

## Removal and Replacement

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### Introduction

This chapter contains procedures for removing and replacing these cardiograph subassemblies:

- The battery
- The keyboard and the user interface assembly
- The printer drive assembly
- The preview screen assembly (M1700A only)
- The top cover assembly
- The printhead assembly
- The preview logic board (M1700A only)
- The CPU assembly
- The disk drive (M1700A and M1701A only)

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### Note



As of February 1992, all new PageWriter XL cardiographs are manufactured to a revised mechanical design specification. All units having a serial number prefix of 3208A or later conform to this revised specification.

This chapter contains procedures for all PageWriter XL cardiographs. The particular procedure you will use depends on the serial number prefix of the PageWriter you are servicing. Make sure you use the correct procedure for your particular cardiograph.

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### Note



The way in which wires and cables are routed and dressed inside the main chassis plays an important part in reducing electromagnetic and radio frequency interference emitted by the cardiograph. When you disassemble any part of the cardiograph, pay special attention to the way cables and wires are routed and dressed. When you reassemble the cardiograph, be sure to route and dress all cables and wires as they were originally.

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## Tool Requirements

These are the tools you need to remove and replace the cardiograph's subassemblies:

- 7/32-inch nut driver
- Small flat-bladed screwdriver
- T10 and T15 Torx drivers (or Torx driver kit, HP part number 5181-1933)
- Long-nose pliers (recommended, but not necessary)

## Note



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The directions in this chapter generally assume you are facing the front of the cardiograph as you work. Thus, for example, the “left side of the cardiograph” means “the left side as you face the front of the unit.”

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## The Battery

This section explains how to remove and replace the battery. These procedures apply to all units.

### Removing the Battery

To remove the battery:

## Caution



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To prevent the loss of data (including the configuration and software) stored in system memory, the cardiograph must be connected to AC with the AC switch turned on when the battery is removed.

If you are servicing an M1700A or M1701A PageWriter, store the configured software on disk as described in “Configuration Files” in Chapter 2. If you are servicing an M1702A PageWriter, print a copy of the cardiograph configuration (see Chapter 2). Doing this will help you reconfigure the PageWriter when power is reapplied.

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1. Connect the power cord to the cardiograph, then plug the cord into an AC outlet.
2. Turn on the AC switch on the back of the cardiograph and check that the AC indicator on the front panel is lit.
3. Open the battery compartment by loosening the two captive thumbscrews on the back of the cardiograph as shown in Figure 7-1 (the figure shows the M1700A).

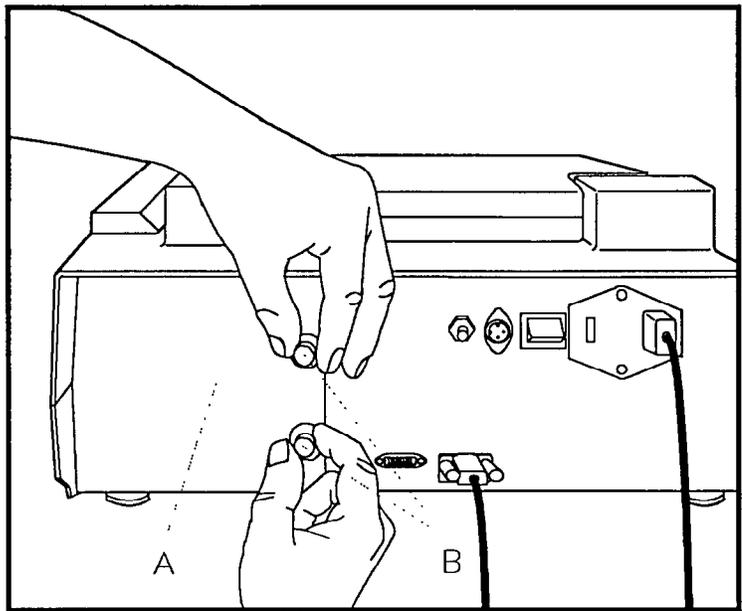


Figure 7-1. Opening the Battery Compartment.

- A. Battery door
- B. Thumbscrews

**Warning**



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The battery is relatively heavy for its size. Support the battery from underneath as you remove it to prevent it from slipping and possibly causing injury.

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4. Slide the battery and battery holder out of the cardiograph.
5. Separate the battery holder from the battery and set the battery aside for storage or proper disposal.

**Warning**



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Dispose of or recycle depleted batteries according to local regulations. Do not disassemble, puncture, or incinerate the battery assembly.

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## Replacing the Battery

To replace the battery:

1. Install the battery in the battery holder. Make sure the tab on the holder fits into the slot on the battery as shown in Figure 7-2.

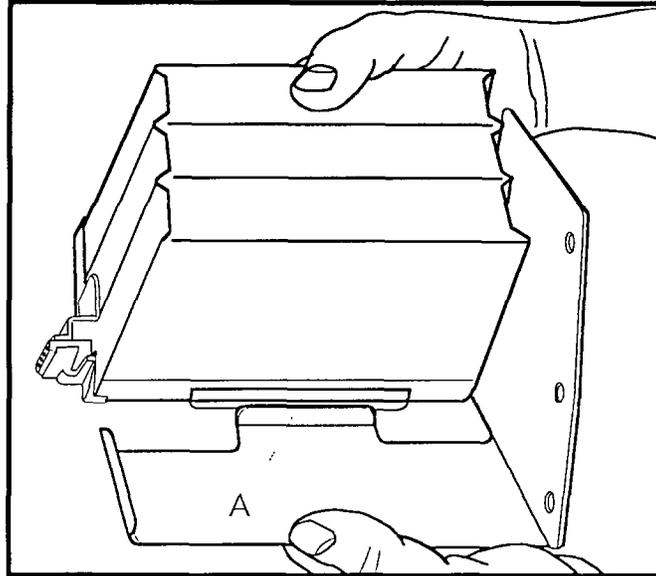


Figure 7-2. Fitting the Battery Holder Tab Into the Battery Slot.

A. Battery slot

2. Gently slide the battery and holder into the battery compartment until completely seated.
3. Finger-tighten the thumbscrews on the battery holder.
4. Press the **On-Standby** switch to turn the cardiograph **On**.
5. Check that the AC indicator and one or more battery level indicators are lit.

### Note



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To insure full battery capacity, charge the battery for 24 hours after you install it in the cardiograph. The battery will charge as long as the cardiograph is connected to AC and the AC switch is on.

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### Note



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To verify battery capacity, turn on the unit while the cardiograph is connected to AC power and the AC switch is on. It is important that the cardiograph is connected to AC power when verifying battery capacity.

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## The Keyboard and the User Interface Assembly

This section explains how to remove and replace the keyboard and the user interface assembly. These procedures apply to all units.

### The Keyboard

The keyboard is mounted on the front of the cardiograph in the user interface assembly. To remove the keyboard, carefully insert a flat-bladed screwdriver into the slots and pry as shown in Figure 7-3. To reinstall the keyboard, snap it back in place.

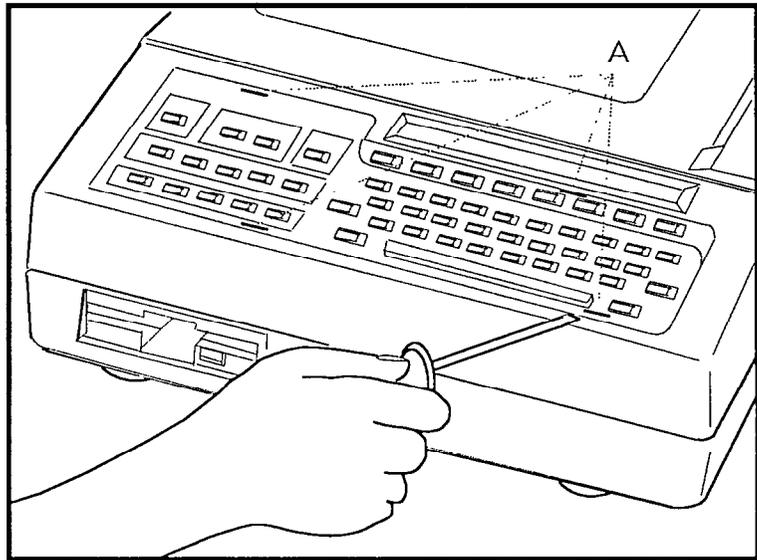


Figure 7-3. Removing the Keyboard.

A. Pry slots

### The User Interface Assembly

The user interface assembly consists of the main bezel, the keyboard PCB, and the front panel display.

#### Removing the User Interface Assembly

#### Caution



Use an electrostatic wrist band or other approved method for protection against electrostatic discharge when handling the interface assembly.

