Phaser 540 Plus Color Printer

The Phaser® 540 Plus Color Printer is Tektronix' second generation color laser printer. This addendum provides an overview of the new features available in the 540 Plus and the changes that apply to the *Phaser 540 User Manual.*

The Phaser 540 Plus provides all the features, print modes, and color matching capabilities of the Phaser 540, and uses the same convenient customer replaceable components. New features in the Phaser 540 Plus include:

- **Legal-size printing capability**

- **Faster throughput**

- **New print-quality mode**

- **Improved troubleshooting tools**

Legal-size printing

The Phaser 540 Plus supports a new paper tray that accommodates legal-size paper. The printable area used by an application is determined by selecting Legal or Legal Short in the driver (the physical page size is the same for both; only the print area is different).

- **Legal Short**
  Prints a full-color image (8.2 x 11.7 in.) on legal-size paper with top and bottom margins of 1.15 in.

- **Legal**
  Prints a full-color image area the same as Legal Short, but can also print monochrome with top and bottom margins of .23 in.

The following table and illustration show the page size, the print area, and the margins for all supported media:

Media	Page size	Print area	Margins Top	Bottom	Sides
1. A/Letter (U.S.)	8.5 x 11 in.	8.2 x 10.6 in.	.22 in.	.18 in.	.15 in.
2. A4 (Metric)	210 x 297 mm	200 x 287 mm	5 mm	5 mm	5 mm
3. Legal Short (U.S.)	8.5 x 14 in.	8.2 x 11.7 in. (CMYK)	1.15 in.	1.15 in.	.15 in.
4. Legal (U.S.)	8.5 x 14 in.	*Color* (CMYK) 8.2 x 11.7 in.	1.15 in.	1.15 in.	.15 in.
		Black (K) 8.2 x 13.5 in.	.23 in.	.23 in.	.15 in.

9008-102
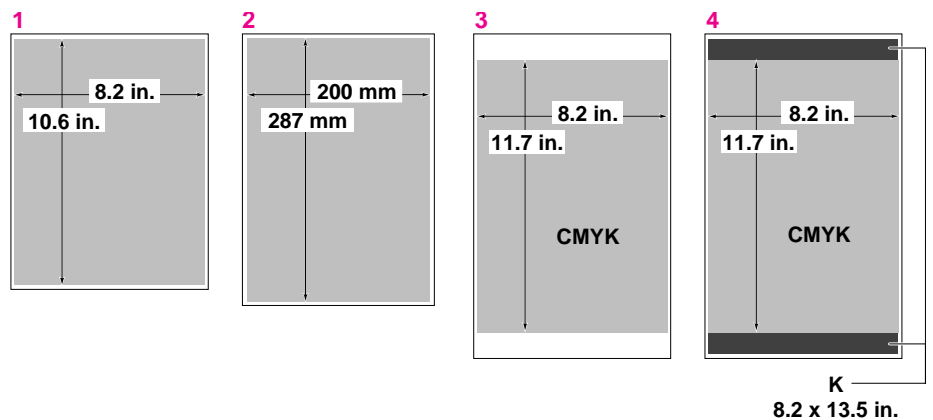
When using the legal-size paper tray, your printer must have the following memory configurations to print using each print-quality mode:

Print-quality mode	Memory requirements
Fast (printer default)	20 Mbytes
Standard	36 Mbytes
Presentation	36 Mbytes
Enhanced	52 Mbytes (maximum configuration)

The optional legal-size tray can be ordered from your local Tektronix authorized reseller or directly from Tektronix; the order number is 436-0314-00.

The addition of the legal-size paper tray affects references in Chapter 2, Chapter 3, and Chapter 5 of the *Phaser 540 User Manual*.

Faster throughput

The Phaser 540 Plus incorporates several enhancements that provide faster throughput:

■   Faster recovery from EnergyStar mode (when the printer has been idle for more than one hour) saves nearly two minutes in the time the printer takes to make the first print.

■   The printer's default print-quality mode is now *Fast*, saving nearly 40 seconds in the time to first print when *Fast* mode is selected from the computer driver.

■   The Phaser 540 Plus delivers approximately a 20% time savings for Phaser Copystation prints when the printer is configured with 52 Mbytes of memory. This reduction applies to first print; multiple copies always occur at full printer speed.

Print-quality

The Phaser 540 Plus incorporates a new print-quality mode for presentations and improved Copystation color matching.

Print-quality modes

■ *Presentation* mode has been added; it is suitable for creating presentation materials such as overhead transparencies or presentation handouts with a color sweep in the background. This mode uses a custom halftone that improves color uniformity for shaded area fills.

■ The printer's other three modes are *Fast*, *Standard*, and *Enhanced*. *Fast* is now the printer's default print-quality mode (the default mode can be changed from the printer's front panel).

These changes affect references in Chapter 3 and Chapter 7 of the *Phaser 540 User Manual*.

Improved Copystation profile

■ The Phaser 540 Plus incorporates a new Copystation profile that provides brighter color and a broader color adjustment range.

Troubleshooting tools

The Test Print and Service Prints, which you access from the printer's front panel, have been improved for diagnosing print quality.

■ The new Test Print shows a 25% tint of each color (cyan, magenta, yellow, and black) and covers the full area of the page for quick verification of printing characteristics.

■ Service Print 1 provides for better diagnostics if a problem is detected in the Test Print. When you select Service Print 1 in the front panel menu, the printer produces four full pages of 25% tint coverage, one for each color: cyan, magenta, yellow, and black.

From the Help Pages menu in the front panel, select **Test Print**
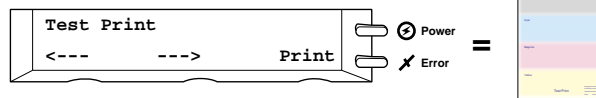
From the Help Pages menu in the front panel, select **Service Print 1**

Black   Cyan   Magenta   Yellow
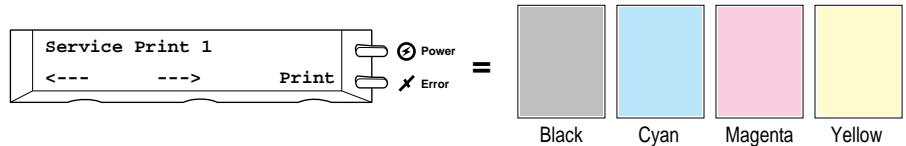
■ The *Phaser 540 Plus Quick Reference Card* (order number 063-2185-01) reflects the changes in the Test Print and Service Prints. When attempting to identify print quality symptoms and solutions, use the new *Phaser 540 Plus Quick Reference Card.*

User Manual

Tektronix

**Phaser™ 540
Color Printer**

Phaser 540 Warranty

Tektronix warrants that the Phaser 540 will be free from defects in materials and workmanship for a period of one (1) year from the date of shipment and that Customer Replaceable Components (CRCs)* in the Phaser 540 will be free from defects in materials and workmanship for a period of ninety (90) days from the date of shipment or six months where longer periods are required by law. If the product or its CRCs prove defective during their respective warranty periods, Tektronix, at its option, will either repair the defective product or CRC without charge for parts and labor, or provide a replacement in exchange for the defective product or CRC.

This warranty applies only to products and CRCs returned to the designated Tektronix depot or the Tektronix authorized representative from which the product or CRC was originally purchased. For products or CRCs returned to other locations, Customer will be assessed the applicable service charge. The above limitation shall not apply within the European Economic Area, where products or CRCs may be returned for warranty service to the nearest designated service depot regardless of the place of purchase.

In order to obtain service under this warranty, Customer must provide the applicable office of Tektronix or its authorized representative with notice of the defect before the expiration of the warranty period and make suitable arrangements for the performance of service. Customer shall be responsible for packaging and shipping the defective product or CRC to the service center designated by Tektronix or its representative, with shipping charges prepaid. Tektronix or its representative shall pay for the return of the product or CRC to Customer. Customer shall be responsible for paying any associated taxes or duties.

This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance and care. Tektronix shall not be obligated to furnish service under this warranty:

   a) to repair damage resulting from attempts by personnel other than Tektronix representatives to install, repair or service the product or CRC;

   b) to repair damage resulting from improper use or connection to incompatible equipment;

   c) to repair any damage or malfunction caused by the use of non-Tektronix supplies or consumables;

   d) to repair a product or CRC that has been modified or integrated with other products when the effect of such modification or integration increases the time or difficulty of servicing the product or CRC;

   e) to repair damage or malfunction resulting from failure to perform user maintenance and cleaning at the frequency and as prescribed in the user manual; or

   f) to repair this product after the limit of its duty cycle of 20,000 pages per month has been reached; all service thereafter shall be billed on a time and material basis.

* Customer Replaceable Components in the Phaser 540 are specifically: fuser, imaging unit, transfer kit (transfer roller and waste bin) and toner cartridges.

Users safety summary

Terms in manual: CAUTION   Conditions that can result in damage to the product.
                         WARNING   Conditions that can result in personal injury or loss of life.

Power source: Do not apply more than 250 volts RMS between the supply conductors or between either supply conductor and ground. Use only the specified power cord and connector. Refer to a qualified service technician for changes to the cord or connector.

Operation of product: Avoid electric shock by contacting a qualified service technician to replace fuses inside the product. Do not operate without the covers and panels properly installed. Do not operate in an atmosphere of explosive gases.

Safety instructions: Read all installation instructions carefully before you plug the product into a power source.

Terms on product: CAUTION   A personal injury hazard exists that may not be apparent. For example, a panel may cover the hazardous area. Also applies to a hazard to property including the product itself.
                          DANGER   A personal injury hazard exists in the area where you see the sign.

Care of product: Disconnect the power plug by pulling the plug, not the cord. Disconnect the power plug if the power cord or plug is frayed or otherwise damaged, if you spill anything into the case, if product is exposed to any excess moisture, if product is dropped or damaged, if you suspect that the product needs servicing or repair, and whenever you clean the product.

Ground the product: Plug the three-wire power cord (with grounding prong) into grounded AC outlets only. If necessary, contact a licensed electrician to install a properly grounded outlet.

Symbols as marked on product:

DANGER high voltage:

Protective ground (earth) terminal:

Use caution. Refer to the manual(s) for information:

WARNING: If the product loses the ground connection, usage of knobs and controls (and other conductive parts) can cause an electrical shock. Electrical product may be hazardous if misused.

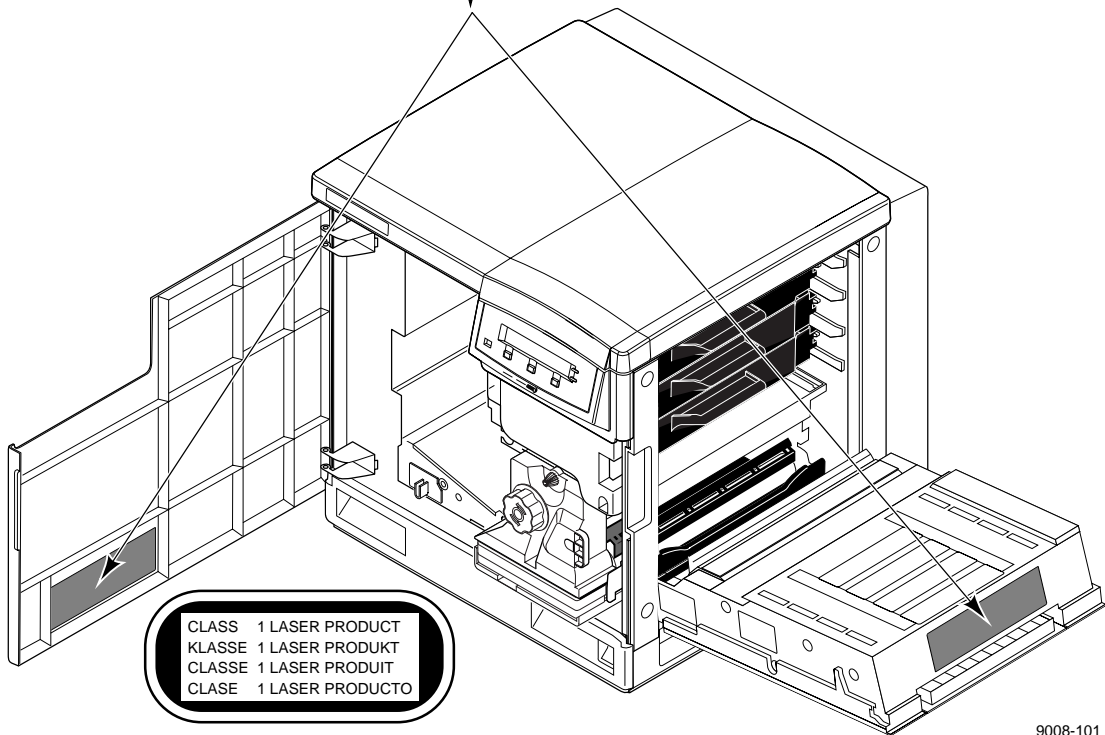This product is certified under IEC 825 as a Class 1 Laser Product:

WARNING: For your protection, do not defeat any interlocks.

CAUTION: This product utilizes a laser. Use of control or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
Do not open covers and do not repair yourself. Refer servicing to qualified personnel.

When you operate this equipment, the socket outlet should be near the equipment and be easily accessible.

DANGER: Invisible laser radiation when open and interlock defeated. AVOID DIRECT EXPOSURE TO BEAM.	CAUTION: Invisible laser radiation when open and interlocks defeated. AVOID DIRECT EXPOSURE TO BEAM.	VORSICHT: Unsichtbare Laserstrahlung, wenn Abdeckung geöffnet und Sicherheitsverriegelung überbrückt. NICH DEM STRAHL AUSSETZEN.	ATTENTION: Rayonnement laser invisible dangereux en cas d'ouverture et lorsque la sécurité est neutralisée. EXPOSITION DANGEREUSE AU FAISCEAU.	Class 3B
PELIGRO: Cuando se abre y se invalida el bloqueo, se producen radiaciones invisibles de láser. EVITESE LA EXPOSICIÓN DIRECTA A TALES RAYOS.	VARNING: Osynlig laser-strålning när denna del är öppnad och spärrar är urkopplade. STRÅLEN ÄR FARLIG.	VAROI: Näkymätön avattaessa ja suojalukitus ohitettaessa olet alttiina lasersäteilylle. ÄLÄ KATSO SÄTEESEN.	VARNING: Osynlig laserstrålning när denna del är öppnad och spärrar är urkopplade. BETRAKTA EJ STRÅLEN.	ADVARSEL: Usynlig laserstråling ved abning når sikkerhedsafbrydere er ude af funktion. UNDGÅ UD ÆTTELSE FOR STRÅLING.	ADVARSEL: Usynlig laserstraling nar deksel åpnes og sikkerhedslas brytes. UNNGÅ EKSPONERING FOR STRÅLEN.

PJQT4521ZA

CLASS 1 LASER PRODUCT
KLASSE 1 LASER PRODUKT
CLASSE 1 LASER PRODUIT
CLASE 1 LASER PRODUCTO

9008-101

FOR USERS IN NORWAY

VARNING!   OM APPARATEN ANVANDS PÅ ANNAT SÄTT ÄN I DENNA BRUKSANVISNING
SPECIFICERATS, KAN ANVÄNDAREN UTSÄTTAS FOR OSYNLIG LASERSTRÅLING,
SOM ÖVERSKRIDER GRÄNSEN FOR LASERKLASS 1.

Tekniska specifikationer för lasern

Uteffekt:	5 mW max.
Våglångd:	780 nm
Effektgrad för stråining:	Kontinuerlig

KLASS 1 LASER APPARAT

Apparaten skall anslutas till jordat uttag när den ansluts till ett Nätverk.

Contents

1

Introduction

The Phaser 540 Color Printer is the first continuous-tone desktop color laser printer. It provides high-quality color printing on plain paper, plus the ease of operation and high performance you expect from a laser printer. Some of its features include:

■ **High quality**
User-selectable 600 x 600 or 300 x 300 dots per inch (dpi) resolution with continuous-tone quality in color or black-and-white. Built-in auto-calibration helps maintain color consistency.

■ **High speed**
Color: up to 3.5 pages per minute on paper,
1.3 pages per minute on transparencies.

Black-and-White: up to 14 pages per minute on paper, 1.7 pages per minute on transparencies.

■ **Plain paper**
Prints on common office papers (16-32 lb. or 60-120 g/m^2).

■ **Workgroup efficient**
High capacity, easy-to-replace components minimize user intervention required. Fast throughput and automatic tray switching make the Phaser 540 an excellent central resource for large or small workgroups.

■ **Network direct**
Bi-directional parallel port; Phaser Share cards provide optional network interfaces for Ethernet (EtherTalk, Novell NetWare, and TCP/IP), Token Ring, LocalTalk and serial.

■ **Lower Tray Assembly**
The optional Lower Tray Assembly provides two additional media trays, especially useful for automatic media selection for different media types.

■ **Phaser CopyStation**
The Phaser CopyStation accessory enables your printer to be used as a color copier.

■ **TekColor™ Dynamic Correction**
Tektronix' exclusive color control technology makes it easy to print the colors you want.

The Phaser 540 has 39 resident PostScript fonts. Additionally, it accepts Adobe Type 1, Type 3, and TrueType downloadable fonts as well as a variety of user-defined fonts. For additional font storage, the printer provides a SCSI (Small Computer System Interface) port, which allows you to attach an external hard disk.

To order supplies such as paper, transparencies, color toner cartridges, a fuser, or an imaging unit, refer to the supplies information sheet that is shipped with the printer and contact your local reseller or, in the United States, call Tektronix at 1-800-835-6100.

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Getting Set Up

At a glance

Installation of your Phaser 540 Color Printer involves these tasks:

1. **Setting up the printer**
   Putting all the pieces together: unpacking the printer and accessories, installing the optional Lower Tray Assembly or the optional Phaser CopyStation, loading the media tray(s), and installing the fuser, imaging unit, and toner cartridges.

2. **Connecting power and interface cables**

3. **Selecting a language for the front panel**

4. **Installing a software driver on your computer**
   Using the Tektronix Phaser 540 drivers and utilities diskettes to install a driver on either a Macintosh or a PC running Windows.

Note   *To add a hard disk to your printer, see "Adding a hard disk for font storage" on page B-5.*

Setting up the printer

What you get with your printer

The printer and its accessories are shipped in two boxes. If you ordered an optional Lower Tray Assembly or Phaser CopyStation, each is shipped separately.

Printer box

The following items are shipped in the printer box:

1. *Quick-Start Installation Instructions*
2. *Phaser 540 Color Printer User Manual*
3. *Phaser 540 Drivers and Utilities Printing Reference* manual and diskettes
4. TekColor Care envelope (including the registration card)
5. *Phaser 540 Quick Reference Card*
6. Supplies information sheet
7. Power cord
8. Optional network manual and diskettes

Standard accessories box

1. Imaging unit
2. Fuser
3. Four toner cartridges (black, cyan, magenta, and yellow)
4. Paper tray
5. Output tray
6. Media sampler kit

Printer box

1 Quick-Start Installation

2 User Manual

3 Drivers & Utilities Manual

4 TekColor™ Care

5

6 Supplies

7

8 Network Manual
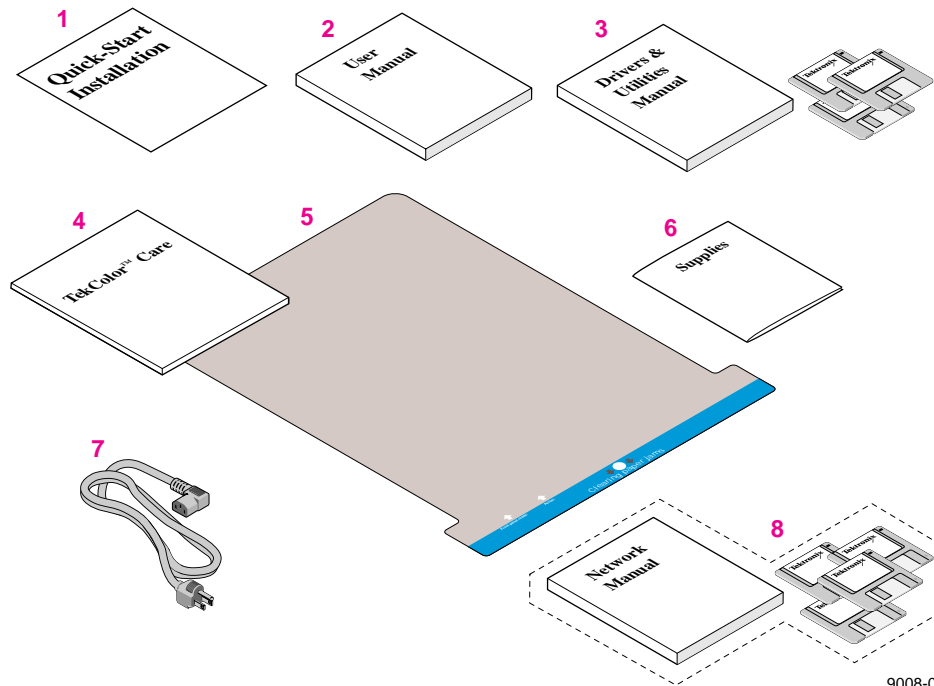
9008-01

Standard accessories box

1

2

3

4

5

6 Media Sampler
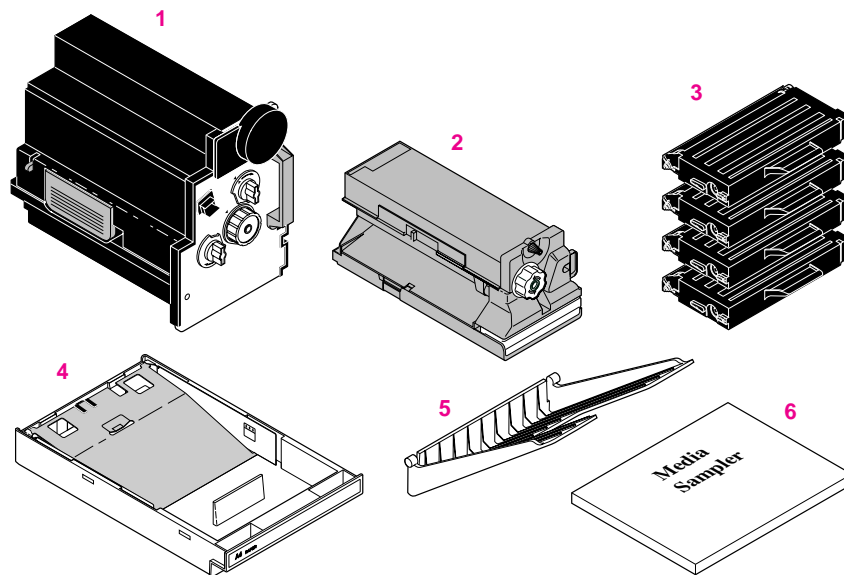
9008-62

Optional accessories

1. Lower Tray Assembly, paper tray and transparency tray

2. Phaser CopyStation
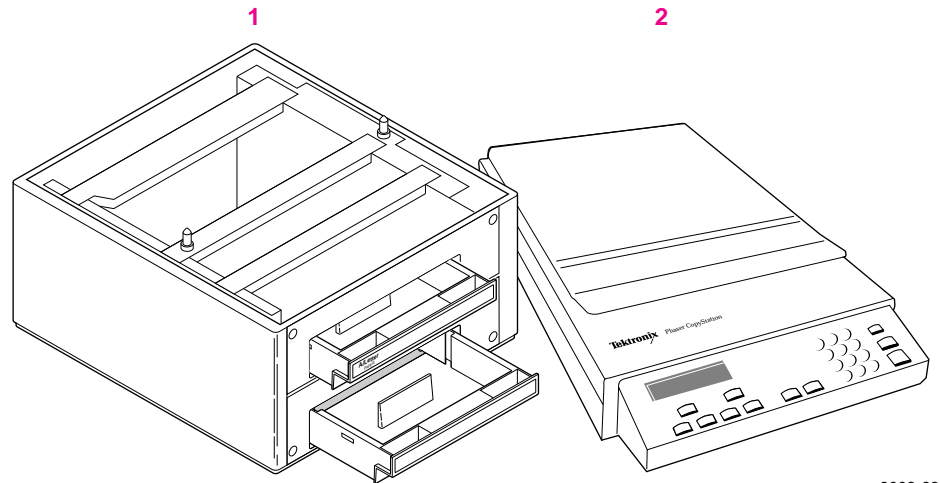
9008-63

Registering your printer

The TekColor information envelope contains your product registration card.

■ Find the customer registration card that is appropriate for you (U.S. or international versions).

■ Fill out the card and mail it.

By registering your printer with Tektronix, you are validating the product warranty and ensuring that you will be sent information about upgrades, service, and accessories as it becomes available.

Removing the packing material

1. Remove the plastic bag from the printer.

2. Remove any tape that holds the printer's doors shut.

Note *Save all packing material in case moving or subsequent shipment is necessary.*

Installing the optional Lower Tray Assembly

An optional Lower Tray Assembly is available with the Phaser 540 (allowing you to print from three trays). Follow these steps to install it.

Warning *The printer weighs about 39 kg. (85 lbs.) and the Lower Tray Assembly weighs about 14 kg (31 lbs.). Observe standard precautions for lifting heavy objects.*

The printer is not permanently attached to the Lower Tray Assembly. When you move the printer, move the pieces separately; moving the printer incorrectly may damage it and may cause personal injury.

1. Place the Lower Tray Assembly on the table or cart you have selected for your printer.

2. Place the printer on top of the Lower Tray Assembly. Always keep the printer upright.

3. Make sure that the left and right alignment pins fit in the holes in the base of the printer.

9008-02
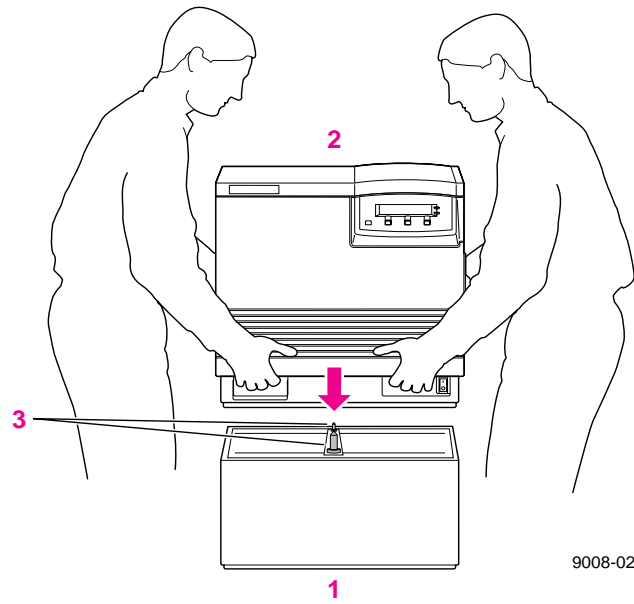
Installing the toner cartridges

1. Open the printer's right side door to install the toner cartridges. (Make sure that the power is always *off* when installing the user-replaceable components.)
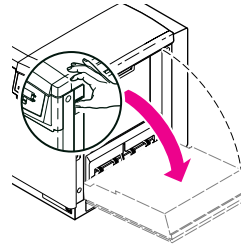
9008-91

Note   *Instructions for loading each toner cartridge are the same except for the slot into which you insert each cartridge. From top to bottom, the order of the colors is Black, Yellow, Magenta, Cyan.*

2. Remove the toner cartridge from its packaging.

    Save all packing material in case you need to return the cartridge for repair or replacement.

