

Section 4

Repair Procedures

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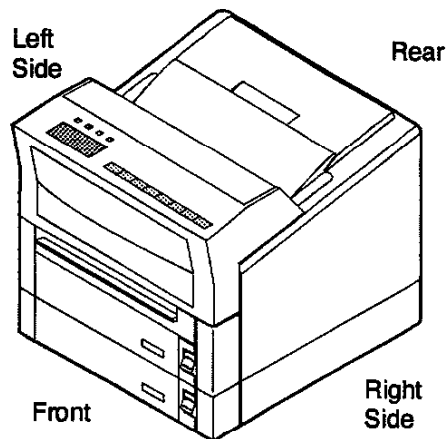
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4.0 Overview

Locations given in the Repair Procedures (REPs) assume you are facing the Control Panel with the orientation illustrated in (Figure 4.0.1).

Figure 4.0.1 Printer Orientation.



12rep004

The following notations apply:

- Arrows in the illustrations show direction of movement. Follow the numerical order if the arrows are numbered.
- The notation *Figure X.Y.Z* references the illustration corresponding to the REP you are performing.
- Numbers in an illustration refer to the corresponding steps in the procedure being performed. Example, REP 4.1.1, step 10 says to remove the two screws. Notice that the two screws in the illustration are labeled 10, indicating step 10.

There are a number of steps you should follow each time before you begin a procedure:

- 1 Do not use force to remove or install printer components.
- 2 Use only the screw size and type designated in the REP. The wrong screw could easily damage tapped holes.
- 3 Wear a ESD wrist strap to dissipate static electricity, which may damage sensitive electronic parts, and use a grounded mat when working with PWBs.
- 4 See *Section 6* for the precise location of electrical connectors in the printer.

This manual reflects the configuration of the printer at the time the manual was created. As the printer matures, the number of screws, bolts, E-Rings, etc. attaching components, the placement of hardware, the placement of wire runs, or the design of the components may change.

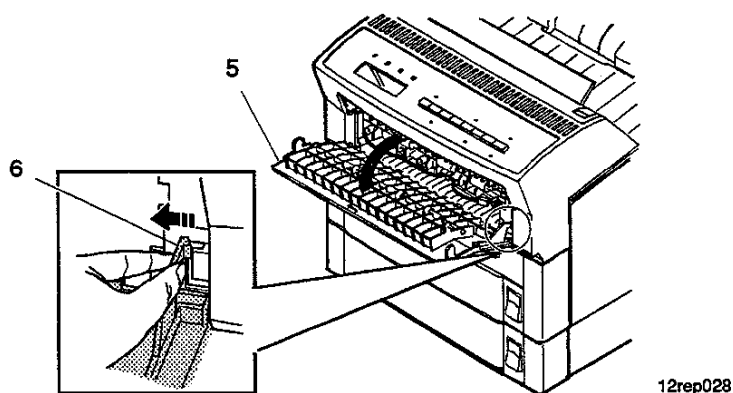
RAP 4.1 Covers

REP 4.1.1 Front Panel Assembly

Removal

- 1 Disconnect the AC Power Cord.
- 2 Remove the Photoconductor / Drum Cartridge.
- 3 Remove the Developer Cartridge.
- 4 Remove the Manual Feed Tray (if installed).
- 5 Open the Duplex Access Cover (Figure 4.1.1a).

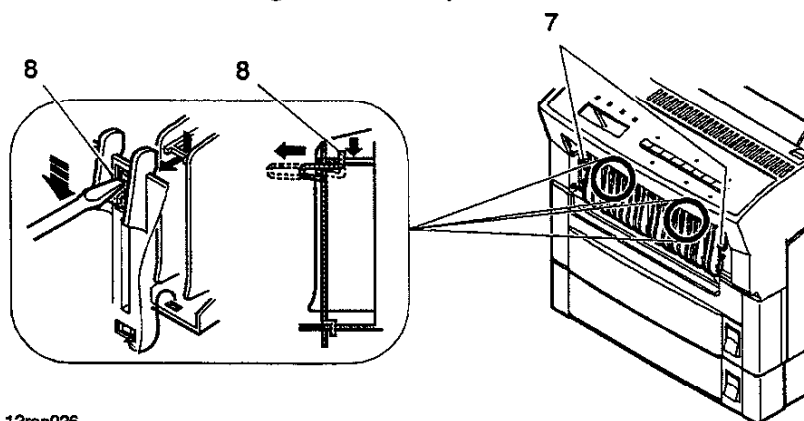
Figure 4.1.1a Duplex Access Cover.



12rep028

- 6 Release the Duplex Access Cover stop and remove the cover (Figure 4.1.1a).
- 7 Remove the two screws that secure the Paper Guide (Figure 4.1.1b).
- 8 Remove Paper Guide by gently pressing down on the two locking tabs (Figure 4.1.1b). Pull the guide forward, then lift and remove.

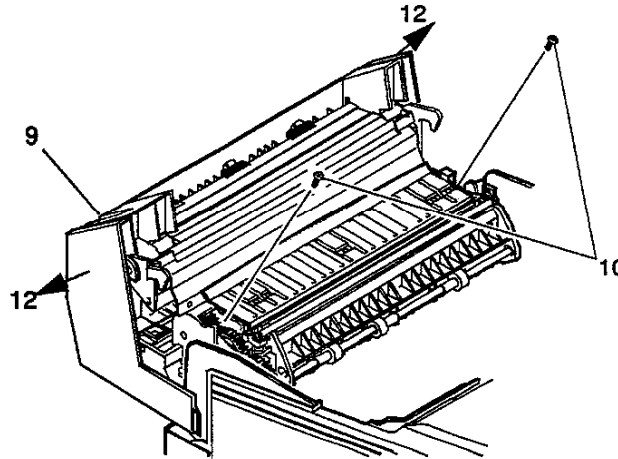
Figure 4.1.1b Paper Guide.



12rep026

- 9 Pull the Front Panel Release Button and open the Front Panel Assembly (Figure 4.1.1c).
- 10 Remove the two screws that secure the Front Panel Assembly (Figure 4.1.1c).

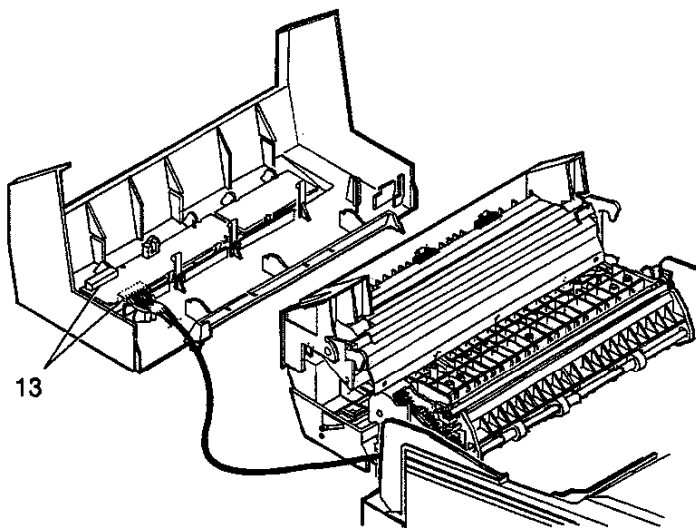
Figure 4.1.1c Front Panel.



12rep003

- 11 Partially close the Front Panel Assembly.
- 12 Gently spread the top sides of the panel and remove.
- 13 Disconnect the Control Panel Harness (Figure 4.1.1d).

Figure 4.1.1d Control Panel Harness.



12rep002

Replacement

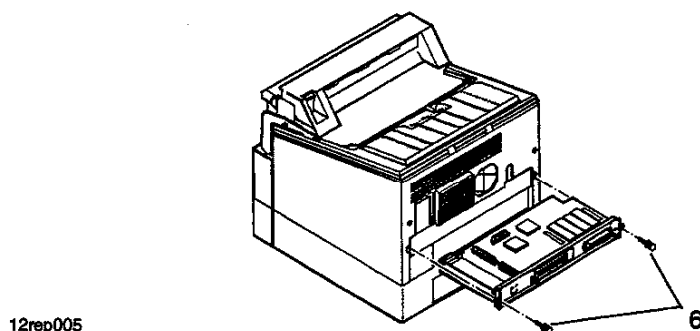
- 1 Assemble in reverse order.
- 2 Verify proper operation.

REP 4.1.2 Upper Cover

Removal

- 1 Disconnect the AC Power Cord.
- 2 Remove the Photoconductor / Drum Cartridge.
- 3 Remove the Developer Cartridge.
- 4 Remove the Manual Feed Tray (if installed).
- 5 Remove the Front Panel Assembly (REP 4.1.1).
- 6 Remove the two thumb screws that secure the System Controller PWB. Remove the System Controller PWB (Figure 4.1.2a).

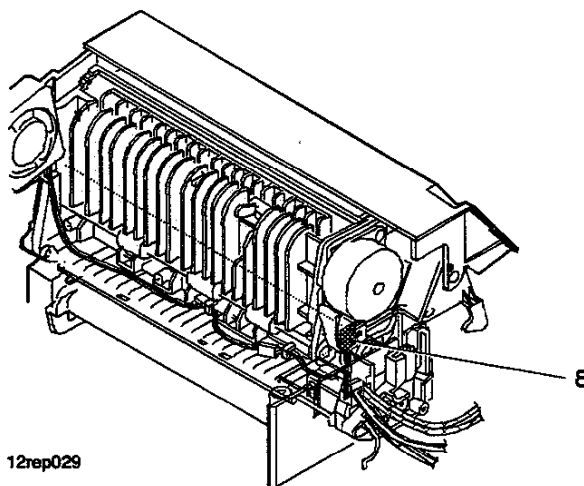
Figure 4.1.2a System Controller Removal.



12rep005

- 7 Remove the two screws that secure the front cooling fan. Remove the cooling fan harness from the harness clips. Disconnect the fan connector and remove the fan.
- 8 Remove the screw that secures the Duplex Cover Interlock Switch and Switch Actuator Extension (Figure 4.1.2b).

Figure 4.1.2b Duplex Cover Interlock Switch.

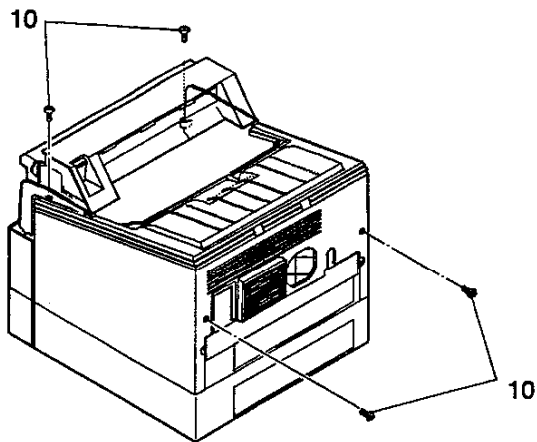


12rep029

- 9 Remove the Switch Actuator Extension and allow the interlock switch to hang from its wires.

- 10 Remove the four screws that secure the Upper Cover (Figure 4.1.2c).

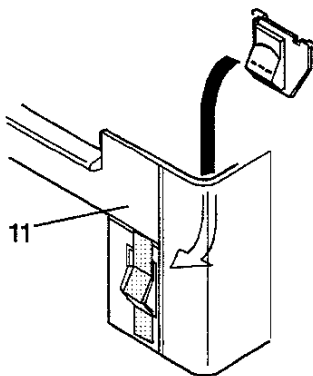
Figure 4.1.2c Upper Cover Removal.



12rep006

- 11 Place a strip of tape over the Cassette Release Button to hold it in place (Figure 4.1.2d).

Figure 4.1.2d Cassette Release Button.



12rep007

- 12 Open the Upper Transport Assembly slightly.
- 13 Removing the Upper Cover is technique sensitive. You will need to work around the cover, lifting the front then the back. Be careful of the Interlock Switch, Control Panel Harness, screws, springs, cables, etc. Remove the Upper Cover.

Replacement

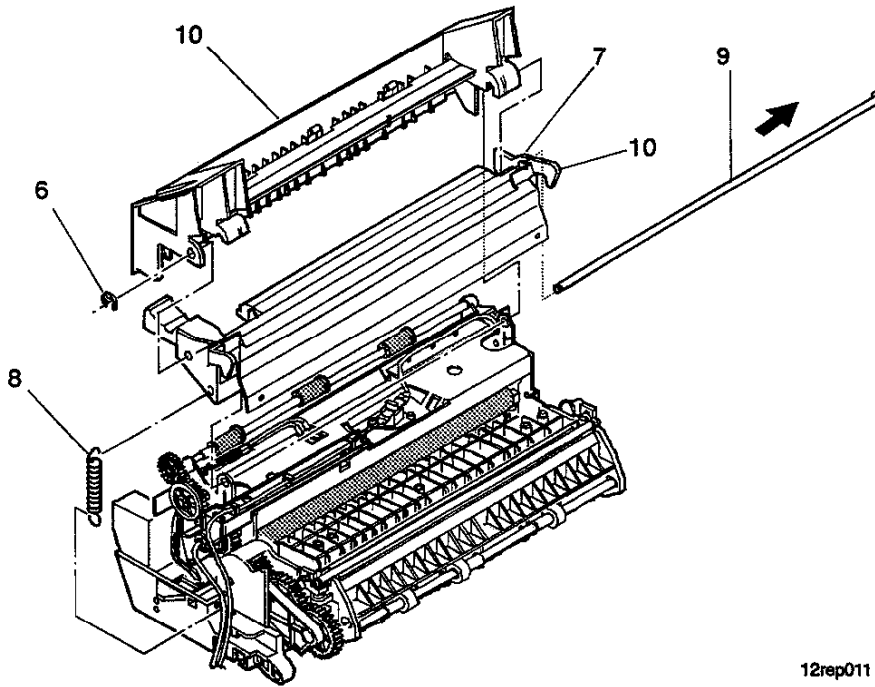
- 1 Assemble in reverse order.
- 2 Verify proper operation.

