7662-4027-21

Pi8500Pro

INSTALLATION & SERVICE GUIDE

fiery ®

Pi8500Pro Server Installation and Service Guide

for Minolta black and white copiers

A guide for service technicians

FCC Information

WARNING: FCC Regulations state that any unauthorized changes or modifications to this equipment not expressly approved by the manufacturer could void the user's authority to operate this equipment.

Class B Declaration of Conformity

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.

Industry Canada Class B Notice

This Class B digital apparatus complies with Canadian ICES-003.

Avis de Conformation Classe B de l'Industrie Canada

Cet appareil numérique de la Classe B est conforme à la norme NMB-003 du Canada.

RFI Compliance Notice

This equipment has been tested concerning compliance with the relevant RFI protection requirements both individually and on system level (to simulate normal operation conditions). However, it is possible that these RFI Requirements are not met under certain unfavorable conditions in other installations. It is the user who is responsible for compliance of his particular installation.

Dieses Gerät wurde sowohl einzeln als auch in einer Anlage, die einen normalen Anwendungsfall nachbildet, auf die Einhaltung der Funkentstörbestimmungen geprüft. Es ist jedoch möglich, dass die Funkentstörbestimmungen unter ungünstigen Umständen bei anderen Gerätekombinationen nicht eingehalten werden. Für die Einhaltung der Funkentstörbestimmungen einer gesamten Anlage, in der dieses Gerät betrieben wird, ist der Betreiber verantwortlich.

Compliance with applicable regulations depends on the use of shielded cables. It is the user who is responsible for procuring the appropriate cables.

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Chapter 4: Service Procedures

Chapter 5: Troubleshooting

Appendix A: Specifications

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Preface   The *Installation and Service Guide* is intended for certified Pi8500Pro Server and copier service technicians installing or servicing the Pi8500Pro Server. If you have not received installation and service certification, you should not attempt to install or service the Pi8500Pro Server. Electronics For Imaging does not warrant the performance if the Pi8500Pro Server installed or serviced by non-certified personnel.

NOTE: The term "Pi8500Pro" is used in this manual to refer to the Pi8500Pro Server.

About this guide

This guide is divided into the following topics:

- "Preface"

  General information about this guide and about installing the Pi8500Pro

- Chapter 1, "Introduction"

  General information about the Pi8500Pro

- Chapter 2, "Preparing for Installation"

  Unpacking and the steps you need to take before you install the unit

- Chapter 3, "Connecting the Pi8500Pro"

  How to connect the Pi8500Pro to the copier and the network and verify that the system is working correctly; overview of the Control Panel

- Chapter 4, "Service Procedures"

  Removal and replacement procedures for Pi8500Pro components; system software installation

- Chapter 5, "Troubleshooting"

  Common problems and ways of correcting them; startup error codes; diagnostic tools

NOTE: Pi8500Pro customers should not use the technical service documentation. Do not leave your copy of the *Installation and Service Guide* at the customer site after you make a service call.

About the illustrations in this guide

The illustrations in this guide reflect the current shipping version of the Pi8500Pro at the time of publication. Components shown in these illustrations are subject to change. To receive information about any Pi8500Pro components that do not match the illustrations in this guide, contact your authorized service/support center.

Terminology and conventions

The terms "replace" and "replacing" are typically used throughout this manual to mean reinstallation of existing components. Install new components only when necessary.

The term "network administrator" refers to the person responsible for maintaining the network at the customer site.

The term "Control Panel" refers to the area on the front of the Pi8500Pro, including the green/red activity light, the display window (LCD—liquid crystal display), and the buttons to the right of and below the display window.

The term "system software" refers to the software installed on the Pi8500Pro hard disk drive.

The term "10BaseT" is used throughout this manual to refer to 10BaseTX.

The term "100BaseT" is used throughout this manual to refer to 100BaseTX.

References to other Pi8500Pro manuals, such as the *Configuration Guide,* are displayed in italics.

NOTE: The note format highlights important messages and additional information.

The Caution icon indicates a need for special care and safety when handling the equipment.

Precautions

Always observe the following general precautions when installing and servicing the
Pi8500Pro:

1. **Report any shipping damage.**

    If there is any evidence of shipping or handling damage to the packing boxes or their
    contents, save the damaged boxes and parts, call the shipper immediately to file a claim,
    and notify your authorized service/support center.

2. **Never alter an existing network without permission.**

    The Pi8500Pro will probably be connected to an existing Local Area Network (LAN)
    based on Ethernet hardware. The network is the link between the customer's computer,
    existing laser printers, and other prepress equipment. Never disturb the LAN by breaking
    or making a network connection, altering termination, installing or removing
    networking hardware or software, or shutting down networked devices without the
    knowledge and express permission of the system or network administrator or the shop
    supervisor.

3. **Never assign an IP address in Pi8500Pro Network Setup.**

    Only the network administrator should assign an IP address to a network device.
    Assigning the Pi8500Pro an incorrect IP address may cause unpredictable errors on any
    or all devices connected to the network.

4. **Always disconnect power before opening the Pi8500Pro.**

5. **Avoid pressing the surface of the display window.**

    Applying pressure to the display window will cause it to change color.

6. **Use a soft cloth moistened with isopropyl or ethyl alcohol to clean the surface of the
    display window.**

    Other solvents, such as water, may damage the polarizer on the display window.

7. **Use care when handling parts of the Pi8500Pro, as some edges on the unit may be sharp. For example, be careful when:**

    - Accessing the CD-ROM drive (keep the drive door closed when not in use)

    - Plugging in cables at the back of the unit

    - Using the power switch to power on/off the unit

8. **Follow standard electrostatic discharge (ESD) precautions while working on the internal components.**

    Static is always a concern when servicing electronic devices. It is highly unlikely that the area around the copier and the Pi8500Pro is static-free. Carpeting, leather-soled shoes, synthetic clothing fibers, silks, and plastics may generate a static charge of more than 10,000 volts. Static discharge is capable of destroying the circuits etched in silicon microchips, or dramatically shortening their life span. By observing standard precautions, you may avoid extra service calls and save the cost of a new board.

    When possible, work on a ground-connected antistatic mat. Wear an antistatic grounding strap, grounded at the same place as the antistatic mat. If that is not possible:

    - Attach a grounding strap to your wrist. Attach the other end to a good ground.

    - When you unpack the Pi8500Pro from the carton for the first time, touch a metal area of the copier to discharge the static on your body.

    - Before you remove the access panel and handle internal components, touch a metal part of the Pi8500Pro.

    - Leave new electronic components inside their antistatic bags until you are ready to install them. When you remove components from an antistatic bag, place them on a grounded antistatic surface, component-side up.

    - When you remove an electronic component, place it into an antistatic bag immediately. Do not walk across a carpet or vinyl floor while carrying an unprotected board.

9. **Handle printed circuit boards by their opposing edges only, and avoid touching the contacts on the edge of the board.**

10. **Never set any liquid on or near the Pi8500Pro or the copier.**

Tools you will need

To install or service the Pi8500Pro, you should bring the following tools and parts:

• ESD wrist grounding strap and antistatic mat

• Wire cutters

• Needlenose pliers

• #0 and #1 Phillips head screwdrivers (non-magnetic)

• Flathead screwdriver

You should also bring this guide, documentation for any optional service kits you may be installing, and any technical notes for the Pi8500Pro.

Chapter 1: Introduction

The Pi8500Pro adds computer connectivity and highly efficient Adobe PostScript 3 and PCL printing capability to copiers. It is optimized for high-speed network communications, processing, rasterization, and printing.

Features

The Pi8500Pro, as an integral part of your organization's printing system, enables users to:

- Send images over AppleTalk, TCP/IP, and IPX networks to print on Pi8500Pro-supported devices.

- Spool print jobs and select a printing priority for each job. Users can control spooled print jobs sent to the Pi8500Pro with remote user software running on networked PC and Mac OS computers.

- Print files in grayscale and black and white.

- Use 136 resident fonts (126 Adobe Type 1 PostScript and 10 TrueType), plus two Adobe Multiple Master fonts used for font substitution when printing PDF files. Fiery Downloader™ or any third-party LaserWriter downloader, such as the Adobe Font Downloader, can be used to download additional fonts.

Copier

Pi8500Pro

Networked computers or workstations
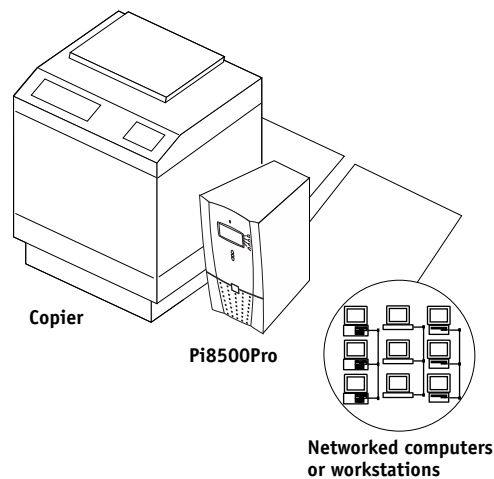
FIGURE 1-1 Pi8500Pro printing system

The Pi8500Pro is one of several imaging products engineered and manufactured by Electronics For Imaging.

How the Pi8500Pro operates

The Pi8500Pro enables users to print to the copier from networked PCs running Microsoft Windows, from networked Mac OS computers, and from networked UNIX workstations running TCP/IP.

The Pi8500Pro custom-designed boards and system software are responsible for efficient image processing and printing controls. The main functions of components and software are described below.

The Pi8500Pro uses specialized circuit boards, the motherboard, and the copier interface board to process image data for printing and scanning images.

The motherboard includes a 866MHz CPU that controls the image data transfer to and from the copier interface board and runs the interpreter. The interpreter rasterizes the page description file and then compresses the image pattern into memory using compression technology.

The interpreter sends compressed raster data through the image frame buffer memory to the copier interface board. The copier interface board decompresses the image data and sends it to the copier through the copier interface cable. The raster data supplied to the laser in the copier charges the drum and renders the final image on paper at full copier engine speed.

High-speed dual in-line memory modules (DIMMs) on the motherboard hold the image data during printing. The Pi8500Pro is configured with one 128MB DIMM for a total of 128MB of memory.

External Devices   **Pi8500Pro**   **Copier**

Networked computers

Motherboard

Network interface

I/O Control

BIOS

CPU

Speaker   Reset

PCI/ Memory Controller

Hard disk drive

CD-ROM drive

IDE interface

Memory & Interpreter

Copier interface board

Print

Copier

User interface board

+3.3/+5/±12V DC

Power supply

AC power

PCI Bus
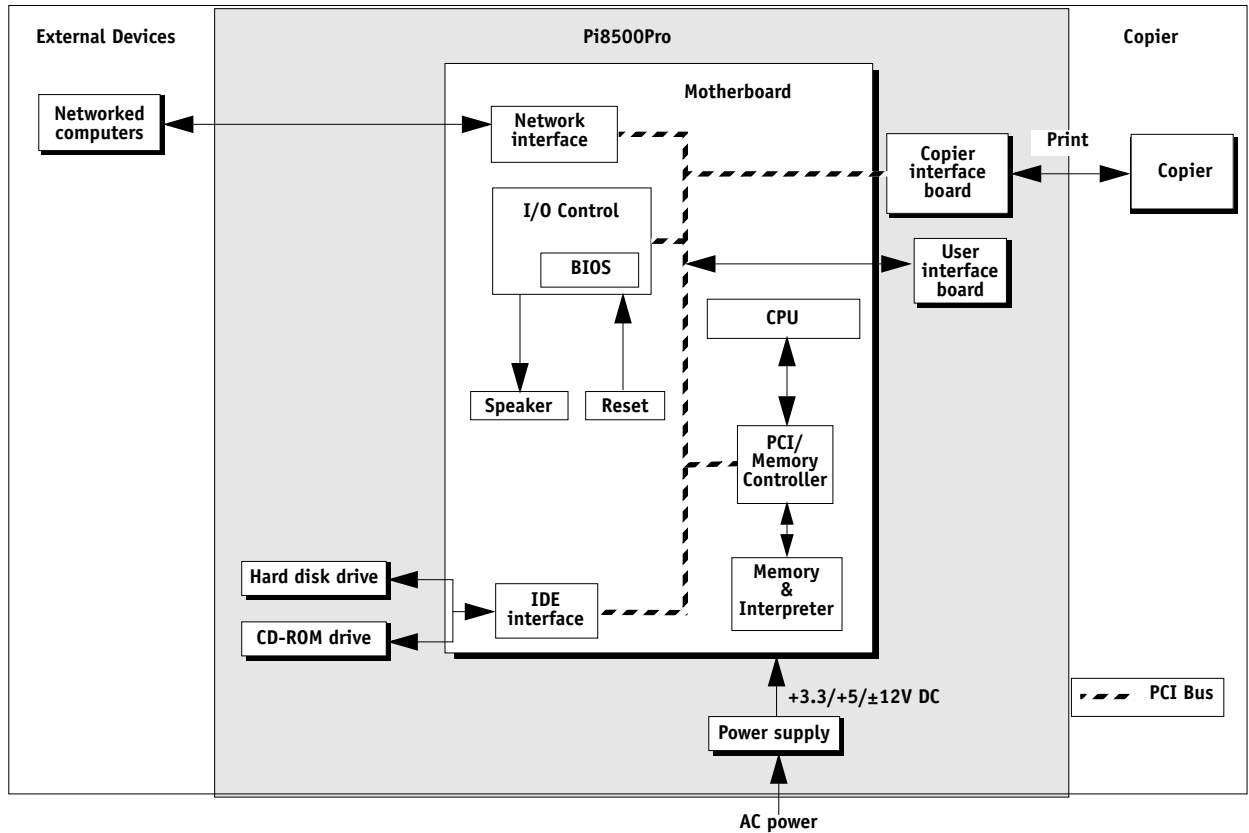
FIGURE 1-2   Pi8500Pro functional diagram

Print options

The Pi8500Pro's efficient capabilities allow users to use a variety of applications to create and print pages of text and/or images. The Pi8500Pro operates over a network.

Printing over a network allows users to print documents directly from applications in which they were created. In addition, the Pi8500Pro offers an efficient way to print files that have been saved in PostScript (PS), Encapsulated PostScript (EPS), Portable Document Format (PDF), or Tagged Image File Format (TIFF). These files can be downloaded directly to the Pi8500Pro using Fiery Downloader, one of the remote utilities for use with the Pi8500Pro.

User software

The following user software is provided on the User Software CD.

Adobe PS Printer Driver	Enables users to print to the Pi8500Pro from Windows 9x/Me, Windows NT 4.0, and Mac OS computers; also supports special Pi8500Pro and PostScript 3 features. Windows 2000/XP users should use the Microsoft PostScript Printer Driver provided with that operating system.
PostScript Printer Description files (PPDs)	Files for use with the PostScript printer driver that allow the Pi8500Pro to appear in popular applications' Print and Page Setup dialog boxes. The PPD provides information about the Pi8500Pro and the particular copier model to the application and printer driver.
PostScript Screen Fonts (for Mac OS only)	PostScript screen fonts for the 136 PostScript printer fonts installed on the Pi8500Pro (126 Adobe Type 1 and 10 TrueType).
Fiery Downloader	Enables the user to print PostScript, EPS, PDF, and TIFF files directly to the Pi8500Pro without opening the application in which they were created. Fiery Downloader also enables the user to manage the printer fonts installed on the Pi8500Pro.
Fiery Spooler™ (Mac OS only)	Enables the user to view the order and priority of print jobs, customize printer settings for jobs, delete jobs, move jobs between queues, and view job accounting information.
Command WorkStation™ software	Enables the operator to control the Pi8500Pro functions from Windows 9x/Me/2000/XP and Windows NT 4.0 workstations. Command WorkStation supports dongle-protected DocBuilder Pro™ (available as an option; requires Adobe Acrobat 4.05, provided on a separate CD). For more information on Command WorkStation, see the *Job Management Guide*.

Fiery WebTools

The Pi8500Pro can support Internet or intranet access with Fiery WebTools™, which include Status, WebSpooler™, Installer, WebLink™, WebScan™, WebSetup, and WebDownloader. For more information on Fiery WebTools, see the user documentation.

NOTE: Fiery WebSetup is supported on Windows computers only.

**Chapter 2:
Preparing for
Installation**

This chapter includes the following information:

- Summary of the installation sequence

- Checking the customer site

- Unpacking the Pi8500Pro

- Pi8500Pro front and back overview

Installation sequence

Familiarize yourself with this chapter and Chapter 3 of this guide before you attempt an installation. The installation sequence described in this chapter is designed to make your job as easy as possible. Installation problems are easier to avoid and diagnose if you proceed from the component to the system level and verify functionality at each stage. Figure 2-1 on page 2-2 outlines the recommended installation procedure for connecting the Pi8500Pro to the copier.

Because the Pi8500Pro is a node on the customer's computer network, make sure you coordinate your scheduled installation with the network administrator at the customer site. Refer the network administrator to the *Configuration Guide* for network setup information.

Copier

Pi8500Pro

| Check installation requirements and verify site conditions; page 2-3 | Unpack the Pi8500Pro, page 2-6

Initial startup; page 3-1 |

Mac OS computers **PC computers** **UNIX workstations**

Connect copier interface cable; page 3-3

Print a Test Page and Configuration Page; page 3-4

Verify network operation without the Pi8500Pro connected

Network administrator connects the Pi8500Pro to the network and verifies the connection; see page 3-7 and the *Configuration Guide*

Network administrator configures Setup options; see the *Configuration Guide*

Network administrator installs user software on networked computers that print to the Pi8500Pro; see *Getting Started*

Full Pi8500Pro functionality

FIGURE 2-1   Recommended installation steps and references

Checking the customer site

Before you install the Pi8500Pro, check site conditions and inform the customer of any installation requirements.

Copier model

❑ **What copier model is installed?**

❑ **Is there space near the copier for the Pi8500Pro?**

Make sure that there is space for the Pi8500Pro. Allow enough space at the back panel for the cables to route easily and at the side panel so that the Pi8500Pro does not interfere with use of or service to the copier (such as clearing a paper jam). You may need to move the copier out from the wall so that its interface connectors are accessible.

❑ **Does the copier require service or adjustments?**

Copy the copier test page before you install the Pi8500Pro.

If the copied image indicates that the copier needs adjustment, inform the customer. After getting approval, complete the copier service needed.

Power

❑ **Is there a dedicated, grounded electrical outlet near the copier for the Pi8500Pro?**

Locate the grounded electrical outlet that will supply power to the Pi8500Pro. You should not run the Pi8500Pro and the copier on the same circuit. Make sure to use a surge suppressor for the Pi8500Pro if the customer has provided one.

- *Do not* use a 3-prong adapter in a 2-hole ungrounded outlet.
- *Do not* use an extension cord.
- *Do not* plug the Pi8500Pro into a circuit with heating or refrigeration equipment (including water coolers).
- *Do not* plug the Pi8500Pro into a switchable wall outlet. This can result in the Pi8500Pro being turned off accidentally.

Network

❑ **What is the network cable and connection type?**

- Unshielded twisted pair (10BaseT/100BaseT)

- Optional Token Ring (shielded twisted pair or unshielded twisted pair?)

❑ **Is the network connection ready and tested for Pi8500Pro installation?**

To verify that the network is functioning before you attach the Pi8500Pro:

- Ask the network administrator to print a document on a shared printer over the network.

- Ask the network administrator to verify the computer and network requirements as specified in *Getting Started*.

System contact person

❑ **Will the person responsible for the computers and the network be available at the time set for installation? Get a name as a contact.**

Setting customer expectations

If the site is ready, installation takes about one hour. The customer should be informed of the following:

- Some nodes on the network may be unavailable for up to one hour.

- The copier may be unavailable for up to one hour.

- The network administrator needs to be available during the installation for network connectivity.

  Equipment downtime and impact on the network can be minimized if the network administrator installs a network connector for the Pi8500Pro and confirms network functionality with the connector in place before the date scheduled for the Pi8500Pro installation.

- The network administrator should have a networked computer available during the installation. The appropriate software should already be installed. Documentation for the networked computer and the network operating software should be available.

- The network administrator should install the user software shipped with the Pi8500Pro (user documentation is also included) onto networked PC and Mac OS computers that will print to the Pi8500Pro.

NOTE: This guide covers hardware installation and service. It provides general information on connecting the Pi8500Pro to the customer's network. Network setup and configuration information are beyond the scope of this guide. For network setup and configuration information, refer the network administrator to the *Configuration Guide*.

Unpacking the Pi8500Pro

The Pi8500Pro is assembled and shipped from the factory in a box that includes all necessary cables and documentation, as shown in Figure 2-2 on page 2-7.

TO UNPACK THE PI8500PRO

1. **Open the box and remove the packing materials.**

   You may want to save the original boxes and packing materials if you need to transport the Pi8500Pro at a later date.

2. **Remove the contents from the top container. Inspect the contents for visible damage. The top container should include the following items:**

   • Bags containing one copier interface cable and one AC power cable

   • CD-ROM drive door

   • Media package (includes CDs for user software and user documentation)

3. **Give the media package to the customer or the network administrator.**

   Let the customer or network administrator know that in order to take full advantage of the Pi8500Pro, the user software must be installed on computers that will print to the Pi8500Pro.

4. **Set aside the remaining components from the top container.**

5. **Remove the top container and any packing materials.**

   Set aside the packing materials and note the orientation of the Pi8500Pro inside the shipping container, in case you need to repack it later.

6. **Carefully lift the Pi8500Pro out of the box.**

   If you notice shipping damage to any component, be sure to save the shipping container in case the carrier needs to see it. Call the carrier immediately to report the damage and file a claim, then call your authorized service/support center. Be ready to furnish the serial number printed on the back of the Pi8500Pro.

Power cable

Copier interface cable

Media package

The Pi8500Pro ships with
drive door unattached
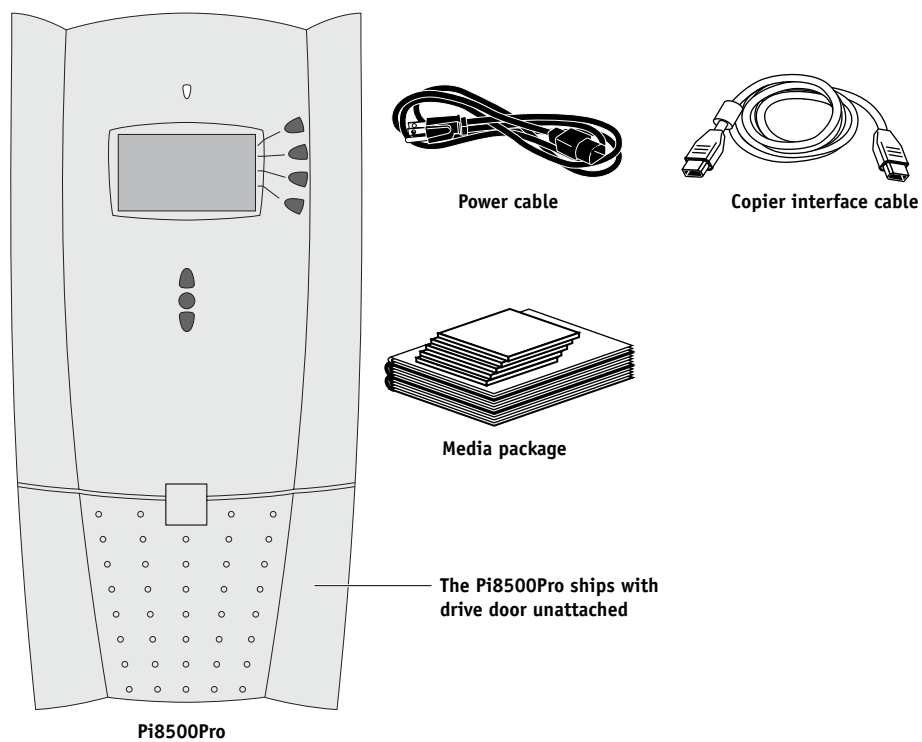
Pi8500Pro

FIGURE 2-2 Contents of Pi8500Pro shipping box

Front and back panels

After unpacking the Pi8500Pro, familiarize yourself with the front and back panels before you connect it to the copier.

Front panel labels	Back panel labels
Activity light	Mouse (not used)
First	Keyboard (not used)
Line selection buttons	USB ports (not used)
Fourth	Serial port (not used)
Up button	Monitor (not used)
Menu button	Parallel port (dongle)
Down button	10/100BaseT
Jewel	Empty slot
Drive door	Copier interface board
CD-ROM drive	Empty slot (reserved for Token Ring option)
	Empty slot
	Empty slot
	Empty slot
	Power switch
	Power connector

Front panel **Back panel**

FIGURE 2-3   Front and back panels

Chapter 3: Connecting the Pi8500Pro

After you unpack or service the Pi8500Pro, power on the system and allow diagnostics to run before you connect the Pi8500Pro to the copier and the network. Diagnostics run automatically during startup to check the Pi8500Pro for internal problems.

Preliminary checkout

The following procedure describes how to connect power and start the Pi8500Pro.

TO CONNECT POWER AND START THE PI8500PRO

1. **Make sure the copier is powered off.**

2. **Move the copier away from the wall if necessary to remove side and back panels.**

3. **Remove the copier's finishing unit (if present) and left side panel.**

   See the copier documentation for how to remove the finishing unit and left side panel.