3. Remove the shipping cover from the cartridge.
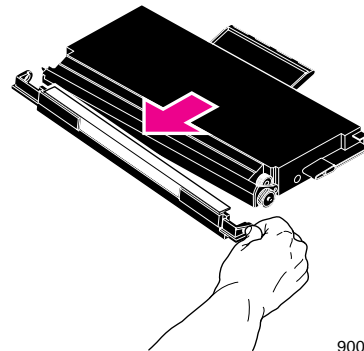
9008-09

4.   Insert the toner cartridge in the slot labeled for its color.
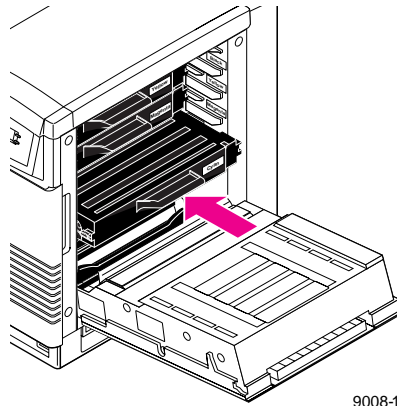
9008-10

5.   Repeat Steps 2-4 for each toner cartridge.

From top to bottom, the order of the color toner cartridges is Black, Yellow, Magenta, Cyan.
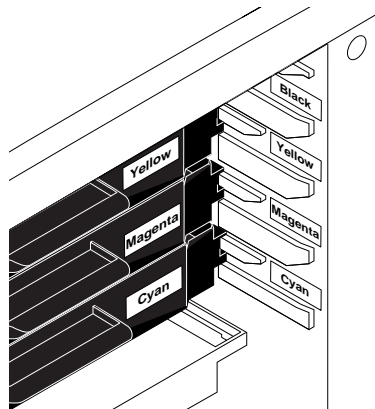
9008-11

Installing the fuser

1. Open the front door and the right side door to install the fuser. (Make sure that the power is always *off* when installing the user-replaceable components.)
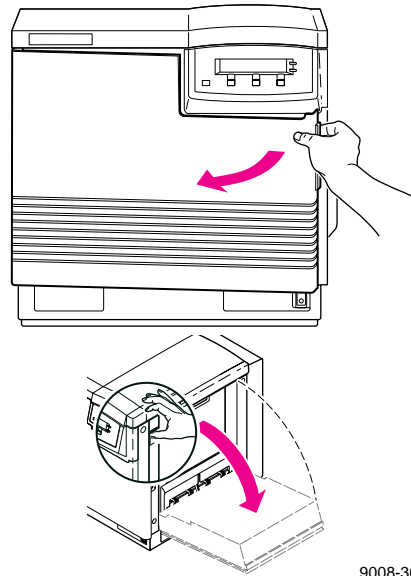
9008-30

2. Remove the fuser from its packaging.

   Save all packing material in case you need to return the fuser for repair or replacement.

Caution   *The fuser weighs approximately 4.1 kg (9 lbs.); take care when handling it.*

3. Slide the fuser into the printer.

9008-04
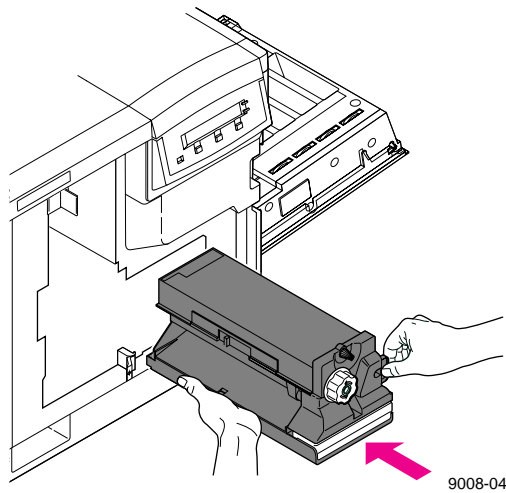
4. Lock the fuser by turning the small blue screw *clockwise* several turns.

9008-05
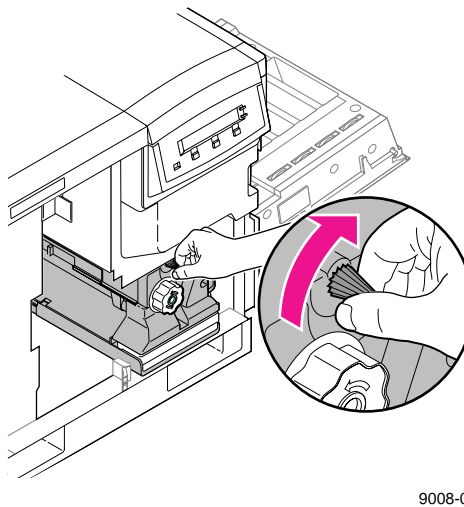
5. Close the right side door.

Installing the imaging unit

1. Open the printer's front door to install the imaging unit. (Make sure that the power is always *off* when installing the user-replaceable components.)
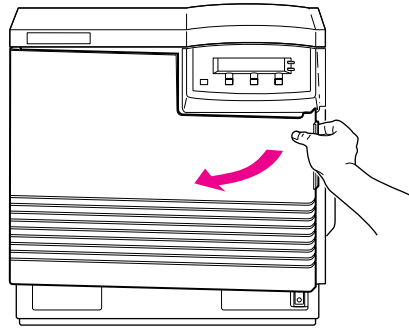
Note   *The imaging unit weighs approximately 6.8 kg (15 lbs.); always use the handles when lifting it.*

2. Remove the imaging unit from its box and plastic bag, but leave the protective cover on until immediately before you insert the unit into the printer.

Caution *The imaging unit is extremely light-sensitive; make sure that it is not exposed to light for more than 45 seconds or it may damage the unit. Never expose it to direct sunlight.*

Save all packing material in case you need to store the imaging unit or if you need to return it for repair or replacement.

3. On the imaging unit, turn the two outer blue knobs *clockwise* to align the black triangles. (This tightens the internal belt to ready the unit for printing.)

9008-74
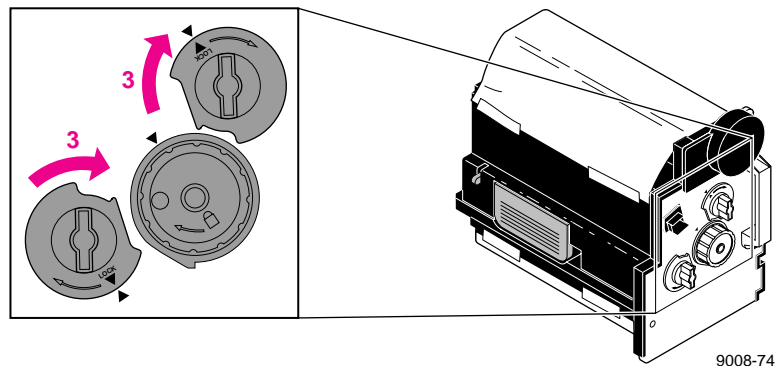
4. Remove the protective plastic sheet from the imaging unit, taking care not to touch the right side or the underside.

5. Insert the imaging unit into the printer, holding it by the blue handles. Release the left handle and slide the unit in until it stops.

4

5

9008-07
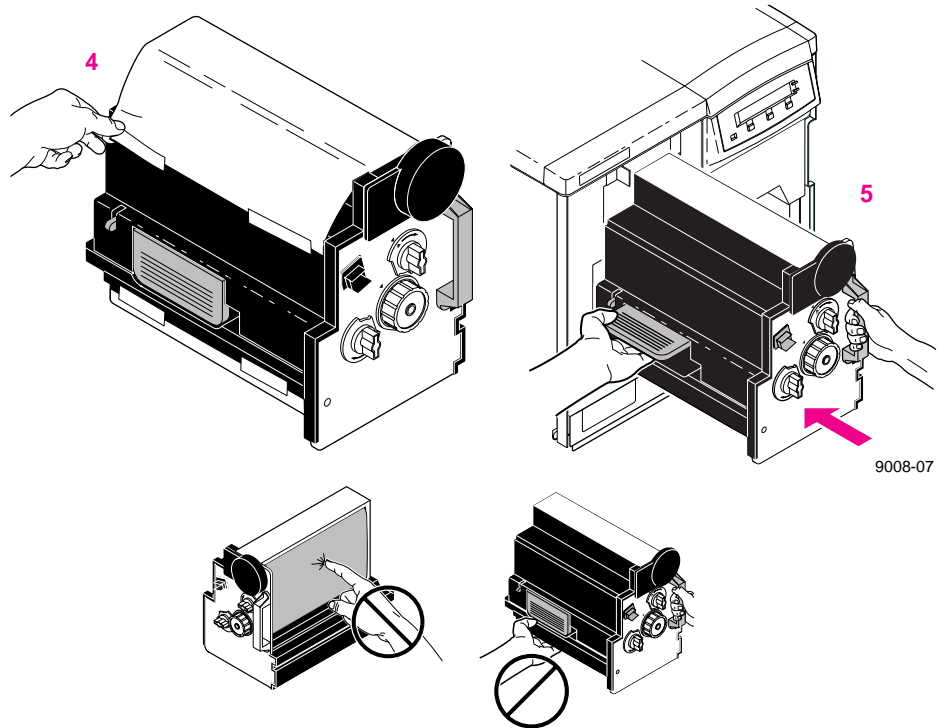
Caution *Be careful not to touch the underside or right side of the imaging unit; fingerprints may affect the print quality. Keep the imaging unit's light exposure to a minimum (under 45 seconds), or you may damage the unit. Never expose it to direct sunlight.*

6. Turn the center blue knob *clockwise* to insert the imaging unit completely and to lock it. The lock icon should align with the black triangle.

6

9008-08
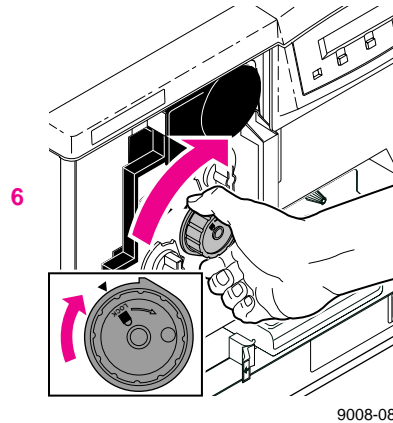
7. Close the printer's front door.

Installing the output tray

1. Insert one side of the plastic output tray into the opening on the printer.

2. Press the opposite side to insert it into its opening on the printer.
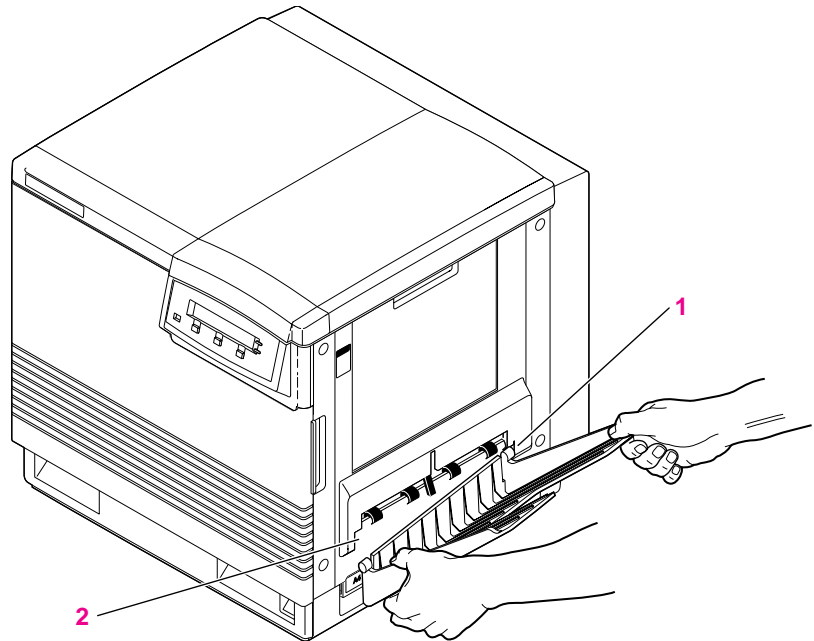
9008-12

Adding paper or transparencies

Unpack the media tray(s). Be sure to remove all adhesive tape and protective foam. The printer uses four different trays:

Tray	Size
A/Letter Paper *standard*	8.5 x 11 in.
A/Letter Transparency *optional*	8.5 x 11 in.
A4 Paper *optional*	210 x 297 mm
A4 Transparency *optional*	210 x 297 mm

Note   *Make sure that you load the correct media. Each tray is designed and labeled for only paper or transparency. If you load the wrong media type in a tray, you will get an error message.*

If you have the Lower Tray Assembly installed, make sure that all trays in the printer at any one time are the same media size (required for the automatic tray-switching feature).

1. To load paper or transparencies, push down on the media tray's metal plate until it clicks, locking it in place.
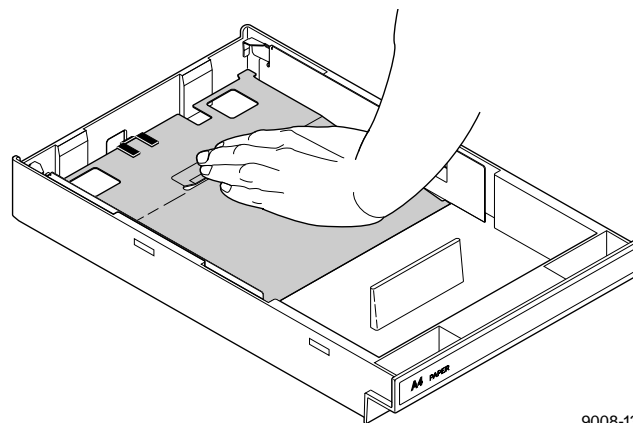
9008-13

Caution   *To keep your printer in good working order, always use clean, unused media.*

2.   Fan the paper or transparencies, but be careful not to leave fingerprints, which can result in a smudged print.
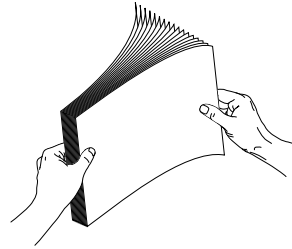
9014-36

3.   Place paper or transparencies in the tray under the hooks.

4.   Load transparencies so that the notched corner is placed closest to the load level label (**5**).

5.   You can load approximately 250 sheets of paper or 100 sheets of transparency film. Use the label on the inside of the tray as a reference for the proper amount of media.
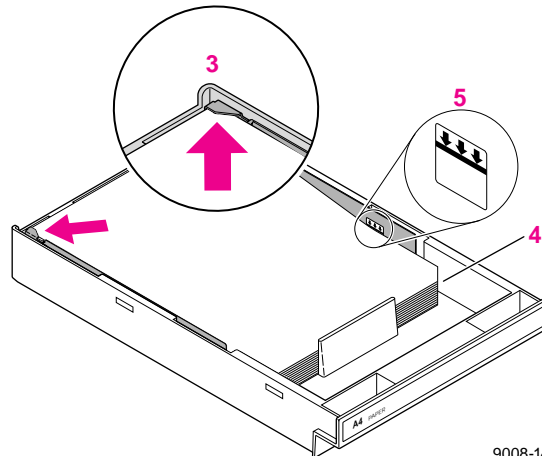
9008-14

6.   If you have a single media tray
Slide the paper tray completely into the slot.
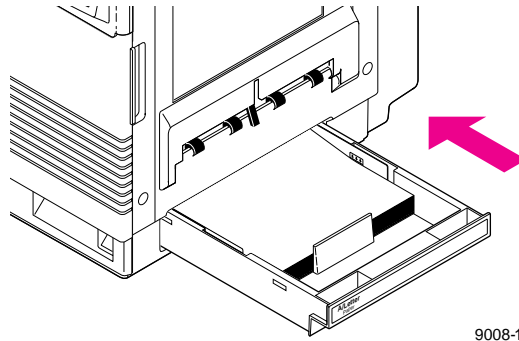
9008-15

If you have a Lower Tray Assembly
Install a media tray into each of the three slots.
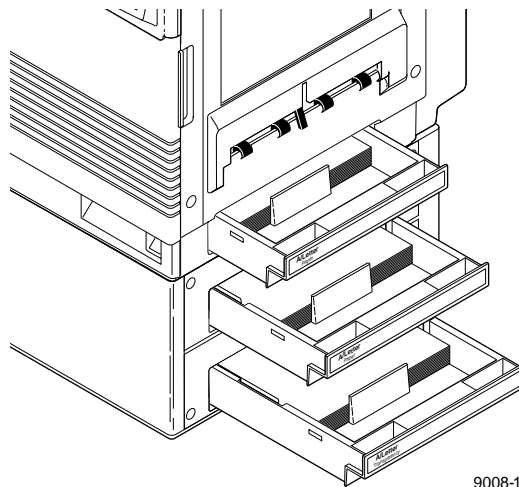
9008-16

Connecting the printer

Printer ports

The printer is shipped standard with a bi-directional parallel port and a SCSI port for interfacing to the optional Phaser CopyStation or an external hard disk for font storage. In addition, the printer can be configured with optional networking and serial ports. The printer accepts print jobs from all the data ports at the same time on a first-come, first-served basis.

The ports include:

1. Parallel   *standard*
2. SCSI   *standard*
   The SCSI port is used only for connecting an external hard disk or for connecting the Phaser CopyStation. Refer to "Adding a hard disk for font storage" on page B-5 for more information on the SCSI port.
3. Phaser Share card   *optional*
   - Phaser Share Ethernet card supports Novell NetWare, EtherTalk and TCP/IP protocols.
   - Phaser Share Token Ring card supports Novell NetWare, TCP/IP and TokenTalk protocols.
   - Phaser Share LocalTalk/serial card

Note   *Make all printer port connections before you turn on the printer.*

The *Phaser Share User Manual* contains all the information
necessary for configuring and using the optional connections.
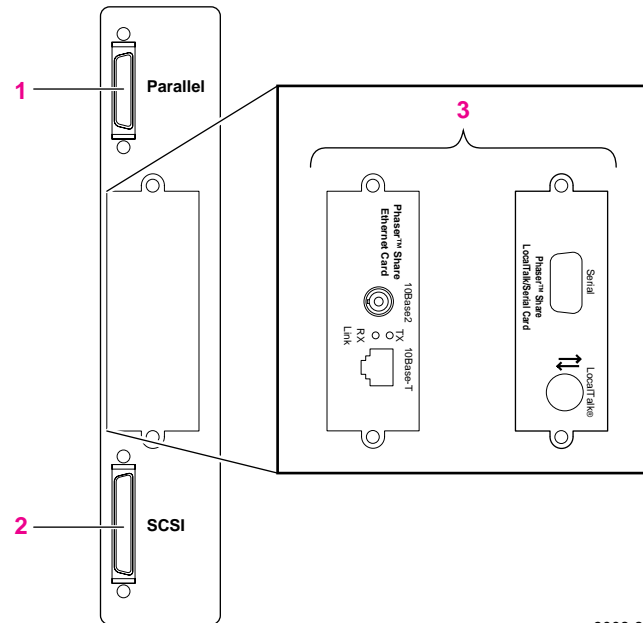
9008-89

Note   *See "Supplies and accessories" on page 5-2 about ordering cables
for connecting the printer.*

Parallel connection

The printer supports a standard (uni-directional) parallel port. The parallel port can also be set for bi-directional communications. Refer to *Phaser 540 Drivers and Utilities Printing Reference* for instructions on changing parallel communications. For information on cables and adapters, see "Supplies and accessories" on page 5-2.

Note   *Make all printer port connections before you turn on the printer.*

1. Connect a parallel interface cable to your computer and to the printer's parallel port.

9008-18
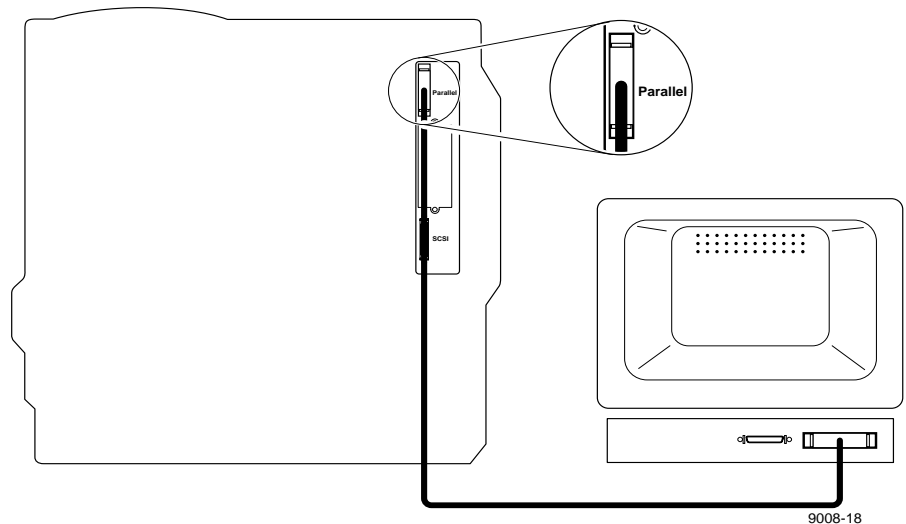
2. If you have no other connections to make, turn immediately to "Turning on the printer" on page 2-24.

Phaser Share network and serial connections

To obtain serial or network connections, one of the optional Phaser Share cards must be installed in the printer. A Phaser Share card can be purchased initially with the printer or later as a separate upgrade kit. If purchased initially, you will find the network manual, *Phaser Share User Manual*, included in the box with your printer.

Phaser Share network interfaces offer high performance and flexible workgroup connectivity. All data input ports and network protocols are simultaneously active. Print jobs are processed on a first-come, first-served basis.

To order the optional hardware, contact your local Tektronix reseller or call Tektronix toll-free in the United States at 1-800-835-6100.

For detailed information on configuring and using the printer on networks, refer to the *Phaser Share User Manual*.

SCSI connections

The SCSI port is used for connecting these optional peripheral devices:

■   **External font disk**
Refer to "Adding a hard disk for font storage" on page B-5 for information on installing a hard disk.

■   **Phaser CopyStation accessory**
Refer to Chapter 2 of the *Phaser CopyStation User Manual* to set up the Phaser CopyStation.

Turning on the printer

After you have connected all the interface cables, you are ready to connect the power cord and turn on the printer.

Caution *To protect your printer from a power surge, make sure that the power switch on the printer is in the off position before plugging in the cord.*

1. Plug the power cord into the printer and into a grounded outlet.

2. Turn on the printer.
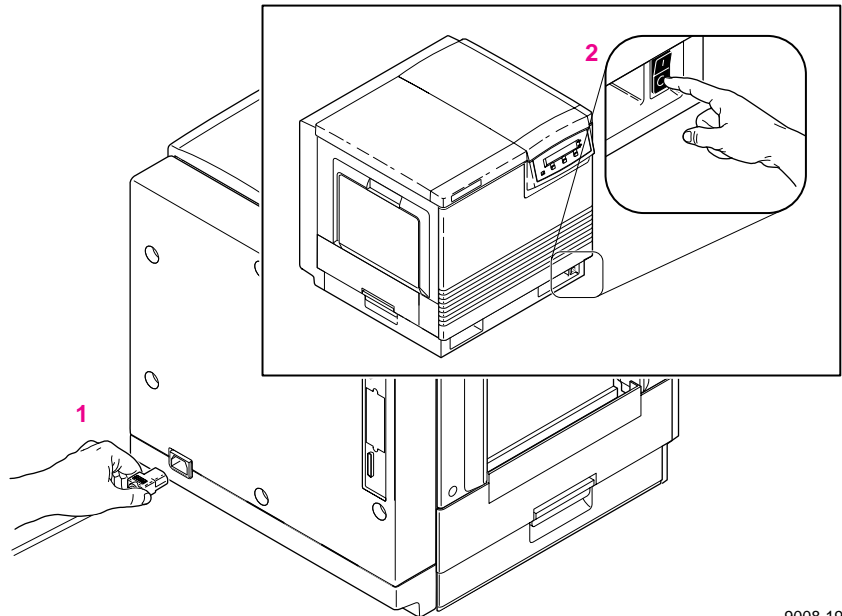
9008-19

What happens at power-up

Both status indicators (power ⊘ and error ↗) on the printer's front panel light briefly, messages appear in the display panel (LCD), and the printer goes through a series of self-tests. The printer takes approximately 5 minutes to warm up and complete the self-tests (depending on the amount of memory installed).
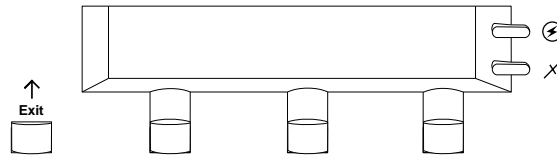
9008-43

After the self-tests run successfully, the printer prints a startup page and, if the printer's copy count is between five and eight pages, a registration page. The startup page prints whenever you turn on or reset the printer.

If you want to turn off the startup page, you can use the front panel menu or use a software utility file provided on the drivers and utilities diskettes included with your printer. Refer to "Enabling and disabling the startup page" on page A-5 and the *Phaser 540 Drivers and Utilities Printing Reference* for details on using the utility file.

When the printer is ready for operation

When the power-up sequence is complete, the green indicator is on steady (not blinking), the red indicator is out, and the front panel message reads `Ready`.

Selecting a language for the front panel

Messages that appear in the front panel window are in English. To change the language to French, German, Spanish, Italian, or Japanese, follow these steps.

1. When the printer is on and the `Ready` message appears, press the **Menu** button. You see this message:

    ```
    Help Pages
    <---    --->   Menu
    ```

    Pressing the left arrow button (**<--**) scrolls backward through the selections; pressing the right arrow button (**-->**) scrolls forward through the selections; and **Menu** enters the currently displayed menu.

2. Using the left (**<--**) or right (**-->**) arrow buttons, scroll through the selections until you see this message:

    ```
    Language
    <---    --->   Menu
    ```

3. Press the **Menu** button to enter the language selection menu. You see this message:

    ```
    Language:English*
    <---    --->   OK
    ```

    where the asterisk (*****) indicates the currently selected language.