To remove the user interface assembly:

1. Set the cardiograph to **Standby**.
2. Remove the keyboard.

3. Remove the six screws shown in Figure 7-4.

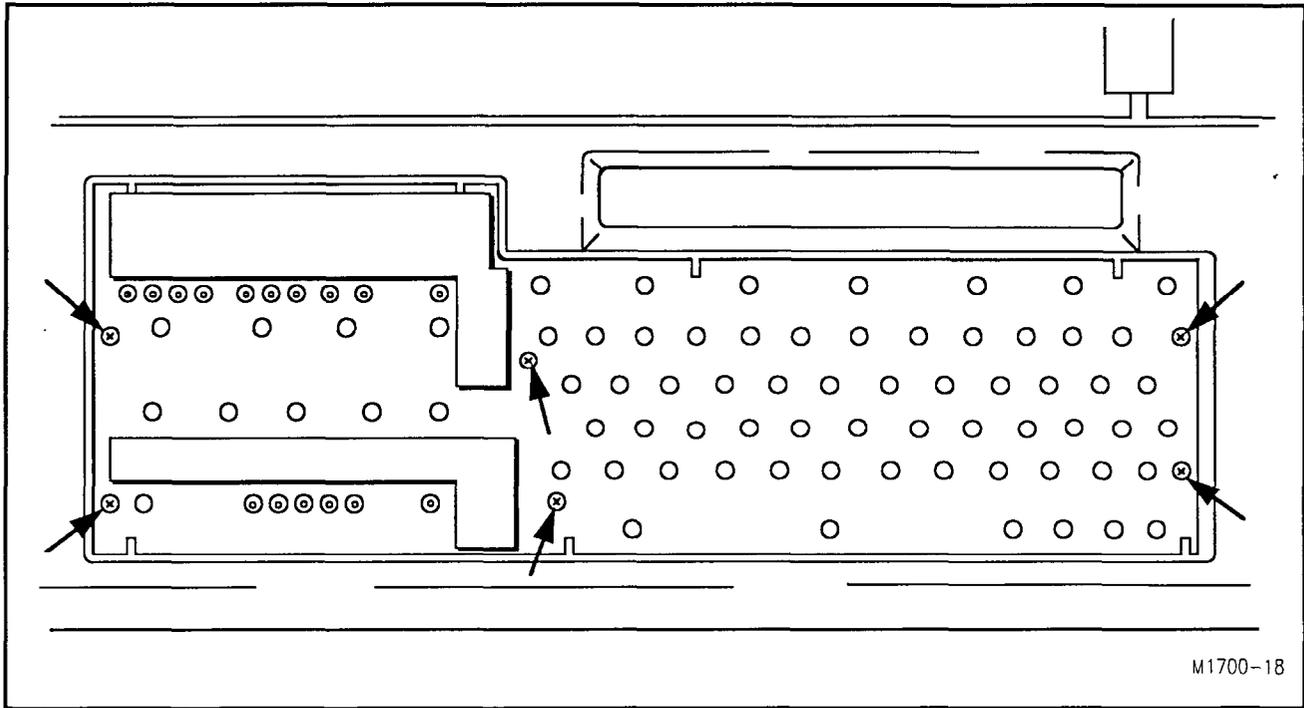


Figure 7-4. User Interface Screw Locations.

4. Carefully lift the assembly and tilt it until the keyboard and LCD circuit boards are accessible.
5. Disconnect the ribbon cables from the circuit boards.

**Caution**



Do not remove the circuit boards from the user interface assembly. Removing the boards can impair the long-term reliability of the cardiograph.

**Replacing the User Interface Assembly**

To replace the user interface assembly, reverse the above procedure.

## The Printer Drive Assembly

This section describes how to remove and replace the printer drive assembly.

### Removing the Printer Drive Assembly

The procedure you will use depends on the serial number prefix of the unit you are servicing. Make sure you use the correct procedure for your particular unit.

#### PageWriters with Serial Number Prefix 3208A or Later

If the PageWriter has a serial number prefix of 3208A or later, use this procedure to remove the printer drive assembly.

To remove the printer drive assembly:

1. Remove the keyboard and the user interface assembly as described previously in this chapter.
2. Remove the printer door:
  - a. Release the latch and pull the door out to the first stop.
  - b. Compress and remove the plastic retainer clip at the end of the rear plastic rail.
  - c. Slide the door out of the rails and set it aside.
3. Lift off the printhead cover as shown in Figure 7-5. As you lift off the cover, note how the tabs on the printhead cover interlock with the other plastic parts of the top cover.

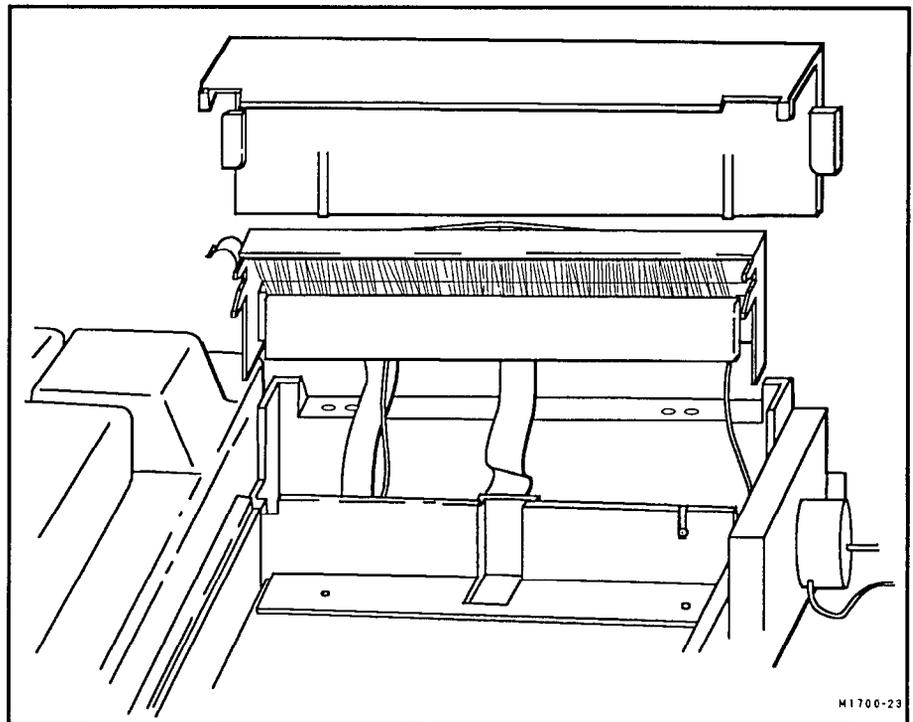
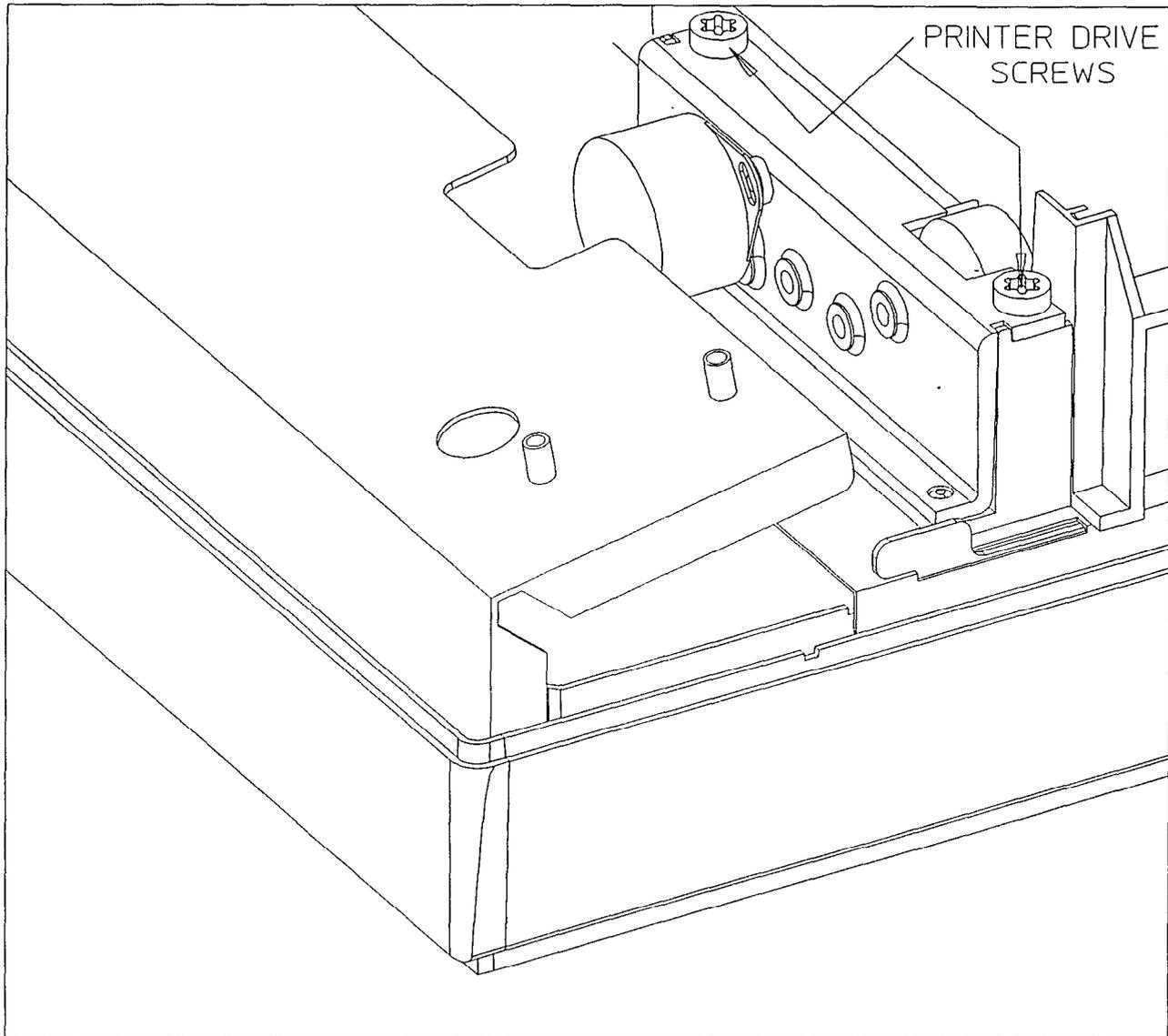


