Tektronix®

Phaser® 780 Color Laser Printer
Advanced Features and Troubleshooting Manual

User 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 or 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:

Hot surface on or in the printer. Use caution to avoid personal injury:

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

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.

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.

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 EXPOSICION 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.

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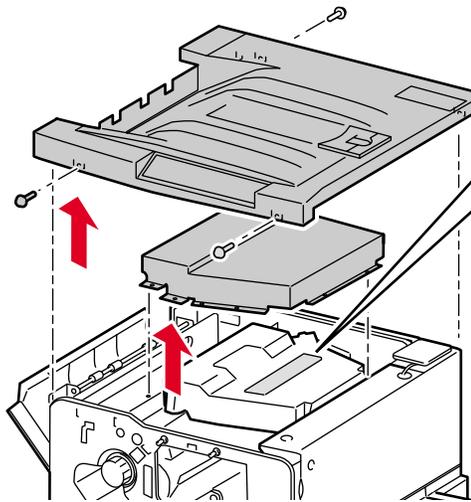
071-9925-30

FOR USERS IN JAPAN

This equipment is in the 2nd Class category (information equipment to be used in a residential area or an adjacent area thereto) and conforms to the standards set by the Voluntary Control Council For Interference by Information Technology Equipment aimed at preventing radio interference in such residential area.

When used near a radio or TV receiver, it may become the cause of radio interference. Read the instructions for correct handling.

Contents

1 *Color Printer Resources*

Tektronix offers the following suite of books, web sites, and software tools to help you get the fullest (and most colorful) use from your printer. The books and software tools are all located on the printer's CD-ROM.
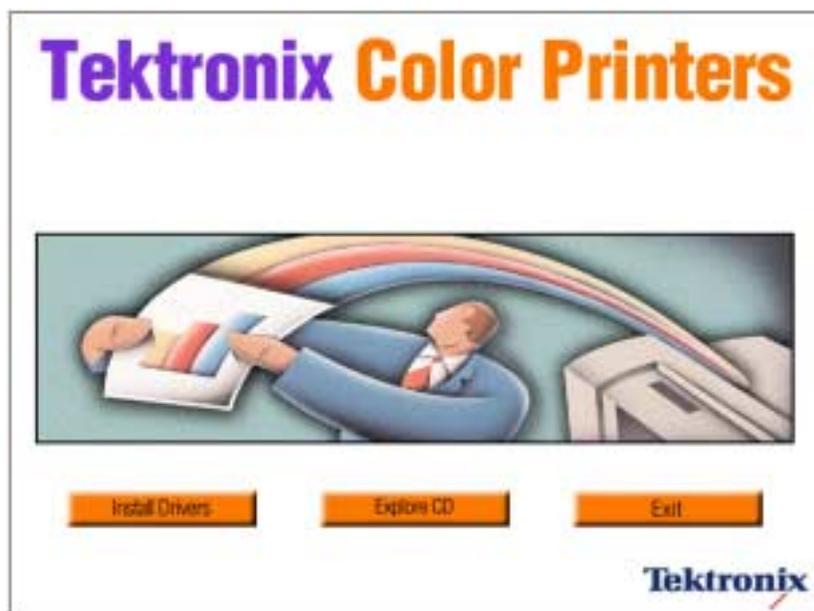
Printed and on-line books

Setup Guide

*A **printed book** is shipped with your printer.*

*An **online book** is included on the printer's CD-ROM in PDF (Acrobat) format.*

- Taking inventory
- Unpacking
- Setting up
- Installing printer software

User Guide

*A **printed book** is shipped with your printer.*

*An **online book** is included on the printer's CD-ROM in PDF (Acrobat) and HTML formats.*

- Loading media
- Consumables information
- Troubleshooting print quality
- Front panel tutorial
- Using specialty media

PhaserShare Networking Setup Guide

*A **printed book** is shipped with your printer.*

*An **online book** is included on the printer's CD-ROM in PDF (Acrobat) format.*

- Connecting your printer to a network:
    - Novell NetWare
    - Ethernet
    - TCP/IP
    - Token Ring
    - AppleTalk

Advanced Features and Troubleshooting Manual

*An **online book** is included on the printer's CD-ROM in PDF (Acrobat) and HTML formats.*

Order a printed copy: order number 070-9925-00.

- All about media
- Using color
- Advanced troubleshooting
- Connecting peripherals

PhaserShare Networking Manual

*An **online book** is included on the printer's CD-ROM in PDF (Acrobat) and HTML formats.*

Order a printed copy: order number 071-0180-01.

- System administration:
  - Setting printer parameters
  - Printer status
- Printer management:
  - Usage Profile reports
  - PhaserLink software

Tektronix World Wide Web sites

Printer home page

	What it includes	**Where to find it**
	■ Product and supplies information ■ Downloading printer drivers ■ Finding your local reseller	**www.tek.com/Color_Printers/**

PhaserLink Printer Management software

What it includes	**Where to find it**

Printer administration and support tool using World Wide Web technology:

- Status of print jobs
- Tracking printer usage
- Configure printer settings
- Routine troubleshooting
- Set security for password-protected features

www.tek.com/Color_Printers/ product/phaserlink.html

or

Enter your printer's Internet address in your web browser.

TekSMART™ Knowledge Base

What it includes	**Where to find it**

- Extensive technical troubleshooting library
- Easy search function

www2.tek.com/merlin/tko

Color Connection

What it includes	**Where to find it**
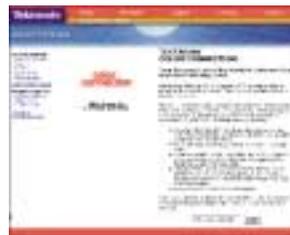
Link to the world of Tektronix color:

- Color education
- Printing ideas
- Personalized email subscription
- **colorize.com**

www.colorconnection.tektronix.com

2

Advanced Print Features

Using fonts

Resident typefaces (PostScript)

The printer accepts Adobe Type 1 and Type 3 downloadable fonts, TrueType fonts, PCL5, and a variety of user-defined fonts.

To extend font capability, the printer supports a SCSI-connected external hard disk for storage of additional fonts.   See "Connecting Peripheral Devices" on page 85 for more information.

ATM (Adobe Type Manager) software (provided on a separate CD-ROM shipped with your printer) helps your computer display these fonts on screen as they will appear in your prints.

All printer configurations are shipped with 136 fonts. To print the fonts, see page 7.

Resident typefaces (PCL5)

For PCL5 (Printer Command Language) printing, the printer supports a variety of typefaces. Before the printer accepts PCL data, the printer port must be set to **AutoSelect**.

Downloading fonts

Printer-*resident* fonts are always available for printing. Additional *downloadable* fonts can be sent from your computer and stored in the printer's memory or on an external hard disk. Adding more printer memory expands the number of fonts that can be stored on your printer.

Downloading fonts saves print time when printing large, or multiple, documents that use those fonts.

The printer accepts these (and other) downloadable fonts:

- Type 1
- Type 3
  - Adobe
  - Agfa
  - Bitstream
  - Microsoft
  - Apple
- TrueType (scalable to any point size; look the same on-screen and printed).

Before printing, make sure that the fonts specified in your document are installed in the printer or are set up correctly. If you request a font in an application that is not resident in the printer, or is not correctly installed, the text is printed in `Courier` typeface.

See "Connecting Peripheral Devices" on page 85 for more information on using an external SCSI disk for font storage.

Downloading fonts from a Macintosh

1. From the printer's CD-ROM, run the Installer application. Select **Custom Install**. Select *Printer Utilities.*

2. From the *PhaserTools* folder on your computer's hard disk, double-click *Apple Printer Utility. S*elect your printer's zone (**AppleTalk Zones**) and your printer (**Printers**).

3. Click **Open Printer**; a dialog box appears.

4. Click the arrow next to **Printer Preferences**.

5. Click the arrow next to **Fonts** for a list of installed fonts and locations.

6. Click **Add**.

7. Select your font folder, then select the font you want to download.

8. Under **Destination**, select the download location: either the printer's memory or an attached hard disk.

9. Click **Add** for one font or click **Add All** for all fonts in the folder.

10. Click **Send**; the font(s) appear in the list.

N O T E

To remove downloaded fonts, click **Remove**.

Downloading fonts with Windows 95/Windows 98 (parallel connection only)

To download fonts to a SCSI hard drive, download the DOS-based utility *PCSEND.EXE* (developed by Adobe Systems Inc. for downloading Adobe fonts) from the Tektronix ftp server, using the following address:

`ftp://ftp.tek.com/Color_Printers/bbs/pcs/misc_utilities/PCSEND.EXE`

See "Downloading files from the Tektronix ftp server" on page 84 for more information.

N O T E

PCSEND.EXE will support downloading of fonts to a printer directly connected to a parallel port on the computer. It does not support printers connected via Ethernet.

Printing a list of resident fonts

From a Macintosh

1. From the printer's CD-ROM, run the Installer application. Select **Easy Install**.

2. From the *PhaserTools* folder on your computer's hard disk, double-click *Apple Printer Utility.* Select your printer's zone (**AppleTalk Zones**) and your printer (**Printers**).

3. Click **Open Printer**; a dialog box appears.

4. From the **File** menu, select **Print Font Samples**.

From a PC or workstation

1. From the printer's CD-ROM, run *setup.exe.* Select **Easy Install**.

2. Open the *PHSRTOOL* directory. Open the *SAMPLERS* subdirectory.

3. Use one of these methods to send to the printer the *FONTS.PS* file:

   - **PC users:** Use the DOS **COPY** command.

   - **Workstation users:** Send the file to the printer as you would any PostScript file.

Using Quick Collate

Requirements

■ Plus Feature Set

■ SCSI external hard disk

Quick Collate speeds the collation and printing of large print jobs and multiple sets of documents. The collate function in some software applications repeatedly sends each page to the printer in sequence until the requested number of copies is printed. With the **Quick Collate** option, the job is sent only once and then multiple collated sets are produced by the printer, allowing much faster processing time.

The number of pages that can be collated at one time depends on the size of the hard disk attached to the printer.

Select **Quick Collate** through a supported driver, generally through the **Properties** (Windows 95 ⁄ Windows 98) or **Printer Specific Options** (Macintosh) menus.

Collation hints and tips

Output order. Depending on your driver, select **Output Face Down** or uncheck the **Output Face Up** box.

Increasing the collation capacity. To increase the number of pages that the printer can collate at once, add additional hard drives.

Quick Collate and Check Print. When you use the printer's **Quick Collate** option with **Check Print**, only the first page of the first set is printed before pausing for review.

N O T E

Make sure that you disable the collate function in your application, because the printer's **Quick Collate** option is faster than the collate function in software applications.

Using Slip Sheets

You can have the printer insert a slip sheet, or a divider page, to separate print jobs, multiple copies of a single print job, or individual pages of a print job.

There are two selections to make in your printer driver.

1. In a supported driver, locate the **Slip Sheet** options:

    - **LaserWriter 8.3.4 driver:**
      In the **Print** dialog box, click **Options**.

    - **LaserWriter 8.5.1 driver:**
      In the **Print** dialog box, use the **Printer-Specific Options** pull-down menu.

    - **Windows 95 / Windows 98 PostScript driver:**
      In the **Device Options** tab, select **Printer Features**.

    - **Windows NT driver:**
      From the **Properties** tab, select the **Advanced** tab. From the **Document Options** tab, select **Printer Features.**

    - **Adobe PS3 driver for Windows 3.1:**
      Select the **Features** tab options.

2. Select one of the following for **Slip Sheet**:

Off	Turns off the slip sheet feature.
End of Job	Inserts a slip sheet between individual print jobs.
End of Set	Inserts a slip sheet between copies, or sets, of a multi-copy print job.
End of Page	Inserts a slip sheet between every page of a print job.

3. Select one of the following for **Slip Sheet Source**:

Tray 1, 2, 3, 4	Takes paper for the slip sheet from the designated tray. Trays 2, 3, and 4 are available with installation of the optional Lower Tray Assembly.
Multi-Purpose Tray	Takes paper for the slip sheet from the external Multi-Purpose Tray on the right side of the printer.

Previewing with Check Print

Requirements

■ Plus Feature Set

■ Enable the feature in the printer's front panel

■ Select **Check Print** in the driver software (see page 11).

When printing multiple pages through the driver (either multiple copies of a single page or a multiple-page file), select **Check Print** to preview the first page of the job before proceeding with the remainder of the job; this feature is useful when printing a large job.

Access to **Check Print** from the driver is enabled and disabled in the printer's front panel. You can also set the timeout in the front panel (timeout is the amount of time the printer waits after sending the first page of a file before it continues with the remainder of the job).

The factory default for **Check Print** is "disabled"; the default timeout is 5 minutes. Follow these instructions to enable **Check Print** in the front panel, reset the timeout, and select the option in the printer driver.

Enable Check Print and reset the timeout

1. At the front panel Ready message, press **Select**.

2. Press the right arrow button until the display reads `Printer Defaults`.

3. Press **Menu**. Then press the right arrow button until the following message appears:

   ```
   Printer Defaults
   Check Print: Off        Menu
   ```

4. Press **Menu**; the following message appears, where the asterisk (*) indicates the current setting:

   ```
   Check Print
   *Off           Select
   ```

5. Press the right arrow button; the following message appears:

   ```
   Check Print
   On             Select
   ```

6. Press **Select**.

7. Change the timeout (the amount of time the printer pauses before completing the print job): When the front panel displays `Printer Defaults/Check Print Timeout`, press **Menu**.

8. Scroll to the preset timeouts, then press `Select` to activate your selection.

N O T E

You can also enable **Check Print** and control the default timeout through PhaserLink software. For details on PhaserLink software, refer to the *PhaserShare Networking Manual* on the printer's CD-ROM or web site.

Use Check Print

1. In a supported driver, select **Check Print**:

   - **LaserWriter 8.3.4 driver:**
     In the **Print** dialog box, click **Options**.

   - **LaserWriter 8.5.1 driver:**
     In the **Print** dialog box, use the **Printer-Specific Options** pull-down menu.

   - **Windows 95 / Windows 98 PostScript driver:**
     In the **Device Options** tab, click **Printer features**.

   - **Windows NT driver:**
      Under the **Properties** tab, select the **Advanced** tab; in the **Document Options** tab, select **Printer features**.

   - **Adobe PS3 driver for Windows 3.1:**
     Features tab options.

2. Check your first print. At the front panel's `Check Print` message, press one of these buttons:

`Cancel`	Cancels the print job.
`Continue`	Prints the entire print job.

Using Image Smoothing

Image Smoothing blends adjacent colors in low-resolution (less than 150 dots per inch) images for smoother color transitions. For example, use Image Smoothing to improve the appearance of an image downloaded from a web site. Image Smoothing is not recommended for 300-dpi or higher images.

There are four ways of selecting Image Smoothing:

■ Through the printer's front panel `Printer Defaults` menu.

■ In a supported printer driver; check the **Image Smoothing** box *on*.

■ Through PhaserLink software under **Configure Printer Defaults**.

■ Through one of the following PostScript utility files (see "Using Printer Utilities" on page 79):

Macintosh
■ *Image Smoothing On*
■ *Image Smoothing Off*

PC
■ *SMOOTHON.PS*
■ *SMOOTHOFF.PS*

Automatic tray switching

When your printer has a Lower Tray Assembly, you can easily run large jobs without having to replace media often.

1. For automatic tray switching to work properly, load the same *type* and *size* media in all of the printer's media trays. The media trays must also be of the same type (e.g., Universal). You can also use the Multi-Purpose Tray for automatic tray switching; fill it with the same media type as the paper trays.

2. Install a tray in each of the printer's tray slots.

Output Order

This option lets you specify whether your document prints face up or face down in the printer's output trays. Select the option in one of three ways (driver selections override all other settings):

■ Through the printer's front panel `Printer Defaults` menu.

■ In a supported printer driver; **Output Order** option or **Output Face Up** option.

■ Through PhaserLink software under **Configure Printer Defaults**.

N O T E
The driver or PhaserLink selections override the front panel setting.

Output Order: Face Up

■ Pages are output in the external tray on the left side of the printer.

■ Pages are output so that the *first* page is on the bottom.