REP 4.1.3 Exit Guide Assembly/Fuser Cover Assembly

Removal

- 1 Disconnect the AC Power Cord.
- 2 Remove the Photoconductor / Drum Cartridge.
- 3 Remove the Developer Cartridge.
- 4 Remove the Manual Feed Tray (if installed).
- 5 Remove the Front Panel Assembly (REP 4.1.1).
- 6 Remove the E-ring from the right end of the fulcrum shaft (Figure 4.1.3a).
- 7 Release the grounding spring on the left end of the fulcrum shaft (Figure 4.1.3a).
- 8 Remove the Fuser Cover Spring (Figure 4.1.3a).
- 9 Slide the fulcrum shaft to the left and remove (Figure 4.1.3a).
- 10 Remove the Exit Guide Assembly and the Fuser Cover Assembly (Figure 4.1.3a).

Figure 4.1.3a Exit Guide and Fuser Cover Assembly.



12rep011

Replacement

- 1 Assemble in reverse order.
- 2 Verify proper operation.

REP 4.1.4 Bottom Cover

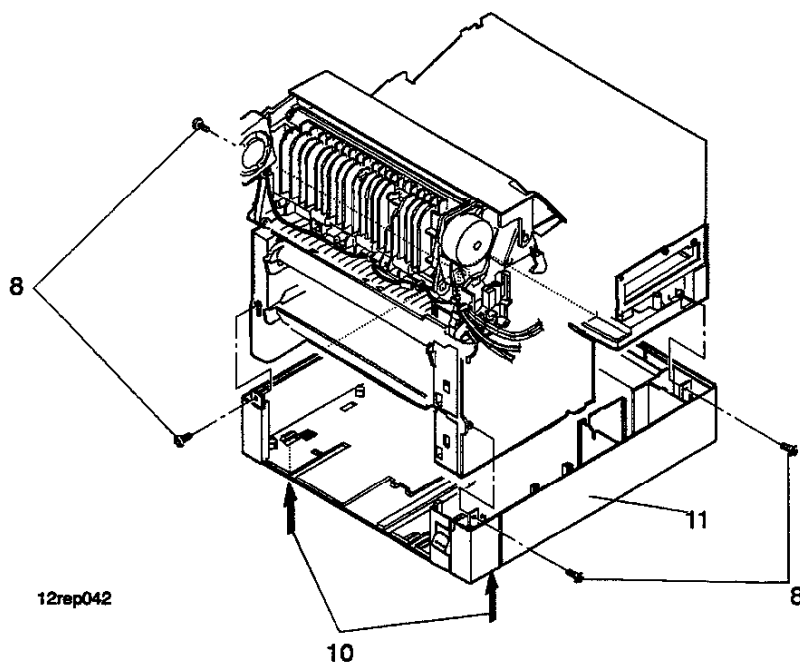
Removal

- 1 Disconnect the AC Power Cord.
- 2 Remove the Photoconductor / Drum Cartridge.
- 3 Remove the Developer Cartridge.
- 4 Remove both Paper Trays.
- 5 Remove the Manual Feed Tray (if installed).
- 6 Remove the Front Panel Assembly (REP 4.1.1).
- 7 Remove the Upper Cover (REP 4.1.2).
- 8 Remove the four screws that secure the Bottom Cover to the printer frame (Figure 4.1.4a).
- 9 Lay the printer either on its the right or left side.

NOTE: In the next step, insert a flat blade screwdriver under the locking tab and twist to release the Bottom Cover. If you pry up on the tab, when the cover releases, the tab may break.

- 10 Carefully release the two tabs holding the Bottom Cover (Figure 4.1.4a).
- 11 Remove the Bottom Cover.

Figure 4.1.4a Bottom Cover.



Replacement

- 1 Assemble in reverse order.
- 2 Verify proper operation.

RAP 4.2 Paper Feed

REP 4.2.1 Paper Size Detect Lever

Removal

- 1** Disconnect the AC Power Cord.
- 2** Remove the Photoconductor / Drum Cartridge.
- 3** Remove the Developer Cartridge.
- 4** Remove the Manual Feed Tray (if installed).
- 5** Remove the Front Panel Assembly (REP 4.1.1).
- 6** Remove the Upper Cover (REP 4.1.2).
- 7** Remove the Bottom Cover (REP 4.1.4).
- 8** Remove the Cassette PWB (REP 4.6.5).
- 9** Remove the upper or lower Paper Size Detect Lever.

Replacement

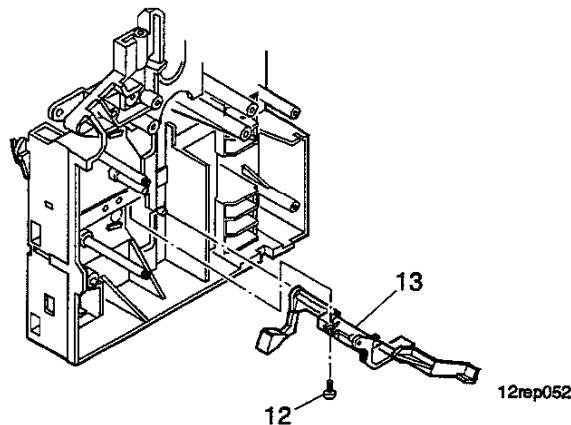
- 1** Assemble in reverse order.
- 2** Verify proper operation.

REP 4.2.2 Paper Empty Actuator

Removal

- 1 Disconnect the AC Power Cord.
- 2 Remove the Photoconductor / Drum Cartridge.
- 3 Remove the Developer Cartridge.
- 4 Remove the Manual Feed Tray (if installed).
- 5 Remove the Front Panel Assembly (REP 4.1.1).
- 6 Remove the Upper Cover (REP 4.1.2).
- 7 Remove the Main Drive Motor Assembly (REP 4.5.1).
- 8 Remove the Bottom Cover (REP 4.1.4).
- 9 Remove the Cassette PWB (REP 4.6.5).
- 10 Remove the Paper Feed Clutch (REP 4.2.3).
- 11 Remove the E-Ring and black Roller Bearing from the Paper Feed Roller Shaft.
- 12 Remove the screw that secures the actuator mounting bracket to the printer frame (Figure 4.2.2a).
- 13 Slide the Paper Empty Actuator and the mounting bracket to the right to remove (Figure 4.2.2a).

Figure 4.2.2a Paper Empty Actuator.



Replacement

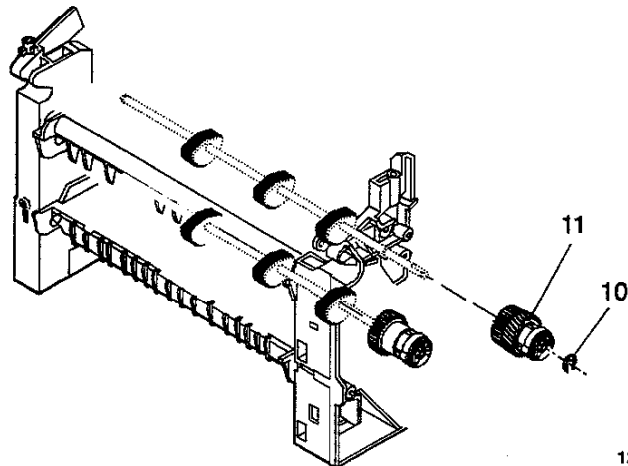
- 1 Assemble in reverse order.
- 2 Install the black Roller Bearing on the right end of the Roller Shaft. The bearing has a key way, rotate the bearing until it locks into position.
- 3 Confirm that the grounding spring is in contact with the black Roller Bearing.
- 4 Assemble the remaining components in reverse order.
- 5 Verify proper operation.

REP 4.2.3 Paper Feed Clutch

Removal

- 1 Disconnect the AC Power Cord.
- 2 Remove the Photoconductor / Drum Cartridge.
- 3 Remove the Developer Cartridge.
- 4 Remove the Manual Feed Tray (if installed).
- 5 Remove the Front Panel Assembly (REP 4.1.1).
- 6 Remove the Upper Cover (REP 4.1.2).
- 7 Remove the Main Drive Motor Assembly (REP 4.5.1).
- 8 Remove the Bottom Cover (REP 4.1.4)
- 9 Remove the Cassette PWB (REP 4.6.5).
- 10 Remove the E-Ring that secures the clutch (Figure 4.2.3a).
- 11 Remove the Paper Feed Clutch (Figure 4.2.3a).

Figure 4.2.3a Paper Feed Clutch.



Replacement

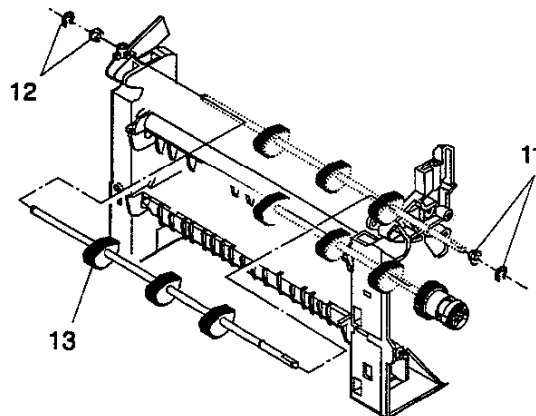
- 1 Assemble in reverse order.
- 2 Verify proper operation.

REP 4.2.4 Paper Feed Roller

Removal

- 1 Disconnect the AC Power Cord.
- 2 Remove the Photoconductor / Drum Cartridge.
- 3 Remove the Developer Cartridge.
- 4 Remove the Manual Feed Tray (if installed).
- 5 Remove the Front Panel Assembly (REP 4.1.1).
- 6 Remove the Upper Cover (REP 4.1.2).
- 7 Remove the Main Drive Motor Assembly (REP 4.5.1).
- 8 Remove the Bottom Cover (REP 4.1.4).
- 9 Remove the Cassette PWB (REP 4.6.5).
- 10 Remove the Paper Feed Clutch (REP 4.2.3).
- 11 Remove the E-Ring and the black Roller Bearing from the right end of the roller shaft (Figure 4.2.4a).
- 12 Remove the E-Ring and the white Roller Bearing from the left end of the roller shaft (Figure 4.2.4a).
- 13 Remove the Paper Feed Roller (Figure 4.2.4a).

Figure 4.2.4a Paper Feed Roller.



12rep051

Replacement

- 1 Assemble in reverse order.
- 2 Install the black Roller Bearing on the right end of the Roller Shaft. The bearing has a key way, rotate the bearing until it locks into position.
- 3 Confirm that the grounding spring is in contact with the black Roller Bearing.
- 4 Install the white Roller Bearing on the left end of the Roller Shaft.
- 5 Assemble the remaining components in reverse order.
- 6 Verify proper operation.

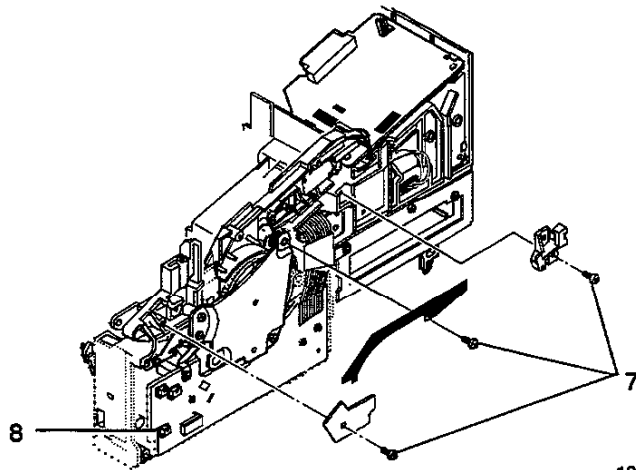
RAP 4.3 Paper Transportation

REP 4.3.1 Upper Transport Assembly

Removal

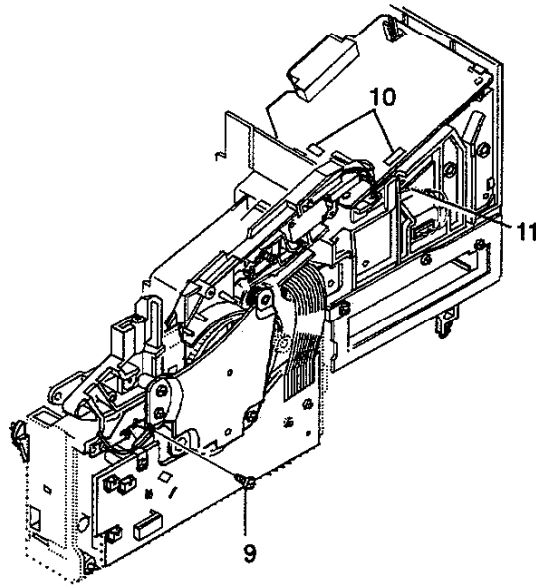
- 1 Disconnect the AC Power Cord.
- 2 Remove the Photoconductor / Drum Cartridge.
- 3 Remove the Developer Cartridge.
- 4 Remove the Manual Feed Tray (if installed).
- 5 Remove the Front Panel Assembly (REP 4.1.1).
- 6 Remove the Upper Cover (REP 4.1.2).
- 7 On the right side of the printer, remove the three screws that secure the three Harness Retainers (Figure 4.3.1a). Remove the Harness Retainers.
- 8 Disconnect the Thermistor Harness from the Cassette PWB (Figure 4.3.1a).