4. Press the right arrow button until the display shows the language you want from these selections:

    ```
    Language:English
    Language:Español
    Language:Français
    Language:Deutch
    Language:Italiano
    Language:(Japanese)
    ```

5. Press **OK** to select the language. Press the ⬆Exit button until `Ready` is displayed.

Making a demonstration print

You can print a demonstration page to check that your printer is set up and operating correctly.

1. When the printer is on and the `Ready` message appears, press the **Menu** button. You see this message:

    ```
    Help Pages
    <---    --->   Menu
    ```

2. Press the **Menu** button. You see this message:

    ```
    Test Print
    <---    --->   Print
    ```

3. Using the left (**<--**) or right (**-->**) arrow buttons, scroll through the selections until you see this message:

    ```
    Demonstration Page
    <---    --->   Print
    ```

4. Press the **Print** button to print the demonstration page.

5. Press the ⬆(Exit) button until `Ready` is displayed in the front panel.

Installing a driver on your computer

Packaged with your printer are the diskettes for PC and Macintosh computers; they contain drivers and utility files. The drivers and utilities let you select between printer media trays, print quality modes, color correction modes and other features.

For complete details on the contents of the printer diskettes and how to use them, refer to *Phaser 540 Drivers and Utilities Printing Reference* manual, which is shipped with the diskettes.

The following topics discuss installing drivers on PCs, Macintosh computers, and workstations.

PC: Microsoft Windows driver

The Windows 3.1 Driver and Printer Utilities diskette includes a Microsoft Windows 3.1 driver for this printer. To use Microsoft Windows applications with this printer, install the Tektronix windows driver onto your PC.

1. Start Windows on your PC.

2. Insert the Tektronix Windows 3.1 Printer Driver diskette into your computer's disk drive.

3. In the main window, double-click on the Control Panel.

4. Double-click the Printers icon; the Printers dialog box appears.

    a. Choose the Add button.

    b. In the List of Printers, select Install Unlisted or Updated Printer.

    c. Choose the Install button.

5. Type in the name of the disk drive that the PC diskette is in (for example, drive B) and select the OK button.

6. Select your printer from the list of printers and click OK. The driver software you need is automatically installed.

7. Assign the printer to a port:

    a. Select the printer from the list of Installed Printers.

    b. Select the Set As Default Printer button if you want this printer to be the default.

    c. Select the Connect button to display the Connect dialog box.

    d. In the Connect dialog box, set the Transmission Retry value to 850. Refer to your Windows documentation for details.

    e. In the Connect dialog box, select a port:

Interface	**Select**
Parallel	LPT1 or LPT2
Serial	COM1 or COM2 (Requires a Phaser Share card)
Network	LPTx or COMx (Requires a Phaser Share card)

Note *For information on ordering options, refer to "Upgrade kits" on page B-1.*

    ■ **If you selected a parallel port:**
Go on to Step **f.**

    ■ **If you selected a network port:**
Click on the Network button to open the Printers – Network Connections dialog box. Fill in each item according to the printer's configuration page. Refer to Windows documentation and the *Phaser Share User Manual* for details, or ask your network administrator for help.

    ■ **If you selected a serial port:**
Click on the Settings button to open the Settings dialog box. Fill in each item according to the printer's configuration page, then click OK. Refer to your Windows documentation or ask your network administrator for help.

Note *The printer's configuration page contains the information you need to set up the printer port. To print a configuration page, see "Printing the configuration page" on page A-6.*

   f. Click OK in the Connect dialog box, and close the Printers dialog box.

Note *If you are using Windows 3.1, you can use the printer with the standard Microsoft Windows PostScript driver (by adding a WPD file specific to the Phaser 540). With the standard driver, you get the printer page size information, but you do not get color corrections and other PostScript Level 2 features; those features are only available through the Tektronix driver for Windows 3.1. For instructions on updating the standard Microsoft driver, refer to the manual Phaser 540 Drivers and Utilities Printing Reference.*

PC: DOS and setting up ports

Check the list of supported printers in your DOS application for support of a Phaser 540 printer. If the list does not include this printer, check to see if other Tektronix Phaser series printers are listed and choose one of those. Otherwise, use a generic color PostScript driver. Refer to the *Phaser 540 Drivers and Utilities Printing Reference* for more information.

Note *Generic PostScript printer drivers do not have information about this particular printer, for example, its page sizes or its image area size. Using a standard Letter or A4 paper size selection should produce acceptable results.*

Setting up the parallel port

If you are using the printer's parallel port, disable timeouts on your computer's parallel port to ensure that large files will print, even if data transmission is slow.

Use the DOS MODE command to disable timeouts on your computer's parallel port.

1. Type the following command at the DOS prompt (if LPT1 is not available, use LPT2):

   MODE LPT1:,,P > NUL

   See your DOS documentation for details on the MODE command.

2. You can add the MODE command to your *AUTOEXEC.BAT* file, so that it takes effect every time you turn on your computer. Refer to your PC user documentation.

Setting up optional interface ports

For instructions on setting up any of the optional interface ports, refer to the *Phaser Share User Manual.*

Macintosh drivers

Note   *You must have an optional Phaser Share card installed in the*
       printer before using the driver.

The Macintosh Driver and Printer Utilities diskette includes two Macintosh
printer drivers that allow you to select page sizes, media type, and
TekColor color corrections for a Phaser 540 printer.

■   Use the Phaser 540 driver if you are using System Software 6.0.7,
     or 7.0 and later. The Phaser 540 driver is a Tektronix-modified
     version of Apple's LaserWriter 7.1.2 printer driver. If you are
     using System Software 7.5 and QuickDraw GX, you must disable
     QuickDraw GX before using this driver; the Phaser 540 driver
     does not work with QuickDraw GX.

■   Use the Phaser 540 GX driver if you are using QuickDraw GX and
     System Software 7.5. The Phaser 540 GX driver works with
     QuickDraw GX applications and with non-QuickDraw GX
     applications.

The *Phaser 540 Drivers and Utilities Printing Reference* manual provides
detailed driver installation procedures and complete information on using
the Tektronix drivers with your printer.

In addition to installing a driver, you may also need to install PostScript
printer description files for applications such as Aldus PageMaker and
QuarkXPress. For details on printing from an application, refer to the
Phaser 540 Drivers and Utilities Printing Reference manual.

Installing the Phaser 540 driver

1. Make sure that your Macintosh is turned on with System Software version 6.0.7, 7.0 or later installed.

2. Insert the Macintosh Driver and Printer Utilities diskette into the disk drive. When the diskette appears on the desktop, it should be open, showing the icons inside.

3. Drag the Phaser 540 driver icon from the diskette to the closed *System Folder* icon on your Macintosh hard disk.

    ■ System 7.0 and higher users: at the alert message, click OK to automatically install the driver in the *Extensions* folder.

    ■ System 6.0.7 users: the driver is installed in the *System Folder*.

4. System 6.0.7 users: LaserWriter 7.1.2 software is required to use the Tektronix driver with system 6.0.7. If you need this software, do the following steps:

    a. Open the *Old System Items* folder on the Macintosh Driver and Printer Utilities diskette.

    b. Drag the Backgrounder V1.3 and PrintMonitor V7.0 from the diskette to the closed *System Folder* icon on your Macintosh hard disk. At the alert message, click OK to automatically install these items in their proper places.

5. Select Chooser from the Apple menu.

6. Click the Phaser 540 printer driver icon on the left side of the Chooser. A list appears with the printers you have connected to your Macintosh or printers that are available on a network. (If the printer driver icon does not appear, Restart your Macintosh, and repeat the printer driver installation procedure; also check the cable connections on your computer and printer.)

7. Click on the Phaser 540 printer in the list of printers on the right side of the Chooser.

8. Close the Chooser by clicking its close box.

9. Store the printer diskette in a safe place.

Installing the Phaser 540 GX driver

1. Make sure that your Macintosh has QuickDraw GX installed and is running System Software version 7.5.

2. Insert the Macintosh Driver and Printer Utilities diskette into the disk drive.

3. When the diskette appears on the desktop, it should be open, showing the icons inside.

4. Drag the Phaser 540 GX driver icon from the diskette to the closed *System Folder* icon on your Macintosh hard disk. At the alert message, click OK to automatically install the driver in the *Extensions* folder.

5. Select Chooser from the Apple menu.

6. Click the Phaser 540 GX printer driver icon on the left side of the Chooser. A list appears with the printers you have connected to your Macintosh or printers that are available on a network. (If the printer driver icon does not appear, Restart your Macintosh, and repeat the printer driver installation procedure; also check the cable connections on your computer and printer.)

7. In the Connect via field's pop-up menu, select your printer's communication method:

   ■ The AppleTalk option is the standard network connection.

   ■ The Servers option is used to select a shared desktop printer. See the *Phaser 540 Drivers and Utilities Printing User Reference* manual for details.

8. Click on the Phaser 540 in the list of printers on the right side of the Chooser.

9. Click the Create button to create a desktop printer. An icon of the printer appears on the desktop with the same name as the printer selected in the Chooser.

10. Close the Chooser by clicking its close box.

11. Store the printer diskette in a safe place.

Workstation users

The printer-control PostScript files that are on the Windows 3.1 Driver and Printer Utilities diskette (PC format) can be used with Unix and VMS workstations. These files let you set up your spooling system to select between media trays, print quality modes, color correction modes and other features. Unix workstation users can access utility files in the following ways:

■   Mount the PC diskette on the workstation.

■   Download utility files from the Tektronix Bulletin Board Service (BBS).

■   Request utility files from the Tektronix Color Printer Information Server over the Internet.

Most workstations with 3.5-inch disk drives provide a device driver that allows you to mount a PC floppy diskette. Refer to the *Phaser 540 Drivers and Utilities Printing Reference* manual for information on mounting PC diskettes.

Refer to the Chapter 6 in this manual for information on accessing Tektronix' Bulletin Board Service or Color Printer Information Server.

What next?

■ When you have set up all the hardware and connections, turned on the power, and installed the software on your computer, you are ready to print. Chapter 3, "Printing," contains useful information on basic printing features such as color correction, fonts, and printing hints. For detailed information on printing options, refer to the *Phaser 540 Drivers and Utilities Printing Reference.*

■ To install a hard disk for font storage, turn to "Adding a hard disk for font storage" on page B-5.

■ To disable the startup page, refer to "Enabling and disabling the startup page" on page A-5.

3 *Printing*

Which platform?

You can print to your printer from any of these platforms, providing the printer has the appropriate interface port. Refer to "Printer ports" on page 2-20 for more information.

■ PC — in Windows and in DOS

■ Unix and VMS Workstations

■ Macintosh

To print from a Macintosh or a PC running Windows, you should have first installed the Tektronix driver for your computer, as described in Chapter 2. For information on using the drivers, refer to the *Phaser 540 Drivers and Utilities Printing Reference.*

Note *If you are using DOS on a PC, you must first set up the driver in your application software.*

Use the following instructions to set up printing from your platform.

Printing from a PC: Windows

Note   *Printing from a PC through an interface port other than the parallel port requires that an optional Phaser Share card be installed in the printer.*

1. Make sure that the Tektronix Windows printer driver has been installed.

2. From the File menu, select the Print Setup command or the similar command in your application. Select Tek Phaser 540 (TekColor) from the list and select Setup. If you have previously set the printer as the default printer, it will already be selected on the list.

3. Use the Setup dialog box to select the paper size, orientation (portrait or landscape), and paper source printing options.

4. Click the Options button to display the Options dialog box.

    a. Click on the Printer Features button to display the Tektronix Printer Features dialog box.

    b. Use the Tektronix Printers Features dialog box to select Color Correction and Print Quality.

        If the Printer Features button does not appear in the Options dialog box, the Tektronix Windows driver probably is not installed or the printer has not been selected.

For details on the Tektronix driver, refer to the *Phaser 540 Drivers and Utilities Printing Reference.*

Printing from a PC: DOS

1. In your application software, set up the printing options for a color printer driver and a communications port. For more information on making these selections, refer to your application software's user manual.

2. Make sure that the PC communication ports have been set up correctly. Refer to "PC: DOS and setting up ports" on page 2-30 for instructions.

3. Select the printer driver for the Phaser 540, a Tektronix Phaser printer, or a generic color PostScript driver.

Note *Generic PostScript printer drivers do not have information about your Phaser 540, for example, its page sizes and image area size. Using a standard Letter or A4 paper size selection should produce acceptable results.*

a. Select the appropriate port (an LPT port for parallel; a COM port for serial; one of the LPT or COM ports for network connections).

b. Set the page margins in your application software as needed. For details on the printer's paper and margin sizes, refer to "Margins and print area" on page 3-15.

4. Send a file to the printer from your software application. Refer to the application software's user manual for details.

Printing from a Unix or VMS workstation

You can print from a workstation through Ethernet, Token Ring, parallel, or serial interfaces. Workstation users can print from any application that generates color PostScript.

For Unix and VMS environments, Tektronix offers Phaser Print. Phaser Print provides fast raster screen copy printing to Tektronix color printers. Phaser Print also provides a graphical user interface for push-button control of Tektronix printer features.

Phaser Print software is available for these workstations:

Workstations	Operating systems
Sun:	Sun OS 4.1.X, Solaris 2.X
SGI:	IRIX 4.0.5 and 5.2
HP 9000 700/800:	HPUX 9.X
IBM RS/6000:	AIX 3.2
DECstation:	Ultrix 4.X
DEC Alpha AXP:	OSF/1 1.3

Note   *Tektronix offers a similar solution for DEC OpenVMS VAX and DEC OpenVMS AXP.*

Phaser Print works with the workstation's native spooling system to print PostScript files and raster files in these formats: Sun Raster Format (SRF), xwd, and SGI RGB.

If you ordered the TCP/IP Ethernet or Token Ring option for your printer, you received a demonstration copy of Phaser Print on a compact disk (CD). If you did not receive a demonstration CD but would like one, or if you would like to purchase a licensed version of Phaser Print, contact your dealer, local Tektronix office, or in the United States or Canada, call 1-800-835-6100.

For VMS environments, Tektronix also offers PhaserSym, a VMS print symbiont. Refer to Appendix B for ordering information.

For information on printing from workstations and setting up spooling systems, you can contact HAL, the Tektronix automated fax system by calling direct (503) 682-7450 or, in the United States or Canada, by calling toll-free 1-800-835-6100. Refer to "Using the automated fax systems" on page 6-3 for details on using the HAL system.

The printer-control PostScript files that are on the printer diskettes (PC format) can be used for Unix workstations. These files let you set up your spooling system to select between media trays, print quality modes, color correction modes and other features. Most workstations with 3.5-inch disk drives provide a device driver that allows you to mount a PC floppy diskette.

If you don't have the means of transferring utility files to control printer features from the PC diskette, you can download utilities and files from the Tektronix Bulletin Board Service (BBS) or request files from the Tektronix Color Printer Information Server, an automatic file serving program on the Internet.   Refer to Chapter 6, "Troubleshooting," for information about accessing Tektronix' Bulletin Board Service or Color Printer Information Server.

Printing from a Macintosh

The Macintosh Driver and Printer Utilities diskette includes two Macintosh printer drivers that allow you to select printer features.

Note *Printing from a Macintosh requires that an optional Phaser Share card be installed in the printer.*

Using the Phaser 540 driver

1. Install the Tektronix printer driver for the Macintosh if needed. Refer to "Installing a driver on your computer" on page 2-28 for instructions.

2. Select the driver in the Chooser.

3. To print a file, use the Page Setup and Print commands from the File menu within your application:

   a. In the Page Setup dialog box, select the desired paper size from the pop-up menu so that the application uses the correct margins for the printer. To see the choices, use the pop-up menu to the right of the standard Paper sizes.

   b. In the Print dialog box, click the TekColor button to open the TekColor Options dialog box, in which you can select TekColor color corrections; select print quality (Standard, Enhanced, Fast); and select media or tray (Paper, Transparency, Upper, Middle, Lower). For more details on the driver, refer to *Phaser 540 Drivers and Utilities Printing Reference.*

Using the Phaser 540 GX driver

1. Install the Tektronix printer driver for the Macintosh if needed. Refer to "Installing a driver on your computer" on page 2-28 for instructions.

2. Select a desktop printer.

3. Print from the driver using one of these methods:

   ■ **For QuickDraw GX applications**
   Select the desktop printer you want to use from the Print dialog box (select Print from the File menu).

   ■ **For non-QuickDraw GX applications**
   You can print to the default desktop printer from the Print dialog box (select Print from the File menu). To change the default desktop printer, select (highlight) the desktop printer you want to use, then select Set Default Printer from the Printing menu.

Refer to the *Phaser 540 Drivers and Utilities Printing Reference* for more information on using the Phaser 540 GX printer driver.

Printing from specific applications

Refer to the *Phaser 540 Drivers and Utilities Printing Reference* manual for some application-specific information.

In addition, you can get tips on printing from specific applications (such as QuarkXPress and PageMaker) by contacting HAL or EuroHAL, the Tektronix automated information systems. HAL and EuroHAL fax you information immediately on applications and other topics. To receive a HAL FAX catalog, call toll-free in the United States 1-800-835-6100, or dial direct (503) 682-7450. For a EuroHAL catalog, and for complete information on both HAL and EuroHAL, see "Using the automated fax systems" on page 6-3.

Selecting print features

This printer provides three print-quality modes as well as TekColor color corrections that you can select to customize your prints. There are three ways to select print features:

■ **Through the printer driver**
Print selections made using the Tektronix printer driver override the settings on the printer's front panel. Refer to the *Phaser 540 Drivers and Utilities Printing Reference.*

■ **From the printer's front panel**
Settings you make on the front panel are only used when printing from a non-Tektronix driver. Refer to the instructions included in this chapter.

■ **Sending a PostScript utility file to the printer**
Printer settings downloaded to the printer's front panel are only used when printing from a non-Tektronix driver. Refer to the *Phaser 540 Drivers and Utilities Printing Reference.*

Note *For network setup protection, the front panel access to setup parameters may be limited. Refer to "Protected mode for the front panel menu" on page 7-4 for details.*

Print-quality modes

Standard   The default setting, at 600 x 600 dpi, bi-level. This is the best general-purpose mode for full color printing. This selection produces about 1.8 pages per minute, depending on the size and complexity of the image. You can get faster throughput with more memory loaded.

Enhanced   This mode produces the highest quality color prints at 600 x 600 dpi, continuous tone. It provides more detail and clarity in scanned images and prints about 1.8 pages per minute. This print-quality mode requires an additional 16 Mbytes of RAM be installed (for a total of 36 Mbytes).

Fast   This mode produces the fastest output at 300 x 300 dpi, continuous-tone: 3.5 pages per minute. When printing raster image data (photographic-quality or continuous-tone), this mode provides excellent output with finer color gradation than Standard mode.

Note   *If you select Enhanced mode but do not have the required 36 Mbytes of memory installed (1 SIMM), the output matches Standard mode. You must have the additional memory installed to achieve the Enhanced mode output quality.*

Selecting print-quality modes from the front panel

Use the following steps to change the print quality mode through the printer's front panel menu.

1. When the printer is on and the `Ready` message appears, press the **Menu** button. The printer displays the first selection in the menu:

    ```
    Help Pages
    <---   --->   Menu
    ```

2. Using the left arrow (**<---**) or right (**--->**) arrow buttons, scroll through the selections until the following message appears:

    ```
    Print Quality
    <---   --->   Menu
    ```

3. Press the **Menu** button to access print quality selections. The printer displays the following message:

    ```
    Print Quality:Standard*
    <---   --->   OK
    ```

4. Using the right or left arrow buttons, scroll between the print quality selections until you reach the appropriate setting. An asterisk next to the selection indicates the currently active setting.

5. Press the **OK** button to confirm your selection.

6. Return to the top level of the menu by pressing the (Exit) button until the printer displays the `Ready` message.

Color correction

The printer provides TekColor Dynamic Correction, which consists of the following color correction modes:

Color correction mode	Description
None	No correction made to colors.
Vivid Color	Adjusts the color blue to appear less purple. Produces the brightest possible colors for transparencies.
Display	Adjusts the color to closely approximate the colors on a standard display screen.
SWOP Press	Specification for Web Offset Publications. Typically used to match U.S. press standards.
Euroscale Press	Matches the *Pantone$^{®}$ Process Color System Guide*, Euroscale Edition. Typically used to match European press standards.
Commercial Press	Used to match commercial 3M Matchprint® proofs.
Monochrome	Prints a color image as a monochrome gray scale. Outputs color page masters in black-and-white for photocopying.
Use Printer Settings	Uses the color correction mode specified in the printer front panel setting rather than any printer driver setting. This may include a custom download color correction.

Note   *The print driver help window provides a short description of each color correction mode. To access this information, click on the Help button (for a Macintosh, in the TekColor Options dialog box; for Windows, in the Tektronix Printer Features dialog box).*

You can view an example output of four of the color correction modes at the bottom of the Startup page. Refer to "Printing the startup page" on page A-4 for instructions on printing the Startup page.

Note   *If your printer is on a network and you have changed the front panel settings, make sure that you tell other users on the network. The printer settings affect all prints made with non-Tektronix drivers.*

Selecting TekColor corrections from the front panel

Use the following steps to change the color correction mode through the printer's front panel menu.

1. When the printer is on and the `Ready` message appears, press the **Menu** button. The printer displays the first selection in the menu:

    ```
    Help Pages
    <---   --->   Menu
    ```

2. Using the left (**<--**) or right (**--->**) arrow buttons, scroll through the selections until the following message appears:

    ```
    TekColor Correction
    <---   --->   Menu
    ```

3. Press the **Menu** button to access color correction selections. The printer displays the following message:

    ```
    TekColor Correction:Vivid Color*
    <---   --->   OK
    ```

4. Using the right or left arrow buttons, scroll through the color correction selections. An asterisk next to the selection indicates the currently active setting.

5. Press the **OK** button to confirm your selection.

6. Return to the top level of the menu by pressing the (Exit) button until the printer displays the `Ready` message.

For a complete list of the front panel settings, see Chapter 7. For more detailed information on color correction, refer to the *Phaser 540 Drivers and Utilities Printing Reference.*

Using color sampler charts

The Phaser 540 diskettes contain color sampler charts for the following color methods:

CMYK
Cyan, magenta, yellow, and black

RGB
Red, green, and blue

HSB
Hue, saturation, and brightness

PANTONE® Colors

The charts consist of colored rectangles and coordinate values. Print the appropriate chart for your application, and use the coordinate values to select colors within an application. For example, your printer can produce PANTONE-approved process color simulations. Use the PANTONE Color sampler chart to select the process color values within software applications that support PANTONE Colors.

If you use an application that specifies print colors using CMYK values, use the CMYK charts. If you use an application that specifies print colors using RGB values, use the RGB charts. For details on printing the charts, refer to the *Phaser 540 Drivers and Utilities Printing Reference.*

All about media

■ Make sure that the media trays are free of dust. Dust and dirt in a media tray can be transferred to the paper or transparency, resulting in poor print quality.

■ Handle paper and transparencies with both hands at the edges to avoid creases and fingerprints, which can result in poor print quality.

■ Store paper and transparencies in the original, dust-free package.

■ To avoid having transparencies or paper stick together, fan them before loading into the appropriate media tray.

■ Use a high grade laser paper for the finest resolution and brightest, most consistent colors: 75-105 g/m^2 (20-28 lb.) paper in the media trays and 60-120 g/m^2 (16-32 lb.) paper with manual feed.

■ Never feed media through the printer twice and never print on both sides of the media.

■ This printer is not designed to accommodate envelopes. Do not attempt to print on envelopes.

Margins and print area

When the printer places an image on media, the image (print area) is a bit smaller than the media size. You may need to adjust the page margins in your application software to match the print area.

Note   *To assure the correct page margins, use the Tektronix software drivers.*

The following table and illustration show the page sizes, the largest print areas, and the margins for the media sizes supported on this printer.

Media	Page size	Print area	Margins		
			Top	**Bottom**	**Sides**
1. A/Letter (U.S.)	8.5 x 11 in.	8.2 x 10.6 in.	.22 in.	.18 in	.15 in
2. A4 (Metric)	210 x 297 mm	200 x 287 mm	5 mm	5 mm	5 mm

1

8.2 in.

10.6 in.

2

200 mm

287 mm
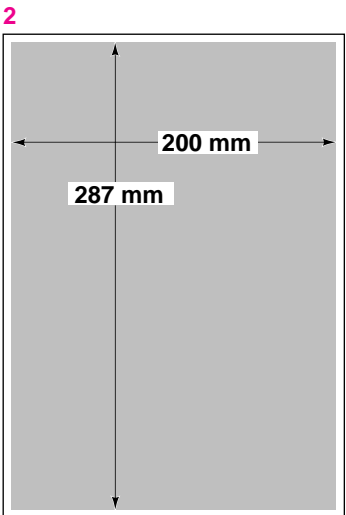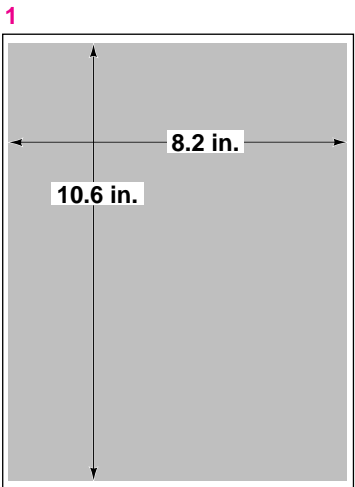
9008-21

Media trays

The printer is shipped with a paper tray, either A/Letter Paper (U.S.) or A4 Paper (Metric), depending on the order option. Optional transparency trays (either A/Letter Transparency or A4 Transparency) are also available.

Media Trays	Media size
A/Letter Paper	8.5 x 11 in.
A/Letter Transparency	8.5 x 11 in.
A4 Paper (Metric)	210 x 297 mm
A4 Transparency (Metric)	210 x 297 mm

Caution   *Load only paper in the paper tray and transparencies in the transparency tray; otherwise, the printer reports a media jam.*

If you have the Lower Tray Assembly installed, make sure that all trays in the printer at any one time are the same media size (required for the automatic tray-switching feature).

Selecting a media tray by location or media type

When your printer has a Lower Tray Assembly, it accommodates three media trays at once. You can make a selection in the printer driver, from the front panel, or using a PostScript utility file.

Regardless of which method you use, you can select media by choosing the location (tray or manual feed) or the type of media; only one can be selected at a time.

Upper*	Forces the upper tray to be selected.
Middle*	Forces the middle tray to be selected.
Lower*	Forces the lower tray to be selected.
Paper	Forces the paper tray to be selected (if it is installed).
Transparency	Forces the transparency tray to be selected (if it is installed).
Media Tray	Selects media from the media tray (if the printer has only one tray).
Manual Feed paper	Selects paper from the manual feed tray.
Manual Feed transparency	Selects a transparency from the manual feed tray.

