

VariQuest®



Perfecta™ 2400

Full-Color Poster Design System

User's Guide

Varitronics®

www.variquest.com

Contact VariQuest @ 800-328-0585 or local authorized Dealer

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Y2843705 Rev B

Standard Warranty

Varitronics, LLC warrants the equipment and accessories comprising the **VariQuest® Perfecta™ 2400** Full-color Poster Design System will be free from defects in material and workmanship for one (1) year from the date of customer purchase. Original serial number must appear on product. Removal of serial numbers will void this warranty and any equipment and accessories that have been altered or modified in any way and are not as originally purchased will void this warranty.

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FCC Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communication. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

EMC (Electromagnetic Compatibility Notice)

This Class A digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations.
Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Technical Support

For technical assistance, please contact your authorized VariQuest dealer or the VariQuest Technical Support team:

- **Email:** techsupport@variquest.com
- **Phone:** 1-800-328-0585

Safety Information

Follow these precautions at all times to ensure the proper use of the printer and prevent it from being damaged:

- Use the power-supply voltage specified on the label. Avoid overloading the printer's electrical outlet with multiple devices.
- Do not disassemble or repair the printer. Contact your authorized **VariQuest®** Dealer or the VariQuest Technical Support team for service.
- Use only the electrical cord supplied with the printer. Do not damage, cut, or repair the power cord. A damaged power cord can cause fire or electric shock. Replace a damaged power cord with an approved power cord.
- Do not allow metal or liquids (except those used in the Cleaning Kits) to touch the internal parts of the printer. Doing so may cause fire, electric shock, or other serious hazards.
- Power off the printer and unplug the power cord from the power outlet in any of the following cases:
 - When placing your hands inside the printer.
 - If there is smoke or an unusual smell coming from the printer.
 - If the printer is making an unusual noise not heard during normal operation.
 - If a piece of metal or a liquid (not part of cleaning and maintenance routines) touches internal parts of the printer.
 - During an electrical (thunder/lightning) storm.
 - During a power failure.

Other

Varitronics and Hewlett-Packard (HP) worked together to create the **VariQuest® Perfecta™ 2400** Full-color Poster Design System. Perfecta is a compact and friendly printer designed specifically for schools. Some features have been optimized for school use. For additional features, contact our Technical Support team.

The information in this manual is from the HP User Guide. Not all features are available with the VariQuest Perfecta 2400 Printer.

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Note: The information in this manual is from the HP User Guide. Not all features are available with the VariQuest Perfecta 2400 Printer.

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A- Glossary

1 Introduction

This chapter provides an overview of the **VariQuest® Perfecta™ 2400**. The following information is contained in this chapter:

- *“Features” on page 1-2*
- *“Main Components” on page 1-3*
- *“Printer Software” on page 1-8*
- *“Web Services” on page 1-9*
- *“Turn Printer On and Off” on page 1-10*
- *“Internal Prints” on page 1-11*

Features

Your printer is a color inkjet printer designed for printing high-quality images on paper up to 24 inches or 36 inches wide.

Some major features of the printer are:

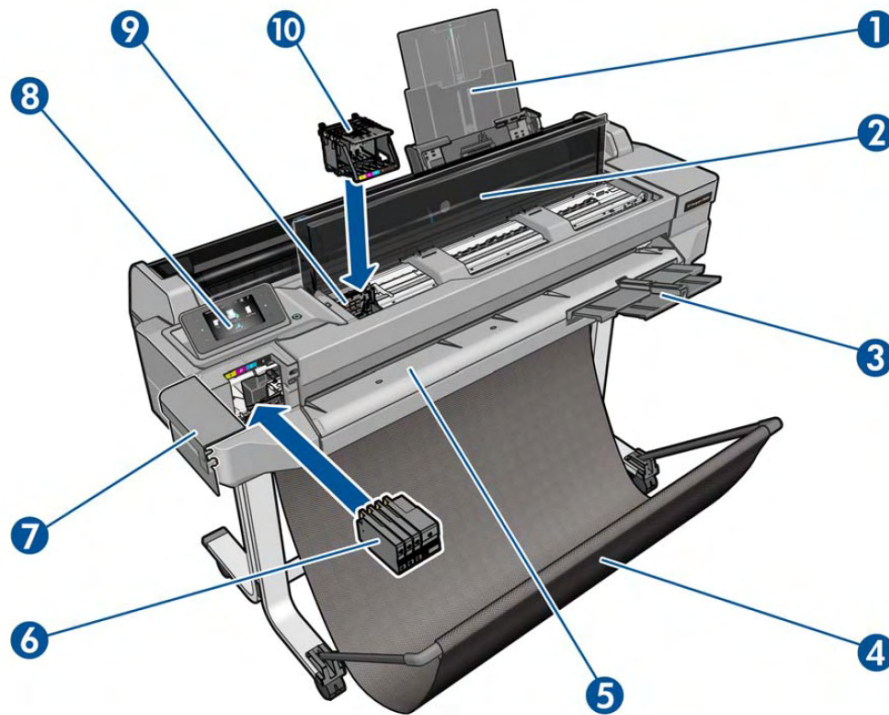
- Print resolution of up to 2400 × 1200 dpi, using the Best print-quality option, the Maximum Detail option and photo paper.
- The printer can be controlled from its front panel or from a remote computer using the Embedded Web Server or the HP Utility.

Note: Throughout this manual, “HP Utility” refers to the HP Utility for Windows.

- Touch-sensitive front panel in color, with an intuitive graphical user interface.
- Supports USB, Ethernet, or WiFi connection.
- Includes Web-connected features such as automatic firmware upgrades, ePrint & Share, and ePrint.
- Handles roll and cut-sheet paper, with a multi-sheet tray.
- Color emulations, see *“Printer Emulation” on page 4-10.*
- Economode for printing economically.
- Ink and paper usage information available from the Embedded Web Server, see *“Access the Embedded Web Server” on page 2-11.*
- Supplies information, troubleshooting, and firmware updates available from the HP Utility, see *“Access the Printer Utility” on page 2-12*
- Access to the online HP Support Center.

Main Components

Front View

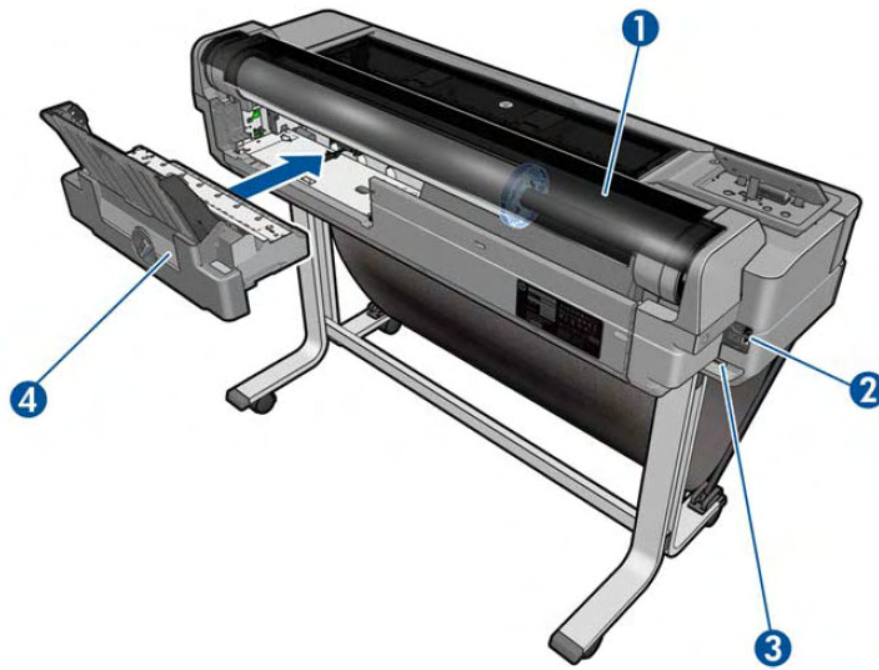


1	Multi-sheet tray extenders	6	Ink cartridges
2	Top cover	7	Ink cartridge cover
3	Output tray extenders	8	Front panel
4	Bin	9	Printhead carriage
5	Output platen	10	Printhead

Main Components

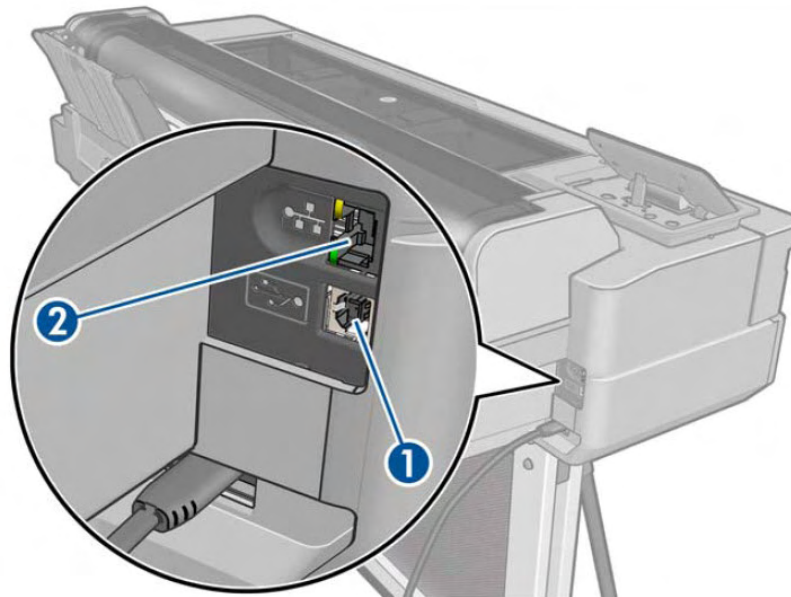
Rear View

Rear View



1	Roll Cover	3	Power Socket
2	Communication Ports	4	Multi-sheet Tray

Communication Ports



1	Hi-Speed USB device port (to connect a computer)	2	Fast Ethernet port (to connect to a network)
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Main Components

Front Panel

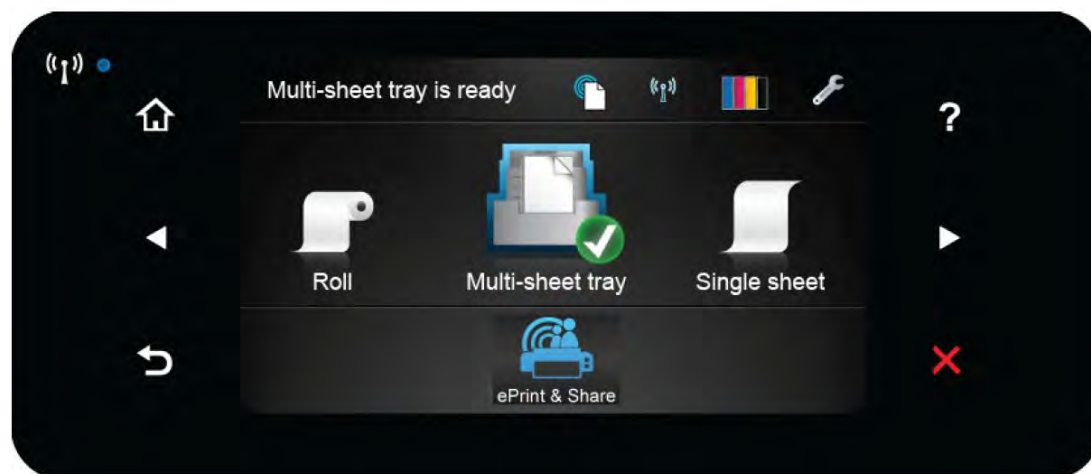
Front Panel

The front panel, located on the front left of the printer, is a touch-sensitive screen with a graphical user interface. It gives you complete control of your printer: from the front panel, you can print, view information about the printer, change printer settings, perform calibrations and tests, and so on. The front panel also displays alerts (warning and error messages) when needed.

The front panel has a large central area to display dynamic information and icons. On the left and right sides you can see up to six fixed icons at different times. Normally they are not all displayed at the same time.

To the right of the front panel is the Power key, with which you can turn the printer on or off. The key is illuminated when the printer is on. It flashes when the printer is in transition between on and off.

Note: Information about specific uses of the front panel can be found throughout this guide.













Left and Right Fixed Icons

	Shows wireless connection status: If the blue light is shining, the wireless connection is active.		Next: Press to go to the next item.
	Home: Press to return to the home screen.		Back: Press to go back to the previous screen.
	Help: Press to view help about the current screen.		Cancel: Press to cancel the current process.
	Previous: Press to go to the previous item.		

Home Screen Dynamic Icons

The following icons are displayed only on the Home screen.

	Paper Source Active Message: A message displays at the top left of the home screen indicating which paper source is active.		Roll Paper: Press to load, unload, and change options for roll paper
	Web Services: Press to view Web Services status and display your printer's email address.		Multi-Sheet Tray: Press to change options for the multi-sheet tray, or to activate it.
	Connectivity: Press to view connectivity status information and to perform network configuration. If a network cable is connected,  is displayed instead. You cannot use wireless and wired network connections simultaneously	 	Single Sheet Paper: Press to load, unload, and change options for single sheets. ePrint: Press to access ePrint & Share.
	Ink: Press to view ink information.		Note: The active paper source is indicated by a slightly larger icon, with a white checkmark in a green circle
	Tools: Press to change printer settings.		

If the printer is left idle for some time, it goes into sleep mode and switches off the front-panel display.

To change the elapse time before sleep mode:

1. Press .
2. Press **Printer Preferences > Sleep**.
3. Set a time between **5** and **240** minutes.



TIP

The printer wakes from sleep mode and switches on the front-panel display whenever there is some external interaction with it.

Printer Software

The following software is provided with your printer:

- The GL/2 and RTL driver for Windows
- Preview
- The Embedded Web Server (see *“Access the Embedded Web Server” on page 2-11*). Allows you to:
 - Manage printer from a remote computer.
 - View status of ink cartridges, printhead, and paper.
 - Access the Support Center.
 - Update printer's firmware.
 - Perform alignments and troubleshooting.
 - Change various printer settings.
 - Manage e-mail notifications.
- Utility (see *“Access the Printer Utility” on page 2-12*). Allows you to:
 - Manage printer from a remote computer.
 - View status of ink cartridges, printhead, and paper.
 - Access the Support Center.
 - Update the printer's firmware, see *“Firmware Updates” on page 5-15*.
 - Launch the Embedded Web Server.

Note: New versions of all printer software can be expected to appear from time to time. In some cases, when you receive your printer there may already be later versions available.

Web Services

Your printer can be connected to the Internet and the Web, providing various benefits:

- Automatic firmware updates (see *"Firmware Updates"* on page 5-15).
- Print on ePrinters from almost anywhere.
- Print on ePrinters from almost any device, including smart phones and tablet computers.

Note: To take advantage of these benefits, your printer must be connected to the Internet.

ePrint & Share

With ePrint & Share you can print from a conference room, job site, or even home. This web service makes it easy to access and print large-format documents using your tablet, smart phone, laptop, or printer touchscreen.

Print from virtually anywhere:

Use your tablet, smart phone, laptop, or printer touchscreen to print where and when you need.

- Plot-to-print seamlessly from AutoCAD® WorkStation.
- Send files to print by email to your Perfecta 2400 ePrinter.

Collaborate with ease:

Whether your files are stored in your ePrint & Share account or an FTP site, ePrint & Share makes it easy to view, share, and print files.

- Share files using an automatically generated hyperlink.
- Access all your FTP sites in one place.

Turn Printer On and Off

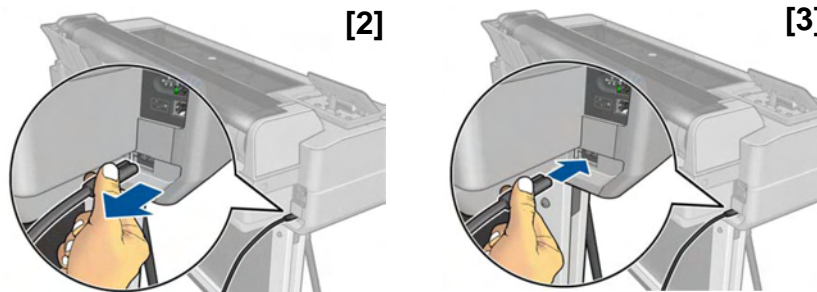
1. To turn the printer on or off, press the **Power** key on the front panel.



2. To store the printer for a long period, or the **Power** key does not work, unplug the power cord.
3. To reapply power, plug in the power cord.

When the printer is powered back on, it takes about three minutes to initialize and check and prepare the printhead. Preparing the printhead takes about 75 seconds.

Note: When the printer has been idle for a certain period of time, it saves power by going into sleep mode. However, any interaction with the printer's front-panel display, or sending a new job to print, returns it to active mode and it can resume printing immediately. To change the sleep mode time, see *"Change Sleep Mode Setting"* on page 2-12.




Internal Prints

Internal prints give various kinds of information about your printer and can be requested from the front panel.

Before requesting any internal print, check that the printer and the paper are ready for printing. The loaded paper should be at least A4 portrait—8.27 inches wide—otherwise the print may be clipped.

To print any internal print:

1. Press .
2. Scroll down and press **Internal Prints**.
3. Select the internal print you want from the following available internal prints:
 - **Demo Prints** (show some of the printer capabilities)
 - Drawing Demo
 - Rendering Demo
 - GIS Map
 - **User Info Prints**
 - Printer-Status Report
 - Print-quality Report
 - Network Report

2 Printer Setup

This chapter provides an setup and personalization of the **VariQuest® Perfecta™ 2400**. The following information is contained in this chapter:

- *“Choosing Connection Method” on page 2-2*
- *“Connecting Printer to Network” on page 2-3*
- *“Connecting a Networked Computer to the Printer” on page 2-4*
- *“Setting Up the Printer” on page 2-7*
- *“Personalizing the Printer” on page 2-10*

Choosing Connection Method

The following methods can be used to connect your printer.




Connection Type	Speed	Cable Length	Other
Wireless	Moderate; varies according to conditions (distance to router, interference, number of wireless clients, network topology, etc.)	N/A	Sensitive to interference over longer distances; requires extra equipment (wireless access point or wireless router)
Fast Ethernet	Fast; varies according to network traffic	Long: 328 ft	Requires extra equipment (switches)
High Speed USB	Very fast	Short: 10 ft	A certified Hi-Speed USB cable is necessary for reliable communication.

Note: The speed of any network connection depends on all components used in the network, which can include network interface cards, routers, switches and cables. If any one of these components cannot operate at high speed, you will have a low-speed connection. The speed of your network connection can also be affected by the total amount of traffic from other devices on the network.

Connecting Printer to Network

The printer can configure itself automatically for most networks, similar to any computer in the same network. The first time you connect it to a network, the process may take a few minutes.

Once the printer has a working network configuration, you can check its network address:

1. From the front panel, press  or .
2. To connect to a wireless network from the front panel, press .
3. Press **Connectivity > Wireless setup wizard**.

Note: When a network device automatically configures itself by receiving an IP address from the DHCP service, the IP address may change when the device is powered off and then on again. As a result, the device may be display as "offline" when driver port settings are configured with the original IP address.

To avoid "offline" status indications:

- Increase the lease time of your DHCP server device.
- Set a fixed IP address for your printer that will not be changed by DHCP (see *"Troubleshooting General Printer Issues" on page 6-40*).
- Configure the printer and driver to refer to the hostname instead of the numeric IP address (see *"Troubleshooting Data Communication Issues" on page 6-31*).
- See the Assembly Instructions for more details about Internet setup, and how to connect to and register with the cloud to enable Web Services.

Connecting a Networked Computer to the Printer

Note: This procedure is for Windows computers only.

The following instructions apply if you intend to print from software applications using a printer driver. See *“Printing” on page 4-1* for alternative ways of printing.

Before you begin, check your equipment:

- Printer is set up and on.
- Ethernet switch or router is on and functioning correctly.
- Printer and the computer are connected to the network (see *“Connecting Printer to Network” on page 2-3*). The printer can be connected by Ethernet or WiFi.

Now you can proceed to install the printer software and connect to your printer.

Install Printer Software

1. Write down the printer's IP address from the front panel (see *“Control Access to Embedded Web Server” on page 2-9*).
2. Insert the Start-up Kit DVD into your computer. If the DVD does not start automatically, run the **setup.exe** program in the root folder of the DVD.
3. Locate and press **Software Installation**.
4. Press **Install Software** and choose your printer from the list of networked printers that appear. If necessary, you can identify the printer by its IP address.

Note: If your computer fails to find any printers on the network, the **Printer Not Found** window displays, which helps you to locate your printer. If you are using a firewall, you may have to disable it temporarily. You can also search for the printer by its *hostname*, *IP address*, or *MAC address*. In some cases, when the printer is not in the same sub-net as the computer, specifying the printer's IP address may be the only successful option.

5. Follow the instructions on your screen to install the printer drivers and other software, such as ePrint & Share.

Note: With ePrint & Share, you can create a copy of your document any time you print, securely in the cloud, in your private online print history. This means that you can reprint your documents from anywhere. To use ePrint & Share, you must create a password-protected account to protect your documents.

If you have enabled Web Services on your printer, you can print to your printer by email. Just check the Web Services menu for the email address of your printer, then send the file you want to print to that email address as an attachment.

Connect a Computer to the Printer using a USB Cable

Note: This procedure is for Windows computers only.

You can connect your printer directly to a computer without going through a network, by using the printer's built-in Hi-Speed USB device port. A USB connection may be faster than a network connection, but it has some disadvantages that you should be aware of:

- A USB cable is of limited length.
- It is more difficult to share the printer.
- You cannot use Web Services.
- You cannot use automatic firmware updates.

Note: The use of non-certified USB cables can lead to connectivity problems. Use only cables certified by the USB Implementor's Forum (<http://www.usb.org/>) with this printer.

Installing Printer Software

The following instructions apply if you intend to print from software applications using a printer driver. See *"Printing" on page 4-1* for alternative ways of printing.

Note: Do not connect the computer to the printer yet. You must first install the printer software on the computer.

To install printer software on the computer:

1. Insert the Start-up Kit DVD into your computer. If the DVD does not start automatically, run the **setup.exe** program in the root folder of the DVD.
2. Locate and press **Software Installation**.
3. Press **Install Software**.
4. If prompted that the installer needs to communicate through the firewall, check the box **Continue installation without searching the network**.
5. If you see a list of networked printers, select **Help me find my printer (including network and USB connected printers)**.
6. Select **USB Cable**.

Note: If preferred, you can connect your printer and complete the installation later. To do so, check the box **I want to connect my printer after completing the setup wizard**.