Figure 7-5. Removing the Printhead Cover.

4. Disconnect the motor and sensor connectors.
5. Remove the two screws (see Figure 7-6) that attach the plastic gear housing to the cardiograph.



**Figure 7-6. Printer Drive and Keyboard Ground Plane Screw Locations.**

6. Carefully pry up the plastic gear housing to free it from the alignment pins on the cardiograph. If the gears fall off their shafts, refer to the first step in the printer drive replacement procedure that follows.

### PageWriters with Serial Number Prefix Prior to 3208A

If the PageWriter has a serial number prefix prior to 3208A, use this procedure to remove the printer drive assembly.

To remove the printer drive assembly:

1. Remove the keyboard and the user interface assembly as described previously in this chapter.
2. Remove the printer door:
  - a. Release the latch and pull the door out to the first stop.
  - b. Compress and remove the plastic retainer clip at the end of the rear aluminum rail.
  - c. Slide the door out of the rails and set it aside.
3. Lift off the printhead cover as shown in Figure 7-7. As you lift off the cover, note how the tabs on the printhead cover interlock with the other plastic parts of the top cover.

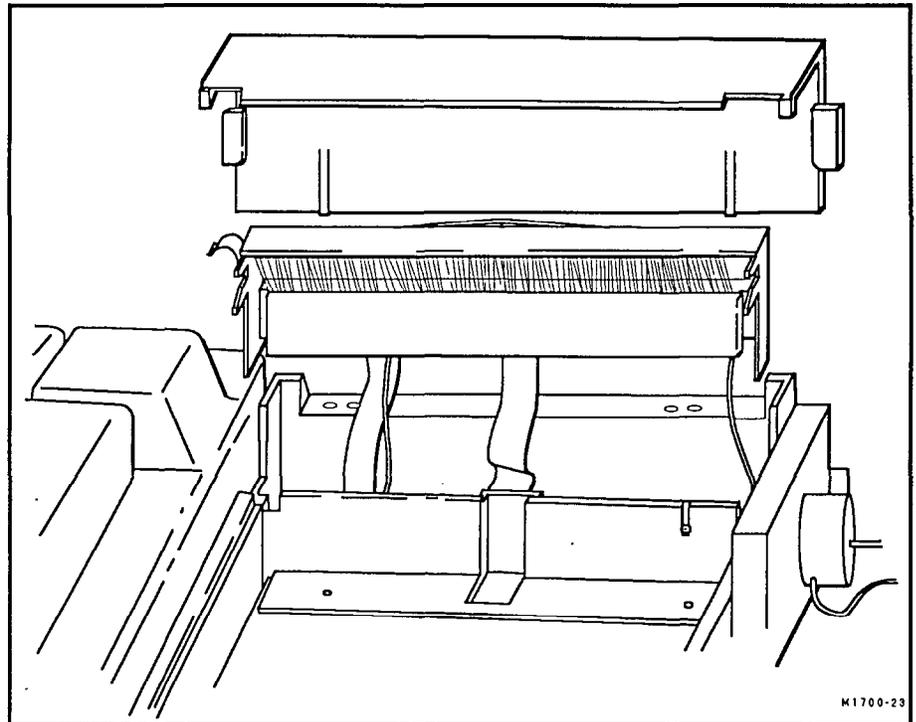
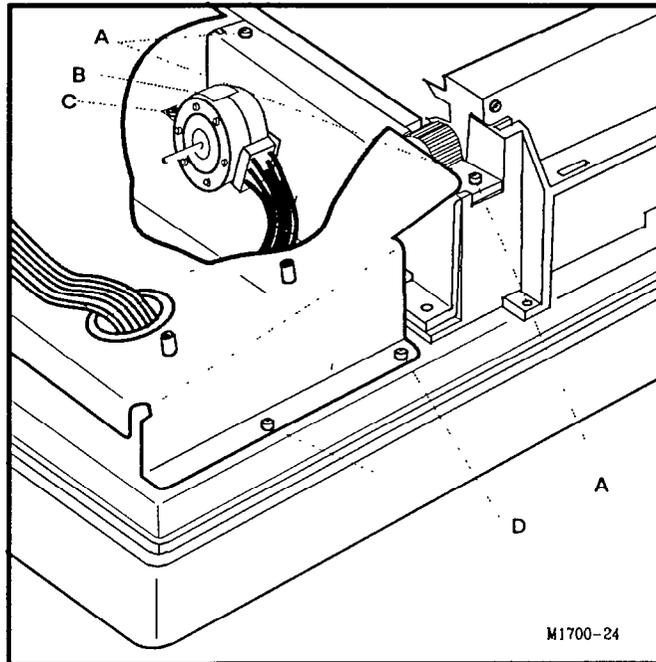


Figure 7-7. Removing the Printhead Cover.

4. Remove the four screws that attach the keyboard ground plane to the upper chassis and set the keyboard ground plane aside. Callout D in Figure 7-8 shows two of the screws.



**Figure 7-8. Printer Drive and Keyboard Ground Plane Screw Locations.**

- A. Gear housing screws
  - B. Motor ground spring
  - C. Motor ground spring attaching screw
  - D. Keyboard ground plane screws (two of four)
5. Remove the screw (callout C in Figure 7-8) that attaches the motor ground spring to the upper chassis.
  6. Disconnect the motor and sensor connectors.
  7. Remove the two screws (callout A in Figure 7-8) that attach the plastic gear housing to the cardiograph.
  8. Carefully pry up the plastic gear housing to free it from the alignment pins on the cardiograph. If the gears fall off their shafts, refer to the first step in the printer drive replacement procedure later in this chapter.

## Replacing the Printer Drive Assembly

Use this procedure to replace the printer drive assembly. This procedure applies to all units.

To replace the printer drive assembly:

1. If necessary, reinstall the gears. The gears are arranged on the shafts in the gear housing as shown in Figure 7-9. Each gear has a number molded into it. That number corresponds to a number molded into the gear housing next to the appropriate shaft. Insert gears with molded numbers facing up.

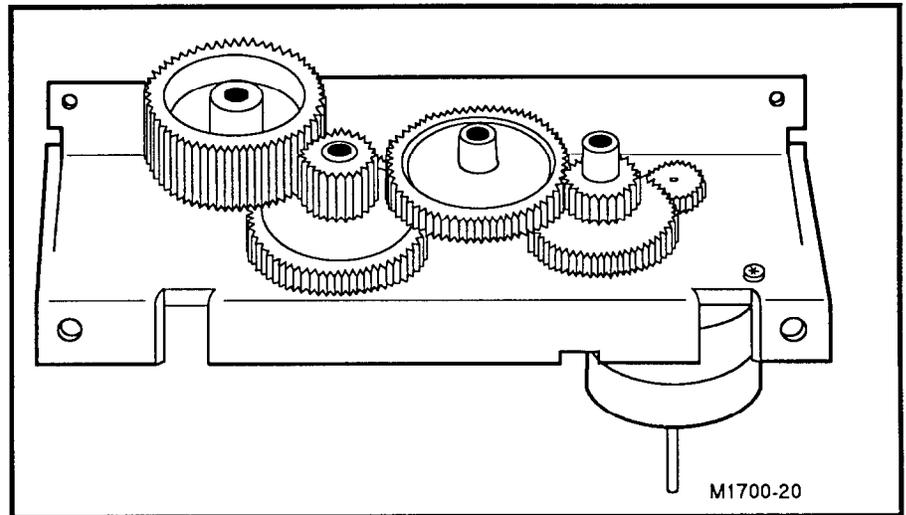


Figure 7-9. The Printer Drive Gears.

