OFFICEJET PRO X451 AND X551
SERIES PRINTERS

Repair Manual

HP OFFICEJET PRO X451

HP OFFICEJET PRO X551

HP Officejet Pro X451 and X551 Printer Series

Repair Manual

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Conventions used in this guide

TIP: Tips provide helpful hints or shortcuts.

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

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

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

Table of contents

1 Removal and replacement 1
Removal and replacement strategy 2
Electrostatic discharge 2
Required tools 3
OfficeJet Pro X special tools kit 3
Advanced Cleaning Kit 5
Service approach 5
Before performing service 5
After performing service 5
Post-service test 6
Print-quality test 6
Removal and replacement procedures 7
Customer replaceable parts 7
Tray 2 7
Ink cartridges 8
Duplex module 12
Output bin 13
Output bin flap 13
Menu access 14
Access the Engineering menu 14
Access the Support Menu 15
Place the product into MFG (manufacturing) mode 15
Place the product into Audit mode 15
Perform tap tests and interpret results 17
10 tap test results (OOBE States) 17
12 tap test results (REDI sensor values) 19
61 tap results (Align & color calibrations) 21
909 tap test results (BDD status) 22
Covers 23
Rear cover 23
Left door 24
Left rear cover 27

Left front cover 28
Top cover 29
Front cover 34
Right cover 35
Main assemblies 36
Aerosol fan assembly 36
Separator/pick assembly 43
Duplex drive module 48
Control panel (X451 models only) 50
Control panel (X551 models only) 51
Power supply 53
Backscatter drop detect (BDD) assembly 55
Service sled assembly 57
Right cross brace 62
Plate console left 65
Plate console right 66
Printbar 67
Printbar calibration procedure 75
Printbar FFC replacement 77
Platen 78
Drying path gear assembly 82
Printbar lift mechanism assembly 83
Tray lift transmission assembly 85
Output drive kit 87
Output drive gears 90
Output drive shaft 6 90
Output drive shaft 5 92
Output drive shaft 4 94
Drive shaft 3 95
Inner top frame 98
Top paper guide 101
Top left paper guide assembly 104
Center left paper guide assembly 106
Paper REDI sensors in the center left paper guide assembly 108
Service sled transmission 109
Printed circuit-board assemblies (PCAs) 110
PCA safety shield 110
Sensor carriage PCA and encoder strip 111
Power button PCA 115
Duplex module sensor PCA 116
Temperature sensor 117

REDI distribution PCA 118
Feed motor encoder sensor PCA 119
Eject flap opto PCA 122
Printzone distribution PCA 122
Media presence sensor PCA/flag 125
Main PCA 126
Main PCA calibration procedure 131
Tray 3 interconnect PCA 134
Pick encoder distribution PCA 135
Wireless PCA 136

2 Parts and diagrams 137

Order parts by authorized service providers 138
Order replacement parts 138
Related documentation and software 138
Supplies part numbers 138
Customer self-repair parts 139
How to use the parts lists and diagrams 141
Assembly locations 142
Front view (X451 Series) 142
Front view (X551 Series) 143
Back view 144
Covers, panels, and doors 146
Internal assemblies 148
Alphabetical parts list 158
Numerical parts list 163

Index 169

List of figures

Figure 1-1 OfficeJet Pro X special tools–ink supply door switch 3
Figure 1-2 OfficeJet Pro X special tools–printbar lift knob 4
Figure 1-3 OfficeJet Pro X special tools–service sled advance tool 4
Figure 1-4 OfficeJet Pro X special tools–printbar dolly 4
Figure 1-5 Remove Tray 2 (1 of 2) 7
Figure 1-6 Remove Tray 2 (2 of 2) 8
Figure 1-7 Replace the ink cartridges (1 of 7) 8
Figure 1-8 Replace the ink cartridges (2 of 7) 9
Figure 1-9 Replace the ink cartridges (3 of 7) 9
Figure 1-10 Replace the ink cartridges (4 of 7) 10
Figure 1-11 Replace the ink cartridges (5 of 7) 10
Figure 1-12 Replace the ink cartridges (6 of 7) 11
Figure 1-13 Replace the ink cartridges (7 of 7) 11
Figure 1-14 Remove the duplex module (1 of 2) 12
Figure 1-15 Remove the duplex module (2 of 2) 12
Figure 1-16 Remove the output bin 13
Figure 1-17 Remove the output bin flap 13
Figure 1-18 X451 control panel button locations 14
Figure 1-19 X551 control panel button locations 14
Figure 1-20 10 tap test results 18
Figure 1-21 12 tap test report 20
Figure 1-22 61 tap test results 21
Figure 1-23 909 tap test results 22
Figure 1-24 Remove the rear cover (1 of 2) 23
Figure 1-25 Remove the rear cover (2 of 2) 23
Figure 1-26 Remove left door (1 of 6) 24
Figure 1-27 Remove the left door (2 of 6) 24
Figure 1-28 Remove the left door (3 of 6) 25
Figure 1-29 Remove the left door (4 of 6) 26
Figure 1-30 Remove the left door (5 of 6) 26
Figure 1-31 Remove the left door (6 of 6) 27
Figure 1-32 Remove the left rear cover (1 of 2) 27

Figure 1-33 Remove the left rear cover (2 of 2) 28
Figure 1-34 Remove the left front cover (1 of 2) 28
Figure 1-35 Remove the left front cover (2 of 2) 29
Figure 1-36 Remove the top cover (1 of 8) 30
Figure 1-37 Remove the top cover (2 of 8) 30
Figure 1-38 Remove the top cover (3 of 8) – X451 models 31
Figure 1-39 Remove the top cover (4 of 8) – X551 models 31
Figure 1-40 Remove the top cover (5 of 8) 32
Figure 1-41 Remove the top cover (6 of 8) 32
Figure 1-42 Remove the top cover (7 of 8) 33
Figure 1-43 Remove the top cover (8 of 8) 33
Figure 1-44 Remove the front cover (1 of 2) 34
Figure 1-45 Remove the front cover (2 of 2) 34
Figure 1-46 Remove the right cover (1 of 2) 35
Figure 1-47 Remove the right cover (2 of 2) 35
Figure 1-48 Remove the aerosol fan (1 of 12) 36
Figure 1-49 Remove the aerosol fan (2 of 12) 37
Figure 1-50 Remove the aerosol fan (3 of 12) 37
Figure 1-51 Remove the aerosol fan (4 of 12) 38
Figure 1-52 Remove the aerosol fan (5 of 12) 38
Figure 1-53 Remove the aerosol fan (6 of 12) 39
Figure 1-54 Remove the aerosol fan (7 of 12) 39
Figure 1-55 Remove the aerosol fan (8 of 12) 40
Figure 1-56 Remove the aerosol fan (9 of 12) 40
Figure 1-57 Remove the aerosol fan (10 of 12) 41
Figure 1-58 Remove the aerosol fan (11 of 12) 41
Figure 1-59 Remove the aerosol fan (12 of 12) 42
Figure 1-60 Remove the separator/pick assembly (1 of 4) 43
Figure 1-61 Remove the separator/pick assembly (2 of 4) 44
Figure 1-62 Remove the separator/pick assembly (3 of 4) 45
Figure 1-63 Remove the separator/pick assembly (4 of 4) 45
Figure 1-64 Reinstall the separator/pick assembly (1 of 5) 46
Figure 1-65 Reinstall the separator/pick assembly (2 of 5) 46
Figure 1-66 Reinstall the separator/pick assembly (3 of 5) 47
Figure 1-67 Reinstall the separator/pick assembly (4 of 5) 47
Figure 1-68 Reinstall the separator/pick assembly (5 of 5) 48
Figure 1-69 Remove the duplex drive module (1 of 2) 49
Figure 1-70 Remove the duplex drive module (2 of 2) 49
Figure 1-71 Remove the control panel (1 of 2) 50
Figure 1-72 Remove the control panel (2 of 2) 50
Figure 1-73 Remove the touchscreen control panel (1 of 4) 51

Figure 1-74 Remove the touchscreen control panel (2 of 4) 51
Figure 1-75 Remove the touchscreen control panel (3 of 4) 52
Figure 1-76 Remove the touchscreen control panel (4 of 4) 52
Figure 1-77 Remove the power supply (1 of 3) 53
Figure 1-78 Remove the power supply (2 of 3) 54
Figure 1-79 Remove the power supply (3 of 3) 54
Figure 1-80 Remove the backscatter drop detect assembly (1 of 2) 55
Figure 1-81 Remove the backscatter drop detect assembly (2 of 2) 56
Figure 1-82 Remove the service sled assembly (1 of 6) 57
Figure 1-83 Remove the service sled assembly (2 of 6) 58
Figure 1-84 Remove the service sled assembly (3 of 6) 58
Figure 1-85 Remove the service sled assembly (4 of 6) 59
Figure 1-86 Remove the service sled assembly (5 of 6) 59
Figure 1-87 Remove the service sled assembly (6 of 6) 60
Figure 1-88 Remove the web advance rack assembly (1 of 2) 61
Figure 1-89 Remove the web advance rack assembly (2 of 2) 61
Figure 1-90 Remove the right cross brace (1 of 4) 62
Figure 1-91 Remove the right cross brace (2 of 4) 63
Figure 1-92 Remove the right cross brace (3 of 4) 63
Figure 1-93 Remove the right cross brace (4 of 4) 64
Figure 1-94 Remove the plate console left 65
Figure 1-95 Remove the plate console right (1 of 2) 66
Figure 1-96 Remove the plate console right (2 of 2) 67
Figure 1-97 Remove the printbar (1 of 12) 68
Figure 1-98 Remove the printbar (2 of 12) 68
Figure 1-99 Remove the printbar (3 of 12) 69
Figure 1-100 Remove the printbar (4 of 12) 69
Figure 1-101 Remove the printbar (5 of 12) 70
Figure 1-102 Remove the printbar (6 of 12) 71
Figure 1-103 Remove the printbar (7 of 12) 71
Figure 1-104 Remove the printbar (8 of 12) 72
Figure 1-105 Remove the printbar (9 of 12) 72
Figure 1-106 Remove the printbar (10 of 12) 73
Figure 1-107 Remove the printbar (11 of 12) 73
Figure 1-108 Remove the printbar (12 of 12) 74
Figure 1-109 Replace the printbar control FFCs (1 of 2) 77
Figure 1-110 Replace the printbar control FFCs (2 of 2) 77
Figure 1-111 Remove the platen (1 of 7) 78
Figure 1-112 Remove the platen (2 of 7) 79
Figure 1-113 Remove the platen (3 of 7) 79
Figure 1-114 Remove the platen (4 of 7) 80

Figure 1-115 Remove the platen (5 of 7) 80
Figure 1-116 Remove the platen (6 of 7) 81
Figure 1-117 Remove the platen (7 of 7) 82
Figure 1-118 Remove the drying path gear assembly 82
Figure 1-119 Remove the printbar lift motor (1 of 2) 83
Figure 1-120 Remove the printbar lift motor (2 of 2) 84
Figure 1-121 Remove the tray lift transmission assembly (1 of 2) 85
Figure 1-122 Remove the tray lift transmission assembly (2 of 2) 86
Figure 1-123 Remove the flap actuator solenoid 87
Figure 1-124 Remove the rack-eject lifter flap (1 of 3) 88
Figure 1-125 Remove the rack-eject lifter flap (2 of 3) 88
Figure 1-126 Remove the rack-eject lifter flap (3 of 3) 89
Figure 1-127 Remove the eject drive gear module 89
Figure 1-128 Remove the output drive gears 90
Figure 1-129 Remove the output drive shaft 6 (1 of 3) 91
Figure 1-130 Remove the output drive shaft 6 (2 of 3) 91
Figure 1-131 Remove the output drive shaft 6 (3 of 3) 92
Figure 1-132 Remove the output drive shaft 5 (1 of 2) 93
Figure 1-133 Remove the output drive shaft 5 (2 of 2) 93
Figure 1-134 Remove the output drive shaft 4 (1 of 2) 94
Figure 1-135 Remove the output drive shaft 4 (2 of 2) 95
Figure 1-136 Remove drive shaft 3 (1 of 4) 96
Figure 1-137 Remove drive shaft 3 (2 of 4) 96
Figure 1-138 Remove drive shaft 3 (3 of 4) 97
Figure 1-139 Remove drive shaft 3 (4 of 4) 97
Figure 1-140 Remove the inner top frame (1 of 5) 98
Figure 1-141 Remove the inner top frame (2 of 5) 99
Figure 1-142 Remove the inner top frame (3 of 5) 99
Figure 1-143 Remove the inner top frame (4 of 5) 100
Figure 1-144 Remove the inner top frame (5 of 5) 100
Figure 1-145 Remove the top paper guide (1 of 6) 101
Figure 1-146 Remove the top paper guide (2 of 6) 101
Figure 1-147 Remove the top paper guide (3 of 6) 102
Figure 1-148 Remove the top paper guide (4 of 6) 102
Figure 1-149 Remove the top paper guide (5 of 6) 103
Figure 1-150 Remove the top paper guide (6 of 6) 103
Figure 1-151 Remove the top left paper guide (1 of 4) 104
Figure 1-152 Remove the top left paper guide (2 of 4) 104
Figure 1-153 Remove the top left paper guide (3 of 4) 105
Figure 1-154 Remove the top left paper guide (4 of 4) 105
Figure 1-155 Remove the center left paper guide (1 of 4) 106

Figure 1-156 Remove the center left paper guide (2 of 4) 106
Figure 1-157 Remove the center left paper guide (3 of 4) 107
Figure 1-158 Remove the center left paper guide (4 of 4) 107
Figure 1-159 Remove the paper REDI sensors 108
Figure 1-160 Correctly positioned service sled transmission 109
Figure 1-161 Incorrectly positioned service sled transmission 109
Figure 1-162 Remove the PCA safety shield (1 of 2) 110
Figure 1-163 Remove the PCA safety shield (2 of 2) 110
Figure 1-164 Remove the sensor carriage PCA and encoder strip (1 of 8) 111
Figure 1-165 Remove the sensor carriage PCA and encoder strip (2 of 8) 111
Figure 1-166 Remove the sensor carriage PCA and encoder strip (3 of 8) 112
Figure 1-167 Remove the sensor carriage PCA and encoder strip (4 of 8) 112
Figure 1-168 Remove the sensor carriage PCA and encoder strip (5 of 8) 113
Figure 1-169 Remove the sensor carriage PCA and encoder strip (6 of 8) 113
Figure 1-170 Remove the sensor carriage PCA and encoder strip (7 of 8) 114
Figure 1-171 Remove the sensor carriage PCA and encoder strip (8 of 8) 114
Figure 1-172 Remove the power button PCA (1 of 2) 115
Figure 1-173 Remove the power button PCA (2 of 2) 115
Figure 1-174 Remove the duplex module sensor PCA (1 of 2) 116
Figure 1-175 Remove the duplex module sensor PCA (2 of 2) 116
Figure 1-176 Remove the temperature sensor (1 of 2) 117
Figure 1-177 Remove the temperature sensor (2 of 2) 117
Figure 1-178 Remove the REDI distribution PCA (1 of 3) 118
Figure 1-179 Remove the REDI distribution PCA (2 of 3) 118
Figure 1-180 Remove the REDI distribution PCA (3 of 3) 119
Figure 1-181 Remove the feed motor encoder sensor PCA (1 of 4) 119
Figure 1-182 Remove the feed motor encoder sensor PCA (2 of 4) 120
Figure 1-183 Remove the feed motor encoder sensor PCA (3 of 4) 120
Figure 1-184 Remove the feed motor encoder sensor PCA (4 of 4) 121
Figure 1-185 Remove the eject flap opto PCA 122
Figure 1-186 Remove the printzone distribution PCA (1 of 3) 123
Figure 1-187 Remove the printzone distribution PCA (2 of 3) 123
Figure 1-188 Remove the printzone distribution PCA (3 of 3) 124
Figure 1-189 Remove the media presence sensor PCA/flag (1 of 2) 125
Figure 1-190 Remove the media presence sensor PCA/flag (2 of 2) 125
Figure 1-191 Remove the main PCA (1 of 8) 127
Figure 1-192 Remove the main PCA (2 of 8) 127
Figure 1-193 Remove the main PCA (3 of 8) 128
Figure 1-194 Remove the main PCA (4 of 8) 128
Figure 1-195 Remove the main PCA (5 of 8) 129
Figure 1-196 Remove the main PCA (6 of 8) 129

Figure 1-197 Remove the main PCA (7 of 8) 130
Figure 1-198 Remove the main PCA (8 of 8) 130
Figure 1-199 Remove the Tray 3 interconnect PCA (1 of 2) 134
Figure 1-200 Remove the Tray 3 interconnect PCA (2 of 2) 134
Figure 1-201 Remove the pick encoder distribution PCA (1 of 2) 135
Figure 1-202 Remove the pick encoder distribution PCA (2 of 2) 135
Figure 1-203 Remove the wireless PCA. 136
Figure 2-1 Front view (X451 Series) 142
Figure 2-2 Front view (X551 Series) 143
Figure 2-3 Back view 144
Figure 2-4 Covers, panels, and doors 146
Figure 2-5 Internal assemblies (1 of 3) 148
Figure 2-6 Internal assemblies (2 of 3) 150
Figure 2-7 Internal assemblies (3 of 3) 152
Figure 2-8 PCA locations (1 of 2) 154
Figure 2-9 PCA locations (2 of 2) 156

1 Removal and replacement

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

Removal and replacement strategy

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

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

CAUTION: Many repair operations will require you to flatten or straighten flex cables. However, where possible, try to avoid doing so. You *must* make sure that all FFCs are fully seated in their connectors. Failure to fully seat an FFC into a connector can cause a short circuit in a PCA.

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

Throughout this chapter, the reinstallation process should follow the reverse order of the removal process documented. Where necessary, the tasks include reinstallation tips to aid in the installation of replacement parts.

Electrostatic discharge

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

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

Required tools

- #T10 TORX driver with a magnetic tip and a 152 mm (6 in) shaft length
- #T10 TORX driver with a magnetic tip and a 25 mm (1 in) shaft length
- Small flat-blade screwdriver
- Needle-nose pliers
- Tweezers
- ESD mat (if one is available) or ESD strap
- Penlight
- 1/4" (6.4mm) nut driver (for use with the OfficeJet Pro X special tools kit)

CAUTION: While the use of a motorized screwdriver is recommended, the screwdriver must have a torque limiter, and it must be set to a low torque.

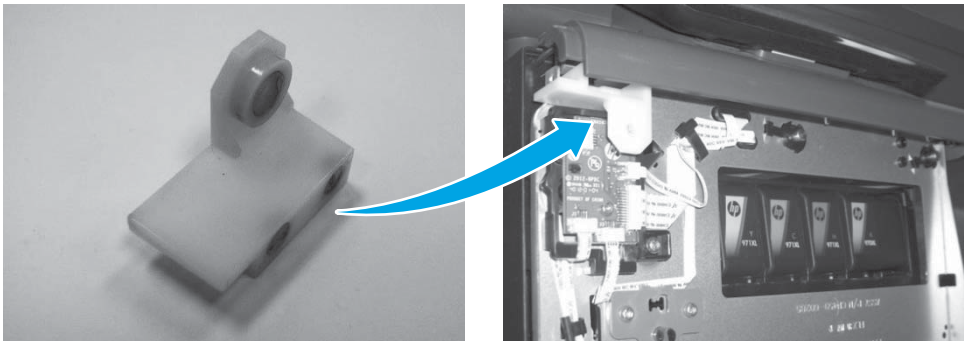
OfficeJet Pro X special tools kit

The OfficeJet Pro X special tools kit (part number CN598-67056) is required for replacing the service sled and printbar assemblies.

The OfficeJet Pro X special tools kit contains the following parts:

- Ink supply door switch–used to tell the printer that the supply door is closed when the front cover is removed.

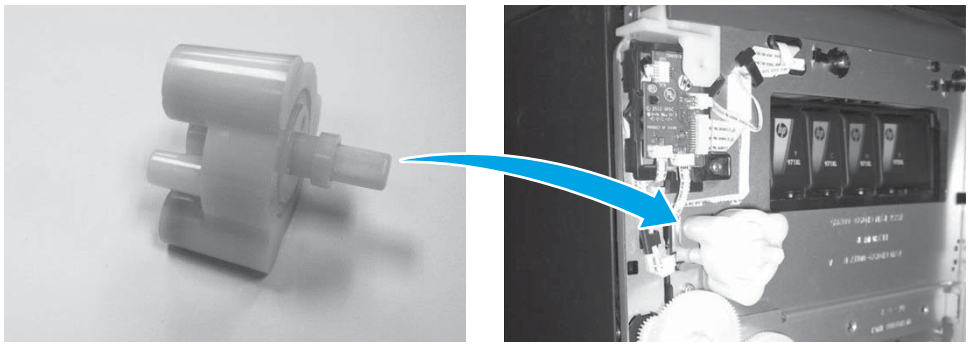
Figure 1-1 OfficeJet Pro X special tools–ink supply door switch



- Printbar lift knob–used for lifting and holding the printbar.

NOTE: Use a ¼" nut driver (6.4mm) to raise the printbar.

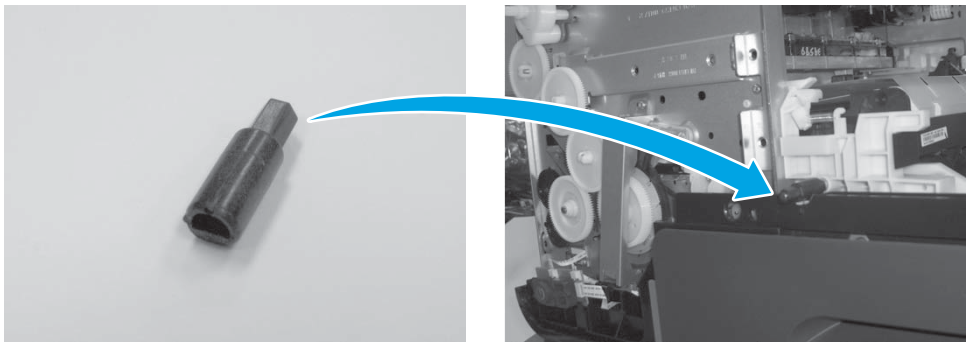
Figure 1-2 OfficeJet Pro X special tools–printbar lift knob



- Service sled advance tool–used to remove and reinstall the service sled.

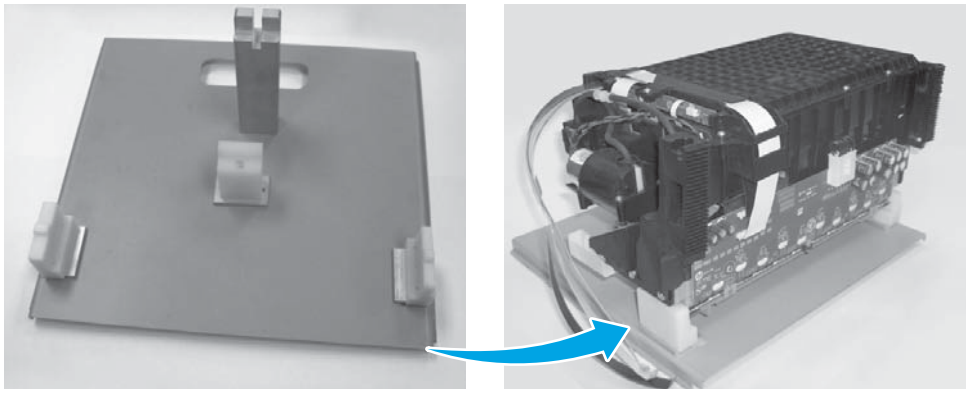
NOTE: Use a ¼" nut driver (6.4mm) to remove or install the service sled

Figure 1-3 OfficeJet Pro X special tools–service sled advance tool



- Printbar dolly–used to support the printbar during removal and installation.

Figure 1-4 OfficeJet Pro X special tools–printbar dolly



Advanced Cleaning Kit

The Advanced Cleaning Kit (part number CN459-67006) is used for resolving shim whiskers print quality issues.

The Advanced Cleaning Kit contains the following items:

- Sheet cleaner - full mid
- Shim whisker kit Instructions
- Corrugated box
- Corrugated insert

Service approach

IMPORTANT: Ensure the product has the latest firmware installed for the initial installation of the product. Certain repairs to this product also require updated firmware, as noted in this document. Download firmware for this product at www.hp.com.

CAUTION: When working on the product, do not pick up the unit by the output tray, which will likely detach under the weight of the product.

Before performing service

- Remove all paper from the product.
- Turn off the power using the power button.
- Unplug the power cable and interface cable or cables.
- Remove the output bin.
- Place the product on an ESD workstation or mat, or use an ESD strap (if one is available). If an ESD workstation, mat, or strap is not available, ground yourself by touching the sheet-metal chassis *before* touching an ESD-sensitive part.
- Remove the Tray 2 cassette.
- Remove the duplex module, which is located inside the left door.

NOTE: When removing the duplex module, avoid making direct contact with the black cylinder to prevent ink smear on skin or clothes. Keep the duplex module level to avoid spilling any maintenance ink.

After performing service

- Plug in the power cable.
- Reinstall the output bin.
- Reinstall the ink cartridges (if they were removed prior to performing service).

- Reinstall the Tray 2 cassette.
- Reinstall the duplex module.
- Load paper in the product.

Post-service test

Perform the following test to verify that the repair or replacement was successful.

Print-quality test

1. Verify that the necessary reassembly steps have been completed.
2. Make sure that the tray contains clean, unmarked paper.
3. Attach the power cord and interface cable or interface cables, and then turn on the product.
4. Verify that the expected startup sounds occur.
5. Print a configuration page, and verify that the expected printing sounds occur.
6. Print a print-quality page, and then verify that there are no lines, streaks, banding, or other print quality defects.
7. Send a print job from the host computer, and then verify that the output meets expectations.
8. Clean the outside of the product with a damp cloth.

Removal and replacement procedures

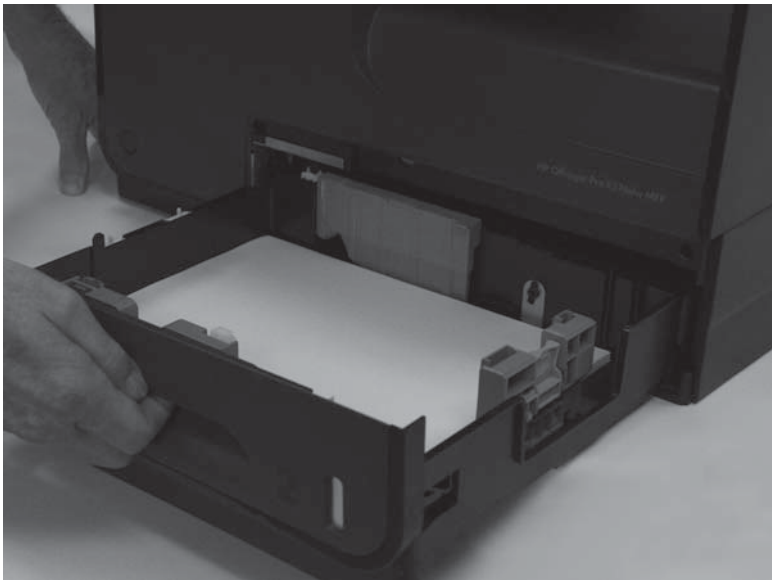
NOTE: Due to time constraints in producing this manual, the product might look slightly different than what is depicted in the photographs in this section. Most changes will be cosmetic in nature and should not affect the repair procedures.

Customer replaceable parts

Tray 2

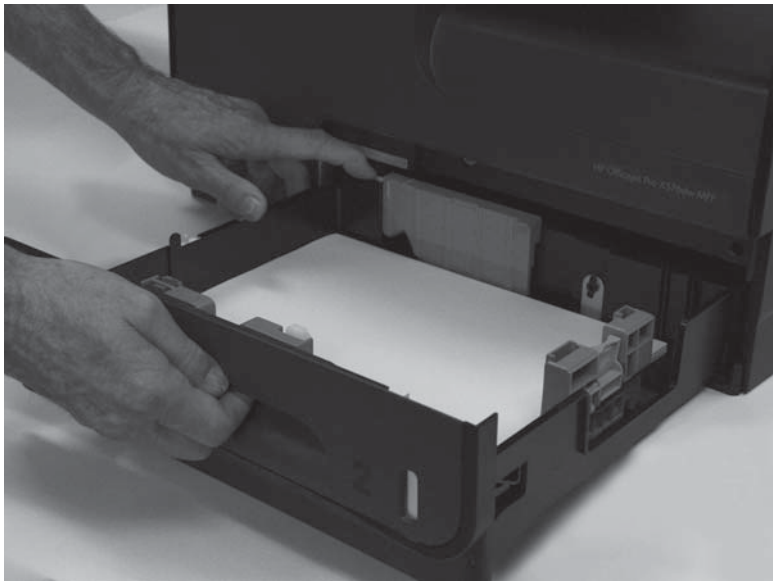
1. Pull out the tray.

Figure 1-5 Remove Tray 2 (1 of 2)



2. Press the latch in left-rear corner of the tray.

Figure 1-6 Remove Tray 2 (2 of 2)



3. Remove the tray from the product.

Ink cartridges

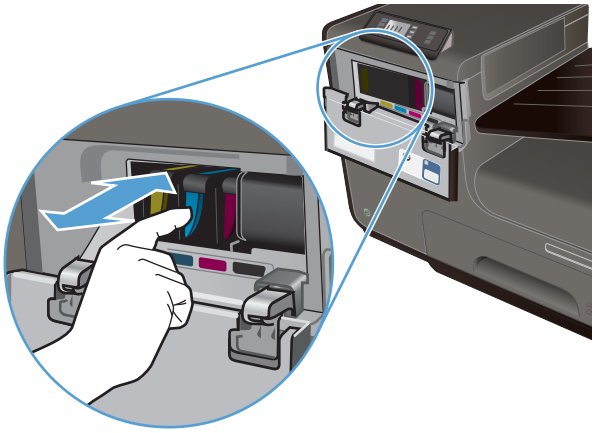
The product uses four colors and has a different ink cartridge for each color: yellow (Y), cyan (C), magenta (M), and black (K).

1. Open the ink cartridge access door.

Figure 1-7 Replace the ink cartridges (1 of 7)

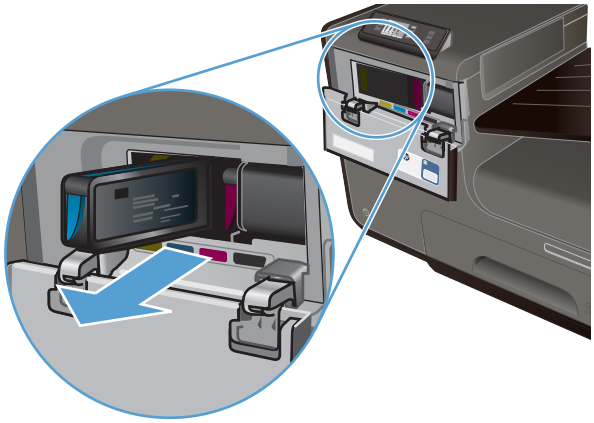
2. Push the old ink cartridge inward to unlock it.

Figure 1-8 Replace the ink cartridges (2 of 7)



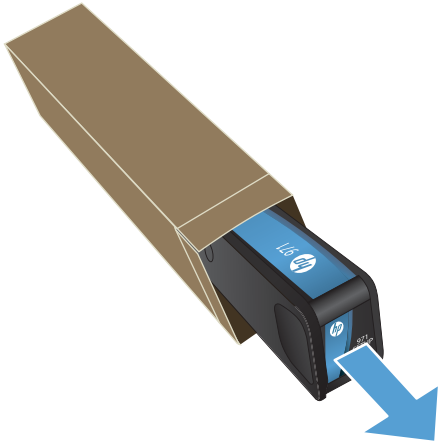
3. Grasp the edge of the old ink cartridge, and then pull the cartridge straight out to remove it.

Figure 1-9 Replace the ink cartridges (3 of 7)



4. Remove the new ink cartridge from the packaging.

Figure 1-10 Replace the ink cartridges (4 of 7)

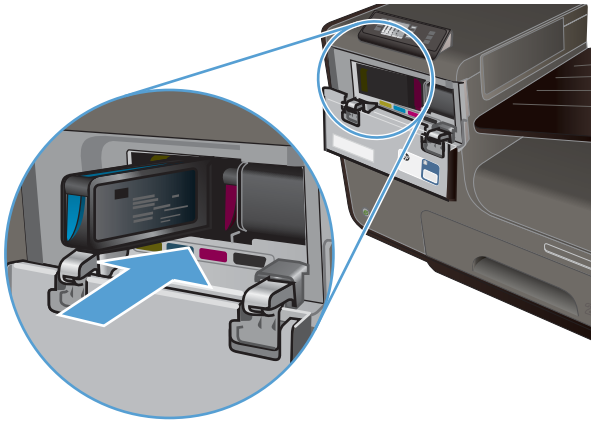


NOTE: Do not touch the metal connector of the ink cartridge. Fingerprints on the connector can cause product operation problems.

Figure 1-11 Replace the ink cartridges (5 of 7)

5. Insert the new ink cartridge into the product.

Figure 1-12 Replace the ink cartridges (6 of 7)



6. Close the ink cartridge door.

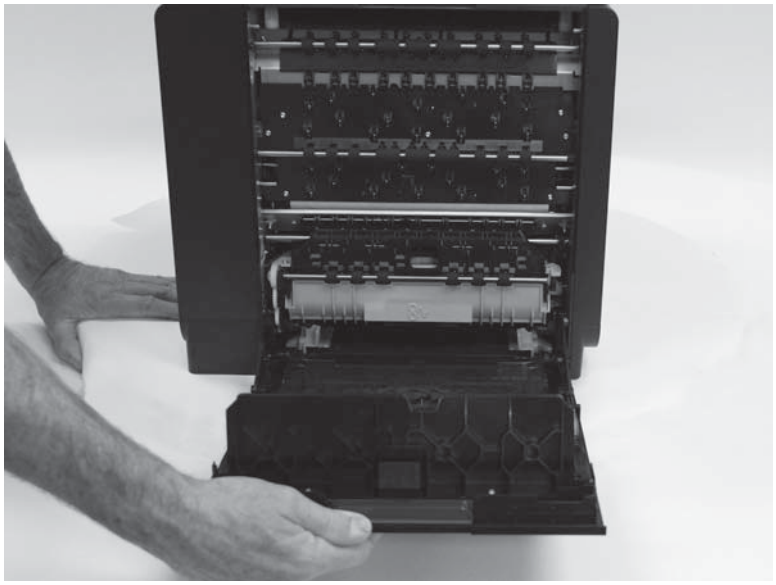
Figure 1-13 Replace the ink cartridges (7 of 7)

7. Place the old ink cartridge in the box, and refer to the HP recycling instructions at www.hp.com/recycle.

Duplex module

1. Open the left door.

Figure 1-14 Remove the duplex module (1 of 2)



2. Pull the duplex module out of the product.

Figure 1-15 Remove the duplex module (2 of 2)

NOTE: When removing the duplex module, avoid making direct contact with the black cylinder to prevent ink smear on skin or clothes. Keep the duplex module level to avoid spilling any maintenance ink.

When removing the duplex module, do not let the bottom of the duplex module touch or rest on the ribs on the left door, which will damage them and might lead to paper damage and jams.

Output bin

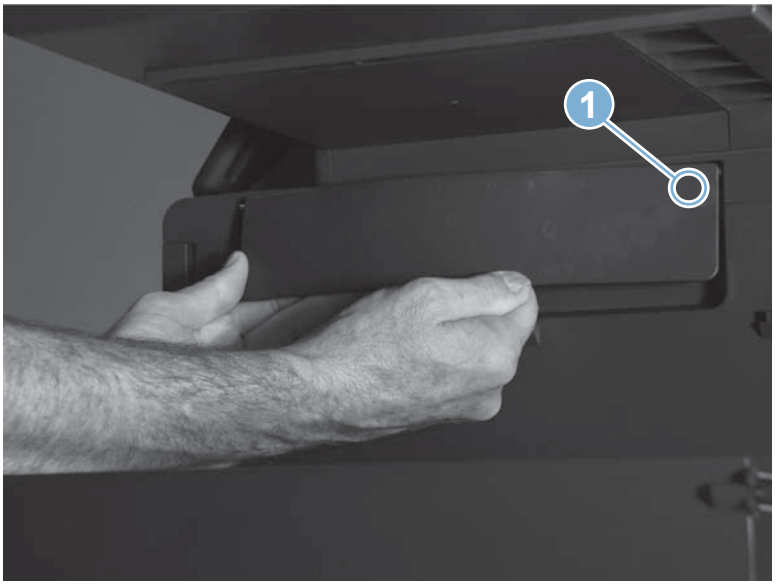
▲ Lift and remove the output bin.

Figure 1-16 Remove the output bin

Output bin flap

1. Remove the output bin. See Output bin on page 13.
2. Flex the middle of the output bin flap, and then remove the flap by pulling the rear pin (callout 1) away from the product first.

Figure 1-17 Remove the output bin flap



Reinstallation tip With the flap in the open position, insert the front pin into the product first, and then flex or bend the flap to install the rear pin.

Menu access

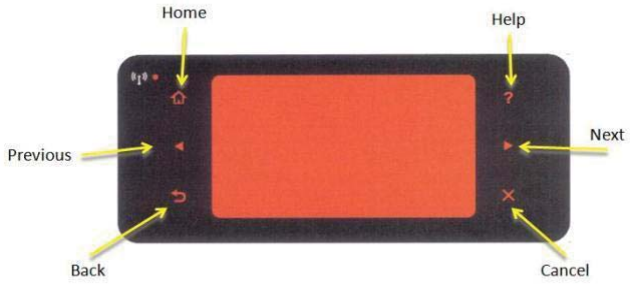
These hidden engineering menus are used for testing and calibration. Some or all of them are referenced in remove and replace sections as required.

WARNING! Misuse of these menus could damage the product or make it unusable.

NOTE: These buttons are not illuminated until they are touched with sufficient pressure. Locate these buttons by sweeping your finger over the general areas indicated in Figure 1-18 X451 control panel button locations on page 14.

Figure 1-18 X451 control panel button locations

Figure 1-19 X551 control panel button locations



Access the Engineering menu

X451

1. Press the Cancel ✕ button.
2. Press the Back ⮌ button.
3. Press the Cancel ✕ button twice.

X551

1. Touch the Home ⌂ button.
2. Touch the Back ⮌ button.
3. Touch the Home ⌂ button twice to enter the Engineering menu.

NOTE: The Service menu is accessed from the Engineering menu.

Access the Support Menu

X451

1. Press the Back ⮌ button.
2. Press the Cancel ✕ button.
3. Press the Back ⮌ button twice.

X551

▲ Touch the Back ⮌ button four times consecutively to open the Support Menu.

NOTE: The Support Menu is usually used by HP call center agents for assisting customers.

Place the product into MFG (manufacturing) mode

NOTE: These two modes are ONLY to be used by authorized service providers. They should NEVER be accessed by the end user.

X451

▲ Press and hold the ATM1 and ATM3 buttons while plugging in the product.

X551

1. Press and hold the power button while plugging in the product. The HP logo appears on the product control panel, and then disappears. Continue to hold the power button for five seconds after the logo disappears.
2. Release the power button.
3. Touch the Home ⌂ button.
4. Touch the Back ⮌ button.
5. Touch the Home ⌂ button twice.
6. After a new screen appears, touch the Home ⌂ button again to enter MFG (off) mode.
7. Press the power button to enter MFG (on) mode.

Place the product into Audit mode

NOTE: These two modes are ONLY to be used by authorized service providers. They should NEVER be accessed by the end user.

X451

▲ Press and hold the ATM1 and ATM3 buttons while plugging in the product.

X551

WARNING! Audit mode is used only when the main PCA is replaced.

1. Press and hold the power button while plugging in the product. The HP logo appears on the control panel, and then disappears. Continue to hold the power button for five seconds after the logo disappears.
2. Release the power button.
3. Touch the Home button.
4. Touch the Back button
5. Touch the Home button twice.
6. Touch the button.
7. Press the power button.

NOTE: The product touchscreen is not active in this menu access mode. Use the and buttons on the control panel frame.

Perform tap tests and interpret results

Perform a tap test

1. Open the Engineering Menu. See Access the Engineering menu on page 14.
2. Touch Manufacturing Menu.
3. Use the arrow key to find the Reports Menu, and then touch the OK button.
4. Use the arrow key to find the Print-mech tap tests, and then touch the OK button.
5. Use the arrow key to find the tap test to run.

10 tap test results (OOBE States)

The printed tap test results contain a sequence of numbers at line number 68, "Startup Complete," of the printed report.

Use the following table to interpret these numbers.

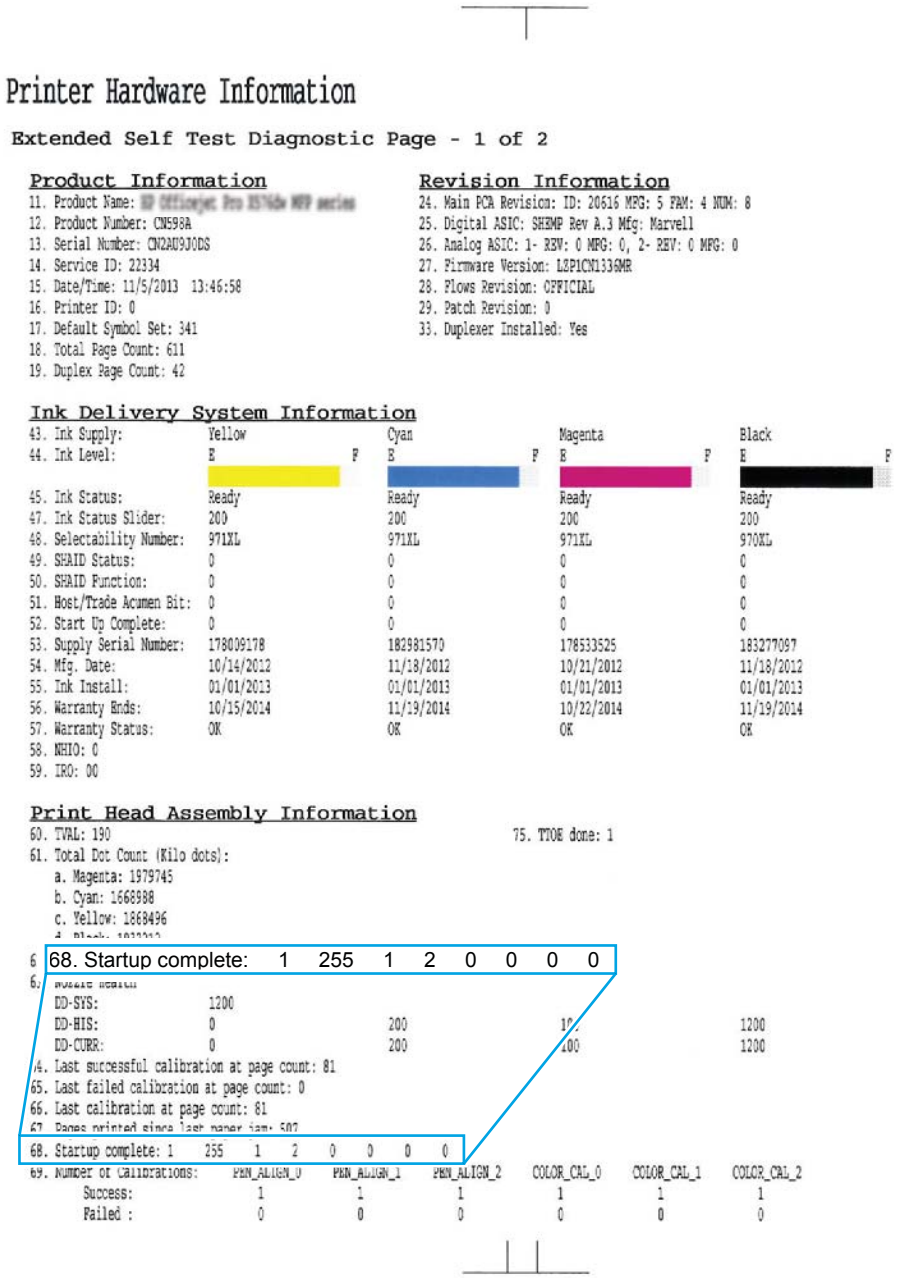
Table 1-1 10 tap test results, row 68

Column	Code	Acceptable values
Column 1	DSID_PEN_PRINTER_STARTUP_BITS	A value of 1 indicates that the printbar has been started up. This means that shipping fluid has been removed from the printbar and replaced with ink. This is the expected state for a printer after initialization.
Column 2	DSID_OOBE_STATE	255–OOBE messaging complete.
Column 3	DSID_INK_SUPPLY_OOBE_COMPELTE	1–SHF purge is complete and service wipes have been enabled.
Column 4	DSID_CAL_OOBE_STATE	A value of 2 means that the OOBE printed calibrations are complete. A value of 1 means the OOBE printed calibrations are in progress A value of 0 means the OOBE printed calibration does not exist so no printing/calibration for OOBE is attempted.
Column 5	DSID_IQ_LIST_INDEX	A value of 3 means that pen height and beam center have been completed, and that BDD is scheduled (or pending) to perform normally. **NOTE:** For 1315FR firmware and above.
Column 6	DSID_BDD_FAIL_MASK	0–internal use only.

Table 1-1 10 tap test results, row 68 (continued)

Column	Code	Acceptable values
Column 7	DSID_IDS_FIRST_CHARGE_REQUIRED	0–internal use only.
Column 8	DSID_PRINTHEAD_CAL_NEEDED	A value of 0 indicates that OOBE calibrations (not IQ calibrations) are complete. This is so the messaging is complete for the calibrations. For example, if this value is 0, but the CAL_OOBE_STATE=1, you will get the printed OOBE calibrations, but the control panel may display **Preparing** instead of **Calibrating**.

Figure 1-20 10 tap test results



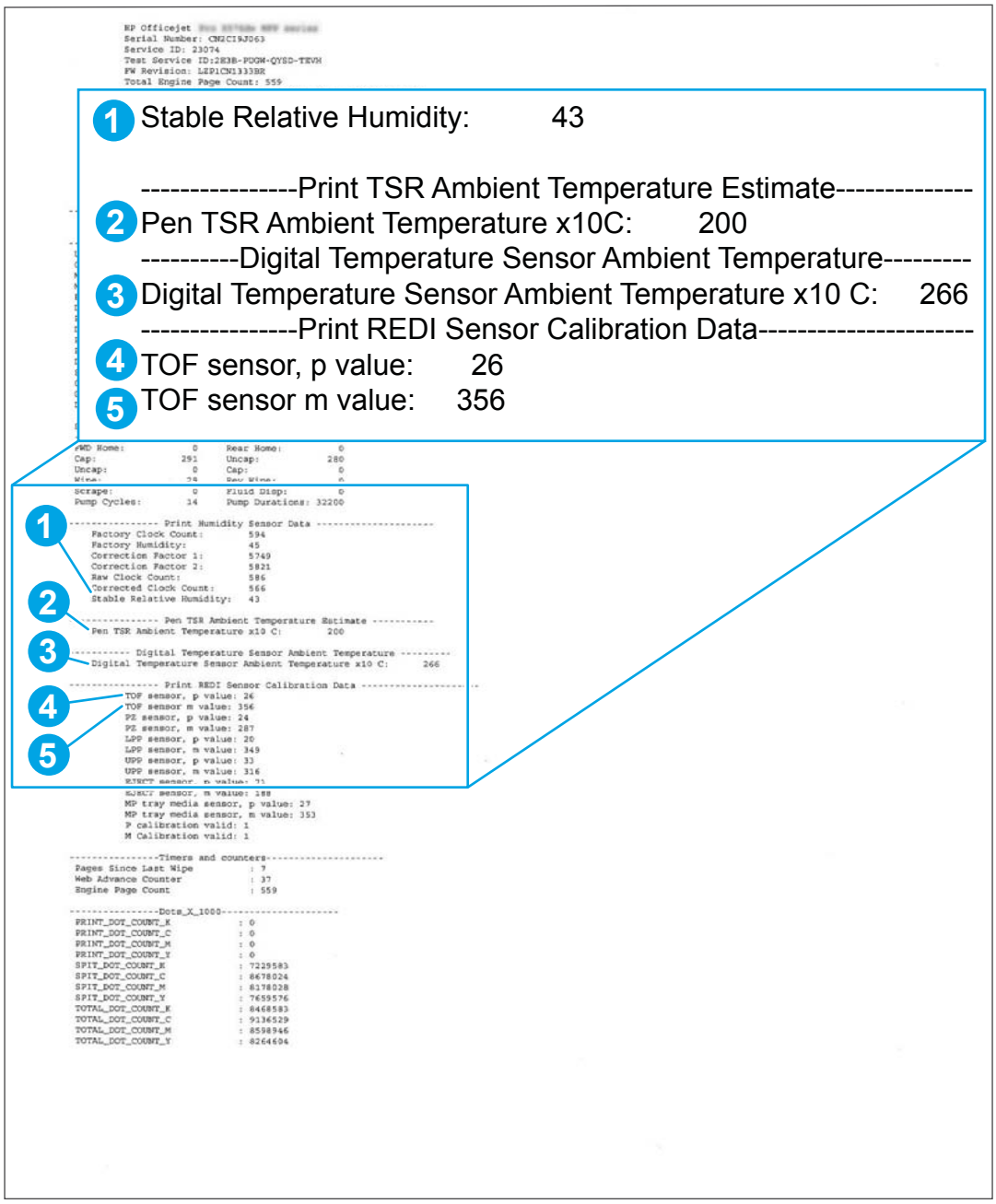
12 tap test results (REDI sensor values)

Table 1-2 12 tap test report

Callout	Report area	Item	Acceptable values
1	Print Humidity Sensor Data	Stable Relative Humidity	0–100 RH
2	Pen TSR Ambient Temperature Estimate	Pen TSR Ambient Temperature x10 °C	± 10 °C of current ambient temperature
3	Digital Temperature Sensor Ambient Temperature	Digital Temperature Sensor Ambient Temperature x10 °C	± 10 °C of current ambient temperature
4	Print REDI Sensor Calibration Data	TOF sensor, p value [1]	Between 10 and 100
5	Print REDI Sensor Calibration Data	TOF sensor, m value [1]	Between 25 and 380

[1] "M" is mirror result, "P" is blocked with paper.