7. When prompted, connect your computer to the printer with a certified USB cable. Ensure that the printer is turned on.
8. Follow the instructions on your screen to install the printer drivers and other software.
9. If you have not yet been prompted to connect the printer, connect the printer now, and let the wizard install the device automatically.

Connecting a Networked Computer to the Printer

Uninstall Printer Software

Printer Sharing Considerations

Any other users sharing your USB-connected printer will be able to send print jobs, but will not be able to receive information from the printer—which affects status reports, administration and troubleshooting.



TIP

The best way to share the printer over a network is to connect the printer directly to the network. See “Connecting a Networked Computer to the Printer” on page 2-4.

Uninstall Printer Software

1. Insert the Start-up Kit DVD into your computer. If the DVD does not start automatically, run the **setup.exe** program in the root folder of the DVD.
2. Locate and press **Software Installation**.
3. Press **Install Software** and follow the instructions on your screen to *uninstall* the printer software.

Setting Up the Printer

Introduction

This section describes various printer settings that the printer administrator may want to control as soon as a new printer is assembled and ready for use.

Automatic Firmware Update

The printer can automatically check for a firmware update periodically (see “*Automatic Firmware Update*” on page 2-7). Without an update, some Web Services may not be available. The Enable Web Services process includes the option to turn on automatic firmware updates from the printer's front panel or Embedded Web Server.

Turn Email Notifications On and Off

To receive email notifications from the printer, you must configure the email server. To configure the email server using the Embedded Web Server, select **Settings > Email Server** and fill in the following fields:

- **SMTP server:** The IP address or hostname of the outgoing mail server (SMTP) that will process all email messages from the printer. If the mail server requires authentication, email notifications will not work.
- **Printer email address:** Each email message sent by the printer must include a return address. This does not need to be a real, functional email address, but should be unique so that message recipients can identify the printer that sent it.

Note: You can turn specific email notifications on or off by selecting **Notifications** from the *Tools* tab of the Embedded Web Server.

Setting Up the Printer

Turn Alerts On and Off

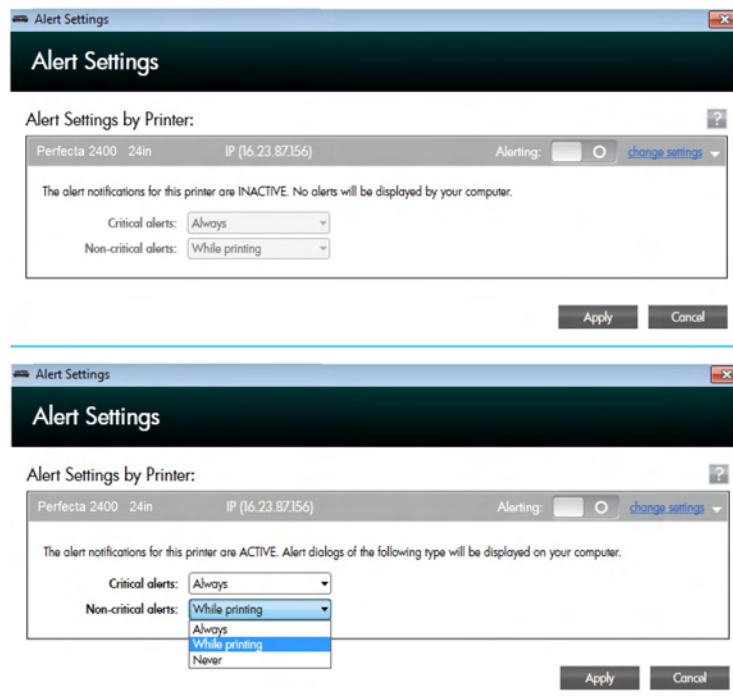
Turn Alerts On and Off

Printer alerts warn you when there is a printer problem that you can correct by taking action, or when one of your printing jobs changes its status. The alerts are displayed by the printer's front panel, by the printer utility, by the printer driver and by the Embedded Web Server.

You can change the alert settings in various ways to display all, some, or none of the available alerts.

To access alert settings under Windows:

1. In the *Tools* menu, select **Alert Settings**.
2. In any alert page displayed in the printer utility, select **Alert Settings**.
3. Right-click the system tray icon of the printer utility, and select **Alert Settings**.
4. To turn off all alerts, go to the *Alert Settings* window and use the **Alerting** slider to turn off alerts completely.



Control Access to Embedded Web Server

To prevent users from modifying important device settings, you can set a password in the *Embedded Web Server*, so that users without the password can see only the Information tabs. Once set, the password is required to view or change any parameters in the other tabs.

Set Windows Driver Preferences


You can change some default settings in your printer driver according to your own preferences (e.g., to set color emulation or paper-saving options). See the following example, for Windows 7 systems:

To change windows driver preferences:

1. On the computer, press **Start**.
2. Click **Devices and Printers**.
3. Right-click your printer's icon and select **Printing preferences**.
4. Make the desired changes, then click **OK**. Any settings you change in the *Printing Preferences* window will be saved as default values.

Setup Web Services

Before using Web Services, some setup is required on your printer and your computer.

1. Verify that your printer is correctly connected to the Internet.
2. Enable Web Services during initial setup of the printer, or later by pressing  on the Home screen and following the instructions on the front panel. The printer may need to restart if the firmware has been updated.
3. Install the printer software (drivers and other software to enhance your experience) in your computer from the Start-up Kit DVD, or from the Web. You can also find documentation and support information on the DVD and on the Web.
4. Create an ePrint & Share account when prompted, or later. ePrint & Share saves copies of all your print jobs in the cloud so that you can reprint and share them from almost anywhere, even from smart phones and tablet computers.
5. Activate your account by clicking the activation link that you will receive by email.



TIP

If you don't see the message, remember to check your junk email folder.


Congratulations, you now have completed Web Services setup. ePrint & Share are ready to use.

Personalizing the Printer





Change Front-Panel Display Language

There are two possible ways to change the language of the front-panel menus and messages.

If you understand the current language:

1. Press .
2. Press **Printer Preferences > Select Language**.
3. When the language select menu displays, press your preferred language.

If you cannot understand the current language:

1. Power off the printer.
2. Press **Power** to turn it on again.
3. When icons appear on the front panel, press , then , then , then .
4. When the language select menu displays, press your preferred language.

Note: If you cannot see the **Home** and **Cancel** icons on the front panel, press where they should appear (see “*Left and Right Fixed Icons*” on page 1-6).

Access the Embedded Web Server



The Embedded Web Server enables you to manage your printer remotely using an ordinary Web browser running on any computer.

To access the Embedded Web Server, you must have a TCP/IP connection to your printer.

The following browsers are known to be compatible with the Embedded Web Server:

- Internet Explorer 7 and later
- Opera 8 and later
- Mozilla Firefox 2 and later
- Safari 3 and later
- Google Chrome 3 and later

To access the Embedded Web Server:

1. Open your Web browser.
2. Type the IP address of your printer. You can see your printer's IP address on the front panel by pressing  or .
3. If you followed these instructions but failed to get through to the Embedded Web Server, see "Cannot access the Embedded Web Server" in *"Troubleshooting" on page 6-1.*

Change Embedded Web Server Language

The default language for the Embedded Web Server is the language you selected for your browser. If this language is not supported by the Embedded Web Server, the Embedded Web Server will appear in English; however, you can change it to any supported language.

The languages supported by the Embedded Web Server are English, Portuguese, Spanish, French, Italian, German, Polish, Russian, Simplified Chinese, Traditional Chinese, Korean, and Japanese.

Use the tab at the top right of the window to select language.

Access the Printer Utility

The Printer Utility enables you to manage your printer from a computer with a USB, TCP/IP, or WiFi connection.

To access the printer utility:

1. Start the Printer Utility from your desktop shortcut or from **Start > All Programs > Hewlett-Packard > HP Designjet Utility > HP Designjet Utility**. This launches the Printer Utility, showing the printers installed on your computer.
2. When you select your printer in the left pane, everything that appears in the right pane is specific to that printer.


Change the language of the Printer Utility

The HP Utility can work in the following languages: English, Portuguese, Spanish, Catalan (Windows only), French, Italian, German, Russian, Simplified Chinese, Traditional Chinese, Korean, and Japanese. The language will be adjusted to your regional language settings as defined in the Windows Control Panel.

Change Sleep Mode Setting

If the printer is left on but unused for a certain period of time, it automatically goes into sleep mode to save power.

To change the sleep-mode settings:

1. From the front panel, press .
2. Press **Printer Preferences > Sleep**.
3. Select the wait time you want, then press **OK**.

Note: You can set the time from 5 to 240 minutes. The default time is 30 minutes.

Change Auto-Off Setting

You can use the printer's auto-off feature to turn the printer off automatically. For example, setting it to 2 hours would turn the printer off after 2 hours of inactivity. In this way, you can save more energy.




CAUTION!

The auto-off feature is automatically disabled when the printer is connected to a network, to avoid inconveniencing network users.


To set printer to turn off automatically:

Note: If you are using a USB connection, you can set the printer to turn itself off completely after 2 to 12 hours of inactivity.

1. At the front panel, press .
2. Press **Printer Preferences > Auto-off**.
3. Choose the time interval you want, then press **OK**.

Change Front-Panel Display Brightness


To change the brightness of the front-panel display:

1. Press .
2. Press **Printer Preferences > Display Brightness**.
3. Select the brightness value you want, then press **OK**.

Note: The default brightness is set to 50.

Configure Network Settings


You can view and configure the network settings from the Embedded Web Server, the Printer Utility or the front panel.

- **Embedded Web Server:** Select the Setup tab, then Networking.
- **Printer Utility:** Access the Embedded Web Server through the Printer Utility.
- **Front Panel:** Press , then **Connectivity**.

The following options are available:

- **Enable/Disable Wireless:** Turns the wireless connection on or off.
- **Wireless Setup Wizard:** Provides an easy way to connect to a wireless network.
- **WiFi-Protected Setup:** Allows you to set up a connection with a wireless network using WPS (pushbutton or pin) encryption.
- **Network Summary:** Displays information about the wired or wireless network
- **Print Wireless Network Test:** Runs diagnostic tests of wireless connectivity
- **Print Network Configuration**
- **Advanced Setup:**
 - **Select I/O Timeout:** Sets the time that the printer will wait for the driver to send a job to the printer once the connection has been opened. Values range from 30 seconds to 30 minutes.
 - **Link Speed:** Sets the speed at which data are transmitted over the network. The default is *Automatic*.
 - **IP Settings:** Allows you to view or change the IP address, subnet mask, default gateway, and DNS address.
 - **Hostname:** Allows you to change the hostname.
- **Restore Network Defaults**

Reset Network Settings

To reset the administrator password and network settings, go to the front panel and press , then **Connectivity > Restore Network Defaults**.

Note: Print the network configuration page and check that the network settings have been reset.

Note: Resetting the printer's network settings also resets the printer's firewall settings.

Configure Firewall Settings

Firewall features provide network-layer security on both IPv4 and IPv6 networks. The firewall provides simple control of IP addresses that are allowed access.

Note: In addition to firewall protection at the network layer, the printer also supports open secure sockets layer (SSL) standards at the transport layer for secure client-server applications, such as clientserver authentication or HTTPS Web browsing.

For firewall operation on the printer, you must configure a firewall policy to apply to specified IP traffic. Firewall policy pages are accessed through the Embedded Web Server and displayed by your Web browser. After a policy is configured, it is not activated until you click **Apply** in the Embedded Web Server.

Creating and Using Firewall Rules

Firewall rules allow you to control IP traffic. Use firewall rules to allow or drop IP traffic based on IP addresses and services.

Enter up to ten rules, each rule specifying the host addresses, services, and the action to take for those addresses and services.

Create a Firewall Rule

1. Open the **Embedded Web Server**.
2. Click **Settings** tab, then **Firewall Rules**.
3. Click **New**.
4. Follow the onscreen instructions.

Note: After you click Apply, the connection to the Embedded Web Server might be temporarily disrupted. If the IP address was unchanged, the Embedded Web Server connection will be enabled again. However, if the IP address was changed, use the new IP address to open the Embedded Web Server.

Change Priority of Firewall Rules

1. Open the **Embedded Web Server**.
2. Click **Settings** tab, then **Firewall Rules Priority**.
3. Select the priority from the *Rule Precedence* list, with 10 having the highest priority and 1 having the lowest priority.
4. Click **Apply**.

Personalizing the Printer

Configure Firewall Settings

Change Firewall Options

1. Open the **Embedded Web Server**.
2. Click **Settings** tab, then **Firewall Options**.
3. Change the desired options then click **Apply**.

Note: After you click Apply, the connection to the Embedded Web Server might be temporarily disrupted. If the IP address was unchanged, the Embedded Web Server connection will be enabled again. However, if the IP address was changed, use the new IP address to open the Embedded Web Server.

Reset Firewall Settings

To reset firewall settings to factory defaults, restore the printer's network settings.

Limitations to Rules, Templates, and Services

When creating firewall rules, note the following limitations to rules, templates, and services.

Item Limit (Maximum Number)

- **Rules:** 10 (one default rule)
- **Address Templates:** 12
- **User-defined Address Templates:** 5
- **Services added to a User-defined Service Template:** 40

Note: The predefined *All Services* template is not subject to this limitation and includes all services supported by the print server.

- **Services added to the Policy:** 40

Note: For a given rule, only one address template and one service template can be added.

- **Service Templates in the Policy:** 10
- **User-defined Custom Service Templates:** 5

Manage ePrinter Security

When you set up Web Services, the printer is in unlock mode. In unlock mode, anyone who knows your printer's email address can print to your printer by just sending a file to it. You should be careful about giving out your printer's email address, as everything sent to that address may be printed on your printer.

If you are the printer administrator, you can manage ePrinter security or change your printer status to lock mode by visiting the ePrint Center where you created your ePrint account. You can also customize your printer's e-mail address and manage print jobs from there.

Change Printer Email Address

You can change your printer's email address at the HP ePrint Center.

3 Paper Handling

This chapter provides paper handling information about the **VariQuest® Perfecta™ 2400**. The following information is contained in this chapter:

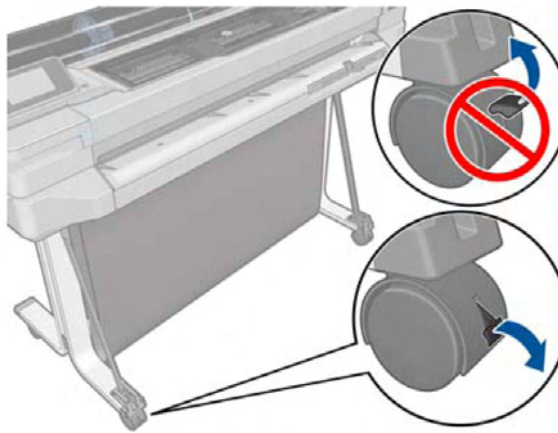
- *“General Paper Loading Tips” on page 3-2*
- *“Loading Paper” on page 3-3*
- *“Paper Details” on page 3-13*
- *“Change Cutter Settings” on page 3-15*

General Paper Loading Tips

You can load paper into the printer in three ways: from a roll, as a single sheet, or as a stack of single sheets from the multi-sheet tray. Only one of these methods can be used at a time, and switching from one to another is a manual operation.

CAUTION!

Make sure the printer wheels are locked (the brake lever is pressed down) to prevent the printer from moving.

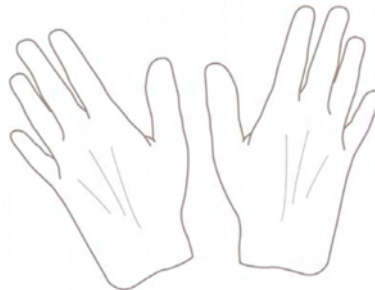


CAUTION!

All paper must be 280 mm (11 in) or wider. A4 and letter paper should not be loaded in landscape orientation.

TIP

When using photo paper, to avoid transferring oils onto the paper, wear cotton gloves.



CAUTION!

Keep the bin closed throughout the loading process.

Loading Paper

Load Roll onto Spindle

Note: If you are a regular user of different paper types, you can change rolls more quickly if you preload rolls of different paper types on different spindles. Extra spindles are available for purchase, contact your authorized VariQuest Dealer or VariQuest Customer Service at 1.800.328.0585.

1. Open the roll cover.



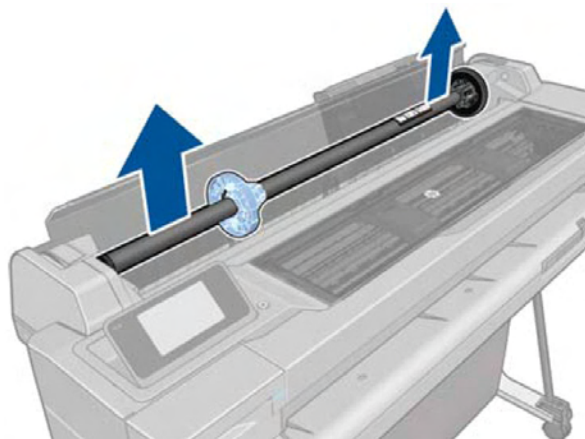
2. Remove the spindle from the printer.



WARNING

Do not insert your fingers into the spindle supports during the removal process.

Note: The spindle has a stop at each end to keep the roll in position. The blue stop can be removed to mount a new roll; it slides along the spindle to hold rolls of different widths.



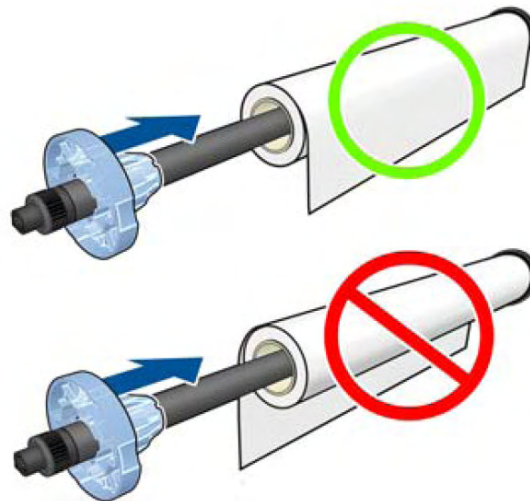
Loading Paper

Load Roll onto Spindle

3. Remove the blue paper stop from the end of the spindle. If the roll is long, rest the spindle horizontally on a table and load the roll on the table.

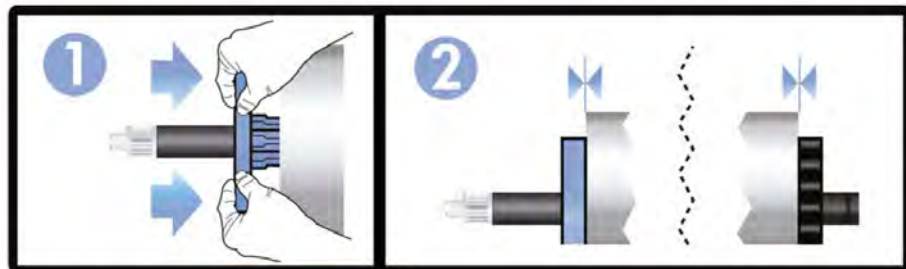


4. Slide the new roll onto the spindle. Make sure the paper type is oriented as shown. If not, remove the roll, turn it 180 degrees and slide it back on to the spindle. Labels on the spindle show the correct orientation.



Note: From the back of the printer, the blue stopper is inserted into the right-side holder. Ensure both ends of the roll are as close to the spindle stops as possible.

5. Put the blue paper stop on to the open end of the spindle, and push it toward the end of the roll [1].
6. Ensure the blue paper stop is pushed in as far as it goes. Check that there is no space between the roll and the stops at both ends [2].




Loading Paper

Load a roll into the Printer

Load a roll into the Printer

To start this procedure, you must have a roll loaded on the spindle. See “*Loading Paper*” on page 3-3.

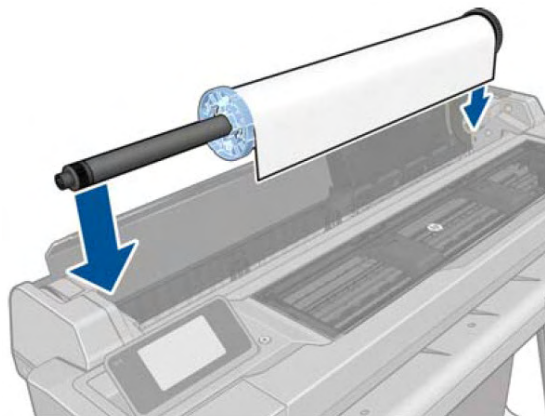
1. From the front panel, press , then **Load Roll**.

Note: Step 1 is optional: if you just start feeding in roll paper, the printer recognizes that you want to load a roll.

2. Open the roll cover.



3. Insert the spindle into the printer, holding it by both ends. The blue hub should be on the left, as viewed from the front of the printer.

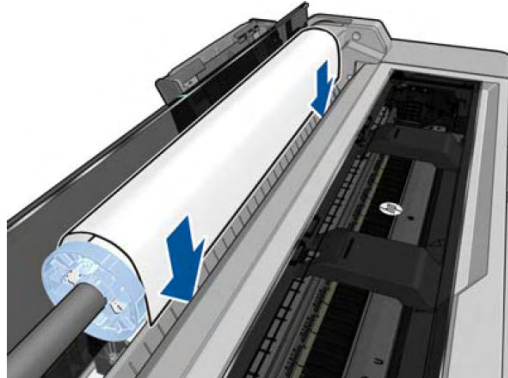


4. If the edge of the roll is not straight or is torn (sometimes due to the tape used to hold end of the roll), pull the paper slightly and cut a straight edge.
5. Insert the edge of the paper into the printer.

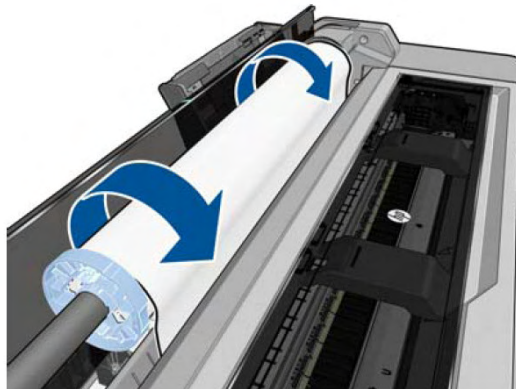


WARNING

Do not push your fingers inside the printer's paper path.



6. Roll the paper into the printer until you feel resistance and the paper flexes slightly. When the printer detects the paper, it beeps, and feeds in the paper automatically.



