible causes	Solution
Image is poorly fused to the page (toner falls or rubs off in places)	• The media is out of specification. • The PAPER TYPE setting is incorrect for the media being used. • The fuser is faulty or damaged. • The low-voltage power supply is faulty.	**1** Make sure that the media being used is within specifications. See “Media specifications” on page 37 in chapter 1. **2** Make sure that the media type setting on the control panel is appropriate for the media being used. **3** Replace the fuser. **4** Replace the low-voltage power supply.

Missing color plane

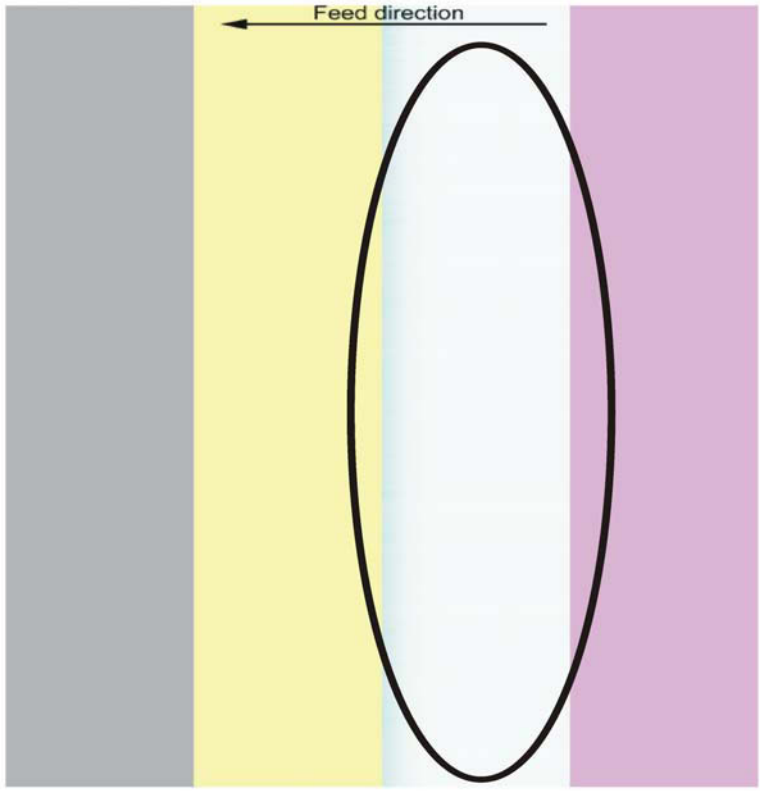


Figure 301. **Missing color plane**

Table 68. Missing color plane

Description	Possible causes	Solution
Image prints with one primary color plane missing	Primary transfer (OPC to belt) of a particular color fails because: • Primary transfer bias is missing. • Image drum, primary charging, or developing biases are missing. • A laser scanner is faulty or a laser path is blocked. • The high-voltage power supply is faulty. • The DC controller PCA is faulty.	**1** Print a set of print-quality troubleshooting pages to isolate the problem to a single color plane. **2** Remove and reseat the image drum for the indicated color. **3** Check the high-voltage contacts between the indicated image drum and the print engine back to the high-voltage power supply. **4** Replace the image drum for the indicated color. **5** Remove and reseat the ITB. Check the primary transfer bias contacts for damage or corrosion. Check the ITB ground. Check the T1 roller of the indicated color for correct positioning and spring tension. **6** Replace the ITB if necessary. **7** Check the laser path between the laser scanner assembly and the image drum for blockage. **8** Check the connectors between the DC controller PCA and the indicated laser scanner assembly. Reconnect them if necessary. **9** Replace the laser scanner for the indicated color. Test the new laser with a laser alignment page, and adjust it if necessary. **10** Replace the high-voltage power supply. **11** Replace the DC controller PCA.

Blank

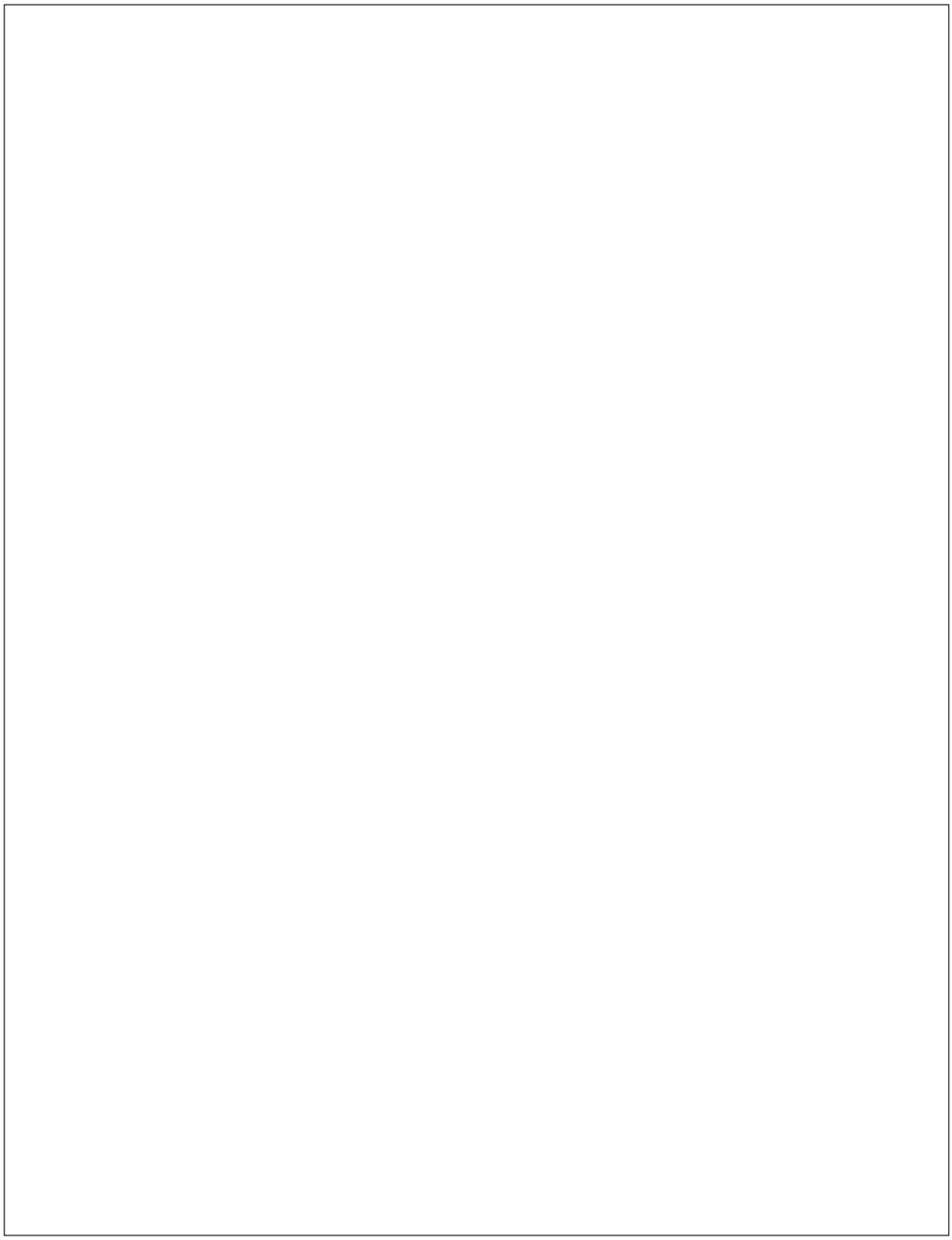


Figure 302. **Blank**

Table 69. Blank

Description	Possible causes	Solution
All pages are blank	• The high-voltage power supply is defective. • The DC controller PCA is defective.	**1** Print a set of print-quality troubleshooting pages to eliminate the possibility of a communication, driver, or software program problem. **2** If the blank pages persist, replace the high-voltage power supply. **3** Replace the DC controller PCA.

Hand or fingerprints



Figure 303. **Hand or fingerprints**

Table 70. Hand or fingerprints

Description	Possible causes	Solution
Clear finger and handprints appear on the printed page	Handprints or fingerprints exist on the ITB (possibly from installation or jam clearing).	• This defect usually clears up by printing a few pages. Tell the customer to print 10 to 15 pages on lower-cost media, and to not touch the ITB.

Fine, yellow dot background

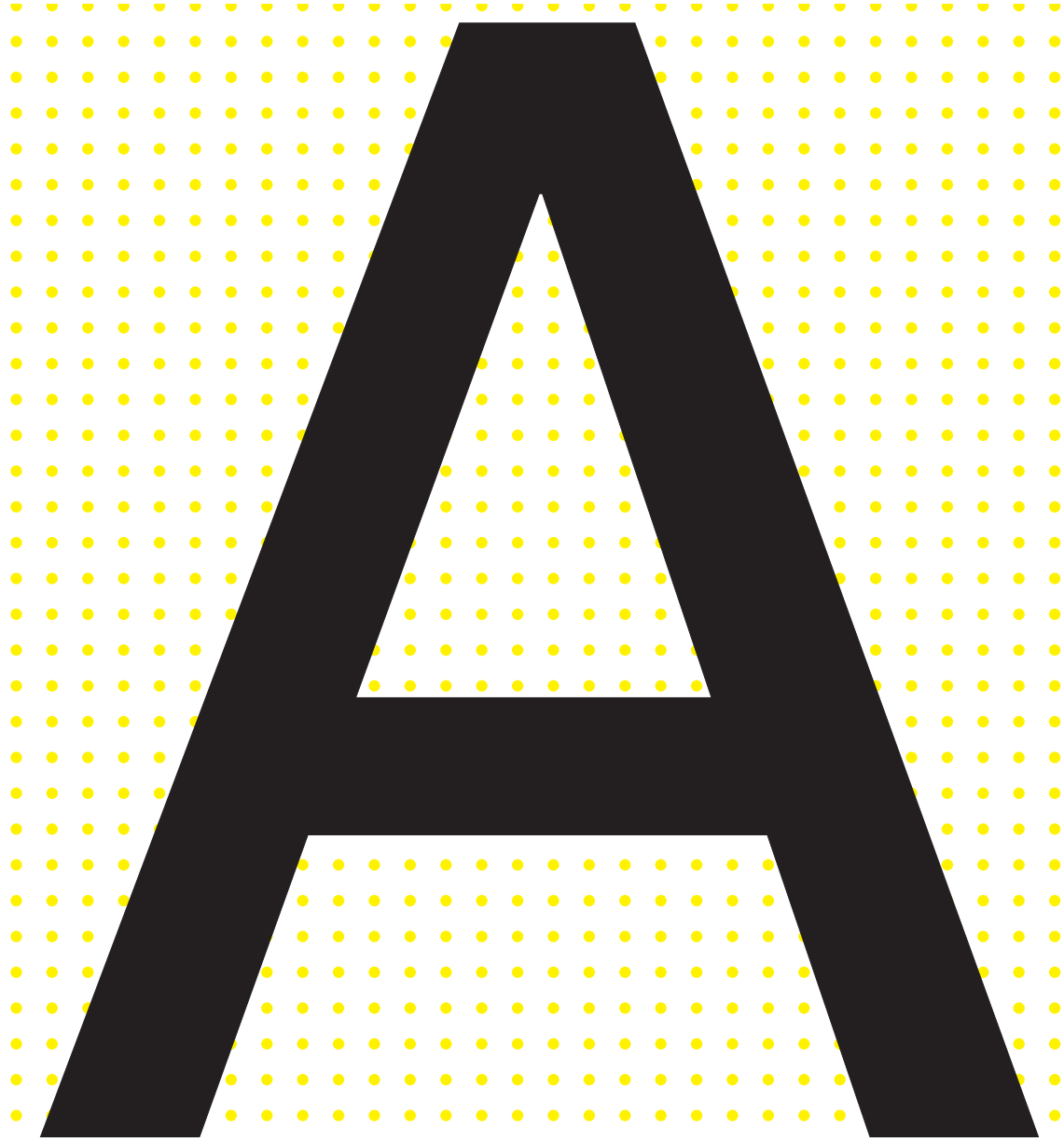


Figure 304. **Fine, yellow dot background**

Table 71. Fine, yellow dot background

Description	Possible causes	Solution
A fine, yellow dot pattern background on all printed pages	• The HP color LaserJet 9500 uses a yellow dot background for counterfeit tracking. • It takes advantage of a less-noticeable yellow dot pattern to reduce banding (particularly at 47 mm from start of solid or heavy halftone fill).	If the 47 mm band countermeasure is undesirable, it can be turned off by using the control panel (CONFIGURE DEVICE, PRINT QUALITY, OPTIMIZE, HIGH COVERAGE 1, set to ON). The user might notice an increase in banding. See “High coverage 1” on page 401. **Note** The anti-counterfeiting pattern cannot be turned off. **Note** The yellow print cartridge has an extra measure of yellow toner so that the use of yellow dot patterns does *not* negatively affect the life of the yellow print cartridge.

Toner halos or explosions occur around solid secondary colors

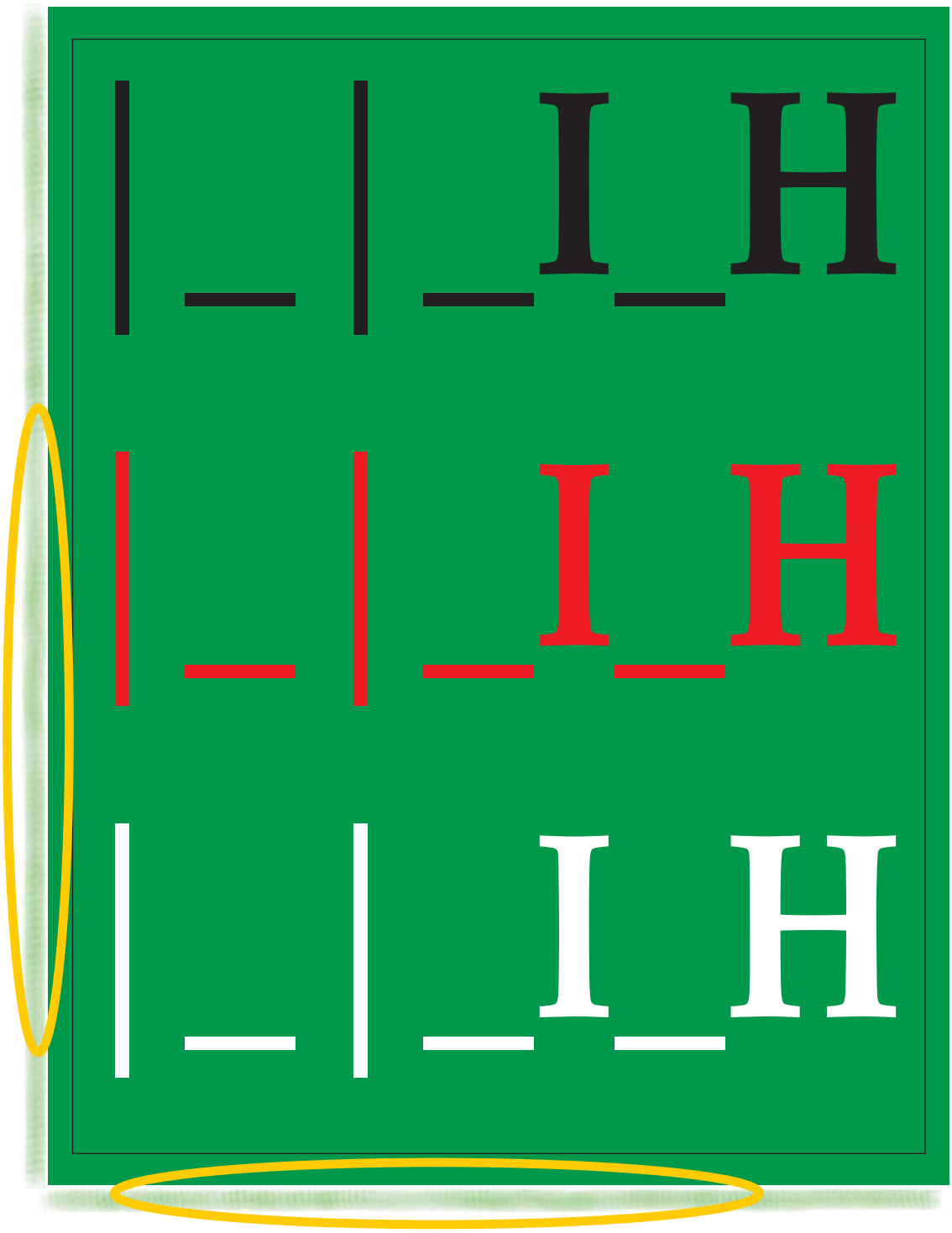


Figure 305. **Toner halos or explosions**

Table 72. Toner halos or explosions

Description	Possible causes	Solution
• Toner halos or explosions form in the white areas around solid, heavy coverage • Toner halos or explosions might appear on the second side (page 1) of a duplexed page (usually in cases of low humidity)	Toner moves away from the solid fill at the time of secondary transfer.	**1** Make sure that the media being used is within specifications. See “Media specifications” on page 37 in chapter 1. **2** Make sure that the media type setting on the control panel is appropriate for the media being used. **3** Keep media wrapped until it is used. **4** Select colors that are lower coverage (lighter and closer to primary). **5** The customer might try different settings under PRINT QUALITY, OPTIMIZE, TRANSFER (DOWN or UP, depending on the media). Some testing might be necessary to find the optimal setting. **Note** Onsite visits and parts replacement (such as printer parts and consumables) will not alleviate toner explosions.

Control panel print-quality adjustments

There are several control panel options that might help address some print-quality problems. These settings should be used with discretion and only after making sure that the media being used is supported, and that the appropriate media type is specified from the control panel.

T1 adjustment

The HP color LaserJet 9500 features automatic color calibration to provide high-quality color output. In some situations, you can manually adjust the density balance of the four primary toner colors. The available range for each color is from -5 to +5. The default value is 0.

CAUTION Performing this procedure changes the color balance of the printer by altering primary transfer biases and affects *all* print jobs.

Note This procedure only has an affect on midtone colors. Solid or very light fills are not affected.

1. Press ✓ or MENU (MFP version) to open the menus.
2. Use ▲ or ▼ to scroll to CONFIGURE DEVICE, and then press ✓.
3. Use ▲ or ▼ to scroll to PRINT QUALITY, and then press ✓.
4. Use ▲ or ▼ to highlight ADJUST COLOR.
5. Use ▲ or ▼ to highlight the desired color.
6. Use ▲ or ▼ to highlight the correct density setting.
7. Press ✓ to select the density setting.
8. Press ⮌ to set the density for the next color.
9. After setting the density for each color, press PAUSE/RESUME (LJ 9500) or EXIT (LJ 9500mfp).

The default values is 0 for each color, a greater negative number might result in lighter or less dense mid-tones for a particular color plane, and a greater positive number might result in darker or more dense mid-tones for a particular color plane.

T2 adjustment

These settings control T2 current to correct for media types with poor secondary transfer with the predefined media types.

When poor secondary transfer (light images) occurs, make sure that the media being used is supported and that the appropriate media-type setting is selected in the control panel. If these are correct, decrease the transfer setting (down 1 or down 2). This might result in a darker image, depending on the type of media. Some medias might experience better secondary transfer using the up 1 or up 2 setting.

1. Press ✓ or MENU (MFP version) to open the menus.
2. Use ▲ or ▼ to scroll to CONFIGURE DEVICE, and then press ✓.
3. Use ▲ or ▼ to scroll to OPTIMIZE, and then press ✓.
4. Use ▲ or ▼ to scroll to TRANSFER DOWN/UP, and then press ✓.

The T2 settings include:

- TRANSFER DOWN 1=OFF/ON
- TRANSFER DOWN 2=OFF/ON
- TRANSFER UP 1=OFF/ON
- TRANSFER DOWN 2=OFF/ON

Note It is possible to set TRANSFER UP 1, 2, and TRANSFER DOWN 1, 2 to ON at the same time. The default is used (all OFF) in this situation.

Leading edge

The leading edge settings are used to compensate for poor transfer, missing toner, discharge marks, and mottled appearance on the leading edge. Try setting the printer to LEADING EDGE DOWN first. Depending on the type of media, you might get better results setting LEADING EDGE UP to ON. Switching LEADING EDGE DOWN and LEADING EDGE UP to ON decreases the T2 leading edge bias one step from nominal.

The settings include LEADING EDGE DOWN=OFF/ON (default value is OFF) and LEADING EDGE UP=OFF/ON (default value is OFF).

1 Press ✓ or MENU (MFP version) to open the menus.

2 Use ▲ or ▼ to scroll to CONFIGURE DEVICE, and then press ✓.

3 Use ▲ or ▼ to scroll to OPTIMIZE, and then press ✓.

4 Use ▲ or ▼ to scroll to LEADING EDGE DOWN/UP, and then press ✓.

High coverage 1

The HP color LaserJet 9500 implements a very fine yellow dot pattern that eliminates most banding associated with a dry EP process. The dot patterns are controlled by the high coverage 1 and high coverage 2 settings. The default value is OFF for high coverage 1, high coverage 2, and high coverage 3.

Note High coverage 1 and high coverage 2 are not mutually exclusive. If both items are turned on, the yellow dots turn off.

High coverage 1 is designed for customers to turn off the yellow dot pattern. Perform the following steps to set high coverage 1:

1 Press ✓ or MENU (MFP version) to open the menus.

2 Use ▲ or ▼ to scroll to CONFIGURE DEVICE, and then press ✓.

3 Use ▲ or ▼ to scroll to OPTIMIZE, and then press ✓.

4 Use ▲ or ▼ to scroll to HIGH COVERAGE 1, and then press ✓.

The settings include:

- OFF: The yellow dots are in a 10-by-10 mm pattern for half-speed printing, and an 8-by-8 mm pattern for full-speed printing.
- ON: The yellow dots are off.

High coverage 2

High coverage 2 is designed to reduce 47 mm bands in half-speed printing modes. If a line reoccurs every 47 mm from the start of a strip of color in half-speed printing modes, turn the item to ON. Otherwise, leave the item OFF. Perform the following steps to set high coverage 2:

1 Press ✓ or MENU (MFP version) to open the menus.

2 Use ▲ or ▼ to scroll to CONFIGURE DEVICE, and then press ✓.

3 Use ▲ or ▼ to scroll to OPTIMIZE, and then press ✓.

4 Use ▲ or ▼ to scroll to HIGH COVERAGE 2, and then press ✓.

The settings include:

- OFF: The yellow dots are in a 10-by-10 mm pattern for half-speed printing, and an 8-by-8 mm pattern for full-speed printing.
- ON: The yellow dots are in an 8-by-8 mm pattern for half-speed printing and full-speed printing.

High coverage 3

High coverage 3 is designed to reduce 50 mm or 100 mm bands in full-speed print modes. The high coverage 3 setting eliminates 50 mm or 100 mm bands and the cardstock band (37 mm from the trailing edge of ledger and 115 mm from the trailing edge of letter for media heavier than 120 g/m²).

The bands are reduced by adjusting the OPC/ITB speed mismatch. If a line or band recurs at 50 mm or 100 mm intervals or 37 mm from the trailing edge of ledger and 115 mm from the trailing edge of letter on media larger than 120 g/m², turn this item ON.

1. Press ✓ or MENU (MFP version) to open the menus.
2. Use ▲ or ▼ to scroll to CONFIGURE DEVICE, and then press ✓.
3. Use ▲ or ▼ to scroll to OPTIMIZE, and then press ✓.
4. Use ▲ or ▼ to scroll to HIGH COVERAGE 3, and then press ✓.

The settings include:

- OFF: speed mismatch of 101.5 percent (default)
- ON: speed mismatch of 102 percent

CAUTION Do *not* change this setting to ON unless the bands are very objectionable because as a result, 47 mm banding might increase.

Print-quality problems associated with jams

- Make sure that all media is cleared from the paper path.
- The media does not pass through the fuser, which causes image defects to appear on subsequent documents. Print two or three pages to clean the printer. If the problem persists, see the next section.
- Print a fuser cleaning page. Press CONFIGURE DEVICE, then press PRINT QUALITY, and then press PROCESS CLEANING PAGE.

Media and paper-path troubleshooting tools

Note

Before beginning media and paper-path troubleshooting, check that the media meets the specifications listed in chapter 1. Also, on the control panel make sure that the appropriate media type is set to support the media being used. Out-of-specification, poor quality, and incorrect media handling can cause jams and image defects.

Problems with print media are sometimes difficult to detect. Follow a standard troubleshooting procedure to help isolate media-related problems. Follow these steps:

- Determine the problem source: print media or printer (page 408)
- Isolate the source of the jam (page 409)
- Isolate a media brand (page 410)
- Isolate a media type (page 410)
- Space requirements (page 32) in chapter 1
- Engine-test button (page 350)
- Stored and loaded correctly (page 37) in chapter 1
- Media specifications (page 37) in chapter 1

Paper-path jam sensors

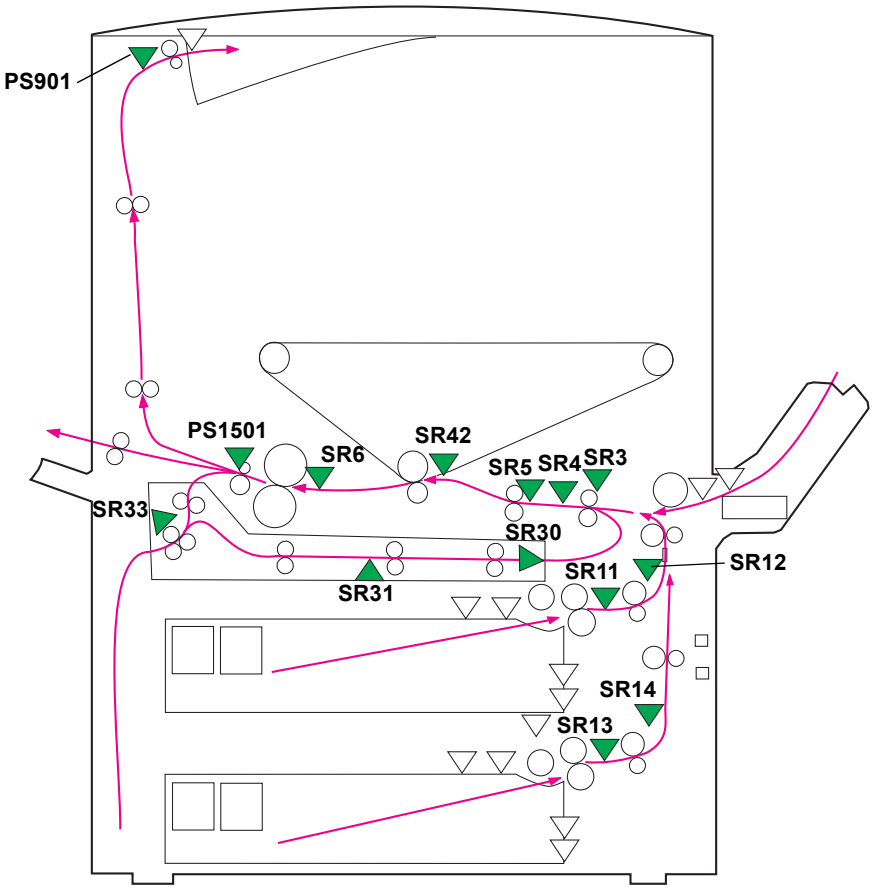


Figure 306. **Paper-path jam sensors**

Table 73. Paper-path jam sensors

Sensor	Sensor name	Sensor	Sensor name
SR3	Registration sensor	SR14	Tray 3 sensor B
SR4	Transparency motor	SR30	Duplexer media re-feed sensor
SR5	Multifeed sensor	SR31	Duplexer media path sensor
SR6	Fuser input sensor	SR33	Duplexer reverse sensor
SR11	Tray 2 sensor A	SR42	T2 input sensor
SR12	Tray 2 sensor B	PS901	Face-down output sensor
SR13	Tray 3 sensor A	PS1501	Fuser output sensor

Note Action for all media jams includes removing the media, checking the flags, testing the sensor with diagnostics, and checking the connectors from the sensor to the DC controller using the wiring diagram.

Note The printer reports jams as 13 errors. These are described in detail in the numerical error message section of this chapter. See “Numerical error messages for the HP LaserJet 9500 Series printer” on page 431.

Table 74. Media jams by location

Jam location	Description	Name	Message	Action
All doors	A door open jam is reported if the following sensors detect media when a door is opened or closed: • Tray 2 sensor A (SR11) • Tray 2 sensor B (SR12) • Tray 3 sensor A (SR13) • Tray 3 sensor B (SR14 • Registration sensor (SR3) • Fuser output sensor (PS1501) • Face-down output sensor (PS901)	Door open jam	13.05.00 JAM INSIDE PAPER PATH	**1** Close all of the doors. **2** Clear the jam. **3** Check the front door interlock switches and all of the connections.
Input accessory or lower right door	Late media from input accessory.	Late media from input accessory	13.20.JJ JAM INSIDE PAPER PATH	**1** Open tray 4 and the right side door to check for jammed media. **2** Check the paper path between tray 4 and the printer. **3** Check the tray-size guides. **4** Replace the pickup, separation, or feed rollers.
Input unit or lower right door	The media is detected by tray 2 sensor A and tray 2 sensor B after recovering from sleep mode or when the printer is turned on.	Residual media jam in media path 2	13.32.00 JAM INSIDE PAPER PATH or 13.32.00 JAM INSIDE LOWER RIGHT DOOR	**1** Check the indicated tray. **2** Check the tray-size guides. **3** Open the lower right door and remove the jammed media.

Table 74. Media jams by location (continued)

Jam location	Description	Name	Message	Action
Lower right door or pickup unit	• The media did not reach the tray 2 sensor B within a specified amount of time. • The media did not reach the tray 3 sensor B within a specified amount of time.	Media delay jam at media feed area 1	13.01.00 JAM INSIDE LOWER RIGHT DOOR or 13.01.00 JAM IN TRAY X	**1** Check the indicated tray or open the lower right door. **2** Remove the jammed or loose media. **3** Check the tray-size guides. **4** Replace the pick, separation, or feed rollers.
Upper right door	The media from any input source did not reach the registration sensor within a specified amount of time.	Media delay jam at media feed area 2	13.03.00 JAM INSIDE UPPER RIGHT DOOR or 13.03.00 JAM INSIDE LOWER RIGHT DOOR	**1** Open the tray 1 door (ITB access) and remove the jammed media. **2** Make sure that the tray 1 door is completely closed. **3** Check the paper path and tray 1 for damage. **4** Check for media in the lower right door area.
Upper right door	The multifeed sensor detects a stack height of more than 0.5 mm (0.019 inch)	Multifeed jam	13.15.00 JAM INSIDE UPPER RIGHT DOOR	**1** Check the registration area for jammed media. **2** If the job is multifeed, check for supported media, and check the pick, separation, and feed rollers in the source tray. **3** If the media is fed from tray 1, check the separation pad. **4** Check the registration rollers for correct functionality.
Upper right door	The registration sensor (SR3) indicates that media fed from tray 1 is longer than what is specified by the formatter.	Too long media jam	13.06.00 JAM INSIDE UPPER RIGHT DOOR	**1** Remove the media from tray 1. **2** Open the ITB access door and remove the jammed media. **3** Check for supported media and correct-size specification on the control panel.
Upper right door, lower left door, or front doors	The T2 upstream sensor, fuser upstream sensor, or fuser output sensor detect media when the door is closed.	Residual media in media path 1	13.20.00 JAM INSIDE PAPER PATH	**1** Remove any residual media near T1 and the fuser. **2** Check the three sensors for correct movement and functionality. **3** Make sure that the fuser, ITB, and T2 roller are seated correctly.

Table 74. Media jams by location (continued)

Jam location	Description	Name	Message	Action
Upper right door or front doors	A page did not reach the fuser upstream sensor within a specified amount of time.	ITB wrap jam	13.1D.00 JAM INSIDE PAPER PATH	**1** Remove the ITB and check for residual media. Make sure that the ITB is seated correctly and the green lever is moved to the correct position. **2** Check the fuser upstream sensor for missing flag or poor movement. **3** Check for supported media. **4** Check the discharge comb area for damage or contamination.
Lower left door	The fuser output sensor detects media after a specified amount of time.	Media stay jam at the fuser unit	13.06.00 JAM INSIDE LOWER LEFT DOOR or 13.06.00 JAM INSIDE PAPER PATH	**1** Check for residual media inside and near the fuser. **2** Remove the fuser and check the exit sensor for correct movement and functionality. **3** Check the fuser rollers for damage or contamination. **4** Check the post fuser paper path for jams. **5** Reseat the fuser.
Upper right door or front doors	The media did not reach the fuser output sensor within a specified amount of time.	Media delay jam at the fuser unit	13.05.00 FUSER JAM LOWER LEFT DOOR or 13.05.00 JAM INSIDE FRONT DOOR	**1** Remove the duplexer. **2** Remove the fuser. **3** Check the post secondary transfer area and the fuser inlet area.
Upper right door or lower left door	The printer detects media wrapping around the fuser roller.	Fuser wrap jam	13.1C.00 FUSER JAM LOWER LEFT DOOR	**1** Check for supported media and media-type settings on the control panel. **2** Check for residual media inside and near the fuser. **3** Remove the fuser and check the exit sensor for correct movement and functionality. **4** Check the fuser rollers for damage and contamination. **5** Check the post fuser paper path for any obstruction. **6** Reseat the fuser.

Table 74. Media jams by location (continued)

Jam location	Description	Name	Message	Action
Lower left door	The media did not reach the switchback sensor within a specified amount of time.	Media delay jam at the reversing area	13.11.00 JAM INSIDE LOWER LEFT DOOR or 13.10.00 JAM INSIDE DUPLEXER	**1** Check the seating of the duplexer, fuser, and fuser access door. **2** Check the face-down and duplexer diverters for correct functionality. **3** Check the fuser and duplexer area feed roller driver trains.
Lower left door	The switchback sensor detects media after a specified amount of time.	Media stay jam at the media reversing area	13.11.00 JAM INSIDE LOWER LEFT DOOR or 13.11.00 JAM INSIDE DUPLEXER	**1** Remove the duplexer and check for residual media. **2** Check the seating of the duplexer, fuser, and fuser access door. **3** Check the face-down and duplexer diverters for correct functionality. **4** Check the fuser and duplexer area feed roller driver trains.
Lower left door or duplexer	The media did not reach the duplex delivery sensor within a specified amount of time.	Media delay jam at the media path to the duplexer	13.12.00 JAM INSIDE DUPLEXER	**1** Remove the duplexer. **2** Check the inside of the duplexer and the duplexer cavity for residual media. **3** Check the duplex delivery sensor for correct movement and functionality. **4** Check the registration guides for correct movement. **5** Check the feed rollers and drive gear trains for damage.
Lower left door or duplexer	The duplex delivery sensor detects media after a specified amount of time.	Media stay jam at the media path to the duplexer	13.13.00 JAM INSIDE DUPLEXER	**1** Remove the duplexer. **2** Check the inside of the duplexer and the duplexer cavity for residual media. **3** Check the duplex delivery sensor for correct movement and functionality. **4** Check the registration guides for correct movement. **5** Check the feed rollers and drive gear trains for damage.

Table 74. Media jams by location (continued)

Jam location	Description	Name	Message	Action
Lower left door or duplexer	The duplex stay sensor detects media when the doors are closed.	Duplexing stay jam (re-feed)	13.29.00	**1** Remove the duplexer. **2** Check the inside of the duplexer and the duplexer cavity for residual media. **3** Check the duplex delivery sensor for correct movement and functionality.
Lower left door	The media did not reach the face-down output sensor within a specified amount of time.	Media delay jam at the face-down tray	13.09.00 JAM INSIDE LOWER LEFT DOOR or 13.09.00 JAM INSIDE UPPER LEFT DOOR	**1** Check the face-down output sensor for correct movement and functionality. **2** Check the face-down and duplex diverters for correct functionality. **3** Check for deformed or misaligned delivery rollers. **4** Check the delivery feed assembly drive gear train. **5** Make sure that the upper and lower left doors are completely closed.
Lower left door or output unit	The face-down output sensor detects media after a specified amount of time.	Media stay jam at face-down tray	13.0A.00 JAM INSIDE TOP OUTPUT BIN or 13.0A.00 JAM INSIDE UPPER LEFT DOOR	**1** Check for residual media near the face-down output sensor. **2** Check for obstructions in the paper path. **3** Check the feed rollers and drive gear trains for damage.
Upper left door or output unit	The face-down output sensor detects media after performing an auto-flush.	Residual media in media path 3 jam	13.3E.00 JAM INSIDE TOP OUTPUT BIN or 13.3E.00 JAM INSIDE UPPER LEFT DOOR	**1** Check for residual media near the face-down output sensor. **2** Check for obstructions in the paper path. **3** Check the feed rollers and drive gear trains for damage.

Determine the problem source: print media or printer

When determining the cause of a printer failure, make a distinction between problems that relate to the printer and problems that involve print media. Often a problem that seems to be related to the printer is actually a matter of poor print-media selection or handling. To determine whether a problem is caused by the printer or by the media, try a few simple steps to remedy the situation:

- Turn the media over in the tray to print on the reverse side.
- Rotate the sheets 180 degrees (end to end) to feed with a different leading edge.

If the symptoms cease or change, assume that the problems are caused by the print media.

Using the straightest paper path

Some problems can be avoided by using the straightest available paper path. Usually this means media feeds from tray 1, and exits into the face-up bin. This path is recommended for envelopes and labels.

Determine if problem is caused by the duplexing process

Media that has just made a pass through the printer can show increased media curl. Media curl increases image dropout, and creates pickup and stacking problems. When the second pass is made, print media might not meet the specifications for moisture and curl. Dry media can hold static charges that affect print quality and stacking of the duplexed page. Media shrinkage resulting from a second pass through the printer can cause image misalignment on the duplexed page.

Isolate the source of the jam

Define the source of the media that jams.

Determine where media jams occur

Check where the leading edge of the media stops when a jam occurs.

Determine whether the printer is experiencing misfeeds or multifeed jams

The following are some possible causes of misfeeds or multifeed jams:

- The media might be too heavy or too light. Check basis weight and measure caliper. See “Basis weight field test” in chapter1.
- The media might be too smooth. Check the finish.
- The customer might be attempting to print embossed media, pre-printed forms, or perforated media that does not meet HP specifications. See “Media specifications” in chapter 1.
- The media might be loaded incorrectly. Turn over the sheets in the tray to determine if in-ream curl is causing misfeeds.
- The customer might be fanning media before loading it into the tray.
- The customer might be adding media in small amounts. Do not add small amounts of media or mix types of media in the tray.
- The printer or media storage environment might be too humid or too dry. See “Media specifications” in chapter 1.

Print-quality problems associated with media

Use media that meets HP specifications. See “Media specifications” on page 37 in chapter 1.

- The media that you are using is too heavy or too light for the printer.
- The driver/printer is set incorrectly. Change the media-type setting to match the media the customer is using.
- The media is excessively rough. Use a smoother, xerographic media.
- The moisture content of the media is uneven, too high, or too low. Use media from a different source or from an unopened ream of media.
- The media is designed for inkjet, offset press, or another program. Make sure that the media is for laser or xerographic programs.
- The transparencies that you are using are not designed for the HP color LaserJet 9500. Use only transparencies that are designed for HP color LaserJet printers.

Isolate a media brand

If the printer jams with only one brand of media, try to remedy the situation:

- Try switching media brands.
- If the media ream in use appears to be old, open a fresh ream of the same media and load it correctly into the printer. If the problem disappears, investigate storage and handling conditions.

Isolate a media type

When jams and other problems occur frequently, it is often because the customer is using a special media. Customers must only use print media that conforms to all Hewlett-Packard specifications, and should always test media before purchasing large quantities. Media should be tested before storage to verify quality printing results. Then, if problems arise, storage or handling conditions can isolate the most likely cause. Some types of media that might cause problems include the following:

- adhesive labels
- envelopes
- transparencies
- preprinted forms and letterhead
- embossed media
- perforated media
- chemically treated media
- synthetic media
- coated media
- other special media

Note See “Media specifications” on page 37 in chapter 1 for more information about these types of media.

Media will not feed from tray x when printing from a software program; the paper-path test works fine

Make sure that the correct media size is set:

- all trays: from the control panel
- tray 2, tray 3, or tray 4: reset the media guides in the correct position in the failing tray
- make sure that the custom-size switch setting is correct

Wrinkling envelopes

- make sure that the input tray is tray 1
- make sure that the output destination is the face-up bin
- place the fuser levers in the up position and retry the envelopes
- try new media (make sure that the envelopes are within specifications; see “Media specifications” on page 37 in chapter 1)

Poor fusing

- make sure that the fuser levers are in the down position for cut sheet media
- make sure that all packing spacers are removed from inside the printer
- try new media (make sure that the media is within specifications; see “Media specifications” on page 37 chapter 1)
- make sure that the proper fusing mode for the media is set in the control panel
- make sure that the ac power does not fluctuate out of range during the print cycle

Overhead transparency defects

Overhead transparencies can experience any of the image-quality problems that other type of media can, in addition to defects that are specific to transparencies. In addition, because transparencies are pliable as they pass through the paper path, they can be marked by the media-handling components.

Note Allow transparencies to cool at least 30 seconds before handling them.

- In the printer driver **Paper** tab, select **Transparency** as the media type. Also, make sure that the tray is correctly configured for transparencies.
- Check that the transparencies meet the specifications for this printer. See “Media specifications” in chapter 1. For more information, see the *HP LaserJet Printer Family Print Media Guide.*
- Handle transparencies by the edges. Skin oil on the surface of transparencies can cause spots and smudges.
- Small, random dark areas on the trailing edge of solid fill pages might be caused when transparencies stick together in the output bin. Try printing the job in smaller batches.
- If the selected colors are not what you expected when printed, select different colors in the software program or printer driver.
- If you are using a reflective overhead projector and the images are too dark when projected, use a standard overhead projector instead.

Jams occur when media either does not reach or move past a sensor along the paper path in a specific amount of time. If a jam occurs, a `13.XX PAPER JAM` message appears on the control panel.

Media jam

Jams occur most often when the following conditions exist:

- media trays are not loaded correctly
- the print media does not meet the specifications listed in the *HP LaserJet Printer Family Print Media Guide*
- the media is in poor condition
- the printer needs to be cleaned

If a jam occurs, a `13.XX PAPER JAM` message appears on the control panel. For detailed descriptions of the `13.XX` messages and the actions recommended to resolve the errors, see “Numerical error messages for the HP LaserJet 9500 Series printer” on page 431.

The following table provides some basic information about general jam troubleshooting.

Table 75. General jam troubleshooting

Check	What to do
What is the frequency of the jams (for example, continuous, one jam per 100 pages, one jam per 1,000 pages)?	• Verify the frequency of the jam with the customer. Print or display the event log to determine jam history. See “Event log page” on page 416.
Do jams only occur when the media is fed from a particular media input source (for example, tray 1, tray 2, tray 3, or tray 4)?	• See “Engine-test button” on page 350 and “Sensor test (interactive)” on page 339 to isolate the problem.
Do jams only occur when media is output to a specific output bin (for example, the face-down bin, the face-up bin, the duplexer, the stapler)?	• See “Engine-test button” on page 350 and “Sensor test (interactive)” on page 339 to isolate the problem.

Table 75. General jam troubleshooting

Check	What to do
Do jams occur with a specific type of media?	• Make sure that the media-type setting matches the media being used. • Try known good media. See the *HP LaserJet Printer Family Print Media Guide*.
Where does the leading edge of the first sheet of media in the paper path stop when a jam occurs? Are any sheets of media damaged or torn?	• Attempt to duplicate the jam. See “Engine-test button” on page 350. Inspect the paper path and all paper-path mechanical assemblies that are in advance of the leading jam.
Is the customer loading the trays correctly?	• Observe the customer while he or she loads the media. See proper media-handling procedures in the *HP LaserJet Printer Family Print Media Guide.*
Is the customer overfilling the trays?	• Make sure that the media level is *not* above the maximum fill marks in the media trays. Observe the customer while he or she loads media in the trays.
Are the media tray guides set correctly?	• Make sure that the tray 2 and the tray 3 media guides are set correctly on all sides. For tray 4, make sure that all adjustments are set correctly (front, back, and side at the top and bottom of the tray).
Does the printer need cleaning?	• Check the paper path and paper-path rollers.
When was the user maintenance performed on the printer?	• Were the pick and separation rollers replaced with the transfer kit?
Is the custom-size switch set correctly?	• Make sure that the switch is set correctly for the media selected.

Customer print job

Ask the customer to send a print job from the problem source(s) to the problem destination(s). Try to recreate the jam errors by having the customer perform a paper-path test. See “Engine-test button” on page 350.

When verifying print jobs, make sure that all of the settings are selected to reflect the customer’s preferences. Keep in mind that the software program settings take priority over driver settings, which take priority over the control panel settings. If a single setting is not present in the software program, but is set in the driver, the driver setting overrides the control panel settings.

Note HP Web Jetadmin can override media types and sizes in certain conditions. See the *HP LaserJet 9500 Series Printer User Reference Guide* for more information.

Clearing jams

Note Open and close all of the printer covers to clear control panel message. After removing a sheet of media, you might need to check other areas for the presence of other media.

All portions of a jammed piece of media must be removed or you might experience repeated jams.

If the jam persists, make sure that you have located and removed all scraps of media from inside the printer.

Clearing repeated jams

1. Make sure that the media is loaded correctly in trays and that all width guides are set correctly (not skewed).
2. Try turning over the stack of media in the tray. If you are using letterhead media, try printing from a different tray.
3. Do *not* use previously printed media or torn, worn, or irregular media.
4. Check the media specifications. If it is outside of the recommended specifications, problems might occur. See the *HP LaserJet Printer Family Print Media Guide.*
5. The printer might be dirty. See “Cleaning the printer and accessories” on page 102.

Tests for troubleshooting paper-path problems

The following tests are useful in troubleshooting paper-path and media-related problems.

Print stop test

See “Print stop test” on page 349 for more information.

Paper-path test

See “Paper-path test (and automatic sensors test)” on page 338 for more information.

Sensor test

See “Sensor test (interactive)” on page 339 for more information.

Tray alignment adjustment

Use this menu item to adjust the front-to-back (duplex) alignment of the four margins.

1. Press ✓ or MENU (MFP version) to open the menus.
2. Use ▲ or ▼ to scroll to CONFIGURE DEVICE, and then press ✓.
3. Use ▲ or ▼ to scroll to PRINT QUALITY, and then press ✓.
4. Use ▲ or ▼ to scroll to SET REGISTRATION, and then press ✓.
5. Follow the printed instructions.

Noise-troubleshooting tools

Try to isolate the origin of the noise by using the various hardware diagnostics and component tests on page 337. Each component test (such as motors, solenoids, and clutches) can be run individually to see if the noise is associated with a particular component part.

Try to determine when the noise occurs by printing from different input sources, changing the duplex option, and selecting a different tray. This might isolate the noise to a particular part or stage in the printing process.

Note It is normal for the fuser to make a cracking or popping noise when the printer is turned on and off. This sound results from the fuser rollers separating when the printer is turned off and pressurizing when the printer is turned on. The sound might also occur after a media jam. The fuser rollers separate when the printer is turned off and after a jam to avoid flat spots on the fuser rollers and to facilitate clearing a jam.

Control panel messages for the HP LaserJet 9500 Series printer

Note See your *HP Scanner/ADF Service Manual for the HP LaserJet 9000mfp/9000Lmfp/9040mfp/9050mfp/9500mfp (*PN C8549-90955) for copy and ADF control-panel messages that are specific to the MFP version. Print-engine messages are the same for the printer and the MFP version.

Make sure to read the exact text of the control panel message, including the error message number and the text, in order to locate the error message in the error tables. This control panel stores enhanced information.

Messages that appear on the control panel provide six categories of information. Each message category is assigned a priority. If more than one condition occurs at the same time, the highest priority message appears. When it is cleared, the next priority message appears, and so on. The following are messages and their priorities:

- **Status messages**—Status messages communicate the current state of the printer. Whenever the printer is ready and online, the printer status message READY appears unless warning messages are pending. When the printer is performing a task, such as a reset or a test, the associated printer status message appears. When the task is complete, the message returns to READY or PAUSED, depending on the current state of the printer.
- **Warning messages**—Warning messages are messages that are important enough that the user must acknowledge them, but not serious enough to cause the printer to stop the printing process. They are usually transient in nature but they can affect the output, and so a record of their occurrence is important. Warnings generally alternate with the READY (or PAUSED) status message and remain on the control panel until the user presses ✓. Warnings appear in most-recent order (FIFO) with duplicates removed.
- **Error messages**—Error messages communicate to the customer that some action must be performed, such as adding media or clearing a jam. Some errors are considered auto-continuable, because the error message appears on the control panel for 10 seconds, and then the printer clears the message and continues normal operation. Pressing a control panel key during the 10-second period cancels the auto-continue feature and initiates the function of the key that was pressed. Error messages are limited to 19 seven-bit characters (or 9 two-byte characters) per line up, and to two lines. Unlike status and warning messages, error messages stop the printing process. The customer has to either fix the problem or give the printer a different command. If the customer can continue past the error conditions without actually fixing the problem, then the customer should be able to perform the task by pressing ✓. If only one option is available when the customer presses ✓, printing should continue by applying the option shown. If more than one option is available when the customer presses ✓, the options are listed with the most logical option listed first and highlighted.
- **Critical error messages**—Critical error messages communicate printer failures to the customer. Generally, turning power off and then on is required for the printer to resume normal operation. If the critical error persists, the printer might requires service and the customer must request a service call. Critical errors are not auto-continuable.
- **Output device warning messages**—These messages are similar to the warning messages described previously, except that they relate to the output device. By default, the message is all that appears if the output device does not provide any additional help. The prompt at the bottom of the control panel does not appear.
- **Output device error messages**—These messages are similar to the error messages that are described above, except that they relate to the output device. By default, the message is all that appears if the output device does not provide any additional help. The prompt at the bottom of the control panel does not appear.

Control panel and event log message format

The control panel messages have the following format:

- `13.XY.ZZ JAM INSIDE DUPLEXER`
- `40 EIO X BAD TRANSMISSION`

The equivalent event log messages have the following format:

- 3 0 13.xy.zz JAM INSIDE DUPLEXER
- 1 0 40.00.00 0 EIO X BAD TRANSMISSION

Note Print a configuration page to identify the input or output device that is configured. Notice that the error format only identifies the Jet-Link device number and the device type; it does not identify the input or output device.

Event log page

Use the event log to diagnose and troubleshoot printer errors and intermittent failures. You can print or show the event log from the control panel (select `PRINT EVENT LOG` or `SHOW EVENT LOG`).

The event log is a first in, first out (FIFO) ordered listing of the last 50 events. The printed event log is printed in four columns that show event number, page count, error code, and description or personality. The description or personality gives detail to the error messages. This information is more useful for troubleshooting.

The following items are tracked and shown on the event log:

- critical errors (some errors that do not appear on the control panel)
- jams
- sensors sensing out of range
- unexpected media size
- complex pages
- buffer overflow

Print an event log

The printer internal event log stores the 50 most recent events, and can be printed at any time. To print the event log:

1. Press ✓ or MENU (MFP version) to open the menus.
2. Use ▲ or ▼ to scroll to `DIAGNOSTICS`, and then press ✓.
3. Use ▲ or ▼ to scroll to `PRINT EVENT LOG`, and then press ✓.
4. The event log prints. The message `PRINTING EVENT LOG` appears on the control panel.

Show an event log

Using the event log that appears on the control panel, the customer can scroll through the contents of the event log from the control panel. Select this to show the 50 most recent events, with the most recent listed first. Use ▲ or ▼ to scroll through the event log contents. If the event log is empty, the message EVENT LOG EMPTY appears on the control panel.

Follow these steps to show the event log:

1. Press ✓ or MENU (MFP version) to open the menus.
2. Use ▲ or ▼ to scroll to DIAGNOSTICS, and then press ✓.
3. Use ▲ or ▼ to scroll to SHOW EVENT LOG, and then press ✓.
4. The event log appears on the control panel.