2. Press the gear housing onto the alignment pins.
3. Reinstall the two gear housing screws.
4. Reconnect the motor and sensor connectors.

### Note



The motor ground spring (callout B in Figure 7-8) and the motor ground spring attaching screw (callout C) were not included on units having a serial number prefix of 3208A, and may be left off.

5. On models having a serial number prefix prior to 3208A, reinstall the motor ground spring and its attaching screw, and reinstall the keyboard ground plane.
6. Reinstall the printhead cover.
7. Reinstall the printer door and the retainer clip.
8. Reinstall the user interface assembly and the keyboard.

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## The Preview Screen Assembly

This section describes how to remove and replace the preview screen assembly.

### Note



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PageWriters having a serial number prefix of 3208A or later have a new design that allows easier component-level repair of the preview screen assembly.

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## Removing the Preview Screen Assembly

The procedure you will use depends on the serial number prefix of the unit you are servicing. Make sure you use the correct procedure for your particular PageWriter.

When you remove the preview screen assembly, you can either disassemble it completely, or you can remove the assembly as a single piece that includes the clutches and cables. (The complete replacement preview assembly also includes clutches and cables.) This section includes instructions for removing the preview assembly as a whole and for disassembling it.

### PageWriters with Serial Number Prefix 3208A or Later

If the PageWriter has a serial number prefix 3208A or later, use these procedures to remove or disassemble the preview screen assembly.

**Removing the Entire Preview Screen Assembly.** Use this procedure to remove the preview screen assembly as a single unit.

### Warning



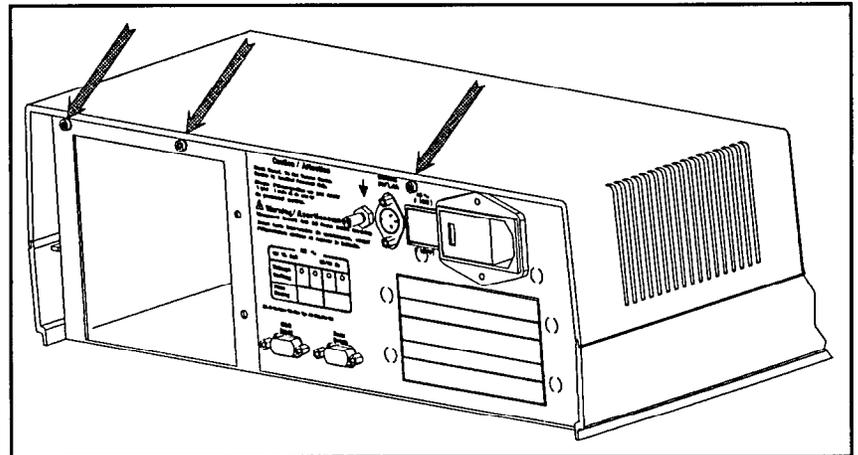
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**Perform the following four steps sequentially to eliminate the chance of exposure to hazardous voltages.**

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1. Disconnect the AC power cord.
2. Verify that no disk is in the disk drive.
3. Turn the cardiograph **On**. (This allows the rectifier assembly capacitors to discharge more rapidly.)
4. Remove the battery as described earlier in this chapter.
5. Remove the left and right clutch covers:
  - a. Insert a small flat-bladed screwdriver in the slot at the bottom rear of the cover and gently pry up till the catch releases.
  - b. Tilt the cover forward slightly to disengage the tabs at the front, then lift the cover away. (This is easier if the screen assembly lays flat on the PageWriter.)
6. Remove the mounting screws and washers from the left and right clutches.
7. Lift the preview screen assembly off of the cardiograph.
8. Remove the user interface as described earlier in this chapter.

9. Remove the three screws from the rear panel as shown in Figure 7-10.



**Figure 7-10. Opening and Removing the Top Cover Assembly.**

10. Open the top cover and disconnect the preview cable from the preview logic board (see “Opening and Removing the Top Cover Assembly” later in this chapter).

**Disassembling the Preview Screen Assembly.** Use this procedure to disassemble the preview screen assembly.

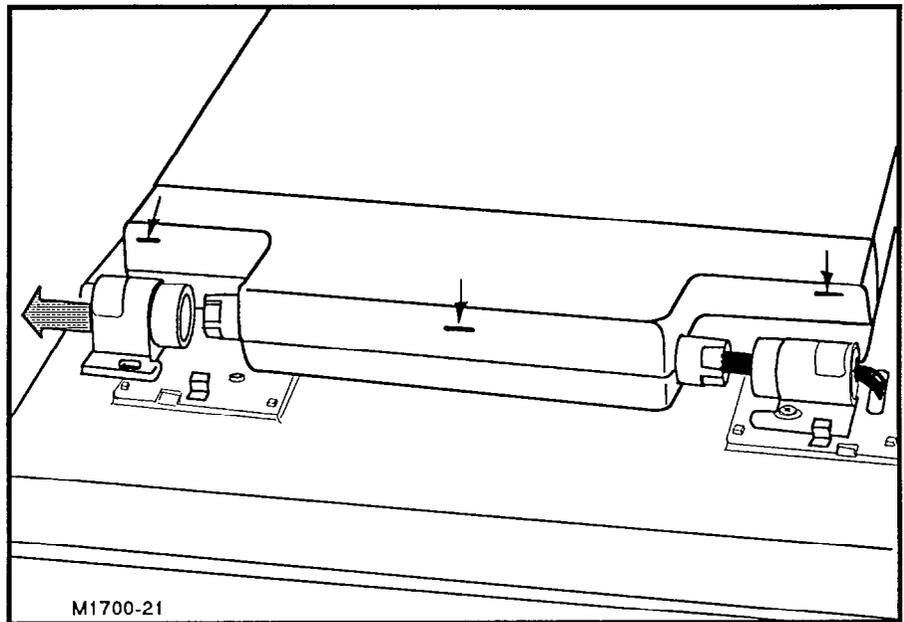
**Warning**



**Perform the following four steps sequentially to eliminate the chance of exposure to hazardous voltages.**

1. Disconnect the AC power cord.
2. Verify that no disk is in the disk drive.
3. Turn the cardiograph **On**. (This allows the rectifier assembly capacitors to discharge more rapidly.)
4. Remove the battery as described earlier in this chapter.
5. Remove the two knobs from the front of the display.
6. Remove the left and right clutch covers:
  - a. Insert a small flat-bladed screwdriver in the slot at the bottom rear of the cover and gently pry up till the catch releases.
  - b. Tilt the cover forward slightly to disengage the tabs at the front, then lift the cover away. (This is easier if the screen assembly lays flat on the PageWriter.)
7. Remove the right clutch:
  - a. Remove the mounting screws and washers.
  - b. Slide the clutch off of the screen housing’s right pivot arm. The clutch fits tightly on the pivot arm and requires effort to remove it.

8. Pull the screen housing's left pivot arm out of the left clutch and lay the screen face down on top of the cardiograph.
9. Pry off the back cover of the screen housing:
  - a. Use a small flat-bladed screwdriver to disengage the three catches on the bottom of the screen housing shown in Figure 7-11.



**Figure 7-11. Removing the Preview Screen Assembly.**

- b. Pivot the cover up until the catches on the top of the screen housing release.
10. Use the T10 Torx driver to remove the screw that connects the green and yellow ground wire from the display cable to the metal display frame.
11. Lift the power supply board out of the screen assembly, and disconnect the ribbon cable from the power supply board.
12. Remove the flat ribbon cable to the LCD, and set the power supply aside.
13. To remove the display screen from the assembly, remove the remaining four screws that attach the screen to its case, and lift the screen out.

### PageWriters with Serial Number Prefix Prior to 3208A

If the PageWriter has a serial number prefix prior to 3208A, use these procedures to remove or disassemble the preview screen assembly.

**Removing the Entire Preview Screen Assembly.** Use this procedure to remove the preview screen assembly as a single unit.

#### Warning



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**Perform the following four steps sequentially to eliminate the chance of exposure to hazardous voltages.**

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1. Disconnect the AC power cord.
2. Verify that no disk is in the disk drive.
3. Turn the cardiograph **On**. (This allows the rectifier assembly capacitors to discharge more rapidly.)
4. Remove the battery as described earlier in this chapter.
5. Remove the left and right clutch covers:
  - a. Insert a small flat-bladed screwdriver in the slot at the bottom rear of the clutch cover and gently pry up till the catch releases.
  - b. Tilt the clutch cover forward slightly to disengage the tabs at the front, then lift it away. (This is easier if the display lays flat on the PageWriter.)
6. Remove the screws holding the ground straps on both sides.
7. Remove the mounting screws and washers from the right and left clutches.
8. Open the top cover and disconnect the preview cable from the preview logic board (see "Opening and Removing the Top Cover Assembly" later in this chapter).