■ Depending on the driver you are using, check the **Output Face Up** box **on**, or select **Face Up**.

Output Order: Face Down

■ Pages are output in the upper output tray, on top of the printer.

■ Pages are output *face down in numerical order.*

■ Depending on the driver you are using, uncheck the **Output Face Up** box, or select **Face Down**.

Hints

■ Most prints from the Multi-Purpose Tray are output *face up*, depending on the media type. If you select **Paper** at the **Media Type** prompt, you can select **Face Down**, and output will be on top of the printer.

■ If you are using the **Quick Collate** option — depending on the driver you are using — select **Output Face Down**, or uncheck the **Output Face Up** box.

PhaserLink PDF Direct Printing

PhaserLink PDF Direct Printing provides drag-and-drop printing of PDF and PostScript files from your web browser in Windows 95 and Windows 98 environments. Just drag any hyperlink for a PDF or PostScript file from the browser to the PDF Direct Printing icon on the desktop to print the file on your Tektronix printer. There is no need to open the file.

To install PhaserLink PDF Direct Printing, use the installer on your printer's CD-ROM. Choose **Custom Install** and check the box for PhaserLink PDF Direct Printing. Detailed instructions are provided in the README file and in the on-line help.

PhaserPrint Plug-in for Photoshop

The PhaserPrint™ plug-in, included on the printer's CD-ROM, operates within the Photoshop application. With PhaserPrint, users can improve image transfer time and gain easy access to Tektronix printer features and other media features.

PhaserPrint software produces correct output only on supported Tektronix printers.

N O T E

If you use this plug-in with a printer not listed in the PhaserPrint dialog box, the image may be placed incorrectly on the page, or colors may look incorrect, or your file may not print.

Installing the plug-in: Macintosh

N O T E

The PhaserPrint Plug-in is automatically installed with the software installation option **Easy Install**.

Compatibility requirements

- Photoshop 3.0 or later
- System 7.5.5 or later

Installing the plug-in

1. From the printer's CD-ROM, run the Installer application. Select **Custom Install**.

2. Select **PhaserPrint plug-in for Photoshop**. Click **Install**; the file is installed in the Photoshop application's *Plug-ins* folder on your computer's hard disk.

Installing the plug-in: Windows

Compatibility requirements

- Photoshop 3.0 and higher
- Windows 95/Windows 98 and Windows NT
- (optional) TCP/IP support requires proper installation of IP networking software and cards

Installing the plug-in

1. From the printer's CD-ROM, run *setup.exe.* Select **Custom Install**.

2. Select **PhaserPrint plug-in for Photoshop**; the file is installed in the Photoshop application's *Plug-ins* directory on your computer's hard disk.

Using the plug-in

1. If you don't already have a default printer selected, do the following:

   - **Macintosh:** Open the **Chooser**. Select a PostScript driver (such as the Apple LaserWriter 8); select your printer. PhaserPrint software works like a printer driver, and prints to the printer you selected in the **Chooser**.

   - **Windows:** Within the PhaserPrint software, select your printer and port, as described in "Print using (Windows)" on page 17.

2. Open Photoshop. Open an image file.

3. From the **File** menu, select **Export**. Select **PhaserPrint**; the **PhaserPrint** dialog box appears.

4. In the **Printer Model** field, select your printer.

5. PhaserPrint software supports the following image modes selected from Photoshop's **Mode** menu. If you select a mode not listed here, an error message appears and your image is not printed.

   - Bitmap
   - Grayscale
   - Indexed Color
   - RGB Color
   - CMYK Color
   - CIE L*A*B Color

Selecting options in the PhaserPrint dialog box

Settings you make in the PhaserPrint plug-in remain in effect until you change them. The exception is *Number of Copies,* which defaults to *1* each time you start the plug-in.

N O T E

You can get information on any of the plug-in's features or printer-specific options with the online **Help** function.

Number of copies

Enter the number of copies to print, from 1 to 1000.

Print using (Macintosh)

The **Print using** pop-up menu lets you choose between printing an image or saving the image to disk.

■ **AppleTalk**   Prints the image to the printer currently selected in the Chooser; the currently selected printer name is displayed in the Printer model field. If the selected printer is not a PostScript printer, this option is unavailable (grayed-out).

■ **PostScript file**   Saves an image to disk as a PostScript file. Click **Save**; a dialog box lets you choose a new or existing file for saving the PostScript code.

When selected, the **File format** pop-up menu becomes available. This pop-up menu has two options: *ASCII base-85* and *Binary.*

■ **ASCII base-85** Image data is encoded using an ASCII base-85 filter during file output, making the resulting PostScript file portable, and downloadable through interface ports that don't support binary data.

■ **Binary** Image data is output in binary format.

Print using (Windows)

The **Print using** pop-up menu lets you choose between printing an image or saving the image to disk. It has two to four options, depending on your system configuration:

■   **TCP/IP**   Available if a TCP/IP stack is installed and running. From **Printer model,** choose a printer. Add and delete printers in the list, and edit printer configuration.

N O T E

> TCP/IP is the fastest printing method; it prints jobs in much less time than the Parallel Port or Printer Driver methods, and is the recommended method if it is available for the printer you are using.

■   **Local Port**   Available if you have local ports installed in your PC. From the **Port Name**, choose the desired printer port.

■   **Printer Driver**   Prints the image through the selected printer driver. From **Driver name,** choose a printer.

■   **PostScript file**   Saves an image to disk as a PostScript file. Click **Save**; a dialog box lets you choose a new or existing file for saving the PostScript code.

When selected, the **File format** pop-up menu becomes available. This pop-up menu has two options: *ASCII base-85* and *Binary.*

   ■   **ASCII base-85** Image data is encoded using an ASCII base-85 filter during file output, making the resulting PostScript file portable so that it can be downloaded through interface ports that don't support binary data. Note that the file may be up to 25% larger.

   ■   **Binary** Image data is output in binary format. Recommended for network printing only (not for the parallel port).

Printer name

Displays the currently selected printer.

Printer model

■   Lists all printers supported by PhaserPrint software.

■   When you select your printer model, PhaserPrint displays the correct options for your printer.

Media size (selection)

- Paper sizes are printer-specific; refer to the online Help for your printer's options. Select your printer in the Printer model field before selecting a paper size.

Color Correction

- The setting remains in effect until you change it.

- Color Corrections are not available if the Mode is **Lab**.

- If **RGB** is the selected **Mode** in Photoshop, the **Calibrated RGB** option is also available.

Media

- The setting remains in effect until you change it.

Quality

- The setting remains in effect until you change it.

Rendering Intent

- Available in the following cases:

  - If the **Mode** in Photoshop is **RGB**, and you select **Calibrated RGB** as the **Color Correction** in PhaserPrint.

  - If the **Mode** in Photoshop is **Lab**.

- Calibrated RGB and Lab modes take longer to print than other modes because the printer must convert for printing CIE colors to RGB or CMYK colors.

Compress Image Data

- Compresses image data so that less data is sent to the printer or stored in a file.

- Useful if your network connection is slow, for example, if you are connected to a very busy network or if you are using LocalTalk or a parallel port. **For fast networks, printing may be faster without using this option.**

- The setting remains in effect until you change it.

- Default is **on**.

Fast preview

- Quick print of your image with slightly reduced image quality.

- Reflects the printer color correction you selected.

- For the fastest printing, use the **None** color correction option.

- Default is **off**.

Output face up

- Print a document face-up, stacking pages so that the first page is on the bottom: Check this option **on**.

- Print a document face-down, stacking the pages face-down in the order they are printed: Check this option **off**.

- The setting remains in effect until you change it.

- Default is **off**.

- Transparencies and other prints made from the Multi-Purpose Tray stack face up only.

Check Print

- When sending a multiple-copy print job to the printer through the driver, you can select **Check Print** to preview the first page of the job, and determine if the job is printing as expected before proceeding with the remainder of the job. This option is especially useful when printing many copies.

- Available only with the Plus Feature Set.

- **Check Print** must be enabled in the printer's front panel.

- At the printer's front panel, set the **Check Print** timeout.

- Default is **off**.

1. Click the **Check Print** check box.

2. Check your first print. At the **Check Print** message on the printer's front panel, press one of the buttons:

   - `Cancel` Cancels the print job.

   - `Continue` Continues printing the entire job.

Image 780Smoothing

■   Blends adjacent colors so that color transitions are less noticeable.

■   Use this option when the image being printed was scanned at a lower resolution than the printer's output resolution. For example, printing an image scanned at 72 dpi using the printer's Standard print quality mode (600 dpi).

■   Images printed using **Image Smoothing** appear with less sharp detail but with smoother color transitions.

■   Default is **off**.

Stylized representation of the page

■   The lower left area of the dialog box displays a stylized representation of the page as it would look when printed using the current selections in the **Scale**, **Scale to fit**, **Printer model**, **Media size (selection), Landscape orientation**, **Replicate images**, **Center images,** and **Image separation** options. When you change any of these selections, the representation of the page is redrawn to reflect the new selection.

■   If **Show color preview of image** is on, an approximate color image is displayed.

Scaling an image

■   **Scale to fit**

   ■   Scales an image to the largest size that fits the image area of the currently selected page size or orientation.

   ■   Automatically updates the **Scale** field value.

■   **Scale**

   ■   Type the percentage the image should be scaled, from 10 percent to 2000 percent.

   ■   Use with the Replicate images option to produce multiple copies of an image on a single page.

■   **Alert message:**   `Image clipping will occur.`

   This message appears in the PhaserPrint dialog box whenever a scaled image will not fit within the image area of the currently selected page size or orientation option.

Landscape orientation

■ Prints the image horizontally (landscape) on the page. Leave this box unchecked to print the image vertically (portrait) on the page.

■ Refer to the **Stylized representation of the page,** in the lower left corner of the dialog box, to see how your selection will look when printed.

Center images

■ Centers the image in the page's image area.

■ If this box is not checked, the lower left corner of the image is aligned with the lower left corner of the printable area of the page.

■ If the **Center images** box is checked *and* the **Replicate images** box is checked, the set of replicated images are centered in the image area of the page.

Replicate images

■ Fills the page's image area with as many copies of the image as will fit.

■ The size of each replicated image is determined by the setting in the **Scale** text box.

■ If the size of each replicated image (shown as black rectangles in the stylized representation of the page) is too small to display, the total image area of the printed page is shown as a single gray rectangle.

Image size

■ Reflects the dimensions, in inches or millimeters, of the image.

■ If the value in the **Scale** box is out-of-range, the image dimensions are displayed with question marks.

Image separation

- Only available if the **Replicate images** box is checked.

- Type an amount, in inches or millimeters (depending on your system's measurement standard), to specify the amount of separation between each replicated image.

    - A larger amount reduces the number of images that can be printed at one time.

    - Minimum allowed separation value is **0**.

    - Maximum separation value is **100** mm (**4** inches).

    - Default separation value is **3.175** mm (**0.125**/one-eighth inches).

    - Valid characters for this field are **0** to **9** and a period (or decimal point).

    - As you type a value, the stylized representation of the page, and **Number of images** and **Image layout** values are dynamically updated. If the value entered in the **Image separation** field is out-of-range, the values in these other fields are replaced by question marks, and no images are shown in the stylized representation of the page. If the value is out-of-range, and you click **Print** or **Save**, the following alert is displayed:

    ```
    The value for Image separation is out of range.  It will be
    replaced with the closest allowed value.
    ```

Number of images

- Displays the number of scaled images that will fit in the image area of the currently selected **Media size (selection)** and **Landscape** orientation options.

- **Number of images** reflects the current **Image separation** value.

- If the **Replicate images** box is not checked, this number is set to **1**.

- If either **Scale** or **Image separation** values are out-of-range, a question mark is displayed.

Image layout

- Shows how the scaled images will fit horizontally and vertically in the image area of the currently selected **Media** and **Landscape orientation** options.

- **Image layout** reflects the current **Image separation** value.

- If the **Replicate images** box is not checked, this number is set to **1 x 1**.

- If either **Scale** or **Image separation** values are out-of-range, question marks are displayed.

Media size (display)

Reflects the dimensions, in inches or millimeters, of the selected media size.

Show color preview of image

Displays an approximate color image, rather than a black box, in the **Stylized representation of the page** field.

3 *Troubleshooting*

On-line support

Visit Tektronix' color printer web site for the most up-to-date information about your printer. View updated user documentation, download utility files, get answers to frequently asked questions, find a list of Tektronix dealers in your area, or contact customer support.

Tektronix Color Printer web site	**www.tek.com/Color_Printers/**
Documentation	**www.tek.com/Color_Printers/userdoc/introduction.html**
Technical support	**www.tek.com/Color_Printers/support/colcare.html**
Color use tips for novices and experts	**www.colorize.com**
PhaserLink software	**www.tek.com/Color_Printers/products/phaserlink.html**
TekSMART™ Knowledge Base	**www2.tek.com/merlin/tko**
Anonymous FTP server	**ftp.tek.com/Color_Printers/**
Email update notices	**www.tek.com/Color_Printers/support/subscribe.html**

Customer Support Centers

For more information or for getting help with troubleshooting or servicing your printer, contact your local Tektronix reseller, authorized service provider, or the following resources worldwide:

Customer Support Centers

Australia 1-800-811-177	**France** 01 69 86 8137	**New Zealand** +61 2 9888 0100
Austria 0660 5804	**Germany** 0180 525 3535	**Norway** (22) 723 801
Belgium 02 720 9602	**Hong Kong** 2585-6655	**Singapore (ASEAN)** 1-800-356-5565
Brazil 0800 16 0220	**India (South Asia)** (91) 80-227-5577	**Spain** 902 239 272
Canada 1-800-835-6100	**Italy** 02 45 287 000	**Sweden** (08) 299 071
China 10-6235-1230	**Japan** 81 3 3448 4872	**Switzerland** 155 9493
Denmark (44) 533 444	**Korea** 2-528-5299	**Taiwan** (02) 2757-1571
Eastern Europe and the Middle East +44 1908 68187	**Luxembourg** 400 847	**Thailand** 2-645-4407
Finland 0203 206 30	**Netherlands** (040) 267 0440	**U.K.** (01) 908 681 707
		U.S. 1-800-835-6100

All other locations: Contact local Tektronix resellers and authorized service providers or Tektronix offices.
For a list of resellers in your area, visit **www.tek.com/Color_Printers/contacts**

Getting information by fax

Another Tektronix resource for up-to-date information is HAL (Highly Automated Library). If you have a fax machine and a touch-tone telephone, you can quickly receive the latest technical hints and tips, solutions to common technical problems, and application notes for software such as CorelDRAW! and QuarkXPress.

Call HAL from anywhere in the world; the fax library is available 24 hours a day, seven days a week. For a catalog listing HAL documents, call one of the following numbers.

Country	Numbers
Austria	00 44 1908 681839
Belgium	
Denmark	
Finland	
Holland	
Italy	
Norway	
Switzerland	
France	0800 90 81 86
Germany	0130 819 220
Spain	07 44 1908 681839
Sweden	009 44 1908 681839
UK	01908 681839
Other countries	+44 1908 681839 (where + is your country's International Access Code)

Diagnostic tools

The printer provides several tools for diagnosing and solving various types of problems; these tools include the following:

Consumables Page

9925-10
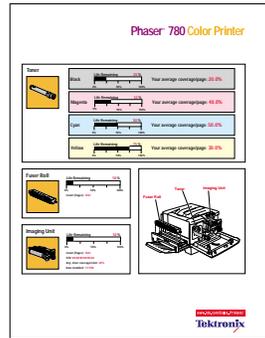
Found in the front panel's `Help Pages` menu. Included are the **% Life Remaining** gauges, showing the approximate remaining life for the toner cartridges, the imaging unit, and the fuser roll cartridge; average coverage per page percentages for toners, and dates of installation for each consumable.

Service Print 1

9925-11
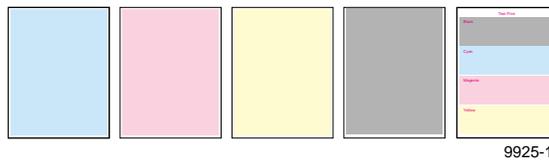
Found in the `Help Pages` menu; five separate pages help you diagnose print quality problems (for example, if a user-replaceable component needs to be replaced).