4. **Place the Pi8500Pro inside the copier.**

   Position the Pi8500Pro as far forward toward the front of the copier as possible so that the Pi8500Pro Control Panel is accessible when the copier's front doors are open.

5. **Remove the small rear panel at the back of the copier.**

6. **Connect the female end of the power cable to the power connector at the back of the Pi8500Pro (see Figure 3-1).**

Power connector
Power switch
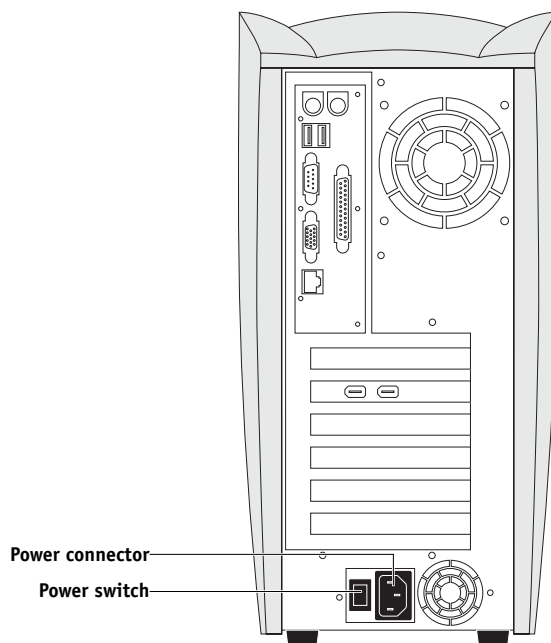
FIGURE 3-1   Pi8500Pro power

7. **Connect the male end of the power cable to the copier's internal power connector.**

8. **Toggle the Pi8500Pro power switch and the copier's internal power switch to their on positions (press |).**

9. **Power on the copier to power on the Pi8500Pro.**

   The Pi8500Pro power supply automatically senses the correct voltage.

10. **Allow startup to proceed without interruption while you watch the Pi8500Pro Control Panel. Do not press any buttons on the Control Panel.**

11. **Wait for the Pi8500Pro to reach the Idle screen to confirm that the Pi8500Pro is operating properly.**

    When the Pi8500Pro reaches the Idle screen, you are ready to shut down and connect the network and copier interface cables. Setup options should be configured after making these connections. The network administrator is responsible for configuring Setup according to the network and user environment. Refer the network administrator to the *Configuration Guide* for Setup information.

    NOTE: The message Copier connection failure. Reboot may appear on the Control Panel when the startup process is complete. After you shut down the Pi8500Pro, connect the it to the copier, and then power back on, the message will no longer appear.

12. **Following a successful startup, shut down the Pi8500Pro (see page 3-16).**

Connecting to the copier

After completing the preliminary checkout, connect the Pi8500Pro to the copier. The Pi8500Pro communicates with the copier through a cable from the copier interface board to the interface port on the copier.

TO CONNECT TO THE COPIER

1. **Power off the copier.**

   Check with the network administrator or supervisor before powering off the copier.

2. **Remove the access panel at the back of the copier.**

3. **Connect one end of the copier interface cable to the interface connector on the copier and the other end of the cable to either one of the Pi8500Pro copier interface connectors (see Figure 3-2 below).**

   The two copier interface connectors on the back panel of the Pi8500Pro are identical. You can attach the copier interface cable to either connector.

Slot 1
Slot 2
Slot 3
Slot 4
Slot 5
Slot 6

Connect the cable
to either connector

Pi8500Pro back panel   **Copier interface cable**
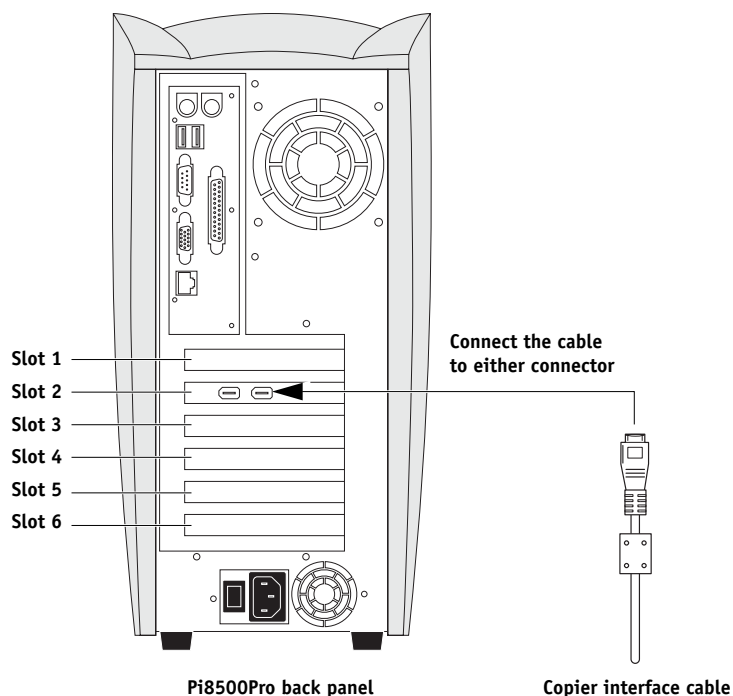
FIGURE 3-2   Copier interface connection

Verifying the connection

After you connect the Pi8500Pro to the copier, print the PS and PCL Test Pages and the Configuration page to verify that the connection between the Pi8500Pro and the copier is good.

Printing the Test Pages and Configuration page

Before connecting the Pi8500Pro to the network, print the PS and PCL Test Pages and the Configuration page.

• PS and PCL Test Pages—printing the PS and PCL Test Pages verifies that all the components of the Pi8500Pro-to-copier interface are working. The Test Pages are files that reside on the HDD (hard disk drive).

• Configuration page—printing the Configuration page can be helpful during installation, setup, and service. After you install the Pi8500Pro and before any default settings are changed, you can obtain a record of the defaults by printing the Configuration page.

After you make the physical connection to the network, the network administrator can customize Setup options according to the network and user environment. Using the Configuration page as a guide can help speed up this process. For more information, see the *Configuration Guide.*

Before you perform any service procedure, you should print the Configuration page, if possible, so that you can return the settings to their former configuration, if necessary.

TO PRINT THE TEST PAGES

1. **Power on the copier and allow it to warm up.**

   The Pi8500Pro starts automatically when you power on the copier. Wait as the Pi8500Pro runs through its startup diagnostics.

2. **At the Idle screen, press the Menu button once (see "Using the Control Panel" on page 3-9). The Functions menu appears.**

   ```
   ▲Print Pages        ▶
   ┃Suspend Printing    ▶
   ┃Resume Printing     ▶
   ▼Unlock and Print    ▶
    Functions         ℹ️▮
   ```

   Use the Up and Down buttons to scroll through these options. Use the line selection buttons to the right to select Print Pages.

   ```
   ▲Shut Down           ▶
   ┃Run Setup           ▶
    Run Diagnostics     ▶
   ▼
    Functions         ℹ️▮
   ```

3

3. **Press the line selection button to the right of Print Pages, and then select PS Test Page.**

   The Pi8500Pro sends the PS Test Page to the copier.

4. **Press the line selection button to the right of Print Pages, and then select PCL Test Page.**

   The Pi8500Pro sends the PCL Test Page to the copier.

5. **Examine the quality of the Test Pages.**

   The Test Pages confirm that the Pi8500Pro is functional and that the connection between the Pi8500Pro and the copier is good. When you examine the Test Pages, keep in mind that:

   • All patches should be visible, even though they may be very faint in the 5% and 2% range.

   • Each patch set should show uniform gradation from patch to patch as the shade lightens from 100% to 0%.

   Poor image quality may indicate a need to service the copier. For more information, see the documentation provided with the copier.

TO PRINT A CONFIGURATION PAGE

1. **If you have not done so already, power on the copier and allow it to warm up. Power on the Pi8500Pro using the power switch on the back panel.**

    Messages appear on the Control Panel as the Pi8500Pro runs through its startup diagnostics.

2. **Make sure that the copier is not in use and that the Info screen on the Pi8500Pro Control Panel reads Idle.**

3. **At the Idle screen, press the Menu button once (see "Using the Control Panel" on page 3-9). The Functions menu appears.**

```
▲Print Pages         ▶        Use the Up and Down buttons to
 Suspend Printing    ▶        scroll through these options. Use
□Resume Printing     ▶        the line selection buttons to the
▼Unlock and Print    ▶        right to select Print Pages.
 Functions         i ↑
```

```
▲Shut Down           ▶
□Run Setup           ▶
 Run Diagnostics     ▶

 Functions         i ↑
```
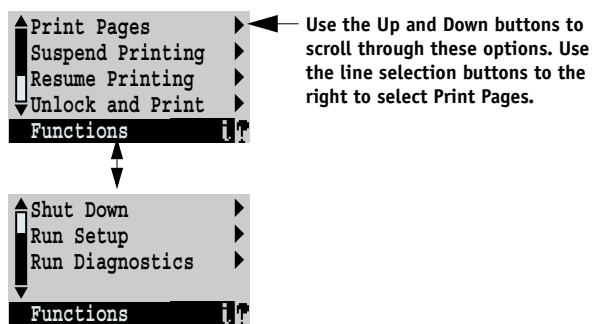
4. **Press the line selection button to the right of Print Pages, and then select Configuration page.**

    The Pi8500Pro sends the Configuration page to the copier and displays the RIP and Print status screens so you can monitor the job.

Installing additional options

If the customer has purchased additional options (such as Token Ring connectivity), install those before connecting the Pi8500Pro to the network. For installation instructions, see the documentation included in each option kit.

After installing options, print the Test Page to verify that the system is operating properly. Checking the installation at each stage makes it easier to pinpoint the cause of problems should they occur.

Connecting to the network

The Pi8500Pro has an external 10BaseT/100BaseT Ethernet network connector for a twisted pair cable (see Figure 3-3). For additional network information, see the *Configuration Guide*.

RJ-45 connector for 10BaseT/ 100BaseT twisted pair Ethernet
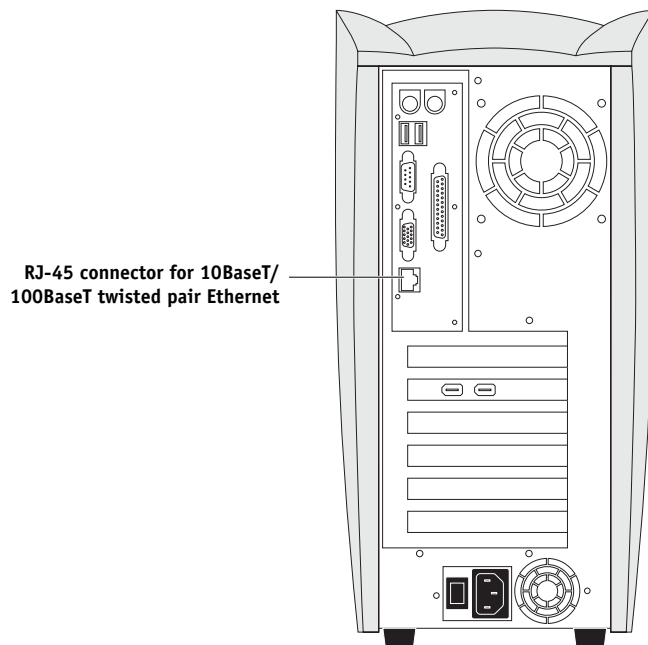
FIGURE 3-3 Pi8500Pro network connector

Token Ring compatibility is available with the optional Token Ring kit (see the documentation included with that kit for more information).

Twisted pair (unshielded twisted pair cable for 10BaseT/100BaseT) uses an RJ-45 connector that connects to the back of the Pi8500Pro (see Figure 3-3 on page 3-7).

1. **Shut down and power off the Pi8500Pro before connecting it to any network device (see page 3-16).**

2. **Connect the network cable to the RJ-45 connector on the back of the Pi8500Pro.**

   A Category 5 unshielded twisted pair (UTP) network cable must be used for 100BaseT.

3. **Configure Setup options.**

   It is the network administrator's responsibility to configure Setup according to the network and user environment. Refer the network administrator to the *Configuration Guide* for Setup information.

4. **After configuring Setup options, verify the network connection.**

   Once the network connection has been made and the Pi8500Pro has the correct Setup configuration, the Pi8500Pro should be available on the network.

   The network administrator should perform any additional network setup, verify the network connection, verify that the Pi8500Pro appears in the list of printers, and print a few test documents from a networked computer that will use the Pi8500Pro. (For more information, see the *Configuration Guide*.)

Using the Control Panel

This section describes the Control Panel. Once you install the Pi8500Pro and verify that it powers up correctly, you can use the Control Panel to access and monitor different functions.

The current status of the Pi8500Pro and Setup information are displayed in the Pi8500Pro display window. Activity can be monitored in the display window, and functions of the Pi8500Pro (such as printing a Test Page and installing or updating system software) can be controlled using the buttons on the Control Panel.

Activity light

Display window

Menu button

First

Line selection buttons

Fourth

Up button

Down button
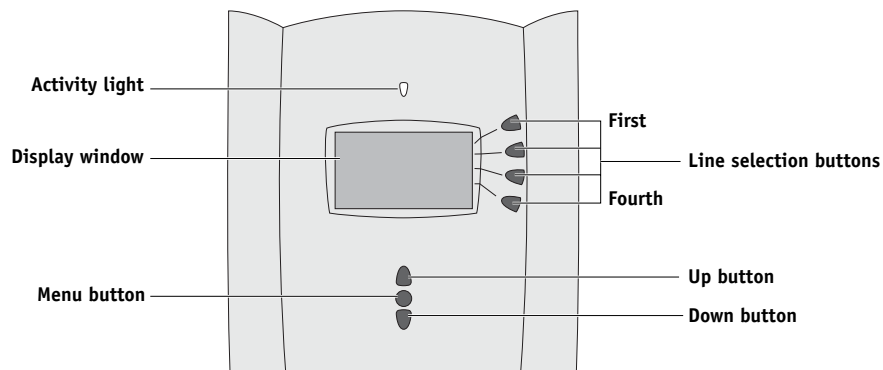
FIGURE 3-4 The Pi8500Pro Control Panel

Activity light

The activity light indicates current activity. If the light is:

Flashing or solid red	An error has caused printing to be disabled. The activity light also flashes red briefly during startup.
Solid green	The Pi8500Pro is idle or starting up.
Flashing green	The Pi8500Pro is processing or printing a job.
No light	The Pi8500Pro is powered off.

Buttons

Line selection buttons	Use the four line selection buttons on the right side of the Control Panel to select the command displayed on the corresponding line of the display window. A special character (▶) appears in the display window next to a button when it is available.
Up and Down buttons	Use these buttons to scroll to different screens in multi-screen lists, to select Setup options from a list, and to select alphanumeric characters.
Menu button	Press this button to view other display screens. Several different display screens show different types of information about the Pi8500Pro.

Control Panel screens and icons

When the Pi8500Pro is in Print mode, pressing the Menu button cycles through four screens: three status screens (Info, RIP, and Print) and the Functions menu. When the Pi8500Pro is idle, pressing the Menu button cycles between the Info screen and the Functions menu.

The bottom line of the screen displays the name of the current screen with the icon for that screen highlighted. Icons for other active screens are also displayed but are not highlighted.

The screens display the following information:
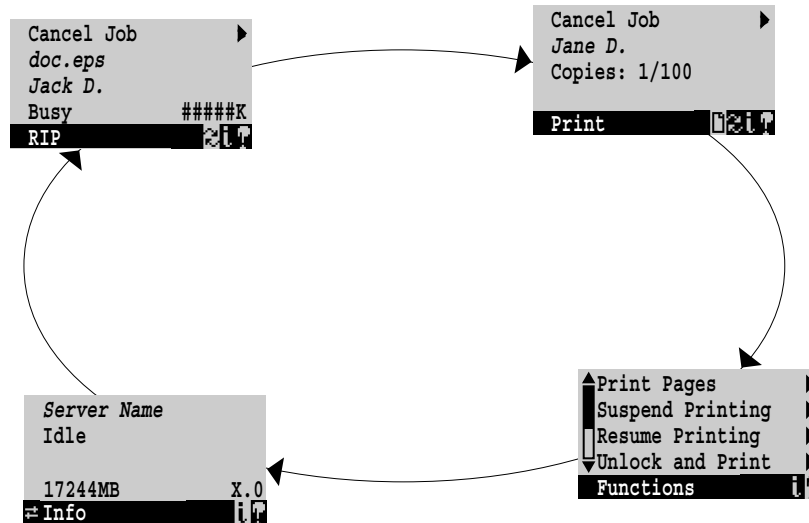
FIGURE 3-5 Control Panel screens during printing

If an error occurs, the Alert screen is displayed with a message describing the error.
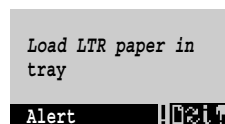
The display window screens and icons are:

| | Alert Status | If there is a problem during printing or processing, the Alert Status screen is activated, displaying an error message. For information on user error messages, see the *Printing Guide*. |
| | Print Status | When the Pi8500Pro is printing, the Print Status screen is activated. This screen displays the following: |

Cancel Job—Press the top line selection button to cancel the job currently printing.

User name—The name of the user who sent the job that is currently being processed.

Pages/Total—The number of copies of the current page that have been printed so far, and the total number of copies of this page that were requested.

RIP Status   When the Pi8500Pro is processing a job, the RIP Status screen is activated. This screen displays the following:

Cancel Job—Press the top line selection button to cancel the job currently processing. The Pi8500Pro cancels the job before printing begins.

Document name—The name of the document currently processing.

User name—The name of the user who sent the job that is currently being processed.

Kilobytes—The amount in kilobytes of the job that has been processed so far.

	Info Status	The Info Status screen displays information about the server's current activity, and software version. This screen is always active, and it appears in the display window when no other screen is selected. It displays the following information:
		Server Name—The Pi8500Pro name as it is configured in Setup.
		Status—The current status of the Pi8500Pro. Status messages include: Idle, Initializing, Busy, Processing, or Printing.
		Number of MB—The space in megabytes available on the HDD.
		Version—The system software version running on the Pi8500Pro.
	Functions	The Functions screen is also always active, but it appears in the display window only when the user has pressed the Menu button to select it. Use the Up and Down buttons to scroll through the list of menu command options. Press the line selection button to the right of a command to select it.
	Network	The Network icon appears in the lower left corner of the display window when the Pi8500Pro is communicating over the network. The Network icon can appear while any screen is displayed.

Functions menu

The Functions menu allows you to perform a variety of administrative functions that do not affect the print jobs of other users. Use the Up and Down buttons to scroll through the list of functions. Press the line selection button next to the function you want to select.

The following functions are available from the Functions menu:

Print Pages—Enables you to print special pages from the Pi8500Pro. You can print the following pages from the submenu that appears:

- PS Test Page—Enables you to confirm that the Pi8500Pro-to-copier interface is functioning properly. The Test Page provides black and white and grayscale samples to troubleshoot problems with the copier or the Pi8500Pro. The following information is also listed: server name (defined in Setup), date and time printed, and compression information.

- PCL Test Page—Enables you to confirm that the Pi8500Pro-to-copier PCL interface is functioning properly. The PCL Test Page provides black and white and grayscale samples to troubleshoot problems with the copier or the Pi8500Pro. The following information is also listed: server name, date and time printed, and compression information.

- Configuration—Prints the current server and device configuration. This includes information about all current Setup settings, and the Ethernet address of the Pi8500Pro. The Configuration page also provides version information for the BIOS chip and information on any options installed in the Pi8500Pro.

- Job Log—Prints the log of the last 55 jobs by default. For more information about the Job Log, see the *Printing Guide*.

- PS Font List—A list of all PostScript fonts resident on the HDD.

- PCL Font List—A list of all PCL fonts resident on the HDD.

- E-mail Log—A log of jobs scanned on the copier and emailed over the network.

- FTP Log—A log of jobs sent to the FTP site designated in the setup options (see the *Configuration Guide*).

Suspend Printing—Suspends communication between the Pi8500Pro and the copier, interrupting the current print job so the copier can be used to make copies. After the copies are made you can select Resume Printing to allow the system to continue processing and printing jobs.

Resume Printing—Reestablishes communication between the copier and the Pi8500Pro so that the system continues processing and printing jobs following Suspend Printing.

Unlock and Print—Allows users to use the Control Panel to unlock and print locked jobs sent to the Pi8500Pro from a client workstation. A password is required in order to unlock and print locked jobs that have been RIPPed but not printed.

Shut Down—Provides three ways to shut down the Pi8500Pro:

- Restart Server (soft reset)—Resets the server software but does not reboot the entire system. Network access to the Pi8500Pro is temporarily interrupted and all currently processing jobs are aborted and might be lost.

- Shut Down System—Shuts down all Pi8500Pro activity properly so that you can power off the system using the power switch on the back panel. You should always select this option before powering off the system (see the procedure "To shut down the Pi8500Pro" on page 3-16).

- Reboot System (hard reset)—Allows you to shut down and then reboot the Pi8500Pro entirely through the Control Panel without having to power off the system from the power switch on the back panel.

Run Setup—Allows you to access the Setup options in order to configure the network and printing environment. Typically it is the network administrator's responsibility to configure Setup according to the network and user environment. Setup is required the first time the Pi8500Pro is powered on and after system software is installed. For a list of options and detailed descriptions of each Setup option, see the *Configuration Guide*.

Run Diagnostics—Allows you to run diagnostics on the following:

- Test E-mail—Tests the Pi8500Pro's email feature.

  See page 5-22 for more about Pi8500Pro diagnostics.

3 Connecting the Pi8500Pro

Shutting down and restarting

The Pi8500Pro will probably be left on all the time at the customer site. Remember that when the Pi8500Pro is powered off, network access to the copier is interrupted.

You should shut down the Pi8500Pro when you need to service it or the copier, and before you remove or attach any cables to the Pi8500Pro. Shut down the Pi8500Pro before changing the copier's toner cartridge in order to prevent the fan from drawing toner into the Pi8500Pro.

TO SHUT DOWN THE PI8500PRO

Always verify that the Pi8500Pro is not being used before you begin the following procedure to power off the Pi8500Pro.

1. **Make sure that the Pi8500Pro Info screen reads Idle.**

   When Printing or Ripping appears on the Control Panel, the Pi8500Pro is currently processing a job. Idle appears in the Info screen when the Pi8500Pro is finished processing the job.

2. **At the Idle screen, press the Menu button once to display the Functions menu.**

3. **Scroll to select Shut Down from the Functions menu.**

```
Print Pages        ▶
Suspend Printing   ▶
Resume Printing    ▶
Unlock and Print   ▶
Functions        ℹ️▼
```

```
Shut Down          ▶    ← Use the line selection
Run Setup          ▶       button to the right to
Run Diagnostics    ▶       select Shut Down.

Functions        ℹ️▼
```
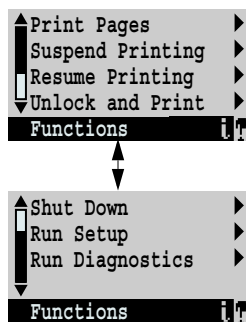
4. **At the next screen, select Shut Down System.**

   The message It is now safe to power off the system.... is displayed.

5. **Remove the access panel at the back of the copier and power off the Pi8500Pro using the power switch on the Pi8500Pro back panel (press 0).**

3-16

3

Shutting down and restarting

TO RESTART THE PI8500PRO

1. **If the Pi8500Pro is already on, make sure it is not receiving, processing, or printing a document.**

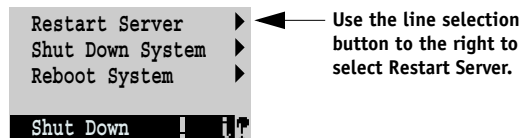   When Printing or Ripping appears on the Pi8500Pro Control Panel, the Pi8500Pro is currently processing a print job. Wait until the job is complete and Idle appears in the Info screen.

2. **Press the Menu button once, select Shut Down from the Functions menu, and then select Restart Server.**

   ```
   Restart Server       ▶ ◀——  Use the line selection
   Shut Down System     ▶       button to the right to
   Reboot System        ▶       select Restart Server.

   Shut Down    !   i↑
   ```

TO REBOOT THE PI8500PRO

1. **If the Pi8500Pro is already on, make sure it is not receiving, processing, or printing a document.**

   When Printing or Ripping appears on the Pi8500Pro Control Panel, the Pi8500Pro is currently processing a print job. Wait until the job is complete and Idle appears in the Info screen.

2. **Press the Menu button once, select Shut Down from the Functions menu, and then select Reboot System.**

   Allow the system to shut down and reboot. Do not push any buttons during this time and ignore the message It is now safe to power off the system.... that appears on the Control Panel while the system reboots.

   ```
   Restart Server       ▶
   Shut Down System     ▶
   Reboot System        ▶ ◀——  Use the line selection
                                button to the right to
   Shut Down    !   i↑          select Reboot System.
   ```
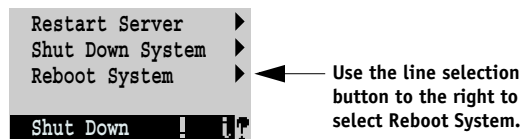
Chapter 4: Service Procedures

Generally, the Pi8500Pro requires no regular service or maintenance. Use the procedures in this chapter to inspect, remove, reseat, and replace major hardware components, as well as to install system software.