**Disassembling the Preview Screen Assembly.** Use this procedure to disassemble the preview screen assembly.

#### Warning



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**Perform the following four steps sequentially to eliminate the chance of exposure to hazardous voltages.**

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1. Disconnect the AC power cord.
2. Verify that no disk is in the disk drive.
3. Turn the cardiograph **On**. (This allows the rectifier assembly capacitors to discharge more rapidly.)
4. Remove the battery as described earlier in this chapter.
5. Remove the left and right clutch covers:
  - a. Insert a small flat-bladed screwdriver in the slot at the bottom rear of the clutch cover and gently pry up till the catch releases.



## Replacing the Preview Screen Assembly

To replace the preview screen assembly, reverse the appropriate removal procedure.

### Note



When reinstalling the ribbon cable from the display to the power supply board, be sure not to twist the cable or the display may not operate.

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## The Top Cover Assembly

This section describes how to remove and replace the top cover assembly. The top cover assembly includes the upper chassis and attached covers, the printer assembly, and, on the M1700A, the preview screen assembly.

To ensure your safety and prevent damage to the cardiograph, these procedures instruct you to remove the battery *and* disconnect the AC power, which means that the contents of system memory will be lost, including the configuration and software. When you reapply power to the M1700A or M1701A cardiograph, you must install the software using either the System disk supplied with the cardiograph or a custom configuration disk. Before removing the M1702A battery, print a copy of the cardiograph configuration to facilitate restoring the configuration when power is reapplied. See “Installing Software” in Chapter 2.

## Opening and Removing the Top Cover Assembly

The procedure you will use depends on the serial number prefix of the unit you are servicing. Make sure you use the correct procedure for your particular PageWriter.

### PageWriters with Serial Number Prefix 3208A or Later

If the PageWriter has a serial number prefix of 3208A or later, use this procedure to open and remove the top cover assembly.

### Note



You can service any PageWriter with a serial number prefix of 3208A or later without removing it from the cart.

To open the top cover assembly:

1. Disconnect the AC power cord.
2. Verify that no disk is in the disk drive.
3. Turn the cardiograph **On**. (This allows the rectifier assembly capacitors to discharge more rapidly.)
4. Remove the battery as described earlier in this chapter.

## Warning



When the cardiograph is connected to AC power, there are dangerous voltages on the line module terminals, even when the AC switch is off. When the AC switch is on, there are also dangerous voltages on the terminals of the mains transformer. If you must have the AC power connected while the cardiograph is open, do not touch any of the exposed connectors.

The rectifier assembly capacitors store hazardous amounts of energy during AC and battery operation. Be careful not to touch any of the exposed capacitor connections.

5. Remove the user interface assembly as described earlier in this chapter.
6. Remove the three screws from the rear panel as shown in Figure 7-13.

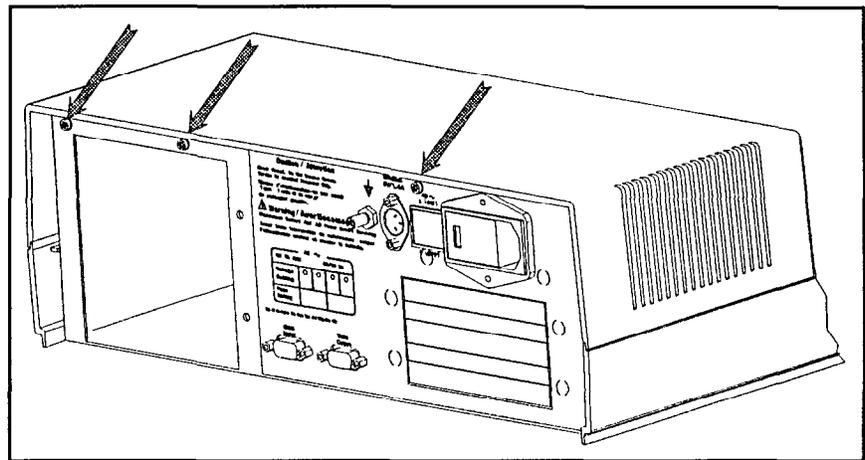


Figure 7-13. Opening and Removing the Top Cover Assembly.

7. Slide the top cover forward about 1 inch, then carefully lift it straight up until there is enough clearance to tilt the left side up.

To remove the top cover assembly, continue as follows:

8. If the cardiograph is equipped with a preview display, disconnect the cable that connects the preview screen to the preview logic board and a ground wire. Disconnect the four cables and the ground wire that connect the top cover assembly to the CPU assembly.
9. Lift the top cover assembly out of the way and set it aside.

### PageWriters with Serial Number Prefix Prior to 3208A

If the PageWriter has a serial number prefix prior to 3208A, use this procedure to open and remove the top cover assembly.

To open the top cover assembly:

1. Disconnect the AC cord.
2. Turn on the cardiograph and remove the battery while the cardiograph is on. (This discharges the rectifier assembly in approximately 20 seconds.)
3. Remove the PageWriter from the cart and place it on a suitable work surface.

### Warning



When the cardiograph is connected to AC power, there are dangerous voltages on the line module terminals, even when the AC switch is off. When the AC switch is on, there are also dangerous voltages on the terminals of the mains transformer. If you must have the AC power connected while the cardiograph is open, do not touch any of the exposed connectors.

The rectifier assembly capacitors store hazardous amounts of energy during AC and battery operation. Be careful not to touch any of the exposed capacitor connections.

4. Remove the seven screws from the rear panel as shown in Figure 7-14.

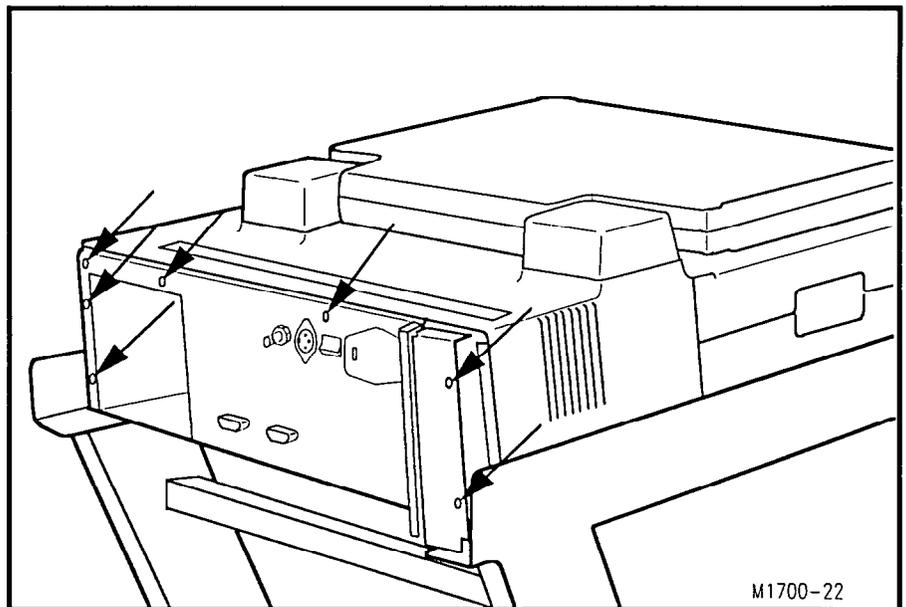


Figure 7-14. Opening and Removing the Top Cover Assembly.

5. Slide the top cover forward about 1 inch, then carefully lift it straight up until there is enough clearance to tilt the left side up.

To remove the top cover assembly, continue as follows:

6. If the cardiograph is equipped with a preview display, remove the screw that secures the cable shield wire to the preview logic RFI shield. Disconnect the cable that connects the preview screen to the preview logic board.
7. Disconnect the four cables that connect the top cover assembly to the CPU assembly.
8. Lift the top cover assembly free of the lower chassis and set it aside.

### Reinstalling the Top Cover Assembly

To reinstall the top cover assembly, reverse the appropriate removal procedure.

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## The Printhead Assembly

This section describes how to remove and replace the printhead assembly.

### Removing the Printhead Assembly

The procedure you will use depends on the serial number prefix of the unit you are servicing. Make sure you use the correct procedure for your particular PageWriter.

#### PageWriters with Serial Number Prefix 3208A or Later

If the PageWriter has a serial number prefix of 3208A or later, use this procedure to remove the printhead assembly.