* This selection only appears in the front panel if you have the optional Lower Tray Assembly installed.

Upper, Middle and Lower selections

All of the selections are available in the printer driver and front panel. In addition, you can also select the Upper, Middle, or Lower tray by using a PostScript utility file (provided on the printer's utility diskettes). If you make a selection by one of these three methods, the printer picks media from the appropriate tray until that tray is empty. When that tray is empty, printing stops until the selected tray is filled.

Paper or Transparency

If you specify a particular media type, the printer picks media from any tray loaded with that type. If the type requested is not available, the printer waits until it is available, and displays a message requesting the appropriate type of media be loaded.

AutoSelect

You can also choose AutoSelect from the front panel or with a utility file. With AutoSelect, the printer picks media from the default tray (if it is filled and loaded) or any tray in the printer that has media loaded. When that tray is empty, the printer automatically picks from another tray if it is the same type of media tray.

Manual Feed

The printer driver and the front panel also allow you to choose the manual feed tray. In the front panel, the selections are `Manual Feed: Paper` and `Manual Feed: Transparency`. In the Macintosh driver, you select manual feed and media type separately. If no media is loaded in the manual feed tray when manual feed is selected, the printer waits 60 seconds before it picks media from a tray (the default timeout is 60 seconds).

For more information on the front panel, see "Front panel" on page 7-1. For detailed information on the printer driver, refer to the *Phaser 540 Drivers and Utilities Printing Reference.*

Note   *You can change the printer's tray-switching behavior by sending the appropriate utility file to the printer; however, media tray selections made in the driver take priority over selections made in either the front panel or by sending utility files to the printer. For more information, see the Phaser 540 Drivers and Utilities Printing Reference manual.*

Image orientation

Orientation refers to how the image appears on a print. You specify the image orientation through your software application or printer driver.

1. Portrait

2. Landscape

8344-42A
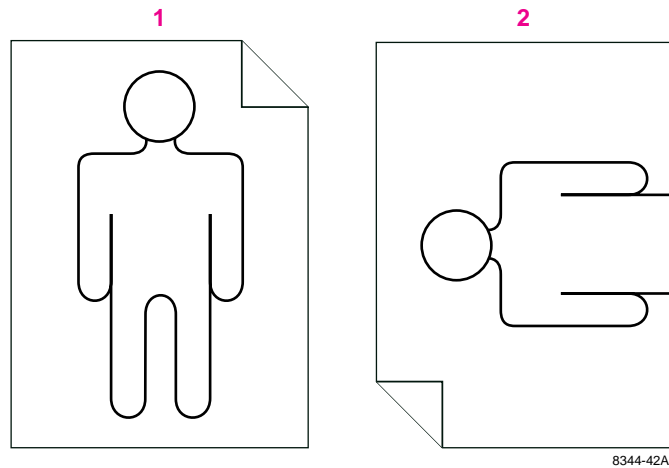
Using manual feed

Use manual feed for printing on a media other than what is installed in the media tray. When the printer senses media in the manual feed tray, it picks that media. You can also select manual feed in the front panel; when you do, the front panel reads `Manual Feed: Paper` or `Manual Feed: Transparency`. The message remains in the front panel until you feed media at the manual feed slot or make another selection. (This front panel setting is overridden by a driver selection.)   If no media is loaded in the manual feed tray when manual feed is selected, the printer waits 60 seconds before it picks media from a tray (the default timeout is 60 seconds).

Caution *Do not re-use media that has been fed through the printer once (for example, after jams or if the media is ejected without being printed). You may damage the printer.*

Also, do not print double-sided. Although your output may look acceptable, you may shorten the life of the imaging unit.

Insert the paper

1. Adjust the guides to the width of the paper.

2. Insert a piece of paper until it stops.

3. Wait 5 seconds after the first sheet enters the printer before inserting a second sheet.
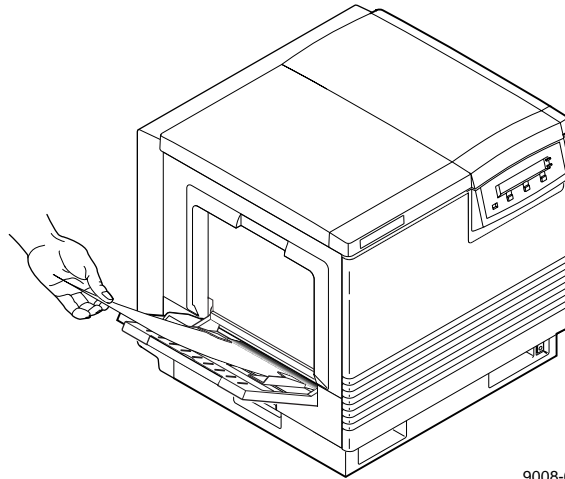
9008-61

Insert the transparency

1. Adjust the guides to the width of a transparency.

2. Tektronix transparency film is stored in its box with the printable side facing *up* and the notched end at the upper right side of the box.

3. Place the transparency in the manual feed tray with the printable side *up:* the end that is notched enters the printer first with the notched corner closest to the *front* of the printer. Insert the transparency until it stops.

4. Wait 5 seconds after the first sheet enters the printer before inserting a second sheet.
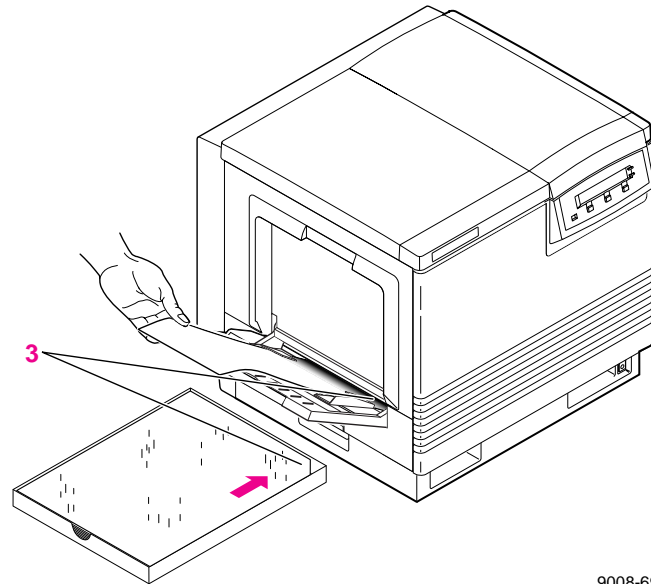
9008-69

Making transparencies

Follow these guidelines when you make transparencies:

■ Use only Tektronix transparencies.

■ When using the transparency tray (**1**), load transparencies with the printable side *down* (the notched end is placed closest to the load level label inside the transparency tray).

■ When using manual feed (**2**), insert the side with the notched end into the printer first, with the notched corner closest to the front of the printer.
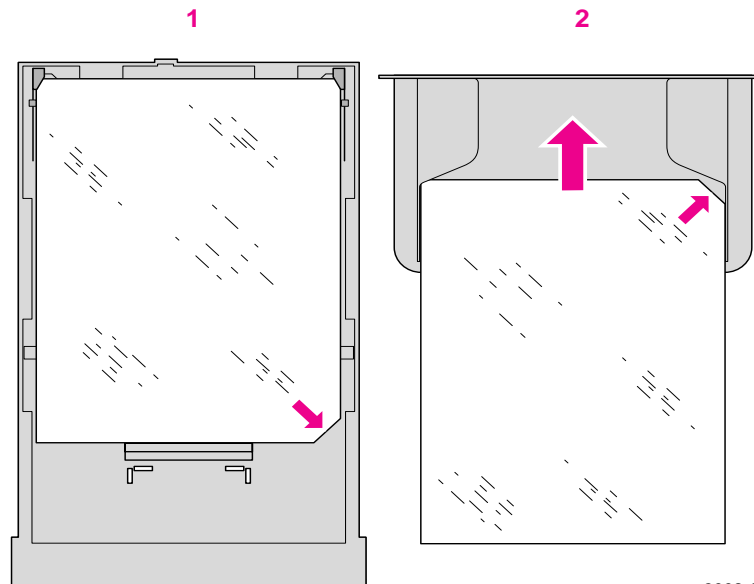
9008-68

Note *Do not re-use transparencies that have been fed through the printer once, for example, after jams or if the transparency is ejected without being printed; you may damage the printer.*

Also, do not print double-sided. Although your output may look acceptable, you may shorten the life of the imaging unit.

Fonts: resident typefaces

Courier
Courier Bold
Courier Oblique
Courier Bold Oblique

ITC Avant Garde Gothic Book
ITC Avant Garde Gothic Book Oblique
ITC Avant Garde Gothic Demi
ITC Avant Garde Gothic Demi Oblique

ITC Bookman Light
ITC Bookman Light Italic
ITC Bookman Demi
ITC Bookman Demi Italic

Helvetica
Helvetica Bold
Helvetica Oblique
Helvetica Bold Oblique

Helvetica Condensed
Helvetica Condensed Bold
Helvetica Condensed Oblique
Helvetica Condensed Bold Oblique

Helvetica Narrow
Helvetica Narrow Bold
Helvetica Narrow Oblique
Helvetica Narrow Bold Oblique

New Century Schoolbook
New Century Schoolbook Bold
New Century Schoolbook Italic
New Century Schoolbook Bold Italic

Palatino
Palatino Italic
Palatino Bold
Palatino Bold Italic

Times Roman
Times Bold
Times Italic
Times Bold Italic

ITC Zapf Chancery Medium Italic
✫✳✂ ❋❀☐❀ ❁❂■❋✳❀▼▲ (ITC Zapf Dingbats)
Σψμβολ (Symbol)

8849-22

Resident typefaces (PCL5)

For PCL5 (Printer Command Language) printing (HP Laserjet III emulation), the printer supports Courier, Times, and Universe typefaces in medium, bold, italic medium, and italic bold.

Downloading fonts

The printer accepts PostScript Type 1, Type 3, and TrueType downloadable fonts.

If you have an external hard disk connected to the Phaser 540, you can store the downloadable fonts on it. You can use utilities on the Phaser 540 printer utilities diskettes to download fonts to the printer. For details, see the manual *Phaser 540 Drivers and Utilities Printing Reference.*

Installing Macintosh screen fonts

The Macintosh Driver and Printer Utilities diskette includes screen fonts for these typeface families: Times, Helvetica, Courier, Symbol, Helvetica Condensed, Helvetica Narrow, Palatino, ITC Avant Garde Gothic, ITC Bookman, ITC Zapf Chancery, ITC Zapf Dingbats, and New Century Schoolbook.

If they are not already installed, you must install these screen fonts to see the printer's resident typefaces on the Macintosh screen. For information on how to install fonts, see the *Phaser 540 Drivers and Utilities Printing Reference* or your Macintosh documentation.

Printer languages: PostScript, HP-GL, PCL5

The printer supports PostScript Level 1 and Level 2, HP-GL (Hewlett-Packard Graphics Language), and monochrome PCL5 (Printer Command Language) printer languages.

The default language for the parallel port is PostScript. For information on default language for other interface ports, refer to the *Phaser Share User Manual.*

If you want to print HP-GL or PCL5 files on a port set to PostScript, you must set up that printer port for that type of data or enable Adobe IntelliSellect™ automatic language selection. Refer to the Phaser *540 Drivers and Utilities Printing Reference* for instructions.

If automatic language selection is enabled, you can send PostScript, HP-GL, and PCL5 files to the printer and the printer automatically detects the type of file and prints it. You can change the default language so that the next time you turn on the printer, it is set to receive PostScript, HP-GL, or PCL5 data on a specific port.

The printer has default values for the HP-GL parameters, such as pen color and pen width. However, you can change these values. Refer to the *Phaser 540 Drivers and Utilities Printing Reference* for instructions.

Printing hints

Application hints

For information about using specific software applications with your printer, contact Tektronix' HAL or EuroHAL information systems. In the U.S., call 1-800-835-6100 or (503) 682-7450; for EuroHAL telephone numbers, refer to "If you need help" on page 6-1. For a complete listing of available topics, request a catalog. For instructions on using the HAL and EuroHAL systems, refer to "Using the automated fax systems" on page 6-3.

Tektronix supplies and drivers

Always use Tektronix supplies to ensure the highest quality prints and printer performance. Tektronix print drivers provide the best access to printer features. See Chapter 5 for order information.

Getting the largest printed picture

To get the largest printed picture, keep in mind the following:

■   The area of media that the Phaser 540 prints on is smaller than the size of the paper or transparency (refer to "Margins and print area" on page 3-15 for more details). You may have to adjust the margins in your application software.

Relative port speed

Ethernet and Token Ring are the fastest ports, followed by the parallel port, the LocalTalk port, then the serial port.

Fastest print time

The total print time depends on the following:

- Image complexity

- Image size

- Type of port used and network traffic

- Printer's memory configuration (a 52-Mbyte configuration is fastest)

- Resolution selected (300 x 300 dpi is twice as fast as 600 x 600 dpi)

- Type of media (paper or transparencies)

Of these elements, only the time contributed by the printer's paper-marking speed (the time it takes the printer to put the colored toner on the paper once it has received the processed image) is predictable; the others can vary greatly depending on your system configuration and the type of image you are printing. However, the Phaser 540 PostScript interpreter combines very fast image processing and communication with sophisticated memory management to keep the total print time to a minimum.

The printer's optimum image processing throughput via a dedicated Ethernet connection is about 200 Kbytes per second (12 Mbytes per minute). Actual throughput will generally be somewhat slower than this, depending on network traffic, image complexity, color correction, and memory configuration.

For details on the printer's paper-marking speed, see "Specifications" on page A-13.

# 4 *Caring for Your Printer*

Overview

To ensure the best print quality and the most reliable printer operation, follow these simple guidelines:

■ Always use high-quality laser paper and *only* Tektronix transparencies.

■ To maintain print quality, use the troubleshooting information on the Quick Reference Card and in Chapter 6; also use the Test Print in the front panel's Help Pages menu to diagnose symptoms.

■ Do not touch the underside or the right side of the imaging unit; fingerprints may appear on your output.

■ Keep the imaging unit's light exposure to a minimum — less than 45 seconds — or you may damage the unit:

■ When installing a new imaging unit, keep the protective plastic sheet on until immediately before you insert it into the printer.

■ If, when installing the imaging unit, you also need to install other components, install the imaging unit last to minimize its light exposure.

■ When changing a toner cartridge or clearing a media jam, make sure that you close the right side door quickly to avoid any light exposure to the imaging unit.

User-replaceable components

This printer is designed modularly so that it is easy to maintain: several of the components are replaceable. What this means to you is that scheduled cleaning is not necessary. These are the replaceable components:

1.   Transfer kit (transfer roller and waste bin)

2.   Imaging unit (includes the filter and corona wire)

3.   Fuser

4.   Toner cartridges
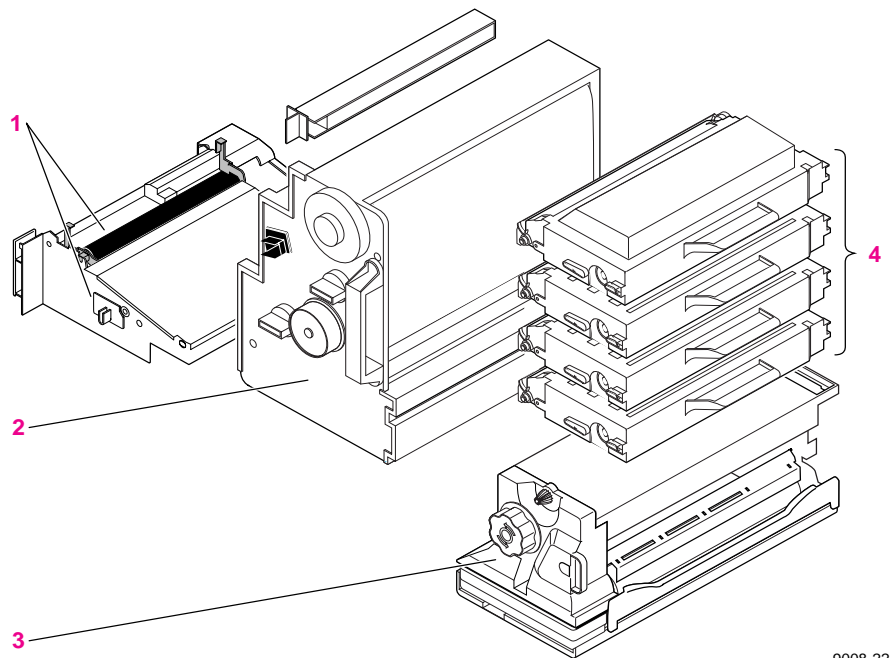
9008-22

When to replace or clean components

The following table lists the replaceable components and what symptoms to look for when they need to be replaced or cleaned.

Printer component	Average life*	Symptom
Toner cartridges		
Change the color toner soon.	6,500 pages	■ Front panel message: `<color>:low`
Change the color toner now.		■ Faded or missing color in a single color.
		■ A straight, narrow, and even vertical light streak in one color.
Imaging unit		
Replace the imaging unit.	40,000 images	■ Dark, vertical streaks on the whole page.
		■ Dark color spots and streaks in all colors.
		■ A wide, light, horizontal band in one place on the page.
		■ All colors are faded; fine line detail disappears.
		■ Front panel message: `Imaging Unit: replace`
Fuser	40,000 pages	■ Front panel message: `Fuser: replace`
Transfer kit	40,000 pages	■ Front panel message: `Transfer Kit: replace`
Corona wire		
Clean the corona wire.	As needed	■ Vertical light streaks that are wavy, wide, and appear in all colors.

* These figures are based on an average of 5% coverage of the printable area for any one color. The frequency of replacement will vary, depending on the complexity of the prints you are making.

For a more detailed list of print quality symptoms and solutions, refer to the table "Troubleshooting and print quality quick reference" on page 6-8 and "Print quality problems" on page 6-21.

Replacing a toner cartridge

Replace a toner cartridge soon after the front panel reads `<color> low`. After the message appears, the cartridge may still yield about 500 pages, depending on the complexity of your prints.

Replace the used toner cartridge

Caution   *Do not leave the right side door open for more than 45 seconds when a toner cartridge has been removed; the imaging unit is exposed to light and will be damaged.*
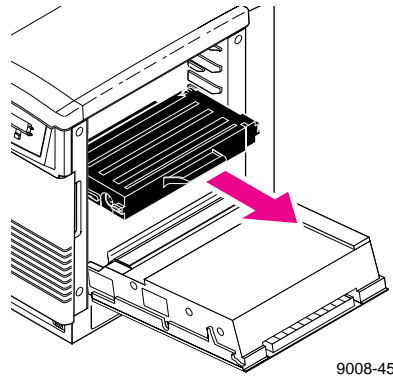
Use this procedure to replace any of the four color toner cartridges.

1.   Turn the power *off*.

2.   Open the right side door.
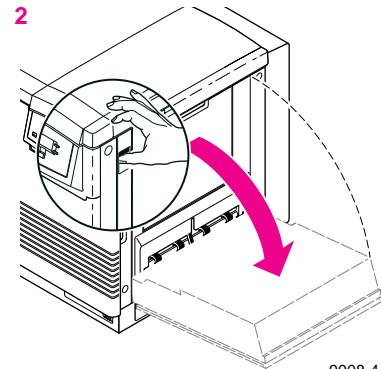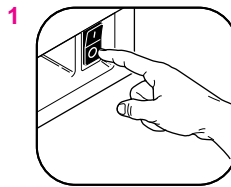
9008-44

3.   Slide out the used toner cartridge and dispose of it as normal office waste.

9008-45

4.   Remove the new toner cartridge from its packaging.

5.   Remove the shipping cover from the new toner cartridge.

6.   Insert the new toner cartridge into the printer.

Note   *The cartridge and printer labels are color-coded for easy installation.*

7.   Close the right side door and turn the power *on*.

9008-46
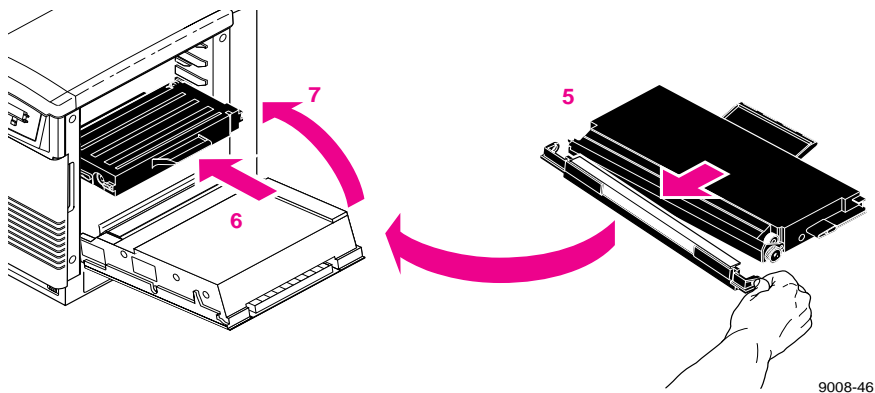
Replacing the imaging unit

Replace the imaging unit when the front panel reads
`Imaging Unit: replace.` Refer to "Troubleshooting and print quality
quick reference" on page 6-8 for more information on diagnosing print
quality symptoms.

The kit consists of these items:

■ Imaging unit (including the corona wire)

■ Filter

■ Blower/brush cleaning tool

Caution *When replacing the imaging unit, make sure that you do not
expose either the new or used unit to light for more than
45 seconds. (When diagnosing a print quality symptom, you
may replace the imaging unit and find it was not the solution,
and then need to put the original unit back into the printer.)*

Remove the used imaging unit

1. Turn the power *off.*

2. Open the front door.
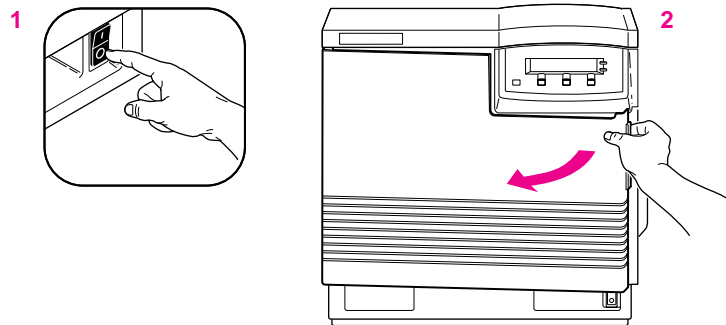
9008-35

3. To unlock the imaging unit, turn the large blue knob *counterclockwise.*

4. Holding the blue front handle, pull out the imaging unit until it stops.

5. Lift up the blue handle on the left side of the imaging unit to release the catch.

Caution   *The imaging unit weighs about 6.8 kg (15 lbs.); take care to handle the imaging unit as shown to avoid damage to the unit and personal injury.*

6. Slide the imaging unit out all the way; cover it completely to prevent damage from exposure to light, and set it aside.
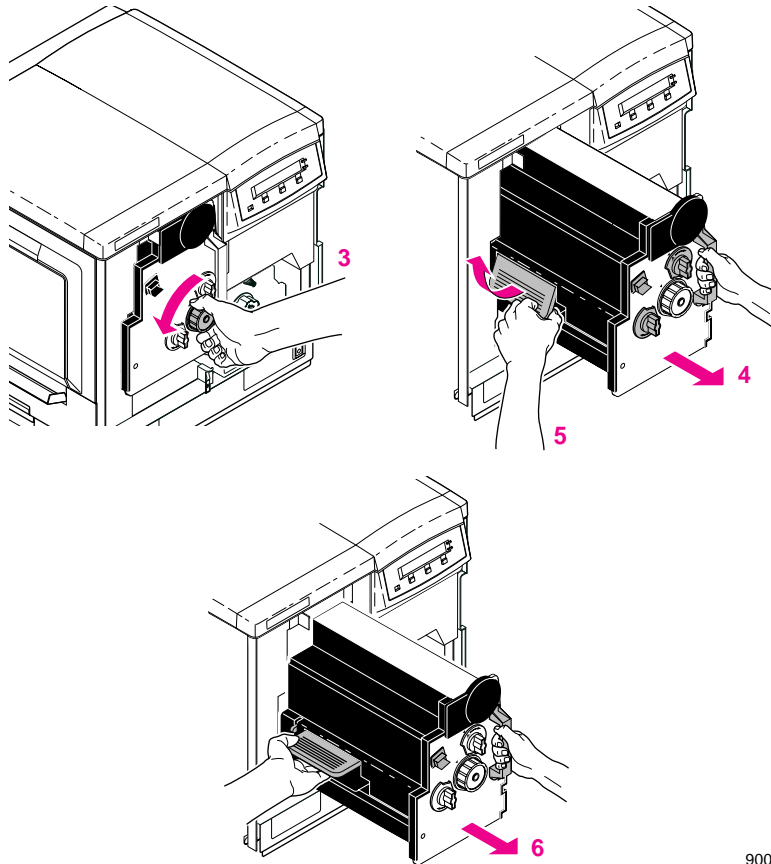
9008-36

Unpack the new imaging unit

1. Remove the filter, the blower/brush cleaning tool, and the new imaging unit from the packaging, but leave the protective cover on the imaging unit until you insert it into the printer.

2. Save all packing material in case moving or subsequent shipment is necessary.

Caution   *To ensure print quality, do not touch the underside or the right side of the imaging unit; you may see fingerprints on your output.*

Never allow exposure to direct sunlight, which can cause permanent damage in only a few seconds. Do not leave the imaging unit exposed to any light for more than 45 seconds. If you do, the unit may be damaged and need to be replaced. When installing it, leave the protective cover on until immediately before you insert it into the printer; then, promptly close the front door.

Clean the sensor

1. Using the blower/brush cleaning tool that was included in the imaging unit packaging, clean the sensor inside the printer.