Configuration Page

9925-12

Found in the `Help Pages` menu; provides useful information for installation and troubleshooting:

- Printer's name and Internet address
- Firmware version
- Printer serial number
- Network information
- Printer feature status (for example, Check Print enabled)

Usage Profile Report
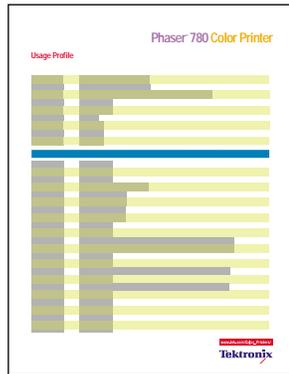
9925-13

Found in the **Help Pages** menu; provides detailed information on consumables used, tray and media selections, printer interventions, as well as an analysis of usage rates. Useful for planning your consumables ordering and tracking the average use of consumables on a per-job basis.

PhaserLink™ Software

Use a standard web browser to view printer status, control printer configuration, view consumable information, and link to online documentation via the World Wide Web.

Note: To use PhaserLink software, the printer must be connected to a network running TCP/IP. Refer to the *PhaserShare Networking Manual* on the printer's CD-ROM for complete details.

Front panel
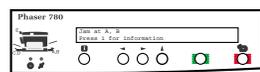
9925-15

Status messages
Automatically reflects a condition requiring user attention.

Info button
Provides useful diagnostic information (suggestions and brief explanations) when the printer experiences a problem.

PS Error Handler

Enabled in the front panel's **Printer Defaults** menu. Used to diagnose PostScript problems. When a PostScript error occurs, an error page prints out if the error handler is enabled.

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 roll cartridge).

■ If the printer's front panel message indicates replacing one or more consumables, replace it if necessary.

■ To help you diagnose the problem (in the absence of a front panel message), print the Consumables Page and Service Print 1 from the front panel's **Help Pages** menu. Refer to "Symptoms and solutions" on page 31 for examples of symptoms, probable causes, and solutions.

Basic rules for troubleshooting

Where does the symptom appear?	Solution
One color **only**:	■ Make another print.
	■ Replace the color toner cartridge.
All four colors:	■ Make another print.
	■ Replace one of these consumables:
	■ imaging unit
	■ fuser roll cartridge
	■ toner cartridge
Refer to "Symptoms and solutions" on page 31 for more detailed solutions.	

Symptoms and solutions

Front Panel Messages

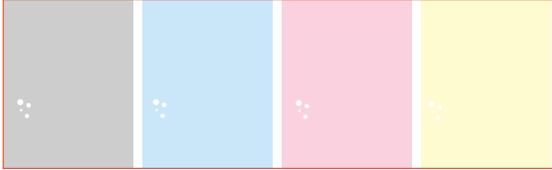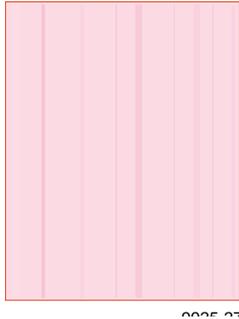| Symptom	Possible Causes	Solution
Power indicator is blinking. ⚡	The printer is processing or printing a job.	Wait for the job to be completed or cancel the job.
	You have entered a menu in the front panel.	Exit the menu.
Power indicator is off. ⚡	The printer is not ready, is disabled, or has detected 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 message indicates a toner cartridge is low.	Correct the condition reported by the front panel.
Error indicator is blinking. ✗	The printer detects a user-correctable error, such as an open door or a paper jam.	Correct the condition reported by the front panel (e.g., close the door or clear the media jam).
	Error occurred that may be user-correctable.	■ Press the **"i"** (information) button for more information on the error condition. ■ Turn the printer off and back on again. If the indicator is still on or blinking after the power-up sequence, the printer may require service.
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 **Select** to enter the front panel menu.
Front panel reports: **Jam at <Location>** (The printer icon on the front panel display flashes the location of the jam.)	Media jam.	■ **Jam at A, B:** Pull out the media-feed unit on the lower right side of the printer. Refer to the User Guide or the label on the inside of the unit to clear the jam. ■ **Jam at C, D:** Pull out the fuser unit on the lower left side of the printer. Refer to the User Guide or the label on the inside of the unit to clear the jam. ■ **Jam at E:** Open the cover on the top left of the printer. Refer to the User Guide or the label on the inside of the cover.
	Too much media is loaded in the media tray.	■ Reduce the amount of media to below the media level indicator on the media tray label. ■ Make sure that paper or transparencies are installed correctly and in the media-specific tray.
	Media is wrinkled or curled.	Change the media.
	Media is too thick or too thin.	Use recommended media. Refer to the User Guide for more information.
	Media is damp from humid conditions.	Replace with a fresh ream. Store media in a controlled environment.
Front panel reports: **Load Media in Tray <no.>**	The media installed is not what the printer is expecting.	■ Change the default media tray to match the desired media type; turn the printer off and then turn it on again. ■ Cancel the job and check for the appropriate driver selection.
Front panel reports: **Load Media in Multi-Purpose Tray**	Media in the multi-purpose tray is not the same media type selected in the driver.	■ Load the correct media type in the multi-purpose tray or reselect the media type from the front panel.
Front panel reports: **<color> Toner Low**	The indicated color toner cartridge is almost empty.	■ Order a toner cartridge now. Change the toner cartridge soon.
Front panel reports: **Replace <color> Toner Cartridge**	Indicated color toner cartridge is empty.	■ Replace the indicated color toner cartridge **now**; the printer stops until you replace the cartridge.

Front Panel Messages (cont'd.)

Symptom	Possible Causes	Solution
Front panel reports: **Imaging Unit Life Almost Over**	The imaging unit is wearing out.	Replace the imaging unit **soon; order an imaging unit now.** Although it continues to function, the print quality may be affected.
Front panel reports: **Replace Imaging Unit**	The life of the imaging unit life has been exceeded.	Replace the imaging unit now.
Front panel reports: **Fuser Roll Cartridge Low**	The fuser roll cartridge is almost spent.	Order a new fuser roll cartridge now. Replace the fuser roll cartridge soon.
Front panel reports: **Replace Fuser Roll Cartridge**	The fuser roll cartridge is spent.	Replace the fuser roll cartridge **now**.
Front panel reports: **Printer Maintenance Required Soon**	The fuser is wearing out.	Call Customer Support.
Front panel reports: **Replace Fuser**	The fuser is worn out.	Call Customer Support.
Front panel reports: **Error ##**	An error occurred that is not user-correctable.	See "Error codes" on page 38 for a list of common error codes. Press the **Info** button on the front panel for more information on the problem. Turn the printer off and back on again. If the error persists, call Customer Support.

Print Quality Problems (And Examples)

Symptom	Solution
Small white spots appear **in the same place** on every print.	Make another print. If the defect is in the same location, call Customer Support. If not, replace the imaging unit.
Vertical bands of varying width and density appear across the prints.	■ Reprint several pages. ■ Try changing the background color of the print. ■ If the problem persists, visit the Tektronix web site or call Customer Support.
Dark band appears in the same area on B-size paper, about 364 mm (14.3 in.) from the leading edge of the media, or on every other print on A/A4 media.	■ Reprint several pages. ■ Try changing the background color of the print. ■ If the problem persists, visit the Tektronix web site or call Customer Support.
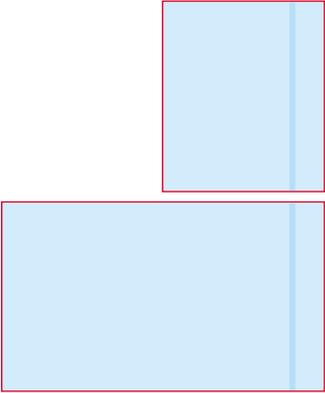
Print Quality Problems (And Examples) (cont'd.)

Print shows small, random light or dark spots **in a single color.**	Replace the color toner cartridge.
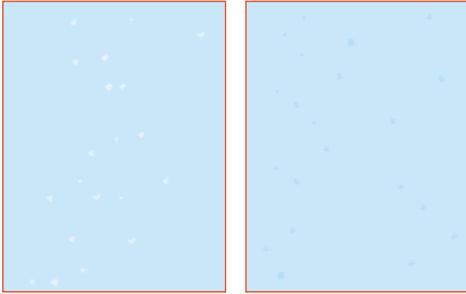
Prints are missing fine-line detail.	Refer to the **% Remaining** gauge for the imaging unit on the Consumables Page. The imaging unit may need to be replaced.
Prints have dull, faded colors.	■ If you are using a media tray, make sure that you have loaded the correct media in the PAPER tray or TRANSPARENCY tray.
	■ If you are using the Multi-Purpose Tray, make sure that you have selected the correct media type in the printer's front panel.
	Print the Consumables Page and Service Print 1 from the front panel's `Help Pages`.
	■ If all colors are faded on the four-color Service Print 1, the imaging unit may need to be replaced. Refer to the **% Remaining** gauge for the imaging unit on the Consumables Page.
	■ 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 streaks or faded prints.
	Make sure that the toner cartridges are installed correctly.
	Make sure that you use high-quality laser paper. See the User Guide for recommended media types, weights, and sizes.
	Use only Tektronix transparencies. Tektronix does not guarantee the results of non-Tektronix transparencies in Tektronix printers.
	Try a different color correction mode.
Image is very faded or pieces of the image are missing; toner on the page is loose.	When using the Multi-Purpose Tray, make sure that you have selected the correct media type in the printer's front panel menu.
	Make sure that the paper guides are set flush against the media in the paper trays.
	Make sure that specialty media is used only in the multi-purpose tray.
Images are offset or ghosted.	■ Reseat the fuser roll cartridge.
	■ The fuser roll cartridge may be depleted. Replace fuser roll cartridge.
	■ If you are making more than 500 prints per day, order the Hi-duty Fuser Roll Cartridge.
Photographic images appear grainy or mottled.	Check your driver or application print settings. Turn off Image Smoothing; in your application turn off Finepoint.

Print Quality Problems (And Examples) (cont'd.)

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 artificial light for more than 3 minutes or direct sunlight for 30 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 media is clean.
	Make sure that you handle the media on the outside edges to avoid fingerprints.
	To get rid of fingerprint spots, print 20 prints to clear.
The back of the printed page appears dirty.	Toner particles have contaminated the transfer roller. This can happen if the printed image is larger than the media (for example, when printing on envelopes). Run 10-20 prints to clean the transfer roller.

If you can't make a print

Symptom	Solution
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.
	Print Service Print 1 from the front panel to verify that the controller board is functional.
	Verify that your printer can communicate:
	If you have a Macintosh Make sure that you have the correct PPD file installed and selected and that you have selected the printer in the **Chooser**. If the printer's name does not appear in the **Chooser**, your network connection may be faulty.
	You can use the **Print Window** command in the Finder 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 **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.
	If the printer does not respond by printing a page from the computer but does print from the front panel, suspect your network. If the printer will not print from the front panel, call Customer Support.

If you can't make a print (cont'd.)

Symptom	Solution
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).
	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 either the **Network** or **AppleTalk** Control Panel.

Problems with image size and position

Symptom	Solution
Off-set images	Check your application for correct image sizing.
	Make sure that media is loaded correctly in the media trays. Set the paper guides flush against the media.
	Make sure that you have installed the driver for this printer, or the correct PPD file, so that you can select the correct page sizes from the driver.
	If printing on transparencies, and you have a Lower Tray Assembly installed, make sure that the TRANSPARENCY tray is installed in tray slot no. 1(the tray slot in the printer).
Cut-off images	Check your application for image sizing.
	Make sure that you are using the correct PPD file and have selected the correct page size.
	Make sure that the correct size media is in the media tray.
	Make sure that media is loaded correctly in the media trays. Set the paper guides flush against the media.

Problems with jams

Symptom	Solution
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 the media is installed under the hook at the front of the media tray and that the paper guides are set flush against the media.
	Use paper from a fresh ream.
Frequent media jams	Use only high-quality laser paper and other media. See the User Guide for recommended media types, weights, and sizes.
	If you are using media that is 120 g/m^2 (28 lb.), check if the **Face Down** media output setting is selected in the driver. If it is, change the setting to **Face Up**. If the problem persists, use the Multi-Purpose Tray rather than a media tray.
	Use only Tektronix transparencies. Tektronix does not guarantee the results of non-Tektronix transparencies in Tektronix printers.
	Make sure that the media is installed under the hook at the front of the media tray and that the paper guides are set flush against the media.
	Do not overfill the media trays, as indicated by the fill labels on the trays.
	Use paper from a fresh ream.
Media frequently wraps around the fuser.	Replace the fuser roll cartridge.
	Use only Tektronix media.
	Verify driver settings for specialty media.

Error codes

If the printer's front panel flashes a message alternating with `Error XX`, find the error code in this table and follow the instructions for resolving the problem.

Error Codes and Actions

Error	User Corrective Action
`Printer Maintenance Required Soon` [no error code is displayed]	■ Contact Customer Support. (Note that the printer will continue to print.)
`Error 10` `Laser Unit Error`	■ Turn the printer power off, then on. ■ If problem persists, check **www2.tek.com/merlin/tko** and/or contact Customer Support.
`Error 11, 12` `Image Density Error`	■ Turn the printer power off, then on. ■ Replace Imaging Unit. Turn the printer off, then on. ■ If problem persists, check **www2.tek.com/merlin/tko** and/or contact Customer Support.
`Error 13` `Density Calibration Error`	■ Turn the printer power off, then on. ■ If problem persists, check **www2.tek.com/merlin/tko** and/or contact Customer Support.

`Error 21` `Toner Carousel Error`
 	
 `Error 22` `PCDC Error`
 	
 `Error 23` `Environment Sensor Error`
 	
 `Error 24` `2nd Bias Roller Error`
	■ Turn the printer power off, then on.
	 ■ If problem persists, check **www2.tek.com/merlin/tko** and/or contact Customer Support.

`Error 40, 41, 42, 43, 44` `Fuser Temperature Error`	■ Open the fuser drawer on the bottom left of the printer, then close it. ■ Turn the printer power off, then on. ■ If problem persists, check **www2.tek.com/merlin/tko** and/or contact Customer Support.
`Error 61` `Process Motor Error`	■ Turn the printer power off, then on. ■ If problem persists, check **www2.tek.com/merlin/tko** and/or contact Customer Support.
`Error 62` `Paper Handling Motor`	■ Check for and clear paper jams. ■ Open the paper feed unit on the right side of the printer, then close it. ■ Turn the printer power off, then on. ■ If problem persists, check **www2.tek.com/merlin/tko** and/or contact Customer Support.

Error Codes and Actions (cont'd.)

Error	User Corrective Action

`Error 70, 71`
`Imaging Unit ID`
`Error`
 	
`Error 72`
`Imaging Unit`
`Count Error`
 	
`Error 73`
`Imaging Unit ID`
`Error`
 	
`Error 74, 75`
`Imaging Unit`
`Count Error`
	■ Remove and reinstall the Imaging Unit. Turn the printer off, then on.
	■ Replace the Imaging Unit. Turn the printer off, then on.
	■ If problem persists, check **www2.tek.com/merlin/tko** and/or contact Customer Support.

`Error 76, 77`
`Engine Board`
`Error`
	■ Turn the printer off, then on.
	■ If problem persists, check **www2.tek.com/merlin/tko** and/or contact Customer Support.

Print quality hints

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

■ Use high-quality paper and *only* Tektronix transparencies, glossy coated paper, and fabric transfer media.

■ **Do not use inkjet media,** especially inkjet coated paper and inkjet transparencies. Inkjet media are coated with a substance that will damage the fuser; Tektronix does not furnish service for damage or malfunction caused by the use of non-Tektronix supplies or consumables. Always use Tektronix coated paper and transparencies that have been specially designed for use with Tektronix Color Laser Printers.

■ Keep the imaging unit's light exposure to a minimum — less than 90 seconds of artificial light and no exposure to sunlight — or you may damage the unit:

   ■ When installing a new imaging unit, keep the protective wrapping on until immediately before inserting the unit.

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

   ■ Do not leave the printer's front door open for extended periods of time (for example, several hours).