Figure 4.3.1a Harness Retainers.



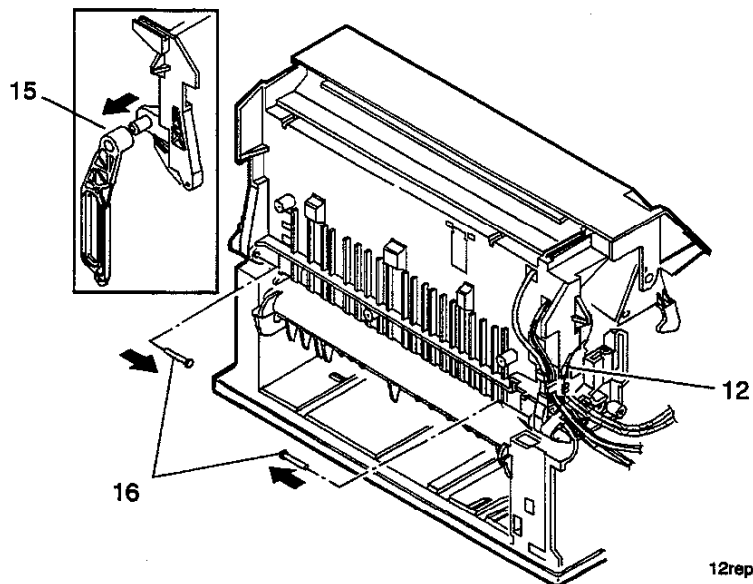
- 9 Remove the screw that secures the Ground Wire to the Frame Earth Plate (Figure 4.3.1b).
- 10 Disconnect CN107 and CN108 from the Printer Controller PWB (Figure 4.3.1b).
- 11 Disconnect the Fuser AC Harness from CN702 on the LVPS (Figure 4.3.1b).
- 12 Disconnect the ground wire inline connector (Figure 4.3.1c).
- 13 Remove all disconnected harnesses from the harness guide.
- 14 Open the Upper Transport Assembly.
- 15 Hold the Upper Transport Assembly and from the left side of the printer, gently pull the Transport Stopper free of the assembly (Figure 4.3.1c).
- 16 Hold the Upper Transport Assembly while removing the two hinge pins (Figure 4.3.1c).
- 17 Remove the Upper Transport Assembly by lifting it from the printer frame.

Figure 4.3.1b Harness Connectors.



12rep009

Figure 4.3.1c Transport Assembly.



12rep010

Replacement

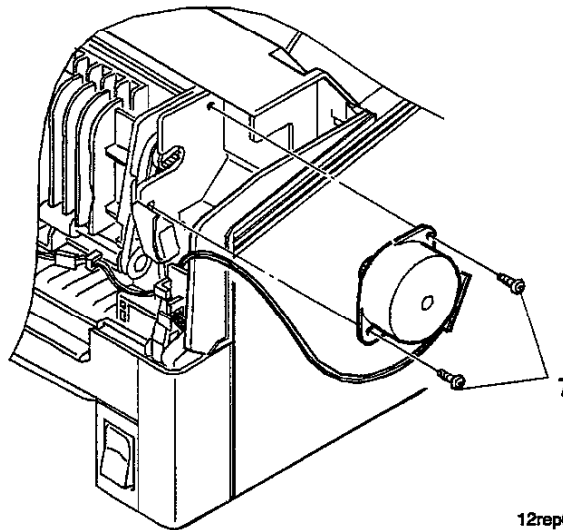
- 1 Assemble in reverse order.
- 2 Verify proper operation.

REP 4.3.2 Duplex Drive Belts

Removal

- 1 Disconnect the AC Power Cord.
- 2 Remove the Photoconductor / Drum Cartridge.
- 3 Remove the Developer Cartridge.
- 4 Remove the Manual Feed Tray (if installed).
- 5 Remove the Front Panel Assembly (REP 4.1.1).
- 6 Remove the Exit Guide Assembly/Fuser Cover Assembly (REP 4.1.3).
- 7 Remove the two screws that secure the Duplex Transport Motor to the Upper Transport (Figure 4.3.2a).
- 8 To remove the Exit Drive Belt, remove the screw that secures the black ground wire and the ground spring to the right end of the Fuser Assembly . Then remove the Exit Drive Belt.
- 9 Remove the Transport Drive Belt from the Transport Drive Pulley.

Figure 4.3.2a Duplex Transport Motor.



12rep031

Replacement

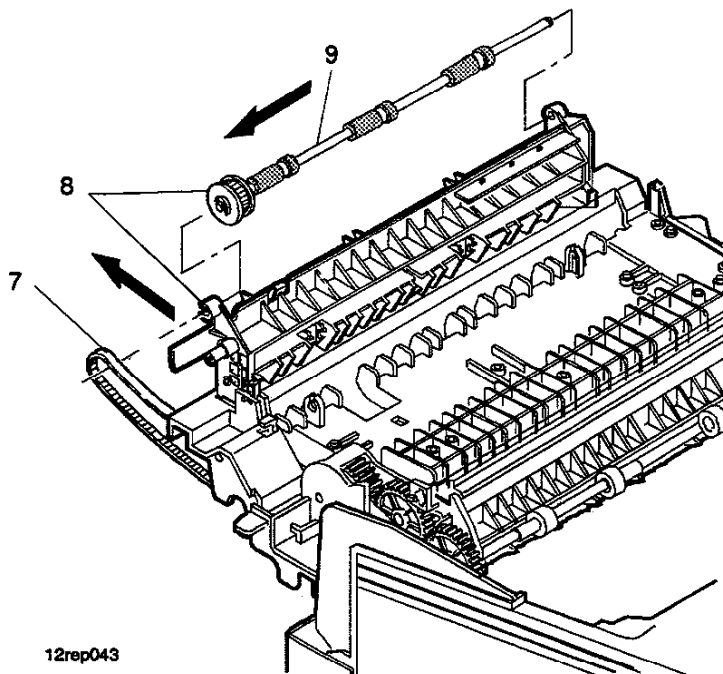
- 1 Assemble in reverse order.
- 2 Verify proper operation.

REP 4.3.3 Paper Exit Roller

Removal

- 1 Disconnect the AC Power Cord.
- 2 Remove the Photoconductor / Drum Cartridge.
- 3 Remove the Developer Cartridge.
- 4 Remove the Manual Feed Tray (if installed).
- 5 Remove the Front Panel Assembly (REP 4.1.1).
- 6 Remove the top screw that secures the Duplex Motor to the transport.
- 7 Remove the drive belt from the Exit Roller Pulley (Figure 4.3.3a).
- 8 Remove the roller shaft from the shaft bracket (Figure 4.3.3a).
- 9 Remove the Exit Roller Shaft by sliding it to the right (Figure 4.3.3a).

Figure 4.3.3a Paper Exit Roller.



Replacement

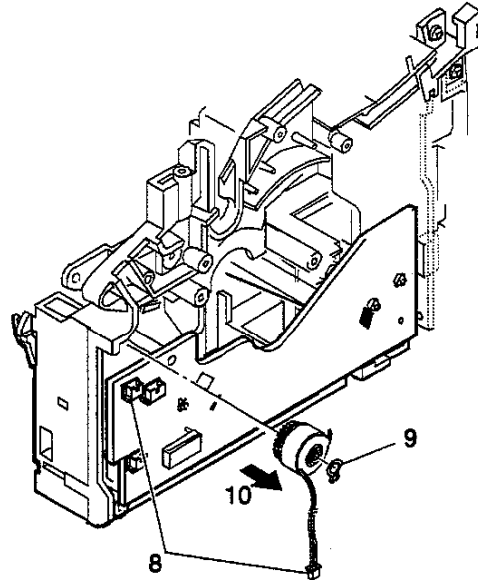
- 1 Assemble in reverse order.
- 2 Verify proper operation.

REP 4.3.4 Registration Clutch

Removal

- 1 Disconnect the AC Power Cord.
- 2 Remove the Photoconductor / Drum Cartridge.
- 3 Remove the Developer Cartridge.
- 4 Remove the Manual Feed Tray (if installed).
- 5 Remove the Front Panel Assembly (REP 4.1.1).
- 6 Remove the Upper Cover (REP 4.1.2).
- 7 Remove the Main Drive Motor Assembly (REP 4.5.1).
- 8 Disconnect the Clutch connector from the Cassette PWB (Figure 4.3.4a).
- 9 Remove the grip ring from the registration shaft (Figure 4.3.4a).
- 10 Remove the Clutch (Figure 4.3.4a).

Figure 4.3.4a Paper Registration Clutch.



Replacement

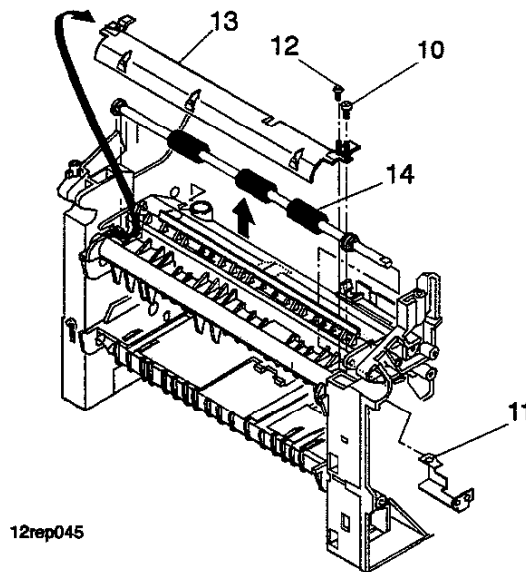
- 1 Assemble in reverse order.
- 2 Verify proper operation.

REP 4.3.5 Register Roller

Removal

- 1 Disconnect the AC Power Cord.
- 2 Remove the Photoconductor / Drum Cartridge.
- 3 Remove the Developer Cartridge.
- 4 Remove the Manual Feed Tray (if installed).
- 5 Remove the Front Panel Assembly (REP 4.1.1).
- 6 Remove the Upper Cover (REP 4.1.2).
- 7 Remove the Upper Transport Assembly (REP 4.3.1)
- 8 Remove the Main Drive Motor Assembly (REP 4.5.1).
- 9 Remove the Registration Clutch (REP 4.3.4).
- 10 Remove the screw that secures the Grounding Plate to the Paper Guide (Figure 4.3.5a).
- 11 As you remove the Grounding Plate, note the routing of the Registration Switch wires (Figure 4.3.5a).
- 12 Remove the screw that secures the Paper Guide to the printer frame (Figure 4.3.5a).
- 13 Carefully move the grounding resistor to allow removal of the Paper Guide (Figure 4.3.5a).
- 14 Carefully lift the grounding tape and remove the Register Roller. Use care not to drop the bearings (Figure 4.3.5a).

Figure 4.3.5a Paper Registration Shaft.



12rep045

Replacement

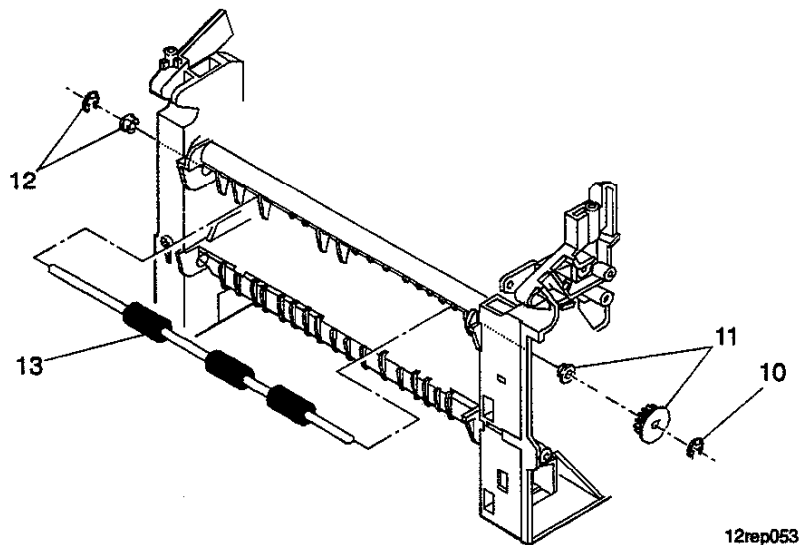
- 1 Assemble in reverse order.
- 2 Ensure the grounding resistor wire and the tab from the Duct Sheet are under the Paper Guide.
- 3 Verify proper operation.

REP 4.3.6 Transport Roller

Removal

- 1 Disconnect the AC Power Cord.
- 2 Remove the Photoconductor / Drum Cartridge.
- 3 Remove the Developer Cartridge.
- 4 Remove the Manual Feed Tray (if installed).
- 5 Remove the Front Panel Assembly (REP 4.1.1).
- 6 Remove the Upper Cover (REP 4.1.2).
- 7 Remove the Paper Cassettes.
- 8 Remove the Bottom Cover (REP 4.1.4)
- 9 Remove the Cassette PWB (REP 4.6.5).
- 10 Remove the E-Ring that secures the Transport Roller Gear to the right end of the roller shaft (Figure 4.3.6a).
- 11 Remove the Transport Roller Gear and the black Roller Bearing (Figure 4.3.6a).
- 12 Remove the E-Ring and white Roller Bearing from the left end of the Roller Shaft (Figure 4.3.6a).
- 13 Slide the Transport Roller Shaft to the right to remove (Figure 4.3.6a).