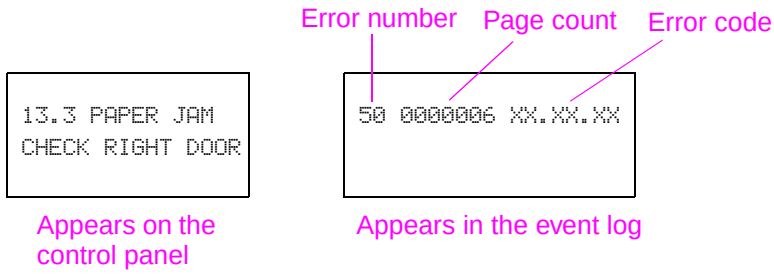


Figure 307. **Example of events on the event log**

Hint

Whenever a 13.XX message appears on the control panel, a good practice is to clear the jammed media from the printer, press PAUSE/RESUME to stop printing, and print the event log. Even if you cannot print the event log, you can read it on the control panel by using the above steps to display an event log.

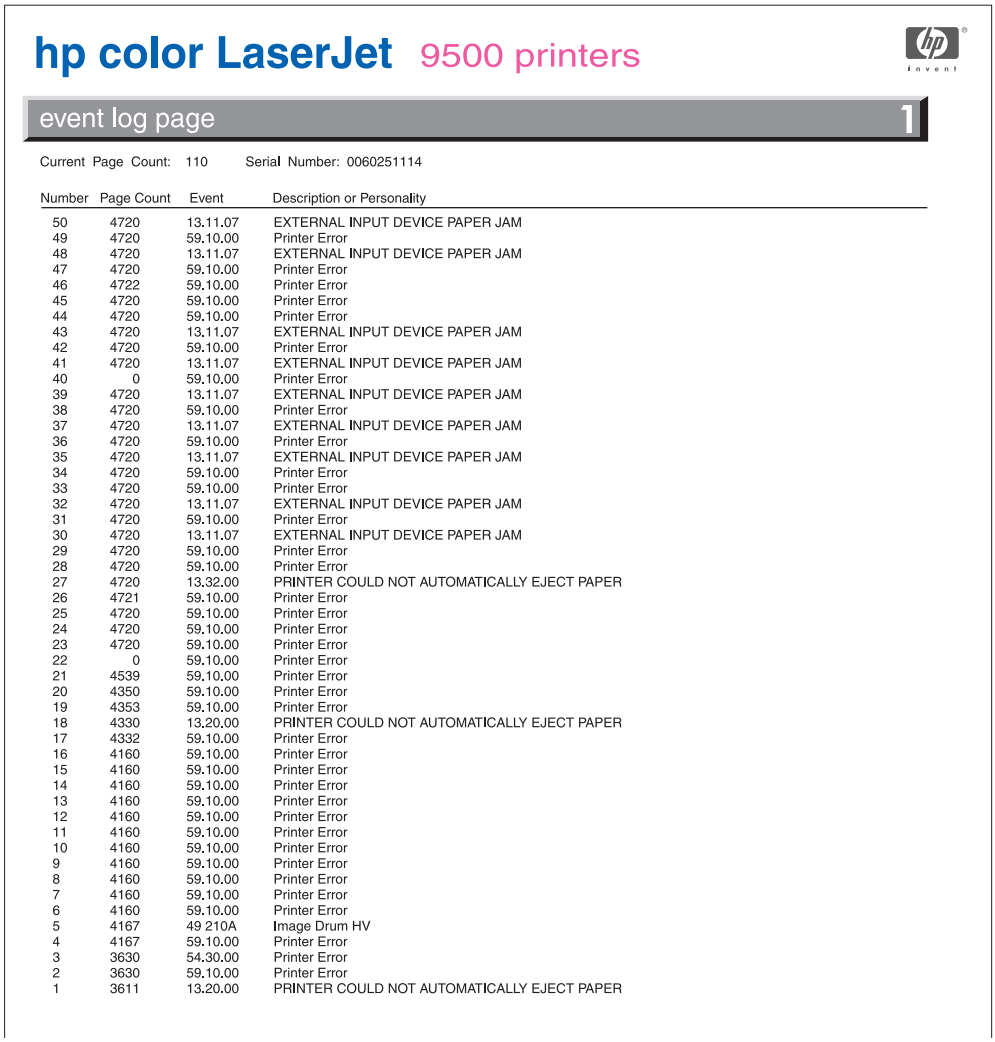
Interpret an event log

Each individual entry in the log is called an “event,” while all errors occurring at the same page count are called an event.

Use the numerical error message table to associate errors in the event log with the control panel error message. For each error or event, follow the recommended action that is listed in the numerical error message table starting on page 431.

1. Check the event log for specific error trends in the last 10,000 printed pages.
2. Ask the customer for any observed error trends. (For example, do jams tend to occur in a specific area of the printer?)
3. Record any specific error trends.

Sample event log page



hp color LaserJet 9500 printers

event log page 1

Current Page Count: 110 Serial Number: 0060251114

Number	Page Count	Event	Description or Personality
50	4720	13.11.07	EXTERNAL INPUT DEVICE PAPER JAM
49	4720	59.10.00	Printer Error
48	4720	13.11.07	EXTERNAL INPUT DEVICE PAPER JAM
47	4720	59.10.00	Printer Error
46	4722	59.10.00	Printer Error
45	4720	59.10.00	Printer Error
44	4720	59.10.00	Printer Error
43	4720	13.11.07	EXTERNAL INPUT DEVICE PAPER JAM
42	4720	59.10.00	Printer Error
41	4720	13.11.07	EXTERNAL INPUT DEVICE PAPER JAM
40	0	59.10.00	Printer Error
39	4720	13.11.07	EXTERNAL INPUT DEVICE PAPER JAM
38	4720	59.10.00	Printer Error
37	4720	13.11.07	EXTERNAL INPUT DEVICE PAPER JAM
36	4720	59.10.00	Printer Error
35	4720	13.11.07	EXTERNAL INPUT DEVICE PAPER JAM
34	4720	59.10.00	Printer Error
33	4720	59.10.00	Printer Error
32	4720	13.11.07	EXTERNAL INPUT DEVICE PAPER JAM
31	4720	59.10.00	Printer Error
30	4720	13.11.07	EXTERNAL INPUT DEVICE PAPER JAM
29	4720	59.10.00	Printer Error
28	4720	59.10.00	Printer Error
27	4720	13.32.00	PRINTER COULD NOT AUTOMATICALLY EJECT PAPER
26	4721	59.10.00	Printer Error
25	4720	59.10.00	Printer Error
24	4720	59.10.00	Printer Error
23	4720	59.10.00	Printer Error
22	0	59.10.00	Printer Error
21	4539	59.10.00	Printer Error
20	4350	59.10.00	Printer Error
19	4353	59.10.00	Printer Error
18	4330	13.20.00	PRINTER COULD NOT AUTOMATICALLY EJECT PAPER
17	4332	59.10.00	Printer Error
16	4160	59.10.00	Printer Error
15	4160	59.10.00	Printer Error
14	4160	59.10.00	Printer Error
13	4160	59.10.00	Printer Error
12	4160	59.10.00	Printer Error
11	4160	59.10.00	Printer Error
10	4160	59.10.00	Printer Error
9	4160	59.10.00	Printer Error
8	4160	59.10.00	Printer Error
7	4160	59.10.00	Printer Error
6	4160	59.10.00	Printer Error
5	4167	49 210A	Image Drum HV
4	4167	59.10.00	Printer Error
3	3630	54.30.00	Printer Error
2	3630	59.10.00	Printer Error
1	3611	13.20.00	PRINTER COULD NOT AUTOMATICALLY EJECT PAPER

Figure 308. **Sample event log page**

Error message interpretation

Note For copy, scan, and ADF-related error message that appear on the control-panel display of an MFP, see chapter 7 in the *HP Scanner/ADF Service Manual for the HP LaserJet 9000mfp/9000Lmfp/ 9040mfp/9050mfp/9500mfp* (PN C8549-90955). Print-engine error messages are the same for the printer and the MFP version.

Messages appear on the control panel to indicate printer operation errors. Within the groupings listed below, the alphabetical error messages are listed first, followed by the numerical error messages.

Note Make sure to check all of the connections and the connectors if an error message appears soon after repairing the printer.

Perform the following steps if a message appears that is not listed in this section:

- turn the printer off, and then turn the printer on again
- make sure that the newest DC controller, formatter, and paper-handling firmware are loaded in the printer
- perform an engine test (page 350) without the formatter installed to isolate the problem to the engine or the formatter

Alphabetical error messages for the HP LaserJet 9500 Series printer

Note For copy, scan, and ADF-related error message that appear on the control-panel display of an MFP, see chapter 7 in the *HP Scanner/ADF Service Manual for the HP LaserJet 9000mfp/9000Lmfp/ 9040mfp/9050mfp/9500mfp* (PN C8549-90955). Print-engine error messages are the same for the printer and the MFP version.

Table 76. Alphabetical error messages

Message	Description or explanation	Recommended action
ACCESS DENIED MENUS LOCKED	• The printer control panel function that you are trying to gain access to is locked to prevent unauthorized access.	• See the network administrator for the correct password.

Table 76. Alphabetical error messages (continued)

Message	Description or explanation	Recommended action
BAD DUPLEXER CONNECTION	• The duplexer is not connected correctly to the printer.	**1** Turn the printer off and remove the duplexer. **2** Make sure that the duplexer is for the HP color LaserJet 9500 (there should *not* be a fan installed in the duplexer). **3** Turn the printer on and check for other error messages. **4** Check the electrical contacts on the duplexer and on the printer for damage or obstructions. **5** Turn the printer off. **6** Reinstall the duplexer and then turn the printer on again. **7** If the error persists, check connector J124 on the DC controller PCA. **8** Check connector J1 on the low-voltage power supply, J201 and J202 on the high-voltage power supply, J608 and J612 on the P driver PCA, and J806 on the T driver PCA. **9** Replace the duplexer.
<BINNAME> FULL	• The specified bin is full and must be emptied for printing to continue. This should be considered a warning if a job is not pending for output to the full bin. When a job is sent to the full bin, it becomes an error.	**1** Empty the bin to continue printing. **2** If the bin is empty, inspect the tray-full sensor flag for damage. Also, make sure that the flag moves smoothly. **3** Check connector J901 on the face-down delivery PCA, and connector J821 on the DC controller PCA.
CHECKING PAPER PATH	• The engine is rotating its rollers to check for possible jams and to clear them automatically.	• No action is necessary.

Table 76. Alphabetical error messages (continued)

Message	Description or explanation	Recommended action
CHECKING PRINTER	• The engine is performing an internal test.	1 No action is usually necessary. 2 If the printer stops when the message CHECING PRINTER appears, turn the printer off and then turn the printer on again. Also, perform the following: • Check the entire paper path for residual media, and remove any media that is found. • Check the paper-path sensors for correct movement and functionality. • Turn the printer off, remove all optional devices (such as EIOs, extra memory, finishing devices, and high-capacity inputs), and then turn the printer on again. • Perform an engine test (see "Engine-test-print page" on page 350) without the formatter installed to isolate the problem to the engine or to the formatter.
CHOSEN PERSONALITY NOT AVAILABLE alternates with READY	• A print job requested a printer language (personality) that is not available with this printer. The job is not printed and is cleared from memory.	• Print the job by using a printer driver for a different printer language, or add the requested language to the printer (if available).
CLEAN POST CHARGER	• The post charger requires cleaning. • This warning message is prompted when the REPLACE BLACK CARTRIDGE message is cleared and the black cartridge count is reset. Printing should continue when this message appears. • When the user opens the upper right door or cycles power when this message appears, the control panel should pop to the menu item CHARGER CLEANED in the RESETS submenu.	1 Clean the post charger. See "Cleaning the post charger" on page 104 in chapter 4. 2 Select YES when prompted about having cleaned the post charger.
CLEARING PAPER PATH	• The printer jammed, or the printer is turned on and media is detected in the printer path. The printer is automatically attempting to eject the pages.	• No action is necessary.

Table 76. Alphabetical error messages (continued)

Message	Description or explanation	Recommended action
CLOSE FRONT OR LOWER LEFT DOOR	• The front left or left side lower doors are open.	**1** Close the front left or the left side lower doors to continue printing. **2** If the door was open when the printer was turned on, close the door, turn the printer off, and then turn the printer on again. **3** Make sure that the interlock switch and the sensor flag are functioning correctly. Replace them if necessary. **4** Check connector J1701L on the left door switch, intermediate connector J3018, and connector 821 on the T driver PCA.
CLOSE FRONT OR UPPER RIGHT DOOR	• The front or upper right doors are open.	**1** Close the right front or the right side upper door to continue printing. **2** If the door was open when the printer was turned on, close the door, turn the printer off, and then turn the printer on again. **3** Make sure that the interlock switch and the sensor flag are functioning correctly. Replace them if necessary. See “Right door switch (front and right side doors)” on page 312. **4** Check connector J1701R on the right door switch, intermediate connector J3085, and connector 809 on the T driver PCA.
CLOSE LOWER RIGHT DOOR	• The right side lower door is open.	**1** Close the right side lower door to continue printing. **2** If the door was open when the printer was turned on, close the door, turn the printer off, and then turn the printer on again. **3** Make sure that the interlock switch and the sensor flag are functioning correctly. Replace them if necessary. See “Right door switch (front and right side doors)” on page 312. **4** Check connector J1041 on the pickup PCA, intermediate connector J3000, and connector J118 on the DC controller PCA.

Table 76. Alphabetical error messages (continued)

Message	Description or explanation	Recommended action
CLOSE UPPER LEFT DOOR	• The left side upper door is open.	**1** Close the left side upper door to continue printing. **2** If the door was open when the printer was turned on, close the door, turn the printer off, and then turn the printer on again. **3** Make sure that the interlock switch and the sensor flag are functioning correctly. Replace them if necessary. **4** Check connector J3017 on the upper left door switch, intermediate connector J3016, and connector J821 on the T driver PCA.
DETECTABLE SIZE IN TRAY X RECOMMEND MOVE SWITCH TO STANDARD	• A tray is loaded with standard-size media, and the switch in the tray is set to custom.	**1** Move the switch to the standard position. **2** Make sure that the media guides are against the media.
DISK DEVICE FAILURE alternates with READY	• The EIO hard disk had a critical failure and can no longer be used.	**1** Turn off the printer. **2** Remove and reinstall EIO hard disk. **3** Turn the printer on again. **4** If the error persists, replace the EIO hard disk.
DISK FILE OPERATION FAILED alternates with READY	• The requested operation could not be performed. You might have attempted an illegal operation, such as trying to download a file to a nonexistent directory.	**1** Check the file name and try again. **2** Check the driver settings to see if any job retention features are selected.
DISK FILE SYSTEM IS FULL alternates with READY	• The disk file system has reached its maximum capacity.	• Delete files from the EIO hard disk and then try again. Using the control panel, delete stored jobs that are not needed. **Note** HP Web Jetadmin can also be used to delete files and fonts.
DISK IS WRITE PROTECTED alternates with READY	• The disk device is protected and no new files can be written to it.	• Fonts and forms cannot be stored on the disk when the disk is write-protected. Use the Windows-based HP Web Jetadmin or the Macintosh-based HP LaserJet Utility to remove the write protections from the disk.
EIO DISK X SPINNING UP	• The EIO hard disk in slot X is spinning up its platter.	• No action is necessary.
EVENT LOG EMPTY	• The user is attempting to view an empty event log by selecting SHOW EVENT LOG from the control panel.	• No action is necessary.
FLASH DEVICE FAILURE alternates with READY	• The flash DIMM had a critical failure and can no longer be used.	• Remove the flash DIMM and replace it with a new one.

Table 76. Alphabetical error messages (continued)

Message	Description or explanation	Recommended action
FLASH FILE OPERATION FAILED alternates with READY	• The requested operation could not be performed. You might have attempted an illegal operation, such as trying to download a file to a nonexistent directory.	• Check the file name and try again.
FLASH FILE SYSTEM IS FULL alternates with READY	• The flash disk or file system has reached maximum capacity.	**1** Delete files from the flash DIMM or the EIO hard disk, and then try again. **2** Use HP Web Jetadmin to download or delete files and fonts (see the download utility help for more information). **3** Using the control panel, delete stored jobs that are not needed.
FLASH IS WRITE PROTECTED alternates with READY	• The flash file is protected, and no new files can be written to it.	• Use an unprotected file.
INCORRECT PIN	• The wrong PIN is used.	• Return to the previous screen and retype the PIN.
INSERT OR CLOSE TRAY X	• The specified tray is missing or open.	**1** Close or insert the specified tray to continue printing. **2** If the error appears when the tray is installed correctly, check connector J52 for tray 2, connector J54 for tray 3, intermediate connector J3001, and connector J120 on the DC controller PCA.
INSTALL CLEANER	• The cleaner is not installed or is not installed correctly.	**1** Make sure that the transfer cleaner is installed correctly and that the cleaning kit is within life specifications. **2** Remove and reseat the cleaner and the toner collection bottle. **3** Open the front doors and lightly tap on the waste toner bottle. Close the front doors and check to see if the error goes away. **4** Make sure that the front doors are completely closed. **5** If the error persists, check the sensor flag mechanism in the toner collection bottle to make sure that it moves correctly. **6** Replace the cleaning kit. **7** Check connectors J1403, J1402, and J1401 on the waste sensor assembly; intermediate connector J3081; and connector J821 on the T driver PCA. **8** Replace the waste sensor assembly.

Table 76. Alphabetical error messages (continued)

Message	Description or explanation	Recommended action
INSTALL TRANSFER BELT	• The ITB is not installed or cannot be detected.	**1** Open the front doors, lower the green lever, and then remove and reseat the ITB. **2** Check the connector on the right side of the ITB for damage. Replace the ITB if necessary. **3** Check the harness and the connectors that support the ITB fan and the thermistor (J3022), and check connector J131 on the DC controller.
INSTALL TRANSFER ROLLER	• The secondary transfer roller is not installed, or there is a problem when it is lifted into position.	**1** Make sure that the secondary transfer roller is installed correctly. Reseat the secondary transfer roller is necessary. **2** Defeat the front door interlocks and check the secondary transfer roller for correct up and down movement. **3** Check for continuity from the secondary transfer assembly high-voltage contacts to the high-voltage power supply. **4** Check connector J3036 on the registration motor (M11) and connector J117 on the DC controller. **5** Check FFC J107 on the DC controller to J204 on the HVPS. **6** Check the four lift arms on the secondary transfer assembly for bonds or damage that might inhibit correct movement up. Repair or replace the lift arms if necessary. **7** Check the secondary transfer clutch (CL3) for correct functionality, and check connectors J3030, J3026, and J121 on the DC controller. **8** Replace the secondary transfer assembly.

Table 76. Alphabetical error messages (continued)

Message	Description or explanation	Recommended action
LOAD TRAY X [TYPE] [SIZE] alternates with TO USE ANOTHER TRAY PRESS ✓	• A job is sent that requires a specific type and size of media that is not available, or the tray-size detection mechanism failed.	**1** Make sure that the requested size and type of media is loaded correctly into the specified tray. **2** Press ✓ to use a type and size of media that is available in another tray. **3** For tray 2, check connectors J52 and J3023 on the tray 2 media detection switch. **4** For tray 3, check connectors J54 and J3024 on the tray 3 media detection switch. **5** Check intermediate connectors J3001, J3076, and J3077; and connectors J120 and J122 on the DC controller PCA. **6** Check the upper and lower cassette paper-width and length-detection switches for correct operation. Replace the switches if necessary. **7** Replace the DC controller PCA. See "DC controller" on page 300.
MANUALLY FEED [TYPE] [SIZE] alternates with TO CONTINUE PRESS ✓	• The printer is waiting for media to be loaded in tray 1 for a manual feed.	**1** Load the requested media into tray 1. Make sure that the media is loaded all the way into the tray. **2** To override the error, press ✓ if the media you want is available in another tray. **3** Press ✓ to use a type and size that is available in another tray. **4** If the media is loaded in tray 1 but is not detected, check the tray 1 sensor flag for correct operation. **5** Check connector J3005 on the tray sensor, intermediate connectors J3004 and J3002, and connector J119 on the DC controller PCA. **6** Replace the DC controller PCA. See "DC controller" on page 300.
NO JOB TO CANCEL	• The CANCEL JOB button (STOP) was pressed, but there is no active job or buffered data to cancel. • The message appears for approximately two seconds before the printer returns to the READY state.	• No action is necessary.

Table 76. Alphabetical error messages (continued)

Message	Description or explanation	Recommended action
NON-HP CARTRIDGE DETECTED	• This message appears when a new print cartridge is installed and it is not a HP print cartridge. It is either a refilled cartridge or a cartridge made by another manufacturer. This message appears until the user installs a genuine HP print cartridge or presses the override key (CANCEL JOB or STOP). The NON-HP CARTRIDGE IN USE message appears for approximately 30 seconds.	**1** Remove and replace the indicated print cartridge, and make sure that genuine HP print cartridges are installed. If the print cartridges are not HP print cartridges, replace them with genuine HP print cartridges. **2** Press CANCEL JOB (STOP) to continue printing. **Note** Moving a print cartridge that is reporting a low or out condition to another printer might cause the print cartridge to report as a non-HP print cartridge. **3** Check connectors J16, J17, J18, and J19 on the print cartridge antenna units, and connectors J1006, J1007, J1008, and J1009 on the T driver PCA. **4** Check the e-label on the print cartridge, and check the antenna unit. Replace the print cartridge if you suspect a faulty e-label. **5** Replace the T driver PCA. See "T-crg (print cartridge) drive assembly" on page 296. **6** Replace the DC controller PCA. See "DC controller" on page 300.
RAM DISK DEVICE FAILURE alternates with READY	• The RAM disk had a critical failure and can no longer be used.	• Turn the printer off, and then turn the printer on again to clear the error.
RAM DISK FILE OPERATION FAILED alternates with READY	• The requested operation could not be performed. You might have attempted an illegal operation, such as trying to download a file to a nonexistent directory.	**1** Try again with a different file or directory. **2** Check the driver settings to see if any job retention features are selected.
RAM DISK FILE SYSTEM IS FULL alternates with READY	• The RAM disk has reached maximum capacity.	**1** Delete files and then try again, or turn the printer off and then turn the printer on again to delete all of the files on the device. (Delete files using HP Web Jetadmin, another software utility, or from the control panel. See the Help for more information.) **2** If the error persists, increase the size of the RAM disk and change the RAM disk size from the CONFIGURE DEVICE menu at the control panel.

Table 76. Alphabetical error messages (continued)

Message	Description or explanation	Recommended action
RAM DISK IS WRITE PROTECTED alternates with READY	• The RAM disk is protected, and no new files can be written to it.	• No action is necessary.
REINSTALL TRANSFER ROLLER	• The secondary transfer roller is not installed, or there is a problem when it lifts into position.	• See See “Transfer roller” on page 207.
REMOVE AND SHAKE <COLOR> CARTRIDGE	• The T-crg (print cartridge) motor cannot turn the indicated print cartridge.	**1** Remove and check the indicated print cartridge and the printer side for damaged drive linkages. Shake the print cartridge a few times, reseat the print cartridge, turn the printer off, and then turn the printer on again. Replace the print cartridge or the drive linkages if necessary. **Note** Make sure that the print cartridges, when stored, were not exposed to high temperatures. **2** Check connector 814 on the T driver PCA. **3** Check color-appropriate connections near the motor: • K: J3046 • C: J3047 • M: J3048 • Y: J3049 **4** Replace the T driver PCA. See “T-crg (print cartridge) drive assembly” on page 296. **5** Replace the DC controller PCA. See “DC controller” on page 300.
RESEND UPGRADE	• An error exists in the printer firmware upgrade.	• Resend a valid firmware image.
ROM DISK DEVICE FAILURE alternates with READY	• The ROM disk had a critical failure and cannot be used.	• Turn the printer off, and then turn the printer on again to clear the error.
ROM DISK FILE OPERATION FAILED alternates with READY	• The requested operation could not be performed. You might have attempted an illegal operation, such as trying to download a file to a non-existent directory.	• No action is necessary.
ROM DISK FILE SYSTEM IS FULL alternates with READY	• The ROM disk reached its maximum capacity.	• Delete files and then try again, or turn the printer off and then turn the printer on again to delete all of the files on the device. (Delete files by using HP Web Jetadmin, another software utility, or the control panel. See the Help for more information.)
ROM DISK IS WRITE PROTECTED	• The ROM disk is protected, and no new files can be written to it.	• Try using a new disk that is not write protected.

Table 76. Alphabetical error messages (continued)

Message	Description or explanation	Recommended action
ROTATE PAPER IN TRAY X alternates with READY	• Tray X is loaded with letter or A4 media in the portrait orientation, but the job that used the tray did not specify booklet-making. • The media in tray X needs to be rotated.	**1** Rotate the media or change the booklet-making option for the job. (The printer will not print until this step is followed.) **2** If the media is landscape, the printer continues printing, but a message appears on the control panel that the print job prints faster if the media is rotated. **3** For tray 2, check connectors J52 and J3023 on the tray 2 media-detection switch. **4** For tray 3, check connectors J54 and J3024 on the tray 3 media-detection switch. **5** Check intermediate connectors J3001, J3076, J3077, and connectors J120 and J122 on the DC controller PCA. **6** Check the tray 2 and tray 3 media-width and length-detection switches for correct operation. Replace the switches if necessary. **7** Replace the DC controller PCA. See "DC controller" on page 300.
SIZE MISMATCH TRAY=[SIZE]	• Tray X is loaded with media that is longer or shorter in the feed direction than the size configured for the tray.	• Reconfigure the tray or move the media to a tray configured for that size.
TRAY X EMPTY [TYPE] [SIZE]	• Tray X is detected as empty.	**1** Load media into tray X. **2** Reseat the media in tray X. **3** Check the lifter gear of the paper pickup unit for damage. Replace the lifter gear or paper pickup unit if necessary. **4** Check connector J11 and J13 on the lifter motor, intermediate connector J3001, and connector J120 on the DC controller PCA. **5** Check the media detection flag for damage or obstructed movement. **6** Adjust or replace the paper pickup unit if necessary. **7** Replace the DC controller PCA. See "DC controller" on page 300.
TRAY X OPEN alternates with READY	• The specified tray is open or is not closed completely.	**1** Close the specified tray. **2** If this error appears with the tray installed correctly, check connector J52 for tray 2, connector J54 for tray 3, intermediate connector J3001, and connector J120 on the DC controller PCA.

Table 76. Alphabetical error messages (continued)

Message	Description or explanation	Recommended action
TRAY X SIZE=*SELECTED SIZE alternates with TO CHANGE, MOVE SWITCH IN TRAY X	• The custom switch is in the standard position, and a custom value from the menu is selected.	• Move the switch to the custom position or reset the menu value to a standard size.
TYPE MISMATCH TRAY X=[TYPE]	• The printer detected a different type of media in the paper path coming from the tray (X) than the type of media that is specified for the tray.	**1** Make sure that the correct media is loaded in the tray. **2** Check the driver settings to make sure that the expected media type is selected. This setting must match the setting in step 3. **3** Check the media-type settings at the control panel to make sure that the printer is set for the media type that is in the tray. **4** See the printer software online help for more information.
UNABLE TO MOPY JOB	• A job cannot be mopied because of a memory, disk, or configuration problem. Only one copy is produced.	**1** The disk might be full. Try removing unneeded files from the disk. **2** Uncheck the hard disk in the driver.
UNABLE TO STORE JOB	• A job cannot be stored on the printer because of a memory, disk, or configuration problem.	**1** The disk might be full. Try removing unneeded files from the disk. **2** Uncheck the hard disk in the driver.

Numerical error messages for the HP LaserJet 9500 Series printer

Note For copy, scan, and ADF-related error message that appear on the control-panel display of an MFP, see chapter 7 in the *HP Scanner/ADF Service Manual for the HP LaserJet 9000mfp/9000Lmfp/ 9040mfp/9050mfp/9500mfp* (PN C8549-90955). Print-engine error messages are the same for the printer and the MFP version.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer

Message	Explanation	Recommended action
`10.XX.YY SUPPLIES ERROR` **Note** Replacing the image drum might correct the problem temporarily because the drum contains toner for about 50 pages. If the problem reoccurs after the image drum is replaced, check the print cartridge or the toner delivery system. **Note** The consumables gas gauge and supplies status menu are always updated to indicate all supplies with a supplies memory error, even though the message refers to a single supply. **Note** If a drum or cartridge reached a “low” or “out” condition and was moved to a different printer, it might be reported as a `NON HP SUPPLY`.	• The printer cannot read or write to at least one print cartridge or image drum memory tag, or at least one memory tag is missing. XX description 00 = e-label memory data error 10 = e-label memory is missing 20 = refilled, non-HP supply (only appears in the event log) 30 = cloned cartridge/supply (only appears in the event log) 90 = toner replenishment malfunction reported by the image drum YY description 00 = black print cartridge 01 = cyan print cartridge 02 = magenta print cartridge 03 = yellow print cartridge 05 = black image drum 06 = cyan image drum 07 = magenta image drum 08 = yellow image drum When a `10.20.YY` or `10.30.YY` error occurs, a question mark is placed on the gas gauge of the supply or supplies with the error. These errors are noted in the event log and `NON HP SUPPLY IN USE` appears on the control panel. If multiple supplies have this error, a `10.XX.YY` error is displayed for the first supply detected with the error. When the error corresponding to the first supply is resolved, another `10.XX.YY` error is displayed for the next supply. (Continues for all supplies errors) **Note** 00 = memory data error might be caused when using non-HP supplies.	**1** In the instance of 10.00, 10.20 and 10.30 errors, check if refilled cartridges or drums are used. Replace them with HP consumables. **2** Turn the printer off, and then turn the printer on. **3** Replace the indicated supply. **4** Check the print cartridge or image drum e-label indicator for damage. Replace the print cartridge or the image drum if necessary. **5** For print cartridges, check: • connectors J16, J17, J18, and J19 on the antenna PCAs. • connectors J1001, J1006, J1007, J1008, and J1009 on the memory controller PCA. • connector J802 on the T driver PCA. **6** For image drums, check: • connectors J12, J13, J14, and J15 on the antenna PCAs. • connectors J1001, J1002, J1003, J1004, and J1005 on the memory controller PCA. • connector J802 on the T driver PCA. **7** Replace the antenna PCA for the indicated cartridge or drum. **8** Replace the T driver PCA. See chapter 6. **9** Replace the DC controller PCA. See “DC controller” on page 300. • In the instance of a 10.90.YY error, the image drum is reporting toner concentration-to-carrier is very low. This error might occur when non-HP supplies are used. Make sure that the toner delivery system and shutters are functioning correctly.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
13.01.00 JAM INSIDE LOWER RIGHT DOOR or 13.01.00 JAM IN TRAY X	• A media delay jam occurred in the paper pickup area. • The media did not reach the tray 2 delivery sensor B (SR12) or the tray 3 delivery sensor B (SR14) within the specified time. • If this error reoccurs, it is a 13.01.00 JAM IN TRAY X error.	**1** Remove the media from the lower right door, tray 2 and tray 3, and the upper right door (ITB access) if necessary. **2** Check the tray-size guides for correct settings. **3** Check the tray 2 delivery sensor B and the tray 3 delivery sensor B (SR12 and SR14; see "Paper-path jam sensors" on page 403) for correct functionality, and check the supporting connectors to the DC controller PCA. **4** Replace the pick and feed rollers if necessary. **5** Replace the PIU.
13.03.00 JAM INSIDE UPPER RIGHT DOOR or 13.03.00 JAM INSIDE LOWER RIGHT DOOR	• A media delay jam occurred in the registration area. • The media from any input source did not reach the registration sensor (SR3) within the specified time. • If this error reoccurs, it is a 13.03.00 JAM INSIDE LOWER RIGHT DOOR error.	**1** Remove the media from the tray 1/registration area. **2** Check that the tray 1 assembly is aligned and closes correctly. **3** Check the registration sensor (SR3; see "Paper-path jam sensors" on page 403) for correct functionality, and check the supporting connectors to the DC controller PCA.
13.05.00 FUSER JAM LOWER LEFT DOOR or 13.05.00 JAM INSIDE FRONT DOOR	• A media delay jam occurred before the fuser. The media did not reach the fuser output sensor (PS1501) within the specified time. • If this error reoccurs, it is a 13.05.00 JAM INSIDE FRONT DOOR error.	**1** Remove the jammed media from the ITB and the fuser area through the lower/left door or the front doors. Removing the fuser and ITB might be helpful. **2** Check the fuser output sensor (PS1501; see "Paper-path jam sensors" on page 403) and its flag for correct functionality, and check the supporting connectors to the DC controller PCA.
13.06.00 JAM INSIDE LOWER LEFT DOOR or 13.06.00 JAM INSIDE PAPER PATH	• A media stay jam occurred in the fuser. The media is detected at the fuser output sensor (PS1501) longer than the specified time. • If this error reoccurs, it is a 13.06.00 JAM INSIDE PAPER PATH error.	**1** Remove the jammed media from the fuser area through the lower/left door or the front doors. Removing the fuser might be helpful. **2** Check the fuser output sensor (PS1501; see "Paper-path jam sensors" on page 403) and its flag for correct functionality, and check the supporting connectors to the DC controller PCA.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
13.07.00 JAM INSIDE UPPER RIGHT DOOR	• A multifeed jam occurred. • Multiple pages, with a stack height of more than 0.5 mm, arrived at the multifeed sensor (SR5) on the registration assembly.	**1** Remove the media from the registration area. **2** Make sure that the media being used is within specifications, and that the correct media type settings for the media being used are set on the control panel. **3** Check the tray pickup and feed rollers. Replace the rollers if necessary. **4** Check the separation pad if the media is fed from tray 1. **5** Check the multifeed sensor (SR5; see “Paper-path jam sensors” on page 403) flag on the registration assembly for damage or binding. **6** Check the multifeed sensor (SR5; see “Paper-path jam sensors” on page 403) for correct functionality, and check the supporting connectors to the DC controller PCA. **7** Check connector J3101 near the multifeed sensor, intermediate connectors J3100 and J3037, and connector J121 on the DC controller PCA. **8** Replace the registration assembly. See “Registration assembly” on page 283. **9** Replace the DC controller PCA. See See “DC controller” on page 300.
13.09.00 JAM INSIDE LOWER LEFT DOOR or 13.09.00 JAM INSIDE UPPER LEFT DOOR	• A media delay jam occurred. • The media did not reach the face-down output sensor (PS901) within the specified time. • If this error reoccurs, it is a 13.09.00 INSIDE UPPER LEFT DOOR error.	**1** Remove the media from the fuser access area, the duplex diverter, or the face-down delivery area through the lower left or upper left doors. **2** Check the face-down and duplex diverters for correct functionality. **3** Check for deformed rollers. **4** Make sure that the upper and lower left doors are completely closed. **5** Check the face-down output sensor (PS901; see “Paper-path jam sensors” on page 403) for correct functionality, and check the supporting connectors to the DC controller PCA.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
13.0A.00 JAM INSIDE TOP OUTPUT BIN or 13.0A.00 JAM INSIDE UPPER LEFT DOOR	• A media stay jam occurred in the face-down tray. The printer detected that media is at the face-down output sensor longer than the specified time. • If this error reoccurs, it is a 13.0A.00 JAM INSIDE UPPER LEFT DOOR error.	1 Remove the media from the fuser access area, the duplex diverter, or the face-down delivery area through the left lower door and the left upper door. 2 Check the face-down sensor (PS901; see "Paper-path jam sensors" on page 403) for correct functionality, and check the supporting connectors to the DC controller PCA.
13.10.00 JAM INSIDE LOWER LEFT DOOR or 13.10.00 JAM INSIDE DUPLEXER	• A media stay jam occurred in the reversing area. • The media did not reach the duplexer media reverse sensor (SR33) within the specified time. • If this error reoccurs, it is a 13.10.00 JAM INSIDE DUPLEXER error.	1 Check for obstructions and residual media in the paper path in the post fuser and duplexer diverter area. 2 Make sure that the lower left door closes correctly. 3 Check the duplex diverter mechanism and the duplex diverter solenoid for correct functionality. 4 Check the duplexer media reverse sensor (SR33; see "Paper-path jam sensors" on page 403) for correct functionality. 5 Check the supporting connectors to the DC controller PCA.
13.11.XY JAM IN INPUT ACCESSORY	• Media is late from tray 4. **Note** XY can be 05, 06, 07, 08, 09, or 10.	1 Check for jammed media by opening tray 4 and opening the lower right door. 2 Check the paper-path transition between tray 4 and the print engine. 3 Check the tray-size guides for correct settings. 4 Replace the pickup rollers and the feed rollers if they are worn.
13.11.00 JAM INSIDE LOWER LEFT DOOR or 13.11.00 JAM INSIDE DUPLEXER	• A media stay jam occurred in the reversing area. • The duplexer reverse sensor (SR33) detects residual media beyond the specified time. • If this error reoccurs, it is a 13.11.00 JAM INSIDE DUPLEXER error.	1 Check for obstructions and residual media in the paper path in the post fuser and duplexer diverter area. 2 Make sure that the lower left door closes correctly. 3 Check the duplex diverter mechanism and the duplex diverter solenoid for correct functionality. 4 Check the duplexer reverse sensor (SR33; see "Paper-path jam sensors" on page 403) for correct functionality. 5 Check the supporting connectors to the DC controller PCA.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
13.11.05 JAM IN INPUT ACCESSORY	• A page is jammed in the paper path at the registration area. • A pickup delay jam occurred.	**1** Clear the jam in the indicated area. **2** Close the door so the printer attempts to clear the paper path. **3** Perform a paper-path test. **4** If the error persists, replace the paper pickup assembly.
13.11.06 PICKUP STATIONARY JAM	• A page is jammed in the pickup area of the input accessory.	**1** Clear the jam in the indicated area of the input device. **2** Remove the media from the right door of the printer engine.
13.11.07 JAM IN INPUT ACCESSORY	• A page is jammed in the right door area. • A page stopped in the registration area.	**1** Clear the jam in the indicated area. **2** Close the door so the printer attempts to clear the paper path. **3** If the error persists, replace the vertical transfer unit.
13.11.08 JAM IN INPUT ACCESSORY	• A page is jammed in the paper path at the vertical transfer unit registration area. • A paper delivery delay jam occurred.	**1** Clear the jam in the indicated area. **2** Close the door so the printer attempts to clear the paper path. **3** Make sure that the vertical transfer sensor is functional. **4** If the error persists, replace the vertical transfer sensor. **5** Replace the vertical transfer unit.
13.11.09 JAM IN INPUT ACCESSORY	• A page is jammed in the paper path at the right door area. • A paper delivery stationary jam occurred.	**1** Clear the jam in the indicated area. **2** Close the door so the printer attempts to clear the paper path. **3** Replace the paper path connection unit. **4** Replace the vertical registration assembly. **5** If the error persists, replace the diverter.
13.11.10 RESIDUAL JAM IN DELIVERY AREA	• A page is jammed in the delivery area when the power is turned on or when the front door is closed.	**1** Clear the jam. **2** Turn the printer off, and then turn the printer on again. **3** Replace the paper path connection unit. **4** Replace the vertical registration assembly.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
13.12.00 JAM INSIDE DUPLEXER	• A media delay jam occurred in the duplexer. • The media did not reach the duplexer media path sensor (SR31) within the specified time.	**1** Remove the duplexer and check for correct seating, residual media, or obstructions. **2** Check the inside of the duplexer and the duplex cavity for residual media or obstructions. **3** Check the duplexer side registration guides for free movement. Replace the duplexer if necessary. See "Duplexer" on page 258. **4** Check the feed rollers and the drive gear trains for damage. Replace them if necessary. **5** Check the duplexer media path sensor (SR31; see "Paper-path jam sensors" on page 403) for correct functionality, and check the supporting connectors to the DC controller PCA.
13.12.11 JAM IN LEFT ACCESSORY	• A staple jam exists in the stapling unit.	**1** Clear the jam. **2** Turn the printer off, and then turn the printer on again. **3** Test the staple sliding motor (M8). **4** Make sure that the stapler unit slides to the home position at power on. **5** Make sure that the staple cartridge is installed correctly. **6** Make sure that no damaged staples exist in the staple cartridge or in the stapler unit. **7** Test another staple cartridge. **8** Check all of the cable connections at the module and at the controller PCA. **9** Replace the stapler unit. **10** Replace the controller PCA.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
13.12.21 JAM IN LEFT ACCESSORY	• A jam (initial jam) exists in the flipper assembly.	**1** Clear the jam. **2** Turn the printer off, and then turn the printer on again. **3** Clean the optical entry sensor. **4** Make sure that the entry sensor moves freely, and run the sensor check mode to test the entry sensor. **5** Calibrate the flipping sensor D/A clear. **6** Activate the reverse motor (M9) to make sure that the motor activates the assembly. **7** Make sure that the paper guide wire is positioned correctly. **8** Replace the flipper assembly. **9** Replace the controller PCA.
13.12.22 JAM IN LEFT ACCESSORY	• A jam (stay jam) exists in the flipper assembly.	• Perform the steps for a 13.12.21 error.
13.12.23 JAM IN LEFT ACCESSORY	• A jam (delay jam) exists in the flipper assembly.	• Perform the steps for a 13.12.21 error.
13.12.31 JAM IN LEFT ACCESSORY	• A jam (initial jam) exists in the paper-path area.	**1** Make sure that the printer and the finishing device are installed on a flat, solid surface. **2** Make sure that the printer is processing media correctly. **3** Clear the jam. **4** Turn the printer off, and then turn the printer on again. **5** Replace the controller PCA. **6** Make sure that the media in use meets specifications. See “Media specifications” on page 37. **7** Replace the whole unit. **8** Replace the flipper assembly.
13.12.32 JAM IN LEFT ACCESSORY	• A jam (stay jam) exists in the paper-path area.	• Perform the steps for a 13.12.31 error.
13.12.33 JAM IN LEFT ACCESSORY	• A jam (delay jam) exists in the paper-path area.	• Perform the steps for a 13.12.31 error.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
13.12.34 JAM IN LEFT ACCESSORY	• A jam (ejectors jam) exists in the paper-path area.	**1** Clear the jam. **2** Turn the printer off, and then turn the printer on again. **3** Make sure that the stapled jobs meet the required specifications. **4** Make sure that the number of sheets per document are within specifications. See “Media specifications” on page 37. **5** Make sure that the media in use meets specifications. See “Media specifications” on page 37. **6** Make sure that the stapler is the home position. **7** Replace the whole unit.
13.12.41 JAM IN LEFT ACCESSORY	• A jam (initial jam) exists in the folding/booklet area.	**1** Make sure that there is no media inside the output device at power on. **2** Make sure that the booklet meets specifications. See “Supported media and capacity for input and output” on page 38. **3** Clear the jam. **4** Turn the printer off, and then turn the printer on again. **5** Activate the staple-fold motor (M7) to make sure that the assembly works. **6** Perform the booklet adjustments as needed. **7** Check all cable connections at the module and at the controller PCA. **8** Replace the folding mechanism. **9** Replace the controller PCA.
13.12.42 JAM IN LEFT ACCESSORY	• A jam (stay jam) exists in the folding/booklet area.	• Perform the steps for a 13.12.41 error.
13.12.43 JAM IN LEFT ACCESSORY	• A jam (delay jam) exists in the folding/booklet area.	• Perform the steps for a 13.12.41 error.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
13.12.51 JAM IN LEFT ACCESSORY	• A jam (initial jam) exists in the booklet bin area.	**1** Clear the jam. **2** Make sure that the booklet meets specifications. See “Supported media and capacity for input and output” on page 38. **3** Turn the printer off, and then turn the printer on again. **4** Activate the booklet bin sliding motor (M10) to make sure that the assembly works. **5** At power on, make sure that the booklet stopper moves completely in and out. **6** Check all cable connections at the module and at the controller PCA. **7** Replace the booklet bin. **8** Replace the controller PCA.
13.12.52 JAM IN LEFT ACCESSORY	• A jam (stay jam) exists in the booklet bin area.	• Perform the steps for a 13.12.51 error.
13.12.53 JAM IN LEFT ACCESSORY	• A jam (delay jam) exists in the booklet bin area.	• Perform the steps for a 13.12.51 error.
13.13.00 JAM INSIDE DUPLEXER	• A media stay jam occurred in the duplexer. • The media did not reach the duplexer media path sensor (SR31) within the specified time.	**1** Remove the duplexer and check for correct seating, residual media, or obstructions. **2** Check the inside of the duplexer and the duplex cavity for residual media or obstructions. **3** Check the duplexer side registration guides for free movement. Replace the duplexer if necessary. **4** Check the feed rollers and the drive gear trains for damage. Replace them if necessary. **5** Check the duplex media path sensor (SR31; see “Paper-path jam sensors” on page 403) for correct functionality, and check the supporting connectors to the DC controller PCA. **6** If the error persists, replace the duplexer. See “Duplexer” on page 258.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
13.1C.00 FUSER JAM LOWER LEFT DOOR	• A fuser wrap jam occurred. The printer detected that media is wrapped around the fuser roller.	**1** Make sure that the media being used is within specifications, and that the correct media type settings for the media being used are set on the control panel. **2** Remove the media from the fuser through the lower left door. Removing the fuser assembly might be helpful. **3** Check the fuser output sensor (PS1501; see "Paper-path jam sensors" on page 403) and its flag for correct functionality, and check the supporting connectors to the DC controller PCA. **4** Check the fuser rollers for damage or contamination. Verify fuser integrity by printing a demo or configuration page. **5** Replace the fuser assembly if necessary. See "Fuser" on page 259.
13.1D.00 JAM INSIDE PAPER PATH	• An ITB wrap jam occurred. • The media did not reach the fuser input sensor (SR6) within the specified time.	**1** Make sure that the media being used is within specifications, and that the correct media type settings for the media being used are set on the control panel. **2** Remove and check the ITB for residual media. **3** Check the T2 area for residual media. **4** Check the ITB for media-caused damage. Replace the ITB if necessary. **5** Check the fuser input sensor (SR6; see "Paper-path jam sensors" on page 403) for correct functionality, and check the supporting connectors to the DC controller PCA.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
13.20.00 JAM INSIDE PAPER PATH	• A residual media jam occurred in the paper path. • The T2 input sensor (SR42), the fuser input sensor (SR6), and/or the fuser output sensor (PS1501) detect media when the printer doors are closed.	**1** Check the paper path from the registration area to the T2 area and through the fuser. If there is jammed media, remove the ITB and fuser. Remove the jammed media. **2** Check the right side lower door area for residual media or jammed sensor flags. **3** Check the T2 input sensor (SR42), the fuser upstream sensor (SR6), and the fuser output sensor (PS1501) for correct flag movement and functionality (see "Paper-path jam sensors" on page 403). **4** Check connectors J3207 and J121 on the DC controller. **5** Check the supporting connectors to the DC controller PCA.
13.25.00 JAM INSIDE UPPER RIGHT DOOR	• The media is detected as longer than what is configured on the control panel, as reported by the registration sensor (SR3).	**1** Check for supported media, and that the media size for the tray is correctly set on the control panel. **2** Make sure that the software program or the driver settings are requesting the size of media that is in the tray. (This is particularly important if the tray size is set to ANY SIZE because the printer registers that the media is the size requested from the job.)
13.29.00 JAM INSIDE DUPLEXER	• A re-feeding jam occurred in the duplexer. • The duplexer media re-feed sensor (SR30) detects media when the printer doors are closed.	**1** Remove the duplexer, and check the inside of the duplexer and the duplex cavity for residual media. **2** Check the duplexer media re-feed sensor (SR30; see "Paper-path jam sensors" on page 403) for correct functionality, and check the supporting connectors to the DC controller PCA. **3** If the error persists, replace the duplexer. See "Duplexer" on page 258.
13.3E.00 JAM INSIDE TOP OUTPUT BIN or 13.3E.00 JAM INSIDE UPPER LEFT DOOR	• Residual media is detected under the face-down output sensor (PS901). • If this error reoccurs, it is a 13.3E.00 JAM INSIDE UPPER LEFT DOOR error.	**1** Remove the media from the face-down delivery area. **2** Check the face-down output sensor (PS901; see "Paper-path jam sensors" on page 403) for correct functionality, and check the supporting connectors to the DC controller PCA.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
13.32.00 JAM IN TRAY X or 13.32.00 JAM INSIDE LOWER RIGHT DOOR	• Residual media is detected in or near tray 2 or tray 3 as indicated at power on, or when the printer is coming out of PowerSave mode. • If this error reoccurs, it is a 13.32.00 JAM INSIDE LOWER RIGHT DOOR error.	1 Remove the media from the pickup area of tray 2 or tray 3 through the tray or the lower right door. 2 Check the tray-size guides for correct settings. 3 Check the tray 2 media path sensor A (SR11) and the tray 2 media path sensor B (SR12) for correct functionality (see "Paper-path jam sensors" on page 403). Check the supporting connectors to the DC controller PCA. 4 Check the tray 3 media path sensor A (SR13) and the tray 3 media path sensor B (SR14) for correct functionality (see "Paper-path jam sensors" on page 403). Check the supporting connectors to the DC controller PCA.
20 INSUFFICIENT MEMORY alternates with TO CONTINUE PRESS ✓	• This message indicates that more data has been received from the computer than fits in the printer internal memory. • Press ✓ (6) to continue printing. Only the amount of data that fits in the printer internal memory is printed. The remainder of the job is cancelled.	• Press ✓ (6) to print the transferred data (some data might be lost), and then simplify the print job or install additional memory.
21 PAGE TOO COMPLEX alternates with TO CONTINUE PRESS ✓	• The page-formatting process was not fast enough for the printer. • There might be some data lost on the page that was being formatted when the error occurred.	1 Press ✓ (6) to print the transferred data (some data might be lost). 2 The page protection item appears in the CONFIGURE DEVICE - DEFAULTS - EVENTS - menu, and should be set to ON to print the page. 3 When the page is successfully printed, PAGE PROTECT=ON, should be set back to AUTO. 4 If this error appears often, simplify the print job.
22 EIO X BUFFER OVERFLOW	• Too much data was sent to the EIO card in the specified slot (X). An improper communications protocol might be in use.	1 Press ✓ (6) to print the transferred data (some data might be lost). 2 Check the host configuration.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
22 PARALLEL I/O BUFFER OVERFLOW alternates with TO CONTINUE PRESS ✓	• Too much data was sent to the parallel port.	**1** Check for a loose cable connection, and be sure to use a high-quality cable. (Some non-HP parallel cables might be missing pin connections or might otherwise not conform to the IEEE-1284 specification.) **2** This error can occur if the print driver in use is not IEEE-1284 compliant. For best results, use the HP print driver that came with the printer or download the latest HP driver for this printer at http://www.hp.com/support/lj9500. **3** Press ✓ (6) to clear the error (data will be lost).
22 SERIAL I/O BUFFER OVERFLOW	• The printer serial buffer overflowed during a busy state.	• Press ✓ (6) to print the transferred data (some data might be lost)
40 BAD SERIAL TRANSMISSION	• A serial data error (parity, framing, or line overrun) occurred during the reception of data from the computer.	• Press ✓ (6) to clear the error and continue printing.
40 EIO X BAD TRANSMISSION	• The connection between the printer and the EIO card in the specified slot has been abnormally broken.	• Press ✓ (6) to clear the error and continue printing.
41.X PRINTER ERROR alternates with TO CONTINUE PRESS ✓	• A temporary printing error occurred. X description 1 = unknown misprint error 2 = beam detect misprint 3 = media feed error (size) 5 = media feed error (type) 6 = ITB detection error	**1** Press ✓ (6) to clear the error and continue printing. **2** Turn the printer off, and then turn the printer on again to clear the error. **3** If the error persists, troubleshoot the laser system (41.2), the media feed mechanisms, the media size/type settings, and the ITB seating.
41.3 UNEXPECTED SIZE TRAY X alternates with TO CHANGE SIZE PRESS ✓	• Tray (X) is loaded with media that is longer or shorter in the feed direction than the size configured for the tray.	**1** Check the media size definition for the specified tray. If necessary, reconfigure the media size defined for the tray. **2** Press ✓ (6) to get to TRAY X SIZE=. Reconfigure the size in a tray so that the printer uses a tray with the size that is required for the print job. **3** If the error does not clear, turn the printer off, and then turn the printer on again. **4** If the error persists, check the tray size sensor mechanisms, the registration sensor for correct functionality, and the supporting connectors to the DC controller PCA.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
41.5 UNEXPECTED TYPE TRAY X alternates with TO CHANGE TYPE PRESS ✓	• Tray (X) is loaded with media that is not of the same type configured for the tray. **Note** The printer only detects media or OHTs.	**1** Check the media type definition for the specified tray. **2** If necessary, reconfigure the media type for the tray. **3** If the error does not clear, turn the printer off, and then turn the printer on again. **4** If the error persists, check the transparency sensor for correct functionality. Check connector J3032 on the transparency sensor, intermediate connector J3027, and connector J121 on the DC controller PCA.
49.XXYY PRINTER ERROR	• A critical formatter firmware error occurred which caused the processor on the formatter to cease operation. **Note** Unique subcodes are constructed by creating a unique error of an 8-bit component ID (XX) and an 8-bit component specific error (YY). The component ID and component specific error are useful in determining which part of the firmware failed.	**Note** The printer 49 errors are usually *not* fixed by replacing the formatter. **1** Turn the printer off, and then turn the printer on again to clear the error. **2** Make sure that the customer is using a known good software program, good driver, good cabling, and good connections. **3** Print a configuration page to make sure that the printer has the most recent release of formatter firmware. If necessary, flash the printer with new firmware. **4** Check all of the accessory hardware, such as memory DIMMs and EIO devices, on the formatter by removing them. (Removing the hardware eliminates them as possible causes of the error.) **5** If the error persists, the formatter might need to be replaced. See “Formatter PCB” on page 302.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
50.X	• A fuser error occurred. Power cycle the printer to continue. X description 1 = low fuser temperature 2 = fuser detected not coming to operating temperature after a jam or open door 3 = high fuser temperature 6 = open fuser heating circuit between the fuser and low-voltage power supply 7 = fuser pressure release mechanism failure	**1** Remove the fuser and check it for damage or jammed media. **2** Make sure that the printer is plugged into appropriate ac voltage. **3** Turn the printer off, let it cool for 10 minutes, and then turn the printer on again to possibly clear the error. **4** Replace the fuser. **5** Check the fuser/print engine electrical connectors J3019 for damage. **6** Check connector J1501 on the fusing sensor PCA and connector J115 on the DC controller PCA. **7** Check for a fuser drive or fuser motor failure. Replace if necessary. See “Fuser motor” on page 298 or “Fuser drive assembly” on page 299. **8** Replace the power supply unit. See “Low-voltage power supply” on page 282. **9** Replace the DC controller PCA. See “DC controller” on page 300.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
51.XY PRINTING ERROR alternates with TO CONTINUE CYCLE POWER	• A laser scanner assembly laser error occurred. X description 1 = beam detect error 2 = laser error Y description 0 = no color K = black C = cyan M = magenta Y = yellow	**CAUTION** When servicing the printer with the top cover off, cover the top of the printer to prevent light leaks which might blind the laser/scanner beam detect sensors. **1** Check the FFCs for damage, and make sure that they are correctly centered and seated in the connectors. Replace the FFCs if necessary. **2** The following are color-specific steps: • **K laser** Check connector J3012 on the laser driver PCA, connector J3056 on the scanner motor, connector J3061 on the beam detect PCA, connectors J812 and J815 on the T driver PCA, and connector J110 on the DC controller PCA. • **C laser** Check connector J3011 on the laser driver PCA, connector J3059 on the scanner motor, connector J3062 on the beam detect PCA, connectors J812 and J815 on the T driver PCA, and connector J110 on the DC controller PCA. • **M laser** Check connector J3010 on the laser driver PCA, connector J3053 on the scanner motor, connector J3063 on the beam detect PCA, connectors J812 and J815 on the T driver PCA, and connector J110 on the DC controller PCA. • **Y laser** Check connector J3009 on the laser driver PCA, connector J3050 on the scanner motor, connector J3064 on the beam detect PCA, connectors J812 and J817 on the T driver PCA, and connector J108 on the DC controller PCA. **3** Check FFC connectors J103 and J106 on the DC controller PCA, J9002 on the formatter cage, and J801 on the T driver PCA. **4** Replace the necessary laser scanner unit. See “Laser/scanner assembly” on page 231. **5** Replace the T driver PCA. See “T-crg (print cartridge) drive assembly” on page 296. **6** Replace the DC controller PCA. See “DC controller” on page 300.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
52.X PRINTER ERROR alternates with TO CONTINUE CYCLE POWER	• A laser scanner assembly error occurred. X description 1 = scanner error 2 = scanner startup error 3 = scanner rotation error Y description 0 = no color K = black C = cyan M = magenta Y = yellow	**CAUTION** When servicing the printer with the top cover off, cover the top of the printer to prevent light leaks which might blind the laser/scanner beam detect sensors. **1** The following are color-specific steps: • **K laser** Check connector J3012 on the laser driver PCA, connector J3056 on the scanner motor, connector J3061 on the beam detect PCA, connectors J812 and J815 on the T driver PCA, and connector J110 on the DC controller PCA. • **C laser** Check connector J3011 on the laser driver PCA, connector J3059 on the scanner motor, connector J3062 on the beam detect PCA, connectors J812 and J815 on the T driver PCA, and connector J110 on the DC controller PCA. • **M laser** Check connector J3010 on the laser driver PCA, connector J3053 on the scanner motor, connector J3063 on the beam detect PCA, connectors J812 and J815 on the T driver PCA, and connector J110 on the DC controller PCA. • **Y laser** Check connector J3009 on the laser driver PCA, connector J3050 on the scanner motor, connector J3064 on the beam detect PCA, connectors J812 and J817 on the T driver PCA, and connector J108 on the DC controller PCA. **2** Check FFC connectors J103 and J106 on the DC controller PCA, J9002 on the formatter cage, and J801 on the T driver PCA. **3** Check the FFCs for damage, and make sure that they are correctly centered and seated in the connectors. Replace the FFCs if necessary. **4** Replace the necessary laser scanner unit. See “Laser/scanner assembly” on page 231. **5** Replace the T driver PCA. See “T-crg (print cartridge) drive assembly” on page 296. **6** Replace the DC controller PCA. See “DC controller” on page 300.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
53.10.05 PRINTER ERROR alternates with TO CONTINUE CYCLE POWER	• A DIMM is installed in both the 168-pin DIMM slot 4 and in the 100-pin DIMM slot 5.	• This is an invalid configuration. DIMMs cannot be installed in both slots at the same time. Remove one of the DIMMs, or move one of the DIMMs to a different slot.
53.XY.ZZ PRINTER ERROR alternates with TO CONTINUE CYCLE POWER	• A problem exists with the printer memory. X DIMM type 1 = RAM Y device location 1 = DIMM slot 1 2 = DIMM slot 2 3 = DIMM slot 3 4 = DIMM slot 4 ZZ error number 0 = unsupported memory 1 = unrecognized memory 2 = unsupported memory 3 = failed RAM test 4 = exceeded maximum RAM size 5 = invalid DIMM speed	• Turn the printer off, and then replace the DIMM that caused the error.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
54.XX PRINTER ERROR	• The printer 54 errors indicate sensor abnormalities. Sensor abnormalities are caused by failed or blocked sensors, or sensors reporting results outside an expected range. **Note** Some 54 errors do not stop the printing process, and are only noted in the event log but *not* on the control panel. XX description **00** = ITB misalignment (check the event log for a 54.27 error and cycle power to recover) **01** = environmental temperature sensor output is abnormal (appears only in the event log) **05** = OHT sensor failure (appears only in the event log) **06** = density sensor failure **Note** For errors 11 through 14, the density is set to the highest or lowest possible value. This usually occurs because the calibration patches are not on the ITB correctly. These errors appear only in the event log. **11** = yellow density sensor (the engine detects abnormality in the yellow density control and the engine default is used) **12** = magenta density sensor (the engine detects abnormality in the magenta density control and the engine default is used) **13** = cyan density sensor (the engine detects abnormality in the cyan density control and the engine default is used) **14** = black density sensor (the engine detects abnormality in the black density control and the engine default is used) **Note** Errors 15 through 18 only appear in the event log and printing continues. **15** = yellow CPR sensor (the engine cannot detect the yellow CPR pattern on the ITB) **16** = magenta CPR sensor (the engine cannot detect the magenta CPR pattern on the ITB)	• **54.01 procedure:** **1** Check that all of the environmental requirements are met. **2** Turn the printer off, and then turn the printer on again. **3** Check connector K3013 on the temperature/humidity sensor, intermediate connector J3085, and connector J807 on the T driver PCA. **4** Replace the temperature/humidity sensor. See "Temperature and humidity sensor" on page 280. **5** Replace the T driver PCA. See "T-crg (print cartridge) drive assembly" on page 296. **6** Replace the DC controller PCA. See"DC controller" on page 300. • **54.06, 54.11, 54.12, 54.13, 54.14, and 54.30 procedure:** **1** Check the cleaning blade and ITB for evidence of a cleaning blade failure (which might cause the density calibration to fail). **2** Check the right door actuated cleaning mechanism for correct functionality. **3** Select CALIBRATE NOW and PRINT STOP TEST on the control panel to check correct formations of the calibration swatches on the ITB. If the swatches are light or missing a color, check the T1 components, image drum, and print cartridge for the missing or light color. Also, check for malformed or too light swatches, stray toner from cleaning failures, and ITB damage. **4** Check connector J3014 at the density sensor, intermediate connector J3072 and J3080, and connector J808 on the T driver PCA. **5** Replace the density/color registration sensor assembly. See "Density and registration sensor assembly" on page 262. **6** Replace the T driver PCA. See "T-crg (print cartridge) drive assembly" on page 296. **7** Replace the DC controller PCA. See "DC controller" on page 300.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
54.XX PRINTER ERROR (continued)	• **17** = cyan CPR sensor (the engine cannot detect the cyan CPR pattern on the ITB) **18** = black CPR sensor (the engine cannot detect the black CPR pattern on the ITB) **20** = CPR sensor (output is abnormal or the engine cannot detect any of the CPR patterns on the ITB) **Note** Errors 21 through 24 indicate a toner concentration sensor failure. **21** = yellow image drum t/d ratio sensor **22** = magenta image drum t/d ratio sensor **23** = cyan image drum t/d ratio sensor **24** = black image drum t/d ratio sensor **27** = ITB misalignment sensor **Note** 27 = ITB misalignment sensor appears in the event log, but it might appear as a 54.00 error on the control panel. **28** = clean density/CPR sensor warning (only appears in the event log) **Note** For error 28, the CLEAN SENSORS 54.28.01 (density sensor is dirty) or CLEAN SENSORS 54.28.02 (CPR sensor is dirty) appears on the event log. **29** = clean density/CPR sensor failed (only appears in the event log and CLEAN SENSORS appears on the control panel) **30** = halftone calibration error	• **54.05 procedure:** **1** Clean the OHT sensor. **2** Check the transparency sensor for correct functionality. **3** Check connectors J3032 on the transparency sensor, intermediate connector J3027, and connector J121 on the DC controller PCA. • **54.15, 54.16, 54.17, 54.18, and 54.20 procedure** **1** Check the color and the tray 1 dependent items for the specified color. **2** Defeat the right side upper door (ITB access) interlocks and check during a calibration that the density patches are formed correctly on the ITB. **3** Print a laser alignment page to check for adjustable CPR problems. **4** Check the cleaning blade and ITB for evidence of a cleaning blade failure (which might cause the density calibration to fail), and check the ITB for damage. **5** Check the right door actuated cleaning mechanism for correct functionality. **6** Select CALIBRATE NOW and PRINT STOP TEST on the control panel to check correct formations of the calibration swatches on the ITB (set to 7,000 milliseconds for a CPR pattern check). If the swatches are light or missing a color, check the T1 components, image drum, and print cartridge for the missing or light color. Also, check for malformed or too light swatches, stray toner from cleaning failures, and ITB damage. **7** Check the ITB for smooth belt rotation and belt travel. Replace the ITB if movement problems or damage exists. **8** Check connector J3073 and J3074 at the CPR sensors, intermediate connector J3080, and connector J808 on the T driver PCA. **9** Replace the DC controller PCA. See “DC controller” on page 300.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
54.XX PRINTER ERROR (continued)		**10** Replace the density/color registration sensor assembly. See "Density and registration sensor assembly" on page 262. **11** Replace the T driver PCA. See "T-crg (print cartridge) drive assembly" on page 296. • **54.21, 54.22, 54.23, and 54.24 procedure** **1** Turn the printer off, and then turn the printer on again to clear the error. **2** Check the indicated image drum for damaged high-voltage contacts, and check the contacts for continuity to the high-voltage power supply. **3** Check the image drum high-voltage pins on the print engine. **4** Check the following connectors: **a** Yellow: J3040 and J804 on the T driver PCA. **b** Magenta: J3038 and J804 on the T driver PCA. **c** Cyan: J3044 and J805 on the T driver PCA. **d** Black: J3042 and J805 on the T driver PCA. **5** Replace the indicated image drum. (Make sure that the printer is turned off, and then turned on again after the image drum is replaced.) See "Process cartridges (image drums)" on page 203. **6** Replace the T driver PCA. See "T-crg (print cartridge) drive assembly" on page 296. **7** Replace the DC controller PCA. See "DC controller" on page 300. • **54.27 and 54.00 procedure** **1** Remove the ITB and check the belt for correct alignment and movement. **2** Replace the ITB and seat it correctly. **3** Check connector J3075 and J618 on the P driver PCA. **4** Replace the ITB. See "Intermediate transfer belt (ITB)" on page 260.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
54.XX PRINTER ERROR (continued)		**5** Replace the P driver PCA. See "P-crg (image drum) drive assembly" on page 292. **6** Replace the DC controller PCA. See "DC controller" on page 300. ● **54.28 procedure** **1** Make sure that the density/color sensor shutter is in the open position when the front right door is closed. **2** Open and close the front right door to clean the sensor assembly. **3** Adjust or replace the sensor cleaning assembly that is actuated by the front right door. **4** Replace the density/color registration sensor assembly. See "Density and registration sensor assembly" on page 262. ● **54.29 procedure** **1** Check the right door actuated cleaning mechanism for correct functionality. **2** Adjust or replace the sensor cleaning assembly that is actuated by the front right door. **3** Replace the density/color registration sensor assembly. See "Density and registration sensor assembly" on page 262.
55.XX PRINTER ERROR alternates with TO CONTINUE CYCLE POWER	● The engine is not communicating with the formatter. ● The communication link between the formatter and the DC controller PCA is lost.	**1** Turn the printer off, and then turn the printer on again to clear the error. **2** Turn the printer off and reseat the formatter. **3** Print a configuration page to make sure that the formatter has the latest firmware image. If it does not, perform a flash upgrade. **4** Check the connectors on the FFC between the formatter cage and the DC controller PCA. **5** Replace the DC controller PCA. See "DC controller" on page 300. **6** Replace the formatter. See "Formatter PCB" on page 302.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
56.X PRINTER ERROR alternates with TO CONTINUE CYCLE POWER	• A temporary printer error occurred.	**1** Turn the printer off, and then turn the printer on again to clear the error. **2** Turn the printer off and reseat the formatter. **3** Print a configuration page to make sure that the formatter has the latest firmware image. If it does not, perform a flash upgrade. **4** Check the connectors on the FFC between the formatter cage and the DC controller PCA. **5** Replace the DC controller PCA. See "DC controller" on page 300. **6** Replace the formatter. See "Formatter PCB" on page 302.
57.X0 PRINTER ERROR	• The printer detects that a fan motor has failed. X description 1 = cartridge fan (FM 3) 3 = low-voltage power supply fan (FM5) 5 = face-up delivery paper path fans (FM1 or FM6) 6 = paper-path fan (FM2) 7 = fuser fan (FM4) 9 = ozone/exhaust fan (FM7)	**1** Turn the printer off, and then turn the printer on again to clear the error. **2** Check the indicated fan, and check for correct movement of the blades and motor. **3** Check the connectors that apply to the X error: 1: J3078 and J820 on the T driver PCA. 3: J3 on the low-voltage power supply, and J102 on the DC controller PCA. 5: J3079 and J3087 at the fans, intermediate connector J086, and J811 on the T driver PCA. 6: J818 on the T driver PCA. 7: J819 on the T driver PCA. 9: J3089 at the fan, and J823 on the T driver PCA. **4** Check connector J1 on the low-voltage power supply, J210 and J202 on the high-voltage power supply, J608 and J612 on the P driver PCA, and J806 on the T driver PCA. **5** Replace the fan if voltage is supplied to it at power on and it fails. See chapter 6. **6** Replace the T driver PCA. See "T-crg (print cartridge) drive assembly" on page 296. **7** Replace the DC controller PCA if X = 3 (FM5). See "DC controller" on page 300.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
58.X0 PRINTER ERROR alternates with TO CONTINUE CYCLE POWER	• A printer error occurred where a memory tag CPU error was detected • Cycle power to continue. X description: 1 = N/A 2 = air temperature sensor 3 = CPU 4 = power supply	**1** Turn the printer off, and then turn the printer on again to clear the error. **2** If the error persists, reseat the print cartridges and the image drums. **3** Check the memory tag on the consumables for damage. Replace the consumable if it is damaged. See “Consumables” on page 201. **4** Check the antenna assemblies for each consumable, and the connections to the memory board. **5** Replace the memory board. **6** Replace the DC controller PCA. See “DC controller” on page 300.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
59.XY PRINTER ERROR alternates with TO CONTINUE CYCLE POWER	• The printer detects a motor that fails to turn or fails to turn at speed. X description 0 = motor error (*not* possible for the HP color LaserJet 9500) 1 = motor startup error 2 = motor rotation error 3 = fuser motor startup error 4 = fuser motor rotation error 5 = image drum motor startup error 6 = image drum motor rotation error 8 = developer motor failure 9 = ITB motor startup error A = ITB motor rotation error D = registration motor starting error E = registration motor rotation error **Note** 59.XY errors with X = A, D, or E noted in the log appear as 59.10.00, 59.13.00, and 59.14.00 respectively (59.XX.YY), where XX is a decimal conversion of the hexadecimal control panel display error. **Note** Print cartridge motor errors are indicated as REMOVE AND SHAKE <COLOR> CARTRIDGE. Y description 0 = no color K = black C = cyan M = magenta Y = yellow	**Note** If turning the printer off and on again does not resolve the 59.00 or 59.A0 error, remove and reinstall the image transfer cleaner. • **Print cartridge motor errors (remove and shake)** There are no 59 errors associated with the print cartridge motor errors. When the engine reports a fail to rotate for these motors, the error REMOVE AND SHAKE <COLOR> CARTRIDGE appears. **1** Remove and check the indicated print cartridge. Check the engine for damaged drive linkages. **2** Gently shake the print cartridge, reseat it, and turn the printer on. **3** Turn the printer off, and then turn the printer on again to clear the error. **4** Use the hardware diagnostic tools from the control panel to test each motor for correct functionality. **5** Check connector J1 on the low-voltage power supply, J210 and J202 on the high-voltage power supply, J608 and J612 on the P driver PCA, and J806 on the T driver PCA. **6** Replace the print cartridge and the drive linkages if necessary. **Note** Make sure that the print cartridges, when stored, were not exposed to high temperatures. **7** Check connector 814 on the T driver PCA. **8** Check the color-appropriate connectors: • K: J3046 near the motor • C: J3047 near the motor • M: J3048 near the motor • Y: J3049 near the motor **9** Replace the T driver PCA. See "T-crg (print cartridge) drive assembly" on page 296. **10** Replace the DC controller PCA. See "DC controller" on page 300.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
59.XY PRINTER ERROR alternates with TO CONTINUE CYCLE POWER (continued)		• **Fuser motor errors** **1** Turn the printer off, and then turn the printer on again to clear the error. **2** Remove and check the fuser for jammed media and damaged drive gears. **3** Perform a motor diagnostics test. **4** Check connector J3035 at the fuser motor and connector J116 on the DC controller PCA. **5** Check the fuser drive train for correct movement. Replace the fuser drive train if necessary. **6** Replace the fuser motor. See "Fuser motor" on page 298. **7** Replace the DC controller PCA. See "DC controller" on page 300. • **Image drum motor errors** **1** Gently shake the print cartridge, reseat it, and turn the printer on. **2** Turn the printer off, and then turn the printer on again to clear the error. **3** Remove and check the indicated image drum, and check the engine for damaged drive linkages. **4** Reseat the image drum. **5** Replace the image drum and the drive linkages if necessary. **6** Check connector J1 on the low-voltage power supply, J210 and J202 on the high-voltage power supply, J608 and J612 on the P driver PCA, and J806 on the T driver PCA. **Note** Make sure that the print cartridges, when stored, were not exposed to high temperatures. **7** Check FFC connectors J104 and J105 on the DC controller PCA, and connectors J601 and J616 on the P driver PCA (especially if the printer has been serviced recently). **8** Make sure that the FFC is centered and that it is completely inserted into the connector. Replace the FFC if it is damaged.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
59.XY PRINTER ERROR alternates with TO CONTINUE CYCLE POWER (continued)		**9** Check the color-appropriate connectors: • K: J610 and J613 on the P driver PCA, J701K for the encoder, and J3097 on the motor. • C: J607 and J614 on the P driver PCA, J701C for the encoder, and J3095 on the motor. • M: J605 and J615 on the P driver PCA, J701M for the encoder, and J3093 on the motor. • Y: J603 and J617 on the P driver PCA, J701Y for the encoder, and J3091 on the motor. **10** Check the process cartridge drive assembly encoders and motors for correct functionality. Replace the encoders and motors if necessary. **11** Replace the process cartridge drive assembly. See “T-crg (print cartridge) drive assembly” on page 296. **12** Replace the DC controller PCA. See “DC controller” on page 300.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
59.XY PRINTER ERROR alternates with TO CONTINUE CYCLE POWER (continued)		• **Developer motor errors** **1** Turn the printer off, and then turn the printer on again to clear the error. **2** Remove and check the indicated image drum, and check the engine for damaged drive linkages. **3** Reseat the image drum and turn the printer on. **4** Use the hardware diagnostic tools from the control panel to test each motor for correct functionality. **5** Replace the image drum and the drive linkages if necessary. **6** Check connector J1 on the low-voltage power supply, J210 and J202 on the high-voltage power supply, J608 and J612 on the P driver PCA, and J806 on the T driver PCA. **7** Check FFC connectors J104 and J105 on the DC controller PCA, and connectors J601 and J616 on the P driver PCA (especially if the printer has been serviced recently). **8** Make sure that the FFC is centered and that it is completely inserted into the connector. Replace the FFC if it is damaged. **9** Check the color-appropriate connectors: • K: J609 on the P driver PCA, and J3096 on the motor. • C: J606 on the P driver PCA, and J3094 on the motor. • M: J604 on the P driver PCA, and J3092 on the motor. • Y: J602 on the P driver PCA, and J3090 on the motor. **10** Check the process cartridge drive assembly encoders and motors for correct functionality. **11** Replace the process cartridge drive assembly. See “T-crg (print cartridge) drive assembly” on page 296. **12** Replace the DC controller PCA. See “DC controller” on page 300.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
59.XY PRINTER ERROR alternates with TO CONTINUE CYCLE POWER (continued)		• **Registration motor error** **1** Turn the printer off, and then turn the printer on again to clear the error. **2** Check the registration assembly for damage or jammed media. **3** Check the gear train on the registration drive assembly for correct functionality. **4** Use the hardware diagnostic tools from the control panel to test each motor for correct functionality. **5** Check connector J3036 on the registration motor, and connector J117 on the DC controller PCA. **6** Use the event log to determine if a 41.19 (high-voltage T2 error) is also occurring with the 59.XY error. If both errors exist, check the rear spring on the T2 roller. Replace the spring if necessary. if the errors persist, replace the T2 assembly. **7** Replace the registration motor. See "Registration assembly" on page 283. (steps 1,2,and 3) **8** Replace the DC controller PCA. See "DC controller" on page 300. • **ITB motor error** **1** Turn the printer off, and then turn the printer on again to clear the error. **2** Partially remove the ITB. Turn the fly wheel on the right side to check the ITB for damage and correct movement. Check the drive linkages from the ITB motor for damage. Replace any damaged hardware. Reseat the ITB and raise the green lever. **3** Use the hardware diagnostic tools from the control panel to test the ITB motor for correct functionality. **4** Remove and reseat the secondary transfer roller and the cleaning blade/toner collection bottle. **5** Check connector J1 on the low-voltage power supply, J210 and J202 on the high-voltage power supply, J608 and J612 on the P driver PCA, and J806 on the T driver PCA. **6** PCA (especially if the printer was recently serviced).

