Removal and Replacement

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Removal and Replacement Strategy

	This chapter documents removal and replacement of Field Replaceable Units (FRUs) only. Exchange assemblies should be sent to SMO for repair.
	Replacement is generally the reverse of removal. Occasionally, notes are included to provide direction for difficult or critical replacement procedures.
WARNING!	Unplug the power cord from the power outlet before attempting to service the printer. If this warning is not followed, severe injury may result.
	Never operate or service the printer with the protective cover removed from the Laser/Scanner Assembly. The reflected beam, although invisible, can damage your eyes.
	The sheet metal edges of this printer can be sharp! Exercise caution when working with the printer.
Caution	The printer contains parts that are electrostatic discharge (ESD) sensitive. Always service printers at an ESD-protected workstation.
	To install a self-tapping screw, first turn it counter-clockwise to align it with the existing thread pattern, then carefully turn clockwise to tighten. Do not overtighten. If a self-tapping screw-hole becomes stripped, repair the screw-hole or replace the affected assembly.
Note	Always remove the toner cartridge before removing or replacing parts.

Required Tools

- #2 Phillips screwdriver with a magnetic tip
- 5.5 mm hexhead nutdriver
- small flathead screwdriver
- needlenose pliers

Caution

A Posidriv screwdriver will damage the printer's screw heads. Use Phillips only.

Figure 6-1 shows the difference between a Phillips and a Posidriv screwdriver. Note that a Phillips tip has more beveled surfaces.



Phillips and Posidriv screwdrivers

Installing Memory Cards (DRAM)



- 1 Unplug the power cord from the printer. You should not install a memory card while the printer is in SleepMode.
- 2 Open the Printer Door, remove the toner cartridge, and close the Printer Door. Protect the toner cartridge from light while you are working on the printer.
- 3 Remove any paper in the paper tray. Gently tip the printer onto its side so that the memory cover is on top as shown in Figure 3.
- 4 Remove the Memory Expansion Cover by carefully pulling the tab out and away from the printer in a gentle rocking motion.
- **5** Align the memory card with the corner notch so it is positioned as in Figure 4. Push it firmly into the printer.

Replace the Memory Expansion Cover, set the printer upright, reinstall the toner cartridge, reinsert paper, and reconnect to the power source.

Print a self-test page (see Chapter 3) to check that the printer recognizes the additional memory you have added. Your Total Memory in the "Printer Information" section will show the new MB total.

- 1 MByte card 2 MByte total
- 2 MByte card 3 MByte total
- 4 MByte card 5 MByte total
- 8 MByte card 9 MByte total

Covers and Doors

Back Cover

- 1 Unplug the power cord and remove the parallel cable from the back of the printer.
- 2 Remove the toner cartridge.
- 3 Lift the Input Extender assembly.

Caution

You must lift the Input Extender when the covers are removed or it will break. After you have removed the covers, leave the Input Extender in this lifted position for ease of replacement.

4 Remove the (3) screws (Figure 6-2, callout 1).



Back Cover Removal (1 of 2)

- **5** Separate the rear panel from the main cover, pulling the lower corners away from the printer first. Then, insert the small flathead screwdriver into the openings at the top to pop the upper corners (Figure 6-3, callout 1).
- **6** Remove the cover by grabbing it on both sides and pulling it straight back with a firm pull (Figure 6-3, callout 2).



Back Cover Removal (2 of 2)

To reinstall

Make certain the Input Extender is up.

EP Door Assembly

- 1 Unplug the power cord and remove the parallel cable from the back of the printer.
- 2 Open the EP door.
- **3** Remove the toner cartridge.
- **4** Along the door hinge, there is a flex point. Firmly press the left tab inward to release it. The right tab will fall out easily (Figure 6-4).



EP Door Assembly Removal

Memory Door

- 1 Unplug the power cord and remove the parallel cable from the back of the printer.
- 2 Remove the toner cartridge.
- **3** Gently tip the printer onto its side so that the Control Panel is on top.
- **4** Carefully pull the door tab out (Figure 6-5, callout 1) and away from the printer in a gentle rocking motion (Figure 6-5, callout 2).