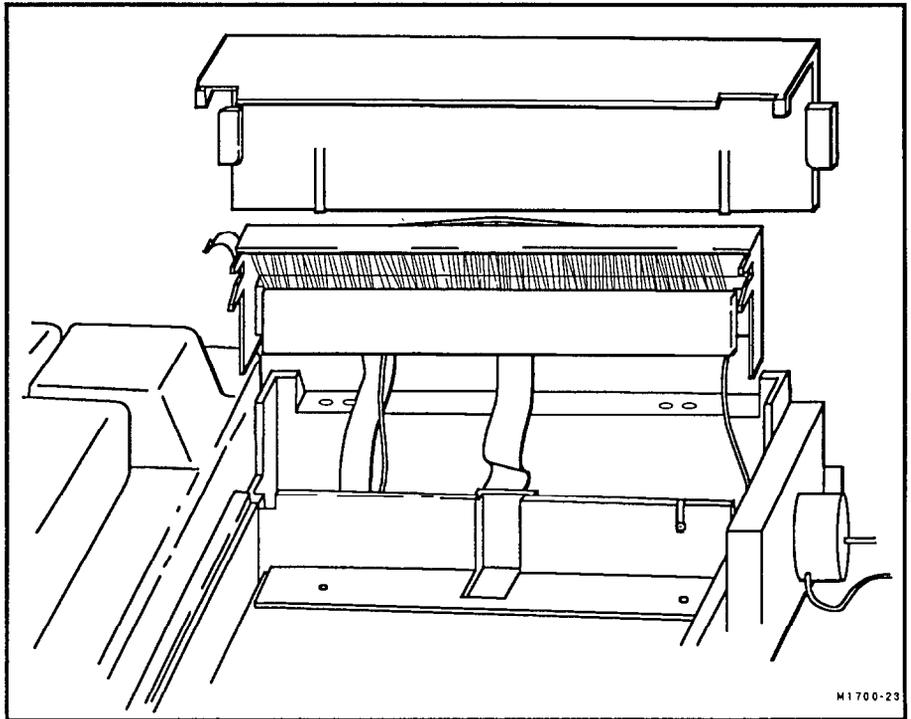
#### Caution



Use an electrostatic wrist band or other approved method for protection against electrostatic discharge when disconnecting and handling the printhead assembly.

To remove the printhead:

1. Remove the printer door:
  - a. Release the latch and pull the door out to the first stop.
  - b. Compress and remove the plastic retainer clip at the end of the rear plastic rail.
  - c. Slide the door out of the rails and set it aside.
2. Remove the user interface assembly as described previously in this chapter.
3. Open the top cover as described previously in this chapter.
4. Remove the printhead cover as shown in Figure 7-15.



**Figure 7-15. Removing the Printhead Cover and Printhead.**

5. Disconnect the two printer cables at J2 and J5 (see Figure 7-20 for the connector locations), and remove the ground wire.
6. Close the top cover, but do not reinstall the screws. (You need to open the cover again when you install the new printhead.)
7. Pull the leaf spring up and out of its slots in the well.
8. Carefully slide the printhead assembly up and out of the printer well. Pull the two ribbon cables and the ground wire from the slots in the top cover.

**PageWriters with Serial Number Prefix Prior to 3208A**

If the PageWriter has a serial number prefix prior to 3208A, use this procedure to remove the printhead assembly.

**Caution**




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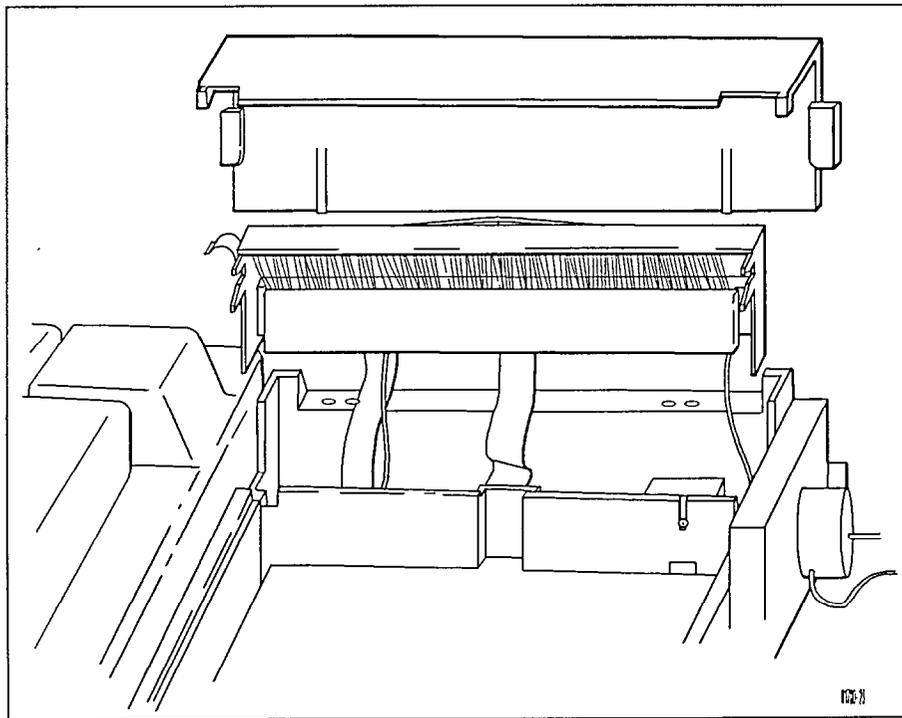
Use an electrostatic wrist band or other approved method for protection against electrostatic discharge when disconnecting and handling the printhead assembly.

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To remove the printhead:

1. Remove the printer door:
  - a. Release the latch and pull the door out to the first stop.
  - b. Compress and remove the plastic retainer clip at the end of the rear aluminum rail.

- c. Slide the door out of the rails and set it aside.
2. Remove the user interface assembly as described previously in this chapter.
3. Open the top cover as described previously in this chapter.
4. Remove the right side plastic cover.
5. Disconnect the two printer cables at J2 and J5 (see Figure 7-20 for the connector locations).
6. Close the top cover but do not reinstall the screws. (You need to open the cover again when you install the new printhead.)
7. Remove the printhead cover as shown in Figure 7-16.



**Figure 7-16. Removing the Printhead Cover and Printhead.**

8. Remove the screws that attach the motor ground spring and printhead ground braids to the upper chassis.
9. Pull the leaf spring up and out of its slots in the well.
10. Remove the two screws holding the ground straps to the upper chassis.
11. Carefully slide the printhead assembly up and out of the printer well. Pull the two ribbon cables from the slots in the top cover.

**Removing the Optical Paper Sensor.** Remove the optical paper sensor as follows:

1. From the inside of the empty paper compartment, insert a small, flat-bladed screwdriver into the square hole (see Figure 7-16) on the surface of the plastic printhead housing.
2. Apply pressure, using the screwdriver to compress the clip that holds the lens in place, and lift the lens out.

**Note**



To remove the sensor on some units with a serial number prefix of 3023A, remove the printer from the top cover to gain access to the sensor.

**Replacing the Printhead Assembly**

Use this procedure to replace the printhead assembly. This procedure applies to all units.

To replace the printhead:

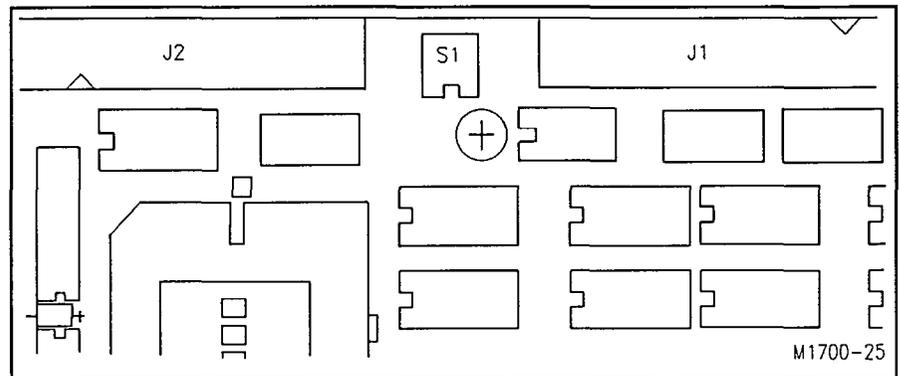
1. Unpack the new printhead. Locate the manufacturer's label behind the ESD brush fibers. Note the resistance code printed in the upper-left quadrant of the manufacturer's label. You need this code later in this procedure when you set the printhead resistance selector on the CPU assembly. The code is a number that corresponds to a range of printhead resistance, as listed in the following table.

**Table 7-1. Printhead Resistance Codes**

Code	Resistance	Code	Resistance
00	535-550 $\Omega$	08	631-640 $\Omega$
01	551-565	09	641-650
02	566-580	A	651-660
03	581-590	B	661-670
04	591-600	C	671-680
05	601-610	D	681-695
06	611-620	E	696-710
07	621-630	FF	711-725

2. Feed the power and data cables (and the ground wire on newer units) into the cardiograph assembly as you lower the printhead into position. Slide the printhead down into the printer well.
3. On PageWriters having a serial number prefix prior to 3208A, feed the ground braids to the top chassis and fasten.
4. Push the leaf spring into its slots in the well.
5. Open the top cover assembly.
6. Connect the power and data cables and the ground wire to the appropriate connectors on the CPU assembly.