Figure 1-21 12 tap test report

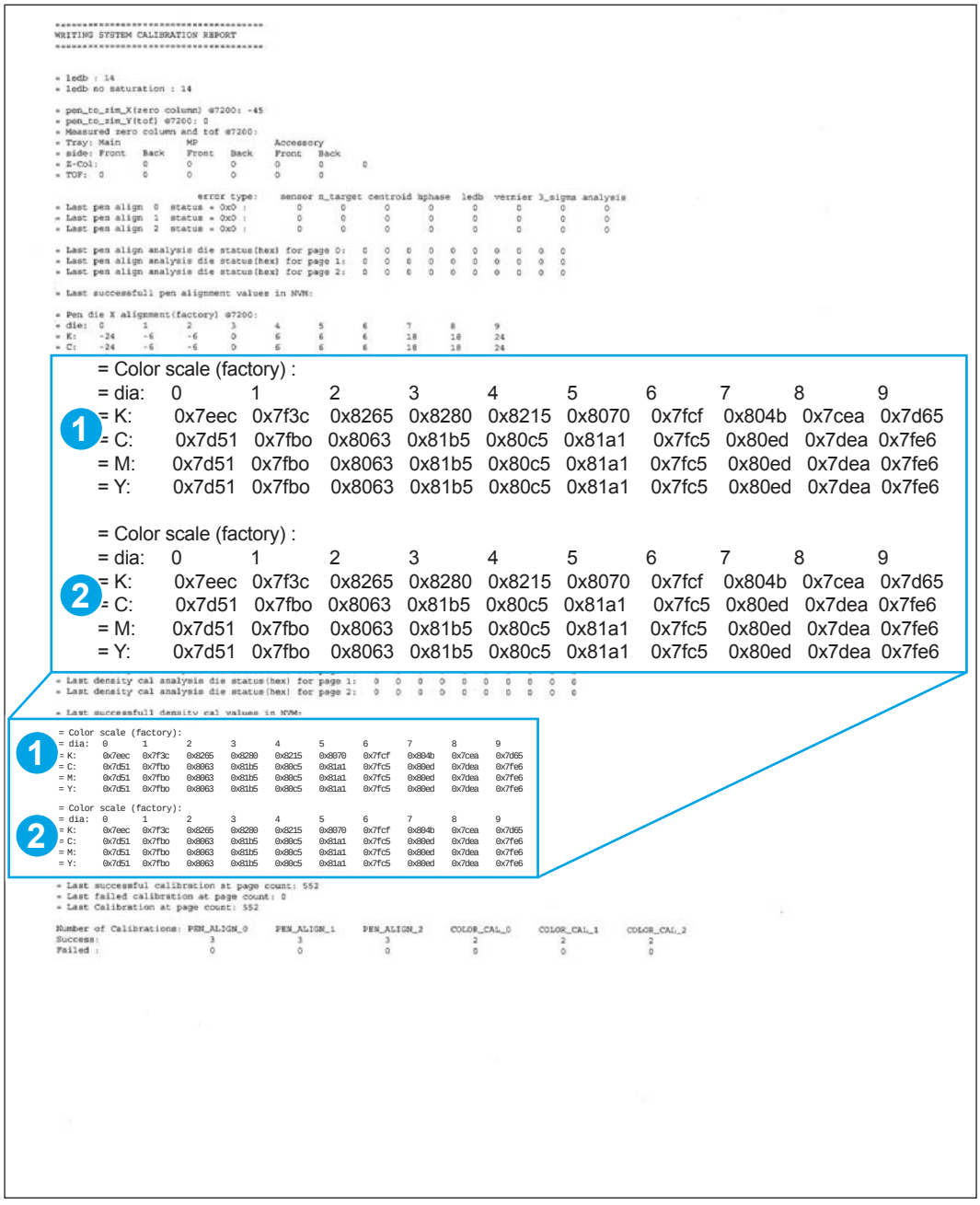


61 tap results (Align & color calibrations)

NOTE: If you hold the up or down arrows down, the tap count will start incrementing by 10, or 100

An acceptable 61 tap test has identical values for the parameters in the “Color scale (factory)” (callout 1) and “Color scale (current)” (callout 2) on the printed report areas. “Color scale (factory)” (callout 1) and “Color scale (current)” will be identical after a main PCA replacement, but may not be the same under other conditions. The values should also be identical after a printbar replacement

Figure 1-22 61 tap test results



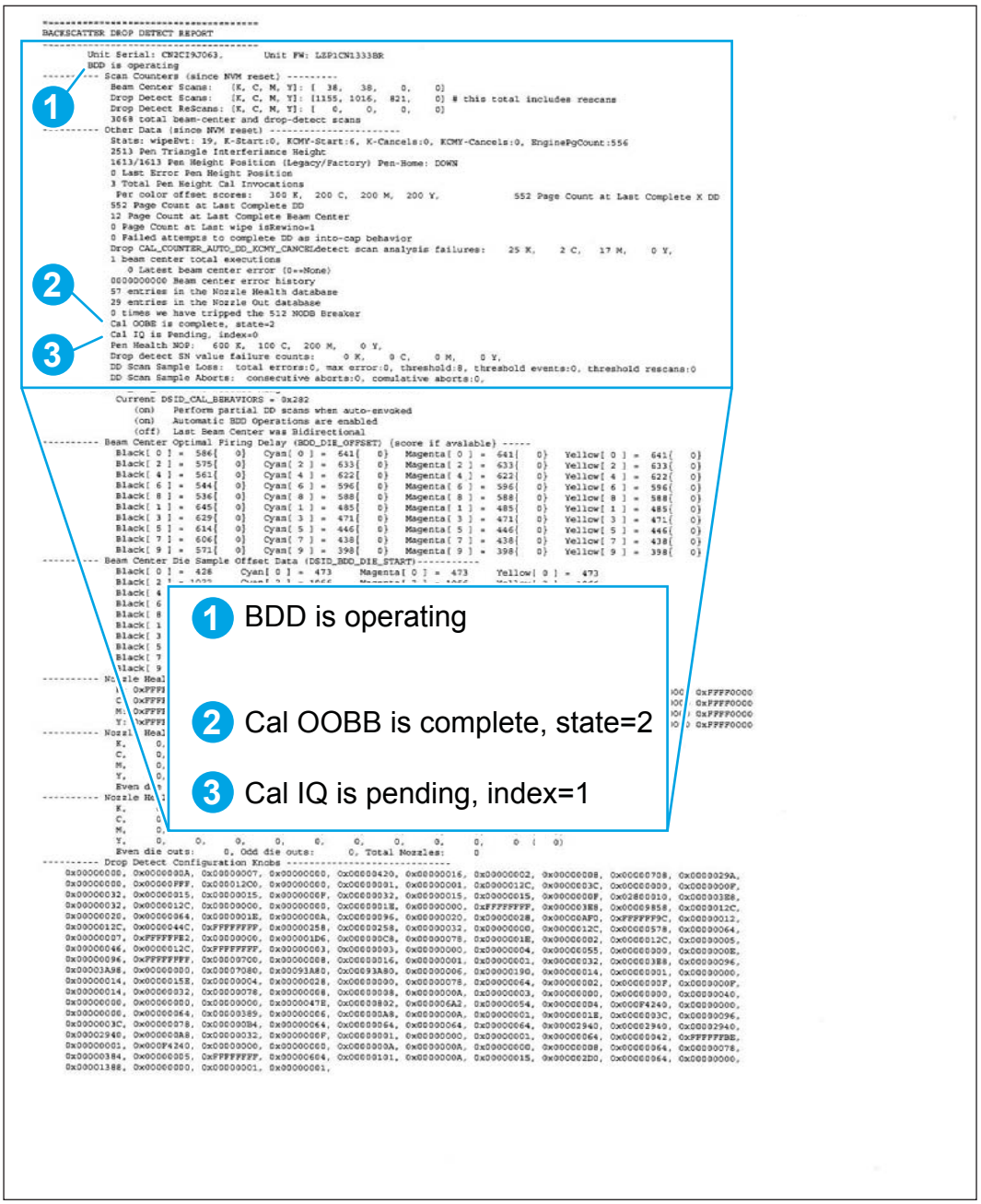
909 tap test results (BDD status)

NOTE: If you hold the up or down arrows down, the tap count will start incrementing by 10, or 100

An acceptable 909 tap test has the following values:

- BDD is operating (callout 1)
- Cal OOBE is complete state=2 (callout 2)
- Cal IQ is in pending, index=1 (callout 3)

Figure 1-23 909 tap test results

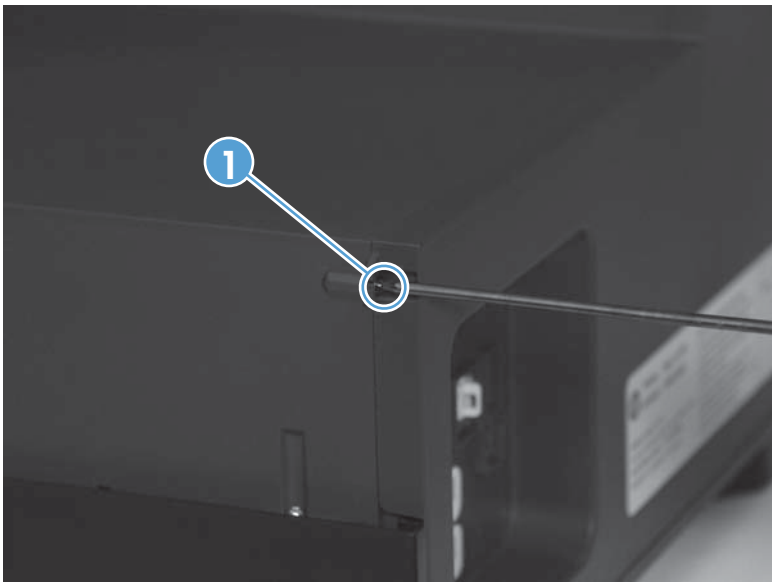


Covers

Rear cover

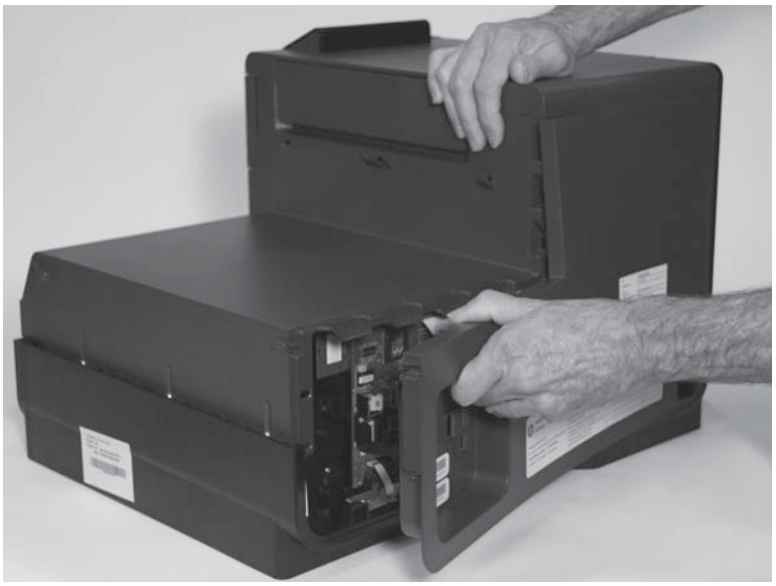
1. Remove the left rear cover. See Left rear cover on page 27.
2. Remove one screw (callout 1).

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



3. Pull the cover to the right, and then remove it.

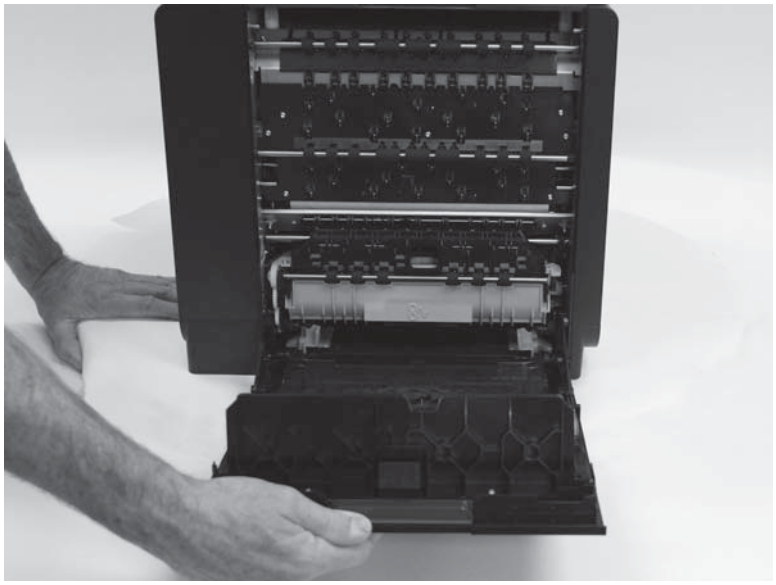
Figure 1-25 Remove the rear cover (2 of 2)



Left door

1. Open the left door.

Figure 1-26 Remove left door (1 of 6)



2. Remove the duplex module.

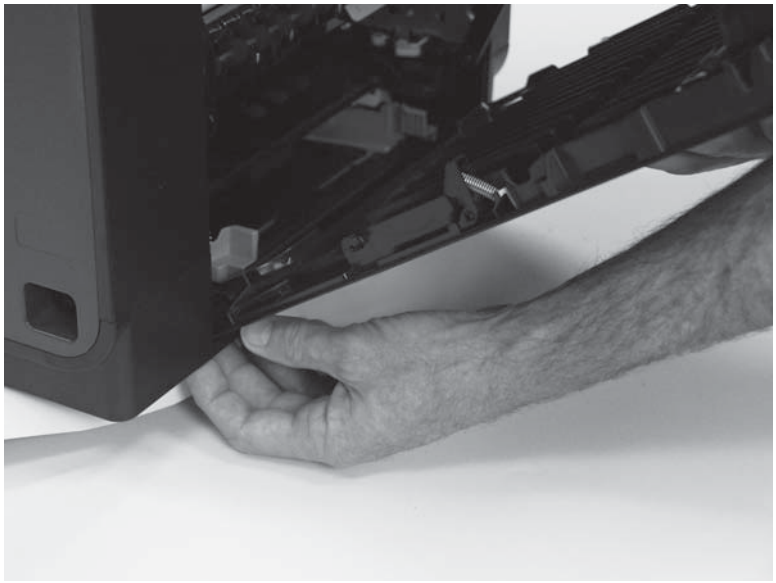
Figure 1-27 Remove the left door (2 of 6)

3. Unhook each restraining strap by twisting the bottom end of the strap away from the door.

Figure 1-28 Remove the left door (3 of 6)

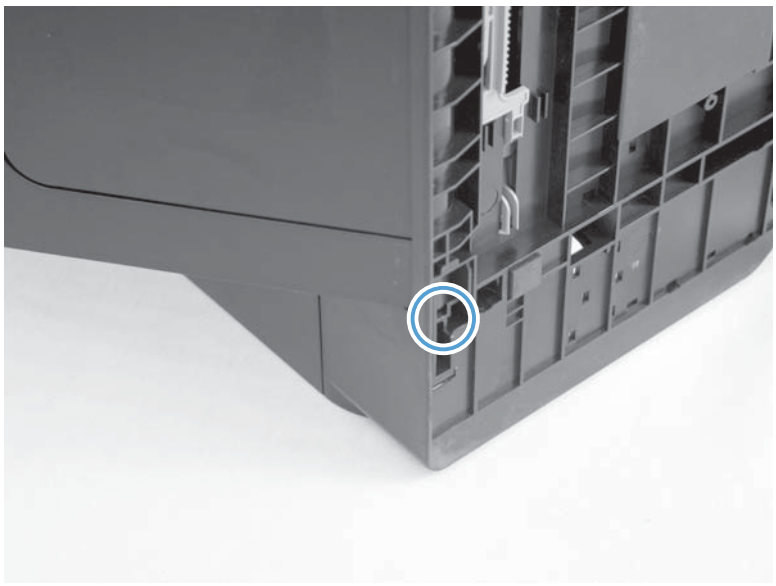
4. Underneath the rear door hinge, locate the catch lever.

Figure 1-29 Remove the left door (4 of 6)



The following figure shows the tab on the underside of the product.

Figure 1-30 Remove the left door (5 of 6)



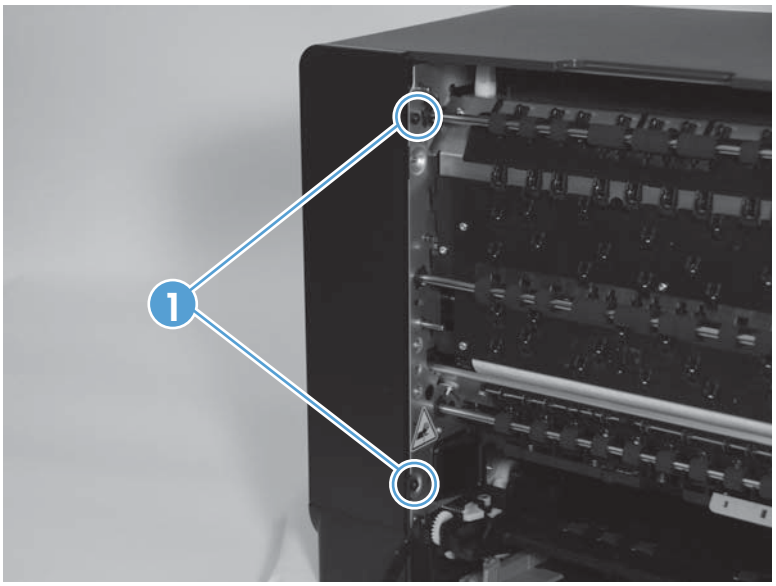
5. While pushing the catch lever to the rear of the product, rotate the door to the right, and then remove the door.

Figure 1-31 Remove the left door (6 of 6)

Left rear cover

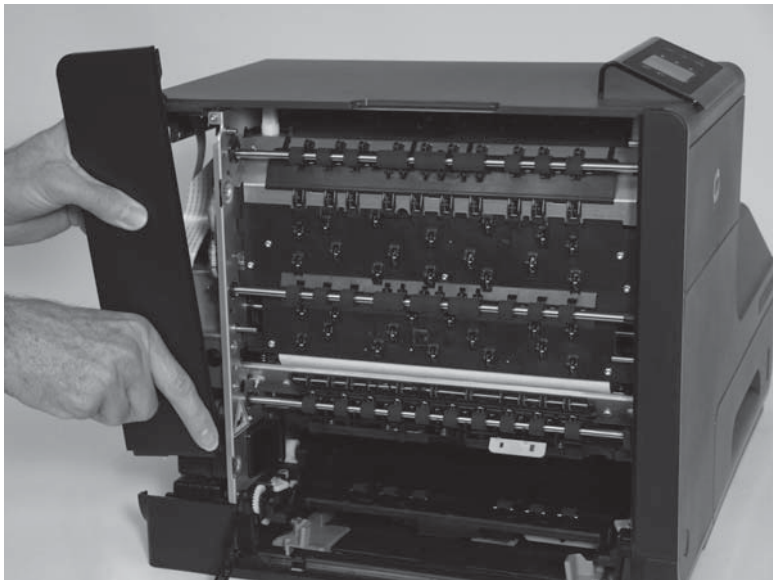
1. Remove the left door. See Left door on page 24.
2. Remove two screws (callout 1).

Figure 1-32 Remove the left rear cover (1 of 2)



3. Remove the cover by sliding the cover up 10 mm (0.4 in), and then rotating the cover away from the product.

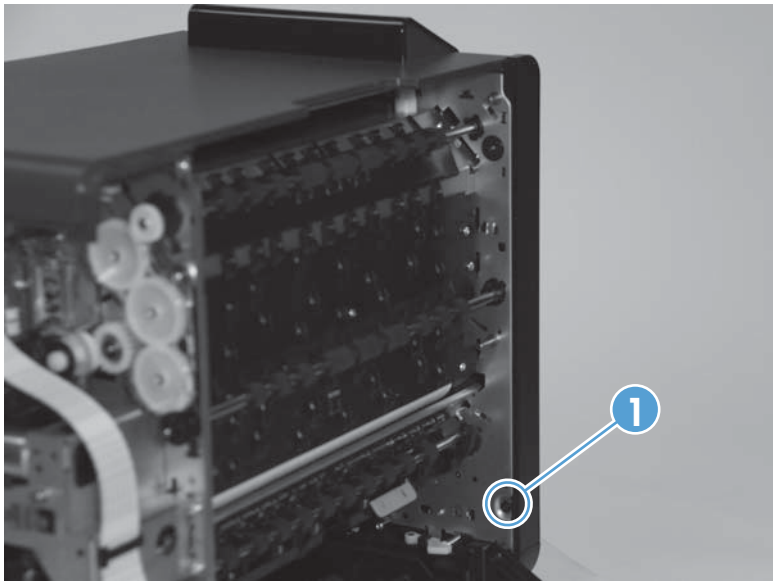
Figure 1-33 Remove the left rear cover (2 of 2)



Left front cover

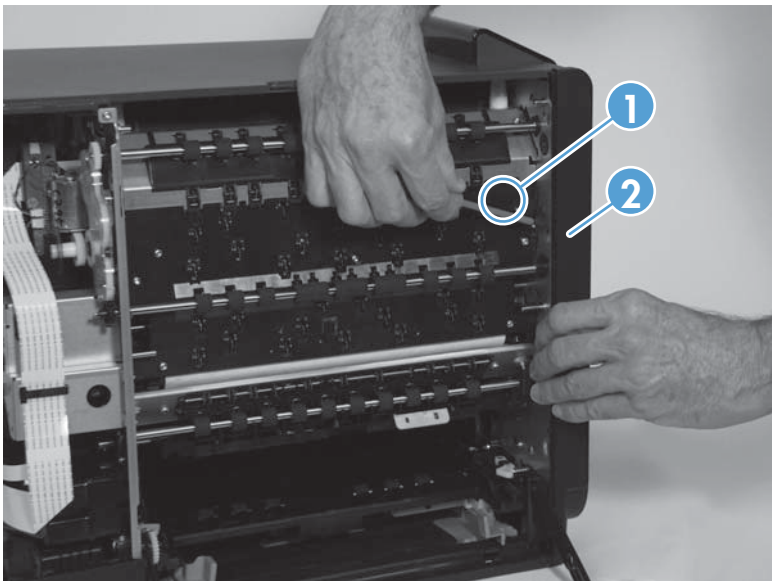
1. Remove the left door. See Left door on page 24.
2. Remove one screw (callout 1).

Figure 1-34 Remove the left front cover (1 of 2)



3. Use a screwdriver to depress the tab (callout 1), and then remove the cover (callout 2) by sliding the cover up 10 mm (0.4 in), and then rotating the cover away from the product.

Figure 1-35 Remove the left front cover (2 of 2)

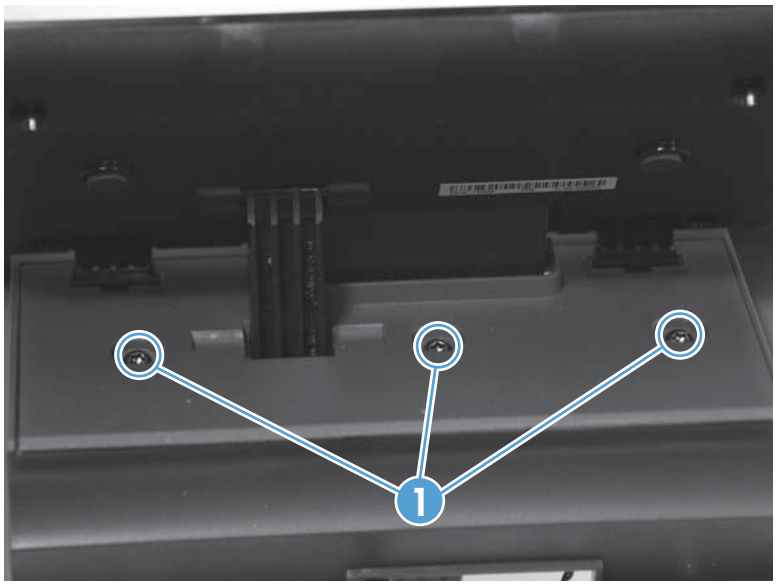


Top cover

1. Remove the following components:
   - Rear cover. See Rear cover on page 23.
   - Left door. See Left door on page 24.
   - Left rear cover. See Left rear cover on page 27.
   - Left front cover. See Left front cover on page 28.
   - Output bin flap. See Output bin flap on page 13.

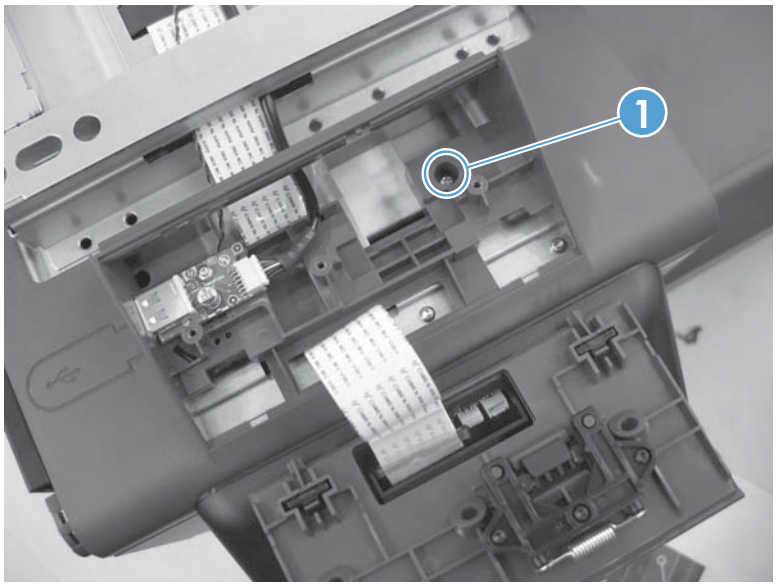
2. **X551 models**: On the top cover, remove three screws (callout 1) from behind the control panel, and then pull the control panel away from the top cover.

Figure 1-36 Remove the top cover (1 of 8)



3. **X551 models**: In the control panel cavity, remove one screw (callout 1).

Figure 1-37 Remove the top cover (2 of 8)



4. Remove two screws (callout 1).

Figure 1-38 Remove the top cover (3 of 8) – X451 models

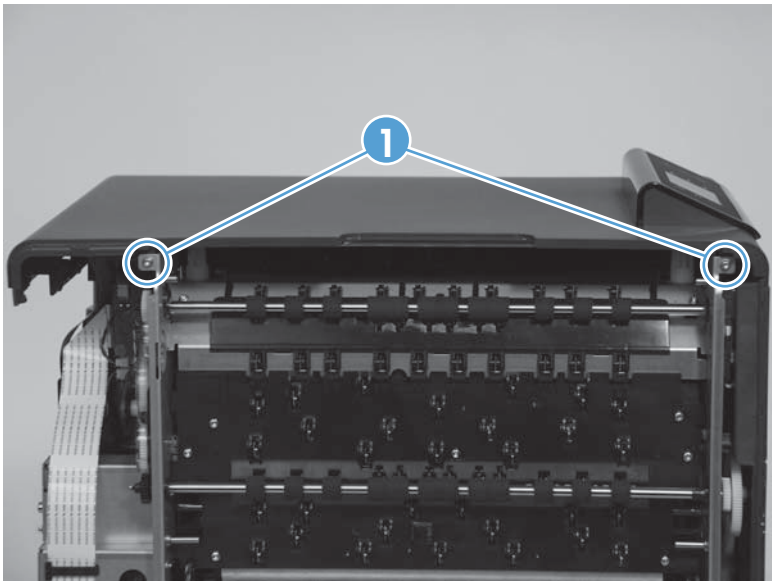
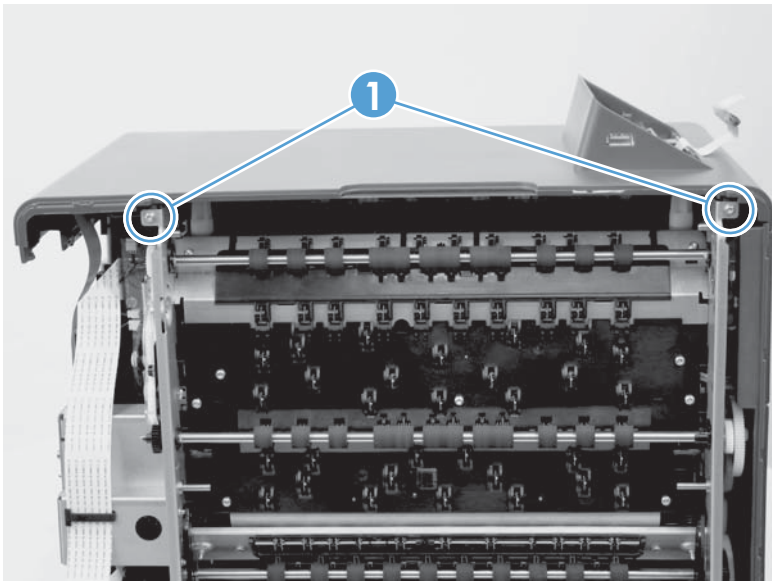
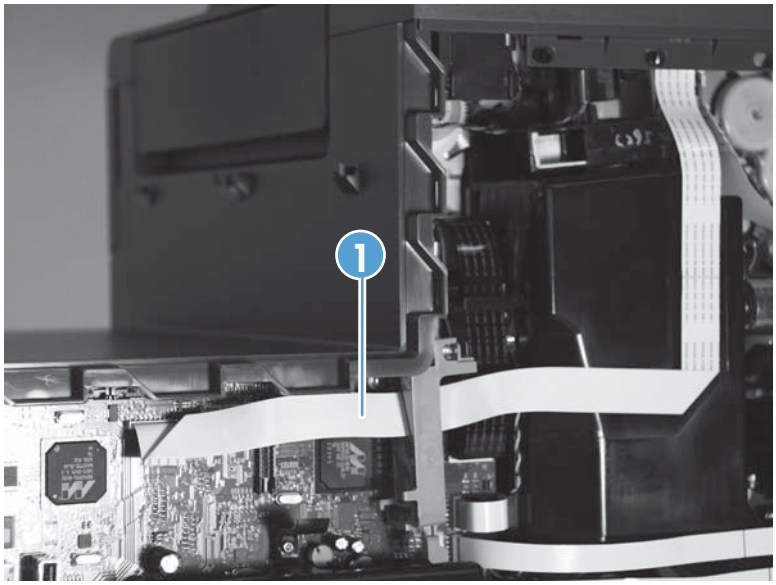


Figure 1-39 Remove the top cover (4 of 8) – X551 models



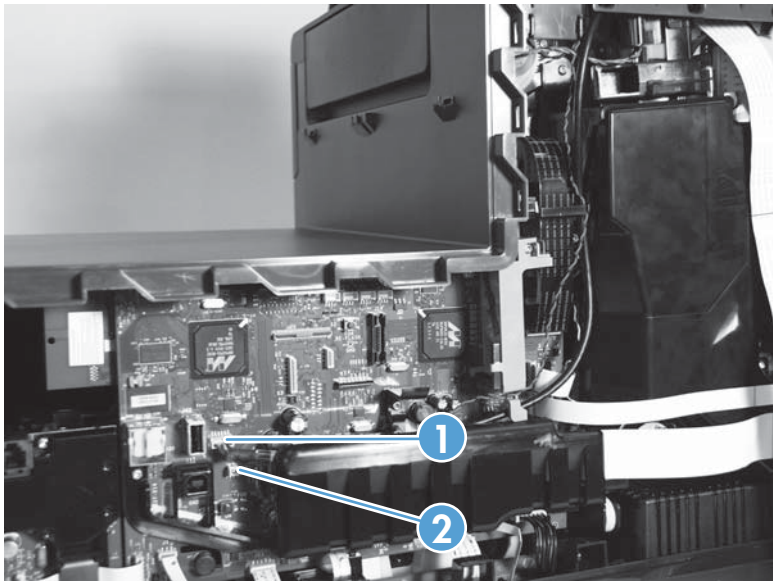
5. Disconnect the control panel flex cable (callout 1) from the formatter PCA.

Figure 1-40 Remove the top cover (5 of 8)



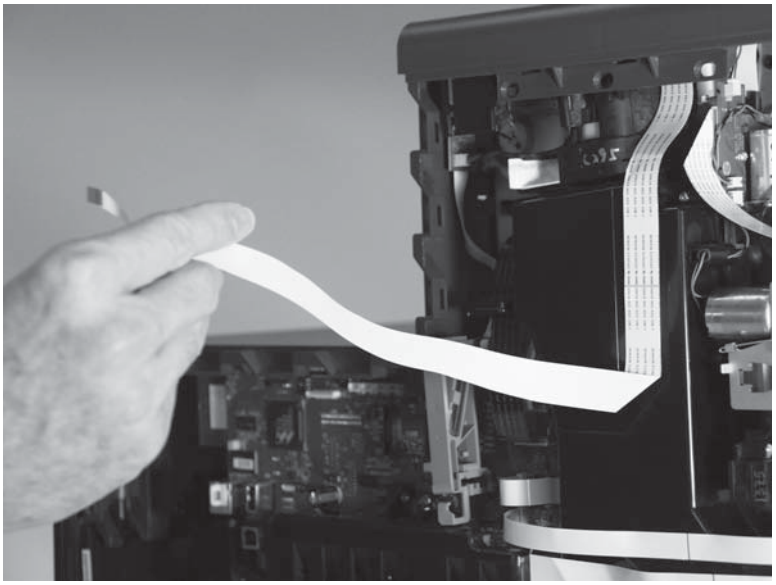
X551 models: Also disconnect the speaker cable (callout 1) and the USB cable (callout 2) from the main PCA.

Figure 1-41 Remove the top cover (6 of 8)



6. Unthread the flex cable through the bracket ferrites and the aerosol fan housing.

Figure 1-42 Remove the top cover (7 of 8)



Reinstallation tip When reinstalling, remember to thread the flex cable through the bracket ferrite correctly. Doing so ensures that the product meets regulatory standards.

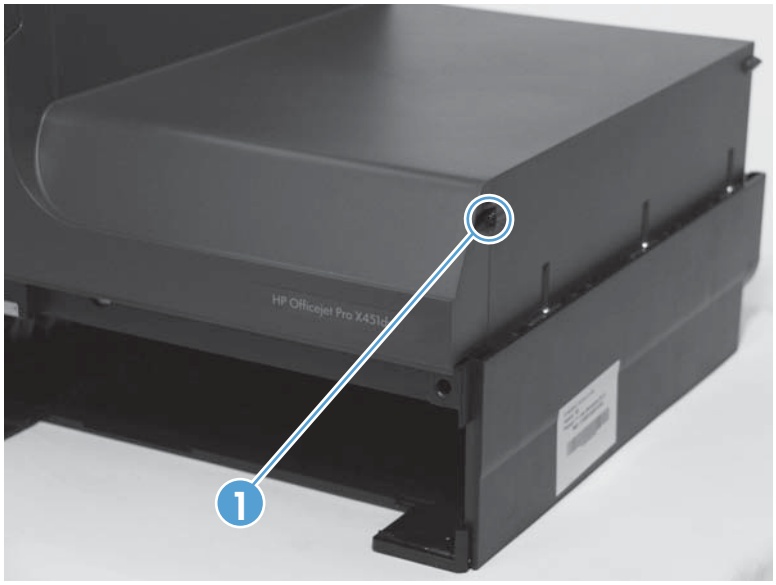
7. Remove the top cover from the product by sliding it to the right, and then lifting it away.

Figure 1-43 Remove the top cover (8 of 8)

Front cover

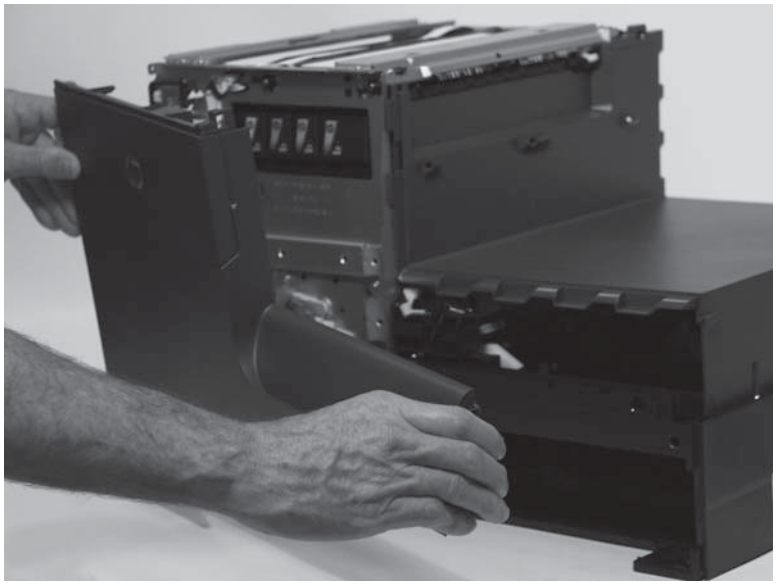
1. Remove the top cover. See Top cover on page 29.
2. Remove one screw (callout 1).

Figure 1-44 Remove the front cover (1 of 2)



3. Remove the front cover.

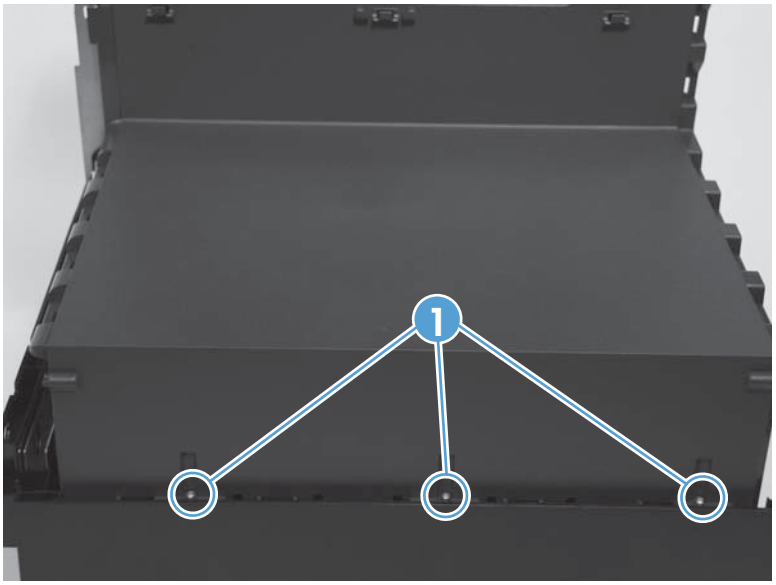
Figure 1-45 Remove the front cover (2 of 2)



Right cover

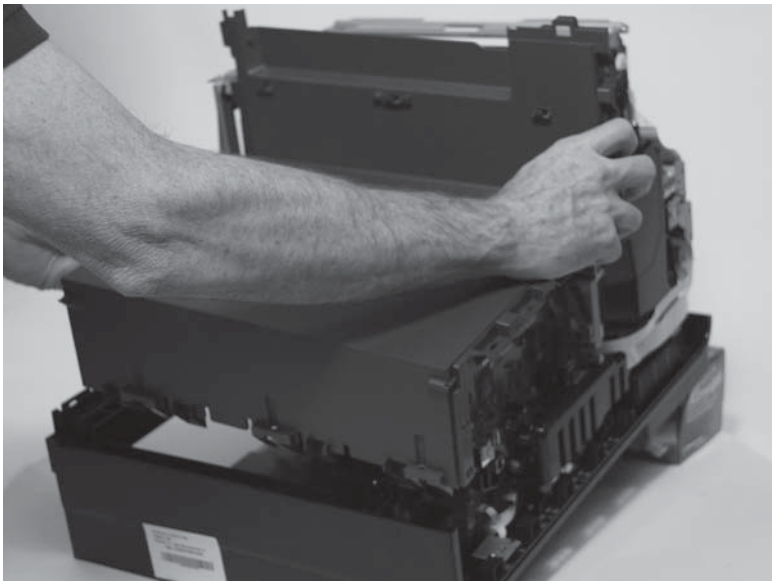
1. Remove the front cover. See Front cover on page 34.
2. Remove three screws (callout 1).

Figure 1-46 Remove the right cover (1 of 2)



3. Remove the right cover from the product.

Figure 1-47 Remove the right cover (2 of 2)

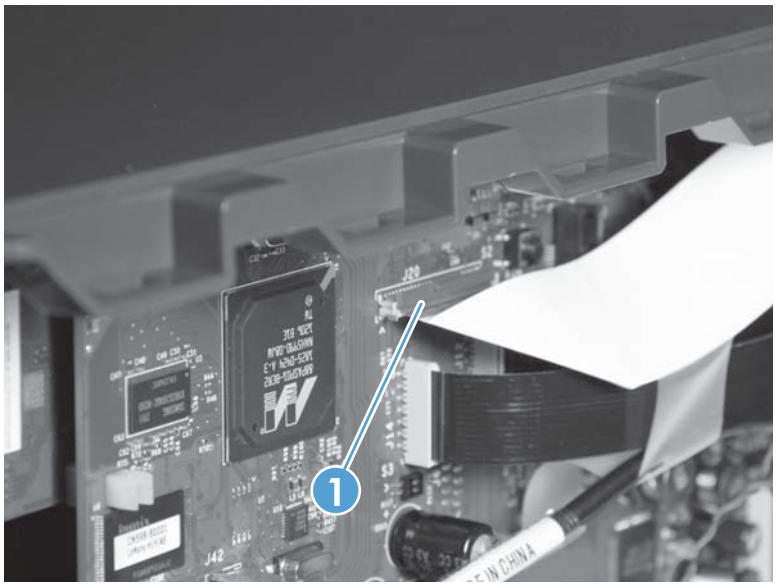


Main assemblies

Aerosol fan assembly

1. Remove the following components:
   - Rear cover. See Rear cover on page 23.
   - PCA safety shield. See PCA safety shield on page 110.
2. Disconnect the control panel flex cable (callout 1). Rotate the ZIF (zero-insertion force) connector to unclasp the connector first, and then disconnect the cable.

Figure 1-48 Remove the aerosol fan (1 of 12)

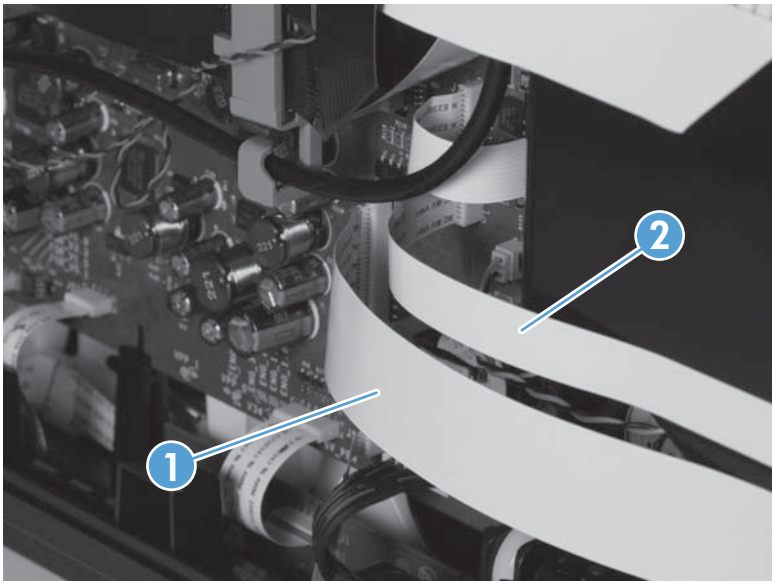


NOTE: **X451 models**: The cable should pull straight out.

X551 models: Unclasp the connector first, and then pull the cable.

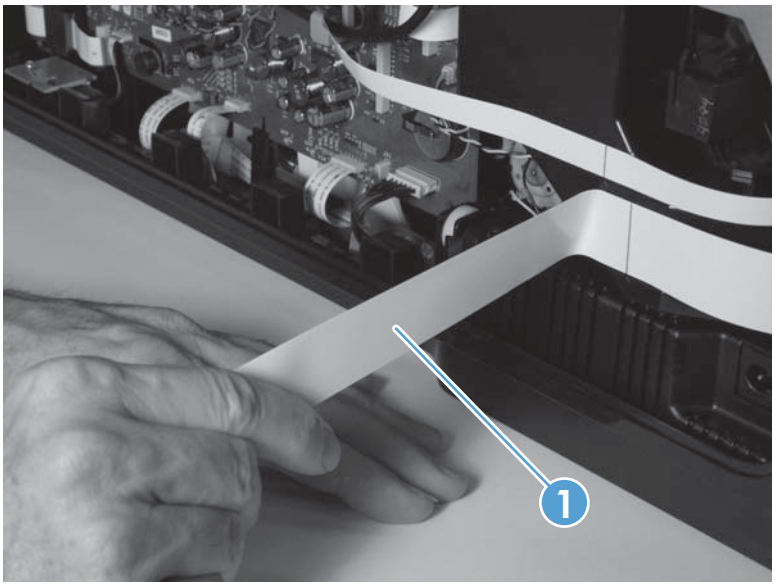
3. Disconnect the printbar lift distribution cable (callout 1) and the sensor carriage cable (callout 2).

Figure 1-49 Remove the aerosol fan (2 of 12)



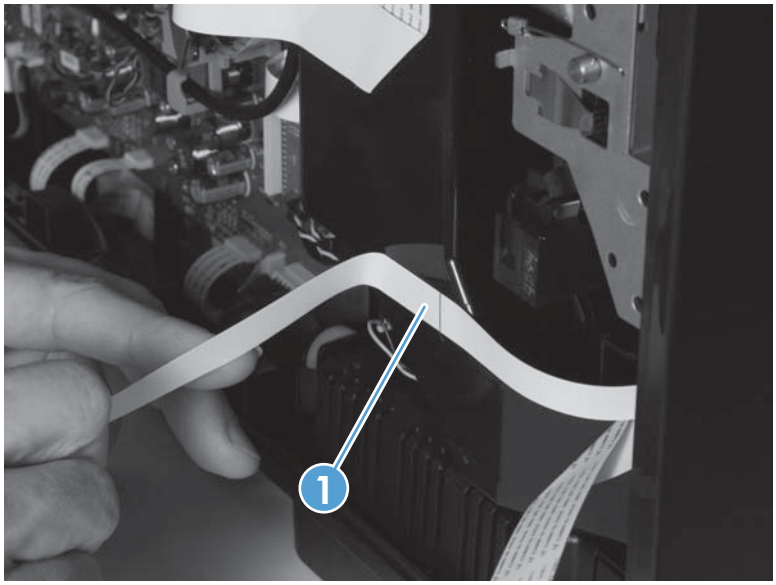
4. Unthread the printbar lift distribution cable (callout 1).

Figure 1-50 Remove the aerosol fan (3 of 12)



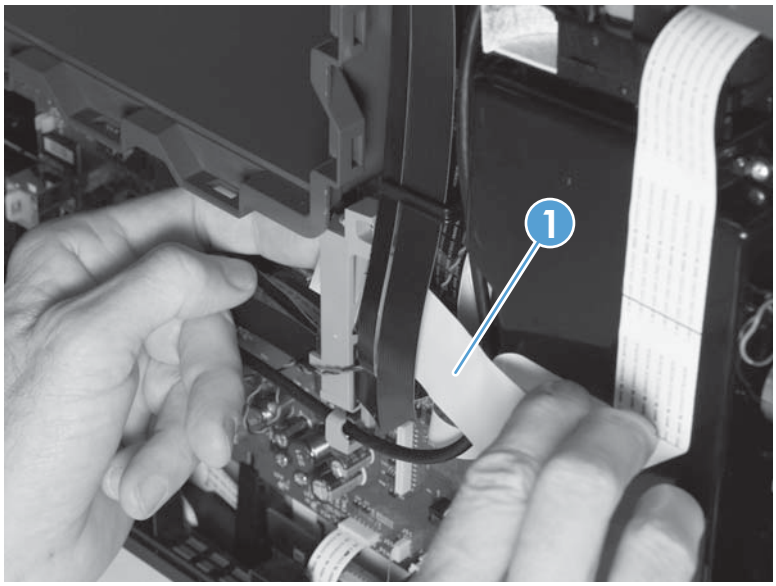
5. Unthread the sensor carriage cable (callout 1).

Figure 1-51 Remove the aerosol fan (4 of 12)



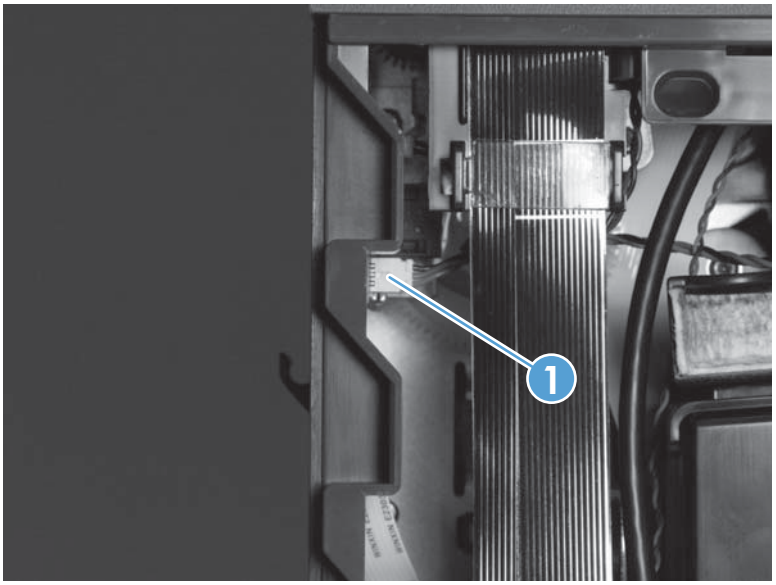
6. Unthread the control panel cable (callout 1) through the ferrite.

Figure 1-52 Remove the aerosol fan (5 of 12)



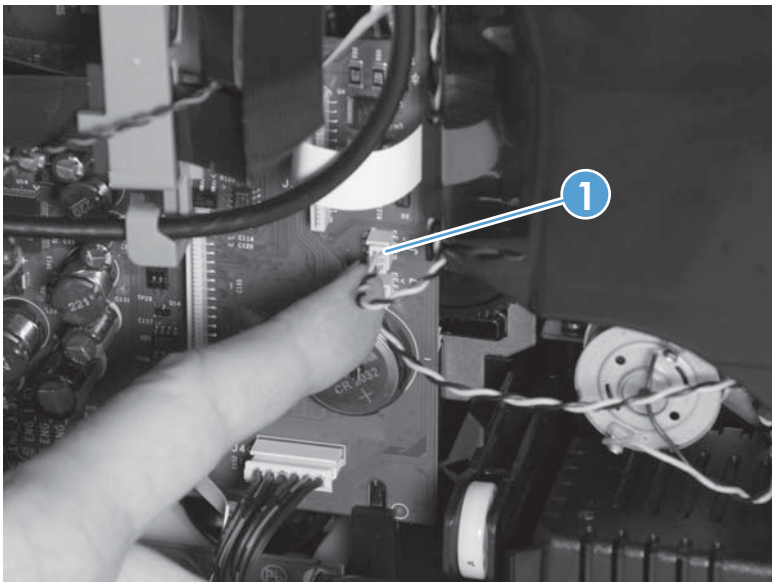
7. Use needle-nose pliers to disconnect the fan motor power cable (callout 1).

Figure 1-53 Remove the aerosol fan (6 of 12)



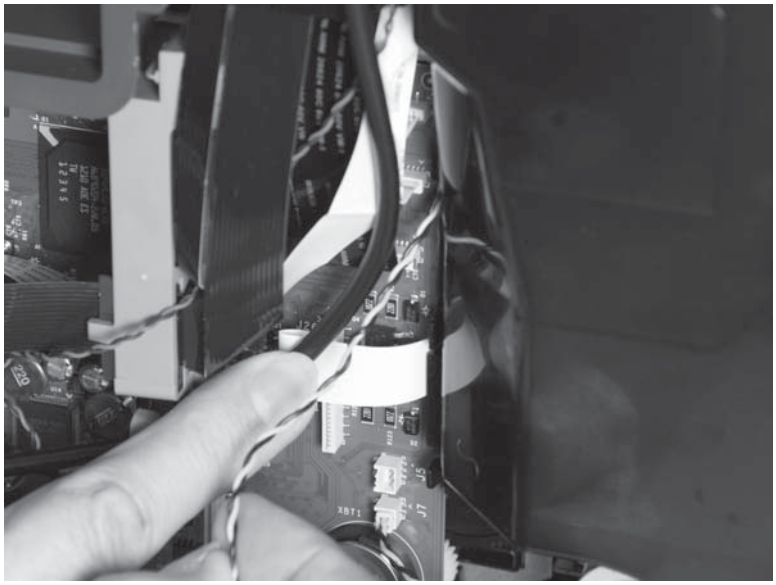
8. Disconnect the feed drive motor cable (callout 1).

Figure 1-54 Remove the aerosol fan (7 of 12)



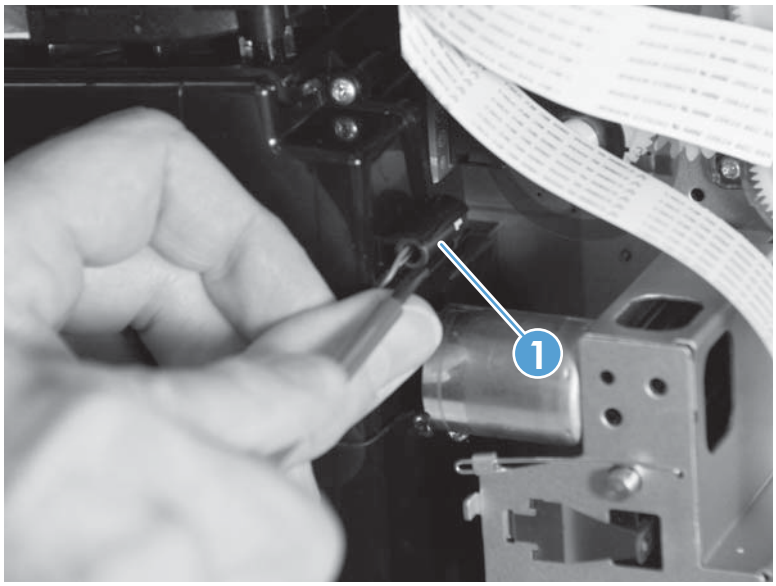
9. Unthread the feed drive motor cable from the fan assembly housing.