Overview

This chapter includes information on servicing the following components:

• Boards and Cables

• Motherboard components (DIMM, CPU, battery)

• Fans (front and back panel)

• Power supply

• HDD (hard disk drive)

• CD-ROM drive

• Front panel components

See Figure 4-1 on page 4-2 for an overview of components. Replacement parts are available from your authorized service representative. The terms "replace" and "replacing" are typically used throughout this chapter to mean reinstallation of existing components. Install new components only when necessary. If you determine that a component you have removed is not faulty, make sure to reinstall it back in the system.

When performing the service procedures described in this chapter, follow the precautions listed in "Precautions" on page xiii.

The tools required to service the system are listed in "Tools you will need" on page xv.

System software

System software is installed on the HDD at the factory. System software is also provided on a CD containing system software and fonts. Use the System Software CD when:

• You upgrade to a more recent version of the system software

• You change languages

• You replace the HDD

NOTE: System software installation takes approximately 20 minutes.

For information on how to install system software, see "System software service" on page 4-54.

Service Procedures

Key
1. Front panel
2. UIB cable
3. User interface board
4. CD-ROM drive
5. CD-ROM drive bracket
6. CD-ROM drive ribbon cable
7. HDD ribbon cable
8. Front fan
9. Board guide
10. Board guide retainer
11. HDD (hard disk drive)
12. Power supply
13. Chassis
14. Back panel fan
15. Motherboard
16. CPU
17. CPU heatsink and fan
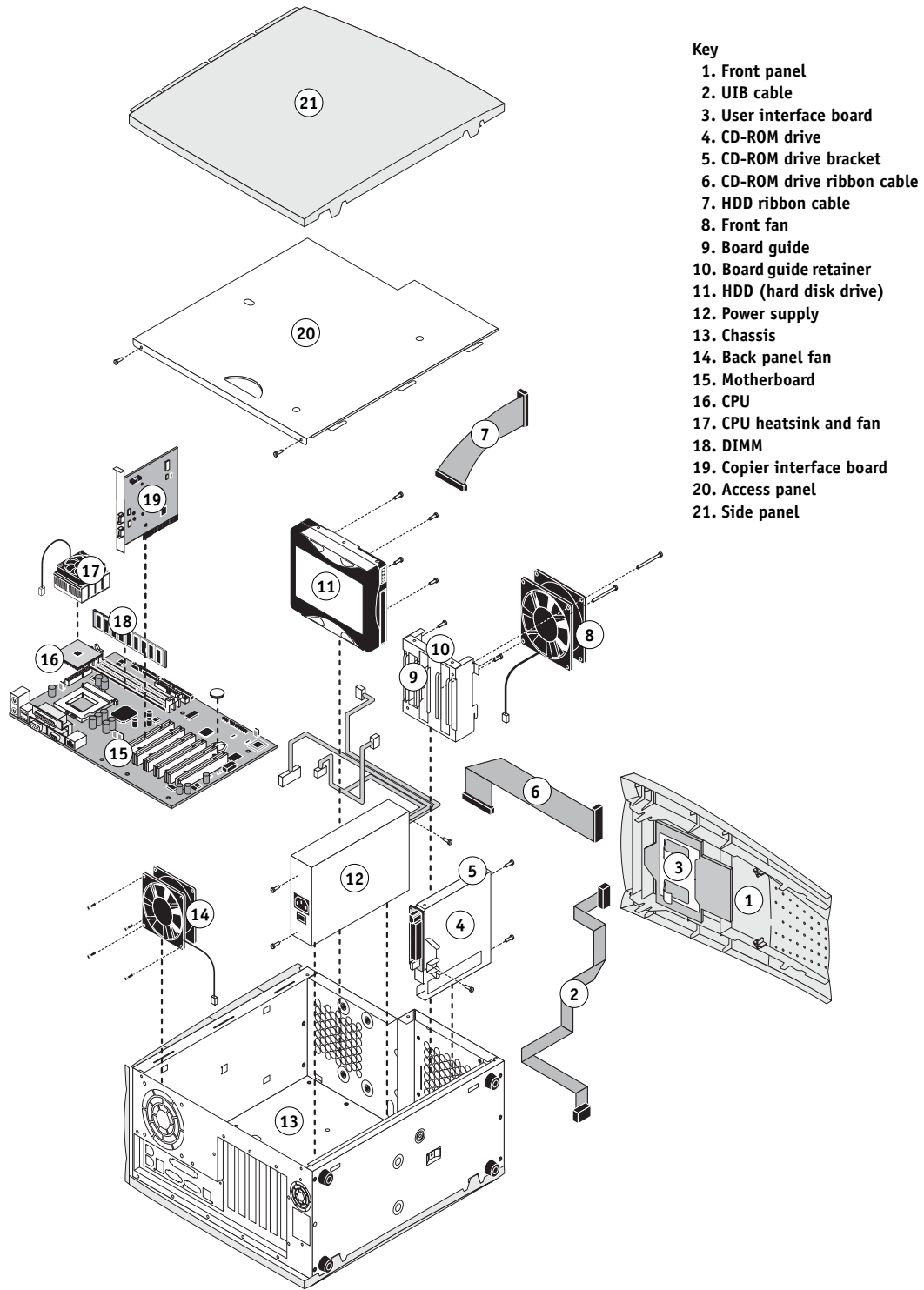18. DIMM
19. Copier interface board
20. Access panel
21. Side panel

FIGURE 4-1 Exploded view of Pi8500Pro components

Accessing internal components

If the Pi8500Pro is powered on, make sure to shut down the system before you access the internal components. Always use the following procedures when opening the Pi8500Pro for inspection or service.

NOTE: Remember that when the Pi8500Pro is powered off, network access to the copier is interrupted. Always get permission from the network administrator before you take the Pi8500Pro off the network.

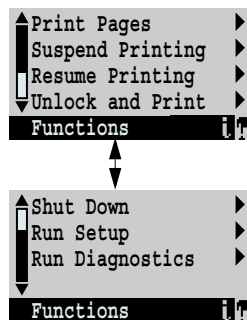TO SHUT DOWN THE PI8500PRO

Always verify that the Pi8500Pro is not being used before you shut it down.

1. **Make sure that the Info screen reads Idle.**

   When Printing or Ripping appears on the Control Panel, the Pi8500Pro is currently processing a job. Idle appears in the Info screen when the Pi8500Pro is finished processing the job.

2. **At the Idle screen, press the Menu button once to display the Functions menu.**

3. **Scroll to select Shut Down from the Functions menu.**

   ```
   ▲Print Pages         ▶
    Suspend Printing    ▶
   □Resume Printing      ▶
   ▼Unlock and Print    ▶
    Functions          i⌶
   ```

   ```
   ▲Shut Down           ▶   ◀ Use the line selection
    Run Setup           ▶      button to the right to
    Run Diagnostics     ▶      select Shut Down.
   ▼
    Functions          i⌶
   ```

4. **At the next screen, select Shut Down System.**

   The message It is now safe to power off the system.... appears.

5. **Remove the access panel at the back of the copier.**

6. **Power off the Pi8500Pro using the power switch on the back panel (press 0).**

7. **Disconnect all cables from the back panel.**

4 Service Procedures

1. Make sure you have powered off the Pi8500Pro (see page 4-3) and removed all the cables from the back panel.

2. Remove the Pi8500Pro from the shelf inside the copier.

3. Position the Pi8500Pro so that it is resting on its side on a flat, anti-static surface (see Figure 4-2).

4. Bend the hooks out from the slots on the bottom of the chassis to release the side panel from the chassis.
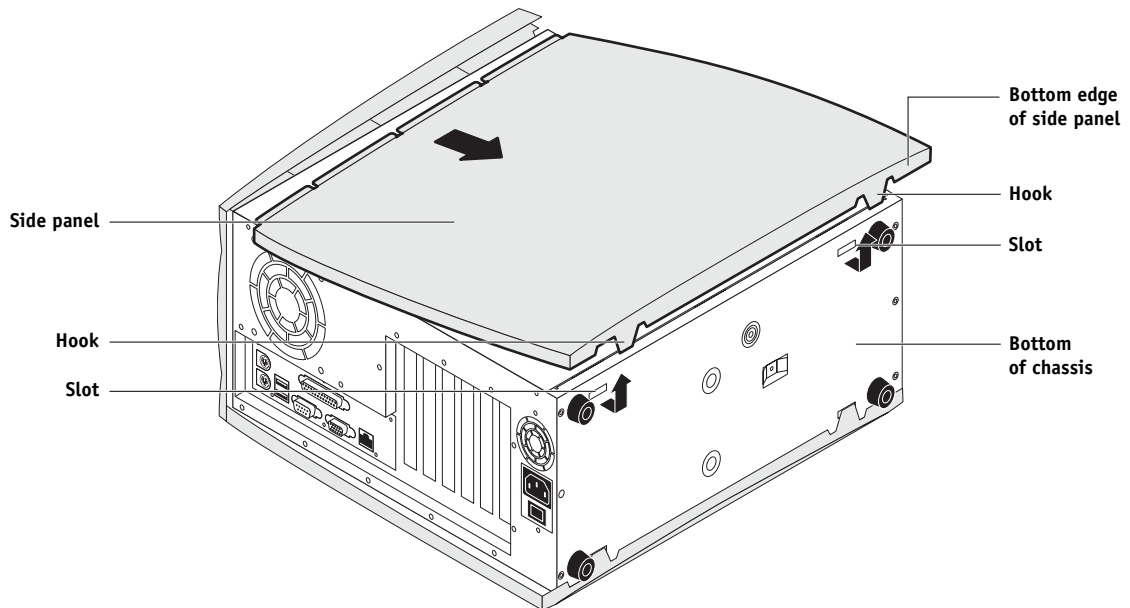

FIGURE 4-2 Removing the side panel

5. Lift up the bottom edge of the side panel and slide it away from the chassis.

6. **Remove the four screws that secure the access panel to the chassis.**

7. **Slide the access panel toward the back panel to disengage the hooks from the chassis, and then lift the access panel off of the chassis (see Figure 4-3).**

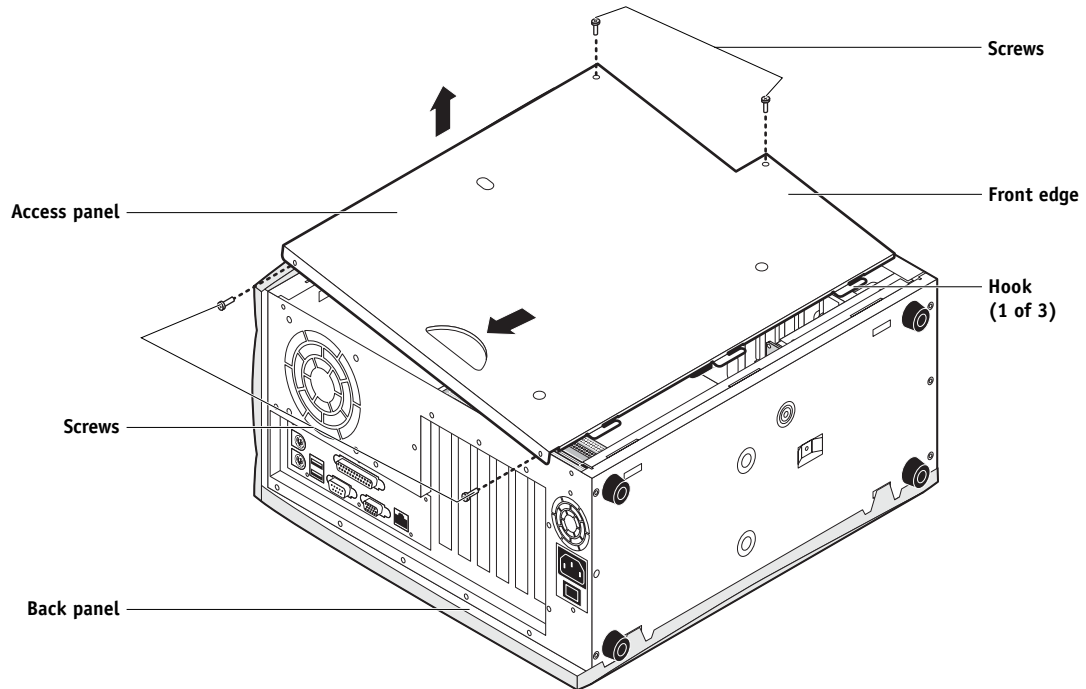   Press on the front edge of the access panel as you slide the panel.
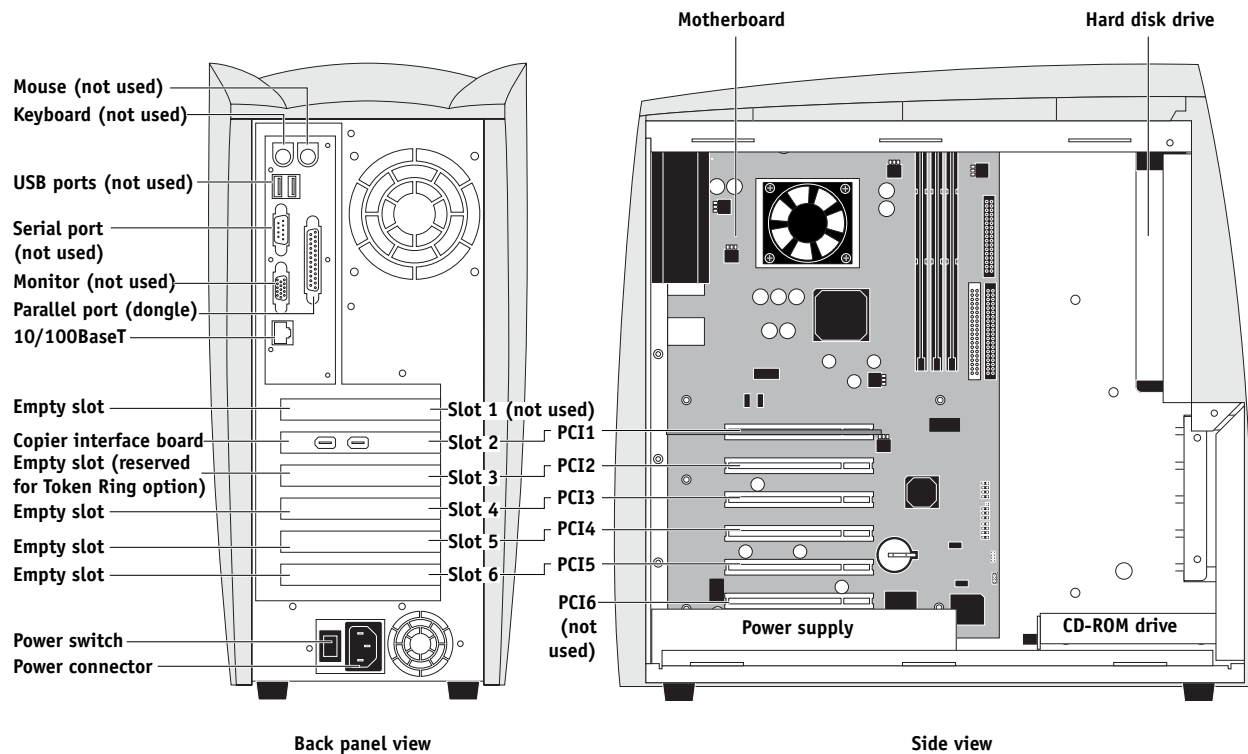

FIGURE 4-3   Removing the access panel

The internal components are now accessible.

The Pi8500Pro is shipped from the factory with a standard board configuration, as shown in Figure 4-4. If optional components have been installed, see the documentation that came with the specific option kit.

NOTE: To service components inside the chassis, position the Pi8500Pro so that it is resting on its side and the components inside the chassis are facing up.

Mouse (not used)
Keyboard (not used)
USB ports (not used)
Serial port (not used)
Monitor (not used)
Parallel port (dongle)
10/100BaseT
Empty slot — Slot 1 (not used)
Copier interface board — Slot 2 — PCI1
Empty slot (reserved for Token Ring option) — Slot 3 — PCI2
Empty slot — Slot 4 — PCI3
Empty slot — Slot 5 — PCI4
Empty slot — Slot 6 — PCI5
PCI6 (not used)
Power switch
Power connector

Motherboard
Hard disk drive
Power supply
CD-ROM drive

Back panel view

Side view

Motherboard connectors:
PCI1—Copier interface board
PCI2—Empty (reserved for Token Ring option)
PCI3—Empty
PCI4—Empty
PCI5—Empty
PCI6—Not used

FIGURE 4-4 Pi8500Pro side view and back panel view

Accessing front panel components

The following procedure describes how to remove the front panel in order to access the user interface board, the Control Panel buttons, the HDD, the CD-ROM drive, the front fan, and the front panel jewel. You do not need to remove the front panel in order to access other components inside the chassis.

TO REMOVE THE FRONT PANEL

1. **Shut down the Pi8500Pro (see page 4-3).**

2. **Open the Pi8500Pro (see page 4-4).**

3. **Stand the Pi8500Pro up in its normal operating position.**

4. **Inside the chassis, bend the top tabs inward to release them from the chassis.**

5. **Inside the chassis, bend the bottom tabs outward to release them from the chassis.**

6. **Pull the front panel away from the chassis.**

   Take care when pulling the front panel away from the chassis, as the UIB cable is still connected to the user interface board on the front panel.

7. **Disconnect the UIB cable from the connector on the user interface board, and then place the front panel on a clean, padded surface.**

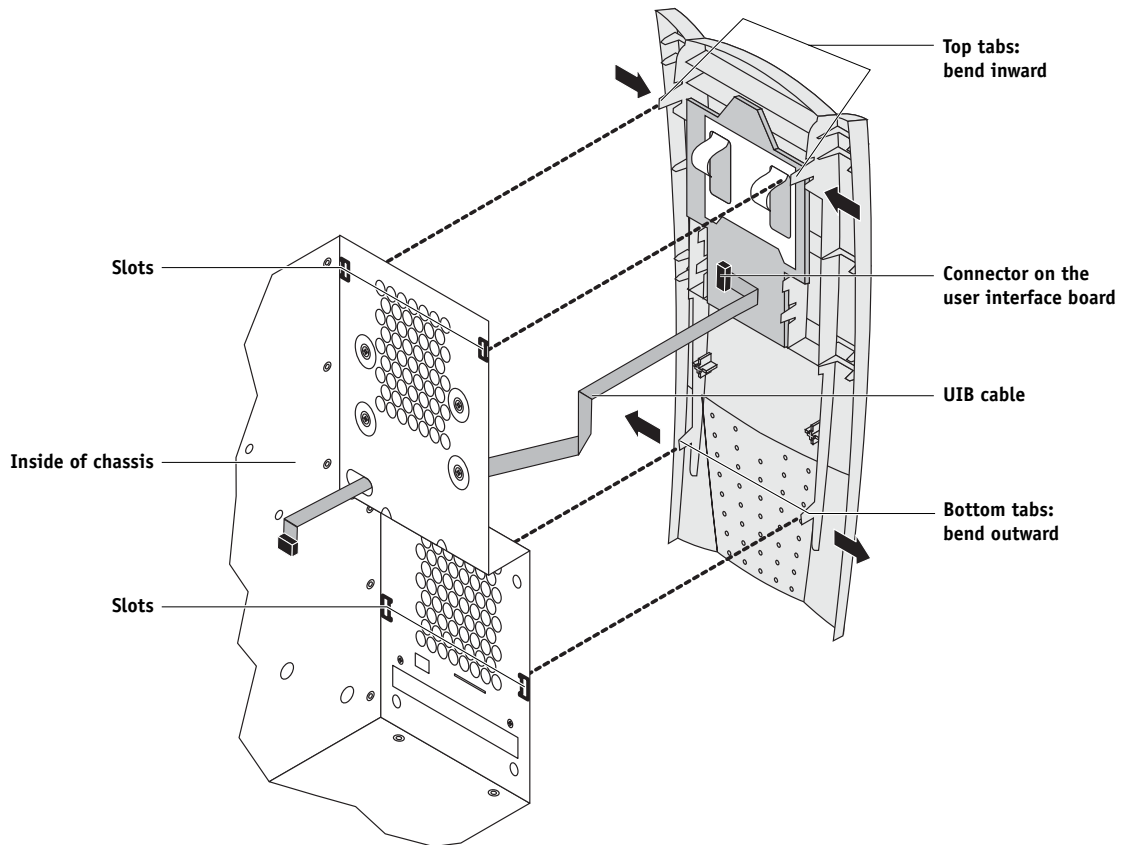   The front panel components are now accessible.

Top tabs:
bend inward

Connector on the
user interface board

UIB cable

Slots

Inside of chassis

Bottom tabs:
bend outward

Slots

FIGURE 4-5   Removing the front panel

TO REPLACE THE FRONT PANEL

1. **Make sure all front panel components are installed correctly.**

2. **Connect the UIB cable to the connector on the user interface board.**

    When you connect the cable, make sure to snap the levers together to ensure that the
    connector is securely fastened.

3. **Position the front panel so that the tabs enter the slots in the front of the chassis, and
    then press the front panel against the chassis until it snaps into place.**

    NOTE: If you replaced the front panel, make sure you transfer the jewel from the original
    front panel onto the new one (see page 4-53).

Checking internal connections

The most common causes of hardware problems are faulty and loose connections. Before you conclude that any board or component has failed, remove, inspect, and reseat all appropriate connections, and then check whether the problem still occurs.

TO CHECK BOARD AND CABLE CONNECTIONS

NOTE: Follow standard ESD precautions while working on internal components.

1. **Make sure you have powered off the Pi8500Pro (see page 4-3), removed all the cables from the back panel, and removed the side panel and access panels (see page 4-4).**

2. **Position the Pi8500Pro so it is resting on its side and the internal components are facing up.**

3. **Inspect the boards to make sure they are firmly seated in their motherboard connectors. Press down firmly on the boards to make sure each one is securely installed.**

   The standard board configuration includes the following (from top to bottom):

   Connector PCI1—Copier interface board

   Connector PCI2—Empty (reserved for Token Ring option)

   Connector PCI3—Empty

   Connector PCI4—Empty

   Connector PCI5—Empty

   Connector PCI6—Not used

4. **Inspect ribbon cables to see if they are intact.**

   Faulty ribbon cables are easily overlooked. Check the contact point between the cable and the connector to ensure that they have not separated. If a ribbon cable is suspect, substitute it with a tested cable.

5. **Make sure that all ribbon cables and power cables are seated properly on connectors (see Figure 4-6 on page 4-10 and Figure 4-7 on page 4-11).**

   Cable connectors are keyed to fit only when properly oriented.

6. **Check the front and back panel fan cables and the CPU fan cable connections to the motherboard.**

   Gently straighten any bent pins with a pair of needlenose pliers. If, after tightening the connections, you are still experiencing problems, it may be that one or more components are still not getting power. If this is the case, see "Checking voltages" on page 4-39.