7. Set selector S1 (refer to Figure 7-17) to the number or letter that corresponds to the resistance code on the printhead label. 00 corresponds to position 0, 09 corresponds to position 9, FF corresponds to position F, etc.



**Figure 7-17. Printhead Resistance Selector.**

8. Close the top cover assembly.
9. Replace the printhead cover.
10. Install the user interface assembly and the keyboard.
11. Run the Extended Self-test printer test described in Chapter 4.

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## The Preview Logic Board

This section describes how to remove and replace the preview logic board. These procedures apply only to models equipped with the preview display option.

### Removing the Preview Logic Board

The procedure you will use depends on the serial number prefix of the unit you are servicing. Make sure you use the correct procedure for your particular PageWriter.

#### PageWriters with Serial Number Prefix 3208A or Later

If the PageWriter has a serial number prefix of 3208A or later, use this procedure to remove the preview logic board.

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#### Caution



Use an electrostatic wrist band or other approved method for protection against electrostatic discharge when disconnecting and handling the preview logic board.

---

To remove the preview logic board:

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#### Warning

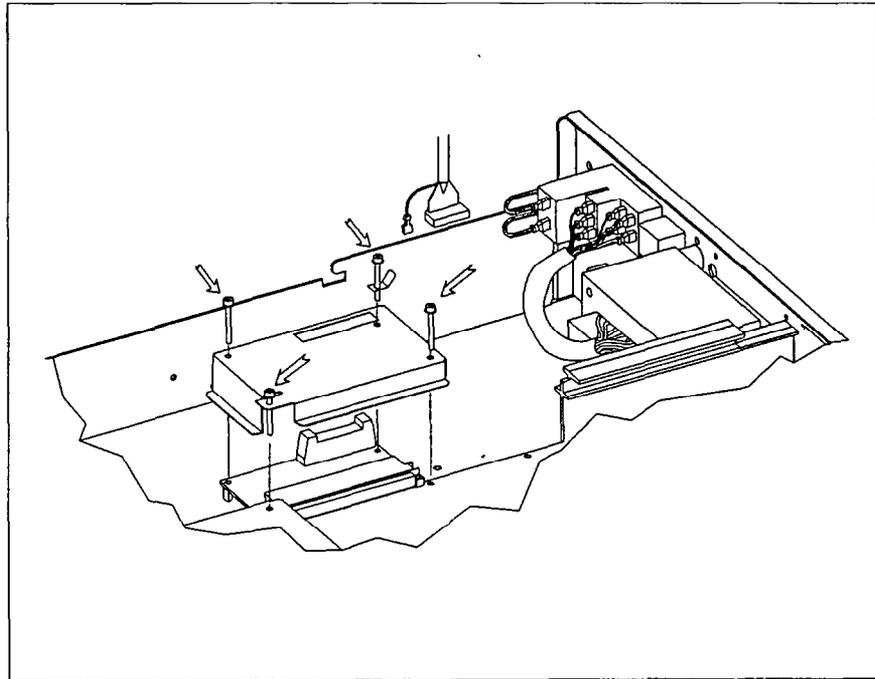


**Perform the following four steps sequentially to eliminate the chance of exposure to hazardous voltages.**

---

1. Disconnect the AC power cord.
2. Verify that no disk is in the disk drive.
3. Turn the cardiograph **On**. (This allows the rectifier assembly capacitors to discharge more rapidly.)
4. Remove the battery as described earlier in this chapter.
5. Remove the top cover assembly as described previously in this chapter.

6. Remove the four screws that hold the preview logic board and shield to the chassis (see Figure 7-18).
7. Disconnect the preview logic board assembly from the system expansion connector on the CPU board assembly, and slide the logic board out.



**Figure 7-18.**

**Preview Logic Board Removal (Serial Number Prefix 3208A or Later).**

### PageWriters with Serial Number Prefix Prior to 3208A

If the PageWriter has a serial number prefix prior to 3208A, use this procedure to remove the preview logic board.

#### Caution



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Use an electrostatic wrist band or other approved method for protection against electrostatic discharge when disconnecting and handling the preview logic board.

---

To remove the preview logic board:

#### Warning

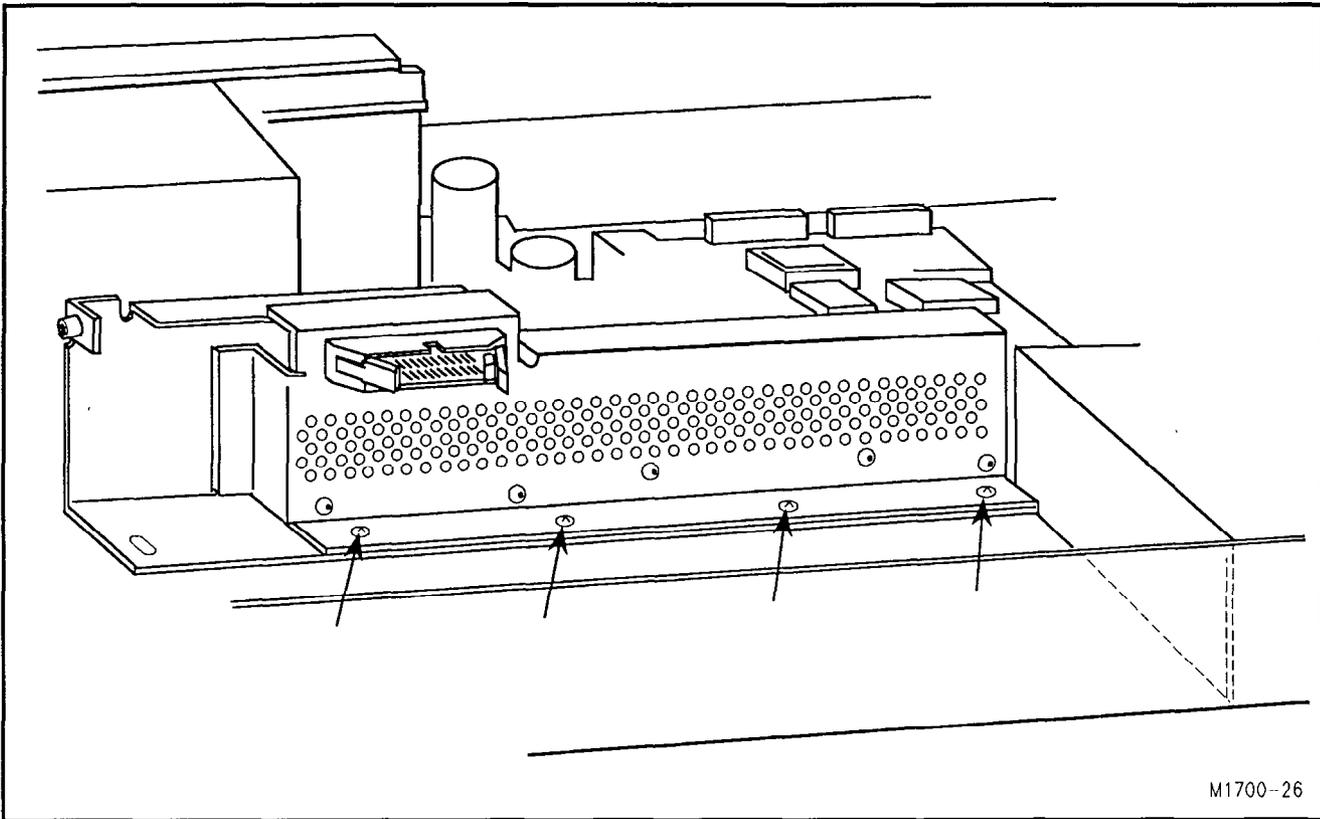


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**Perform the following four steps sequentially to eliminate the chance of exposure to hazardous voltages and to avoid damage to the preview display.**

---

1. Disconnect the AC power cord.
2. Verify that no disk is in the disk drive.
3. Turn the cardiograph **On**. (This allows the rectifier assembly capacitors to discharge more rapidly.)
4. Remove the battery as described earlier in this chapter.
5. Remove the top cover assembly as described previously in this chapter.
6. Remove the screws that hold the preview logic board and shield assembly to the chassis bottom and rear (see Figure 7-19).



M1700-26

**Figure 7-19. Preview Logic Board Assembly Screw Locations.**

7. Disconnect the preview logic board assembly from the system expansion connector on the CPU board assembly, and slide the entire assembly out.
8. Remove the screws that hold the RFI shield and board to the frame. The shield and board can then be lifted off the frame.

### **Replacing the Preview Logic Board**

To replace the logic board, reverse the appropriate removal procedure, or refer to the installation instructions included with the replacement part.