Memory Door Removal

Main Cover and Paper Input Assembly

- 1 Remove the toner cartridge.
- 2 Remove memory door.

Caution Remove the memory door first. The door will break if you remove the Main Cover without removing the memory door.

- **3** Remove the EP Door Assembly.
- 4 Remove the Back Cover.
- **5** Remove the (2) screws from the top of the printer (Figure 6-6, callout 1).
- 6 Grasp the two lower, front corners of the printer and pull gently outward to release the front of the Main Cover.
- 7 Lift the cover straight off.
- **8** Remove the Paper Input Assembly (Figure 6-6, callout 2) by rotating it forward and lifting it out with firm pressure.



Main Cover and Paper Input Assembly Removal

Note

When replacing the Paper Input Assembly, make certain that the mylar sheet is positioned between the Input Feed Roller and Separation Pad and that the sheet is not folded or bent.

Internal Assemblies

Control Panel

- 1 Remove the Printer Covers.
- **2** Use the needlenose pliers to release the Control Panel connector (Figure 6-7, callout 1).
- **3** Press the tab on the top of the Control Panel downward (Figure 6-7, callout 2). The Control Panel will pop out of the printer chassis.
- 4 Lift the Control Panel out.



Control Panel Removal

Exit Roller Assembly

- 1 Remove Printer Covers.
- 2 Grasp both tabs at the lower ends of the Exit Roller bushings and pull inward. This will release the tabs from the printer chassis (Figure 6-8, callout 1).
- **3** Rotate the tabs 90 degrees, clear of the printer chassis (Figure 6-8, callout 2).
- 4 Lift the roller out.





Exit Roller Removal

To reinstall

The end of the Exit Roller that has a gear attached must fit into the gear train. It is possible to reinstall the Exit Roller so that the gear end is on the opposite side of the printer; this placement would cause paper path problems.

Delivery Assembly

- 1 Remove the Printer Covers and Exit Roller Assembly.
- 2 Remove the EP Right-Hand assembly by pressing the tab in (Figure 6-9, callout 1) and sliding the assembly toward the front of the printer (Figure 6-9, callout 2).

The EP Right-Hand assembly must be removed to access any fuser components.

Figure 6-9

Note



Delivery Assembly Removal (1 of 2)

3 Use the magnetic screwdriver to remove the (2) screws (Figure 6-10, callout 1). Once the screws have been removed, rotate the rear of the Delivery Assembly up and forward and lift it out of the printer.



Figure 6-10

Delivery Assembly Removal (2 of 2)

Note

Upon reinstallation, the tabs on the front end of the Delivery Assembly must fit under the sheet metal fuser plate below to correctly reseat the Delivery Assembly.

Fuser Pressure Plate

- 1 Remove Printer Covers and Delivery Assembly (Figures 6-9 and 6-10).
- **2** Remove the (2) screws (Figure 6-11, callout 1).
- **3** Press the Fuser Plate retainer clips out to release the Pressure Plate (Figure 6-11, callout 2).
- **4** Rotate the plate around and toward the back and lift up to remove it (Figure 6-11, callout 3).





Fuser Pressure Plate Removal

To reinstall:

The Fuser Pressure Plate is kept in place by four locking mechanisms in each corner. Place the rear slits in the plate over the rear brackets that hold the Fusing Assembly (Figure 6-12, callout 1). Lower the plate over the retaining clips, pressing on both sides of the Fuser Pressure Plate (Figure 6-12, callout, 2). It is important that the spring is placed over the positioning pin (callout 3) because inadequate pressure will cause fusing problems. Replace the screws.