NOTE: Power supply and CD-ROM drive are not shown
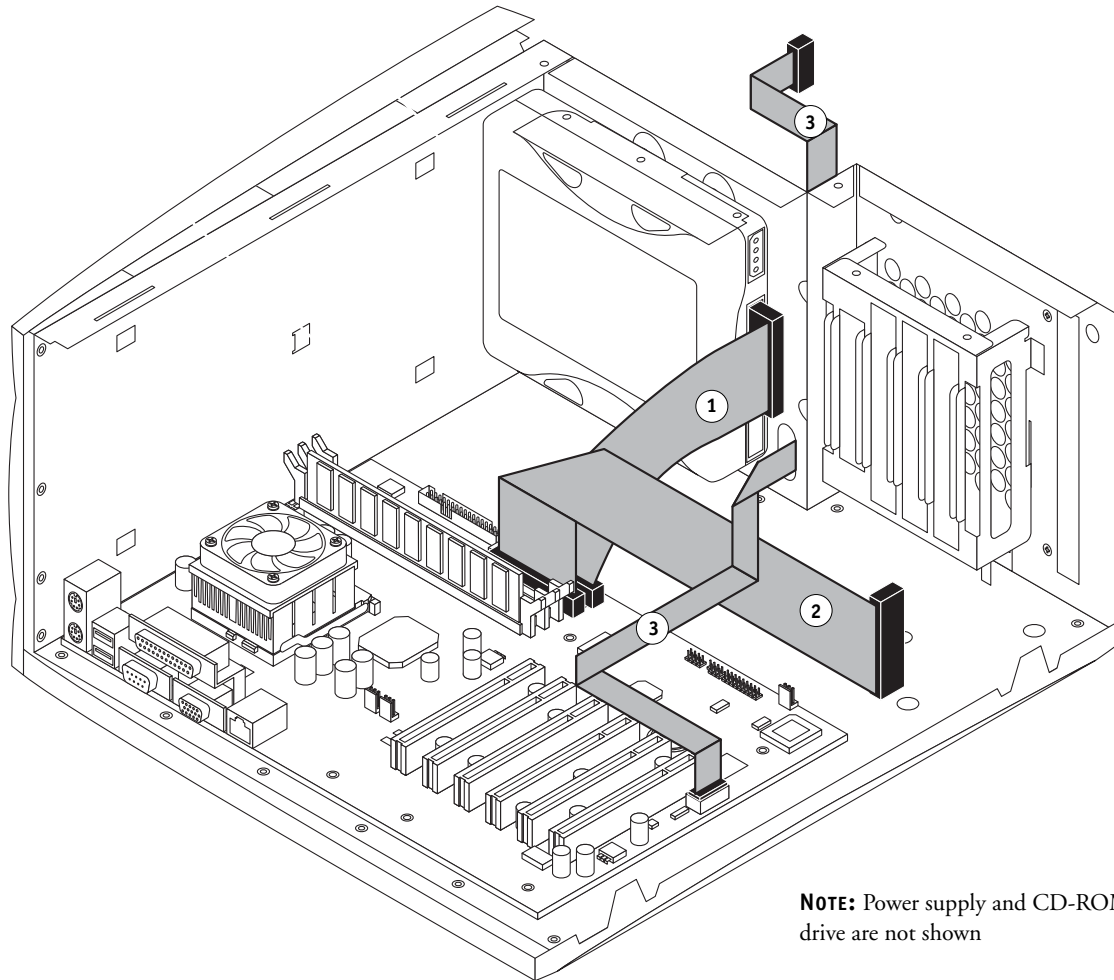
Cable key	From	To
1. HDD ribbon cable	Motherboard PIDE (Primary IDE connector)	HDD
2. CD-ROM drive ribbon cable	Motherboard SIDE (Secondary IDE connector)	CD-ROM drive
3. UIB ribbon cable	UIB connector on the motherboard (JP20)	User interface board in front panel

FIGURE 4-6   Ribbon cable connections

NOTE: Power supply and CD-ROM drive are not shown
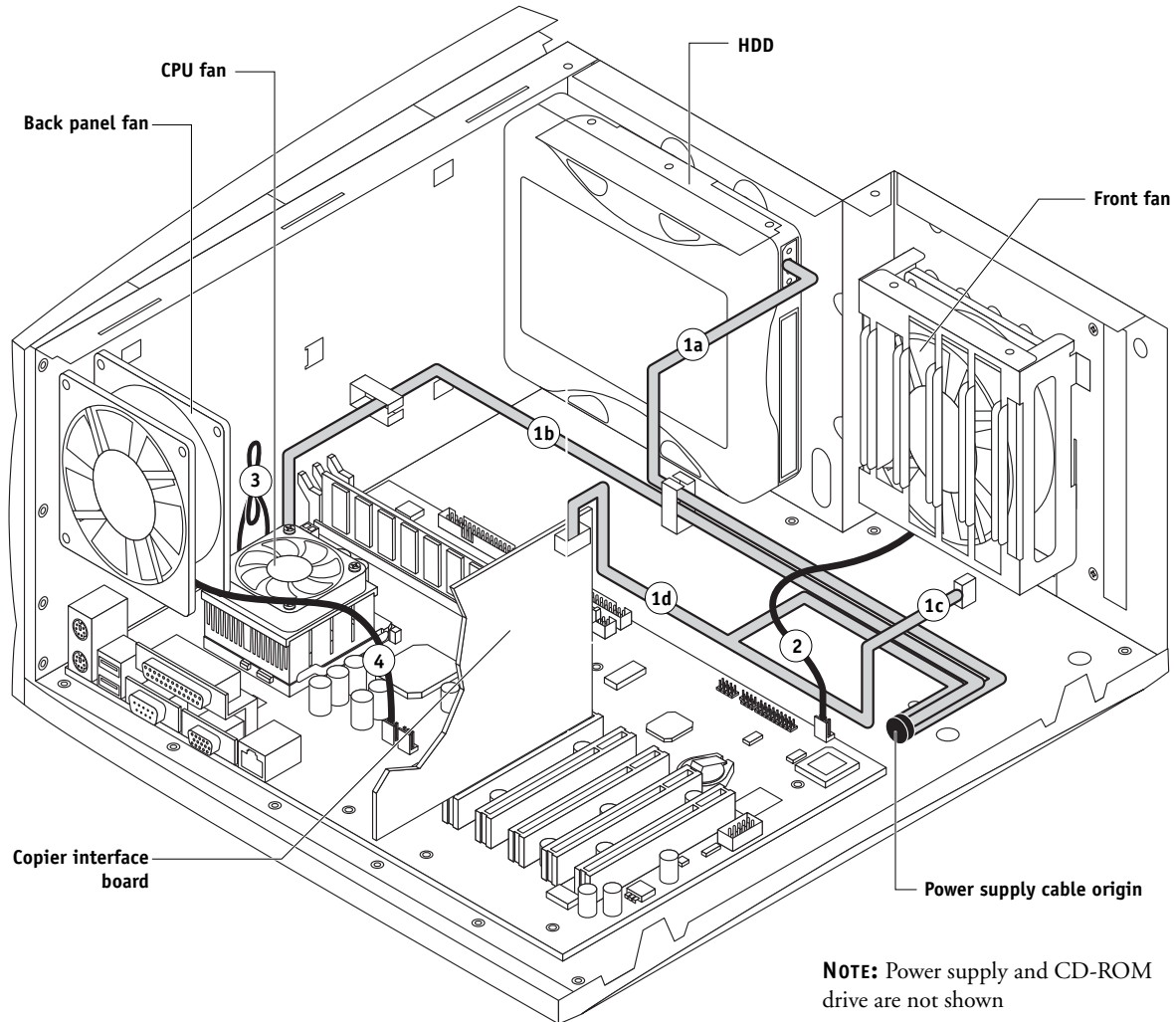
Cable key	From	To
1. Power supply cable	Power supply	a. 4-pin connector—HDD (hard disk drive) b. 20-pin connector—Motherboard c. 4-pin connector—CD-ROM drive d. 4-pin connector—Copier interface board
2. Front fan cable	Front fan	Fan connector on motherboard (FAN3)
3. CPU fan cable	CPU fan	Fan connector on the motherboard (FAN1)
4. Back panel fan cable	Fan (back panel)	Fan connector on the motherboard (FAN2)

FIGURE 4-7 Power cable connections

4

Service Procedures

TO CHECK MOTHERBOARD DIMM CONNECTIONS

1. **Check that all DIMMs are locked. If any DIMMs have come loose, release and reseat them.**

   The DIMMs (dual in-line memory modules) on the motherboard are held in place by levers at each end. Sockets 1-4 on the motherboard hold the DIMMs.

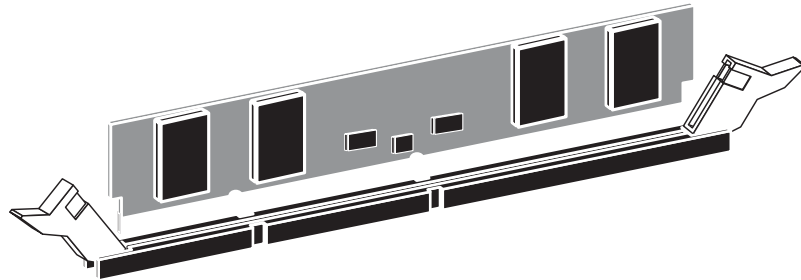2. **To release a DIMM, push outward on the levers on each side of the DIMM.**

FIGURE 4-8   Releasing the DIMM levers

3. **Slide the DIMM straight out of the socket.**

4. **To replace a DIMM, gently slide the DIMM straight into the socket and close the levers at each side to lock it into place.**

   Make sure that the levers close securely around the ends of the DIMM and that each DIMM is fully seated in its socket.

   If you removed the DIMMs completely, note that DIMMs fit the socket only one way. The notches on the bottom of the DIMM should line up with the notches in the socket.

Restoring and verifying functionality after service

Conclude your inspection and service by reassembling and verifying the Pi8500Pro.

Reassembling the system

Use the following procedure to reassemble the Pi8500Pro after inspection or service.

TO REASSEMBLE THE PI8500PRO

1. **If you removed the front panel, replace it (see page 4-8).**

2. **Position the Pi8500Pro so that it is resting on its side on a flat, anti-static surface.**

3. **Reseat all boards, cables, connectors, and other parts loosened or removed during inspection or service.**

4. **Insert the hooks on the bottom edge of the access panel into the slots in the chassis, and then lower the access panel onto the chassis (see Figure 4-9).**

   Be careful not to damage any ribbon cables; fold the ribbon cables inside the chassis before replacing the access panel.

5. **Press on the back edge of the access panel and slide it until the mounting holes are aligned with the holes on the chassis.**

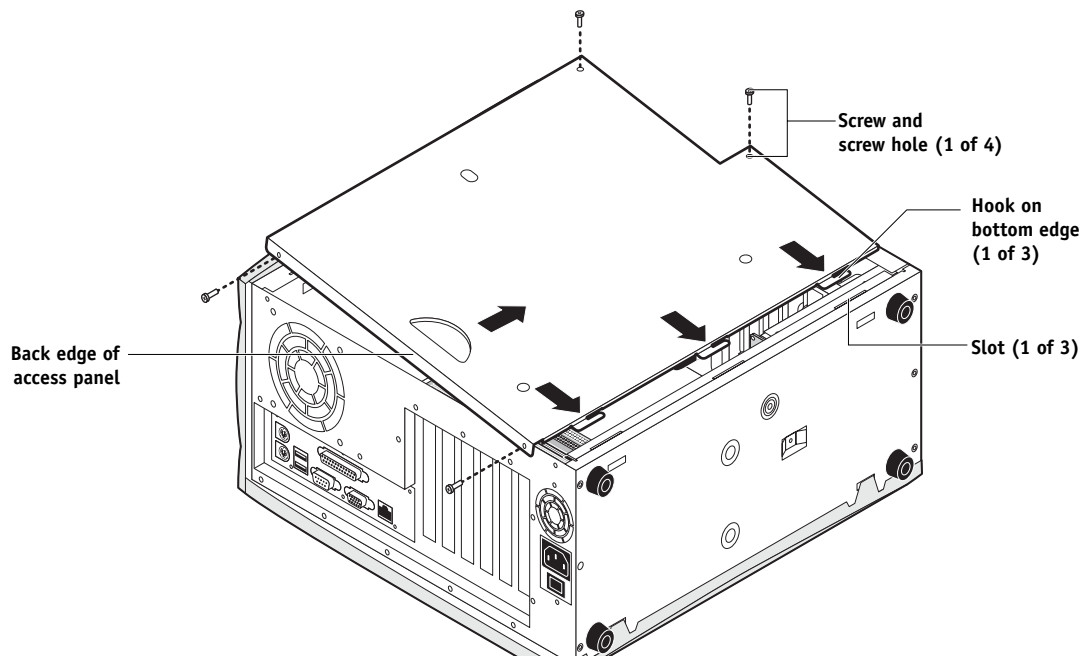6. **Replace the four screws that attach the access panel to the chassis.**

FIGURE 4-9   Replacing the access panel

7. **Match the grooves on the top edge of the side panel with the top of the Pi8500Pro, and then lower the side panel onto the chassis.**

8. **Press down on the bottom edge of the side panel until the hooks click into the slots on the bottom of the chassis.**

   NOTE: Do not leave the access panel off after servicing. An airflow channel is created by the panel and the fans. Leaving the Pi8500Pro open could reduce the operational life expectancy of internal components.
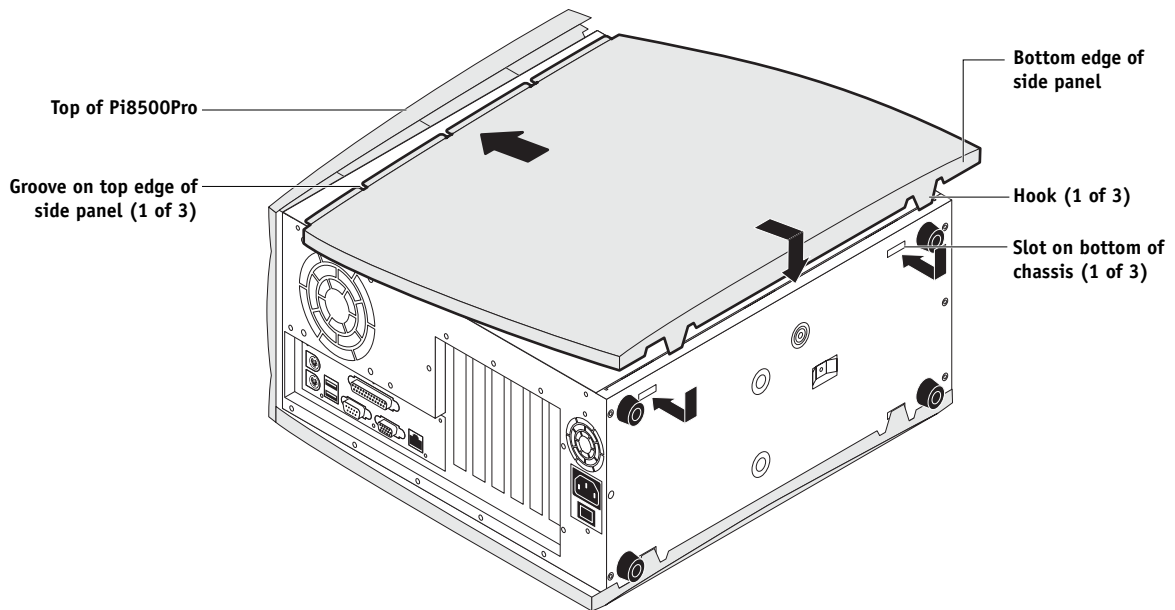

Top of Pi8500Pro

Groove on top edge of side panel (1 of 3)

Bottom edge of side panel

Hook (1 of 3)

Slot on bottom of chassis (1 of 3)

FIGURE 4-10 Replacing the side panel

9. **Connect any cables removed during service to the back of the Pi8500Pro.**

Verifying functionality

Before you leave the customer site, make sure you have completed the steps outlined in Figure 4-11. If you are unable to complete a step, determine the reason and rectify the problem before continuing. See Chapter 5, "Troubleshooting," for more information.
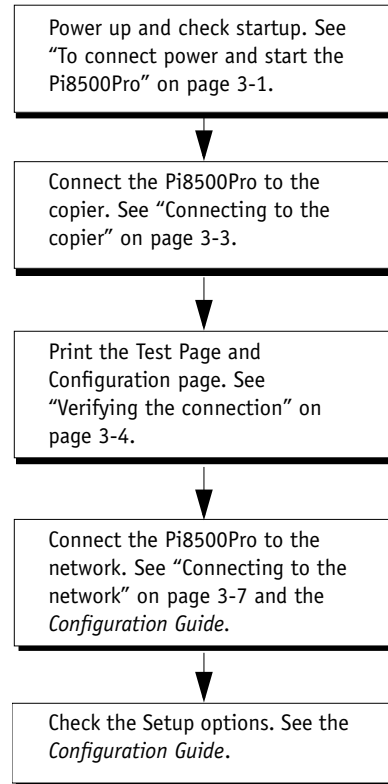
```
┌─────────────────────────┐
│ Power up and check       │
│ startup. See             │
│ "To connect power and    │
│ start the                │
│ Pi8500Pro" on page 3-1.  │
└─────────────────────────┘
            │
            ▼
┌─────────────────────────┐
│ Connect the Pi8500Pro    │
│ to the                   │
│ copier. See "Connecting  │
│ to the                   │
│ copier" on page 3-3.     │
└─────────────────────────┘
            │
            ▼
┌─────────────────────────┐
│ Print the Test Page and  │
│ Configuration page. See  │
│ "Verifying the           │
│ connection" on           │
│ page 3-4.                │
└─────────────────────────┘
            │
            ▼
┌─────────────────────────┐
│ Connect the Pi8500Pro    │
│ to the                   │
│ network. See "Connecting │
│ to the                   │
│ network" on page 3-7 and │
│ the                      │
│ *Configuration Guide.*   │
└─────────────────────────┘
            │
            ▼
┌─────────────────────────┐
│ Check the Setup options. │
│ See the                  │
│ *Configuration Guide.*   │
└─────────────────────────┘
```

FIGURE 4-11 Pi8500Pro connection verification steps

Removing and replacing boards

This section includes procedures for removing and replacing the following boards:

- Copier interface board

- User interface board

- Motherboard

For information on installing option boards, see the separate installation instructions provided with those boards.

Copier interface board

The copier interface board (see Figure 4-12) provides the print interface between the Pi8500Pro and the copier.

The copier interface board is installed in connector PCI1 on the motherboard and occupies one back panel slot. The board's interface connector at slot 2 on the back panel connects to a cable that attaches to the copier.

NOTE: The two copier interface connectors on the copier interface board are identical. You can attach the copier interface cable to either connector.
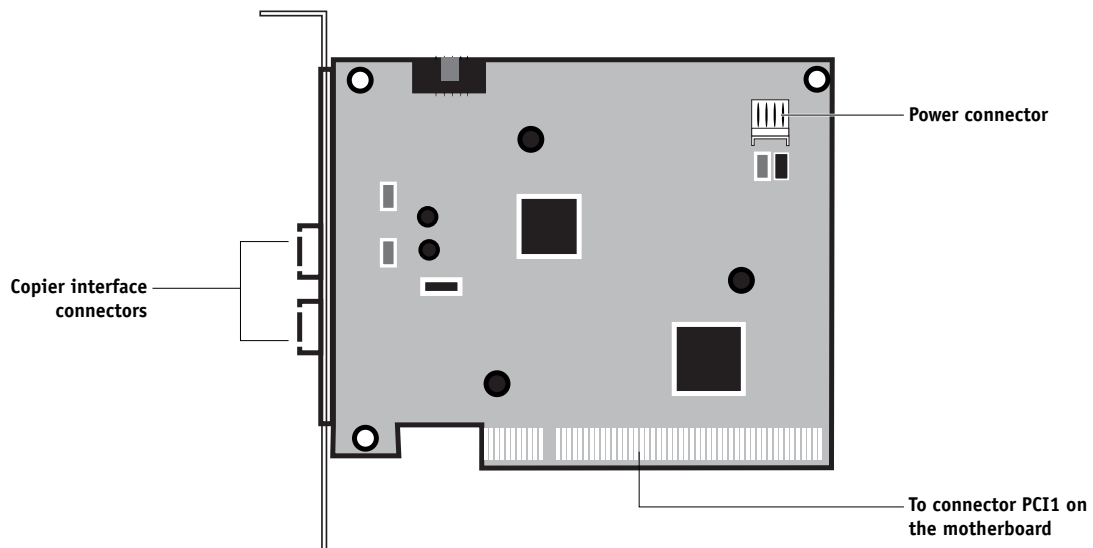
FIGURE 4-12 Copier interface board

TO REMOVE THE COPIER INTERFACE BOARD

1. **Shut down and open the Pi8500Pro (see page 4-3 and page 4-4).**

2. **Make sure the copier interface cable connected to the back of the Pi8500Pro is removed.**

3. **Remove the 4-pin power cable from the copier interface board.**

4. **Remove the board mounting bracket screw from back panel slot 2.**

5. **Remove the copier interface board from motherboard connector PCI1.**

    Grasp the board at the front and back edge and gently pull the board straight out of its motherboard connector.

6. **Place the board in an antistatic bag.**

TO REPLACE THE COPIER INTERFACE BOARD

1. **Reseat the copier interface board in connector PCI1 on the motherboard. The component side of the board should be facing down toward the power supply.**

    The copier interface board connector is keyed to fit only one way when properly oriented.

2. **Attach the board mounting bracket screw to the bracket in back panel slot 2.**

3. **Connect the 4-pin power cable to the copier interface board.**

4. **Reassemble the Pi8500Pro and verify its functionality (see page 4-13).**

User interface board

The user interface board installed in the front panel (see Figure 4-13) provides the interface between the Pi8500Pro and the user. The front of the user interface board contains circuitry for the following:

- Activity lights (1 green and 1 red LED)

- Display window (LCD)

- Four line selection buttons

- Up and Down buttons

- Menu button

The UIB cable routes from a connector on the back of the user interface board to a connector on the motherboard.

NOTE: Spare user interface boards are shipped as part of the complete front panel assembly and are not spared separately. The following procedures are provided as reference only. See page 4-7 for how to replace the complete front panel assembly.
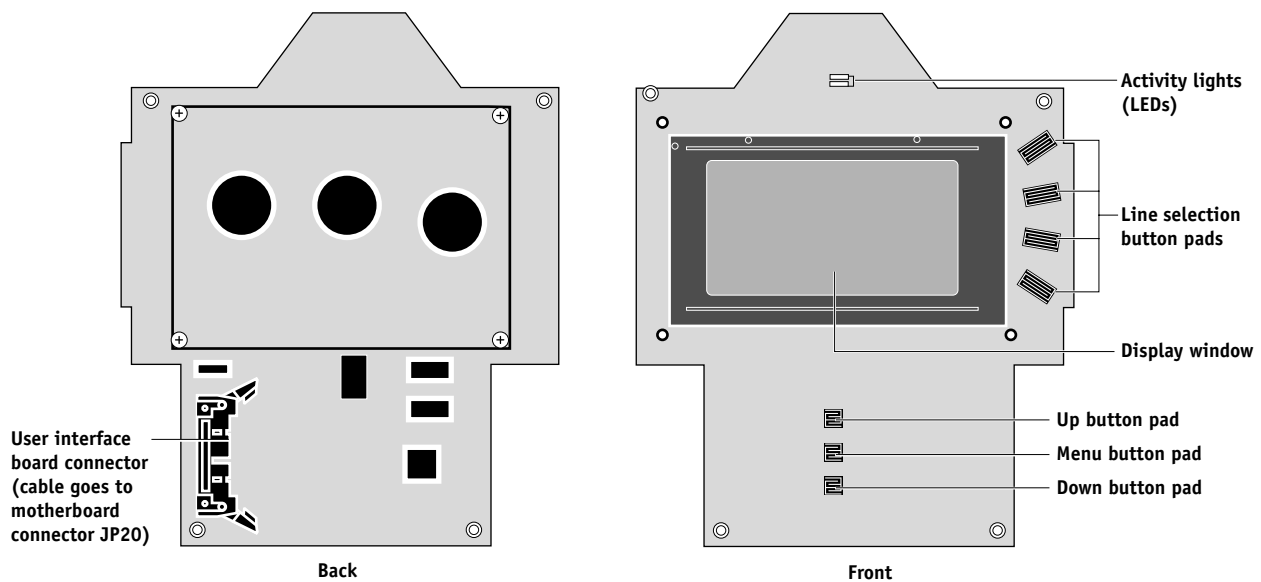
FIGURE 4-13 Diagram of the user interface board (back and front)

TO REMOVE THE USER INTERFACE BOARD FROM THE FRONT PANEL

1. **Shut down and open the Pi8500Pro (see page 4-3 and page 4-4).**

2. **Remove the front panel from the chassis (see page 4-7).**

3. **Disconnect the UIB cable from connector J3 on the user interface board.**

   Press outward on the connector levers on each side of the connector (see Figure 4-14), and then pull the connector free. Avoid pulling on the cable itself.

Connector levers
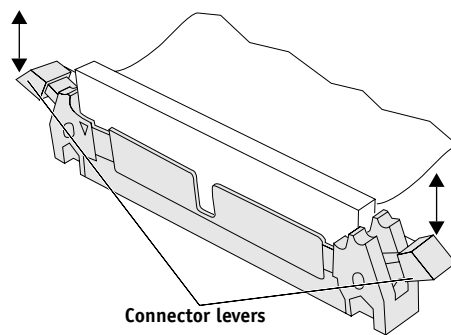
FIGURE 4-14 Detail of ribbon cable connector

4. **Push gently outward on the snap tabs that secure the user interface board to the inside of the front panel until the edges of the board are released from the tabs.**

5. **Lift up slightly on the bottom edge of the board and slide the board out from under the top guides on the front panel (see Figure 4-15).**

   Be careful not to damage the top tabs when lifting up on the user interface board.

Top guides

User interface board

Front panel

Snap tabs
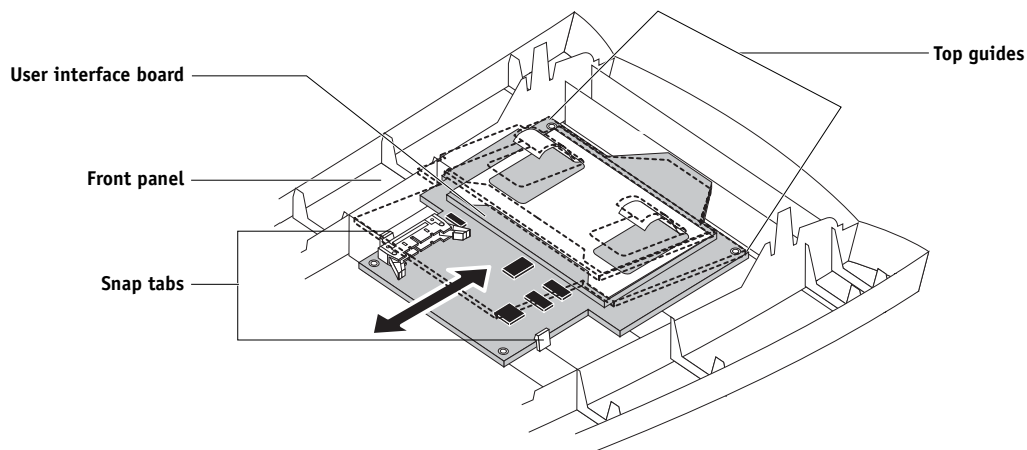
FIGURE 4-15 Removing the user interface board

6. **Place the board in an antistatic bag.**

To replace the user interface board in the front panel

1. **Position the user interface board in the front panel at an angle so that the top edge of the board fits under the top guides (see Figure 4-15).**

   The board should be positioned so that the button pads on the front of the board line up with the buttons installed in the front panel.