Loading Paper

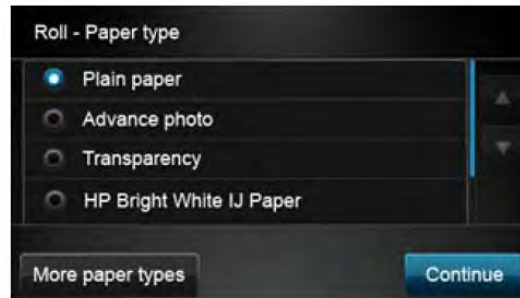
Load a roll into the Printer

- The front panel prompts you to select the paper category and type.



TIP

*If you do not see your paper type in the front panel, press **More paper types**. If you still cannot find your paper type in the whole list, see “Paper Type Missing from Printer Driver” on page 6-5.*



- The printer checks the alignment and measures the width. If the roll is not correctly aligned, follow the instructions on the front-panel display.
- Close the roll cover.

Note: If you have an unexpected issue at any stage of the paper loading process, see “Paper Loading Error Messages” on page 6-4.

Unload a Roll


1. To unload paper from the front panel: press , then **Unload Roll**.

Note: After unloading the paper, the multi-sheet tray will become the default active paper source. If the end of the paper is no longer attached to the core, the front panel prompts you to unload the roll manually. After unloading, the multi-sheet tray is the default active paper source.

Load a Single Sheet

Note: Roll paper and single sheets use the same input slot in the printer.

Note: Sheet sizes of width 12.95 inches or less should be loaded from the multi-sheet tray.

1. At the front panel, press , then **Load Single Sheet**. If a roll is already loaded, you must wait until it is automatically unloaded.
2. Select your paper category and type. If you do not see your paper type in the front panel, press **More paper types**. If you still cannot find your paper type in the whole list, see “Paper Type Missing from Printer Driver” on page 6-5.
3. Open the roll cover.



Loading Paper

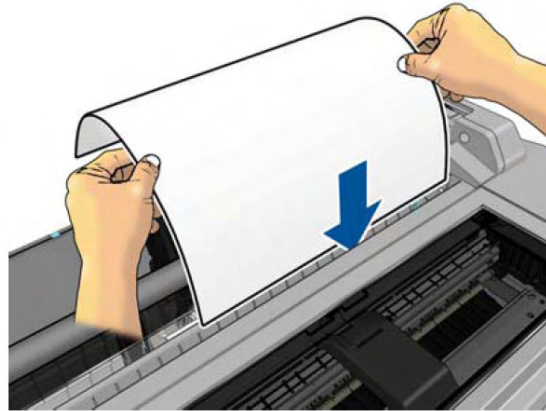
Load a Single Sheet

4. When prompted, insert the sheet into the right-hand side of the input slot.

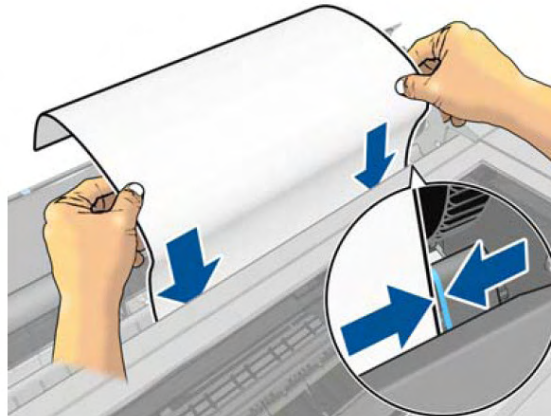


WARNING

Do not push your fingers inside the printer's paper path.



5. Align the sheet with the blue line.



6. On the front panel, press **OK** to feed the paper into the printer. Guide the sheet into the printer; this is especially important with thicker papers.


The printer checks the alignment and measures the sheet.

Note: Depending on the width of the sheet, it feeds out the front of the printer.

7. If the sheet is not correctly aligned, you may be prompted to reload it.

Note: If you have an unexpected problem at any stage of the paper loading process, see *"Paper Loading Error Messages"* on page 6-4.


Unload a Single Sheet

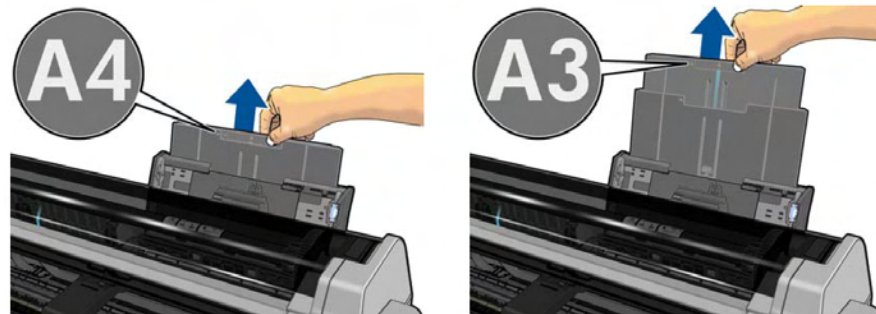
1. To unload a sheet, go to the front panel and press .
2. Press **Unload Single Sheet**.
3. As the sheet unloads out of the front of the printer; either catch it manually or allow it to fall into the bin.

Note: After unloading, the multi-sheet tray is the default active paper source.

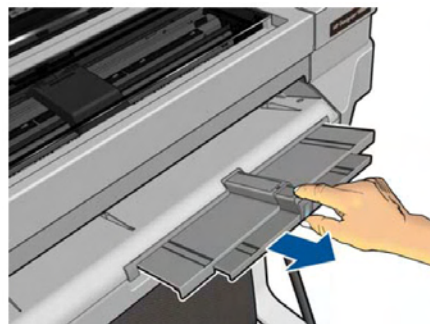
Use the Multi-Sheet Tray

Note: If no roll is loaded or the roll has run out of paper, the multi-sheet tray is active by default.

1. At the front panel, press , then **Use multi-sheet tray**. If a roll or single sheet is already loaded, you must wait until it is automatically unloaded.
2. Adjust the input tray extensions depending on the length of the paper: the first extension for A4 and the second extension for A3 paper.



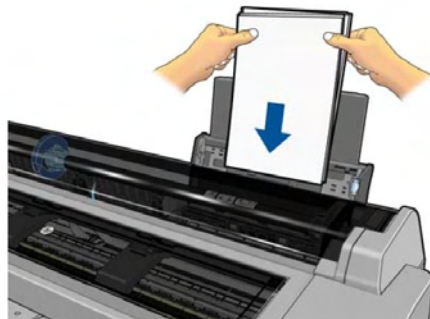
3. Adjust the output tray extensions depending on the length of the paper.



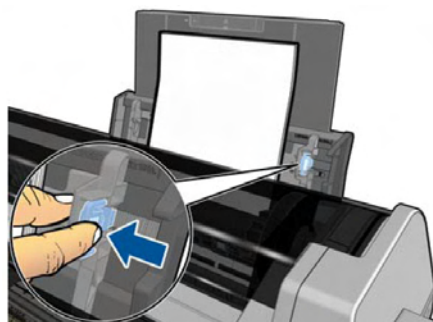
Loading Paper

Use the Multi-Sheet Tray

4. Load sheets of paper into the tray with the printed side facing outward. Ensure that the sheets are all of the same size.



5. Adjust the tray to fit the width of the paper.



Paper Details

View Paper Information

To view the loaded paper information, press the icon of the active paper source. The following information is displayed on the front panel:

- Paper type you have selected
- Roll or sheet status
- Width of the paper in millimeters (estimated)

Note: If no roll and no single-sheet paper is loaded, the message **Out of paper** is displayed.

Maintain Paper Quality

To maintain paper quality, follow these recommendations.


- Store rolls covered by another piece of paper or cloth.
- Store cut sheets covered and clean or brush them before loading them in the printer.
- Clean input and output platens.
- Always keep the top cover of your printer closed.

Note: Photo and coated paper requires careful handling, see *“Troubleshooting Paper or Paper Quality Issues”* on page 6-6.

Change Drying Time

You may want to change the drying time setting to suit special printing conditions such as multiple prints where time is of higher importance or when you need to be sure ink is dry before handling.

To change drying time:

1. Press .
2. Press **Printer preferences > Print retrieval > Select drying time.**
3. Choose from one of the options:
 - **Extended:** Sets a longer than recommended time to ensure ink is completely dry.
 - **Optimized:** Sets the default and recommended time for your selected paper (default setting).
 - **None:** Disables the drying time and removes your print as soon as it finishes printing.



CAUTION!


CAUTION: If the ink is not dry when the print is removed it could leave ink in the output tray and marks on the print.

Note: If you cancel the drying time during a print, the printer may not feed and cut the paper immediately due to the printhead maintenance, which runs in parallel. If the dry time is zero, the printer cuts the paper and then performs the printhead maintenance. However, if the dry time is greater than zero, the printer does not cut the paper until after printhead maintenance has completed.

Change Cutter Settings

Turn Automatic Cutter On and Off

To turn the printer's paper cutter on or off:

1. From the front panel, press .
2. Press **Printer preferences > Print retrieval > Enable cutter**.
3. Change the cutter option. The default setting is **On**.

Note: If the cutter is turned off, it will not cut the paper between jobs, but it will continue to cut the paper on loading and unloading rolls.



TIP

To cut roll paper while the automatic cutter is disabled, see “Use Form Feed With or Without Cutting” on page 3-16.

Change Cutter Settings

Use Form Feed With or Without Cutting

Use Form Feed With or Without Cutting

There are at least two reasons why you might want to advance the form feed with or without cutting:

- To trim the leading edge of the paper if it is damaged or not straight.
- To feed and cut the paper when the automatic cutter has been disabled.

To advance form feed:

1. From the front panel, press .
2. Press **Form feed and cut**. The printer advances the paper and makes a straight cut across the front edge.

Note: The printhead is serviced after each print, and the paper cannot be cut until the process completes, so you may notice a delay.




CAUTION!

Remove the cut piece from the output platen. If strips or short prints are left on the output platen, the printer could jam. Check also that there are no pieces of paper in the cutter guide.



Note: Photo and coated paper requires careful handling, see “*Troubleshooting Paper or Paper Quality Issues*” on page 6-6.

3. To advance the paper without cutting it, press , then **Form Feed**.

4 Printing

This chapter provides printing information about the **VariQuest® Perfecta™ 2400**. The following information is contained in this chapter:

- *“Print from a Computer” on page 4-2*
- *“Advanced Print Settings” on page 4-2*
- *“Color Management” on page 4-9*
- *“Web-Connected Printing” on page 4-11*
- *“HP Designjet ePrint & Share security” on page 4-18*
- *“Printing Examples” on page 4-19*

Print from a Computer

Before you can print from a computer, the correct printer driver must be installed on the computer (see “Printer Setup” on page 2-1), and the computer must be connected to the DC2400 by network, USB cableWiFi or WiFi.

When the printer driver has been installed and the computer connected to the DC2400, you can print from a software application by using the application's own **Print** command and selecting the correct printer.

Advanced Print Settings

This chapter explains the various print settings available for use on the DC2400. To satisfy all requirements., these methods offer a relatively large number of settings.



TIP

Normally, you should use the default settings unless you know they do not meet your requirements.



TIP

If you intend to reuse a specific group of settings repeatedly, you can save those settings under a name of your own choice and recall them later. A saved group of settings is known as a 'quick set' in the Windows printer driver.

Select Print Quality

The printer has a variety of print-quality options because high-quality printing requires some loss of speed, while fast printing implies some reduction in print quality. Therefore, the standard print-quality selector is a slider that lets you choose between quality and speed. With some paper types, you can choose a compromise position between the two.

You can also select from the custom options: **Best**, **Normal** and **Fast**. If you select **Fast**, you can also select **Economode**. It uses a lower rendering resolution and consumes less ink, therefore increasing printing speed even further but reducing print quality. Economode can be selected only from the custom options (not from the slider).

There is also a supplementary custom option that may have an effect on print quality: **Maximum Detail**. See “*Print High-Quality Output*” on page 4-8.

Note: In the Windows driver dialog, the rendering resolution is displayed in the *Custom Print Quality Options* dialog box (select **Custom Options>Settings**).

To select print-quality options:

1. In the Windows driver dialog: select the **Paper/Quality** tab.
2. In the *Print Quality* section, select **Standard Options** to use the speed/quality slider.

- or -

Select **Custom Options** to see the more specific options.

Note: You cannot change the print quality of pages that the printer is already receiving or has already received (even if they have not yet started to print).

Select Paper Size

The paper size can be specified as follows:

Note: The specified paper size should be the paper size in which the document was created. It is possible to rescale the document to a different size for printing. See *“Rescale a Print” on page 4-7.*

To specify a paper size:

1. In the Windows driver dialog select the **Paper/Quality** tab.
2. In the *Document Size* list, select your paper size.

Note: If your application offers no Page Setup dialog, use the Print dialog.

Custom Paper Sizes

If you want to choose a paper size that is not included in the list of standard paper sizes, there are various different ways to specify it.

Use the Windows Printer Driver

A custom paper size created using the Windows printer driver has the following characteristics:

- The selected paper size is permanent and will not disappear if the driver is closed or the computer is turned off.
- The paper size is local to the printer queue and will not be seen from other printer queues in the same computer.
- In Domain server networks, the paper size is local to the computer. It will not be seen from other computers sharing the printer queue.
- In Workgroup networks, the paper size will be shared among all the computers sharing the printer queue.
- If the printer queue is deleted, the paper size is deleted with it.

To select paper size from Printer Driver:

1. Select the **Paper/Quality** tab.
2. Press the **Custom** button.
3. Enter the name and dimensions of your new paper size.
4. Press **OK**. The new paper size is automatically selected.

Use Windows Forms

A custom paper size created in this way has the following characteristics:

- The selected paper size is permanent and will not disappear if the driver is closed or the computer is turned off.
- Restricted users cannot create paper forms. The “manage documents” role in the Windows Active Directory is the minimum required.
- The paper size is local to the computer. It will be seen in all the printer queues that have been created on the computer and that support paper of that size.
- If a printer queue is shared, this paper size will appear in all the client computers.
- If a printer queue is shared from another computer, this paper size will not appear on the driver’s document size list. A Windows form in a shared queue needs to be created in the server.
- If the printer queue is deleted, the paper size is not deleted.

To use Windows forms:

1. Select the following:
 - **Windows Vista or XP:** From the *Start* menu or *Control Panel*, select **Printers**; then from the *File* menu, select **Server Properties**.
 - **Windows 7:** From the *Start* menu or *Control Panel*, select **Devices and Printers**, then **Select Printer**.
2. In the *Forms* tab, check the **Create a new form** box.
3. Enter the name and dimensions of your new paper size. Leave the margins as 0.00.
4. Press **Save Form**.
5. Go to the printer driver, and select the **Paper/Quality** tab.
6. From the drop-down list of paper sizes, select **More...**
7. Select your new paper size from the group of **Custom** sizes.

Advanced Print Settings

Choose Margins Options

Choose Margins Options

By default, the printer leaves a 5 mm margin between the edges of your image and the edges of the paper, increased to 17 mm at the foot of cut-sheet paper. However, you can change these settings.

To change margins options:

1. In the Windows driver dialog, select the **Paper/Quality** tab.
2. Click the **Margins/Layout** button.
3. Choose from the following options.:
 - **Standard.** The image will be printed on the selected paper size, with the default margin between the edges of the image and the edges of the paper. The image should be small enough to fit between the margins.
 - **Oversize.** You should load paper that is larger than the size you selected in the application or driver. If you cut off the margins after printing, you will be left with a page of the size you selected, with no margins remaining between your image and the edges of the paper. This is useful when you want your image to cover the whole area of the paper.
 - **Clip Contents By Margins.** The image will be printed on the selected paper size, with the default margin between the edges of the image and the edges of the paper. In this case, if the image is the same size as the page, the printer assumes that the extreme edges of the image are either white or unimportant, and do not need to be printed. This may be useful when your image already contains a border.

Print on Loaded Paper

To print a job on whichever paper is loaded in the printer:

1. In the printer driver *Paper Type* option, select **Any**.
2. In the Windows driver dialog, select **Paper/Quality** tab.
3. In the *Paper Type* drop-down list, select **Any**.

Rescale a Print

You can send an image of a certain size to the printer but tell the printer to rescale it to a different size (normally larger). This may be useful:

- If your software does not support large formats
- If your file is too large for the printer's memory—in this case, you can reduce the paper size in your software and then scale it up again using the front-panel option

To rescale an image:

1. From the Windows driver dialog, select **Features** tab.
2. In the *Resizing Options* section, choose from the following:
 - **Print document on** option: Adjusts the image size to the paper size you selected. For example, if you selected ISO A2 as the paper size and you print an A3-sized image, it is enlarged to fit the A2 paper. If the ISO A4 paper size is selected, the printer reduces a larger image to fit the A4 size.
 - **% of actual size** option: Enlarges the printable area of the original paper size (page minus margins) by the percentage indicated, then adds the margins to create the output paper size.

Print Draft-Quality Output

Note: You can specify faster draft-quality printing by using Economode. This is intended mainly for documents containing only text and line drawings.

To specify fast draft-quality printing:

1. In the Windows driver dialog: select **Paper/Quality** tab.
2. In the *Print Quality* section, move the print-quality slider to the extreme left ('Speed').

To specify Economode draft-quality printing:

1. In the Windows driver dialog, select **Paper/Quality** tab.
2. In the *Print Quality* section, select **Custom Options**.
3. Set the quality level to **Fast** and check the **Economode** box.

Print High-Quality Output

To specify high-quality printing:

1. In the Windows driver dialog, select **Paper/Quality** tab.
2. In the *Print Quality* section, move the print-quality slider to the extreme right ('Quality').

Print High-Resolution Images

To print an image with a resolution greater than the rendering resolution:

1. Select **Custom Print Quality Options** and check the image resolution.
2. To improve print sharpness, select **Maximum Detail** option. This option is available only if you are printing on glossy paper and you have selected **Best** print quality.

Note: The Maximum Detail option results in slower printing with photo papers, but it does not increase the amount of ink used.

Paper Economy

To save roll paper:

1. In the Windows driver dialog, select **Features** tab.
2. Select one or more of the these options:
 - **Remove top/bottom blank areas**
 - **Rotate by 90 degrees**
 - **Autorotate.**

Ink Economy

Use the following recommendations for making economical use of ink.

- **Draft prints:** Use plain paper and move the print-quality slider to the left end of the scale ('Speed'). For further economy, select custom print quality options, then select Fast and Economode.
- **Clean Printhead only when Needed:** Cleaning the printhead can be useful, but it uses a small amount of ink.
- **Leave Printer Power ON:** When the printer is permanently turned on, it can maintain the printhead in good condition automatically. This regular printhead maintenance uses a small amount of ink. However, if it is not done, the printer may need to use much more ink later to restore the health of the printhead.
- **Print using Wide Prints:** Wide prints make more efficient use of ink than narrow prints, because printhead maintenance uses some ink, and its frequency is related to the number of passes made by the printhead.

Color Management

Your printer has been engineered with advanced hardware and software features to ensure predictable and dependable color results.

- State-of-the-art printheads and inks
- Dedicated color resources for most available paper types
- Color emulation

Color Management Options

The aim of color management is to reproduce colors as accurately as possible on all devices: so that, when you print an image, you see very similar colors as when you view the same image on your monitor. Color management is highly dependent on the paper type loaded at the printer, so be sure to select the correct preset for the paper type you are using.

The color management options for your printer can be selected from the Color menu in the Windows driver dialog. In some applications you can make the choice in the application itself.

- **Application-Managed Colors:** Your application program must convert the colors of your image to the color space of your printer and paper type, using the ICC profile embedded in the image and the ICC profile of your printer and paper type.
- **Printer-Managed Colors:** Your application program sends your image to the printer without any color conversion, and the printer converts the colors to its own color space. The color management in the printer is done using a set of stored color tables. ICC profiles are not used. This method can produce very good results with supported paper types. There are two color spaces that the printer can convert to its own color space using the stored color tables: sRGB and Adobe RGB.
 - **sRGB** emulates the characteristics of the average computer monitor. This standard space is endorsed by many hardware and software manufacturers, and has become the default color space for many scanners, cameras, printers, and software applications.
 - **Adobe RGB** provides a larger color gamut than sRGB. Use this space if you need to do print production work with a wide range of colors.

Printer Emulation

If you want to print a job and see approximately the same colors that you would get from printing the same job on a different Designjet printer, you can use the emulation mode provided by your printer.

Note: Printer emulation is available only when printing an HP-GL/2 job on plain or coated paper.

To use printer emulation:

1. In the Windows HP-GL/2 driver dialog, select **Color** tab.
2. Select **Printer Managed Colors**.
3. From the *Source Profile* list, select **Printer Emulation**.
4. Select from the **Emulated Printer** list.

Printing Greyscale or Black-and-White

You can convert all colors in your image to shades of grey as follows:

- **Application Program:** Many applications provide this option.
- **Windows Driver Dialog:** From the *Color* tab, choose **Color Options**.
- **Select Print in Greyscale.** Only the black ink will be used for printing, except if the paper loaded is glossy, in which case colored inks are used to compose the gray shades. You can also select **Print in pure black and white** if you want only black and white output with no gray shades. In this case, only black ink will be used for printing.


Note: The **Print in pure black and white option** is not supported when printing on glossy paper.

Web-Connected Printing

Your printer can be connected to the Web, providing various benefits:

- Automatic firmware updates (see “*Firmware Updates*” on page 5-15).
- Print on ePrinters from almost anywhere.
- Print on ePrinters from almost any device, including smartphones, tablets, and laptops.

You can enable Web Services when setting up the printer. See “*Web-Connected Printing*” on page 4-11 or the Assembly Instructions for more information. If you

prefer, you can do it later by pressing  on the Home screen and following the instructions on the front panel.

Important

The printer must be connected to a network: connect an Ethernet cable for a wired connection, or start the Wireless Wizard in the Connectivity menu for a wireless connection. See “*Choosing Connection Method*” on page 2-2.

Print Remotely with ePrint & Share

If you are working from home, and you want to print to your office printer, you can print using ePrint & Share.

1. From your application, send the file to print, selecting your printer.

Note: Since you are not locally connected to the printer, a prompt dialog will display asking you if you are trying to print locally or remotely through the cloud.

2. When prompted, select the option **Print remotely through the cloud** and sign in to your account.
3. Select your printer from the list.

Note: If you already set up the printer, it will appear in the list. Otherwise, you will need to add the printer's email address.

4. Select **Continue**. The driver dialog appears, in which you can select print settings.

Note: When printing remotely, no print preview is available.

5. Click **Print**, and your document is sent to print on your Web-connected printer.

Print by Email

After enabling Web Services, you can print to your printer by email. Just check the Web Services menu or the ePrint menu for the email address of your printer, then send the file you want to print to that email address as an attachment.