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
59.XY PRINTER ERROR alternates with TO CONTINUE CYCLE POWER (continued)		**7** Make sure that the FFC is centered and that it is completely inserted into the connector. Replace the FFC if it is damaged. **8** Check connector J3098 at the motor, and connector J611 on the P driver PCA. **9** Check FFC connector J104 on the DC controller PCA, and FFC connector J601 on the P driver **T2 clutch error** **1** Turn the printer off, and then turn the printer on again to clear the error. **2** Use the hardware diagnostic tools from the control panel to test each motor for correct functionality. **3** Remove and reseat the secondary transfer roller and the cleaning blade/toner collection bottle. **4** Check the secondary transfer assembly for damage or jammed media. **5** Check connector J3030 on the secondary transfer assembly, intermediate connector J3026, and connector J121 on the DC controller PCA. **6** Replace the secondary transfer assembly. See “Secondary transfer assembly (T2)” on page 267. **7** Replace the DC controller PCA. See “DC controller” on page 300.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
60.X PRINTER ERROR	• The tray number specified by X is lifting media to the top of the tray for proper feeding but an obstruction is preventing the tray from lifting correctly. X description 2: tray 2 cassette lifter 3: tray 3 cassette lifter 4: tray 4 cassette tray 8: tray 2 pickup roller lifter 9: tray 3 pickup roller lifter	**1** Check the indicated media tray for correct functionality of all of the parts. Replace the media tray if necessary. **2** Check connector J11 near the pickup motor, connector J12 near the pickup roller up/down motor, and connector J13 near the lifter motor. **3** Check intermediate connector J3001, and connector J120 on the DC controller PCA. **4** Check the connectors for the media-size detection switches J52, J54, J3076, and J3077. **5** Replace the paper pickup assembly. See "Pickup unit" on page 272. **6** Replace the DC controller PCA. See "DC controller" on page 300.
64.X PRINTER ERROR alternates with TO CONTINUE CYCLE POWER	• A scan buffer (video DMA) error occurred.	**1** Turn the printer off, and then turn the printer on again to clear the error. **2** Perform a cold reset. See "Cold reset" on page 97 in chapter 3. **3** Turn the printer off, remove all of the extra memory and EIO devices, and turn the printer on again. **4** Replace the formatter or the firmware DIMM. See "Formatter PCB" on page 302.
66.11.00 OUTPUT DEVICE FAILURE	• A stapler carriage motor failure (M8) occurred.	**1** Make sure that the stapler cartridge is seated in the stapler unit correctly. **2** Activate the staple sliding motor (M8) by performing a mechanical test. **3** Make sure that the stapler unit slides to the home position. **4** Replace the stapler unit. **5** Replace the controller PCA. **6** Replace the whole unit.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
66.12.31 OUTPUT DEVICE FAILURE	• A home position timeout (M1) occurred.	**1** Check all of the cable connections at the controller PCA. **2** Turn the printer off, and then turn the printer on again to clear the error. **3** Activate the delivery motor (M1) by performing a mechanical test. **4** Replace the controller PCA. **5** Replace the whole unit.
66.12.32 OUTPUT DEVICE FAILURE	• A home position timeout for aligning paddles occurred.	• Perform the steps for a 66.12.31 error.
66.12.33 OUTPUT DEVICE FAILURE	• A delivery motor (M6) failure occurred.	• Perform the steps for a 66.12.31 error.
66.12.34 OUTPUT DEVICE FAILURE	• A front aligning plate motor (M4) failure occurred.	**1** Check all of the cable connections at the controller PCA. **2** Turn the printer off, and then turn the printer on again to clear the error. **3** Activate the front and back aligning plate motors (M4 and M5) by performing a mechanical test. **4** Adjust the front jogger by performing a calibration procedure. **5** Replace the controller PCA. **6** Replace the whole unit.
66.12.35 OUTPUT DEVICE FAILURE	• A back aligning plate motor (M5) failure occurred.	• Perform the steps for a 66.12.34 error.
66.12.36 OUTPUT DEVICE FAILURE	• A stacker bin fluctuation motor (M6) failure occurred.	**1** Check all of the cable connections at the controller PCA. **2** Turn the printer off, and then turn the printer on again to clear the error. **3** Activate the stacker bin fluctuation motor (M6) by performing a mechanical test. **4** Make sure that the stacker bin moves up and down at the power-on sequence. **5** Send two pages through as a test. **6** Replace the controller PCA. **7** Replace the whole unit.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
66.12.41 OUTPUT DEVICE FAILURE	• A staple-fold motor (M7) failure occurred.	**1** Check all of the cable connections at the controller PCA. **2** Turn the printer off, and then turn the printer on again to clear the error. **3** Activate the staple-fold motor (M7) by performing a mechanical test. **4** Perform a booklet adjustment as needed. **5** Replace the folding mechanism. **6** Replace the controller PCA.
66.12.51 OUTPUT DEVICE FAILURE	• A booklet bin slide motor (M10) failure occurred.	**1** Check all of the cable connections at the controller PCA. **2** Turn the printer off, and then turn the printer on again to clear the error. **3** Activate the booklet bin slide motor (M10) by performing a mechanical test. **4** At power on, make sure that the booklet stopper moves completely in and out. **5** Replace the booklet bin. **6** Replace the controller PCA.
68.X PERMANENT STORAGE ERROR alternates with TO CONTINUE PRESS ✓	• An error occurred in the printer nonvolatile memory (NVRAM), and one or more printer settings is reset to its factory default. Printing can continue, but there might be some unexpected functions because an error occurred in permanent storage. X description 0 = onboard NVRAM 1 = removable disk (flash or hard)	**1** Pressing ✓ (6) should clear the error. **2** Perform a cold reset. See “Cold reset” on page 97. **3** Turn the printer off, remove all of the extra memory and EIO devices, and then turn the printer on again. **4** For 68.1 errors, remove files from the hard disk by using the control panel or Web Jetadmin. **5** Reinitialize the hard disk drive. See “Hard disk reinitialization” on page 94 in chapter 3. **6** Perform a NVRAM initialization.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
68.X PERMANENT STORAGE FULL alternates with TO CONTINUE PRESS ✓	• The printer NVRAM is full. Some saved settings in the NVRAM might reset to the factory defaults. Printing can continue, but there might be some unexpected functions because an error occurred in permanent storage. X description 0 = onboard NVRAM 1 = removable disk (flash or hard)	**1** Pressing ✓ (6) should clear the error. **2** Perform a cold reset. See "Cold reset" on page 97. **3** Turn the printer off, remove all of the extra memory and EIO devices, and then turn the printer on again. **4** For 68.1 errors, remove files from the hard disk by using the control panel or Web Jetadmin. **5** Reinitialize the hard disk drive. See "Hard disk reinitialization" on page 94. **6** Perform a NVRAM initialization.
68.X PERMANENT STORAGE WRITE FAIL	• The printer NVRAM is failing to write. Printing can continue, but there might be some unexpected functions because an error occurred in permanent storage. X = description 0 = onboard NVRAM 1 = removable (flash or hard)	**1** Pressing ✓ (6) should clear the error. **2** Perform a cold reset. See "Cold reset" on page 97. **3** Turn the printer off, remove all of the extra memory and EIO devices, and then turn the printer on again. **4** For 68.1 errors, remove files from the hard disk by using the control panel or Web Jetadmin. **5** Reinitialize the hard disk drive. See "Hard disk reinitialization" on page 94. **6** Perform a NVRAM initialization.
69.X PRINTER ERROR	• A temporary printer error occurred. 00 (duplex D-roller is not detected at the home position) 01 (duplex slide adjustment failure)	**1** Turn the printer off, reseat the duplexer, and then turn the printer on again to clear the error. **2** Remove the duplexer and check for proper seating, residual media, or obstructions. **3** Check the inside of the duplexer and the duplex capacity for residual media or obstructions. **4** Check the duplexer-side registration guides for correct functionality. Replace the duplexer if necessary. See "Duplexer" on page 258. **5** Check the feed rollers and drive gear trains for damage. Replace them if necessary.
79.XXXX PRINTER ERROR	• A critical hardware error occurred.	• Turn the printer off, and then turn the printer on again to clear the error.

Table 77. Numerical error messages for the HP LaserJet 9500 Series printer (continued)

Message	Explanation	Recommended action
8X.YYYY	• The EIO accessory card in slot X has encountered a critical error as specified by YYYY.	**1** Turn the printer off. **2** Remove the EIO accessory card. Reseat the card securely into the specified slot. **3** Turn the printer on again. **4** Insert the card into a different slot. **5** If the error persists, the EIO accessory card might need to be replaced.

Data and communication troubleshooting tools

Note Communication problems are normally the customer's responsibility. Time spent attempting to resolve these problems might not be covered by the HP warranty. Refer the customer to the network administrator for assistance in troubleshooting network problems.

If you think that the problem is because of a customer error, data, communication, application, or driver problem, verify that the print engine is functioning correctly. To do this, print any of the built-in pages from the control panel. The demonstration page, configuration pages, and print-quality pages are useful for this check. If the internal pages print correctly, the printer is probably not the problem. Make sure you check the communication, driver, application, or customer error.

One method to check communication and data connections is to change the method of data transfer. For example, if the printer is connected through a network, try using a parallel connection. The problem might be solved quickly through the process of elimination.

Checking program and driver problems is similar. If the customer indicates that there are failures when using a single program, try printing from a different program. Also, if the customer indicates that there are failures while using the PostScript driver, try printing from the PCL driver.

Test message

After the printer is installed, verify communications between the printer and the IBM-compatible computer. Type the following information at the MS-DOS prompt:

`C:\DIR>LPT1` ENTER (for printing to parallel port #1)

The printer should print a directory listing of the C:\ directory.

EIO troubleshooting

The Jetdirect configuration page shown in figure 309 contains valuable information about the current status of the EIO accessories. Before attempting to troubleshoot a network problem or notifying your network consultant of a problem, always print a configuration page. If an EIO accessory is installed, the Jetdirect configuration page also prints.

See the *HP Jetdirect Network Interface Configuration Guide* for detailed explanations of network issues.

Software/network troubleshooting

The following scenarios are intended to identify specific conditions that cause 49 errors, or provide adjustments that might eliminate the error message.

Error occurs when printing from a specific environment or software program

- print from a different software program
- print different documents within the same software program
- change the graphics mode in the printer properties
- change the resolution setting in the printer properties
- select a PostScript driver rather than PCL (Windows only)
- use a different font, if possible (font selections might not be accessible in some environments or software programs)
- adjust the margin settings, if possible

Error occurs when printing a specific document

- change the graphics mode in the printer properties
- change the resolution setting in the printer properties
- select a PostScript driver rather than a PCL (Windows only)
- use a different font, if possible, or utilize fewer font changes
- adjust the margin settings, if possible
- if graphics are used, try using fewer graphics on each page or rearrange the graphics on the page
- recreate the document

Jetdirect configuration

- If the EIO Jetdirect print server successfully turns on and completes its internal diagnostics, the `I/O CARD READY` message appears. If communication is lost, an `I/O NOT READY` message appears followed by a two-digit error code. Consult the *HP Jetdirect Network Interface Configuration Guide* for further details and recommended action.
- The “Network Statistics” column indicates the status of network activity. Bad packets, framing errors, unsendable packets, and collisions should be minimal. If a high percentage (greater than 1 percent) of these occur, contact the network administrator. All of the statistics are set to zero when the printer is turned off.
- A “Novell Status” block should state the Novell printer server name to which the printer is connected. If the Node Name reads “NPIxxxxxx” (xxxxxx = last six digits of the EIO LAN address), the EIO card is not configured for a Novell server. This could indicate that the card is operating under an IPX protocol other than Novell. Consult with the network administrator if the Node Name is not present.
- In the TCP/IP protocol block, the default IP address is “192.0.0.192.” It is acceptable to operate the printer with this default address. The error message `ARP DUPLICATE IP ADDRESS` might appear in this block. This is also an acceptable error code if the TCP/IP protocol is not being used. Please check with the network administrator to determine the correct IP address for the printer.

Verify network and server operation

- try to print the job to the printer parallel port
- try to print from the host system through the network to another printer (contact the network administrator for assistance)

Jetdirect page

Use the Jetdirect page to view current network settings, to help troubleshoot printer problems, or to verify network statistics or protocol information. The Jetdirect page prints with the configuration page.

Jetdirect page elements

A. HP Jetdirect configuration

B. Network statistics

C. Protocol information

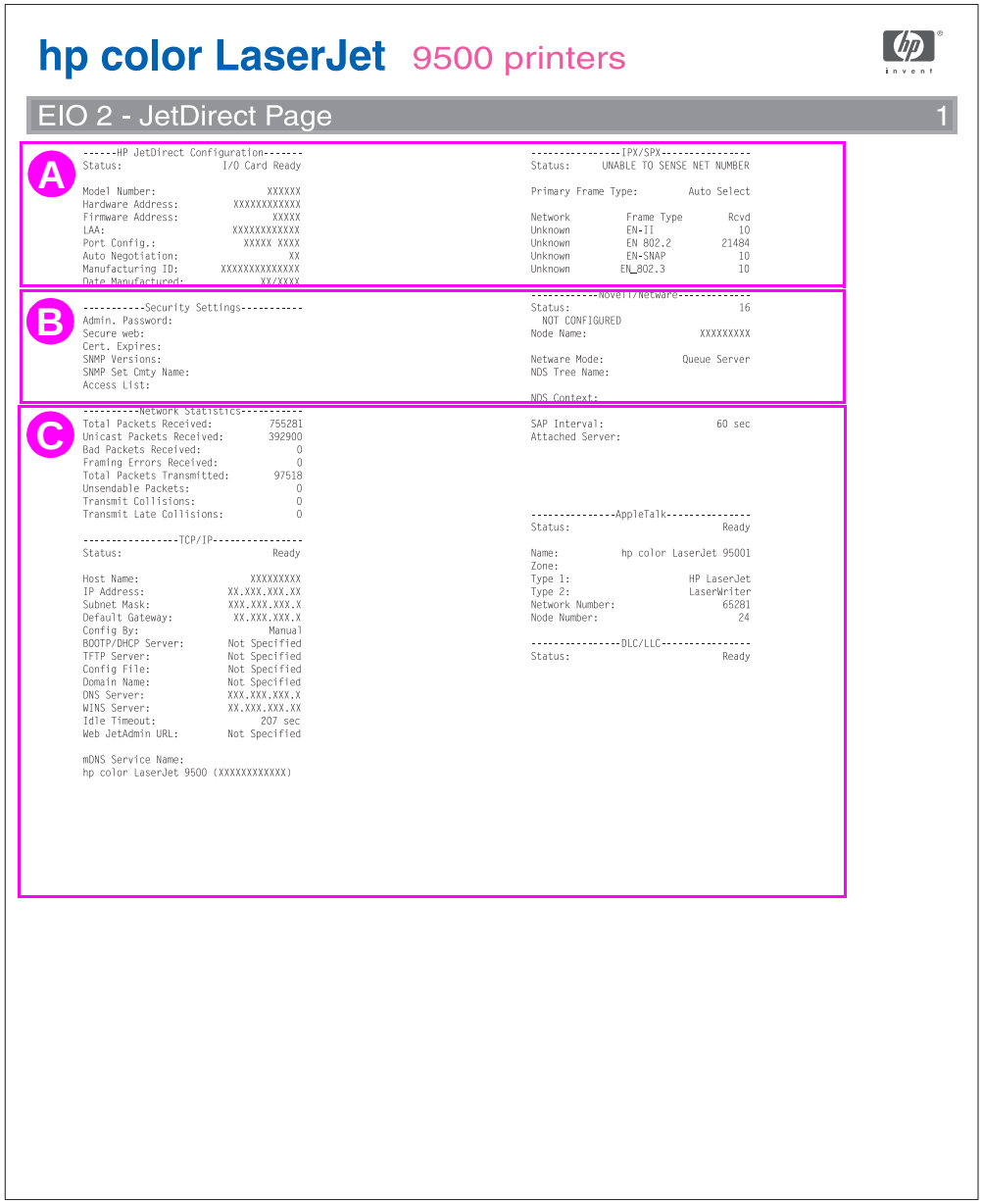


Figure 309. **Sample Jetdirect page**

Troubleshooting tools for the HP LaserJet 9500hdn printer tray 4

Note The following troubleshooting tools for tray 4 are similar to, but do not apply to tray 4 for the MFP version. To troubleshoot an MFP tray 4, see your *2,000-sheet Side-input Tray Service Manual* (PN Q1891-90901).

On the HP LaserJet 9500hdn printer tray 4 can run standalone diagnostics to test the device motors, functionality, and sensors. You need one power cord, one #2 Phillips screwdriver, and a small, flat-blade screwdriver for the DIP switches.

Tray 4 diagnostics label (LJ 9500)

The tray 4 diagnostics label is located on the inside of the tray 4 back cover.

Table 78. DIP switch settings

DIP switch	Normal	Motor test	Standalone running test	Sensor test
1	Off	On	On	Off
2	Off	On	Off	Off
3	Off	Off	Off	On
4	Off	On	On	On

Note Make sure that you turn the power supply off and set all of the DIP switches to the OFF position (normal settings) when you finish the diagnostics, or the unit will *not* work correctly. Then, replace the back cover of the HP LaserJet 9500hdn printer.

Tray 4 motor test (LJ 9500)

This test verifies that the three motors on tray 4 are functioning correctly.

1. Identify the back cover (opposite from the tray door). Remove the four screws in the back cover, and then remove the back cover.
2. Open tray 4.
3. Set the DIP switches on the controller PCA to motor test mode.
4. Pull out on the blue handle to turn the power supply switch to diagnostic mode.
   - if the motors are working correctly, you hear them as they rotate continuously
   - if the motors do not rotate, replace the corresponding FRU (either the paper pickup assembly or the paper-deck drive assembly)
5. To stop the test, set the power switch to the operational mode (push in), and reset the DIP switches on the controller PCA to the OFF position.

Tray 4 standalone running test (LJ 9500)

This test verifies that tray 4 is functioning correctly. For this test, use the LED that is located on the controller PCA on tray 4.

Note If tray 4 is mounted underneath the printer, jams might occur because the printer will *not* pick up the media. To prevent excessive jams during this test, feed only six to eight pages.

1. Make sure that media is loaded in tray 4.
2. Set the DIP switches on the tray 4 controller PCA for standalone running mode.

3 Pull the blue power supply switch outward to set the power supply switch to the diagnostic mode. The motors start and media should lift from the tray.

- if the unit does not work correctly, the lower service LED on the controller PCA flashes in a pattern that indicates the problem (see table 79 for an interpretation of the LED patterns)

4 To stop the test, set the power supply switch to the operational mode, and set the DIP switches on the controller PCA to the OFF position (see table 78). Open tray 4 and remove any media from the paper path.

Tray 4 sensor test (LJ 9500)

This test manually activates the sensors on tray 4 to test if they are working correctly.

1 Set the DIP switches on the controller PCA for sensor test mode.

2 For each paper sensor:

- open tray 4
- remove the metal spring that holds the sensor unit in place (secured by 1 screw)
- pull out the sensor unit

3 To set the power supply switch to the diagnostic mode, pull the blue power supply switch outward.

4 To manually activate each sensor, press it in with your finger.

- When you activate the sensor, the bottom service LED on the controller PCA illuminates. When you release the sensor, the LED goes dark.
- If the LED does not illuminate, a problem exists with the sensor. Replace the corresponding FRU.

5 To stop the test, set the power supply switch to the operational mode, and set the DIP switches on the controller PCA to the OFF position (see table 78).

Tray 4 light pattern interpretation (LJ 9500)

If tray 4 is working correctly, it picks up media from the tray and feeds it to the printer, and the bottom service light flashes regularly every 0.5 second.

Table 79. Tray 4 light pattern interpretation

Long (1 second)	Short (0.03 second)	Error number/ meaning	Recommended action
3	1	66.11.01 Lifter malfunction	Lift the tray by hand to make sure that it lifts freely. Make sure that the paper size plates are installed correctly (in the same corresponding slots) and are not bent. If neither of these is the problem, replace tray 4.
2	1	13.11.11 Registration sensor delay jam	The media does not reach the sensor. Open the door, and remove the media. Replace the paper pickup assembly.
2	2	13.11.3B Registration sensor station jam/initial jam	Open the door, and remove the media. Check the sensors, and replace the corresponding FRU.
2	3	13.11.31 Jam sensor delay jam	The media did not reach the sensor. Open the door, and remove the media. Replace the paper pickup assembly.
2	4	13.11.21 13.11.2B Jam sensor stationary jam/initial jam	Open the door and remove the media.
1	1	Paper path door is open	Close the door.
1	2	Media tray is open Wrong-size media is loaded	Close the tray. Load the correct size of media, or check the sensors.
1	3	No media in the tray	Load media, or check the sensors.

Note If the LED does not come on, replace the paper-deck PCA or the universal power-supply assembly.

Tray 4 does not print media (LJ 9500)

- make sure that power is supplied to tray 4
- print a configuration page and make sure that tray 4 is listed in the paper-handling options section
- run a paper-path test from tray 4 (if the test is successful, the paper-size detection switches might have failed or an incorrect size might be specified in the software program)
- make sure that the custom-size switch setting is correct

8 Parts and diagrams

Chapter contents

Introduction 475
Ordering parts 475
Customer support information 475
Terminology 476
Unique parts 476
Kits, supplies, accessories, exchange parts, and documentation 479
Hardware identification 483
Illustrations and parts lists 484
External covers and panels 484
Left cover assembly 488
Right door assembly 489
Internal components (1 of 9) 490
Internal components (2 of 9) 492
Internal components (3 of 9) 494
Internal components (4 of 9) 496
Internal components (5 of 9) 498
Internal components (6 of 9) 500
Internal components (7 of 9) 502
Internal components (8 of 9) 504
Internal components (9 of 9) 506
Registration drive assembly 508
Process cartridge drive assembly (image drum drive) 509
Toner cartridge drive assembly (print cartridge drive) 510
Fuser drive assembly 512
Cassette assembly 514
Paper pickup assembly (1 of 3) 516
Paper pickup assembly (2 of 3) 518
Paper pickup assembly (3 of 3) 520
Manual feed pickup assembly (tray 1) (1 of 2) 522
Manual feed pickup assembly (tray 1) (2 of 2) 524
Registration assembly 526
Secondary transfer assembly (T2) (1 of 2) 528
Secondary transfer assembly (T2) (2 of 2) 530
Delivery feed assembly 531
Face down delivery assembly 532
Delivery cover assembly 533
Fuser assembly 534
PCB assemblies 535

Tray 4 536
Tray 4 main body 536
Tray 4 drive assembly. 540
Tray 4 PCA location 541
Pedestal 542
Pedestal main body (1 of 2) 542
Pedestal main body (2 of 2) 543
Master parts lists 544
Alphabetical parts list 544
Numerical parts list 550

Introduction

Note This chapter describes assemblies and components for the HP color LaserJet 9500 printer and the print engine portion of the HP color LaserJet 9500mfp. See the *HP Scanner/ADF Service Manual for the HP LaserJet 9000mfp/9000Lmfp/9040mfp/9050mfp/9500mfp (*PN C8549-90955) for assembly illustrations and part numbers for components that are unique to the MFP.

The figures in this chapter illustrate the major subassemblies in the printer and the MFP print engine as well as their component parts. Parts shown in magenta are field replacable units (FRUs). A table accompanies each exploded-view diagram. Each table lists the item number for represented parts, the associated part number for the item (if it can be ordered), the quantity, and a description of the part. Parts that are listed as not orderable are available by ordering the higher-level assembly or FRU.

Note When looking for an electrical part, pay careful attention to the voltage listed in the description column to ensure that the part number selected is for the correct printer model.

Ordering parts

All standard part numbers listed are stocked and can be ordered from HP's Customer Services and Support Organization. The following website allows you to search for HP product parts using the HP product name or model number, part number, or by choosing an HP product from a list.

www.partsurfer.hp.com

To order parts, go to

www.hp.com/buyparts

Consumables and accessories like those listed in table 84 can be ordered from Hewlett-Packard.

Supplies, accessories, and consumables can be ordered from the following websites:

- North America: www.hp.com/sbso/product/supplies
- Canada: www.hp.ca/catalog/supplies
- Europe: www.hp.com/go/supplies
- Asia Pacific: www.hp.com/paper

Customer support information

Before visiting the printer support website (URL: www.hp.com/support/lj9500) or the Customer Services and Support Organization (URLs listed above), obtain the following information and print the specified diagnostic pages.

- Printer model-found on the upper-right corner of the front doors of the printer.
- Serial number-found inside the front doors, in the lower-right corner.
- Configuration page, EIO Jetdirect card page, event log.

Terminology

Table 80. Term decoder

HP term	Parts listing	Definition
Image drum	P-crg	Process cartridge (carrier, OPC, charge roller, developer sleeve)
Print cartridge	T-crg	Toner cartridge
Toner collection bottle	Waste toner bottle assembly	Receptacle for waste toner from EP process
Image transfer roller	Transfer roller assembly	Secondary transfer roller (T2)
Image transfer belt	Intermediate transfer belt (ITB) assembly	Image transfer belt (ITB)
Post charger	Not orderable (part of the ITB)	Corona wire to facilitate secondary transfer
Transfer cleaner	ITB cleaner assembly	ITB cleaning blade

Unique parts

Some parts are unique to the HP CLJ 9500 printer or to the HP CLJ 9500mfp. Use table 81 to determine if the part required is unique to the printer model being serviced.