Figure 1-55 Remove the aerosol fan (8 of 12)



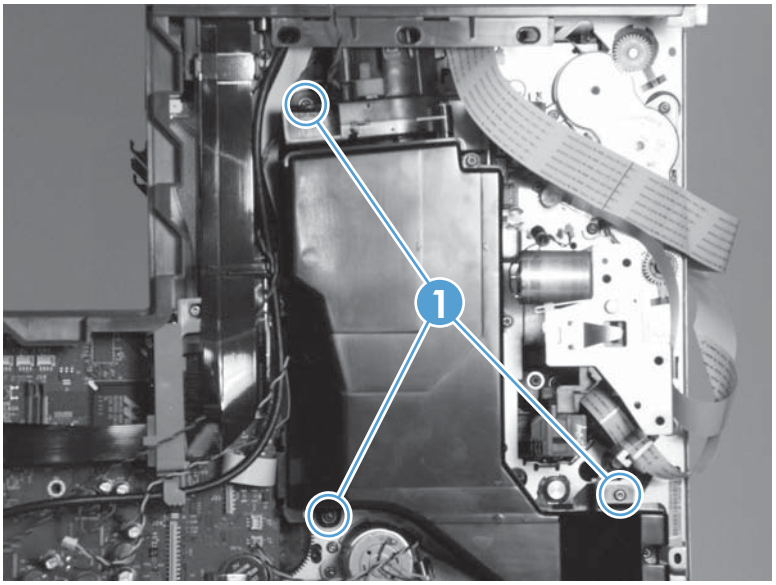
10. Push the sensor carriage ferrite (callout 1) out through the side of the snap using a small screwdriver. Leave the sensor carriage motor plugged in. During re-assembly, the sensor carriage ferrite can pushed to the left back through the snaps as shown in Figure 1-56 Remove the aerosol fan (9 of 12) on page 40.

Figure 1-56 Remove the aerosol fan (9 of 12)



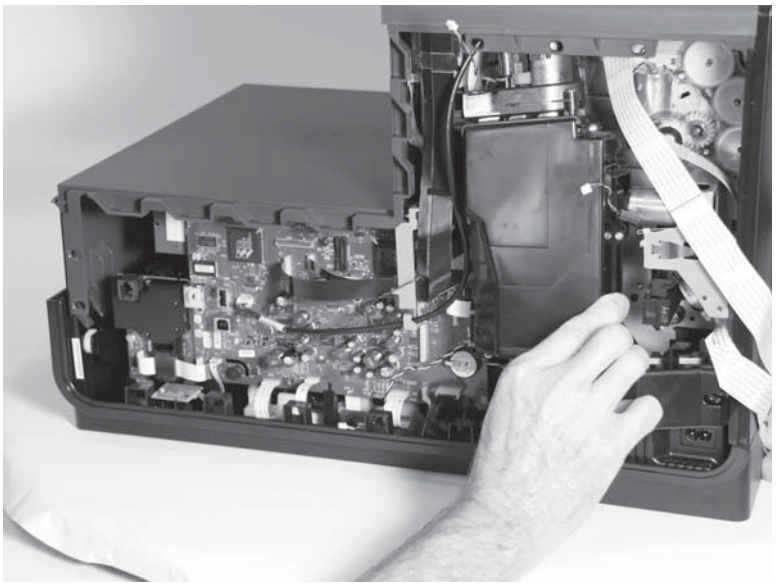
11. Remove three screws (callout 1) mounting the housing to the sheet metal.

Figure 1-57 Remove the aerosol fan (10 of 12)



12. Pull out the fan assembly.

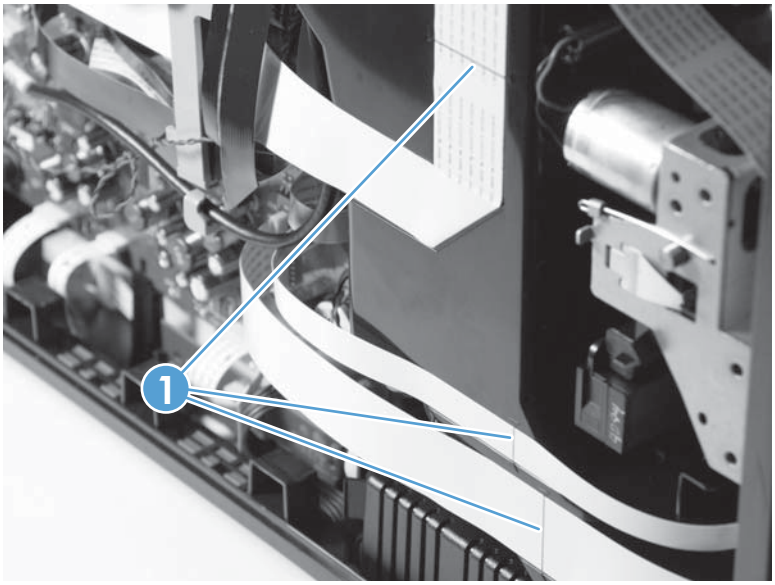
Figure 1-58 Remove the aerosol fan (11 of 12)



CAUTION: Avoid placing the assembly on any surface with the duct opening and gasket ring in contact with the surface. Doing so will leave an ink ring on the surface. Additionally, avoid touching the duct opening and gasket ring.

Reinstallation tip Align the black lines (callout 1) on the flex cables with the indicators on the fan assembly housing.

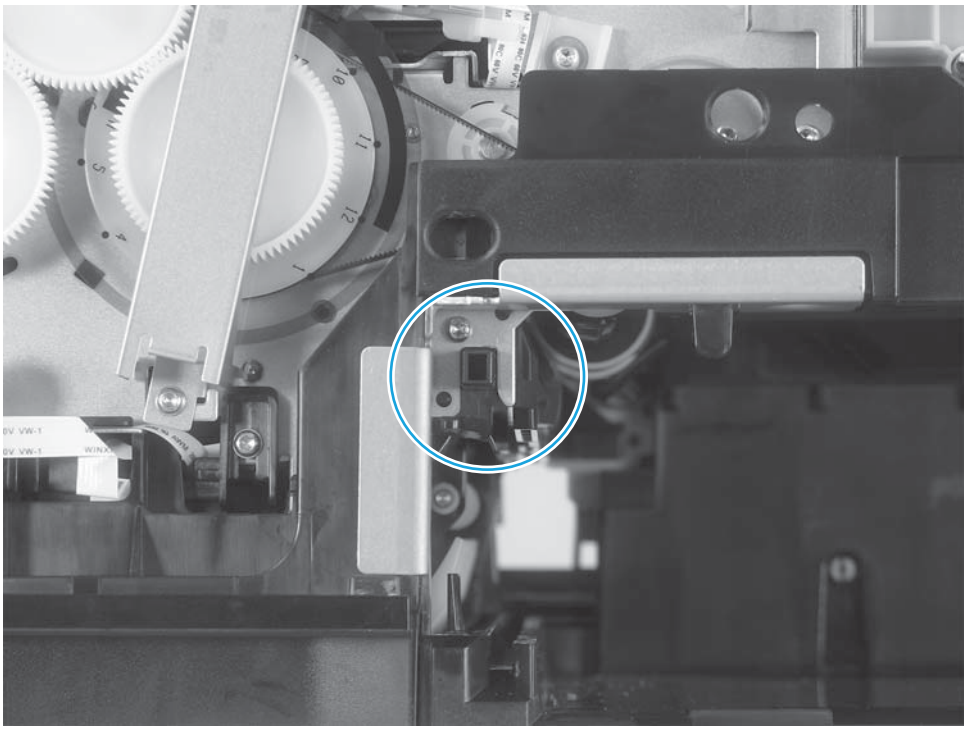
Figure 1-59 Remove the aerosol fan (12 of 12)



Separator/pick assembly

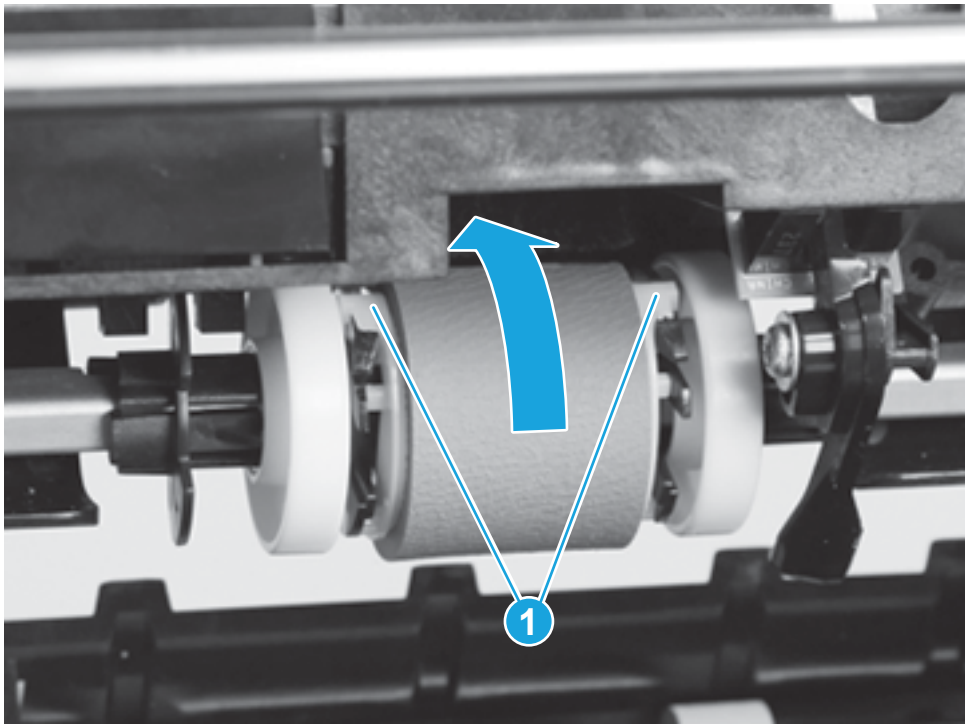
1. Remove the service sled assembly. See Service sled assembly on page 57.
2. Remove one screw, and then remove the separation pad assembly.

Figure 1-60 Remove the separator/pick assembly (1 of 4)



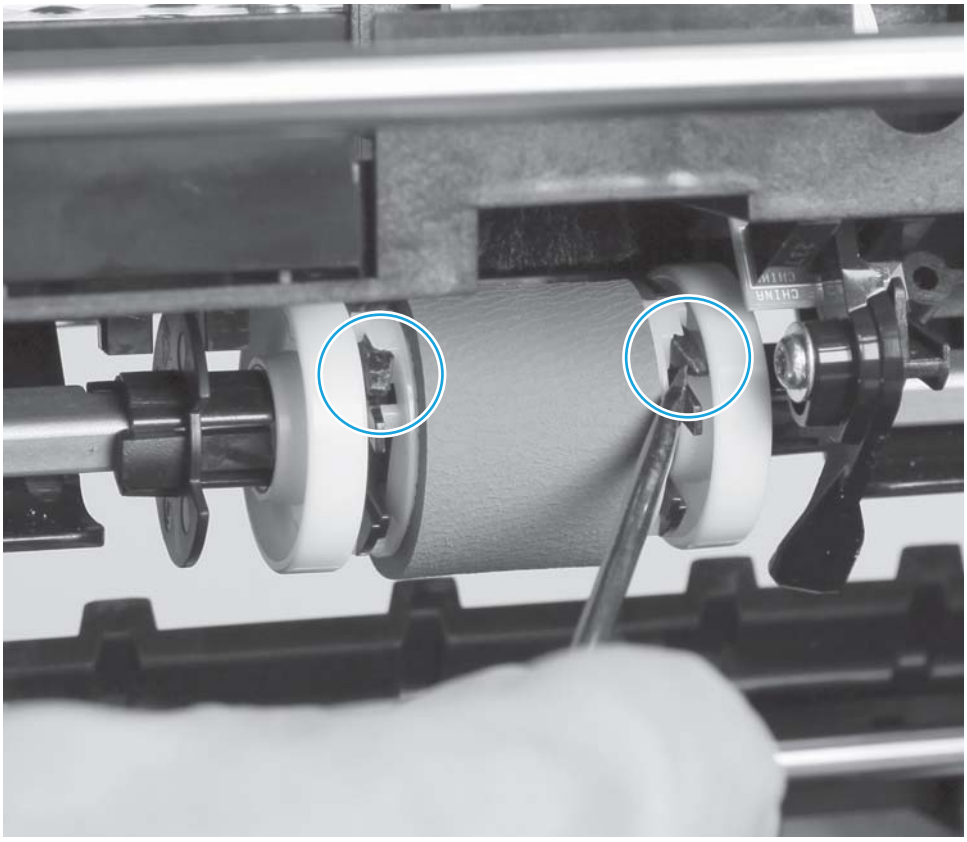
3. Rotate the pick assembly to position the white tabs (callout 1) as shown below.

Figure 1-61 Remove the separator/pick assembly (2 of 4)



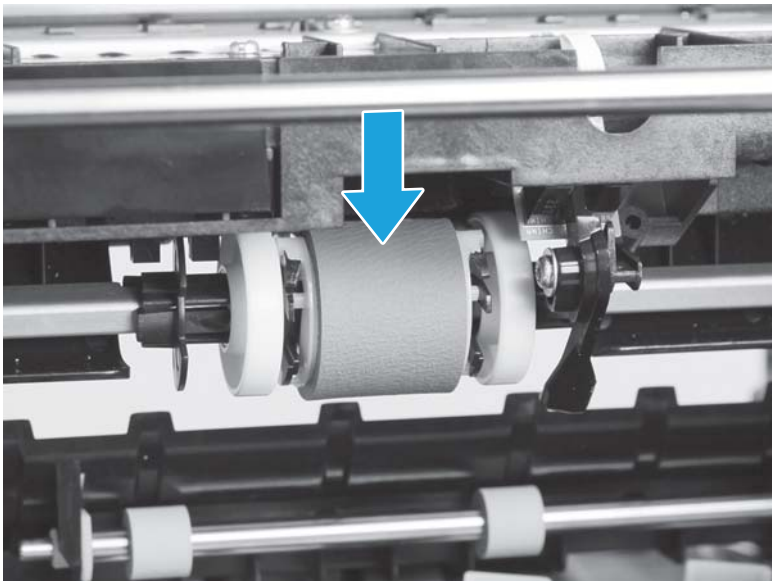
4. Use a small flat blade screwdriver (or hook screwdriver) to depress the black locking tab on the left side of the pick assembly, and then push down on the pick assembly to partially release it. Repeat for the locking tab on the right.

Figure 1-62 Remove the separator/pick assembly (3 of 4)



5. Push down on the pick assembly to remove it.

Figure 1-63 Remove the separator/pick assembly (4 of 4)

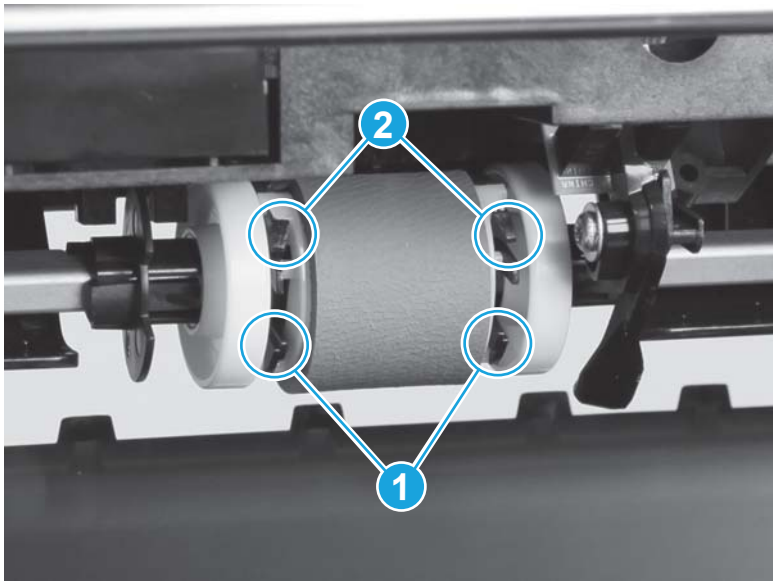


Reinstall the pick assembly/separator

Wear a vinyl glove while handling the new pick assembly to prevent skin oils from contaminating the roller.

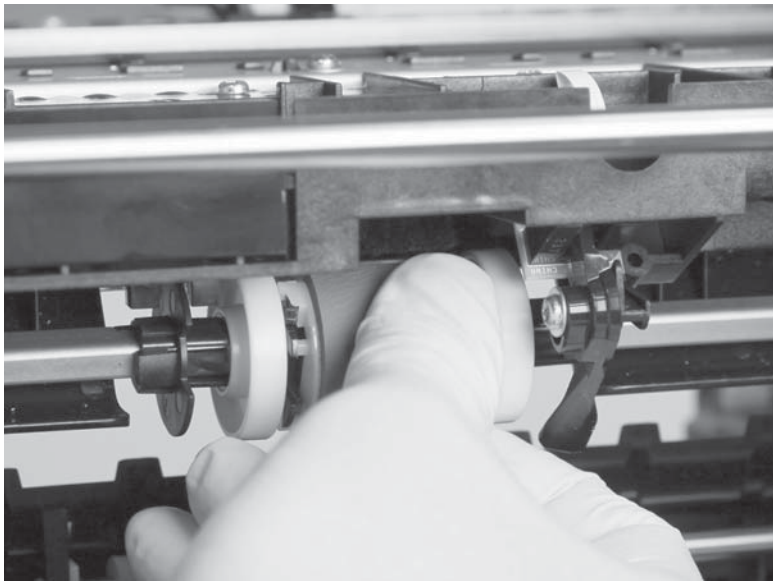
1. Rotate the pick assembly shaft and mounting bracket so that the narrow tabs (callout 1) on the bracket are positioned near the bottom of the bracket, and the wide tabs (callout 2) are near the top of the bracket as shown below.

Figure 1-64 Reinstall the separator/pick assembly (1 of 5)



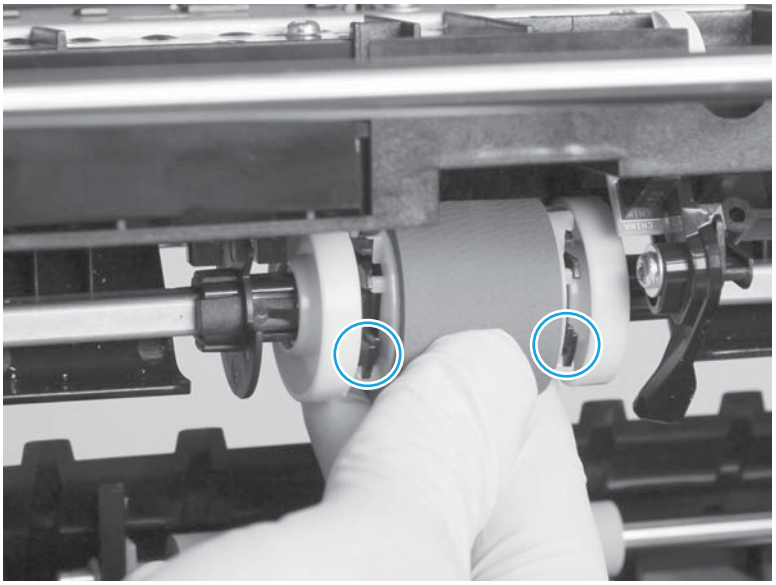
2. Position the flat side of the pick assembly against the flat side of the pick assembly shaft as shown below.

Figure 1-65 Reinstall the separator/pick assembly (2 of 5)



3. Attach the narrower pick assembly tabs.

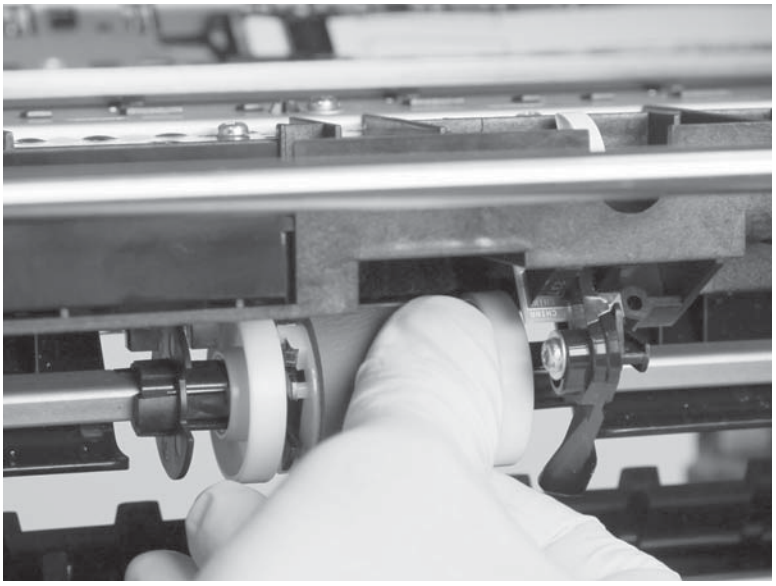
Figure 1-66 Reinstall the separator/pick assembly (3 of 5)



4. Press down on the top of the pick assembly until the wide tabs snap into place.

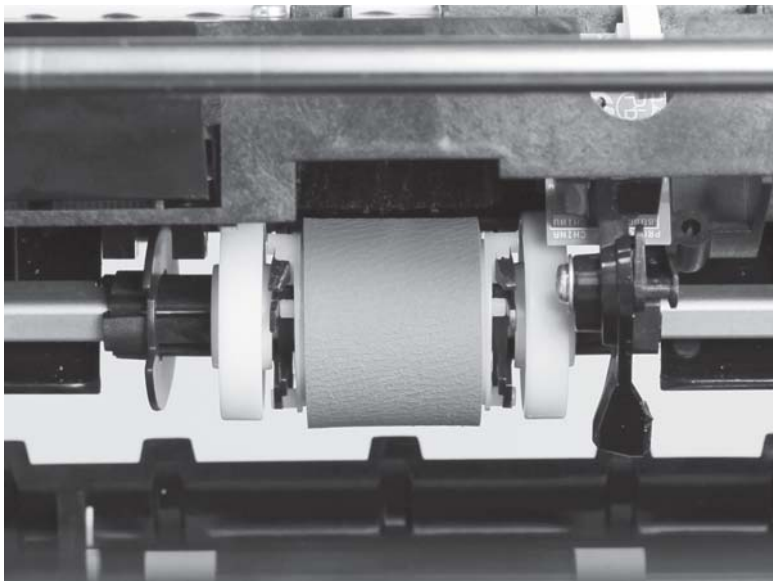
NOTE: Reposition the roller shaft if it rotates while snapping the wider tabs into place.

Figure 1-67 Reinstall the separator/pick assembly (4 of 5)



5. Verify that the tabs are correctly snapped into place and the pick assembly is seated squarely in the mounting bracket.

Figure 1-68 Reinstall the separator/pick assembly (5 of 5)



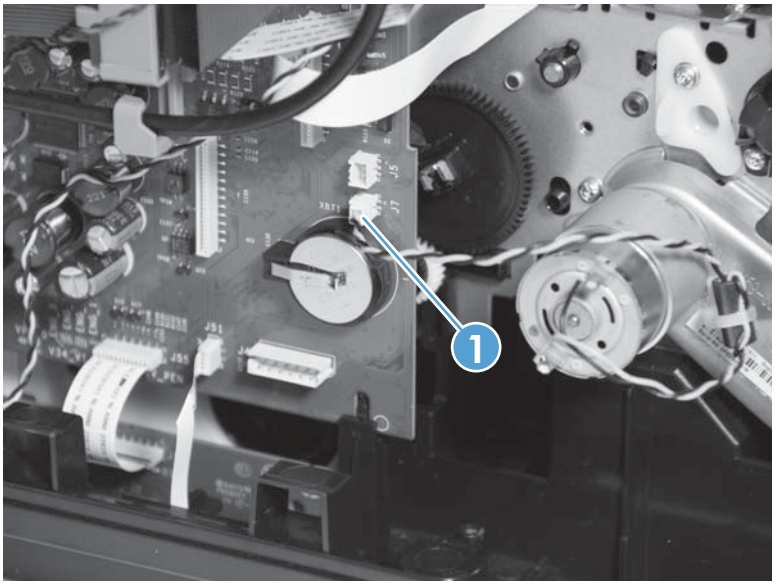
6. Reinstall the separator assembly.

Duplex drive module

1. Remove the following components:
   - Rear cover. See Rear cover on page 23.
   - Aerosol fan assembly. See Aerosol fan assembly on page 36.
   - Power supply. See Power supply on page 53.

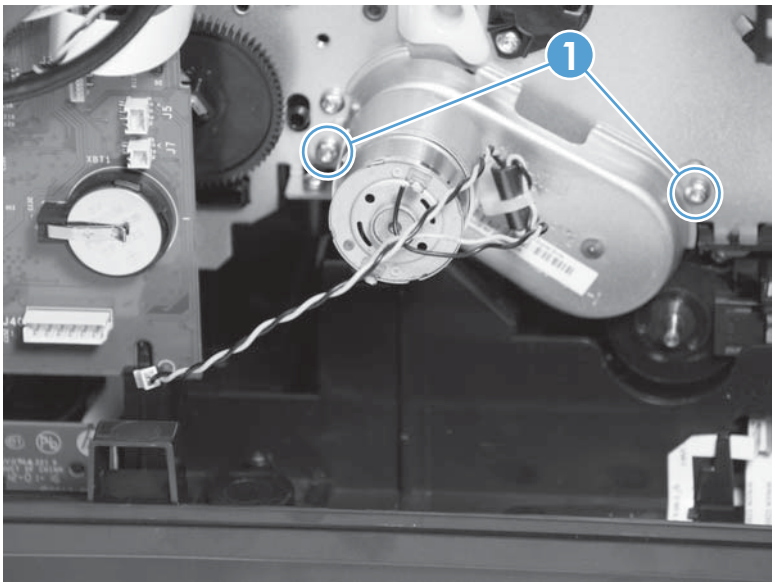
2. Disconnect one wire connector (callout 1).

Figure 1-69 Remove the duplex drive module (1 of 2)



3. Remove two screws (callout 1), and then remove the module.

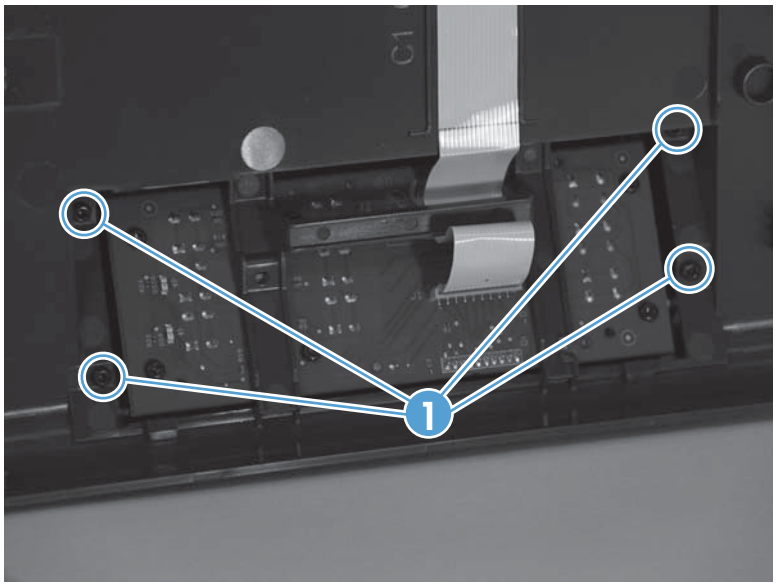
Figure 1-70 Remove the duplex drive module (2 of 2)



Control panel (X451 models only)

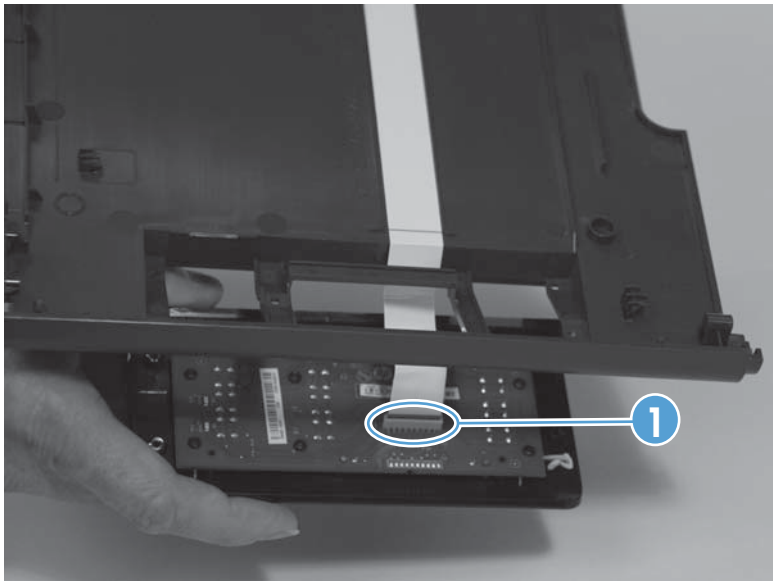
1. Remove the top cover. See Top cover on page 29.
2. From the inside of the top cover, remove four T8 screws (callout 1).

Figure 1-71 Remove the control panel (1 of 2)



3. Remove the control panel, and then disconnect one flex cable (callout 1).

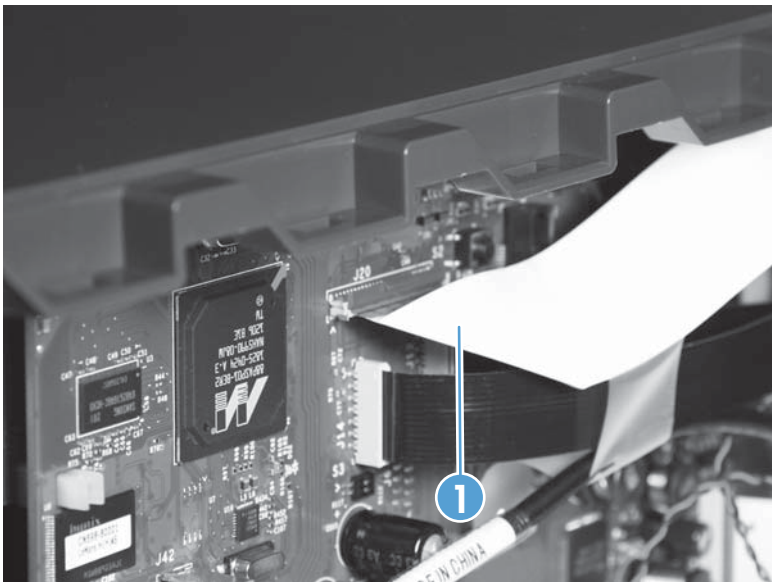
Figure 1-72 Remove the control panel (2 of 2)



Control panel (X551 models only)

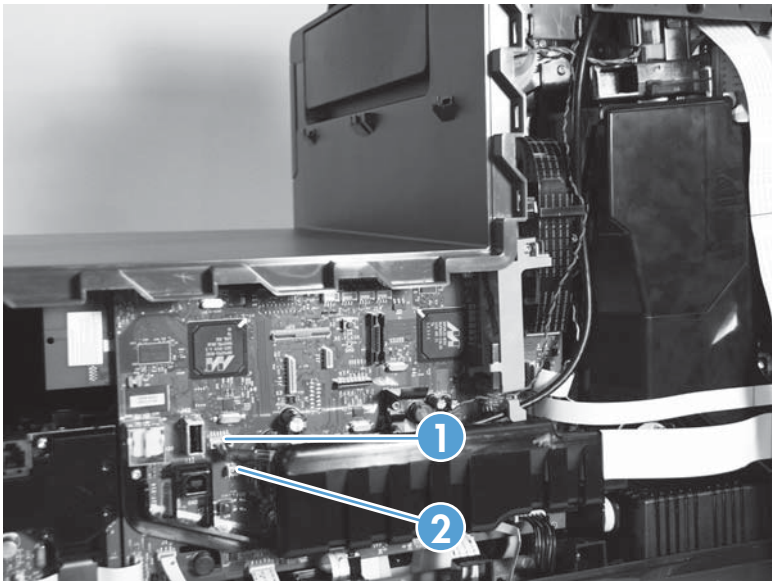
1. Remove the following components.
   - Rear cover. See Rear cover on page 23.
   - Left door. See Left door on page 24.
2. Rotate the ZIF latch, and then disconnect the control panel flex cable (callout 1) from the main PCA.

Figure 1-73 Remove the touchscreen control panel (1 of 4)



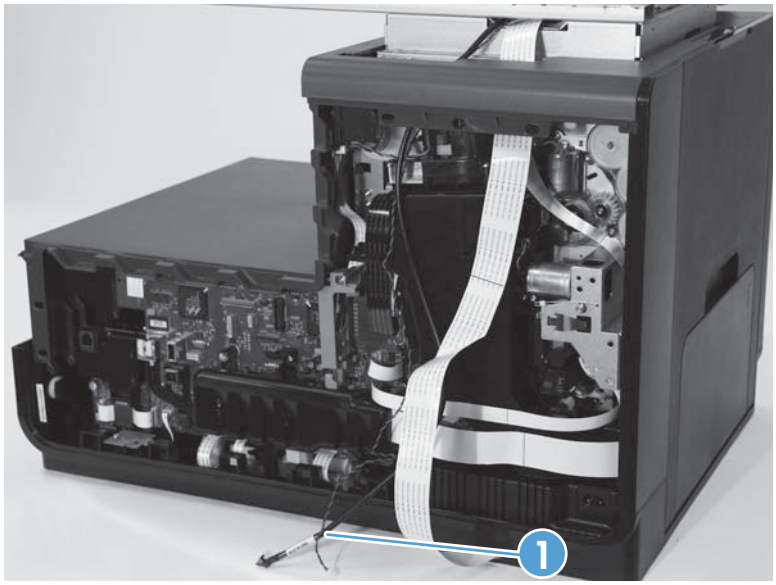
3. Disconnect the USB cable (callout 1) and speaker cable (callout 2).

Figure 1-74 Remove the touchscreen control panel (2 of 4)



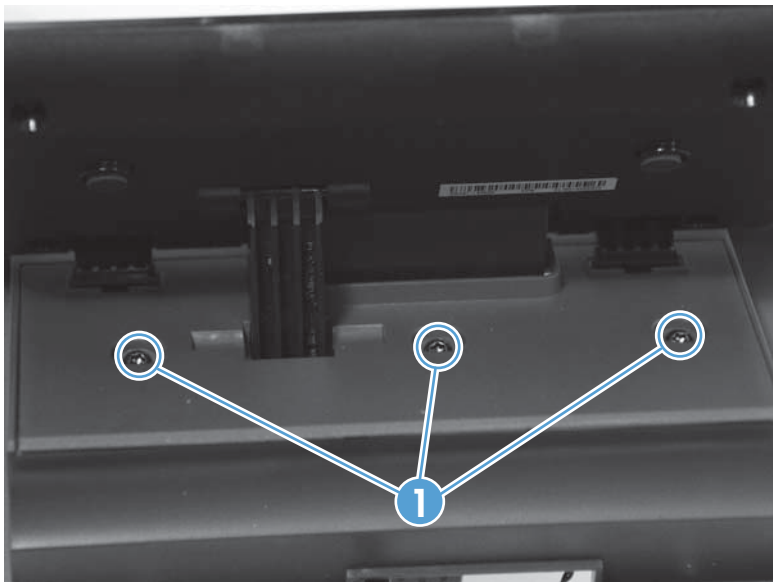
4. Unthread the cables (callout 1) through the back of the product.

Figure 1-75 Remove the touchscreen control panel (3 of 4)



5. On the back of the top panel, remove three screws (callout 1) from behind the control panel, and then remove the control panel.

Figure 1-76 Remove the touchscreen control panel (4 of 4)

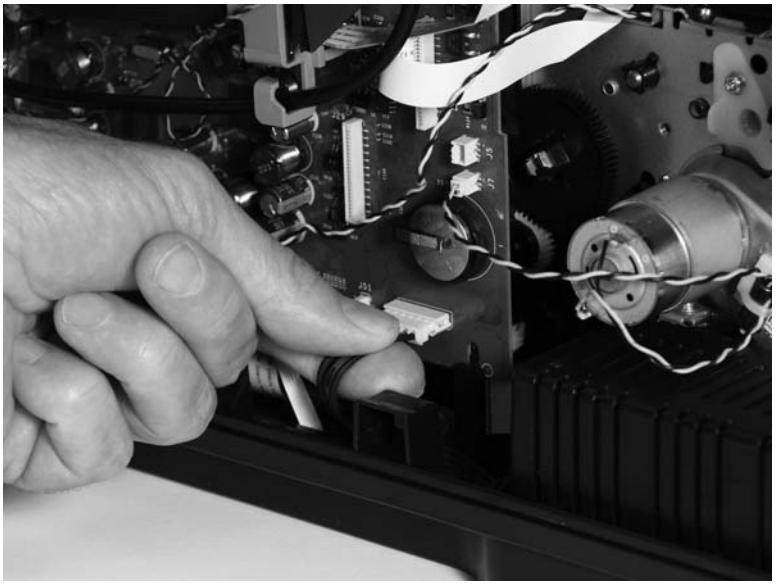


Power supply

CAUTION: Make sure that the power cable is disconnected from the product.

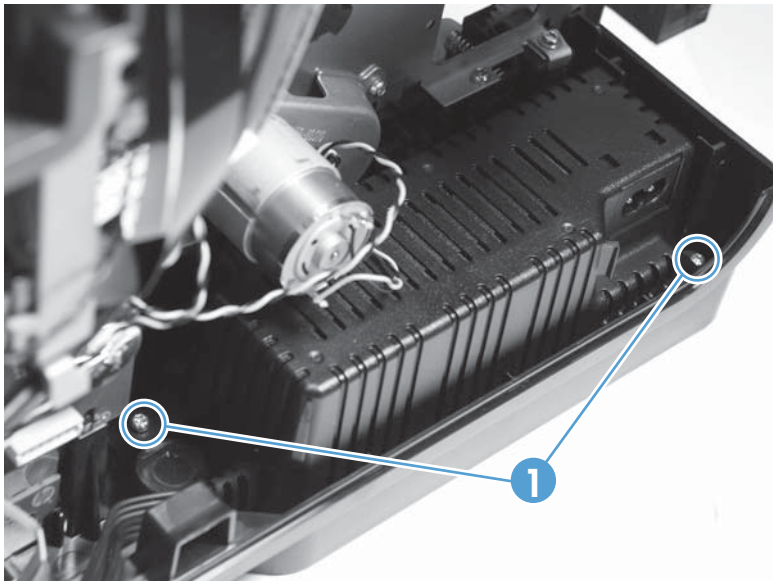
1. Remove the following components:
   - Rear cover. See Rear cover on page 23.
   - Left door. See Left door on page 24.
   - Left rear cover. See Left rear cover on page 27.
   - Aerosol fan assembly. See Aerosol fan assembly on page 36.
2. Disconnect the cable that connects the power supply to the main PCA.

Figure 1-77 Remove the power supply (1 of 3)



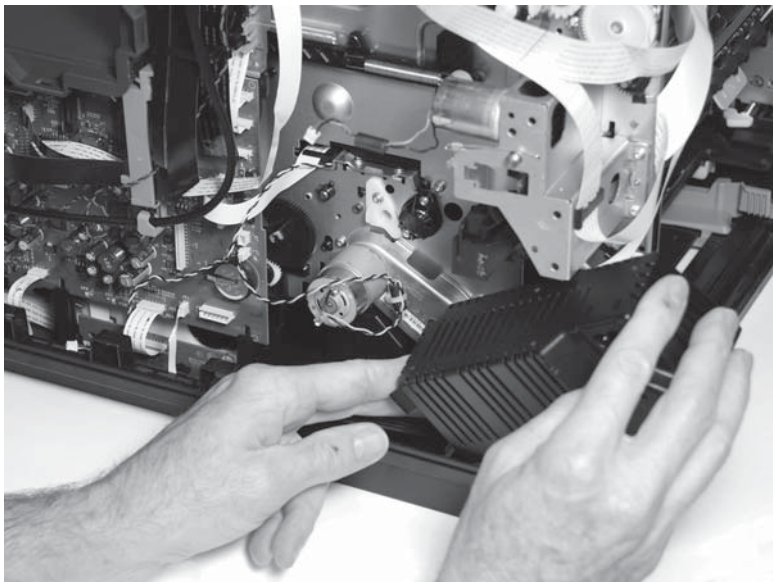
3. Remove two screws (callout 1) from the base of the power supply.

Figure 1-78 Remove the power supply (2 of 3)



4. Remove the power supply.

Figure 1-79 Remove the power supply (3 of 3)



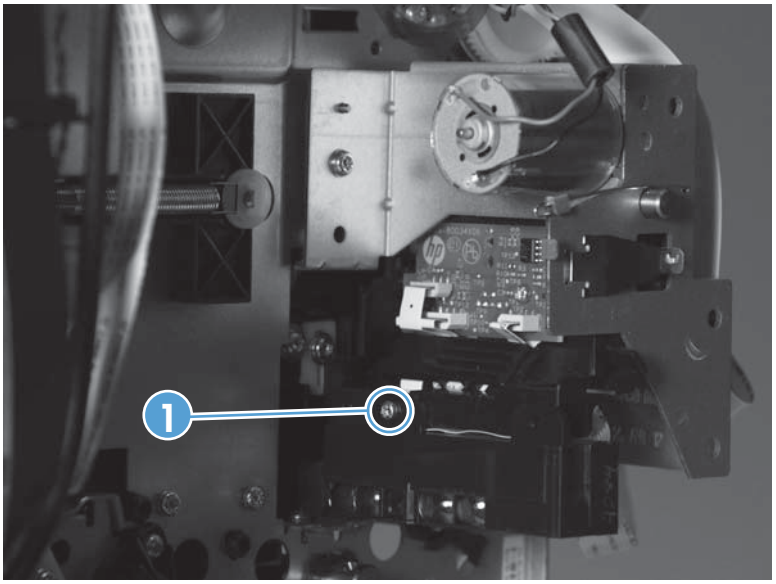
NOTE: You might have to loosen the fasteners on the duplex drive module in order to remove the power supply. If that is the case, see Duplex drive module on page 48.

Backscatter drop detect (BDD) assembly

IMPORTANT: Ensure the product firmware is upgraded to at least version 1336MR before performing this repair procedure. If the firmware upgrade cannot be completed, contact HP support.

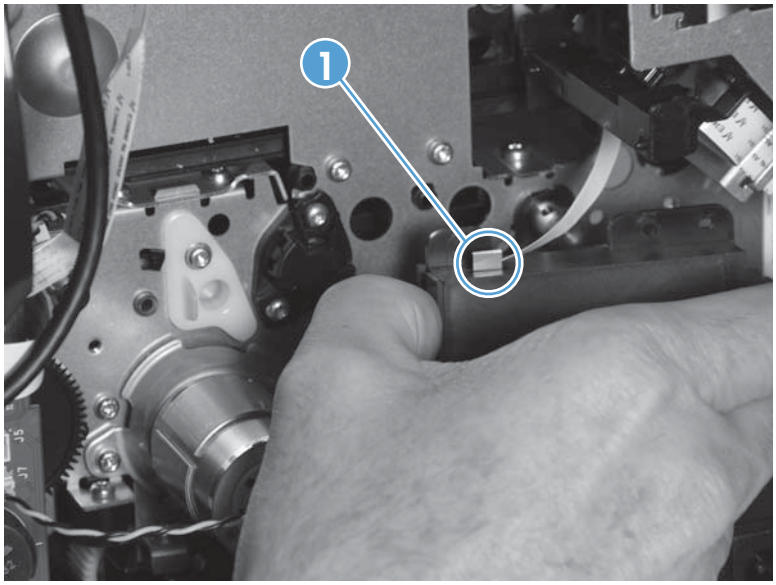
1. Remove the following components:
   - Rear cover. See Rear cover on page 23.
   - Aerosol fan assembly. See Aerosol fan assembly on page 36.
2. Verify that the sensor carriage is in the home position.
3. Remove one screw (callout 1).

Figure 1-80 Remove the backscatter drop detect assembly (1 of 2)



4. Detach the BDD assembly, and then disconnect the flex cable (callout 1).

Figure 1-81 Remove the backscatter drop detect assembly (2 of 2)



5. After installing a new BDD assembly, perform the following calibrations:

   a. From the control panel, open the Service menu. See Access the Engineering menu on page 14 for information on how to access the Service menu.

   b. Select System Configuration, and then select Enable Drop Detect Calibration.

   c. Touch the OK button.

   d. After resetting the drop detect calibrations, run Clean Printhead, level 1. This will take approximately 17 minutes.

Service sled assembly

Remove the following components:

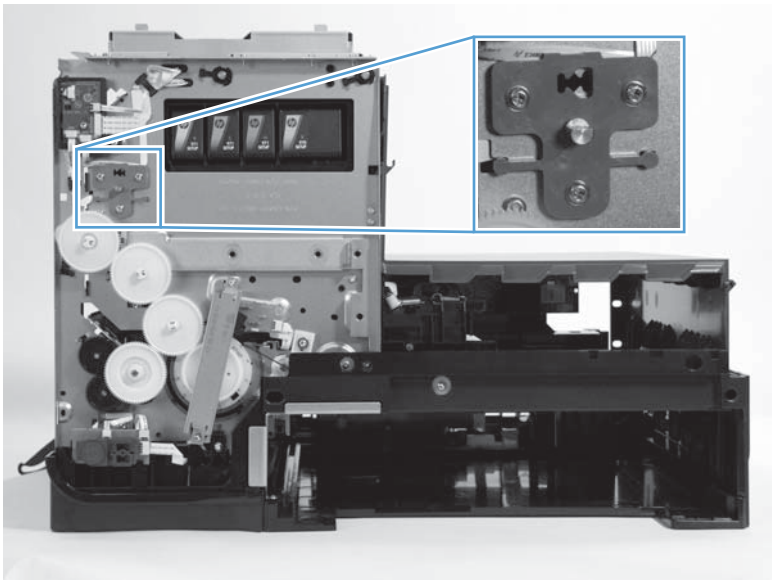
- Rear cover. See Rear cover on page 23.
- Left door. See Left door on page 24.
- Left rear cover. See Left rear cover on page 27.
- Left front cover. See Left front cover on page 28.
- Top cover. See Top cover on page 29.
- Front cover. See Front cover on page 34.
- Right cover. See Right cover on page 35.
- Right cross brace. See Right cross brace on page 62.

Service sled assembly

IMPORTANT: The OfficeJet Pro X special tools kit (part CN598-67056) is required when replacing the service sled assembly.

1. On the front of the product, locate the printbar lock mount.

Figure 1-82 Remove the service sled assembly (1 of 6)

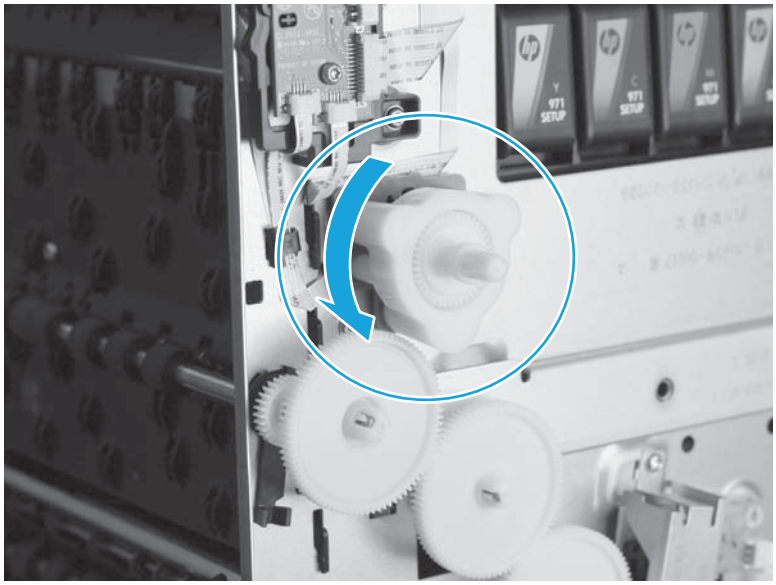


2. Insert the printbar lift knob tool into the printbar lock mount, rotate the tool counter-clockwise, and then push in the locking disc to secure the printbar in place.

NOTE: The printbar lock tool may look different than what is shown here.

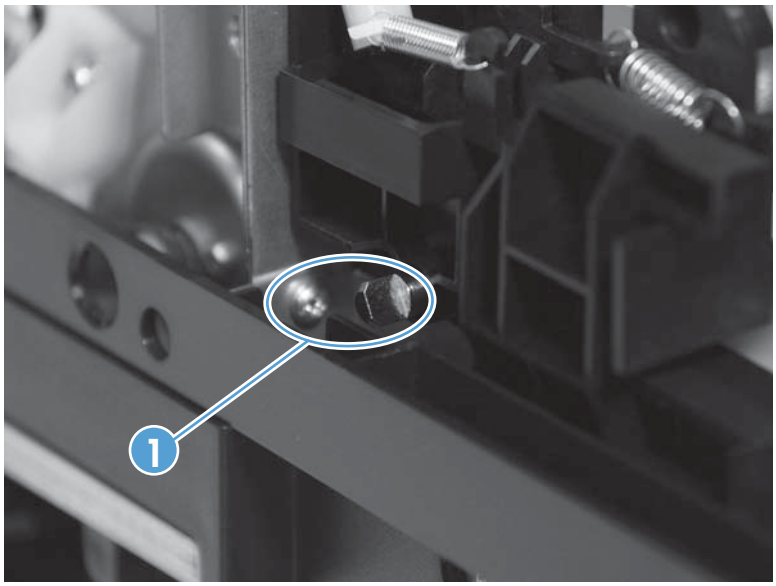
CAUTION: The printbar lift lock tool must remain in place until either the printbar is removed, or the service sled assembly is reinstalled in the product. If the printbar drops to the bottom of the product, the printbar might be damaged, and likely will need to be replaced.