2. **Push the board down into the front panel until the snap tabs hook over the edges of the board.**

3. **Attach the UIB cable to connector J3 on the user interface board.**

   Make sure the connector levers close securely around the cable connector.

4. **Replace the front panel (see Figure 4-5 on page 4-8).**

5. **Reassemble the Pi8500Pro (see page 4-13) and verify its functionality (see the connection verification steps described in Figure 4-11 on page 4-15).**

Motherboard

The motherboard has one Intel Pentium III 866MHz CPU that controls the image data transferred to and from the copier interface board. The motherboard also controls HDD functions and the communication between the Pi8500Pro and external devices. The motherboard has 3 DIMM sockets. One of the sockets contains a 128MB DIMM, for a total of 128MB of memory (see Figure 4-18 on page 4-28). The motherboard also includes six 32-bit PCI (Peripheral Component Interconnect) connectors.

Removing the motherboard

The motherboard attaches to the side of the chassis above the power supply. Before you remove the motherboard, you must remove:

- Board guide retainer

- All boards installed on the motherboard

- Power supply

- All cables connected to the motherboard (these include the power cable, front fan cable, back panel fan cable, HDD ribbon cable, CD-ROM drive ribbon cable, and UIB cable)

This section also includes information on the following:

- Replacing or adding the DIMM

- Replacing the CPU

- Replacing the battery

- Jumper configuration

Follow precautions when handling components (see page xiii).

Key

 1. Keyboard/mouse connectors (not used)
 2. USB connectors (not used)
 3. Parallel port (dongle); COM ports (not used)
 4. 10/100BaseT Ethernet port
 5. Back panel fan cable connector (FAN2)
 6. Copier interface board connector (PCI1)
 7. Empty (PCI2; reserved for Token Ring option)
 8. Empty (PCI3)
 9. Empty (PCI4)
10. Empty (PCI5)
11. Empty (PCI6)
12. UIB cable connector (JP20)
13. Battery (BT1)
14. BIOS chip (U13)
15. Front fan cable connector (FAN3)
16. SIDE cable connector (CD-ROM drive)
17. PIDE cable connector (HDD)
18. DIMM socket (J2)
19. DIMM socket (J1)
20. DIMM socket (J3)
21. 20-pin power supply connector (J14)
22. CPU fan cable connector (CPU FAN/FAN1)
23. CPU, heatsink, and CPU fa
MS—Mounting holes (5 holes)
S—Snap-top standoffs (2)

NOTE: Connectors not listed above
are not used.
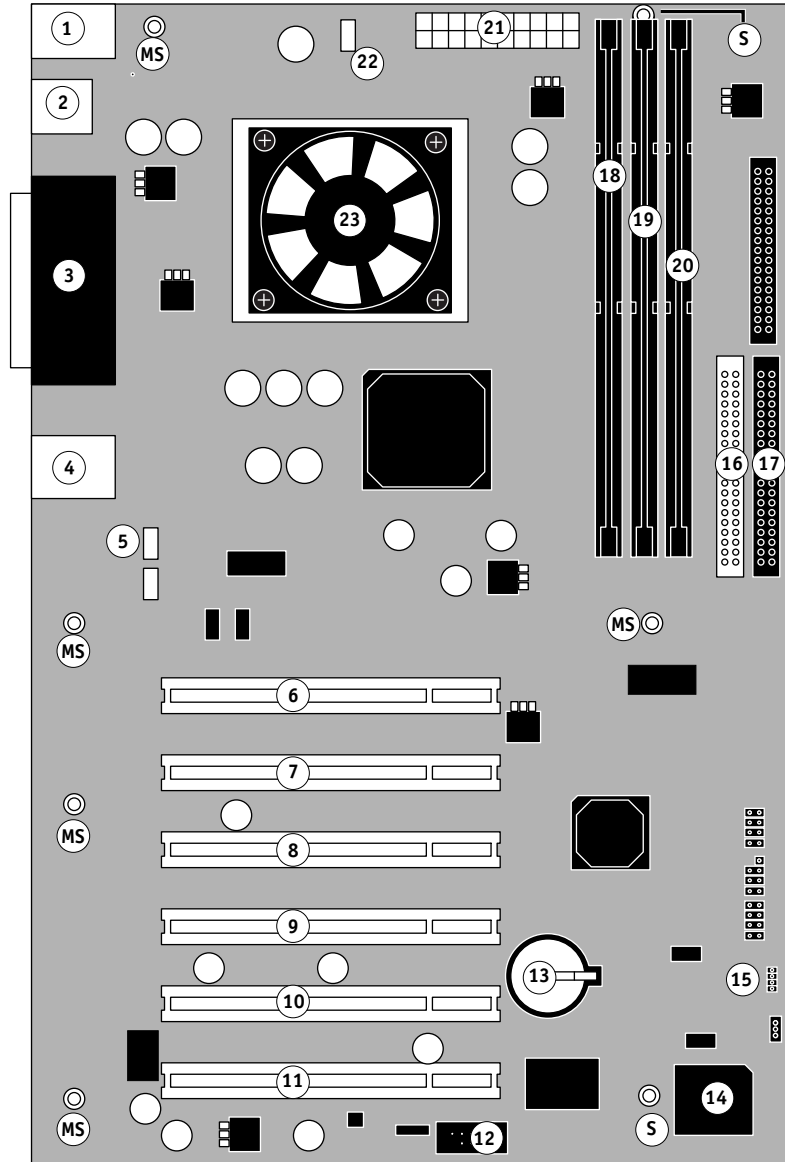
FIGURE 4-16 Diagram of the Pi8500Pro motherboard

4 Service Procedures

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1. **Shut down and open the Pi8500Pro (see page 4-3 and page 4-4).**

2. **Remove the following boards from the motherboard:**

    To remove a board, remove its mounting bracket screw, grasp the board at the front and back edge and gently pull it straight out of its connector on the motherboard. Place each board on an antistatic surface

    • Copier interface board in motherboard connector PCI1 (see page 4-18)

    You need to disconnect the 4-pin power cable from the copier interface board before you remove it from the motherboard.

    • Optional Token Ring board in motherboard connector PCI2 (if this option is present)

    Remove any other option boards that may be installed in remaining connectors on the motherboard.

3. **Remove the following cables as described below:**

    • Front fan cable from motherboard connector FAN3

    • Back panel fan cable from motherboard connector FAN2

    • Power cable from the 20-pin motherboard connector J14

    • HDD ribbon cable from motherboard connector PIDE (Primary IDE)

    • CD-ROM drive ribbon cable from the CD-ROM drive

    Leave the CD-ROM drive ribbon cable attached to the SIDE (Secondary IDE) connector on the motherboard, unless you are installing a new motherboard.

    • 4-pin power cable from the CD-ROM drive

4. **Remove the power supply (see page 4-41).**

    You need to first remove the power supply in order to remove the UIB cable from the motherboard.

5. **Remove the UIB cable from motherboard connector JP20.**

4 Motherboard

---

1. **If you are replacing the motherboard with a new motherboard, remove the following from the motherboard:**

   - DIMM (page 4-29)

   - CPU (page 4-30)

   - CD-ROM drive ribbon cable (see Figure 4-6 on page 4-10)

2. **Remove the 5 mounting screws on the motherboard (see Figure 4-16 on page 4-23 for screw locations).**

3. **Lift the edge of the motherboard opposite the back panel connectors to remove the motherboard from the chassis (see Figure 4-17 on page 4-25).**

   Two snap-top standoffs on the base of the chassis also help to hold the motherboard in place. Gently pull up on the motherboard to release it from the standoffs.

   Make sure the back panel connectors on the motherboard clear the chassis as you remove the board. Avoid handling contacts and using excessive force.
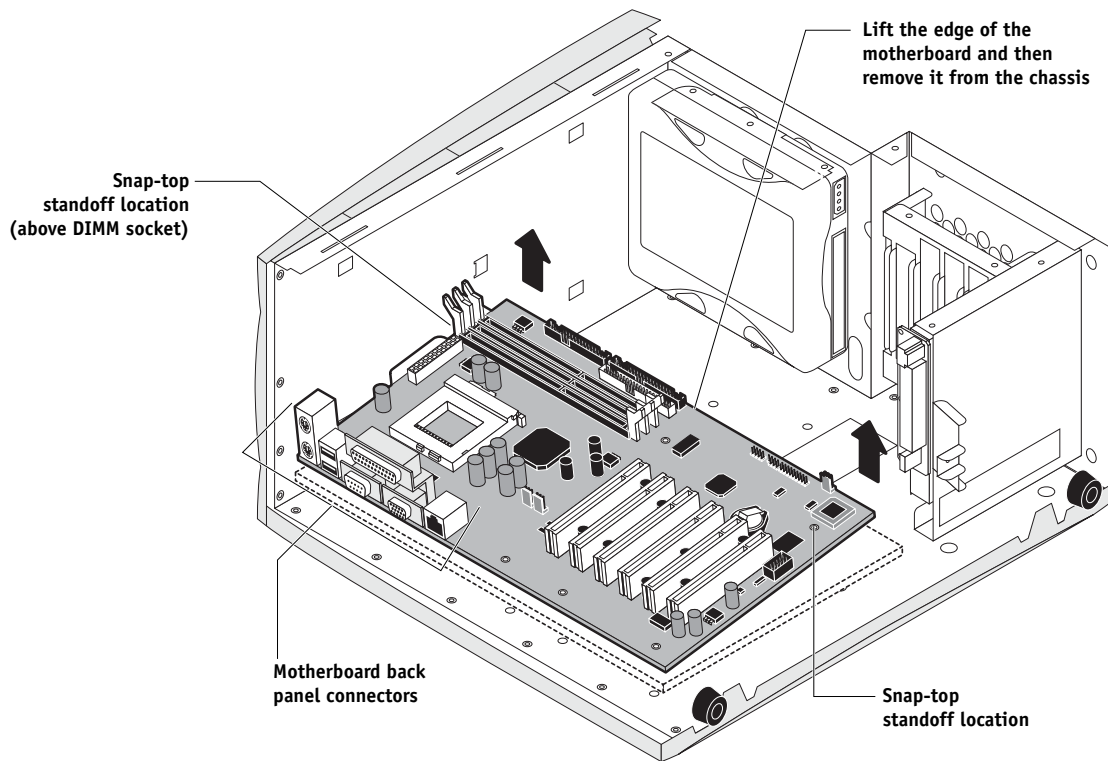
NOTE: Power supply not shown.

FIGURE 4-17 Removing the motherboard

Replacing the motherboard

Follow the procedures in this section to replace the motherboard.

If you are installing a new motherboard:

• Transfer the DIMM and CPU from the old motherboard onto the new motherboard.

TO REPLACE THE MOTHERBOARD

1. **Angle the motherboard so the back panel connectors on the motherboard fit into the cutouts in the back of the chassis (see Figure 4-17 on page 4-25).**

2. **Align the mounting holes on the motherboard with the snap-top standoffs located in the base of the chassis (see Figure 4-17 on page 4-25) and then gently push the motherboard down to secure it to the chassis.**

3. **Insert the five motherboard mounting screws that attach the motherboard to the chassis.**

4. **If you are installing a new motherboard, install the DIMM and CPU from the old motherboard. For the DIMM, see page 4-28; for the CPU, see page 4-30.**

Now you are ready to complete motherboard installation.

4 Motherboard

To replace boards and cables

1. **Replace the power supply (see page 4-42).**

2. **Replace the following cables as described:**

   - Connect the UIB cable to motherboard connector JP20.

   - Connect the 4-pin power cable to the CD-ROM drive.

   - Connect the CD-ROM drive ribbon cable from the CD-ROM drive to the SIDE (Secondary IDE) connector on the motherboard.

   - Connect the HDD ribbon cable from the HDD to motherboard connector PIDE (Primary IDE).

   NOTE: Make sure to connect the longer end of the HDD ribbon cable (with the blue connector) to the HDD. Also, make sure not to switch the CD-ROM and HDD ribbon cables. The CD-ROM ribbon cable has 40 wires; the HDD ribbon cable has 80 wires.

   - Connect the 20-pin power cable to motherboard connector J14.

   - Connect the back panel fan cable to motherboard connector FAN2.

   - Connect the front fan cable to motherboard connector FAN3.

3. **Replace the following boards in their motherboard connectors:**

   - Copier interface board in motherboard connector PCI1 (see page 4-18).

     Connect the 4-pin power cable to the copier interface board's power connector.

   - Optional Token Ring board in motherboard connector PCI2 (if this option is present).

   NOTE: When installing boards, make sure that the board connectors are properly aligned with their connectors on the motherboard.

4. **Make sure all board mounting bracket screws for boards occupying back panel slots are secured. Press down firmly on the top of the board as you insert each screw.**

   NOTE: Make sure unused slots have slot covers installed. Uncovered slots reduce the air flow and could cause the Pi8500Pro to overheat.

5. **Reassemble the Pi8500Pro (see page 4-13) and verify its functionality (see the connection verification steps described on page 4-15).**

Replacing parts on the motherboard

This section describes how to remove and replace the DIMM, CPU, and battery on the motherboard. Before performing any of these procedures, shut down and open the Pi8500Pro (see page 4-3 and page 4-4).

DIMM

The motherboard has thee DIMM sockets (J1, J2, J3). The Pi8500Pro ships with 128MB of memory installed as follows:

- J1—Empty

- J2—128MB DIMM

- J3—Empty
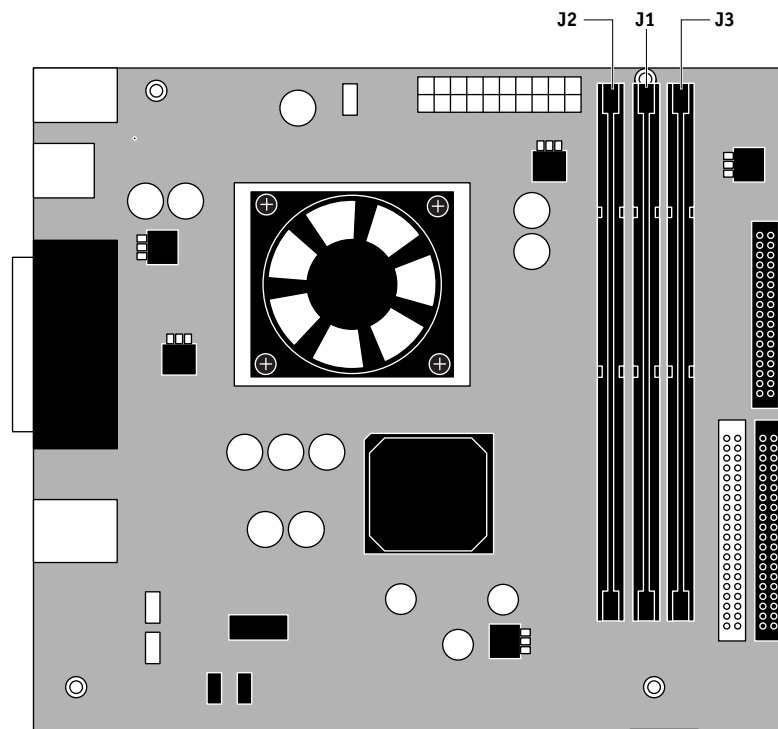
FIGURE 4-18 Motherboard DIMM sockets

Approved DIMMs are available from your service representative.

TO REPLACE A DIMM

1. **To release a DIMM, push outward on the levers on each side of the DIMM.**
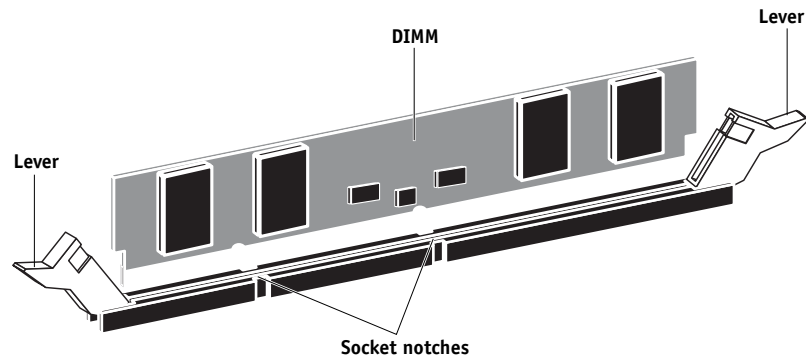
FIGURE 4-19 Releasing a DIMM

2. **Slide the DIMM straight out of the socket.**

3. **To replace a DIMM, position the DIMM in the socket and press the DIMM straight down into the socket so that the levers lock the DIMM into place.**

   NOTE: The DIMM fit in the socket only one way. The two notches on the bottom of the DIMM should line up with the notches in the socket.

   Make sure that the levers close securely around the ends of the DIMM and that each DIMM is fully seated in its socket.

4. **Reassemble the Pi8500Pro (see page 4-13) and verify its functionality (see the connection verification steps described on page 4-15).**

Motherboard CPU

The CPU is installed in a Zero Insertion Force (ZIF) socket on the motherboard. Before removing the CPU from its socket, disconnect the CPU fan cable from the motherboard and detach the CPU cooling assembly from the CPU socket. The CPU cooling assembly consists of a fan, a heatsink, and a heatsink clip.

CPU fan ——————

Heatsink clip ——————

Heatsink ——————
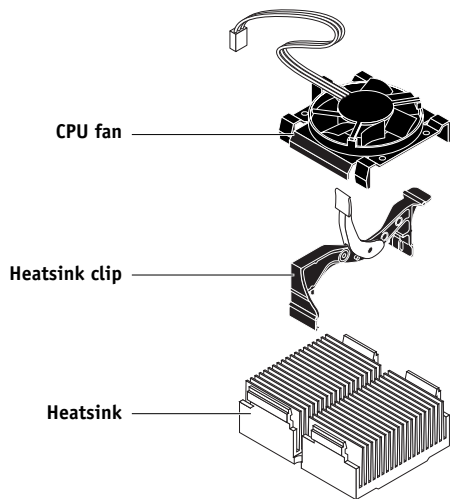
FIGURE 4-20 CPU cooling assembly

Follow standard ESD precautions while handling the motherboard and all components.

4 Motherboard

To remove a CPU

1. **Position the Pi8500Pro so that it is on its side and the components inside the chassis are facing up.**

2. **Remove the CPU fan cable from motherboard connector FAN1.**

3. **Remove the CPU cooling assembly (see Figure 4-21).**

⚠️ Be aware that both the cooling assembly and the CPU may be very hot. Also, use caution when lifting the cooling assembly off the CPU, as the thermal compound applied to the bottom of the heatsink may damage the CPU if the heatsink is removed too forcefully.
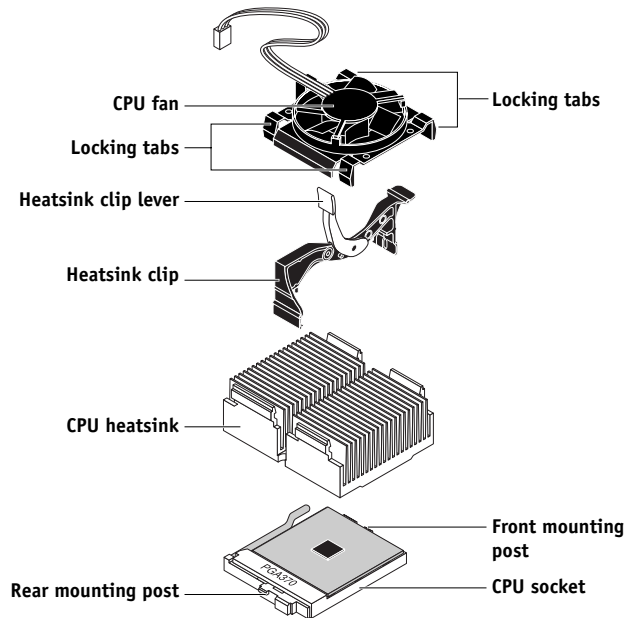
• Remove the CPU fan from the heatsink by pressing in on the locking tabs and lifting up on the fan.

• Lift the lever on the heatsink clip to relieve tension on the clip.

• Remove the clip from the rear mounting post on the CPU socket, and then remove the clip from the front mounting post.

You may need to use a flathead screwdriver to carefully bend the clip until it is free from the rear mounting post. Be careful not to damage the clip, the motherboard, the CPU, or the CPU socket when removing the heatsink clip.
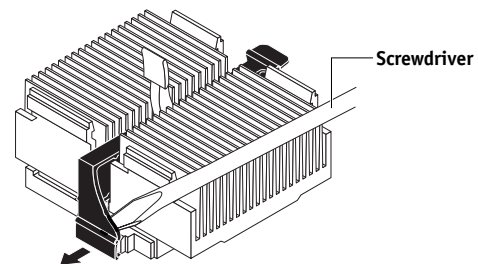
• Remove the CPU cooling assembly from the CPU socket.

FIGURE 4-21 Removing the CPU cooling assembly

4. **Lift the CPU socket lever to release the CPU from the socket (see Figure 4-22 on page 4-32).**

5. **Grasp the CPU by its edges and gently lift it from the socket.**

TO REPLACE A CPU

1. **Wipe the contact surface of the CPU with a clean, lint-free cloth to assure good contact with the new heatsink.**

    If you removed the CPU from the motherboard in order to install it on a new motherboard, make sure you completely remove any thermal compound residue on the surface of the CPU and at the base of the heatsink.

2. **Insert the CPU into the socket. Make sure you align the arrow indicating pin 1 on the CPU with pin 1 in the CPU socket (see Figure 4-22).**

3. **Lower the socket lever to secure the CPU.**
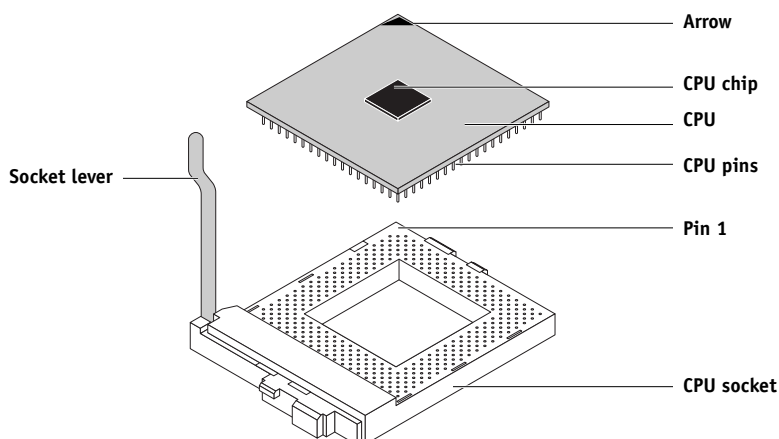
FIGURE 4-22 Replacing a CPU

4. **At the base of the heatsink, remove the protective backing (if any) covering the thermal compound.**

    NOTE: If you are moving the original CPU and heatsink to a new motherboard, first completely remove any thermal compound residue on the surface of the CPU and at the base of the heatsink, and then apply a fresh thermal compound square to the base of the heatsink. When installing the thermal compound, make sure you squeeze out any air bubbles or wrinkles. Bubbles and wrinkles reduce the heat-transfer efficiency of the cooling assembly.

5. Replace the CPU cooling assembly.

Make sure the thermal compound on the base of the heatsink completely covers the CPU chip. Incorrect installation could cause the CPU to overheat.

CPU fan

Heatsink clip lever — Tab

Heatsink clip — Pin

CPU heatsink

Notch

Step

Front mounting post

Rear mounting post — CPU socket

PGA370
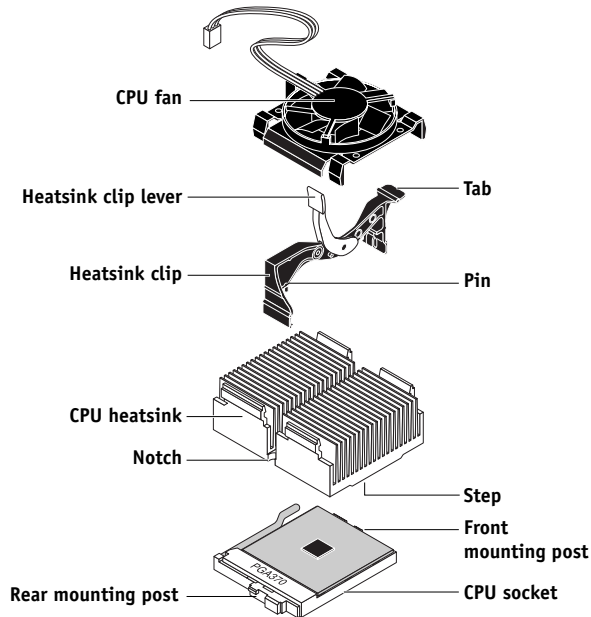
- Align the notch on the bottom of the heatsink so that it is directly over the rear mounting post on the CPU socket.
- Place the heatsink on the CPU so that the thermal compound on the heatsink step completely covers the CPU chip.
- Align the pin on the heatsink clip with the notch on the bottom of the heatsink.
- First secure the clip over the rear mounting post on the CPU socket, then secure the clip over the front mounting post by pressing down on the tab until the clip snaps into place.
- Lower the heatsink clip lever.
- Place the CPU fan on top of the heatsink and snap it into place.

6. Connect the CPU fan cable to the motherboard connector FAN1.

If you are installing a new CPU, secure the fan cable using a tie-wrap. The tie-wrap will prevent the fan cable from interfering with the CPU fan. Also, make sure the connector on the cable is securely connected to the motherboard.