Table 81. Parts that are unique to the HP color LaserJet 9500 or 9500mfp

Ref	Description	Part number	Qty.
Figure 312; 1	Cover, left upper (HP CLJ 9500 only)	RB2-7336-000CN	1
Figure 312; 24	Tray, face-up delivery (HP CLJ 9500 only)	RB2-5690-000CN	1
Figure 313; 12	Tray, delivery movable (HP CLJ 9500 only)	RB2-7341-000CN	1
Figure 313; 13	Cover, top right (HP CLJ 9500 only)	RB2-7321-000CN	1
Figure 313; 15	Display, panel assembly (control panel) (HP CLJ 9500 only)	RG5-6115-030CN	1
Figure 313; 15	Display, panel assembly (control panel) (HP CLJ 9500mfp only)	5851-1838	1
Figure 313; 17	Cover, top left assembly (HP LJ 9500 only)	RG5-6112-000CN	1
Figure 339; all	Face-down delivery assembly (use this part number to order the entire assembly) (HP CLJ 9500 only)	RG5-6017-000CN	1
Figure 321; 19	Cable, right upper crossmember (J1701R, J3015D, J3013, J3085) (HP CLJ 9500 only)	RG5-5943-000CN	1
Figure 321; 19	Cable, right upper crossmember (HP CLJ 9500mfp only)	RG5-5974-000CN	1
Figure 324; 19	Cable, rear upper cable (HP CLJ 9500 only)	RG5-5920-000CN	1
Figure 324; 19	Cable, rear upper cable (HP CLJ 9500mfp only)	RG5-5990-000CN	1
Figure 338; all	Delivery feed assembly (use this part number to order the entire assembly; SL2, J3069) (HP CLJ 9500 only)	RG5-6150-000CN	1
Figure 311; 2	Delivery feed assembly (use this part number to order the entire assembly) (HP CLJ 9500mfp only)	RG5-6190-000CN	1
Figure 340; all	Delivery cover assembly (use this part number to order the entire assembly) (HP CLJ 9500 only)	RG5-6151-000CN	1
Figure 311; 1	Delivery cover assembly (use this part number to order the entire assembly) (HP CLJ 9500mfp only)	RG5-6191-000CN	
Figure 340; 2	Fan (HP CLJ 9500 only)	RH7-1546-000CN	2
Figure 310; 1	Guide, feed (HP CLJ 9500mfp only)	RB2-7376-000CN	1
NA	Cable, AC (HP CLJ 9500mfp only)	RG5-5991-000CN	1
NA	Cable, grounding (HP CLJ 9500mfp only)	RG5-5992-000CN	1

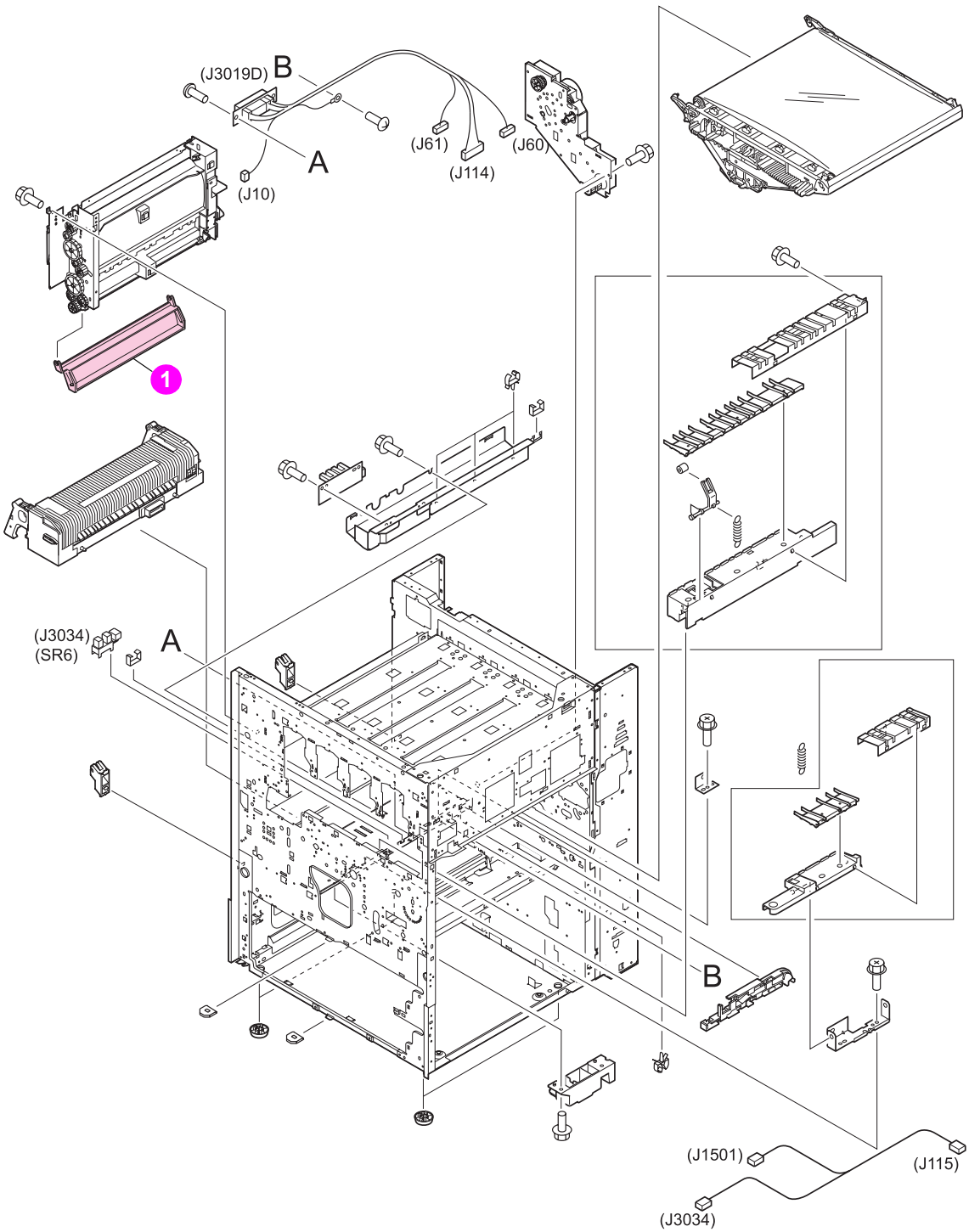


Figure 310. **Parts that are unique to the MFP (1 of 2)**

Table 82. Parts that are unique to the MFP (1 of 2)

Ref	Description	Part number	Qty
Figure 310; 1	Guide, feed (HP CLJ 9500mfp only)	RB2-7376-000CN	1

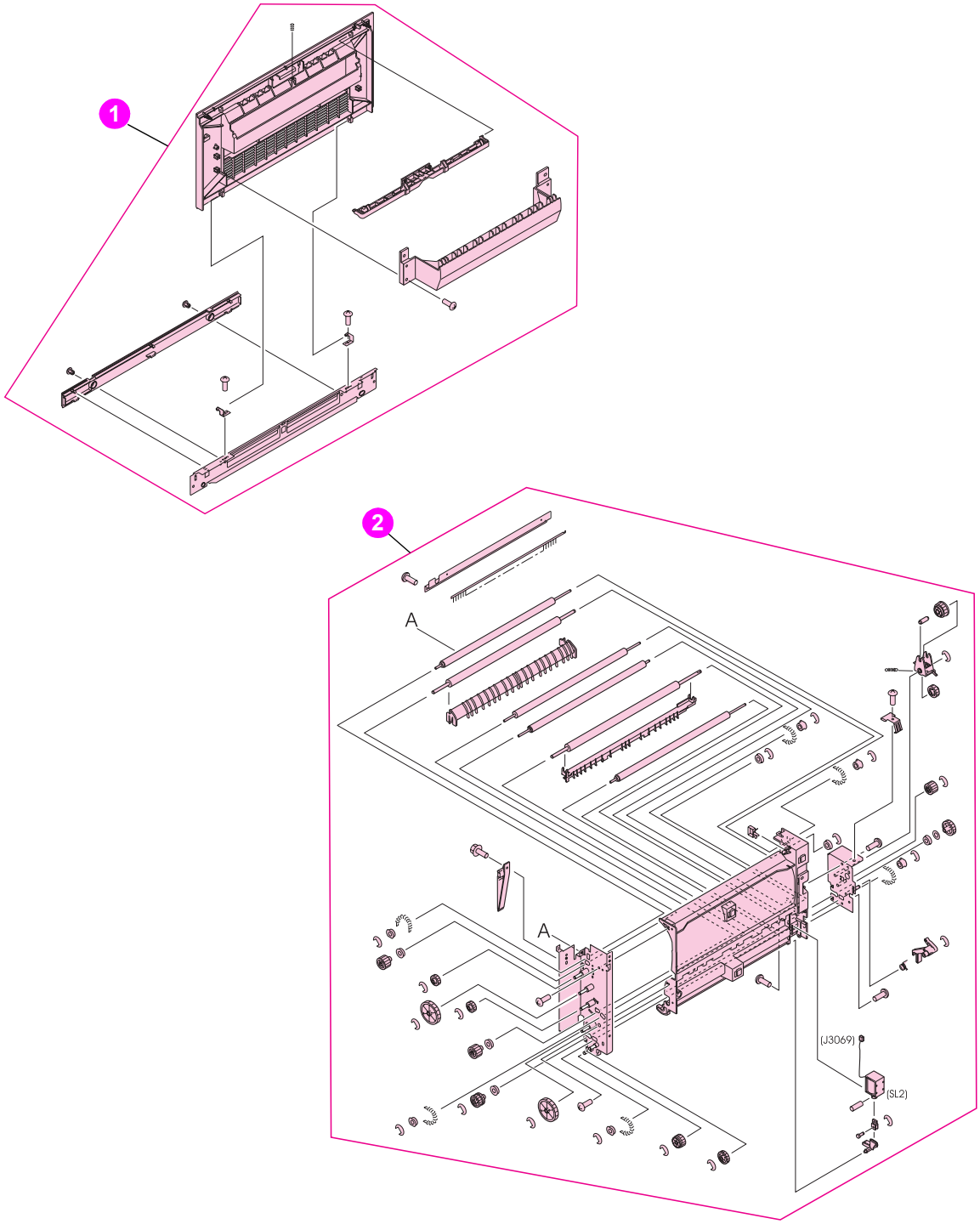


Figure 311. **Parts that are unique to the MFP (2 of 2)**

Table 83. Parts that are unique to the MFP (2 of 2)

Ref	Description	Part number	Qty
Figure 311; 1	Delivery cover assembly (use this part number to order the entire assembly) (HP CLJ 9500mfp only)		
Figure 311; 2	Delivery feed assembly (use this part number to order the entire assembly) (HP CLJ 9500mfp only)		

Kits, supplies, accessories, exchange parts, and documentation

Note If item does not have a product number, use the service-part number to order that item.

Table 84. Kits and supplies

Item	Product Number	Service part-number	Description
Print cartridge, black	C8550A	C8550-67901	Replacement print cartridge
Print cartridge, cyan	C8551A	C8551-67901	Replacement print cartridge
Print cartridge, yellow	C8552A	C8552-67901	Replacement print cartridge
Print cartridge, magenta	C8553A	C8553-67901	Replacement print cartridge
Image drum, black	C8560A	C8560-67901	Replacement image drum
Image drum, cyan	C8561A	C8561-67901	Replacement image drum
Image drum, yellow	C8562A	C8562-67901	Replacement image drum
Image drum, magenta	C8563A	C8563-67901	Replacement image drum
Image transfer Kit	C8555A	C8555-67901	One image transfer belt, one image transfer roller, nine paper rollers, and one ozone filter
Image cleaning kit	C8554A	C8554-67901	One air filter, one transfer cleaner, and one toner collection bottle
Fuser kit	C8556A	RG5-6098-000CN new C8546-69007 exchange	One fuser assembly

Table 85. Accessories, exchange parts, and documentation

Item	Product number	Service part-number	Description
Staple cartridge for stapler/ stacker	C8091A	C8085-67901	Replacement cartridge
Staple cartridge for multifunction finisher	C8092A	C8088-60541	Replacement cartridge
Intermediate transfer belt (ITB) assembly	No product number	RG5-6400-030CN new C8546-69002 exchange	Entire assembly
Cartridge drive assembly	No product number.	RG5-6188-030CN new C8546-69006 exchange	Entire assembly
Power supply 110 V	No product number	C8546-69003 exchange	PCA assembly
Power supply 220 V	No product number	C8546-69004 exchange	PCA assembly
Formatter assembly (LJ 9500)	No product number	C8546-67911 new C8546-69001 exchange	Does not include memory, firmware, or EIO card
Formatter assembly (LJ9500mfp)	Q5915A	Q5915-67901 new Q5915-69001 exchange	Does not include memory, firmware, or EIO card
DC controller	No product number	C8546-67906 new C8546-69005 exchange	PCA
16 MB DIMM	C9712CA	C9712-67907	Flash firmware DIMM for formatter
Control panel overlay	No product number	C8546-40002 (LJ9500) Q3726-60105 (LJ 9500mfp)	English
Control panel overlay	No product number	C8546-40003 (LJ9500) Q3726-60106 (LJ 9500mfp)	French (European)

Table 85. Accessories, exchange parts, and documentation (continued)

Item	Product number	Service part-number	Description
Control panel overlay	No product number	C8546-40004 (LJ9500) Q3726-60107 (LJ 9500mfp)	Italian
Control panel overlay	No product number	C8546-40005 (LJ 9500) Q3726-60108 (LJ 9500mfp)	German
Control panel overlay	No product number	C8546-40006 LJ(9500) Q3726-60109 (LJ 9500mfp)	Spanish (Castilian)
Control panel overlay	No product number	C8546-40007 (9500) Q3726-60110 (LJ 9500mfp)	Dutch
Control panel overlay	No product number	C8546-40008 (LJ 9500) Q3726-60111 (LJ 9500mfp)	Portuguese (Brazilian)
Control panel overlay	No product number	C8546-40009 (LJ 9500) Q3726-60112 (LJ 9500mfp)	Norwegian
Control panel overlay	No product number	C8546-40010 (LJ 9500) Q3726-60113 (LJ 9500mfp)	Swedish
Control panel overlay	No product number	C8546-40011 (LJ 9500) Q3726-60114 (LJ 9500mfp)	Finnish
Control panel overlay	No product number	C8546-40012 (LJ 9500) Q3726-60115 (LJ 9500mfp)	Danish
Control panel overlay	No product number	C8546-40013 (LJ 9500) Q3726-60116 (LJ 9500mfp)	Polish
Control panel overlay	No product number	C8546-40014 (LJ 9500) Q3726-60117 (LJ 9500mfp)	Russian
Control panel overlay	No product number	C8546-40015 (LJ 9500) Q3726-60118 (LJ 9500mfp)	Czech
Control panel overlay	No product number	C8546-40016 (LJ 9500) Q3726-60119 (LJ 9500mfp)	Hungarian
Control panel overlay	No product number	C8546-40017 (LJ 9500) Q3726-60120 (LJ 9500mfp)	Chinese, traditional
Control panel overlay	No product number	C8546-40018 (LJ 9500) Q3726-60121 (LJ 9500mfp)	Chinese, simplified
Control panel overlay	No product number	C8546-40019 (LJ 9500) Q3726-60122 (LJ 9500mfp)	Korean
Control panel overlay	No product number	C8546-40020 (LJ 9500) Q3726-60123 (LJ 9500mfp)	Japanese
Control panel overlay	No product number	C8546-40021 (LJ 9500) Q3726-60124 (LJ 9500mfp)	Turkish
Control panel overlay	No product number	C8546-40022 (LJ 9500) Q3726-60125 (LJ 9500mfp)	Hebrew
Control panel overlay	No product number	C8546-40023 (LJ 9500) Q3726-60126 (LJ 9500mfp)	Greek
Control panel overlay	No product number	C8546-40024 (LJ 9500) Q3726-60127 (LJ 9500mfp)	Arabic
Control panel overlay	No product number	Q3726-60123 (LJ 9500mfp)	Thai
64MB DIMM	C7848A	Q1887-67901	Memory DIMM
128 DIMM	C7850A	C7850-67901	Memory DIMM
256 MB DIMM	C9653A	C9653-67901	Memory DIMM
Firmware DIMM	C9712A	C9712-67912	Firmware DIMM
Font DIMM—simplified Chinese	C4293A	5184-5248	Font DIMM
Font DIMM—traditional Chinese	C4292A	5184-5247	Font DIMM

Table 85. Accessories, exchange parts, and documentation (continued)

Item	Product number	Service part-number	Description
HP Fast InfaRed Connect Pod	C4103A	C4103-67901	Wireless printing device
Hard disk	J6073A	J6073-69001 J6073-61011	20 GB hard drive 20 GB hard drive kit
HP Jetdirect 615N Fast Ethernet (10/100 Base-TX) (LJ9500)	No product number	J6057-69001	Ethernet EIO card
HP Jetdirect 620 Fast Ethernet (10/100 Base-TX) (LJ 9500mfp)	No product number.	J7934-60013	Ethernet EIO card
PCA Fax modem card (LJ 9500mfp)	No product number.	Q3701-60001	Fax
HP Jetdirect Connectivity (USB)	J4135A	J4135-61001	USB EIO card
2,000-sheet feeder for the LJ 9500 (tray 4)	C8531A	C8531-67902 new C8531-69004 exchange	Includes the cassette
2,000-sheet feeder (tray 4) cassette for the LJ 9500	No product number	RG5-6212-230CN new C8531-69011 exchange	Cassette only
3,000-sheet stacker	C8084A	Not orderable	Finishing device
3,000-sheet stapler/stacker	C8085A	Not orderable	Finishing device
Multifunction finisher	C8088A	C8088-60500 new C8088-69500 exchange	Finishing device
Duplexer	C9674A	C9674-67901 new C9674-69001 exchange	Required for two-sided printing
Pedestal (LJ9500n/9500mfp)	No product number	C8546-67909 new C8546-69008 exchange	Stand with casters.
2,000-sheet side-input feeder tray 4 for the LJ 9500mfp only	No product number	Q1891-67901 new C8549-69001 exchange	High capacity tray.
Discharge comb cleaning brush	No product number.	RB2-7615-000CN	Used to clean the transfer cleaner corona wire
Power cord	No product number	8120-6812 (LJ 9500) 8120-8706 (LJ 9500mfp)	United States
Power cord	No product number	5181-3530	Mexico, Brazil, Canada (FR/EN)
Power cord	No product number	8120-6811 (LJ 9500) 8120-6811 (LJ 9500mfp)	Germany, Spain, France, Netherlands, Norway, Sweden, Finland, Italy, Russia, Czech Republic, Hungary, Poland, Saudi Arabia, Korea, Greece, Turkey, Portugal
Power cord	No product number	8120-6800 (LJ 9500) 8120-6800 (LJ 9500mfp)	Israel
Power cord	No product number	8121-0780	India
Power cord jumper	No product number	C8546-60104	Required for the LJ 9500mfp.
Copy connect cable (scanner) (LJ 9500mfp)	No product number	C8549-60105	38 inch cable
Copy connect EIO (LJ 9500mfp)	No product number	5851-1958	Enhanced input output PCA
Copy connect board assembly (LJ 9500mfp)	No product number	Q3650-60001	PCA-LVDS adapter
Service manual bundle	No product number	C8549-99001	Printer, finishing devices and side-input tray 4.

Table 85. Accessories, exchange parts, and documentation (continued)

Item	Product number	Service part-number	Description
Training kit for HP color LaserJet 9500/9500mfp printer	No product number	C8546-60109	CD- based service training materials
User guide	Electronic versions ready to print at: www.hp.com/support/lj9500		Mini-manual that goes inside of the right door of the HP color LaserJet 9500 series printer
HP color LaserJet 9500 Series Printer Use guide and User reference guide	Electronic versions ready to print at: www.hp.com/support/lj9500		Electronic versions of the user guide and the user reference guide.
HP color LaserJet 9500mfp Printer Use guide and User reference guide	Electronic versions ready to print at: www.hp.com/support/clj9500mfp		Electronic versions of the user guide and the user reference guide.

Hardware identification

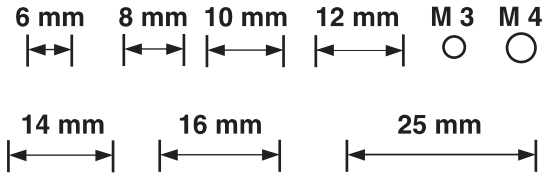


Table 86. Common hardware

Example	Type and uses

	• Long aluminum finish (M3 by 8)
	  ◦ Plastic to sheet metal
	  ◦ Long-reach sheet metal (P-cartridge motor assembly)
	• Short brass finish (M3 by 6)
	  ◦ Sheet metal to sheet metal
	• Short black finish (M3 by 8)
	  ◦ Laser/scanner assemblies
	• Self-threading brass finish (M4)
	  ◦ Sheet metal to plastic

Table 87. Common torque values

Material	HP recommended torque value
Plastic to metal	5.5 pounds per inch
Metal to metal	10 pounds per inch
PCBA	5.5 pounds per inc.
Plastic to plastic	5.5 pounds per inc.

Illustrations and parts lists

The following illustration and parts tables show the field replaceable units (FRUs). Two tables at the end of this chapter list all of the parts shown in this chapter. Both tables also contain the figure numbers in this chapter that show the parts.

Note Parts shown in magenta are FRUs. Other parts are not service-replaceable. Callout numbers that are followed by a “T” indicate the number of teeth on the specified gear.

External covers and panels

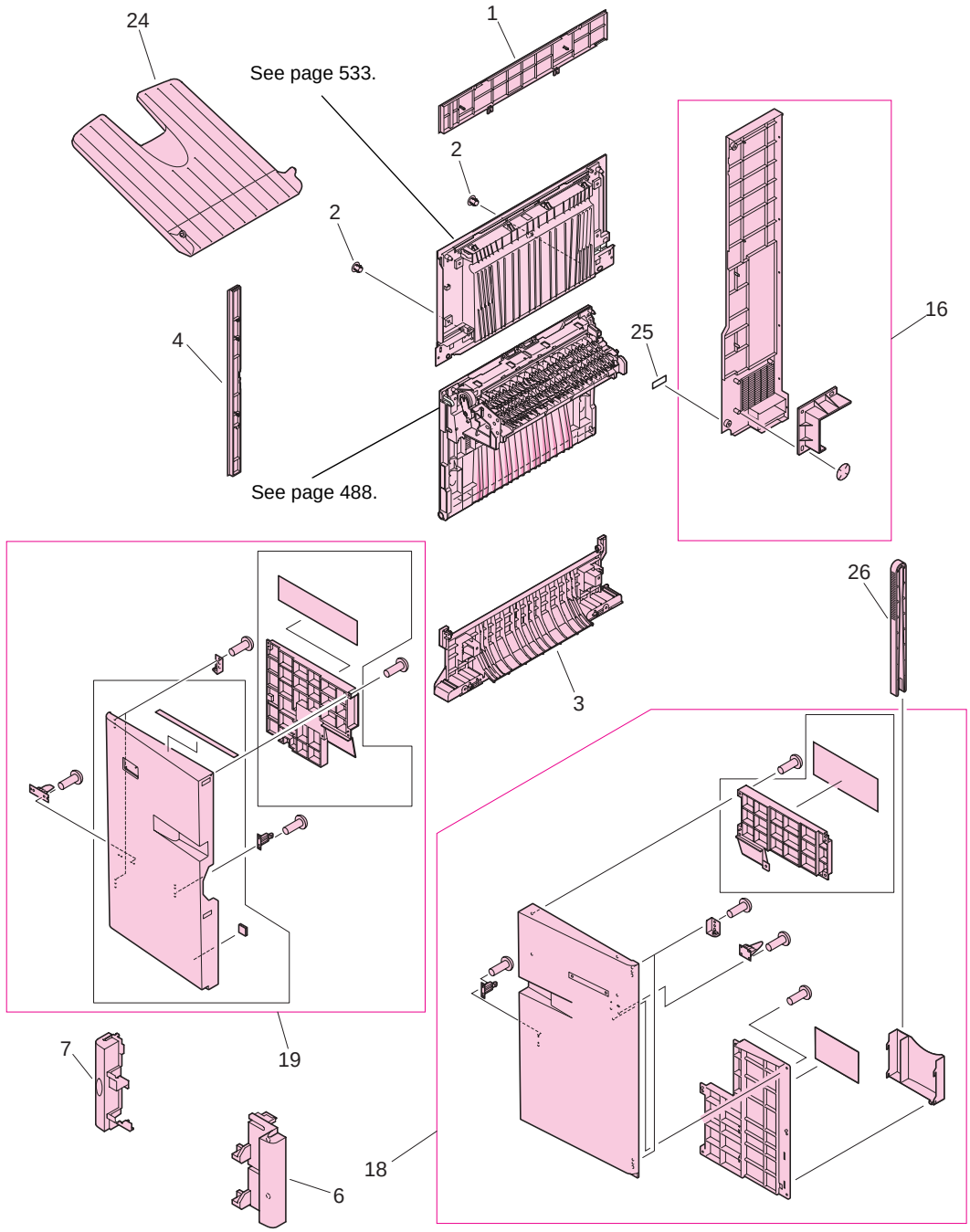


Figure 312. **External covers and panels (1 of 2)**

Table 88. External covers and panels (1 of 2)

Ref	Description	Part number	Qty
Figure 312; 1	Cover, left upper (HP CLJ 9500 only)	RB2-7336-000CN	1
Figure 312; 2	Cap, cover	Not orderable	2
Figure 312; 3	Cover, left lower	RB2-5687-000CN	1
Figure 312; 4	Cover, left front	RB2-7335-000CN	1
Figure 312; 6	Cover, front right	RB2-5682-000CN	1
Figure 312; 7	Cover, front left	RB2-5683-000CN	1
Figure 312; 16	Cover, left back assembly	RG5-6111-000CN	1
Figure 312; 18	Door, front right assembly	RG5-6113-000CN	1
Figure 312; 19	Door, front left assembly	RG5-6114-020CN	1
Figure 312; 24	Tray, face-up delivery (HP CLJ 9500 only)	RB2-5690-000CN	1
Figure 312; 25	Label, outlet 110 V Label, outlet 220 V	Not orderable Not orderable	1 1
Figure 312; 26	Tongs, jam removal	RF5-3535-000CN	1

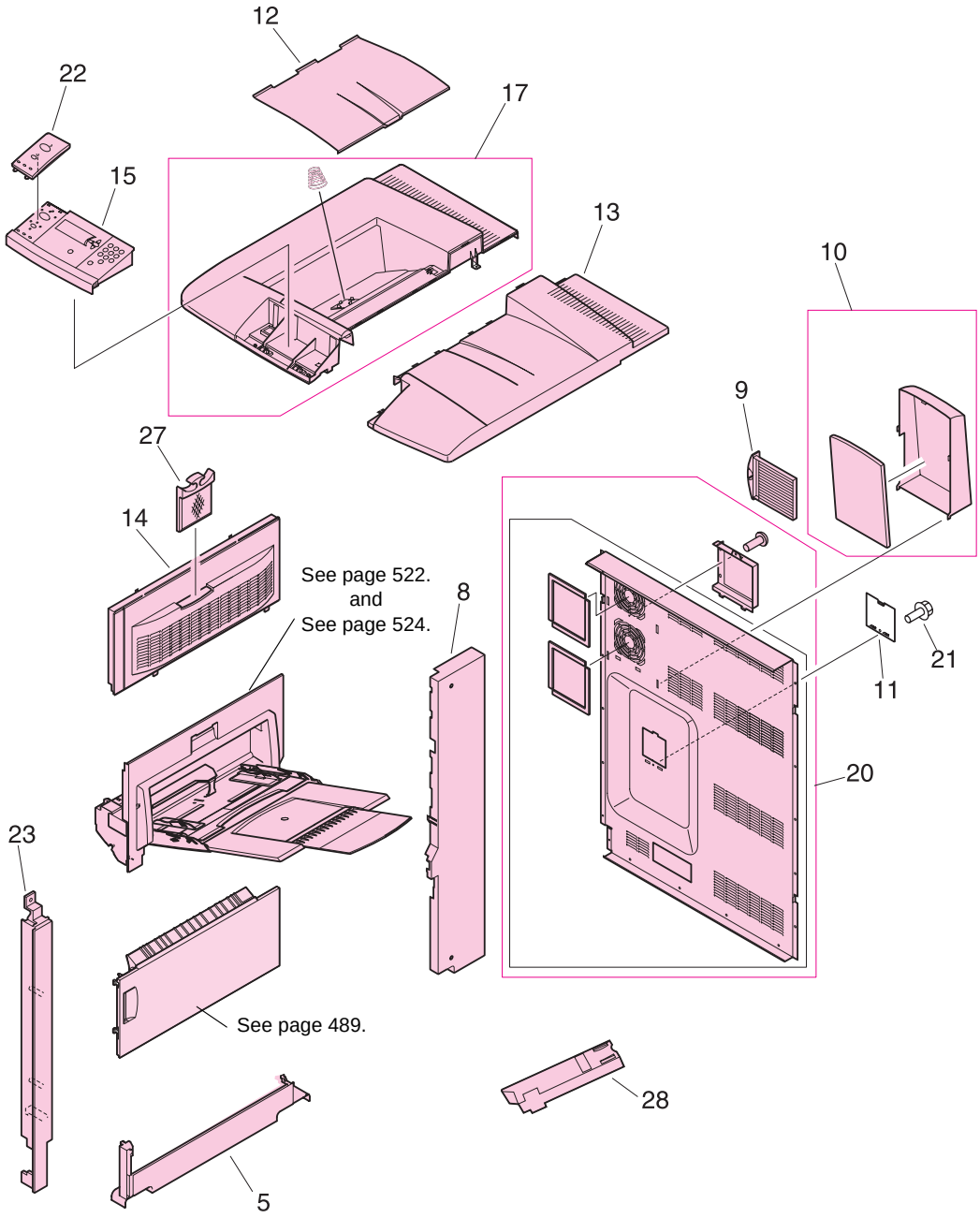


Figure 313. **External covers and panels (2 of 2)**

Table 89. External covers and panels (2 of 2)

Ref	Description	Part number	Qty
Figure 313; 5	Cover, right lower	RB2-5689-000CN	1
Figure 313; 8	Cover, right back	RB2-7352-000CN	1
Figure 313; 9	Filter, air	RB2-7170-000CN	1
Figure 313; 10	Hood, fan	RF5-3555-000CN	1
Figure 313; 11	Cover, blanking	Not orderable	1
Figure 313; 12	Tray, delivery movable (HP CLJ 9500 only)	RB2-7341-000CN	1
Figure 313; 13	Cover, top right (HP CLJ 9500 only)	RB2-7321-000CN	1
Figure 313; 14	Cover, right upper	RB2-7332-000CN	1
Figure 313; 15	Display, panel assembly (control panel) (CLJ 9500)	RG5-6115-030CN	1
Figure 313; NA	Display, panel assembly (control panel) (CLJ 9500mfp not shown)	5851-1838	1
Figure 313; 17	Cover, top left assembly (HP LJ 9500 only)	RG5-6112-000CN	1
Figure 313; 20	Cover, rear assembly	RG5-6042-000CN	1
Figure 313; 21	Screw, RS M3X8	Not orderable	1
Figure 313; 22	Control panel overlay	See table 85 on page 479.	1
Figure 313; 23	Cover, right front	RB2-7331-000CN	1
Figure 313; 27	Filter, ozone	RB2-7206-000CN	1

Left cover assembly

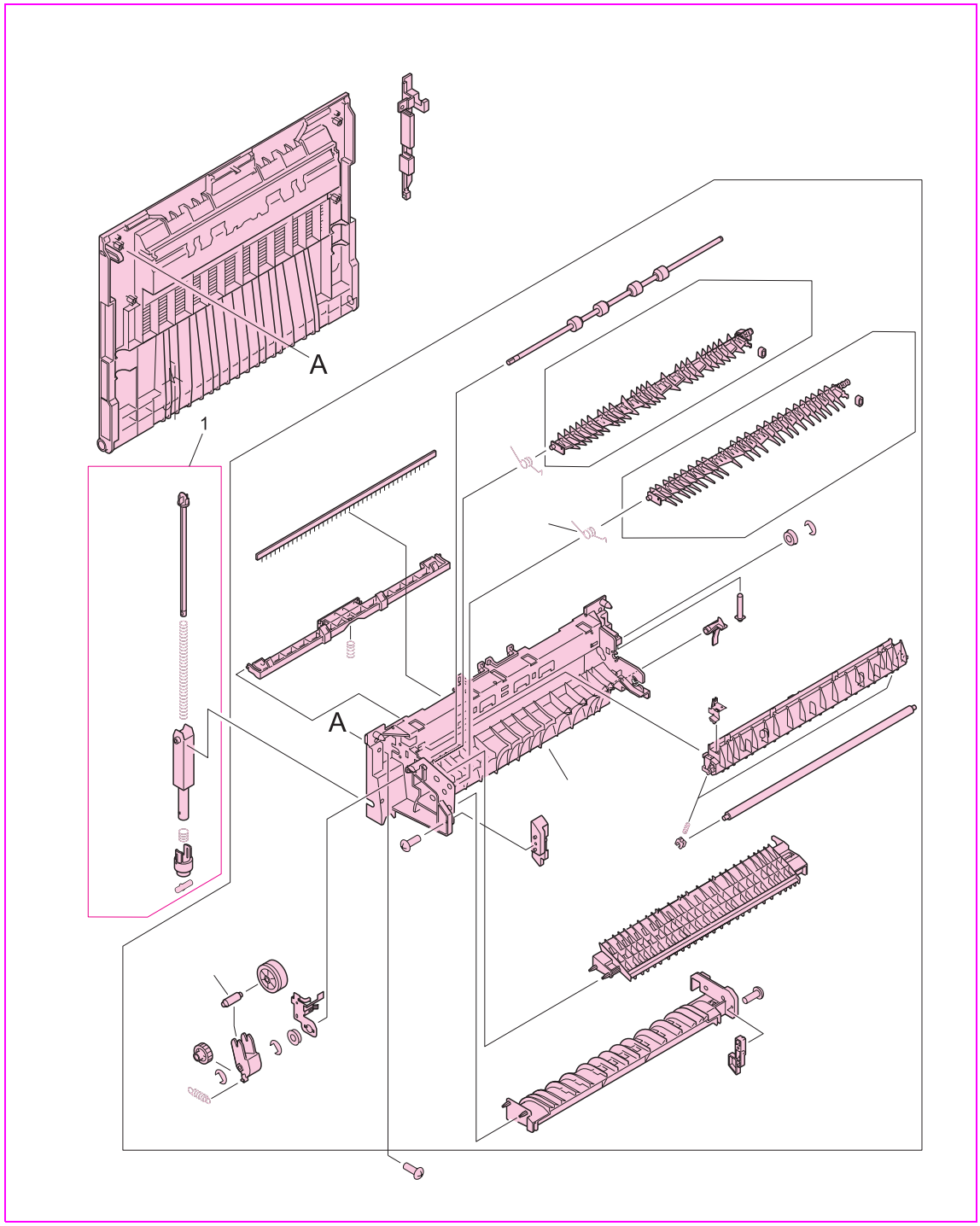


Figure 314. **Left cover assembly**

Table 90. Left cover assembly

Ref	Description	Part number	Qty
Figure 314; all	Cover, left assembly	RG5-6149-000CN	1
Figure 314; 1	Dampener, left cover assembly	RG5-6185-000CN	1

Right door assembly

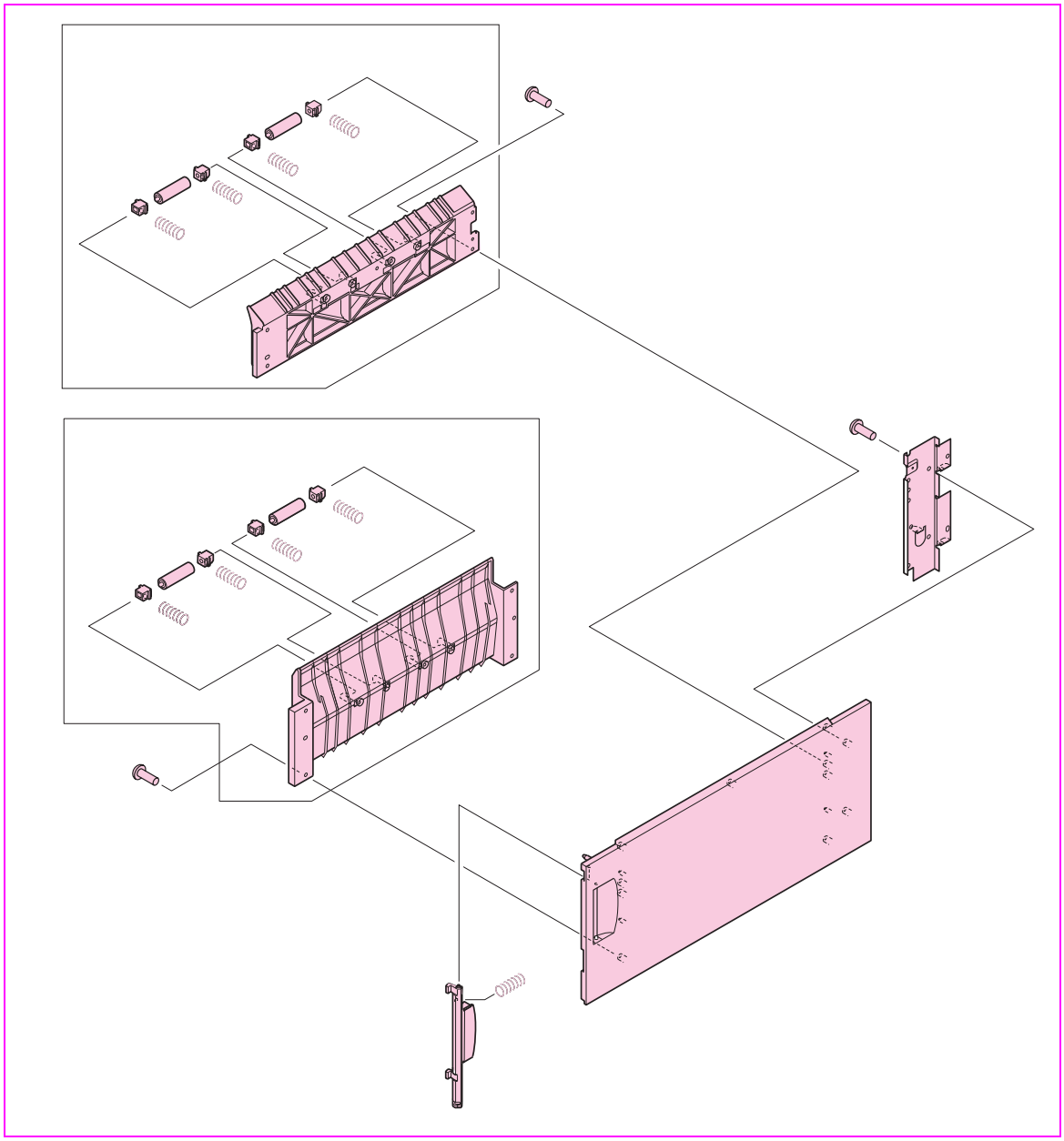


Figure 315. **Right door assembly**

Table 91. Right door assembly

Ref	Description	Part number	Qty
Figure 315; all	Door, right assembly	RG5-6108-000CN	1

Internal components (1 of 9)

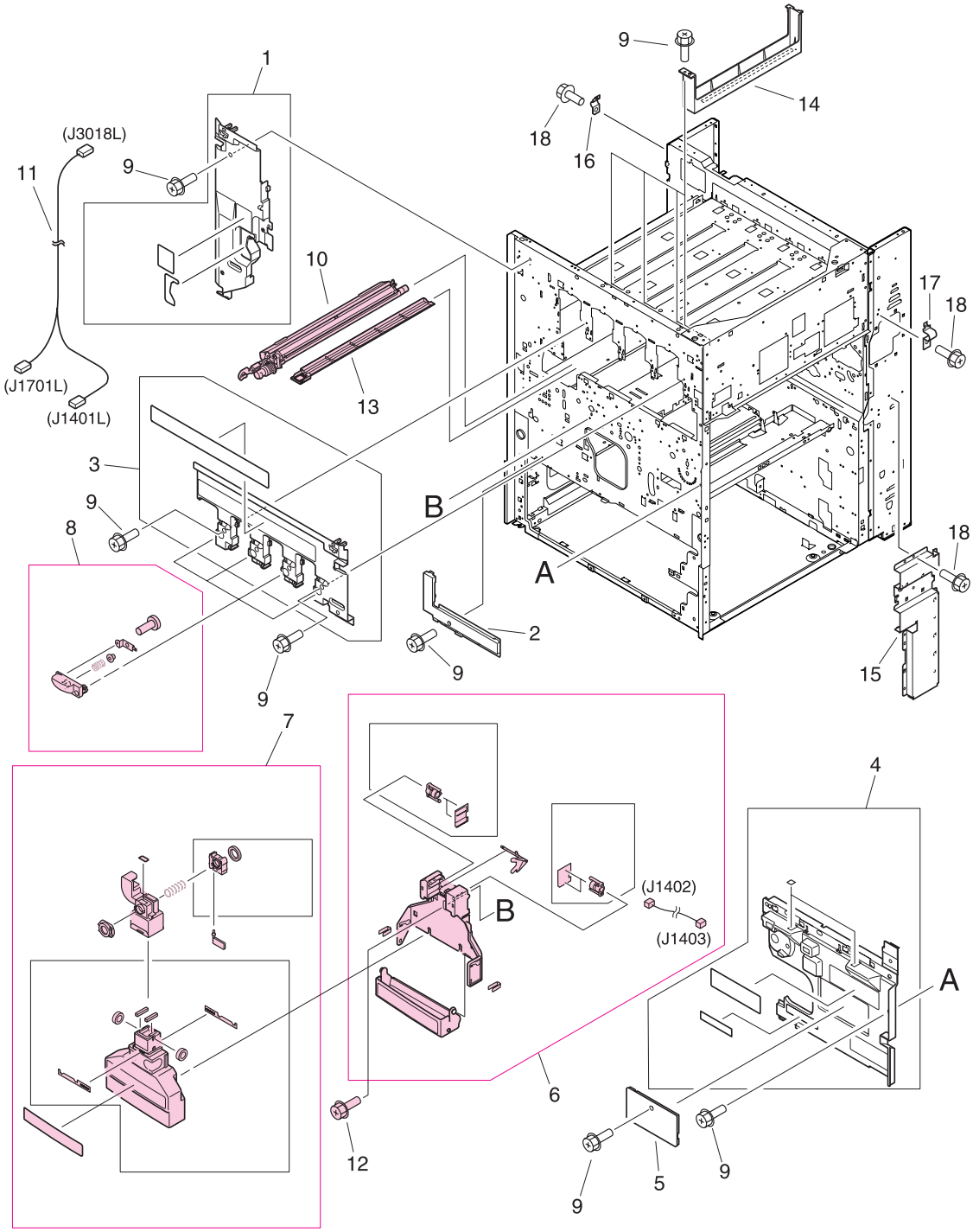


Figure 316. **Internal components (1 of 9)**

Table 92. Internal components (1 of 9)

Ref	Description	Part number	Qty
Figure 316; 1	Cover, inner left upper	Not orderable	1
Figure 316; 2	Cover, inner left lower	Not orderable	1
Figure 316; 3	Cover, inner right upper	Not orderable	1
Figure 316; 4	Cover, inner right lower assembly	Not orderable	1
Figure 316; 5	Cover, inner	Not orderable	1
Figure 316; 6	Waste toner sensor assembly (J1402, J1403)	RG5-6038-000CN	1
Figure 316; 7	Waste toner bottle assembly	RG5-6040-020CN	1
Figure 316; 8	Toner cartridge lever assembly	RG5-6121-000CN	4
Figure 316; 9	Screw, RS M3X8	Not orderable	11
Figure 316; 10	ITB cleaner assembly	RG5-6041-040CN	1
Figure 316; 11	Waste toner connecting cable (J1701L, J3018L)	Not orderable	1
Figure 316; 12	Screw, M4X6	Not orderable	1
Figure 316; 13	Tray, catch	RB2-7207-000CN	1
Figure 316; 14	Cover, scanner	Not orderable	1
Figure 316; 15	Cover, pickup cable	Not orderable	1
Figure 316; 16	Cable, support left	Not orderable	1
Figure 316; 17	Cable support right	Not orderable	1
Figure 316; 18	Screw, RS M3X6	Not orderable	5

Internal components (2 of 9)

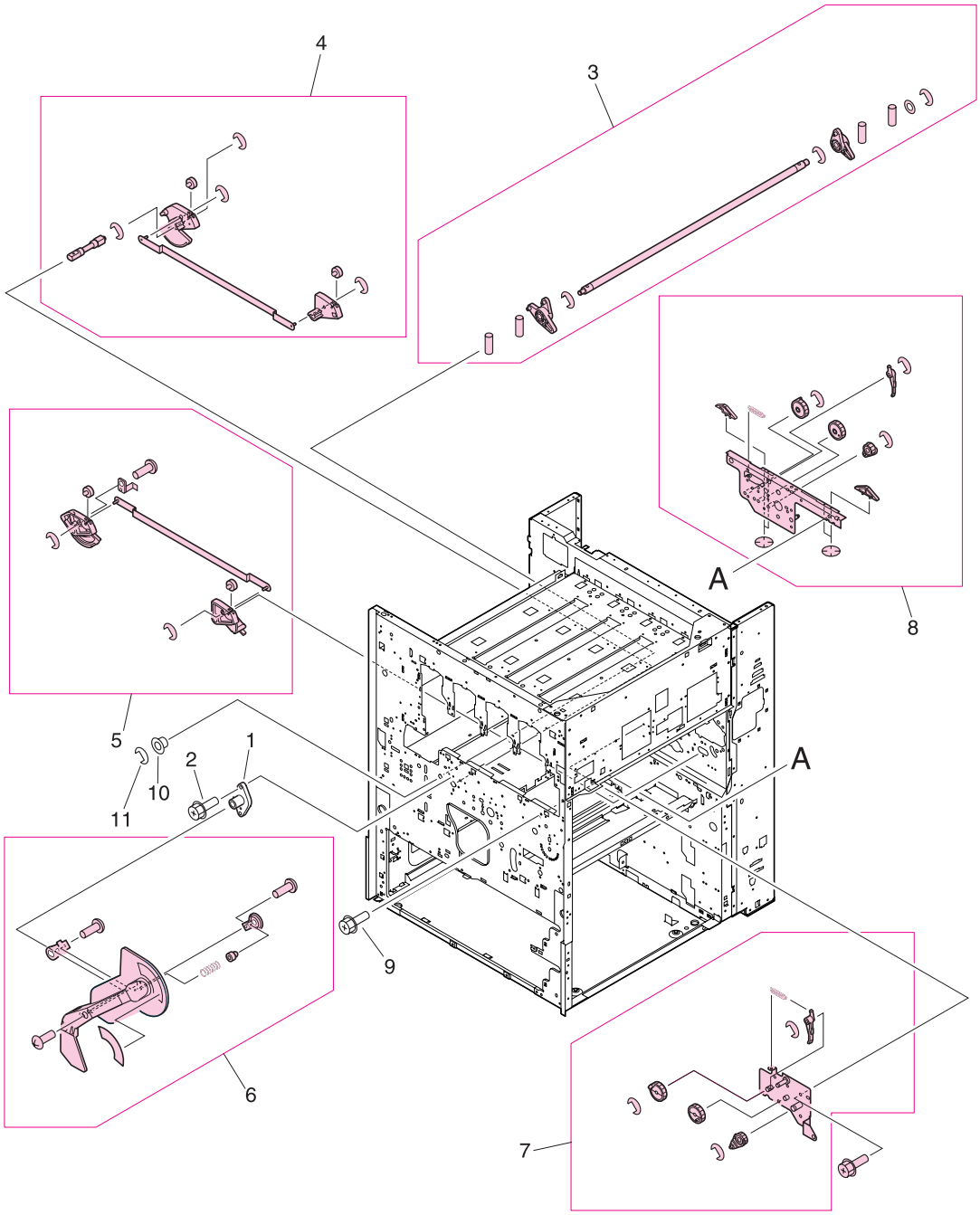


Figure 317. **Internal components (2 of 9)**

Table 93. Internal components (2 of 9)

Ref	Description	Part number	Qty
Figure 317; 1	Plate, mount	Not orderable	1
Figure 317; 2	Screw, RS M3X12	Not orderable	2
Figure 317; 3	Soft link shaft assembly	RG5-6122-000CN	1
Figure 317; 4	Lift link front assembly	RG5-6131-000CN	1
Figure 317; 5	Lift link rear assembly	RG5-6132-000CN	1
Figure 317; 6	Lever assembly	RG5-6134-020CN	1
Figure 317; 7	Link rear unit	RG5-6147-000CN	1
Figure 317; 8	Transfer link front assembly	RG5-6146-000CN	1
Figure 317; 9	Screw, RS M3X6	Not orderable	11
Figure 317; 10	Bushing	Not orderable	1
Figure 317; 11	Ring, E	Not orderable	1

Internal components (3 of 9)

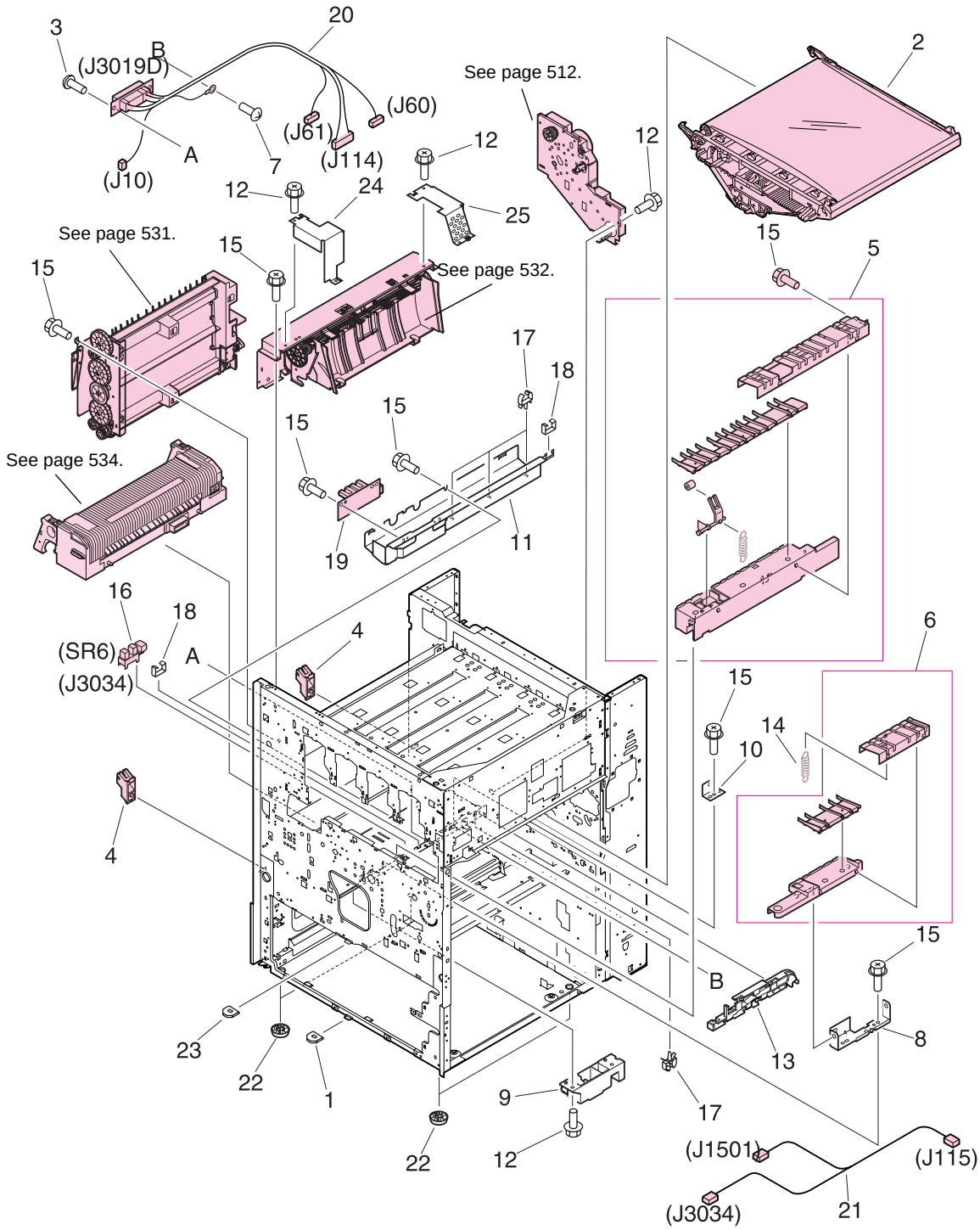


Figure 318. **Internal components (3 of 9)**

Table 94. Internal components (3 of 9)

Ref	Description	Part number	Qty
Figure 318; 1	Mount, positioning	Not orderable	1
Figure 318; 2	Intermediate transfer belt (ITB) assembly	RG5-6180-080CN new C8546-69002 exchange	1
Figure 318; 3	Screw, TP M4X8	Not orderable	2
Figure 318; 4	Mount, dampener	RB2-5570-020CN	2
Figure 318; 5	Main fuser front guide assembly	RG9-1595-000CN	1
Figure 318; 6	Sub fuser front guide assembly	RG9-1596-000CN	1
Figure 318; 7	Screw, with washer M4X6	Not orderable	1
Figure 318; 8	Plate, feeder support	Not orderable	1
Figure 318; 9	Plate, duplexing support	Not orderable	1
Figure 318; 10	Plate, fuser positioning	Not orderable	1
Figure 318; 11	Mount, lower fuser sensor	Not orderable	1
Figure 318; 12	Screw, RS M3X6	Not orderable	6
Figure 318; 13	Guide, drawer cable	Not orderable	1
Figure 318; 14	Spring, tension	RS6-2442-000CN	1
Figure 318; 15	Screw, RS M3X6	Not orderable	11
Figure 318; 16	Photo interrupter (TLP1241, SR6, J3034)	WG8-5362-000CN	1
Figure 318; 17	Clamp, cable	Not orderable	4
Figure 318; 18	Clip, cable	Not orderable	2
Figure 318; 19	Fuser sensor PCB assembly	RG5-5914-000CN	1
Figure 318; 20	Fuser connecting cable assembly (J10, J60, J61, J114, J3019D)	RG5-5925-000CN	1
Figure 318; 21	Fuser sensor cable assembly (J115, J1501, J3034)	RG5-5932-000CN	1
Figure 318; 22	Foot	Not orderable	4
Figure 318; 23	Mount, positioning	Not orderable	1
Figure 318; 24	Cover, shield back delivery assembly	Not orderable	1
Figure 318; 25	Cover, shield front delivery assembly	Not orderable	1

Internal components (4 of 9)