Figure 4.3.6a Transport Roller Removal.



Replacement

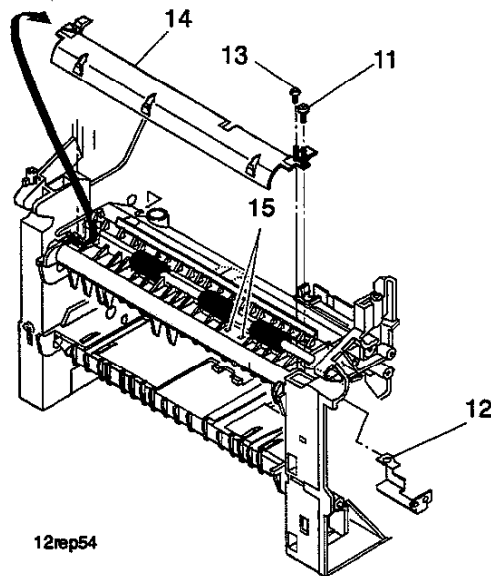
- 1 Assemble in reverse order.
- 2 Install the black Roller Bearing on the right end of the Roller Shaft. The bearing has a key way, rotate the bearing until it locks into position.
- 3 Confirm that the grounding spring is in contact with the black Roller Bearing.
- 4 Assemble the remaining components in reverse order.
- 5 Verify proper operation.

REP 4.3.7 Registration Sensor

Removal

- 1 Disconnect the AC Power Cord.
- 2 Remove the Photoconductor / Drum Cartridge.
- 3 Remove the Developer Cartridge.
- 4 Remove the Manual Feed Tray (if installed).
- 5 Remove the Front Panel Assembly (REP 4.1.1).
- 6 Remove the Upper Cover (REP 4.1.2).
- 7 Remove the Upper Transport Assembly (REP 4.3.1).
- 8 Remove the Bottom Cover (REP 4.1.4).
- 9 Remove the Cassette PWB (REP 4.6.5).
- 10 Remove the Upper Transport Roller (REP 4.3.6).
- 11 Remove the screw that secures the Grounding Plate to the Paper Guide (Figure 4.3.7a).
- 12 As you remove the Grounding Plate, note the routing of the Registration Switch wires (Figure 4.3.7a).
- 13 Remove the screw that secures the Paper Guide to the printer frame (Figure 4.3.7a).
- 14 Remove the grounding resistor to allow removal of the Paper Guide (Figure 4.3.7a).
- 15 Release the two locking tabs that secure the Registration Sensor to the bottom of the Printer Frame (Figure 4.3.7a). Remove the sensor.

Figure 4.3.7a Registration Sensor.



Replacement

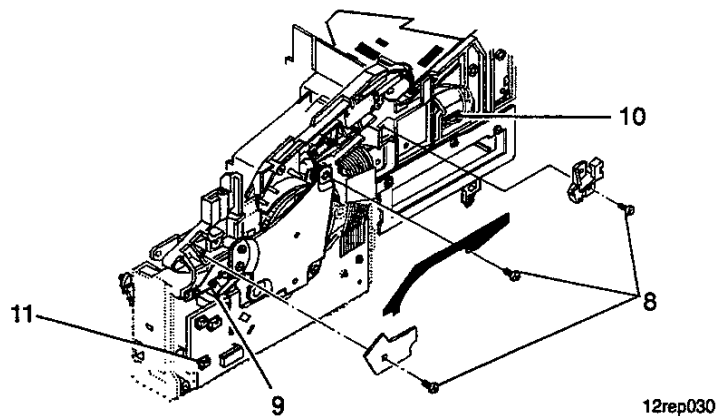
- 1 Assemble in reverse order.
- 2 Verify proper operation.

RAP 4.4 Fusing

REP 4.4.1 Fuser

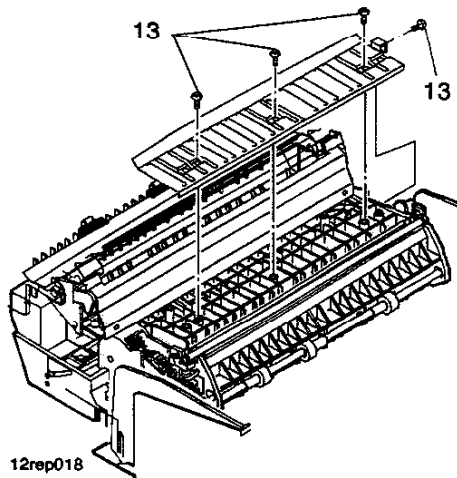
- 1 Disconnect the AC Power Cord.
- 2 Remove the Photoconductor / Drum Cartridge.
- 3 Remove the Developer Cartridge.
- 4 Remove the Manual Feed Tray (if installed).
- 5 Remove the Front Panel Assembly (REP 4.1.1).
- 6 Remove the Upper Cover (REP 4.1.2).
- 7 Remove the Exit Guide Assembly and Fuser Cover Assembly (REP 4.1.3).
- 8 On the right side of the printer, remove the three screws that secure the three Harness Retainers (Figure 4.4.1a). Remove the Harness Retainers.
- 9 Remove the screw that secures the ground wire to the earth plate (Figure 4.4.1a).
- 10 Disconnect CN702 (Fuser AC Harness) from the LVPS (Figure 4.4.1a).
- 11 Disconnect the Thermistor Harness from the Cassette PWB (Figure 4.4.1a).

Figure 4.4.1a Fuser Harness Access.



- 12 Cut the cable ties that secures the fuser harnesses to other printer harnesses.
- 13 Remove the four screws that secure the Paper Guide to the Upper Transport (Figure 4.4.1b). Remove the Paper Guide.

Figure 4.4.1b Paper Guide.

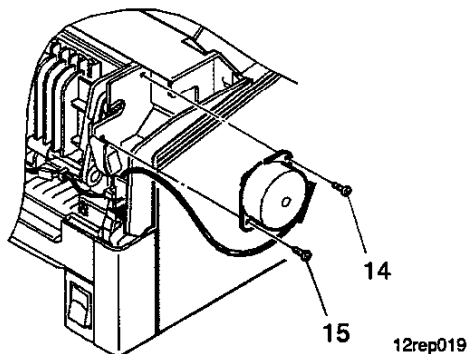


- 14 Remove the top screw that secures the Duplex Motor to the transport (Figure 4.4.1c).

NOTE: Depending on the routing of the thermistor harness it may be necessary to remove both screws that secure the Duplex Motor Harness.

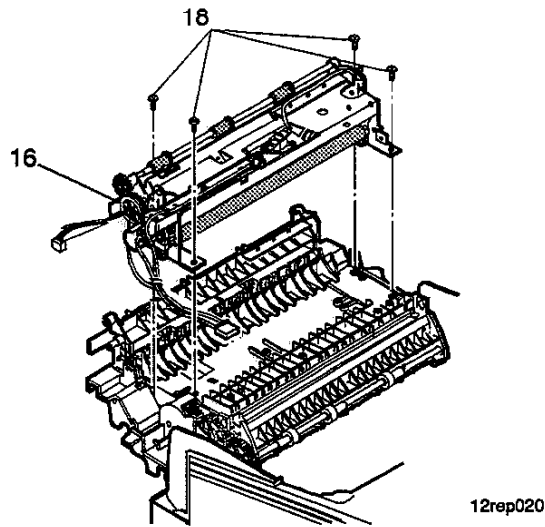
- 15 Loosen the bottom screw that secures the Duplex Motor (Figure 4.4.1c). Remove the two belts from the Duplex Motor.

Figure 4.4.1c Duplex Motor.



- 16 Remove the screw that secures the black ground wire and the ground spring to the right end of the Fuser Assembly (Figure 4.4.1d).
- 17 Release the Transport Stopper from the Upper Transport and lower the transport down against the front of the printer frame.
- 18 Remove the four screws that secure the Fuser to the transport (Figure 4.4.1d). Remove Fuser Assembly

Figure 4.4.1d .Fuser Assembly.



Replacement

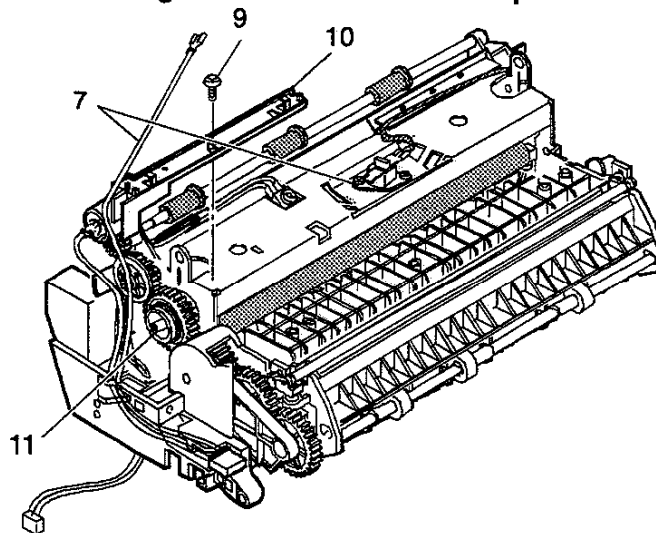
- 1 Assemble in reverse order.
- 2 Ensure all ground springs and terminals are properly connected.
- 3 Install new cable ties to replace the ones that were cut.
- 4 Verify proper operation.

REP 4.4.2 Fuser Heater Lamp

Removal

- 1 Disconnect the AC Power Cord.
- 2 Remove the Photoconductor / Drum Cartridge.
- 3 Remove the Developer Cartridge.
- 4 Remove the Manual Feed Tray (if installed).
- 5 Remove the Front Panel Assembly (REP 4.1.1).
- 6 Remove the Exit Guide Assembly and Fuser Cover Assembly (REP 4.1.3).
- 7 Disconnect the AC wire from the right side of the Thermostat (Figure 4.4.2a).
- 8 Remove the AC wire and the thermistor wire from the Lamp Holder retaining clips.
- 9 Remove the screw that secures the Lamp Holder to the Fuser (Figure 4.4.2a).
- 10 Very carefully lift the right end of the Lamp Holder to disengage the locating pin. Slide the Lamp Holder to the right to remove (Figure 4.4.2a).
- 11 Slide the Fuser Heater Lamp out the right side of the Fuser (Figure 4.4.2a).

Figure 4.4.2a Fuser Heater Lamp.



12rep021

Replacement

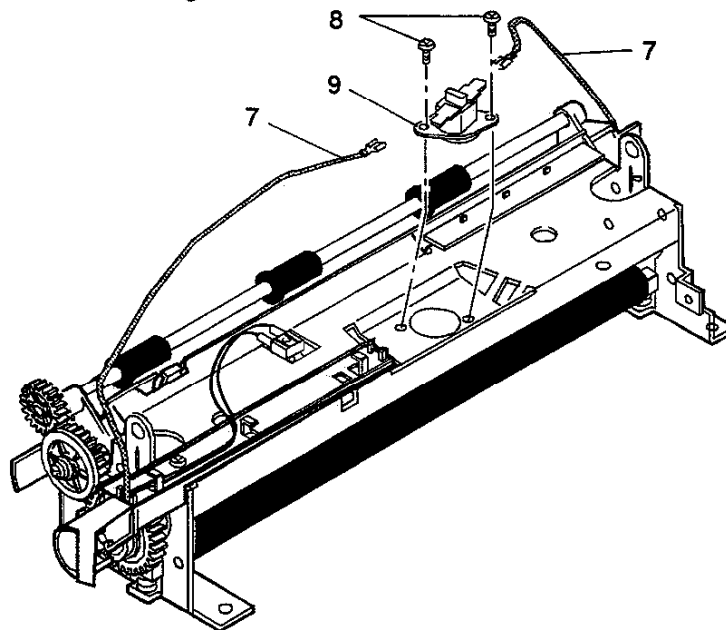
- 1 Assemble in reverse order.
- 2 Ensure that the terminal on the Heater Lamp Holder is properly contacting the Heater Lamp.
- 3 Verify proper operation.

REP 4.4.3 Thermostat

Removal

- 1 Disconnect the AC Power Cord.
- 2 Remove the Photoconductor / Drum Cartridge.
- 3 Remove the Developer Cartridge.
- 4 Remove the Manual Feed Tray (if installed).
- 5 Remove the Front Panel Assembly (REP 4.1.1).
- 6 Remove the Exit Guide Assembly and Fuser Cover Assembly (REP 4.1.3).
- 7 Disconnect the two AC wires from the Thermostat (Figure 4.4.3a).
- 8 Remove the two screws that secure to Thermostat to the Fuser Assembly (Figure 4.4.3a).
- 9 Remove the Thermostat (Figure 4.4.3a).

Figure 4.4.3a Thermostat Removal.