   ■ Do not touch or otherwise contaminate the blue surface of the imaging unit; fingerprints or other defects may appear on your output.

Media hints

Use high-grade media. For best reliability and image-quality, always use Tektronix media. Refer to the printer's *User Guide* for ordering information. Do not use media designed for inkjet printers; it may damage the fuser.

Media handling

- Make sure that the media is dust-free. Dust and dirt can result in poor print quality.

- Handle media with both hands at the edges to avoid creases and fingerprints.

- Store media in the original, dust-free package in the same environmental conditions as the printer.

If your printer has a Lower Tray Assembly installed

- Insert the TRANSPARENCY tray only in tray slot no. 1, or the printer's tray slot.

Specialty media

- Always load specialty media (envelopes, Tektronix glossy coated paper, card stock, fabric transfer sheets) in the Multi-Purpose Tray. Use the appropriate driver and printer settings for the media.

- Printing on specialty media can reduce the life of the printer's components and may require more frequent printer cleaning.

Improving print speed

Relative port speed

Ethernet and Token Ring are the fastest ports, followed by the parallel port, then the LocalTalk 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
- Print quality mode selected
- Color correction mode selected
- If **Image Smoothing** is activated
- Number of non-resident fonts used

Printed colors are not what you expected

- Select another **Color Correction** option in a supported driver and print your image again; refer to page 63 for more information on color correction.

- Make sure that you are using a supported printer driver installed from the printer's CD-ROM.

- If you are sharing the printer with other users on a network, another user may have changed the printer's default color correction.

- If you use the driver's **Use Printer Setting** option and printed colors are not what you expected, check the following:

    - A selection may have been made in the front panel's TekColor Correction menu.

    - A color correction utility file may have been downloaded to the printer.

        Refer to "Color corrections" on page 63 for details on how these settings affect prints made from a driver.

Printing PANTONE Colors

If printer-specific PANTONE Colors are not printing as expected, make sure that you are printing without any color corrections selected. Refer to "PANTONE® Color files" on page 71 for more information.

There are many variables in process reproduction of colors generated by your printer, any one of which may affect the quality of the PANTONE Color simulation, including:

■ Type of media used

■ Print quality mode selected

■ Effective final resolution

■ Dot structure/halftones

■ Density of the toner colors

Using the Tektronix halftone screens

Tektronix halftone screens are designed for Tektronix printers and improve print quality over application-set halftone screens. The *Setscreen Off (SCRENOFF.PS)* utility file redefines some PostScript operators, such as the *setscreen*, *setcolorscreen* and *sethalftone*. When downloaded to the printer, this file prevents applications from overriding the Tektronix proprietary halftone screens.

Macintosh file names	PC file names
Setscreen On	*SCREENON.PS*
Setscreen Off	*SCRENOFF.PS*
Apple Printer Utility	

N O T E

The printer's default setting is *off.*

Refer to "Using the files on the printer's CD-ROM" on page 79 for instructions on using these files.

Selecting page sizes in Windows applications

In some Windows applications, you can select printer page sizes in a **Print Setup** dialog box accessed from the **File** menu. If you use a **Print Setup** dialog box to select the printer from your application, some page sizes may not be visible in the list.

If the printer page size you want to use is not visible in the list, do the following:

Windows 3.1

1. From the **Main** window, open the **Control Panel** and double-click the **Printers** icon.

2. In the **Printers** dialog box, select your printer in the list of printers.

3. Click the **Setup** button.

4. In the **Setup** dialog box, select the page size you want and click **OK**.

5. Return to your application. If you open the **Print Setup** dialog box again from within your application, the page size selection may be blank. The page size you just selected in the driver is still selected, it is just not visible in the list.

6. Print as usual.

N O T E

If you open the **Print Setup** dialog box from within an application, and the page size selection is blank, the blank represents the page size last selected from the printer driver through the Control Panel. You can leave the page size selection blank and print as usual, or you can select a page size from the list.

Windows 95/Windows 98

1. Click the **Start** icon in the task bar on your screen; a menu appears.

2. Move the cursor over **Settings**; another menu appears.

3. In the menu, click **Printers**; the **Printers** window appears.

4. In the **Printers** window, select your printer's icon. From the **File** menu, select **Properties**.

5. Click the **Paper** tab.

6. Choose a page size, and click **OK**.

7. Return to your application.

Fonts printing incorrectly from Windows

If fonts are printing incorrectly from Windows, make sure that you installed the correct printer with the supported driver and PostScript printer description (PPD) file.

If you are not sure which printer configuration you have, print the Configuration Page from the front panel's `Help Pages` menu; it lists your printer's feature set, as well as the amount of memory installed and other useful information.

Sharing the printer on a network

Driver, utility files, and front panel interactions

If your printer is shared on a network, you can affect prints made by others when you download a utility file or use the printer's front panel menus to change the printer's default settings.

■   When you print from a supported driver with any print feature selection *except* **Use Printer Setting**, the driver selection *overrides* front panel selections or downloaded utility files *for prints made from the driver.*

■   When you print from a supported driver with the **Use Printer Setting** option, your images are printed with either a previously downloaded utility file or the default front panel menu selections.

■   When you print from a non-supported driver, your images are printed with either a previously downloaded utility file or the default front panel menu selections.

■   If the colors on your prints are not what you expected, and your system administrator has disabled some of the printer's front panel menus, use one of these methods to determine what settings are in effect:

   ■   Ask your system administrator whether a utility file has been downloaded to the printer.

   ■   Print the Configuration Page from the front panel Help Pages menu to see the current color correction selection.

   ■   Use PhaserLink software to view the current printer defaults.

If the Apple Printer Utility does not work (AppleTalk)

If your printer is connected through a print server, you can use only the *Apple Printer Utility* to download PostScript utility files.

Startup page prints even though it is disabled

If the printer detects a *nonfatal* error at power-up (for example, faulty printer ports and some memory failures), 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 DIMM *x* failed	One of the memory DIMMs is not working. In this message, *x* indicates the number of the DIMM that failed. Since the printer's base memory is still working, the printer can still be used, but throughput may suffer.

PostScript printing errors

If your printer reports a PostScript error when printing from Adobe PageMaker, MacroMedia FreeHand, QuarkXPress, or Canvas, you may be using an older or incorrect version of the PostScript printer description (PPD) file. Refer to the printer's *Setup Guide* for instructions on installing printer description files.

1. Use the most current printer description file. To determine the **date** of the file you are using, do the following:

    Macintosh users:
    - Select a printer description file.

    - From the **File** menu, choose **Get Info**. Make a note of the file's version date.

    Windows 3.1 users (when using the Adobe 3.0.2 driver):
    - In the **File Manager,** check a printer description file's creation date.

    - Make a note of the file's version date.

    Windows 95/Windows 98 users:
    - In the **Windows Explorer,** check a printer description file's creation date.

    - Make a note of the file's version date.

2. Check the Tektronix web site (**www.tek.com/Color_Printers/**) to see if the printer description files you have are the most recent. If they are not, you can download the newer files from the web. Refer to "On-line support" on page 25.

Enabling the PostScript error handler

The error handling utility helps diagnose problems when a job doesn't print; it provides a PostScript error-handling function to help determine the cause of some PostScript printing problems. When the error handler is enabled, PostScript errors and other status information are printed. This utility is useful for debugging PostScript code.

1. In the printer's front panel, press **Select**.

2. Press a right or left arrow button until the front panel displays this message:

   ```
   Printer Menu
    Printer Defaults        Menu
   ```

3. Press **Menu**.

4. Press a right or left arrow button to scroll to this message:

   ```
   Printer Defaults
    PS Error Handler:Off        Menu
   ```

5. Press **Menu**; this message appears:

   ```
   PS Error Handler
    *Off          Select
   ```

   The * indicates the current selection; *Off* is the factory default.

6. Press the right arrow button to change the setting to *On*.

7. Press **Select**.

8. Press **Exit** (far right button) until the front panel reads Ready.

After turning on the error handler, resend the print job; the printer produces an error page.

N O T E

Windows users: The Windows error handler overrides the front panel error handler. To use the front panel error handler, you must disable the Windows error handler as well as enable the front panel error handler. Go to the Windows **PostScript** tab and uncheck the box **Print PS Error Info**.

Installing additional memory

Static electricity precautions

■   Leave the printer plugged into its power outlet; this preserves a ground path for static discharges.

■   Touch the printer's bare metal frame often to discharge static electricity from your body or use a grounding strap if available.

■   Handle the circuit board(s) by their edges only.

■   Do not lay the board(s) on a metal surface.

■   Avoid wearing nylon or polyester clothing; they generate static electricity.

On-site installation

Professional, on-site installation is just a phone call away. Productivity is important to your business success — so when you need it done right — the first time — call Tektronix. Tektronix' on-site installation delivers what you've been looking for: expert service technicians who provide quality, on-site product installation. See "Customer Support Centers" on page 26 for more information.

C A U T I O N

Do not install this RAM DIMM if you are uncomfortable modifying electronic equipment. You will be liable for any damage to the printer.

Requirements

- A Phillips® head screwdriver

- A 168-pin, low-voltage, 64-bit wide SDRAM DIMM. You can add 16-Mbyte, 32-Mbyte, 64-Mbyte, and 128-Mbyte DIMMs that have Serial Presence Detect (SPD) ROMs. The following memory cards are compatible with your printer.

Samsung	Memory	Configuration
KMM366S203BT	16 Mbyte	1 DIMM bank of 2M x 8 devices
KMM366S403BT	32 Mbyte	2 DIMM banks of 2M x 8 devices
KMM366S823AT	64 Mbyte	1 DIMM bank of 8M x 8 devices
KMM366S824AT	64 Mbyte	2 DIMM banks of 4M x 16 devices
KMM366S1623AT	128 Mbyte	2 DIMM banks of 8M x 8 devices
Smart Module		
SM564043574N6AA	32 Mbyte	1 DIMM bank of 4M x 16 devices
SM564088574N6AA	64 Mbyte	1 DIMM bank of 8M x 8 devices
Micron Technology		
MT8LSDT264AG-66CL2	16 Mbyte	1 DIMM bank of 2M x 8 devices
MT16LSDT464AG-10BC4	32 Mbyte	2 DIMM banks of 2M x 8 devices
MT16LSDT464AG-662C1	32 Mbyte	2 DIMM banks of 2M x 8 devices
MT8LSDT864AG-662D3	64 Mbyte	1 DIMM bank of 8M x 8 devices
MT8LSDT864AG-10BD2	64 Mbyte	1 DIMM bank of 8M x 8 devices
MT16LSDT1664AG-662DT	128 Mbyte	2 DIMM banks of 8M x 8 devices
NEC		
MC-454AD645F-A10B	32 Mbyte	2 DIMM banks of 2M x 8 devices
MC-458CB645FA-A10B	64 Mbyte	1 DIMM bank of 8M x 8 devices
MC-4516CD645FA-A10B	128 Mbyte	2 DIMM banks of 8M x 8 devices

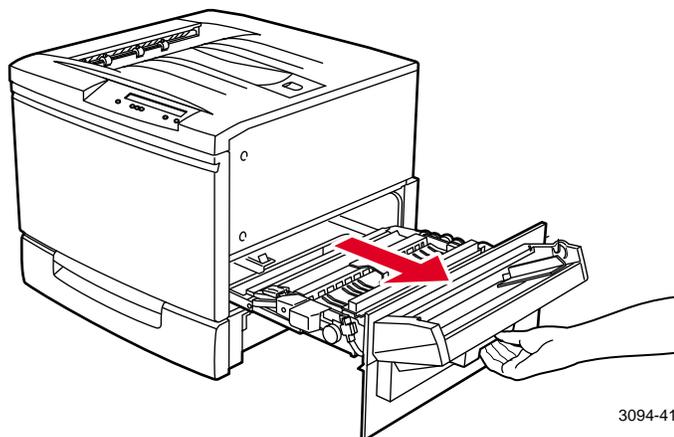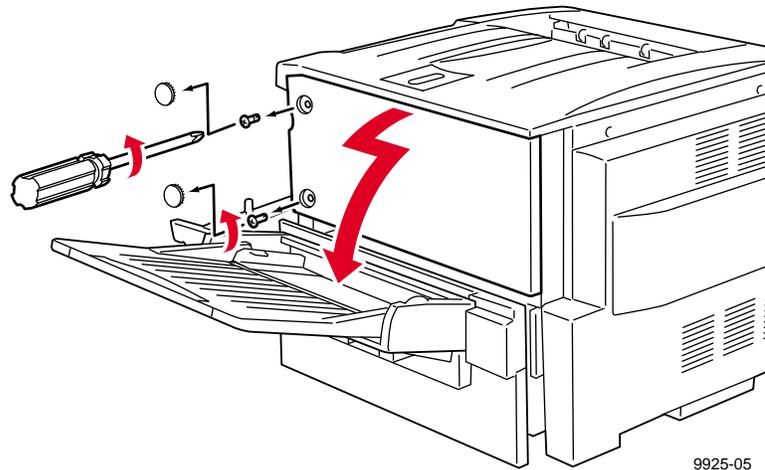# Installing a memory card

1. Turn off the printer, but do not unplug it.
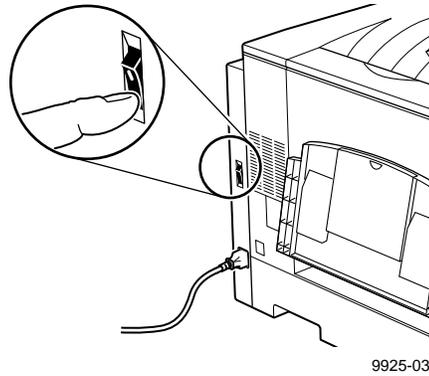
9925-03

2. Open the front cover.
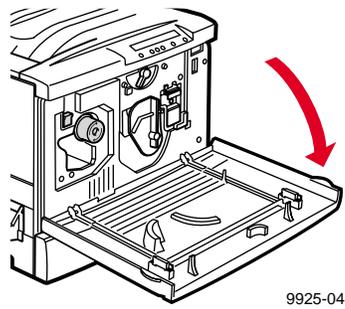
9925-04

3. Pull out the multi-purpose tray unit on the bottom right of the printer.
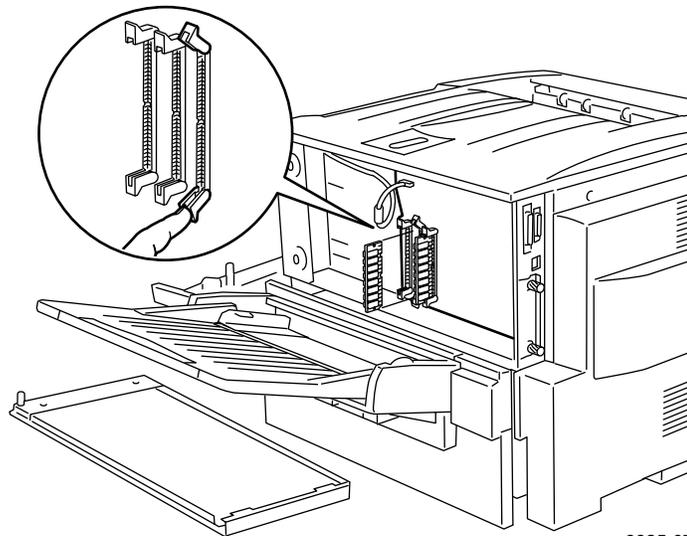

3094-41

4. Remove the two screws on the panel above the multi-purpose tray. Take off the panel and set it aside.
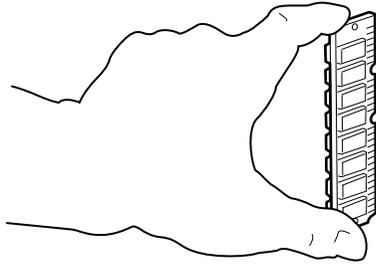
9925-05

5. Press open the white tabs at the top and bottom of the memory slot. Install additional memory starting from the slot on the right and proceeding to the left.
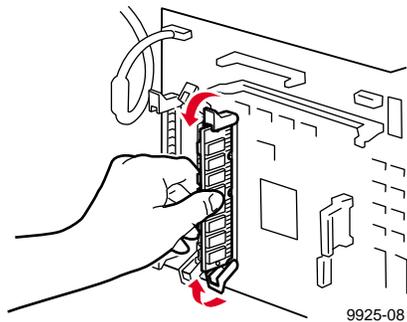
9925-07

6. Hold the memory card by the edges with the **notched** long edge toward the printer.
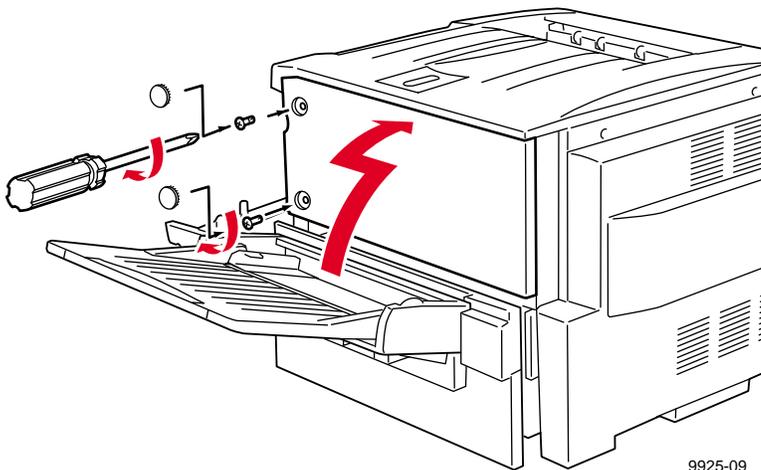

9925-06

7. Insert the card into the slot, aligning the notches with the ridges in the slot. Press firmly. The white tabs will snap into place, locking the card in the slot.