7. Reassemble the Pi8500Pro (see page 4-13) and verify its functionality (see the connection verification steps described on page 4-15).

Motherboard battery

The battery on the motherboard is located at BT1. To replace it, use a 3V manganese dioxide lithium coin cell battery (Panasonic CR2032 or equivalent).

⚠ **CAUTION:** There is danger of explosion if the battery is replaced with the incorrect type. Replace only with the same type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

ACHTUNG: Es besteht Explosionsgefahr, wenn die Batterie durch eine Batterie falschen Typs ersetzt wird. Als Ersatz dürfen nur vom Hersteller empfohlene Batterien gleichen oder ähnlichen Typs verwendet werden. Verbrauchte Batterien müssen entsprechend den Anweisungen des Herstellers entsorgt werden.

ATTENTION: Il y a risque d'explosion si la pile est remplacée par un modèle qui ne convient pas. Remplacez-la uniquement par le modèle recommandé par le constructeur. Débarrassez-vous des piles usées conformément aux instructions du constructeur.

ADVARSEL!: Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering Udskiftning må kun ske med bat-teri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandøren.

VAROITUS: Paristo voi räjähtää, los se on virheellisesti asennettu. Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä Käytetty paristo valmistajan ohjeiden mukaisesti.

ADVARSEL: Eksplosjonsfare ved feilaktig skifte av batteri. Benytt samme batteritype eller en tilsvarende type anbefalt av apparatfabrikanten. Brukte batterier kasseres i henhold til fabrikantens instruksjoner.

VARNING: Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparat-tillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

TO REPLACE THE MOTHERBOARD BATTERY

1. **Locate the battery on the motherboard (see Figure 4-16 on page 4-23).**

2. **Carefully push the clip away from the battery until the socket ejects the battery.**
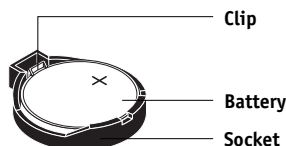
FIGURE 4-23 Motherboard battery

3. **Slide the battery out of its socket.**

4. **To insert a new battery, slide it into the socket so that the positive (+) side of the battery faces up.**

5. **Press the battery down into the socket until it snaps into place.**

   Make sure the battery is securely installed in the socket.

6. **Reassemble the Pi8500Pro (see page 4-13) and verify its functionality (see the connection verification steps described on page 4-15).**

7. **Configure the time and date in Setup.**

Motherboard jumpers

The table below shows the factory default jumper configuration. The jumper configuration should not be changed.

Jumper	Jumper area (shipping configuration)	Description
JP1	1 ● 2 ● 3 ●	• Clear CMOS and reset password Jumper is installed on pins 1 and 2 during normal operation.
JP2	1 ● 2 ●	• Flash/BIOS write protect Jumper is installed on pins 1 and 2. This setting should not be changed.
JP3	1 2 ● ●	• LAN Enable/Disable Jumper is installed on pins 1 and 2. This setting should not be changed.
JP13	1 ● 2 ● 3 ● 4 ●	• Speaker connector Jumper installed on pins 3 and 4. This setting should not be changed.
JP38	3 2 1 ● ● ●	• LAN Double EEPROM Jumper installed on pins 1 and 2. This setting should not be changed.

Fans

Inside the Pi8500Pro, a front fan and back panel fan run continuously when the system is running. You should hear the fans start as soon as you power on the Pi8500Pro. If you do not hear the fans, the most likely problem is a faulty power connection (see "To check board and cable connections" on page 4-9).

The following procedures describe how to remove and replace the front fan and back panel fan.

Front fan

The front fan circulates air inside the Pi8500Pro in order to cool integrated circuits within the system.

TO REMOVE THE FRONT FAN

1. Shut down and open the Pi8500Pro (see page 4-3 and page 4-4).

2. Remove the fan cable from motherboard connector FAN3.

3. Remove and set aside the two screws that attach the board guide to the chassis (see Figure 4-1 on page 4-2 for the location of the board guide).

4. Unhook and remove the board guide (with front fan attached) from the chassis (see Figure 4-24 on page 4-37).

5. Remove and set aside the two screws (and washers, if present) that attach the front fan to the board guide.

TO REPLACE THE FRONT FAN

1. **Position the fan on the board guide.**

    An arrow on the side of the fan indicates the airflow direction. Make sure the fan is positioned so that the arrow points inside the Pi8500Pro and the fan cable can reach motherboard connector FAN3.
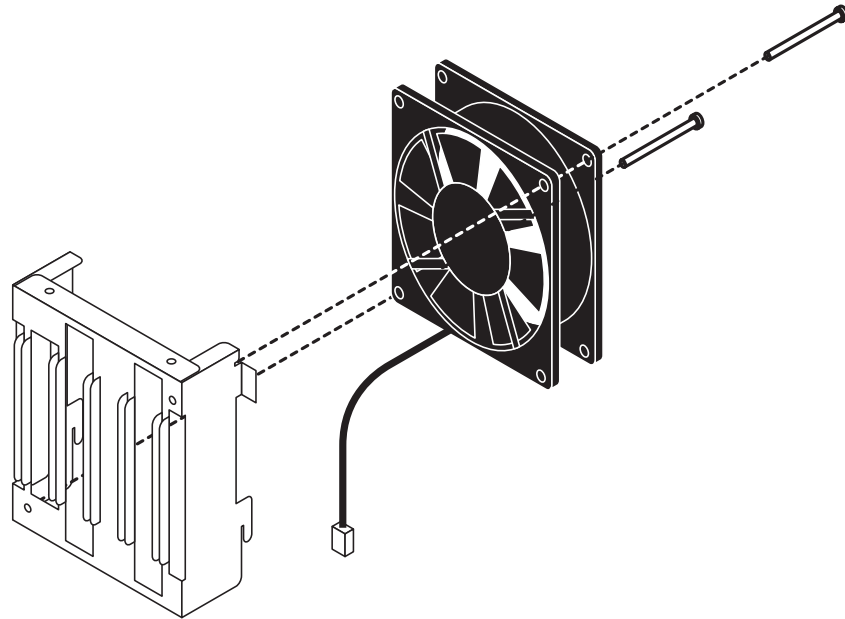
FIGURE 4-24 Replacing the front fan

2. **Install the fan on the board guide using the two screws (and washers, if present) you removed earlier.**

3. **Hook the board guide (with front fan attached) into the chassis.**

4. **Attach the board guide to the chassis using the two screws you removed earlier.**

5. **Connect the fan cable to motherboard connector FAN3.**

6. **Reassemble the Pi8500Pro (see page 4-13) and verify its functionality (see the connection verification steps described on page 4-15).**

Back panel fan

The back panel fan cools the system by blowing air from inside the system out of the back of the Pi8500Pro.

TO REMOVE THE BACK PANEL FAN

1. **Shut down and open the Pi8500Pro (see page 4-3 and page 4-4).**

2. **Remove the fan cable from motherboard connector FAN2.**

3. **Remove and set aside the four snap rivets that attach the fan to the chassis.**
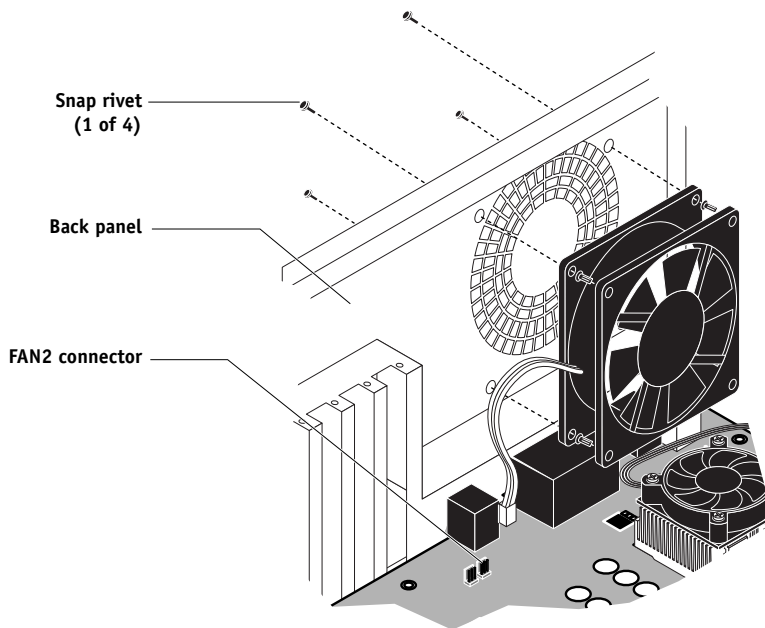
FIGURE 4-25 Removing the back panel fan

4. **Remove the fan from the chassis.**

1. **Position the fan on the inside of the back panel so that the mounting holes line up with the four holes on the chassis (see Figure 4-25 on page 4-38).**

   An arrow on the side of the fan indicates the airflow direction. Make sure the fan is positioned so that the arrow faces the bottom of the chassis and points toward the back panel. The fan should blow air out of the back of the chassis when the system is reassembled and powered on.

2. **Attach the fan to the chassis using the snap rivets you removed earlier.**

3. **Connect the fan cable to the motherboard connector FAN2 (see Figure 4-25 on page 4-38).**

4. **Reassemble the Pi8500Pro (see page 4-13) and verify its functionality (see the connection verification steps described on page 4-15).**

5. **Make sure the fan vent on the back panel is emitting air. If the fan vent is not emitting air, the fan is oriented incorrectly.**

Power supply

The fan-cooled 200-watt power supply has an automatic input voltage selection circuit. The input voltages are 90-135VAC and 180-265VAC.

Checking voltages

You can check power supply functionality using a multimeter at the following locations on the power supply:
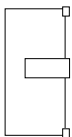
- Connector that supplies power to the motherboard

- Connector that supplies power to the HDD

- Connector that supplies power to the CD-ROM drive

- Connector that supplies power to the copier interface board

Test voltages on the connectors of the power supply cables, not on the board or component connectors. The following table describes the power connectors.

TABLE 4-1   Pi8500Pro power connectors

Connector	Pins	Color	Voltage
	1, 2, 11	Green	3.3V
	3, 5, 7, 13, 15, 16, 17	Black	GND
	18	White	-5V
	4, 6, 19, 20	Red	+5V
	10	Yellow	+12V
	12	Blue	-12V
20-pin Motherboard	14	--	not connected
	8	--	Supply Power ok (Input pin; no voltage to check)
	9	Red	+5VSB
	1	Yellow	+12V
	2	Black	common
	3	Black	common
4-pin HDD	4	Red	+5V
	1	Yellow	+12V
	2	Black	common
	3	Black	common
4-pin CD-ROM drive	4	Red	+5V
	1	Yellow	+12V
	2	Black	common
	3	Black	common
4-pin Copier interface board	4	Red	+5V

Removing and replacing the power supply

This section describes how to remove and replace the power supply.

---

1. **Shut down and open the Pi8500Pro (see page 4-3 and page 4-4).**

2. **Remove the 20-pin power cable from motherboard connector J14.**

3. **Remove the 4-pin power cable from the HDD.**

4. **Remove the 4-pin power cable from the copier interface board.**

5. **Remove the ribbon cable from the CD-ROM drive.**

6. **Remove the 4-pin power cable from the CD-ROM drive.**

   NOTE: If cables are routed through the cable clamps, make sure to carefully remove them.

7. **While supporting the power supply, remove the screw from the bottom of the chassis and the two screws from the back panel that attach the power supply to the chassis.**

   Set the screws aside so you can replace them later.
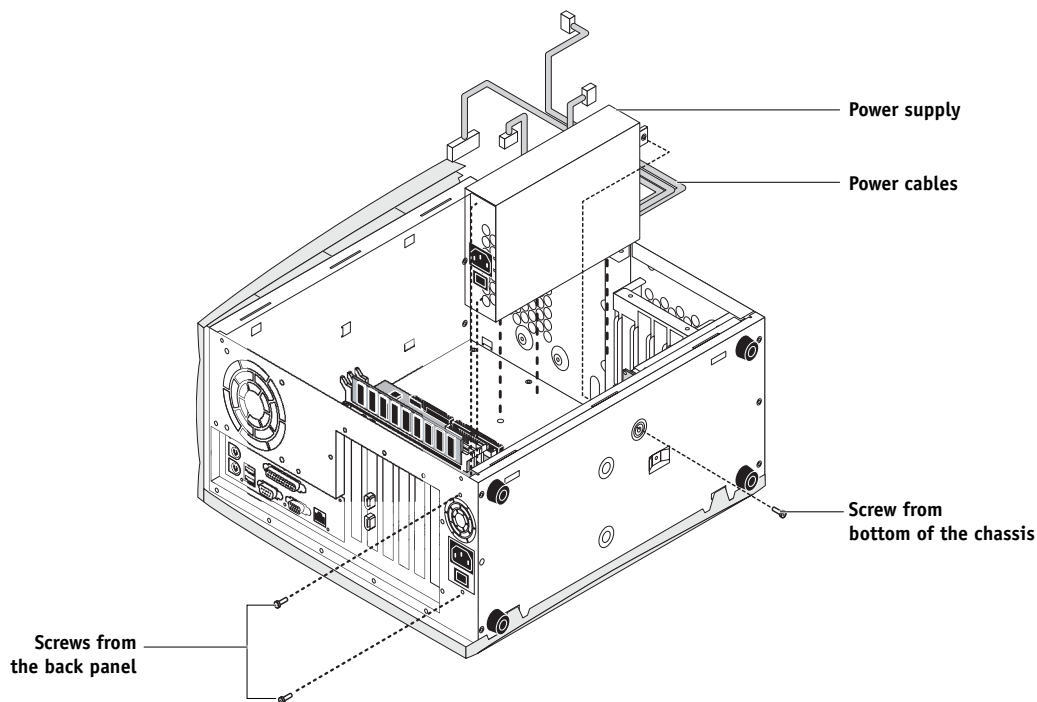
FIGURE 4-26 Removing the power supply

8. **Lift the power supply out of the chassis.**

4 Service Procedures

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1. **Position the power supply inside the lower-left corner of the chassis and align the mounting holes with the two holes on the back of the chassis and the hole on the bottom of the chassis.**

2. **While supporting the power supply, attach the power supply from the outside with two screws (larger) on the back panel and one screw (smaller) on the bottom of the chassis.**

   If you are installing a new power supply, make sure to use the screws that came with the new one to attach the power supply to the chassis.

3. **Place the power cables in the cable clamps that are attached to the inside of the chassis (see Figure 4-7 on page 4-11).**

   Route the power cables under the ribbon cables.

4. **Connect the 4-pin power cable to the CD-ROM drive.**

5. **Connect the ribbon cable to the CD-ROM drive.**

6. **Connect the 4-pin power cable to the copier interface board.**

7. **Connect the 4-pin power cable to the HDD.**

8. **Connect the 20-pin power cable to motherboard connector J14.**

9. **Reassemble the Pi8500Pro (see page 4-13) and verify its functionality (see the connection verification steps described on page 4-15).**

   If you cut any tie wraps, make sure to replace them.

Hard disk drive

The factory-installed HDD (hard disk drive) is formatted and loaded with system software, network drivers, and printer fonts. The HDD is also used to store spooled print jobs. Available space on the HDD is displayed on the Control Panel.

If you replace the HDD with a new one, you will need to install system software on the new HDD. (Spare HDDs are shipped without system software installed.)

Proper handling

Improper handling can damage the HDD. Handle the HDD with extreme care:

• Use proper ESD practices when grounding yourself and the Pi8500Pro.

• Keep magnets and magnetic-sensitive objects away from the HDD.

• Do not remove the screws on top of the HDD. Loosening these screws voids the warranty.

• Never drop, jar, bump, or put pressure on the HDD.

• Handle the HDD by its sides and avoid touching the printed circuit board.

• Allow the HDD to reach room temperature before installation.

HDD problems may be caused by the following:

• Loose or faulty connection

• Faulty ribbon cable

• Faulty hard disk drive

Motherboard

HDD—stores system software and a
backup of the system software

Back panel

Front panel
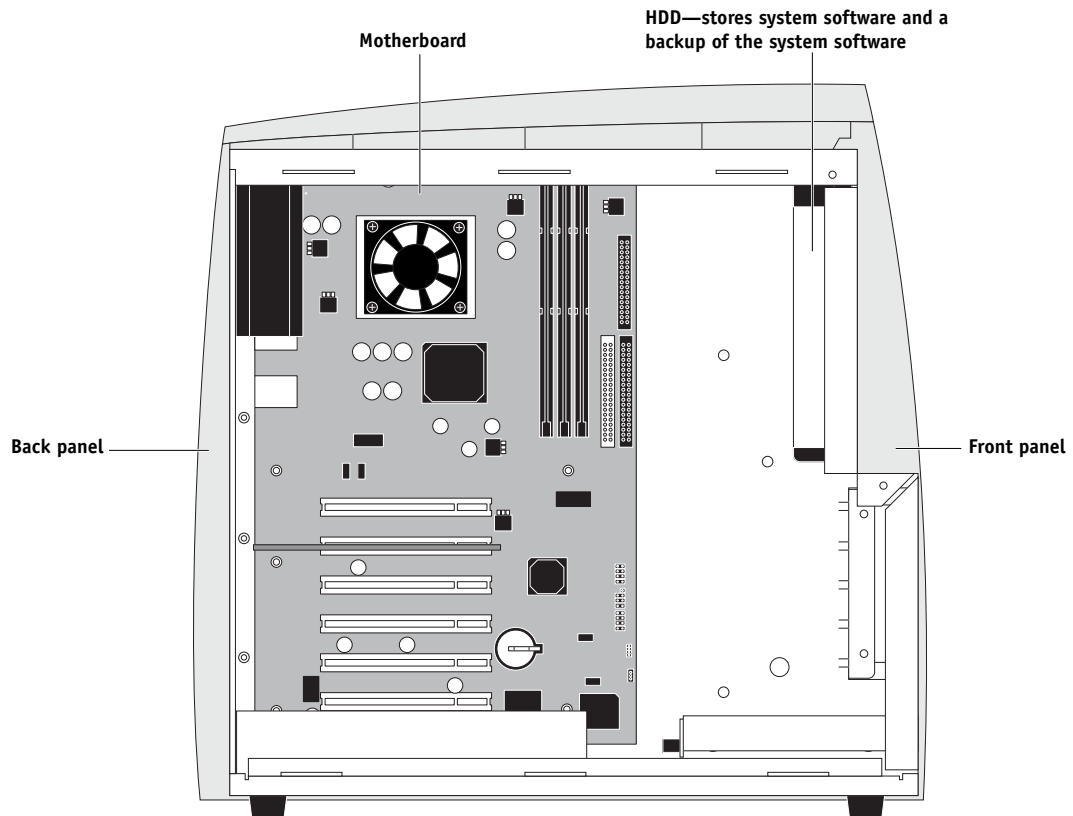
FIGURE 4-27 Pi8500Pro HDD (hard disk drive)

If you are replacing the HDD with a new one, you will need:

- The appropriate system software and documentation for the Pi8500Pro you are servicing.

- A compatible version of the user software for the networked computers that will be printing to the Pi8500Pro.

TO REMOVE THE HDD

1. **If you are removing the HDD in order to install a new drive, first give the network administrator the opportunity to print the Job Log and to save any custom simulations. Also, print the Configuration Page and the Font Lists from the Functions menu (if possible; see page 4-55 for a detailed description).**

2. **Shut down and open the Pi8500Pro (see page 4-3 and page 4-4).**

3. **Remove the front panel (see page 4-7).**

4. **Remove the 4-pin power supply cable from the HDD.**

5. **Remove the HDD ribbon cable from the HDD by pulling the connector (not the cable) straight out from the HDD.**

6. **Remove three of the four screws that attach the HDD to the chassis (see Figure 4-28).**

7. **While supporting the HDD, remove the fourth screw.**

HDD

Screw (1 of 4)
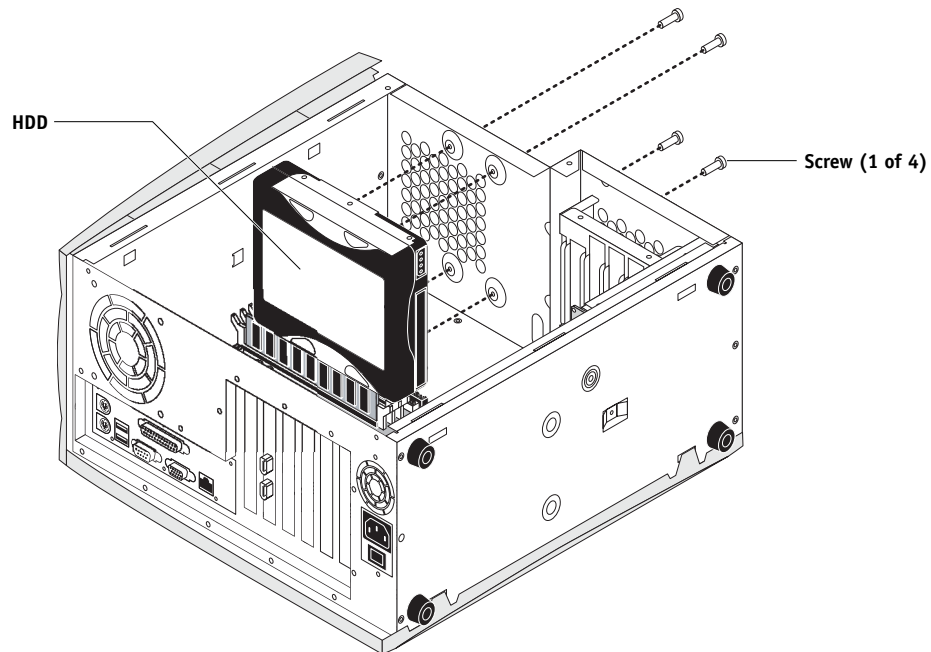
FIGURE 4-28 Removing the HDD

8. **Remove the HDD from the chassis and place it in an antistatic bag.**

Do not unscrew the screws on the HDD cover. Loosening these HDD screws will break the seal and void the HDD warranty.

Do not touch the drive with magnetic objects (such as magnetic screwdrivers), and avoid placing items such as credit cards and employee ID cards that are sensitive to magnets near the HDD.

Replacement HDDs are not shipped with any system software pre-installed. After installing the drive, you need to install the appropriate system software.

TO REPLACE THE HDD

1. **If you are installing a new HDD, unpack the drive.**

   Do not drop, jar, or bump the HDD. Do not touch the HDD with magnetic objects or place objects sensitive to magnets near the HDD.

2. **Position the HDD inside the chassis and align the mounting holes with the four holes in the chassis.**

   The HDD should be positioned as shown in Figure 4-28 on page 4-45.

3. **Once the HDD is properly aligned in the chassis, replace the screws on each side of the HDD and tighten them. (Make sure you use the same screws you removed earlier.)**

4. **Connect the HDD ribbon cable to the HDD.**

   NOTE: Make sure to connect the longer end (with the blue connector) of the HDD ribbon cable to the HDD. Also, make sure not to switch the CD-ROM and HDD ribbon cables. The CD-ROM ribbon cable has 40 wires; the HDD ribbon cable has 80 wires.

5. **Connect the 4-pin power supply cable to the HDD.**

   The connectors are keyed to fit only one way.

6. **Replace the front panel (see page 4-8).**

7. **Reassemble the Pi8500Pro (see page 4-13).**

8. **Connect the cables you removed from the back panel.**

9. **If you replaced the HDD with a new HDD, install system software (see page 4-54).**

   If a startup error appears on the Control Panel when you power on the Pi8500Pro, check the connections. If a startup error still appears, call your authorized service/support center.

10. **Verify Pi8500Pro functionality (see the connection verification steps described on page 4-15).**

CD-ROM drive

The CD-ROM drive is mounted in a bracket that attaches to the inside of the chassis. The CD-ROM drive is used to install system software onto the HDD.
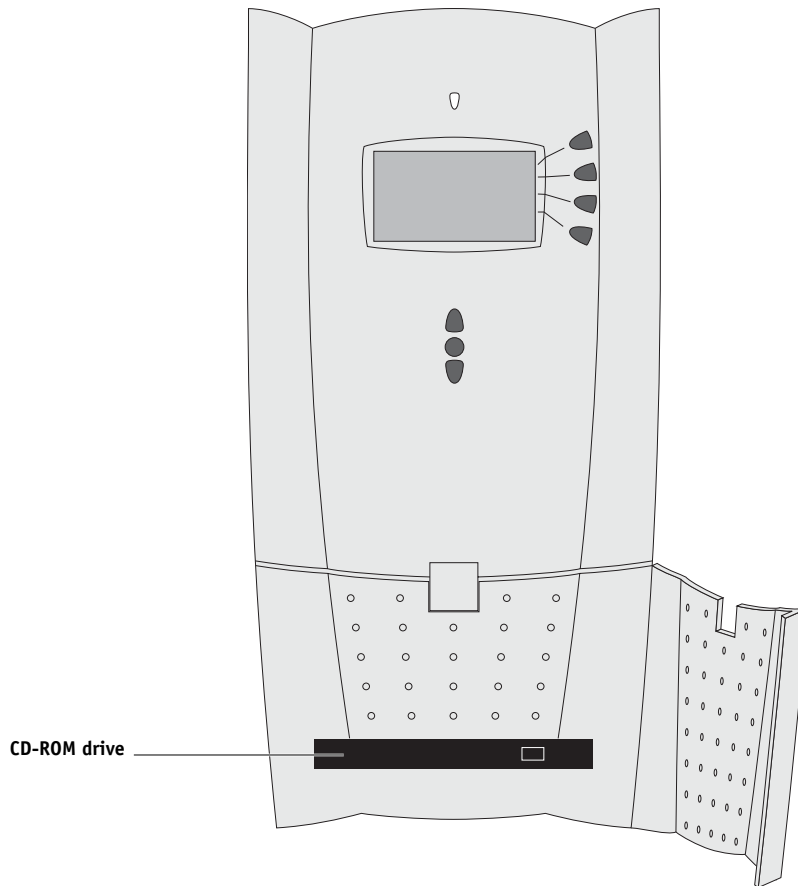
CD-ROM drive —————————

FIGURE 4-29 Pi8500Pro CD-ROM drive

TO REMOVE THE CD-ROM DRIVE

1. **Shut down and open the Pi8500Pro (see page 4-3 and page 4-4).**

2. **Remove the front panel (see page 4-7).**

3. **Remove the CD-ROM drive ribbon cable from the CD-ROM drive by pulling the connector (not the cable) straight out from the CD-ROM drive.**

4. **Remove the 4-pin power supply cable from the CD-ROM drive.**

5. **While supporting the CD-ROM drive and bracket assembly, remove the screw on the bottom of the chassis and the two screws on the front of the chassis that attach the bracket to the chassis (see Figure 4-30).**

    Set the screws aside so you can replace them later.