Fuser Pressure Plate Replacement

Heating Element

- 1 Remove Printer Covers, Delivery Assembly (Figures 6-9 and 6-10), and Fuser Pressure Plate (Figure 6-11).
- 2 Remove the wire cover (on the right side of the printer) for the Heating Element wires by pressing in on the tab and pulling outward (Figure 6-13, callout 1).



Heating Element Removal (1 of 3)

3 Disconnect the AC voltage to the Heating Element by releasing the connector located on the DC Controller. Press down on the connector release with a small, flathead screwdriver (Figure 6-14, callout 1). (Since this is a small space, it is much easier to reach the connector with a screwdriver.) Pull straight out (Figure 6-14, callout 2).



Heating Element Removal (2 of 3)

- **4** Remove the wire from the wire guides along the right-side of the printer.
- 5 Disconnect the thermistor feedback connector in the left front side of the Fusing Assembly (Figure 6-15).

Figure 6-15





6 Lift the Heating Element out.

To reinstall

Make sure the connectors are properly reattached.

Pressure Roller

- 1 Remove Printer Covers, Delivery Assembly (Figures 6-9 and 6-10), Fuser Pressure Plate (Figure 6-11), and Heating Element (Figures 6-13 through 6-15).
- **2** Remove the Pressure Roller guide by lifting the edge (Figure 6-16, callout 1) and then rolling it gently backward (Figure 6-16, callout 2).



Figure 6-16

Pressure Roller Guide Removal

3 Lift the right end of the Pressure Roller up and out of the printer chassis.

Note The right end of the Pressure Roller is greased.

- 4 The left side will follow easily with the Pressure Roller gear still attached.
- **Note** When reinstalling the Pressure Roller, apply a drop of grease to the grounding plate on the right side of the shaft. (Refer to Chapter 8 for a part number.)

Face-Up/Face-Down Lever

- 1 Remove Printer Covers, Delivery Assembly (Figures 6-9 and 6-10), Fuser Pressure Plate (Figure 6-11), and Heating Element (Figures 6-13 through 6-15), and Pressure Roller (Figure 6-16).
- **2** Rotate the lever forward 90 degrees (past the spring) and pull it straight out the front of the printer.

To reinstall

- 1 Make sure the lever arm is on the left and is initially pointing downward.
- 2 Pull the spring forward using needlenose pliers.
- **3** Slide the short, round tabs into the grooves on the Separation Guide Assembly. The machined ridges on the lever will face you.
- 4 Release the spring so it falls in place in front of the square tab (Figure 6-17).

Note

While the shape of the lever was changed for the HP LaserJet 6L (a stiffening rod was also added), these procedures for Face-Up/Face-Down Lever removal remain unchanged. Figure 6-17 shows the lever from an HP LaserJet 5L.

Figure 6-17



Face-Up/Face-Down Lever Replacement

Note

You can tell when the lever is in place because there are two plastic grooves that fit precisely in front of the Exit Rollers, and you should be able to feel the spring's release mechanism.

Fuser Exit Roller Assembly

- 1 Remove Printer Covers, Delivery Assembly (Figures 6-9 and 6-10), Fuser Pressure Plate (Figure 6-11), and Heating Element (Figures 6-13 through 6-15), Pressure Roller (Figure 6-16), and Face-Up/Face-Down Lever (Figure 6-17).
- 2 Remove the gear from the left end of the roller shaft by pressing down on the catching mechanism with the small flathead screwdriver and pulling the gear away.
- **3** Remove the Exit Roller Assembly by pressing the small, white tab upward (Figure 6-18, callout 1) and rotating it around (Figure 6-18, callout 2).

Note While the shape of the white tab was changed for the HP LaserJet 6L, these procedures for Fuser Exit Roller Assembly removal remain unchanged. Figure 6-18 shows the white tab from an HP LaserJet 5L.