In this way, you can print from anywhere with an Internet connection, without needing any printer driver. There are a few limitations that you should bear in mind:

- **Format:** Attached files must be in PDF, JPEG, or TIFF formats.
- **Maximum Size:** File sizes must be 10 MB or less, however, your email server may have a lower limit.
- **Printed Size:** Files are printed in the original document size (at 100% scale), in normal quality, in color, and normally in portrait orientation (some printers may offer autorotation).

Print from Smartphone or Tablet

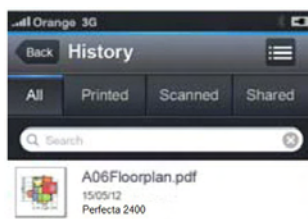
The ePrint & Share apps enable you to access files on your mobile device or ePrint & Share and print them to a web-connected printer. You can obtain these apps from the following sources:

- <http://www.hp.com/go/designjetprinters>.
- Your smartphone's application storefront.

You can use your 3G connection to print. You do not need to be connected with the printer by WiFi, and you do not need a printer driver.

To print from a smartphone or tablet:

1. Select the files to print from your **Online Print History** or from any other location connected to your ePrint & Share account.




2. An image of your print is displayed. On some devices, you can zoom in and out.

Note: The orientation of the preview (portrait/landscape) may not be the same as the orientation of the print.

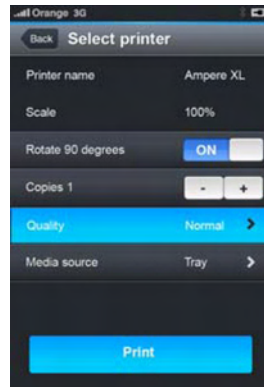


Web-Connected Printing

Print from Smartphone or Tablet

3. To print the file, press .
4. Select the printer if it is already listed; or, if necessary, press **Add a printer** and give your printer's email address to add it to the list.
5. Choose the print settings, then press **Print**.

Note: Printing may not start immediately.



Note: Whenever you print a document with ePrint & Share, it is saved in your Online Print History.

6. From other applications, when there is an 'Open In' option available, select ePrint & Share to print your documents on a Web-connected printer.

View and Print from HP ePrint & Share Website

1. Go to **<http://www.hp.com/go/eprintandshare>** and log in to your account. Follow instructions on the website.
2. To view and print a file, select the category to filter your list of saved files (printed, scanned, shared with me, or all). You will see a list of your files ordered by time. The file can be identified by the name, the date and time of printing, the printer that was used, and the thumbnail.
3. Select the file, and a file preview is shown in the right panel. If the file contains multiple pages, you can navigate through the pages using the arrows. You can also click the preview to enlarge it, and zoom in to see details.
4. Press **Print**.
5. If you have the full HP Designjet software suite installed, a print-preview dialog appears, in which you can check and modify some settings and select your local or remote eprinters. If you do not have the software installed on the computer you are using, you will see a generic screen that allows you to select the remote printer and change basic settings.
6. Press **Print** again to send your document to print. To print on any printer, use the option **Print to PDF**. This creates a copy of your document in your computer, which you can print later.


Web-Connected Printing

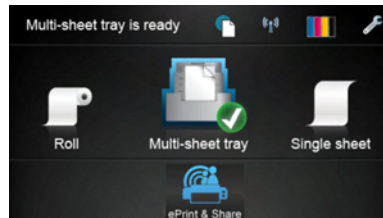
Print from ePrint & Share using the Front Panel

Print from ePrint & Share using the Front Panel

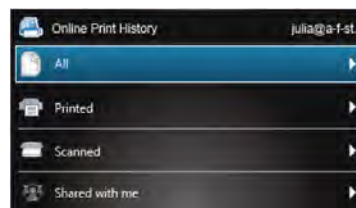
ePrint & Share allows you to print files on any Web-connected printer, when you want. You don't need a computer: you can use the printer's front panel.

To print using ePrint & Share:

1. On the front panel, press the **Web Services**  icon.



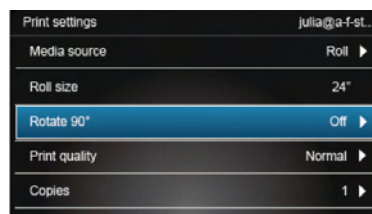
2. Sign in to your ePrint & Share account.
3. In the event categories, select the category you require.



4. Select the document you want to print.



5. Choose the print settings before printing the document. The specific print settings that you will see depend on the printer model.



6. Return to the preview screen and send the document to print. It will not start printing immediately.

View and Print from Other Content Repositories

You may be able to connect your ePrint & Share account to other content repositories, such as FTP sites, in which case you can use your ePrint & Share account to print directly from those repositories. For further information, see your ePrint & Share help information.

Create Online Print History

Documents are automatically added to your Online Print History whenever you print from the following:

- ePrint & Share driver, and you are logged into your ePrint & Share account.
- Front panel using ePrint & Share.
- Mobile app on your smartphone or tablet.
- FTP site using ePrint & Share or the mobile app.

HP Designjet ePrint & Share security

When you add new content to your Online Print History (by printing), only you will have access to that content; but, whenever you choose to share a file, which you do by sharing a special link with your colleague, anyone who has that link and an HP Designjet ePrint & Share account can access your file.

The access control mechanism is on a file-by-file basis, meaning that if you share something with someone, that person will have access only to the content of that specific shared file.

You can also unshare a file at any time, in which case the link will no longer work, and no-one will be able to see the file any more.

Note: Anyone who has printed the file will still have it in his or her online print history.

HP support personnel have special account privileges to help in troubleshooting any issue you may have, but they cannot download any of your files.

As part of the normal service operation, HP performs regular backups of your data. These backups are an automated process with only the software processes themselves having access to your data. HP Designjet ePrint & Share is hosted in a first-class data center. Physical access to these premises is strictly controlled and restricted. Only employees who have a legitimate business need can access the data center.

All the computers hosting the HP Designjet ePrint & Share service are protected by a multi-tiered firewall, all the systems are constantly monitored, and intrusion detection tests are run periodically.

The servers on which your files are stored have additional levels of security and isolation, both physical and logical, even from other services hosted in the same premises.

View and print from other content repositories

HP takes security and data privacy very seriously. HP will not sell, rent, or lease your personal information to others. You retain full ownership, and any intellectual property rights you may have, to the files you upload to HP Designjet ePrint & Share. By providing the service, HP does not obtain any special ownership or rights to these files.

In order for HP to be legally capable of making backups of your data and performing certain actions (generate a preview, etc.), you grant to HP the right to use the files, solely for the purposes of providing the HP Designjet ePrint & Share service.

Before you log off from your computer, check that all pending uploads to your Online History have been submitted or cancelled. Otherwise, they could be uploaded by another user of the same computer.

For the latest information, see <http://www.hp.com/go/eprintandshare>.

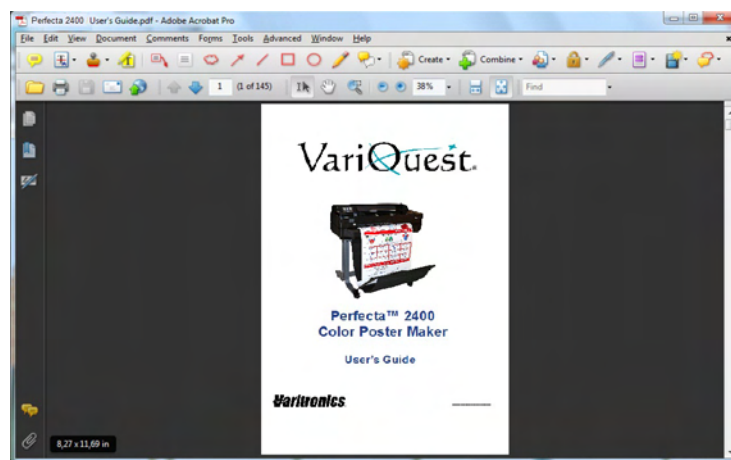
Printing Examples

Use the examples in this section as a general guide to help you print from other applications.

Adobe Acrobat

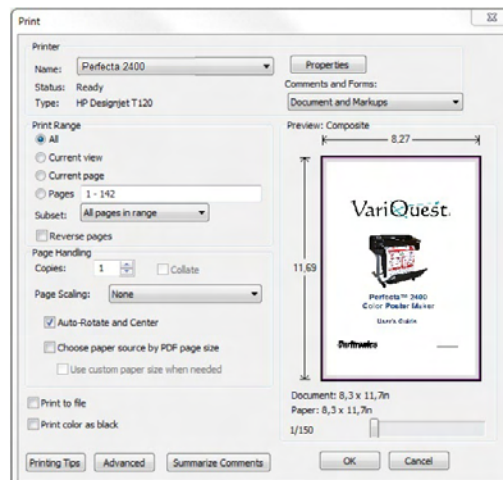
To print from Adobe Acrobat:

1. In the Acrobat window, move the mouse cursor to the bottom left corner of the document pane until the document size appears there.



2. Select **File > Print**.
3. Set *Page Scaling* to **None**.

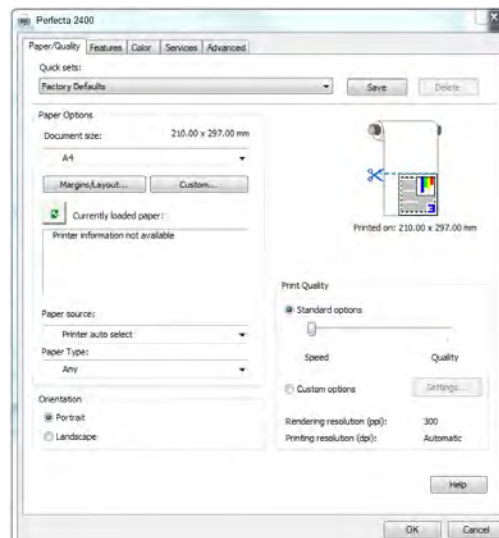
Note: The page size will not be automatically selected according to the document size.



Printing Examples

Adobe Acrobat

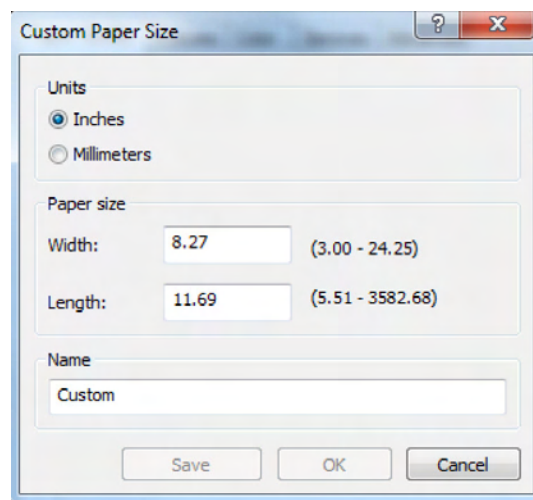
4. Press **Properties**, then select the **Paper/Quality** tab.



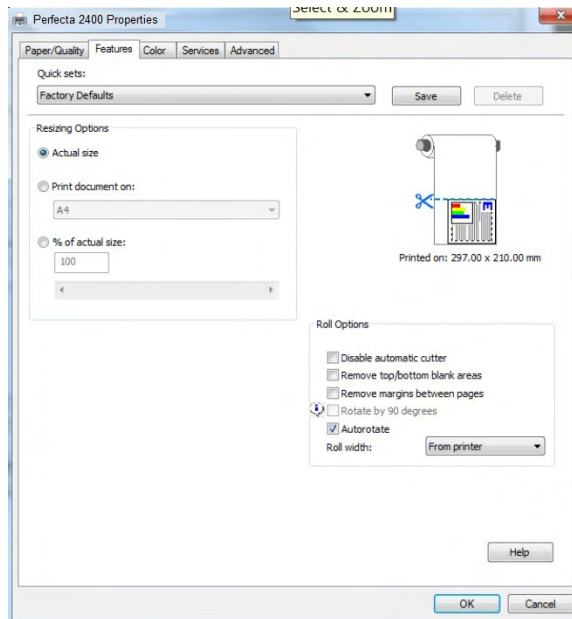
5. Choose the **Document Size** and **Print Quality** you want to use.

- OR -

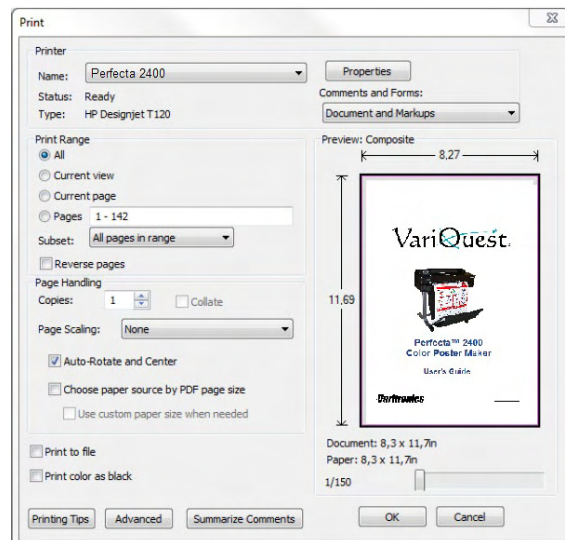
To define a new custom paper size, press **Custom**.



6. Select the **Features** tab, then check the box for **Autorotate**.

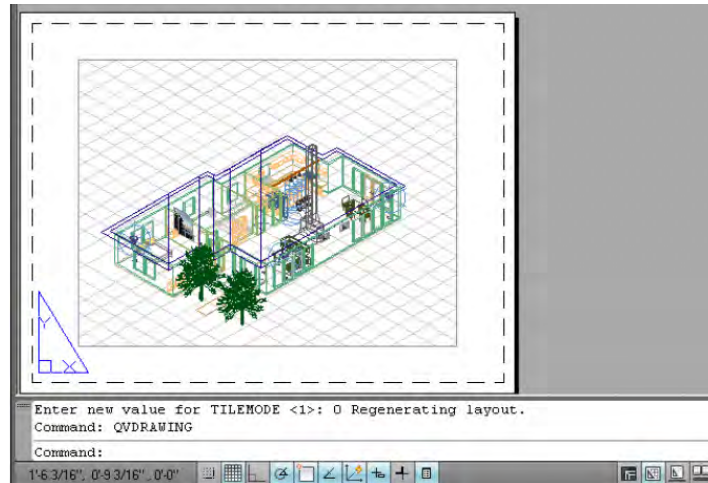


7. Click **OK**.
8. In the *Print* dialog, check that the print preview seems correct., then click **OK**.



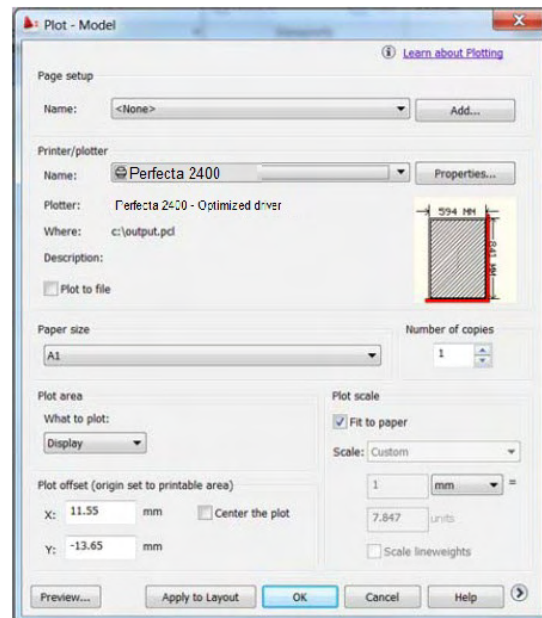
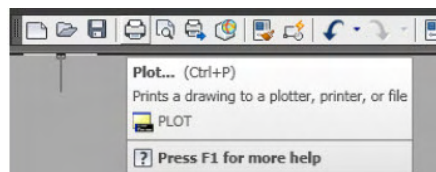
Print from Autodesk AutoCAD

The AutoCAD window can show a model or layout. Normally a layout is printed rather than the model.

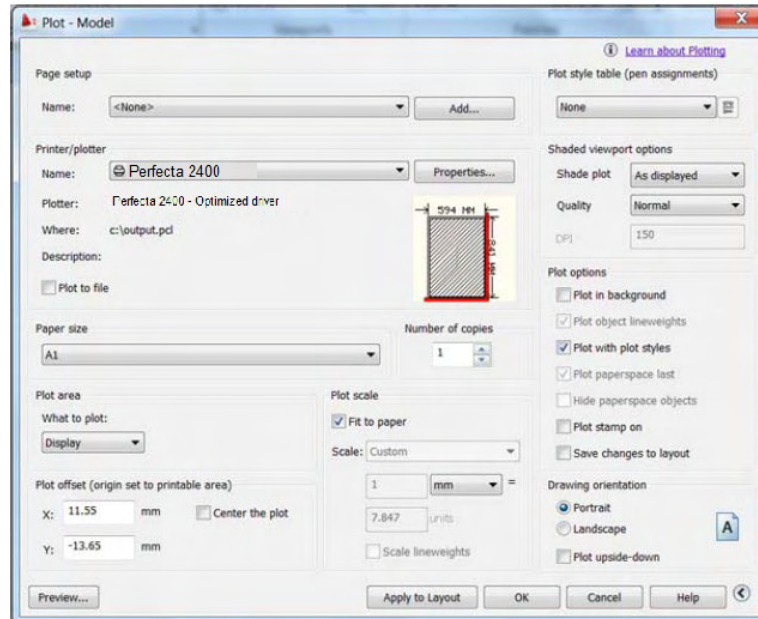


To print from AutoCAD:

1. At the top of the CAD window, click the **Plot** icon. The Plot window opens.

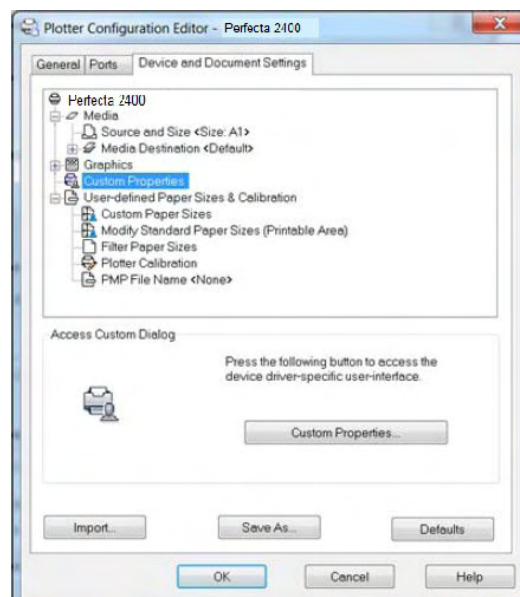


- To view more options, press the circular button in the lower right corner of the window.

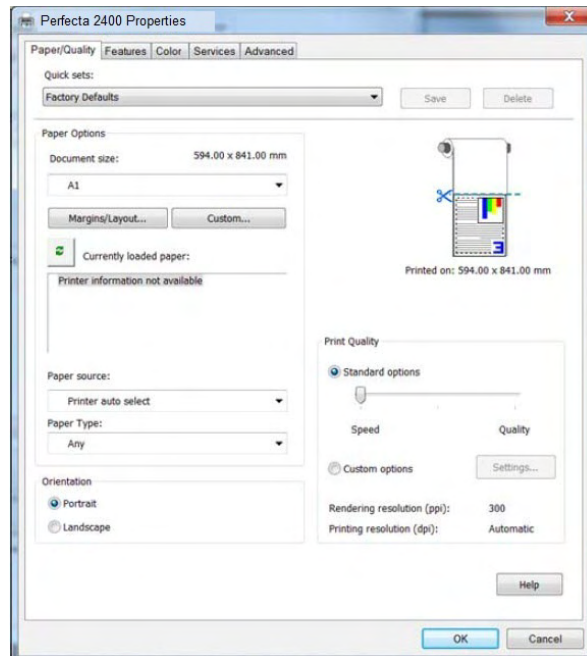


Note: The Quality option does not refer to the final print quality but to the quality of AutoCAD viewport objects that are sent for printing.

- Press **Properties...**, then select the **Device and Document Settings** tab.
- Press **Custom Properties...**



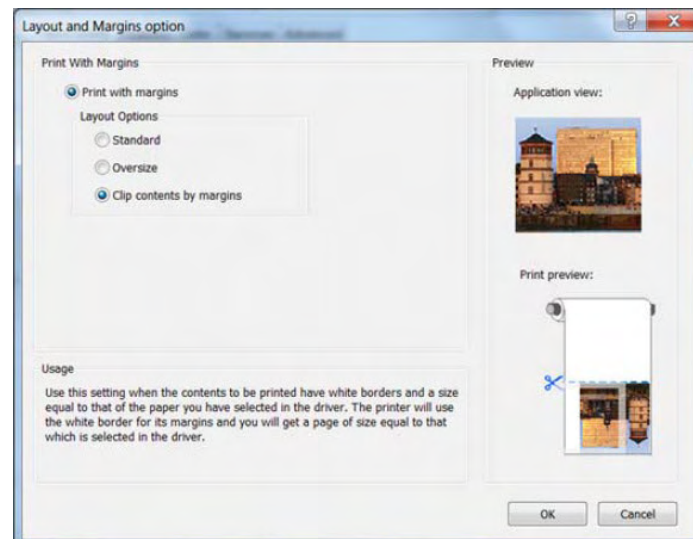
5. In the **Paper/Quality** tab, select the paper type that you intend to use.



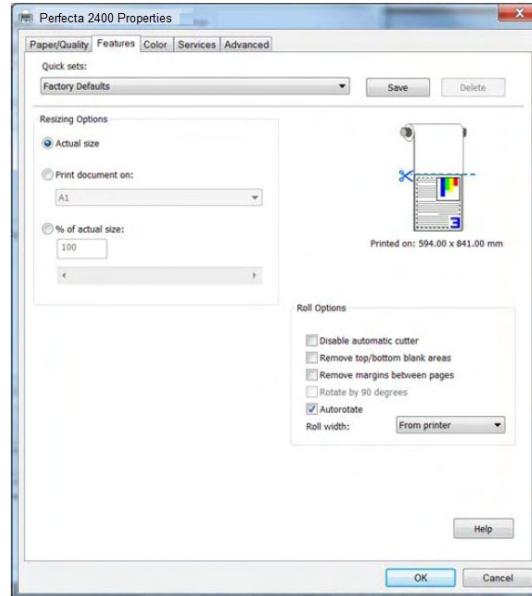
6. Select the print quality (your choice between speed and quality of printing).