Bracket
(CD-ROM drive
enclosed inside)

Mounting screws
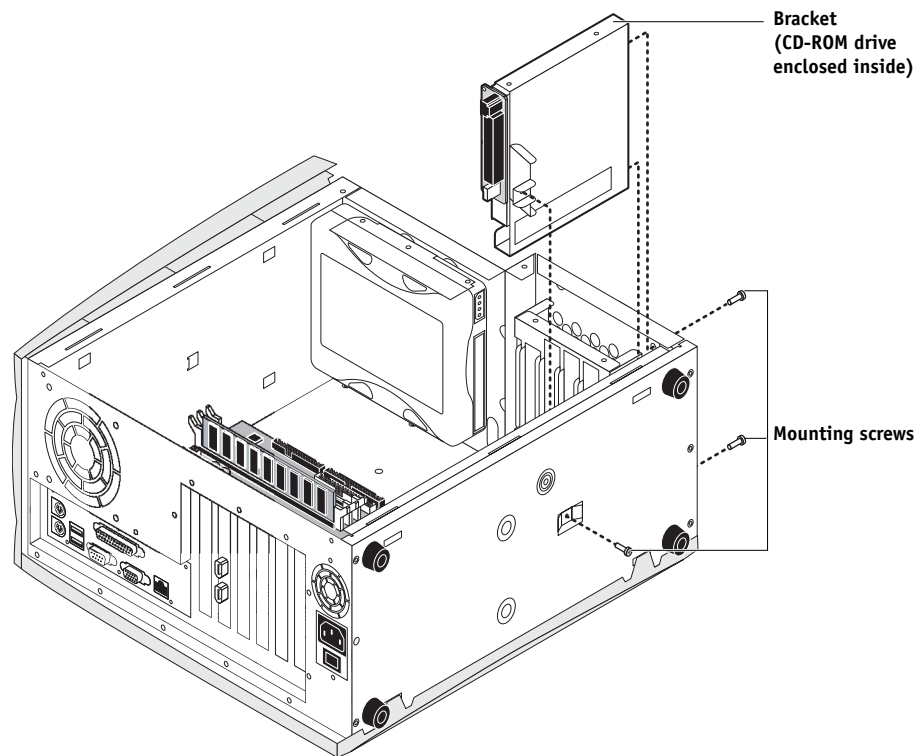
FIGURE 4-30 Removing/replacing the CD-ROM drive and bracket

6. **Lift the bracket out of the chassis.**

    Make sure not to damage any components when you remove the bracket from the chassis.

To replace the CD-ROM drive

1. **Position the bracket inside the chassis and align the mounting holes with the three holes in the chassis (two in front, one on the bottom; see Figure 4-30 on page 4-48).**

2. **Replace the three screws that attach the bracket to the chassis.**

3. **Connect the 4-pin power supply cable to the CD-ROM drive.**

4. **Connect the CD-ROM drive ribbon cable to the CD-ROM drive.**

    The connectors are keyed to fit only one way.

5. **Replace the front panel (see page 4-8).**

6. **Reassemble the Pi8500Pro (see page 4-13) and verify its functionality (see the connection verification steps described on page 4-15).**

4 Service Procedures

NOTE: Spare CD-ROM drives are shipped as a complete assembly that includes the CD-ROM drive, bracket, and connector adapter and are not spared separately. The following procedures are provided as reference only.

1. **Remove the two screws that attach the connector adapter to the CD-ROM drive, and then remove the connector adapter from the CD-ROM drive (see Figure 4-31).**

   Make sure to pull the connector adapter straight out from the CD-ROM drive. Do not twist the connector adapter while removing it.

2. **Remove the four screws that attach the CD-ROM drive to the bracket and slide the drive out the front of the bracket.**

   Make sure not to damage the EMI gasketing around the edge of the bracket as you remove the drive.
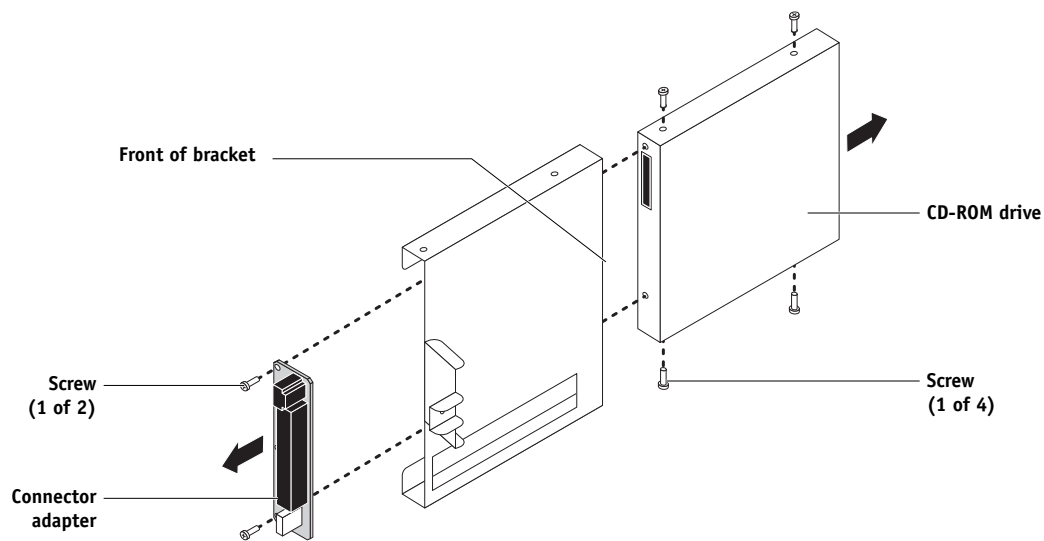
FIGURE 4-31 Removing the CD-ROM drive from the bracket

4 CD-ROM drive

To replace the CD-ROM drive in the bracket

1. **With the bracket outside the chassis, slide the replacement CD-ROM drive into the bracket (see Figure 4-31 on page 4-50).**

   Make sure not to damage the EMI gasketing around the edge of the bracket as you slide the CD-ROM drive into place.

2. **Replace the four screws that attach the CD-ROM drive to the bracket (see Figure 4-31).**

3. **Position the connector adapter over the back of the CD-ROM drive and press it into place.**

   The connector on the adapter is keyed to fit on the CD-ROM drive only one way.

4. **Replace the two screws that attach the connector adapter to the CD-ROM drive (see Figure 4-31).**

Front panel components

The front panel holds a jewel, the user interface board, and buttons. This section describes replacing the jewel and buttons on the front panel. For information on replacing the user interface board, see page 4-19.

Activity light

Line selection buttons

Up button

Menu button

Down button
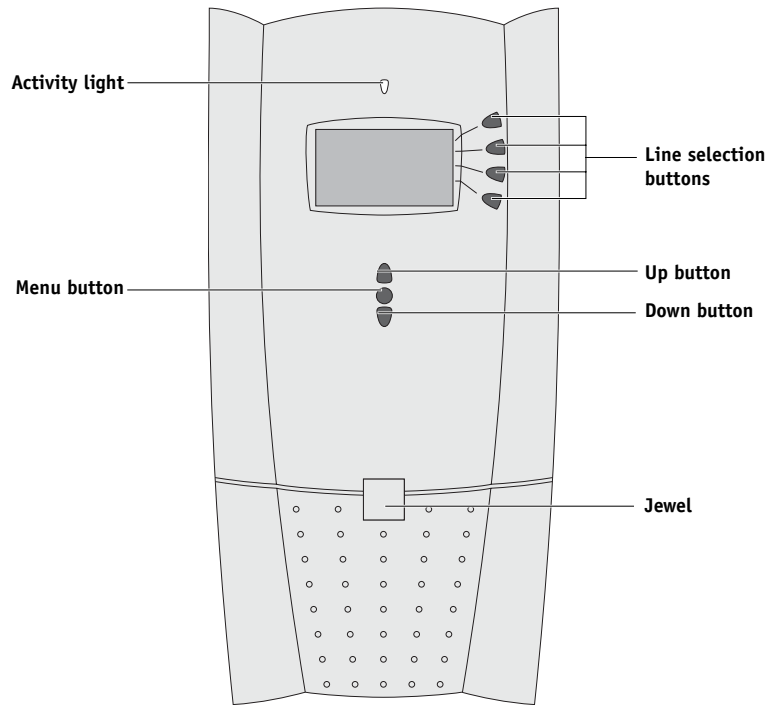
Jewel

FIGURE 4-32 Front panel jewel and buttons

Jewel

Some upgrades or product modifications may require you to replace the jewel on the front panel. The following procedure describes how to replace the jewel.

1. **Remove the front panel (see page 4-7).**

    Now you have access to the tabs on the back side of the jewel.

2. **Remove the jewel from the front panel.**

    Squeeze the tabs on the back side of the jewel while pushing it out of its slot.

3. **Insert the tabs of the new jewel into the empty slots in the front panel and press down until it snaps into place.**

    The jewel's lower tabs are larger than the upper tabs. The lower tabs fit into the lower slots.

4. **Replace the front panel (see page 4-8).**

5. **Reassemble the Pi8500Pro (see page 4-13).**

Buttons

The Control Panel buttons are located in cutouts in the front panel and are designed to fit only one way. When correctly positioned, the buttons make contact with the button pads on the front of the user interface board and provide users with manual status/control capability from the Control Panel.

1. **Remove the front panel (see page 4-7).**

2. **Remove the user interface board (see page 4-20).**

3. **Place the front panel buttons in the appropriate cutouts.**

    Notice that the buttons fit only one way in the cutouts.

4. **Replace the front panel (see page 4-8).**

5. **Reassemble the Pi8500Pro (see page 4-13) and verify its functionality (see the connection verification steps described on page 4-15).**

System software service

The Pi8500Pro ships with system software installed on the HDD. System software is also provided on a CD that can be used to update the system software to a newer version or to reinstall the current version of the system software.

This section describes how to install system software from the system software CD (see page 4-55).

Keep in mind the following when installing system software:

- **Job Log**—The list of jobs in the Job Log and any jobs in the queues are deleted. The network administrator can use Fiery Spooler to save a current list of jobs (not the actual jobs) from the Job Log.

- **Fonts**—All fonts on the HDD are deleted when you install system software. Resident fonts are reinstalled when you reinstall system software. Any customer-supplied fonts will need to be reinstalled by the network administrator using Fiery Downloader.

  To determine which additional fonts were downloaded to the Pi8500Pro, print the PS and PCL Font List before you install the system software and again after you complete the system software installation. Any fonts *not listed* after installation will need to be reinstalled. For more information, see the *Job Management Guide*.

- **Configuration**—Make sure to print a Configuration page before installing any system software (see page 3-6 for instructions). The Setup configuration will be lost when you install system software.

- **Custom simulations**—Custom simulations and custom outputs saved on the HDD are deleted when you install system software. Save a copy of any custom simulations before installing software so they can be restored later.

- **Compatibility**—When upgrading the system software, make sure the latest user software is installed onto all computers that print to the Pi8500Pro. Using incompatible versions of the system and user software may result in system problems.

Installing system software

The System Software CD includes the system software and fonts. Use the System Software CD when:

- You replace the HDD
- You update to a more recent version of the system software
- You change languages

NOTE: System software installation takes approximately 20 minutes.

TO INSTALL SYSTEM SOFTWARE

1. **If you have not done so already, first give the network administrator the opportunity to print the Job Log and to save any custom simulations. Also, print the following from the Functions menu (if possible):**

   - Configuration page—records the customer's current Setup configuration. The Setup configuration will be reset to the default configuration when system software is installed.

   - Font Lists—the PS and PCL Font lists detail the fonts currently installed on the HDD. These include the original fonts that came installed on the Pi8500Pro plus any additional fonts that the customer may have installed. All fonts are deleted when you install system software. The network administrator can use Fiery Downloader to reinstall customer-supplied fonts after system software reinstalls the original fonts. To determine which customer-supplied fonts need to be reinstalled, print the Font List before you install system software and again after you install system software. Any fonts *not listed* after installation need to be reinstalled.

2. **Insert the system software CD in the CD-ROM drive.**

   NOTE: If you installed a new HDD, power on the system using the power switch on the back panel, insert the system software CD in the CD-ROM drive, allow the system to boot, and then proceed to step 5 on page 4-56.

3. **Select Shut Down from the Functions menu (see page 4-3).**

4. **At the next screen, select Reboot System.**

   Allow the system to shut down and reboot. Routine startup diagnostics appear on the Control Panel while the system reboots.

5. **Following the startup diagnostics, the system software installation process begins immediately. The Control Panel displays the following screens:**

   1. Disk Format
   2. Base Install
   3. Platform Install
   4. Diablo Install
   5. Kernel Install

   6. Memory config update
   7. LCD Install
   8. System Install
   9. System Install, Extracting
   10. Installation is in progress

   11. Installation was successful

6. **At the message "Please remove CD," remove the system software CD, and then close the CD-ROM drive drawer.**

   The system shuts down and reboots automatically. Wait as messages appear indicating that the system is rebooting. Do not push any buttons during this time and ignore the message Press any button to enter config mode that appears on the Control Panel while the system reboots.

7. **When the Select Language screen appears, scroll to the appropriate language, and then select OK.**

   ```
   Select Language
   English


                   OK ▶ ◀───── Select
   Language Setup
   ```
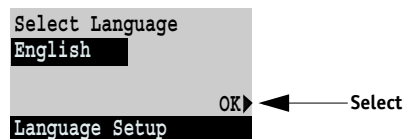
   The system restarts and the Control Panel displays the messages System booting. Please wait . . . and Restarting server.

8. **When the Setup Menu displays, configure Setup using the Configuration page you printed earlier.**

   Bypass any settings that are not included on the Configuration page if it is more appropriate for the network administrator to set them. For more information, see the *Configuration Guide.*

9. **Reinstall fonts, user software, or custom simulations that may have been deleted when you installed system software.**

Chapter 5: Troubleshooting

This chapter identifies the source of common problems that may occur with the Pi8500Pro and suggests ways of correcting them.

The Troubleshooting process

The Pi8500Pro is a server for copiers, and is generally part of a configuration like the one shown below. Problems may occur in one of three areas:

- Inside the Pi8500Pro

- In the interface between the Pi8500Pro and the copier

- In the interface between the Pi8500Pro and the workstations or computers to which it is connected

Copier

Pi8500Pro

Networked computers or workstations
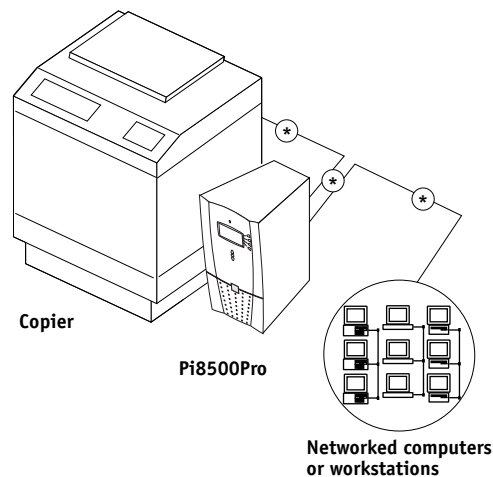
FIGURE 5-1 Troubleshooting the system

This chapter does not attempt to provide troubleshooting information for attached computers such as PCs or Mac OS computers, for copiers, or for extensive networks. You should refer problems in these areas to the appropriate service departments and network administrators.

When performing the service procedures described in this chapter, follow the precautions listed in "Precautions" on page xiii.

The terms "replace" and "replacing" are typically used throughout this manual to mean reinstallation of existing components. Install new components only when necessary. If you determine that a component you have removed is not faulty, make sure to reinstall it back in the system.

Preliminary on-site checkout

Most problems with the Pi8500Pro are caused by loose board or cable connections; therefore, this section describes the quick checks you can do to locate and fix obvious problems. This section first describes how to eliminate any problems with external connections to the back of the Pi8500Pro, and then addresses checking internal board and cable connections. It is a good idea to check external and internal connections before replacing any components.

NOTE: Your should first verify that the network is functioning, no unauthorized software or hardware is installed on the Pi8500Pro, and there are no problems with a particular print job or application. The on-site administrator can help you verify these issues.

For problems that persist after you have done the quick checks of the external and internal connections, this section goes on to provide a comprehensive list of internal and external checks that may help you fix the problem.

This section includes the following:

• "Checking external connections" on page 5-3

  This section describes the quick checks you can do to make sure the problem is not caused by a loose connection at the back of the Pi8500Pro.

• "Checking internal components" on page 5-4

  This section describes the quick checks you can do to make sure the problem is not caused by a loose board or cable connection inside the Pi8500Pro.

• "Inspecting the system" on page 5-5

  This section provides a more comprehensive checklist for checking the Pi8500Pro internally and externally. If your initial checks fail, you may want to go through this checklist before concluding that you need to replace a cable or component.

To troubleshoot problems according to specific symptoms, refer to Table 5-2 on page 5-13. Locate symptoms listed in the table to help you determine possible causes and steps to remedy them.

Checking external connections

Before removing the side and front panel of the Pi8500Pro to check internal components, first eliminate the most obvious sources of problems. Make sure that:

• All interface cables to the system are plugged into the proper connectors on the back panel of the Pi8500Pro (see Figure 5-2).

• The power cable is plugged into the wall power outlet.

• The power switch on the back panel of the Pi8500Pro is in the on position.

• The LED on the network connector is blinking to indicate network activity.

Mouse (not used)
Keyboard (note used)

USB ports (not used)

Serial port
(not used)

Monitor (not used)
Parallel port (dongle)

10/100BaseT

Empty slot

Copier interface board

Empty slot (reserved
for Token Ring option)

Empty slot

Empty slot

Empty slot

Power switch

Power connector
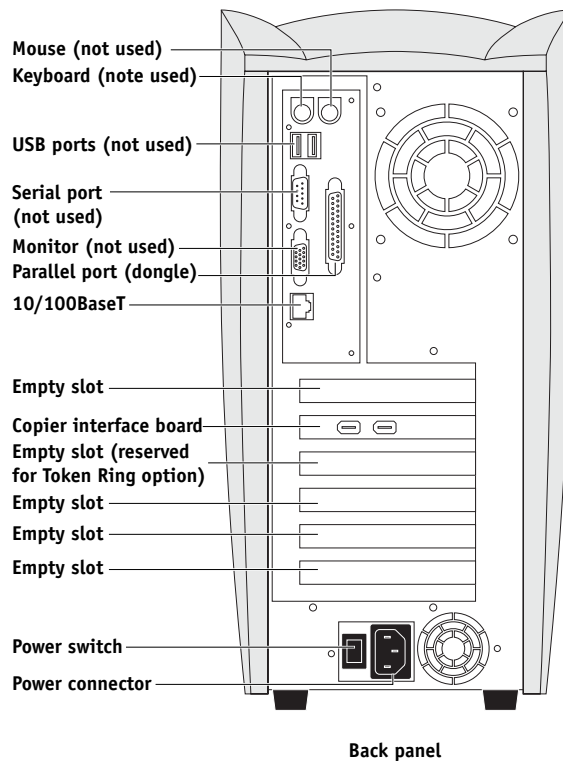
Back panel

FIGURE 5-2   Back panel of the Pi8500Pro

If all the connectors are properly in place and the power is on, proceed to the next stage of troubleshooting.

Checking internal components

To check the internal components you must remove the side and front panel of the Pi8500Pro.

⚠ Before you remove the Pi8500Pro's panels, be aware of the safety precautions you should take when handling the Pi8500Pro. Use ESD precautions when handling printed circuit boards and electronic components. To review the safety precautions, see "Precautions" on page xiii.

Use the guidelines in Chapter 4, "Service Procedures," when disassembling, checking, and reassembling the Pi8500Pro.

TO CHECK INTERNAL COMPONENTS

1. **Shut down and open the Pi8500Pro (page 4-3 and page 4-4).**

⚠ 2. **Before you touch any components inside the Pi8500Pro, attach a grounding strap to your wrist and discharge any static electricity on your body by touching a metal part of the Pi8500Pro.**

3. **Inspect the inside of the Pi8500Pro (see page 4-9).**

    Make sure no foreign materials have been dropped into the chassis.

    • Look for obviously loose boards and reseat each board securely in its connector on the motherboard.

    • Look for cables that are obviously loose. Reseat each connector firmly.

    • Make sure each connector is properly aligned with its mating connector. If the pins are offset from each other, the board affected will not function properly.

4. **Reassemble the Pi8500Pro and verify functionality (see page 4-13 and page 4-15).**
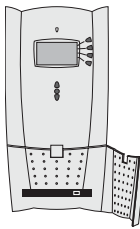
Inspecting the system

If your initial checks of the cable and board connections do not fix the problem, it may be necessary to inspect the system on a component-by-component basis, as described in Table 5-1. A comprehensive inspection allows you to verify that each hardware component is properly installed and configured, and helps you avoid replacing expensive components unnecessarily.
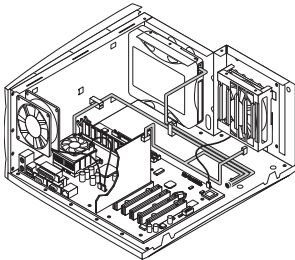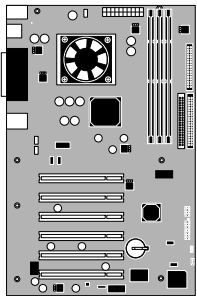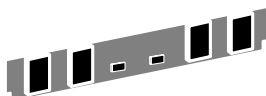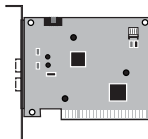
If the system you are servicing does not meet a condition listed in Table 5-1 below and it is not obvious what action(s) you should take to fix the problem (for example, if the system hangs before reaching Idle), locate the behavior in Table 5-2 on page 5-13 and perform the suggested action(s) given for the condition.