Figure 1-83 Remove the service sled assembly (2 of 6)



3. Locate the service sled cartridge drive shaft (callout 1).

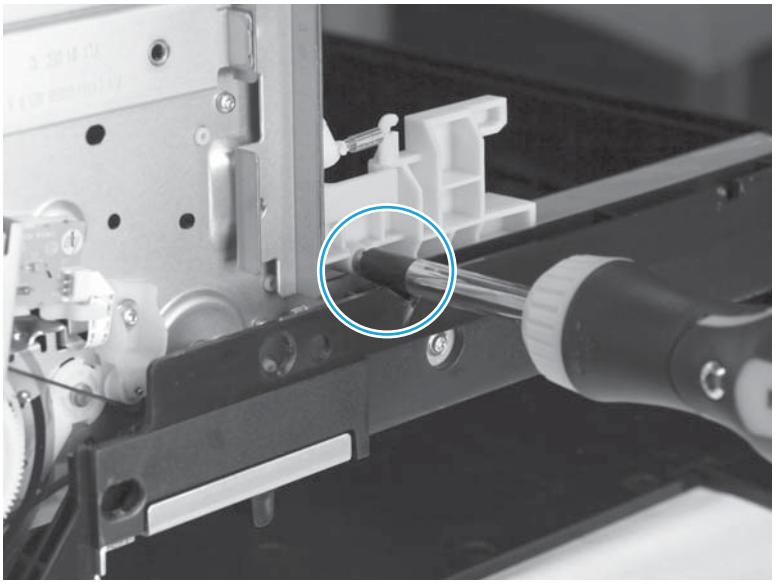
Figure 1-84 Remove the service sled assembly (3 of 6)



4. Mount the service sled advance tool on the drive shaft.

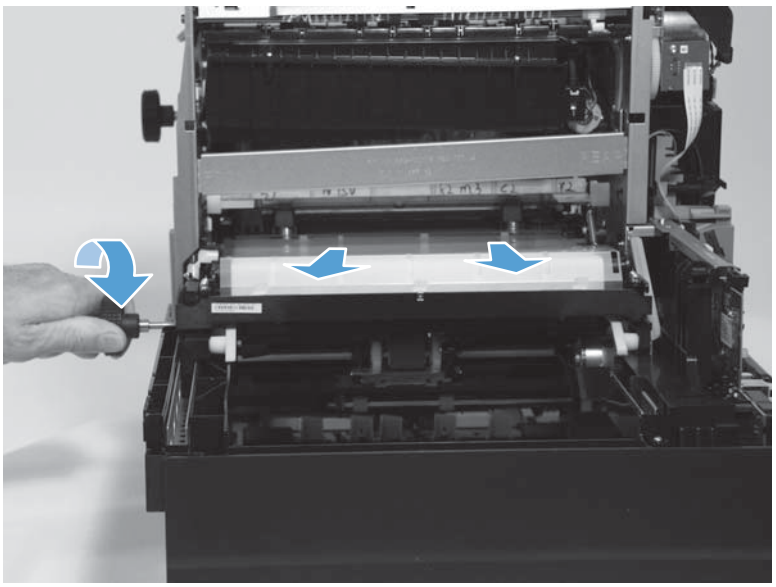
NOTE: On older products, part of the base material may need to be removed to mount the service sled advance tool on the drive shaft.

Figure 1-85 Remove the service sled assembly (4 of 6)



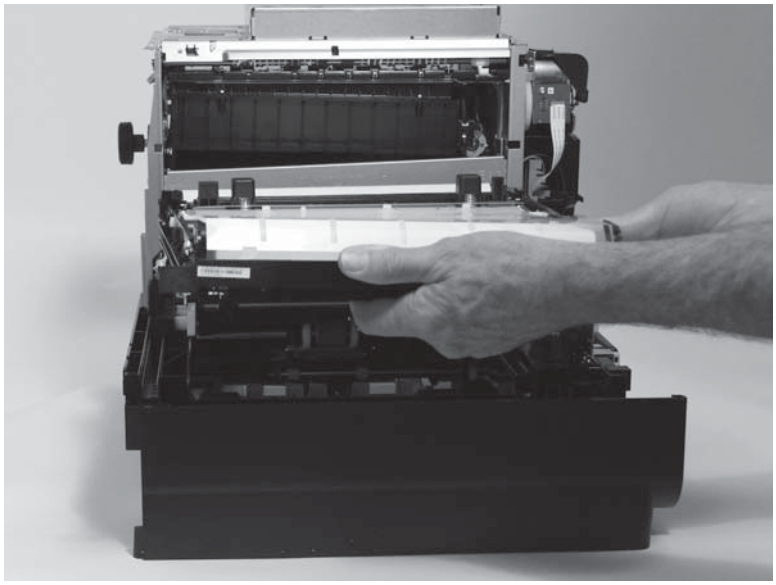
5. Turn the tool clockwise to fully advance the service sled forward.

Figure 1-86 Remove the service sled assembly (5 of 6)



6. Lift the service sled cartridge from the product.

Figure 1-87 Remove the service sled assembly (6 of 6)



NOTE: Do not touch the web contact roller during the removal process. The roller is saturated with ink. Also, any contaminants from your hands that transfer to the roller could affect print quality.

7. After reinstalling the service sled assembly, test for correct operation using the following steps:

   a. Open the Engineering menu. See Access the Engineering menu on page 14 for information on accessing the Engineering menu.

   b. Select Service, select Service Tests, select Test Service Station, and then touch the OK button.

   c. Select two service cycles, and then touch the OK button.

   d. The service sled module should move out of, and back into cap smoothly. If the operation isn't smooth, check for correct installation, including whether the service sled is aligned correctly. Also check that the service sled transmission is in the correct position. See Service sled transmission on page 97.

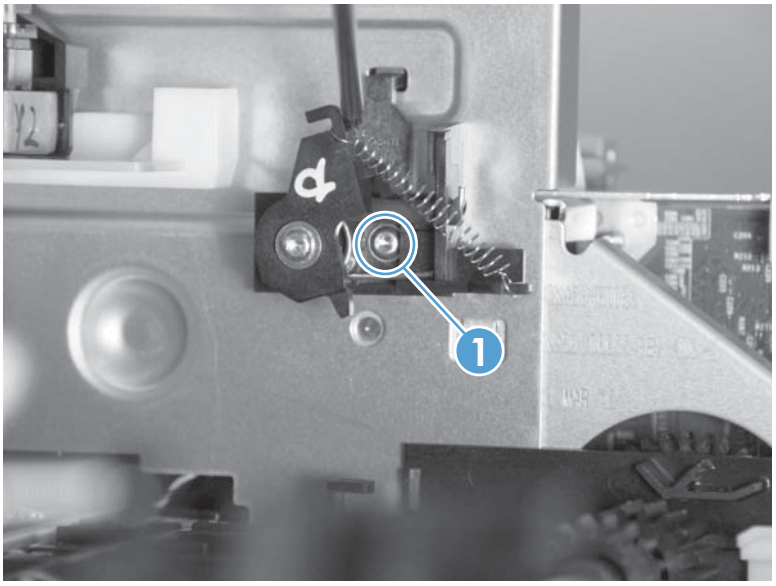
Reinstallation tip During the reinstallation process, you must ensure that the service sled is aligned with the case part.

NOTE: If you are working on the product at a repair center, use the special alignment tool (PN T-285463) to make sure the sled is aligned correctly. In the field, you will have to align it by sight. See Service sled transmission on page 97.

Web advance rack assembly

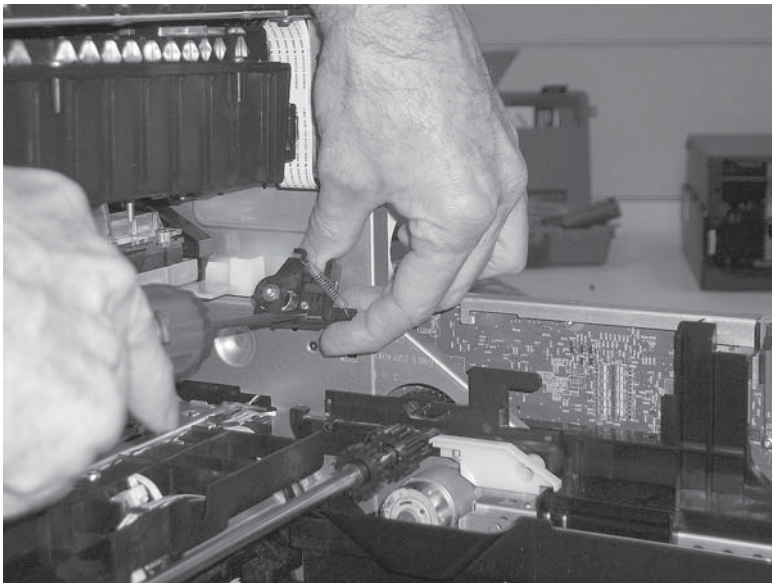
1. Remove one screw (callout 1) from behind the flag.

Figure 1-88 Remove the web advance rack assembly (1 of 2)



2. Rotate the assembly upward to clear the tab from the right wall, and then remove the assembly.

Figure 1-89 Remove the web advance rack assembly (2 of 2)

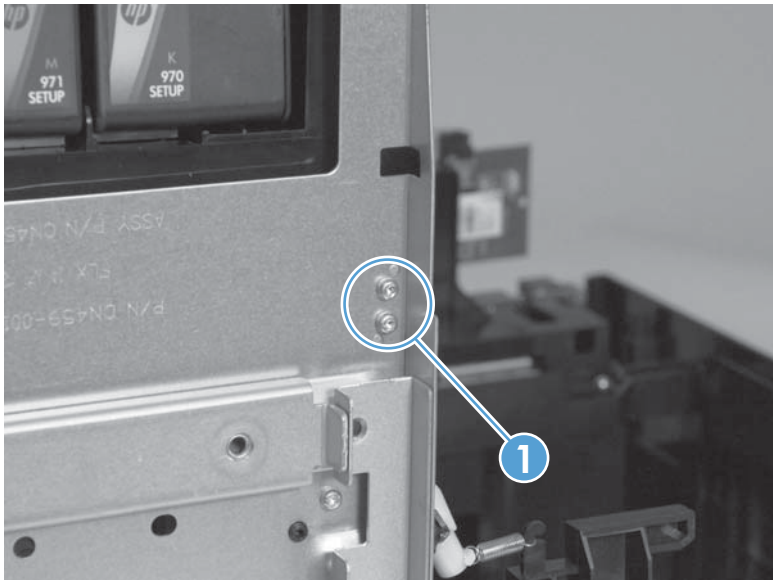


NOTE: If you are working on the product at a repair center, use a special alignment tool (PN T-285463) to make sure the sled is aligned correctly. In the field, you will have to align it by sight.

Right cross brace

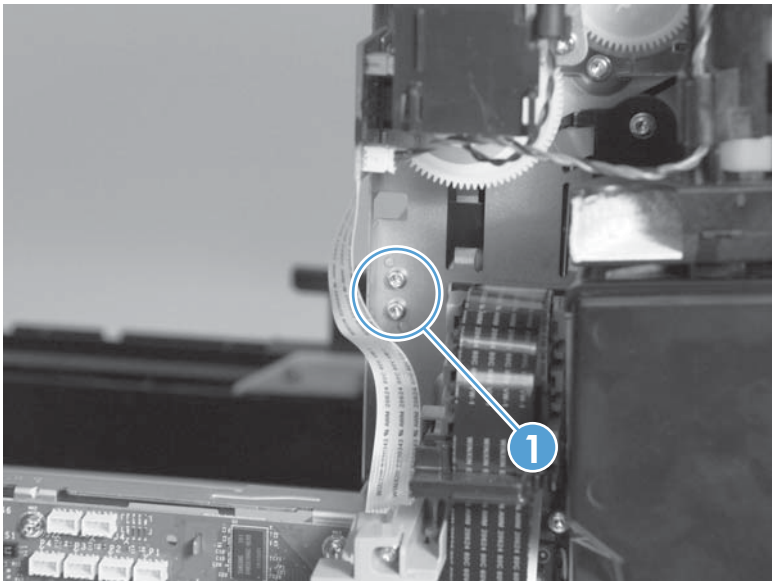
1. Remove the following components:
   - Rear cover. See Rear cover on page 23.
   - Left door. See Left door on page 24.
   - Left rear cover. See Left rear cover on page 27.
   - Left front cover. See Left front cover on page 28.
   - Top cover. See Top cover on page 29.
   - Front cover. See Front cover on page 34.
   - Right cover. See Right cover on page 35.
2. Remove two screws (callout 1) from the front of the product.

Figure 1-90 Remove the right cross brace (1 of 4)



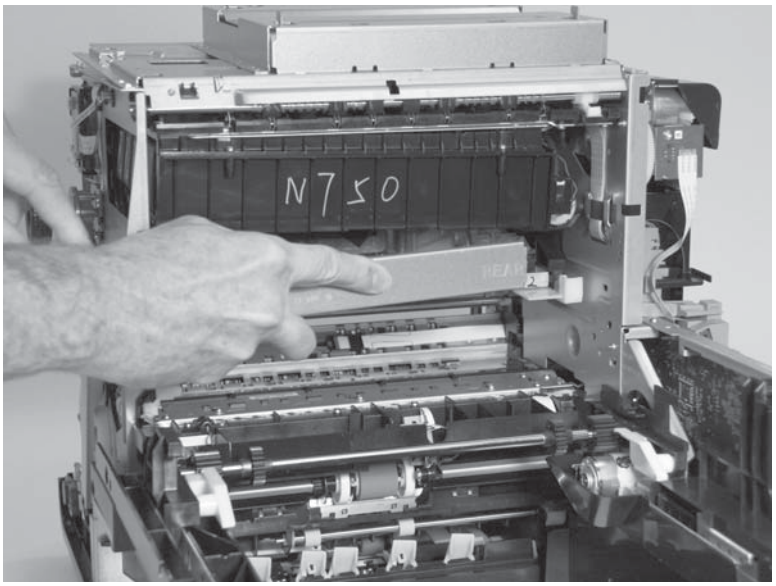
3. Remove two screws (callout 1) from the rear of the product.

Figure 1-91 Remove the right cross brace (2 of 4)



4. Remove the brace.

Figure 1-92 Remove the right cross brace (3 of 4)



Reinstallation tip The front and rear ends are labeled. Set the locator bumps on the bar in the locator holes on the product.

Figure 1-93 Remove the right cross brace (4 of 4)

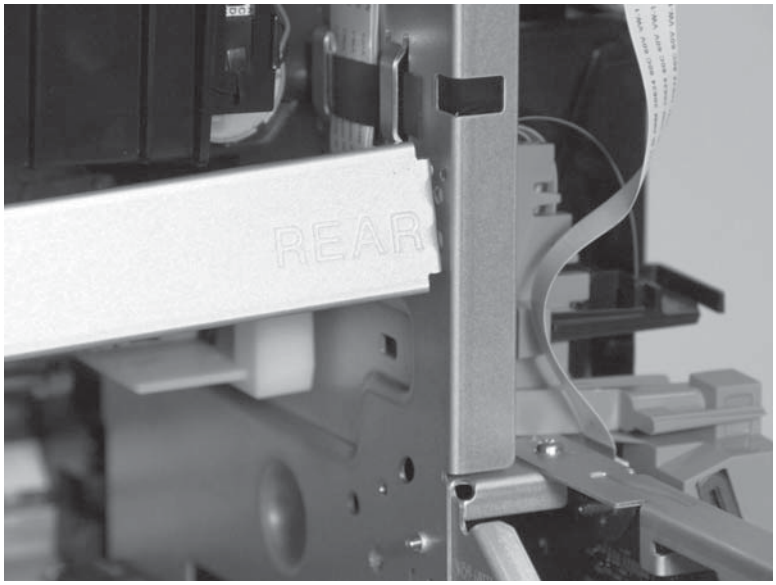


Plate console left

1. Remove the following components:
   - Rear cover. See Rear cover on page 23.
   - Left door. See Left door on page 24.
   - Left rear cover. See Left rear cover on page 27.
   - Left front cover. See Left front cover on page 28.
   - Top cover. See Top cover on page 29.
2. Remove five screws (callout 1), and then remove the brace (callout 2).

Figure 1-94 Remove the plate console left

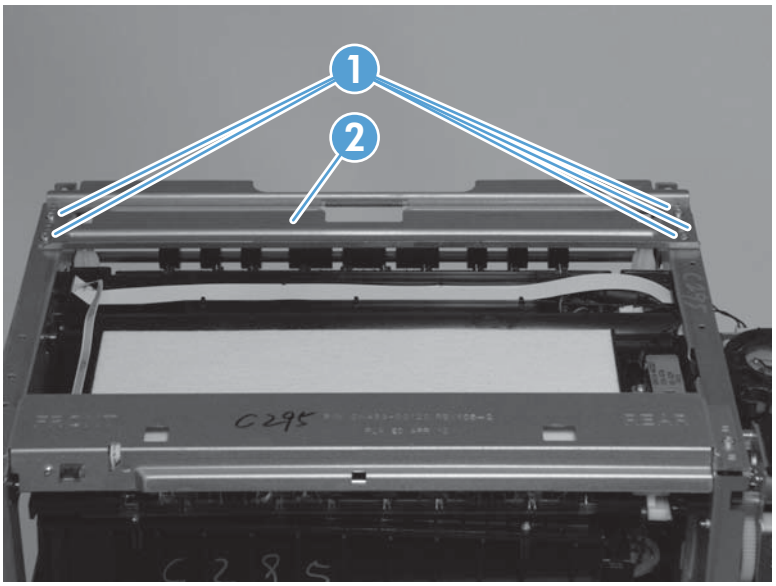
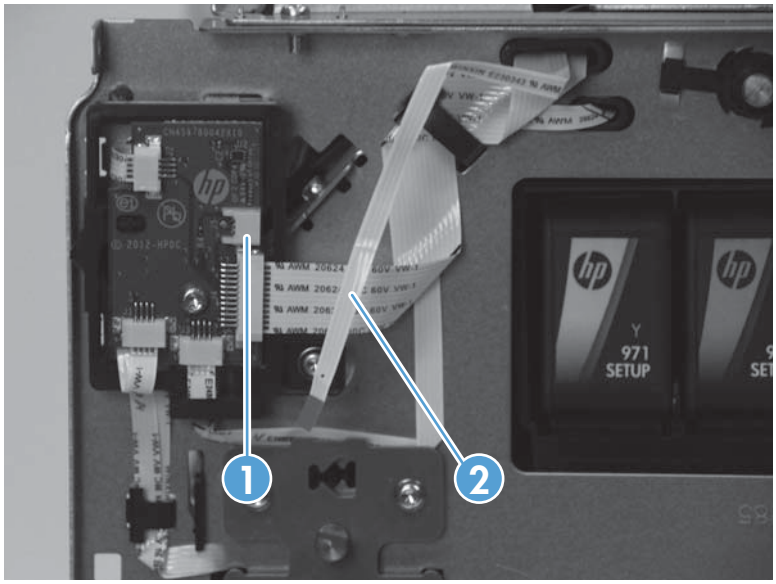


Plate console right

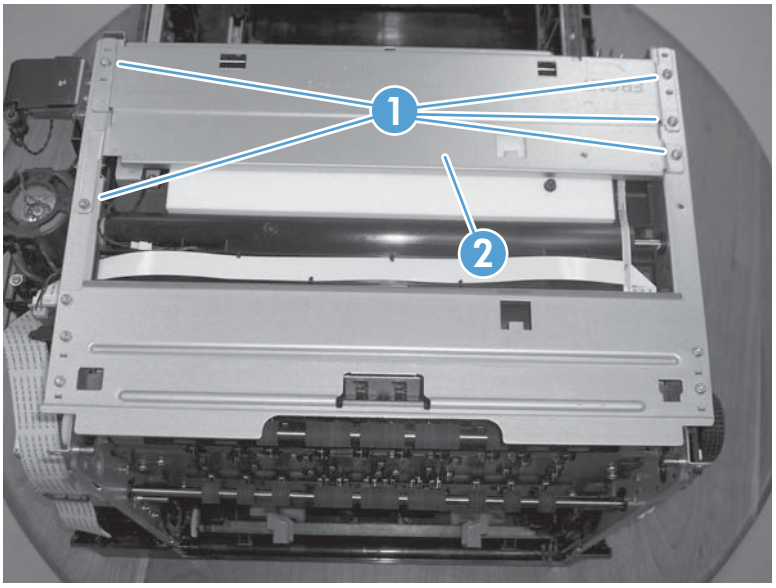
1. Remove the following components:
   - Rear cover. See Rear cover on page 23.
   - Left door. See Left door on page 24.
   - Left rear cover. See Left rear cover on page 27.
   - Left front cover. See Left front cover on page 28.
   - Top cover. See Top cover on page 29.
   - Right cover. See Right cover on page 35.
2. Disconnect the eject flap opto PCA flex cable connection (callout 1), and then unthread the cable (callout 2) from the product frame.

Figure 1-95 Remove the plate console right (1 of 2)



3. Remove five screws (callout 1), and then remove the brace (callout 2).

Figure 1-96 Remove the plate console right (2 of 2)



Printbar

IMPORTANT: Ensure the product firmware is upgraded to at least version 1336MR before performing this repair procedure. If the firmware upgrade cannot be completed, contact HP support.

NOTE: If the product has printed more than 30,000 pages, replacement of the service sled assembly is recommended. This only applies if the printbar is being replaced.

WARNING! The printbar testing and calibration instructions must be followed exactly. Failure to follow these instructions exactly may result in a printer problem that is not recoverable in the field.

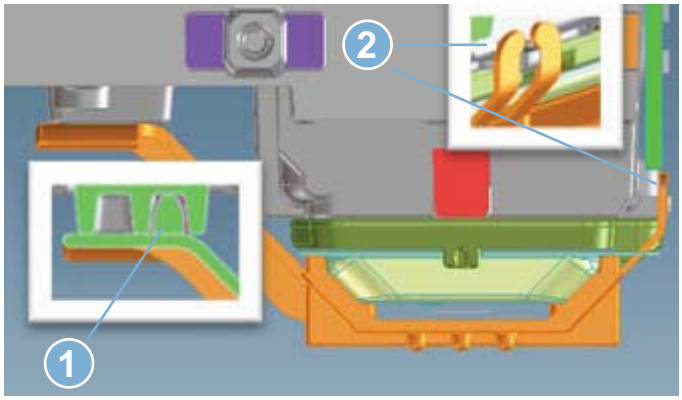
1. Before replacing the printbar:
   - Replace the duplex module. The duplex module must be replaced any time the printbar is replaced.
   - A set of trade supplies will be required to test that the printbar has been installed correctly. The existing customer supplies will be sufficient as long as they have ink left.
2. Remove the following components:
   - Service sled cartridge. See Service sled assembly on page 57.
   - Aerosol duct, remove for easier access (optional).
   - Right cross brace. See Right cross brace on page 62.
   - Web advance rack assembly. See Web advance rack assembly on page 61.
   - Plate console, left. See Plate console left on page 65.
   - Plate console, right. See Plate console right on page 66.

IMPORTANT: The OfficeJet Pro X special tools kit (part CN598-67056) is required when replacing a printbar. If you are working on the product at a repair center, use the special alignment tool (PN T-285463) to make sure the sled is aligned correctly. In the field, you will have to align it by sight. See Service sled transmission on page 109.

CAUTION: The printbar lift lock tool must remain in place until the printbar is lowered onto the dolly. If the printbar drops to the bottom of the product, the printbar might be damaged.

3. Install the nozzle "helmet" on the printbar to protect the ink nozzles. Install the two front rubber bumpers (callout 1) into the matching notches in the printbar, then rotate the printbar safety cap back and up to engage the catches on the back of the printbar (callout 2).

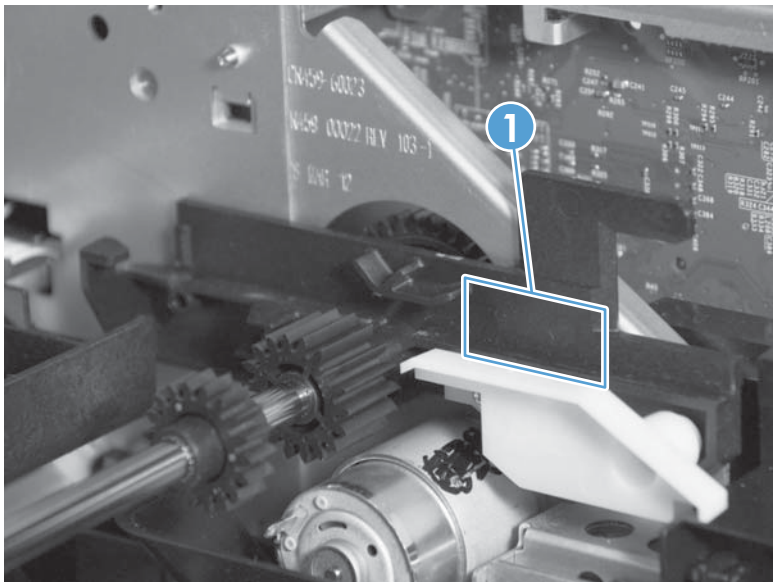
Figure 1-97 Remove the printbar (1 of 12)



4. Install the printbar dolly.

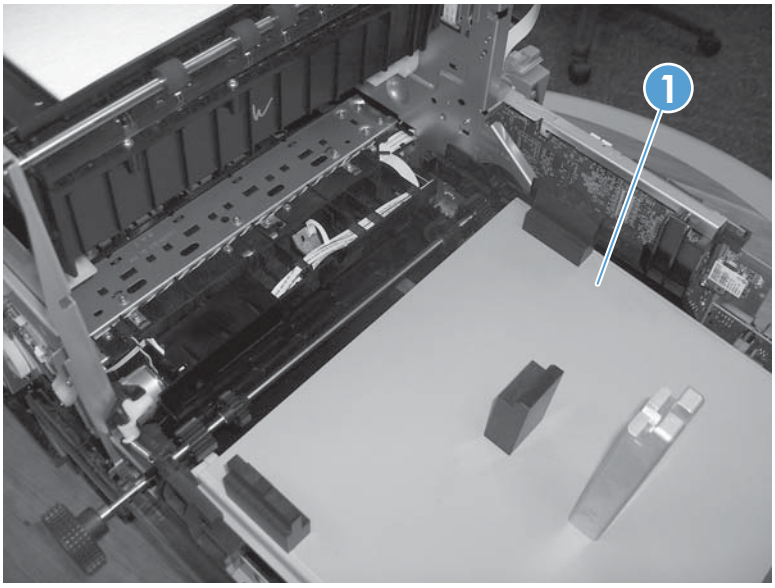
   a. Locate the service sled guides (callout 1).

Figure 1-98 Remove the printbar (2 of 12)



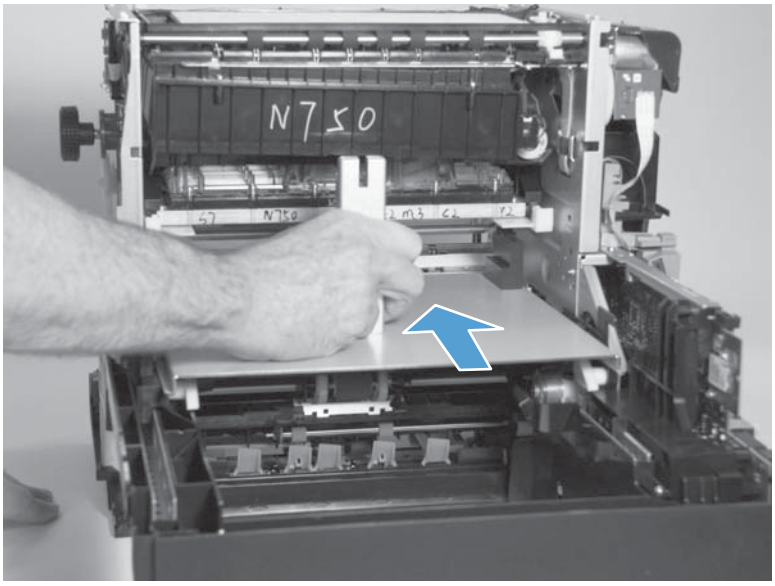
b. Place the dolly (callout 1) on the guides.

Figure 1-99 Remove the printbar (3 of 12)



c. Push the dolly into the product until it reaches the left side, and then lower the printbar by hand onto to the seated dolly. This will prevent the printbar from inadvertently dropping onto the dolly.

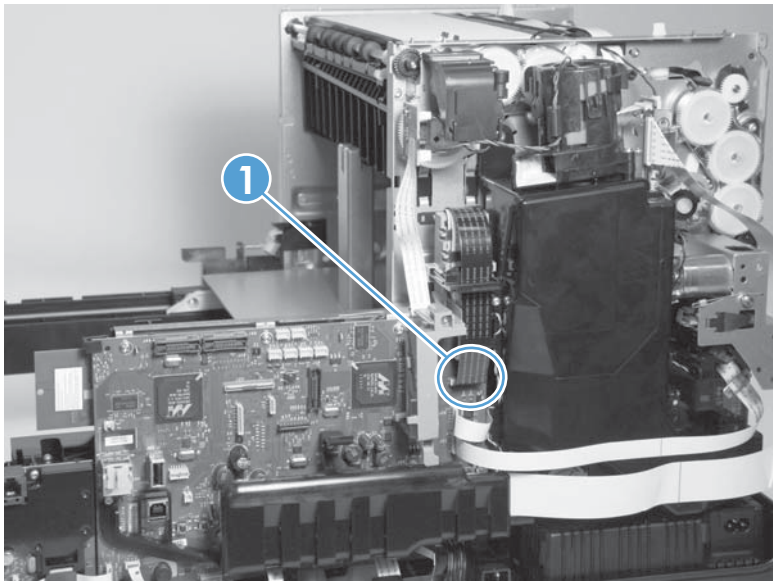
Figure 1-100 Remove the printbar (4 of 12)



5. Disconnect three printbar flex cables (callout 1).

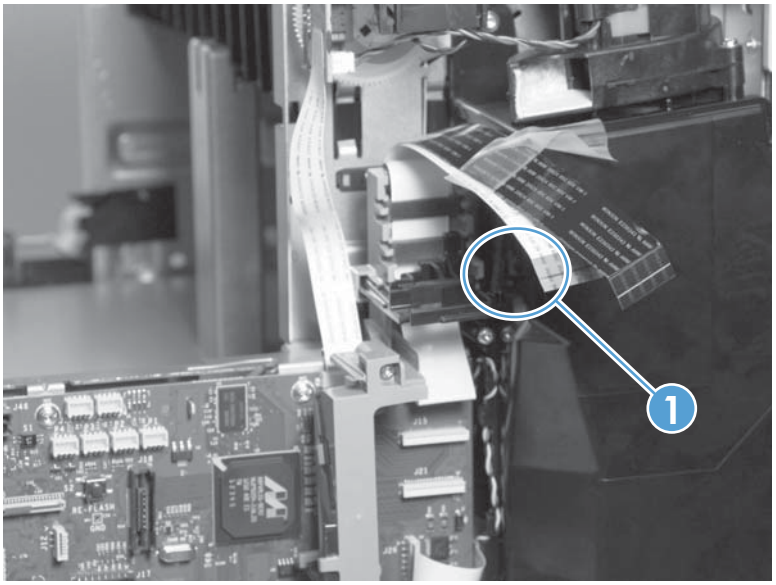
CAUTION: Two of these cables are installed in zero insertion force (ZIF) sockets that have a black holder on top. The black holder must be pulled up *carefully* to release the cables. It is very easy to break these connectors.

Figure 1-101 Remove the printbar (5 of 12)



6. Unthread the three flex cables through the ferrite holder (callout 1).

Figure 1-102 Remove the printbar (6 of 12)



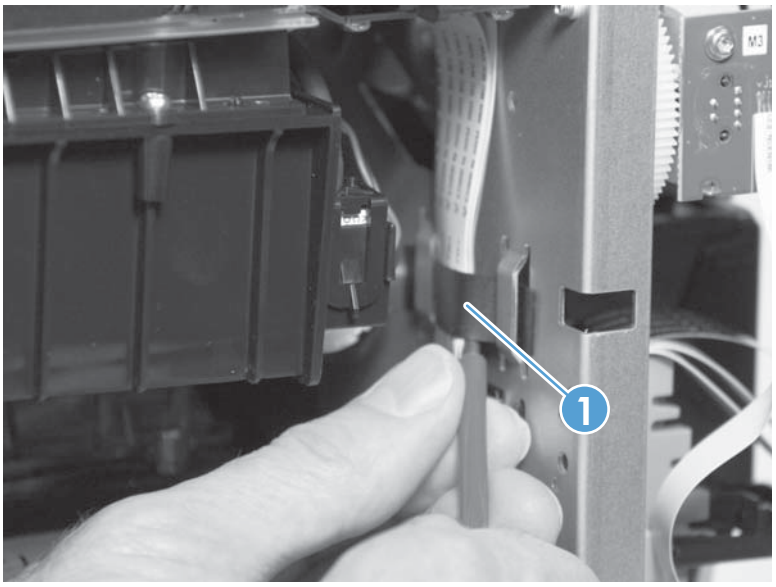
Reinstallation tip When reinstalling, remember to thread the two white flex cables through the ferrites correctly. (The black flex cable goes through a slot in the plastic holder.) Doing so ensures that the product meets regulatory standards.

Reinstallation tip When reinstalling, inspect the printbar flex cables for damage. If any damage exists, replace the damaged cable.

Reinstallation tip Manually clasp the cables to make sure that the ZIF sockets are closed on the cables correctly.

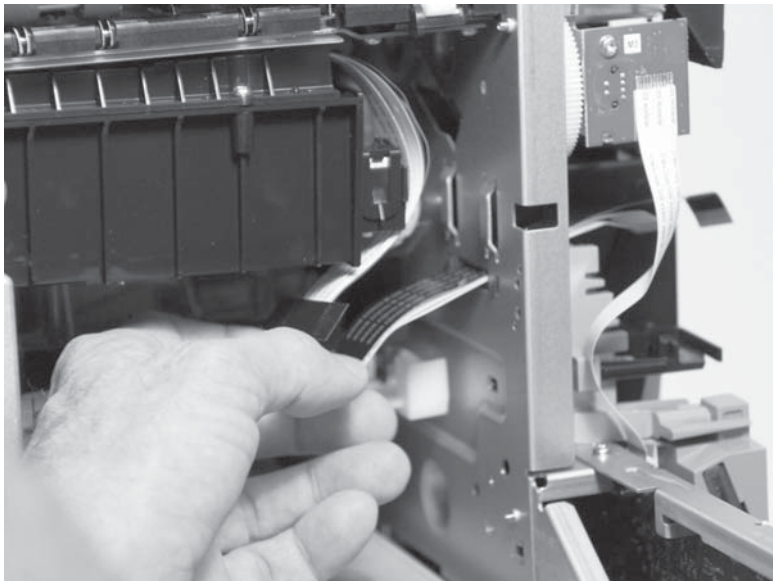
7. Carefully use a screwdriver to remove the flex cable retainer (callout 1) from the product. Take care to avoid damaging the cable.

Figure 1-103 Remove the printbar (7 of 12)



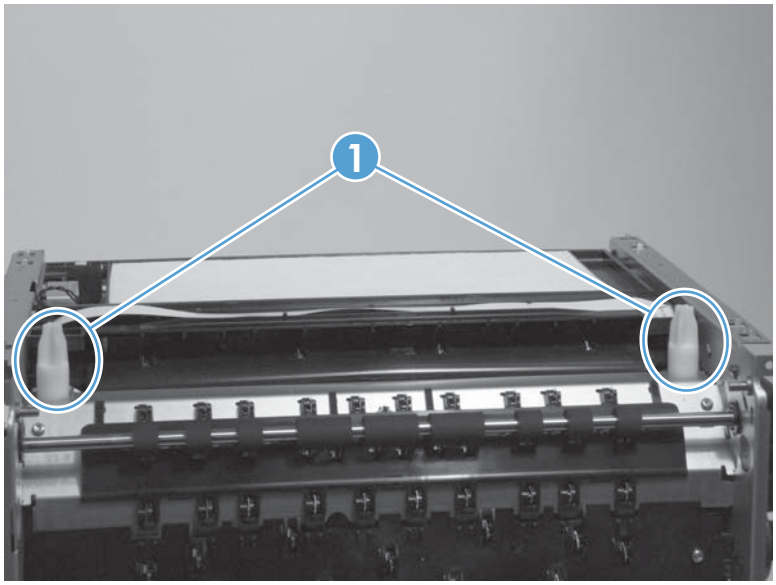
8. Unthread all three of the printbar cables through the front frame of the product.

Figure 1-104 Remove the printbar (8 of 12)



9. Gently remove the printbar lift lock tool to lower the printbar onto the dolly.
10. Locate both lift guides (callout 1) on the top left of the product.

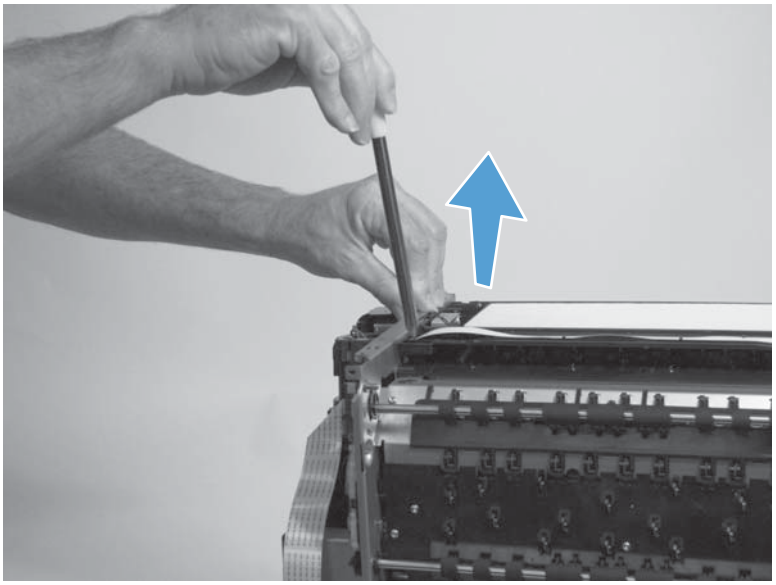
Figure 1-105 Remove the printbar (9 of 12)



11. Pull each lift guide up to remove.

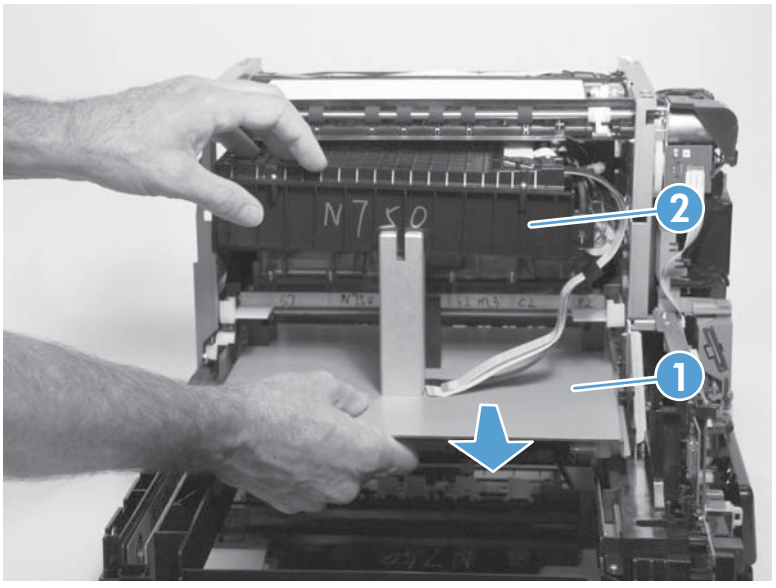
CAUTION: The lift guides are greasy.

Figure 1-106 Remove the printbar (10 of 12)



12. Slide the dolly (callout 1) forward, away from the product, to remove the printbar assembly (callout 2).

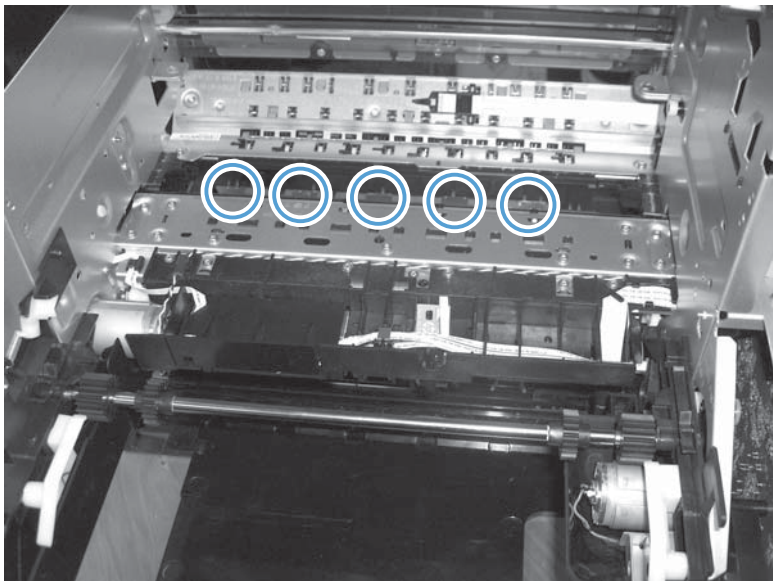
Figure 1-107 Remove the printbar (11 of 12)



CAUTION: Use extreme care when handling the printbar while it is out of the product. It can be easily damaged.

13. Before reinstalling the printbar, check the shims for a significant buildup of ink/duct. If there is a significant build up, the shims can be cleaned very carefully with a **lint free** wipe.

Figure 1-108 Remove the printbar (12 of 12)



Reinstall the printbar

1. Slide the printbar dolly with new printbar gently into position and ensure it is fully seated. Insert the front and rear lift guide rods and ensure they are fully seated in their pockets.

Reinstallation tip Ensure that the lift guide pockets have adequate grease in them during reinstallation. Failure to apply enough lubricant to the lift pocket guides can cause a noticeable increase in product operation noise.

Reinstallation tip Lift guide rods must be replaced in the same position. For example, front guide back into the front of the product.

If the printbar lift rod Z stop is broken, it must be replaced (part CN598-67048). If you are installing an new Z-stop, the top of the lift guide rods will stand proud of the top of the case. Installing the plate console left will cause the Z stop to crush down to the correct height.

2. Reinstall the plate console left.
3. Reinstall the printbar lock. Turn the lock to lift the printbar to it's top-most position. There should not be more than a 1.5 mm gap between where the printbar guide meets the lift rod Z stop on the front and rear guide rods. If a larger gap is evident, the printbar guide may be misaligned by a tooth. Lower the printbar back onto the dolly and see step 10 of Remove the printbar to remove and reinstall the lift guide rods.
4. Remove the printbar dolly and verify that the service sled drive is *not* easy to turn. If the service sled is not easy to turn, this indicates that the service sled transmission is in the correct position. See Service sled transmission on page 109 for details.

Reinstallation tip Remove the printbar safety cap before reinstalling the service sled.

Printbar calibration procedure

Test the printbar installation

Test the printbar installation after installing a printbar.

1. Temporarily connect the front panel into the main PCA. Temporarily install the right case part.
2. Place the printer into MFG (on) mode. See Place the product into MFG (manufacturing) mode on page 15 for information on putting the product into MFG mode.

WARNING! Follow the instructions for placing the product into MFG (manufacturing) mode **exactly** as listed in Place the product into MFG (manufacturing) mode on page 15. Failure to follow these instructions while placing the product into MFG (manufacturing) mode can render the product inoperable.

   - Temporarily install a set of trade supplies or use the existing customer supplies. Host supplies will be rejected in MFG (on) mode.

3. Verify that the new printbar is functional:
   a. Temporarily install the left door.
   b. Cover the IDS door sensor with a magnet.
   c. Print a Printer Status Report page.
   d. Ensure that the service sled is aligned with the arrows. Perform a 21 tap test. Observe that the service sled moves smoothly, and that once it caps the printbar, that the cap is level and aligned correctly.
   e. Turn the product off using the power button, and then unplug the product.
4. Reinstall the product covers.

Calibrate the printbar

IMPORTANT: All the product covers must installed before calibrating the printbar.

A new duplex module must be installed before calibration/initialization.

1. Place the product into MFG (off) mode, and then place the product into MFG (on) mode. See Place the product into MFG (manufacturing) mode on page 15 for information on placing the product into these MFG modes.

NOTE: Use trade ink supplies while in MFG (on) mode. Host supplies will be rejected in MFG (on) mode.

2. Open the Engineering menu. See Access the Engineering menu on page 14 for information accessing the Engineering menu.

WARNING! Follow the instructions for accessing the Engineering menu **exactly** as listed in Access the Engineering menu on page 14. Failure to follow these instructions when accessing the Engineering menu can render the product inoperable.

3. Select the Service Menu, scroll to System Configuration, select Service ink container Or Duplex module, select Replace Duplex Module, and then touch the OK button.

WARNING! Replacement of the duplex module is critical. Failure to replace the duplex module and to inform the firmware that the duplex module has been replaced will likely force the system into an unrecoverable error.

4. From the Service Menu, scroll to System Configuration, select Replace Printbar and follow the onscreen prompts, and then touch the OK button.

5. After the product restarts, remove the trade supplies, and then install the HP Setup supplies that came with the printbar replacement kit.

NOTE: An initialization screen will be displayed on the product control panel while the printbar purges the shipping fluid.

NOTE: After the printbar purges the shipping fluid, the product begins calibrating. The calibrations will take approximately 20 to 25 minutes and a total of nine pages will print. When the calibrations are complete, the control panel will return to the Home screen.

6. Turn off the product, and then turn the product on. The product will boot in user (standard) mode.

NOTE: Use the power button to turn the product off and on. If the power button does not work, see the Troubleshooting guide.

7. Print a Print Quality Report. If there are problems, then follow the Print Quality Checklist in the Troubleshooting Guide.

8. Open the Engineering menu. See Access the Engineering menu on page 14 for information accessing the Engineering menu.

9. Run the following tap tests:

   - 10 tap
   - 12 tap
   - 61 tap
   - 909 tap

   For more information on running and verifying tap test results, see Perform tap tests and interpret results on page 17.

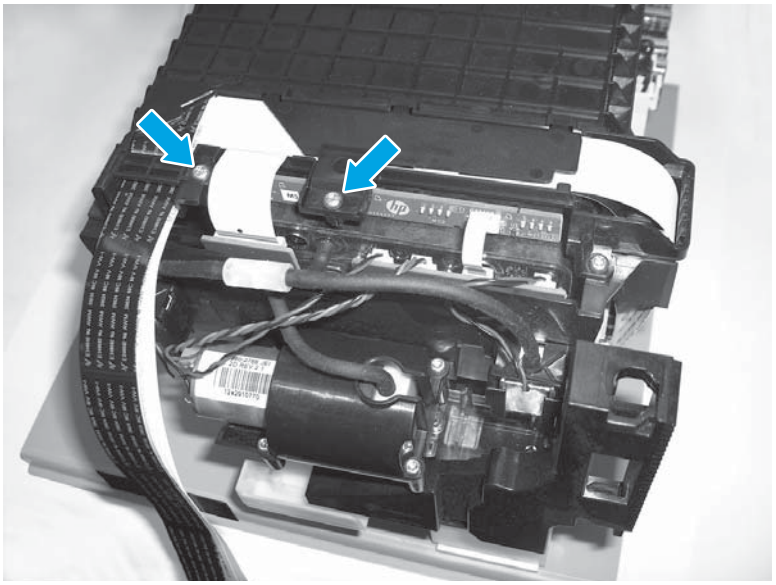
10. Return to the Ready screen, and then complete the customer configurations, including network settings, preferred paper size and trays, and so forth.

Printbar FFC replacement

IMPORTANT: The printbar safety cap must remain securely fastened to the printbar during this procedure. If the printbar safety cap is unfastened, then the printbar might be damaged and require replacement.

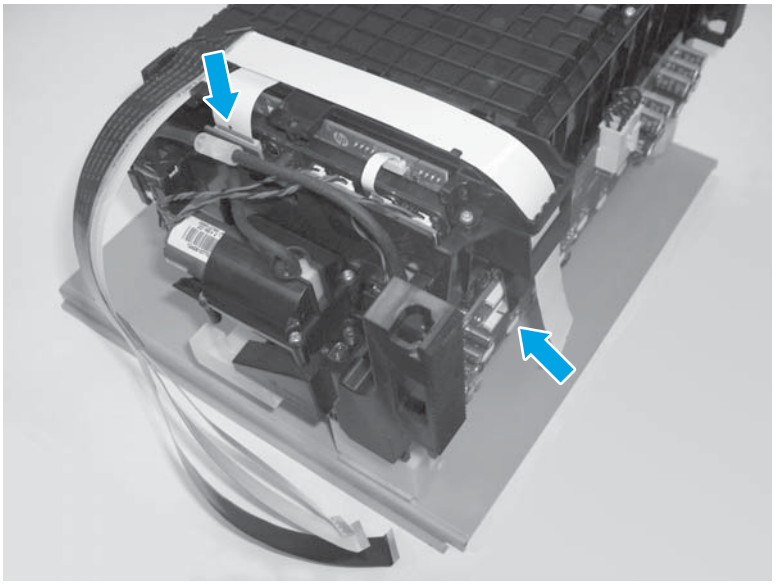
1. Remove the printbar. See Printbar on page 67
2. Remove two screws, and then remove the two FFC retainers.

Figure 1-109 Replace the printbar control FFCs (1 of 2)



3. Remove two printbar FFCs installed in ZIF sockets, and then remove the prime pump FFC.

Figure 1-110 Replace the printbar control FFCs (2 of 2)



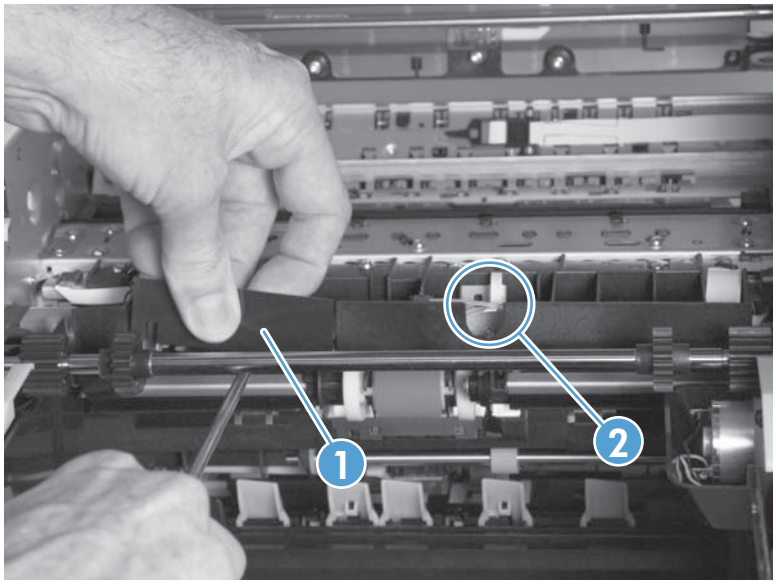
4. Install the new FFCs.

Platen

NOTE: Ensure the product firmware is upgraded to at least version 1336MR before performing this repair procedure. If the firmware upgrade cannot be completed, contact HP support.

1. Remove the following components:
   - Aerosol fan assembly. See Aerosol fan assembly on page 36.
   - Right cross brace. See Right cross brace on page 62.
   - Service sled assembly. See Service sled assembly on page 57.
2. Remove the printzone distribution PCA cover (callout 1).

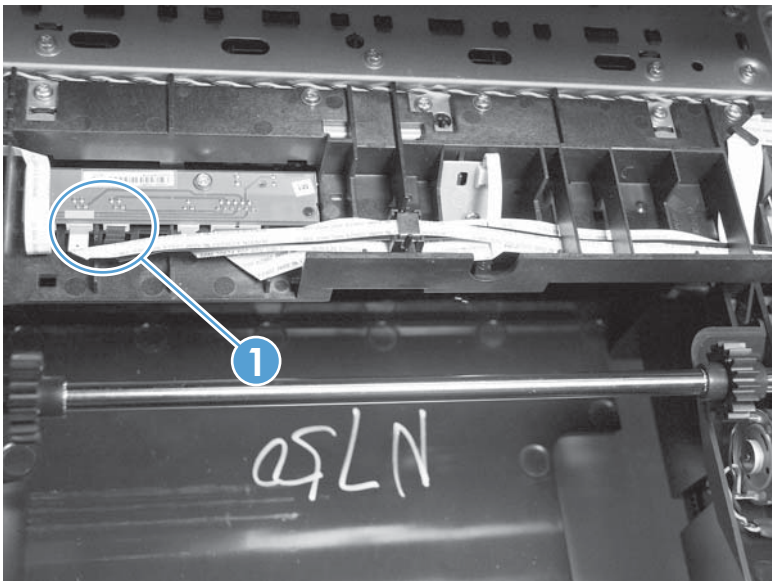
Figure 1-111 Remove the platen (1 of 7)



NOTE: The printzone distribution PCA is indicated by callout 2.

3. Disconnect two flat flexible cables (callout 1). Note that the white cable is on the left and the black cable is on the right, and then unthread the cables through the chassis wall.