4676-9-01
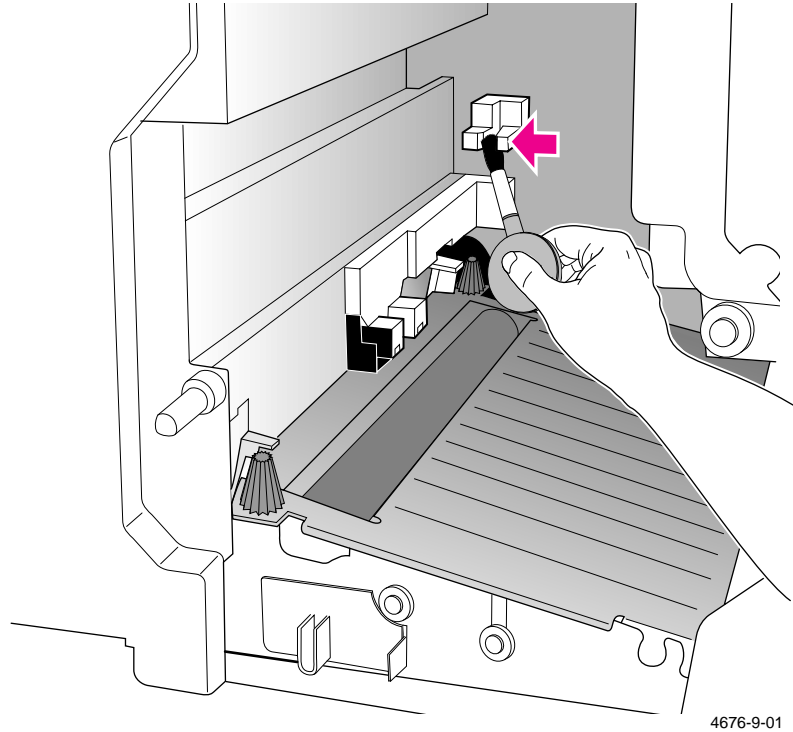
Replace the filter

1. Pull out the used filter and dispose of it as normal office waste.

2. Insert the new filter.

9008-37
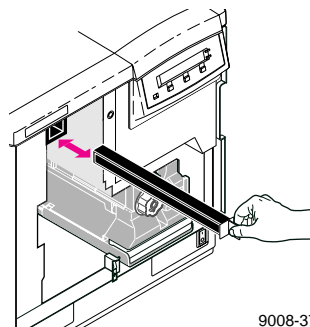
Insert the new imaging unit

1. Turn the two small blue knobs *clockwise* to align the triangles.
2. Remove the protective plastic sheet.

9008-38
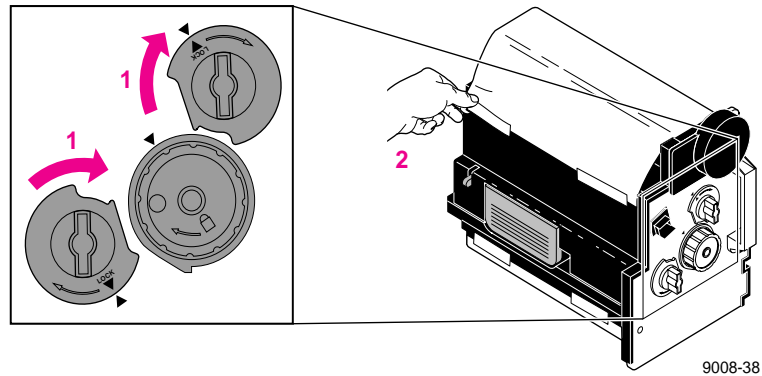
3. Insert the new imaging unit into the printer, holding it by the blue handles.
4. Release the left handle and slide the unit in until it stops.
5. Turn the large blue knob *clockwise* to insert the imaging unit completely and to lock it.
6. When properly installed, the lock icon aligns with the black triangle.
7. Close the front door and turn the power *on*.

9008-39
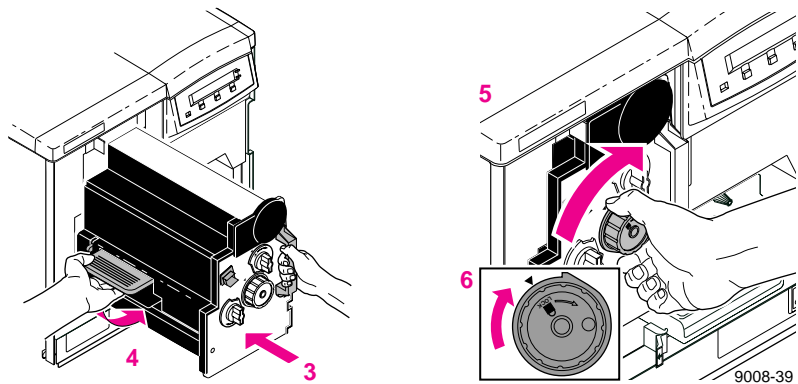
Reset the copy count

To reset the copy count for the imaging unit (and the corona wire, which is included with the new imaging unit), complete these steps.
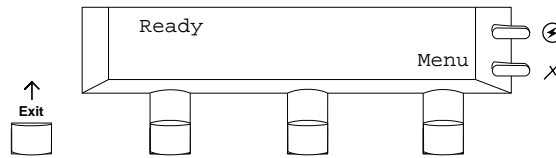
```
         Ready

                Menu
```

Exit

9008-20

1. Press the **Menu** button to enter the front panel menu. You will see this message in the display:

    ```
    Help Pages
    <---    --->    Menu
    ```

2. Press the right arrow button (**--->**) until the display reads

    ```
    System Counts
    <---    --->    Menu
    ```

3. Press the **Menu** button to enter the System Counts menu.

4. Press the right arrow button (**--->**) until the display reads

    ```
    Imaging Unit
    <---    --->    Menu
    ```

5. Press the **Menu** button; then press the **Reset** button.

6. Press the right arrow button (**--->**) until the display reads

    ```
    Corona Wire
    <---    --->    Menu
    ```

7. Press the **Menu** button; then press the **Reset** button.

8. Press the (Exit) button until the display reads `Ready`.

What to do with the used imaging unit

Once you determine that the new imaging unit takes care of whatever print quality symptom you observed, dispose of the used imaging unit as normal office waste.

If the new imaging unit did *not* take care of the symptom, put the original unit back into the printer and repack the new unit so that it is protected from any exposure to light, and save it for future use as needed.

Replacing the fuser

Replace the fuser when the front panel reads `Fuser: replace`. Refer to "Troubleshooting and print quality quick reference" on page 6-8 for more information on diagnosing print quality symptoms.

Remove the used fuser

1. Turn the power *off*.

2. Open the front door *and* the right side door.
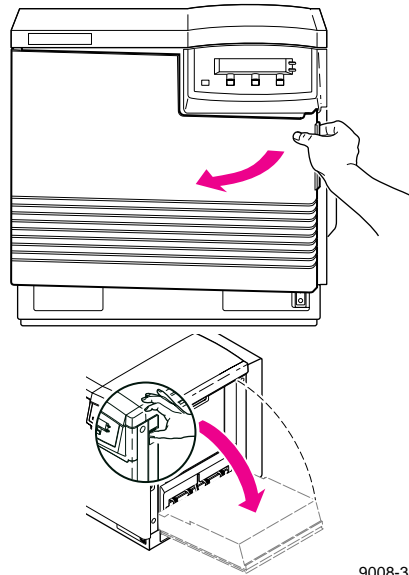
9008-30

3. To unlock the fuser, turn the *small* blue screw that is above the large knob *counterclockwise* (about four turns) until it is loose.

4. Holding the blue tab on the right, pull the fuser until the safety catch stops it.

5. Press the blue tab on the left to release the safety catch.

Caution *The fuser may be hot. Be careful not to touch the areas marked with this caution icon:*

The fuser weighs about 4.1 kg (9 lbs.); take care to handle the fuser as shown in the illustrations.

6. Slide the fuser out all the way, and dispose of it as normal office waste.
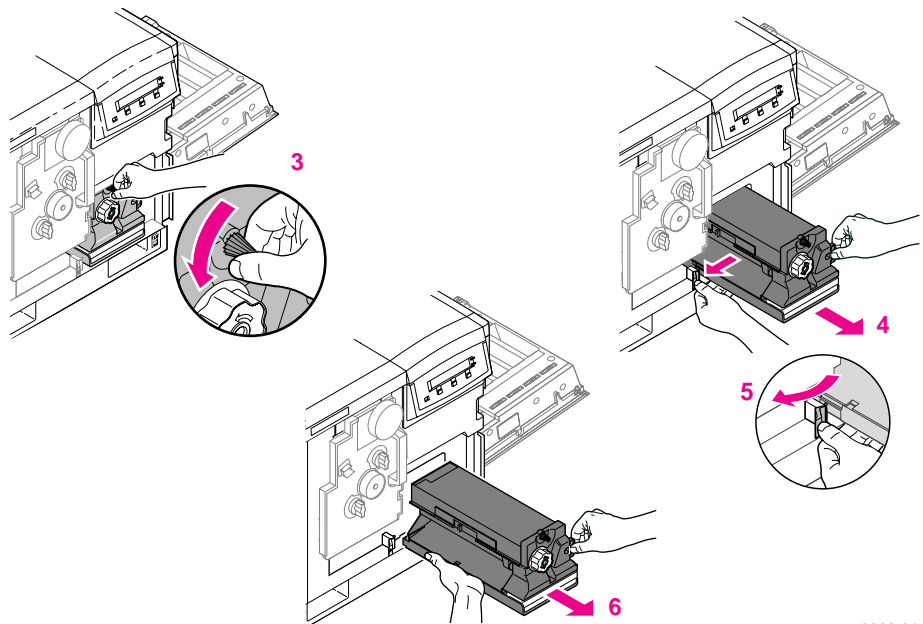
9008-31

Insert the new fuser

1. Remove the new fuser from its packaging.

Note *Save all packing material in case moving or subsequent shipment is necessary.*

2. Using both hands, slide the new fuser into the printer. Push firmly to seat the fuser in place.

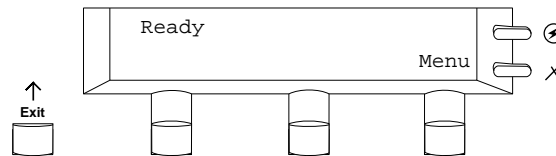**3.** To lock the fuser, turn the *small* blue screw *clockwise* about four turns until it is tightened.
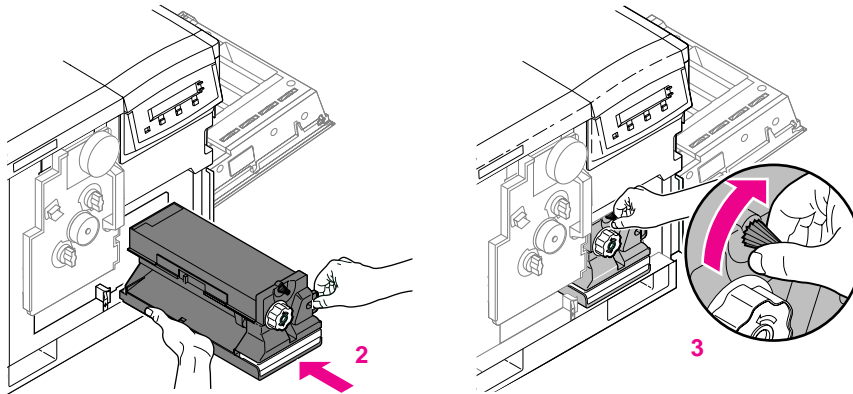
9008-32

4. Close the right side door and the front door.

5. Turn the power *on*.

Reset the copy count

To reset the copy count for the fuser, complete these steps.

9008-20

1. Press the **Menu** button to enter the front panel menu. You will see this message in the display:

   ```
   Help Pages
   <---    --->    Menu
   ```

2. Press the right arrow button (**--->**) until the display reads

   ```
   System Counts
   <---    --->    Menu
   ```

3. Press the **Menu** button to enter the System Counts menu.

4. Press the right arrow button (**--->**) until the display reads

   ```
   Fuser
   <---    --->    Menu
   ```

5. Press the **Menu** button; then press the **Reset** button.

6. Press the (Exit) button until the display reads Ready.

Replacing the transfer kit

Replace the transfer kit (consisting of the transfer roller and the waste bin) when the front panel reads `Transfer Kit: replace`. Refer to "Troubleshooting and print quality quick reference" on page 6-8 for more information on diagnosing print quality symptoms.
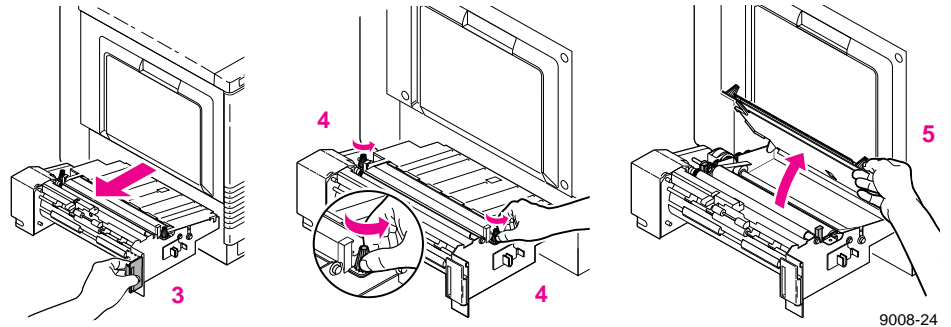
Remove the used transfer roller

1. Turn the power *off*.

2. Open the left side door. (If you have an optional Lower Tray Assembly, open the upper of the two left side doors).
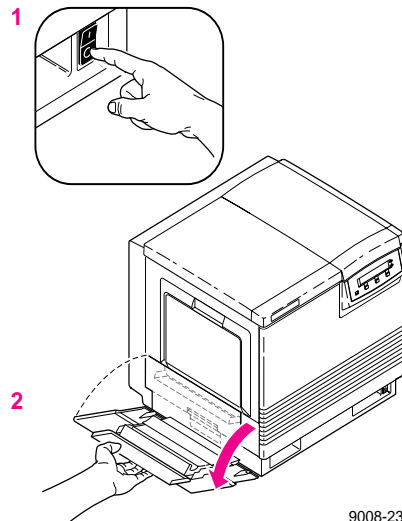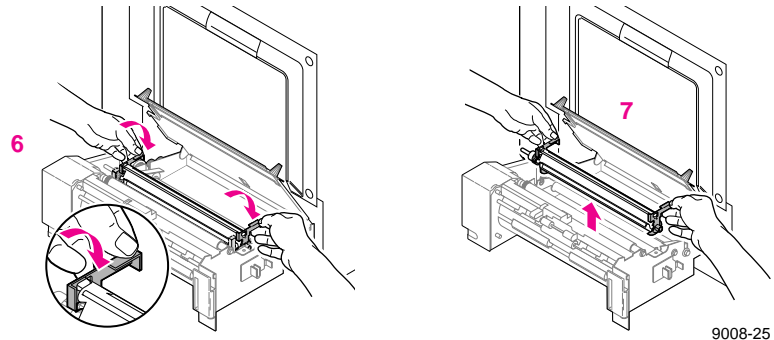
9008-23

3. Use the blue handle to pull out the paper feeder.

4. Turn the blue screws *counterclockwise* about four turns to unlock the cover.

5. Lift the cover until it catches and stays open.
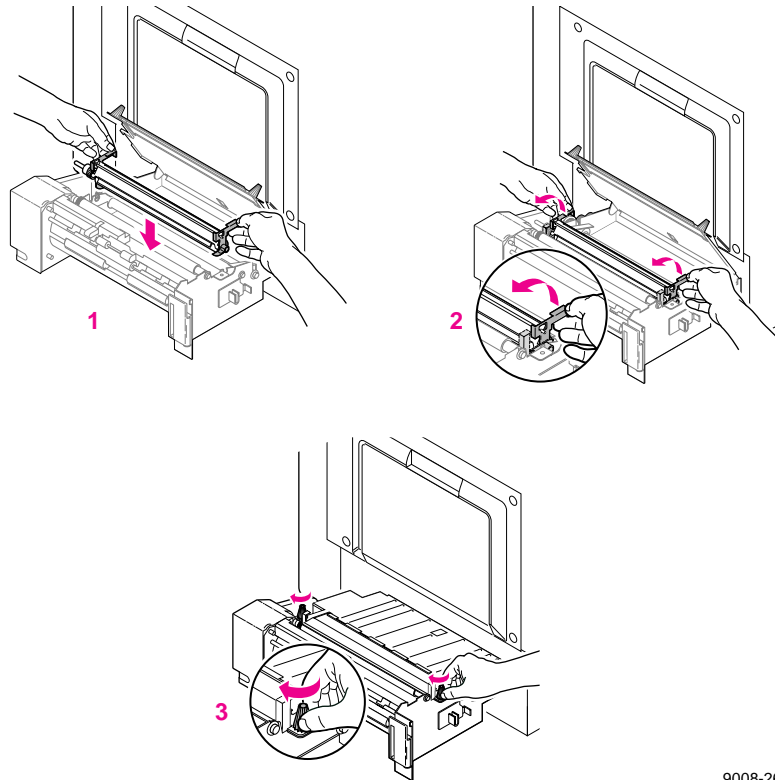

9008-24

6. Hold the transfer roller by its blue handles; rotate the handles toward the printer.

7. Lift out the used transfer roller and dispose of it as normal office waste.

9008-25

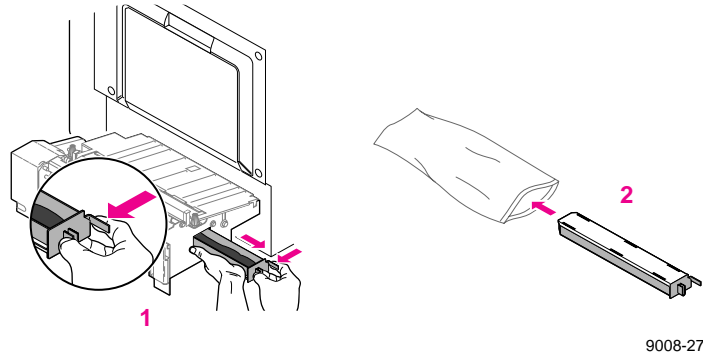### Insert the new transfer roller

1. Holding the new transfer roller by its blue handles, place the roller into the paper feeder.

2. Rotate the handles away from the printer to seat the roller securely.

3. Close the cover and tighten the two blue screws (*clockwise*).

9008-26

Replace the waste bin

1. With the paper feeder still out, pinch the waste bin's handle; press the safety catch to release it and remove the waste bin.

2. Place the used waste bin in the plastic bag provided in the kit; *close the plastic bag securely* and dispose of it as normal office waste.
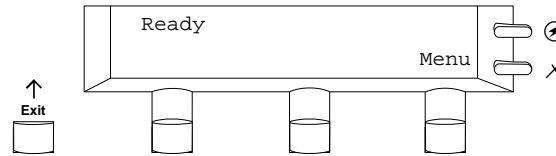

9008-27

3. Insert the new waste bin.

4. Slide the paper feeder back into the printer.

5. Close the left side door.

6. Turn the power *on.*
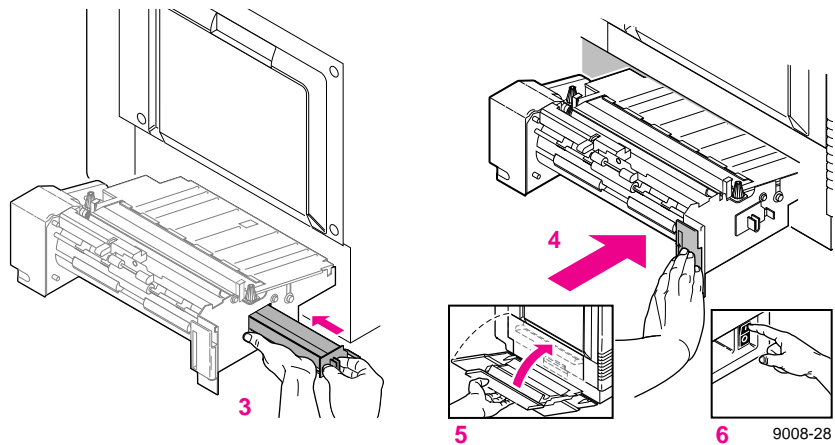
9008-28

Reset the copy count

To reset the copy count for the transfer kit, complete these steps.

9008-20

1. Press the **Menu** button to enter the front panel menu. You will see this message in the display:

   ```
   Help Pages
   <---    --->    Menu
   ```

2. Press the right arrow button (**--->**) until the display reads

   ```
   System Counts
   <---    --->    Menu
   ```

3. Press the **Menu** button to enter the System Counts menu.

4. Press the right arrow button (**--->**) until the display reads

   ```
   Transfer kit
   <---    --->    Menu
   ```

5. Press the **Menu** button; then press the **Reset** button.

6. Press the (Exit) button until the display reads Ready.
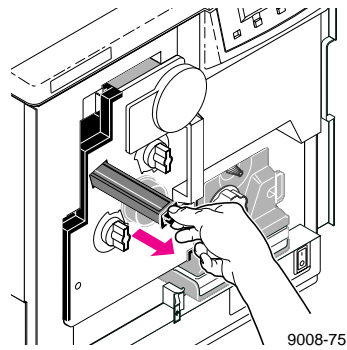
Cleaning the corona wire

When your prints show vertical light streaks that are wavy and appear in all colors, the corona wire needs to be cleaned. If cleaning doesn't take care of the problem, the corona wire may be worn out and need to be replaced. Separate replacement of the corona wire should not be required often, since each new imaging unit includes a new corona wire already installed, and the average life of these two components is similar.

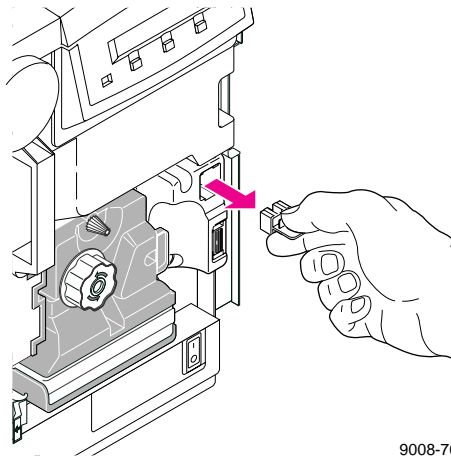**1.** Turn the power *off*.

2. Open the front door.
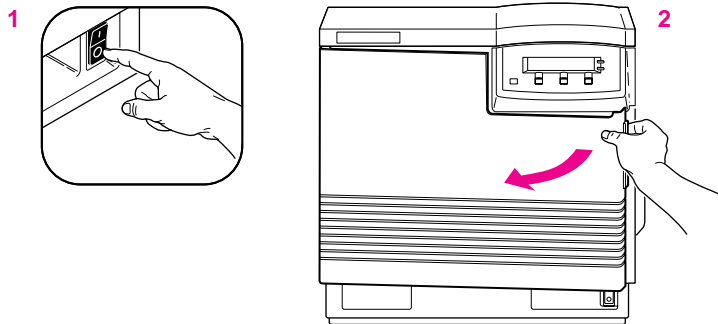
9008-35

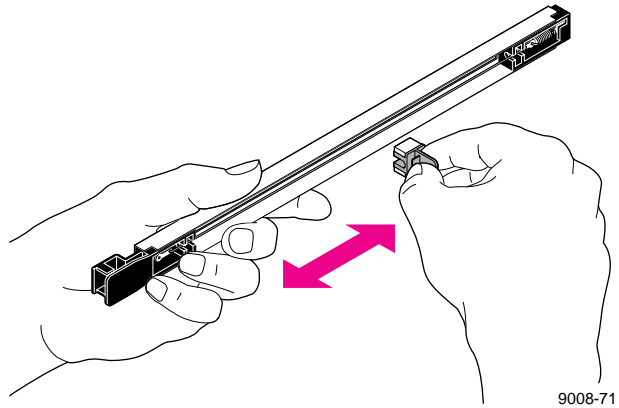**3.**   Pinch the handle of the corona wire to remove it.
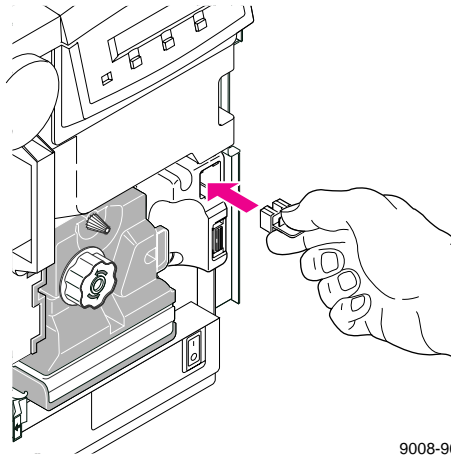
9008-75

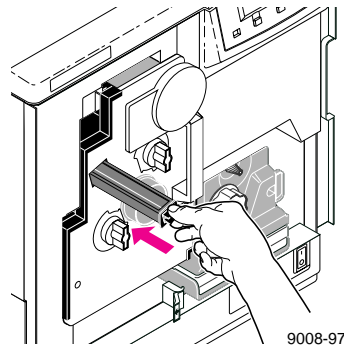**4.**   Remove the cleaning tool from inside the printer.

9008-70

5. Insert the cleaning tool on the underside of the corona wire housing, as shown.

6. Wipe the corona wire with a back and forth motion.
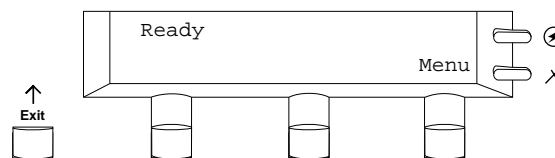
9008-71

7. Replace the cleaning tool inside the printer.

9008-90

8. Replace the corona wire in the printer.

9008-97

9. Close the front door and turn the power *on*.

Reset the copy count

If you replace the corona wire, reset its copy count by completing these steps.

9008-20

1. Press the **Menu** button to enter the front panel menu. You will see this message in the display:

    ```
    Help Pages
    <---     --->     Menu
    ```

2. Press the right arrow button (**--->**) until the display reads

    ```
    System Counts
    <---     --->     Menu
    ```

3. Press the **Menu** button to enter the System Counts menu.

4. Press the right arrow button (**--->**) until the display reads

    ```
    Corona Wire
    <---     --->     Menu
    ```

5. Press the **Menu** button; then press the **Reset** button.

6. Press the (Exit) button until the display reads `Ready`.

Supplies and Accessories

Tektronix supplies: the mark of quality

Tektronix supplies are developed and tested as a total *system*: printer, user-replaceable components, and media. These system components work together to produce consistent, high-quality color images.

Always order Tektronix supplies for your Phaser 540 printer to guarantee the best print quality, media feed reliability, and trouble-free printer performance.

Ordering information

For specific product information, refer to the next page or the supplies information sheet that is shipped with the printer. To order supplies, contact your local Tektronix reseller or, in the U.S.A., call Tektronix at 1-800-835-6100.