12rep023

Replacement

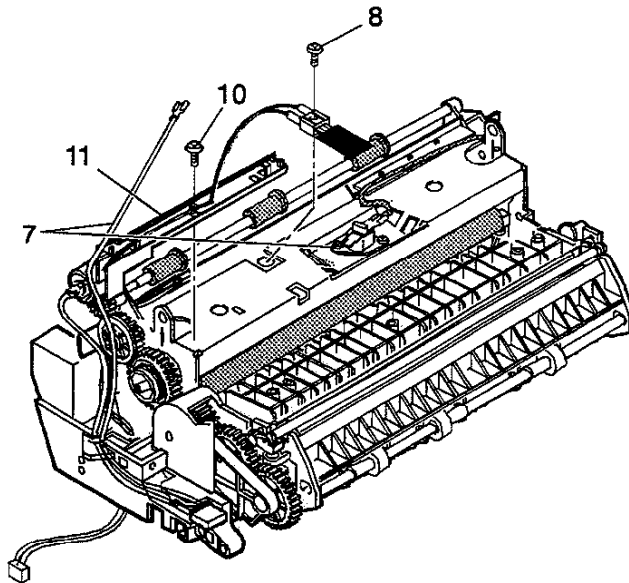
- 1 Assemble in reverse order.
- 2 Verify proper operation.

REP 4.4.4 Thermistor

Removal

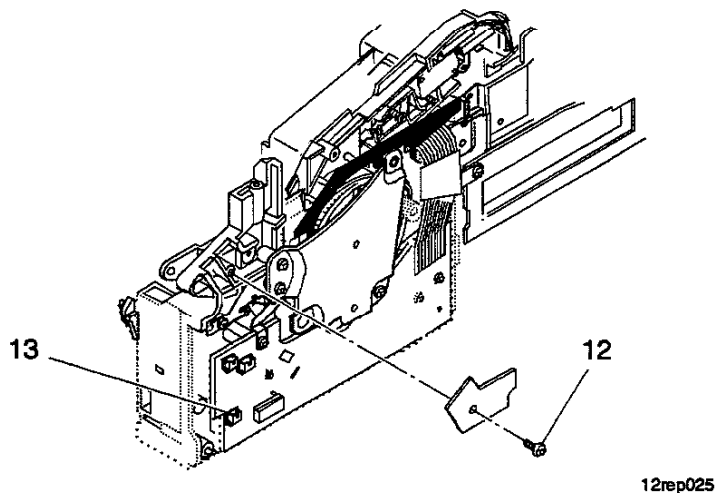
- 1 Disconnect the AC Power Cord.
- 2 Remove the Photoconductor / Drum Cartridge.
- 3 Remove the Developer Cartridge.
- 4 Remove the Manual Feed Tray (if installed).
- 5 Remove the Front Panel Assembly (REP 4.1.1).
- 6 Remove the Exit Guide Assembly and Fuser Cover Assembly (REP 4.1.3).
- 7 Disconnect the AC wire from the right side of the Thermostat (Figure 4.4.4a).
- 8 Remove the screw that secures the Thermistor to the Fuser Assembly (Figure 4.4.4a).
- 9 Remove the AC wire and the thermistor wire from the Lamp Holder retaining clips.
- 10 Remove the screw that secures the Lamp Holder to the Fuser (Figure 4.4.4a).
- 11 Very carefully lift the right end of the Lamp Holder to disengage the locating pin. Slide the Lamp Holder to the right to remove (Figure 4.4.4a).

Figure 4.4.4a Thermistor Removal.



- 12 Remove the screw that secures the Harness Retaining Plate (Figure 4.4.4b). Remove the Harness Retaining Plate.
- 13 Disconnect the Thermistor connector from the Cassette PWB (Figure 4.4.4b)
- 14 Disconnect the remaining AC wire from the Heater Lamp Holder.
- 15 Remove the two AC wires from the Heater Lamp Holder.
- 16 Remove the Thermistor from the Heater Lamp Holder.

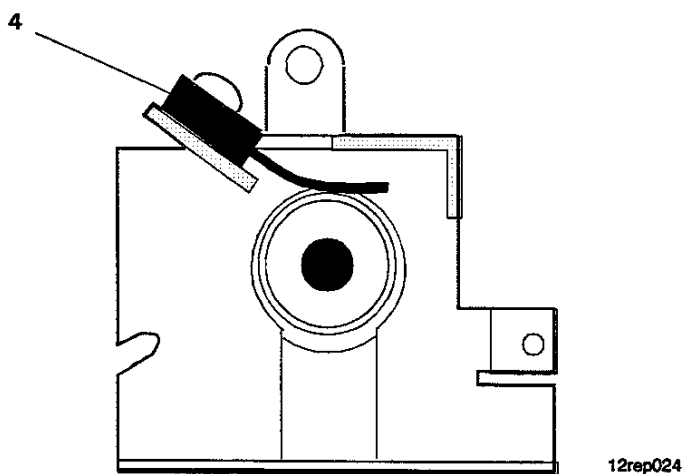
Figure 4.4.4b Harness Retaining Plate.



Replacement

- 1 Assemble in reverse order.
- 2 Ensure that the terminal on the Heater Lamp Holder is properly contacting the Heater Lamp.
- 3 Position the Thermistor locating pin in the hole on the Fuser Assembly.
- 4 Ensure that the Thermistor is in contact with the Heat Roller (Figure 4.4.4c).
- 5 Verify proper operation.

Figure 4.4.4c Thermistor Replacement.



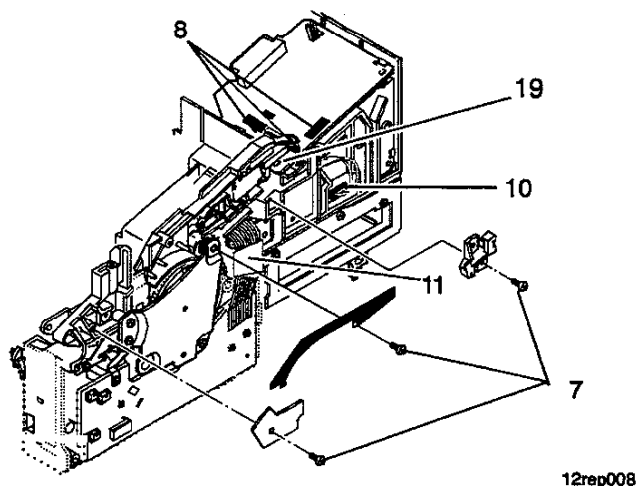
RAP 4.5 Drives

REP 4.5.1 Main Drive Motor Assembly

Removal

- 1 Disconnect the AC Power Cord.
- 2 Remove the Photoconductor / Drum Cartridge.
- 3 Remove the Developer Cartridge.
- 4 Remove the Manual Feed Tray (if installed).
- 5 Remove the Front Panel Assembly (REP 4.1.1).
- 6 Remove the Upper Cover (REP 4.1.2).
- 7 On the right side of the printer, remove the three screws that secure the Harness Retainers (Figure 4.5.1a). Remove the Harness Retainers.
- 8 Disconnect CN102, CN107, and CN108 from the Printer Controller PWB (Figure 4.5.1a)

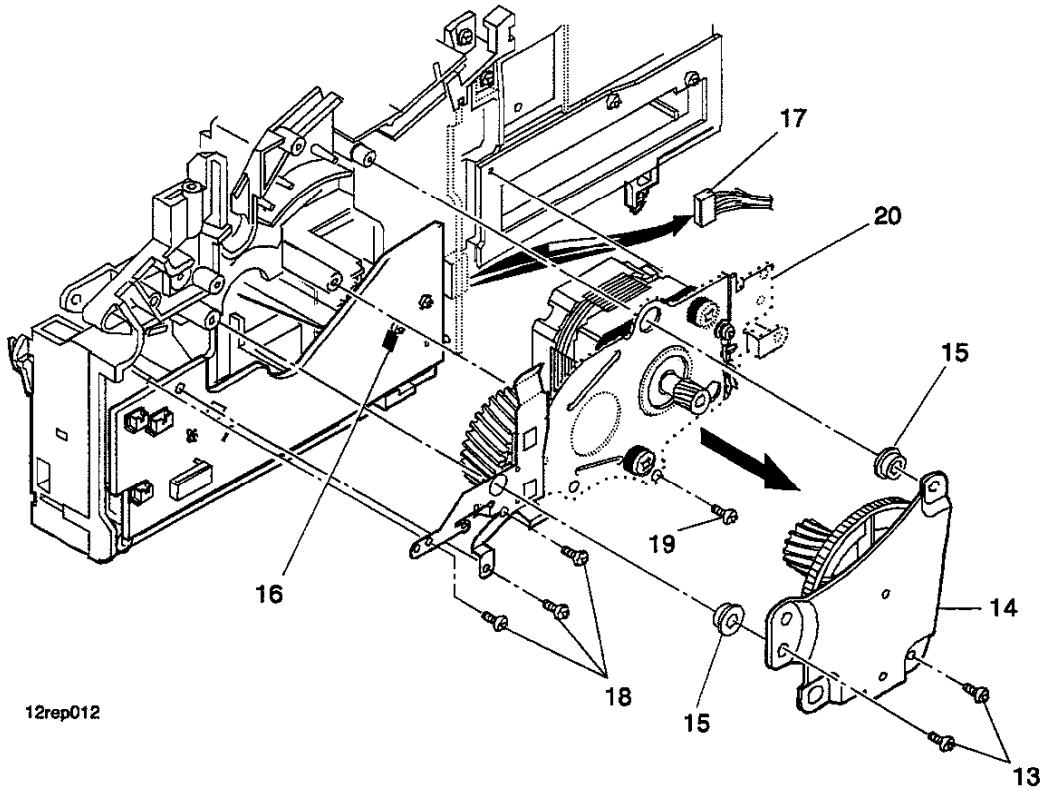
Figure 4.5.1a Harness Retainers.



- 9 Disconnect the two wires from the Safety Switch (Figure 4.5.1a).
- 10 Disconnect CN702 (Fuser AC Harness) from the LVPS (Figure 4.5.1a).
- 11 Remove the three screws that secure the Cassette PWB harness and ground shield to the printer frame (Figure 4.5.1a).
- 12 Remove all disconnected harnesses from the harness guide.
- 13 Remove the two screws that secure the Drive Bracket (Figure 4.5.1b).
- 14 Remove the Drive Bracket and the two gears supported by the bracket (Figure 4.5.1b).
- 15 Remove the two Drive Spacers (note orientation) (Figure 4.5.1b).
- 16 Remove the screw that secures the motor harness clamp to the Cassette PWB (Figure 4.5.1b).
- 17 Disconnect the Main Drive Motor Harness from the Motor Drive PWB (Figure 4.5.1b).
- 18 Remove the three screws that secure the ground wire and the earth plate to the printer frame (Figure 4.5.1b).

- 19 Remove the final screw that secures the Main Drive Motor Assembly (Figure 4.5.1b).
- 20 Remove the Main Drive Motor Assembly (Figure 4.5.1b).

Figure 4.5.1b Main Drive Motor.



12rep012

Replacement

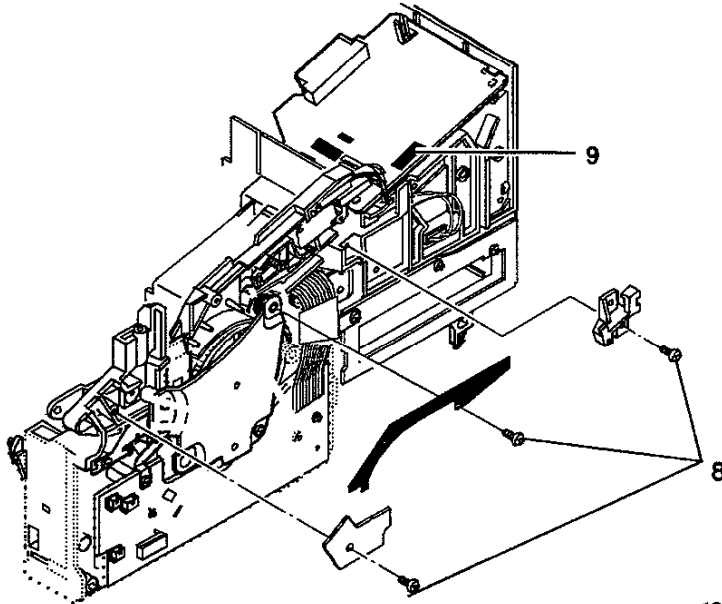
- 1 Assemble in reverse order.
- 2 Verify proper operation.

REP 4.5.2 Duplex Transport Motor

Removal

- 1 Disconnect the AC Power Cord.
- 2 Remove the Photoconductor / Drum Cartridge.
- 3 Remove the Developer Cartridge.
- 4 Remove the Manual Feed Tray (if installed).
- 5 Remove the Front Panel Assembly (REP 4.1.1).
- 6 Remove the Upper Cover (REP 4.1.2).
- 7 Remove the Exit Guide Assembly/Fuser Cover Assembly (REP 4.1.3).
- 8 On the right side of the printer, remove the three screws that secure the Harness Retainers (Figure 4.5.2a). Remove the Harness Retainers.
- 9 Disconnect connector CN107 from the Printer Control PWB (Figure 4.5.2a).

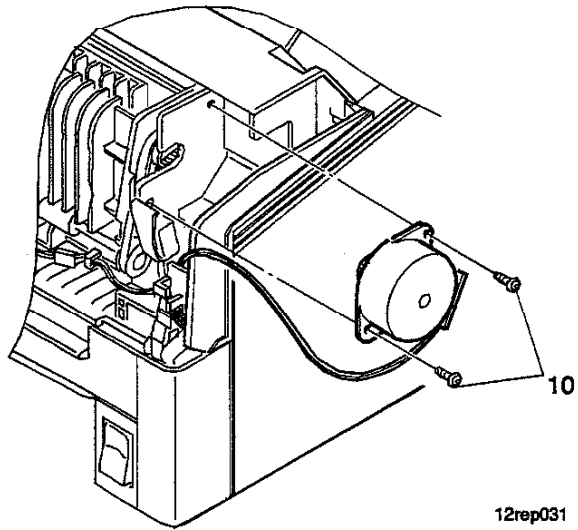
Figure 4.5.2a Duplex Transport Motor Harness Access.