Note: If you intend to print on roll paper, you must choose where the printer should cut the paper.

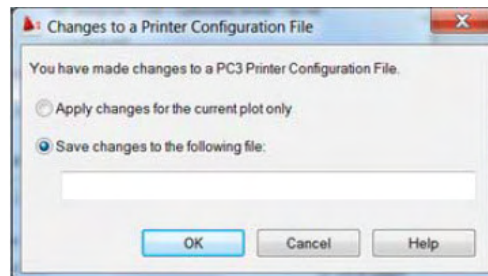
7. Press **Margins/Layout** button and select **Clip contents by margins**.



8. Select the *Features* tab, then click the box for **Autorotate** (Autorotation can help to avoid wasting paper).



9. Press **OK** and save your configuration changes to a PC3 file.



Printing Examples

Using Clip Contents by Margins

Using Printer Emulation

To request printer emulation:

1. Select **Advanced Settings>Color>Color Management>Printer Managed Colors >Printer Emulation**.
2. Select **Off** (no printer emulation) or the name of the printer model that you want to emulate.

Note: This setting applies only to jobs that do not contain any printer emulation setting saved in the job.

Using Clip Contents by Margins

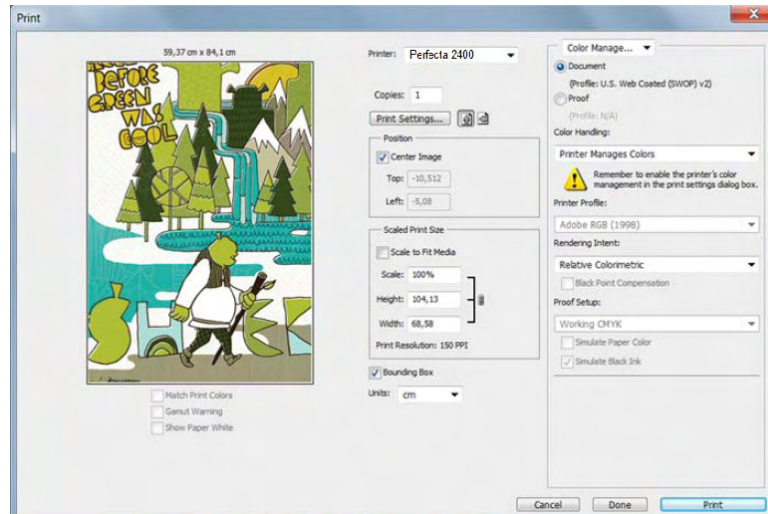
Use this option when the contents to be printed have white borders and a size equal to that of the paper you have selected. The printer will use the white border for its margins and you will get a page of size equal to that which is selected in the driver.

To setup clip contents by margins:

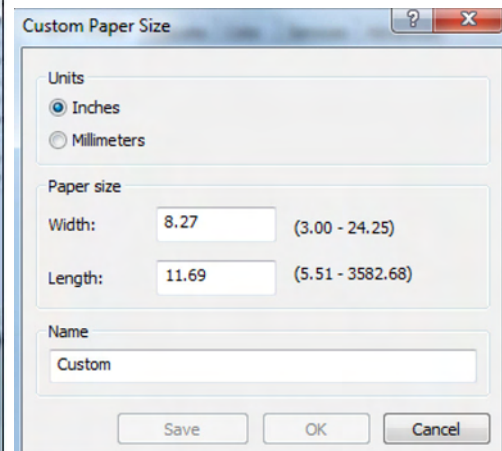
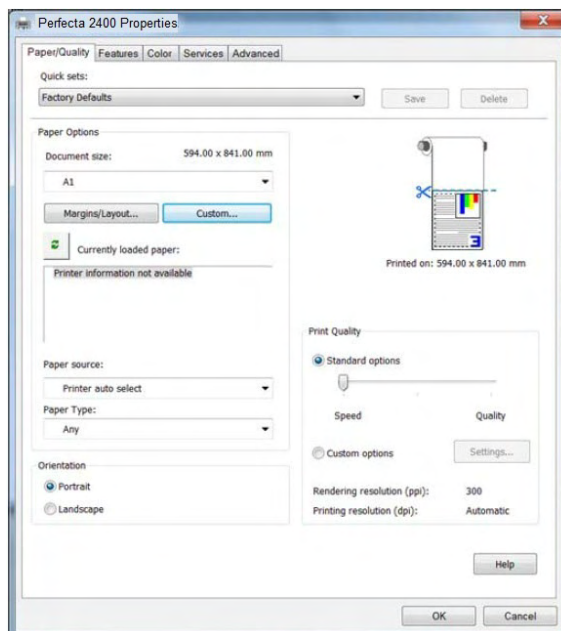
1. Select **Advanced Settings>Paper/Quality>Margins/Layout>Print with Margins>Layout>Clip Contents by Margins**.

Print from Adobe Photoshop

1. In *Photoshop CS5*, select **File > Print** and then select your printer.



2. Choose from the available paper sizes.
- or -
If you do not find the paper size that you want, press **Custom**.
- Enter the width, the length and the name of your custom paper size.
- Press **Save**, then **OK**.
3. If desired, change the default **Paper Source**, **Paper Type** and **Print Quality**.

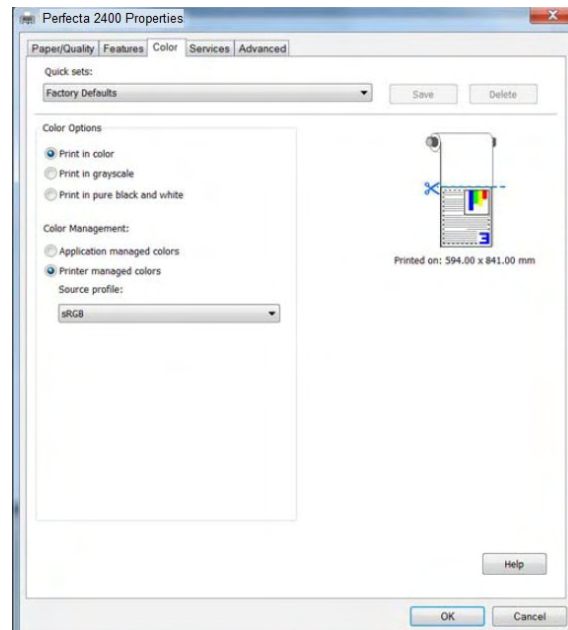


Printing Examples

Print from Adobe Photoshop

4. Select the **Color** tab.
5. Verify that the default color management option **Printer managed colors** is selected.

Note: This is the correct option because you already selected *Printer Manages Colors* in Photoshop.

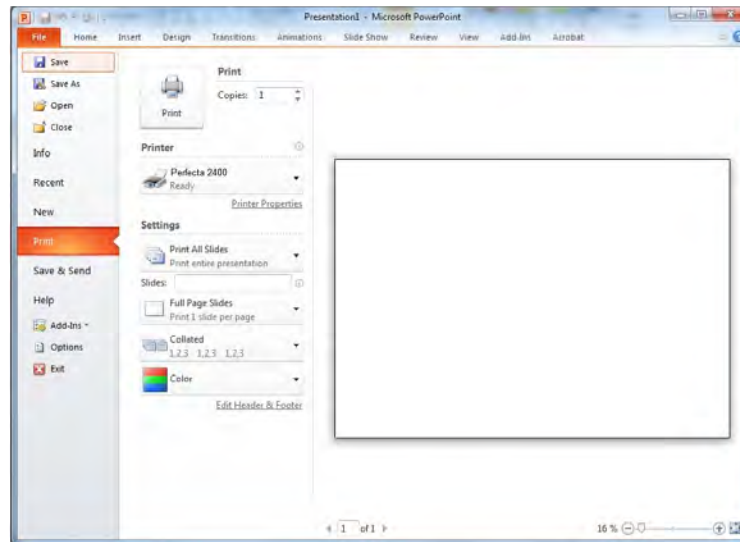


Print and Scale from Microsoft Office

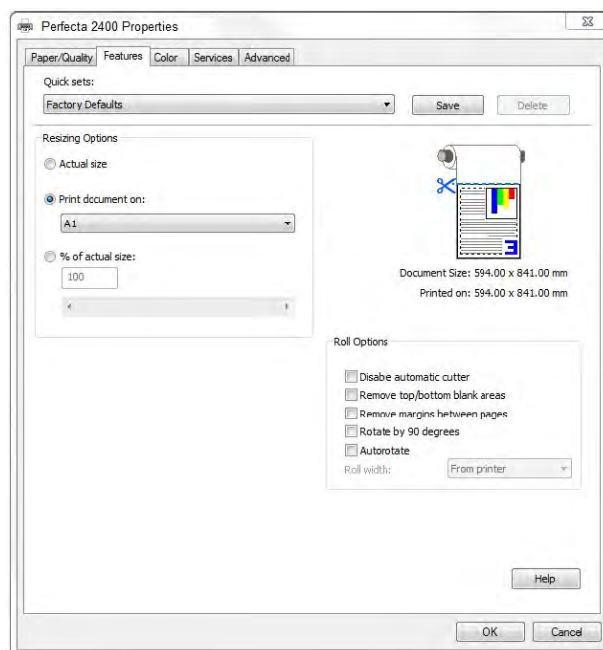
This section demonstrates how to print and scale from the applications in Microsoft Office 2010.

PowerPoint

1. Select **File>Print**, and select the name of your printer.



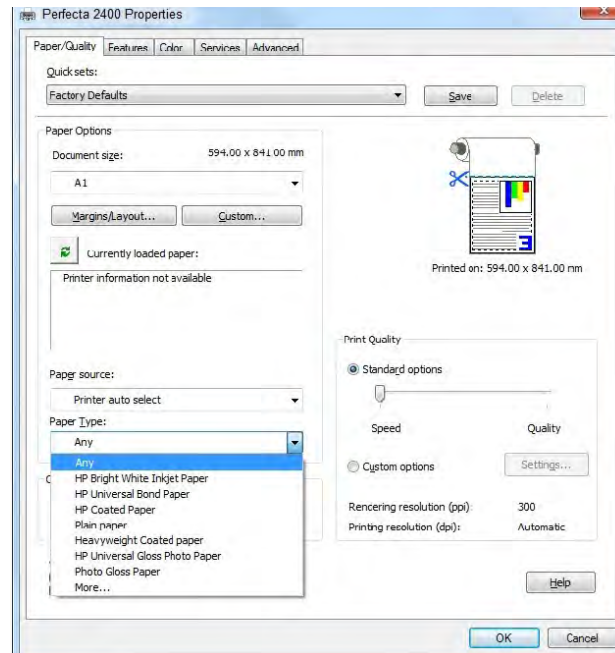
2. Select **Printer Properties > Features > Print document on** to scale the document to a specific size.



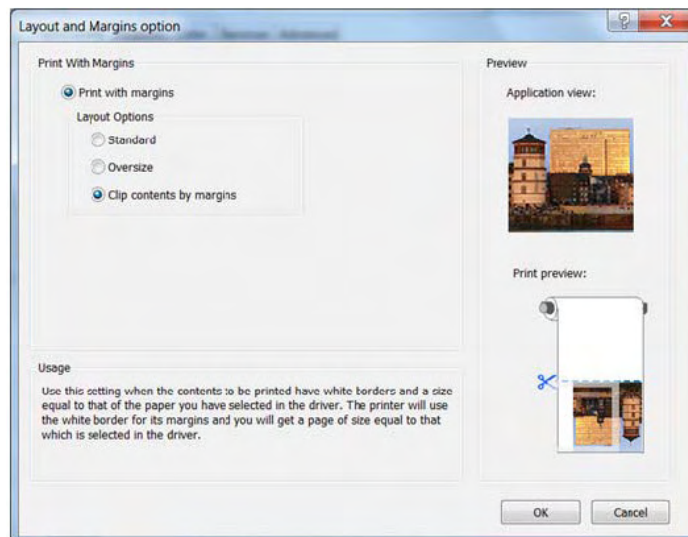
Printing Examples

Print and Scale from Microsoft Office

3. Select the *Paper/Quality* tab, then choose your **Paper Source** and **Paper Type**.

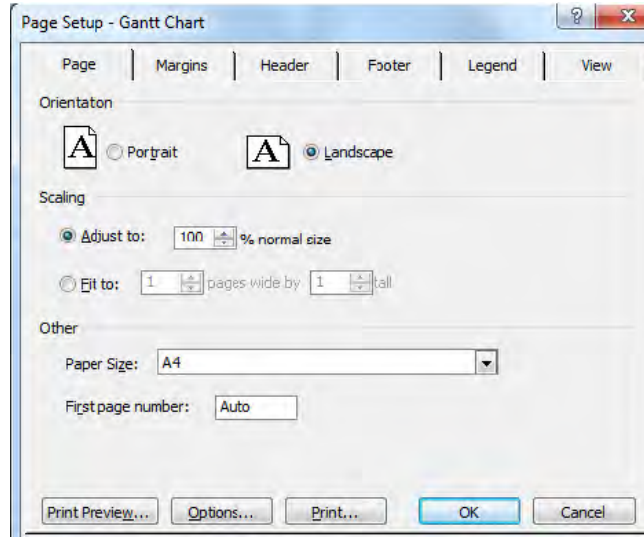


4. Select **Margins/Layout**, then select **Clip contents by margins** to keep the size.

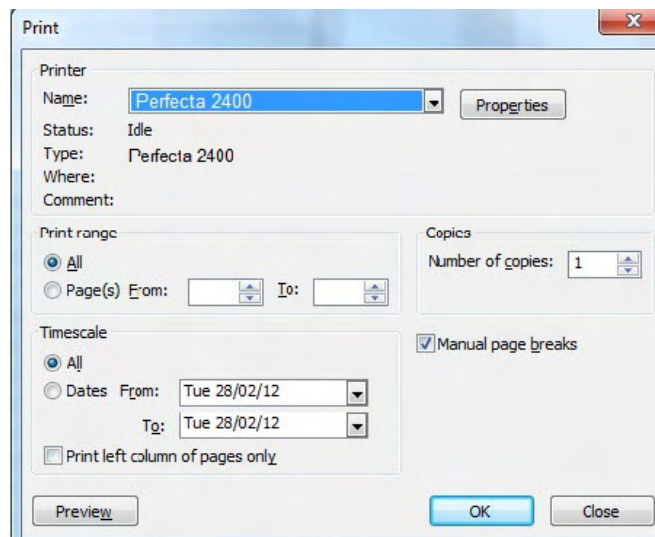


Project

1. Select **File>Page Setup>Print**.



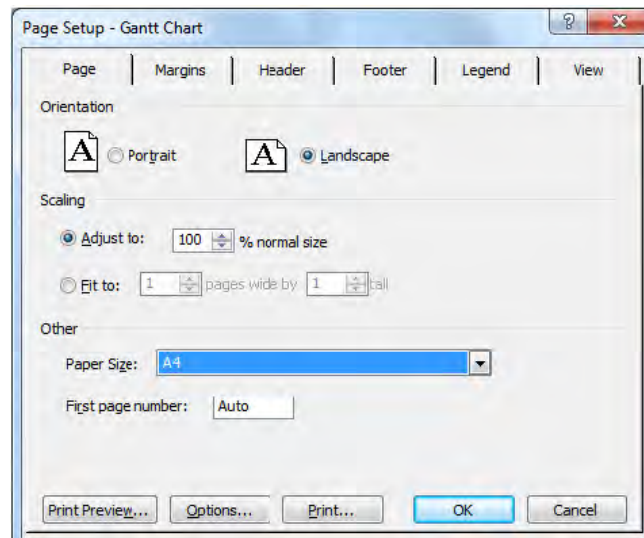
2. Select your printer's name, then click **OK**.



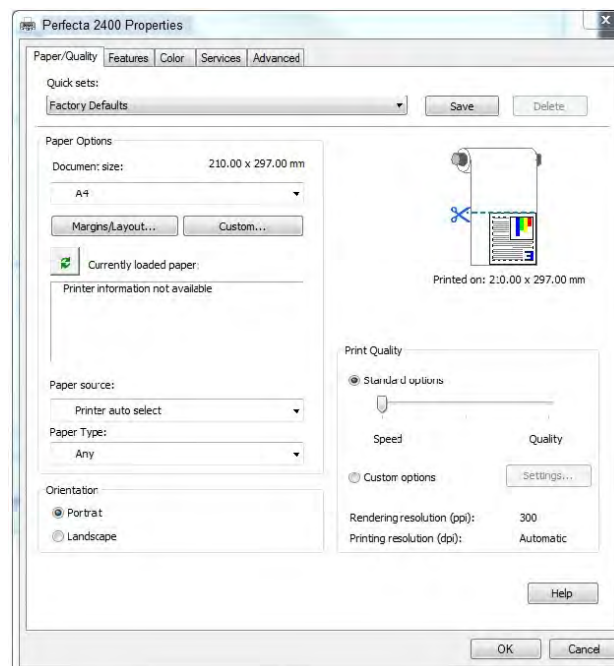
Printing Examples

Print and Scale from Microsoft Office

3. Select **Page**, and choose the **Paper Size** from the drop-down list.
4. Click **Options** to go to the printer driver.

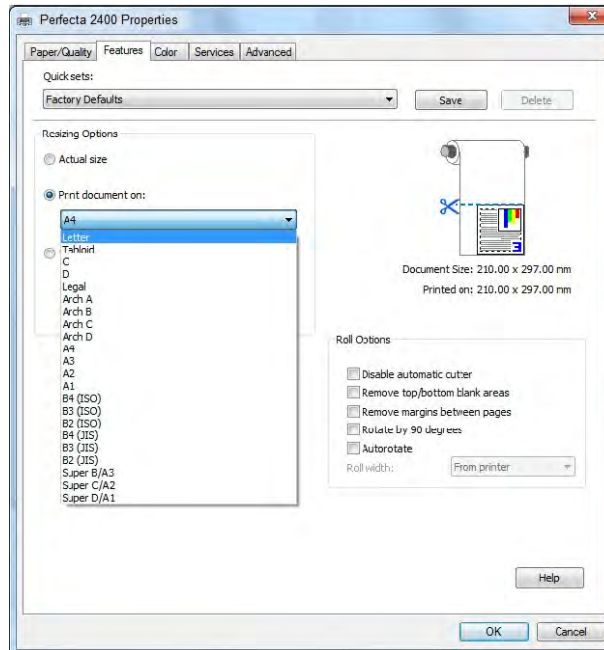


5. Select the **Paper/Quality** tab and verify the settings:
 - **Paper source:** Printer auto select.
 - **Paper Type:** Any.



6. Select **Features > Print document on** to scale the document to a specific size.

Note: You can scale the document in Project.

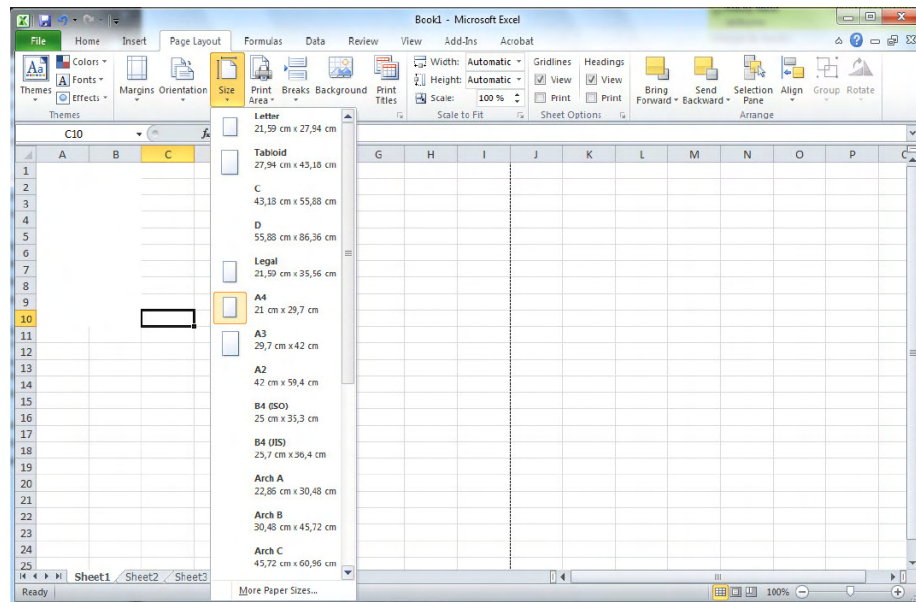


Printing Examples

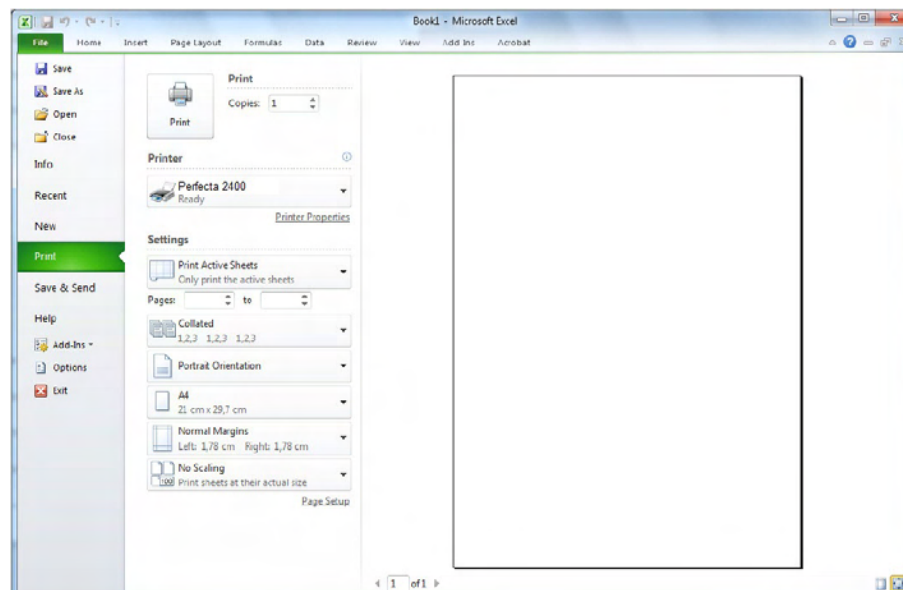
Print and Scale from Microsoft Office

Excel

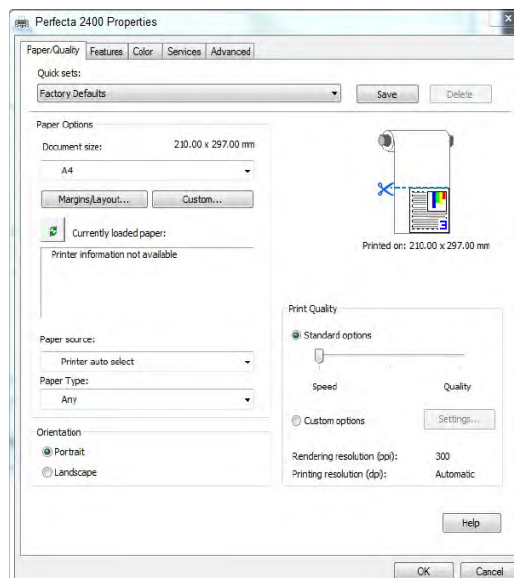
1. Select the *Page Layout* tab.
2. Select **Size**, and choose the paper size you want.