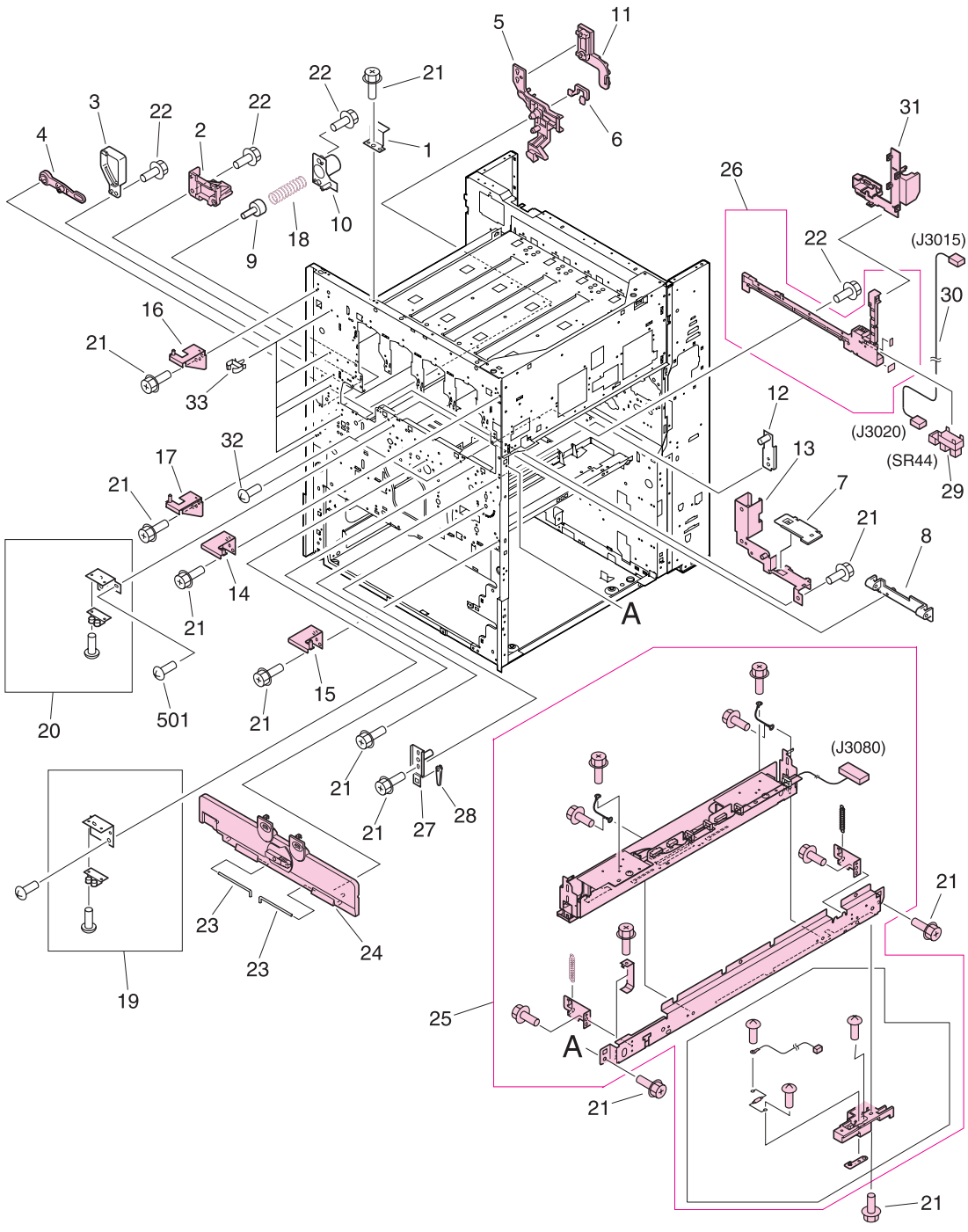


Figure 319. **Internal components (4 of 9)**

Table 95. Internal components (4 of 9)

Ref	Description	Part number	Qty
Figure 319; 1	Plate, control panel support	Not orderable	1
Figure 319; 2	Guide, cleaner	RB2-7181-000CN	2
Figure 319; 3	Cover, interlock	Not orderable	1
Figure 319; 4	Link, holder lift	RB2-7258-000CN	1
Figure 319; 5	Support, cleaning front	RB2-7570-000CN	1
Figure 319; 6	Plate, positioning	RB2-7537-000CN	1
Figure 319; 7	cover, support plate	Not orderable	1
Figure 319; 8	Support, side plate hinge	RB2-7302-000CN	2
Figure 319; 9	Pin, open/close cover support	Not orderable	1
Figure 319; 10	Guide, support pin	Not orderable	1
Figure 319; 11	Support, cleaning front	RB2-7515-000CN	1
Figure 319; 12	Plate, positioning	Not orderable	1
Figure 319; 13	Plate, mount	RF5-3505-000CN	1
Figure 319; 14	Support door hinge	RF5-3506-000CN	1
Figure 319; 15	Support door hinge	RF5-3507-000CN	1
Figure 319; 16	Support door hinge	RF5-3508-000CN	1
Figure 319; 17	Support door hinge	RF5-3509-000CN	1
Figure 319; 18	Spring, compression	Not orderable	1
Figure 319; 19	Right roller catch assembly	Not orderable	1
Figure 319; 20	Left roller catch assembly	Not orderable	1
Figure 319; 21	Screw, RS M3X6	Not orderable	11
Figure 319; 22	Screw, RS M3X8	Not orderable	4
Figure 319; 23	Pin, hinge	Not orderable	2
Figure 319; 24	P-crg open/close cover assembly	RG5-6182-000CN	1
Figure 319; 25	Registration sensor assembly (J3080)	RG5-6123-020CN	1
Figure 319; 26	Rail, guide front	RF5-3545-000CN	1
Figure 319; 27	Plate, shaft front	Not orderable	1
Figure 319; 28	Lever, adjusting	Not orderable	1
Figure 319; 29	Photo interrupter (TLP1241, SR44, J3020)	WG8-5362-000CN	1
Figure 319; 30	Intermediate transfer belt (ITB) sensor cable assembly (J3015, J3020)	RG5-5960-000CN	1
Figure 319; 31	Cover, rail	RB2-7531-000CN	1
Figure 319; 32	Screw, M3X8	Not orderable	4
Figure 319; 33	Clamp, cable	Not orderable	5

Internal components (5 of 9)

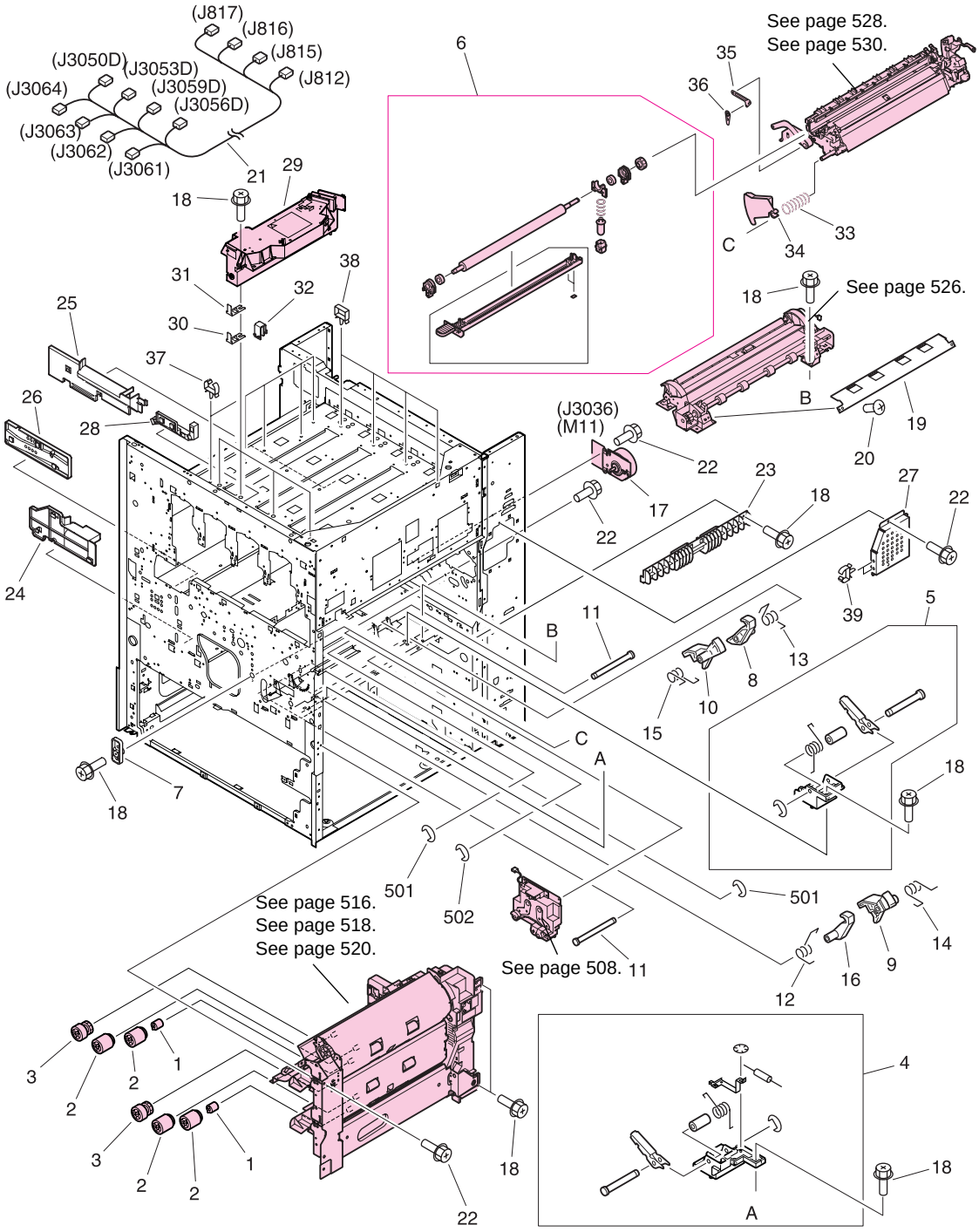


Figure 320. **Internal components (5 of 9)**

Table 96. Internal components (5 of 9)

Ref	Description	Part number	Qty
Figure 320; 1	Torque limiter	RB2-5759-000CN	1
Figure 320; 2	Roller	RF5-3338-000CN	4
Figure 320; 3	Roller, pickup	RF5-3340-000CN	2
Figure 320; 4	Damper front assembly	Not orderable	1
Figure 320; 5	Damper rear assembly	Not orderable	1
Figure 320; 6	Transfer roller assembly	RG5-6178-030CN	1
Figure 320; 7	Plate, eliminator contact	Not orderable	1
Figure 320; 8	Hook, registration front	Not orderable	1
Figure 320; 9	Block, registration front	Not orderable	1
Figure 320; 10	Block, registration rear	Not orderable	1
Figure 320; 11	Shaft, registration hook	Not orderable	2
Figure 320; 12	Spring, torsion	Not orderable	1
Figure 320; 13	Spring, torsion	Not orderable	1
Figure 320; 14	Spring, torsion	Not orderable	1
Figure 320; 15	Spring, torsion	Not orderable	1
Figure 320; 16	Hook, registration rear	Not orderable	1
Figure 320; 17	Motor, DC24 V (M11, J3036)	RH7-1518-000CN	1
Figure 320; 18	Screw, RS M3X6	Not orderable	11
Figure 320; 19	Guide, registration paper front lower	Not orderable	1
Figure 320; 20	Screw, M4X10	Not orderable	2
Figure 320; 21	Cable, BD auto registration (J812, J815, J816, J817, J3050D, J3053D, J3056D, J3059D, J3061, J3062, J3063, J3064)	Not orderable	1
Figure 320; 22	Screw, RS M3X6	Not orderable	4
Figure 320; 23	Guide, pickup	Not orderable	1
Figure 320; 24	Guide, duplexing front	Not orderable	1
Figure 320; 25	Guide, duplexing rear	Not orderable	1
Figure 320; 26	Guide, fuser support front	Not orderable	1
Figure 320; 27	Cover, motor	Not orderable	1
Figure 320; 28	Guide, panel cable	Not orderable	1
Figure 320; 29	Scanner assembly	C8546-69002	4
Figure 320; 30	Plate, scanner adjustment shim 1	Not orderable	Varies
Figure 320; 31	Plate, scanner adjustment shim 2	Not orderable	Varies
Figure 320; 32	Holder, scanner adjustment shim	Not orderable	8
Figure 320; 33	Spring, compression	RS6-2840-000CN	1
Figure 320; 34	Cover, transfer front	RB2-7445-000CN	1
Figure 320; 35*	Link, front	RF5-3502-000CN	1
Figure 320; 36*	Holder, stop	RB2-7501-000CN	1
Figure 320; 37	Clamp, cable	Not orderable	5
Figure 320; 38	Clamp, cable	Not orderable	4
Figure 320; 39	Clamp, cable	Not orderable	2
*Always order both item number 35 and item number 36 together.			

Internal components (6 of 9)

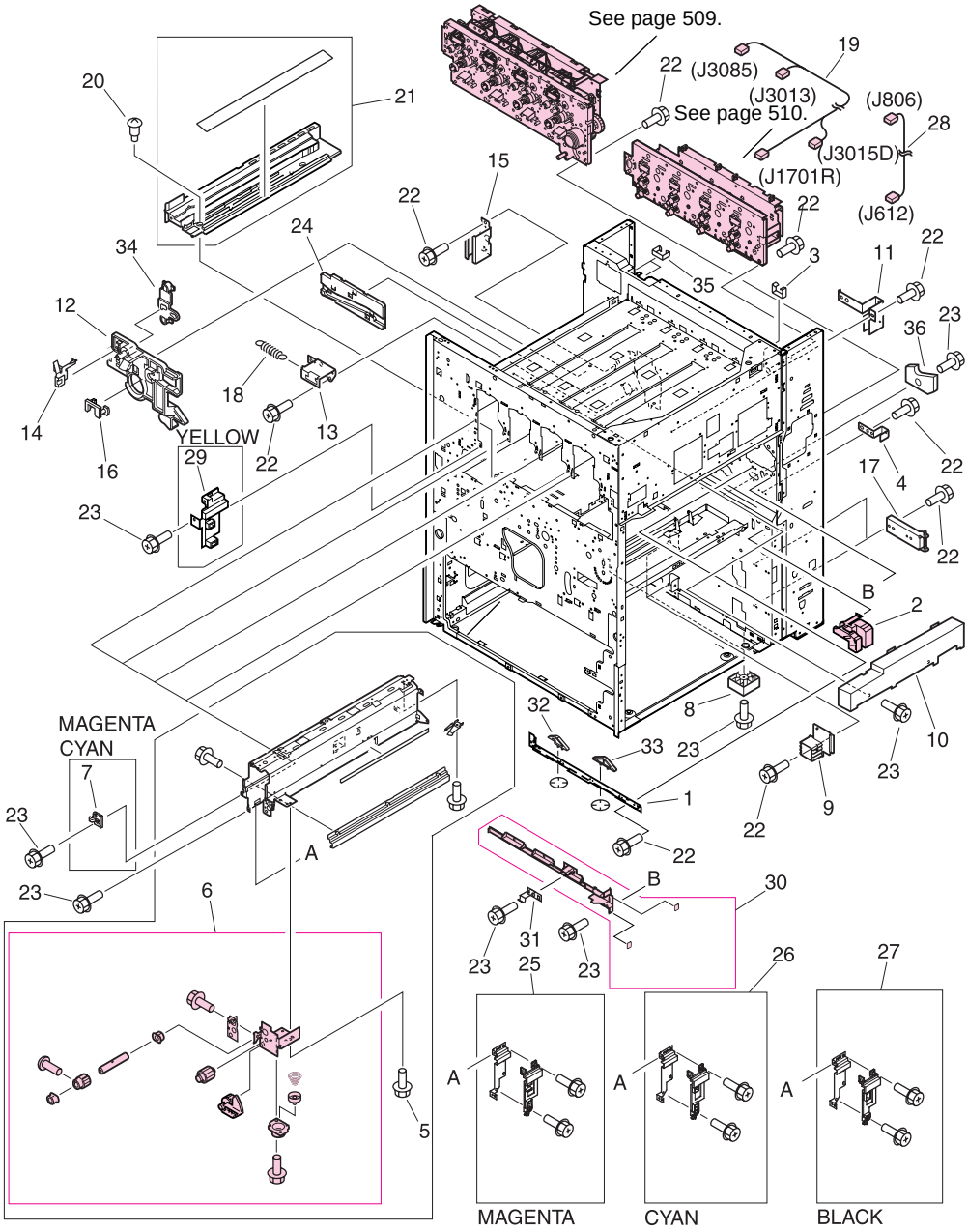


Figure 321. **Internal components (6 of 9)**

Table 97. Internal components (6 of 9)

Ref	Description	Part number	Qty
Figure 321; 1	Plate, rail support	Not orderable	1
Figure 321; 2	Block, damper	RB2-7217-000CN	1
Figure 321; 3	Clip, cable	Not orderable	1
Figure 321; 4	Fuser plate, high-voltage	Not orderable	1
Figure 321; 5	Screw, RS M3X6	Not orderable	2
Figure 321; 6	Cartridge, click support assembly	RG5-6141-020CN	1
Figure 321; 7	Support, claw (magenta, cyan)	Not orderable	2
Figure 321; 8	Block, right	Not orderable	1
Figure 321; 9	Cover, latch	Not orderable	2
Figure 321; 10	Duct, fan	Not orderable	1
Figure 321; 11	Rail, guide rear	Not orderable	1
Figure 321; 12	Support, cleaner rear	Not orderable	1
Figure 321; 13	Plate, mount	Not orderable	1
Figure 321; 14	Plate, contact	Not orderable	1
Figure 321; 15	Support, cleaner rear support	Not orderable	1
Figure 321; 16	Holder, positioning	Not orderable	1
Figure 321; 17	Hinge, right cover	Not orderable	2
Figure 321; 18	Spring, tension	Not orderable	1
Figure 321; 19	Right upper crossmember cable (J1701R, J3015D, J3013, J3085) (HP CLJ 9500 only)	RG5-5943-000CN	1
Figure 321; 19	Right upper crossmember cable (HP CLJ 9500mfp only)	RG5-5974-000CN	1
Figure 321; 20	Screw, stepped M3	Not orderable	3
Figure 321; 21	Intermediate transfer belt (ITB) duct unit	Not orderable	1
Figure 321; 22	Screw, RS M3X6	Not orderable	10
Figure 321; 23	Screw, RS M3X8	Not orderable	10
Figure 321; 24	Guide, fuser support	Not orderable	1
Figure 321; 25	Magenta cartridge rail assembly	Not orderable	1
Figure 321; 26	Cyan cartridge rail assembly	Not orderable	1
Figure 321; 27	Black cartridge rail assembly	Not orderable	1
Figure 321; 28	Toner cartridge cable (J612, J806)	RG5-5939-000CN	1
Figure 321; 29	Rail, cartridge (yellow)	Not orderable	1
Figure 321; 30	Rail, guide rear	RF5-3546-020CN	1
Figure 321; 31	Plate, grounding	RB2-7281-000CN	1
Figure 321; 32	Cam, right	Not orderable	1
Figure 321; 33	Cam, left	Not orderable	1
Figure 321; 34	Retainer, cleaner rear	Not orderable	1
Figure 321; 35	Holder, edge	Not orderable	2
Figure 321; 36	Block, support	Not orderable	1

Internal components (7 of 9)

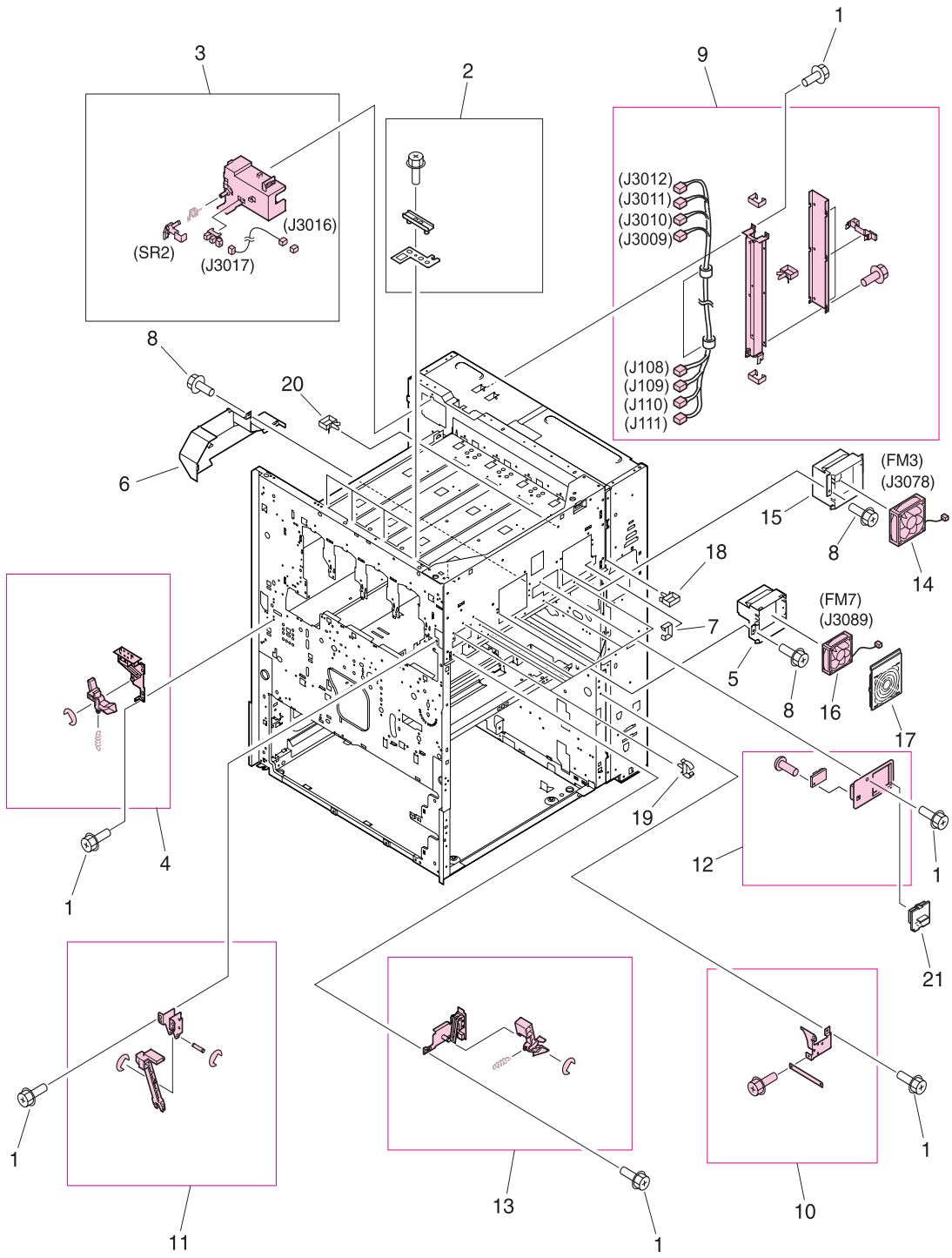


Figure 322. **Internal components (7 of 9)**

Table 98. Internal components (7 of 9)

Ref	Description	Part number	Qty
Figure 322; 1	Screw, RS M3X6	Not orderable	10
Figure 322; 2	Angle adjustment plate assembly	Not orderable	4
Figure 322; 3	Paper delivery sensor assembly (SR 2, J3016, J3017)	RG5-6152-000CN	1
Figure 322; 4	Left interlock assembly	RG5-6037-000CN	1
Figure 322; 5	Holder, ozone	Not orderable	1
Figure 322; 6	Duct, ozone	Not orderable	1
Figure 322; 7	Clip, cable	Not orderable	1
Figure 322; 8	Screw, RS M3X6	Not orderable	3
Figure 322; 9	Cable, laser assembly (J108, J109, J110, J111, J3009, J3010, J3011, J3012)	RG5-6148-000CN	1
Figure 322; 10	M-purpose support assembly rear	RG5-6107-000CN	1
Figure 322; 11	Slide arm assembly	RG5-6130-000CN	1
Figure 322; 12	Humidity sensor assembly	RG5-6153-000CN	1
Figure 322; 13	Right interlock assembly	RG5-6036-000CN	1
Figure 322; 14	Fan (FM3, J3078)	RH7-1554-000CN	1
Figure 322; 15	Holder, fan	Not orderable	1
Figure 322; 16	Fan (FM7, J3089)	RH7-1564-000CN	1
Figure 322; 17	Cover, fan	Not orderable	1
Figure 322; 18	Clamp, cord	Not orderable	1
Figure 322; 19	Clamp, cable	Not orderable	8
Figure 322; 20	Clip, cable	Not orderable	1
Figure 322; 21	Cover, sensor	Not orderable	1

Internal components (8 of 9)

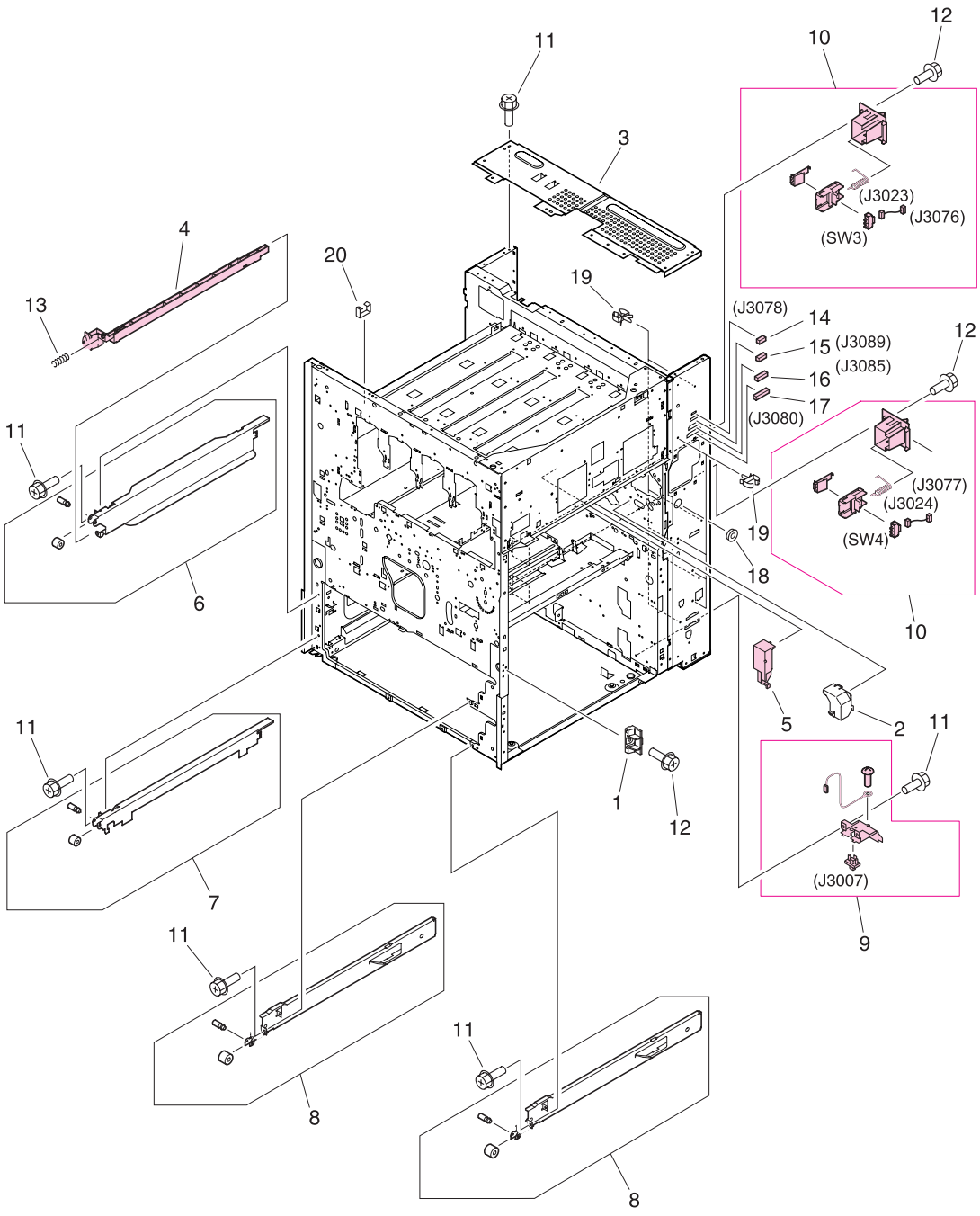


Figure 323. **Internal components (8 of 9)**

Table 99. Internal components (8 of 9)

Ref	Description	Part number	Qty
Figure 323; 1	Support, right door stop	Not orderable	1
Figure 323; 2	Cover, registration	Not orderable	1
Figure 323; 3	Crossmember, rear	Not orderable	1
Figure 323; 4	Rod, switch	RB2-7354-000CN	1
Figure 323; 5	Cover, transfer cable	RB2-7444-000CN	1
Figure 323; 6	Left rail upper assembly	Not orderable	1
Figure 323; 7	Left rail lower assembly	Not orderable	1
Figure 323; 8	Right rail assembly	Not orderable	2
Figure 323; 9	Connector assembly (J3007)	RG5-5779-000CN	1
Figure 323; 10	End paper sensor assembly (J3023, J3076, J3024, J3077, SW3, J3023, SW4, J3024)	RG5-5699-000CN	2
Figure 323; 11	Screw, RS M3X6	Not orderable	6
Figure 323; 12	Screw, RS M3X8	Not orderable	4
Figure 323; 13	Spring, compression	Not orderable	1
Figure 323; 14	Connector, 3P (J3078)	VS1-5057-003CN	1
Figure 323; 15	Connector, 5P (J3089)	VS1-5057-005CN	1
Figure 323; 16	Connector, 10P (J3085)	VS1-5057-010CN	1
Figure 323; 17	Connector, 20P (J3080)	VS1-5057-020CN	1
Figure 323; 18	Bushing	Not orderable	1
Figure 323; 19	Clip, cable	Not orderable	8
Figure 323; 20	Clip, cable	Not orderable	1

Internal components (9 of 9)

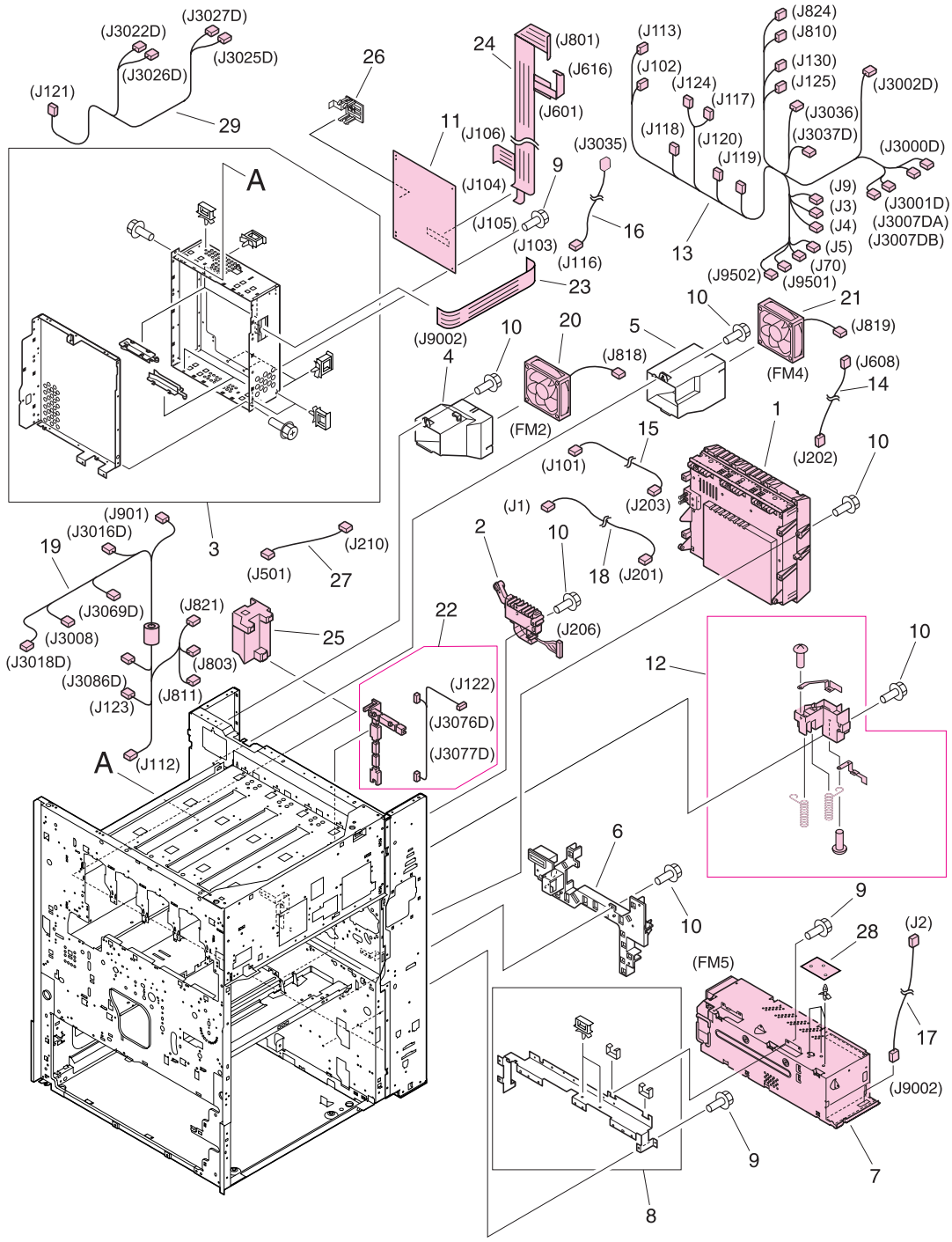


Figure 324. **Internal components (9 of 9)**

Table 100. Internal components (9 of 9)

Ref	Description	Part number	Qty
Figure 324; 1	High-voltage PCB assembly	RG5-6031-000CN	1
Figure 324; 2	High-voltage connector PCB assembly (J206)	RG5-6032-000CN	1
Figure 324; 3	Shield case assembly	Not orderable	1
Figure 324; 4	Holder, upper fan	Not orderable	1
Figure 324; 5	Holder, lower fan	Not orderable	1
Figure 324; 6	Guide, main cable	Not orderable	1
Figure 324; 7	Power supply assembly 110-127 V (FM5, 100-127 V) Power supply assembly 220-240 V (FM5, 220-240 V)	RH3-2236-030CN new C8546-69003 exchange RH3-2237-040CN new C8546-69004 exchange	1 1
Figure 324; 8	Power supply mount assembly	Not orderable	1
Figure 324; 9	Screw, RS M3X6	Not orderable	6
Figure 324; 10	Screw, RS M3X8	Not orderable	10
Figure 324; 11	DC controller PCB assembly	RG5-5901-060CN new C8546-69005 exchange	1
Figure 324; 12	High-voltage holder assembly	RG5-6129-000CN	1
Figure 324; 13	Cable, rear lower (J3, J4, J5, J9, J70, J102, J113, J117, J118, J119, J120, J124, J125, J129, J130, J810, J824, J3000D, J3000DH, J3001D, J3001DH, J3002D, J3002DH, J3007DAJ3007DB, J3036,J3037DB, J9501, J9502, J9503, J9504))	RG5-5919-000CN	1
Figure 324; 14	Cable, process cartridge (J202, J608)	RG5-5938-000CN	1
Figure 324; 15	Cable, high-voltage control (J101, J203)	RG5-5940-000CN	1
Figure 324; 16	Cable, fuser motor (J116, J3035)	RG5-5952-000CN	1
Figure 324; 17	Cable, formatter (J2, J9002)	RG5-5933-000CN	1
Figure 324; 18	Cable, high-voltage (J1, J201)	RG5-5937-000CN	1
Figure 324; 19	Cable, rear upper (J112, J123, J803, J811, J821, J901, J3008, J3016D, J3018D, J3069D, J3086D) (HP CLJ 9500 only)	RG5-5920-000CN	1
Figure 324; 19	Cable, rear upper (HP CLJ 9500mfp only)	RG5-5990-000CN	1
Figure 324; 20	Fan (FM2, J818)	RH7-1521-000CN	1
Figure 324; 21	Fan (FM4, J819)	RH7-1522-000CN	1
Figure 324; 22	Cable, rear holder assembly (J122, J3076, J3077D)	RG5-6159-000CN	1
Figure 324; 23	Cable, flat (J103, J9002)	RH2-5509-000CN	1
Figure 324; 24	Cable, flat (J104, J106< J601, J616, J801)	RH2-5507-000CN	1
Figure 324; 25	High-voltage power supply PCB unit	RH3-0353-020CN	1
Figure 324; 26	Plate, test switch	Not orderable	1
Figure 324; 27	Cable, post controller (J210, J501)	RG5-5966-000CN	1
Figure 324; 28	Regulator PCB assembly	RG5-5971-000CN	1
Figure 324; 29	Cable, rear lower (J121, J3025D, J3027D), J3022D, J3026D)	RG5-5975-000CN	1

Registration drive assembly

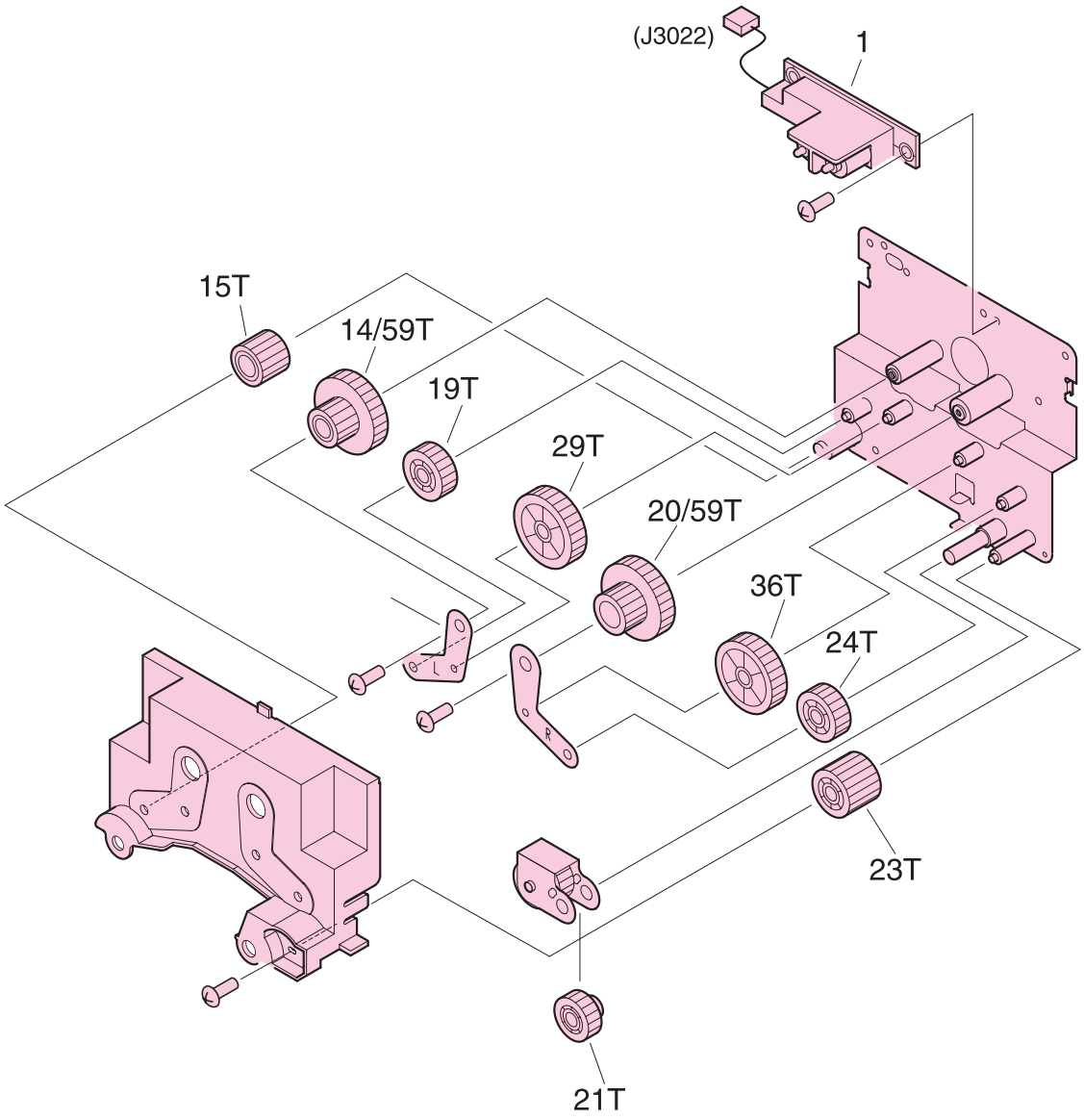


Figure 325. **Registration drive assembly**

Note Callout numbers that are followed by a “T” indicate the number of teeth on the specified gear. For example, 21T is a gear with 21 teeth.

Table 101. Registration drive assembly

Ref	Description	Part number	Qty
Figure 325; all	Registration drive assembly	RG5-6015-000CN	1
Figure 325; 1	Pin holder unit (registration drive assembly; J3022)	RG5-6160-000CN	1

Process cartridge drive assembly (image drum drive)

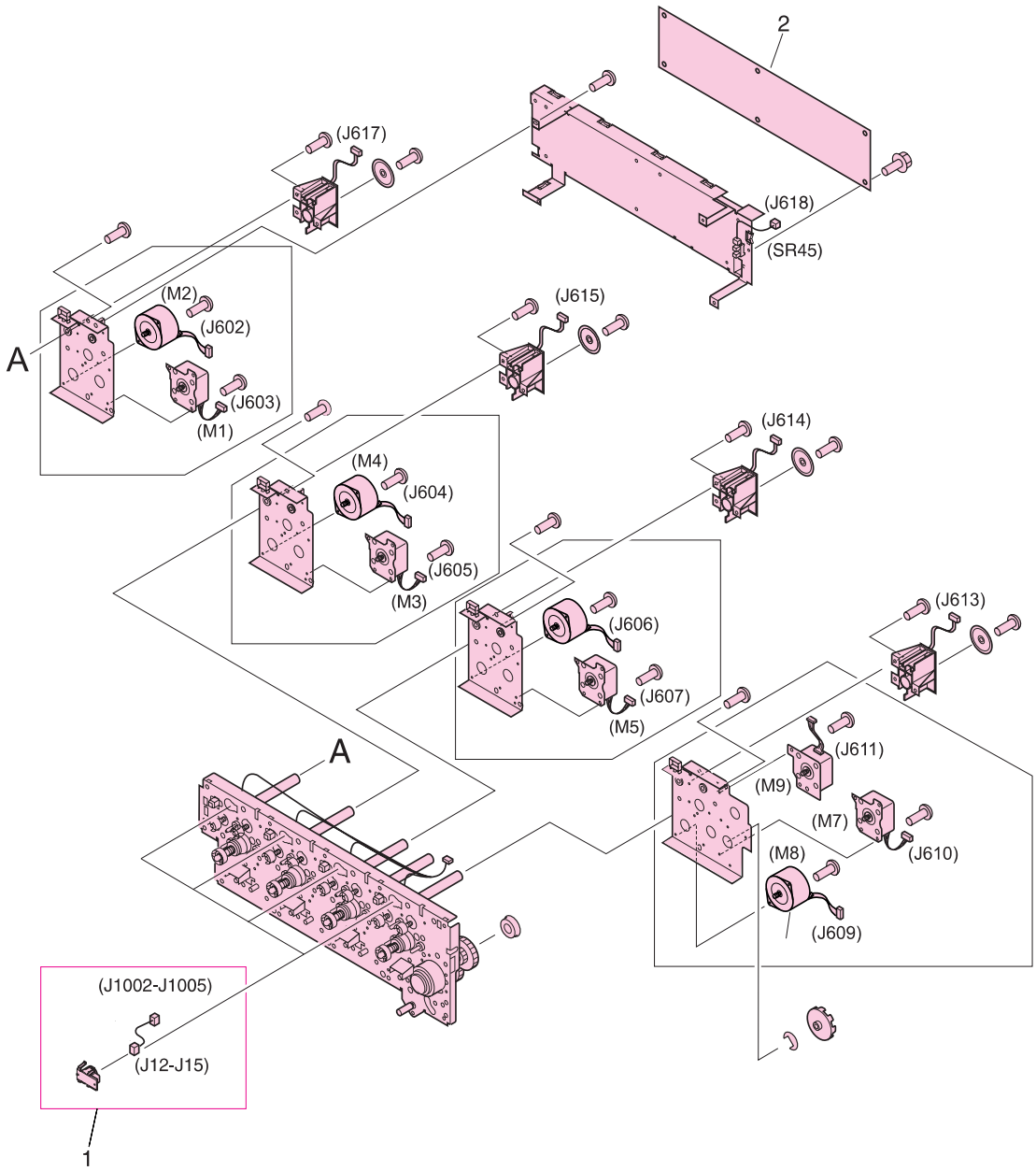


Figure 326. **Process cartridge drive assembly (image drum drive)**

Table 102. Process cartridge drive assembly (image drum drive)

Ref	Description	Part number	Qty
Figure 326; all	Process cartridge drive assembly (J613, J614, J615, M8, J609, J12, J13, J14, J15, J1002, J1003, J1004, J1005, M7, J610, M9, J611, M2, J604, J606, M1, M3, M5, J603, J605, J607)	RG5-6188-030CN new C8546-69006 exchange	1
Figure 326; 1	Antenna holder assembly	RG5-6026-000CN	4
Figure 326; 2	Process cartridge (image drum) PCB assembly	RG5-5905-000CN	1

Toner cartridge drive assembly (print cartridge drive)

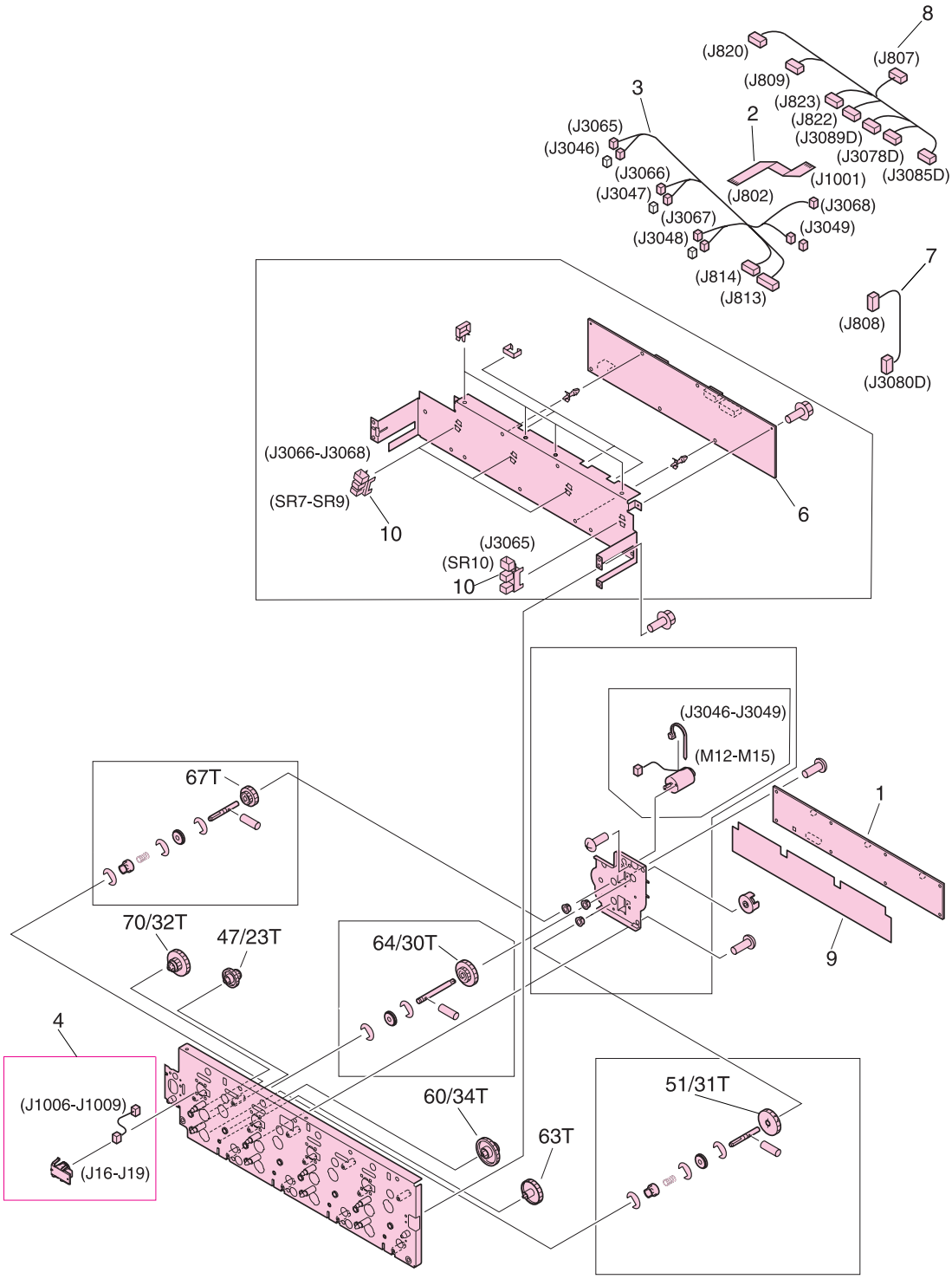


Figure 327. **Toner cartridge drive assembly (print cartridge drive)**

Note Callout numbers that are followed by a “T” indicate the number of teeth on the specified gear. For example, 21T is a gear with 21 teeth.

Table 103. Toner cartridge drive assembly (print cartridge drive)

Ref	Description	Part number	Qty
Figure 327; all	Toner cartridge drive assembly (print cartridge drive)	RG5-6022-020CN	1
Figure 327; 1	Memory switch PCB assembly	RG5-5909-000CN	1
Figure 327; 2	Cable, flat (J802, J1001)	RH2-5508-000CN	1
Figure 327; 3	Toner drive cable (J813, J814, J3046, J3047, J3048, J3049, J3065, J3066, J3067, J3068)	RG5-5930-000CN	1
Figure 327; 4	Antenna holder assembly (J16-J19, J1006-J1009)	RG5-6026-000CN	4
Figure 327; 5	Toner cartridge motor assembly (M12, M13, M14, M15, J3046, J3047, J3048, J3049)	Not orderable	1
Figure 327; 6	crg driver PCB assembly (print cartridge drive)	RG5-5907-020CN	1
Figure 327; 7	Cable, right rear 1 (J808, J3080D)	RG5-5962-000CN	1
Figure 327; 8	Cable, right rear 2 (J807, J808, J820, J822, J823, J3078D, J3085D, J3089D)	RG5-5963-000CN	1
Figure 327; 9	Sheet, insulating	Not orderable	1
Figure 327; 10	Photo-interrupter TLP1241 (J16, J17, J18, J19, J1006, J1007, J1008, J1009)	WG8-5362-000CN	4

Fuser drive assembly

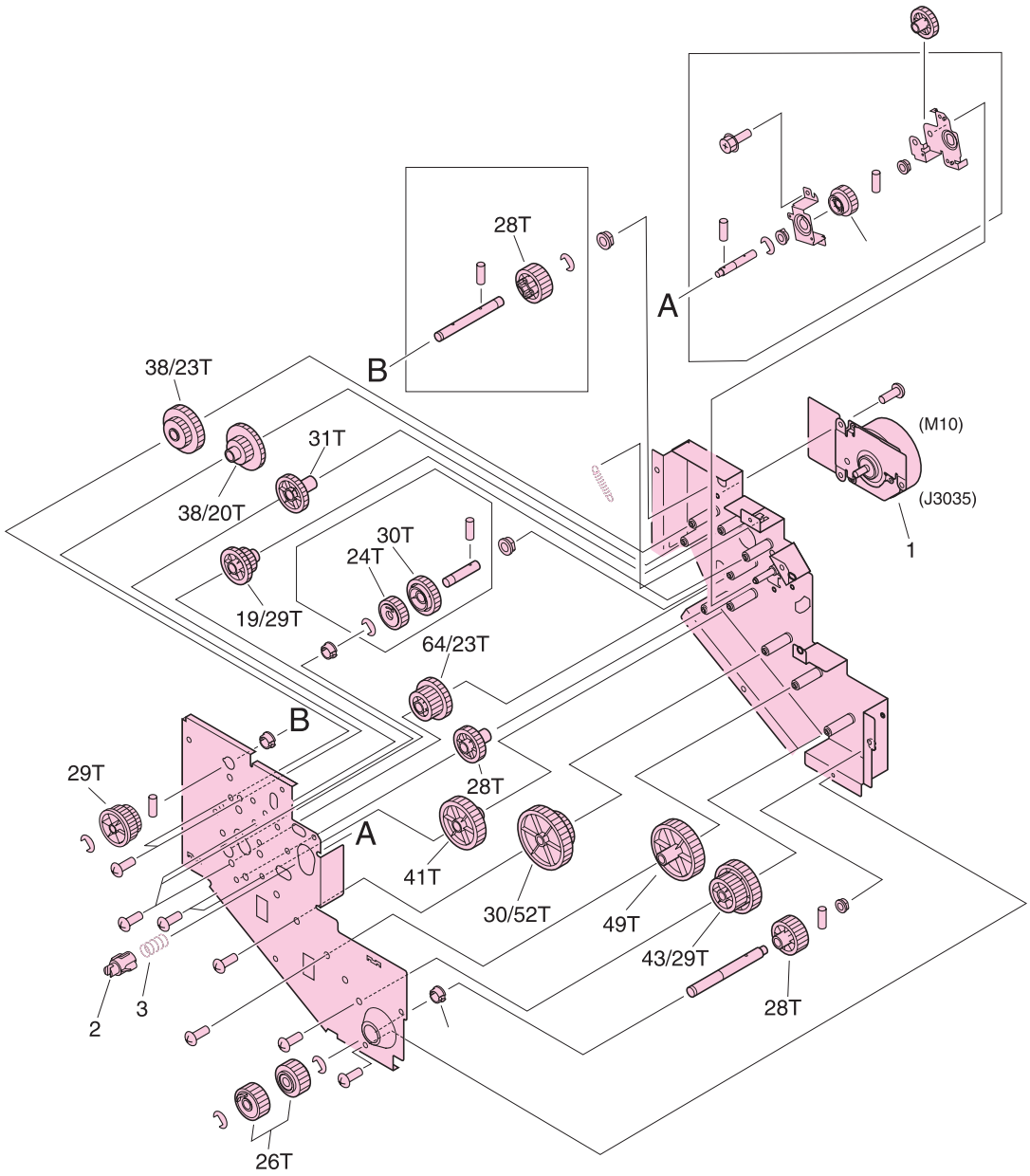


Figure 328. **Fuser drive assembly**

Note Callout numbers that are followed by a “T” indicate the number of teeth on the specified gear. For example, 21T is a gear with 21 teeth.