9925-08

8. Screw the right panel back into place.

9925-09

9. Close the multi-purpose tray unit and the front cover.

10. Turn on the printer.

11. To verify that the printer recognizes the new memory board, print a Configuration Page from the printer's front panel Help Pages menu.

4 *Printer Management*

PhaserLink™ Printer Management software

PhaserLink Printer Management software is a printer management tool that uses World Wide Web technology to provide printer information and functionality:

- Job status

- Printer usage

- Routine troubleshooting

- Configuration of printer settings

PhaserLink Printer Management requires a TCP/IP connection. To access PhaserLink Printer Management information, enter your printer's Internet address in a web browser: the PhaserLink Printer Management interface appears on your computer's screen.

9925-22

For detailed information on PhaserLink Printer Management software, search on the printer's CD-ROM or web site, or enter this address in your web browser:

www.tek.com/Color_Printers/products/phaserlink.html

Usage Profile

Usage Profile provides a proactive strategy for service, maintenance, and administration of your printer. You can keep track of most printer parameters in more detail than even PhaserLink Printer Management provides.

Information in the Usage Profile Report includes:

■   Remaining life of consumables

■   Paper versus transparency usage

■   Percent coverage by job or printer history

■   Number and location of media jams

■   Media tray usage

■   Number of pages printed
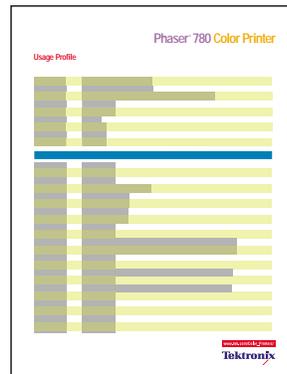
9925-13

Print the Usage Profile report from your printer's front panel; it is located in the **Help Pages** menu.

In addition, you can easily arrange electronic mail notification so that your system administrator or supplies ordering agent receives timely information on error conditions or supplies status. This feature allows you to predict consumable ordering for remote locations. Three types of error conditions are reported:

- **For the designated operator, system administrator, or service provider**
  - Toner low
  - Toner out
  - Empty media tray
  - Percentage of toner coverage by job or printer history

- **For the system administrator**
  - Printer configuration

- **For the service provider**
  - Error conditions requiring hardware service repair

For detailed information on Usage Profile Reports and email notification, search on the printer's CD-ROM or Tektronix web site.

Job Accounting

The printer stores a log file containing information about jobs printed. The file is a list of job accounting records. Each record contains fields such as user name, job name, pages printed, job times, and ink used.   Job accounting is available through the PhaserShare Administrator and PhaserLink Printer Management software.

For more information on Job Accounting, see the *PhaserShare Networking Manual* on the printer's CD-ROM or web site.

Enabling and disabling the Startup Page

You can choose to have a Startup Page print each time the printer is turned on or reset, or you can disable the Startup Page. There are three methods for enabling/disabling the Startup Page:

■ **From PhaserLink Printer Management software.** Refer to the *PhaserShare Networking Manual* for information on using your web browser to access the printer.

■ **From utility files.** Download one of the following files from the printer's CD-ROM:

  ■ **Macintosh** Use the *Apple Printer Utility.* See page 81 for instructions.

  ■ **PC** Use utility files *STARTPG.PS* (enables), *NOSTRTPG.PS* (disables); see page 82 for downloading instructions.

■ **From the printer's front panel**

  1. Press **Select**; the printer displays the following message:

     ```
     Printer Menu
        Help Pages      Menu
     ```

  2. Press the right arrow button to scroll to **Printer Defaults**.

  3. Press **Menu**.

  4. Press the right arrow button until the following message appears:

     ```
     Printer Defaults
        Startup Page    Menu
     ```

  5. Press **Menu**; the following status message appears, where the asterisk indicates the current setting:

     ```
     Startup Page
        *On       Select
     ```

  6. Press the right arrow button once. Then press **Select** to change the default setting to **Off**.

  7. Press **Exit** (the far right button) until Ready appears.

Changing the Energy Star timeout

■ The Energy Star default is set to 1 hour. When the printer exits the Energy Star mode, it is ready to print in about 5 minutes.

■ Increasing the Energy Star value from 1 hour keeps the printer ready for printing and eliminates the warm-up period. For typical office environments, set the value to 3 hours.

To increase the timeout value:

1. Press **Select** on the front panel; the following message appears:

   ```
   Printer Menu
      Help Pages      Menu
   ```

2. Press the right arrow button to scroll to **Printer Defaults**.

3. Press **Menu**.

4. Press the right arrow button until the following message appears:

   ```
   Printer Defaults
      Energy Star Timeout:1     Select
   ```

5. Press the right arrow button to increase the timeout value. You can set the value up to 4 hours.

6. Press **Select**.

7. Press **Exit** (the far right button) until `Ready` appears.

Protected mode for the front panel menu

System administrators can control user access to the front panel menus with the following utility files (see page 79 for instructions on downloading utility files):

- Macintosh utility files:

    - *Menu Short* (limits menu access)

    - *Menu Long* (expands menus)

- PC utility files:

    - *MENUSHRT.PS* (limits menu access)

    - *MENULONG.PS* (expands menus)

The "short" utility files limit the menu items displayed on the front panel, thus preventing users from changing front panel settings that may affect the prints of other users. Users instead select printing features — such as color corrections — through their applications only. In the protected mode, users can still print the Consumables Page, Configuration Page, Startup Page, and Demonstration Page. The "long" utility files reset the front panel to display full menus and allow full access to the settings.

If you used the *Menu Short or MENUSHRT.PS* file to limit the front panel menus, you can temporarily restore the full menus:

1. Press and hold `Menu`; press the far right button.

2. Scroll the menus: Press the right or left arrow button.

3. When you press the far right button again, the front panel returns to the shortened form.

5 *Using Color*

Color corrections

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

| Color correction mode		Description
Front panel selection	**Driver selection**	
Automatic	Automatic	Default setting. Automatically applies the best color correction mode to each element (text, graphics, photos) on the page.
SWOP Press	SWOP Press	Specification for Web Offset Publications. Typically used to match U.S. press standards.
SNAP Press	SNAP Press	Specifications for Non-Heat Advertising Printing. Used to match standards for printing on uncoated and newsprint papers.
Euroscale Press	Euroscale Press	Used to match equivalent Imation Matchprint® proofs.
Commercial Press	Commercial Press	Used to match commercial Imation Matchprint® proofs.
Toyo	Toyo	User to match commercial Toyo printing inks on coated paper.
DIC	DIC	Used to match Dai Nippon printing inks on coated paper.
FujiProof	FujiProof	Used to match the Fuji Color Art System for commercial North American proofs.
None	None	No correction made to colors.
Vivid Color	Vivid Color	Produces the brightest possible colors.
sRGB Display	sRGB Display	Adjusts color to closely approximate the colors on a standard display screen.
—	Use Printer Setting	Uses the color correction mode specified in the printer's front panel setting rather than any printer driver setting.

N O T E

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

Printing the Color Sampler Charts

Overview

Color sampler charts are colored rectangles with each color's component values; they help you select colors in an application that can be reproduced on your printer.

Component values are percentages of each color — CMYK (Cyan, Magenta, Yellow, Black), RGB (Red, Green, Blue), or HSB (Hue, Saturation, Brightness) — that combine to make a particular color.
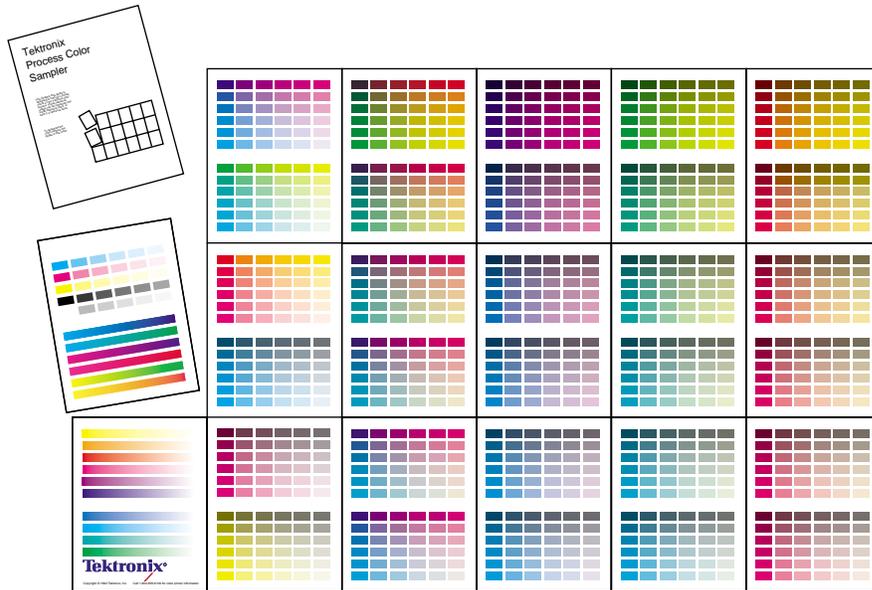
9925 -17

Color charts

■   Which color chart you print and use depends on how your application selects color.   For information on color selection, refer to the application's documentation, then print one or more of the color sampler charts.

■   Each color sampler chart is several pages long; print them in panels and connect them to form a wall chart or place in a binder for easy reference.

Color sampler chart descriptions

Color sampler chart		Number of pages	Utility file	Front panel selection
CMYK Sampler	Cyan, magenta, yellow, and black color model	18	X	X
RGB Sampler	Red, green, and blue color model	12	X	X
HSB Sampler	Hue, saturation, and brightness color model	12	X	

N O T E

To print the PANTONE Color sampler charts, see page 74.

Printing samplers from a Macintosh

Installing color correction files

1. From the printer's CD-ROM, run the Installer application. Select **Custom Install**.

2. In the dialog box, select *Printer Utilities* and *Samplers*; click **Install**. Go to the next topic, "Downloading a color correction file".

Selecting a color correction file

Select a color correction file in one of three ways: the front panel, PhaserLink Software, or download a PostScript utility file. The color correction files are as follows:

- Automatic
- Commercial Press
- DIC
- Euroscale Press
- FujiProof
- No Color Correction
- SNAP Press
- sRGB Display
- SWOP Press
- Toyo
- Vivid Color

Downloading a color correction file

N O T E
You can achieve the same result by setting the color correction at the front panel.

1. From your computer's hard disk, open the *PhaserTools* folder.

2. Double-click *Apple Printer Utility;* a Printer Selector dialog box appears:

   a. Under **AppleTalk Zones**, select your printer's zone.

   b. Under **Printers**, select your printer.

   c. Click **Open Printer**.

3. From the **File** menu, select **Send PostScript File**.

4. Open the *Printer Utilities* folder and select a color correction file.

5. Click **Add**.

6. Click **Send**.

Printing a color sampler chart

1. From your computer's hard disk, open the *PhaserTools* folder.

2. Double-click *Apple Printer Utility;* a Printer Selector dialog box appears:

    a. Under **AppleTalk Zones**, select your printer's zone.

    b. Under **Printers**, select your printer.

    c. Click **Open Printer**.

3. From the **File** menu, select **Send PostScript File**.

4. Open the *PhaserTools* folder. Open the *Samplers* folder; select a color sampler chart; click **Add**.

5. Click **Send**.

6. For future reference, write the name of the color correction that you used on the first page of the chart.

Printing the desired color from an application

1. Using the color sampler chart that you printed earlier, select the desired colors.

2. From your application, apply the desired colors in your document.

3. To print your document: In the driver, select the color correction that is the same as the file you downloaded to print the color sample chart; or select the same color correction from the front panel and then select **Use Printer Settings** in the driver.

Printing samplers from a PC

Use the same color correction to print the chart and to print from your application. Any other color correction selection in the driver causes colors to print differently than expected.

Installing color correction files

1. From the printer's CD-ROM, run *setup.exe.* Select **Custom Install**.

2. In the dialog box, select *Printer Utilities,* select a printer driver, select the *Samplers* subdirectory; click **Install**. Go to the next topic, "Downloading a color correction file" on page 68.

Downloading a color correction file

N O T E
You can make the same color correction settings at the printer's front panel.

1. From the computer's hard disk, open the *Phsrtool* directory. Open the *Phsr780* subdirectory; select a color correction file:
   - *Automatc.ps*
   - *Comrcial.ps*
   - *Dic.ps*
   - *Euroscal.ps*
   - *Fujiprof.ps*
   - *Nocorect.ps*
   - *Snapress.ps*
   - *Srgbdspl.ps*
   - *Swopress.ps*
   - *Toyo.ps*
   - *Vivdcolr.ps*

2. Send to the printer the desired color correction file:
   - **PC users**: Use the DOS **COPY** command.
   - **Workstation users**: Send a color correction file to the printer as you would any PostScript file.

Printing a color sampler chart

1. Open the *Phsrtool* directory. Open the *Samplers* subdirectory.

2. Send to the printer the desired color sampler chart:

   ■ **PC users**: Use the DOS **COPY** command.

   ■ **Workstation users**: Send the file to the printer as you would any PostScript file.

3. For future reference, write the name of the color correction that you used on the first page of the chart.

Selecting a color correction in an application

1. Using the color sampler chart that you printed earlier, select the desired colors.

2. From your application, apply the desired colors in your document.

3. To print your document: In the driver, select the color correction that is the same as the file you downloaded to print the color sample chart; or select the same color correction from the front panel and then select **Use Printer Settings** in the driver.

Printing a color sampler chart from the front panel

1. Decide which color correction to use; refer to "Color corrections" on page 63.

2. When the `Ready/Printer Menu` message appears in the printer's front panel, press `Select`; this message appears:

    ```
    Printer Menu
       Help Pages        Menu
    ```

3. Press `Menu`; the following message appears:

    ```
    Help Pages
       Consumables Page   Print
    ```

4. Press the right arrow button to scroll to `RGB Sampler Print` or `CMYK Sampler Print`.

5. Press `Print`.

6. For future reference, write the name of the color correction that you used on the first page of the chart.

Selecting a color correction in an application

1. In an application — using the colors on the sampler chart — select the desired colors; apply the colors in your document.

2. To print your document: In the driver, select the color correction that is the same as the file you downloaded to print the color sample chart; or select the same color correction from the front panel and then select **Use Printer Settings** in the driver.

PANTONE® Color files

For the latest information on color libraries, visit the Tektronix web site at **www.tek.com/Color_Printers/** or contact your local Tektronix reseller.