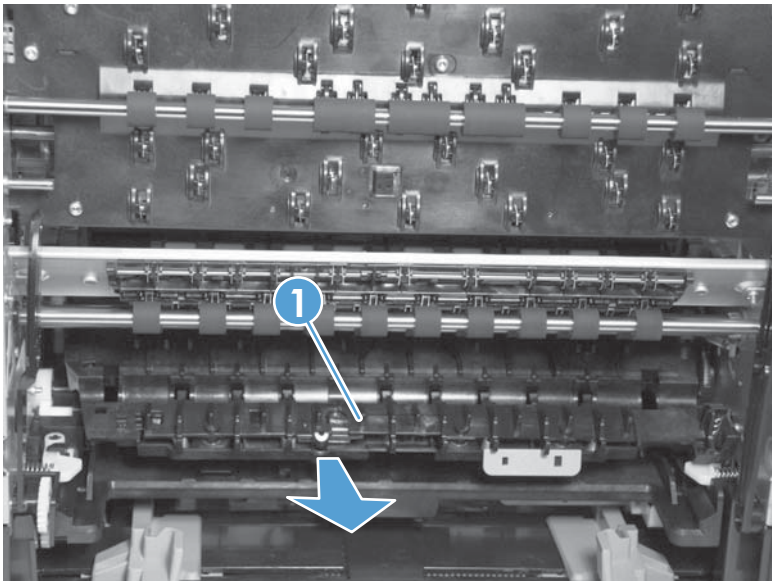
Figure 1-112 Remove the platen (2 of 7)



Reinstallation tip Remember the cable orientation and order. Take care to avoid crimping the flex cables when removing or reinstalling them.

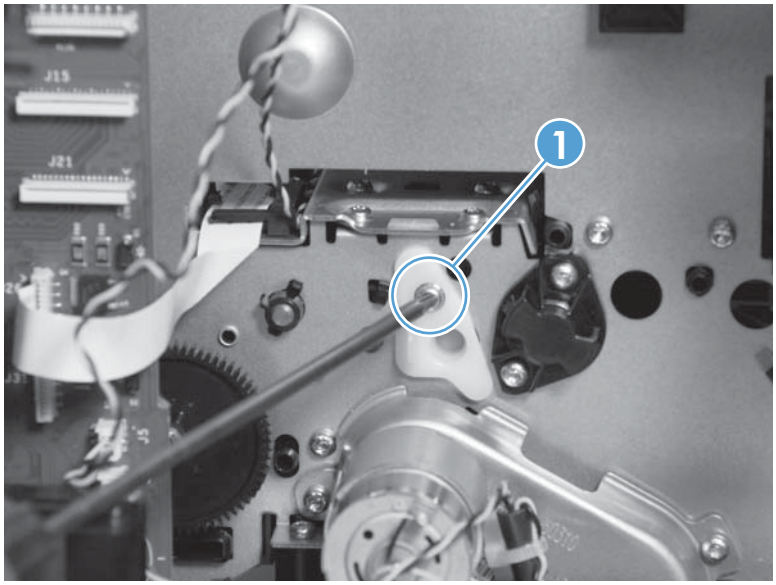
4. Lower the platen (callout 1).

Figure 1-113 Remove the platen (3 of 7)



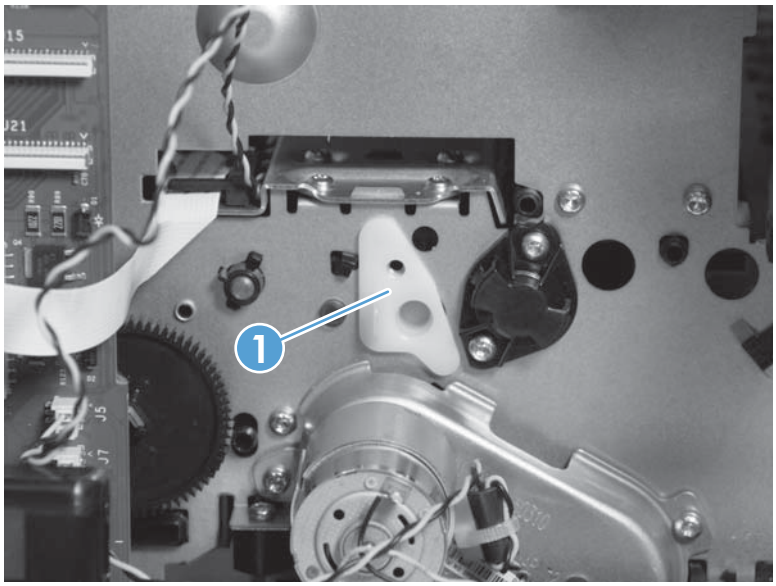
5. Remove one screw (callout 1) from the rear wall.

Figure 1-114 Remove the platen (4 of 7)



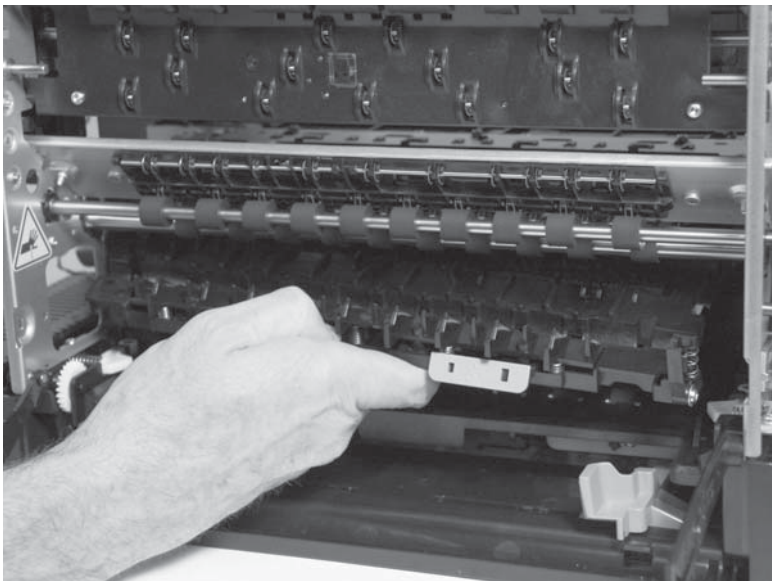
6. Remove the bracket (callout 1).

Figure 1-115 Remove the platen (5 of 7)



7. Push the platen towards the rear of the product to clear the retention spring on the front pivot, and then remove the platen.

Figure 1-116 Remove the platen (6 of 7)



TIP: Temporarily tape the two REDI FFCs together to make them easier to thread through the wall. Remove the tape after the FFCs are threaded through the wall.

8. New REDI sensors were installed with the new platen and require calibration. Use the following steps to calibrate the REDI sensors.

Calibrate the REDI sensors

a. Open the Engineering menu.

b. From the Engineering Menu, select the Service Menu, and then select System Configuration.

c. Select Paper Sensor Calibration.

NOTE: The paper sensor calibrations require one sheet of blank HP Colorlok paper. HP Colorlok paper **must** be used for the Paper Sensor Calibration. The same sheet of paper can be reused if it is undamaged.

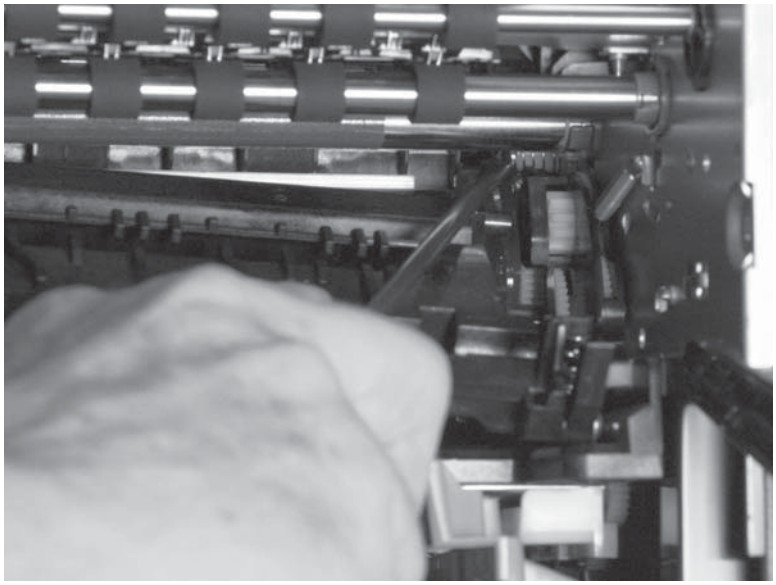
d. Select Calibrate Main tray. The tray will eject one blank page.

e. Select Calibrate MP tray. The product will eject one blank page into the tray.

Reinstallation tip Place the black cable (callout 1) under the white cable and thread the cables through the hole in the product interior.

Reinstallation tip While reinstalling the right end of the platen, depress the spring in the front of the unit.

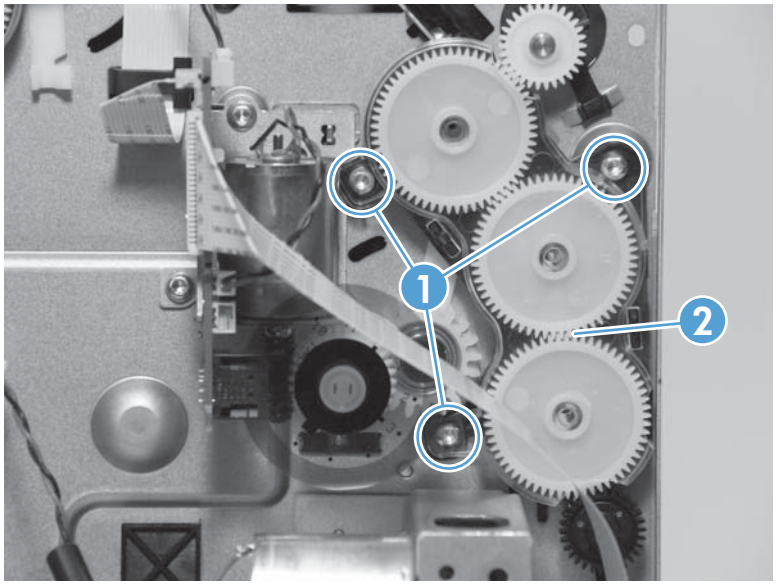
Figure 1-117 Remove the platen (7 of 7)



Drying path gear assembly

1. Remove the following components:
   - Rear cover. See Rear cover on page 23.
   - Left rear cover. See Left rear cover on page 27.
   - PCA safety shield. See PCA safety shield on page 110.
2. Remove three screws (callout 1), and then remove the assembly (callout 2).

Figure 1-118 Remove the drying path gear assembly



Printbar lift mechanism assembly

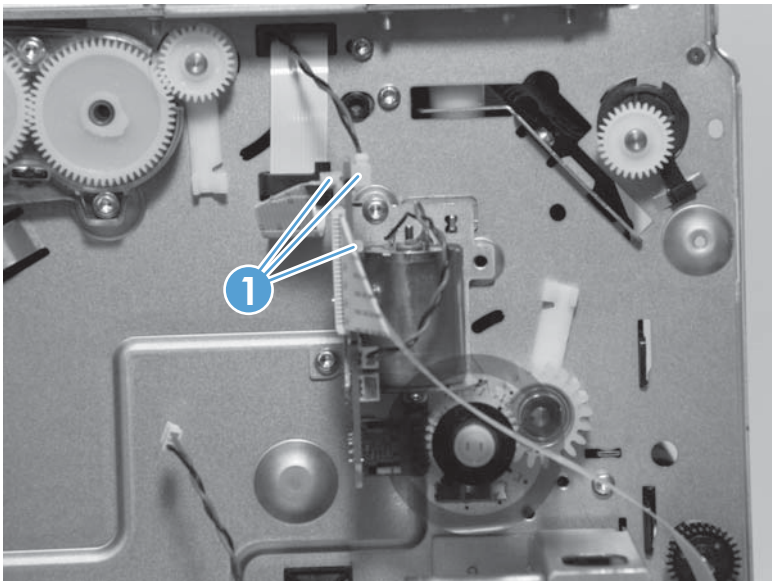
Remove the following components:

- Aerosol fan assembly. See Aerosol fan assembly on page 36.
- Drying path gear assembly. See Drying path gear assembly on page 82.

Printbar lift bracket worm drive

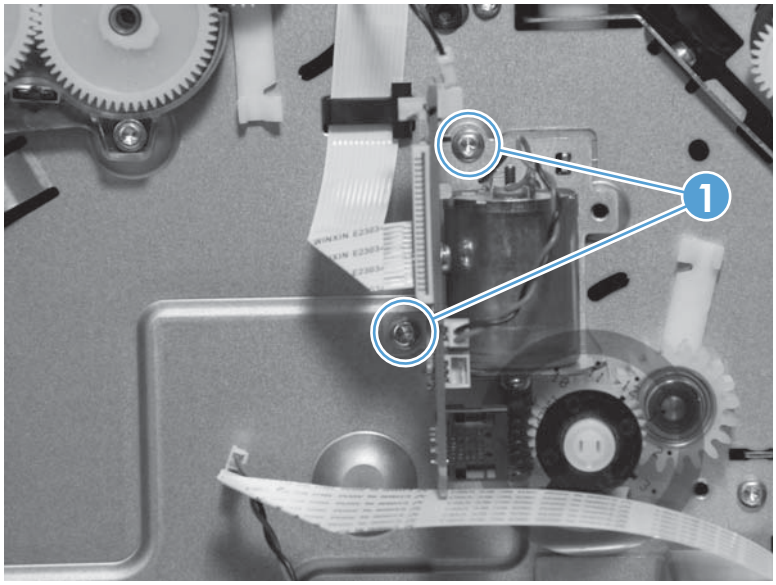
1. Disconnect three wire connectors (callout 1).

Figure 1-119 Remove the printbar lift motor (1 of 2)



2. Remove two screws (callout 1), and then remove the assembly.

Figure 1-120 Remove the printbar lift motor (2 of 2)



3. Remove the plastic clip from the printbar lift encoder shaft. Remove the lift encoder/gear assembly.

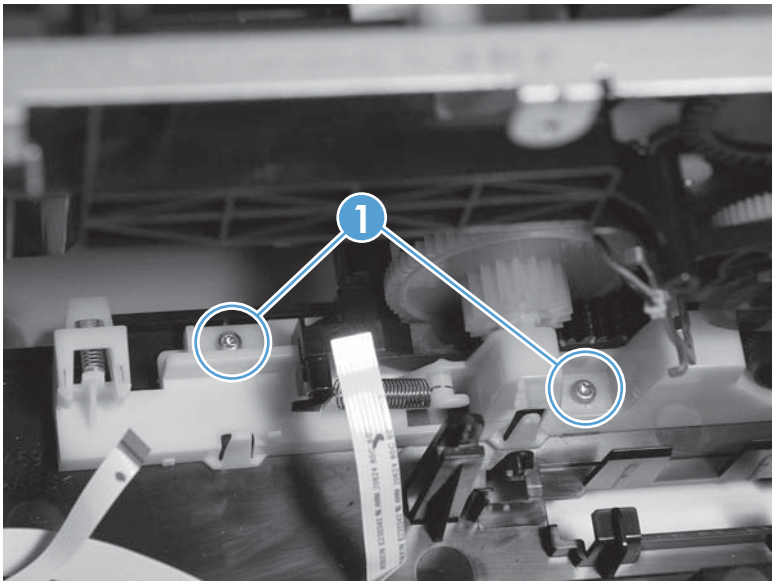
Reinstallation tip Fit the encoder wheel through the sensor on the back of the PCA assembly.

TIP: Use the clip supplied with the printbar lift mechanism kit. Do **not** reuse the existing clip.

Tray lift transmission assembly

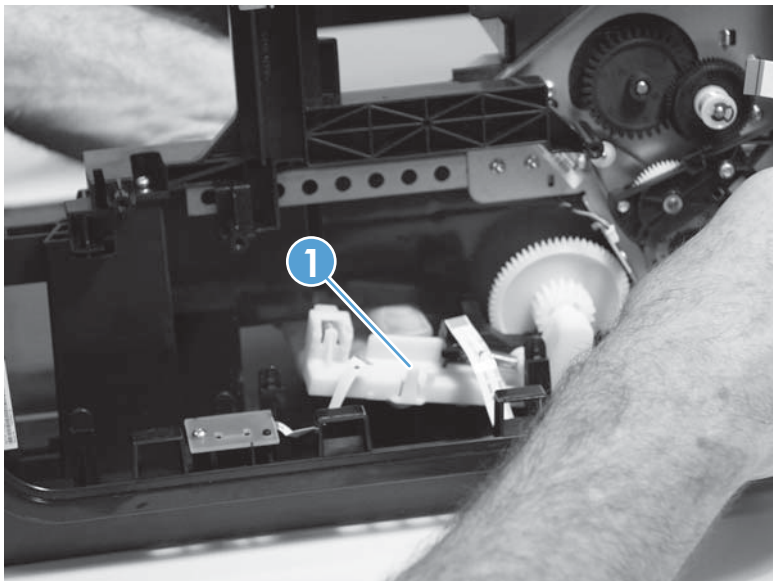
1. Remove the following components:
   - Main PCA. See Main PCA on page 126.
   - Pick encoder distribution PCA. See Pick encoder distribution PCA on page 135.
   - Tray 3 interconnect PCA. See Tray 3 interconnect PCA on page 134.
2. Remove two screws (callout 1).

Figure 1-121 Remove the tray lift transmission assembly (1 of 2)



3. Carefully remove the assembly (callout 1). The main gear drive axle must clear a post on the product chassis before the assembly can be removed.

Figure 1-122 Remove the tray lift transmission assembly (2 of 2)



Reinstallation tip When reinstalling the tray lift transmission assembly, ensure the service sled is installed correctly. See Service sled transmission on page 109.

Output drive kit

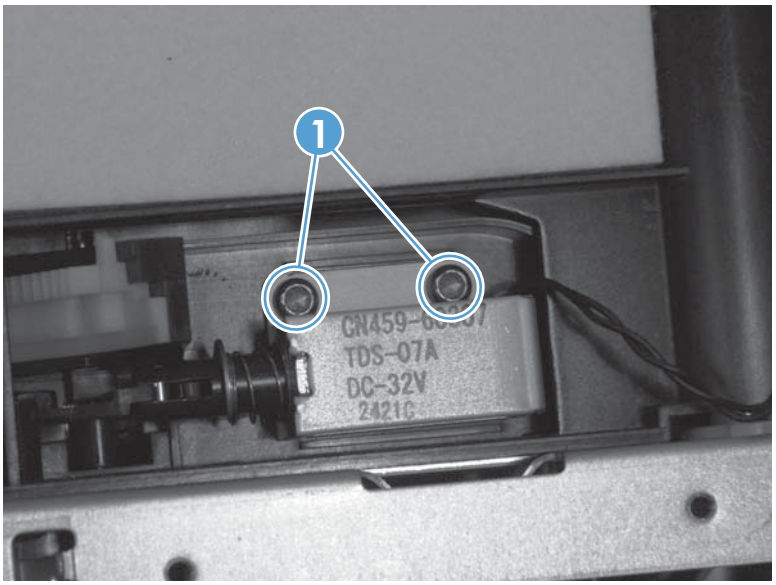
Remove the following components:

- Rear cover. See Rear cover on page 23.
- Left door. See Left door on page 24.
- Left rear cover. See Left rear cover on page 27.
- Left front cover. See Left front cover on page 28.
- Top cover. See Top cover on page 29.
- Plate console right. See Plate console right on page 66.

Flap actuator solenoid

1. Remove two screws (callout 1).

Figure 1-123 Remove the flap actuator solenoid

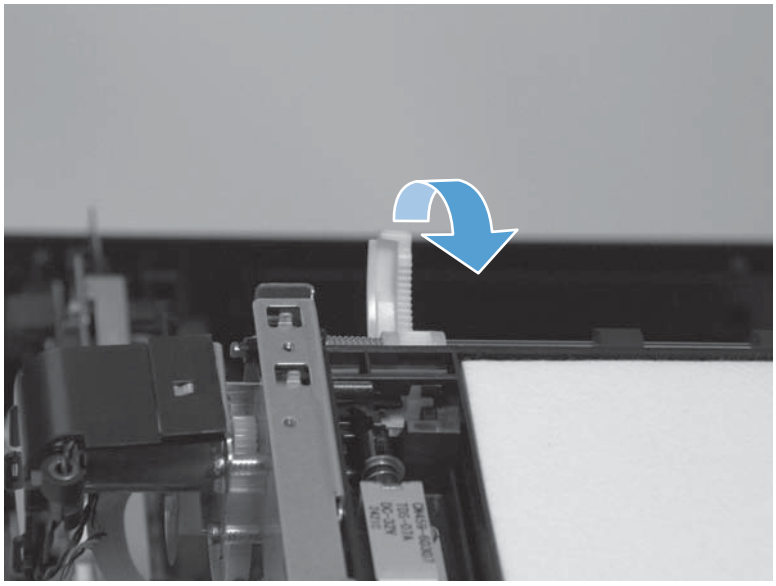


2. Remove the solenoid and disconnect the solenoid activation cable.

Rack-eject lifter flap

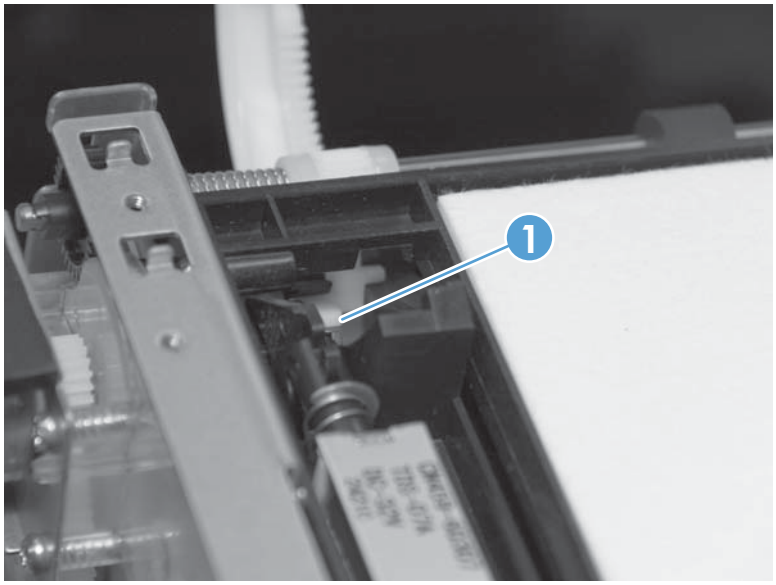
1. Pull the actuator forward.

Figure 1-124 Remove the rack-eject lifter flap (1 of 3)



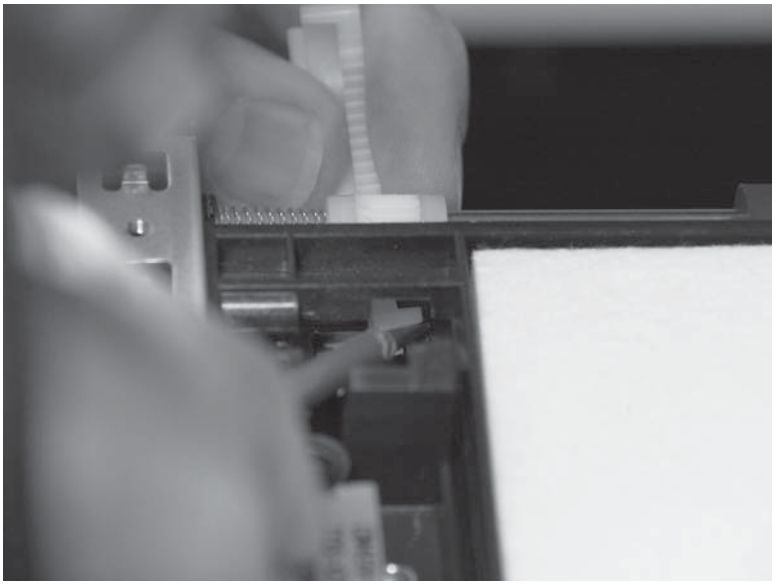
2. Locate the tab (callout 1) on the right of the actuator.

Figure 1-125 Remove the rack-eject lifter flap (2 of 3)



3. Use a screwdriver to lift the tab, and then rotate the actuator to remove it.

Figure 1-126 Remove the rack-eject lifter flap (3 of 3)

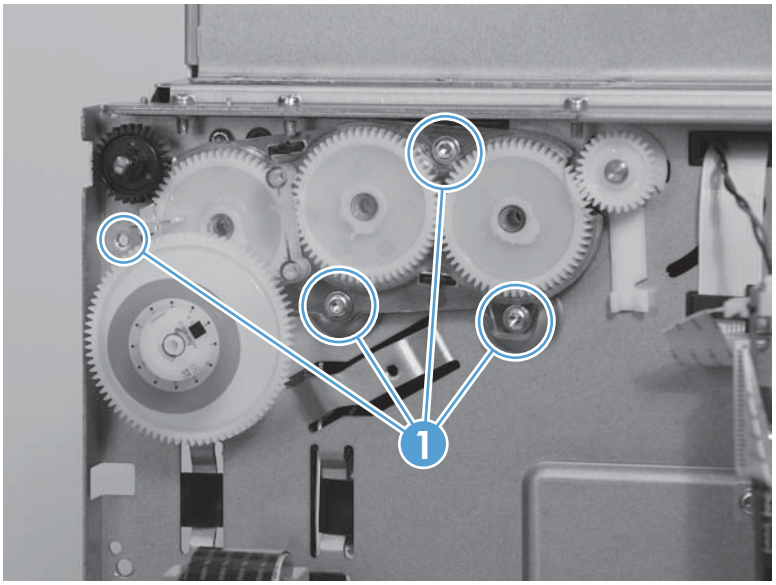


Reinstallation tip Ensure that the actuator is correctly aligned during reinstallation. If the actuator is aligned incorrectly, the actuator flap will not open. The actuator must pass through the guide anchored on both sides of the guide.

Eject drive gear module

▲ Remove four screws (callout 1), and then remove the assembly.

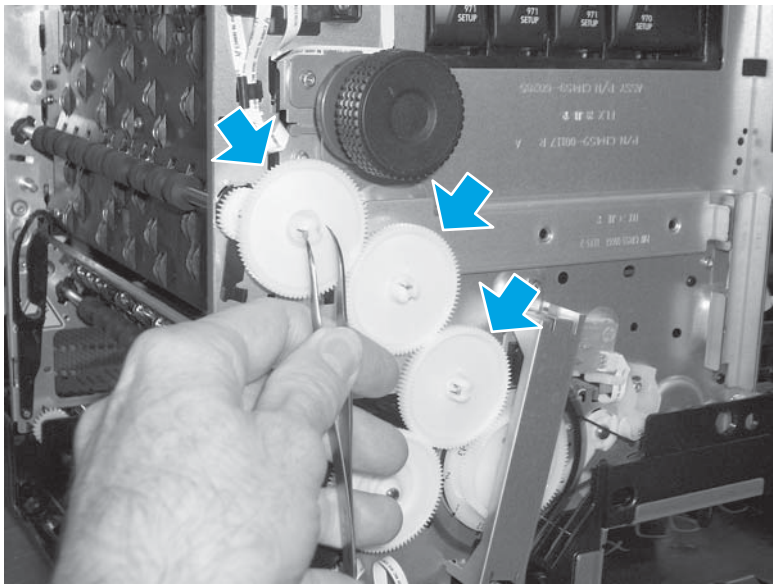
Figure 1-127 Remove the eject drive gear module



Output drive gears

1. Spread the retainers (using a pair of tweezers) holding the gear onto the shaft, and then slide the gear off the shaft. Repeat this step for each gear.

Figure 1-128 Remove the output drive gears



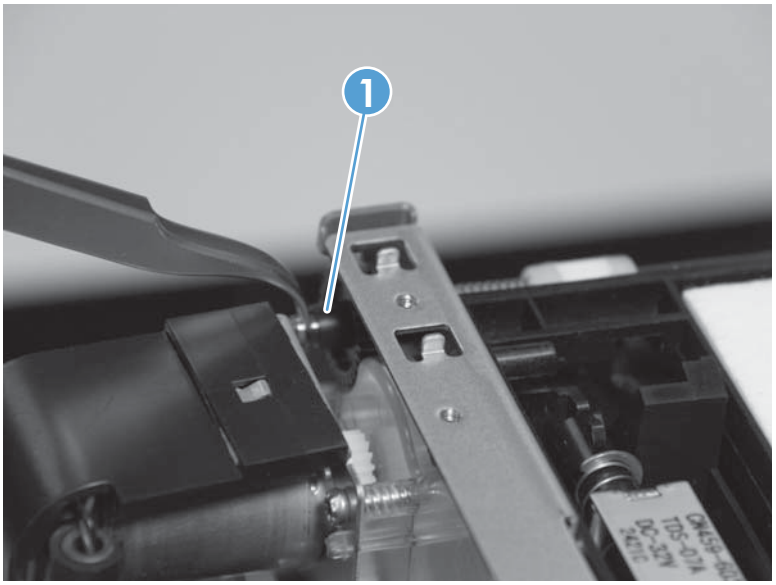
2. Snap the new output drive gears onto the shafts.

Output drive shaft 6

1. Remove the following components:
   - Rear cover. See Rear cover on page 23.
   - Left door. See Left door on page 24.
   - Left rear cover. See Left rear cover on page 27.
   - Left front cover. See Left front cover on page 28.
   - Top cover. See Top cover on page 29.
   - Front cover. See Front cover on page 34.
   - Right cover. See Right cover on page 35.
   - Plate console right. See Plate console right on page 66.
   - Output flap actuator. See Rack-eject lifter flap on page 88.

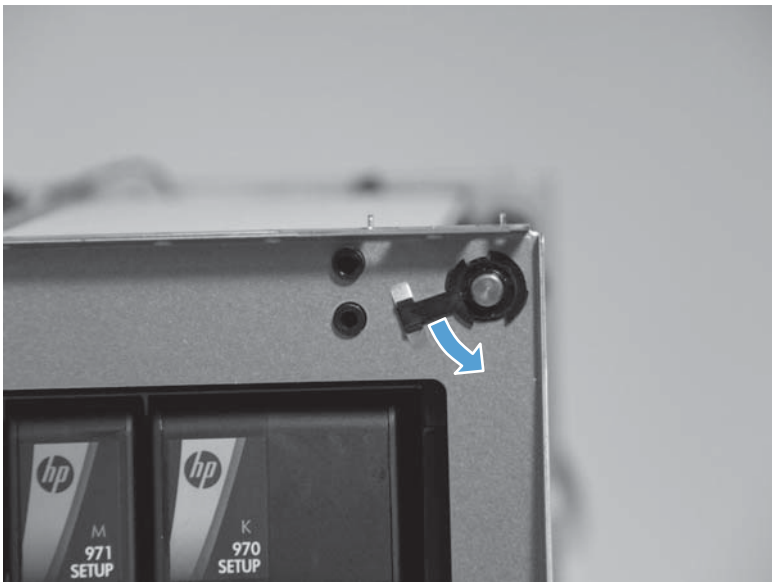
2. Pry apart the clip (callout 1) from the pulley on the rear of the shaft.

Figure 1-129 Remove the output drive shaft 6 (1 of 3)



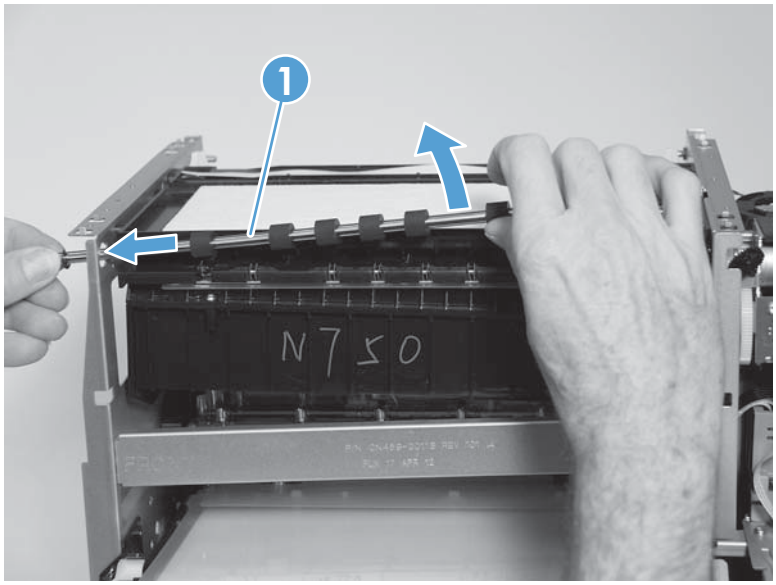
3. Rotate the front output drive shaft bearing counterclockwise.

Figure 1-130 Remove the output drive shaft 6 (2 of 3)



4. Grip the rear pulley, pull the shaft (callout 1) to the front of the product, and then remove the shaft.

Figure 1-131 Remove the output drive shaft 6 (3 of 3)

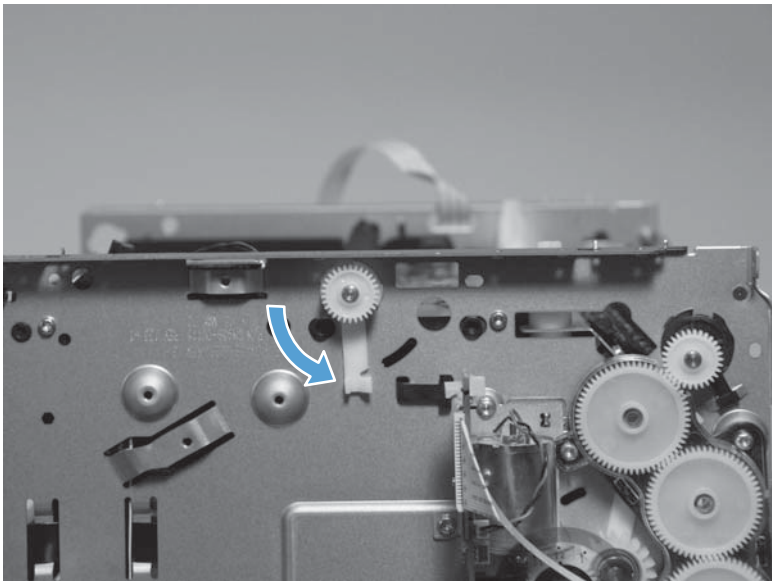


Output drive shaft 5

1. Remove the following components:
   - Rear cover. See Rear cover on page 23.
   - Left door. See Left door on page 24.
   - Left rear cover. See Left rear cover on page 27.
   - Left front cover. See Left front cover on page 28.
   - Top cover. See Top cover on page 29.
   - Front cover. See Front cover on page 34.
   - Right cover. See Right cover on page 35.
   - Inner top frame. See Inner top frame on page 98.
   - Plate console right. See Plate console right on page 66.
   - Plate console left. See Plate console left on page 65.

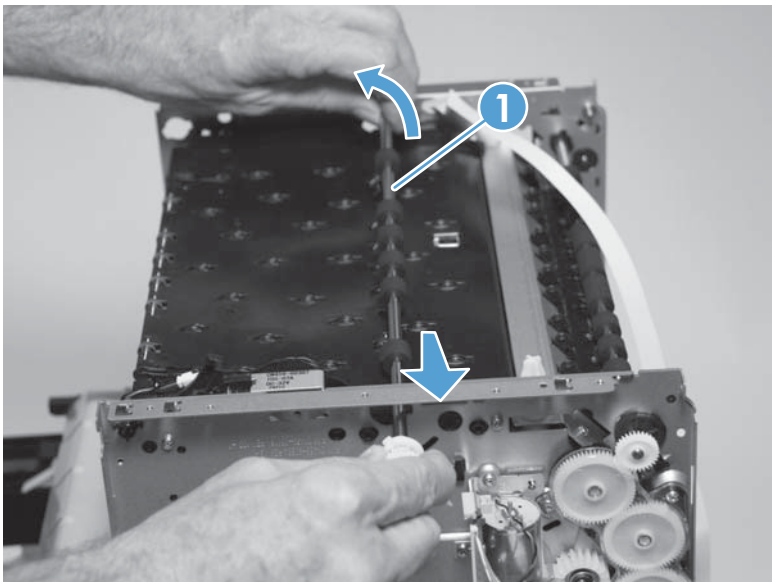
2. Rotate the rear output drive shaft bearing counterclockwise.

Figure 1-132 Remove the output drive shaft 5 (1 of 2)



3. Pull the shaft (callout 1) to the rear of the product, and then remove the shaft.

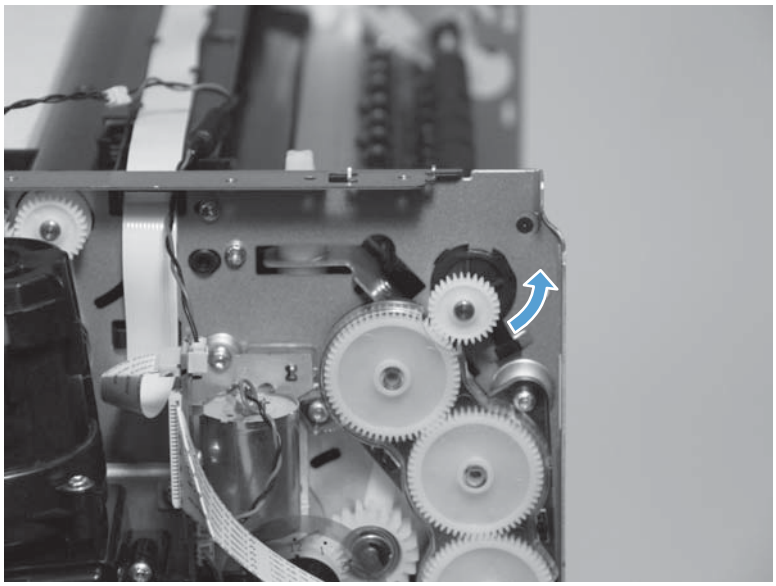
Figure 1-133 Remove the output drive shaft 5 (2 of 2)



Output drive shaft 4

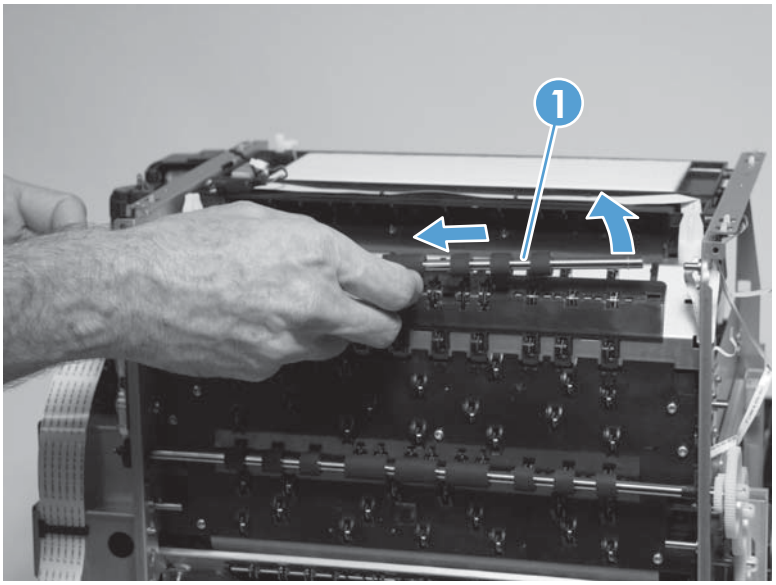
1. Remove the following components:
   - Rear cover. See Rear cover on page 23.
   - Left door. See Left door on page 24.
   - Left rear cover. See Left rear cover on page 27.
   - Left front cover. See Left front cover on page 28.
   - Drying path gear assembly. See Drying path gear assembly on page 82.
2. Rotate the rear output drive shaft bearing counterclockwise.

Figure 1-134 Remove the output drive shaft 4 (1 of 2)



3. Remove the shaft (callout 1).

Figure 1-135 Remove the output drive shaft 4 (2 of 2)

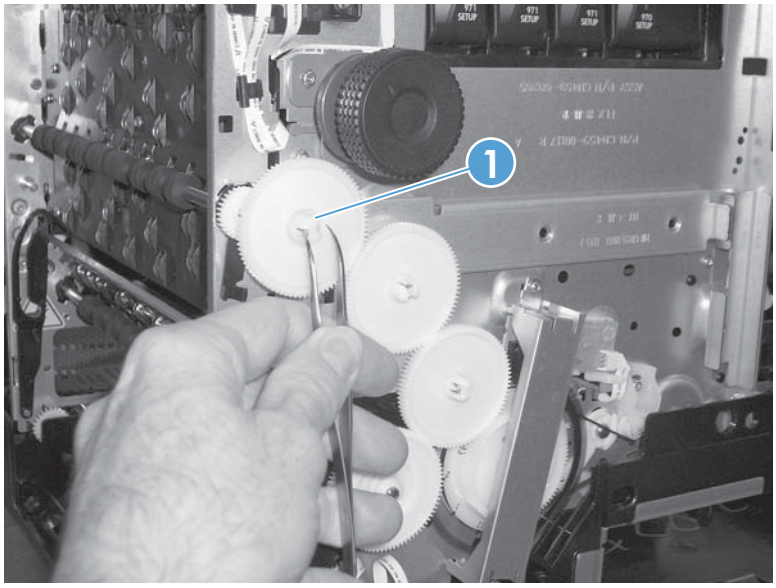


Drive shaft 3

1. Remove the following components:
   - Rear cover. See Rear cover on page 23.
   - Left door. See Left door on page 24.
   - Left rear cover. See Left rear cover on page 27.
   - Left front cover. See Left front cover on page 28.
   - Top cover. See Top cover on page 29.
   - Front cover. See Front cover on page 34.

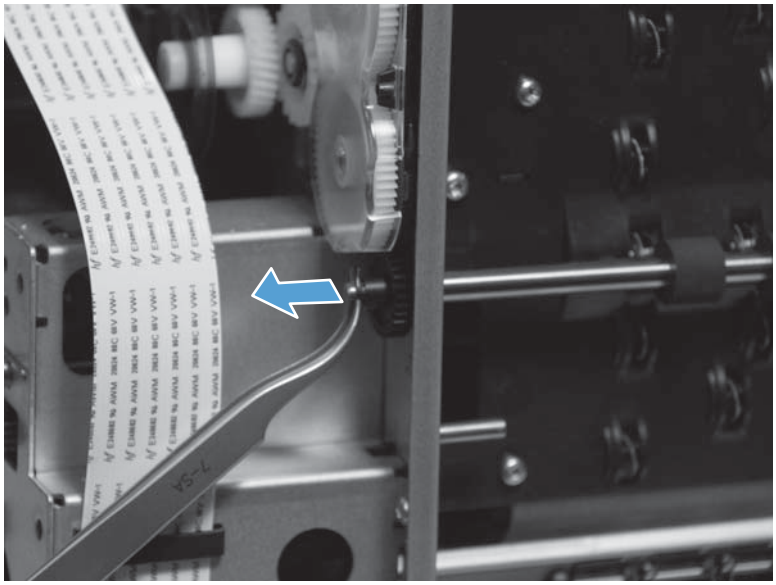
2. Remove one gear (callout 1).

Figure 1-136 Remove drive shaft 3 (1 of 4)



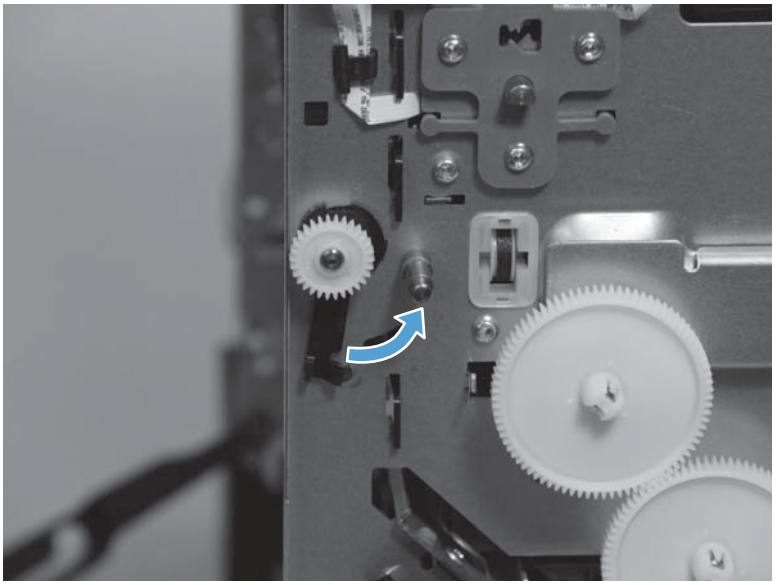
3. Use tweezers to release the hooks on the rear gear so it can slide off the shaft.

Figure 1-137 Remove drive shaft 3 (2 of 4)



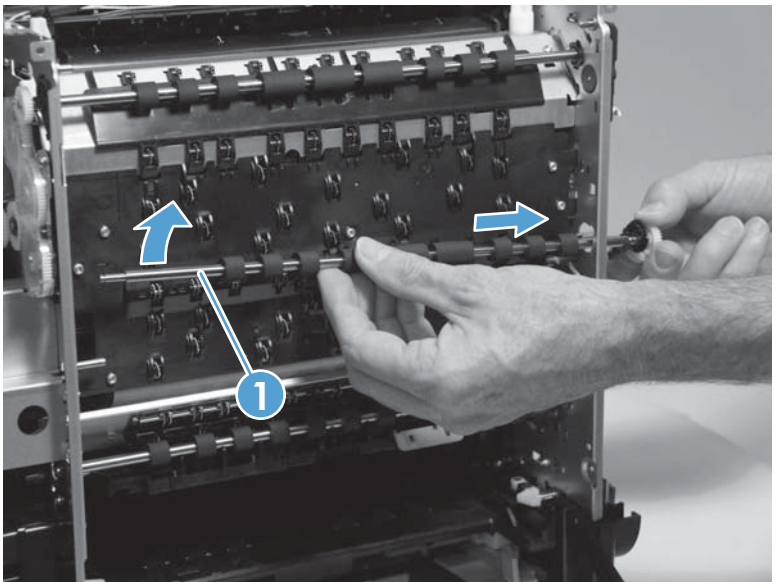
4. Rotate the front output drive shaft bearing counterclockwise.

Figure 1-138 Remove drive shaft 3 (3 of 4)



5. Remove the shaft (callout 1).

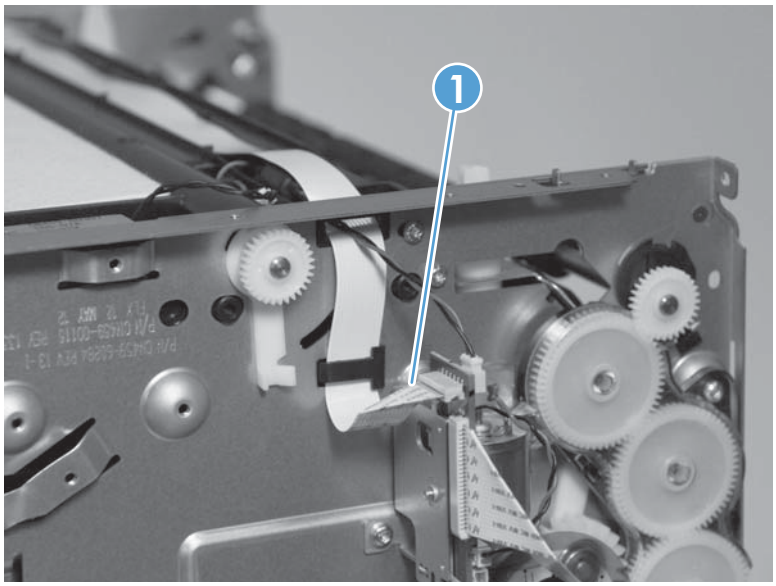
Figure 1-139 Remove drive shaft 3 (4 of 4)



Inner top frame

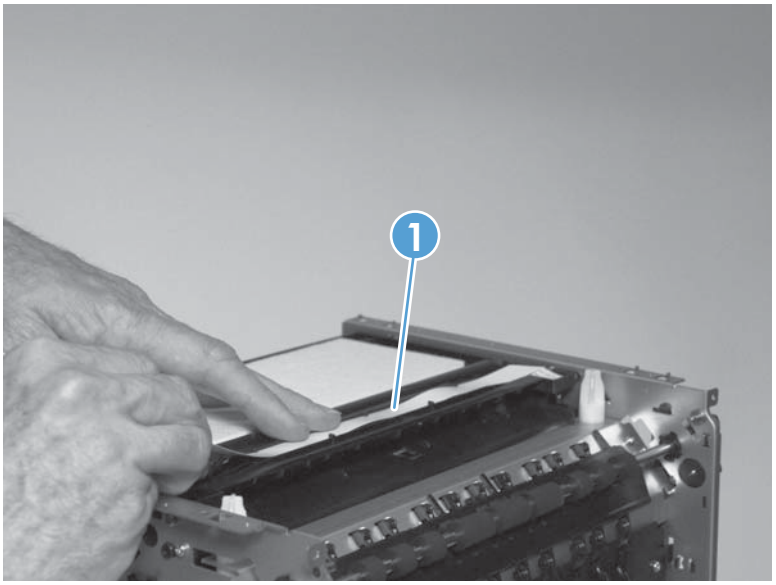
1. Remove the following components:
   - Top cover. See Top cover on page 29.
   - Aerosol fan assembly. See Aerosol fan assembly on page 36.
   - Eject drive gear module. See Eject drive gear module on page 89.
   - Plate console right. See Plate console right on page 66.
   - Plate console left. See Plate console left on page 65.
2. Disconnect the printzone distribution PCA flex cable (callout 1).

Figure 1-140 Remove the inner top frame (1 of 5)



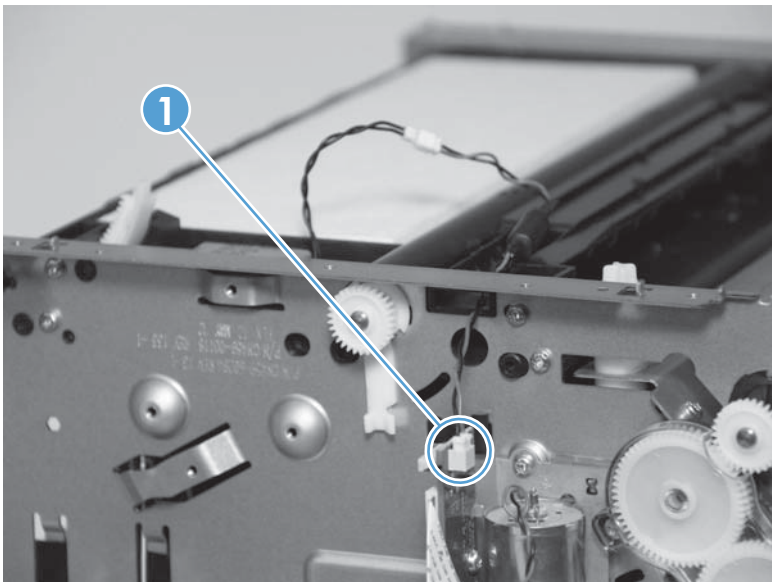
3. Unthread the flex cable (callout 1).

Figure 1-141 Remove the inner top frame (2 of 5)



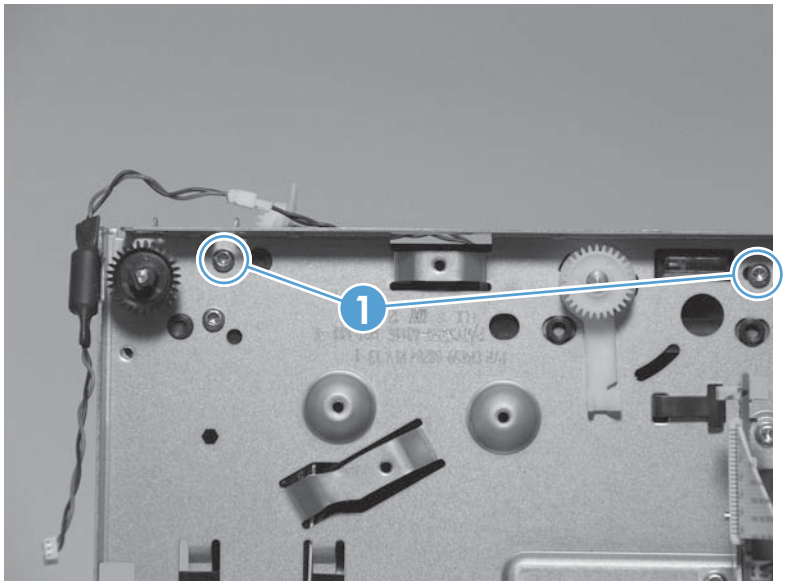
4. Disconnect the flap actuator solenoid cable (callout 1) from the printzone distribution PCA.