Supplies and accessories

Phaser 540 Supplies and Accessories

	Order number	Description	
Supplies			
Toner cartridges	016-1319-00	Black	
	016-1320-00	Cyan	
	016-1321-00	Magenta	
	016-1322-00	Yellow	
Fuser	016-1323-00	110 volt	
	016-1354-00	220 volt	
Imaging kit	016-1316-00		
Transfer kit	016-1318-00		
Paper	016-1368-00	A/Letter (U.S.)	500 sheets
	016-1369-00	A4 (Metric Letter)	500 sheets
Transparencies	016-1325-00	A/Letter (U.S.)	50 sheets
	016-1326-00	A4 (Metric Letter)	50 sheets
Accessories			
	436-0282-00	A/Letter paper tray	
	436-0283-00	A4 paper tray	
	436-0284-00	A/Letter transparency tray	
	436-0285-00	A4 transparency tray	
	436-0297-00	Output tray	
	4676FTA	Lower Tray Assembly (includes one A/Letter paper tray and one A/Letter transparency tray; order Option 01 for metric trays)	
	4540	Phaser CopyStation printer accessory	
	540 CART	Phaser 540 printer cart with a shelf	

Phaser 540 Supplies and Accessories (cont'd.)

	Order number	Description	
Accessories (cont'd.)			
Cables and adapters	012-1468-00	Parallel/Centronics	36-pin high-density plug to 25-pin DSUB plug; 3 meters (9.84 feet)
		Connects the Phaser 540 to a PC or workstation parallel port.	
	012-1465-00	SCSI-2 HD to SCSI-1 LD	50-pin high-density plug to 50-pin low-density plug; 2.0 meters (6.56 feet)
		Connects the Phaser 540's SCSI port to a hard disk drive or the Phaser CopyStation SCSI port.	
	012-1299-00	SCSI-1 LD to Macintosh SCSI	50-pin low-density plug to Macintosh SCSI 25-pin plug
		Combine with 013-0297-00 to connect the printer's SCSI port to a hard disk drive with Macintosh SCSI 25-pin plug.	
	013-0297-00	SCSI-1 LD to SCSI-2 HD	SCSI adapter: converts 50-pin low-density plug to 50-pin high-density plug
		Use with either 012-1465-00 or 012-1299-00 to convert a low-density SCSI connection to a high-density SCSI connection.	
	012-1379-00	Serial (RS-232) Null modem	9-socket receptacle to 9-socket receptacle; 1.8 meters (6 feet)
		Connects the Phaser 540 serial port to a PC or workstation serial port.	
	012-1380-00	Serial (RS-232) Null modem	9-socket receptacle to 25-socket receptacle; 1.8 meters (6 feet)
		Connects the Phaser 540 serial port to a PC or workstation serial port.	

Chapter

6 *Troubleshooting*

If you need help

If you need assistance, contact your local Tektronix dealer or sales representative, Tektronix Customer Support Hotline, the Tektronix Bulletin Board Service (BBS), or Tektronix' interactive fax system (HAL).

Customer Support Hotline

If your problem is still not resolved after first trying the suggestions in this Troubleshooting chapter, call the Tektronix Customer Support Hotline in the United States and Canada at 1-800-835-6100 (from 6:00 am to 5:00 pm PST).

For technical support outside the United States and Canada, contact your local Tektronix dealer or local Tektronix office.

Printer service

If your printer needs service, call 1-800-835-6100 in the United States, from 6:00 am to 5:00 pm PST. Outside the U.S., contact your Tektronix dealer or local Tektronix office.

The Tektronix Bulletin Board Service

The Tektronix Bulletin Board Service (BBS) is available for direct downloading of the latest versions of printer drivers, utilities, and files. If you have a Macintosh or PC, communication software, and modem, you can call the system and use the menus to locate and download the files you want.

To access the BBS 24 hours a day, 7 days a week, call (503) 685-4504.

For a detailed instruction guide on system requirements, terminal settings, protocol, modem, how to connect to our BBS, and how to download files, request a document catalog from HAL, the Tektronix automated fax system. Refer to "Using the automated fax systems" on page 6-3 for instructions on using HAL.

Downloading files from the Tektronix Color Printer Information Server
UNIX and VMS workstation utility files included with the printer on a PC diskette let you set up the printer to select between media trays, print quality modes, color correction modes and other features. If you don't have the means of transferring these files from the PC diskette, you can request files from the Tektronix Color Printer Information Server, an automatic file serving program on the Internet that responds to requests for files.

If you can exchange electronic mail with other Internet sites, you can access the Tektronix Color Printer Information Server. From this server you can retrieve driver and utility files and color printer information.

Send your electronic mail requests for files to the following address:

    color_printer_info@TEKTRONIX.TEK.COM

To receive the list of information available on the server, type the following at the Subject prompt:

    send index

To examine the full index for any library, type:

    send index from *library-name*

To request a single file from a directory, type:

    send *filename* from *library-name*

To determine file size, type:

    send list of *filename* from *library-name*

Using the automated fax systems

As an alternative to the Customer Support Hotline, and to provide up-to-date information quickly, Tektronix has set up HAL (Highly Automated Library) and EuroHAL, two interactive, automated fax systems. These automated fax systems provide Macintosh, PC, and workstation users with the latest technical hints and tips (like color adjustments), solutions to common technical problems, and application notes for software problems (such as CorelDRAW! and QuarkXpress).

You may call HAL or EuroHAL from anywhere in the world. The fax systems are available 24 hours a day, seven days a week.

Use HAL to order a catalog or individual documents in the U.S.A. and Canada

If you have a fax machine and a touch-tone voice telephone, you can order a HAL catalog, listing all of the information offered by HAL, by calling (503) 682-7450 (direct) or, in the U.S. and Canada, call 1-800-835-6100.

1. Before you call, write down the area code and telephone number for your fax machine. HAL will ask you to key this number through the keypad on your voice telephone. If you are calling from outside the United States or Canada, you'll need to know the international access code to reach your country from the United States. Without a complete fax number, HAL cannot call your fax machine.

2. Call only from a touch-tone voice telephone.

3. Follow through the voice-prompted menu.

4. Order individual documents by entering the desired document's number as listed in the HAL catalog. Enter the number by using the telephone's keypad.

5. You can order up to three documents per call.

6. The HAL catalog or documents you request are faxed to you in a matter of minutes.

Use EuroHAL to order a catalog or individual documents in Europe

EuroHAL includes many documents, some in English and some in other European languages. If a local version of the document you want is available, EuroHAL will send it in your language. Otherwise, it will send English documents.

If you have a tone-dial telephone and a fax machine, then you can use EuroHAL. If your telephone has star (*) and hash mark (#) keys then it can probably use tones; ask your local telephone supplier if you are not sure.

If your telephone does not have these keys or has a dial, you will need to buy a tone dialer from your local telephone or electronics shop. This small box is held to the phone and will send the standard tones that you need to talk to EuroHAL.

1. To use EuroHAL, dial one of the numbers listed in the following table.

Country	Numbers
Austria	00 44 1628 478 347
Belgium	00 44 1628 478 347
Denmark	00 44 1628 478 347
Finland	990 44 1628 478 347
France	05 90 81 86
Germany	0130 819 220
Holland	09 44 1628 478 347
Italy	00 44 1628 478 347
Norway	0 95 44 1628 478 347
Spain	07 44 1628 478 347
Sweden	0 09 44 1628 478 347
Switzerland	00 44 1628 478 347
UK	01628 478 347
Other countries	+44 1628 478 347 (where + is your country's International Access Code)

2. EuroHAL answers and asks which language you want to use.

For English	Press 1
For French	Press 2
For German	Press 3

3. The first time you use EuroHAL, you should order a catalog. This lists all the documents that are available and is constantly updated.

4. EuroHAL asks you for your fax machine number. If you are calling from outside the UK, add your country code first, as shown in the following table.

Country	Country code	Your area code and fax number	Press # when finished
Austria	00 43	area code fax number	#
Belgium	00 32	area code fax number	#
Denmark	00 45	area code fax number	#
Finland	00 358	area code fax number	#
France	00 33	area code fax number	#
Germany	00 49	area code fax number	#
Holland	00 31	area code fax number	#
Italy	00 39	area code fax number	#
Norway	00 47	area code fax number	#
Spain	00 34	area code fax number	#
Sweden	00 46	area code fax number	#
Switzerland	00 41	area code fax number	#
UK		just enter your fax number	#
Other countries	00 xx	area code number	#

Symptoms and solutions

Diagnostic tools

The Phaser 540 provides several tools for diagnosing and solving various types of problems, from print quality to media jams. These tools include the following:

■ **"Troubleshooting and print quality quick reference" table**
Describes several printing problems by symptom (including an example), then lists the possible causes and solutions. See page 6-8.

■ **Test Print**
Found in the Help Pages menu (accessed from the front panel); it helps you diagnose print quality problems. For example, if a user-replaceable component, such as toner, needs to be replaced.

■ **Phaser 540 Quick Reference Card**
Provides easy access to troubleshooting information on media jams and maintaining print quality (including color examples of print quality symptoms).

■ **Configuration Page**
Found in the Help Pages menu (accessed from the front panel), it, provides useful information for installation and troubleshooting. Refer to Appendix A for details on printing the Configuration Page.

Maintaining print quality

If you notice a problem with the quality of your prints, the probable solution is replacing one of the consumable components (toner cartridges, imaging unit, fuser or transfer kit) or cleaning the corona wire. To help you diagnose the problem, print the test print from the front panel:

1. Press the **Menu** button. The display reads:

    ```
    Help Pages
    <---    --->    Menu
    ```

2. Press the **Menu** button. The display reads:

    ```
    Test Print
    <---    --->    Print
    ```

3. Press the **Print** button.

    The printer prints the diagnostic test print. Use it to diagnose and correct any problems you might be having with print quality. If you need to call Technical Support, always print the test print first, because it contains useful diagnostic information.
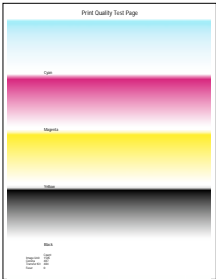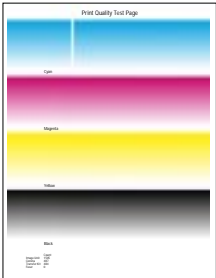
4. Press the ⟨Exit⟩ button until the front panel reads `Ready`.

5. Refer to the table "Troubleshooting and print quality quick reference" on page 6-8 for examples of symptoms, probable causes, and solutions. The *Phaser 540 Quick Reference Card* contains color examples of some of the most common print artifacts to help diagnose and correct print quality problems.
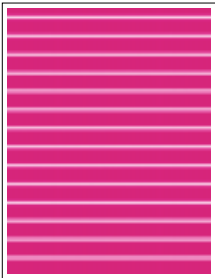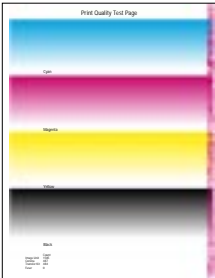
Troubleshooting and print quality quick reference

Symptom	Possible Causes	Solution
Power indicator is blinking	The printer is receiving, processing or printing a job.	Wait for the job to be completed or cancel the job.
	You have entered the menu in the front panel.	Exit the menu.
Power indicator is off	The printer is not ready, is disabled, or has detected an error.	Read the front panel message to determine the printer's status.
Error indicator is on	Attention is required, but not immediately. For example, when the front panel reads `<color> low`.	Correct the condition reported by the front panel.
Error indicator is blinking	The printer is stopped because it detected a user-correctable error such as an open door or a media jam.	Correct the condition reported by the front panel (e.g., close the door or clear a media jam).
	Error occurred that is not user-correctable.	Turn the printer off and back on again. If the indicator is still on after the power-up sequence, the printer requires service. See page 6-1.

Front panel reports:
`Jam at <Location>:`
`See inside front door`
	Media jam.	■ **To find the jam**: refer to the paper path illustration on the inside front door label or refer to this chapter.
		■ **To clear the jam**: refer to the instructions on the Quick Reference Card or in this chapter.
		■ Make sure that paper or transparencies are installed correctly and in the media-specific tray. See page 2-17.

	Too much media is loaded in the media tray.	Reduce the amount of media to below the load level indicator on the media tray label.
	Wrong media is installed in the tray.	Load paper in the paper tray or transparencies in the transparency tray.
	Media is wrinkled or curled.	Change the media.
	Media is too thick or too thin.	Use recommended laser paper and Tektronix transparencies. Refer to Chapter 3 for more information.
Front panel reports: `Wrong media in tray`	Paper is installed in the transparency tray or transparencies are installed in the paper tray.	■ Load only paper in the paper tray and transparencies in the transparency tray. ■ Make sure that you are using the correct size media tray for the media loaded (A or A4).

Troubleshooting and print quality quick reference (cont'd.)

Symptom	Possible Causes	Solution
Front panel reports: `<color>:low`	Indicated color toner cartridge is low.	Replace the indicated color toner cartridge when the print quality becomes unacceptable. If you don't already have one, order a new toner cartridge.

Front panel reports:
`Standby`
`  W A K E   U P`
	Printer is in standby mode.	Press any of the front panel buttons and wait for the printer to initialize.

Front panel reports: `Printer Error ##`	An error occurred that is not user-correctable.	Turn the printer off and back on again. If the error persists, call Technical Support.
The front panel menu exits and returns to `Ready` without anyone pressing the button.	Front panel timeout: if no activity occurs in 5 minutes, the front panel returns to `Ready`.	Press **Menu** to enter the front panel menu.
Print appears faded in a single color. 	The color toner cartridge is low.	Replace the color toner cartridge soon (depending on the complexity of your prints, you can continue to print up to 500 more pages).
Print shows a straight, thin and even, light vertical line in one color. 	The roller in the color toner cartridge is scratched.	Replace the color toner cartridge.
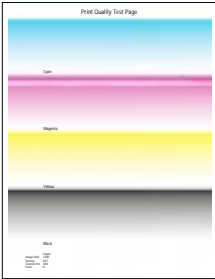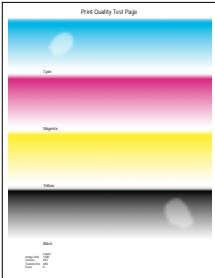
Troubleshooting and print quality quick reference (cont'd.)

Symptom	Possible Causes	Solution
Print shows a small, repeating light spot in a single color.	The roller in the color toner cartridge is damaged.	Replace the color toner cartridge.
Print shows light horizontal bands in a single color.	The roller in the color toner cartridge is damaged.	Replace the color toner cartridge.
The media has a color streak in the margin.	Color toner cartridge is leaking.	Replace the color toner cartridge.
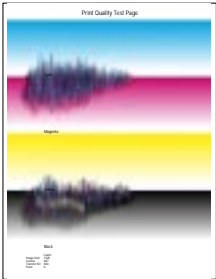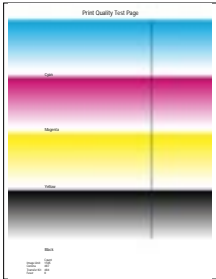
Troubleshooting and print quality quick reference (cont'd.)

Symptom	Possible Causes	Solution
Light and wavy vertical streaks appear in all colors.	The corona wire is dirty.	Clean the corona wire. See page 4-22. If several cleaning attempts do not show improvement, check the test print for the imaging unit's system count: if it is near or past 40,000, you probably need to replace the imaging unit, which includes a new corona wire.
Prints are missing fine-line detail.	The imaging unit is worn out.	Replace the imaging unit.
Dark and uneven vertical streaks appear in all colors (most easily visible in yellow).	The imaging unit is worn out.	Replace the imaging unit.
Dark color spots and streaks appear in all colors.	The imaging unit is worn out. This symptom occurs more frequently in the winter or in a dry climate.	Replace the imaging unit.
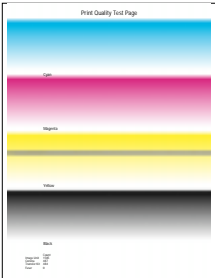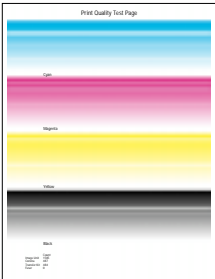
Troubleshooting and print quality quick reference (cont'd.)

Symptom	Possible Causes	Solution
A single, wide, light horizontal band appears in one place on the page **or** the entire image is faded.	The imaging unit was exposed too long to light.	Wait overnight and print the test print. If print quality hasn't changed, replace the imaging unit.
Large light spot(s) appears randomly in the print.	Fingerprint(s): someone has touched the underside of the imaging unit.	Artifact(s) fades after several prints.
On the test print, each color "bleeds" into the color band below it (the most visible is magenta in the yellow band).	The cleaning blade inside the imaging unit is not cleaning an internal belt.	Replace the imaging unit.

Troubleshooting and print quality quick reference (cont'd.)

Symptom	Possible Causes	Solution
Large, uneven and repeating streaks appear on the page.	An internal belt on the imaging unit is slipping.	Replace the imaging unit.
One vertical, dark and even fine line appears on the print through all colors.	Either the imaging unit or the fuser is scratched.	Replace the imaging unit; make sure that the old imaging unit is not exposed to light for more than 45 seconds. If a new imaging unit does not correct the problem: ■ Put the old imaging unit back into the printer. ■ Repack the new imaging unit. ■ Replace the fuser.
Front panel reports: `Fuser:replace`	The fuser is worn out.	Replace the fuser.
A piece of the printed image is missing and reappears out of place, approximately 100 mm (4 in.) down on the page.	The fuser is worn out.	Replace the fuser.

Troubleshooting and print quality quick reference (cont'd.)

Symptom	Possible Causes	Solution
One dark, horizontal band appears on the print approximately 241 mm (9.5 in) from the leading edge. 	The media "stalled" for a few seconds in the fuser. The cause: ■ Media is installed wrong side up. ■ Media is curled. ■ The fuser needs to be replaced. ■ The printer needs adjustment.	 ■ Turn over the media in the media tray. ■ Replace the media. ■ Replace the fuser. ■ Call Service.
Front panel reports: `Transfer Kit:replace`	The transfer kit (transfer roller and waste bin) is worn out.	Replace the transfer kit.
Toner spots appear on the backside of the media.	The transfer kit is worn out.	Replace the transfer kit.
Light horizontal bands appear in all colors. 	The contact on the transfer roller is not working properly.	Call Technical Support. See page 6-1.

If you can't make a print

Printer not operating

■ Make sure that you plugged in the printer and turned it on.

■ Make sure that you connected the interface cable(s) properly.

■ Verify that your printer is functional by pressing the test print button on the back panel.

■ Verify that your computer can communicate with the printer.

Note *When you have checked all possible causes and your printer is still not operating, you can call for service at 1-800-835-6100 in the U.S. and Canada, or call your nearest Tektronix reseller.*

To verify that your computer can communicate with the printer, use one of these methods:

■ **If you have a Macintosh**
Make sure that you have the correct driver installed and that you have selected the printer in the Chooser. If the printer's name does not appear in the Chooser, your LocalTalk or EtherTalk connection may be faulty. (See also "Printer doesn't appear in the Chooser (Macintosh)" on page 6-17.)

You can use the Print Window command to send a file to the printer without using an application. If the communication link between your computer and the printer is working, the printer produces a directory listing of the active window on the desktop.

■ **If you have a PC**
Type this DOS command:

echo %! > *port*

echo showpage [Ctrl-D] > *port*

Where [CTRL-D] indicates pressing the D key while holding down the CTRL key. Substitute the name of the printer port (for example COM1:, COM2:, LPT1:, LPT2:) for the variable *port* in this command. For example, if you are testing a parallel connection on LPT1, type:

echo %! > lpt1:

echo showpage [Ctrl-D] > lpt1:

If the communication link between your computer and the printer is working, the printer ejects a blank page. If this occurs, but you cannot print from your application or through Windows, make sure that the appropriate driver is installed and that you have selected the printer correctly.

Printer doesn't appear in the Chooser (Macintosh)

■   Make sure that the printer is turned on and the cables are correctly attached.

■   Check the termination (refer to the documentation for your network adapter or connector for information on termination).

■   Make sure that you have the correct zone selected in the Chooser before looking for the printer's name in the list of printers.

■   If you have changed the printer's name, make sure that you have given it a unique name (not the same as any other printer in the zone or on the network).

■   Make sure that the correct network is selected in the Network Control Panel.

Power indicator blinks and stops, but the file does not print

This is probably the result of a PostScript error. Download the PostScript error handler file from the Phaser 540 utility diskettes. For more information on using the PostScript error handler, see the manual *Phaser 540 Drivers and Utilities Printing Reference.*

Printer will not power up to Ready

This may be the result of an unterminated network connection. The printer sees network activity, but is unable to successfully connect.

Print job does not finish (the printer times out)

If you are using the serial or parallel port from a PC, make sure that you used the MODE command to set the PC's communication parameters. For example:

MODE LPT1:,,P > NUL

MODE COM1:9600,N,8,1,P

The P parameter in these commands sets the port timeout to Infinite Retry and must be part of the command.

If you are using Windows 3.1, make sure that the Transmission Retry value for the printer's assigned port is set to 850. For more information, see "PC: Microsoft Windows driver" on page 2-28.

Error indicator is blinking

The **Error** indicator blinks with any hard error, such as the following circumstances:

- Media jam
- Any of the printer doors are open
- Any of the user-replaceable components are missing

Look at the front panel for an indication of the type of error, then correct the problem. If the front panel message is `Printer Error ##`, turn the printer off and on again. If the **Error** indicator remains on after power-up, your printer requires service. See "If you need help" on page 6-1 for telephone information.

Media problems

Frequent paper-picking errors

■   Fan the paper or transparencies before installing them in their respective trays. This is especially important for transparencies because they tend to stick together.

■   Make sure that you have loaded the correct media in the tray. You must load paper in the paper tray and transparencies in the transparency tray.

■   Make sure that the media is installed under the hooks at the front of the media tray.

Media is picked but does not advance

■   Check the front panel. If it reads `Wrong media in tray`, check that the paper is loaded in the paper tray or transparencies are loaded in the transparency tray.

Frequent media jams

■   Make sure that you use a high-quality laser paper: 75-105 g/m^2 (20-28 lb.) paper in the media trays and 60-120 g/m^2 (16-32 lb.) paper with manual feed. Refer to "All about media" on page 3-14 for more information.

■   Use only Tektronix transparencies that are listed on the supplies information sheet. Tektronix does not guarantee the results of non-Tektronix transparencies in Tektronix printers.

■   Make sure that the media is installed under the hooks at the front of the media tray.

■   Do not overfill the media tray, as indicated by the red line on the right side of the tray.

■   Never print on both sides of the media.

Problems with image size and position

Off-set images

Check your application for correct image sizing.

Cut-off images

■   Check your application for image sizing.

■   Make sure that you are using a Phaser 540 driver and have
selected the correct page size. If you select the incorrect page size,
the image may be cut off.

■   Make sure that the correct size media is in the media tray.

Image shifts or margins are incorrect (Macintosh)

■   Make sure that you have installed the Phaser 540 printer driver
onto your Macintosh so that you can select the correct page sizes
from the driver. For details on the Phaser 540 driver, refer to the
manual *Phaser 540 Drivers and Utilities Printing Reference.*

■   For details on how to print from a Macintosh, refer to "Printing
from a Macintosh" on page 3-6.

Print quality problems

Prints have dull, faded colors

■　Print the test print from the Help Pages in the front panel. If all colors are faded, the imaging unit may need to be replaced. If one color is faded, replace the toner cartridge.

■　Make sure that the imaging unit stays covered until immediately before installing it in the printer. Exposure to light can damage the imaging unit and will produce light streaks or faded prints.

■　Make sure that the toner cartridges are installed correctly.

■　Make sure that you have loaded the correct media in the correct tray: Load only paper in the paper tray and load only transparencies in the transparency tray.

■　Make sure that you use a high-quality laser paper: 75-105 g/m^2 (20-28 lb.) paper in the media trays and 60-120 g/m^2 (16-32 lb.) paper with manual feed. Refer to "All about media" on page 3-14 for more information.

■　Use only Tektronix transparencies that are listed on the supplies information sheet. Tektronix does not guarantee the results of non-Tektronix transparencies in Tektronix printers.

Streaks or spots

Most spots are caused by fingerprints or dust introduced into the printer while installing the imaging unit or loading media.

■ Make sure that the surface where you unpack the imaging unit, paper, and transparencies is free of dust. Keep supplies in a covered area or a closed box.

■ Make sure that the imaging unit stays covered until immediately before installing it in the printer. Exposure to light for more than 45 seconds can damage the imaging unit.

■ Do not touch the right side or underside of the imaging unit; fingerprints affect print quality.

■ Make sure that the paper or transparency film is clean.

■ Make sure that you handle the media on the outside edges to avoid fingerprints.

■ To get rid of fingerprint spots, print a few prints (you can print any of the Help Pages in the front panel menu).

Light, wavy, vertical streaks indicate a dirty or used corona wire.

■ Clean the corona wire; if the problem persists, replace the corona wire.

Black-and-white prints instead of color

■   **If you have a Macintosh**
Make sure that you are using the Phaser 540 driver or the latest
Apple LaserWriter printer driver (version 6.0.7 or higher), which
supports color PostScript.

Make sure that Color/Grayscale is selected in the Print dialog box.
Some applications require special files to print in color. Make sure
that these files are properly installed. For information, refer to the
manual *Phaser 540 Drivers and Utilities Printing Reference.*

Make sure that you have not selected Monochrome in the
TekColor Options dialog box.

■   **If you have a PC**
Be sure to use a driver that supports color PostScript. If you are
using Windows 3.1, use the Phaser 540 driver.

If you are using Windows, make sure that the Color box in the
Options dialog box is checked. For information on the drivers,
refer to the manual *Phaser 540 Drivers and Utilities Printing
Reference.*

Make sure that you have not selected Monochrome in the
Tektronix Printer Features dialog box.

■   If you are not using a driver, make sure that you have not sent the
monochrome snippet; make sure that the front panel is not set for
`Monochrome.`

Startup page prints even though it is disabled

The printer's power-up self-test can detect problems that do not necessarily make the printer completely inoperable. Examples of these *non-fatal* errors include faulty printer ports and some memory failures.

If the printer detects a non-fatal error at power-up, the startup page prints, even if you have disabled it. In this case, the page contains one or more of the error messages listed in the following table. Depending on your needs, you may not need to call for service immediately.

Error messages on the startup page

Message	Description
Parallel Port failed I/O Card failed. SCSI Port failed	The named port is not working. The other ports can still be used.
DRAM SIMM *x* failed	One of the memory SIMMs is not working. In this message, *x* indicates the number of the SIMM that failed. Since the printer's base memory is still working, the printer can still be used, but large image files may not print, and throughput may suffer.

Clearing a media jam

If you get frequent media jams, make sure that you are using high-quality laser paper and Tektronix transparencies. Order from the supplies information sheet that is shipped with your printer.

If a media jam occurs, the front panel reports `Jam at <Location>`. The `<Locations>` are the various sensors throughout the paper path, listed as **A** through **E**. If you have an optional Lower Tray Assembly installed, Jam A can occur at any of the three media trays, whichever tray you selected for the current print job.