PANTONE Color files for your printer include color library files for specific applications and PANTONE Color sampler charts. The printer's CD-ROM provides two sets of PANTONE Color files. Both sets are installed when you select Custom Install (see "Installing PANTONE® Color files" on page 73). One set of files is optimized for the Standard print-quality mode, and the other is optimized for the Enhanced print-quality mode on your printer.

N O T E

For printing in Photo print-quality mode, the Enhanced reference files are recommended.

Enhanced and Photo print-quality modes are available with the Graphics or Plus Feature set.

Methods of printing PANTONE Colors

If you are printing:	See the following instructions:
Proofs with no spot colors for a 4-color press	"PANTONE Colors from color selection books" on page 72.
Proofs with one or more spot colors and black (no process colors)	"Printer-specific PANTONE Colors" on page 71.
Proofs using spot and process colors for output on a 5+ color press	"Printer-specific PANTONE Colors" on page 71. "PANTONE Colors from color selection books" on page 72.
Proofs; final work to be printed on a Phaser printer	"Printer-specific PANTONE Colors" on page 71.

Printer-specific PANTONE Colors

Your printer can produce *process color simulations* of PANTONE Spot Colors.

Use the following instructions when printing proofs for these types of print jobs:

■ One or more spot colors and black (no process colors) for final output on a printing press.

■ Spot colors and process colors for final output on a 5+ color printing press.

■ Spot colors for final output on your Phaser printer.

1. Print a copy of the PANTONE Color chart that corresponds to the print-quality mode (Standard or Enhanced) you are using; see page 74.

2. Within an application, apply spot colors in your document; use the individual color reference numbers on the sampler chart.

3. Print your document; select these printer settings in a driver, *or* from the front panel, *or* with a downloadable utility file (driver settings override all other selections):

- Color correction: **None**
- Print quality: ■ **Standard** (use Standard file set)

   ■ **Enhanced** (use Enhanced file set)

   ■ **Photo** (use Enhanced file set)
- Media: **Paper**

For final output on a 5+ color printing press

For colors to be printed as a process color (no spot colors), follow these steps:

1. Open the application.

2. Before separating the file for printing press plates, replace the printer's PANTONE process Colors with standard PANTONE Colors.

PANTONE Colors from color selection books

In some applications, you can select colors from PANTONE Color selection books. These colors can be proofed on your Phaser printer before final output on a printing press.

Use the following instructions when printing proofs for print jobs with these specifications:

- Final output on a 4-color printing press (no spot colors).

- Spot colors and process colors for final output on a 5+ color printing press.

1. From an application, select PANTONE Colors; use individual color values from a PANTONE Colors selection book.

2. Print your document; select the **Commercial Press** color correction. (Proof colors may not be completely accurate, but PANTONE Colors will be printed correctly on a printing press.)

3. When you are satisfied with the proof, the file can be separated for printing press plates without adjustment to the file.

Installing PANTONE® Color files

N O T E
Two sets of files are installed, one for printing in Standard print-quality mode and one for printing in Enhanced print-quality mode.

Macintosh

1. From the printer's CD-ROM, use the Installer application.

2. From the **Custom Install** window, install the following:

   - *PANTONE® Color Files*

   - *Printer Utilities*

PC

1. From the printer's CD-ROM, run *setup.exe*. Select **Custom Install**.

2. From the **Custom Install** window, install the following:

   - *PANTONE® Color Files*

   - *Printer Utilities*

Printing the PANTONE® Color charts

Macintosh

Printing individual pages from Acrobat Reader

1. Install Acrobat Reader if you want to print individual pages from the PANTONE® Color chart. Insert the printer's CD-ROM in your computer's drive, and install Acrobat Reader onto your computer's hard disk; follow on-screen instructions.

2. After Acrobat Reader is installed, open the *PhaserTools* folder on your computer's hard disk. Open the *Pantone Files* folder. If using Standard print-quality mode, double-click the *PANTONE® Phaser 780 Std.pdf* file. If using Enhanced or Photo print-quality mode, double-click the *PANTONE® Phaser 780 Enh.pdf* file.

3. View and print pages from the color sampler chart file. For best results, print on paper.

   - **From a supported driver (such as LaserWriter 8):** Print your document with the following selections.

   - **From a nonsupported driver:** Print your document with the following front panel selections *or* downloadable utility files.

     - Color correction: **None**
     - Print quality: - **Standard** (use Standard file set)
                                 - **Enhanced** (use Enhanced file set)
                                 - **Photo** (use Enhanced file set)
     - Media: **Paper**

N O T E

Print only with the selections listed above; other selections cause PANTONE Colors to print differently than expected.

Printing the entire chart

1. Use the *Apple Printer Utility.* If using Standard print-quality mode, download to the printer the *PANTONE® Phaser 780 Std.ps* file. If using the Enhanced or Photo print-quality mode, download the *PANTONE® Phaser 780 Enh.ps* file. These PostScript files contain necessary color correction and print-quality information.

2. For best results, print the chart on paper.

   - **From a supported driver (such as LaserWriter 8):** Print your document with the following selections.

   - **From a nonsupported driver:** Print your document with the following front panel selections *or* downloadable utility files.
     - Color correction: **None**
     - Print quality: ■ **Standard** (use Standard file set)

                              ■ **Enhanced** (use Enhanced file set)

                              ■ **Photo** (use Enhanced file set)
     - Media: **Paper**

PC

Printing individual pages from Acrobat Reader

1. You may want to install Acrobat Reader if you want to print individual pages from the PANTONE® Color chart. Insert the printer's CD-ROM in your computer's drive, go to the *Manuals* directory, and follow the instructions in the *ReadMe* file.

2. After Acrobat Reader is installed, open the *PANTONE* directory on your computer's hard disk. If using Standard print-quality mode, double-click the *Pan780s.pdf* file. If using Enhanced or Photo print-quality mode, double-click the *Pan780e.pdf* file.

3. View and print pages from the color sampler chart file.

   - **From a supported driver (such as the Tektronix driver for Windows 3.1 or the AdobePS 4 driver for Windows 95):** Print your document with the following selections.

   - **From a nonsupported driver:** Print your document with the following front panel selections *or* downloadable utility files.

     - Color correction: **None**
     - Print quality: - **Standard** (use Standard file set: *Pan780s.xxx*)

                                    - **Enhanced** (use Enhanced file set: *Pan780e.xxx*)

                                    - **Photo** (use Enhanced file set: *Pan780e.xxx*)
     - Media: **Paper**

N O T E

Print only with the selections listed above; any other selections cause PANTONE Colors to print differently than expected.

Within an application, using the colors on the chart, select PANTONE Colors in your document.

Printing the entire chart

1. If using Standard print-quality mode, download to the printer the *Pan780s.ps* file. If using the Enhanced or Photo print-quality mode, download the *Pan780e.ps* file. These PostScript files contain necessary color correction and print-quality information. Use one of the following methods:

    ■ **PC users:** Use the DOS **COPY** command.

    ■ **Workstation users:** Send the file to the printer as you would any PostScript file.

2. For best results, print the chart on paper.

    ■ **From a supported driver (such as the Tektronix driver for Windows 3.1 or the AdobePS 4 driver for Windows 95):** Print your document with the following selections.

    ■ **From a nonsupported driver:** Print your document with the following front panel selections *or* downloadable utility files.

    > ■ Color correction: **None**
    > ■ Print quality: ■ **Standard** (use Standard file set: *Pan780s.xxx*)
    >
    > ■ **Enhanced** (use Enhanced file set: *Pan780e.xxx*)
    >
    > ■ **Photo** (use Enhanced file set: *Pan780e.xxx*)
    > ■ Media: **Paper**

Within an application, using the colors on the chart, create PANTONE Colors in your document.

PhaserMatch™ ICC software

This software is a color management tool that you can use for the following (requires the Plus Feature Set):

- Customize colors to accurately match your press standards.

- Custom profile editing for maximum flexibility.

- Create your own profile database.

PhaserMatch ICC software is compatible with any press ICC profile. For more information, refer to the PhaserMatch ICC Software manual.

6 *Using Printer Utilities*

In addition to using the printer's front panel or the options in a supported driver, the printer's utility files offer another method for changing the way the printer operates. In some cases, a selection can be made only with a utility file.

Utility files control print features such as color correction and enabling or disabling the Startup Page. However, printer features that are selected from a driver override utility file settings and front panel settings.

There are three ways to install utility files:

- From the printer's CD-ROM

- From Tektronix' ftp site

- From Tektronix' World Wide Web site

Using the files on the printer's CD-ROM

Downloading files from a Macintosh

Using the Apple Printer Utility to download files

All PostScript utility files and fonts on the printer's CD-ROM can be downloaded to the printer with the *Apple Printer Utility.*

N O T E

If your printer is connected to a print server, you can use only the Apple Printer Utility to download PostScript utility files.

1. Insert the printer's CD-ROM into your computer's CD-ROM drive. Double-click the *Phaser 780 Installer* icon. Click **Continue**. View the license agreements and click **Accept** to continue.

2. Select **Custom Install**. Select **Printer Utilities**. Click **Install**. Click **Continue** to install more files or click **Quit** to end the installation.

3. When the registration window appears, click **Continue** or click **Cancel** if you have already registered.

4. From the *PhaserTools* folder (installed on your computer's hard drive), double-click the *Apple Printer Utility* icon.

5. In the **Printer Selector** dialog box, make the following selections:

    a. Under **AppleTalk Zones**, select your printer's zone.

    b. Under **Printers**, select your Phaser printer if it is not already selected.

    c. Click **Open Printer**.

6. When the printer dialog box opens, from the **File** menu, select **Send PostScript File**; the **Select the PostScript files to download** dialog box appears.

7. Select the *PhaserTools* folder; select the *Printer Utilities* folder.

8. Select a utility file. Click **Add**.

9. Click **Send**.

10. At the prompt **Save PostScript output as**, you are asked for a file name for saving printer output. Use the default name given in the edit box or type a new name. (Printer output includes status messages generated by the printer reporting such conditions as out of paper.)

11. Click **Save**.

12. If no output is returned by the printer, the *Apple Printer Utility* displays a dialog box; click **Continue**. If output is returned by the printer, you won't see this dialog box.

    Check your computer's hard disk for the log file created by the utility. The log file lists what files were installed and where.

Using the *Apple Printer Utility* to perform other tasks

In addition to downloading PostScript files and fonts, you can use the *Apple Printer Utility* to perform the following specialized tasks:

Turning on/off the Startup Page

1. From the *PhaserTools* folder, double-click *Apple Printer Utility.*

2. In the **Printer Selector** dialog box, make the following selections:

   a. Under **AppleTalk Zones**, select your printer's zone.

   b. Under **Printers**, select your Phaser printer.

   c. Click **Open Printer**.

3. Click the arrow next to **Printer Preferences**; a list of options appears.

4. Click the arrow next to **Startup Page**.

5. Click the check box as follows:

   - **Box is checked (default):** Prints a Startup Page each time the printer is turned on or reset.
   - **Box is unchecked:** Stops the Startup Page from automatically printing.

6. Click **Send**.

Changing the printer's AppleTalk name

1. From the *PhaserTools* folder, double-click *Apple Printer Utility.*

2. In the **Printer Selector** dialog box, make the following selections:

   a. Under **AppleTalk Zones**, select your printer's zone.

   b. Under **Printers**, select your Phaser printer.

   c. Click **Open Printer**.

3. Click the arrow next to **Printer Preferences**; a list of options appears.

4. Click the arrow next to **Name**.

5. In the text box, type the new printer name.

6. Click **Send**.

Downloading files from a PC

Windows 3.1

1. From the printer's CD-ROM, run *setup.exe*. Select **Custom Install**. Select *Printer Utilities*.

2. From your computer's hard disk, open the *PHSRTOOL* directory. Open the *PHSR780* subdirectory.

3. Select the utility file you want to send to the printer, for example *RESET.PS*.

4. From the **File** menu, select **Copy**; the **Copy** dialog box appears with the utility file you selected listed in the **From** field.

5. In the **To** field, type the port your printer is connected to. For example, type **LPT1:** for a parallel port connection. Click **OK**.

6. If the **Confirm File Replace** dialog box appears, click **Yes** to continue; the file is downloaded to the printer.

If your printer is connected to an optional Novell NetWare or TCP/IP network, follow the instructions provided with your network software.

Windows 95/Windows 98

1. From the printer's CD-ROM, run *setup.exe*. Select **Custom Install**. Select *Printer Utilities*.

2. Click **Start** in the task bar on your screen.

3. In the menu that appears, select **Programs**.

4. Select **MS-DOS Prompt**.

   - Change directory to the *PHSRTOOL* directory.

   - If your printer is connected to the parallel (LPT) port, type the following command (where *x* is 1, 2, or 3):

     COPY RESET.PS LPTx:

   - If your printer is connected to an optional Novell NetWare or TCP/IP network, follow the instructions provided with your network software.

Downloading files from the Tektronix World Wide Web site

Tektronix has a site on the World Wide Web that you can reach from a web browser, at the following address:

www.tek.com/Color_Printers/

At the Tektronix Color Printer home page, explore options such as customer support documents and new product information. New and updated information is always being added, so check the web site frequently.

Use a web browser such as Netscape Navigator or Internet Explorer, and follow these steps.

1. Start your web browser and enter the following address:

    www.tek.com/Color_Printers/support/software.html

2. From the pull-down menus, select your printer, computer, and type of file.

3. Select the files you need; they are downloaded to your computer.

Downloading files from the Tektronix ftp server

Utility files included on the printer's CD-ROM let you set up the printer from UNIX and VMS workstations to select between media trays, print quality modes, color correction modes and other features. If you don't have the means to transfer these files from the CD-ROM, you can request files from the Tektronix anonymous ftp server.

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

Log onto the Tektronix ftp server and download utility files:

1. At the system prompt, type the following:

   ftp ftp.tek.com

   The system responds:

   ```
   Name (ftp.tek.com:<login name>) :
   ```

2. Type: **anonymous**

   Press **Return**.

   The system responds:

   ```
   Guest login ok, send your complete e-mail address as password.
   ```

3. Enter your e-mail address. Press **Return**.

4. Change directories to your printer-specific directory:

   cd Color_Printers/UNIX/<*Tektronix printer*>/utilities

5. Download the utility files; type:

   mget *

   The system prompts you for each file in the directory, to which you respond **y** (yes) or **n** (no).

6. Exit the ftp session: type **quit** or **bye**; press **Return**.

Chapter

7

Connecting Peripheral Devices

The printer's optional SCSI (Small Computer System Interface) port is used for connecting external hard disk drives and scanners — all are *SCSI devices*.

The printer supports up to seven SCSI devices, as long as each has a unique SCSI ID number (any number between **0** – **6**) and the final device in the "daisy chain" is appropriately terminated. Devices can be connected in any combination of model and storage capacity.

SCSI peripheral devices

Device	Uses
Tektronix external SCSI hard disk drives ZDISK	■ Store downloaded fonts, data, and programs. ■ Temporary storage during job collation. ■ SCSI interface requires the Plus Feature Set.
Scanners	■ Turn your printer into a convenient color copier. ■ For a list of supported scanners, contact your local Tektronix reseller or visit the Tektronix web site: **www.tek.com/Color_Printers/**

Connecting SCSI devices

Required items

■ A SCSI peripheral cable for each SCSI device.

■ The printer uses a SCSI-2, 50-pin connector.

■ One SCSI cable terminator, unless one of the SCSI devices has an internal terminator.

To order supplies and accessories, contact your local dealer or visit the Tektronix web site at **www.tek.com/Color_Printers/supplies**.

012-1465-00	SCSI-2 HD to SCSI-1 LD cable	50-pin high-density plug to 50-pin low-density plug; 2.0 meters (6.56 feet)
	Connects the printer's SCSI port to a hard disk drive or a scanner SCSI port.	
012-1299-00	SCSI-1 LD to Macintosh SCSI cable	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 adapter	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.	

Connection overview

1. Turn off the printer and SCSI devices.

2. Set the SCSI ID numbers.

3. Connect cables to SCSI devices.

4. Connect cable to printer.

5. Check termination.

6. Turn on SCSI devices.

7. Turn on printer.

Connecting one SCSI device

C A U T I O N

To avoid damaging components, *before* you connect or disconnect a SCSI cable, turn off the printer, then turn off the SCSI device.