Table 104. Fuser drive assembly

Ref	Description	Part number	Qty
Figure 328; all	Fuser drive assembly	RG5-6018-000CN	1
Figure 328; 1	Motor, DC24 V (M10, J3035)	RH7-1519-000CN	1
Figure 328; 2	Coupler	Not orderable	1
Figure 328; 3	Spring, compression	Not orderable	1

Cassette assembly

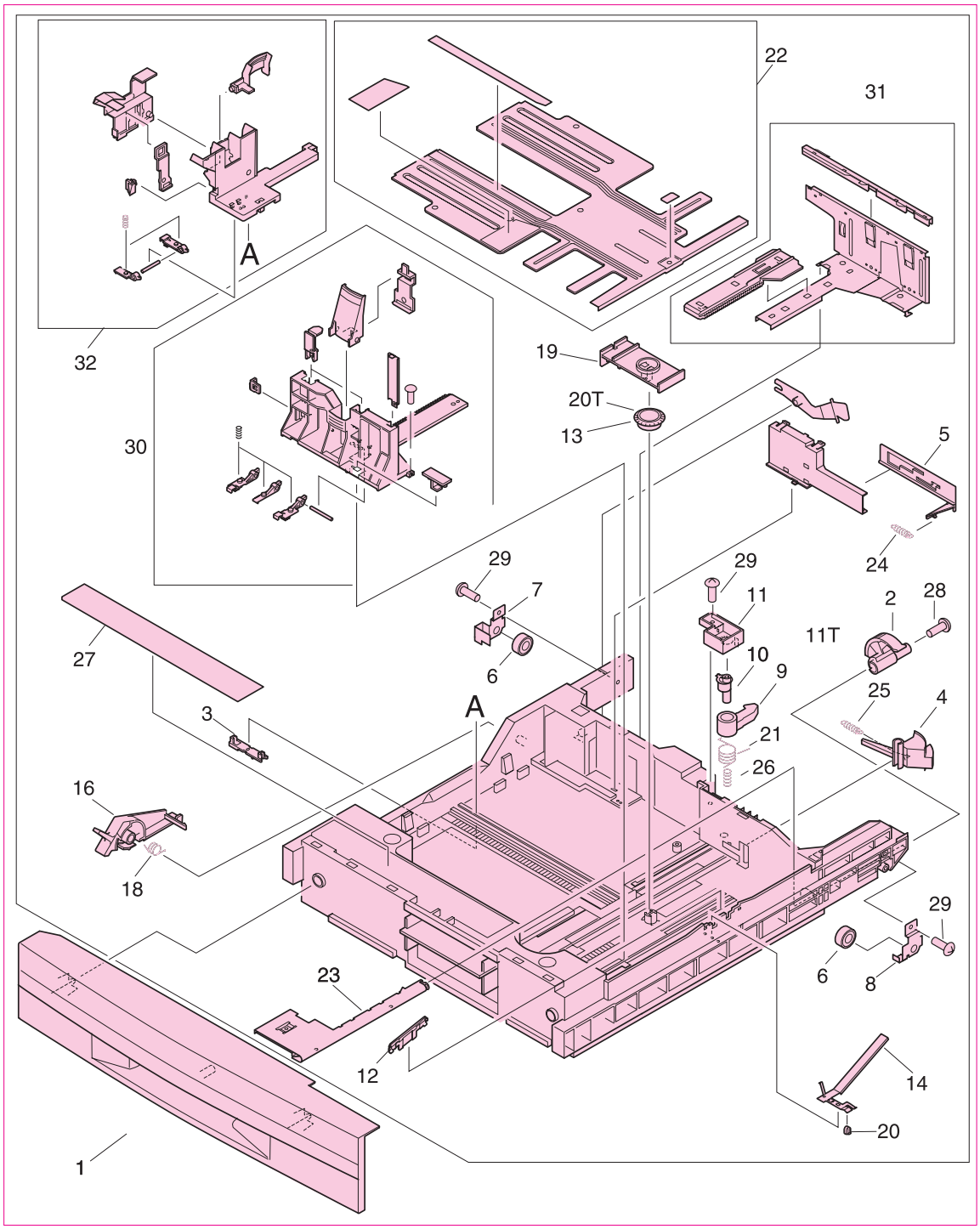


Figure 329. **Cassette assembly**

Note Callout numbers that are followed by a “T” indicate the number of teeth on the specified gear. For example, 21T is a gear with 21 teeth.

Table 105. Cassette assembly

Ref	Description	Part number	Qty
Figure 329; all	Cassette (use this part number to order the entire assembly)	RG5-5635-080CN	2
Figure 329; 1	Cover, front	Not orderable	1
Figure 329; 2	Gear, 11 teeth	Not orderable	1
Figure 329; 3	Holder, rear	Not orderable	1
Figure 329; 4	Cam, width sensing	Not orderable	1
Figure 329; 5	Plate, coupler	Not orderable	1
Figure 329; 6	Roller, cassette	Not orderable	2
Figure 329; 7	Plate, left stop	Not orderable	1
Figure 329; 8	Plate, right stop	Not orderable	1
Figure 329; 9	Claw, lock	Not orderable	1
Figure 329; 10	Shaft, lock	Not orderable	1
Figure 329; 11	Holder, lock	Not orderable	1
Figure 329; 12	Guide	Not orderable	1
Figure 329; 13	Gear, 20 teeth	Not orderable	1
Figure 329; 14	Plate, grounding	Not orderable	1
Figure 329; 15	Arm, cassette	Not orderable	1
Figure 329; 16	Knob, cassette	Not orderable	1
Figure 329; 17	Holder, cover	Not orderable	1
Figure 329; 18	Spring, torsion	Not orderable	1
Figure 329; 19	Holder, mount	Not orderable	1
Figure 329; 20	Pin, grounding	Not orderable	1
Figure 329; 21	Spring, torsion	Not orderable	1
Figure 329; 22	Plate, lifting	Not orderable	1
Figure 329; 23	Plater, lifter	Not orderable	1
Figure 329; 24	Spring, tension	Not orderable	1
Figure 329; 25	Spring, tension	Not orderable	1
Figure 329; 26	Spring, compression	Not orderable	1
Figure 329; 27	Label, control	Not orderable	1
Figure 329; 28	Screw, with washer M3X29.5	Not orderable	1
Figure 329; 29	Screw, M4X10	Not orderable	1
Figure 329; 30	Side, standard plate assembly	Not orderable	1
Figure 329; 31	Side, plate guide assembly	Not orderable	1
Figure 329; 32	End plate guide assembly	Not orderable	1

Paper pickup assembly (1 of 3)

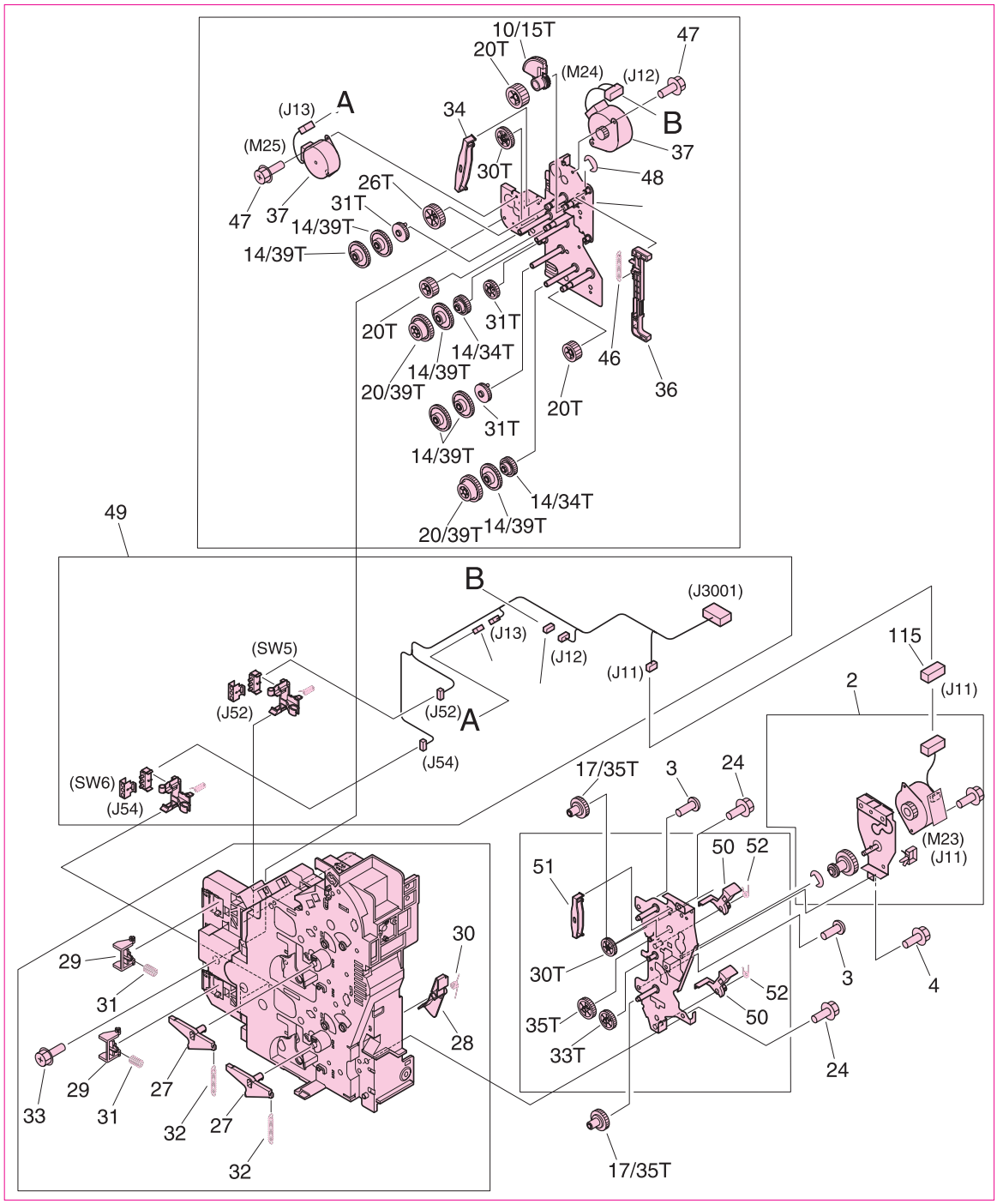


Figure 330. **Paper pickup assembly (1 of 3)**

Note Callout numbers that are followed by a “T” indicate the number of teeth on the specified gear. For example, 21T is a gear with 21 teeth.

Table 106. Paper pickup assembly (1 of 3)

Ref	Description	Part number	Qty
Figure 330; all Figure 331; all Figure 332; all	Paper pickup assembly (use this part number to order the entire assembly)	RG5-6196-000CN	1
Figure 330; 2	Motor, pickup assembly (M23, J11)	Not orderable	1
Figure 330; 3	Screw, M4X10	Not orderable	5
Figure 330; 4	Screw, RS M3X6	Not orderable	5
Figure 330; 24	Screw, RS M3X8	Not orderable	12
Figure 330; 27	Lever, release	Not orderable	2
Figure 330; 28	Flag, right cover assembly	Not orderable	2
Figure 330; 29	Arm, lock	Not orderable	2
Figure 330; 30	Spring, torsion	Not orderable	1
Figure 330; 31	Spring, compression	Not orderable	2
Figure 330; 32	Spring, tension	Not orderable	2
Figure 330; 32	Screw, RS M3X8	Not orderable	5
Figure 330; 34	Holder, gear	Not orderable	1
Figure 330; 36	Rod, pickup	Not orderable	1
Figure 330; 37	Motor, DC24 V (M24, J12) (M25, J13)	Not orderable	2
Figure 330; 46	Spring, tension	Not orderable	1
Figure 330; 47	Screw, with washer RS M3X6	Not orderable	4
Figure 330; 48	Ring, E	Not orderable	1
Figure 330; 49	Paper width sensor unit (SW5, J52, SW6, J54)	Not orderable	1
Figure 330; 50	Flag, sensor	Not orderable	2
Figure 330; 51	Holder, gear	Not orderable	1
Figure 330; 52	Spring, torsion	Not orderable	2
Figure 330; 115	Connector, 4P (J11)	Not orderable	1

Paper pickup assembly (2 of 3)

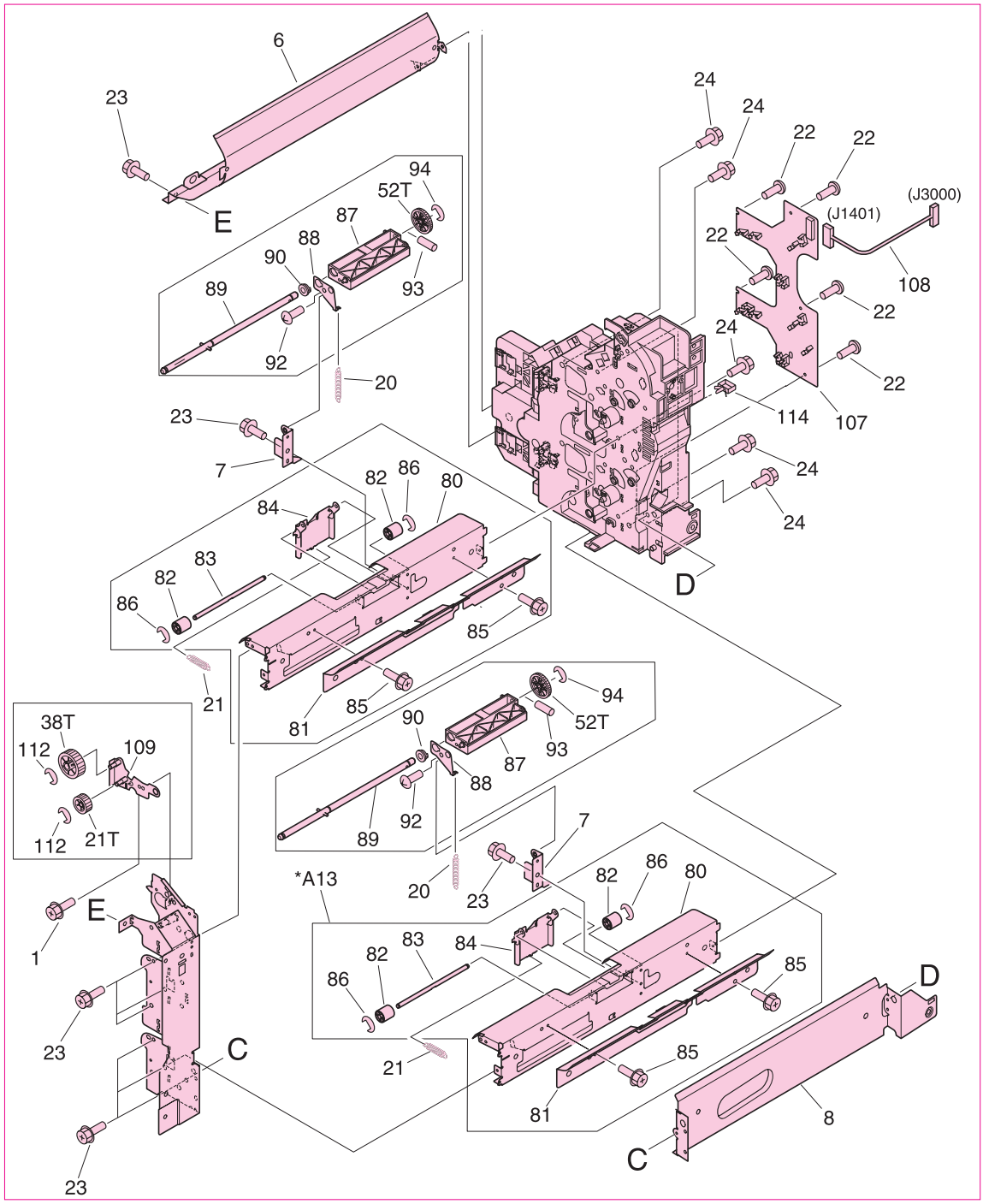


Figure 331. **Paper pickup assembly (2 of 3)**

Note Callout numbers that are followed by a “T” indicate the number of teeth on the specified gear. For example, 21T is a gear with 21 teeth.

Table 107. Paper pickup assembly (2 of 3)

Ref	Description	Part number	Qty
Figure 331; 1	Screw, RS M3X6	Not orderable	5
Figure 331; 6	Guide, pickup out	Not orderable	1
Figure 331; 7	Plate, right support	Not orderable	2
Figure 331; 8	Crossmember, pickup	Not orderable	1
Figure 331; 20	Spring, tension	Not orderable	2
Figure 331; 21	Spring, tension	Not orderable	2
Figure 331; 22	Screw, M4X10	Not orderable	5
Figure 331; 23	Screw, RS M3X6	Not orderable	13
Figure 331; 24	Screw, RS M3X8	Not orderable	12
Figure 331; 80	Guide, right	Not orderable	2
Figure 331; 81	Guide, feed out	Not orderable	2
Figure 331; 82	Roller, feed	Not orderable	4
Figure 331; 83	Shaft, feed roller	Not orderable	2
Figure 331; 84	Holder, feed roller	Not orderable	2
Figure 331; 85	Screw, RS M3X6	Not orderable	4
Figure 331; 86	Ring, E	Not orderable	4
Figure 331; 87	Holder, retard	Not orderable	2
Figure 331; 88	Plate, holder support	Not orderable	2
Figure 331; 89	Shaft, retard	Not orderable	2
Figure 331; 90	Bushing	Not orderable	2
Figure 331; 92	Screw, M4X10	Not orderable	2
Figure 331; 93	Pin, dowel	Not orderable	2
Figure 331; 94	Ring, E	Not orderable	2
Figure 331; 107	Feed PCB assembly	Not orderable	1
Figure 331; 108	Cable, pickup	Not orderable	1
Figure 331; 109	Plate, front m-purpose support	Not orderable	1
Figure 331; 112	Ring, E	Not orderable	2

Paper pickup assembly (3 of 3)

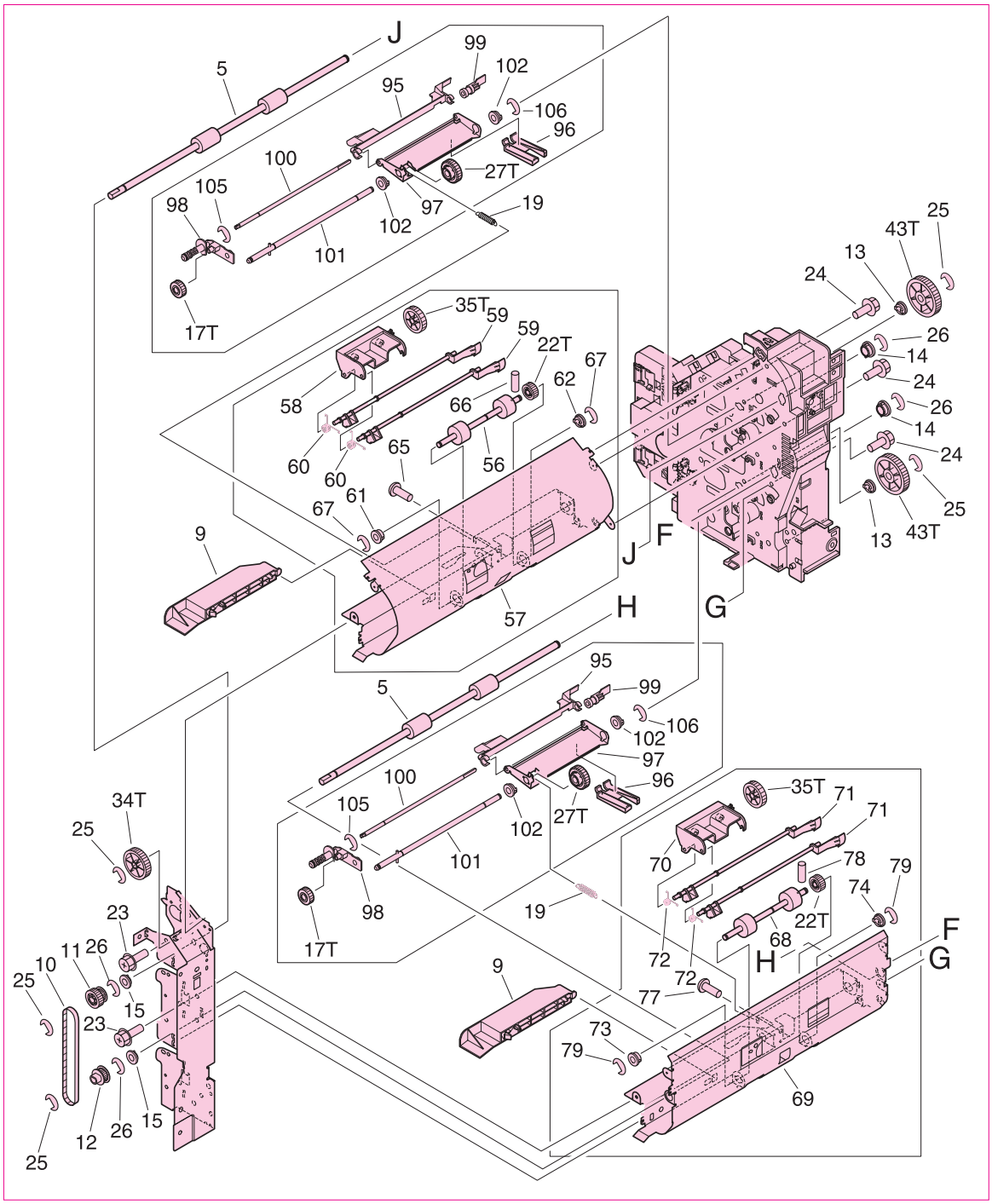


Figure 332. **Paper pickup assembly (3 of 3)**

Note Callout numbers that are followed by a “T” indicate the number of teeth on the specified gear. For example, 21T is a gear with 21 teeth.

Table 108. Paper pickup assembly (3 of 3)

Ref	Description	Part number	Qty
Figure 332; 5	Roller, vertical path	Not orderable	2
Figure 332; 9	Guide, front inlet	Not orderable	2
Figure 332; 10	Timing belt	Not orderable	1
Figure 332; 11	Vertical path drive gear unit	Not orderable	1
Figure 332; 12	Vertical Path pulley unit	Not orderable	1
Figure 332; 13	Bushing	Not orderable	2
Figure 332; 14	Bushing	Not orderable	2
Figure 332; 15	Bushing	Not orderable	2
Figure 332; 19	Spring, tension	Not orderable	3
Figure 332; 23	Screw, RS M3X6	Not orderable	13
Figure 332; 24	Screw, RS M3X8	Not orderable	12
Figure 332; 25	Ring, E	Not orderable	5
Figure 332; 26	Ring, E	Not orderable	4
Figure 332; 56	Roller, feed	Not orderable	1
Figure 332; 57	Guide, pickup feed	Not orderable	1
Figure 332; 58	Holder, feed sensor	Not orderable	1
Figure 332; 59	Flag, feed sensor	Not orderable	2
Figure 332; 60	Spring, torsion	Not orderable	2
Figure 332; 61	Bushing	Not orderable	1
Figure 332; 62	Bushing	Not orderable	1
Figure 332; 65	Screw, M4X10	Not orderable	2
Figure 332; 66	Pin, dowel	Not orderable	1
Figure 332; 67	Ring, E	Not orderable	2
Figure 332; 68	Roller, feed	Not orderable	1
Figure 332; 69	Guide, feed roller	Not orderable	1
Figure 332; 70	Holder, feed sensor	Not orderable	1
Figure 332; 71	Flag, feed sensor	Not orderable	2
Figure 332; 72	Spring, torsion	Not orderable	2
Figure 332; 73	Bushing	Not orderable	1
Figure 332; 74	Bushing	Not orderable	1
Figure 332; 77	Screw, M4X10	Not orderable	2
Figure 332; 78	Pin, dowel	Not orderable	1
Figure 332; 79	Ring, E	Not orderable	2
Figure 332; 95	Flag, paper sensor	Not orderable	2
Figure 332; 96	Guide, inlet	Not orderable	2
Figure 332; 97	Holder, pickup	Not orderable	2
Figure 332; 98	Holder, pickup roller	Not orderable	2
Figure 332; 99	Flag, paper height	Not orderable	2
Figure 332; 100	Shaft, pickup	Not orderable	2
Figure 332; 101	Shaft, feed	Not orderable	2
Figure 332; 102	Bushing	Not orderable	4
Figure 332; 105	Ring, E	Not orderable	2
Figure 332; 106	Ring, E	Not orderable	2

Manual feed pickup assembly (tray 1) (1 of 2)

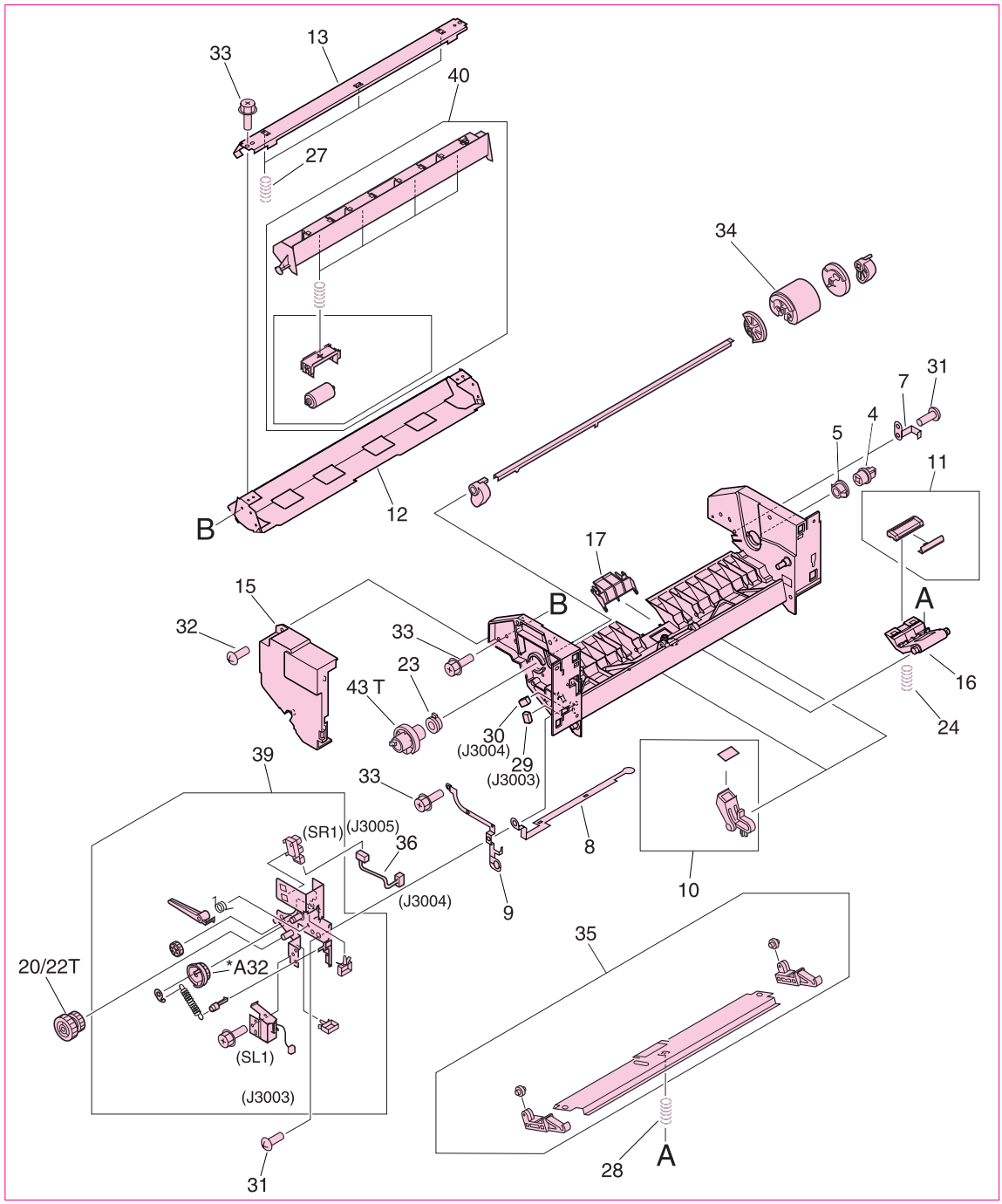


Figure 333. **Manual feed pickup assembly (tray 1) (1 of 2)**

Note Callout numbers that are followed by a “T” indicate the number of teeth on the specified gear. For example, 21T is a gear with 21 teeth.

Table 109. Manual feed pickup assembly (tray 1) (1 of 2)

Ref	Description	Part number	Qty
Figure 333; all Figure 334; all	Manual feed pickup assembly (tray 1)	RG5-6090-190CN	1
Figure 333; 4	Bushing	Not orderable	1
Figure 333; 5	Bushing, right	Not orderable	1
Figure 333; 7	Plate, grounding	Not orderable	1
Figure 333; 8	Plate, grounding	Not orderable	1
Figure 333; 9	Plate, grounding	Not orderable	1
Figure 333; 10	Pad	RF5-3489-000CN	2
Figure 333; 11	Pad, separation	RF5-3490-000CN	1
Figure 333; 12	Plate, paper pickup guide	Not orderable	1
Figure 333; 13	Plate, paper pickup cover	Not orderable	1
Figure 333; 15	Cover, multipurpose sensor	Not orderable	1
Figure 333; 16	Holder, pad	Not orderable	1
Figure 333; 17	Guide, paper	Not orderable	1
Figure 333; 23	Bushing, left	Not orderable	1
Figure 333; 24	Spring, compression	Not orderable	1
Figure 333; 27	Spring, compression	Not orderable	1
Figure 333; 28	Spring, compression	Not orderable	1
Figure 333; 29	Connector, 2P (J3003)	Not orderable	1
Figure 333; 30	Connector, 3P (J3004)	Not orderable	1
Figure 333; 31	Screw, M4X10	Not orderable	6
Figure 333; 32	Screw, M4X8	Not orderable	1
Figure 333; 33	Screw, RS M3X6	Not orderable	6
Figure 333; 34	Roller, pickup	RB2-1820-000CN	1
Figure 333; 35	Paper guide plate assembly	Not orderable	1
Figure 333; 36	Multipurpose sensor cable (J3004, J3005)	Not orderable	1
Figure 333; 39	Multipurpose drive assembly (SL1, J3003, SR1, J3005)	Not orderable	1
Figure 333; 40	Front registration crossmember assembly	Not orderable	1

Manual feed pickup assembly (tray 1) (2 of 2)

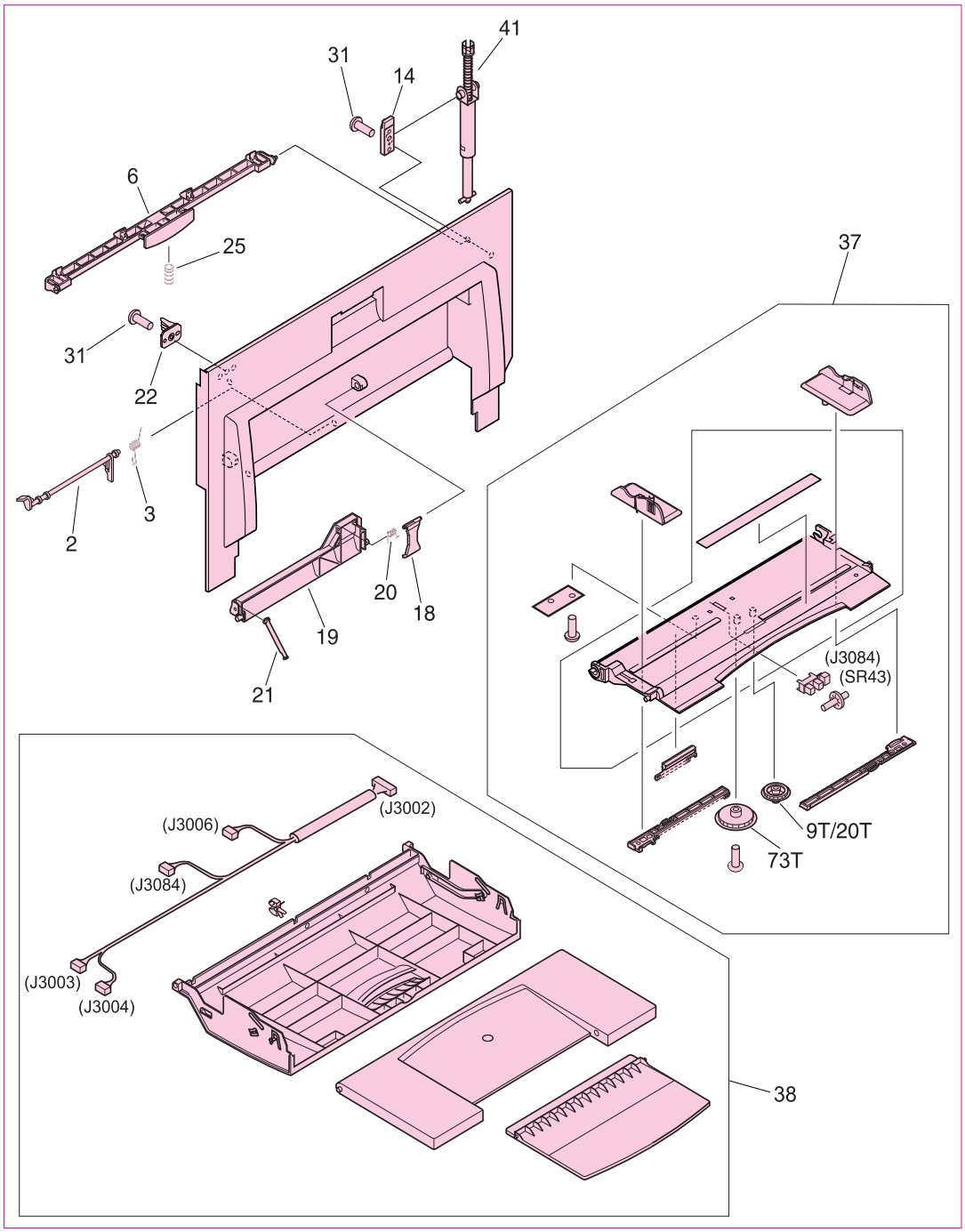


Figure 334. **Manual feed pickup assembly (tray 1) (2 of 2)**

Note Callout numbers that are followed by a “T” indicate the number of teeth on the specified gear. For example, 21T is a gear with 21 teeth.

Table 110. Manual feed pickup assembly (tray 1) (2 of 2)

Ref	Description	Part number	Qty
Figure 334; 2	Arm, sensor	Not orderable	1
Figure 334; 3	Spring, torsion	Not orderable	1
Figure 334; 6	Knob	Not orderable	1
Figure 334; 18	Lever, sensor	Not orderable	1
Figure 334; 19	Frame, paper sensor	Not orderable	1
Figure 334; 20	Spring, torsion	Not orderable	1
Figure 334; 21	Flag, sensor	Not orderable	1
Figure 334; 22	Mount, shaft	Not orderable	1
Figure 334; 37	Multipurpose tray assembly (SR43, J3084)	Not orderable	1
Figure 334; 38	Multipurpose, cover assembly (J3002, J3003, J3004, J3006, J3084)	Not orderable	

Registration assembly

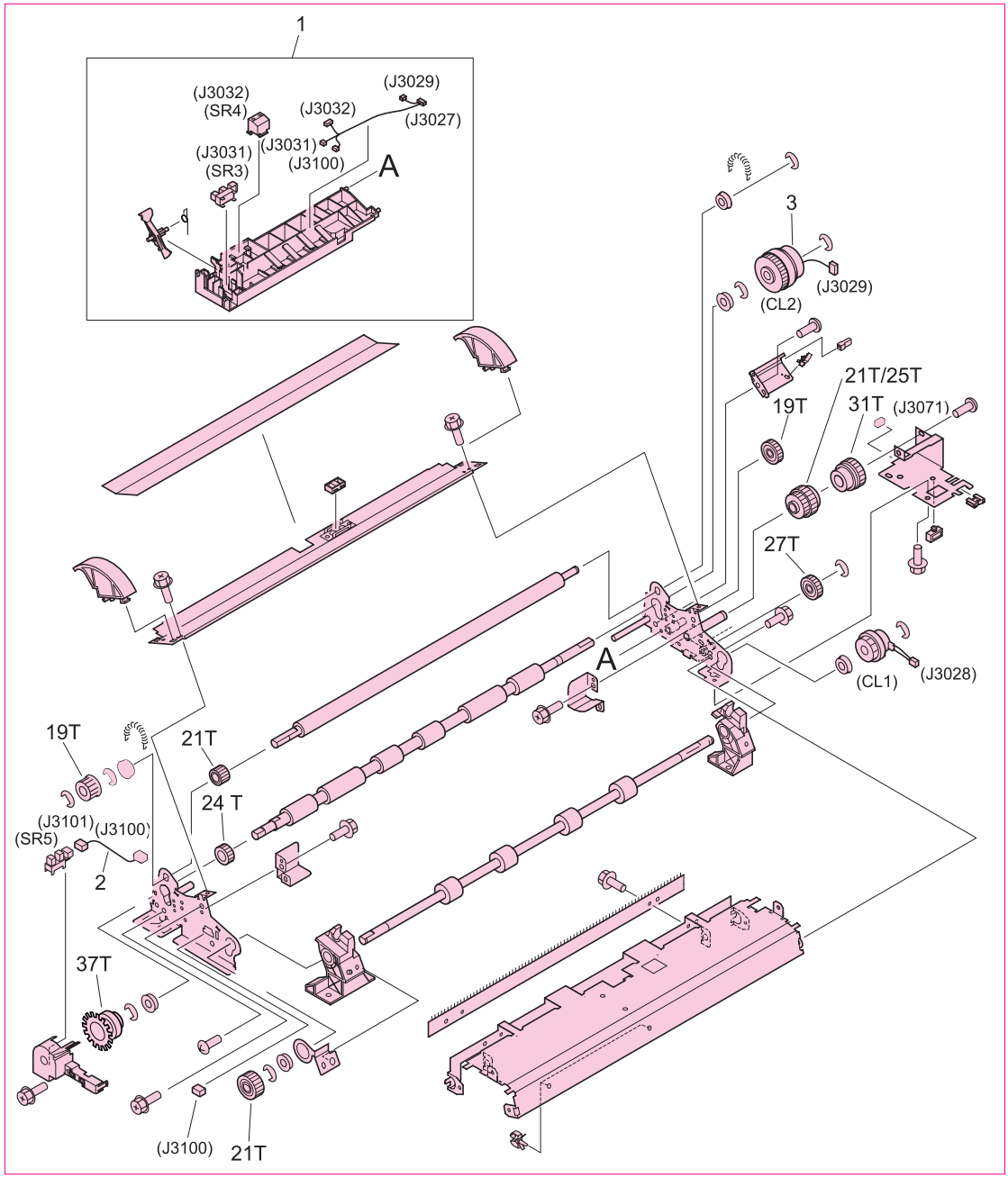


Figure 335. **Registration assembly**

Note Callout numbers that are followed by a “T” indicate the number of teeth on the specified gear. For example, 21T is a gear with 21 teeth.

Table 111. Registration assembly

Ref	Description	Part number	Qty
Figure 335; all	Registration assembly (use this part number to order the entire assembly; SR5)	RG5-6016-000CN	1
Figure 335; 1	Registration sensor holder assembly (SR4, J3032, SR3, J3031, J3027, J3029, J3031, J3032, J3100)	Not orderable	1
Figure 335; 2	Cable, sensor (J3100, J3101)	Not orderable	1
Figure 335; 3	Clutch, electrical mechanical (CL, J3029)	Not orderable	1
Figure 335; 4	Clutch, electrical mechanical (CL1, J3028)	Not orderable	1

Secondary transfer assembly (T2) (1 of 2)

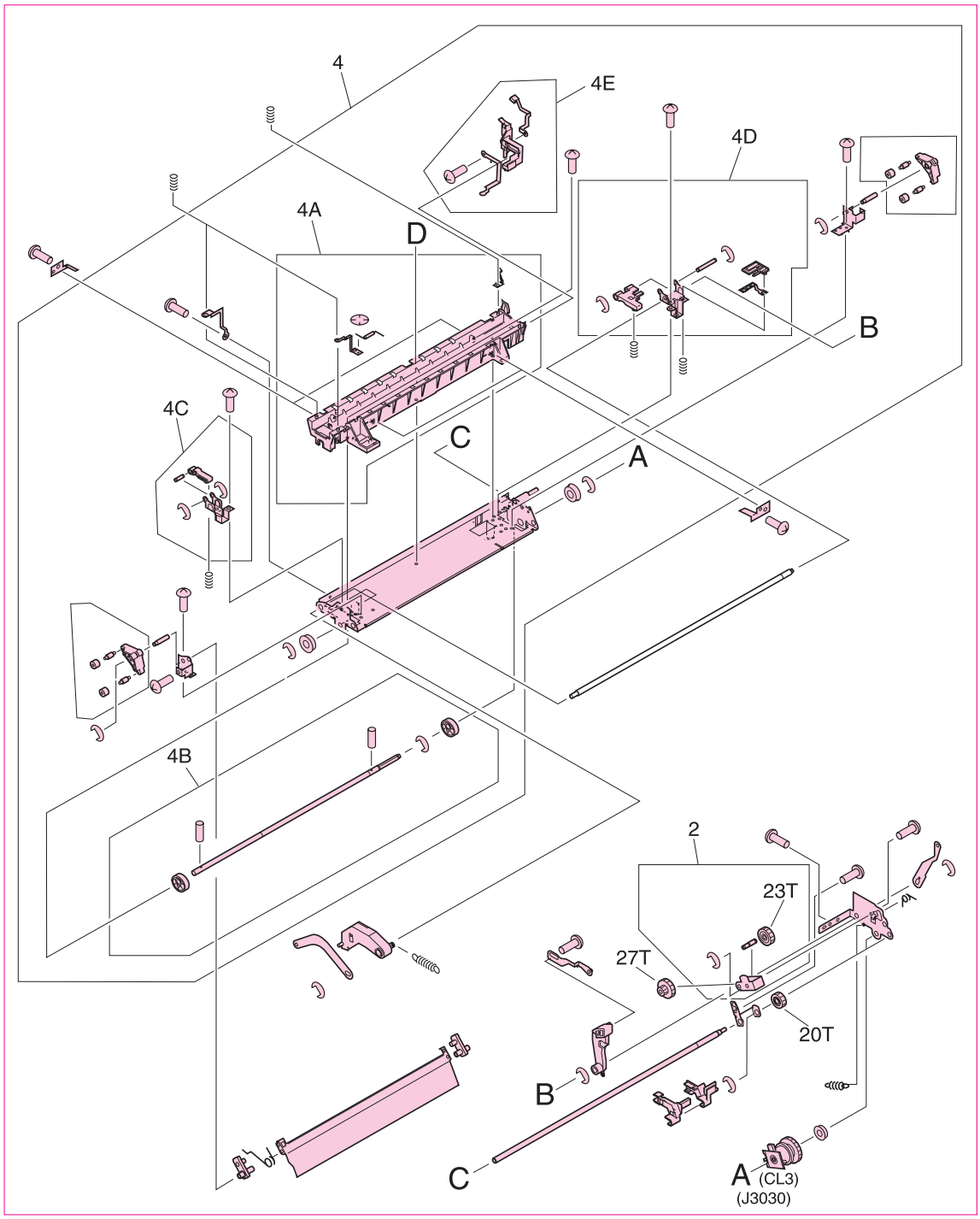


Figure 336. **Secondary transfer assembly (T2) (1 of 2)**

Note Callout numbers that are followed by a “T” indicate the number of teeth on the specified gear. For example, 21T is a gear with 21 teeth.

Table 112. Secondary transfer assembly (T2) (1 of 2)

Ref	Description	Part number	Qty
Figure 336; all Figure 337; all	Secondary transfer assembly (T2) (use this part number to order the entire assembly; J3026, J3030, J3081, CL3, J3030, SR42)	RG5-6179-020CN	1
Figure 336; 2	Gear holder assembly	Not orderable	1
Figure 336; 4	Crossmember assembly	Not orderable	1

Secondary transfer assembly (T2) (2 of 2)

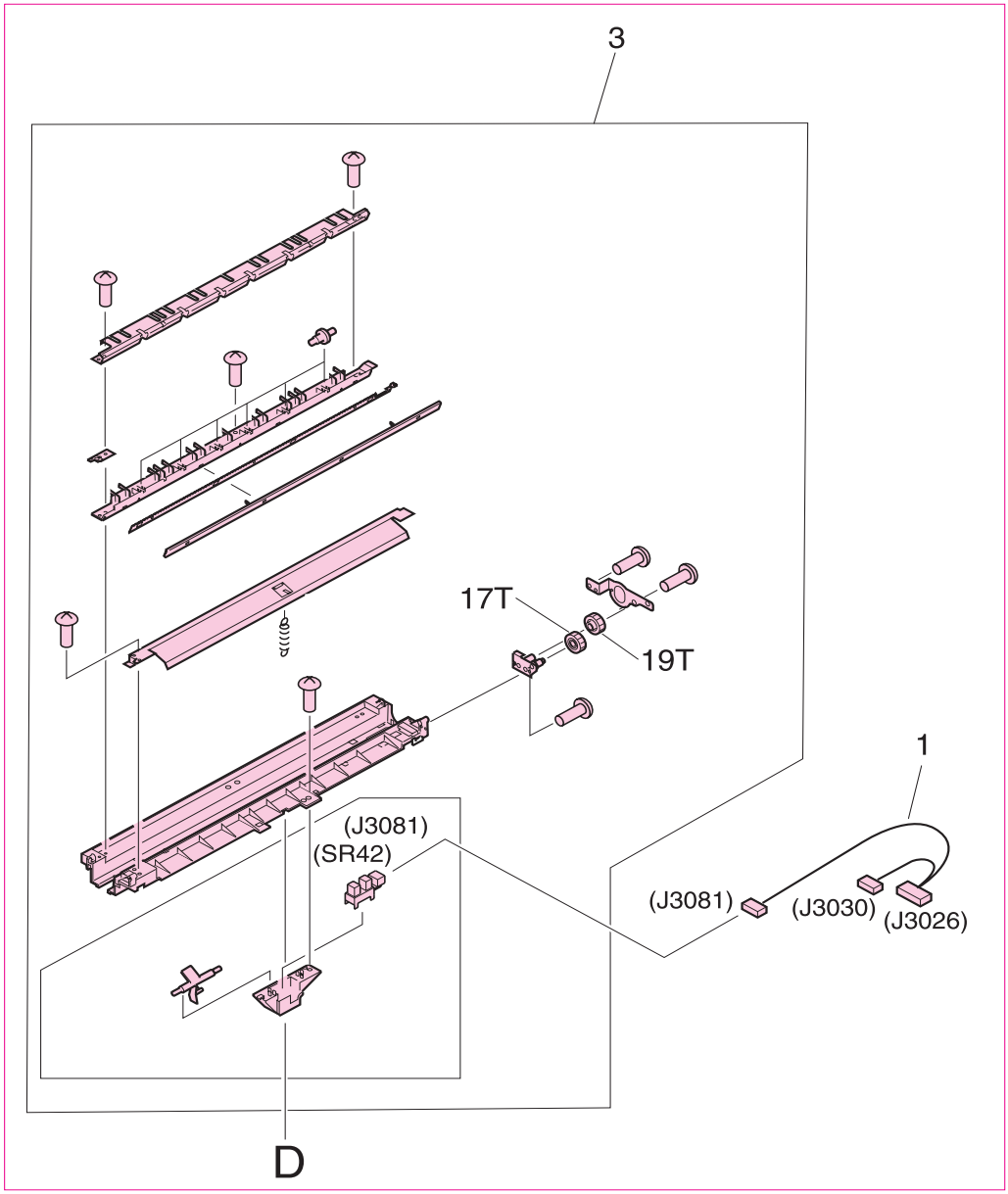


Figure 337. **Secondary transfer assembly (T2) (2 of 2)**

Note Callout numbers that are followed by a “T” indicate the number of teeth on the specified gear. For example, 21T is a gear with 21 teeth.

Table 113. Secondary transfer assembly (T2) (2 of 2)

Ref	Description	Part number	Qty
Figure 337; 1	Secondary transfer (T2) cable assembly (use this part number to order the entire assembly)	RG5-6179-030CN	1
Figure 337; 3	Guide, holder assembly	Not orderable	1

Delivery feed assembly

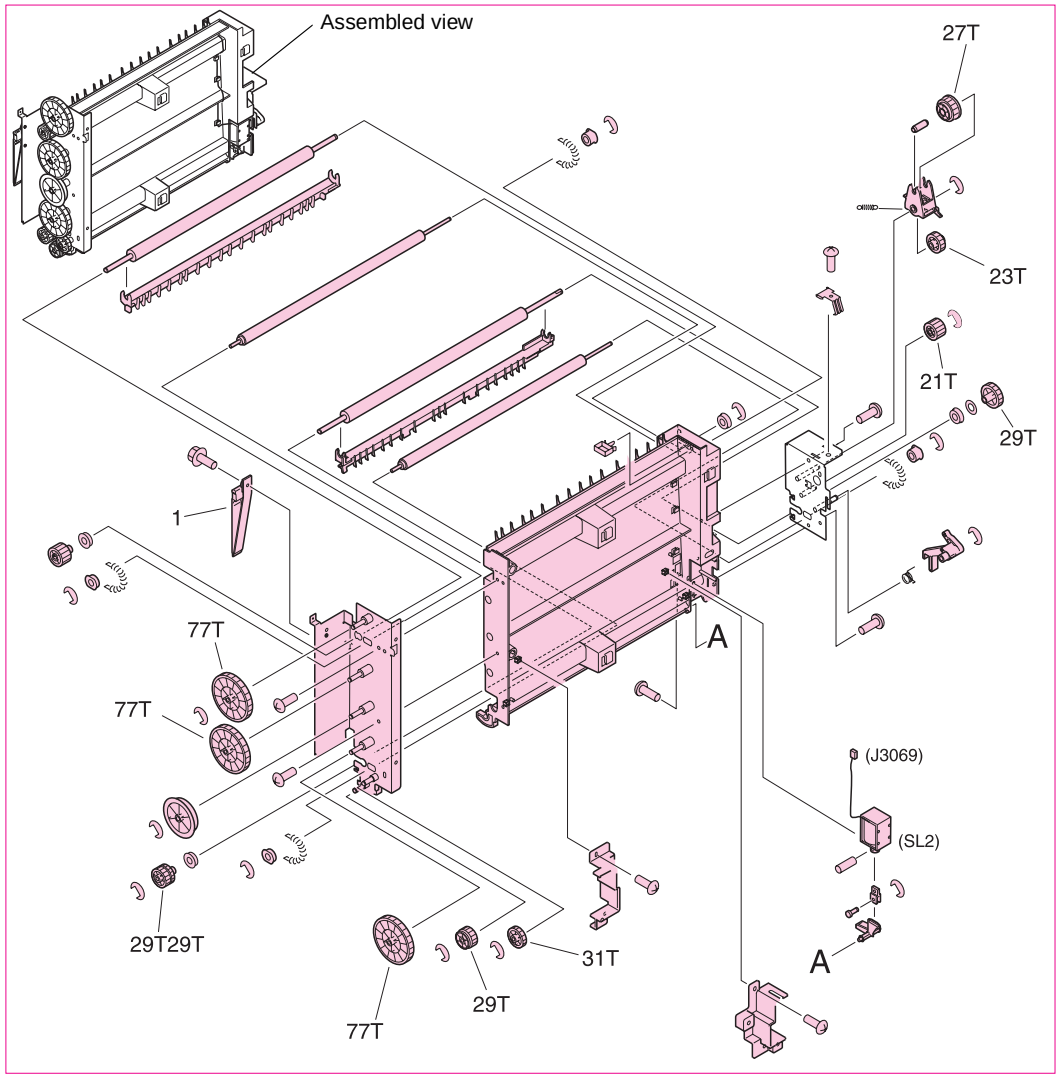


Figure 338. **Delivery feed assembly**

Note Callout numbers that are followed by a “T” indicate the number of teeth on the specified gear. For example, 21T is a gear with 21 teeth.