The following illustration shows the locations of the sensors that report a media jam (**A** through **E**).

9008-60
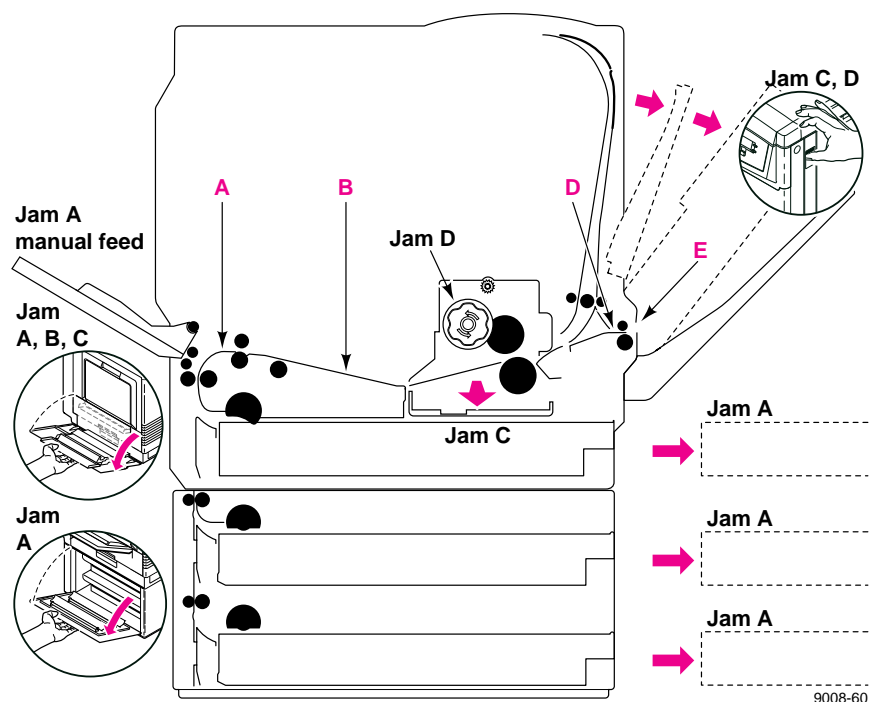
Jam at A

1. Open the left side door corresponding to the selected media tray.

9008-100

2. Remove the jammed media.

9008-48
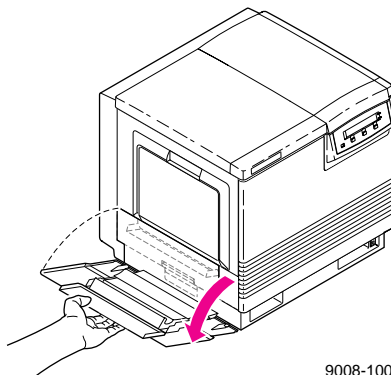
OR

1. Remove the selected media tray.

2. Remove the jammed media from inside the printer.

9008-49
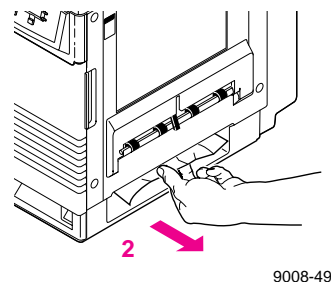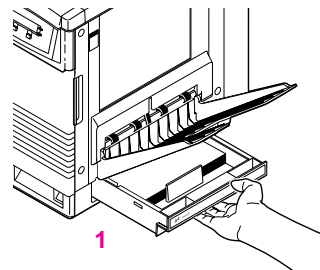
Note *If you have an optional Lower Tray Assembly, Jam A can occur at any of the three media trays, whichever tray you selected for the current print job.*

Jam at B

1. Open the left side door corresponding to the selected media tray.
2. Pull out the paper feeder; the jammed media is visible.
3. Pull the media toward the *inside of the printer*.
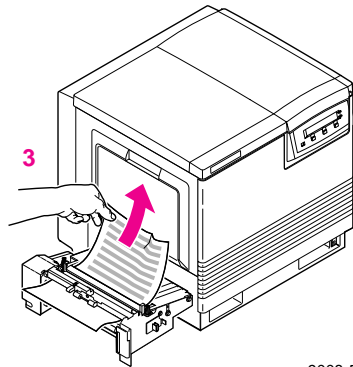
9008-50

Jam at C

1. Open the left side door.

2. Pull out the paper feeder. The media is on top of the paper feeder.

3. Pull the media out toward the *inside of the printer.*
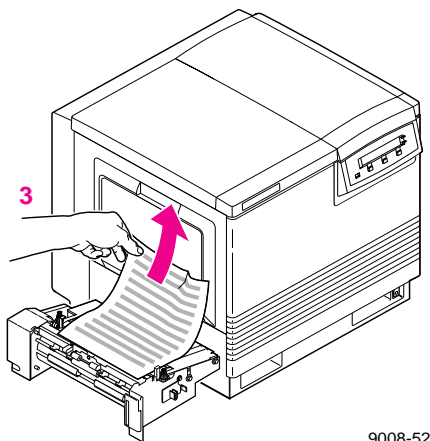
9008-52

OR

1. Open the front door *and* the right side door to access the fuser.
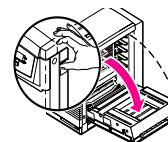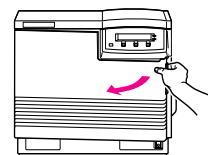
9008-53

2. Turn the small blue knob *counterclockwise* to unlock the fuser; pull the fuser out until it stops.
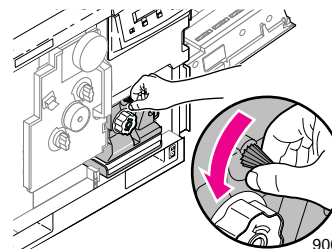
9008-99

3. Turn the fuser's large blue knob *clockwise* to release the jammed media.

4. Remove the jammed media from the fuser.
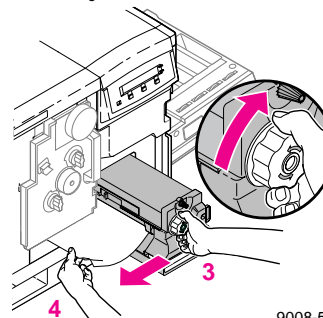
9008-54

Jam at D

1. Open the front door to access the fuser.

2. Pull open the access door (above the plastic output tray). The media is visible.

3. On the fuser, turn the large blue knob *counterclockwise.*

4. Remove the media from inside the access door.

9008-55

Caution   *If the fuser knob will not turn, do not force it or you may damage the fuser. Instead, follow these steps:*
- *Unlock the fuser by turning the small blue knob counterclockwise.*
- *Pull the fuser out. The media will probably tear.*
- *Turn the fuser's large blue knob clockwise to release the jammed media.*
- *Remove the jammed media from the fuser and the printer.*
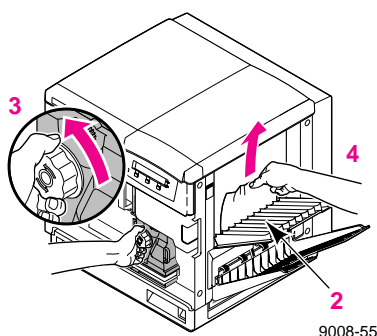
1. Open the front door *and* the right side door to access the fuser.

2. Turn the fuser's large blue knob *counterclockwise* to release the jammed media.

3. Remove the jammed media from the right side of the printer.

OR

9008-56

Jam at E

Remove the jammed media from the output tray.

9008-57
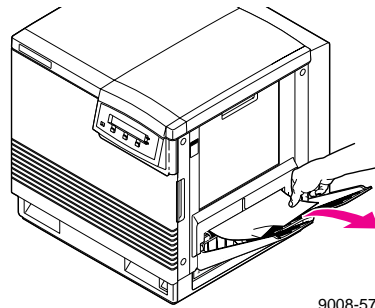
OR

Pull open the access door (above the plastic output tray) and remove the media.

9008-98
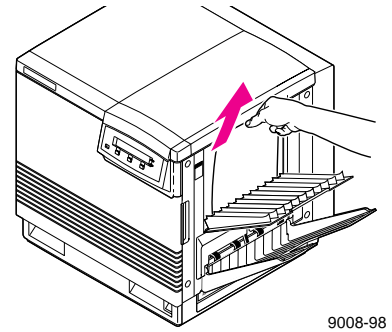
Jam at Manual Feed

Remove the jammed media from the manual feed tray.

9008-58

7
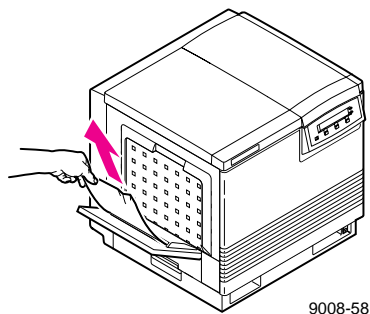
Front and Rear Panels

Front panel

The front panel provides a display of two lines of 24-characters each for messages, button labels, and user-adjustable parameter settings.

Front panel indicators

The front panel also includes two indicator lights:

1. **Power** (green LED)
2. **Error** (red LED)
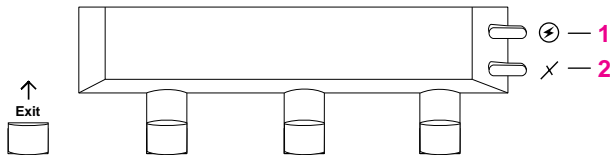
9008-34

Indicator	On	Blinking	Off
1. Power	The printer is on and ready for operation.	The printer is processing or printing an image. The printer is in interactive mode: you have pressed the **Menu** button.	The printer is not ready, or there is an error.
2. Error	If the indicator is on after the power-up sequence, some user interaction is required (for example, toner is low). Check the front panel message.	The printer requires immediate user interaction (for example, clear a media jam or close an open door). Refer to Chapter 6.	Normal operation: there are no print engine or controller board errors.

Front panel buttons

1. The Exit button allows you to perform the following menu functions:

   ■ Back up a level of the menu without making a selection.

   ■ Exit the menu.

2. Button 2 is inactive during normal printer operation. However, you can perform this menu function when you enter the front panel menu:

   ■ `<---` Scroll backward through the available selections.

3. During normal printer operation, button 3 has the following effect:

   ■ `Cancel` Cancels `a print job or selection.`

   When you enter the front panel menu, button 3 has the following effect:

   ■ `--->` Scrolls forward through the available selections.

4. Button 4 is labeled `Menu` during normal operation and allows you to enter the menu. After entering the front panel menu, Button 4 changes meaning as you select sub-menus:

   ■ `Menu` Accesses to sub-menus.

   ■ `Print` Executes a print command.

   ■ `OK` Accepts the selected value.

   ■ `Reset` Resets the count for a user-replaceable component.
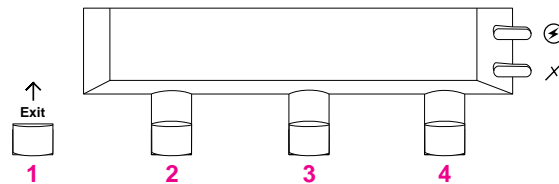
9008-29

Two-line display

The two lines of the display have the following functions:

Line 1

■   Displays status messages such as `Ready` and `Printing`.

■   Displays operation errors and warnings such as `<color>:low`.

■   Displays the names of menus and parameters you can set.

Line 2

■   Displays button labels such as **`<--`** for *previous* and **`-->`** for *next* (for moving through selections in a given menu), **`Menu`** for access to a menu of selections, and **`Print`** and **`OK`** to make selections.
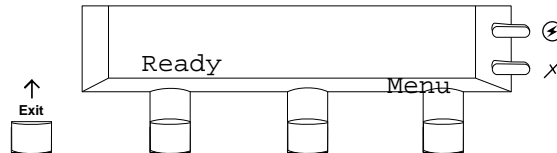
9008-43

For a roadmap to the front panel menu selections, turn to "Front panel menu map" on page 7-5.

Protected mode for the front panel menu

System administrators may choose to limit user access to front panel menus by downloading a utility file to the printer. The "lock" utility file prevents most menu items from being displayed on the front panel. The capability of limiting menu access is often useful when a system administrators needs to retain control of the printer's settings. In the protected mode, users still have access to print the Test Print, Configuration, Startup, and Demonstration pages.

In the protected mode, you can still access the full menu structure through a combination of front panel button pushes. An "unlock" utility file can also be downloaded to the printer to unlock the front panel menu for user viewing.

To learn more about locking and unlocking the front panel menus, refer to the *Phaser 540 Driver and Utilities Printing Reference* manual or call the Tektronix Customer Support Hotline at 1-800-835-6100 (from 6:00 am to 5:00 pm PST).

Use the following key sequence to access the entire menu when the front panel is "locked:"

■ Press and hold down the **Menu** button and press the ⬆(Exit) button.

The Help Pages menu in the front panel menu includes a front panel menu map. Refer to "Front panel menu map" on page 7-5. For instructions on printing the menu map, refer to "Printing the front panel menu map" on page A-7.

Front panel menu map

Phaser 540 Menu Map

<---	scrolls backward through available selections
--->	scrolls forward through available selections
Menu	enters the next sub-menu
Exit	exits without making a change
OK	accepts the displayed value as the new setting

Press **Menu**

Help Pages

Exit **<---** **--->** **Menu**

Test Print	Configuration Page
Demonstration Page	Service Print
Startup Page	Menu Map

System Counts

Exit **<---** **--->** **Menu**

Page Count	Transfer Kit
Imaging Unit	Fuser
Corona Wire	

TekColor Correction

Exit **<---** **--->** **Menu**

Vivid Color (*default*)	Commercial
Display	Monochrome
SWOP	None
Euroscale	

Print Quality

Exit **<---** **--->** **Menu**

Standard (*default*)
Enhanced ★
Fast

Printer Defaults

Exit **<---** **--->** **Menu**

Default Tray	Output Order
Startup Page	Energy Star
Startup Mode	Energy Star Timeout

Serial Settings★★

Exit **<---** **--->** **Menu**

Baud Rate	Parity
Data Bits	Flow Control
Stop Bits	

Network Settings★★

Exit **<---** **--->** **Menu**

TCP/IP	NetWare
EtherTalk	NetBios

Language

Exit **<---** **--->** **Menu**

English (*default)	Deutsch
Español	Italiano
Français	Japanese

★**Available when optional memory is installed.** ★★ **Appears when optional Phaser™ Share card is installed.**

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Rear panel

1. Parallel connector

2. SCSI connector
   (to add a Phaser CopyStation or a hard disk for font storage)

3. Optional Phaser Share card with serial and network connectors

4. Test print button
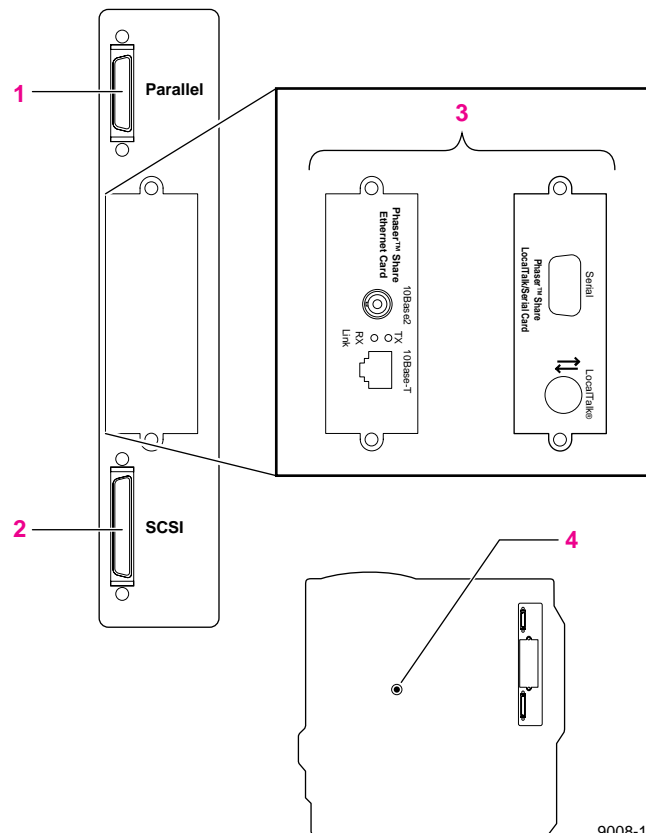
9008-17

A   *Technical Notes*

Printing Help Pages

The printer has several Help Pages that you can print to learn more about the printer.

Test Print:	Provides a test pattern to diagnose and correct print quality problems.
Demonstration Page:	Provides a colorful way of learning more about the printer while demonstrating its printing quality.
Startup Page:	Lists the number of pages printed, installed interface ports, software version numbers, installed RAM memory, the number of fonts, and other useful information.
Configuration Page:	Lists general information on printer settings and how the printer is configured.
Service Prints:	Provide diagnostic pages for service technicians.
Menu Map:	Provides a graphical view of the front panel menus.

The Help Pages are discussed in the following topics.

Printing the test print

The test print provides an easy-to-use tool to diagnose and resolve print quality symptoms. The *Phaser 540 Quick Reference Card* and Chapter 6 of this manual provide examples of symptoms as well as the information necessary to correct the problem. When you call Technical Support, always print the test print first; it contains useful diagnostic information.

1. While the `Ready` message is displayed, press the **Menu** button. The printer displays the first item in the menu:

   ```
   Help Pages
   <----    ----->      Menu
   ```

2. Press the **Menu** button to enter the Help Pages menu. The following message appears:

   ```
   Test Print
   <----    ----->      Print
   ```

3. Press the **Print** button to print the test print.

4. Return to the top level of the menu by pressing the (Exit) button until the printer displays the `Ready` message.

Printing the demonstration page

You can print a demonstration page anytime you want to examine the printing quality of the printer. The demonstration page prints in the currently selected print mode.

1. When the printer is on and the `Ready` message appears, press the **Menu** button. The printer displays the first item in the menu:

    ```
    Help Pages
    <----    ----->       Menu
    ```

2. Press the **Menu** button to access the Help Pages. The following message appears:

    ```
        Test Print
        <----    ----->       Print
    ```

3. Press the left arrow (**<--**) or right arrow (**--->**) buttons until the following message appears:

    ```
    Demonstration Page
    <---    --->       Print
    ```

4. Press the **Print** button to print the demonstration pages.

5. Return to the top level of the menu, by pressing the (Exit↑) button until the printer displays the `Ready` message.

Printing the startup page

By default, printing of the startup page is enabled on power up. However, you can print the startup page anytime when you need to learn the number of pages that have been printed, the amount of installed memory, the number of fonts in memory, and installed interface ports.

Note   *If the printer detects a non-fatal failure, it automatically prints a startup page containing diagnostic information regardless of the startup page setting.*

1.   While the `Ready` message is displayed, press the Menu button. The printer displays the first item in the menu:

```
Help Pages
<----    ----->      Menu
```

2.   Press the **Menu** button to access the Help Pages. The following message appears:

```
Test Print
<----    ----->      Print
```

3.   Press the left arrow (**<--**) or right arrow (**-->**) buttons until the following message appears:

```
Startup Page
<---    --->      Print
```

4.   Press the **Print** button to print a startup page.

5.   Return to the top level of the menu by pressing the ⬆Exit button until the printer displays the `Ready` message.

Enabling and disabling the startup page

You can enable and disable printing of the startup page in three ways:

■ On a PC, send a PostScript language utility file to the printer. For more information, refer to the *Phaser 540 Drivers and Utilities Printing Reference* manual.

■ On a Macintosh, use the *LaserWriter utility.*

■ Through the printer's front panel, according to the following instructions:

1. While the Ready message is displayed, press the **Menu** button. The printer displays the first item in the setup menu:

   ```
   Help Pages
   <----    ----->     Menu
   ```

2. Using the left arrow (**<--**) or right arrow (**--->**) buttons, scroll through the selections until the following message appears:

   ```
   Printer Defaults
   <---    --->     Menu
   ```

3. Press the **Menu** button to access the printer defaults settings.

4. Using the left arrow (**<--**) or right arrow (**--->**) buttons, scroll through the selections until the following message appears:

   ```
   Startup Page
   <---    --->     Menu
   ```

5. Press the **Menu** button to access the startup page settings.

6. Press the right arrow (**--->**) button once for the following message:

   ```
   Startup Page:disabled
   <---    --->     OK
   ```

7. Press the **OK** button to disable printing of the startup page.

8. To return to the top level of the menu, press the ⬆(Exit) button until the printer displays the Ready message.

Printing the configuration page

The configuration page contains a variety of information especially useful for network installation and troubleshooting.

There are two ways to print the configuration page:

■ **Use the printer's front panel menu.**

1. While the `Ready` message is displayed, press the **Menu** button. The printer displays the first item in the menu:

```
Help Pages
<----    ----->     Menu
```

2. Press the **Menu** button to access the Help Pages. The following message appears:

```
Test Print
<----    ----->     Print
```

3. Press the left arrow (**<--**) or right arrow (**--->**) buttons until the following message appears:

```
Configuration Page
<---    --->     Print
```

4. Press the **Print** button to print a configuration page.

5. Return to the top level of the menu by pressing the ⬆️(**Exit**) button until the printer displays the `Ready` message.

■ **Send the PostScript language file to the printer.**

See the *Phaser Share User Manual* or the *Phaser 540 Drivers and Utilities Printing Reference* for more information on the configuration page.

Printing the front panel menu map

The front panel menu map provides a convenient navigation aid for quickly determining the location of menu items. The menu map can be printed from the front panel; it is also available in Chapter 7.

1. While the `Ready` message is displayed, press the **Menu** button. The printer displays the first item in the menu:

    ```
    Help Pages
    <----    ----->        Menu
    ```

2. Press the **Menu** button to enter the Help Pages menu. The following message appears:

    ```
    Test Print
    <----    ----->        Print
    ```

3. Press the left arrow button (**<--**) until the display reads:

    ```
    Menu Map
    <----    ----->        Print
    ```

4. Press the **Print** button to print the menu map page.

5. Return to the top level of the menu by pressing the ↑(**Exit**) button until the printer displays the `Ready` message.

Energy Star mode

When the printer is idle for the time set in the Energy Star front panel menu (1 hour default), it cools down completely. When the printer exits the Energy Star cool-down mode, it is ready to print in about 5 minutes.

Refer to the menu map in Chapter 7 to locate the Energy Star Timeout setting in the front panel submenu. Refer to "Changing the Energy Star timeout" on page A-9 for directions on changing the Energy Star timeout value.

Changing the Energy Star timeout

The default value for the Energy Star timeout is 1 hour. You can change the default timeout value when you want the printer to more quickly reach the Energy Star energy-saving standby mode.

1. When the printer is on and the `Ready` message appears, press the **Menu** button. The printer displays the first selection in the menu:

    ```
    Help Pages
    <---   --->   Menu
    ```

2. Using the left (**<--**) or right (**-->**) arrow buttons, scroll through the selections until the following message appears:

    ```
     Printer Defaults
    <---   --->   Menu
    ```

3. Press the **Menu** button to access printer default selections. The printer displays the following message:

    ```
    Default Tray
    <---   --->   Menu
    ```

4. Using the left or right arrow buttons, scroll through the selections until the following message appears:

    ```
    Energy Star Timeout
    <---   --->   Menu
    ```

5. Press the **Menu** button to access Energy Star selections. The printer displays the following message:

    ```
    Timeout: 1 hrs
    <---   --->   OK
    ```

6. Using the left or right arrow buttons, scroll through the selections until the desired setting is reached.

7. Press the **OK** button to confirm your Energy Star timeout selection.

8. Return to the top level of the menu by pressing the **Exit** button until the printer displays the `Ready` message.

Parallel port

The printer has an asynchronous parallel port that lets you interface with PCs. The parallel port supports uni-directional and bi-directional communications (refer to the *Phaser 540 Drivers and Utilities Printing Reference* for instructions on setting the port to bi-directional communications). For bi-directional communications, the parallel port supports two modes: Compatibility Mode and Nibble Mode.

The interpretation of interface signals depends on the current mode. Compatibility Mode provides host-to-printer communication in a manner compatible with a uni-directional interface. Nibble Mode provides printer-to-host communication and may be combined with Compatibility Mode to provide bi-directional communication.

Note *For more information, refer to the IEEE P1284 document for parallel interfaces.*

When you use the parallel port, be sure to type this command at the PC (if LPT1 is not available, use LPT2) to disable timeouts:

MODE LPT1:,,P

The table shows the parallel port's connected pins. Other pins are not connected.

Parallel port signal descriptions

Pin	Signal mode names: Compatibility/Nibble	Return pin	Signal source	Description	
1	Busy/PtrBusy	19	Printer	C mode:	Positive true = not ready for data
				N mode:	Data bits 3 then 7, then busy status
2	Select/Xflag	20	Printer	C mode:	Positive true = online
				N mode:	Data bits 1 then 5
3	nAck/PtrClk	21	Printer	C mode:	Negative true = data transfer acknowledge
				N mode:	Data qualifier
4	nFault/nDataAvail	22	Printer	C mode:	Negative true = printer fault exists that prevents printing
				N mode:	Negative low = data ready then data bits 0 then 4
5	PError/AckDataReq	23	Printer	C mode:	Positive true = printer error exists, such as media tray empty
				N mode:	Data bits 2 then 6
6	Data 1	24	Host	C mode:	Positive true data input
				N mode:	Not used
7	Data 2	25	Host	C mode:	Positive true data input
				N mode:	Not used
8	Data 3	26	Host	C mode:	Positive true data input
				N mode:	Not used
9	Data 4	27	Host	C mode:	Positive true data input
				N mode:	Not used
10	Data 5	28	Host	C mode:	Positive true data input
				N mode:	Not used

Parallel port signal descriptions (cont'd.)

Pin	Signal mode names: Compatibility/Nibble	Return pin	Signal source	Description	
11	Data 6	29	Host	C mode:	Positive true data input
				N mode:	Not used
12	Data 7	30	Host	C mode:	Positive true data input
				N mode:	Not used
13	Data 8	31	Host	C mode:	Positive true data input
				N mode:	Not used
14	nInit/nHostRTS	32	Host	C mode:	Negative true = reset interface
				N mode:	Not used
15	nStrobe/HostClk	33	Host	C mode:	Negative true = transfer data into printer input latch on rising edge
				N mode:	Negative true = transfer Extensibility Request value into printer input latch on rising edge
16	nSelectIn/1284 Active	34	Host	C mode:	Negative true = select printer
				N mode:	Used in conjunction with HostBusy for 1284 hardware handshaking
17	nAutoFd/HostBusy	35	Host	C mode:	Not used
				N mode:	Used in conjunction with 1284 Active for 1284 hardware handshaking
18	Host Logic High		Host	Positive true = host signals valid	
				Negative true = host signals invalid	
36	Peripheral Logic High		Printer	Positive true = printer on	
				Negative true = printer off	

Specifications

Temperature

Operating: 10° C to 32.5^{o} C (50° F to 90.5^{o} F)
Non-operating: 0° C to 40° C (32° F to 104° F)
Storage: (without paper, transparencies, or consumables): -20° C to $+60^{o}$ C (-4° F to $+140^{o}$ F)

Humidity

Operating: 10% to 80% Relative Humidity, non-condensing
Non-operating: 10% to 90% Relative Humidity, non-condensing

Altitude

Operating: 0 to 2,500 m (8,000 ft.).
Non-operating: 0 to 4000 m (50,000 ft.)