12rep008

- 10 Remove the two screws that secure the Duplex Transport Motor to the Upper Transport (Figure 4.5.2b). Remove the Duplex Motor.

Figure 4.5.2b Duplex Transport Motor.



12rep031

Replacement

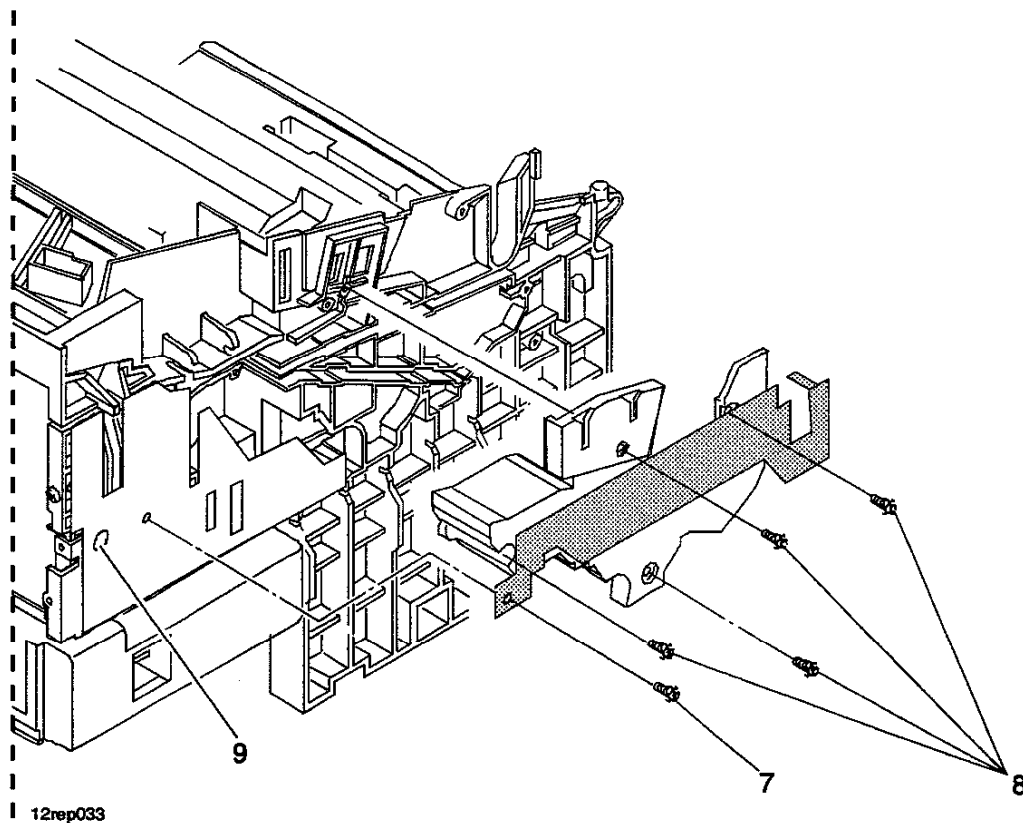
- 1 Assemble in reverse order.
- 2 Verify proper operation.

REP 4.5.3 Toner Motor

Removal

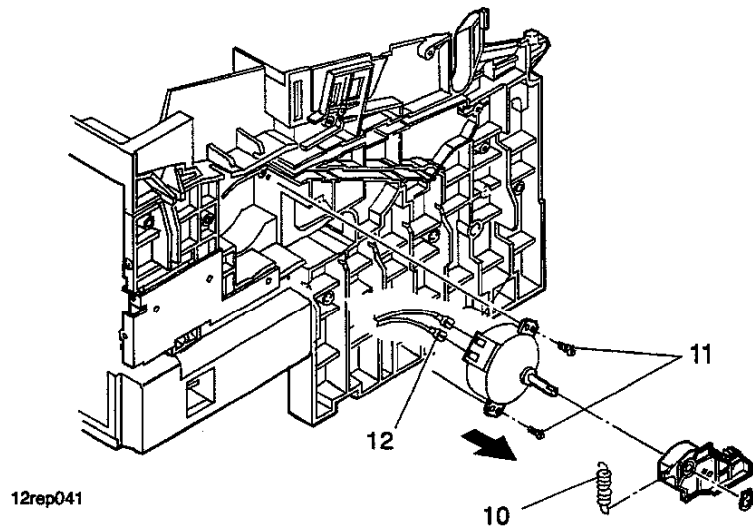
- 1 Disconnect the AC Power Cord.
- 2 Remove the Photoconductor / Drum Cartridge.
- 3 Remove the Developer Cartridge.
- 4 Remove the Manual Feed Tray (if installed).
- 5 Remove the Front Panel Assembly (REP 4.1.1).
- 6 Remove the Upper Cover (REP 4.1.2).
- 7 Remove the screw that secures the Duct Sheet to the Toner Motor Shield Plate (Figure 4.5.3a).
- 8 Remove the four screws securing the Duct Cover to the printer frame (Figure 4.5.3a). Remove the Duct Cover and allow it to hang from the Duct Sheet.
- 9 Remove the screw that secures the Toner Motor Shield Plate (Figure 4.5.3a). Remove the plate.

Figure 4.5.3a Duct Cover Removal.



- 10 Remove the Toner Arm Spring (Figure 4.5.3b).
- 11 Remove the two screws that secure the Toner Motor and remove the motor and gear assembly (Figure 4.5.3b).
- 12 Disconnect the two wires attached to the Toner Motor.

Figure 4.5.3b Toner Motor Removal.



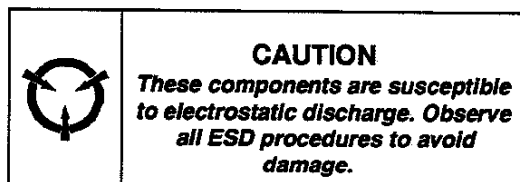
Replacement

- 1 Assemble in reverse order.
- 2 Verify proper operation.

RAP 4.6 Electronics

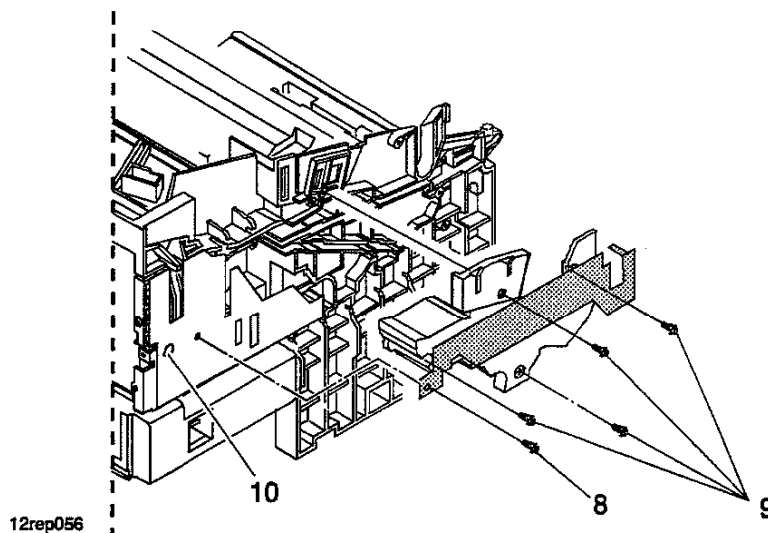
REP 4.6.1 Power Supply Assembly

Removal



- 1 Disconnect the AC Power Cord.
- 2 Remove the Photoconductor / Drum Cartridge.
- 3 Remove the Developer Cartridge.
- 4 Remove the Manual Feed Tray (if installed).
- 5 Remove the Front Panel Assembly (REP 4.1.1).
- 6 Remove the Upper Cover (REP 4.1.2).
- 7 Close and latch the Upper Transport.
- 8 Remove the screw that secures the Duct Sheet to the Toner Motor Shield Plate (Figure 4.6.1a).
- 9 Remove the four screws securing the Duct Cover to the printer frame (Figure 4.6.1a). Remove the Duct Cover and allow it to hang from the Duct Sheet.
- 10 Remove the screw that secures the Toner Motor Shield Plate (Figure 4.6.1a). Remove the plate.

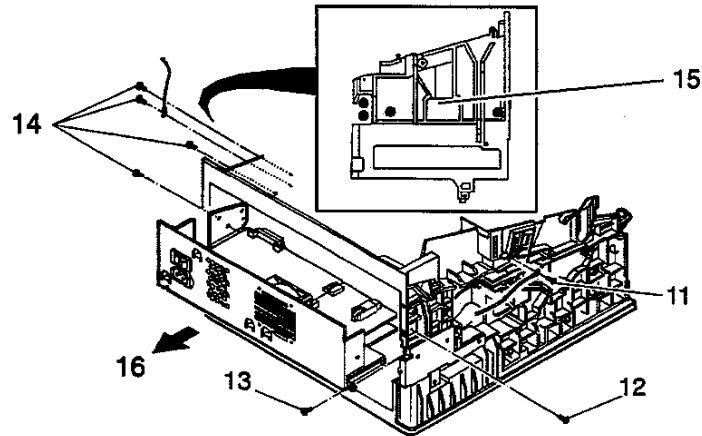
Figure 4.6.1a Duct Cover Removal.



- 11 Remove the screw that secures the Charge High Voltage wire to the terminal (Figure 4.6.1b).
- 12 Remove the Power Supply screw from the left side frame (Figure 4.6.1b).
- 13 Remove the screw that secures the rear of the Power Supply to the printer (Figure 4.6.1b).
- 14 Remove the four screws from the right side of the printer; see inset (Figure 4.6.1b).

- 15 Disconnect the Fuser AC supply connector (CN702) from the right side of the Power Supply (Figure 4.6.1b).
- 16 Remove the Power Supply by sliding it out the rear of the printer (Figure 4.6.1b).

Figure 4.6.1b Power Supply Removal.



To Remove the High Voltage Power Supply (HVPS) from the Power Supply Assembly

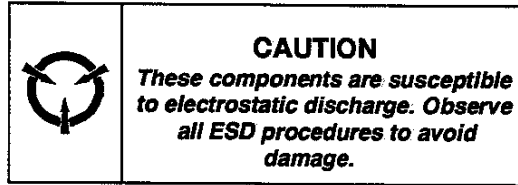
- 17 Disconnect CN802 (Fan Motor) from the HVPS.
- 18 Remove the Toner Density Control Knob.
- 19 Remove the four screws that secure the Fan Motor.
- 20 Remove the two screws that secure the HVPS to the assembly.
- 21 Remove the HVPS.

Replacement

- 1 Assemble in reverse order.
- 2 Verify proper operation.

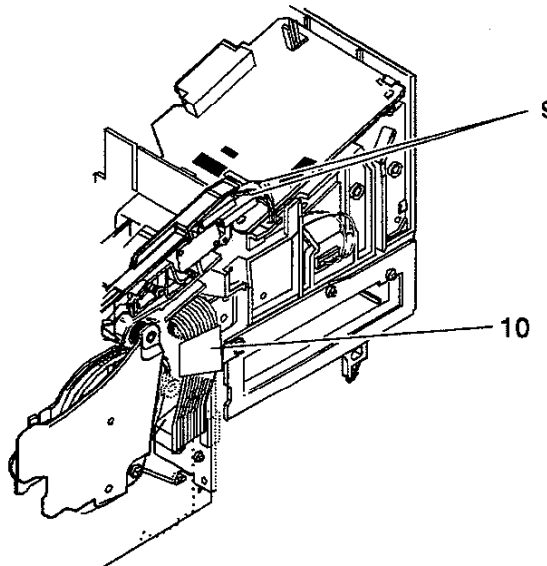
REP 4.6.2 Motor Driver PWB

Removal



- 1 Disconnect the AC Power Cord.
- 2 Remove the Photoconductor / Drum Cartridge.
- 3 Remove the Developer Cartridge.
- 4 Remove the Manual Feed Tray (if installed).
- 5 Remove the Front Panel Assembly (REP 4.1.1).
- 6 Remove the Upper Cover (REP 4.1.2).
- 7 Remove the Main Drive Motor Assembly (REP 4.5.1).
- 8 Remove the Power Supply Assembly (REP 4.6.1).
- 9 Disconnect CN101 and CN103 from the Printer Controller PWB (Figure 4.6.2a)
- 10 Detach the lower tab on the Cassette PWB ground shield (attached to the printer frame by adhesive) (Figure 4.6.2a).

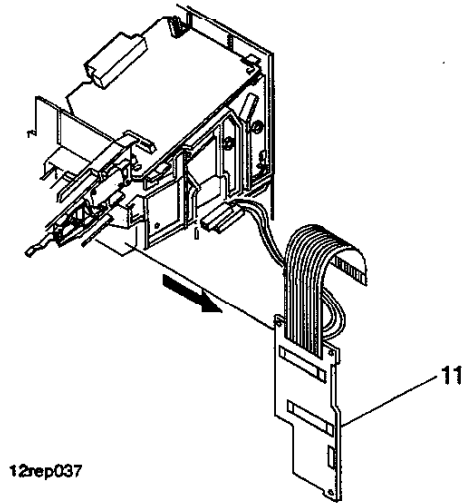
Figure 4.6.2a Cassette PWB Shield.