TABLE 5-1   Verifying the system

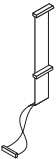| Conditions to verify	Part and additional page references
When problem occurs, verify that: • Power switch is on • Power cable is connected properly into the power outlet • Chassis fans are operating • Network link activity LED on RJ-45 connector is blinking • All external cables required are present, in correct connectors, well-seated • Cables, cable connectors, and mating connectors appear undamaged	Back panel external connectors, chassis fans, and power switch, page 5-3
If problem occurs at power up or reboot, verify that: • System LED on the Control Panel lights • Display window lights up and boot up messages display • No error messages or system hangs occur before reaching Idle • CD-ROM drive is present and no disk is in the drive • CD-ROM LED blinks briefly • CD-ROM tray can be opened and closed • After the system reaches Idle, the Control Panel buttons work	Front panel, page 4-7; CD-ROM drive, page 4-47
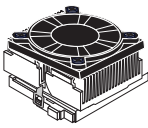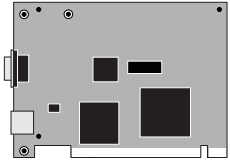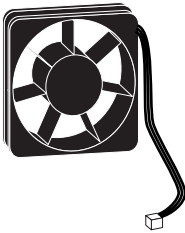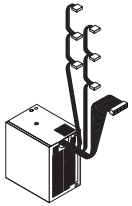
5 Troubleshooting

TABLE 5-1   Verifying the system

Conditions to verify	Part and additional page references

• All replaceable parts are:
  • Present
  • Properly aligned
  • Installed securely
  • Installed on the appropriate site
  • The correct part for the system
  • Properly configured, if configurable (such as HDD jumper)
  • Appear undamaged
• Chassis and contents have not been tampered with (no unauthorized additions or changes have been made)
• Chassis does not contain any foreign objects
	Chassis

• Motherboard, including components and traces, appears undamaged and no foreign objects are evident • Each CPU required is present, installed in the correct connector, well-seated, and appears undamaged • Each CPU cooling unit is well-aligned and firmly attached • Each fan required (including fan cable) is well-positioned (not upside down), installed in the correct connector, and appears undamaged • Boards required on the motherboard are present, well-seated, and in the correct slots • Each DIMM is well-seated • Battery is installed	Motherboard, page 4-22
• DIMM is well-seated • DIMM connector is not oxidized	DIMM for Pi8500Pro, page 4-28
Each board required is: • Present • Installed in the correct slot • Well-seated • Appears undamaged Required cables (if applicable) are: • Present • Firmly connected in the correct connectors • Appear undamaged	Copier interface board, page 4-17
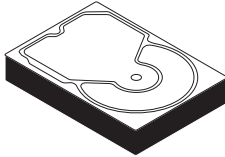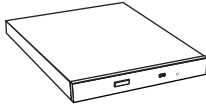
TABLE 5-1   Verifying the system

Conditions to verify	Part and additional page references
CPU is: • Present • Well-seated • Appears undamaged The CPU cooling unit is: • Well-aligned • Firmly attached	CPU with cooling assembly, page 4-30
If included in the system, the required board is: • Present • Installed in the correct slot • Well-seated • Appears undamaged The network administrator can verify that the system is: • Installed on a working network • Configured appropriately in Network Setup	Token Ring; see document included with optional kit
Each fan is: • Properly positioned (not backwards) • Installed in the correct connector • Fan, fan cable, cable connector, and mating connector appear undamaged	Front fan, page 4-36; Back panel fan, page 4-38
The power supply required is: • Present • Correctly installed • Appears undamaged Cable connectors are: • Firmly connected • Appear undamaged • Installed in the correct devices	Power supply, page 4-39
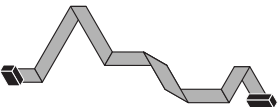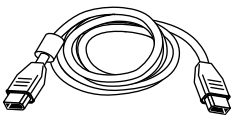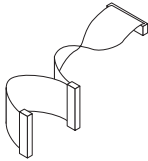
5 Troubleshooting

TABLE 5-1   Verifying the system

Conditions to verify	Part and additional page references
The HDD required is: • Present • Correctly installed • Appears undamaged • Jumpered as the primary master according to label HDD ribbon cable is: • Present • Firmly connected in the motherboard's PIDE (Primary IDE) connector • Appears undamaged	Hard disk drive (HDD), page 4-43
The CD-ROM drive required is: • Present • Correctly installed • Appears undamaged • CD-ROM drive ribbon cable is connected to motherboard SIDE (Secondary IDE connector) • Activity LED lights on power up	CD-ROM drive, page 4-47

TABLE 5-1 Verifying the system

Conditions to verify	Part and additional page references
Each cable required: • Is present • Is installed in the correct connector • Is well-seated • Appears undamaged (including connectors)	UIB cable, page 4-10 HDD ribbon cable, page 4-10 Copier interface cable, page 3-3 CD-ROM drive ribbon cable, page 4-10 Power cable, page 2-7

Normal startup sequence

When you power on or reboot the Pi8500Pro, the system runs the following startup routine on the Control Panel. The routine takes approximately 2–5 minutes to reach the Idle screen. If the system hangs or data is missing during the startup sequence, note the screen displayed and then check Figure 5-3 on page 5-11 for the possible problems and suggested actions.

Code in motherboard BIOS tests, initializes, and configures areas on the motherboard.

System software on the HDD completes startup process

Power on or Reboot

Backlighting

Version of UIB firmware is displayed

xx.xx.xx

®
Electronics for Imaging, Inc.
fiery

EGA/VGA Adapter found

Testing Memory

Starting DMA

Initializing DMA Controller

Initializing Interrupt Controller

Internal Hardware Testing

Configuring Floppy Drives

Configuring IDE Drives

Booting ....

Press any key to enter config mode

System booting. Please wait...

System Message

Please wait...

Server Name
Please wait...

17244MB   X.0
Info

Server Name
Idle

17244MB   X.0
Info

FIGURE 5-3   Normal startup sequence

Error messages and conditions

To address specific error messages or conditions, refer to Table 5-2 on page 5-13. Use the table to locate the problem or symptom you want to fix, read about the possible causes, and then perform the suggested actions to solve the problem.

If replacing a component does not correct the problem, make sure you install the old component back in the Pi8500Pro.
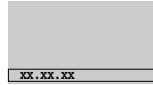
T ABLE 5-2   Pi8500Pro error messages and conditions

Symptom	Possible cause	Suggested action
Beep codes		
5 beeps at startup (2 beeps followed a few seconds later by 3 more beeps)	The first two beeps indicate that the CMOS settings were lost due to a dead battery. The three beeps that follow indicate that the system has restored the settings during startup.	**You may have to replace the motherboard battery.**

N OTE: Any other multi-beep pattern may indicate a hardware failure on the motherboard. Before replacing any components, first check the items in Table 5-1, "Verifying the system," on page 5-5.

Symptom	Possible cause	Suggested action
Startup		
Pi8500Pro does not start up, or the Control Panel is not backlit.	The Pi8500Pro is powered off.	**Make sure the power switch on the back of the Pi8500Pro is in the on position.**
	Possibly one of the following: • Power cable is not plugged into the power connector on the Pi8500Pro back panel or to the copier's internal power connector • Faulty power supply (power supply may not be supplying power to the motherboard) • Faulty motherboard (motherboard power plane may not be supplying power to components) • Faulty user interface board	**12. Check again all cables and connections.** **13. Check power to the CD-ROM drive.** If the LEDs are lit during startup and you are able to eject the CD-ROM drive tray, then the drives are receiving power from the power supply. **14. Listen for the power supply fan and feel for air at the back of the unit where the power supply is located.** If you do not feel air from the power supply fan and the drives are not receiving power, you may have a faulty power supply which you will need to replace (see page 4-41). **15. Check the fan vent on the back panel to make sure air is coming out the back of the system.** If the air is not coming out the back and the drives are not receiving power, the motherboard is faulty and the motherboard will need to be replaced (see page 4-22). **16. If you have verified that the power supply and the motherboard are functioning properly, you may need to replace the front panel containing the user interface board (see page 4-7).**
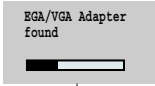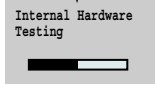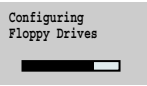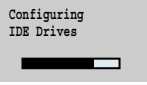
TABLE 5-2 Pi8500Pro error messages and conditions (Continued)

Symptom	Possible cause	Suggested action
Startup (cont.)		
Control Panel is lit but discolored.	Possibly one of the following: • User interface board cable or connections are faulty • User interface board is faulty • CPU connection is loose • CPU is faulty • Motherboard is faulty	1. **Check again the user interface board cable and connections. If the cable and connections are good and the problem persists, replace the front panel assembly containing the user interface board (see page 4-7).** 2. **If the problem persists, verify CPU and CPU fan connection. If the problem persists, you may need to replace the CPU (see page 4-30).** 3. **If the problem persists, you may need to replace the motherboard (see page 4-22).**
Control Panel is lit but no text appears.	User interface board is faulty.	**Replace the front panel assembly containing the user interface board (see page 4-7).**
System hangs at screen (the version string at the base of the screen is not displayed).	If the system hangs with the version string not displayed, the code resident on the user interface board has most likely been corrupted.	**Replace the front panel assembly containing the user interface board (see page 4-7).**
System hangs at screen, and/or the system beeps multiple times (more than two short beeps).	Possibly one of the following: • Missing or faulty DIMM • Faulty BIOS	1. **Check again all cables and connections.** 2. **If the problem persists, check for missing or faulty DIMM and reseat the DIMM to remove any oxidation on the connector (see page 4-28).** 3. **If the problem persists, you may need to replace the BIOS chip on the motherboard (see page 4-22).**
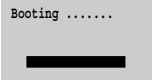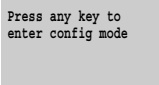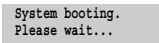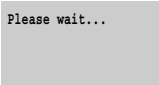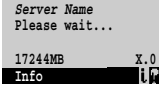
TABLE 5-2 Pi8500Pro error messages and conditions (Continued)

Symptom	Possible cause	Suggested action
Startup (cont.)		

<table>
<tr>
<td>

```
EGA/VGA Adapter
found
```

```
Internal Hardware
Testing
```

System hangs at screen. Includes the following screens:

- Testing Memory
- Starting DMA
- Initializing DMA Controller
- Initializing Interrupt Controller

</td>
<td>Master/slave mode setting conflict</td>
<td>

1. **Check that the HDD is set to master mode.**

   A label located on the HDD provides configuration information for setting the mode. If the HDD does not have a label you may need to contact your service support center for more information. Each HDD is configured correctly at the factory and should not be changed.

2. **Check that the HDD ribbon cable is connected to the motherboard PIDE (Primary IDE) connector.**

3. **Check that the CD-ROM ribbon cable is connected to the motherboard SIDE (Secondary IDE) connector.**

4. **If the problem persists, replace the motherboard (see page 4-22).**

</td>
</tr>
<tr>
<td>

```
Configuring
Floppy Drives
```

```
Configuring
IDE Drives
```

System hangs at screen

</td>
<td>

Possibly one of the following:

- Cable connections to the CD-ROM drive are loose or ribbon cable is faulty
- CD-ROM is faulty

</td>
<td>

1. **Check again all cables and connections.**

2. **Check for a faulty CD-ROM drive. If the drive is faulty, replace it (see page 4-48).**

   If the LED is lit during startup and you are able to eject the CD-ROM drive tray, then the drive is functioning.

</td>
</tr>
</table>

TABLE 5-2 Pi8500Pro error messages and conditions (Continued)

Symptom	Possible cause	Suggested action
Startup (cont.)		
`Booting .......` ▬▬▬ System hangs at screen	Possibly one of the following: • Corrupt system software • Faulty HDD	1. **Check again all cables and connections.** 2. **If the problem persists, reinstall system software (see page 4-54).** Corrupt system software may cause the system to hang at this screen. 3. **If the problem still persists, replace the HDD (see page 4-45).** If replacing the HDD does not correct the problem, make sure you install the old HDD back in the Pi8500Pro.
`Press any key to enter config mode` `System booting. Please wait...` `System Message` `Please wait...` `Server Name Please wait...` `17244MB     X.0` `Info` System hangs at any of these screens	Possibly one of the following: • Corrupt system software • Faulty HDD • Faulty motherboard	4. **Check again all cables and connections.** 5. **If the problem persists, reinstall system software (see page 4-54).** Corrupt system software may cause the system to hang at this screen. 6. **If the problem still persists, replace the HDD (see page 4-45).** If replacing the HDD does not correct the problem, install the old HDD back in the system. 7. **If the problem persists, verify CPU and CPU fan connection. If the problem persists, you may need to replace the CPU (see page 4-30).** 8. **If the problem still persists, you may need to replace the motherboard (see page 4-22).** If replacing the motherboard does not correct the problem, make sure you install the old motherboard back in the Pi8500Pro.

TABLE 5-2   Pi8500Pro error messages and conditions (Continued)

Symptom	Possible cause	Suggested action
Control Panel Messages		
Check power & cable appears on the Control Panel	Possibly one of the following: • The copier is not ready to print. • Problem with the connection between the Pi8500Pro and the copier.	1. Make sure the copier is powered on and ready to print. 2. Check again that the copier interface cable is present and properly connected to the Pi8500Pro and the copier (see page 3-3). 3. If the problem persists, power off/on the copier and the Pi8500Pro, waiting 1 minute after the Pi8500Pro reaches Idle before you power on the copier. 4. If the problem persists, replace the copier interface cable (see page 3-3). 5. If the problem persists, replace the copier interface board (see page 4-17). 6. If the problem persists, you may need to service the copier.
CD-ROM		
CD-ROM is not responding, cannot be located, or the busy LED on the drive remains lit.	Possibly one of the following: • A CD is stuck in the CD-ROM drive • Cable connections to the CD-ROM drive are loose or ribbon cable is faulty • CD-ROM is faulty • Motherboard is faulty	1. Insert a paper clip into the mechanical pin hole on the CD-ROM drive to force the drive tray to open. 2. If the problem persists, check the cable connections to the CD-ROM (see page 4-10). 3. Check CD-ROM ribbon cable connections to the motherboard. 4. If the problem persists, you may need to replace the CD-ROM (see page 4-47). 5. If the problem persists, you may need to replace the motherboard (see page 4-22).
System performance		
System performs slowly and/or hangs periodically.	Possibly one of the following: • Board or cable connections are loose or faulty • System software is corrupted • CPU is overheated or faulty • Motherboard is faulty	1. Check again all cables and connections. 2. Make sure CPU is firmly seated in its socket and that the fan cable is connected to the motherboard. 3. If the problem persists, reinstall system software (see page 4-54). 4. If the problem persists, you may need to replace the motherboard (see page 4-22).

TABLE 5-2   Pi8500Pro error messages and conditions (Continued)

Symptom	Possible cause	Suggested action
Network		

Keep in mind the following if you suspect a network problem:

- If the Pi8500Pro does not appear in the list of printers on the network, there may be another device on the network with the same Ethernet hardware address.

- There may be conflicting network settings in Setup and on the customer's workstation

- Printing problems may be caused by inappropriate Setup options

- Application-specific printing errors may be caused by missing or incorrectly placed printer description files

- System software may be corrupted

See the *Configuration Guide* for additional information.

Symptom	Possible cause	Suggested action
Unable to connect to the network, or the green LED on the 10/100BaseT connector is not lit.	Possibly one of the following: • Network cable or connection is faulty • Network is faulty • System software is corrupted • Ethernet interface on the Pi8500Pro motherboard is faulty	**1. If the green LED on the 10/100BaseT connector is not lit on the Pi8500Pro back panel, check the cable connection to the back panel and the network. Make sure the cable is the correct type.** **2. If the network cable is the correct type and is properly connected to the back of the Pi8500Pro, connect a new network cable to the back of the Pi8500Pro.** **3. If the problem persists, have the network administrator check Network Setup.** **4. If the problem persists, make sure that the network administrator has checked other devices on the network.** If other devices are not functioning, there could be a problem with the network. **5. If the problem persists, reinstall system software (see page 4-55).** Corrupt system software may cause the system to hang. **6. If the rest of the network is functioning properly and the problem persists, replace the motherboard (see page 4-22).**

TABLE 5-2   Pi8500Pro error messages and conditions (Continued)

Symptom	Possible cause	Suggested action
Network (cont.)		
System starts up slowly then displays one or more DHCP error messages on the Control Panel.	Possibly one of the following: • Network cable or connection is faulty • Network is faulty • System searches for a nonexistent DHCP server because DHCP is enabled by default on the Pi8500Pro, but the customer's network is not using DHCP. • Ethernet interface on the Pi8500Pro motherboard is faulty • System software is corrupted	1. **If the green LED on the 10/100BaseT connector is not lit on the Pi8500Pro back panel, check the cable connection to the back panel and the network. Make sure the cable is the correct type.** 2. **If the network cable is the correct type and is properly connected to the back of the Pi8500Pro, connect a new network cable to the back of the Pi8500Pro.** 3. **If the problem persists, have the network administrator change the default in Pi8500Pro Network Setup.** 4. **If the problem persists, make sure that the network administrator has checked other devices on the network.** If other devices are not functioning, there could be a problem with the network. 5. **If the problem persists, reinstall system software (see page 4-55).** Corrupt system software may cause the system to hang. 6. **If the rest of the network is functioning properly and the problem persists, replace the motherboard (see page 4-22).**

TABLE 5-2   Pi8500Pro error messages and conditions (Continued)

Symptom	Possible cause	Suggested action
Printing		
NOTE: Intermittent print quality problems are difficult to trace. Before you try to troubleshoot print quality problems, print a test page to make sure that the copier itself does not need servicing or adjusting.		
Test Page fails to print.	The copier is not ready to print.	**Make sure the copier is powered on and ready to print.**
	There is a problem with the connection between the Pi8500Pro and the copier.	**1. Check again that the copier interface cable is present and properly connected to the Pi8500Pro and the copier (see page 3-3).**
		2. If the problem persists, power off/on the copier and the Pi8500Pro, waiting 1 minute after the Pi8500Pro reaches Idle before you power on the copier.
		3. If the problem persists, replace the copier interface cable (see page 3-3).
		4. If the problem persists, replace the copier interface board (see page 4-17).
		5. If the problem persists, you may need to service the copier.
Pi8500Pro appears on the list of printers on the customer's workstation, but certain jobs do not print.	A PostScript error.	**Make sure Print to PostScript Error in Setup is set to Yes. Check for error messages on the Pi8500Pro output.**
	An application problem.	**1. Try printing a job from a different application to determine if the problem is associated with a particular application.**
		2. Make sure the connection between the Pi8500Pro and the workstation is working by downloading a test page from the workstation, or by printing a simple file such as a text file.
		3. Resend the problem file.

TABLE 5-2   Pi8500Pro error messages and conditions (Continued)

Symptom	Possible cause	Suggested action
Printing (cont.)		
A print job stalls or stops after one or a few pages.	Possibly one of the following: • A PostScript or application error • System software is corrupted	**1. Cancel the Pi8500Pro print job.** **2. If this fails to clear the problem, reboot the Pi8500Pro.** **3. If the problem persists, select Clear Server from the Run Setup menu on the Control Panel.** **4. Set Print Cover Page to Yes and re-send the problem job; The Cover Page will indicate PS Error.** You can also double click the problem job in the Command WorkStation window to get more information on the postscript error. **5. If the problem persists, reinstall system software (see page 4-55).** Corrupt system software may cause the system to hang at this screen.
	Incorrect or faulty DIMM or faulty DIMM connection.	**1. Power off the Pi8500Pro; reseat the DIMM to remove any oxidation on the connector (see page 4-28).** **2. Verify memory amount on the Configuration Page.** **3. If the problem persists after replacing the DIMM, you may need to replace the motherboard (see page 4-22).**
Print quality is poor.	Possibly one of the following: • A file or application problem. • A missing or outdated printer description file. • The application cannot find the appropriate printer description file.	**1. Print a Pi8500Pro Test Page (see page 5-24).** **2. If the quality of the Pi8500Pro Test Page is good, the error condition may be caused by a file or an application problem.** **3. Make sure the appropriate printer description file is installed. See the *Printing Guide* for a list of printer files.**

If the user can print the Pi8500Pro Test Page but cannot print a job from a computer on the network, make sure the network administrator has:

- Checked all components of the network, including cables, connectors, terminators, network adapter boards, and network drivers

- Activated the network and used it to communicate with other printers

- Checked the corrective actions listed in the *Printing Guide*

- Confirm that the applicable network settings in Setup (such as AppleTalk zone, IP address, Subnet mask, and Gateway address) match the settings used in the network

NOTE: EPS file generation is not completely standardized among applications. Some users may encounter problems while printing certain EPS files.

Diagnostic tools

Additional diagnostic tools are available through the Pi8500Pro Functions menu. These include E-mail log diagnostics, and printing a Test Page.

Test E-mail

This diagnostic tool allows you to perform a quick test of the Pi8500Pro E-mail feature without actually having to scan a document off the copier glass and email it over a network. Test E-mail diagnostic causes the system to send an email to itself. You review the results of the test by printing an E-mail log through the Functions menu.

TO RUN TEST E-MAIL

1. **At the Idle screen, press the Menu button once to display the Functions menu.**

```
▲Print Pages        ▶
 Suspend Printing   ▶
 Resume Printing    ▶
▼Unlock and Print   ▶
 Functions        ℹ🖶
```

```
▲Shut Down          ▶
 Run Setup          ▶
 Run Diagnostics    ▶ ◀─── Use the line selection
▼                         button to the right to
 Functions        ℹ🖶      select Run Diagnostics.
```
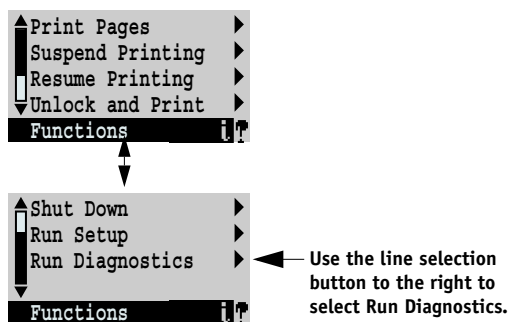
2. **Select Run Diagnostics from the Functions menu.**

3. **At the Diagnostics screen, select Test E-mail.**

```
 Test I/F Board    ▶ ◀─── Not used
 Test E-mail       ▶ ◀─── Select Test E-mail


 Diagnostics      ℹ🖶
```
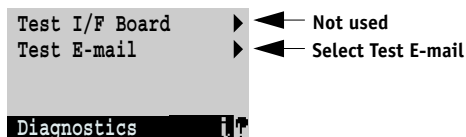
The following screen displays on the Control Panel.

```
 Sending
 Test E-mail...
 Check E-mail Log
 For Result
```
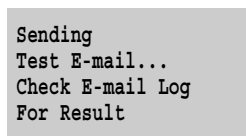
Diagnostic tools

4. **To print the E-mail Log, press the Menu button once (see "Using the Control Panel" on page 3-9). The Functions menu appears.**

```
 ▲ Print Pages           ▶        Use the Up and Down buttons to
 ▌ Suspend Printing      ▶        scroll through these options. Use
 ▯ Resume Printing       ▶        the line selection buttons to the
 ▼ Unlock and Print      ▶        right to select Print Pages.
   Functions            ▮▼
```

```
 ▲ Shut Down             ▶
 ▌ Run Setup             ▶
   Run Diagnostics       ▶
 ▼
   Functions            ▮▼
```
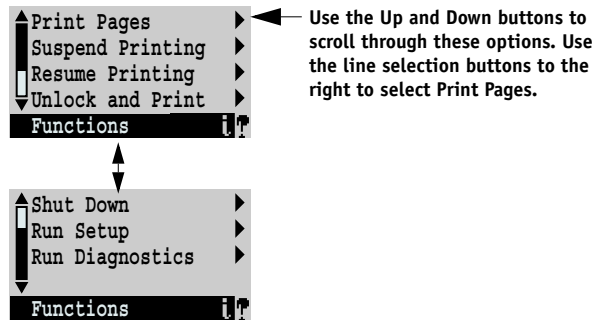
5. **Press the line selection button to the right of Print Pages, and then scroll to select E-mail Log.**

    The Pi8500Pro sends the E-mail Log to the copier.

6. **On the E-mail Log, locate the results of the test in the Status column.**

    A successful transmission indicates that the Pi8500Pro will be able to send email over the network. A failed transmission indicates a problem with the Pi8500Pro setup options. Have the Network Administrator confirm setup options, and see the *Configuration Guide* for more information.

Printing the Test Pages

Once you have connected the Pi8500Pro to the copier, you should print the PS and PCL Test Pages to verify that the interface between the copier and the Pi8500Pro is working properly. The PS and PCL Test Pages are files that reside on the HDD and are printed to the copier using the settings configured in Setup.

TO PRINT THE TEST PAGES

1. **Power on the copier and allow it to warm up.**

   The Pi8500Pro starts automatically when you power on the copier. Wait as the Pi8500Pro runs through its startup diagnostics.

2. **At the Idle screen, press the Menu button once (see "Using the Control Panel" on page 3-9). The Functions menu appears.**

   ```
   ▲ Print Pages          ▶        Use the Up and Down buttons to
     Suspend Printing     ▶        scroll through these options. Use
     Resume Printing      ▶        the line selection buttons to the
   ▼ Unlock and Print     ▶        right to select Print Pages.
     Functions         ⓘ 🔳
   ```

   ```
   ▲ Shut Down            ▶
     Run Setup            ▶
     Run Diagnostics      ▶
   ▼
     Functions         ⓘ 🔳
   ```

3. **Press the line selection button to the right of Print Pages. and then select PS Test Page.**

   The Pi8500Pro sends the PS Test Page to the copier.

4. **Press the line selection button to the right of Print Pages. and then select PCL Test Page.**

   The Pi8500Pro sends the PCL Test Page to the copier.

5. **Examine the quality of the Test Pages.**

   The Test Pages confirm that the Pi8500Pro is functional and that the connection between the Pi8500Pro and the copier is good. When you examine the Test Pages, keep in mind that:

   • All patches should be visible, even though they may be very faint in the 5% and 2% range.

   • Each patch set should show uniform gradation from patch to patch as the shade lightens from 100% to 0%.

   Poor image quality may indicate a need to service the copier. For more information, see the documentation provided with the copier.

Appendix A: Specifications

This appendix provides an overview of Pi8500Pro features.

Hardware features

- Single Pentium III CPU—866MHz

- Memory—128MB

- An RJ-45 connector for 10Mbps or 100Mbps connectivity over twisted pair cable

- Optional PCI Token Ring board connectivity

- 20GB hard disk drive standard

- Built-in CD-ROM drive

Networking and connectivity

- Supports AppleTalk, TCP/IP, and IPX protocols simultaneously

- Supports EtherTalk Phase 2

- RJ-45 connector that supports 10/100BaseT twisted pair network connectivity

- Supports Token Ring

User software

A complete description of user software is provided in *Getting Started*. For optimal performance, current versions of the user software should be maintained on every network computer that might print to the Pi8500Pro.

Safety and emissions compliance

The Pi8500Pro has been certified to meet or surpass the following government standards:

Safety approvals:

- UL 1950

- CSA 22.2 #950

- EN 60950 (TUV/GS mark)

- CB scheme IEC 950

- Nemko

EMI/EMC approvals:

- FCC Class B

- VCCI Class B

- EN55022 Class B

- EN55024 Class B

- AS/NZS 3548 Class B

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