Primary voltage ranges

100 - 128 VAC, 110 VAC nominal
174 - 250 VAC, 220 VAC nominal

Frequency range

47 to 63 Hz

Primary fusing

110 VAC, 8 Amps
220 VAC, 5 Amps
(Not user-accessible)

Power Consumption
Meets Energy Star power conservation requirements.

State	Average power
Continuous printing	208 W
Idle	130 W
Energy Star	23 W or under

Dimensions of standard unit (without Lower Tray Assembly)
Height: 454 mm (18 in.)
Depth: 492 mm (19.5 in.)
Width: 489 mm (19* in.)

    *712 mm (27.4 in.) with the output tray

Dimensions with Lower Tray Assembly
Height: 666 mm (26.2 in.)
Depth: 492 mm (19.5 in.)
Width: 489 mm (19* in.)

    *712 mm (27.4 in.) with the output tray

Weight of standard unit with all consumables (without Lower Tray Assembly)
53.3 kg (117 lbs.)

Weight of Lower Tray Assembly
13.98 kg (30.8 lbs.)

Printing speed

The speeds and rates listed in the following table represent the time it takes the printer to produce a print (**1st print**) and the rate at which the printer produces multiple prints (**Continuous throughput rate**). The continuous throughput rate is sometimes referred to as the printer's paper-marking speed: the time it takes the printer to put the colored toner on the paper, once it has received the processed image.

	300 dpi Paper		600 dpi Paper		Transparency mode	
	1st print	**Continuous throughput rate**	**1st print**	**Continuous throughput rate**	**1st print**	**Continuous throughput rate**
Monochrome	20 seconds	14 pages per minute	40 seconds	7 pages per minute	70 seconds	1.7 pages per minute
2-color	25 seconds	7 pages per minute	50 seconds	3.5 pages per minute	82 seconds	1.5 pages per minute
4-color	35 seconds	3.5 pages per minute	65 seconds	1.8 pages per minute	100 seconds	1.3 pages per minute

Safety and emissions standards
FCC Part 15, Subpart J "Class B" verified
Vfg 243 Class B
CISPR 22 Class B, verified
UL 1950, listed.
CSA 220, certified.
EN60950/IEC 950, TUV licensed
EN55022

B

Expanding Your Printing System

Upgrade kits

Order number	Description
4685F16	16-Mbyte SIMM for adding memory (Option 16); see "Advantages of adding memory" on page B-2.
4676FTA	Lower Tray Assembly with one paper tray and one transparency tray. For metric trays, order 4676FTA Option 01.
4540	Phaser CopyStation accessory adds color copying capability to your Tektronix Phaser printer.
4676FP1	Ethernet networking card upgrade kit; includes EtherTalk and Novell NetWare protocols (for Option P1).
4676FP2	TCP/IP Protocol upgrade kit; requires the presence of either the Ethernet or Token Ring Networking card.
4676FP3	LocalTalk networking card upgrade kit; includes LocalTalk protocol and RS-232 (serial) interface.
4676FP4	Token Ring Networking Card upgrade kit.

Advantages of adding memory

The following table summarizes the memory configurations for the Phaser 540 printer:

Memory configurations for the Phaser 540 printer

Memory	Total memory	Performance / Benefit
Standard	20 Mbytes	Fast and Standard print modes.
Add one 16-Mbyte SIMM	36 Mbytes	Doubles the size of the frame buffers to reduce the time required to render images.
		Minimum requirement for **Enhanced** mode printing.
Add two 16-Mbyte SIMMs	52 Mbytes (max.)	Increases the size of caches, buffers, and virtual memory to reduce the amount of time required to transfer large images and to process multiple jobs.

The total amount of memory installed in the printer is reported on the startup page and on the configuration page.

In general, more memory improves throughput, provides more storage for downloadable fonts, and allows printing of the most complex images. Additional memory can also reduce offload time by increasing the size of input buffers for the I/O ports. Adding a 16-Mbyte SIMM to a Phaser 540 provides the following specific benefits:

■   Larger I/O buffers (increases from 256 Kbytes to 1 Mbyte)

■   Improved imaging performance

■   Improved network performance

■   Additional Virtual Memory

Phaser Share cards

Tektronix Phaser Share cards offer high-performance network connectivity for your color printer.

Order number	Description
4676FP1	Option P1. Adds Ethernet interface; includes support for Novell NetWare and EtherTalk.
4676FP2	Option P2. Adds TCP/IP to Opt. P1 Ethernet or Opt. P4 Token Ring.
4676FP3	Option P3. Adds LocalTalk/serial interface.
4676FP4	Option P4. Adds Token Ring interface; includes support for Novell NetWare and TokenTalk.

Phaser CopyStation accessory

The Phaser CopyStation accessory adds easy-to-use, walk-up color copying capability to the Phaser 540 Color Printer.

The CopyStation's front-panel controls let you specify the number of copies and select among color, gray scale and black-and-white copying modes. You can choose to make copies reduced to 25% or enlarged to 200% of the original's size, and you can adjust copies for color balance and lightness.

Note   *To order a Phaser CopyStation, use Tektronix order number 4540.*

For instructions on connecting a Phaser CopyStation to your printer or printer network, and for operating instructions, refer to the *Phaser CopyStation User Manual*.

Phaser Print

For printing in Unix and VMS environments, Tektronix offers Phaser Print. Phaser Print provides fast raster screen copy printing to Tektronix color printers. Phaser Print also provides a graphical user interface for push-button control of Tektronix printer features. Phaser Print works with the workstation's native spooling system to print PostScript files and raster files in these formats: Sun Raster Format (SRF), xwd, and SGI RGB.

Note   *To order Phaser Print, use Tektronix order number 4690F20.*

PhaserSym

For printing in VMS environments, Tektronix offers PhaserSym. PhaserSym is a VMS print symbiont for DEC OpenVMS, VAX, and DEC OpenVMS AXP machines.

Note   *To order PhaserSym, use Tektronix order number 4690F41.*

Adding a hard disk for font storage

With the Phaser 540, you can connect one or more Small Computer System Interface (SCSI) external hard disks to the printer and use them for additional font storage. Once you download a font to the external disk, the font remains there until you remove it.

Compatible hard disks

The Phaser 540 can use most SCSI hard disks that support the full SCSI command set. Also, most SCSI hard disks that work with an Apple LaserWriter will work with the Phaser 540. Contact your computer or printer dealer for information.

Requirements for adding a hard disk

To connect an external disk you need these items:

■   A SCSI peripheral cable for each disk. The printer uses a SCSI-2, 50-pin connector.

■   One SCSI cable terminator, unless your disk has an internal terminator.

The printer can support up to seven external disks connected at one time. When connecting a hard disk to the printer, follow these guidelines:

■   You must turn on the disk(s) *before* you turn on the printer. Wait at least one minute after turning on the disk(s) before turning on the printer.

■   The printer must always be at one end of the chain with a terminator at the other end (or a terminated device such as the Phaser CopyStation).

■   With multiple disks, each disk must have a unique SCSI ID number. Do not turn on the printer or disk *until each disk has a unique number.*

■   With multiple disks, only one disk can contain a *Sys/Start* file.

Initialization   Unless the disk is already formatted for operation with a PostScript printer, you have to initialize (format) the disk after connecting it to the printer. The Phaser 540 diskettes contain utilities to help you initialize the disk and download fonts to it. For instructions on how to use the utilities, refer to the manual *Phaser 540 Drivers and Utilities Printing Reference.*

SCSI ID number   The printer's SCSI number is 7. Valid ID numbers for the external disk are 0 through 6.

Note   *If you have a Phaser CopyStation connected to the printer, it must be located at one end of the chain, with the printer at the other end and the external disk(s) in the middle. The CopyStation uses two SCSI ID addresses, 05 and 06; therefore, the external disk(s) can use ID numbers 0 through 4.*

Termination   The Phaser 540 has an internal terminator.

Note   *If the Sys/Start file contains an error, the printer ignores the remainder of the file and may not start up as you expect it to.*

Startup file   You may load a startup file called *Sys/Start* onto your external disk. You can use the *Sys/Start* file to customize printer operation (for example, select a specific color correction or load fonts into the printer's memory).

Connecting one disk

Make sure that the computer, printer, and external disk are turned *off* before you connect or disconnect a SCSI cable.

1. Phaser 540 printer with a built-in SCSI terminator

2. SCSI port

3. External disk SCSI port

4. Terminator (not required if the disk has a built-in terminator or if you have a Phaser CopyStation connected at the other end of the chain).

Each disk must have a unique SCSI ID number. Do not turn on the printer or disk until each disk has a unique number.

Note *You must turn on the disk(s) before you turn on the printer. Wait at least one minute after turning on the disk(s) before turning on the printer.*

9008-65
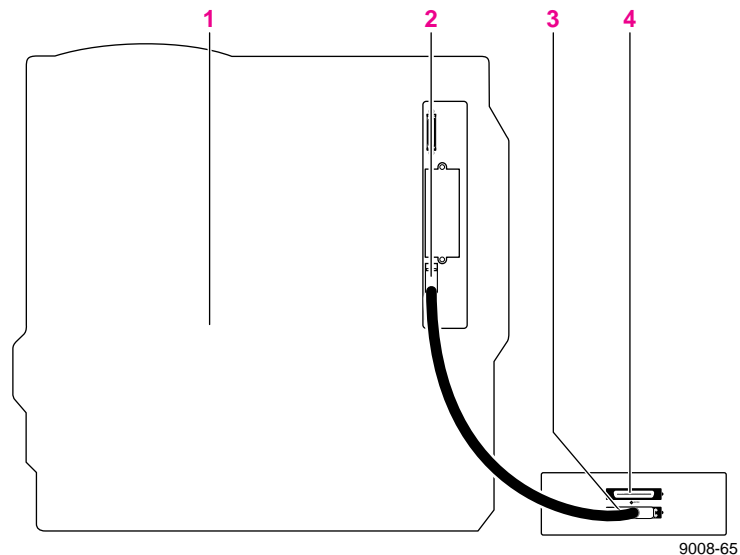
Connecting multiple disks

Make sure that the computer, printer, and external disks are turned *off* before you connect or disconnect a SCSI cable.

1. Phaser 540 printer with a built-in SCSI terminator

2. SCSI port

3. External disks

4. Terminator (not required if the *end* disk has a built-in terminator or if you have a Phaser CopyStation connected at the other end of the chain).   The middle disk must *not* have an internal terminator).

Each disk must have a unique SCSI ID number. Do not turn on the printer or disk until each disk has a unique number.

Note   *You must turn on the disk(s) before you turn on the printer. Wait at least one minute after turning on the disk(s) before turning on the printer.*

9008-66
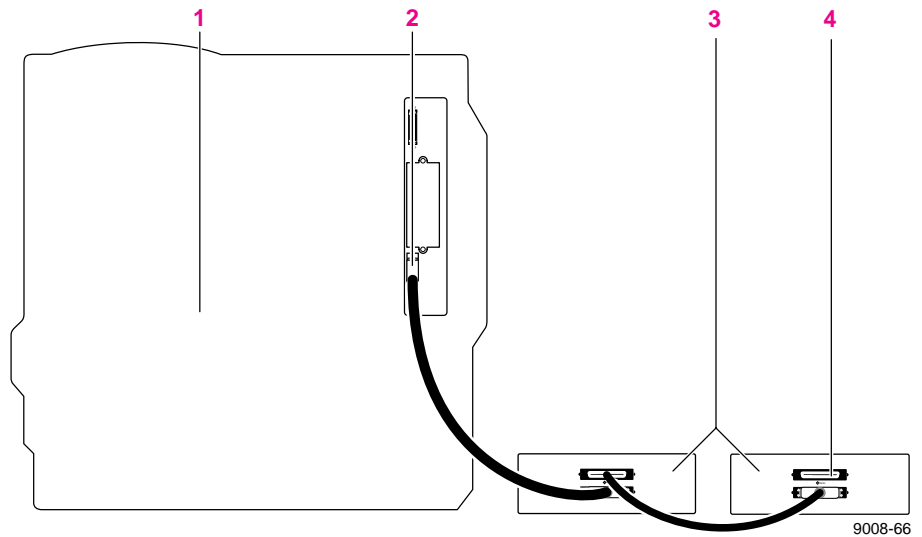
C *Moving Your Printer*

Repacking your printer

1. Turn off the printer; remove the power cord.

2. Remove the media tray(s). Repack them for shipping or storage in their original shipping boxes.
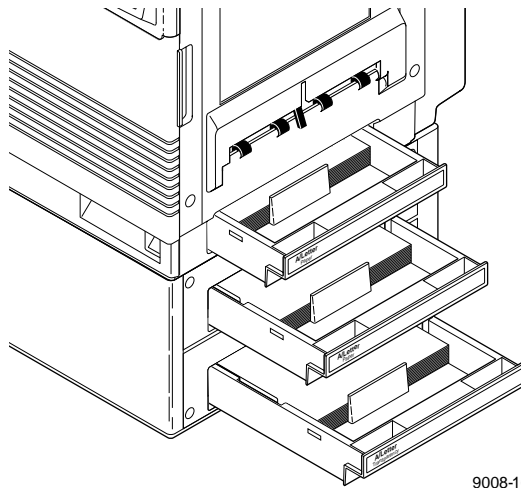
9008-16

3.   With the front and right side doors open, remove the fuser and imaging unit; immediately repack them for shipping or storage in their original shipping boxes.

Caution   *The imaging unit is extremely light sensitive; keep its light exposure to a minimum (less than 45 seconds). Also, keep it upright to avoid spilling any waste toner.*

4.   Remove the four toner cartridges; replace the protective cover for each cartridge; repack them for shipping or storage in their original shipping boxes.

5.   Carefully remove the waste bin; empty the waste toner into a plastic bag that you seal and dispose of as normal office waste; replace the waste bin in the printer.

9008-76
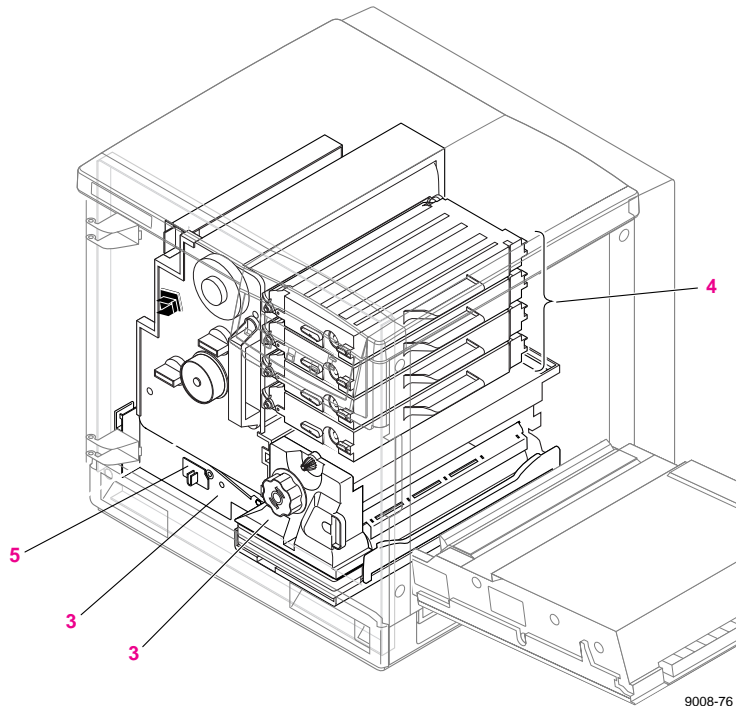
6. Wipe off any loose toner in and around the printer.

7. Close all doors and secure them with adhesive tape. If you don't have a Lower Tray Assembly, read ahead to Step 9.

8. **If you have a Lower Tray Assembly:**

    a. Lift the printer up and away from the Lower Tray Assembly.

Warning   *The printer weighs about 39 kg. (85 lbs.) and the Lower Tray Assembly weighs 14 kg (31 lbs.). Observe standard precautions for lifting heavy objects.*

    b. Repack the Lower Tray Assembly in its original shipping box.
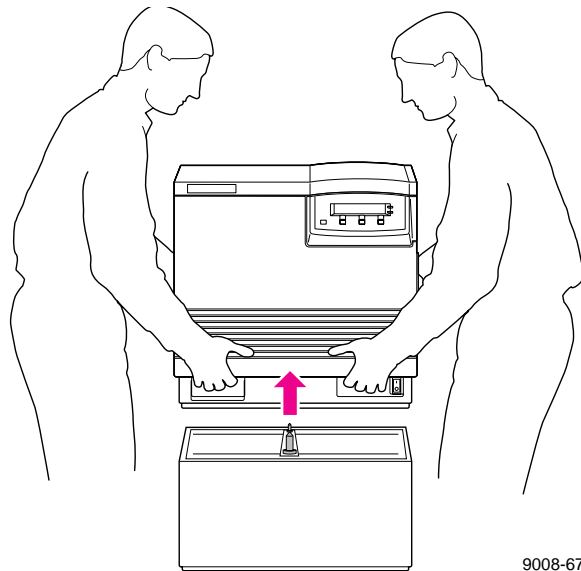
9008-67

9. Repack any other accessories in the original Tektronix shipping box.

10. Repack the printer in the original Tektronix shipping box. Make sure that you keep the printer level when moving.

Note *To keep your warranty valid, you must first remove the fuser, toner cartridges, and imaging unit, then ship the printer in its Tektronix shipping box with the appropriate packing materials. Call Tektronix at 1-800-835-6100 or call your nearest Tektronix dealer if you need a replacement box. Also, if you are returning the printer for service, call Tektronix or your nearest Tektronix dealer for a return authorization number.*

9008-59
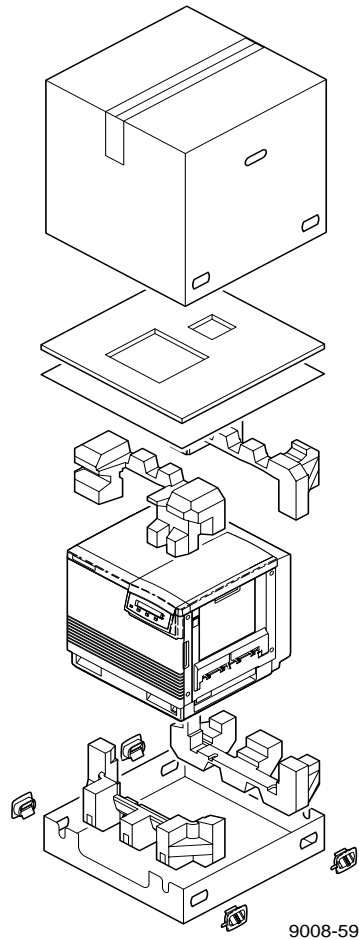
D

Regulatory Information

Canadian EMC (Electromagnetic Compatibility) regulatory standards

■ This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

■ Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limits applicables aux appareils numériques de la classe B prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministere des Communications du Canada.

Declaration of conformity (for 220-230VAC equipment)

Tektronix, Inc.
Color Printing and Imaging Division
P.O. Box 1000
Wilsonville, Oregon 97070-1000 U.S.A.

declares, under our sole responsibility, that the product

Phaser 540 (4676A)

to which this declaration relates, is in conformity with the following
standard(s) or other normative document(s):

For the EC EN60950	Safety of Information Technology Equipment including Electrical Business Equipment
For the EC EN55022	Limits and methods of measurement of radio Interference characteristics of Information Technology Equipment
For the EC 50 0821-1	The Generic Immunity Standard for electrical and electronic apparatus intended for use in the residential, commercial, and light industrial environment.

following the provision of the

Low Voltage Directive 73/23/EEC, the Electromagnetic Compatibility
Directive 89/336/EEC, Machinery Directive 89/392/EEC, and the law
governing the operation of radio-frequency equipment (HFfG) 9 August
1949.

FCC Class B device (for 115 VAC equipment)

The equipment described in this manual generates and uses radio frequency energy. If it is not installed and used properly in strict accordance with Tektronix' instructions, it may cause interference with radio and television reception.

This equipment has been tested and verified 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 interferences 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 of 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.

Warning   *Changes or modifications not expressly approved by Tektronix can affect emission compliance and could void the user's authority to operate this product. To ensure emission compliance, use shielded interface cables.*

Material Safety Data Sheets

Proper management of environmental resources protects the well-being of our employees, customers, shareholders, and the communities we are a part of worldwide.

Tektronix establishes and maintains sound environmental management practices to accomplish this goal and to assure compliance with the laws, regulations, and orders of the responsible governmental authorities wherever Tektronix and its subsidiaries operate.

Tektronix, Incorporated is complying with government regulations by providing Material Safety Data Sheets for this product.

Color Printing and Imaging Division
Tektronix, Incorporated

MSDS for toner

Section I – Product identification

Trade name and Tektronix part number:
Black Toner Cartridge   016-1319-00
Cyan Toner Cartridge   016-1320-00
Magenta Toner Cartridge   016-1321-00
Yellow Toner Cartridge   016-1322-00

Product use: Used in the Phaser 540 color printers.

Section II – Information on ingredients

Ingredients
Toners are a proprietary blend of pigments and resins

Section III – Hazards identification

Potential Health Effects:
Eyes: Contact unlikely. If any particles get into the eye, flush thoroughly with water.
Skin: Not expected to be an irritant.
Inhalation: Minimum irritation expected, as with any non-toxic dust.
Ingestion: Not considered a route of exposure. See Section XI.

Section IV – First aid measures

None indicated. These toners are encapsulated pigments and should not cause health hazards when used as intended.

Section V – Fire fighting measures

Flammable Properties:

Flash point: Not determined.
Fire & explosion hazards: These toners will burn. No unusual hazards are expected.

Section VI – Accidental release measures

Spill Or Leak: Not applicable.

Section VII – Handling and storage

Handling: None.
Storage: Avoid high temperatures.

Section VIII – Exposure control – personal protection

Exposure Guidelines: No special protection indicated when used as intended. TLV/PEL: None established.

Section IX – Physical and chemical properties

Appearance: Black, blue, red, or yellow powders.
Odor: None.
Solubility: Not water soluble.

Section X – Stability and reactivity

Stability: Stable.
Incompatibility With Other Materials: None.
Hazardous Polymerization: Will not occur.

Section XI – Toxicological information

Toxicity: Non-toxic orally.
Carcinogenicity: Not listed by IARC, NTP, or OSHA.
Mutagenicity: Toners have been examined in bacterial assays using six different strains. All toners were found to be not mutagenic.

Section XII – Ecological information

No known impact.

Section XIII – Disposal considerations

These products are not a hazardous waste as specified in 40CFR 261.
Dispose in accordance with all Federal, State, and Local regulations.

Section XIV – Transport information

D.O.T.: Not regulated.

Section XV – Regulatory information

TSCA: All components of these toners are listed in the Toxic Substances
Control Act inventory as verified by our suppliers.
SARA: Not reportable.
RCRA: TCLP below hazardous waste levels set by EPA.
CERCLA: No reportable quantity for this material.
California Prop. 65: Not listed.

Section XVI – Other information

Original preparation date: September 16, 1994 R.C.

Tektronix, Incorporated
P.O. Box 500
Chemical Documentation
Mail stop 55-769
Beaverton, Oregon 97077
Printer information: 1-800-835-6100
MSDS information: (503) 627-7255

MSDS for silicone oil

Section I – Product identification

Trade name and Tektronix part number:
Silicone Fluid 006-7959-00

Product use: Used in Tektronix Phaser 540 color printers.

Section II – Information on ingredients

Ingredients
Polydimethylsiloxane

Hazardous Ingredients: None. This is not a hazardous material as defined by the OSHA Hazard Communication Standard.

Section III – Hazards identification

Potential Health Effects:
Eyes: Direct contact may cause temporary discomfort.
Skin: A prolonged exposure may cause slight irritation.
Inhalation: Not an irritant to respiratory passages.
Ingestion: Swallowing a large amount could cause discomfort.

Section IV – First aid measures

Eyes: Flush immediately with water.
Skin: Wipe off and wash with soap and water.
Inhalation: Not a likely route of exposure.
Oral: No first aid should be needed.

Section V – Fire fighting measures

Flammable Properties: Flammable limits not determined.

Flash point: 570° F, minimum open cup.
Fire & explosion hazards: No unusual hazards known.

Section VI – Accidental release measures

Spill Or Leak: Wipe with absorbent material and dispose in accordance with Federal, State, and Local regulations.

Section VII – Handling and storage

Handling: No special requirements.
Storage: No special requirements.

Section VIII – Exposure control – personal protection

Exposure Guidelines: None established.
Engineering Controls: None needed when used as intended in Tektronix printers.
Eye Protection: None needed.
Skin Protection: None should be needed.
Respiratory Protection: None needed.

Section IX – Physical and chemical properties

Appearance: Colorless liquid.
Odor: Slight.
Solubility: Not water soluble.
Specific Gravity: 0.97.

Section X – Stability and reactivity

Stability: Stable. Traces of formaldehyde may form if heated in air above 300° F (149° C). Levels generated in the printer are not considered hazardous.
Incompatibility With Other Materials: Oxidizing compounds can cause a reaction.
Hazardous Polymerization: Will not occur.

Section XI – Toxicological information

Eye Irritation: May cause slight irritation.
Skin: May cause slight irritation, but no significant effect.

Section XII – Ecological information

No known impact.

Section XIII – Disposal considerations

Observe all Federal, State, and Local regulations. See section XV.

Section XIV – Transport information

D.O.T.: Not regulated.

Section XV – Regulatory information

EPCRA section 313 Reportable Ingredients: None.
California Prop. 65: Not listed.
Canadian WHMIS: Not considered a hazardous chemical.
TSCA: This product is listed in the Toxic Substances Control Act inventory
as verified by our suppliers.
OSHA: Not considered a hazardous material as defined by 29CFR1910.1200
Hazard Communication.

Section XVI – Other information

Original preparation date: October 28, 1994 R.C.

Tektronix, Incorporated
P.O. Box 500
Chemical Documentation
Mail stop 55-769
Beaverton, Oregon 97077
Printer information: 1-800-835-6100
MSDS information: (503) 627-7255

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