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- 11 Carefully slide the Motor Driver PWB out the right side of the printer. Ensure that the lower connector on the PWB is free of the Power Supply Ground plate .

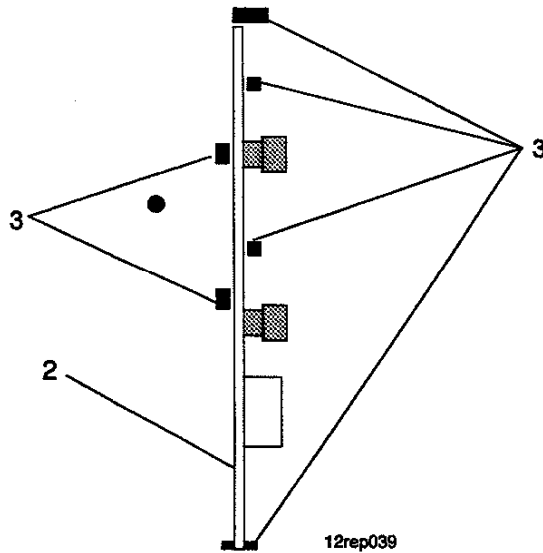
Figure 4.6.2b Motor Control PWB Removal.



Replacement

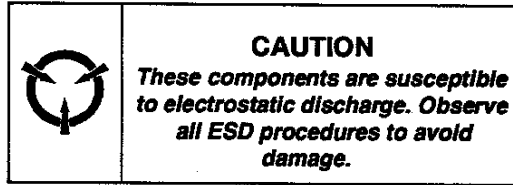
- 1 Assemble in reverse order.
- 2 When installing the Motor Driver PWB (Figure 4.6.2c), ensure that you do not damage the Power Supply Ground Plate.
- 3 Ensure that the PWB is orientated between the six locating tabs on the printer frame (Figure 4.6.2c).
- 4 Verify proper operation.

Figure 4.6.2c Locating Tabs.



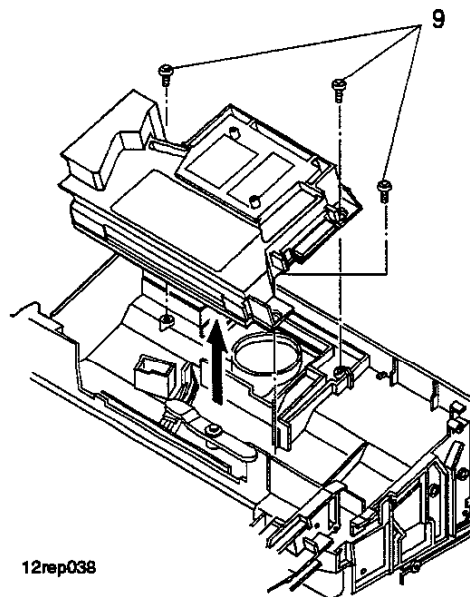
REP 4.6.3 Laser Assembly

Removal



- 1 Disconnect the AC Power Cord.
- 2 Remove the Photoconductor / Drum Cartridge.
- 3 Remove the Developer Cartridge.
- 4 Remove the Manual Feed Tray (if installed).
- 5 Remove the Front Panel Assembly (REP 4.1.1).
- 6 Remove the Upper Cover (REP 4.1.2).
- 7 Lift the right edge of the Printer Controller PWB and slide the PWB to the right disconnecting CN104 from the Laser Assembly.
- 8 Move the Printer Controller PWB far enough to allow access to the screws that secure the Laser assembly.
- 9 Remove the three screws that secure the Laser Assembly to the printer frame (Figure 4.6.3a). Remove the Laser.

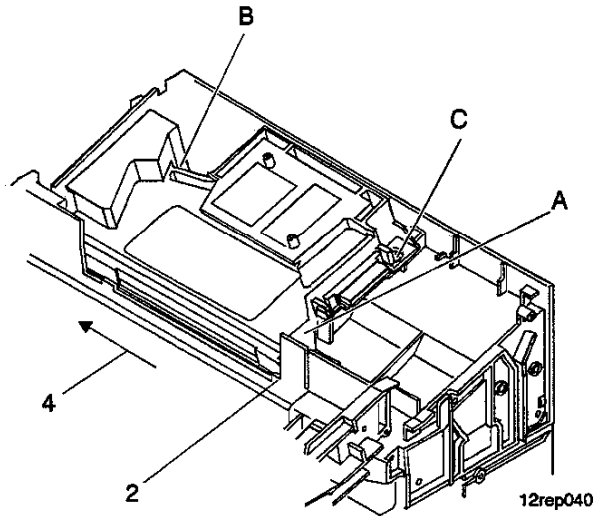
Figure 4.6.3a Laser Assembly.



Replacement

- 1 Assemble in reverse order.
- 2 Place the Laser in the right front corner (Figure 4.6.3b).
- 3 Reinstall the three screws, but do not tighten.
- 4 Bias the Laser in the direction of the arrow (Figure 4.6.3b).
- 5 Tighten the three screws in A, B, C sequence (Figure 4.6.3b).
- 6 Verify proper operation.
- 7 Perform the Print Registration Adjustment (ADJ 4.1.1).

Figure 4.6.3b Laser Replacement.



REP 4.6.4 Transfer Corotron Wire

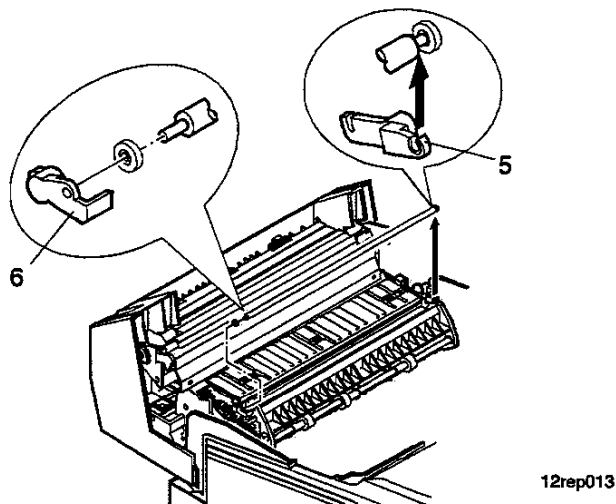
Removal

- 1 Disconnect the AC Power Cord.
- 2 Remove the Photoconductor / Drum Cartridge.
- 3 Remove the Developer Cartridge.
- 4 Open the Front Panel.

NOTE: When removing the guide roller, use care not to lose the right end roller collar. The right roller collar is not secured.

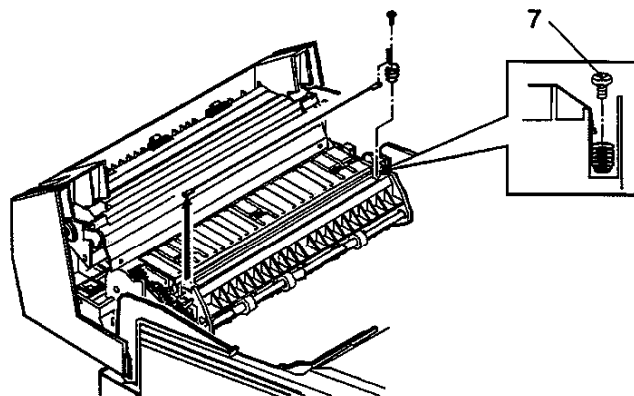
- 5 Remove the Guide Roller by lifting the left end free of the left guide arm (Figure 4.6.4a).
- 6 Move the roller to the left until it is free of the right guide arm (Figure 4.6.4a).

Figure 4.6.4a Guide Roller.



- 7 Remove the screw that secures the Transfer Corotron Spring (Figure 4.6.4b). Remove the spring and the Transfer Wire.

Figure 4.6.4b Transfer Corotron Wire.

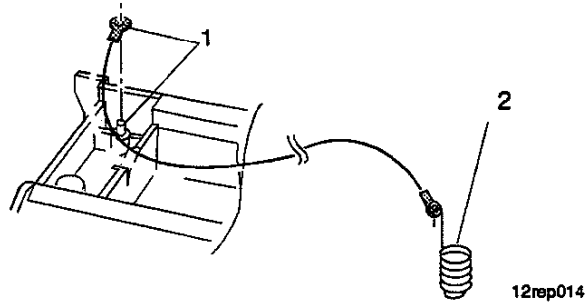


Replacement

NOTE: Only hold the Transfer Corotron Wire by the terminals. Do not touch the wire with your bare hands.

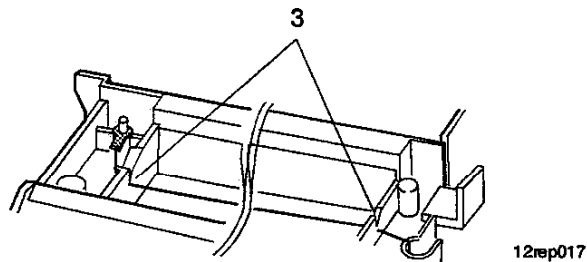
- 1 Attach one end of the wire to the boss on the transport frame (Figure 4.6.4c).
- 2 Hang the Transfer Corotron Wire Spring and screw on the other end of the wire (Figure 4.6.4c).

Figure 4.6.4c Attaching the Transfer Corotron Wire Assembly.



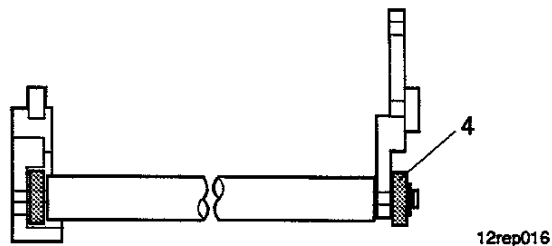
- 3 Put the wire along the V-groove in the frame and secure the spring to the frame (Figure 4.6.4d).

Figure 4.6.4d V-Groove.



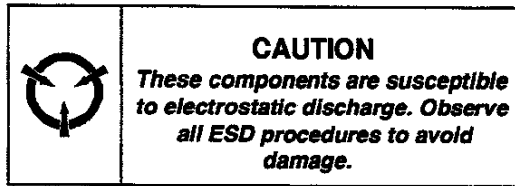
- 4 Reinstall the Guide Roller. Ensure the collar is on the outside of the left guide arm .

Figure 4.6.4e Guide Roller Collar.



- 5 Assemble remaining components in reverse order.
- 6 Verify proper operation.

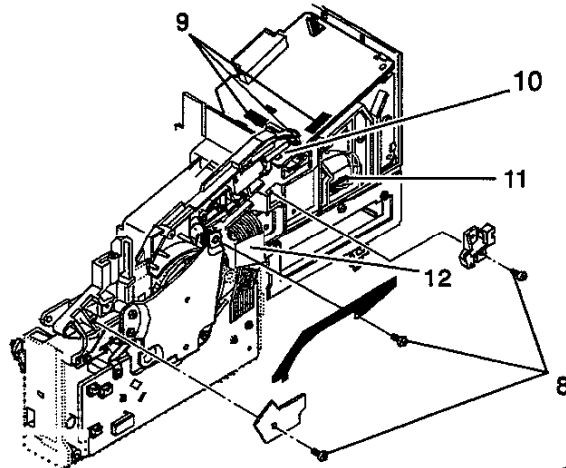
REP 4.6.5 Cassette PWB



Removal

- 1 Disconnect the AC Power Cord.
- 2 Remove the Photoconductor / Drum Cartridge.
- 3 Remove the Developer Cartridge.
- 4 Remove the Manual Feed Tray (if installed).
- 5 Remove the Front Panel Assembly (REP 4.1.1).
- 6 Remove the Upper Cover (REP 4.1.2).
- 7 Remove the Bottom Cover (REP 4.1.4).
- 8 On the right side of the printer, remove the three screws that secure the Harness Retainers (Figure 4.6.5a). Remove the Harness Retainers.
- 9 Disconnect CN102, CN107, and CN108 from the Printer Controller PWB (Figure 4.6.5a).
- 10 Disconnect the two wires from the Safety Switch (Figure 4.6.5a).
- 11 Disconnect CN702 (Fuser AC Harness) from the LVPS (Figure 4.6.5a).
- 12 Remove the three screws that secure the Cassette PWB harness and ground shield to the printer frame (Figure 4.6.5a).
- 13 Remove all disconnected harnesses from the harness guide.