1. Turn off the printer and the SCSI device.

2. On the SCSI device, set a unique SCSI ID number (**0 – 6**; the printer is **7**).

3. Connect the SCSI cable to the SCSI device; you will need a high-density SCSI connector.

4. Connect the SCSI cable to the printer port marked "SCSI."

5. Attach terminator (not required if the SCSI device has a built-in terminator). Note the following:

   ■ The printer has an internal terminator.

   ■ The printer must always be at one end of the chain with a terminator (or a device with an internal terminator) at the other end.

   ■ Most SCSI hard disks are shipped with an internal terminator that is active.

   ■ If the SCSI device does not have an internal terminator, add one.

N O T E

Devises that require power from another device (TERMPWR pin 38) may not terminate properly.

   ■ For a scanner's termination, refer to its documentation.
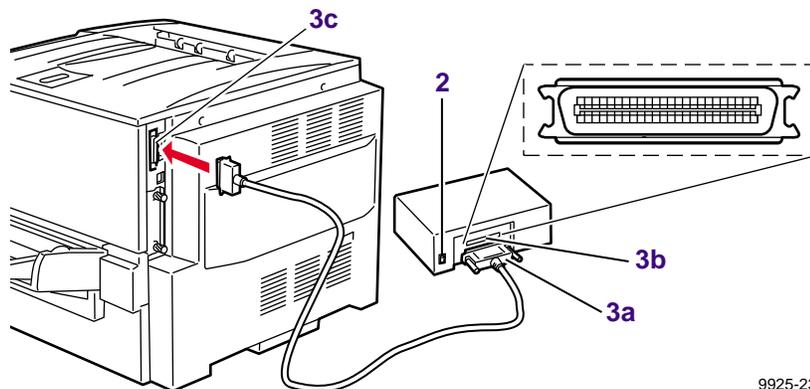
9925-23

6. If you have connected an uninitialized SCSI hard disk, see "Initializing a formatted SCSI device" on page 89.

7. Turn on the SCSI device, then turn on the printer.

Connecting multiple SCSI devices

C A U T I O N

To avoid damaging components, *before* you connect or disconnect a SCSI cable, turn off the printer and all SCSI devices.

Before you turn on the printer, turn on the SCSI devices.

1. Turn off the printer and the SCSI devices.

2. For each SCSI device, set a unique SCSI ID number (**0 – 6**; the printer is **7**).

3. Connect the SCSI cable to the first SCSI device; you will need high-density SCSI connectors. Connect the second device to the first and so on.

4. Connect the SCSI cable attached to the first SCSI device to the printer port marked "SCSI."

5. Attach the terminator to the last device in the SCSI chain (not required if the SCSI device has a built-in terminator). Note the following:

   ■ The printer has an internal terminator.

   ■ The printer must always be at one end of the chain with a terminator (or a device with an internal terminator) at the other end.

   ■ Most SCSI external hard disks are shipped with an internal terminator that is active. If you are connecting multiple hard disks, you will need to deactivate the terminators on all devices except for the last device on the daisy chain. See the documentation provided with the disk for instructions.

   ■ For a scanner's termination, refer to its documentation.
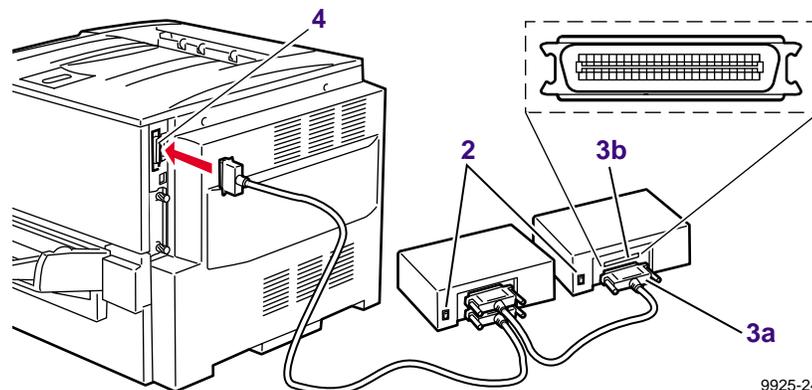
9925-24

6. If you have connected an uninitialized SCSI hard disk, see "Initializing a formatted SCSI device" on page 89.

Initializing a formatted SCSI device

Most external hard disks are formatted at the factory and only need to be initialized.

Macintosh users

1. From the printer's CD-ROM, run the Installer application. Select **Custom Install**. Select *Printer Utilities.*   From your computer's hard disk, open the *PhaserTools* folder. Open *Printer Utilities.*

2. In the **Chooser,** select your printer.

3. From the *PhaserTools* folder, double-click *Apple Printer Utility.* Download to the printer the *Initialize Printer Disks* file.

PC and workstation users

1. From the printer's CD-ROM, run *setup.exe.* Select **Custom Install**. Select *Printer Utilities.*   From your computer's hard disk, open the *PHSRTOOL* directory. Open the *PHSR780* subdirectory.

2. Use one of the following methods to send to the printer the *INITDISK.PS* file:

    ■ **PC users**: Use the DOS **COPY** command.

    ■ **Workstation users:** Send the file to the printer as you would any PostScript file.

8

Using Your Printer with a Scanner

Overview

By attaching a recommended scanner to your printer, you can use the printer as a color copier. Settings for copies are made at the printer's front panel. For example, you can specify the number of copies, reduce or enlarge prints, adjust the color saturation, and select color, gray scale, or black-and-white copying.

For more information, refer to the following topics:

■   "Connecting Peripheral Devices" on page 85.

■   "Making copies" on page 92.

■   "Using the front panel Copier Menu" on page 94.

■   "Placing and scaling images" on page 96.

Making copies

Copying a single page

Making a copy with your scanner and printer is similar to making a copy with a photocopier:

1. Raise the scanner's document cover.

2. Place the original image *face down* on the scanner's glass; position the image in your scanner according to its instructions.

3. At the printer's front panel, press the right arrow button to scroll to the **Copier Menu**; press `Select`.

4. Press the right or left arrow buttons to scroll to the following functions as needed:

   - Number of Copies/Print
   - Color Mode
   - Adjust Color
   - Adjust Contrast
   - Adjust Darkness
   - Zoom
   - Scan Area
   - Select Tray
   - Set Defaults

5. Press **Menu** to enter the individual submenus. Press the right or left arrow buttons to scroll to the appropriate selections, then press **Select**. To return to the previous submenu, press **Exit** (far right button) once.

6. When you are ready to print your copies, press the right or left arrow buttons to scroll to the `Number of Copies/Print` menu. Press `Menu`.

7. If you want more than one print, press the right arrow button to increase the number.

8. Press `Print` to make your copy.

9. To return to the `Ready` message, press the **Exit** button twice.

   N O T E

   If you return to the top level of the printer menu without saving your settings as default settings, you will lose your copier settings.

The image is transferred to the printer. The first copy normally takes 30 to 60 seconds. The subsequent copies are output at the printer's rated speed.

Copying multiple pages with an Auto-Document Feeder

If your scanner is equipped with an Auto-Document Feeder (ADF), you can copy an entire set of originals at one time and produce multiple, collated copies.

Pages are loaded and copied one at a time, and output the number of times you request in Step 7.

If your printer has Quick Collate capability (requires Plus Feature Set), the copies are automatically collated when output.

1. Make sure that no originals are on the scanner bed.

2. Insert the stack of originals in the ADF (refer to your scanner's documentation).

3. At the printer's front panel, press the right arrow button to scroll to the **Copier Menu**; press `Select`.

4. Press the right or left arrow button to scroll to the following functions as needed:

   - Number of Copies/Print
   - Color Mode
   - Adjust Color
   - Adjust Contrast
   - Adjust Darkness
   - Zoom
   - Scan Area
   - Select Tray
   - Set Defaults

5. Press **Menu** to enter the individual submenus. Press the right or left arrow button to scroll to the appropriate selections, then press **Select.** To return to the previous submenu, press `Exit` (the far right button) once.

6. When you are ready to print your copies, press the right or left arrow button to scroll to the `Number of Copies/Print` menu. Press **Menu**.

7. If you want more than one print, press the right arrow button to increase the number.

8. Press `Print` to make your copy.

9. To return to the `Ready` message, press the `Exit` button twice.

N OTE

If you return to the top level of the printer menu without saving your settings as default settings, you will lose your copier settings.

Using the front panel Copier Menu

The printer allows you to control the settings listed in the table below. From the printer's `Help Pages` menu, select `Menu Map` to print a Copier Menu.

Copier menu setting	Purpose
Number of Copies/Print	Selects up to 999 copies. To change the desired number, press the right or left arrow button.
	Press down and hold the arrow button to autoincrement the value. Release the button when the desired number of copies is displayed.
Color Mode	Selects the type of color reproduction from the following:
	■ **Color Image:** For full-color images. The image is reproduced with as accurate as possible color matching.
	■ **Color Text:** For images with colored text, line art or charts. The image is reproduced in full color, but text colors are accentuated and scanning occurs at a higher resolution to maintain text definition.
	■ **Gray Scale:** For copying or creating monochrome images. The image is reproduced in shades of gray.
	■ **Black and White:** The image is reproduced in full white and full black only. Especially suitable for copying line drawings.
Adjust Color	■ Brightens or increases the saturation of all colors or reduces the saturation (add black) on a scale of −10 (blackest) to +10 (most saturated, brightest). Zero, the default, is neutral.
	■ Adjusts the red/green and blue/yellow color balance.
Adjust Contrast	Adjusts the contrast on a scale of −10 (lowest contrast) to +10 (highest contrast).
Adjust Darkness	Lightens or darkens your prints on a scale of −10 (lightest) to +10 (darkest).
Zoom	Enlarges or reduces the size of the copy image from approximately **25%** to **1000%** of the original's image size, depending on your scanner. The default setting is **100%**. To change the scale value, press the right or left arrow button.
	Press down and hold the right or left arrow button to autoincrement the value. Release the button when the desired number of copies is displayed.
Scan Area	Selects the size of your original image or input.
	■ The options available (for example, Letter, Legal, Tabloid, A3) will depend on the scan area of your scanner.
	■ **Tray Size,** the default selection, copies an area equal to the size of the media in the selected tray. If the media in the tray is larger than the area the scanner can image, it will scan the largest possible area and scale the image up to fit the media, without distortion.
Scan Tray	Selects the media tray from which your copy or output will be printed.
	■ The options available will depend on the number of media trays in your printer.
Set Defaults	■ Changes the printer's front panel default settings and saves your own settings for the kinds of copies you typically make.
	■ Resets the defaults to the printer's original selections.

Copier Menu

Phaser® 780 Color Printer

Copier Menu

(i) displays information	◯ selects displayed setting
scrolls backward	exits without a change
scrolls forward	

Press ◯

Number of Copies/Print
(i) ◁ ▷ ◯

Color Mode
(i) ◁ ▷ ◯

Color Image	Grayscale
Color Text	Black and White

Adjust Color
(i) ◁ ▷ ◯

Saturation	Red and Green Balance	Blue and Yellow Balance

Adjust Contrast
(i) ◁ ▷ ◯

Adjust Darkness
(i) ◁ ▷ ◯

Zoom
(i) ◁ ▷ ◯

Scan Area
(i) ◁ ▷ ◯

Tray Size	Legal ★	A4 ★
Letter	Tabloid ★	A3 ★

Scan Tray
(i) ◁ ▷ ◯

Tray 1	Tray 3 ★★	Multi-Purpose Tray
Tray 2 ★★	Tray 4 ★★	

Set Defaults
(i) ◁ ▷ ◯

Save Settings	Reset Factory Defaults

www.tek.com/Color_Printers/

Tektronix

★ Scanner-specific   ★★ Requires Lower Tray Assembly

9925-18

Placing and scaling images

Copying at 100% scale

When you copy originals at 100% scale, the copy image is the same size as the original. Note however, that printers are typically unable to print to the extreme edges of the print media; the area in which a printer can print is called its "printable area." When you make a copy at 100% scale, if any part of the original image extends beyond the printer's printable area, it is cropped. You can see this effect by performing the following experiment:

1. **Original print**   Find an original that has information extending to its edges.

2. **Original on the scanner's glass**   Place the original face-down on the glass in your scanner. Lower the document cover. At the printer's front panel, press `Copy`. Refer to "Making copies" on page 92 for instructions on using the printer's front panel to make copies.

3. **Copy print**   Note that the image is not printed at the copy's edges.
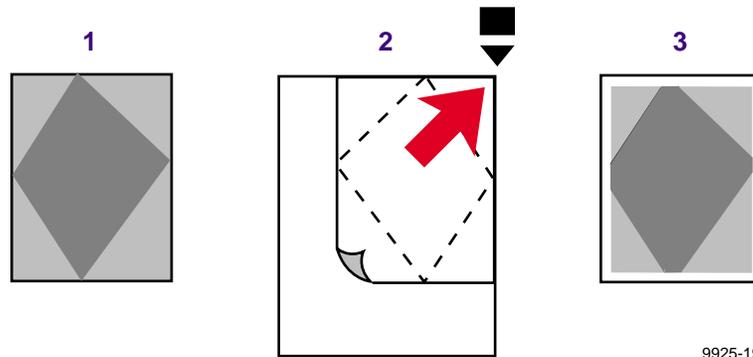
9925-19

The next example, "Copying to fit full-bleed images," shows how you can work around this problem.

Copying to fit full-bleed images

If your original's image extends to its outer edges — often called a full-bleed image — and you wish to copy the entire image, set `Zoom` to approximately 95%. The full image will be printed, at a slightly reduced scale, within the printer's maximum printable area.

1. **Original print**　Find a full-bleed original.

2. **Original on the scanner's glass**　Place the original on the scanner glass. Using the front panel controls, set `Zoom` to approximately `95%` (you will need to experiment to determine the scaling value that works best with your printer).　Lower the document cover. At the printer's front panel, press `Copy`. Refer to "Making copies" on page 92 for instructions on using the printer's front panel to make copies.

3. **Copy print**　Note that the entire image now fits, at a slightly reduced scale, entirely within the printer's printable area.

9925-20
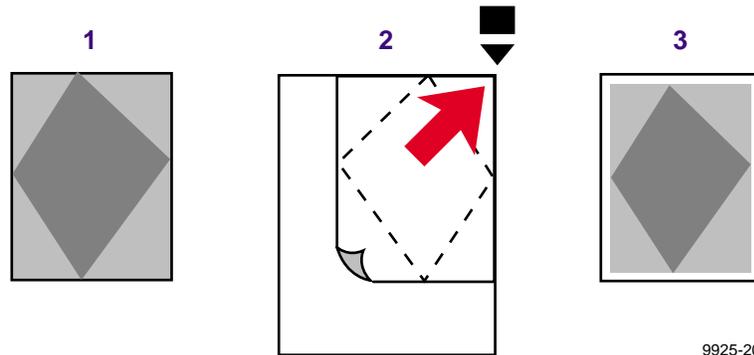
Scaling images using Zoom

1. **Original print**   Find a small, full-bleed original image.

2. **Original on scanner's glass**   Place the original face-down in your scanner. Use the front panel menu to set the `Zoom` to a value such as `200%`. Lower the document cover. At the printer's front panel, press `Copy`.

3. **Copy print**   The image is enlarged on the copy print and it is shifted slightly into the printer's printable area. The right side of the image did not fit within the printable area.

9925-21
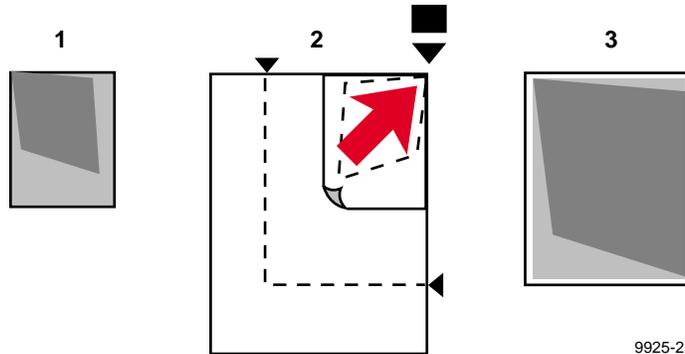
Scaling images using Scan Area

If your original is a standard size (Letter, A4, etc.), you can use the `Scan Area` function to automatically scale the image up or down to fit the media in the selected tray.