Table 114. Delivery feed assembly

Ref	Description	Part number	Qty
Figure 338; all	Delivery feed assembly (use this part number to order the entire assembly; SL2, J3069) (HP CLJ 9500 only)	RG5-6150-000CN	1
Figure 338; all	Delivery feed assembly (use this part number to order the entire assembly; SL2, J3069) (HP CLJ 9500 only)	RG5-6190-000CN	1
Figure 338; 1	Door tape	RB2-7447-000CN	1
Figure 338; 2	Screw, RS M3X6	Not orderable	2

Face down delivery assembly

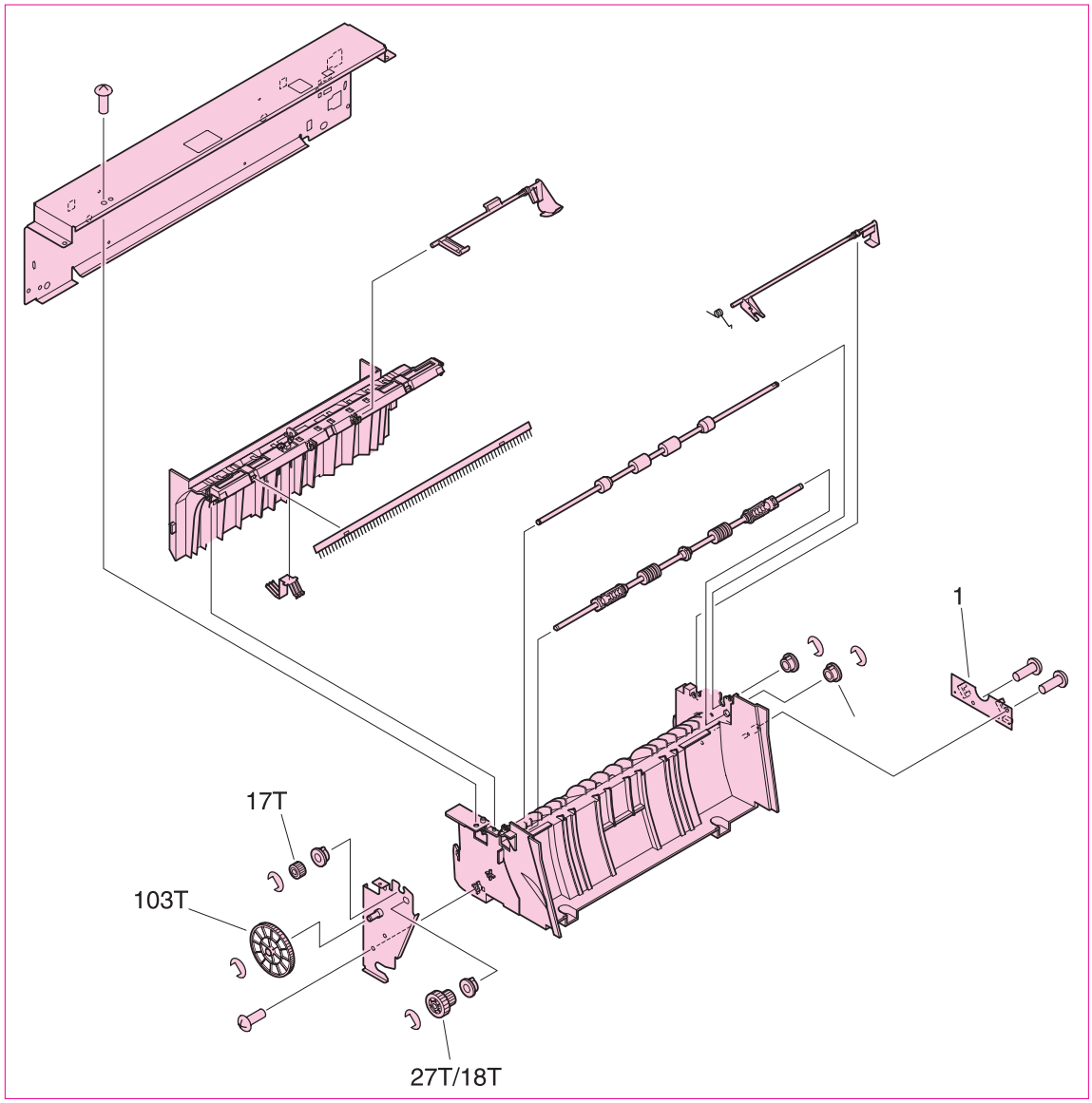


Figure 339. **Face down delivery assembly**

Note Callout numbers that are followed by a “T” indicate the number of teeth on the specified gear. For example, 21T is a gear with 21 teeth.

Table 115. Face down delivery feed assembly

Ref	Description	Part number	Qty
Figure 339; all	Face-down delivery assembly (use this part number to order the entire assembly)	RG5-6017-030CN	1
Figure 339; 1	Face-down delivery sensor PCB assembly	Not orderable	1

Delivery cover assembly

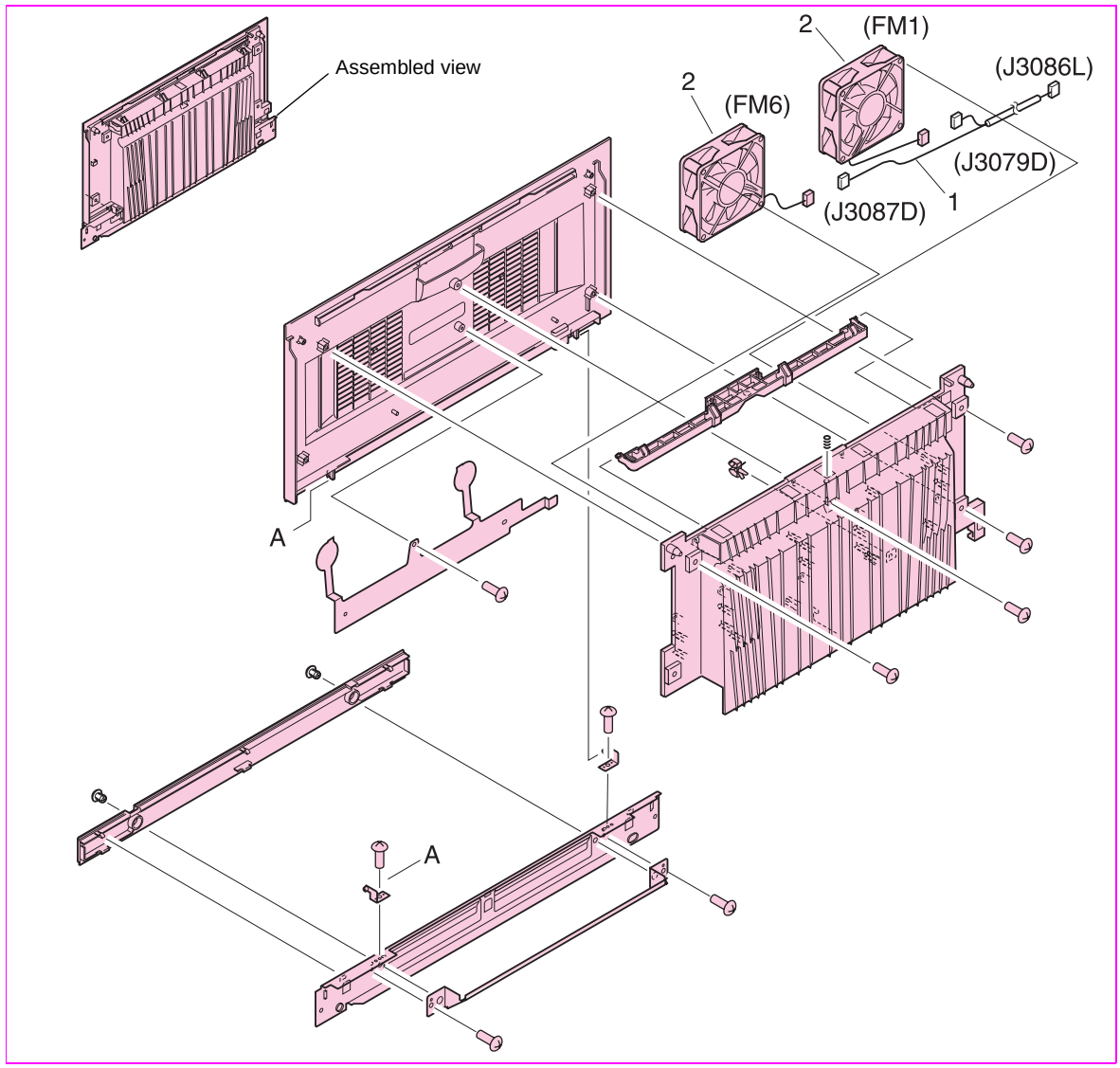


Figure 340. **Delivery cover assembly**

Table 116. Delivery cover assembly

Ref	Description	Part number	Qty
Figure 340; all	Delivery cover assembly (use this part number to order the entire assembly) (HP CLJ 9500 only) ‘	RG5-6151-000CN	1
Figure 340; all	Delivery cover assembly (use this part number to order the entire assembly) (HP CLJ 9500mfp only) ‘	RG5-6191-000CN	1
Figure 340; 1	Delivery fan cable	Not orderable	1
Figure 340; 2	Fan (HP CLJ 9500 only)	RH7-1546-000CN	2

Fuser assembly

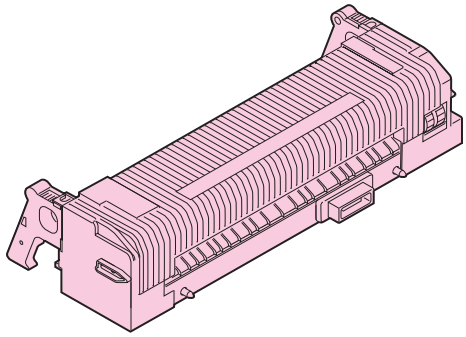


Figure 341. **Fuser assembly**

Table 117. Fuser assembly

Ref	Description	Part number	Qty
Figure 341; all	Fuser assembly	RG5-6098-000CN new C8546-69007 exchange	1

PCB assemblies

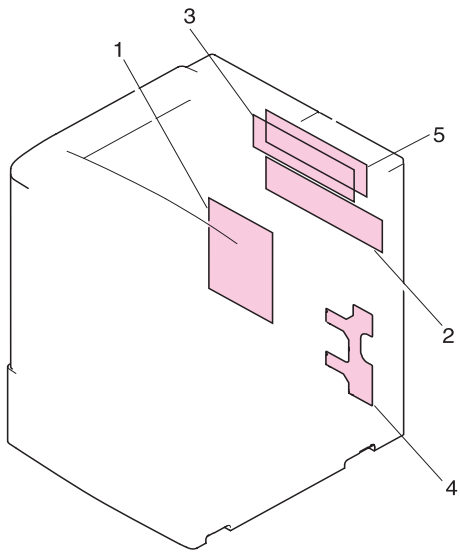


Figure 342. **PCB assemblies**

Table 118. PCB assemblies

Ref	Description	Part number	Qty
Figure 342; 1	DC controller PCB assembly	RG5-5901-060CN	1
Figure 342; 2	Process cartridge (image drum) PCB assembly	RG5-5905-000CN	1
Figure 342; 3	Memory switch PCB assembly	Not orderable	1
Figure 342; 4	Feed PCB assembly	Not orderable	1
Figure 342; 5	crg (print cartridge) driver assembly	RG5-5907-020CN	1

Tray 4

Tray 4 main body

Note This tray 4 is only available for the HP color LaserJet 9500hdn. See your *2,000-Sheet Side Input Service* manual (PN Q1891-90901) for parts information about the MFP tray 4.

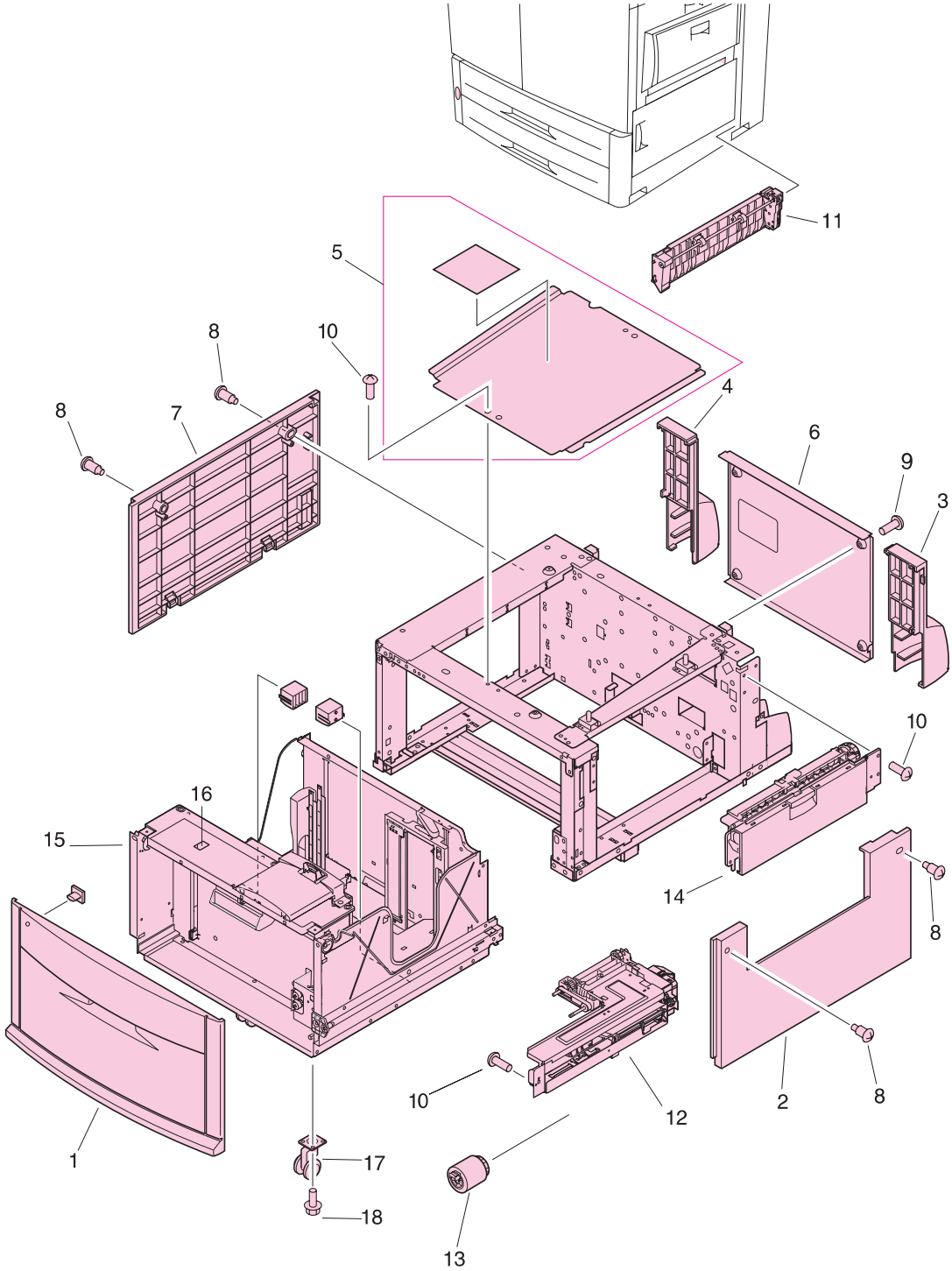


Figure 343. **Tray 4 main body (1 of 2)**

Table 119. Tray 4 main body (1 of 2)

Ref	Description	Part number	Qty
Figure 343; 1	Cover, front	RB2-7648-000CN	1
Figure 343; 2	Cover, right	RB2-7649-000CN	1
Figure 343; 3	Cover, right back	RB2-7650-000CN	1
Figure 343; 4	Cover, left back	RB2-7651-000CN	1
Figure 343; 5	Cover, center	RB2-7652-000CN	1
Figure 343; 6	Cover, back	RF5-3644-000CN	1
Figure 343; 7	Cover, left	RF5-3645-000CN	1
Figure 343; 8	Screw, stepped	RS5-9099-000CN	
Figure 343; 9	Screw, W/W, M4 by 6	XA-0994-000CN	
Figure 343; 10	Screw, M4 by 6	XB6-7400-000CN	
Figure 343; 11	Paper path connection unit (PPCU)	RG5-6227-000CN	1
Figure 343; 12	Paper input unit (PIU)	RG5-6208-120CN	1
Figure 343; 13	Feed/separation rollers	RF5-3338-000CN	3
Figure 343; 14	Tray 4 vertical registration assembly (VTU/VRA)	RG5-6225-050CN	1
Figure 343; 15	Tray 4	RG5-6212-300CN	1
Figure 343; 16	Lever, standard/custom	RB2-7762-000CN	1
Figure 343; 17	Caster	RB2-7709-000CN	1
Figure 343; 18	Screw, M4 by 8	XA9-0732-000CN	
Not shown	Tray 4-to-engine stabilizing screws	0515-4318	2

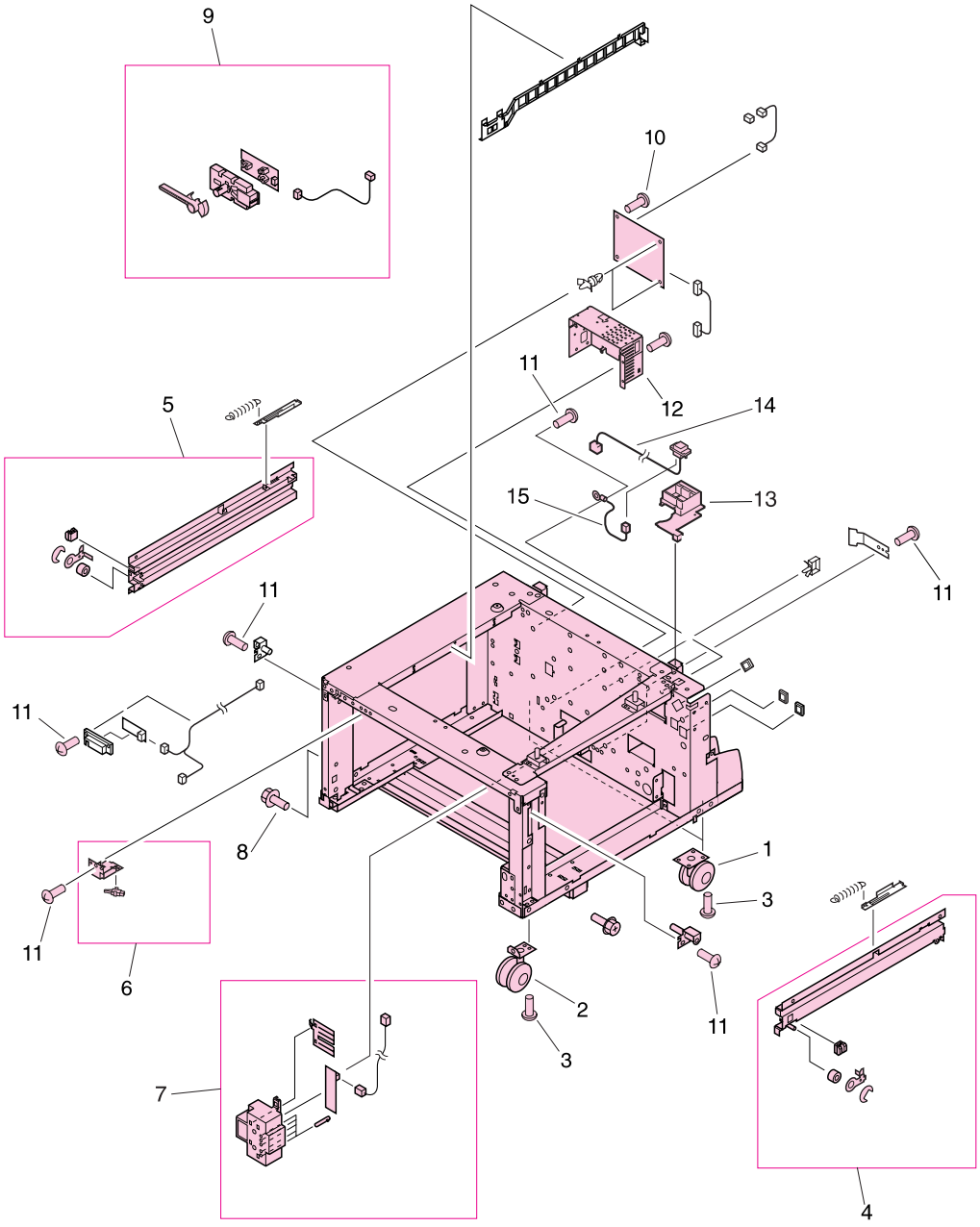


Figure 344. **Tray 4 main body (2 of 2)**

Table 120. Tray 4 main body (2 of 2)

Ref	Description	Part number	Qty
Figure 344; 1	Caster, back	RB2-7678-000CN	2
Figure 344; 2	Caster, front swivel	RB3-0304-040CN	2
Figure 344; 3	Screw, M5 by 12	XA9-0912-000CN	
Figure 344; 6	Switch assembly (SW21)	RG5-6206-000CN	1
Figure 344; 7	Paper size sensing assembly	RG5-6207-040CN	1
Figure 344; 8	Screws, M4 by 8	XA9-0732-000CN	
Figure 344; 9	Paper volume sensing assembly	RG5-6229-000CN	1
Figure 344; 10	Screw, M4 by 6	XB6-7300-607CN	
Figure 344; 11	Screw, M4 by 6	XA9-0994-000CN	
Figure 344; 12	Power supply	RG5-6250-000CN	1
Figure 344; 13	Jet-Link holder	RB2-7662-000CN	1
Figure 344; 14	Jet-Link cable assembly	RG5-6240-000CN	1
Figure 344; 15	Jet-Link grounding cable	RG5-6249-000CN	1

Tray 4 drive assembly

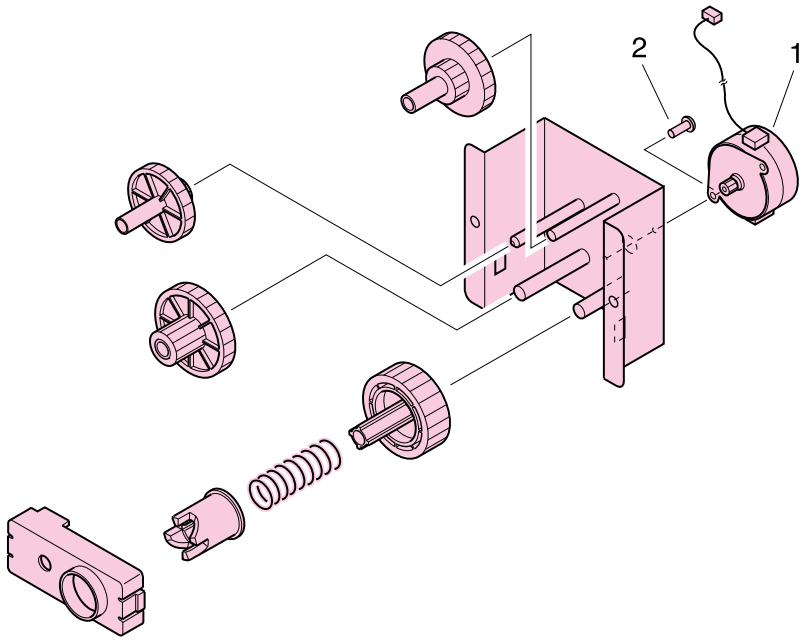


Figure 345. **Tray 4 drive assembly**

Table 121. Tray 4 drive assembly

Ref	Description	Part number	Qty
Figure 345; all	Tray 4 deck drive assembly	RG5-6228-040CN	1
Figure 345; 1	Motor (M303)	RH7-1481-000CN	1
Figure 345; 2	Screw, M3 by 6	XB2-6300-607CN	

Tray 4 PCA location

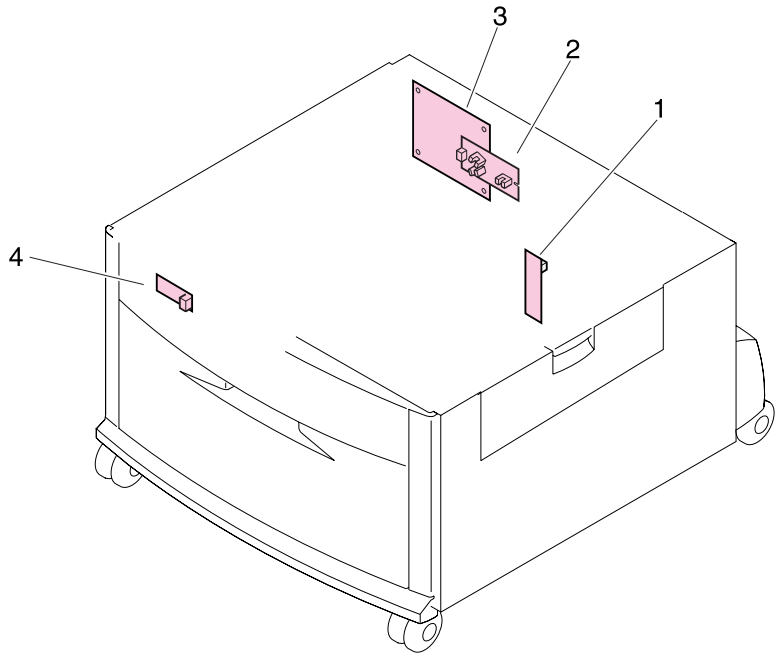


Figure 346. **Tray 4 PCA location**

Table 122. Tray 4 PCA location

Ref	Description	Part number	Qty
Figure 346; 1	Paper size PCA	RG5-6238-000CN	1
Figure 346; 2	Paper volume PCA	RG5-6237-000CN	1
Figure 346; 3	Deck controller PCA	RG5-6235-100CN	1
Figure 346; 4	LED PCA	RG5-6239-000CN	1

Pedestal main body (1 of 2)

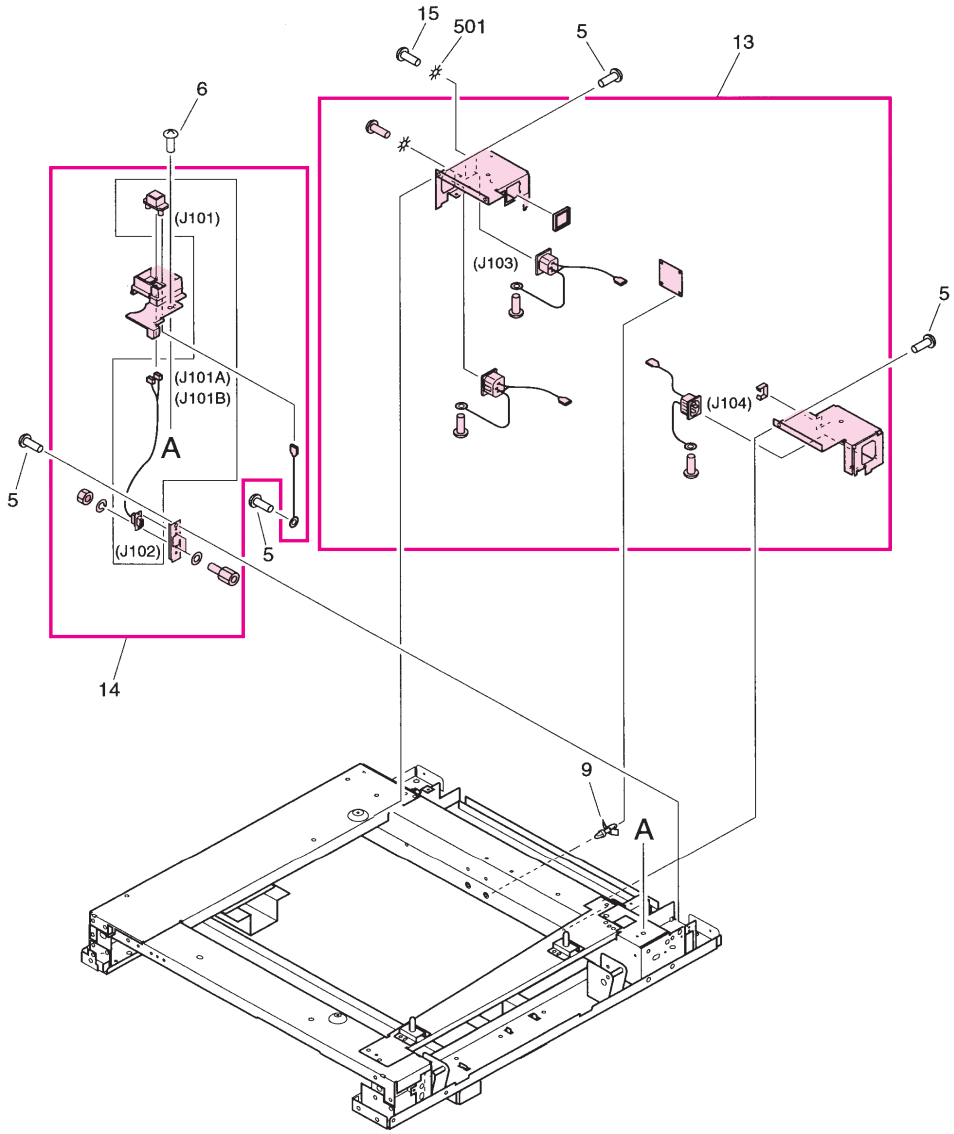


Figure 347. **Pedestal main body (1 of 2)**

Table 123. Pedestal main body (1 of 2)l

Ref	Description	Part number	Qty
Figure 347; 5	Screw, w washer M4X8	Not orderable	5
Figure 347; 6	Screw, TP M4X6	Not orderable	5
Figure 347; ;9	Support, PCA	Not orderable	4
Figure 347; 13	Connector PCA assembly	RG5-6979-000CN	1
Figure 347; 14	Cable holder assembly	RG5-6981-000CN	1
Figure 347; 501	Washer toothhed lock	Not orderable	

Pedestal main body (2 of 2)

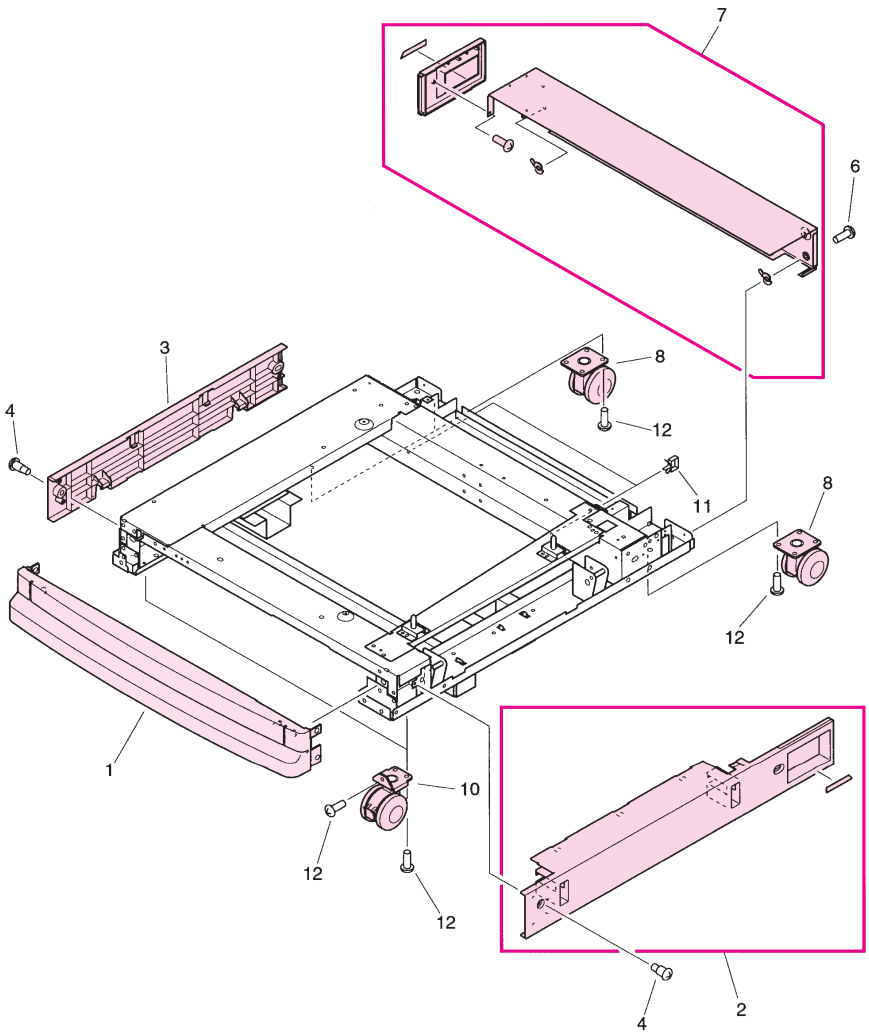


Figure 348. **Pedestal main body (2 of 2)**

Table 124. Pedestal main body (2 of 2

Ref	Description	Part number	Qty
Figure 348; 1	Cover, pedestal front	RB3-0287-000CN	1
Figure 348; 2	Cover, pedestal right	RF5-4254-000CN	1
Figure 348; 3	Cover, pedestal left	RB3-0289-000CN	1
Figure 348; 4	Screw, stepped	Not orderable	4
Figure 348; 7	Cover, pedestal rear	RG5-6982-000CN	1
Figure 348; 10	Caster, pedestal	RB3-7678-000CN	2
Figure 348; 11	Clip, cable	Not orderable	3
Figure 348; 12	Screw, W washer M5X12	Not orderable	21

Master parts lists

Alphabetical parts list

Note The master parts tables (alphabetical and numerical) list FRUs available from HP. For a complete list of parts found in the HP LaserJet 9500 series printer, refer to the exploded view illustrations in this chapter. Parts not listed in this table might be part of a larger subassembly.

Table 125. Alphabetical parts list

Ref	Description	Part number	Qty
Figure 326; 1	Antenna holder assembly	RG5-6026-000CN	4
Figure 327; 4	Antenna holder assembly	RG5-6026-000CN	4
Figure 321; 2	Block, damper	RB2-7217-000CN	1
NA	Cable, AC (HP CLJ 9500mfp only)	RG5-5991-000CN	1
Figure 324; 23	Cable, flat	RH2-5509-000CN	1
Figure 324; 24	Cable, flat	RH2-5507-000CN	1
Figure 327; 2	Cable, flat	RH2-5508-000CN	1
Figure 324; 17	Cable, formatter	RG5-5933-000CN	1
Figure 324; 16	Cable, fuser motor	RG5-5952-000CN	1
NA	Cable, grounding (NHP CLJ 9500 only)	RG5-5992-000CN	1
Figure 324; 18	Cable, high-voltage	RG5-5937-000CN	1
Figure 324; 15	Cable, high-voltage control	RG5-5940-000CN	1
Figure 347; 14	Cable holder assembly	RG5-6981-000CN	1
Figure 322; 9	Cable, laser assembly	RG5-6148-000CN	1
Figure 324; 27	Cable, post controller	RG5-5966-000CN	1
Figure 324; 14	Cable, process cartridge	RG5-5938-000CN	1
Figure 324; 22	Cable, rear holder assembly	RG5-6159-000CN	1
Figure 324; 13	Cable, rear lower	RG5-5919-000CN	1
Figure 324; 29	Cable, rear lower	RG5-5975-000CN	1
Figure 324; 19	Cable, rear upper (HP CLJ 9500 only)	RG5-5920-000CN	1
Figure 324; 19	Cable, rear upper (HP CLJ 9500mfp only)	RG5-5990-000CN	1
Figure 327; 7	Cable, right rear 1	RG5-5962-000CN	1
Figure 327; 8	Cable, right rear 2	RG5-5963-000CN	1
Figure 321; 6	Cartridge, click support assembly	RG5-6141-020CN	1
Figure 329; all	Cassette (use this part number to order the entire assembly)	RG5-5635-080CN	2
Figure 343; 17	Caster	RB2-7709-000CN	1
Figure 344; 1	Caster, back	RB2-7678-000CN	2
Figure 344; 2	Caster, front swivel	RB3-0304-040CN	2
Figure 348; 10	Caster, pedestal	RB3-7678-000CN	2
Figure 323; 9	Connector assembly	RG5-5779-000CN	1
Figure 323; 16	Connector, 10P	VS1-5057-010CN	1
Figure 323; 17	Connector, 20P	VS1-5057-020CN	1
Figure 323; 14	Connector, 3P	VS1-5057-003CN	1
Figure 323; 15	Connector, 5P	VS1-5057-005CN	1

Table 125. Alphabetical parts list (continued)

Ref	Description	Part number	Qty
Figure 347; 13	Connector PCA assembly	RG5-6979-000CN	1
See table 85 on page 479.	Control panel overlay	NA	1
Figure 343; 6	Cover, back	RF5-3644-000CN	1
Figure 343; 5	Cover, center	RB2-7652-000CN	1
Figure 343; 1	Cover, front	RB2-7648-000CN	1
Figure 312; 7	Cover, front left	RB2-5683-000CN	1
Figure 312; 6	Cover, front right	RB2-5682-000CN	1
Figure 343; 7	Cover, left	RF5-3645-000CN	1
Figure 314; all	Cover, left assembly	RG5-6149-000CN	1
Figure 343; 4	Cover, left back	RB2-7651-000CN	1
Figure 312; 16	Cover, left back assembly	RG5-6111-000CN	1
Figure 312; 4	Cover, left front	RB2-7335-000CN	1
Figure 312; 3	Cover, left lower	RB2-5687-000CN	1
Figure 312; 1	Cover, left upper (HP CLJ 9500 only)	RB2-7336-000CN	1
Figure 319; 31	Cover, rail	RB2-7531-000CN	1
Figure 313; 20	Cover, rear assembly	RG5-6042-000CN	1
Figure 343; 2	Cover, right	RB2-7649-000CN	1
Figure 343; 3	Cover, right back	RB2-7650-000CN	1
Figure 313; 8	Cover, right back	RB2-7352-000CN	1
Figure 313; 23	Cover, right front	RB2-7331-000CN	1
Figure 313; 5	Cover, right lower	RB2-5689-000CN	1
Figure 313; 14	Cover, right upper	RB2-7332-000CN	1
Figure 348; 1	Cover, pedestal front	RB3-0287-000CN	1
Figure 348; 3	Cover, pedestal left	RB3-0289-000CN	1
Figure 348; 7	Cover, pedestal rear	RG5-6982-000CN	1
Figure 348; 2	Cover, pedestal right	RF5-4254-000CN	1
Figure 313; 17	Cover, top left assembly (HP LJ 9500 only)	RG5-6112-000CN	1
Figure 313; 13	Cover, top right (HP CLJ 9500 only)	RB2-7321-000CN	1
Figure 323; 5	Cover, transfer cable	RB2-7444-000CN	1
Figure 320; 34	Cover, transfer front	RB2-7445-000CN	1
Figure 342; 5	crg (print cartridge) driver assembly	RG5-5907-020CN	1
Figure 327; 6	crg driver PCB assembly (print cartridge drive)	RG5-5907-020CN	1
Figure 314; 1	Dampener, left cover assembly	RG5-6185-000CN	1
Figure 342; 1	DC controller PCB assembly	RG5-5901-060CN new C8546-69005 exchange	1
Figure 346; 3	Deck controller PCA	RG5-6235-100CN	1
Figure 340; all	Delivery cover assembly (use this part number to order the entire assembly) (HP CLJ 9500 only)	RG5-6151-000CN	1
Figure 311; ; 1	Delivery cover assembly (use this part number to order the entire assembly) (HP CLJ 9500mfp only)	RG5-6191-000CN	
Figure 338; all	Delivery feed assembly (use this part number to order the entire assembly) (HP CLJ 9500 only)	RG5-6150-000CN	1

Table 125. Alphabetical parts list (continued)

Ref	Description	Part number	Qty
Figure 311; 2	Delivery feed assembly (use this part number to order the entire assembly) (HP CLJ 9500mfp only)	RG5-6190-000CN	1
Figure 313; 15	Display, panel assembly (control panel) (HP CLJ 9500 only)	RG5-6115-030CN	1
Figure 313; 15	Display, panel assembly (control panel) (HP CLJ 9500mfp only)	5851-1838	1
Figure 312; 19	Door, front left assembly	RG5-6114-020CN	1
Figure 312; 18	Door, front right assembly	RG5-6113-000CN	1
Figure 315; all	Door, right assembly	RG5-6108-000CN	1
Figure 323; 10	End paper sensor assembly	RG5-5699-000CN	2
Figure 339; al	Face-down delivery assembly (use this part number to order the entire assembly) (HP CLJ 9500 only)	RG5-6017-000CN	1
Figure 322; 14	Fan	RH7-1554-000CN	1
Figure 322; 16	Fan	RH7-1564-000CN	1
Figure 324; 20	Fan	RH7-1521-000CN	1
Figure 324; 21	Fan	RH7-1522-000CN	1
Figure 340; 2	Fan (HP CLJ 9500 only)	RH7-1546-000CN	2
Figure 343; 13	Feed/separation rollers	RF5-3338-000CN	3
Figure 313; 9	Filter, air	RB2-7170-000CN	1
Figure 313; 27	Filter, ozone	RB2-7206-000CN	1
Figure 341; all	Fuser assembly	RG5-6098-000CN new C8546-69007 exchange	1
Figure 318; 20	Fuser connecting cable assembly	RG5-5925-000CN	1
Figure 328; all	Fuser drive assembly	RG5-6018-000CN	1
Figure 318; 21	Fuser sensor cable assembly	RG5-5932-000CN	1
Figure 318; 19	Fuser sensor PCB assembly	RG5-5914-000CN	1
Figure 319; 2	Guide, cleaner	RB2-7181-000CN	2
Figure 310; 1	Guide, feed (HP CLJ9500mfp only)	RB2-7376-000CN	1
Figure 324; 2	High-voltage connector PCB assembly	RG5-6032-000CN	1
Figure 324; 12	High-voltage holder assembly	RG5-6129-000CN	1
Figure 324; 1	High-voltage PCB assembly	RG5-6031-000CN	1
Figure 324; 25	High-voltage power supply PCB unit	RH3-0353-020CN	1
Figure 320; 36	Holder, stop (Also order RF5-3502-000CN at the same time)	RB2-7501-000CN	1
Figure 313; 10	Hood, fan	RF-5-3555-000CN	1
Figure 322; 12	Humidity sensor assembly	RG5-6153-000CN	1
Figure 318; 2	Intermediate transfer belt (ITB) assembly	RG5-6180-080CN	1
Figure 316; 10	Intermediate transfer belt (ITB) cleaner assembly	RG5-6041-040CN	1
Figure 319; 30	Intermediate transfer belt (ITB) sensor cable assembly	RG5-5960-000CN	1
Figure 344; 14	Jet-Link cable assembly	RG5-6240-000CN	1
Figure 344; 15	Jet-Link grounding cable	RG5-6249-000CN	1
Figure 344; 13	Jet-Link holder	RB2-7662-000CN	1
Figure 346; 4	LED PCA	RG5-6239-000CN	1
Figure 322; 4	Left interlock assembly	RG5-6037-000CN	1
Figure 317; 6	Lever assembly	RG5-6134-020CN	1
Figure 343; 16	Lever, standard/custom	RB2-7762-000CN	1

Table 125. Alphabetical parts list (continued)

Ref	Description	Part number	Qty
Figure 317; 5	Lift link shaft assembly	RG5-6132-000CN	1
Figure 317; 4	Lift rod front assembly	RG5-6131-000CN	1
Figure 317; 7	Link rear unit	RG5-6147-000CN	1
Figure 320; 35	Link, front (Also order RB2-7501-000CN at the same time)	RF5-3502-000CN	1
Figure 319; 4	Link, holder lift	RB2-7258-000CN	1
Figure 318; 5	Main fuser front guide assembly	RG9-1595-000CN	1
Figure 333; all Figure 334; all	Manual feed pickup assembly (tray 1)	RG5-6090-190CN	1
Figure 327; 1	Memory switch PCB assembly	RG5-5909-000CN	1
Figure 345; 1	Motor (M303)	RH7-1481-000CN	1
Figure 320; 17	Motor, DC24V	RH7-1518-000CN	1
Figure 328; 1	Motor, DC24V	RH7-1519-000CN	1
Figure 318; 4	Mount, dampener	RB2-5570-020CN	2
Figure 322; 10	M-purpose support assembly rear	RG5-6107-000CN	1
Figure 322; 3	Paper delivery sensor assembly	RG5-6152-000CN	1
Figure 343; 12	Paper input unit (PIU)	RG5-6208-120CN	1
Figure 343; 11	Paper path connection unit (PPCU)	RG5-6227-000CN	1
Figure 330; all Figure 331; all Figure 332; all	Paper pickup assembly (use this part number to order the entire assembly)	RG5-6196-000CN	1
Figure 346; 1	Paper size PCA	RG5-6238-000CN	1
Figure 344; 7	Paper size sensing assembly	RG5-6207-040CN	1
Figure 346; 2	Paper volume PCA	RG5-6237-000CN	1
Figure 344; 9	Paper volume sensing assembly	RG5-6229-000CN	1
Figure 319; 24	P-CRG open/close cover assembly	RG5-6182-000CN	1
Figure 318; 16	Photo interrupter (TLP1241)	WG8-5362-000CN	1
Figure 319; 29	Photo interrupter (TLP1241)	WG8-5362-000CN	1
Figure 327; 10	Photo-interrupter TLP1241	WG8-5362-000CN	4
Figure 325; 1	Pin holder unit (registration drive assembly)	RG5-6160-000CN	1
Figure 321; 31	Plate, grounding	RB2-7281-000CN	1
Figure 319; 13	Plate, mount	RF5-3505-000CN	1
Figure 319; 6	Plate, positioning	RB2-7537-000CN	1
Figure 344; 12	Power supply	RG5-6250-000CN	1
Figure 324; 7	Power supply assembly 110-127V Power supply assembly 220-240V	RH3-2236-030CN new C8546-69003 exchange RH3-2237-040CN new C8546-69004 exchange	1 1
Figure 326; 2	Process cartridge (image drum) PCB assembly	RG5-5905-000CN	1
Figure 342; 2	Process cartridge (image drum) PCB assembly	RG5-5905-000CN	1
Figure 326; all	Process cartridge drive assembly	RG5-6188-030CN new C8546-69006 exchange	1
Figure 319; 26	Rail, guide front	RF5-3545-000CN	1
Figure 321; 30	Rail, guide rear	RF5-3546-020CN	1
Figure 335; all	Registration assembly (use this part number to order the entire assembly)	RG5-6016-000CN	1

Table 125. Alphabetical parts list (continued)

Ref	Description	Part number	Qty
Figure 325; all	Registration drive assembly	RG5-6015-000CN	1
Figure 319; 25	Registration sensor assembly	RG5-6123-020CN	1
Figure 324; 28	Regulator PCB assembly	RG5-5971-000CN	1
Figure 322; 13	Right interlock assembly	RG5-6036-000CN	1
Figure 321; 19	Right upper crossmember cable (HP CLJ 9500 only)	RG5-5943-000CN	1
Figure 321; 19	Right upper crossmember cable (HP CLJ 9500mfp only)	RG5-5974-000CN	1
Figure 323; 4	Rod, switch	RB2-7354-000CN	1
Figure 320; 2	Roller	RF5-3338-000CN	4
Figure 320; 3	Roller, pickup	RF5-3340-000CN	2
Figure 320; 29	Scanner assembly	RG5-6181-000CN	4
Figure 345; 2	Screw, M3 by 6	XB2-6300-607CN	
Figure 344; 10	Screw, M4 by 6	XB6-7300-607CN	
Figure 344; 11	Screw, M4 by 6	XA9-0994-000CN	
Figure 343; 10	Screw, M4 by 6	XB6-7400-000CN	
Figure 343; 18	Screw, M4 by 8	XA9-0732-000CN	
Figure 344; 3	Screw, M5 by 12	XA9-0912-000CN	
Figure 343; 8	Screw, stepped	RS5-9099-000CN	
Figure 343; 9	Screw, W/W, M4 by 6	XA-0994-000CN	
Figure 344; 8	Screws, M4 by 8	XA9-0732-000CN	
Figure 336; all Figure 337; all	Secondary transfer assembly (T2) (use this part number to order the entire assembly)	RG5-6179-030CN	1
Figure 322; 11	Slide arm assembly	RG5-6130-000CN	1
Figure 317; 3	Soft link shaft assembly	RG5-6122-000CN	1
Figure 320; 33	Spring, compression	RS6-2840-000CN	1
Figure 318; 14	Spring, tension	RS6-2442-000CN	1
Figure 318; 6	Sub fuser front guide assembly	RG9-1596-000CN	1
Figure 319; 5	Support, cleaning front	RB2-7570-000CN	1
Figure 319; 11	Support, cleaning front	RB2-7515-000CN	1
Figure 319; 8	Support, side plate hinge	RB2-7302-000CN	2
Figure 344; 6	Switch assembly (SW21)	RG5-6206-000CN	1
Figure 321; 28	Toner cartridge cable	RG5-5939-000CN	1
Figure 327; all	Toner cartridge drive assembly (print cartridge drive)	RG5-6022-020CN	1
Figure 316; 8	Toner cartridge lever assembly	RG5-6121-000CN	4
Figure 327; 3	Toner drive cable	RG5-5930-000CN	1
Figure 312; 26	Tongs, jam removal	RF5-3535-000CN	1
Figure 320; 1	Torque limiter	RB2-5759-000CN	1
Figure 317; 8	Transfer link front assembly	RG5-6146-000CN	1
Figure 320; 6	Transfer roller assembly	RG5-6178-030CN	1
Figure 343; 15	Tray 4	RG5-6212-230CN	1
Figure 345; all	Tray 4 deck drive assembly	RG5-6228-040CN	1
Figure 343; 14	Tray 4 vertical registration assembly (VTU/VRA)	RG5-6225-050CN	1
Not shown	Tray 4-to-engine stabilizing screws	0515-4318	2

Table 125. Alphabetical parts list (continued)

Ref	Description	Part number	Qty
Figure 312; 24	Tray face up delivery (HP CLJ 9500 only)	RB2-5690-000CN	1
Figure 316; 13	Tray, catch	RB2-7207-000CN	1
Figure 313; 12	Tray, delivery movable (HP CLJ 9500 only)	RB2-7341-000CN	1
Figure 316; 7	Waste toner bottle assembly	RG5-6040-020CN	1
Figure 316; 6	Waste toner sensor assembly	RG5-6038-000CN	1

Numerical parts list

Note The master parts tables (alphabetical and numerical) list FRUs available from HP. For a complete list of parts found in the HP LaserJet 9500 series printer, refer to the exploded view illustrations in this chapter. Parts not listed in this table might be part of a larger subassembly.