3. Select the *File* tab.
4. Select **Print**, and select the name of your printer.

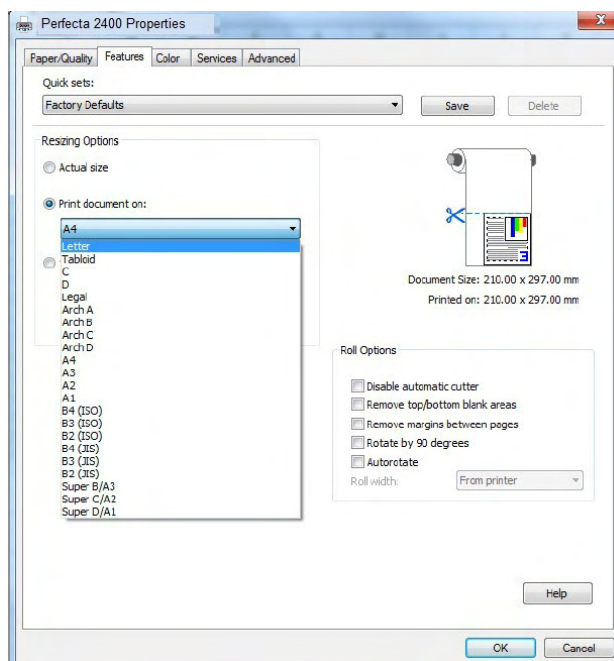


5. Select **Printer Properties** to go to the printer driver.
6. In the *Paper/Quality* tab, select **Paper source**, **Paper Type** and **Print Quality**.



7. Select **Features > Print document on** to scale the document to a specific size.

Note: You can also scale the document in Excel.



5 Ink Cartridge Handling

This chapter provides information about maintenance for the **VariQuest® Perfecta™ 2400**. The following information is contained in this chapter:

- *“Ink Cartridge Maintenance” on page 5-2*
- *“Printer Maintenance” on page 5-5*
- *“Move or Store the Printer” on page 5-14*
- *“Firmware Updates” on page 5-15*
- *“Software Updates” on page 5-15*
- *“Printer Maintenance Kits” on page 5-16*

Ink Cartridge Maintenance

Ink cartridges store the ink and are connected to the printhead, which distributes the ink on the paper. To purchase additional cartridges, see Accessories on page 90.



CAUTION!

Observe precautions when handling ink cartridges because they are ESD-sensitive devices (see the Glossary on page 143). Avoid touching pins, leads and circuitry.

Storing Anonymous Usage Information

Each ink cartridge contains a memory chip that assists in printer operation. The memory chip also stores a limited set of anonymous information about the usage of the printer, which can include the following: date first installed, last used date, number of pages printed, page coverage, frequency of printing, printing modes used, any printing errors that may have occurred and the product model.


This information helps HP design future products to meet our customers' printing needs. The data collected by the memory chip does not include information that could be used to identify a customer or user of the cartridge or printer.

The sampled memory chips are read and studied to improve future HP products. HP partners who assist in recycling ink cartridges may also have access to the data. Any third party possessing the cartridge may be able to access the anonymous information on the memory chip. If you prefer to not allow access to this information, you can render the chip inoperable. However, after you render the memory chip inoperable, the cartridge cannot be used in an HP printer.

If you are concerned about providing this anonymous information, you can turn off the memory chip's ability to collect printer usage information. To do so, access the Embedded Web Server, and select Settings > Anonymous Usage Information Storage. This does not prevent the cartridge from working normally in other respects. However, if you change your mind later, you can restore the factory defaults to resume collecting printer usage information.

Ink Cartridge Status

To view the ink levels of your ink cartridges:

1. On the front panel, press .
2. For more information, press **More**.

Replace Ink Cartridge

There are two occasions when you need to replace an ink cartridge.

- Ink cartridge is very low and you want to replace it with a full cartridge for unattended printing (you can use up the remaining ink in the first cartridge at a more convenient time).
- Ink cartridge is empty or faulty, and you must replace it to continue printing.



CAUTION!

Do not try to remove an ink cartridge while printing.



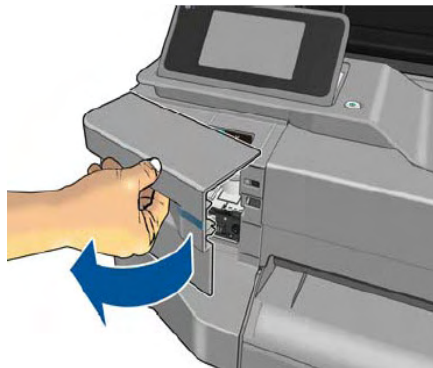
CAUTION!

Remove an ink cartridge only if you are ready to insert another one.

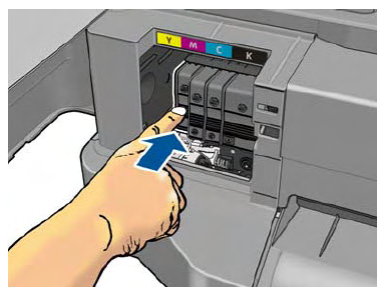
Note: When a cartridge runs out of ink, the current job is cancelled.

To replace an ink cartridge:

1. Turn ON the printer.
2. If your printer is on a stand, make sure the printer wheels are locked (the brake lever is pressed down) to prevent the printer from moving.
3. Open the ink cartridge cover on the left-hand side of the printer.



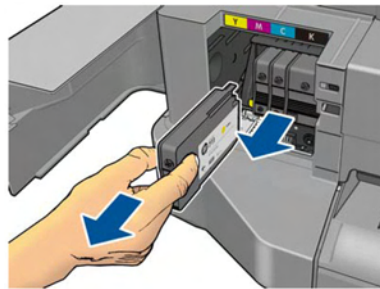
4. Wait until the carriage stops moving.
5. Press the ink cartridge to unlock it.



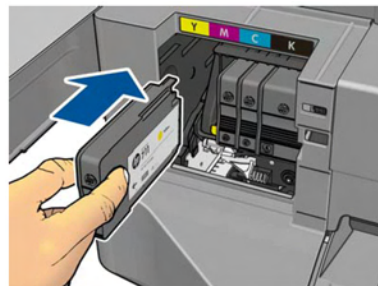
Ink Cartridge Maintenance

About the Printhead

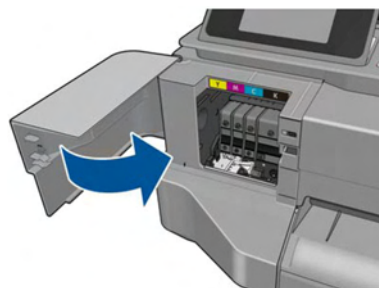
6. Remove the ink cartridge.



7. Insert the new ink cartridge. Make sure that you insert the ink cartridge into the slot that has the same colored letter as the cartridge you are installing.



8. Close the ink cartridge cover.



About the Printhead

The printhead comes installed in the printer and is connected to the ink cartridges. The printhead jets ink onto the paper.



CAUTION!

Observe precautions when handling the printhead, because it is an ESD-sensitive device (see "Glossary" on page 7-2). Avoid touching pins, leads, and circuitry.

Printer Maintenance

The printer is not designed for any purpose other than printing. Do not use the printer as a table. The surface can easily be damaged, and if anything falls into the printer, it can cause serious damage.

Checking Printer Status

You can check the current status of the printer in various ways:

- From the HP Utility, select your printer to see a page of information describing the status of the printer and its paper and ink supplies.
- From the Embedded Web Server, you can see information about the general status of the printer. The Supplies page in the Main tab describes the status of the paper and ink supplies.
- From the front panel, you can get information about the loaded paper and the ink levels.

Cleaning Printer Exterior

Clean the outside of the printer and all other parts of the printer that you regularly touch as part of normal operation with a damp sponge or a soft cloth and a mild household cleaner such as non-abrasive liquid soap.



WARNING

To avoid an electric shock, make sure that the printer is turned off and unplugged before you clean it. Do not let water get inside the printer.




CAUTION!

Do not use abrasive cleaners on the printer.

Print Quality Diagnostic Report

The Print Quality Diagnostic Report consists of two test patterns designed to highlight printhead reliability problems. It helps you check the performance of the printhead that is currently installed in your printer, and whether it suffers from clogging or alignment problems.

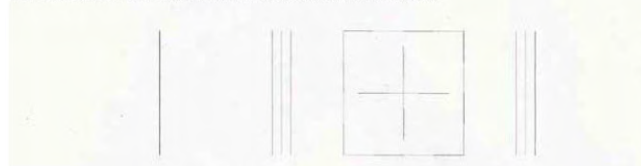
To print the Print Quality Diagnostic Report:

1. Use the same paper *type* used when you detected a problem. The test patterns are easiest to evaluate on plain white paper.
2. Check that the selected paper type is the same as the paper type loaded into the printer. See “View Paper Information” on page 3-13.
3. On the front panel, press .
4. Select **Image Quality Maintenance > Print Diagnostic Image.**

Note: The report can also be requested from the Embedded Web Server. It takes about two minutes to print the report.

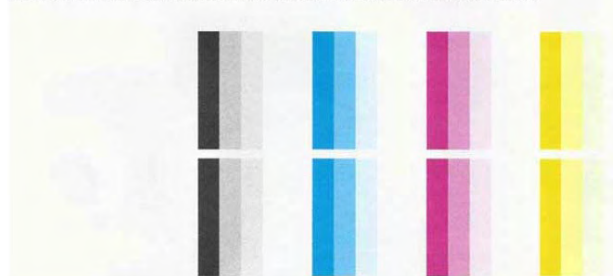
Test Pattern 1

If the lines are not straight and connected, align the printheads.



Test Pattern 2

If you see thin white lines across any of the colored blocks, clean the printheads.



Corrective Actions

1. If the lines in Test Pattern 1 are not straight and connected, align the printhead (see *“Aligning the Printhead”* on page 5-8).
2. If any of the colored blocks in Test Pattern 2 show white lines, or are faded or completely missing, clean the printhead (see *“Cleaning the Printhead”* on page 5-7). Follow the front-panel prompts and perform all three levels of cleaning if necessary.
3. If the problem persists, clean the printhead again.
4. If the problem remains, replace the ink cartridge (see *“Replace Ink Cartridge”* on page 5-3) corresponding to the streaked, faded, or missing color block in Test Pattern 2.
5. If the problem continues to persist, replace the printhead (see *“Replacing the Printhead”* on page 5-9). If the printhead is still in warranty, contact your Varitronics Dealer for support.

Cleaning the Printhead

If your print is streaked or has incorrect or missing colors, the printhead may need to be cleaned. There are three stages of cleaning. Each stage lasts about two minutes, uses one sheet of paper, and an increasing amount of ink. After each stage, review the quality of the printed page. You should initiate the next phase of cleaning **only** if the print quality is poor.

If print quality still seems poor after completing all stages of cleaning, try aligning the printhead.


Note: Cleaning uses ink, so clean the printhead only when necessary.



CAUTION!

Failing to turn off the printer correctly can cause print-quality problems.

To clean the printhead from the front panel:

1. Make sure there is paper in the input tray or a roll loaded.
2. From the front panel, press .
3. Press **Image Quality Maintenance > Clean Printhead**.

To clean the printhead from the Embedded Web Server:

1. Make sure there is paper in the input tray or a roll loaded.
2. In the Embedded Web Server *Tools* tab, select **Print Quality Toolbox > Clean Printhead**, and follow the instructions on the screen.

To clean the printhead from the HP Utility

1. Make sure there is paper in the input tray or a roll loaded.
2. In the *Support* tab of the HP Utility, select **Printhead Cleaning**, and follow the instructions on the screen.

Aligning the Printhead


Precise printhead alignment is essential for accurate colors, smooth color transitions, and sharp edges in graphical elements. Your printer has an automatic printhead alignment process which runs whenever a printhead has been accessed or replaced.

You may need to align the printhead after a paper jam or if you are experiencing print-quality problems.

**CAUTION!**

Do not use transparent or semi-transparent paper to align the printhead.

To align the printhead:

1. Load the paper you want to use, see “Loading Paper” on page 3-3. You can use a roll or a cut sheet; plain white paper is recommended.
2. Ensure the window is closed. A strong light source near the printer during printhead realignment can affect alignment.
3. From the front panel, press .
4. Press **Image Quality Maintenance > Align Printhead**. If the loaded paper is satisfactory, the printer runs the realignment and prints a realignment pattern. The process takes about five minutes.

Note: Printhead alignment can also be started from the Embedded Web Server (Tools > Print Quality Toolbox > Align Printhead), or from the HP Utility (Support > Printhead Alignment).

5. Wait until the front-panel display shows the process complete before using the printer.

Note: If the printer cannot complete the printhead alignment successfully, you may be asked to clean the printhead and try again.

Replacing the Printhead

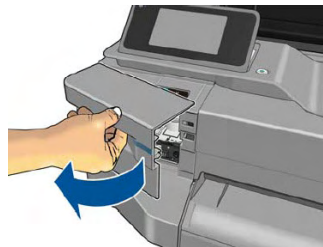


TIP

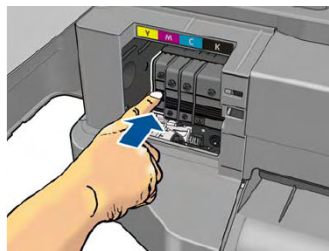
When the printhead has been replaced, the printer will automatically perform a printhead alignment on the loaded paper. If you want to perform the printhead alignment on a different paper (e.g., from the multi-sheet tray), change the paper before starting this procedure. Plain white paper is recommended.

To replace the printhead:

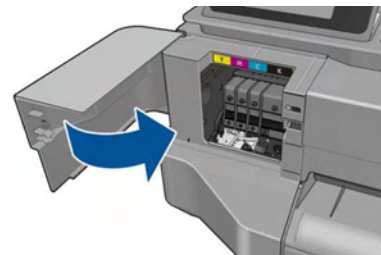
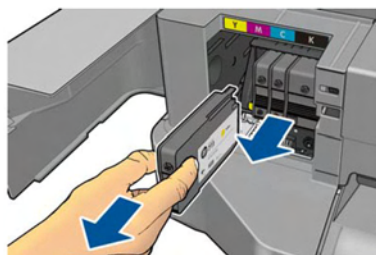
1. Turn on the printer.
2. If your printer is on a stand, make sure the printer wheels are locked (brake lever is pressed down) to prevent the printer from moving.
3. From the front panel, press .
4. Press **Image Quality Maintenance > Replace Printhead**.
5. Open the ink cartridge cover.



6. Wait until the carriage stops moving, then press each ink cartridge to unlock it.



7. Remove each ink cartridge., then close the cartridge cover.



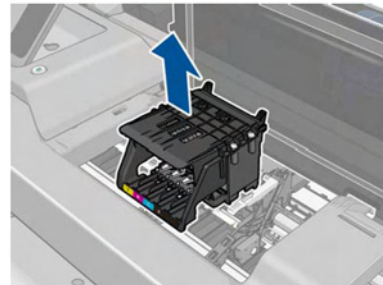
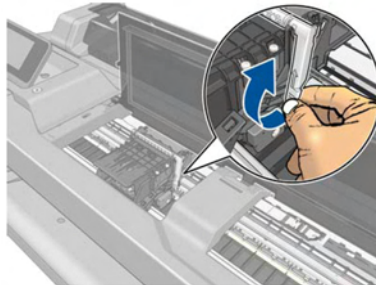
Printer Maintenance

Replacing the Printhead

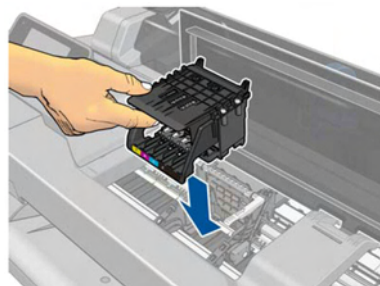
8. On the front panel, press **Next**, then open the top cover.



9. Raise the carriage lever., then **Remove** the old printhead, keeping it vertical to avoid getting ink on the connections.



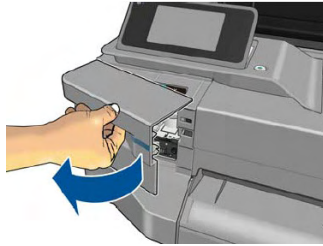
10. **Insert** the new printhead and lower the carriage lever.



11. Close the top cover.



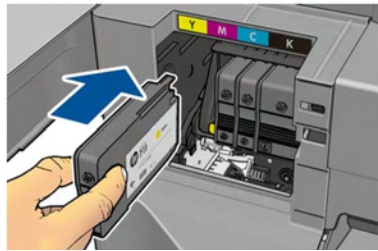
12. On the front panel, press **Next.**, then open the ink cartridge cover.



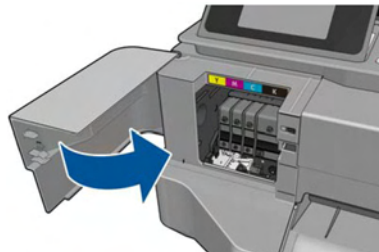
13. Insert the ink cartridges. Make sure that you insert each ink cartridge into the slot that has the same colored letter as the cartridge you are installing.

Important

If the printhead is new, install new ink cartridges. New ink cartridges are required for successful printhead replacement.



14. Close the ink cartridge cover.



15. On the front panel, press **Done.** You will be prompted to align the printhead.


Cleaning the Encoder Strip

1. Make sure that the printer is not printing and that the carriage is located in the service station on the right-hand side of the printer.
2. Using tap water and a small cloth that will not leave fibers in the printer, dampen the cloth and remove any excess water, so that the cloth is damp but not wet.
3. Open the printer window.
4. Hold the cloth in an inverted U shape around the encoder strip and carefully wipe until no further ink residue appears on the cloth.

**CAUTION!**

Be very careful not to scratch the encoder strip with your fingernails or any other object. Make sure that you are holding the cloth correctly.

Note: Do not move the carriage away from the service station.

5. Close the printer window.
6. From the front panel, press .
7. Press **Image Quality Maintenance > Replace Printhead**. The carriage moves to the left and stops in the correct position to remove the printhead.
8. Turn off the printer by pressing the **Power** key and then unplugging the power cord.
9. Open the printer window and move the carriage further to the left, so you can access the service station.
10. Clean the part of the encoder strip inside the service station as described above.
11. Close the printer window. and turn the printer back on.

Calibrating the Paper Advance

Accurate paper advance is important to image quality because it is part of controlling the proper placement of dots on the paper. If the paper is not advanced the correct distance between printhead passes, light or dark bands appear in the print and image grain may increase.

The printer is calibrated to advance correctly with all the papers appearing in the front panel. When you select the type of loaded paper, the printer adjusts the rate at which to advance the paper while printing. However, if you are not satisfied with the default calibration of your paper, you may need to recalibrate the rate at which the paper advances. See *“Troubleshooting” on page 6-1* to determine whether paper advance calibration will solve your issue.

To recalibrate the paper advance:


1. From the front panel, press .
2. Press **Image Quality Maintenance > Paper Advance Calibration > Calibrate Ready Paper**. The printer automatically recalibrates the paper advance and prints a paper advance calibration image.
3. Wait until the front panel displays the status screen and re-print your print.

Note: The recalibration procedure takes approximately three minutes. Do not worry about the paper advance calibration image. The front-panel display shows any errors in the process.

4. If you are satisfied with your print, continue using this calibration for your paper type. If you are dissatisfied with the recalibration, return to the default calibration, see *“Setting Up the Printer” on page 2-7*.

To return to default paper advance calibration:

Note: Returning to the default calibration sets all the corrections made by the paper advance calibration to zero. To return to the default paper advance calibration value, you must reset the calibration.

1. From the front panel, press .
2. Press **Image Quality Maintenance > Paper Advance Calibration > Reset Ready Paper Calibration**.
3. Wait until the front panel displays the operation has completed successfully.

Move or Store the Printer

If you need to move or store the printer, prepare it correctly to avoid possible damage.

To prepare the printer for moving or storing:

1. Do not remove the ink cartridges or printhead.
2. Remove any loaded paper.
3. On the front panel, press **Power** to turn off the printer.
4. Unplug the power cord connected to the printer.
5. Disconnect any cables connecting the printer to a network or a computer.



CAUTION!

If you turn the printer upside down, ink could escape into the printer and cause serious damage.

Note: When the printer is turned back on, it takes about three minutes to initialize itself and to check and prepare the printhead. Preparing the printhead normally takes just over a minute. However, if the printer has been off for a six weeks or more, preparing the printhead could take up to 45 minutes.



CAUTION!

If the printer remains off for a long period of time, the printhead may become unusable. In this case, you need to replace the printhead with a new one.



TIP

Preparing and purging the printhead uses both time and ink. To maintain the printhead health, we strongly recommend that you leave the printer on or in sleep mode, whenever possible. In both cases, the printer will wake from time to time to maintain the printhead. Thus you can avoid going through lengthy preparation processes before using your printer.

Firmware Updates


There are various ways of downloading and installing firmware updates; you can choose whichever you find most convenient.

Note: A firmware update package can be large; you should consider whether there are any implications for your network or Internet connection.

- You can configure the printer to download firmware updates automatically whenever they become available: see “*Automatic Firmware Update*” on page 2-7.

The following options are available if you choose *manual firmware updates*.

Update from Front Panel

1. Press .
2. Press **Web Services > Product Update**.
3. Press **Check Now** to check whether new firmware is available. If new firmware is available, you are given the opportunity to download and install it.

Update from Embedded Web Server

1. Select Firmware Update.

Update from HP Designjet Utility

1. Select your printer.
2. Click the **Support** tab.
3. Select **Firmware Update**.

Software Updates

Under Windows, you are normally offered software updates automatically. For manual updates of printer drivers and other software for your printer, go to <http://www.hp.com/go/T120/drivers> or <http://www.hp.com/go/T520/drivers>.

Printer Maintenance Kits

Three maintenance kits are available for your printer. The kits contain components that may need to be replaced after long use. When one of them is needed, a message is displayed on the front panel and by the HP Utility.

When you see the message, you should contact your Varitronics Dealer and request the maintenance kit. The kits are installed by service technicians only.