1. Place the original face-down in your scanner. Lower the document cover.

2. In the front panel `Copier` menu, set the `Scan Area` equal to the size of your original.

3. Under `Select Tray`, select the tray that has the media size on which you want to print.

4. Press `Print`. The image will be scaled to fit the selected media as closely as possible without distorting the image.

9 *Regulatory Information and Specifications*

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 220-230 VAC 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 780 (Z780)

to which this declaration relates, is in conformity with the following standard(s) or other normative document(s):

For the EC EN60950:1992	Safety of Information Technology Equipment including Electrical Business Equipment
For the EC EN55022:1992	Limits and methods of measurement of radio Interference characteristics of Information Technology Equipment
For the EC EN50082-1:1992	The Generic Immunity Standard Residential, Commercial, and Light Industry.

Environmental Phenomena	Test Specification	Basic Standard
Radio-Frequency Electromagnetic Field	27 - 500 MHz	IEC801-3:1984
Electrostatic Discharge	8kV (charge Voltage)	IEC801-2:1984
Fast Transients common mode on Signal lines	0.5kV (peak) 5/50 Tr/Th ns 5kHz Rep. Frequency	IEC801-4:1988 Capacitive Clamp
AC mains ports	1kV	

following the provision of the
Low Voltage Directive 73/23/EEC, the Electromagnetic Compatibility Directive 89/336/EEC.

FCC Class B device (for 100-120 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 1 – Product Identification
Trade Names Tektronix Part Number:
Black Toner Cartridge   016-1678-00
Cyan Toner Cartridge   016-1679-00
Magenta Toner Cartridge   016-1680-00
Yellow Toner Cartridge   016-1681-00

Product Use: Tektronix Phaser® 780 color printers

Section 2 – Information On Ingredients
Ingredients
Toners are a proprietary blend of pigments and resins, encased in a cartridge.

Section 3 – Hazards Identification
ROUTES OF EXPOSURE: Toner powders are encased in a cartridge and are not accessible, unless cartridge is forcibly broken.

POTENTIAL HEALTH EFFECTS: Health effects from this product are expected to be negligible, when product is used as intended.
Immediate Effects:
Inhalation: Minimum irritation to respiratory tract.
Skin: Non-irritant and non-sensitizer for skin.
Eye: Non-irritating to eyes.
Ingestion: Not an expected route of exposure.
Chronic Effects: None known or expected.

SIGNS AND SYMPTOMS OF EXPOSURE: Minimal irritation to respiratory tract, as for any non-toxic dust.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None when used as intended.

Section 4 – First Aid Measures
Inhalation: Unlikely route of exposure. In the event of exposure, remove person to fresh air. Seek medical attention if symptoms occur.
Eyes: If particles get into eye, flush thoroughly with water. Seek medical attention if symptoms occur.
Skin: Wash thoroughly with soap and water. Seek medical attention if symptoms of irritation occur.
Ingestion: Dilute stomach contents by drinking several glasses of milk or water. Seek medical attention immediately.

Section 5 – Fire Fighting Measures
Flammable Properties:
Flash Point: Not applicable.
Fire & Explosion Hazards: These toners will burn. No unusual hazards are expected. As for most organic powders, explosive mixtures can form when powder is dispersed in air.
Extinguishing media: Use CO_2, dry chemical, foam, or water. Avoid inhalation of smoke. As for any fire, wear protective clothing and self-contained breathing apparatus.

Section 6 – Accidental Release Measures
Spill Or Leak: Toners are encased in a cartridge. However, in case of breakage, toner powders may be cleaned up with a broom or vacuum and placed in a convenient waste disposal container. Clean up residue if necessary with soap and water.

Section 7 – Handling And Storage
Handling: No special requirements.
Storage: No special requirements.

Section 8 – Exposure Control – Personal Protection
No special protection indicated when used as intended.

TLV/PEL: Black toner contains carbon black, which has an OSHA Permissible Exposure Limit (PEL) of 3.5 mg/m^3 (milligrams per cubic meter of air), as an eight-hour time-weighted average. The ACGIH Threshold Limit Value (TLV) is also 3.5 mg/m^3.

Section 9 – Physical And Chemical Properties
Appearance: Black, blue, red, or yellow powders in cartridge.
Odor: Slight.
Solubility: Not water-soluble.
Specific Gravity: 1 (water = 1).

Section 10 – Stability And Reactivity
Stability: Stable.
Incompatibility With Other Materials: None known.
Hazardous Polymerization: Will not occur.

Section 11 – Toxicological Information
Acute: Non-irritating to eyes. Non-sensitizer for skin. Non-irritant for skin. Not toxic, according to laboratory tests for acute oral, dermal, and inhalation toxicity.
Chronic: Mutagenic effects: none detected in Ames assay.
Note: Toxicity data is based upon test results of similar xerographic toners.

Section 12 – Ecological Information
No known impact.

Section 13 – Disposal Considerations
These products are not a hazardous waste as specified in 40CFR 261. Dispose in accordance with all federal, state, and local regulations. In the spent condition, copper-zinc ferrite (CAS 66402-68-4) may be present in the remnant material at sufficient levels to classify the remnant material as a hazardous waste under the California Code of Regulations, Title 22, Division 4.5.

Section 14 – Transport Information
DOT: Not regulated.

Section 15 – Regulatory Information
TSCA: All components of these toners are listed in the Toxic Substances Control Act inventory as verified by our suppliers.

RCRA: TCLP below hazardous waste levels set by EPA.

California Proposition 65: Not listed.

CERCLA: Not listed.

SARA Extremely Hazardous Substances: Not listed.

SARA 313: Not listed.
The ingredients of these toners are not listed as carcinogens by OSHA or NTP. Black toner does contain carbon black, which has been classified by the International Agency for Research on Cancer (IARC) as a class 2B carcinogen. IARC 2B materials are considered to be possibly carcinogenic to humans.

Section 16 – Other Information
Original preparation date: June 3, 1998. JMP
Tektronix, Incorporated
P.O. Box 500
Chemical Documentation
Mail Stop 46-825
Beaverton, Oregon 97077
Printer information: 1-800-835-6100
MSDS information: (503) 627-7255

MSDS for Developer

Section 1 – Product Identification
Trade Names Tektronix Part Number:

Black Developer Assembly	118-9782-00
Cyan Developer Assembly	118-9783-00
Magenta Developer Assembly	118-9784-00
Yellow Developer Assembly	118-9785-00

Product Use: Tektronix Phaser® 780 color printers

Section 2 – Information On Ingredients
Ingredients
Developers are a proprietary blend of copper-zinc ferrite (CAS 66402-68-4), resins and pigments, encased in a cartridge.

Section 3 – Hazards Identification
ROUTES OF EXPOSURE: Developer granules are encased in a cartridge and are not accessible, unless cartridge is forcibly broken.

POTENTIAL HEALTH EFFECTS: Health effects from this product are expected to be negligible, when product is used as intended.
Immediate Effects:
Inhalation: Minimum irritation to respiratory tract.
Skin: Non-irritant and non-sensitizer for skin.
Eye: Non-irritating to eyes.
I**ngestion:** Not an expected route of exposure.
Chronic Effects: None known or expected.

SIGNS AND SYMPTOMS OF EXPOSURE: Minimal irritation to respiratory tract, as for any non-toxic dust.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None when used as intended.

Section 4 – First Aid Measures
Inhalation: Unlikely route of exposure. In the event of exposure, remove person to fresh air. Seek medical attention if symptoms occur.
Eyes: If particles get into eye, flush thoroughly with water. Seek medical attention if symptoms occur.
Skin: Wash thoroughly with soap and water. Seek medical attention if symptoms of irritation occur.
Ingestion: Dilute stomach contents by drinking several glasses of milk or water. Seek medical attention immediately.

Section 5 – Fire Fighting Measures
Flammable Properties:
Flash Point: Not applicable.
Fire & Explosion Hazards: This product is combustible. No unusual hazards are expected.
Extinguishing media: Use CO_2, dry chemical, foam, or water. Avoid inhalation of smoke. As for any fire, wear protective clothing and self-contained breathing apparatus.

Section 6 – Accidental Release Measures
Spill Or Leak: Developer granules may be cleaned up with a broom or vacuum and placed in a convenient waste disposal container. Clean up residue if necessary with soap and water.

Section 7 – Handling And Storage
Handling: No special requirements.
Storage: No special requirements.

Section 8 – Exposure Control – Personal Protection
No special protection indicated when used as intended.

TLV/PEL: Black developer contains carbon black, which has an OSHA Permissible Exposure Limit (PEL) of 3.5 mg/m^3 (milligrams per cubic meter of air), as an eight-hour time-weighted average. The ACGIH Threshold Limit Value (TLV) is also 3.5 mg/m^3.

Section 9 – Physical And Chemical Properties
Appearance: Black, blue, red, or yellow granules in cartridge.
Odor: Slight.
Solubility: Not available.
Specific Gravity: Not available.

Section 10 – Stability And Reactivity
Stability: Stable.
Incompatibility With Other Materials: None known.
Hazardous Polymerization: Will not occur.

Section 11 – Toxicological Information
Acute: Non-irritating to eyes. Non-sensitizer for skin. Non-irritant for skin. Not toxic, according to laboratory tests for acute oral, dermal, and inhalation toxicity.
Chronic: Mutagenic effects: none detected in Ames assay.
Note: Toxicity data is based upon test results of similar xerographic materials.

Section 12 – Ecological Information
No known impact.

Section 13 – Disposal Considerations
These products are not a hazardous waste as specified in 40CFR 261. Dispose in accordance with all federal, state, and local regulations. In the spent condition, copper-zinc ferrite (CAS 66402-68-4) may be present in the remnant material at sufficient levels to classify the remnant material as a hazardous waste under the California Code of Regulations, Title 22, Division 4.5.

Section 14 – Transport Information
DOT: Not regulated.

Section 15 – Regulatory Information
TSCA: All components of these developers are listed in the Toxic Substances Control Act inventory as verified by our suppliers.

RCRA: TCLP below hazardous waste levels set by EPA.

California Proposition 65: Not listed.

CERCLA: Not listed.

SARA Extremely Hazardous Substances: Not listed.

SARA 313: Copper-Zinc ferrite is present in all developer colors and is a SARA 313 substance.

The ingredients of these toners are not listed as carcinogens by OSHA or NTP. Black toner does contain very small quantities of carbon black (<1%), which has been classified by the International Agency for Research on Cancer (IARC) as a class 2B carcinogen. IARC 2B materials are considered to be possibly carcinogenic to humans.

Section 16 – Other Information
Original preparation date: June 3, 1998. JMP
Tektronix, Incorporated
P.O. Box 500
Chemical Documentation
Mail Stop 46-825
Beaverton, Oregon 97077
Printer information: 1-800-835-6100
MSDS information: (503) 627-7255

MSDS for Silicone Oil

Section 1 – Product Identification
Silicone oil, impregnated into oil roller of fuser roll cartridge (Tektronix part number 016-1866-00).

Product Use: Tektronix Phaser® 780 color printers

Section 2 – Information On Ingredients
Ingredients
Organo-functional polydimethylsiloxane.

Section 3 – Hazards Identification
ROUTES OF EXPOSURE: Skin, eyes.

POTENTIAL HEALTH EFFECTS: Health effects from this product are expected to be negligible, when product is used as intended.
Immediate Effects:
Inhalation: Not an expected route of entry.
Skin: Non-irritant and non-sensitizer for skin.
Eye: Non-irritating to eyes.
Ingestion: Not an expected route of exposure.
Chronic Effects: None known or expected.

SIGNS AND SYMPTOMS OF EXPOSURE: None when used as intended.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None when used as intended.

Section 4 – First Aid Measures
Inhalation: Not a route of exposure for this product.
Eyes: Flush thoroughly with water. Seek medical attention if symptoms occur.
Skin: Wash thoroughly with soap and water. Seek medical attention if symptoms of irritation occur.
Ingestion: Unlikely route of exposure. Dilute stomach contents by drinking several glasses of milk or water. Seek medical attention.

Section 5 – Fire Fighting Measures
Flammable Properties:
Flash Point: Not applicable.
Fire & Explosion Hazards: No unusual hazards are expected.
Extinguishing media: Use CO_2, dry chemical, foam, or water. Avoid inhalation of smoke. As for any fire, wear protective clothing and self-contained breathing apparatus.

Section 6 – Accidental Release Measures
Spill Or Leak: Oil is impregnated into oil roller of fuser roll cartridge. Small amounts (i.e., drops) may result from normal handling. Absorb and place in an appropriate disposal container. Clean spills thoroughly because residue can be slippery.

Section 7 – Handling And Storage
Handling: Wash hands with soap and water after contact. Clean spills per Section 6.
Storage: No special requirements.

Section 8 – Exposure Control – Personal Protection
No special protection indicated when used as intended.

Section 9 – Physical And Chemical Properties
Appearance: Clear liquid impregnated into oil roller of fuser roll cartridge
Odor: Slight.
Solubility: This silicone oil is not water-soluble.
Specific Gravity: 0.97 (water=1).

Section 10 – Stability And Reactivity
Stability: Stable.
Incompatibility With Other Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Silicone dioxide, carbon dioxide, and traces of incompletely burned carbon products.
Hazardous Polymerization: Will not occur.

Section 11 – Toxicological Information
Acute: Non-irritating to eyes. Non-sensitizer for skin. Non-irritant for skin. Not toxic, according to laboratory tests for acute oral and dermal toxicity.
Chronic: None detected in Ames and in vitro CHO assays.
Note: Toxicity data is based upon test results of this material as well as similar materials.

Section 12 – Ecological Information
Not available.

Section 13 – Disposal Considerations
Dispose in accordance with all federal, state, and local regulations.

Section 14 – Transport Information
DOT: Not regulated.

Section 15 – Regulatory Information
TSCA: Listed in the Toxic Substances Control Act inventory as verified by our suppliers.

California Proposition 65: Not listed.

CERCLA: Not listed.

SARA Extremely Hazardous Substances: Not listed.

SARA 313: Not listed.
This material is not listed as carcinogenic by OSHA, IARC or NTP.

Section 16 – Other Information
Original preparation date: June 3, 1998. JMP
Tektronix, Incorporated
P.O. Box 500
Chemical Documentation
Mail Stop 46-825
Beaverton, Oregon 97077
Printer information: 1-800-835-6100
MSDS information: (503) 627-7255

Specifications

Temperature
Operating: 5 degrees C to 32 degrees C (41 degrees F to 89.6 degrees F)
Best Print Quality: 18 degrees C to 26 degrees C (64.4 degrees F to 78.8 degrees F)
Nonoperating: 0 degrees C to 35 degrees C (32 degrees F to 95 degrees F)
Storage: (without paper, transparencies, or consumables): –20 degrees C to +40 degrees C
(–4 degrees F to +104 degrees F)

Humidity
Operating: 15% to 85% Relative Humidity, noncondensing
Best Print Quality: 40% to 70% Relative Humidity, noncondensing
Nonoperating: 15% to 80% Relative Humidity, noncondensing

Altitude
Operating: 0 to 2,500 m (8,000 ft.)
Nonoperating: 0 to 4000 m (13,125 ft.)

Primary voltage ranges
90 - 132 VAC, 110 VAC nominal
198 - 264 VAC, 220 VAC nominal

Frequency range
50 to 60 Hz

Primary fusing
125 VAC, 15 Amps

250 VAC, 6.3 Amps

(Not user-accessible)

Power Consumption
Meets Energy Star power conservation requirements.

State	Average power
Continuous printing	400 W or less
Idle	250 W or less
Energy Star	45 W or under

Dimensions of standard unit (without Lower Tray Assembly)
Height: 490 mm (19.3 in.)

Depth: 641 mm (25.3 in.)

Width: 728 mm (28.7 in.)*

*With multi-purpose tray in up position.

Weight
68.4 kg (150.5 lb.)

Index