4 Slide the Exit Roller Assembly forward and out to the right of the printer.



Fuser Exit Roller Removal

Paper Exit Sensor Flag

- 1 Remove the Printer Covers, Delivery Assembly (Figures 6-9 and 6-10), and Fuser Pressure Plate (Figure 6-11).
- **Caution** Before proceeding to Step 2, examine the Paper Exit Sensor flag. It is important to note the position of the spring mechanism on the flag. The spring must be reinstalled to exactly this position.
 - 2 Remove the Paper Exit Sensor flag by pressing down on the left side and pulling up on the right side.

To reinstall

Note

It is important that you reinstall the flag correctly, because installing it incorrectly will cause the Control Panel to display an error with the Paper Exit Sensor (PS201).

Place the left side of the flag in the correct position first, then slide the right side into place, making certain the spring is on top of the flag (Figure 6-19). If the spring exerts no pressure on the flag, it may require "respringing" by giving the spring an extra turn before reinstalling. The flag should fit snugly in place.

Figure 6-19



Paper Exit Sensor Flag Replacement

Top Assemblies

Laser/Scanner Assembly

- 1 Remove the Printer Covers.
- 2 Remove both Laser/Scanner connectors (Figure 6-20, callout 1).
- **3** Remove all (4) screws and lift the assembly straight off (Figure 6-20, callout 2).

Note One of the four screws is longer than the other three. Upon reinstallation, the longer screw must be replaced in its original location.



Laser/Scanner Assembly Removal

Solenoid

- 1 Remove the Printer Covers.
- 2 On the left side of the printer, remove the paper pickup gear (Figure 6-21, callout 1) by pressing the tabs in the center of the gear outward and pulling the gear off (Figure 6-21).



Solenoid Removal (1 of 2)

- **3** Remove the Solenoid connector (J204) from the DC Controller (Figure 6-22, callout 1).
- **4** Remove the self-tapping screw that holds the Solenoid in place (Figure 6-22, callout 2).
- 5 Unthread the wires from the printer chassis.
- 6 Lift the Solenoid off.





Solenoid Removal (2 of 2)

Note

When reinstalling this part, the Paper Pickup Gear is keyed to go on the shaft in only one way.

Pickup Roller Assembly

- 1 Remove the Printer Covers.
- 2 Remove the paper pickup gear (Figure 6-21).

Note This gear is keyed to go on the shaft in only one way.

3 Remove the pickup roller grounding clip on the right of the printer by lifting each end of the clip up and over the two metal guides and sliding the clip off. Figure 6-23 depicts the clip from an HP LaserJet 5L. The clip from an HP LaserJet 6L (and some HP LaserJet 5Ls) is shaped differently.



Pickup Roller Assembly Removal (1 of 2)

4 Using needlenose pliers, pull the bottom of the bushing out (Figure 6-24, callout 1), then turn it counter clockwise to release it (Figure 6-24, callout 2).



Pickup Roller Assembly Removal (2 of 2)

- 5 Lift the bushing out.
- 6 From inside the front of the printer, slide the right side of the Pickup Roller Assembly forward, then lift the left side out.

6 Removal and Replacement

To reinstall

After placing the Pickup Roller shaft through on the left side, line up the Idler Roller tabs while repositioning the right side. Rock the shaft back and forth until the Pickup Roller and the Idler Roller tabs are correctly reinstalled.

Note

It is important that the Pickup Roller is placed back in with the two Idler Roller tabs up, so that they fit into the underside of the metal chassis behind the Laser/Scanner assembly (Figure 6-25).



Paper Pickup Roller Assembly Replacement (Inside/Front View)

Paper Feed Frame

- 1 Remove the Printer Covers.
- 2 Remove the Pickup Roller Assembly (Figures 6-23 through 6-24).
- **3** Disconnect the following:
 - Solenoid from the DC Controller at J204 (Figure 6-22, callout 1)
 - Two connectors from the Laser/Scanner (Figure 6-26, callout 1)
 - Connector from Top Cover/EP Cartridge Sensor on HP LaserJet 5L only (Figure 6-26, callout 2)
 - Connector from Switch 101 (Figure 6-26, callout 3)
 - Connector from Front Control Panel (Figure 6-26, callout 4)



Paper Feed Frame Removal (1 of 4)

4 Release the catch on the control panel cable guide by using the small flathead screwdriver to push on the tab (Figure 6-27). Then slide the guide off.