Table 126. Numerical parts list

Ref	Description	Part number	Qty
See table 85 on page 479.	Control panel overlay	NA	1
Not shown	Tray 4-to-engine stabilizing screws	0515-4318	2
Figure 313; 15	Display, panel assembly (control panel) (HP CLJ 9500mfp only)	5851-1838	1
Figure 318; 4	Mount, dampener	RB2-5570-020CN	2
Figure 312; 6	Cover, front right	RB2-5682-000CN	1
Figure 312; 7	Cover, front left	RB2-5683-000CN	1
Figure 312; 3	Cover, left lower	RB2-5687-000CN	1
Figure 313; 5	Cover, right lower	RB2-5689-000CN	1
Figure 312; 24	Tray face up delivery (HP CLJ 9500 only)	RB2-5690-000CN	1
Figure 320; 1	Torque limiter	RB2-5759-000CN	1
Figure 313; 9	Filter, air	RB2-7170-000CN	1
Figure 319; 2	Guide, cleaner	RB2-7181-000CN	2
Figure 313; 27	Filter, ozone	RB2-7206-000CN	1
Figure 316; 13	Tray, catch	RB2-7207-000CN	1
Figure 321; 2	Block, damper	RB2-7217-000CN	1
Figure 319; 4	Link, holder lift	RB2-7258-000CN	1
Figure 321; 31	Plate, grounding	RB2-7281-000CN	1
Figure 319; 8	Support, side plate hinge	RB2-7302-000CN	2
Figure 313; 13	Cover, top right (HP CLJ 9500 only)	RB2-7321-000CN	1
Figure 313; 23	Cover, right front	RB2-7331-000CN	1
Figure 313; 14	Cover, right upper	RB2-7332-000CN	1
Figure 312; 4	Cover, left front	RB2-7335-000CN	1
Figure 312; 1	Cover, left upper (HP CLJ 9500 only)	RB2-7336-000CN	1
Figure 313; 12	Tray, delivery movable (HP CLJ 9500 only)	RB2-7341-000CN	1
Figure 313; 8	Cover, right back	RB2-7352-000CN	1
Figure 323; 4	Rod, switch	RB2-7354-000CN	1
Figure 310; 1	Guide, feed (HP CLJ 9500mfp only)	RB2-7376-000CN	1
Figure 323; 5	Cover, transfer cable	RB2-7444-000CN	1
Figure 320; 34	Cover, transfer front	RB2-7445-000CN	1
Figure 320; 36	Holder, stop (Also order RF5-3502-000CN at the same time)	RB2-7501-000CN	1
Figure 319; 11	Support, cleaning front	RB2-7515-000CN	1
Figure 319; 31	Cover, rail	RB2-7531-000CN	1
Figure 319; 6	Plate, positioning	RB2-7537-000CN	1
Figure 319; 5	Support, cleaning front	RB2-7570-000CN	1
Figure 343; 1	Cover, front	RB2-7648-000CN	1

Table 126. Numerical parts list (continued)

Ref	Description	Part number	Qty
Figure 343; 2	Cover, right	RB2-7649-000CN	1
Figure 343; 3	Cover, right back	RB2-7650-000CN	1
Figure 343; 4	Cover, left back	RB2-7651-000CN	1
Figure 343; 5	Cover, center	RB2-7652-000CN	1
Figure 344; 13	Jet-Link holder	RB2-7662-000CN	1
Figure 344; 1	Caster, back	RB2-7678-000CN	2
Figure 343; 17	Caster	RB2-7709-000CN	1
Figure 343; 16	Lever, standard/custom	RB2-7762-000CN	1
Figure 348; 1	Cover, pedestal front	RB3-0287-000CN	1
Figure 348; 3	Cover, pedestal left	RB3-0289-000CN	1
Figure 344; 2	Caster, front swivel	RB3-0304-040CN	2
Figure 348; 10	Caster, pedestal	RB3-7678-000CN	2
Figure 343; 13	Feed/separation rollers	RF5-3338-000CN	3
Figure 320; 2	Roller	RF5-3338-000CN	4
Figure 320; 3	Roller, pickup	RF5-3340-000CN	2
Figure 320; 35	Link, front (Also order RB2-7501-000CN at the same time)	RF5-3502-000CN	1
Figure 319; 13	Plate, mount	RF5-3505-000CN	1
Figure 312; 26	Tongs, jam removal	RF5-3535-000CN	1
Figure 319; 26	Rail, guide front	RF5-3545-000CN	1
Figure 321; 30	Rail, guide rear	RF5-3546-020CN	1
Figure 313; 10	Hood, fan	RF-5-3555-000CN	1
Figure 343; 6	Cover, back	RF5-3644-000CN	1
Figure 343; 7	Cover, left	RF5-3645-000CN	1
Figure 348; 2	Cover, pedestal right	RF5-4254-000CN	1
Figure 329; all	Cassette (use this part number to order the entire assembly)	RG5-5635-080CN	2
Figure 323; 10	End paper sensor assembly	RG5-5699-000CN	2
Figure 323; 9	Connector assembly	RG5-5779-000CN	1
Figure 342; 1	DC controller PCB assembly	RG5-5901-060CN new C8546-69005 exchange	1
Figure 326; 2	Process cartridge (image drum) PCB assembly	RG5-5905-000CN	1
Figure 342; 2	Process cartridge (image drum) PCB assembly	RG5-5905-000CN	1
Figure 342; 5	crg (print cartridge) driver assembly	RG5-5907-020CN	1
Figure 327; 6	crg driver PCB assembly (print cartridge drive)	RG5-5907-020CN	1
Figure 327; 1	Memory switch PCB assembly	RG5-5909-000CN	1
Figure 318; 19	Fuser sensor PCB assembly	RG5-5914-000CN	1
Figure 324; 13	Cable, rear lower	RG5-5919-000CN	1
Figure 324; 19	Cable, rear upper (HPCLJ 9500 only)	RG5-5920-000CN	1
Figure 318; 20	Fuser connecting cable assembly	RG5-5925-000CN	1
Figure 327; 3	Toner drive cable	RG5-5930-000CN	1
Figure 318; 21	Fuser sensor cable assembly	RG5-5932-000CN	1
Figure 324; 17	Cable, formatter	RG5-5933-000CN	1
Figure 324; 18	Cable, high-voltage	RG5-5937-000CN	1

Table 126. Numerical parts list (continued)

Ref	Description	Part number	Qty
Figure 324; 14	Cable, process cartridge	RG5-5938-000CN	1
Figure 321; 28	Toner cartridge cable	RG5-5939-000CN	1
Figure 324; 15	Cable, high-voltage control	RG5-5940-000CN	1
Figure 321; 19	Right upper crossmember cable (HP CLJ 9500 only)	RG5-5943-000CN	1
Figure 324; 16	Cable, fuser motor	RG5-5952-000CN	1
Figure 319; 30	Intermediate transfer belt (ITB) sensor cable assembly	RG5-5960-000CN	1
Figure 327; 7	Cable, right rear 1	RG5-5962-000CN	1
Figure 327; 8	Cable, right rear 2	RG5-5963-000CN	1
Figure 324; 27	Cable, post controller	RG5-5966-000CN	1
Figure 324; 28	Regulator PCB assembly	RG5-5971-000CN	1
Figure 321; 19	Right upper crossmember cable (HP CLJ 9500mfp only)	RG5-5974-000CN	1
Figure 324; 29	Cable, rear lower	RG5-5975-000CN	1
Figure 324; 19	Cable, rear upper (HP CLJ 9500mfp only)	RG5-5990-000CN	1
NA	Cable, AC (HP CLJ 9500mfp only)	RG5-5991-000CN	1
NA	Cable, grounding (HP CLJ 9500mfp only)	RG5-5992-000CN	1
Figure 325; all	Registration drive assembly	RG5-6015-000CN	1
Figure 335; all	Registration assembly (use this part number to order the entire assembly)	RG5-6016-000CN	1
Figure 339; al	Face-down delivery assembly (use this part number to order the entire assembly) (HP CLJ 9500 only)	RG5-6017-000CN	1
Figure 328; all	Fuser drive assembly	RG5-6018-000CN	1
Figure 327; all	Toner cartridge drive assembly (print cartridge drive)	RG5-6022-020CN	1
Figure 326; 1	Antenna holder assembly	RG5-6026-000CN	4
Figure 327; 4	Antenna holder assembly	RG5-6026-000CN	4
Figure 324; 1	High-voltage PCB assembly	RG5-6031-000CN	1
Figure 324; 2	High-voltage connector PCB assembly	RG5-6032-000CN	1
Figure 322; 13	Right interlock assembly	RG5-6036-000CN	1
Figure 322; 4	Left interlock assembly	RG5-6037-000CN	1
Figure 316; 6	Waste toner sensor assembly	RG5-6038-000CN	1
Figure 316; 7	Waste toner bottle assembly	RG5-6040-020CN	1
Figure 316; 10	Intermediate transfer belt (ITB) cleaner assembly	RG5-6041-040CN	1
Figure 313; 20	Cover, rear assembly	RG5-6042-000CN	1
Figure 333; all Figure 334; all	Manual feed pickup assembly (tray 1)	RG5-6090-190CN	1
Figure 341; all	Fuser assembly	RG5-6098-000CN new C8546-69007 exchange	1
Figure 322; 10	M-purpose support assembly rear	RG5-6107-000CN	1
Figure 312; 16	Cover, left back assembly	RG5-6111-000CN	1
Figure 313; 17	Cover, top left assembly (HP LJ 9500 only)	RG5-6112-000CN	1
Figure 312; 18	Door, front right assembly	RG5-6113-000CN	1
Figure 312; 19	Door, front left assembly	RG5-6114-020CN	1
Figure 313; 15	Display, panel assembly (control panel) (HP CLJ 9500 only)	RG5-6115-030CN	1
Figure 316; 8	Toner cartridge lever assembly	RG5-6121-000CN	4
Figure 317; 3	Soft link shaft assembly	RG5-6122-000CN	1

Table 126. Numerical parts list (continued)

Ref	Description	Part number	Qty
Figure 319; 25	Registration sensor assembly	RG5-6123-020CN	1
Figure 324; 12	High-voltage holder assembly	RG5-6129-000CN	1
Figure 322; 11	Slide arm assembly	RG5-6130-000CN	1
Figure 317; 4	Lift rod front assembly	RG5-6131-000CN	1
Figure 317; 5	Lift link shaft assembly	RG5-6132-000CN	1
Figure 317; 6	Lever assembly	RG5-6134-020CN	1
Figure 321; 6	Cartridge, click support assembly	RG5-6141-020CN	1
Figure 317; 8	Transfer link front assembly	RG5-6146-000CN	1
Figure 317; 7	Link rear unit	RG5-6147-000CN	1
Figure 322; 9	Cable, laser assembly	RG5-6148-000CN	1
Figure 314; all	Cover, left assembly	RG5-6149-000CN	1
Figure 315; all	Door, right assembly	RG5-6108-000CN	1
Figure 338; all	Delivery feed assembly (use this part number to order the entire assembly) (HP CLJ 9500 only) For an MFP, see table 81.	RG5-6150-000CN	1
Figure 340; all	Delivery cover assembly (use this part number to order the entire assembly) (HP CLJ 9500 only)	RG5-6151-000CN	1
Figure 322; 3	Paper delivery sensor assembly	RG5-6152-000CN	1
Figure 322; 12	Humidity sensor assembly	RG5-6153-000CN	1
Figure 324; 22	Cable, rear holder assembly	RG5-6159-000CN	1
Figure 320; 6	Transfer roller assembly	RG5-6178-030CN	1
Figure 336; all Figure 337; all	Secondary transfer assembly (T2) (use this part number to order the entire assembly)	RG5-6179-030CN	1
Figure 318; 2	Intermediate transfer belt (ITB) assembly	RG5-6180-080CN	1
Figure 320; 29	Scanner assembly	RG5-6181-000CN	4
Figure 319; 24	P-CRG open/close cover assembly	RG5-6182-000CN	1
Figure 314; 1	Dampener, left cover assembly	RG5-6185-000CN	1
Figure 326; all	Process cartridge drive assembly	RG5-6188-030CN new C8546-69006 exchange	1
Figure 325; 1	Pin holder unit (registration drive assembly)	RG5-6160-000CN	1
Figure 311; 2	Delivery feed assembly (use this part number to order the entire assembly) (HP CLJ 9500mfp only)	RG5-6190-000CN	1
Figure 311; 1	Delivery cover assembly (use this part number to order the entire assembly) (HP CLJ 9500mfp only)	RG5-6191-000CN	1
Figure 330; all Figure 331; all Figure 332; all	Paper pickup assembly (use this part number to order the entire assembly)	RG5-6196-000CN	1
Figure 344; 6	Switch assembly (SW21)	RG5-6206-000CN	1
Figure 344; 7	Paper size sensing assembly	RG5-6207-040CN	1
Figure 343; 12	Paper input unit (PIU)	RG5-6208-120CN	1
Figure 343; 15	Tray 4	RG5-6212-230CN	1
Figure 343; 14	Tray 4 vertical registration assembly (VTU/VRA)	RG5-6225-050CN	1
Figure 343; 11	Paper path connection unit (PPCU)	RG5-6227-000CN	1
Figure 345; all	Tray 4 deck drive assembly	RG5-6228-040CN	1
Figure 344; 9	Paper volume sensing assembly	RG5-6229-000CN	1
Figure 346; 3	Deck controller PCA	RG5-6235-100CN	1

Table 126. Numerical parts list (continued)

Ref	Description	Part number	Qty
Figure 346; 2	Paper volume PCA	RG5-6237-000CN	1
Figure 346; 1	Paper size PCA	RG5-6238-000CN	1
Figure 346; 4	LED PCA	RG5-6239-000CN	1
Figure 344; 14	Jet-Link cable assembly	RG5-6240-000CN	1
Figure 344; 15	Jet-Link grounding cable	RG5-6249-000CN	1
Figure 344; 12	Power supply	RG5-6250-000CN	1
Figure 347; 13	Connector PCA assembly	RG5-6979-000CN	1
Figure 347; 14	Cable holder assembly	RG5-6981-000CN	1
Figure 348; 7	Cover, pedestal rear	RG5-6982-000CN	1
Figure 318; 5	Main fuser front guide assembly	RG9-1595-000CN	1
Figure 318; 6	Sub fuser front guide assembly	RG9-1596-000CN	1
Figure 324; 24	Cable, flat	RH2-5507-000CN	1
Figure 327; 2	Cable, flat	RH2-5508-000CN	1
Figure 324; 23	Cable, flat	RH2-5509-000CN	1
Figure 324; 25	High-voltage power supply PCB unit	RH3-0353-020CN	1
Figure 324; 7	Power supply assembly 110-127V Power supply assembly 220-240V	RH3-2236-030CN new C8546-69003 exchange RH3-2237-040CN new C8546-69004 exchange	1 1
Figure 345; 1	Motor (M303)	RH7-1481-000CN	1
Figure 320; 17	Motor, DC24V	RH7-1518-000CN	1
Figure 328; 1	Motor, DC24V	RH7-1519-000CN	1
Figure 324; 20	Fan	RH7-1521-000CN	1
Figure 324; 21	Fan	RH7-1522-000CN	1
Figure 340; 2	Fan (HP CLJ 9500 only)	RH7-1546-000CN	2
Figure 322; 14	Fan	RH7-1554-000CN	1
Figure 322; 16	Fan	RH7-1564-000CN	1
Figure 343; 8	Screw, stepped	RS5-9099-000CN	
Figure 318; 14	Spring, tension	RS6-2442-000CN	1
Figure 320; 33	Spring, compression	RS6-2840-000CN	1
Figure 323; 14	Connector, 3P	VS1-5057-003CN	1
Figure 323; 15	Connector, 5P	VS1-5057-005CN	1
Figure 323; 16	Connector, 10P	VS1-5057-010CN	1
Figure 323; 17	Connector, 20P	VS1-5057-020CN	1
Figure 318; 16	Photo interrupter (TLP1241)	WG8-5362-000CN	1
Figure 319; 29	Photo interrupter (TLP1241)	WG8-5362-000CN	1
Figure 327; 10	Photo-interrupter TLP1241	WG8-5362-000CN	4
Figure 343; 9	Screw, W/W, M4 by 6	XA-0994-000CN	
Figure 343; 18	Screw, M4 by 8	XA9-0732-000CN	NA
Figure 344; 8	Screws, M4 by 8	XA9-0732-000CN	
Figure 344; 3	Screw, M5 by 12	XA9-0912-000CN	
Figure 344; 11	Screw, M4 by 6	XA9-0994-000CN	
Figure 345; 2	Screw, M3 by 6	XB2-6300-607CN	

Table 126. Numerical parts list (continued)

Ref	Description	Part number	Qty
Figure 344; 10	Screw, M4 by 6	XB6-7300-607CN	
Figure 343; 10	Screw, M4 by 6	XB6-7400-000CN	

Index

Numerics

2,000-sheet feeder. *See* tray 4

A

A4 media settings 68
AC/DC power conversion 149
accessories
  available 23
  diagrams 29
  ordering 53, 475
  part numbers 479
  verifying installation 352
acoustic emissions specifications 27
adhesive labels
  print modes 73
  specifications 42
adjustment, laser/scanner
  about 237
  page, printing 233
  page, reading 235
  step 1 238
  step 2 242
adjustments, print quality 400
APC (automatic light emission control) 163
AppleTalk settings 78
applications, changing settings from 88
auto continue 76
auto sense mode 73

B

back covers, removing
  printer 228
  tray 4 320
back view, diagrams 317
balance, color 400
basis-weight field test 46
beams
  detect errors 165, 167
  operations 160, 161
  skew calibration 169
belt only test 85, 341
bins
  capacities 38
  default, setting 67
  full 420
  locating 28
blank control panel display 336
blank pages, troubleshooting 395
blisters mode 74
block diagram 121
bond paper, weight equivalence table 46
box
  contents 36
  size 32
buttons, control panel 60

C

cables
  connectors 28
  troubleshooting 352
cables, flat flexible (FFCs)
  removing and replacing 199
  signals 130
  troubleshooting 358
calibration
  color plane registration (CPR) 167
  environment 178
  halftone 180
  laser beam skew 169
  menu settings 72
  skipping 97
caliper field test 48
Cancel Job button 61
capacities, trays and bins 38
carbonless media 45
cardstock mode 73
cartridges
  block diagram 121
  diagrams 170
  disabling 81, 338
  drive assembly, diagrams and part numbers 510
  drive assembly, removing and replacing 296
  error messages 428
  motors, operations 152
  motors, testing 85, 343
  non-HP 106, 427
  operations 172
  part numbers 106, 479
  removing 197, 201
  storing 107
  terminology 476
  warranty 56
cassette assembly, diagrams and part numbers 514
cassettes. *See* trays
CD-ROM, parts information 54
center back cover (tray 4), removing 320
charging operations 171
checks. *See* tests
chemically treated media 44
circuits
  capacity 26
  DC controller 143
  flat flexible cable (FFC) signals 130
  laser diodes 162
  wiring diagrams 126
cleaning
  components 104
  precautions 102
  toner, spilled 102
  waste toner operations 176, 177
cleaning blade
  diagrams 170
  operations 176, 177
  removing and replacing 206
  terminology 476
cleaning kit
  page count, resetting 86
  part numbers 479
cleaning page 72
clearable warnings 76
clothing, toner on 102

clutches
diagrams 143, 154
paper path 181, 189
cold reset
paper size settings 86
performing 97
color
adjustments 400
band test 84, 364
entire page, troubleshooting 387
halos 398
missing 394
mode 75
plane misregistration 385
plane registration (CPR) 167
settings 70
communications, troubleshooting 466
components
block diagram 121
internal, diagrams and part numbers 490
testing 83
configuration page
HP Jetdirect 468
printing 64
using 352
Configure Device menu 67
connectors
DC controller, checking for damage 200
locating 28, 138
troubleshooting 358
consumables. *See* supplies
continue settings 76
control panel
blank, troubleshooting 336
clearable warning settings 76
cover, removing and replacing 209
default settings 88
language 76, 88
lights and buttons 60
locating 28
locked menus 419
menus 62
messages, alphabetical list 419
messages, troubleshooting 415
overlay, removing and replacing 208
part numbers 479
removing and replacing 209
service ID 86
controller board (tray 4), removing 325
copies, default number 67
counts, page 86
Courier font settings 68
covers
back, removing and replacing 228
diagrams and part numbers 484
left back, removing and replacing 224
left lower, removing and replacing 225
left upper, removing and replacing 212
right back, removing and replacing 227
top left, removing and replacing 215
top right, removing and replacing 213
tray 4, removing 318
upper right, removing and replacing 210
CPR (color plane registration) 167
CPU
DC controller PCA 146, 147
tray 4 193
curl, grain test 48
current capacity 26
custom media
configuring trays 91
detection operations 183
Customer care Reseller Sales and Support Center 54
cut edge condition field test, media 49
cutouts, avoiding media with 44

D

damaged connectors, DC controller 200
DC controller
circuit components 143
color plane registration (CPR) 167
connectors, checking for damage 200
engine-control system 142
feeding operations 181
flat flexible cable (FFC) signals 130
formatter operations 158
halftone calibration control 180
high-voltage power supply 150
last sheet detection, tray 1 188
media size detection 183
motors and fans 151
operations 146
paper width detection, tray 1 187
part numbers 479
pickup operations tray 2 or 3 184
removing and replacing 300
scanner motor 166
T driver circuit 147
tray 1 pickup operations 186
default settings, restoring
print modes 74
printer 80
defeating interlocks 337
defects, repeating 365, 367
delivery cover assembly, diagrams and part numbers 533
delivery fan
diagrams 153
removing and replacing 290
delivery feed assembly, diagrams and part numbers 531
delivery unit sensor, removing and replacing 253
delivery unit, removing and replacing 249
demo page, printing 64
density
control operations 178, 179
image formation operations 171
sensor assembly, removing and replacing 262
developer motors test 85, 344
developing cylinder
block diagram 121
operations 172
developing motors 151
D-half (halftone calibration) 180

diagnostics
belt only 341
color band 364
components 340
developer motor 344
disable cartridge 338
engine 338, 350, 364
face-up solenoid 348
fuser motor 345
image drum motors 342
interlocks, defeating 337
menu 81
paper path 338
pre-registration 347
print cartridge motors 343
print stop test 349
registration test 348
sensors 339
tools 337
transfer motor 341
tray 1 feed motor 345
tray 2 feed-drive 346
tray 3 feed-drive 347
tray 4 motors 469
tray 4 sensors 470
YMCK laser 344
Diagnostics menu 81
diagonal lines, troubleshooting 378
DIMMs
part numbers 479
slots 159
specifications 23
verifying installation 352
diodes, laser 162, 163
DIP switches, tray 4 469
directory file page 64, 357
disable cartridge test 338
disk. *See* hard disk
DLC/LLC settings 78
documentation
ordering 55, 475
part numbers 481
doors
diagrams and part numbers 484
front, removing and replacing 217
fuser, removing and replacing 218
image drum, removing and replacing 229
ITB, removing and replacing 220
jam detection operations 190
left switch, removing and replacing 311
locating 28
right switch, removing and replacing 312
upper left sensor, removing and replacing 314
dots per inch (dpi) 23
downloading drivers 53
dpi (dots per inch) 23
drive assembly (tray 4), removing 324
drive motor (tray 4), removing 324
drivers
downloading 53
included 23
drums, image
block diagram 121
diagrams 170
door, removing and replacing 229
drive assembly, diagrams and part numbers 509
drive assembly, removing and replacing 292
handling 108
motor test 85
motors, operations 151
non-HP 106
operations 171
part numbers 108, 479
removing 197, 203
terminology 476
testing 81, 342
warranty 56
dual-beam method 161
duplexer
deflector 121
error messages 420
part numbers 481
removing and replacing 258
settings 68
troubleshooting 409
duty cycle 23

E

edge printing 93
EIO cards
part numbers 481
slots 23, 28
EIO disk. *See* hard disk
EIO submenu 78
electrical contacts, troubleshooting 358
electrical specifications 26
electrophotographic process 170
electrostatic discharge (ESD) precautions 198
embossed media, specifications 44
energy consumption 26
engine control system, block diagram 142
engine tests 350, 364
envelopes
default size 67
grain test 48
print mode 73
specifications 41
storing 45
troubleshooting 410
environment calibration control 178
environmental specifications
printer 26, 27
storing media 45
equivalence table, paper weight 46
error messages
alphabetical list 419
log 81
numerical list 431
settings 76
types of 415
ESD (electrostatic discharge) precautions 198
event log
configuration page 353
diagnostics menu 81
messages 417
printing 416
sample page 418
viewing 417
exchange program 53
eye contact, toner 103

F

face down delivery assembly, diagrams and part numbers 532
face-up deflector 121
face-up delivery fans 153
face-up solenoid test 85, 348
factory defaults, restoring
  print modes 74
  printer 80
fans
  delivery, removing and replacing 290
  diagrams 143, 151
  fuser, removing and replacing 291
  right back, removing and replacing 265
  right front, removing and replacing 266
Fast Infrared (FIR) connect 28
fasteners 198, 483
FastRes 23
features 23, 24
feed guide, cleaning 104
feed rollers
  block diagram 121
  operations 181, 184
  tray 4 193, 322
feed unit, vertical 254
feeding operations
  last sheet detection, tray 1 188
  lifting 185
  paper path 181, 189
  testing 85
  tray 1 186
  tray 2 or 3 184
FFCs (flat flexible cables)
  removing and replacing 199
  signals 130
fiber composition test 49
field replaceable units (FRUs)
  part numbers 484
  removing and replacing 197
file directory page 64, 357
fingerprints, troubleshooting 396
finish test, paper 48
FIR connector 28
firmware updates
  downloading 109
  Macintosh 113
  messages received during 116
  troubleshooting 116
  UNIX 111
  Windows, FTP 111
  Windows, local port 110
  Windows, LPR commands 115
  Windows, network 111
first aid procedures, toner 103
first page out, specifications 23
flags, diagrams 121
flash error messages 423
flat flexible cables (FFCs)
  removing and replacing 199
  signals 130
  troubleshooting 358
focusing lenses, operations 160, 161
fonts
  Courier settings 68
  DIMMs, part numbers 479
  included 23
  list, printing 64
  PCL settings 69
foreign interface harness (FIH) 28
formatter
  cage, removing and replacing 304
  color plane registration (CPR) 167
  halftone calibration control 180
  heartbeat LED 159, 351
  operations 158
  part numbers 479
  PCB, removing and replacing 302
  power supplies 149
  tray 4 feeding operations 192
forms, preprinted 43
frequent jams, troubleshooting 413
front doors
  locating 28
  removing and replacing 217
front fuser guide, cleaning 104
front paper sensor, removing and replacing 315
front view, diagrams 317
FRUs (field replaceable units)
  part numbers 484
  removing and replacing 197
FTP firmware updates
  Macintosh 113
  Windows 111
furnish test, media 49
fuser
  cleaning 104
  control circuit operations 148
  diagrams 170
  door, removing and replacing 218
  drive assembly, diagrams and part numbers 512
  drive assembly, removing and replacing 299
  front paper sensor, removing and replacing 315
  kit, part numbers 479
  kit, resetting page count 86
  media compatibility 42
  motor test 345
  removing and replacing 259
  sensor PCA, removing and replacing 316
  warranty 56
fuser fan
  diagrams 153
  removing and replacing 291
fuser motor
  diagrams 152
  removing and replacing 298
  testing 85
fusing rollers
  block diagram 121
  operations 175
fusing troubleshooting 392

G

ghosted image, troubleshooting 388
glossy media 44
glossy mode 73
grain field test 48
gray levels 23
guides, cleaning 104

H

halftone calibration control 180
halos, troubleshooting 398
handprints, troubleshooting 396

hard disk
error messages 423
file directory page 64, 357
included 23
part numbers 481
reinitializing 94
skip disk function 97
hardware 483
harnesses, wiring 197
heartbeat LED, formatter 159, 351
heaters, operations 148
heavy media mode 73
held jobs 63, 75
high coverage adjustments 401
high-voltage contact, removing and replacing 306
high-voltage power supply
operations 150
removing and replacing 281
HP Fast Infrared (FIR) connector 28
HP FastRes 23
HP Jetdirect print servers
configuration page 468
connector, locating 28
EIO submenu 78
included 22
model number 23
troubleshooting 467
HP Jet-Link cabling, troubleshooting 352
HP Jet-Link connector 28
HP LaserJet utility, Macintosh firmware updates 114
HP media 39
HP PCL 5c driver 23
HP Web JetAdmin, firmware updates 115
humidity
calibration control 178
meter, suppliers 50
sensor, removing and replacing 280
specifications 27
storing media 45

I

I/O submenu 77
identification label 25
image cleaning kit, part numbers 479
image density detection operations 179
image drums
block diagram 121
diagrams 170
door, removing and replacing 229
drive assembly, diagrams and part numbers 509
drive assembly, removing and replacing 292
handling 108
motor test 85
motors, operations 151
non-HP 106
operations 171
part numbers 108, 479
removing 197, 203
terminology 476
testing 81, 342
warranty 56
image formation operations 170
image mask control 164
image quality
adjustments 400
blank pages 395
color band test 364
color over entire page 387
color plane misregistration 385
color plane missing 394
fingerprints 396
fusing, poor 392
ghosted image 388
halos 398
jams 402
light print 380
lines 371, 374, 378
misplaced images 391
repeating defects 365, 367
sample defects 366
troubleshooting 359, 360
wavy brush marks 384
yellow dots 397
image stabilization control 178
image transfer kit, part numbers 479
imaging area 93
Information menu 64
information pages
configuration 352
file directory 357
HP Jetdirect 468
printing 352
supplies status 354
ingestion, toner 103
inhalation, toner 103
initialization
hard disk 94
NVRAM 95, 96
input trays
alignment adjustment 413
behavior modes 75
capacities 38
custom media settings 91
detection operations 183
diagrams and part numbers 514
empty error messages 429
included 22
insert error messages 424
jam detection operations 190
last sheet detection, tray 1 188
lifting operations 185
load error messages 426
locating 28
media size detection operations 181, 183
media supported 38
motors, testing 85, 345
open error messages 429
paper path operations 181
paper path test 81
paper-handling menu 65
paper-width detection, tray 1 187
pickup operations, cassettes 184
pickup operations, tray 1 186
printable area 93
registration 70
rotate paper error messages 429
sensors, diagrams 145, 154
separation pad, cleaning 105
size error messages 430
standard paper size, setting 89

installation
box contents 36
error messages 424
space requirements 32
verifying for accessories 352
interface connections 23, 28
interlocks, defeating 337
intermediate transfer belt. *See* ITB
internal components, diagrams and part numbers 490
INTR (initial rotation) sequence 123
IP address 75, 467
IPX/SPX settings 78
ITB
block diagram 121
cleaning operations 176
density detection operations 179
diagrams 170
door, removing and replacing 220
fan 153
motor 151
operations 173
part numbers 479
removing 197
removing and replacing 260
sensor, removing and replacing 313
terminology 476
testing 341

J

jams
cleaning spilled toner 102
clearing 412
detection operations 123, 190
error messages 432
frequent 413
locations 404
multifeeds, troubleshooting 409
print quality 402
recovery settings 76
sensors 403
tray 4 detection operations 193
troubleshooting 411
JetAdmin, firmware updates 115
Jetdirect print servers
configuration page 468
connector, locating 28
EIO submenu 78
included 22
model number 23
troubleshooting 467
Jet-Link cabling, troubleshooting 352
Jet-Link connector 28
job storage 63, 75

K

kits
page count, resetting 86
part numbers 479

L

labels
print modes 73
specifications 42
language, control panel 76, 88
languages, printer
included 23
settings 76
verifying installation 352
laser/scanner assemblies
adjusting 237, 238, 242
adjustment page, printing 233
adjustment page, reading 235
Beam detect errors 165
beam skew calibration 169
block diagram 121
laser control operations 162, 163
operations 160, 161
power supplies 149
removing and replacing 231
scanner motor control 166, 167
testing 85
LaserJet utility, Macintosh firmware updates 114
last sheet detection, tray 1 188
leading edge adjustment 401
LEDs. *See* lights
left back cover (tray 4), removing 320
left back cover, removing and replacing 224
left bin, locating 28
left cover, diagrams and part numbers 488
left door switch, removing and replacing 311
left lower cover, removing and replacing 225
left side access door, locating 28
left side cover (tray 4), removing 318
left side view, diagrams 317
left upper cover, removing and replacing 212
lenses, operations 160, 161
letterhead specifications 43
lifter motor 153
lifting operations 185
light control, laser diodes 162, 163
light media mode 73
light print, troubleshooting 380
lights
control panel 60
formatter heartbeat LED 159, 351
tray 4 471
limited warranty 56
lines, troubleshooting 371, 374, 378
link speed 79
load trays error messages 426
locked menus 419
long-grain paper test 48
low-voltage power supply
operations 149
removing and replacing 282
LPR commands, firmware updates 115
LSTR (last rotation) sequence 123

M

Macintosh firmware updates 113
maintenance
agreements 56
cleaning procedures 102, 104
counts, resetting 86
manual feed
pickup assembly, diagrams and part numbers 522
settings 68
manuals
ordering 55
part numbers 481
map, menu 62
margins 93
mask control, image 164

media
custom sizes 91
default size 67, 86
detection operations 193
envelopes 41
finish test 48
glossy 44
HP 39
last sheet detection, tray 1 188
level detection operations 193
lifting operations 185
optimize settings 71
preprinted 43
print modes 70, 73
recommended 39
rotate error messages 429
selecting 37
sensors 145
size detection operations 181, 183
sizes supported 38
storing 45
test tools 50
testing 45
tray settings 65, 89
troubleshooting 84, 359, 409
types 41
weight equivalence table 46
width detection, tray 1 187
media jams. *See* jams
memory
clearing 97
configuration page information 353
DIMM slots 159
NVRAM initialization 95, 96
part numbers 479
specifications 23
Memory Enhancement technology (MEt) 23
menus, control panel
Configure device 67
Diagnostics 81
EIO 78
I/O 77
Information 64
language, setting 88
locked 419
map 62
Output Setup 77
Paper handling 65
parallel input 77
PCL 69
Print Quality 70
Printing 67
Resets 80
Retrieve job 63
Service 86
System Setup 75
messages
alphabetical list 419
log 81
numerical list 431
settings 76
types of 415
MEt (Memory Enhancement technology) 23
metric weight equivalence table, paper 46
Microsoft Windows. *See* Windows
mirrors, operations 160, 161
misfeeds, troubleshooting 409
misplaced images, troubleshooting 391
model number 25
models
features 22
parts 476
moisture
media content field test 48
meters, suppliers 50
mono mode 75
monthly duty cycle 23
motors
developer, testing 344
diagrams 143, 151
fuser, removing and replacing 298
fuser, testing 345
image drum, testing 342
paper path 181, 189
pickup operations, tray 2 or 3 184
power supplies 149
print cartridge, testing 343
registration assembly, removing and replacing 283
scanner 166, 167
testing 85
transfer, testing 341
tray 1 feed, testing 345
tray 4 drive, removing 324
tray 4, testing 469
MPPCA 187
multifeeds, troubleshooting 409
multifunction finisher
locating 29
Output Setup submenu 77
part numbers 481
supplies, part numbers 479

N

networks
features 23
troubleshooting 466
next-day onsite service 57
noise
specifications 27
troubleshooting 414
non-HP print cartridges 106
Novell Status information 467
NVRAM initialization 95, 96

O

on/off switch 28
onsite service agreements 57
operating environment
calibration 178
specifications 26, 27

operations
Beam detect errors 165, 167
block diagram 121
cassette detection 183
color plane registration (CPR) 167
connector location diagrams 138
DC controller 143, 146
density detection 179
dual-beam method 161
electrophotographic process 170
engine control system 142
environment calibration 178
fans 151
flat flexible cable (FFC) signals 130
formatter 158
formatter heartbeat LED 159
fuser control circuit 148
halftone calibration 180
high-voltage power supply 150
image formation 170
image mask control 164
image stabilization 178
jam detection 190
laser control 162, 163
laser/scanner system 160
laser-beam skew calibration 169
last sheet detection, tray 1 188
lifting 185
low-voltage power supply 149
media size detection 181, 183
motors 151
paper path 181, 189
paper-width detection, tray 1 187
pickup, tray 1 186
pickup, tray 2 or 3 184
scanner motor 166, 167
sequences 122
systems 120
T driver PCA 147
timing chart 124
optimize media settings 71
ordering
documentation and software 55
parts and supplies 53, 475
output bins
capacities 38
default, setting 67
full 420
locating 28
output quality, troubleshooting. *See* print quality, troubleshooting
Output Setup submenu 77
overhead transparencies
printer modes 73
specifications 43
troubleshooting 411
overheating control 148
overlay for control panel, removing and replacing 208
override A4/letter settings 68
ozone
fan 153
filter 28

P

packaging, removing 32
page counts 86
page skew adjustment operations, tray 4 193
pages per minute (ppm) 23
panels. *See* covers
paper
custom sizes 91
default size 67, 86
detection operations 193
finish test 48
glossy 44
HP 39
last sheet detection, tray 1 188
level detection operations 193
lifting operations 185
optimize settings 71
preprinted 43
print modes 70, 73
recommended 39
rotate error messages 429
selecting 37
sensors 145
size detection operations 181, 183
sizes supported 38
storing 45
test tools 50
testing 45
tray settings 65, 89
troubleshooting 84, 359, 409
types 41
weight equivalence table 46
width detection, tray 1 187
paper connecting unit (tray 4), removing 329
Paper handling menu 65
paper jams. *See* jams
paper path
operations 181, 189
straight 409
test 81, 338
paper pickup assembly, diagrams and part numbers 516
paper-size detection switch PCB (tray 4), removing 326
parallel cable connector 28
Parallel Input submenu 77
parts
alphabetical list 544
CD-ROM 54
numerical list 550
ordering 53, 475
printer models 476
removing and replacing 197
voltage 475
Pause/Resume button 61
PCB assemblies, diagrams and part numbers 535
PCL
font list, printing 64
included 23
submenu 69
P-crg drive assembly, removing and replacing 292
perforated media, avoiding 44
periods, operations 122
personalities
included 23
settings 76
verifying installation 352
pH test kit 50
phases, operations 122
phone numbers
ordering documentation and software 55
ordering supplies 53
service agreements 57
support 54
physical specifications 26
pickup assembly (tray 4), removing 328
pickup assembly, diagrams and part numbers 516

pickup motor 153
pickup rollers
block diagram 121
motors 152
operations 184, 186
tray 1, removing and replacing 309
tray 4 193, 322
pickup system operations
cassette detection 183
feeding 181, 183
last sheet detection, tray 1 188
lifting 185
paper path 189
tray 1 186
tray 2 or 3 184
pickup unit, removing and replacing 272
PIN, Service menu 86
PJL (printer job language) 23
pliers, required 198
ports
included 23
locating 28
post charger
cleaning 104
diagrams 170
operations 174
removing and replacing 307
PostScript Level 3 emulation 23
power
consumption 26
operations 122
troubleshooting 336
unplugging printer 148, 197
power cord
connector 28
part numbers 481
power supplies
engine-control system 142
fans 153
high-voltage 150
high-voltage, removing and replacing 281
low-voltage 149
low-voltage, removing and replacing 282
part numbers 479
post charger, removing and replacing 307
tray 4, operations 192
tray 4, removing 327
power switch, locating 28
PowerSave
energy consumption 26
settings 75
ppm (pages per minute) 23
preprinted media specifications 43
preregistration motor 189
pre-registration test 347
pressure roller
block diagram 121
heating operations 148
primary charging roller
block diagram 121
operations 171, 177
print cartridges
block diagram 121
diagrams 170
disabling 81, 338
drive assembly, diagrams and part numbers 510
drive assembly, removing and replacing 296
error messages 428
motors, operations 152
motors, testing 85, 343
non-HP 106, 427
operations 172
part numbers 106, 479
removing 197, 201
storing 107
terminology 476
warranty 56
print modes 70, 73
print quality
adjustments 400
blank pages 395
color band test 364
color over entire page 387
color plane misregistration 385
color plane missing 394
fingerprints 396
fusing, poor 392
ghosted image 388
halos 398
jams 402
light print 380
lines 371, 374, 378
misplaced images 391
repeating defects 365, 367
sample defects 366
troubleshooting 359, 360
wavy brush marks 384
yellow dots 397
Print Quality submenu 70
PRINT sequence 123
print servers, HP Jetdirect
configuration page 468
connector, locating 28
EIO submenu 78
included 22
model number 23
troubleshooting 467
print stop test 84, 349
printable area 93
printer drivers
downloading 53
included 23
printer job language (PJL) 23
Printing submenu 67
priority onsite service 57
private jobs 63, 75
process cartridges. *See* image drums
production code 25
programs, changing settings from 88
proof and hold jobs 63, 75
protocol settings 78
protocols, network
troubleshooting 467
PS error pages 68
PS fonts, included 23
PS Level 3 emulation 23

Q

quality
- adjustments 400
- blank pages 395
- color band test 364
- color over entire page 387
- color plane misregistration 385
- color plane missing 394
- fingerprints 396
- fusing, poor 392
- ghosted image 388
- halos 398
- jams 402
- light print 380
- lines 371, 374, 378
- misplaced images 391
- repeating defects 365, 367
- sample defects 366
- troubleshooting 359, 360
- wavy brush marks 384
- yellow dots 397

quick copy jobs 63, 75

R

RAM (random-access memory) specifications 23
RAM disk
- error messages 427
- settings 76

random-access memory (RAM) specifications 23
recycled media 45
region of origin 25
registration assembly
- diagrams and part numbers 526
- removing and replacing 283
- tray 4 193, 323

registration drive assembly, diagrams and part numbers 508
registration motors
- operations 152
- testing 85

registration roller
- block diagram 121
- cleaning 105

registration sensor assembly, removing and replacing 262
registration settings 70
registration test 348
regulatory information 25
reinitialization
- hard disk 94
- NVRAM 95, 96

remanufactured parts 53
remote firmware updates
- downloading 109
- Macintosh 113
- messages received during 116
- troubleshooting 116
- UNIX 111
- Windows, FTP 111
- Windows, LPR commands 115
- Windows, network 111

removing parts 197
repeating defects 365, 367
replacing parts 197
Resets submenu 80
resetting
- cold reset 97
- NVRAM 95, 96
- page counts 86
- print modes 74
- printer settings 80

residual jams, detection operations 191, 193
residual toner cleaning operations 176, 177
resistivity test tools 50
resolution 23
Resolution Enhancement technology (REt) 23
restoring default settings
- cold reset 97
- NVRAM initialization 95, 96
- print modes 74
- printer 80

REt (Resolution Enhancement technology) 23
retention, job 63, 75
Retrieve job menu 63
revision level 25
right back cover (tray 4), removing 320
right back cover, removing and replacing 227
right back fan, removing and replacing 265
right door
- diagrams and part numbers 489
- switch, removing and replacing 312

right front fan, removing and replacing 266
right side cover (tray 4), removing 319
right side view, diagrams 317
right upper cover, removing and replacing 210
rollers
- cleaning 105
- diagrams 121
- feed, operations 181
- high-voltage power supply 150
- image formation system 170
- motors 151
- pickup operations, tray 2 or 3 184
- primary charging operations 171, 177
- repeating defects 365, 367
- transfer operations 175
- transfer, removing and replacing 207
- tray 1 pickup, removing and replacing 309
- tray 4 operations 193

ROM disk error messages 428
rotate paper error messages 429
rough media, smoothness test 48
ruler, repeating defects
- troubleshooting
- repeating defects 365, 367

S

saving settings 96
scanner motor 166, 167
screwdrivers, required 198
screws 198, 483
secondary transfer assembly
- diagrams and part numbers 528
- removing and replacing 267

secondary transfer roller, diagrams 170
security
- configuration page 353
- Web site settings 79

sensors
delivery unit, removing and replacing 253
density and registration, removing and replacing 262
density detection 179
diagrams 121, 143, 154
fuser front paper, removing and replacing 315
fuser PCA, removing and replacing 316
ITB, removing and replacing 313
jam 403
paper path 181
paper path test 338
temperature and humidity, removing and replacing 280
testing 82, 339
tray 1 pickup 186
tray 4, testing 470
upper left door, removing and replacing 314
separation guide, cleaning 104
separation operations 175
separation pad
block diagram 121
cleaning 105
operations 186
removing and replacing 310
separation rollers
block diagram 121
operations 184
tray 4, operations 193
tray 4, removing 322
sequences, operations 122
serial number
locating 25
resetting 86
servers, HP Jetdirect
configuration page 468
connector, locating 28
EIO submenu 78
included 22
model number 23
troubleshooting 467
service agreements 54, 57
service approach 52
service ID 86, 87
Service menu 86
settings
cold reset 97
saving 96
service ID 87
types of 88
setup
box contents 36
requirements 32
Sheffield meter 48, 50
short-grain paper test 48
signals
flat flexible cable (FFC) 130
image mask control 164
laser control 162, 163
site requirements 32
size
box 32
custom media 91
default, media 67
detection operations, media 181, 183, 193
envelopes 41
media supported 38
media, tray settings 65
printer 26
skew adjustment operations, tray 4 193
skew, laser-beam 169
skin contact, toner 103
skip calibration 97
skip disk 97
smoothness test, paper 48
software
ordering 55
settings 88
troubleshooting 466
solenoids
diagrams 143, 154
face-up test 348
paper path operations 181
testing 85
tray 1 pickup 186
space requirements 32
special media
embossed 44
envelope specifications 41
label specifications 42
perforated 44
preprinted 43
storing 45
testing 45
transparency specifications 43
specifications
environmental 26, 27
media 37
size, printer 26
speed 23
speed specifications 23
speed/cost settings 75
spilled toner, cleaning 102
stabilization, image 178
stacker
locating 29
Output Setup submenu 77
part numbers 481
stages, operations 122
stapler/stacker
calibration 86
locating 29
Output Setup submenu 77
part numbers 481
supplies, part numbers 479
static charge eliminator 173, 175
static precautions 198
status, supplies 64, 354
STBY (standby) sequence 123
storage capabilities, verifying 357
storage specifications 27
stored jobs 63, 75
storing
image drums 108
media 45
print cartridges 107
straight paper path 409
suppliers, media test tools 50
supplies
See also print cartridges
error messages 431
low, settings 76
ordering 53, 475
part numbers 479
resetting 80
supplies status page
printing 64
using 354

support
centers, phone numbers and websites 54
service agreements 57
surface coatings, media 44
surface resistivity test tools 50
switches
diagrams 154
interlocks, defeating 337
left door, removing and replacing 311
paper-length detection 183
paper-size detection (tray 4), removing 326
power, locating 28
right door, removing and replacing 312
thermal, operations 148
tray 4 469
synthetic media 44
System Setup submenu 75
systems, printer 120

T

T driver PCA 147
T1 adjustment 400
T2 adjustment 400
TCP/IP protocols 467
TCP/IP settings 78
T-crg drive assembly, removing and replacing 296
telephone numbers
ordering documentation and software 55
ordering supplies 53
service agreements 57
support 54
temperature
calibration control 178
label specifications 42
meter, suppliers 50
sensor, removing and replacing 280
specifications 27
storing media 45
temporary settings 88
terminology 476
tests
belt only 341
color band 364
components 340
developer motor 344
Diagnostics menu 81
disable cartridge 338
engine 338, 350, 364
face-up solenoid 348
fuser motor 345
image drum motors 342
interlocks, defeating 337
media 45
paper path 338
pre-registration 347
print cartridge motors 343
print stop 349
registration 348
sensors 339
tools 337
transfer motor 341
tray 1 feed motor 345
tray 2 feed-drive 346
tray 3 feed-drive 347
tray 4 motors 469
tray 4 sensors 470
YMCK laser 344
theory of operations. *See* operations
thermistors, operations 148
thermoswitches, operations 148
timing chart, printer operations 124
toner
charging operations 171
cleaning operations 176, 177
cleaning spilled 102
collection bottle, removing 197, 205
coverage, usage page information 356
first aid measures 103
fusing operations 175
image formation operations 172
mode 74
parts terminology 476
post charger operations 174
transfer operations 173
toner cartridges. *See* print cartridges
tools
media test 50
required for service 198
top bin, locating 28
top left cover, removing and replacing 215
top right cover, removing and replacing 213
torque values 198, 483
tough paper mode 74
transfer kit page count, resetting 86
transfer motor test 85, 341
transfer roller
block diagram 121
operations 175
removing and replacing 207
transfer unit
block diagram 121
warranty 56
transparencies
printer modes 73
specifications 43
troubleshooting 411
tray 1 feed motor test 345
tray 2 feed-drive test 346
tray 3 feed-drive test 347
tray 4
back covers, removing 320
controller board, removing 325
drive assembly, diagrams and part numbers 540
drive assembly, removing 324
drive motor, removing 324
jam detection operations 193
left side cover, removing 318
lights, interpreting 471
main body, diagrams and part numbers 536
motor test 469
paper connecting unit, removing 329
paper-size detection switch PCB, removing 326
part numbers 481
PCA, diagrams and part numbers 541
pickup assembly, removing 328
power supply, operations 192
power supply, removing 327
registration assembly, removing 323
removing from printer 321
right side cover, removing 319
rollers, removing 322
sensors, testing 470

trays
alignment adjustment 413
behavior modes 75
capacities 38
custom media settings 91
detection operations 183
diagrams and part numbers 514
empty error messages 429
included 22
insert error messages 424
jam detection operations 190
last sheet detection, tray 1 188
lifting operations 185
load error messages 426
locating 28
media size detection operations 181, 183
media supported 38
motors, testing 85, 345
open error messages 429
paper path operations 181
paper path test 81
paper-handling menu 65
paper-width detection, tray 1 187
pickup operations, cassettes 184
pickup operations, tray 1 186
printable area 93
registration 70
rotate paper error messages 429
sensors, diagrams 145, 154
separation pad, cleaning 105
size error messages 430
standard paper size, setting 89
troubleshooting
about 334
blank pages 395
checklist 334
color adjustments 400
color band test 364
color over entire page 387
color plane misregistration 385
color plane missing 394
communications 466, 467
diagnostics 337
Diagnostics menu 81
electrical connections 358
envelopes 410
error messages 415
event log 416
fingerprints 396
firmware updates 116
fusing, poor 392
ghosted image 388
halos 398
HP Jetdirect print servers 467
information pages 352
jams 403, 411
light print 380
lines 371, 374, 378
media 359, 409
misplaced images 391
networks 466
noise 414
power 336
print quality 359, 360, 366
service approach 52
software 466
tests 337
transparencies 411
wavy brush marks 384
yellow dots 397
TrueType fonts 23
turning off printer 148, 197

U

UNIX firmware updates 111
unpacking printer 32
unplugging printer 148, 197
updating firmware
downloading files 109
Macintosh 113
messages received during 116
troubleshooting 116
UNIX 111
Windows, FTP 111
Windows, local port 110
Windows, LPR commands 115
Windows, network 111
upper covers, removing and replacing
left 212
right 210
upper left door sensor, removing and replacing 314
upper right fan 153
usage page 64, 356
user guides
ordering 55
part numbers 481

V

vacuuming spilled toner 102
vertical feed unit, removing and replacing 254

viewing
  current MFP settings 352
  directory structures 357
voltage
  high-voltage power supply 150
  low-voltage power supply 149
  part numbers 475
  specifications 26
  tray 4 power supply 192
volume onsite service 57

W

WAIT sequence 123
warranty 56
washing off toner 102
waste toner collection bottle
  operations 176, 177
  removing 197, 205
wavy brush marks, troubleshooting 384
Web JetAdmin, firmware updates 115
websites
  documentation 55
  firmware updates 109
  HP media 39
  ordering parts and supplies 53, 475
  security, settings 79
weekly onsite service 57
weight
  basis test, media 46
  equivalence table, paper 46
  printer 32
Wide A4 settings 68
width detection, tray 1 187
Windows, updating firmware through
  FTP 111
  local port 110
  LPR commands 115
  network 111
wireless printing 23
wiring
  diagrams 126
  replacing harnesses 197
wood pulp test kits 49, 50

Y

yellow dots, troubleshooting 397
YMCK laser test 344



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