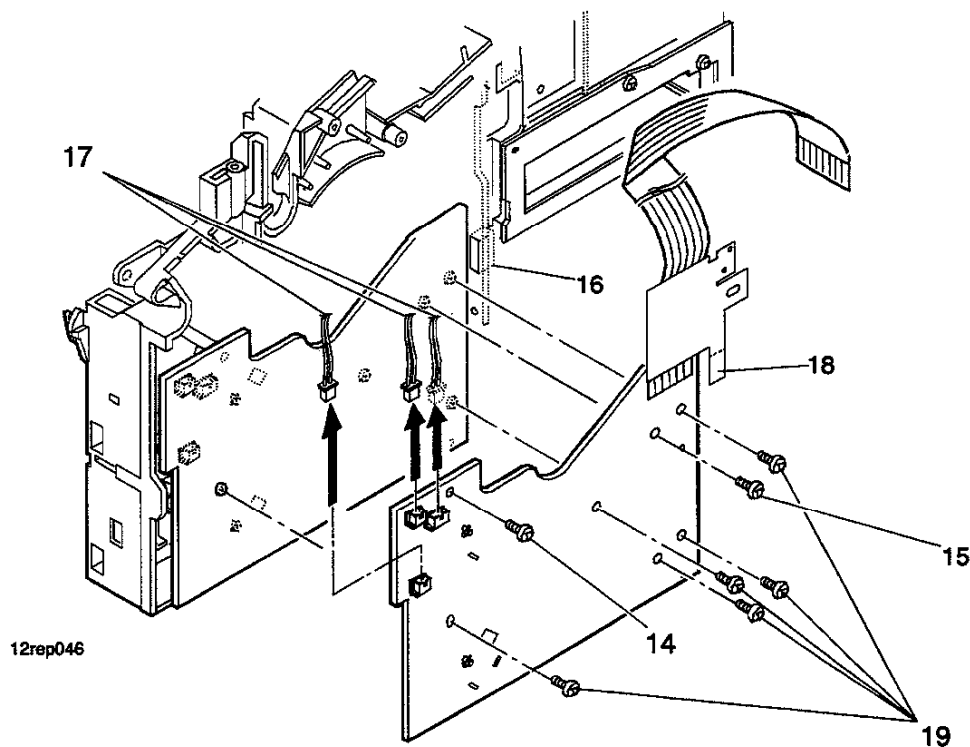
Figure 4.6.5a Harness Retainers.



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- 14 Remove the screw that secures the Main Drive Motor Earth Plate to the Cassette PWB (Figure 4.6.5b).
- 15 Remove the screw that secures the motor harness clamp to the Cassette PWB (Figure 4.6.5b).
- 16 Disconnect the Main Drive Motor Harness from the Motor Drive PWB (Figure 4.6.5b).
- 17 Disconnect CN303, CN304, and CN305 from the Cassette PWB (Figure 4.6.5b).
- 18 Detach the lower tab on the Cassette PWB ground shield (attached to the printer frame by adhesive) (Figure 4.6.5b).
- 19 Remove the five screws that secure the Cassette PWB to the Printer Frame (Figure 4.6.5b).
- 20 Remove the cassette PWB.

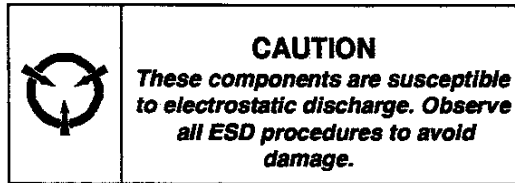
Figure 4.6.5b Cassette PWB.



Replacement

- 1 Assemble in reverse order.
- 2 To properly position both Paper Out Actuators, ensure that both paper trays are installed and both contain paper.
- 3 Verify proper operation.

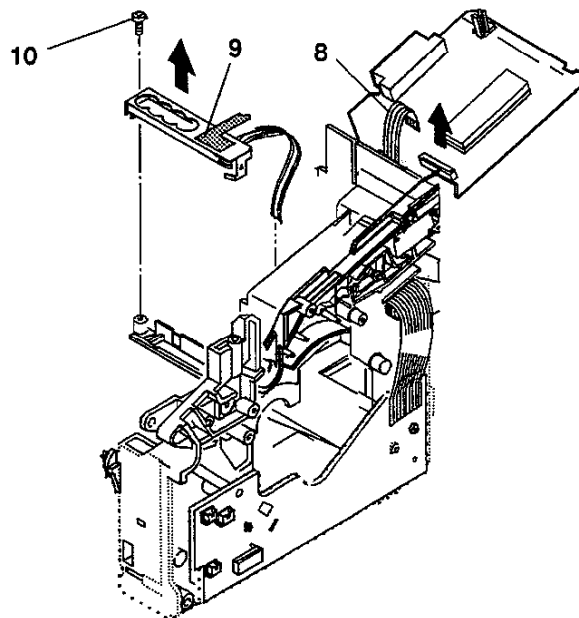
REP 4.6.6 Toner Sensor PWB



Removal

- 1 Disconnect the AC Power Cord.
- 2 Remove the Photoconductor / Drum Cartridge.
- 3 Remove the Developer Cartridge.
- 4 Remove the Manual Feed Tray (if installed).
- 5 Remove the Front Panel Assembly (REP 4.1.1).
- 6 Remove the Upper Cover (REP 4.1.2).
- 7 Remove the Main Drive Motor Assembly (REP 4.5.1).
- 8 Disconnect CN103 from the Printer Control PWB (Figure 4.6.6a).
- 9 Carefully peel the ground foil from the sensor cover (Figure 4.6.6a).
- 10 Remove the screw that secures the Toner Sensor PWB to the printer frame (Figure 4.6.6a).
- 11 Remove sensor, sensor cover, and sensor cable.

Figure 4.6.6a Toner Sensor PWB.

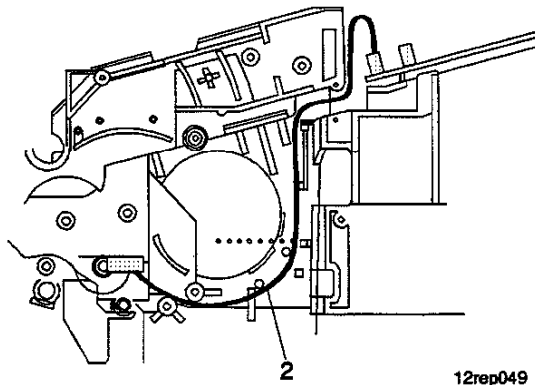


12rep048

Replacement

- 1 Assemble in reverse order.
- 2 Reinstall the sensor cable as illustrated (Figure 4.6.6b).

Figure 4.6.6b Sensor Cable.

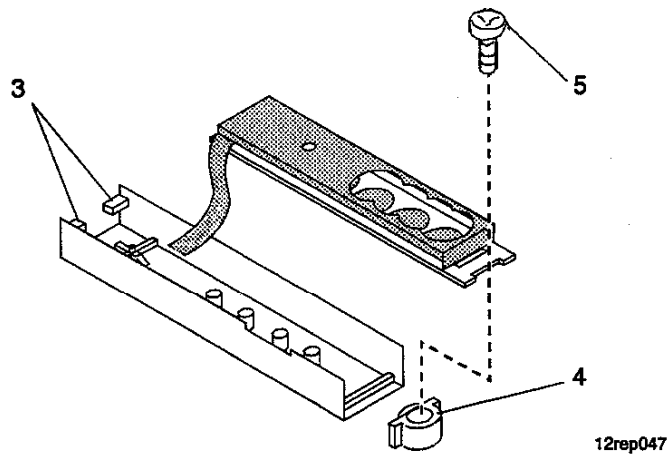


- 3 Install the right end of the Toner Sensor PWB under the two tabs in the printer frame (Figure 4.6.6c).

NOTE: The figure below illustrates the Toner Sensor PWB as viewed from the rear of the printer.

- 4 The left end of the sensor rests on the flat surface of the mounting stud (Figure 4.6.6c).
- 5 Reinstall mounting screw (Figure 4.6.6c).

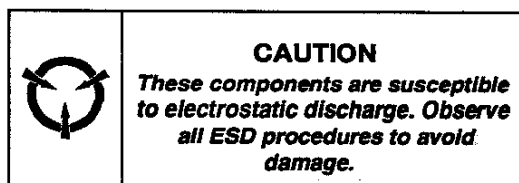
Figure 4.6.6c Installing Toner Sensor PWB.



- 6 Reinstall remaining components in reverse order.
- 7 Verify proper operation.

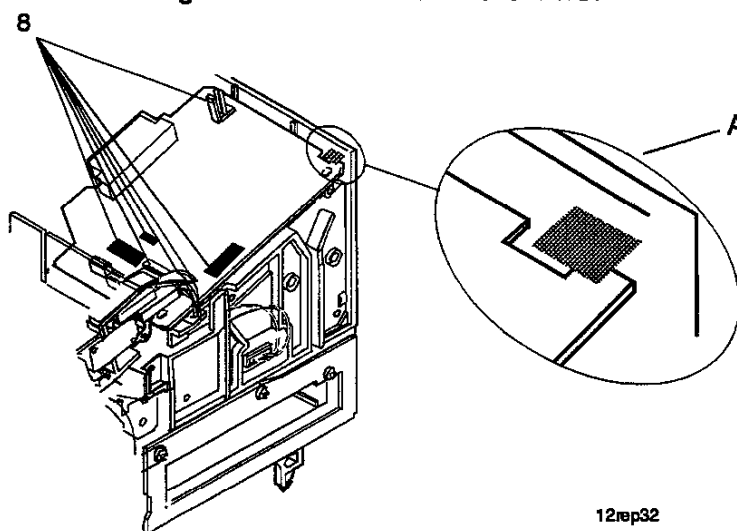
REP 4.6.7 Printer Controller PWB

Removal



- 1 If possible, use Counters Set in the Diagnostic Tests (section 5) to record the current values set in NVRAM. Record the values, do not change them.
- 2 Disconnect the AC Power Cord.
- 3 Remove the Photoconductor / Drum Cartridge.
- 4 Remove the Developer Cartridge.
- 5 Remove the Manual Feed Tray (if installed).
- 6 Remove the Front Panel Assembly (REP 4.1.1).
- 7 Remove the Upper Cover (REP 4.1.2).
- 8 Disconnect all seven connectors from the Printer Controller PWB (Figure 4.6.7a).

Figure 4.6.7a Printer Controller PWB.



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- 9 Lift the right edge of the Printer Controller PWB and slide the PWB to the right disconnecting CN104 from the Laser Assembly.

Replacement

- 1 Assemble in reverse order.
- 2 Ensure that the right rear corner of the PWB is under the tab on the rear frame; see inset A (Figure 4.6.7a).
- 3 If a new Printer Controller PWB is installed, set the NVRAM to the values recorded in step 1.
- 4 Perform Print Registration Adjustment (ADJ 4.1.1).

ADJ 4.1 Adjustments

ADJ 4.1.1 Print Registration

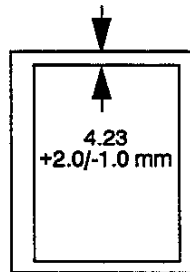
Print Registration should be adjusted when any of the following have occurred:

- When the margin differs from the reference value.
- When the System Controller PWB is replaced.
- When the Laser Assembly is replaced.

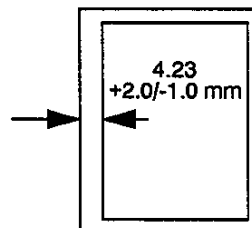
The margin settings are adjusted by control panel key operation. Adjustment value is 0.04mm for each increment.

Reference Value

(Top margin)



(Left margin)



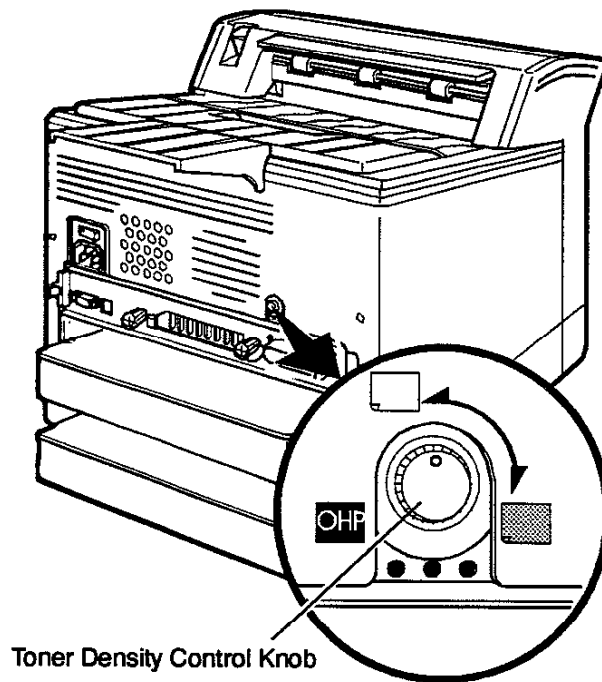
- 1 Switch on the AC power while pressing and holding the LINE and MENU keys until 'TOP MARGIN=XX' is displayed (XX is -128 to 128)
- 2 Press the MENU key. LEFT MARGIN=XX is displayed.
- 3 Press the ENTER key to print a test print.
- 4 Compare the test print with the reference value above. If the test print is within specification, go to step 12. If adjustment is required, go to step 5.
- 5 Press the MENU key. TOP MARGIN=XX is displayed.
- 6 Press \vee or \wedge keys to set the top margin value (-128 to 128).
- 7 Press the MENU key to save the top margin value. LEFT MARGIN=XX is displayed.
- 8 Press \vee or \wedge keys to set the left margin value (-128 to 128).
- 9 Press the MENU key to save the left margin value. TOP MARGIN=XX is displayed.
- 10 Press the MENU key. LEFT MARGIN=XX is displayed.
- 11 Press the ENTER key to print a test print.
- 12 Check the setting. Repeat steps 5 through 11 until the test print meets specification.
- 13 Press the FORM FEED key or switch off the power to terminate setting.

ADJ 4.1.2 Print Density Adjustment

To adjust the print density, use the Toner Density Control Knob at the rear of the printer.

- To increase density, rotate the knob clockwise.
- When printing on transparency film, rotate the knob fully counterclockwise.

NOTE: Increasing density reduces toner life.



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Notes