Figure 1-142 Remove the inner top frame (3 of 5)



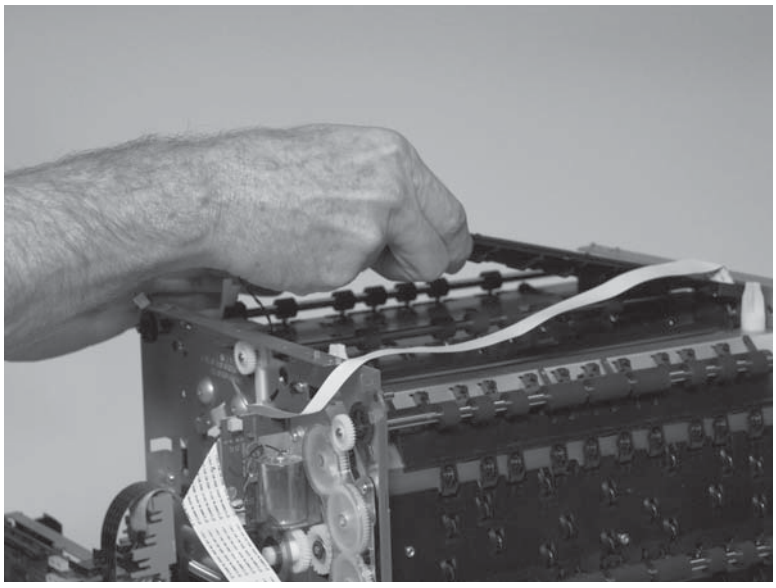
5. Remove two screws (callout 1) from the rear of the product.

Figure 1-143 Remove the inner top frame (4 of 5)



6. Remove the inner top frame.

Figure 1-144 Remove the inner top frame (5 of 5)

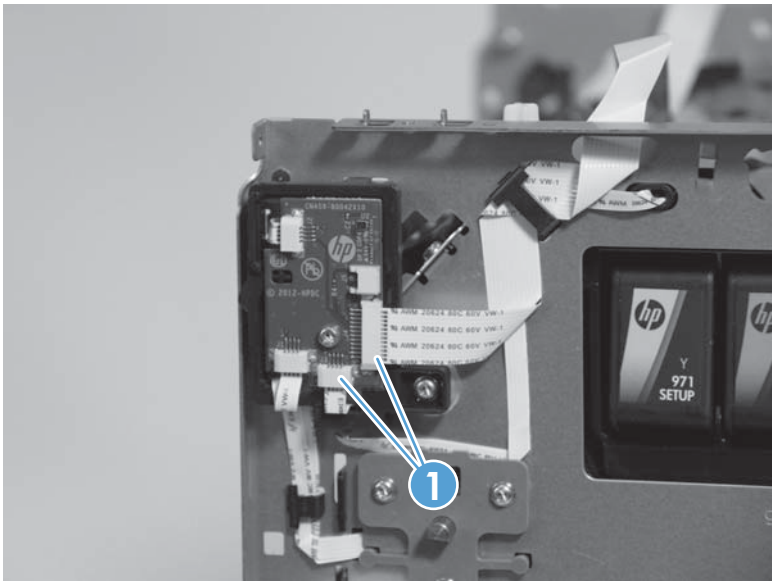


NOTE: It can be quite difficult getting the inner top frame out from the slots in the metal cube. Bias the assembly toward the front, and it should lift out from the rear.

Top paper guide

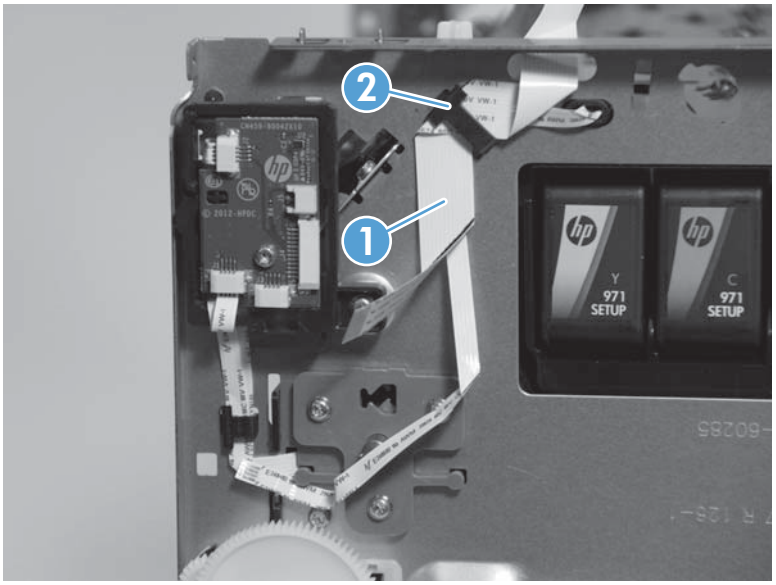
1. Remove the following components:
   - Printbar. See Printbar on page 67.
   - Output drive shaft 6. See Output drive shaft 6 on page 90.
   - Output drive shaft 5. See Output drive shaft 5 on page 92.
2. Disconnect two cables (callout 1) from the printzone distribution PCA.

Figure 1-145 Remove the top paper guide (1 of 6)



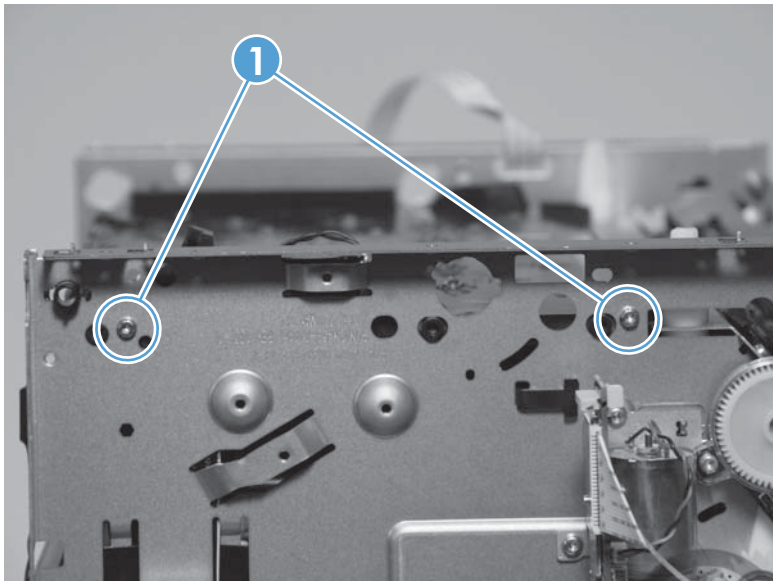
3. Remove the flex cable (callout 1) and the wire retainer (callout 2).

Figure 1-146 Remove the top paper guide (2 of 6)



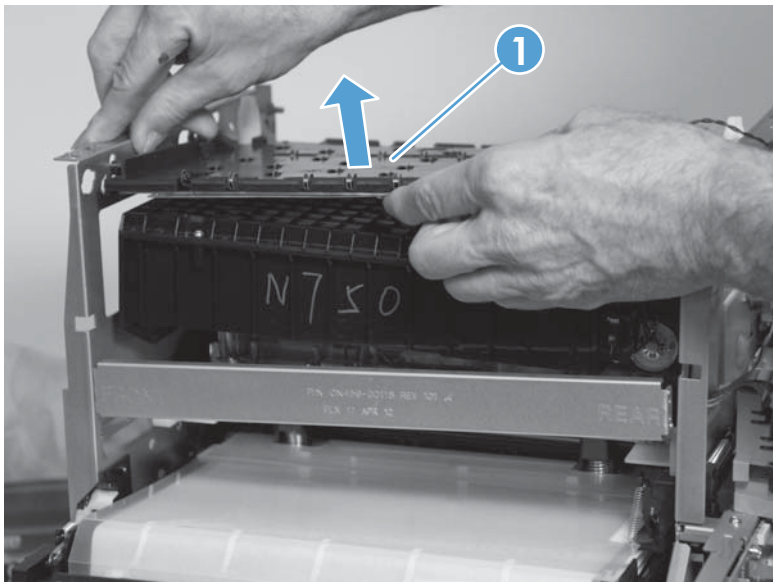
4. Remove two screws (callout 1) from the rear of the product.

Figure 1-147 Remove the top paper guide (3 of 6)



5. Raise the top paper guide (callout 1).

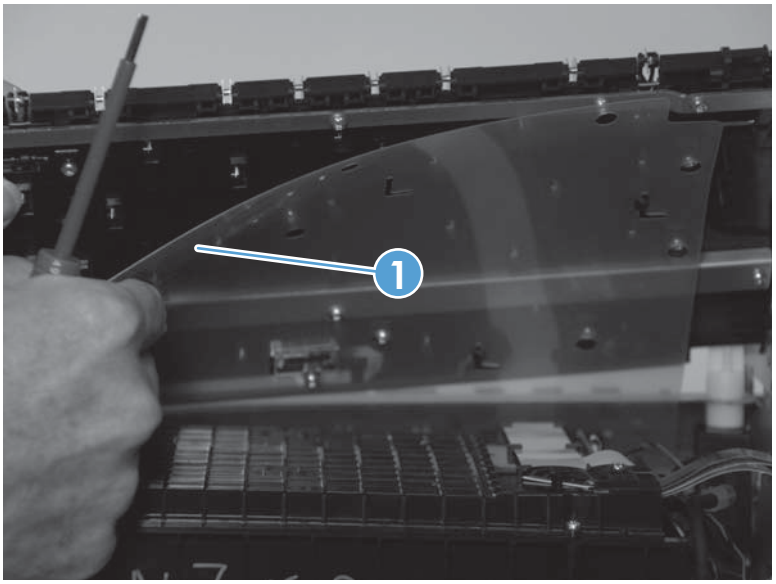
Figure 1-148 Remove the top paper guide (4 of 6)



6. Use a screwdriver to unclip the plastic shield (callout 1) from underneath the top paper guide.

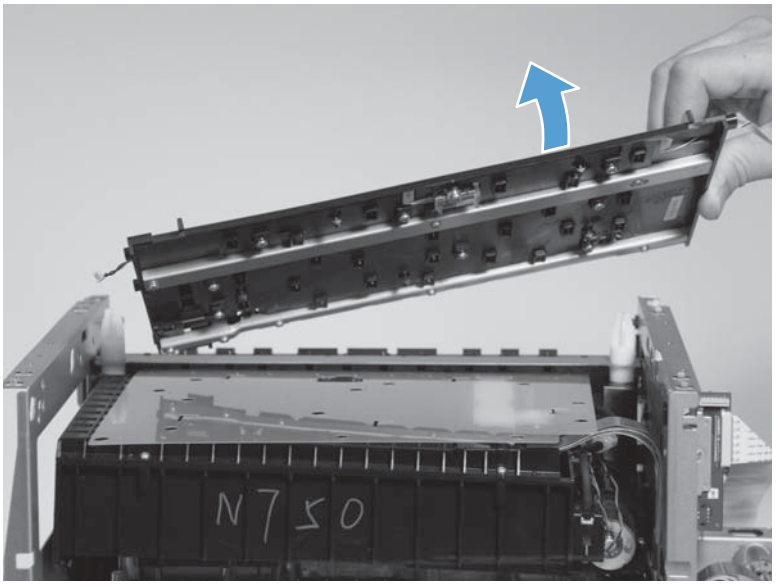
NOTE: Use caution to avoid breaking the plastic tabs on the shield. Take care to correctly plug the shield back into the top paper guide.

Figure 1-149 Remove the top paper guide (5 of 6)



7. Remove the guide.

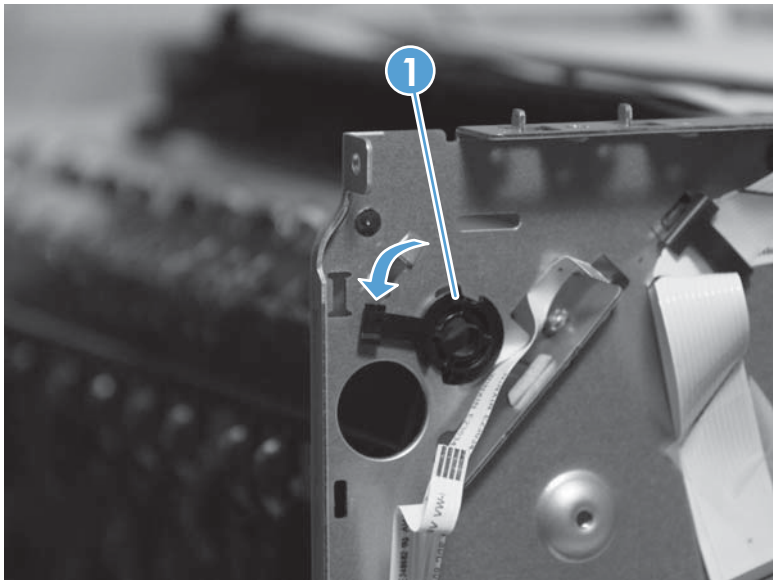
Figure 1-150 Remove the top paper guide (6 of 6)



Top left paper guide assembly

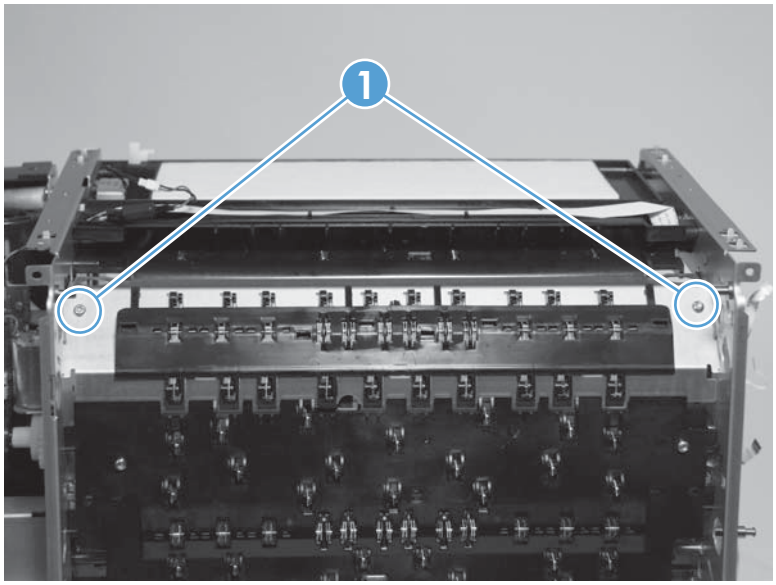
1. Remove the following components:
   - Printbar. See Printbar on page 67.
   - Plate console right. See Plate console right on page 66.
   - Output drive shaft 4. See Output drive shaft 4 on page 94.
   - Drying path gear assembly. See Drying path gear assembly on page 82.
2. Remove the output drive shaft 4 front bearing (callout 1).

Figure 1-151 Remove the top left paper guide (1 of 4)



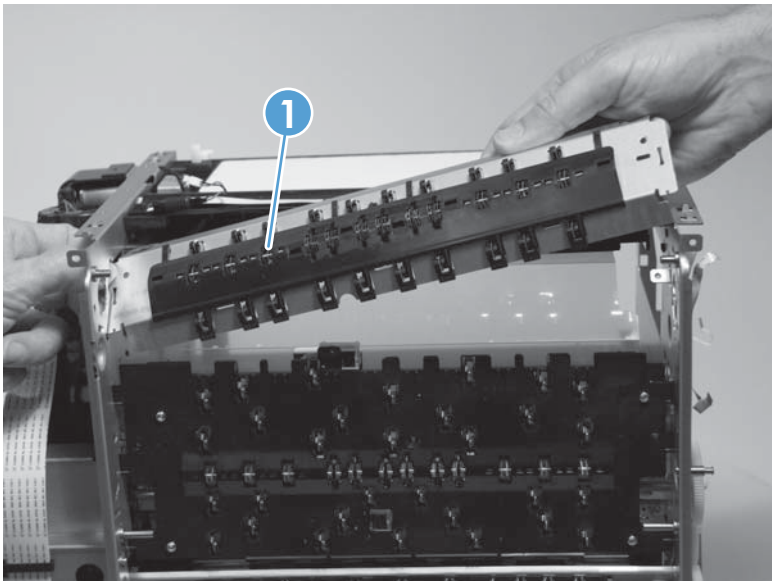
3. Remove two screws (callout 1).

Figure 1-152 Remove the top left paper guide (2 of 4)



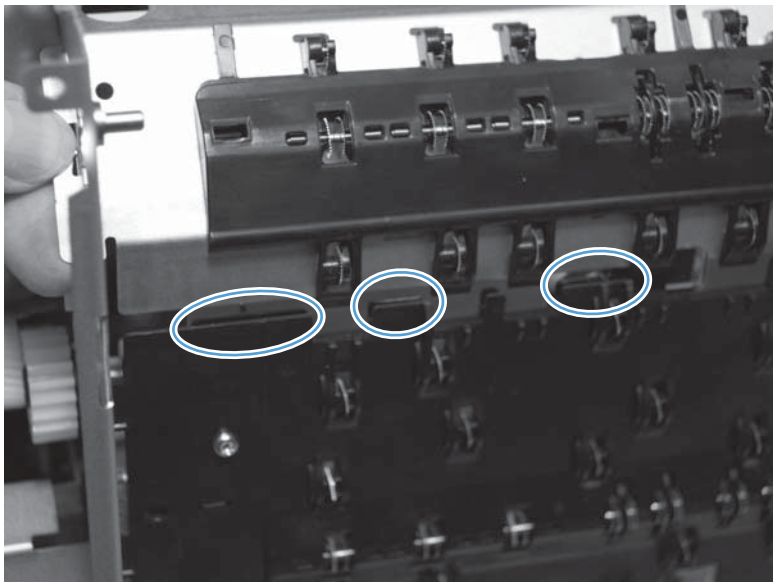
4. Remove the paper guide assembly (callout 1).

Figure 1-153 Remove the top left paper guide (3 of 4)



Reinstallation tip During the reinstallation process, the bottom metal edge of the assembly inserts into the grooves in the plastic center left paper guide.

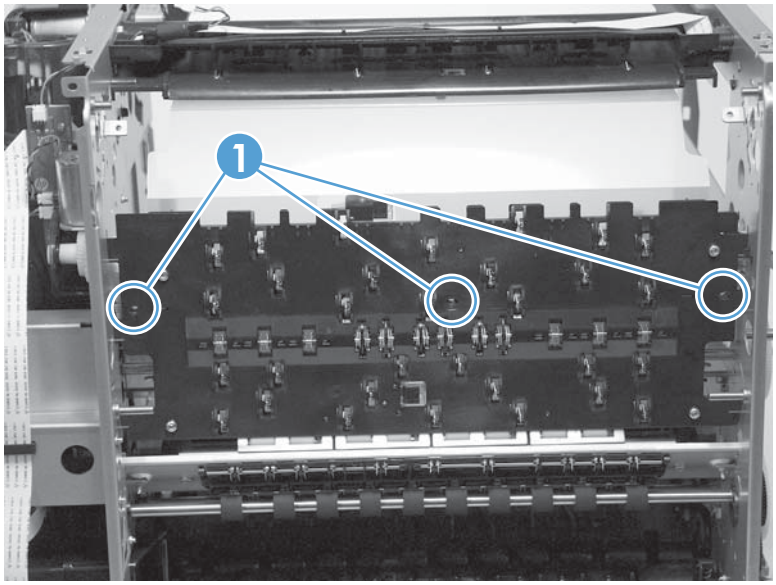
Figure 1-154 Remove the top left paper guide (4 of 4)



Center left paper guide assembly

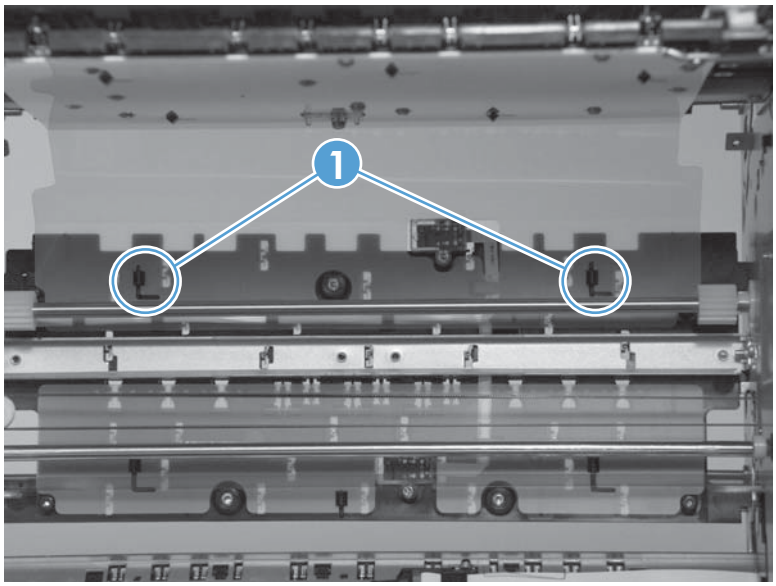
1. Remove the following components:
   - Top left paper guide assembly. See Top left paper guide assembly on page 104.
   - Drive shaft 3. See Drive shaft 3 on page 95.
2. Remove three screws (callout 1).

Figure 1-155 Remove the center left paper guide (1 of 4)



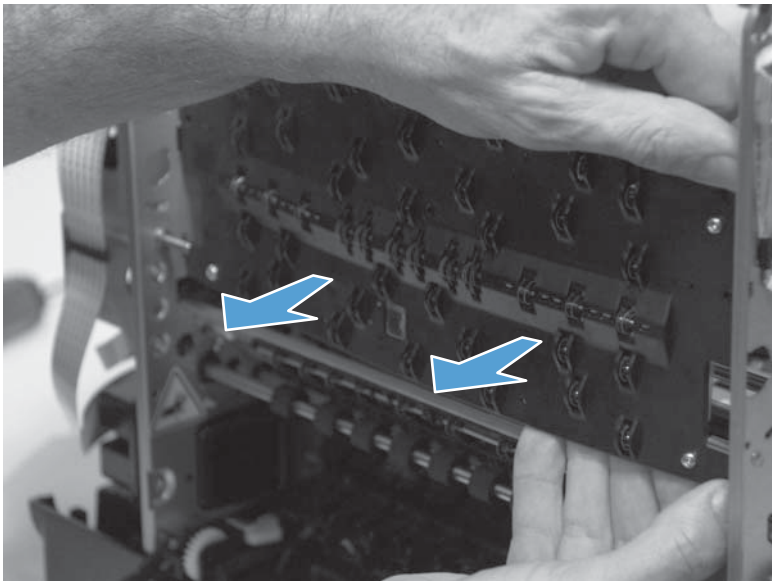
3. Locate two dust shield tabs (callout 1) inside the product.

Figure 1-156 Remove the center left paper guide (2 of 4)



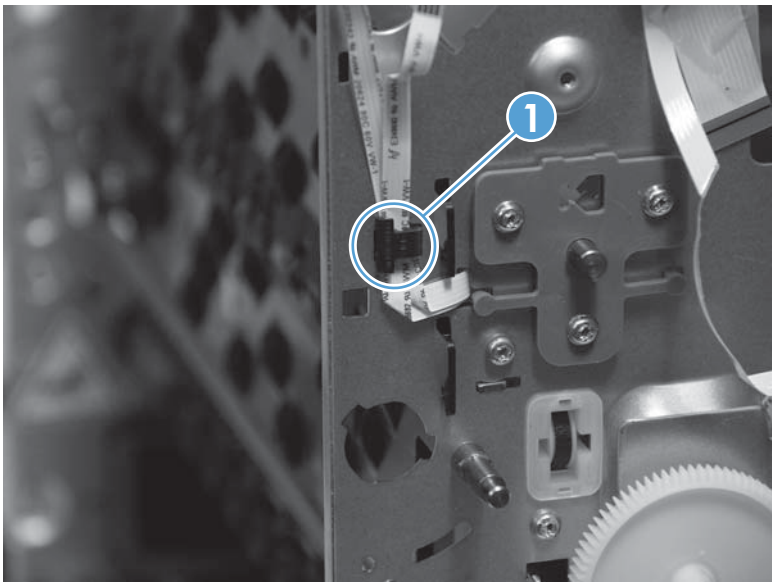
4. Lift and flex the assembly to remove it.

Figure 1-157 Remove the center left paper guide (3 of 4)



5. Remove one cable retainer (callout 1).

Figure 1-158 Remove the center left paper guide (4 of 4)



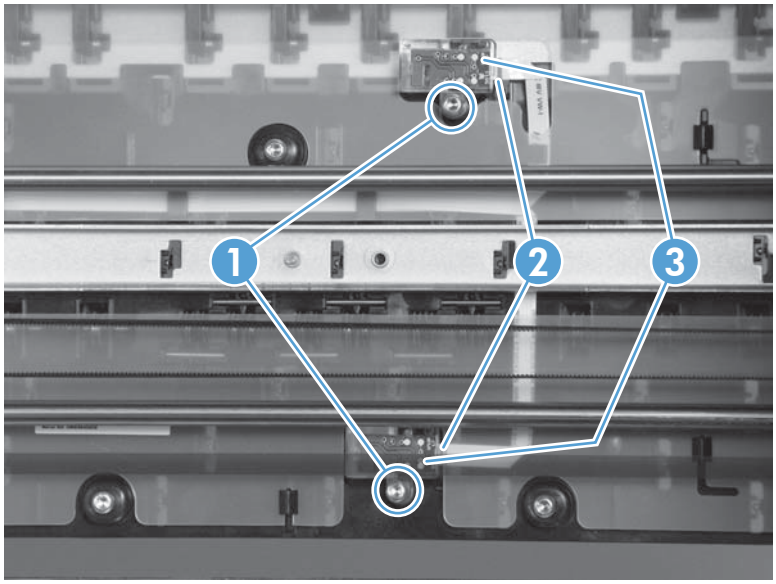
Paper REDI sensors in the center left paper guide assembly

IMPORTANT: Ensure the product firmware is upgraded to at least version 1336MR before performing this repair procedure. If the firmware upgrade cannot be completed, contact HP support.

There are two paper REDI sensors; the lower paper path REDI sensor and the upper paper path REDI sensor. This procedure works for both.

1. Remove the printbar. See Printbar on page 67.
2. Remove two screws (callout 1) and disconnect two flex cables (callout 2), and then remove the sensors (callout 3).

Figure 1-159 Remove the paper REDI sensors



3. After replacing the sensors, use the following steps to calibrate the REDI sensors.

Calibrate the REDI sensors

a. Open the Engineering menu. See Access the Engineering menu on page 14 for information accessing the Engineering menu.

b. From the Engineering menu, select the Service Menu, and then select System Configuration.

c. Select Paper Sensor Calibration.

NOTE: The paper sensor calibrations require one sheet of blank HP Colorlok paper. HP Colorlok paper **must** be used for the Paper Sensor Calibration. The same sheet of paper can be reused if it is undamaged.

d. Select Calibrate Main tray. The tray will eject one blank page.

e. Select Calibrate MP tray. The product will eject one blank page into the tray.

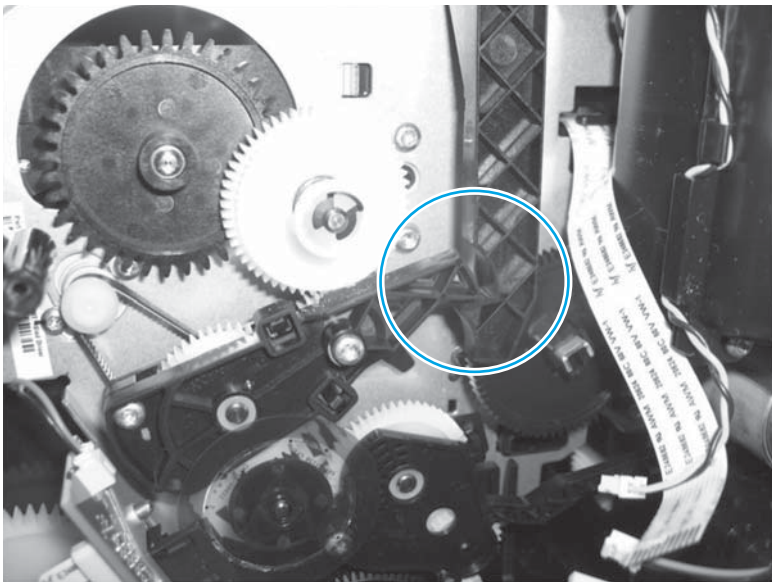
Service sled transmission

Before reassembling the product, ensure that the service sled transmission is installed in the correct position. If the service sled transmission is not installed correctly, the product will not operate correctly.

The service sled transmission is located behind the main PCA. Remove the aerosol fan assembly to check or adjust the positioning of the service sled transmission.

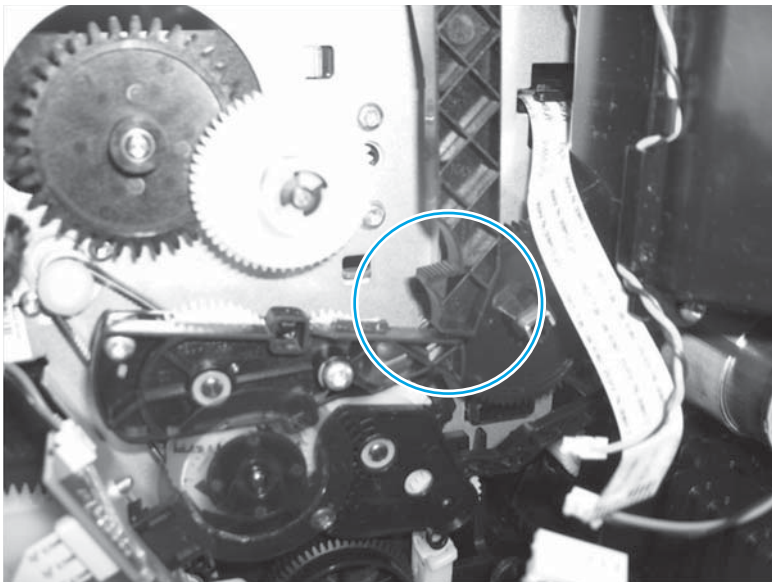
- Service sled transmission in the correct position.

Figure 1-160 Correctly positioned service sled transmission



- Service sled transmission in the incorrect position.

Figure 1-161 Incorrectly positioned service sled transmission

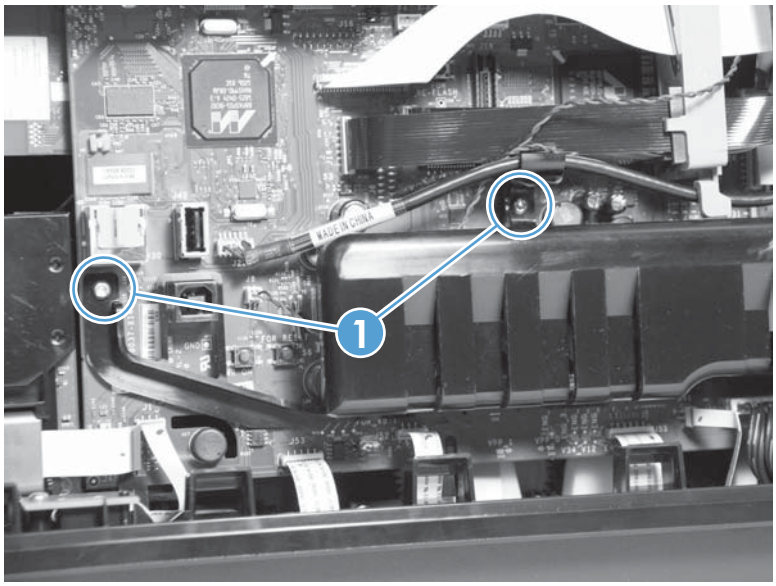


Printed circuit-board assemblies (PCAs)

PCA safety shield

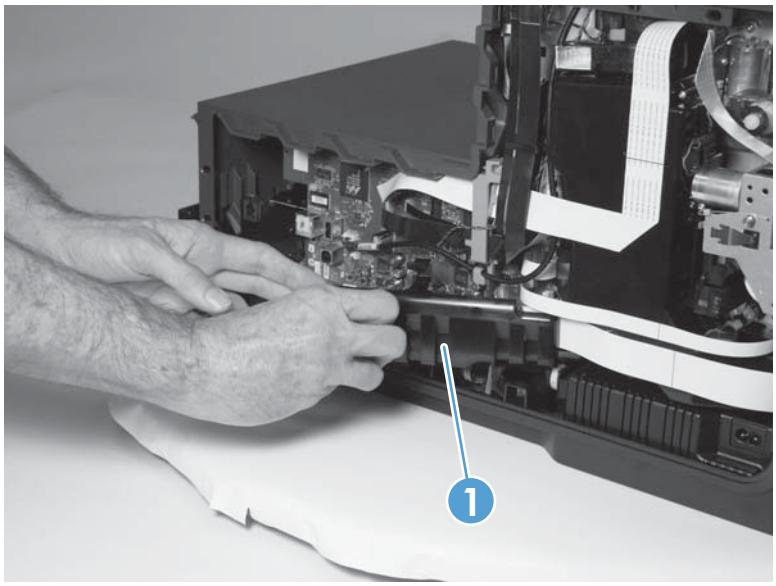
1. Remove the rear cover. See Rear cover on page 23.
2. Remove two screws (callout 1).

Figure 1-162 Remove the PCA safety shield (1 of 2)



3. Remove the shield (callout 1) by pushing the shield toward the aerosol fan assembly.

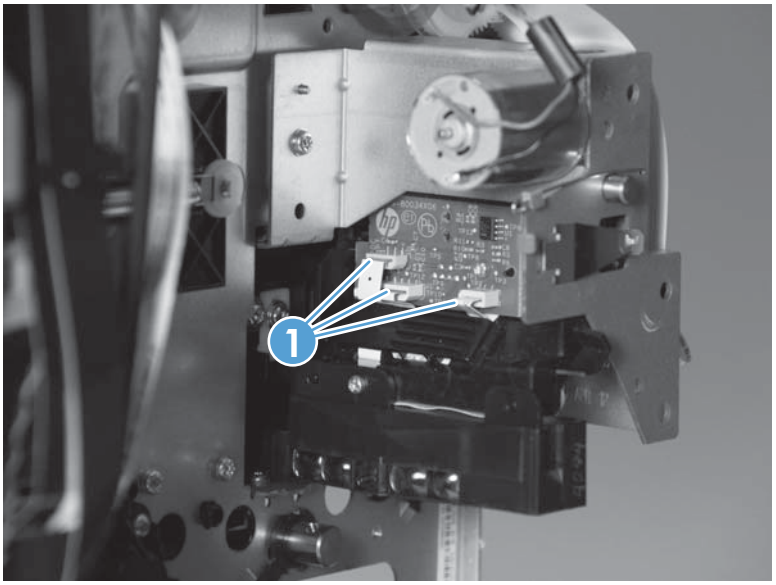
Figure 1-163 Remove the PCA safety shield (2 of 2)



Sensor carriage PCA and encoder strip

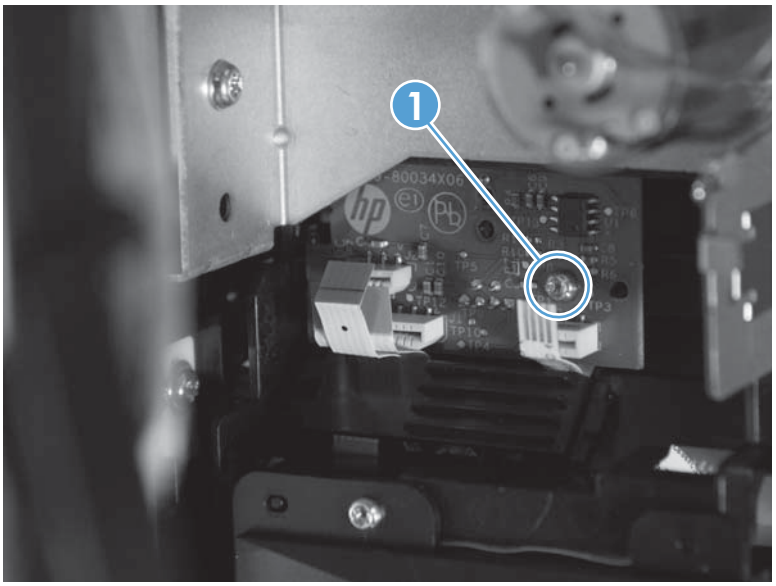
1. Remove the following components:
   - Rear cover. See Rear cover on page 23.
   - Aerosol fan assembly. See Aerosol fan assembly on page 36.
2. Disconnect three wire connectors (callout 1).

Figure 1-164 Remove the sensor carriage PCA and encoder strip (1 of 8)



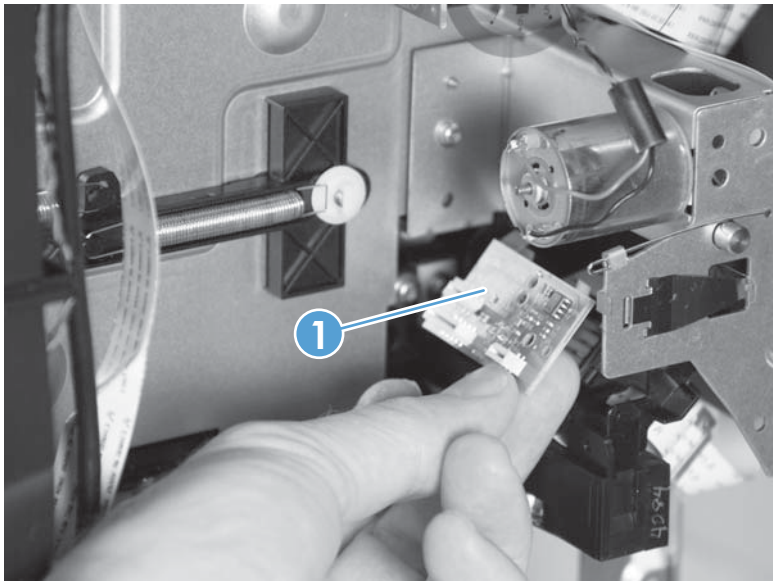
3. Remove one screw (callout 1).

Figure 1-165 Remove the sensor carriage PCA and encoder strip (2 of 8)



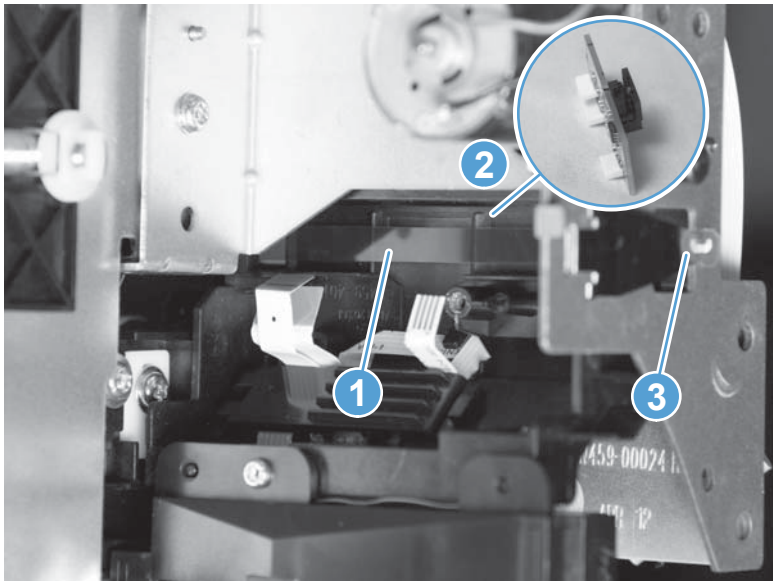
4. Remove the PCA (callout 1).

Figure 1-166 Remove the sensor carriage PCA and encoder strip (3 of 8)



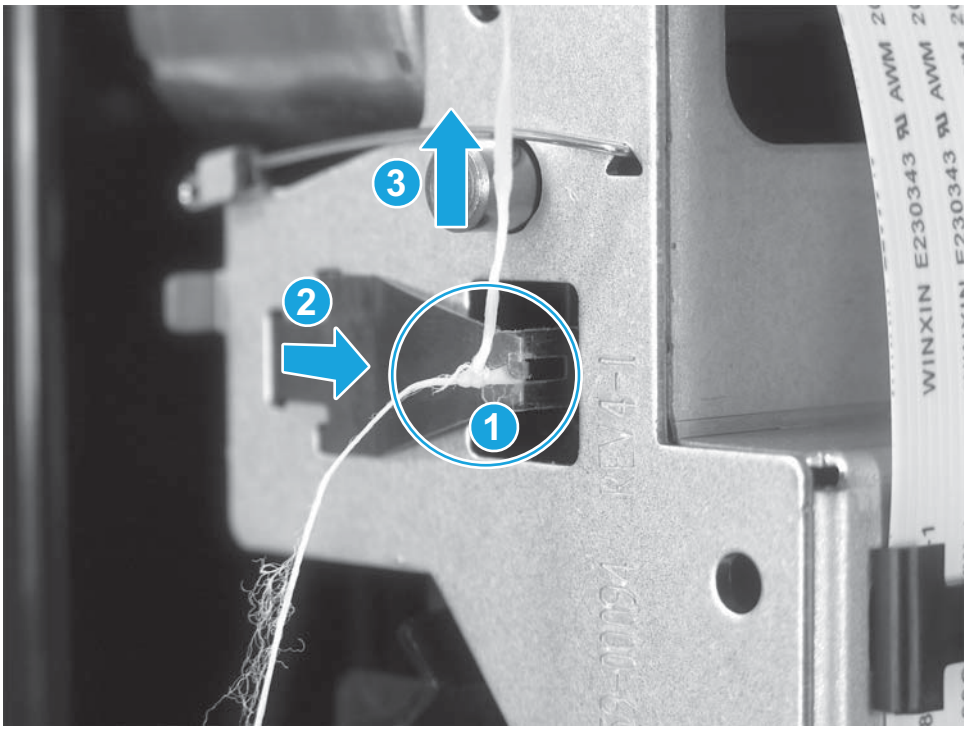
5. Locate the sensor carriage encoder strip (callout 1). The sensor carriage encoder strip feeds through the product, passes through the encoder strip sensor on the back of the sensor carriage PCA (callout 2), and then attaches to the bracket (callout 3) at the back of the product.

Figure 1-167 Remove the sensor carriage PCA and encoder strip (4 of 8)



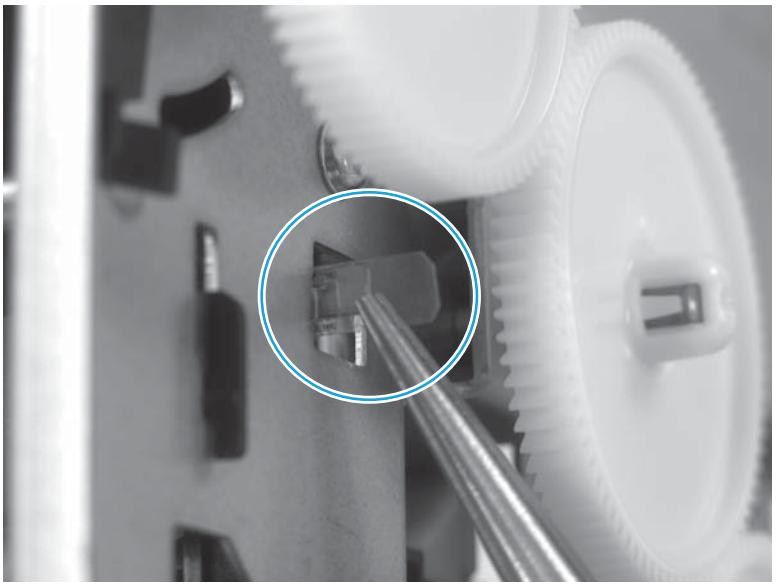
6. Thread a piece of floss or thread through the opening on the end of the sensor carriage encoder strip (callout 1), and then depress the bracket (callout 2) while lifting up on the sensor carriage encoder strip to remove the encoder strip from the bracket.

Figure 1-168 Remove the sensor carriage PCA and encoder strip (5 of 8)



7. At the front of product, use a pair of needle nose pliers to grasp the encoder strip, and then lift it off the bracket.

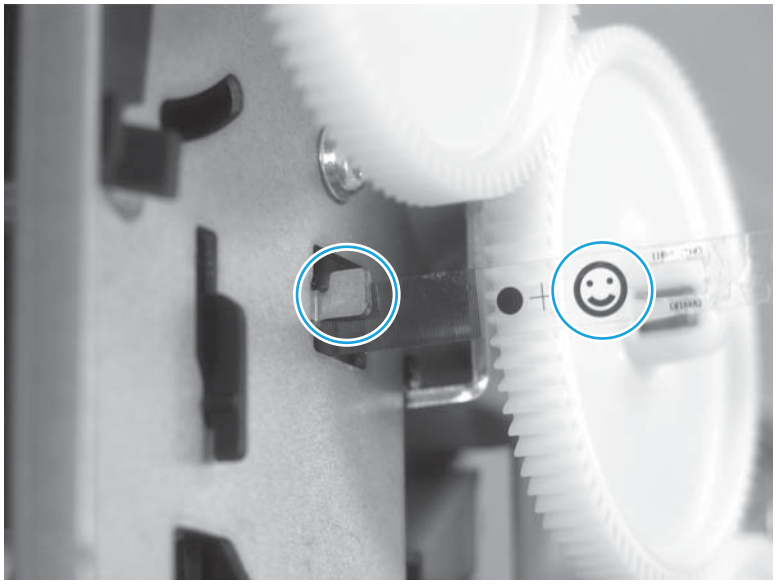
Figure 1-169 Remove the sensor carriage PCA and encoder strip (6 of 8)



8. At the front of the product, carefully pull the encoder strip through the product and remove it. Ensure that you can still grasp the thread at the back of the product.

9. At the front of the product, tie the thread or floss passed through the product to the new encoder strip. The encoder strip must me positioned with the smiley face as shown in Figure 1-170 Remove the sensor carriage PCA and encoder strip (7 of 8) on page 114.

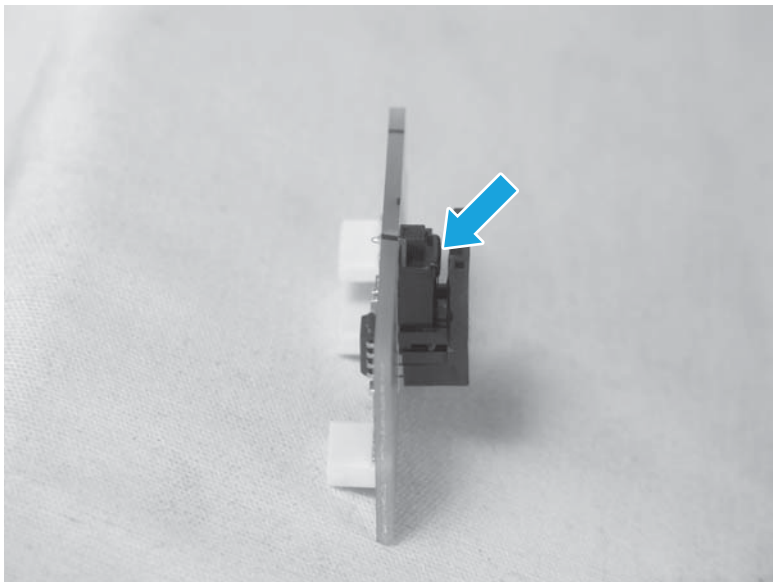
Figure 1-170 Remove the sensor carriage PCA and encoder strip (7 of 8)



10. Carefully pull the encoder strip through the product, and then reattach the encoder strip on the bracket at the rear of the product.

11. Install the new sensor carriage PCA. Ensure that the encoder strip threads through encoder strip sensor on the back of the sensor carriage PCA.

Figure 1-171 Remove the sensor carriage PCA and encoder strip (8 of 8)



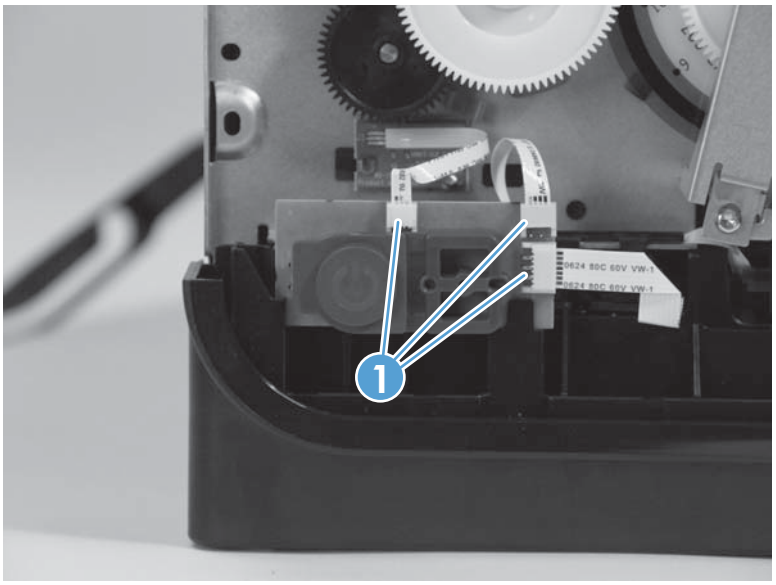
IMPORTANT: Threading the sensor carriage encoder strip through the product and through the encoder strip sensor on the back of the sensor carriage PCA can be a difficult procedure. If the sensor carriage encoder strip is not correctly positioned, then the front panel will display a 61000012 error when the product is turned on.

Power button PCA

The power button PCA is located in the product front cover.

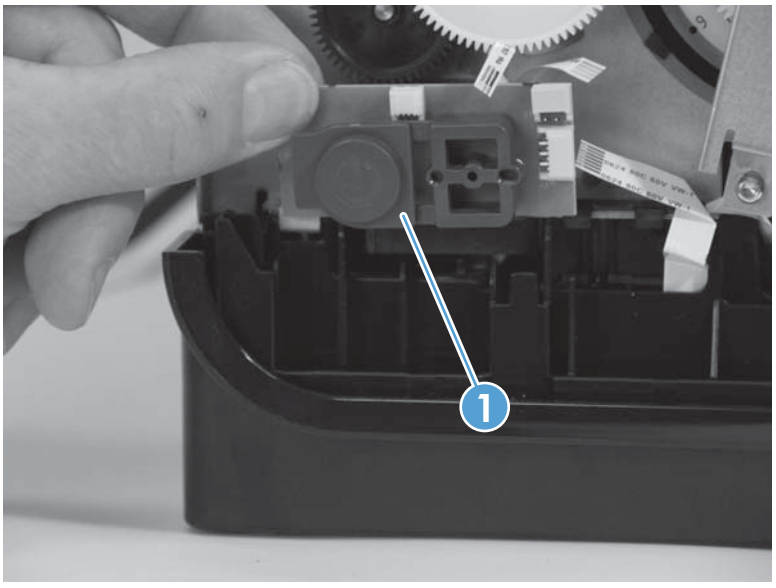
1. Remove the front cover. See Front cover on page 34.
2. Disconnect three wire connectors (callout 1).