Paper Feed Frame Removal (2 of 4)

- **5** Remove the self-tapping screw from the back sheet metal plate and lift it off (Figure 6-28, callout 1).
- 6 Remove the (4) hex head screws from the Paper Feed Frame (Figure 6-28, callout 2).



Paper Feed Frame Removal (3 of 4)

7 Release the sensor unit connector (Figure 6-29).

Figure 6-29



Paper Feed Frame Removal (4 of 4)

8 Verify that all cables are clear of the frame and pull the frame straight back to remove it.

To reinstall

The Paper Feed Frame may be easier to reinstall if you place the printer on its front, so that you can apply pressure while putting the screws back in place.

Transfer Roller Guide & Transfer Roller

- 1 Remove the Printer Covers, Pickup Roller Assembly (Figures 6-23 through 6-25), and Paper Feed Frame (Figures 6-26 through 6-29).
- **2** Looking at the back of the printer, note the two small, hook-shaped release tabs on each end of the Transfer Roller guide. Using a small, flathead screwdriver, carefully pry each tab outward to release it (Figure 6-30).
- **3** Roll the released portion of the guide up. To remove the Transfer Roller Guide, pull it off each end of the Transfer Roller shaft.



Transfer Roller Guide & Transfer Roller Removal (Inside/Back View)

4 This exposes the Transfer Roller.

WARNING!

- Do not touch the Transfer Roller or otherwise allow it to be contaminated.
- 5 Working from the front of the printer, gently pry the gear side of the Transfer Roller out first, then slide the other side out of its socket.

To reinstall

Some of the HP LaserJet 5L Printers contain a small metal spring under the Transfer Roller Guide. Upon reinstallation with these models, the small metal spring should rest under the Transfer Roller Guide.

Kick Plate

Caution

Be careful working with the Kick Plate and Separation Pad. The spring underneath the Kick Plate may stay attached to the Kick Plate, but it is also likely to spring away from the Kick Plate. Place the spring aside for Separation Plate disassembly.

- 1 Remove the Printer Covers and the Pickup Roller Assembly (Figures 6-23 and 6-24).
- 2 Press the Separation Pad (Figure 6-31). Allow the Kick Plate to pivot upward (a spring underneath will push it up). Lift the Kick Plate off its mounting pins.

Figure 6-31



Kick Plate Removal

To reinstall

If the spring on the Kick Plate doesn't stay on the Kick Plate, replace the spring, making certain the diameter of the spring surrounds two lower pins on the Kick Plate and rests inside the third pin. Use needlenose pliers to place the spring correctly. (See Figure 6-32.)



Kick Plate Spring Replacement

While rotating the Kick Plate into place, guide the other end of the spring onto the silver grounding plate located on the Paper Feed Frame.



Separation Pad

- 1 Remove the Printer Covers, Pickup Roller Assembly (Figures 6-23 and 6-24), and Kick Plate (Figure 6-31).
- 2 Lift the bottom of the white plastic tab on the rear of the Paper Feed Frame up slightly and slide it up, toward the top of the Paper Feed Frame. This will release the Separation Pad (Figure 6-33).
- 3 Lift the Separation Pad 90 degrees and slide its mounting pins out of their retainers.



Separation Pad Removal

Subpads

Note

When you replace the Separation Pad, you should also replace the smaller subpads at the same time.

- 1 Place your index finger on the subpad.
- 2 Press toward the top of the printer.

Figure 6-34



Subpad Removal

Feed Assembly

The Feed Assembly is located in the Paper Feed Frame.