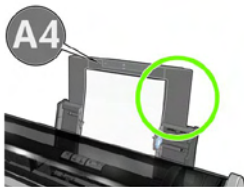
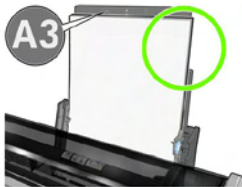

6 Troubleshooting

This chapter provides information about troubleshoot the **VariQuest® Perfecta™ 2400**. The following information is contained in this chapter:



- *“Troubleshooting Paper Issues” on page 6-2*
- *“Paper Loading Error Messages” on page 6-4*
- *“Paper Type Missing from Printer Driver” on page 6-5*
- *“Troubleshooting Paper or Paper Quality Issues” on page 6-6*
- *“Troubleshooting Print Quality Issues” on page 6-12*
- *“Troubleshooting Ink Cartridge and Printhead Issues” on page 6-30*
- *“Troubleshooting Data Communication Issues” on page 6-31*
- *“Network Configuration Page” on page 6-37*
- *“Troubleshooting General Printer Issues” on page 6-40*
- *“Front Panel Error Messages” on page 6-43*

Troubleshooting Paper Issues

Troubleshooting Paper Issues	
Problem	Suggested Action
Paper cannot be loaded successfully.	<ul style="list-style-type: none"> • Check that no paper is already loaded. • Ensure that the paper is far enough inside the printer, you should feel the printer grab the paper. • Do not attempt to straighten the paper during the aligning process, unless instructed to do so by the front-panel display. The printer automatically attempts to straighten the paper. • The paper may be crumpled, or warped, or may have irregular edges.
Unsuccessful Roll Load	<ul style="list-style-type: none"> • Check that the roll is at least 11 inches wide: narrower rolls are not supported. • Check the leading edge of the paper: if it is not straight or clean, it should be trimmed. Remove the initial 1 inch from the roll and try again. This may be necessary even with a new roll of paper. • Check that the roll ends are tight against the spindle ends. • Check that the spindle is correctly inserted. • Check that the output tray is closed. The roll will not load when it is open. • Check that the paper is correctly loaded on the spindle, and that it loads over the roll toward you. • Check that all roll end plugs have been removed. • Check that the paper is wound tightly on the roll. • Do not touch the roll or paper at during the alignment process. • If the paper has not been inserted straight, follow the instructions on the front panel. • To start the load process again, cancel the process on the front panel and rewind the roll from the end of the spindle until the edge is removed from the printer. <p>Note: If the roll has become loose around the core, the printer cannot load the paper.</p>

Troubleshooting Paper Issues (cont'd)	
Problem	Suggested Action
Unsuccessful Sheet Load	<ul style="list-style-type: none"> Check that the sheet is more than 12.95 inches wide (A3+). If it is that width or less, load it from the multi-sheet tray. Guide the sheet, especially thick papers, when the printer initially feeds the sheet. Ensure that the sheet is aligned with the reference line on the roll cover. Do not attempt to straighten the sheet during the loading process, unless instructed to by the front panel display. Do not use hand-cut sheets, which may be of irregular shapes. Use only purchased sheets. <p>Note: In case of any problems, follow the instructions on the front-panel display.</p> <ul style="list-style-type: none"> To start the load process again, cancel the process on the front panel; the printer ejects the sheet from the front of the printer.
Unsuccessful Load from Multi-Sheet Tray	<ul style="list-style-type: none"> Check that you have not loaded too many sheets into the tray. The maximum number of sheets depends on the paper thickness: approximately 50 sheets of plain, standard paper. Check that sheets are correctly loaded into the tray. Check that sheets are correctly adjusted and centered in the tray. Check that you have extended the input and output trays correctly: the first extension for A4, the second for A3 paper. <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>A4</p> </div> <div style="text-align: center;">  <p>A3</p> </div> </div> <ul style="list-style-type: none"> If the paper is hanging over the back of the input tray as shown, it may fail to load. <p>Note: Avoid leaving sheets of paper loaded in the printer for a significant length of time, because they will deform.</p> <div style="text-align: center;">  </div>

Paper Loading Error Messages

Paper Loading Error Messages	
Message	Suggested Action
Paper loaded with too much skew.	<ul style="list-style-type: none"> During the paper load process the printer detected that the paper had too much skew. Press OK to unload the roll automatically, then restart the process.
Paper not detected.	<ul style="list-style-type: none"> During the paper load process the printer did not detect any paper. Verify the paper is inserted fully and is not transparent.
Paper too far from lateral edge.	<ul style="list-style-type: none"> Reload the cut sheet, aligning the right edge against the black stop on the spindle.
Paper load failed.	<ul style="list-style-type: none"> Paper width is smaller than the minimum size supported by the selected paper source.
Cut sheets smaller than ISO.	<ul style="list-style-type: none"> Load A3 paper using the multi-sheet tray.
Sheet too big.	<ul style="list-style-type: none"> During the load process the printer detected that the sheet of paper is either too wide or too long to be loaded correctly. Press  to stop the load process. See “Functional Specifications” on page 7-2.
Sheet too small.	<ul style="list-style-type: none"> During the load process the printer detected that the sheet of paper is too narrow or too short to be loaded in the printer. Press  to stop the load process. See “Functional Specifications” on page 7-2.

Paper Type Missing from Printer Driver



To work with a paper not in the driver, you can use your paper as one of the presets already in the driver, however, you must identify whether your paper is transparent or translucent, photo or bond, coated or technical.

Note: For glossy paper, it is important to select a glossy paper type, as the printer adjusts its ink use for glossy paper.

Transparent or Translucent Film	
Paper Type	Suggested Action
Transparent (e.g., transparency)	• Select paper type Film > Transparent/Clear film .
Translucent (e.g., technical paper)	• Select paper type Film > Matte film .
Photo Paper	
Paper Type/Finish	Suggested Action
Photo Paper	• Use the Photo Paper category.
Glossy/High Gloss Paper	• Select paper type Photo Gloss Paper .
Semi-Gloss/Satin/Pearl/Luster Finish	• Select paper type Photo Semi-gloss/Satin Paper . Note: To increase gamut on photo paper, select paper type HP Universal Gloss Photo Paper or HP Universal Satin Photo Paper , depending on the finish.
Bond and Coated or Technical Paper	
Note: Your paper type selection for generic paper depends on the absorption capacity of the paper's ink.	
Paper Type/Finish	Suggested Action
Natural Tracing Papers	• Select paper type Natural Tracing Paper < 65 g/m2 or Natural Tracing Paper > 65 g/m2 , depending on the weight of the paper.
Thin Papers (<90 g/m2) or uncoated papers (e.g., plain paper or bright white paper)	• Select paper type Bond and Coated Paper > Plain Paper . You can also select Recycled Bond Paper .
Light-coated Papers (<110 g/m2)	• Select paper type Bond and Coated Paper > HP Coated Paper .
Heavyweight Coated Papers (<200 g/m2)	• Select paper type Bond and Coated Paper > Heavyweight Coated Paper .

Troubleshooting Paper or Paper Quality Issues

Ink or Wrinkling Problems	
Problem	Suggested Action
Black ink is easily removed when touched.	<p>This happens when your paper is incompatible with matte black ink. To use an optimized ink combination:</p> <ul style="list-style-type: none"> Select paper type Photo Paper > Photo Gloss Paper.
After printing, the paper has wrinkles or there is too much ink.	<p>This happens when too much ink is used. To use less ink, select a thinner category.</p> <p>Matte paper categories from thinnest to thickest are:</p> <ul style="list-style-type: none"> Plain Paper Coated Paper Heavyweight Coated Paper <p>For other image quality problems, see <i>"Troubleshooting Paper or Paper Quality Issues"</i> on page 6-6.</p>
Wrong Paper Type Printed	
Problem	Suggested Action
The printer prints your job before you were able to load your desired paper.	<p>In the printer driver, you may have Any selected for the <i>Paper Type</i>. When Any is selected, the printer will print immediately on whichever paper is loaded.</p> <p>Load your desired paper, see <i>"Paper Handling"</i> on page 3-1, and select your paper type specifically in the driver.</p> <ul style="list-style-type: none"> In the <i>Windows driver dialog</i>: select the Paper/Quality tab. Select your paper type from the Paper Type list. <p>Note: Any is the driver default.</p>

Paper Mismatch	
Problem	Suggested Action
Printer stops or stays in wait mode.	<p>If the paper currently loaded in the printer is not suitable for a particular job, the printer stops and waits for you to decide what to do. There are several ways in which the loaded paper may be considered unsuitable:</p> <ul style="list-style-type: none"> • The paper type is not as specified for the job. • The paper source (roll, multi-sheet tray, or manual feed) is not as specified for the job. • The paper size is smaller than specified for the job. <p>If you do not specify these settings for a particular job, the printer will print on whatever paper is loaded. If the printer stops for a paper mismatch, you can choose one of these options:</p> <ul style="list-style-type: none"> • Load the correct paper and resume printing. • Print the job on the currently-loaded paper. The print may be clipped if the paper is not large enough. • Cancel the job.
Paper Roll Jammed.	<p>When a paper jam occurs, a message normally displays on the front panel.</p> <ol style="list-style-type: none"> 1. Open the top cover.  2. Try to move the printhead carriage out of the way. 

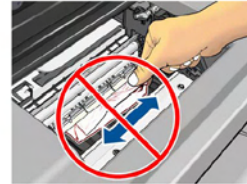
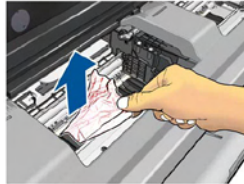
Paper Mismatch (cont'd)

3. Carefully remove any of the jammed paper that you can lift up and out from the top of the printer.



CAUTION!

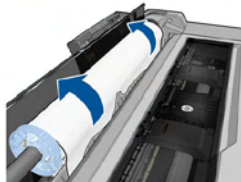
Do not move the paper sideways, as it could damage the printer.



4. Close the top cover.

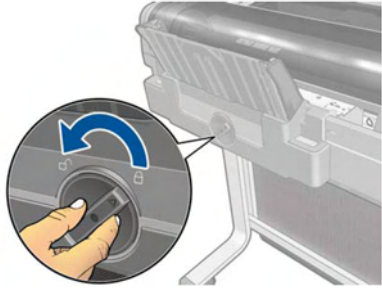
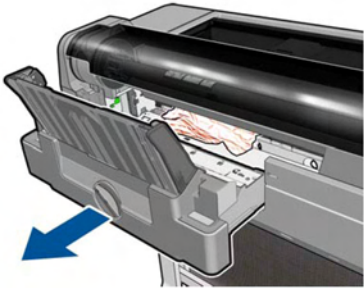
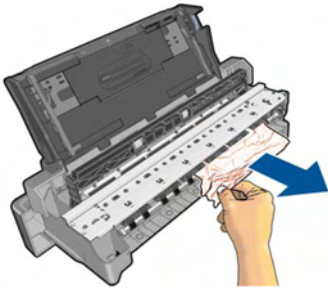


5. Open the roll cover and rewind the roll. You may feel resistance if the paper is stuck; pull firmly.



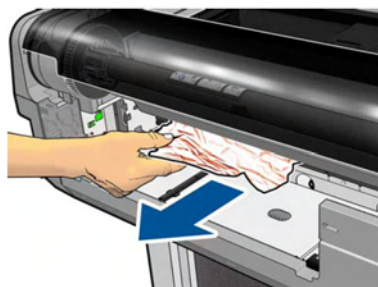
6. Reload the roll, or load a new sheet; see “Paper Handling” on page 3-1.

Note: If you find that there is still some paper causing an obstruction, restart the procedure and carefully remove all pieces of paper. You may need to remove the multi-sheet tray (see “Paper Loading Error Messages” on page 6-4).

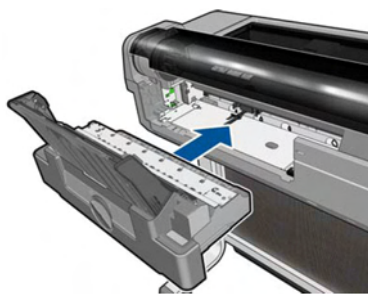
Paper Jams	
Problem	Suggested Action
Multi-sheet Tray Jammed.	<p>If the paper in the multi-sheet tray has jammed, proceed as follows:</p> <ol style="list-style-type: none"> 1. Remove as much paper as you can from the multi-sheet tray. 2. Push down the multi-sheet tray extensions, which will make the tray easier to handle. 3. Unlock the tray, using the rotary switch behind it.  <ol style="list-style-type: none"> 4. Pull out the tray.  <ol style="list-style-type: none"> 5. Remove all paper from the tray. 

Paper Jams (cont'd)

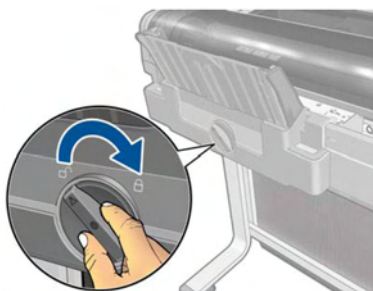
6. Remove all paper from the printer.




7. Replace the tray.




8. Lock the tray.



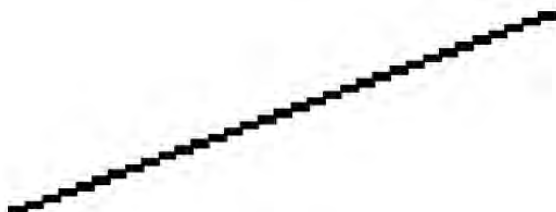
Paper Jams (cont'd)	
A strip stays on the output tray and generates jams.	<p>If a small piece of paper has been cut, such as before printing a new roll, or after the front panel option Form feed and cut has been used, the cut strip may remain in the output tray.</p> <ol style="list-style-type: none"> When the printer is not printing, reach into the tray and remove the strip. 
The printer displays out of paper when paper is available.	<p>If the roll becomes loose from its core, it will not feed correctly and the printer will not load the paper. If possible, tighten the paper to its core or load a new roll.</p>
Prints do not fall neatly into the bin.	<ul style="list-style-type: none"> Ensure the bin is correctly installed. Ensure the bin is open. Ensure the bin is not full. <p>Paper often tends to curl near the end of a roll, which can cause output problems.</p> <ol style="list-style-type: none"> Load a new roll, or remove prints manually as they are completed.
The sheet stays in the printer when printing is complete.	<p>The printer holds the paper to allow the print to dry after printing, see <i>"Change Drying Time" on page 3-14</i>.</p> <ul style="list-style-type: none"> If the paper is only partially ejected after the drying time, gently pull the sheet out of the printer. If the automatic cutter is disabled, use the Form feed and cut option in the front panel, see <i>"Use Form Feed With or Without Cutting" on page 3-16</i>.
The paper is automatically cut when printing is complete.	<p>By default, the printer cuts the paper after the drying time has been completed, see <i>"Change Drying Time" on page 3-14</i>. To disable the cutter, see <i>"Turn Automatic Cutter On and Off" on page 3-15</i>.</p>
The cutter does not cut well.	<p>By default, the printer is set to cut the paper automatically after the drying time has been completed.</p> <p>If the cutter is turned on but not cutting correctly:</p> <ul style="list-style-type: none"> Check that the cutter rail is clean and clear of any obstacles. Check that there are no pieces of paper in the cutter groove.
The roll is loose on the spindle	<p>The roll may need to be replaced or reloaded.</p>


Troubleshooting Print Quality Issues


General Printing Tips	
Problem	Suggested Action
When you have any print-quality problems:	<ul style="list-style-type: none"> To achieve the best performance from your printer, use only genuine manufacturer's supplies and accessories, whose reliability and performance have been thoroughly tested to give trouble-free performance and best-quality prints. Make sure the paper type selected in the front panel is the same as the paper type loaded into the printer (see <i>"View Paper Information" on page 3-13</i>). Also make sure that the paper type selected in your software is the same as the paper type loaded into the printer. <hr/> <p>⚠ CAUTION! <i>If you have the wrong paper type selected, you could experience poor print quality and incorrect colors, and possibly damage the printhead.</i></p> <hr/> <ul style="list-style-type: none"> Check that you are using the most appropriate print-quality settings for your purposes (see <i>"Printing" on page 4-1</i>). You are likely to see lower print quality if you moved the print-quality slider to the 'Speed' end of the scale, or set the custom quality level to Fast. Check that your environmental conditions (temperature, humidity) are in the recommended range. See <i>"Environmental Specifications" on page 7-5</i>.


Horizontal Banding	
Problem	Suggested Action
Horizontal lines across the image.	<p>If your printed image has added horizontal lines as shown (Note: The color may vary.):</p>  <ol style="list-style-type: none"> 1. Check that the paper type you have loaded corresponds to the paper type selected in the front panel and in your software. See <i>“View Paper Information”</i> on page 3-13. 2. Check that you are using appropriate print-quality settings for your purposes (see <i>“Printing”</i> on page 4-1). In some cases, you can overcome a print-quality problem by selecting a higher print-quality level. For instance, if you set the Print Quality slider to Speed, try setting it to Quality. 3. If printhead is working correctly, perform the paper advance calibration: see <i>“Calibrating the Paper Advance”</i> on page 5-13. 4. If the problem continues to persist, contact your VariQuest dealer for further support.

6-14


Jagged-Edged Lines	
Problem	Suggested Action
Lines have jagged edges.	<p>If your printed image has lines that appear stepped or jagged when printed:</p>  <ol style="list-style-type: none"> 1. The problem may be inherent in the image. Try to improve the image with the application you are using to edit it. 2. Check that you are using appropriate print-quality settings. See <i>"Printing"</i> on page 4-1. 3. Select the custom print-quality options in the driver dialog, and turn on the Maximum detail option (if available).


Lines Print Double or Wrong Color	
Problem	Suggested Action
Lines print out double or in the wrong color.	<p>This problem can have various visible symptoms:</p> <ul style="list-style-type: none"> • Colored lines are printed double, in different colors. • Borders of colored blocks are colored wrong.  <p>To correct this kind of problem:</p> <ol style="list-style-type: none"> 1. Print the Print-Quality Diagnostic Report. See <i>"Print Quality Diagnostic Report"</i> on page 5-6. 2. Align the printhead if recommended in the report.



Discontinuous Lines	
Problem	Suggested Action
Lines are broken or not continuous.	<p>If your lines are broken:</p>  <ol style="list-style-type: none"> 1. Check that you are using appropriate print-quality settings. See <i>"Printing"</i> on page 4-1. 2. Print the Print-Quality Diagnostic Report. See <i>"Print Quality Diagnostic Report"</i> on page 5-6. 3. Align the printhead if recommended in the report.


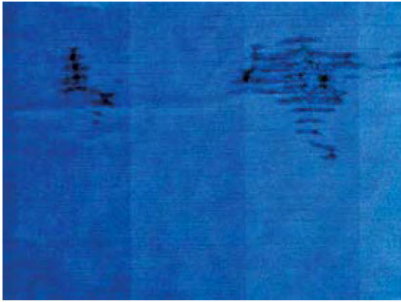
Blurred Lines	
Problem	Suggested Action
Lines are blurred.	<p>Humidity can cause ink to soak into the paper, making the lines blurred and fuzzy.</p>  <p>Try the following:</p> <ol style="list-style-type: none"> 1. Check that your environmental conditions (temperature, humidity) are suitable for high-quality printing. See <i>“Environmental Specifications” on page 7-5.</i> 2. Check that the paper type selected in the front panel is the same as the paper type you are using. See <i>“View Paper Information” on page 3-13.</i> 3. Try changing to a heavier paper type. 4. Select a lower print quality (such as Speed); the printer will then use less ink. 5. Select a paper type that is slightly thinner than the paper you have loaded; this will persuade the printer to use less ink. Example paper types in ascending order of thickness: Plain Paper, Coated Paper, Heavyweight Coated Paper. 6. If you are using glossy paper, try changing to a different type of glossy paper. 7. Print the Print-Quality Diagnostic Report. See <i>“Print Quality Diagnostic Report” on page 5-6.</i> 8. Align the printhead if recommended in the report.

Inaccurate Line Lengths	
Problem	Suggested Action
Length of printed lines is not accurate.	<p>If your printed line lengths are not accurate for your purposes, you can try to improve line length accuracy.</p> <ol style="list-style-type: none"> 1. Print on Matte Film, for which your printer's line length accuracy is specified. See <i>"Functional Specifications"</i> on page 7-2. 2. Polyester film is about ten times more dimensionally stable than paper. However, using film that is thinner or thicker than Matte Film will reduce line length accuracy. 3. Set the <i>Print Quality</i> slider to Quality. 4. Maintain the room at a steady temperature between 10 and 30°C (50 and 86°F). 5. Load the roll of film and let it rest for five minutes before printing. 6. If you are still not satisfied, try recalibrating the paper advance. See <i>"Calibrating the Paper Advance"</i> on page 5-13.

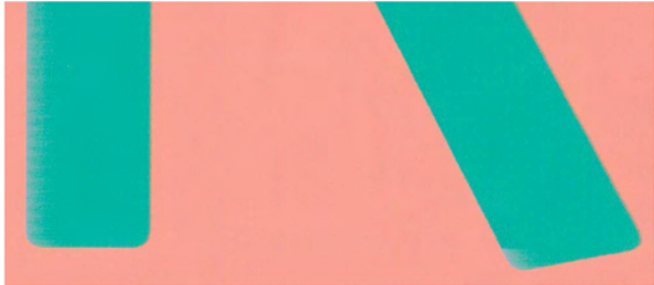
Blurred or Grainy Image	
Problem	Suggested Action
The whole image is blurry or grainy.	 <ol style="list-style-type: none"> Check that: <ul style="list-style-type: none"> The loaded paper type corresponds to the paper type selected in the front panel and in your software. See <i>“View Paper Information”</i> on page 3-13. You are printing on the correct side of the paper. You are using appropriate print-quality settings (see <i>“Printing”</i> on page 4-1). In some cases, you can overcome a print-quality problem by selecting a higher print-quality level. For instance, if you have set the Print Quality slider to Speed, try setting it to Quality. Print the Print-Quality Diagnostic Report. See <i>“Print Quality Diagnostic Report”</i> on page 5-6. Align the printhead if recommended in the report. If the problem persists, perform paper advance calibration: see <i>“Calibrating the Paper Advance”</i> on page 5-13. If the problem continues to persist, contact your VariQuest dealer for further support.