Figure 1-172 Remove the power button PCA (1 of 2)



3. Remove the assembly (callout 1).

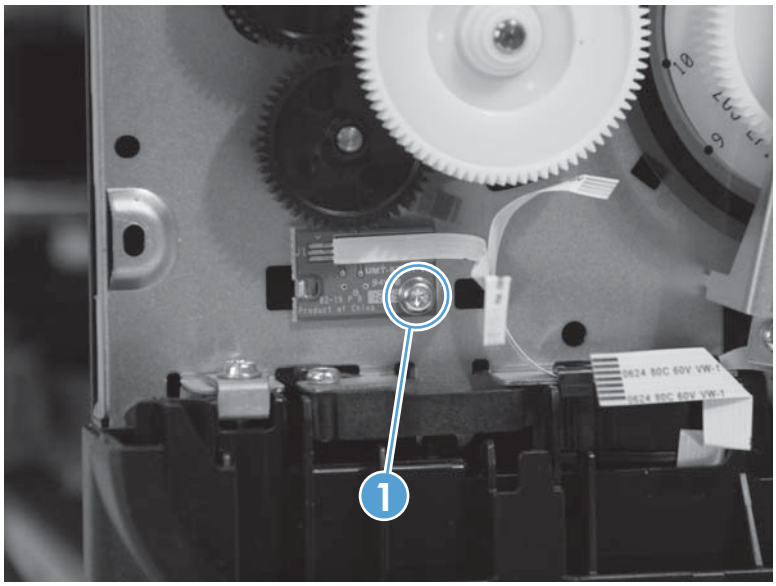
Figure 1-173 Remove the power button PCA (2 of 2)



Duplex module sensor PCA

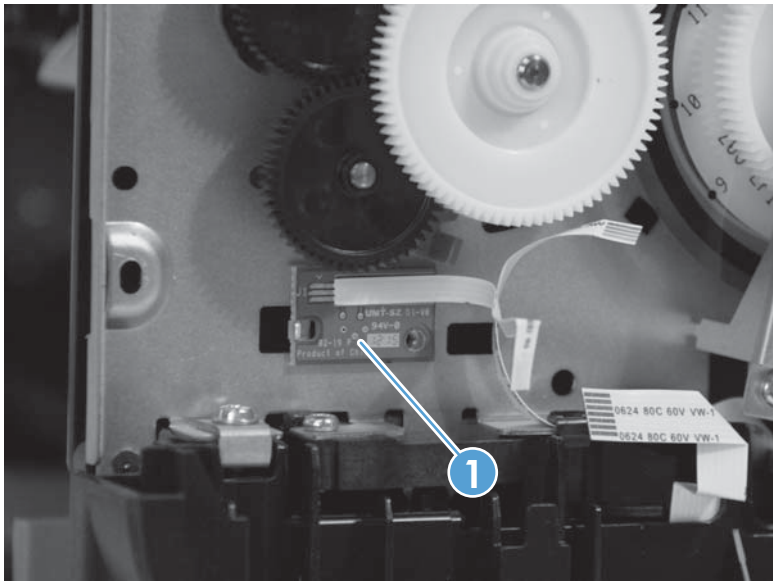
1. Remove the front cover. See Front cover on page 34.
2. Remove one screw (callout 1).

Figure 1-174 Remove the duplex module sensor PCA (1 of 2)



3. Remove the sensor PCA (callout 1).

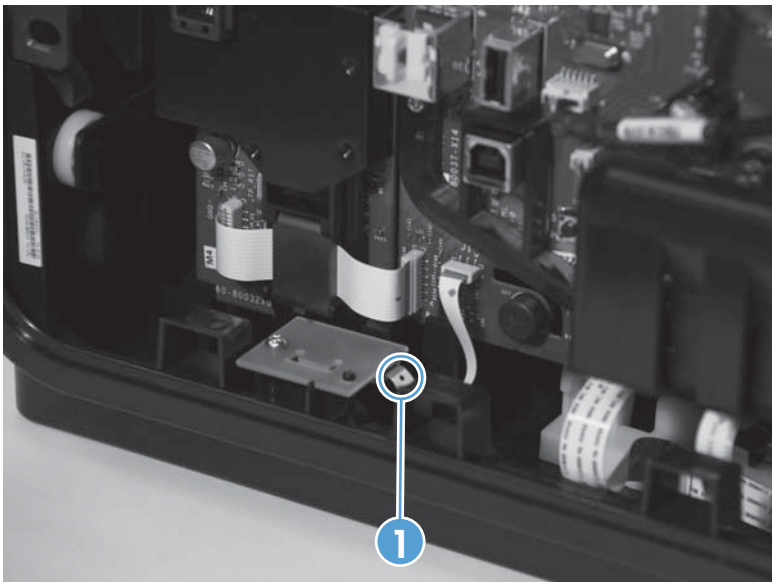
Figure 1-175 Remove the duplex module sensor PCA (2 of 2)



Temperature sensor

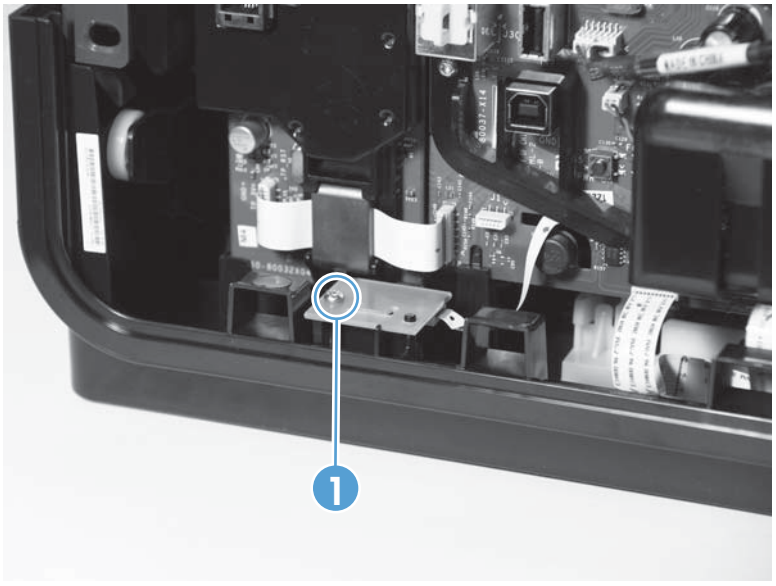
1. Remove the rear cover. See Rear cover on page 23.
2. Disconnect one cable (callout 1).

Figure 1-176 Remove the temperature sensor (1 of 2)



3. Remove one screw (callout 1), and then remove the sensor.

Figure 1-177 Remove the temperature sensor (2 of 2)

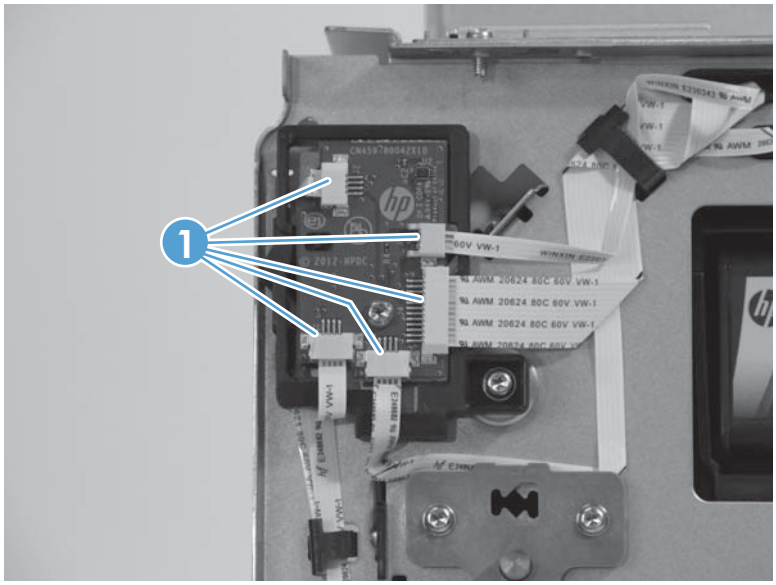


4. After reinstalling the temperature sensor, test for the correct operation: A correctly operating temperature sensor is indicated by the results of a 12 tap test. Print a 12 tap test, and check for the correct temperature. See 12 tap test results (REDI sensor values) on page 19.

REDI distribution PCA

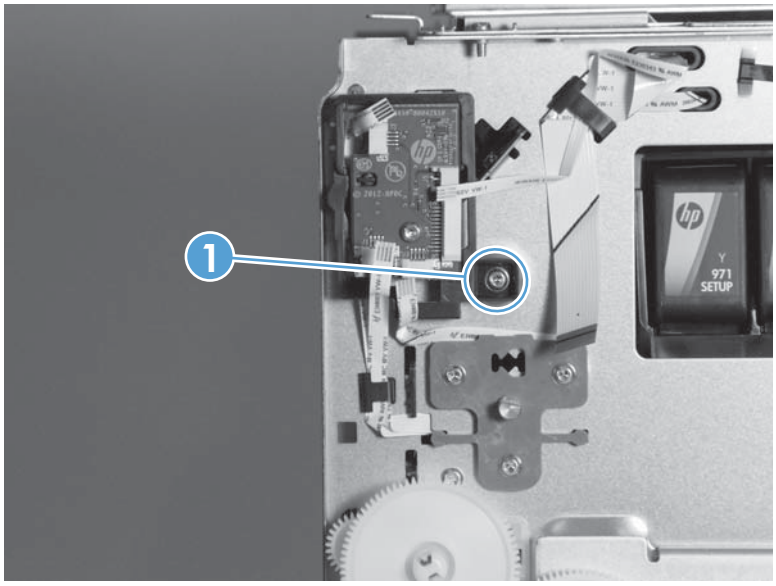
1. Remove the front cover. See Front cover on page 34.
2. Disconnect five wire connectors (callout 1).

Figure 1-178 Remove the REDI distribution PCA (1 of 3)



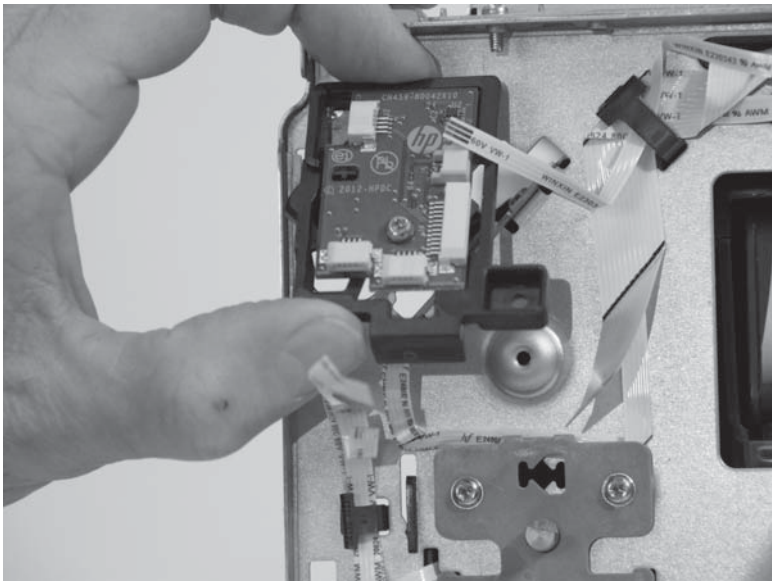
3. Remove one screw (callout 1).

Figure 1-179 Remove the REDI distribution PCA (2 of 3)



4. Remove the sensor PCA.

Figure 1-180 Remove the REDI distribution PCA (3 of 3)

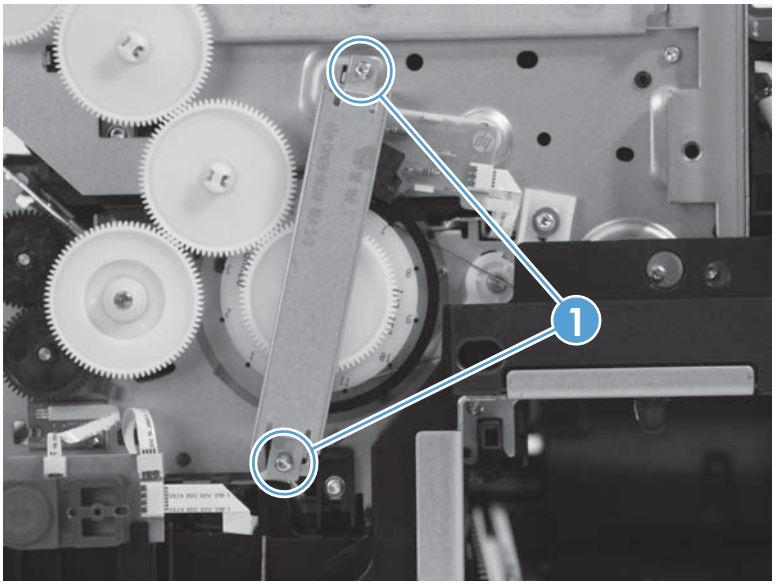


Reinstallation tip Ensure that the upper left flex cable does not poke through the front wall. It should not be visible when looking at the wall from the left door.

Feed motor encoder sensor PCA

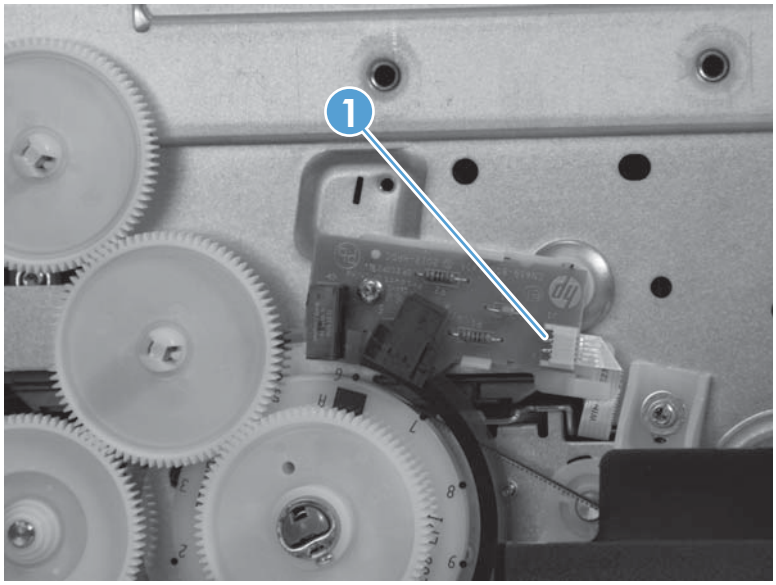
1. Remove the front cover. See Front cover on page 34.
2. Remove two screws (callout 1) from the guard bracket, and then remove the bracket.

Figure 1-181 Remove the feed motor encoder sensor PCA (1 of 4)



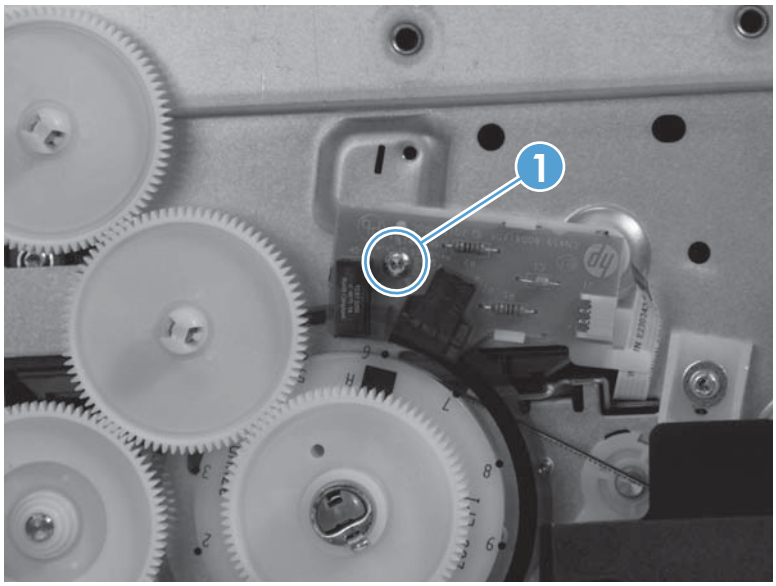
3. Disconnect the flex cable (callout 1).

Figure 1-182 Remove the feed motor encoder sensor PCA (2 of 4)



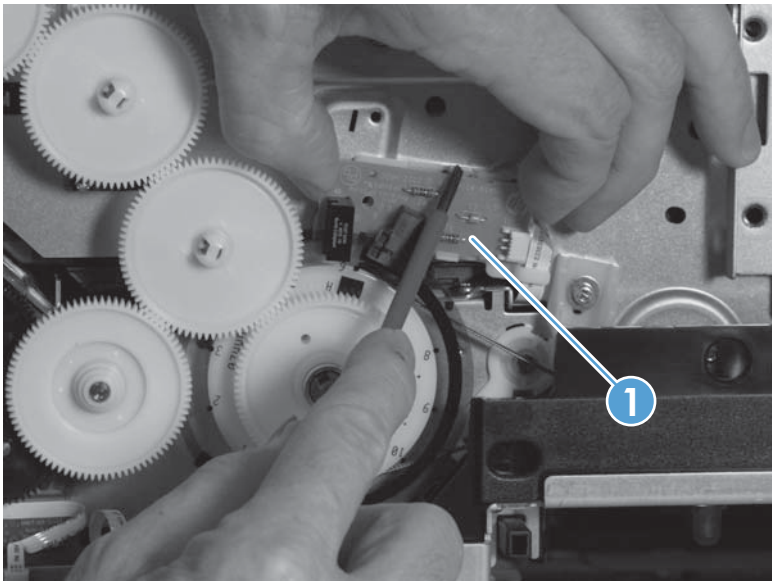
4. Remove one screw (callout 1).

Figure 1-183 Remove the feed motor encoder sensor PCA (3 of 4)



5. Unclip and remove the sensor PCA (callout 1).

Figure 1-184 Remove the feed motor encoder sensor PCA (4 of 4)

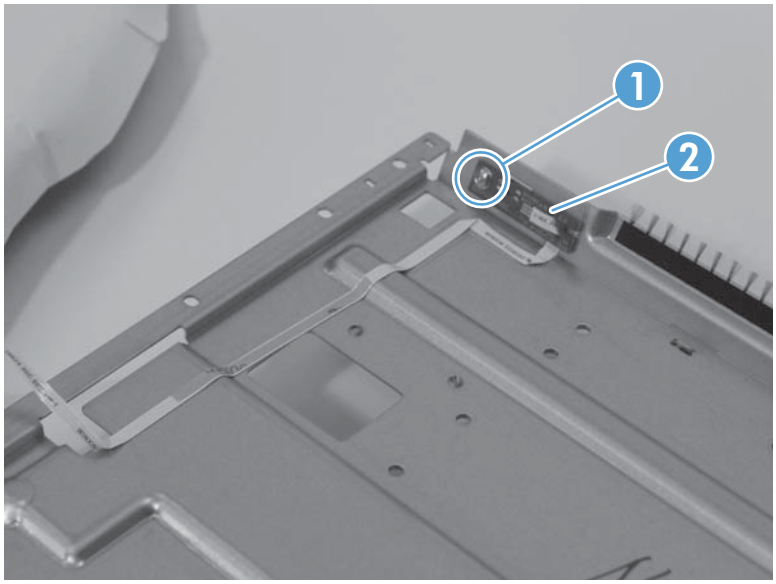


Reinstallation tip Make sure that the encoder disk is inserted into both sensors on the sensor PCA.

Eject flap opto PCA

1. Remove the following components:
   - Rear cover. See Rear cover on page 23.
   - Left door. See Left door on page 24.
   - Left rear cover. See Left rear cover on page 27.
   - Left front cover. See Left front cover on page 28.
   - Top cover. See Top cover on page 29.
   - Front cover. See Front cover on page 34.
2. Remove one screw (callout 1) from the underneath of the plate console left, and then remove the sensor PCA (callout 2).

Figure 1-185 Remove the eject flap opto PCA

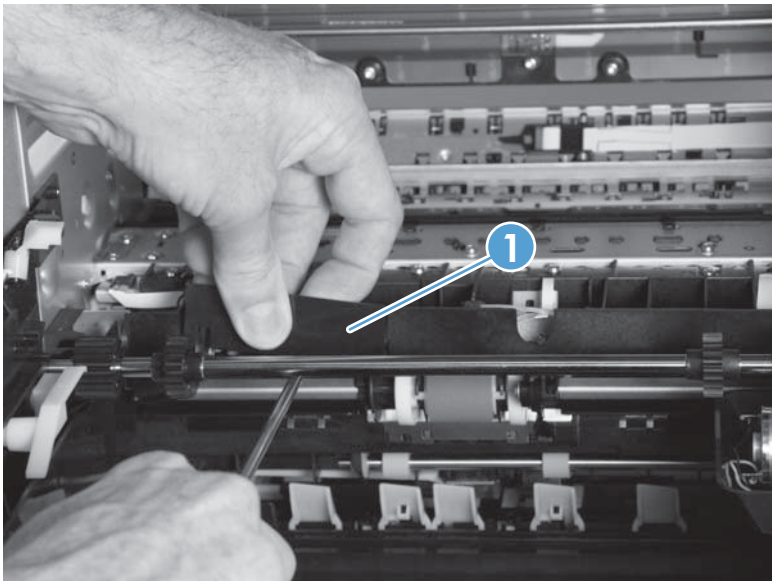


Printzone distribution PCA

1. Remove the service sled assembly. See Service sled assembly on page 57.

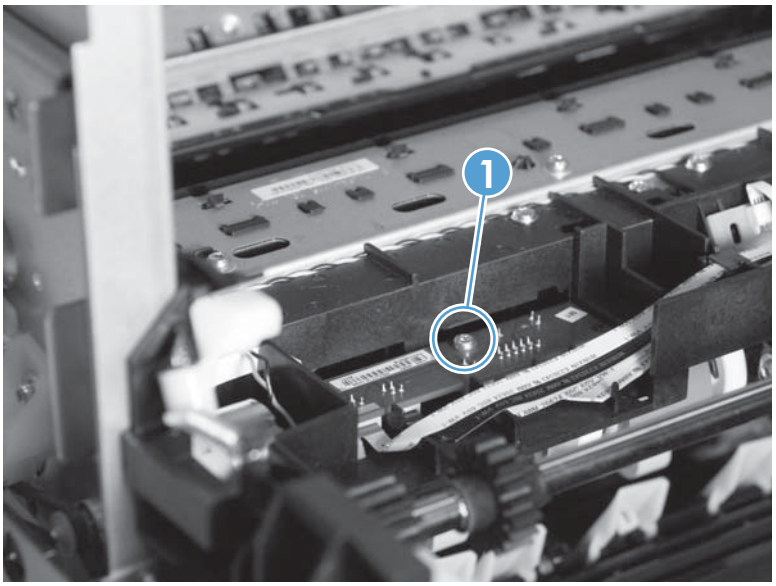
2. Use a screwdriver to remove the PCA cover (callout 1).

Figure 1-186 Remove the printzone distribution PCA (1 of 3)



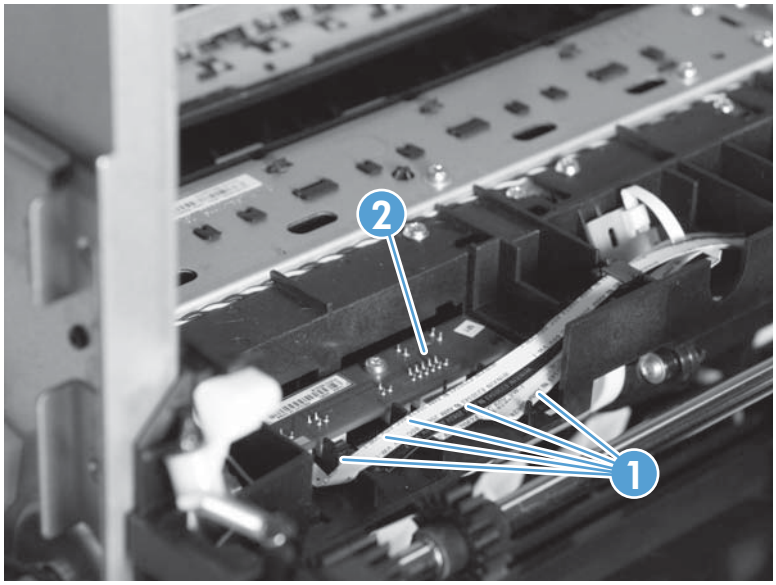
3. Remove one screw (callout 1).

Figure 1-187 Remove the printzone distribution PCA (2 of 3)



4. Disconnect five flex cables (callout 1), and then remove the PCA (callout 2).

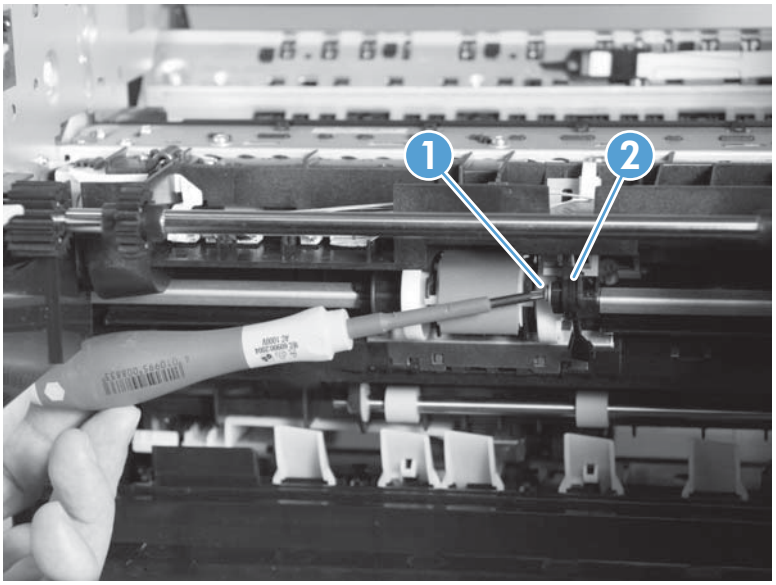
Figure 1-188 Remove the printzone distribution PCA (3 of 3)



Media presence sensor PCA/flag

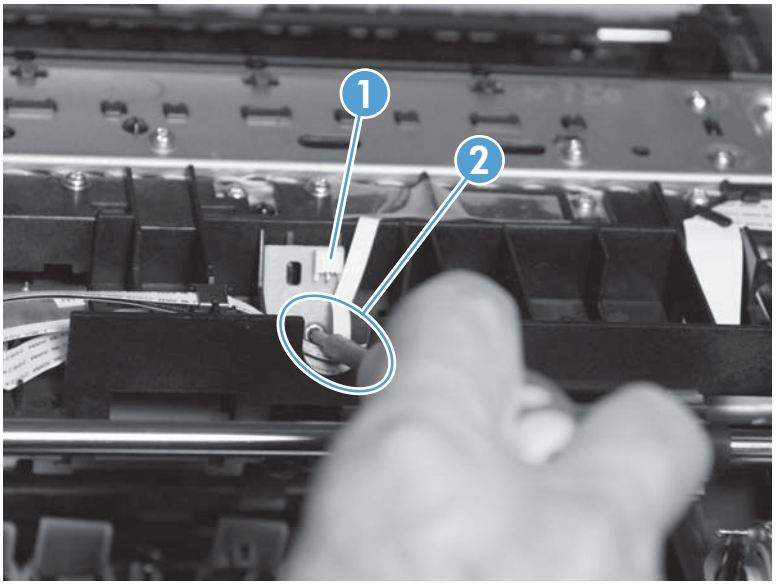
1. Remove the printbar. See Printbar on page 67.
2. Remove one screw (callout 1) from the sensor flag (callout 2), and then remove the flag.

Figure 1-189 Remove the media presence sensor PCA/flag (1 of 2)



3. Disconnect the flex cable connector (callout 1), remove one screw (callout 2), and then remove the sensor PCA.

Figure 1-190 Remove the media presence sensor PCA/flag (2 of 2)



Main PCA

NOTE: If the product has printed more than 5,000 pages, replacement of the duplex module assembly is recommended.

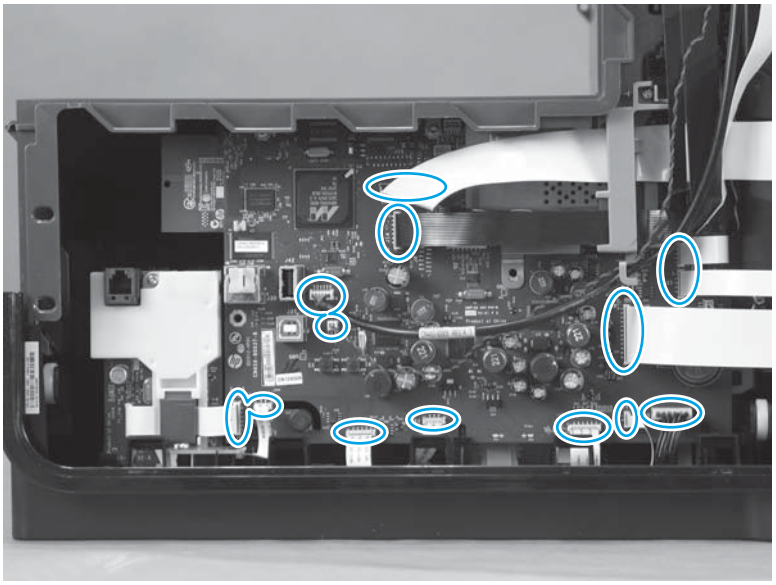
If the product has printed more than 30,000 pages, replacement of the service sled assembly is recommended. This only applies if the main PCA is being replaced.

NOTE: The replacement main PCA should already have the required revision of firmware – 1336MR or later. Earlier versions of firmware do not support the required calibrations. If the replacement main PCA has older firmware, contact HP support.

1. Remove the following components:
   - Rear cover. See Rear cover on page 23.
   - PCA safety shield. See PCA safety shield on page 110.

2. Disconnect all cables from the PCA.

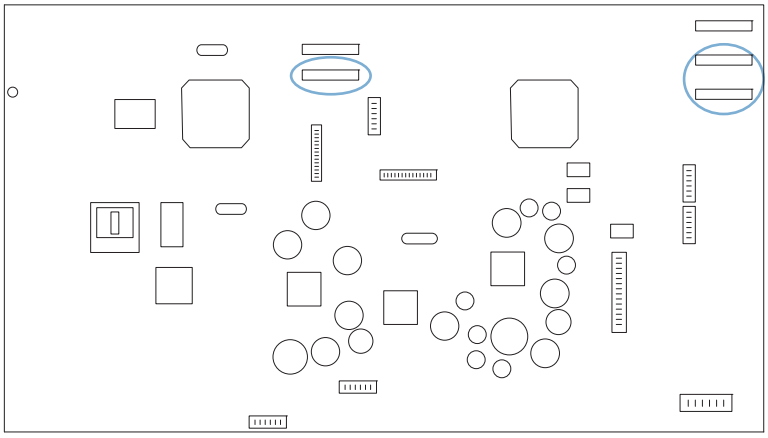
Figure 1-191 Remove the main PCA (1 of 8)



NOTE: Additional clearance can be obtained by removing the aerosol fan assembly.

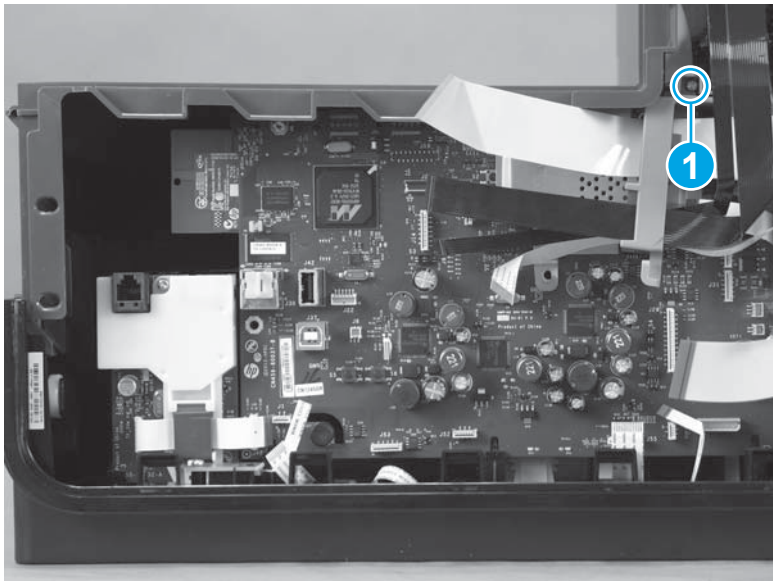
IMPORTANT: The main PCA sockets highlighted in Figure 1-192 Remove the main PCA (2 of 8) on page 127 are ZIF sockets. Take care to not break the latches on these ZIF sockets when removing or installing the FFCs in these sockets.

Figure 1-192 Remove the main PCA (2 of 8)



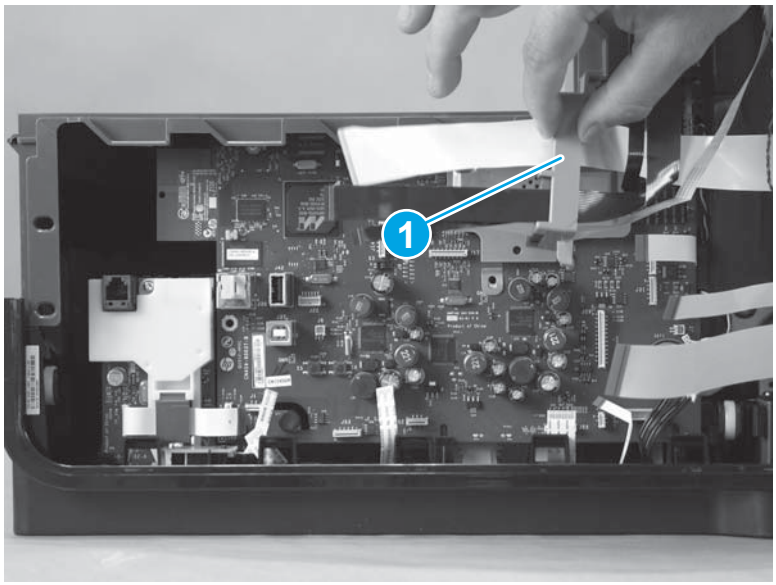
3. Remove one screw (callout 1) from behind the three print bar cables.

Figure 1-193 Remove the main PCA (3 of 8)



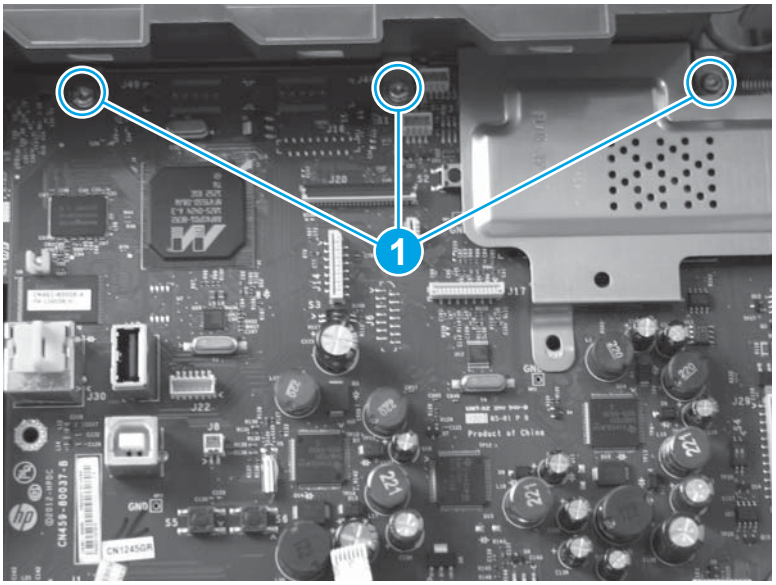
4. Lift the wire harness (callout 1) away from the PCA. The printbar flex cables can remain in the wire harness.

Figure 1-194 Remove the main PCA (4 of 8)



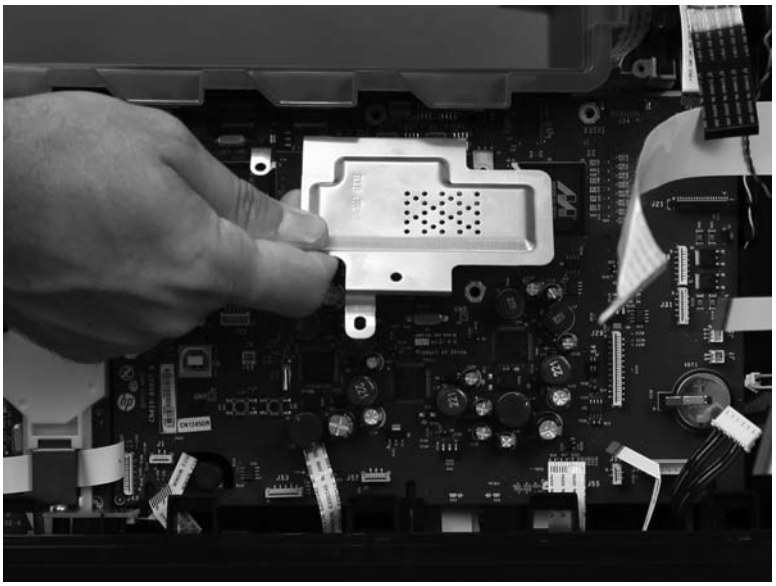
5. Remove three screws (callout 1) from the PCA.

Figure 1-195 Remove the main PCA (5 of 8)



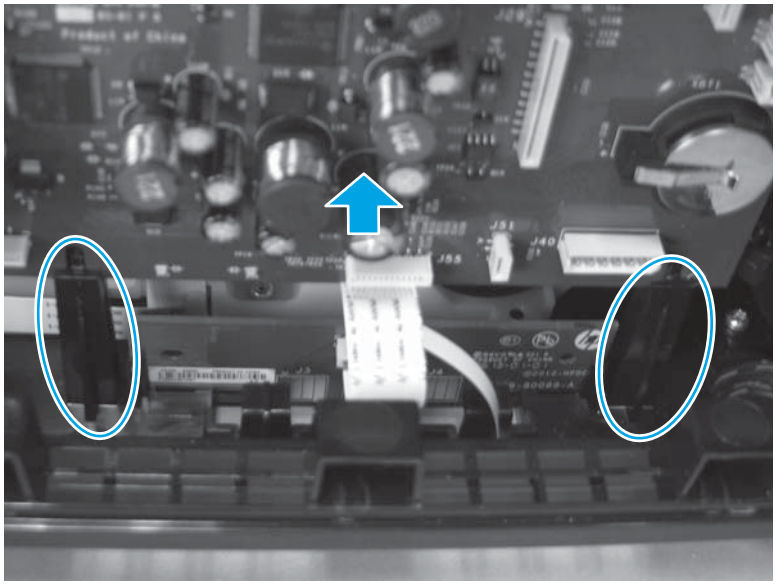
6. Remove the EMI shield.

Figure 1-196 Remove the main PCA (6 of 8)



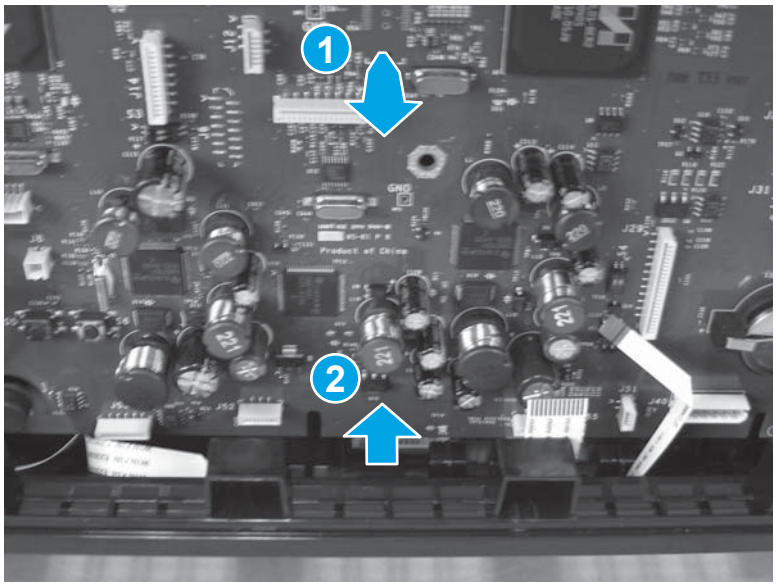
7. Lift the PCA up slightly to remove it from the mounting posts, and then lower it into the product.

Figure 1-197 Remove the main PCA (7 of 8)



8. Rotate the top of the PCA (callout 1) outward, and the lift the PCA up (callout 2) to remove.

Figure 1-198 Remove the main PCA (8 of 8)



Reinstallation tip Fit the bottom of the PCA in the slot in the product frame.

NOTE: After replacing the main PCA, you must perform all calibration processes.

Main PCA calibration procedure

Test the main PCA installation

1. Place the product into Audit mode. See Place the product into Audit mode on page 15 for information on placing the product into Audit mode.
2. Press the power button to enter Audit (on) mode.
   - Temporarily install a set of trade supplies or use the existing customer supplies. Host supplies will be rejected in MFG (on) mode.
3. Select the Country and the Language, and then enter the localization information.
4. Verify the main PCA functionality:
   a. Cover the IDS door sensor with a magnet.
   b. Print a verification page.
   c. Press the power button to turn the product off.

Calibrate the main PCA

1. Turn the product on and enter the Engineering menu. See Access the Engineering menu on page 14 for information on accessing the Engineering menu.
2. Scroll to Service, select System Configuration, and then touch the OK button.
3. Scroll to Enter Serial Number. Use the up and down arrows on the control panel to enter the serial number

NOTE: The serial number only contains 10 digits. Any digits entered after the tenth are ignored.

4. Scroll to Enter Ethernet MAC address, and then touch the OK button. Enter the Ethernet MAC address using the up and down arrows on the control panel, and then touch the OK button.

NOTE: The Ethernet MAC address is located on the back panel.

5. For DW models only: Scroll to Enter wireless MAC address and then touch the OK button.
6. Enter the wireless MAC address using the up and down arrows on the control panel, and then touch the OK button.

NOTE: The wireless MAC address is located on the back panel.

7. Scroll to Paper Sensor Calibration, and then touch the OK button.

NOTE: HP Colorlok paper must be used for the Paper Sensor Calibration.

The paper sensor calibrations require one sheet of blank paper for each calibration. The same sheet of paper can be reused if it is undamaged.

8. Select Calibrate Main tray. The tray will eject one blank page.

9. Select Calibrate MP tray. The tray will eject one blank page.
10. MFP models only: Scroll to Enter scanner barcode and then touch the OK button.
11. Enter the scanner calibration bar code, and then touch the OK button.

NOTE: The scanner calibration bar code is located underneath the main scan glass on the left side of the glass.

12. Touch the Cancel button to return to the Engineering menu.
13. Select the Manufacturing menu.
14. Scroll to the Special Tests menu, and then touch the OK button.
15. Scroll to TouchScreen Calibration, and then touch the OK button.
16. Calibrate the touch screen.

IMPORTANT: Use a stylus or other rounded object to complete the interactive screen calibration in order to prevent scratching or damaging the screen.

17. Touch the Cancel button to return to the Engineering menu.
18. Select the Underware menu.
19. Scroll to the System menu, and then touch the OK button.
20. Scroll to Set Derivative, and then touch the OK button.
21. Set the derivative for the region. Select from the following choices:

Table 1-3 Region derivatives

Code name	Product Number	Region
BAJA_AMERICAS	X451dn, X451dw, X551dw	North America
BAJA_AP	X451dn, X451dw, X551dw	Asia Pacific
BAJA_AP_TAIWAN	X451dn, X451dw, X551dw	Taiwan
BAJA_EMEA	X451dn, X451dw, X551dw	Europe
BAJA_LA	X451dn, X451dw, X551dw	Latin America
BAJA_JAPAN	X451dn, X451dw, X551dw	Japan

22. Enter the language and country information.

NOTE: The localization information is similar to the information entered after turning the product on in Audit Mode. However, the derivative has additional region specific settings. This will be the last time you will be prompted to enter language and country in this process.

23. Turn the product off, and then unplug it.
24. Finish assembling the case parts.
25. Turn the product on to User Mode.

26. Open the Engineering menu. See Access the Engineering menu on page 14 for information on accessing the Engineering menu.

27. Select the Service menu. See Access the Support Menu on page 15 for information on accessing the Service menu.

28. Scroll to System Configuration, and then touch the OK button.

29. Scroll to Trigger All Calibrations, and then touch the OK button.

NOTE: The product automatically restarts and begins the calibrations. The calibrations will take approximately 20 to 25 minutes and a total of 9 pages will print. When the calibrations are complete, the control panel will return to the Home screen.

30. From the Ready screen, touch the left arrow, and then select Setup.

31. Scroll to and touch Print Reports, and then select Print Quality Report.

NOTE: If there are any discrepancies in the Print Quality Report, consult the *Troubleshooting Manual* for recovery methods.

32. Touch the Back button ⮌ twice to return to the Ready screen.

33. Open the Engineering menu. See Menu access on page 14 for information on accessing the Engineering menu.

34. Select the Manufacturing menu.

35. Scroll to the Reports menu, and then touch the OK button.

36. Run the following tap tests:

    - 10 tap
    - 12 tap
    - 61 tap
    - 909 tap

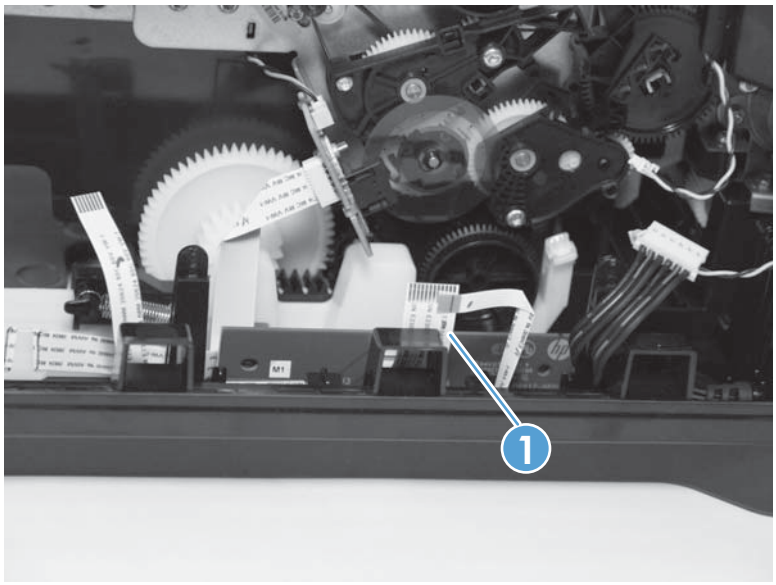
    For more information on running and verifying tap test results, see Perform tap tests and interpret results on page 17.

37. Return to the Ready screen, and then complete the customer configurations, including network settings, preferred paper size and trays, and so forth.

Tray 3 interconnect PCA

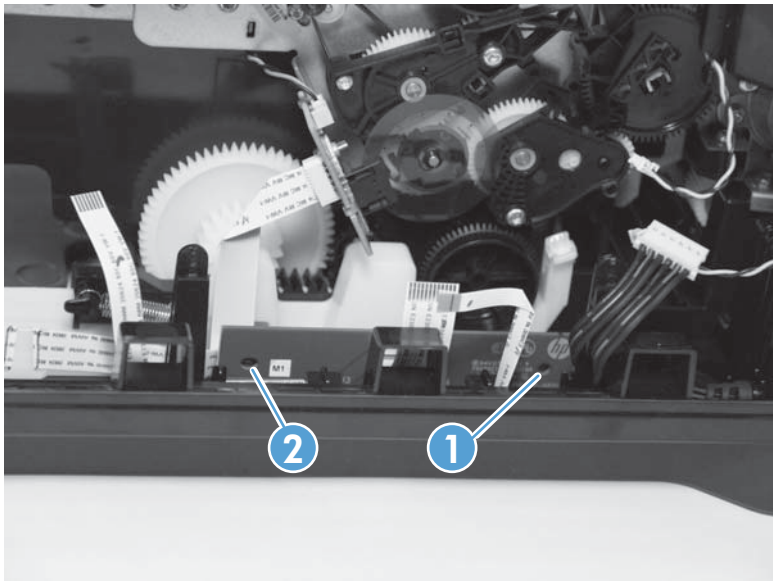
1. Remove the rear cover. See Rear cover on page 23.
2. Remove the FFC (callout 1) from the tray 3 interconnect PCA.

Figure 1-199 Remove the Tray 3 interconnect PCA (1 of 2)



3. Use a small screwdriver to release the tab on the right side of the PCA (callout 1), and lift the PCA slightly. Release the tab on the left side of the PCA (callout 2), and then remove the PCA.

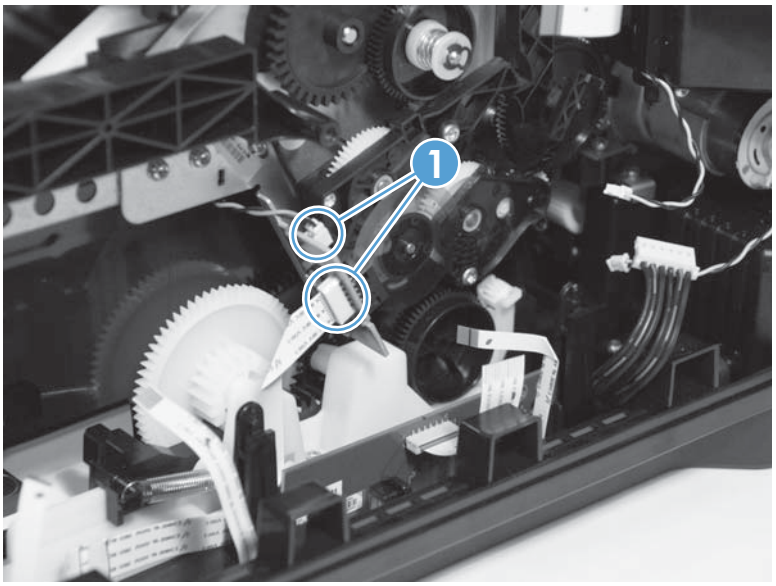
Figure 1-200 Remove the Tray 3 interconnect PCA (2 of 2)



Pick encoder distribution PCA

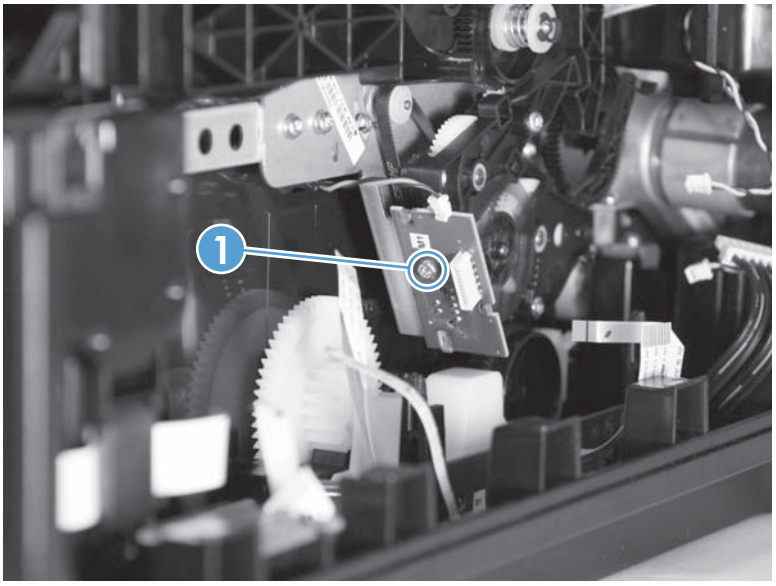
1. Remove the main PCA. See Main PCA on page 126.
2. Disconnect two cables (callout 1).