- 1 Remove the Printer Covers, Pickup Roller Assembly (Figures 6-23 through 6-25), and Paper Feed Frame (Figures 6-26 through 6-29).
- 2 Turn the Paper Feed Frame upside down.
- **3** Remove the Feed Roller Shaft by lifting the plastic tab up (Figure 6-35, callout 1) and sliding it out the side of the Paper Feed Frame (Figure 6-35, callout 2).



Feed Assembly Removal (1 of 3)

4 Remove the self-tapping screw that holds the Feed Assembly in place (Figure 6-36, callout 1).

Note Before proceeding to Step 5, examine the tabs and how they fit into their slots (Figure 6-36, callout 2). The tabs must be reinstalled to exactly this position.

5 Remove the Feed Assembly.

Figure 6-36



Feed Assembly Removal (2 of 3)

6 Turn the Feed Assembly over and place it in one hand with the roller-side down. Pop one of the tabs on the other side and the feed roller should fall into your hand (Figure 6-37).

Figure 6-37



Feed Assembly Removal (3 of 3)

To reinstall

Before securing the screw, ensure the tabs on the Feed Assembly are positioned in their slots on the Paper Feed Frame (Figure 6-35, callout 2). Failure to do so will cause paper feed problems.

Bottom Assemblies

Memory Door Guide

- 1 Remove the Printer Covers.
- 2 Remove any extra memory.
- **3** Two tabs hold the memory door guide on the printer chassis. Press each tab inward (Figure 6-38).
- 4 Pull the memory door guide out.





Memory Door Guide Removal

Motor

- 1 Remove the Printer Covers.
- 2 Remove the motor connector (Figure 6-39, callout 1).
- **3** Remove the memory door guide to expose the two motor screws.
- 4 Remove the motor screws (Figure 6-39, callout 2).
- 5 Lift the Motor out.

Figure 6-39



Motor Removal

DC Controller

- 1 Remove the Printer Covers.
- 2 Disconnect the motor connector from the motor (Figure 6-39, callout 1).
- 3 Disconnect the Solenoid connector from the DC Controller (Figure 6-22, callout 1).
- **4** Remove the back sheet metal plate and disconnect the PS202/PS204 connector (Figure 6-29).
- 5 Remove the AC Cable cover and disconnect the AC Cable from the DC Controller (Figures 6-13 and 6-14).
- 6 Tip the printer on its top, with the front facing you.
- 7 Remove the (4) screws (Figure 6-40, callout 1). One of the screws is a grounding screw. The location of the grounding screw is marked by a "star" etched into the bottom of the DC Controller.

Note Make certain when you reinstall the DC Controller that the grounding screw with the washer is replaced in the same location.



DC Controller Removal (1 of 3)

- 6 Removal and Replacement
- 8 Lift the bottom plate, rotating the plate toward you from the back as if hinged on the front. Release the Fusing Assembly connector (J206) (Figure 6-41, callout 1).





DC Controller Removal (2 of 3)

- 9 Remove the (7) remaining connectors (Figure 6-42, callout 1).
- **10** Remove the screws (5) that secure the DC Controller to the metal case (Figure 6-42, callout 2).





DC Controller Removal (3 of 3)

- **11** Remove the DC Controller by lifting gently on the side opposite the formatter, then sliding it out.
- **Caution** Be careful not to rotate the DC Controller as you remove it.
- Note When ordering, the DC Controller does not come with any connectors. Use the current connectors or refer to the connector chart in Chapter 8 for ordering information.

Formatter PCA



- 1 Remove the Printer Covers and complete the DC Controller removal direction up to step 8 (Figures 6-40 and 6-41).
- **2** Remove the two cable clips (Figure 6-43, callout 1).
- **3** Remove all (4) screws from the formatter cover (Figure 6-43, callout 2). Lift the I/O shield to remove it.
- 4 Remove the Control Panel display cable (Figure 6-43, callout 3).
- **5** Slide the formatter away from the DC Controller PCA to remove it from the connector.



Formatter Board Removal

Note

The formatter I/O shield comes in two separate pieces. Be careful to order the correct pieces should you need to replace them.