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## The CPU Assembly

This section describes how to remove and replace the CPU assembly. This procedure applies to all units.

### Removing the CPU Assembly

To remove the CPU assembly:

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#### Caution



Use an electrostatic wrist band or other approved method for protection against electrostatic discharge when disconnecting cables from and handling the CPU assembly.

---

#### Warning



**Perform the following four steps sequentially to eliminate the chance of exposure to hazardous voltages.**

---

1. Disconnect the AC power cord.
2. Verify that no disk is in the disk drive.
3. Turn the cardiograph **On**. (This allows the rectifier assembly capacitors to discharge more rapidly.)
4. Remove the battery as described earlier in this chapter.
5. Remove the top cover assembly as described previously in this chapter.
6. Disconnect the two rectifier cable spade lugs (J6 and J7) and the two disk drive cables (J14 and J15). (See Figure 7-20 for jumper locations.)
7. If the unit has a preview assembly, remove the preview logic board assembly as described previously in this chapter.
8. Remove the board mounting screws (shown in Figure 7-20). Also remove the jackposts that hold the serial and patient module connectors to the rear panel.
9. Lift off the RFI shield, then slide the board toward the front of the cardiograph and disconnect the spade lug at J8.
10. Lift the board out of the lower chassis.

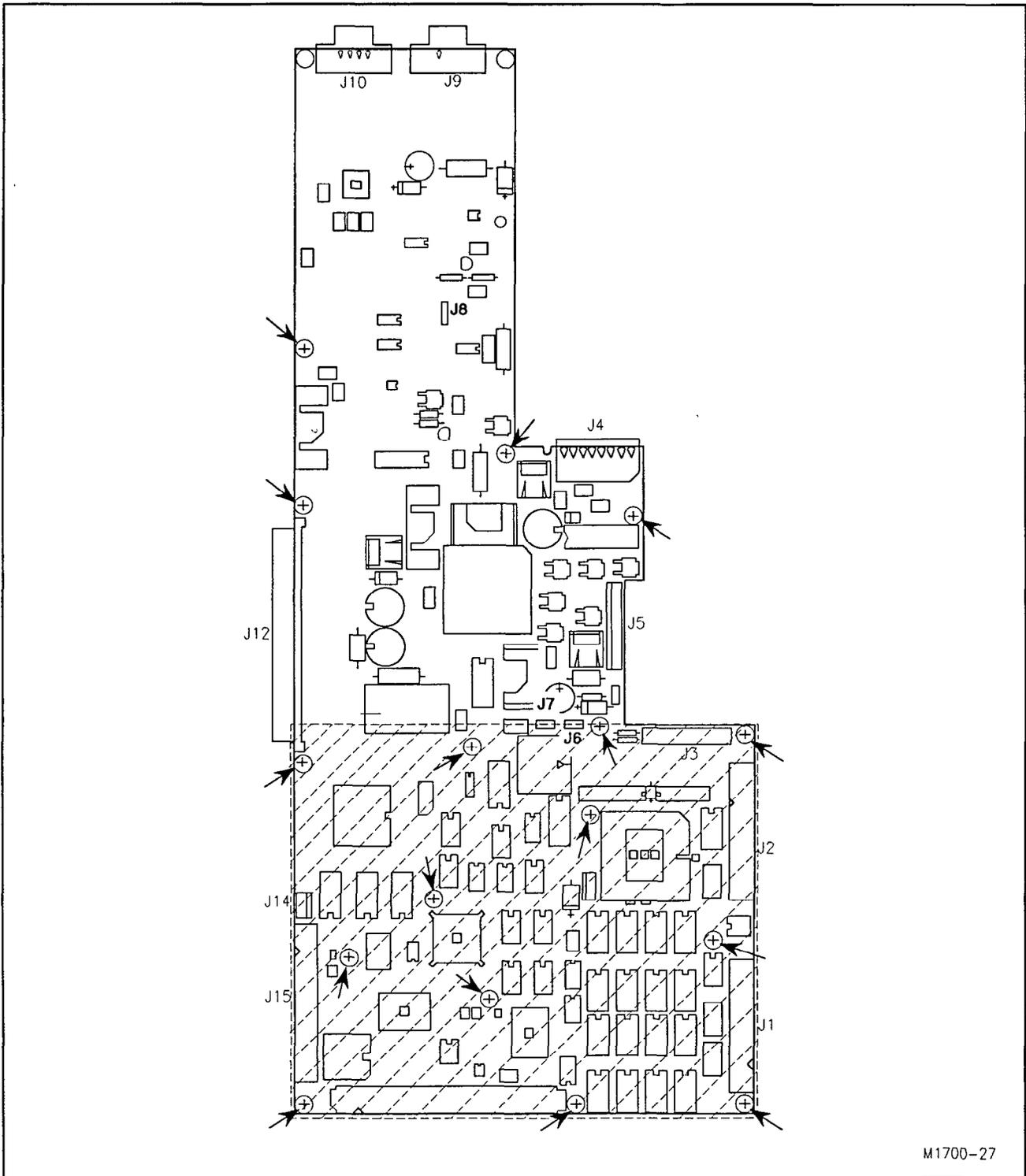


Figure 7-20. Screw and Connector Locations on the CPU Assembly.

## Replacing the CPU Assembly

To replace the CPU assembly, reverse the removal procedure.

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## The Disk Drive (M1700A and M1701A only)

This section describes how to remove and replace the disk drive.

To remove the disk drive:

### Caution

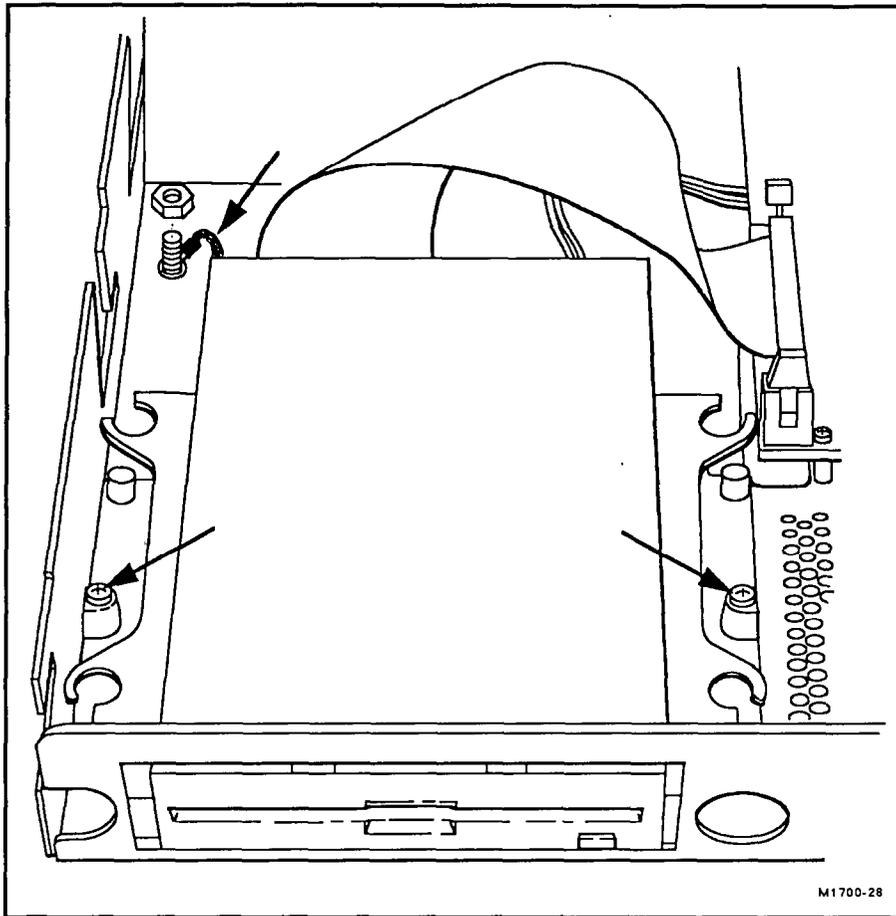


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Use an electrostatic wrist band or other approved method for protection against electrostatic discharge when disconnecting cables from and handling the disk drive.

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1. Remove the top cover assembly as described previously in this chapter.
2. Remove the two screws that attach the plastic vibration mounts to the chassis.
3. On units having a serial number prefix prior to 3208A, remove the 7/32-inch nut that attaches the ground strap to the chassis (see Figure 7-21).



**Figure 7-21. Disk Drive Mounting Screws.**

4. Lift the disk drive enough to disconnect the data cable and power cable.
5. Remove the disk drive from the chassis.
6. Remove the screws that attach the vibration mounts to the disk drive and set the mounts aside for reuse.
7. Remove the screw that attaches the ground strap to the bottom of the disk drive; set the ground strap and screw aside for reuse.

### **Replacing the Disk Drive**

To replace the disk drive, reverse the removal procedure.