Figure 1-201 Remove the pick encoder distribution PCA (1 of 2)



3. Remove one screw (callout 1), which requires the T10 Torx driver with the 25 mm (1 in) shaft.

Figure 1-202 Remove the pick encoder distribution PCA (2 of 2)



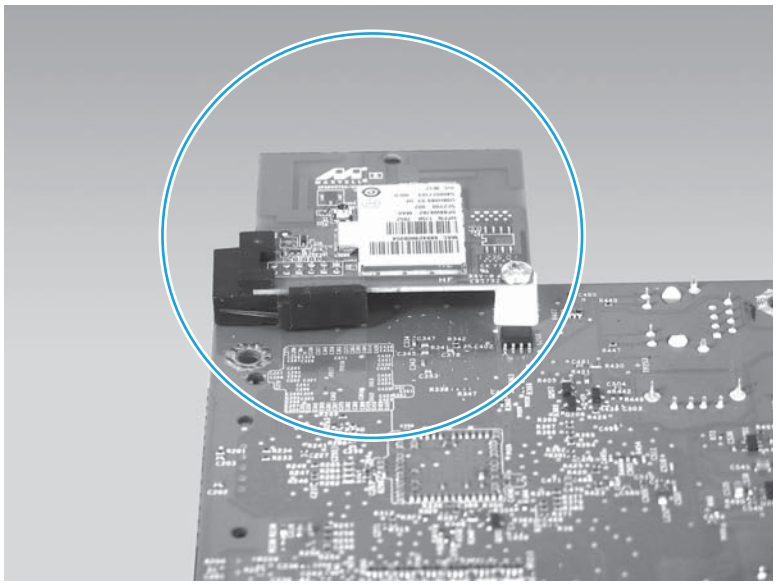
4. Remove the PCA.

Reinstallation tip Make sure that the encoder disk is seated correctly in the sensor when reinstalling the PCA.

Wireless PCA

1. Remove the main PCA. See Main PCA on page 126.
2. Remove the screw and retention holder that fastens the wireless PCA to the main PCA
3. Remove the wireless PCA connector by lifting the wireless PCA vertically from the main PCA.

Figure 1-203 Remove the wireless PCA.



2 Parts and diagrams

NOTE: In this chapter, part numbers are listed only for available replaceable parts.

- Order parts by authorized service providers
- How to use the parts lists and diagrams
- Assembly locations
- Covers, panels, and doors
- Internal assemblies
- Alphabetical parts list
- Numerical parts list

Order parts by authorized service providers

Order replacement parts

NOTE: As of the time this manual was published, parts are not available for ordering. Only HP repair centers can order parts. This might change in the future.

Table 2-1 Order parts, accessories, and supplies

Order supplies and paper	www.hp.com//go/suresupply.
Order genuine HP parts or accessories	www.hp.com/buy/parts
Order through service or support providers	Contact an HP-authorized service or support provider.

Related documentation and software

Table 2-2 Related documentation and software

Item	Description	Part number
HP Officejet Pro X451 and X551 Series Printers User Guide	Product user guide	CE863-90907
HP Officejet Pro X451 and X551 Series Printers Repair Manual	English repair manual (this manual)	CV037-90002
HP Officejet Pro X451 and X551 Series Printers Troubleshooting Manual	English troubleshooting manual	CV037-90001

Supplies part numbers

Table 2-3 Supplies part numbers

Part	Part number	Cartridge number	Type/size
Paper feeder	CN595A		500-sheet paper feeder (optional Tray 3)
USB cable	8121-0868		2 m A-to-B cable

Table 2-4 Ink cartridge supplies

Selectability	Size	Colour	Type	Part Number
970	32 mm	Black	Host	D8J18-30001
971	A	Cyan	Host	CN622-30002
971	A	Magenta	Host	CN623-30002
971	A	Yellow	Host	CN624-30002

Table 2-4 Ink cartridge supplies (continued)

Selectability	Size	Colour	Type	Part Number
970	A	Black	Trade	CN621-30001
971	A	Cyan	Trade	CN622-30001
971	A	Magenta	Trade	CN623-30001
971	A	Yellow	Trade	CN624-30001
970XL	XL	Black	Trade	CN625-30001
971XL	XL	Cyan	Trade	CN626-30001
971XL	XL	Magenta	Trade	CN627-30001
971XL	XL	Yellow	Trade	CN628-30001

NOTE: For information about the yield for the cartridges, see www.hp.com/go/pageyield. Actual yield depends on specific use.

Some ink cartridges may not be available in all countries/regions.

Customer self-repair parts

The following customer self-repair parts are available for the product.

Each kit includes parts and installation instructions. The customer self repair (CSR) level indicates the expected difficulty the customer will experience when replacing this part:

- A: Easy
- B: Difficult

Table 2-5 Customer self-repair parts

Item	Description	CSR level	Part number
Document feeder assembly	• Document feeder assembly • Document feeder foam pad • Document feeder replacement instructions	B	CN598-67008
Duplex assembly	Duplex module	A	CN598-67004
Output bin assembly	Output bin	A	CN598-67007
Main tray assembly	Main tray	A	CN598-67005
Left door assembly	Left door	B	CN598-67001
Left door strap	Left door strap	B	CN598-67002

Table 2-5 Customer self-repair parts (continued)

Item	Description	CSR level	Part number
Left door rear strap	Left door rear strap	B	CN598-67003
Eject flap assembly	Eject flap	B	CN598-67006

How to use the parts lists and diagrams

The figures in this chapter show the major subassemblies in the product and their component parts. A parts list table follows each exploded view assembly diagram. Each table lists the item number, the associated part number, and the description of each part. If a part is not listed in the table, then it is not a field replacement unit (FRU).

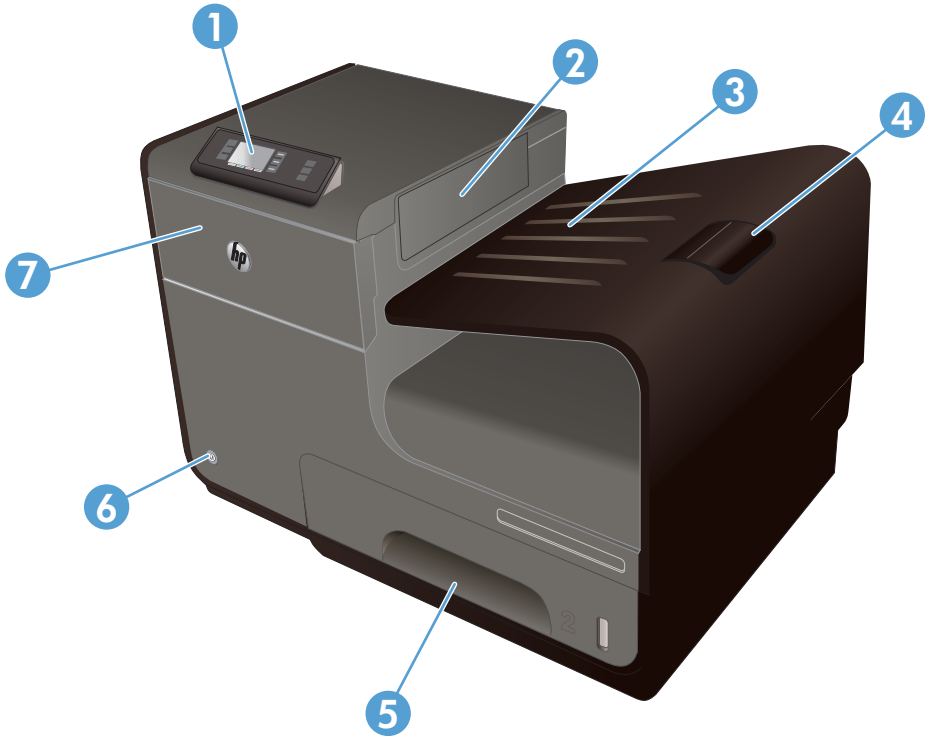
CAUTION: Be sure to order the correct part. When looking for part numbers for electrical components, pay careful attention to the voltage that is listed in the description column. Doing so will ensure that the part number selected is for the correct product model.

NOTE: In this manual, the abbreviation "PCA" stands for "printed circuit-board assembly." Components described as a PCA might consist of a single circuit board or a circuit board plus other parts, such as cables and sensors.

Assembly locations

Front view (X451 Series)

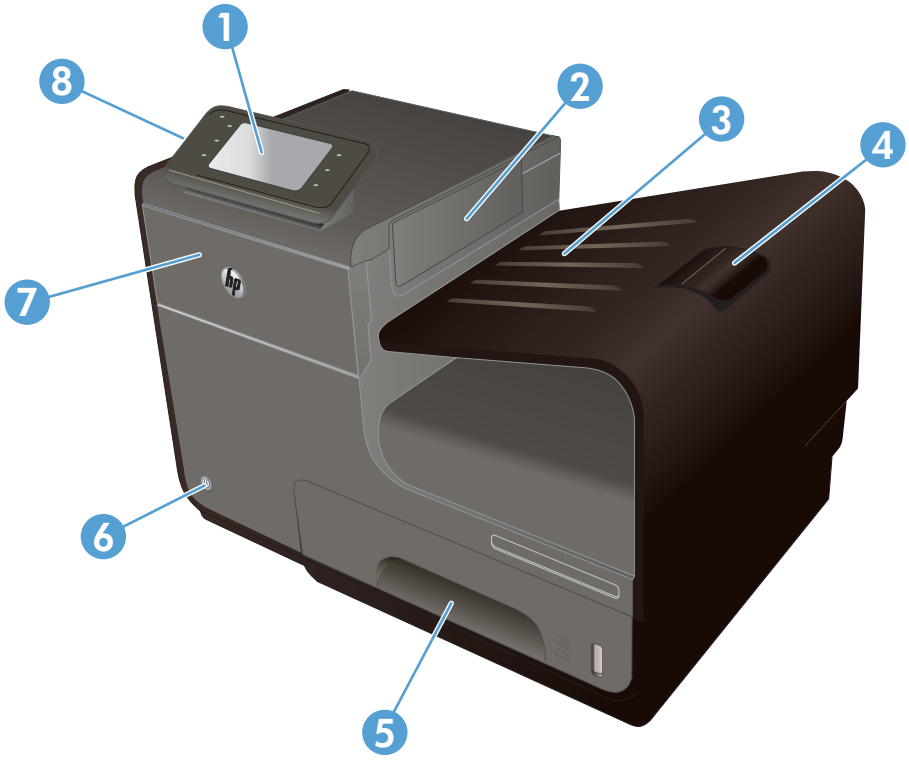
Figure 2-1 Front view (X451 Series)



1	Control panel
2	Output eject flap.
3	Output bin
4	Output bin extension
5	Tray 2 (Main paper tray)
6	On/Off button
7	Ink cartridge door

Front view (X551 Series)

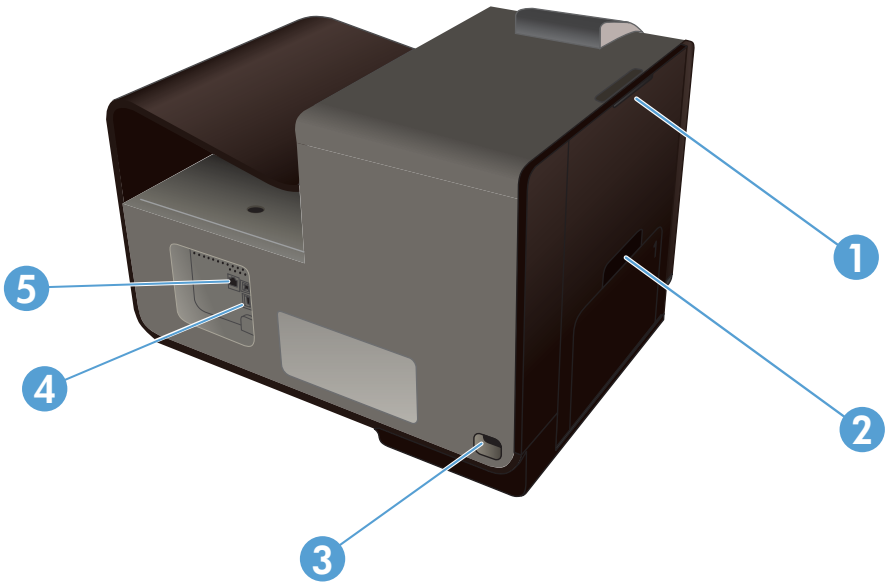
Figure 2-2 Front view (X551 Series)



1	Control panel
2	Output bin door
3	Output bin
4	Output bin extension
5	Tray 2 (Main paper tray)
6	On/Off button
7	Ink cartridge door
8	USB 2.0 Host port that accepts USB storage devices for Plug and Print USB Drive printing.

Back view

Figure 2-3 Back view



1	Left door (access for clearing jams)
2	Tray 1 (Multi-purpose tray)
3	Power connection
4	Hi-Speed USB 2.0 ports
5	Ethernet port

Covers, panels, and doors

Figure 2-4 Covers, panels, and doors

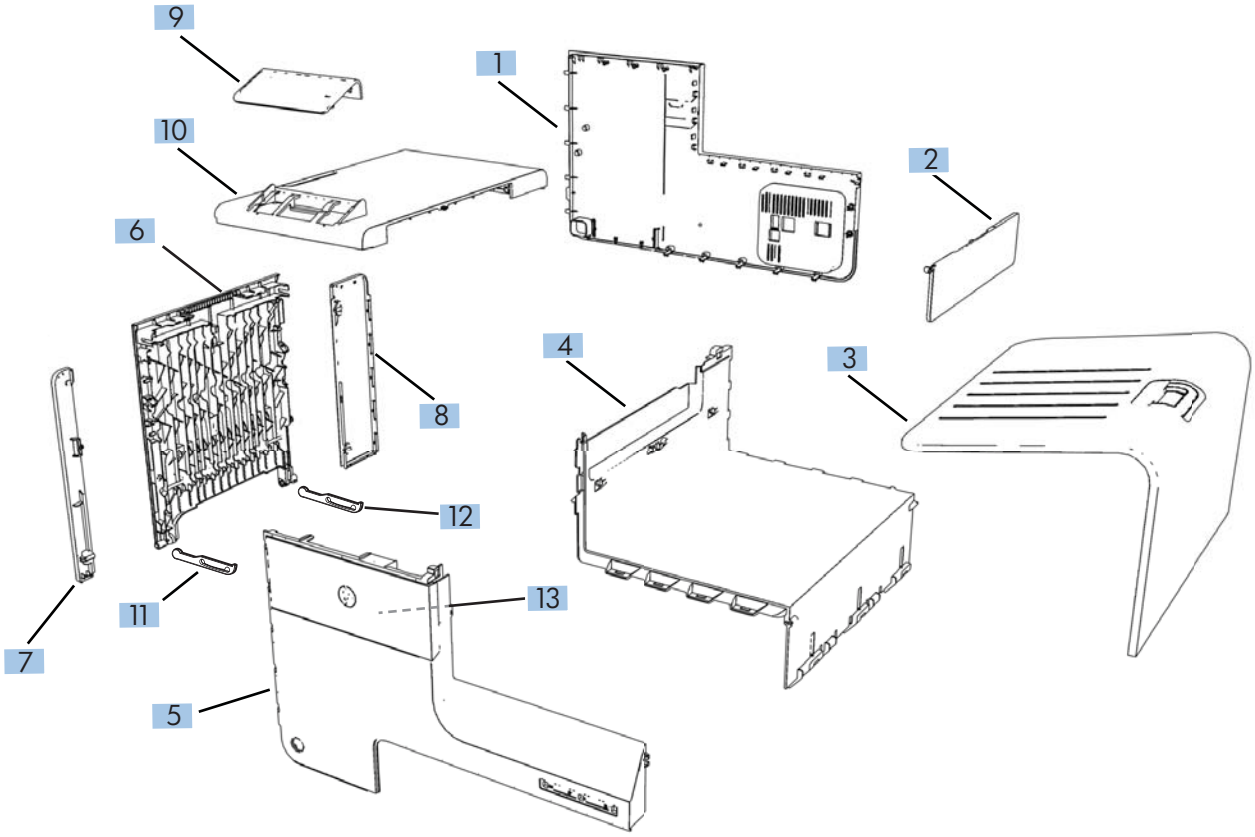


Table 2-6 Covers, panels, and doors

Ref	Description	Part number	Qty
1	Rear cover	CN598-67047	1
2	Eject flap assembly	CN598-67023	1
3	Output bin	CN598-67007	1
4	Right cover	CN598-67051	1
5	Front cover	CN598-67052	1
6	Left door	CN598-67001	1
7	Left front cover	CN598-67050	1
8	Left rear cover	CN598-67049	1
9	Control-panel assembly—X551	CN461-67003	1
9	Control-panel assembly—X451	CN463-67001	1
10	Top cover (X551)	CV037-67003	1
10	Top cover (X451)	CN459-67007	1
11	Strap, left door	CN598-67002	1
12	Strap, left door, rear	CN598-67003	1
13	Hinge, ISS door	CN598-67053	2
Not shown	Control panel FFC—X551	CV037-67002	1
Not shown	Control panel FFC—X451	CN463-67003	1

Internal assemblies

Figure 2-5 Internal assemblies (1 of 3)

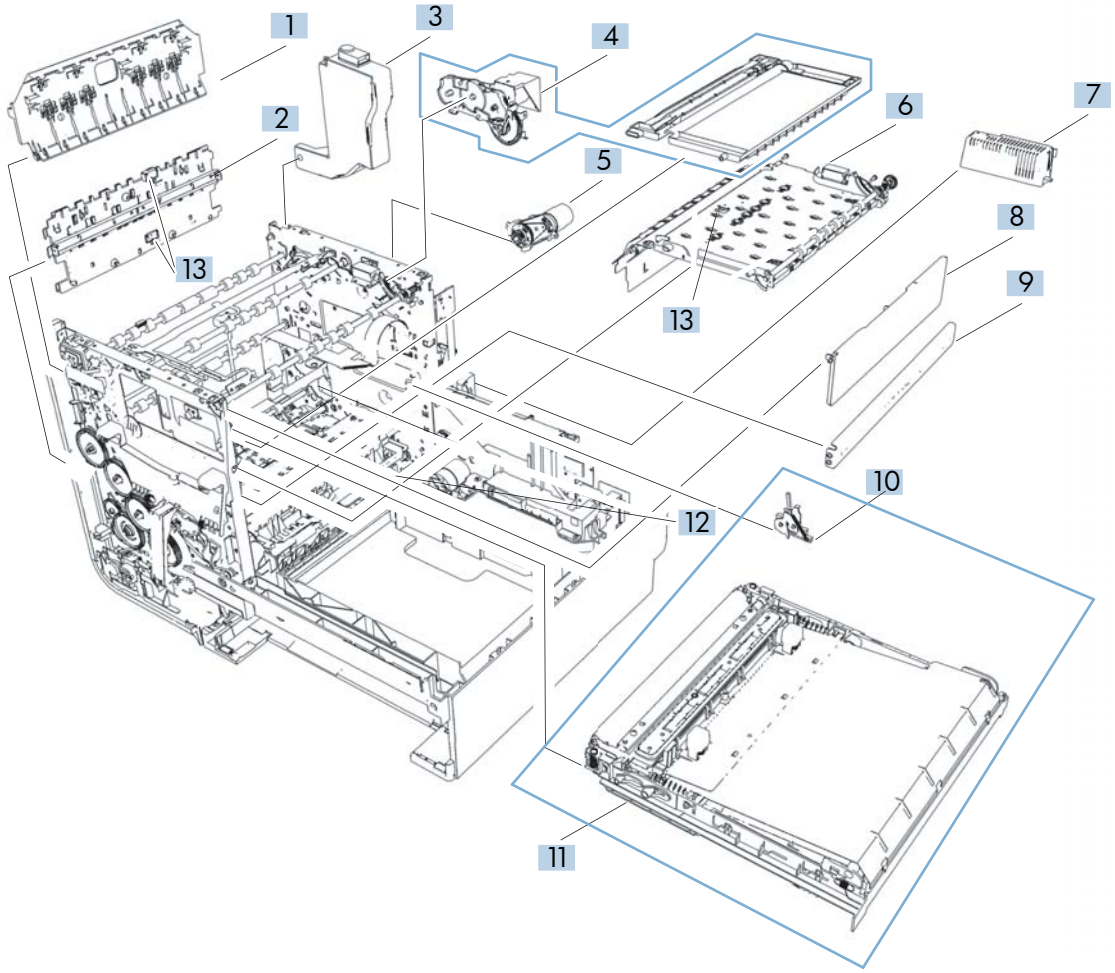


Table 2-7 Internal assemblies (1 of 3)

Ref	Description	Part number	Qty
1	Upper hanger assembly	Not supported	1
2	Vertical star wheel wall	Not supported	1
3	Aerosol fan assembly	CN598-67046	1
4	Eject drive gear module	CN598-67022	1
Not shown	Flap actuator solenoid	CN598-67022	1
Not shown	Rack-eject lifter flap	CN598-67022	1
5	Duplex drive module	CN598-67036	1
6	Floor eject assembly	Not supported	1
7	Power supply	CN598-67016	1
7	Power supply — India and China only	CN598-67017	1
8	Eject flap assembly	CN598-67023	1
9	Cross brace, right	Not supported	1
10	Web advance rack assembly	CN598-67021	1
11	Service sled assembly	CN598-67021	1
12	Media presence sensor PCA/flag	CN598-67034	1
13	REDI sensors	CN598-67038	3
Not shown	BDD sensor	CN598-67035	1
Not shown	FFC, 11 pin printzone	CN598-67039	1
Not shown	FFC, 24 pin printbar lift	CN598-67040	1
Not shown	FFC, 10 pin pick drive enc	CN598-67041	1
Not shown	FFC, 12 pin REDI distribution	CN598-67042	1
Not shown	FFC, 5 pin sensor carriage BDD	CN598-67043	1

Figure 2-6 Internal assemblies (2 of 3)

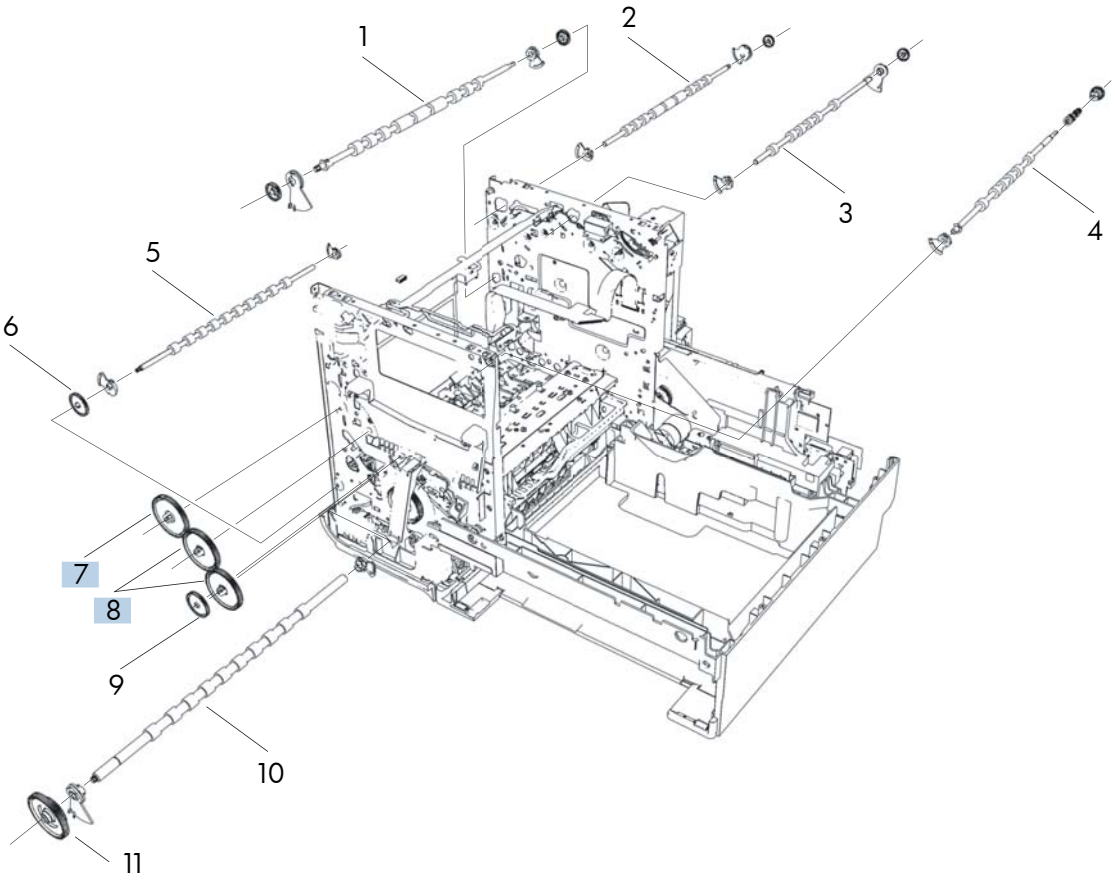


Table 2-8 Internal assemblies (2 of 3)

Ref	Description	Part number	Qty
1	Transfer 3 shaft	Not supported	1
2	Output upper 4 shaft	Not supported	1
3	Output eject 5 shaft	Not supported	1
4	Output eject 6 shaft	Not supported	1
5	Output lower 2 shaft	Not supported	1
6	Gear, shaft output lower	Not supported	1
7	Gear, output idler gear, 83t/30t	CN598-67031	1
8	Gear, idler gear train, 78t/48t	CN598-67031	2
9	Spurgear, idler gear train, 52t	Not supported	1
10	Platen output 1 shaft	Not supported	1
11	Gear, shaft output platen 1	Not supported	1

Figure 2-7 Internal assemblies (3 of 3)

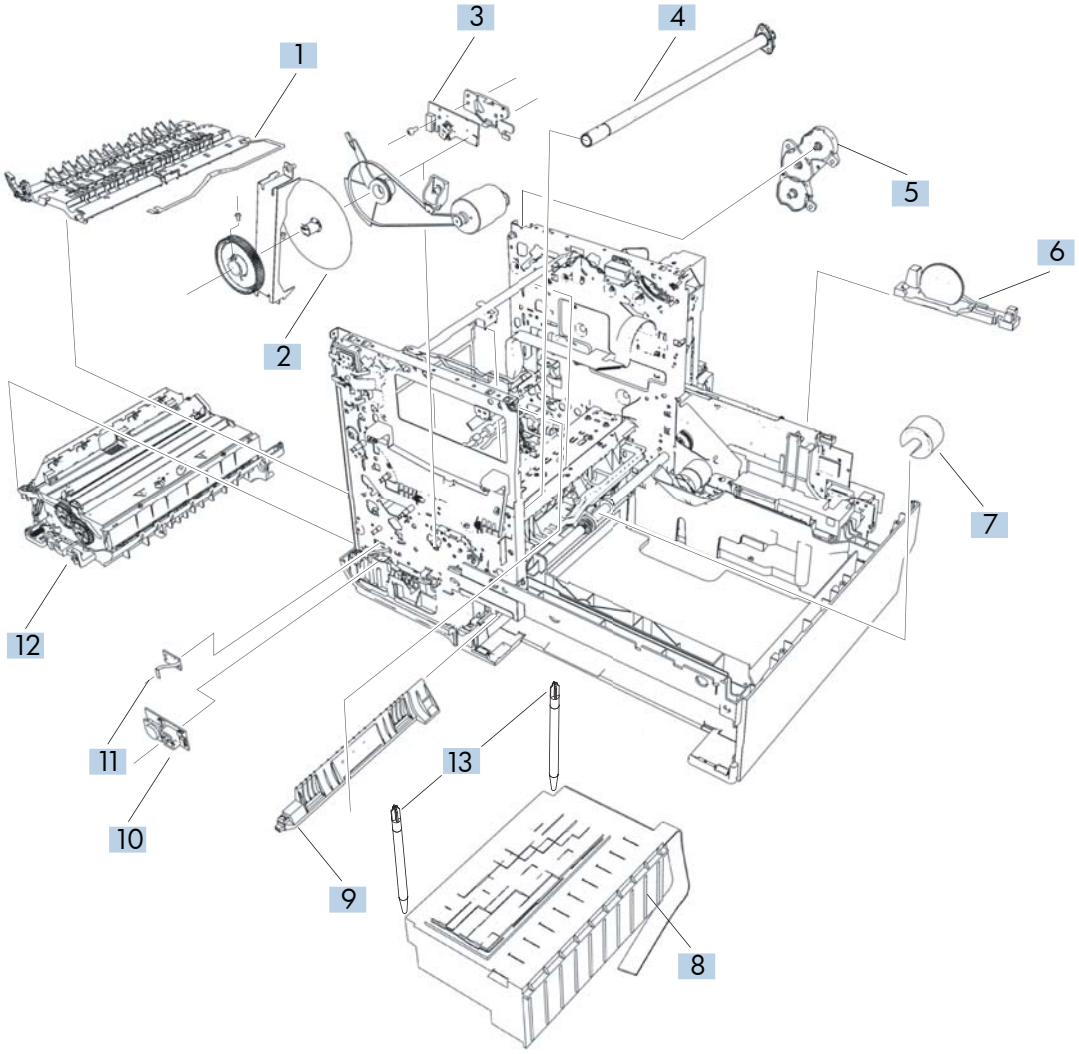


Table 2-9 Internal assemblies (3 of 3)

Ref	Description	Part number	Qty
1	Platen	CN598-67025	1
	NOTE: The platen kit contains a TOF REDI sensor and a print zone REDI sensor.		
2	Encoder disk	(Not supported)	1
3	Feedshaft Encoder PCA	CN598-67030	1
4	Feedshaft	(Not supported)	1
5	Drying path gear assembly	CN598-67060	1
6	Tray lift transmission assembly	CN598-67020	1
7	Separator/pick assembly kit	CN598-67018	1
8	Printbar	CN598-67045	1
Not shown	Printbar lift mechanism assembly	CN598-67027	1
9	Separation assembly	CN598-67018	1
10	Power button assembly	CN598-67019	1
11	Duplex presence sensor PCA	CN598-67057	1
12	Duplex module	CN598-67004	1
13	Z stop, printbar lift rod	CN598-67048	2
Not shown	Shaft, printbar lift, clutched	CN598-67028	1

Figure 2-8 PCA locations (1 of 2)

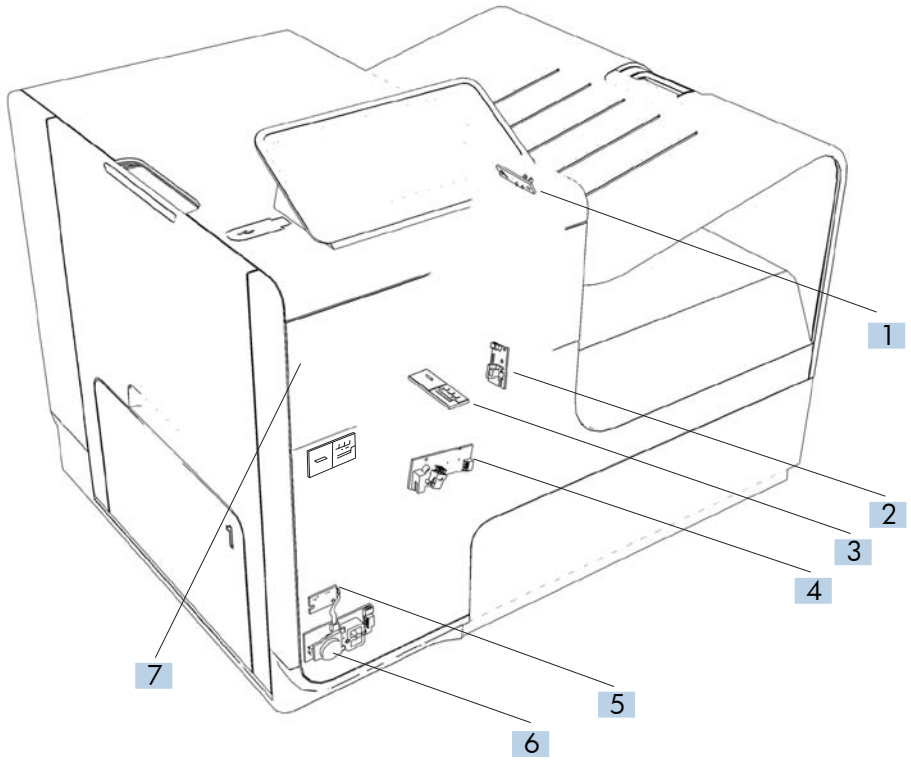


Table 2-10 PCA locations (1 of 2)

Ref	Description	Part number	Qty
1	Eject flap opto PCA	CN598-67023	1
2	Pick encoder distribution PCA	CN598-67029	1
3	Print zone distribution PCA	CN598-67033	1
4	Feedshaft encoder PCA	CN598-67030	1
5	Duplex presence sensor PCA	CN598-67057	1
6	Power button assembly	CN598-67019	1
7	REDI distribution PCA,	CN598-67037	1

Figure 2-9 PCA locations (2 of 2)

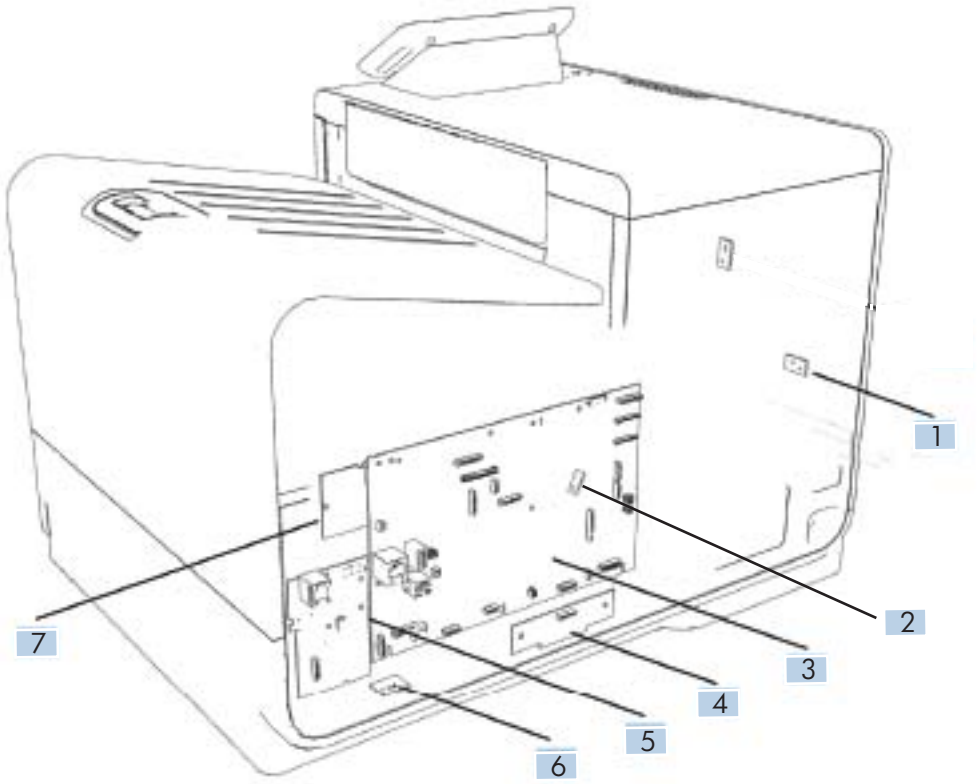


Table 2-11 PCA locations (2 of 2)

Ref	Description	Part number	Qty
1	Sensor carriage PCA/encoder strip	CN598-67061	1
2	Media presence flag/opto PCA kit	CN598-67034	1
3	Main PCA (X451dn models)	CN463-67002	1
3	Main PCA (X451dw models)	CN463-67004	1
3	Main PCA (X551dw models)	CV037-67001	1
4	Tray 3 interconnect PCA	CN598-67059	1
5	Fax PCA	CN460-67007	1
6	Temperature sensor	CN598-67024	1
7	Wireless PCA	CN598-67055	1

Alphabetical parts list

Table 2-12 Alphabetical parts list

Description	Part number	Table and page
Aerosol fan assembly	CN598-67046	Internal assemblies (1 of 3) on page 149
BDD sensor	CN598-67035	Internal assemblies (1 of 3) on page 149
Control panel FFC—X451	CN463-67003	Covers, panels, and doors on page 147
Control panel FFC—X551	CV037-67002	Covers, panels, and doors on page 147
Control-panel assembly—X451	CN463-67001	Covers, panels, and doors on page 147
Control-panel assembly—X551	CN461-67003	Covers, panels, and doors on page 147
Cross brace, right	Not supported	Internal assemblies (1 of 3) on page 149
Drying path gear assembly	CN598-67060	Internal assemblies (3 of 3) on page 153
Duplex drive module	CN598-67036	Internal assemblies (1 of 3) on page 149
Duplex module	CN598-67004	Internal assemblies (3 of 3) on page 153
Duplex presence sensor PCA	CN598-67057	Internal assemblies (3 of 3) on page 153
Duplex presence sensor PCA	CN598-67057	PCA locations (1 of 2) on page 155
Eject drive gear module	CN598-67022	Internal assemblies (1 of 3) on page 149
Eject flap assembly	CN598-67023	Covers, panels, and doors on page 147
Eject flap assembly	CN598-67023	Internal assemblies (1 of 3) on page 149
Eject flap opto PCA	CN598-67023	PCA locations (1 of 2) on page 155
Encoder disk	(Not supported)	Internal assemblies (3 of 3) on page 153
Fax PCA	CN460-67007	PCA locations (2 of 2) on page 157
Feedshaft	(Not supported)	Internal assemblies (3 of 3) on page 153

Table 2-12 Alphabetical parts list (continued)

Description	Part number	Table and page
Feedshaft Encoder PCA	CN598-67030	Internal assemblies (3 of 3) on page 153
Feedshaft encoder PCA	CN598-67030	PCA locations (1 of 2) on page 155
FFC, 10 pin pick drive enc	CN598-67041	Internal assemblies (1 of 3) on page 149
FFC, 11 pin printzone	CN598-67039	Internal assemblies (1 of 3) on page 149
FFC, 12 pin REDI distribution	CN598-67042	Internal assemblies (1 of 3) on page 149
FFC, 24 pin printbar lift	CN598-67040	Internal assemblies (1 of 3) on page 149
FFC, 5 pin sensor carriage BDD	CN598-67043	Internal assemblies (1 of 3) on page 149
Flap actuator solenoid	CN598-67022	Internal assemblies (1 of 3) on page 149
Floor eject assembly	Not supported	Internal assemblies (1 of 3) on page 149
Front cover	CN598-67052	Covers, panels, and doors on page 147
Gear, idler gear train, 78t/48t	CN598-67031	Internal assemblies (2 of 3) on page 151
Gear, output idler gear, 83t/30t	CN598-67031	Internal assemblies (2 of 3) on page 151
Gear, shaft output lower	Not supported	Internal assemblies (2 of 3) on page 151
Gear, shaft output platen 1	Not supported	Internal assemblies (2 of 3) on page 151
Hinge, ISS door	CN598-67053	Covers, panels, and doors on page 147
Left door	CN598-67001	Covers, panels, and doors on page 147
Left front cover	CN598-67050	Covers, panels, and doors on page 147
Left rear cover	CN598-67049	Covers, panels, and doors on page 147
Main PCA (X451dn models)	CN463-67002	PCA locations (2 of 2) on page 157
Main PCA (X451dw models)	CN463-67004	PCA locations (2 of 2) on page 157

Table 2-12 Alphabetical parts list (continued)

Description	Part number	Table and page
Main PCA (X551dw models)	CV037-67001	PCA locations (2 of 2) on page 157
Media presence flag/opto PCA kit	CN598-67034	PCA locations (2 of 2) on page 157
Media presence sensor PCA/flag	CN598-67034	Internal assemblies (1 of 3) on page 149
Output bin	CN598-67007	Covers, panels, and doors on page 147
Output eject 5 shaft	Not supported	Internal assemblies (2 of 3) on page 151
Output eject 6 shaft	Not supported	Internal assemblies (2 of 3) on page 151
Output lower 2 shaft	Not supported	Internal assemblies (2 of 3) on page 151
Output upper 4 shaft	Not supported	Internal assemblies (2 of 3) on page 151
Pick encoder distribution PCA	CN598-67029	PCA locations (1 of 2) on page 155
Platen output 1 shaft	Not supported	Internal assemblies (2 of 3) on page 151
Platen **NOTE:** The platen kit contains a TOF REDI sensor and a print zone REDI sensor.	CN598-67025	Internal assemblies (3 of 3) on page 153
Power button assembly	CN598-67019	Internal assemblies (3 of 3) on page 153
Power button assembly	CN598-67019	PCA locations (1 of 2) on page 155
Power supply	CN598-67016	Internal assemblies (1 of 3) on page 149
Power supply — India and China only	CN598-67017	Internal assemblies (1 of 3) on page 149
Print zone distribution PCA	CN598-67033	PCA locations (1 of 2) on page 155
Printbar	CN598-67045	Internal assemblies (3 of 3) on page 153
Printbar lift mechanism assembly	CN598-67027	Internal assemblies (3 of 3) on page 153
Rack-eject lifter flap	CN598-67022	Internal assemblies (1 of 3) on page 149

Table 2-12 Alphabetical parts list (continued)

Description	Part number	Table and page
Rear cover	CN598-67047	Covers, panels, and doors on page 147
REDI distribution PCA,	CN598-67037	PCA locations (1 of 2) on page 155
REDI sensors	CN598-67038	Internal assemblies (1 of 3) on page 149
Right cover	CN598-67051	Covers, panels, and doors on page 147
Sensor carriage PCA/encoder strip	CN598-67061	PCA locations (2 of 2) on page 157
Separation assembly	CN598-67018	Internal assemblies (3 of 3) on page 153
Separator/pick assembly kit	CN598-67018	Internal assemblies (3 of 3) on page 153
Service sled assembly	CN598-67021	Internal assemblies (1 of 3) on page 149
Shaft, printbar lift, clutched	CN598-67028	Internal assemblies (3 of 3) on page 153
Spurgear, idler gear train, 52t	Not supported	Internal assemblies (2 of 3) on page 151
Strap, left door	CN598-67002	Covers, panels, and doors on page 147
Strap, left door, rear	CN598-67003	Covers, panels, and doors on page 147
Temperature sensor	CN598-67024	PCA locations (2 of 2) on page 157
Top cover (X451)	CN459-67007	Covers, panels, and doors on page 147
Top cover (X551)	CV037-67003	Covers, panels, and doors on page 147
Transfer 3 shaft	Not supported	Internal assemblies (2 of 3) on page 151
Tray 3 interconnect PCA	CN598-67059	PCA locations (2 of 2) on page 157
Tray lift transmission assembly	CN598-67020	Internal assemblies (3 of 3) on page 153
Upper hanger assembly	Not supported	Internal assemblies (1 of 3) on page 149
Vertical star wheel wall	Not supported	Internal assemblies (1 of 3) on page 149

Table 2-12 Alphabetical parts list (continued)

Description	Part number	Table and page
Web advance rack assembly	CN598-67021	Internal assemblies (1 of 3) on page 149
Wireless PCA	CN598-67055	PCA locations (2 of 2) on page 157
Z stop, printbar lift rod	CN598-67048	Internal assemblies (3 of 3) on page 153

Numerical parts list

Table 2-13 Numerical parts list

Part number	Description	Table and page
(Not supported)	Encoder disk	Internal assemblies (3 of 3) on page 153
(Not supported)	Feedshaft	Internal assemblies (3 of 3) on page 153
CN459-67007	Top cover (X451)	Covers, panels, and doors on page 147
CN460-67007	Fax PCA	PCA locations (2 of 2) on page 157
CN461-67003	Control-panel assembly—X551	Covers, panels, and doors on page 147
CN463-67001	Control-panel assembly—X451	Covers, panels, and doors on page 147
CN463-67002	Main PCA (X451dn models)	PCA locations (2 of 2) on page 157
CN463-67003	Control panel FFC—X451	Covers, panels, and doors on page 147
CN463-67004	Main PCA (X451dw models)	PCA locations (2 of 2) on page 157
CN598-67001	Left door	Covers, panels, and doors on page 147
CN598-67002	Strap, left door	Covers, panels, and doors on page 147
CN598-67003	Strap, left door, rear	Covers, panels, and doors on page 147
CN598-67004	Duplex module	Internal assemblies (3 of 3) on page 153
CN598-67007	Output bin	Covers, panels, and doors on page 147
CN598-67016	Power supply	Internal assemblies (1 of 3) on page 149
CN598-67017	Power supply — India and China only	Internal assemblies (1 of 3) on page 149
CN598-67018	Separator/pick assembly kit	Internal assemblies (3 of 3) on page 153
CN598-67018	Separation assembly	Internal assemblies (3 of 3) on page 153
CN598-67019	Power button assembly	Internal assemblies (3 of 3) on page 153

Table 2-13 Numerical parts list (continued)

Part number	Description	Table and page
CN598-67019	Power button assembly	PCA locations (1 of 2) on page 155
CN598-67020	Tray lift transmission assembly	Internal assemblies (3 of 3) on page 153
CN598-67021	Web advance rack assembly	Internal assemblies (1 of 3) on page 149
CN598-67021	Service sled assembly	Internal assemblies (1 of 3) on page 149
CN598-67022	Eject drive gear module	Internal assemblies (1 of 3) on page 149
CN598-67022	Flap actuator solenoid	Internal assemblies (1 of 3) on page 149
CN598-67022	Rack-eject lifter flap	Internal assemblies (1 of 3) on page 149
CN598-67023	Eject flap assembly	Covers, panels, and doors on page 147
CN598-67023	Eject flap assembly	Internal assemblies (1 of 3) on page 149
CN598-67023	Eject flap opto PCA	PCA locations (1 of 2) on page 155
CN598-67024	Temperature sensor	PCA locations (2 of 2) on page 157
CN598-67025	Platen **NOTE:** The platen kit contains a TOF REDI sensor and a print zone REDI sensor.	Internal assemblies (3 of 3) on page 153
CN598-67027	Printbar lift mechanism assembly	Internal assemblies (3 of 3) on page 153
CN598-67028	Shaft, printbar lift, clutched	Internal assemblies (3 of 3) on page 153
CN598-67029	Pick encoder distribution PCA	PCA locations (1 of 2) on page 155
CN598-67030	Feedshaft Encoder PCA	Internal assemblies (3 of 3) on page 153
CN598-67030	Feedshaft encoder PCA	PCA locations (1 of 2) on page 155
CN598-67031	Gear, output idler gear, 83t/30t	Internal assemblies (2 of 3) on page 151
CN598-67031	Gear, idler gear train, 78t/48t	Internal assemblies (2 of 3) on page 151

Table 2-13 Numerical parts list (continued)

Part number	Description	Table and page
CN598-67033	Print zone distribution PCA	PCA locations (1 of 2) on page 155
CN598-67034	Media presence sensor PCA/flag	Internal assemblies (1 of 3) on page 149
CN598-67034	Media presence flag/opto PCA kit	PCA locations (2 of 2) on page 157
CN598-67035	BDD sensor	Internal assemblies (1 of 3) on page 149
CN598-67036	Duplex drive module	Internal assemblies (1 of 3) on page 149
CN598-67037	REDI distribution PCA,	PCA locations (1 of 2) on page 155
CN598-67038	REDI sensors	Internal assemblies (1 of 3) on page 149
CN598-67039	FFC, 11 pin printzone	Internal assemblies (1 of 3) on page 149
CN598-67040	FFC, 24 pin printbar lift	Internal assemblies (1 of 3) on page 149
CN598-67041	FFC, 10 pin pick drive enc	Internal assemblies (1 of 3) on page 149
CN598-67042	FFC, 12 pin REDI distribution	Internal assemblies (1 of 3) on page 149
CN598-67043	FFC, 5 pin sensor carriage BDD	Internal assemblies (1 of 3) on page 149
CN598-67045	Printbar	Internal assemblies (3 of 3) on page 153
CN598-67046	Aerosol fan assembly	Internal assemblies (1 of 3) on page 149
CN598-67047	Rear cover	Covers, panels, and doors on page 147
CN598-67048	Z stop, printbar lift rod	Internal assemblies (3 of 3) on page 153
CN598-67049	Left rear cover	Covers, panels, and doors on page 147
CN598-67050	Left front cover	Covers, panels, and doors on page 147
CN598-67051	Right cover	Covers, panels, and doors on page 147
CN598-67052	Front cover	Covers, panels, and doors on page 147

Table 2-13 Numerical parts list (continued)

Part number	Description	Table and page
CN598-67053	Hinge, ISS door	Covers, panels, and doors on page 147
CN598-67055	Wireless PCA	PCA locations (2 of 2) on page 157
CN598-67057	Duplex presence sensor PCA	Internal assemblies (3 of 3) on page 153
CN598-67057	Duplex presence sensor PCA	PCA locations (1 of 2) on page 155
CN598-67059	Tray 3 interconnect PCA	PCA locations (2 of 2) on page 157
CN598-67060	Drying path gear assembly	Internal assemblies (3 of 3) on page 153
CN598-67061	Sensor carriage PCA/encoder strip	PCA locations (2 of 2) on page 157
CV037-67001	Main PCA (X551dw models)	PCA locations (2 of 2) on page 157
CV037-67002	Control panel FFC—X551	Covers, panels, and doors on page 147
CV037-67003	Top cover (X551)	Covers, panels, and doors on page 147
Not supported	Upper hanger assembly	Internal assemblies (1 of 3) on page 149
Not supported	Vertical star wheel wall	Internal assemblies (1 of 3) on page 149
Not supported	Floor eject assembly	Internal assemblies (1 of 3) on page 149
Not supported	Cross brace, right	Internal assemblies (1 of 3) on page 149
Not supported	Transfer 3 shaft	Internal assemblies (2 of 3) on page 151
Not supported	Output upper 4 shaft	Internal assemblies (2 of 3) on page 151
Not supported	Output eject 5 shaft	Internal assemblies (2 of 3) on page 151
Not supported	Output eject 6 shaft	Internal assemblies (2 of 3) on page 151
Not supported	Output lower 2 shaft	Internal assemblies (2 of 3) on page 151
Not supported	Gear, shaft output lower	Internal assemblies (2 of 3) on page 151

Table 2-13 Numerical parts list (continued)

Part number	Description	Table and page
Not supported	Spurgear, idler gear train, 52t	Internal assemblies (2 of 3) on page 151
Not supported	Platen output 1 shaft	Internal assemblies (2 of 3) on page 151
Not supported	Gear, shaft output platen 1	Internal assemblies (2 of 3) on page 151

Index

A

accessories
  ordering 138
after-service checklist 5

B

bin, output
  locating 142, 143

C

cartridge
  ordering 138
  part number 138
cautions iii
checklists
  after-service 5
  preservice 5
control panel, removing 50, 51
conventions, document iii
covers
  front, removing 34
  left door, removing 24
  left front, removing 28
  left rear, removing 27
  locations 146
  parts list 146
  right, removing 35
  top, removing 29
covers, removing
  rear 23

D

diagrams 137
  covers. panels, and doors 146
  internal assemblies 148
document conventions iii
document feeder
  locating 142, 143
door release, locating 142, 143
doors
  parts list 146

E

eject flap sensor PCA, removing 122
electrostatic discharge (ESD) 2
ESD (electrostatic discharge)
  precaution during parts removal 2
ethernet port
  locating 144

F

front cover, removing 34

I

ink cartridge
  ordering 138
  part number 138
input tray
  locating 142, 143
interface ports
  locating 144
internal assembly
  locations 148
  parts list 148

L

left door, removing 24
left front cover, removing 28
left rear cover, removing 27

M

main PCA, removing 126

N

notes iii

O

ordering
  ink cartridge 138
  product documents 138
  supplies and accessories 138
output bin
  locating 142, 143

P

panels
  parts list 146
part number
  ink cartridge 138
parts 137
  cover locations 146
  door locations 146
  internal assembly locations 148
  panel locations 146
pliers, required 3
ports
  locating 144
post-service tests 6
preservice checklist 5
print cartridges
  door release, locating 142, 143
print quality
  test 6

R

rear cover, removing 23
removing parts
  cautions for 2
  checklists 5
  control panel 50, 51
  Eject flap opto PCA 122
  front cover 34
  left door 24

left front cover 28
left rear cover 27
main PCA 126
rear cover 23
right cover 35
tools, required 3
top cover 29
replacing
parts 2
right cover, removing 35

S

screwdrivers, required 3
screws
replacing 2
service
tools, required 3
static precautions 2
supplies
ordering 138

T

tests
post-service 6
print-quality 6
tips iii
tools, required 3
top cover, removing 29
trays
locating 142, 143

U

USB port
locating 144

W

warnings iii

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CV037-90002