Paper Rippled	
Problem	Suggested Action
The paper is not flat after printing.	<p>If the paper does not lie flat when it comes out of the printer, but has shallow waves in it, you are likely to see defects in the printed image, such as vertical stripes. This can happen when you use thin paper that becomes saturated with ink.</p>  <ol style="list-style-type: none"> 1. Check that the paper type loaded corresponds to the paper type selected in the front panel and in your software. See <i>“View Paper Information”</i> on page 3-13. 2. Try changing to a thicker paper type such as a heavy, coated paper. 3. Select a lower print quality (e.g., Speed); the printer will then use less ink. 4. Select a paper type that is slightly thinner than the paper you have loaded; this will persuade the printer to use less ink. Example paper types in ascending order of thickness: Plain Paper, Coated Paper, Heavyweight Coated Paper.

Print Scuffed or Scratched	
Problem	Suggested Action
The paper is scuffed or scratched when it comes out of the printer.	<p>The black ink pigment can be scuffed or scratched when touched by a finger, a pen or some other object. This is particularly noticeable on coated paper.</p> <p>Glossy paper may be extremely sensitive to the bin or to anything else that it contacts soon after printing, depending on the amount of ink used and the environmental conditions at the time of printing.</p>  <p>To reduce the risk of scuffs and scratches:</p> <ul style="list-style-type: none"> • Handle prints carefully. • Avoid stacking prints on top of each other. • Catch your prints as they are cut from the roll and do not let them fall into the bin. Alternatively, leave a sheet of paper in the bin so that freshly printed sheets do not make direct contact with the bin. <p>To increase the drying time:</p> <ol style="list-style-type: none"> 1. At the front panel, press . 2. Press Printer Preferences>Print Retrieval>Select drying time >Extended.

Ink Marks on Paper	
Problem	Suggested Action
Horizontal smears on the front of coated paper.	<p>If a lot of ink is used on plain or coated paper, the paper absorbs the ink quickly and expands. As the printhead moves over the paper, the printhead may come into contact with the paper and smear the printed image. This problem is normally seen only on cut sheets of paper (not on roll paper).</p> <hr/> <p>⚠ CAUTION! <i>If you notice this problem, immediately cancel the printing job. Press  and also cancel the job from your computer application. Soaked paper can damage the printhead.</i></p> <hr/> <p>If you notice poor print quality after canceling a print job due to smearing, clean the printhead. See “Cleaning the Printhead” on page 5-7.</p> <p>To avoid this problem:</p> <ol style="list-style-type: none"> 1. Check that the paper type loaded corresponds to the paper type selected in the front panel and in your software. See “View Paper Information” on page 3-13. 2. Use a recommended paper type and the correct print settings. 3. If using sheet paper, try rotating the sheet 90 degrees. The orientation of the paper fibers may affect performance. 4. Try changing to a thicker paper type, such as heavyweight coated paper. 5. Select a paper type that is slightly thinner than the paper you have loaded; this will persuade the printer to use less ink. Example paper types in ascending order of thickness: Plain Paper, Coated Paper, Heavyweight Coated Paper. 6. Try to increase the margins by relocating the image to the center of the page using your software application. 
Ink marks on the back of the paper	<ul style="list-style-type: none"> • Clean the platen with a soft cloth. • Clean each rib separately.

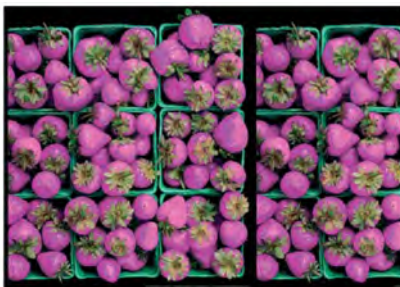
Black Ink Rubs Off	
Problem	Suggested Action
Black ink comes off when you touch the print.	<p>This problem may be caused by printing with matte black ink on glossy paper. The printer will not use matte black ink if it knows that the paper will not retain it.</p> <p>To avoid matte black ink, you select Photo Glossy Paper as the paper type (in the Photo Paper category).</p>

Object Edges Not Sharp	
Problem	Suggested Action
The edges of objects are stepped or not sharp.	<p>If edges of objects or lines appear to be poorly defined or lighter in density and you have already set the print-quality slider to Quality in the driver dialog:</p>  <ol style="list-style-type: none"> 1. Select the custom print-quality options. 2. Try setting the quality level to Speed. See “Printing” on page 4-1.

Object Edges Dark	
Problem	Suggested Action
The edges of objects are darker than expected.	<p>If edges of objects seem darker than expected, and you have already set the print-quality slider to Quality in the driver dialog:</p>  <ol style="list-style-type: none"> 1. Select the custom print-quality options. 2. Try setting the quality level to Speed. See <i>“Printing” on page 4-1</i>.

Vertical Lines Different Color	
Problem	Suggested Action
Print has vertical bands of different colors along it.	<ol style="list-style-type: none"> 1. Try using thicker paper, choosing from the recommended paper types such as heavyweight coated paper. 2. Try using higher print-quality settings (see <i>“Printing” on page 4-1</i>). For example, if the Print Quality slider is set to Speed, try setting it to Quality.

White Spots on Print	
Problem	Suggested Action
White spots appear on the printed paper.	<p>This is probably due to paper fibers, dust or loose coating material. To avoid this problem:</p> <ol style="list-style-type: none"> 1. Try cleaning the paper manually with a brush before printing, to remove any loose fibers or particles. 2. Always keep the cover of your printer closed. 3. Protect your paper rolls and sheets by storing them in bags or boxes.

Inaccurate Colors	
Problem	Suggested Action
Printed colors are not correct.	<p>If the colors of your print do not match your expectations, try the following:</p>  <ol style="list-style-type: none"> 1. Check that the paper type loaded corresponds to the paper type selected. 2. Check that you are printing on the correct side of the paper. 3. Check that you are using appropriate print-quality settings. For the most accurate colors, select Normal or Best quality. 4. Print the Print Quality Diagnostic Report. See “<i>Print Quality Diagnostic Report</i>” on page 5-6.

Colors Fading	
Problem	Suggested Action
Printed colors fade quickly.	<p>If you print on instant-dry photo paper, your prints will fade rapidly. If you plan to display the prints for more than two weeks, you should laminate them to achieve longer life.</p> <p>Prints on coated paper that can swell will fade much less rapidly. However, lamination will increase the life of prints (depending on the type of lamination) with all paper types.</p>



Image is Incomplete	
Problem	Suggested Action
The image is clipped at the bottom.	<p>Check the following:</p> <ul style="list-style-type: none"> • Did you press  before all the printer received all of the data? If so, you ended the data transmission and will have to print the page again. • The I/O timeout setting may be too short. This setting determines how long the printer waits for the computer to send more data, before deciding that the job is finished. Change the timeout setting, then send the print again: from the front panel, increase the I/O timeout setting to a longer period by pressing , then Connectivity > Advanced Setup > Select I/O Timeout. • There may be a communications problem between your computer and the printer. Check your USB or network cable, or your WiFi connection. • Check to make sure that your software settings are correct for your current page size (e.g., long-axis prints). • If you are using network software, make sure it has not timed out.


Image is Clipped	
Problem	Suggested Action
The image is clipped when printed.	<p>Clipping normally indicates a discrepancy between the actual printable area on the loaded paper and the printable area as understood by your software.</p> <ul style="list-style-type: none"> • Check the actual printable area for the paper size you have loaded (printable area = paper size – margins). • Check the printable area of your software (may be called "printing area" or "imageable area"). For example, some software applications assume standard printable areas that are larger than those used in this printer. • If you defined a custom page size with very narrow margins, the printer may impose its own minimal margins, clipping your image slightly. You may want to consider using a larger paper size. • If your image contains its own margins, you may be able to print it successfully by using the Clip Contents by Margins option (see "Choose Margins Options" on page 4-6). • If you are trying to print a very long image on a roll, check that your software is capable of printing an image of that size. • You may have tried to rotate the page from portrait to landscape on a paper size that is not wide enough. • If necessary, reduce the size of the image or document in your software application, so it fits between the margins. <p>There is another possible explanation for a clipped image. Some applications, such as Adobe Photoshop, Adobe Illustrator and CorelDRAW, use an internal 16-bit coordinate system which means that they cannot handle an image of more than 32,768 pixels.</p> <hr/> <p>Note: An image 32,768 pixels long would print at a length of 54.61 inches if you select Best or Quality in the driver. If you select <i>Fast</i>, <i>Normal</i> or <i>Speed</i>, that same image will print 109.23 inches.</p> <hr/> <p>If you try printing an image larger than this from these applications, the bottom of the image may be clipped. To print the whole image, try these suggestions:</p> <ul style="list-style-type: none"> • The driver dialog includes an option called <i>Max. application resolution</i>, which enables you to print successfully in this situation. You do not normally need to change the default setting (Auto). However, you can find the option in the <i>Advanced</i> tab, under Document Options > Printer Features. • Save the file in another format, such as TIFF or EPS, and open it with another application. • Use a RIP to print the file.

Some Objects Missing from Image	
Problem	Suggested Action
Some objects are missing from my printed image.	<p>Large quantities of data may be necessary to print a high-quality large-format print job, and in some specific workflows there may be issues that can lead to some objects missing from the output. Tips to help avoid this problem.</p> <ul style="list-style-type: none"> • Tell the HP-GL/2 driver to send the image as a bitmap. • Select a smaller page size and scale to the desired final page size in the driver or in the front panel. • Save the file in another format, such as TIFF or EPS, and open it with another application. • Use a RIP to print the file. • Reduce the resolution of bitmap images in your application software. • Select a lower print quality to reduce the resolution of the printed image. <p>⚠ CAUTION! <i>These options are suggested for troubleshooting purposes and may adversely affect the final output quality or the time necessary to generate the print job. Therefore, they should be cancelled if they do not help to solve the problem.</i></p>

PDF File Clipped or Missing Information	
Problem	Suggested Action
When printing a PDF file, some of the information is clipped or missing.	<p>In older versions of Adobe Acrobat or Adobe Reader, large PDF files could be clipped or lose some objects when printing with the HP-GL/2 and HP RTL driver at high resolution.</p> <p>To avoid such problems, upgrade your Adobe Acrobat or Adobe Reader software to the latest version. These problems should be solved from version 7 and above.</p>

Still Experiencing Problems	
Problem	Suggested Action
I'm still experiencing print-quality problems.	<p>If you still experience print-quality problems after applying the advice in this section, try the following:</p> <ul style="list-style-type: none"> • Use a higher print-quality option. See <i>"Printing"</i> on page 4-1. • Verify the driver you are using is the most current. Consult your VariQuest dealer for details. • Verify that your printer's firmware is up to date. See <i>"Firmware Updates"</i> on page 5-15. Check that you have the right settings in your software application.






Troubleshooting Ink Cartridge and Printhead Issues

Cannot Insert Ink Cartridge	
Problem	Suggested Action
Ink cartridge cannot be inserted into the printer.	<ol style="list-style-type: none"> 1. Check that you have the correct type of cartridge (model number). 2. Check that the colored label on the cartridge is the same color as the label on the slot. 3. Check that the cartridge is correctly oriented, with the letter or letters marking the cartridge label right-side up and readable. <div>  CAUTION! Never clean inside the ink cartridge slots. </div>




Ink Cartridge Status Message	
Message	Description
OK	<ul style="list-style-type: none"> The cartridge is working normally, with no known problems.
Missing or Damaged	<ul style="list-style-type: none"> There is no cartridge present, or it is not correctly connected to the printer (shown with an X on the status screen).
Low:	<ul style="list-style-type: none"> The ink level is low.
Out of ink	<ul style="list-style-type: none"> The cartridge is empty.
Not genuine HP	<ul style="list-style-type: none"> The cartridge is not a genuine HP cartridge.
Wrong slot	<ul style="list-style-type: none"> The cartridge has been inserted into the wrong slot.
Incompatible	<ul style="list-style-type: none"> The cartridge is incompatible with this printer.

Cannot Insert Printhead	
Problem	Suggested Action
Printhead cannot be inserted into the printer.	<ol style="list-style-type: none"> 1. Check that you have the correct type of printhead (model number). 2. Check that you have removed the orange protective cap from the printhead. 3. Check that the printhead is correctly oriented. 4. Check that you have correctly latched the printhead, see <i>"Replacing the Printhead"</i> on page 5-9.

Troubleshooting Data Communication Issues

Communication Failures between Computer and Printer	
Symptom	Suggested Action
<ul style="list-style-type: none"> Front-panel display does not show the Printing message when an image is sent to the printer. Computer displays an error message when trying to print. Computer or printer hangs (stays idle), while communication is taking place. Printed output shows random or inexplicable errors (misplaced lines, partial graphics etc.). 	<ul style="list-style-type: none"> Check that the correct printer is selected in your application, see <i>"Printing" on page 4-1</i>. Check that the printer prints from other applications. Remember large prints take time to receive, process and print. Check the printer network connectivity status: the printer's IP address should match the IP address specified in the printing computer. If addresses do not match, configure correctly; if the issue persists, check your network configuration or try connecting to the printer by USB cable. Try another interface cable. If the printer is connected by USB cable, disconnect and reconnect the USB cable. Also try a different USB port on the PC. If the printer is connected to a wireless network, request a diagnostic report: press , then Settings > Print Wireless Network Test. Also try moving the printer closer to the wireless router, or connecting the printer by wired network or USB cable. <p>When a network device automatically configures itself by receiving an IP address from the DHCP service, the IP address may change if the device is powered off and then on again. To avoid having the device shown as "offline:"</p> <ul style="list-style-type: none"> Increase the lease time of your DHCP server device. Set a fixed IP address for your printer that will not be changed by DHCP. Configure the printer and driver to refer to the hostname instead of the numeric IP address. <p>To set a fixed IP address for the printer:</p> <ol style="list-style-type: none"> From the front panel, press  or . At the bottom of the screen, press Settings > Advanced setup > IP settings > OK > Manual. Enter the IP address, subnet mask, and gateway (settings should be provided by your network administrator). <p>To use the hostname instead of the numeric IP address:</p> <ol style="list-style-type: none"> From the front panel, press  or . Write the IP address and the hostname (HPXXXXXX format). From PC, go to Control Panel > Printers, right-click the printer and select Properties > Ports > Configure Port, and in the <i>Printer name</i> or <i>IP address field</i> enter the hostname.

Wired Network Issues	
Problem	Suggested Action
Unable to install the software provided with the printer.	<p>Check that:</p> <ul style="list-style-type: none"> • All cable connections to the computer and the printer are secure. • The network is operational and the network hub is turned on. • All applications, including virus protection programs, spyware protection programs, and firewalls are closed or disabled for computers running Windows. • The printer is installed on the same subnet as the computers that use the printer. <p>If the installation program cannot discover the printer:</p> <ul style="list-style-type: none"> • Print the network configuration page. • Enter the IP address manually in the installation program. For more information, see <i>“Configure Network Settings” on page 2-14.</i> <p>Note: Though it is not recommended that you assign a static IP address to the printer, you might resolve some installation problems (such as a conflict with a personal firewall) by doing so. See <i>“Troubleshooting Data Communication Issues” on page 6-31.</i></p>
Network port does not match the IP address of the printer.	<p>Make sure that the network ports created in the printer driver match the printer's IP address.</p> <ol style="list-style-type: none"> 1. Print the printer's network configuration page. 2. Click Start > Settings > Printers or Printers and Faxes. - or - Click Start > Control Panel, then double-click Printers. 3. Right-click the printer icon, click Properties, then click the Ports tab. 4. Select the TCP/IP port for the printer, and then click Configure Port. 5. Verify the IP address listed in the dialog box with the IP address listed on the network configuration page. If the IP addresses are different, change the IP address in the dialog box to match the address on the network configuration page. 6. Click OK twice to save the settings and close the dialog boxes.

Wireless Network Issues	
Problem	Suggested Action
Cannot connect wirelessly.	<ol style="list-style-type: none"> 1. Make sure the wireless (802.11) light at the top left of the front panel is turned on . If the blue light is not lit, the wireless capabilities may not have been turned on. To turn on wireless, press , then Settings > Wireless > On. 2. Disconnect the Ethernet cable, if connected to the printer. Connecting an Ethernet cable turns off the printer's wireless capabilities. 3. Restart components of the wireless network. Turn off the router and the printer, then turn them back on in this order: 1) Router, then 2) Printer. If you still are unable to connect, turn off the router, printer, and your computer. Sometimes, turning off the power and then turning it back on can solve a network communication issue. 4. Run the Wireless Network Test. To print a Wireless Network Test page, press , then Settings > Print Wireless Network Test. If a problem is detected, the printed test report includes recommendations that could help to solve the problem.

Wireless Network Issues	
Problem	Suggested Action
Advanced Wireless Network Troubleshooting: Problems persist even after trying suggested actions.	<p>If you have tried the previous suggestions and are still cannot connect to your printer to the wireless network, try the following:</p> <ol style="list-style-type: none"> 1. Make sure your computer's wireless networking has been turned on. For more information, see the documentation that came with your computer. 2. If you are not using a unique network name (SSID), then it is possible that your computer could be connected to a nearby network that is not yours. Try the following to determine whether your computer is connected to your network. <ul style="list-style-type: none"> - Click Start > Control Panel, point to Network Connections, then click View Network Status and Tasks. - or - Click Start > Settings > Control Panel, double-click Network Connections, click the View menu, then select Details. - Leave the network dialog box open while you continue to the next step. - Disconnect power cord from the wireless router. The connection status of your computer should change to <i>Not Connected</i>. - Reconnect power cord to the wireless router. The connection status should change to Connected. <p>Note: For more detailed information about your AirPort connection, click System Preferences in the Dock, then click Network. If the wireless connection is working correctly, a green dot appears next to AirPort in the list of connections. For more information, click the Help button in the window.</p> <ul style="list-style-type: none"> • If you are still unable to get your computer connected to your network, contact your network administrator as there may be a hardware issue with your router or computer.

Wireless Network Issues

Problem	Suggested Action
	<ol style="list-style-type: none"> 3. If you have established that the computer and the printer both have active connections to a network, you can check whether they are on the same network by trying to access the printer's Embedded Web Server (see <i>"Access the Embedded Web Server"</i> on page 2-11). <ul style="list-style-type: none"> - If you cannot access the Embedded Web Server and are sure that both the computer and printer have active connections to the same network, the firewall security software could be blocking communication. Temporarily turn off any firewall security software running on your computer, and try to access the Embedded Web Server again. If you can access it, try using the printer for printing. - If you are able to access the Embedded Web Server and use your printer with the firewall turned off, you need to reconfigure your firewall settings to allow the computer and printer to communicate with each other over the network. - If you are able to access the Embedded Web Server, but are still unable to use the printer even with the firewall turned off, try enabling the firewall software to recognize the printer. 4. If you have the HP software installed, you can check the printer's status from your computer to check whether the printer is paused or offline, preventing you from using it. <ol style="list-style-type: none"> a. Click Start > Settings > Printers or Printers and Faxes. <ul style="list-style-type: none"> - or - Click Start > Control Panel, then double-click Printers. b. If the printers on your computer are not displayed in <i>Details</i> view, click the View menu, then click Details. c. Depending on the printer status, do one of the following: <ul style="list-style-type: none"> * If the printer is Offline, right-click the printer, and click Use Printer Online. * If printer is Paused, right-click the printer, and click Resume Printing. d. Try using the printer over the network.

Troubleshooting Data Communication Issues

Add Hardware Addresses to Wireless Access Point (WAP)

Add Hardware Addresses to Wireless Access Point (WAP)

Add WAP Address	
Problem	Suggested Action
Need to add a hardware address(es) to a wireless access point (WAP).	<p>MAC filtering is a security feature in which a WAP is configured with a list of MAC addresses (also called "hardware addresses") of devices that are allowed to gain access to the network through the WAP. If the WAP does not have the hardware address of a device attempting to access the network, the WAP denies the device access to the network. If the WAP filters MAC addresses, then the printer's MAC address must be added to the WAP's list of accepted MAC addresses.</p> <ol style="list-style-type: none"> 1. Print the network configuration page. For more information, see <i>"Network Configuration Page"</i> on page 6-37. 2. Open the WAP's configuration utility, and add the printer's hardware address to the list of accepted MAC addresses.

Network Configuration Page

If the printer is connected to a network, you can print a network configuration page to view the network settings for the printer. You can use the network configuration page to help troubleshoot network connectivity problems. If you need to call HP, it is often useful to print this page before calling.

To print the network configuration page from the front panel:

1. press , then **Internal Prints > User Information Prints > Network Configuration Page**.

HP Network Configuration Page		
General Information		
1	Network Status	Offline
	Active Connection Type	None
	URL(s) for Embedded Web Server	http://10.0.0.0
	Firmware Revision	ENL 11A20080A
	Headname	HP887157
	Serial Number	MT08041040505
	Admin Password	Not Set
802.3 Wired		
2	Hardware Address (MAC)	02:00:0C:00:00:00
	Link Configuration	None
802.11 Wireless		
3	Hardware Address (MAC)	02:00:0C:00:00:00
	Status	Disconnected
	Communication Mode	Ad-hoc
	Network Name (SSID)	HP-embedded 887157
Port 1918		
	Status	Enabled
uCONX		
4	Status	Enabled
	Service Name	CMUgen 1504 (8114) (8011116)
SLP		
5	Status	Enabled
Microsoft Web Services		
	WS Discovery	Enabled
	WS Proxy	Enabled
	Status	Enabled

Network Configuration Page

Add Hardware Addresses to Wireless Access Point (WAP)

Network Configuration Page Details	
Section	Description
1. General Information	Information about the current status and active connection type of the network, and other information, such as the URL of the Embedded Web Server.
2. 802.3 Wired	Information about the active wired network connection, such as the IP address, subnet mask, default gateway, and hardware address of the printer.
3. 802.11 Wireless	Information about your wireless network connection, such as the hostname, IP address, subnet mask, default gateway, and server.
4. Miscellaneous	Information about more advanced network settings:
	Port 9100: The printer supports raw IP printing through TCP Port 9100. This HP-proprietary TCP/IP port on the printer is the default port for printing. It is accessed by HP software.
	Line Printer Daemon (LPD): Refers to the protocol and programs associated with line printer spooling services that may be installed on various TCP/IP systems.
	Note: The LPD functionality can be used with any host implementation of LPD that complies with the RFC 1179 document. The process for configuring printer spoolers, however, might differ. See your system documentation for information about configuring these systems.
	Bonjour: Services (which use mDNS, or Multicast Domain Name System) are typically used on small networks for IP address and name resolution (through UDP port 5353), where a conventional DNS server is not used.
	Service Location Protocol (SLP): An Internet standard network protocol that provides a framework to allow networking applications to discover the existence, location, and configuration of networked services in enterprise networks. This protocol simplifies discovery and use of network resources such as printers, Web servers, fax machines, video cameras, file systems, backup devices (tape drives), databases, directories, mail servers, and calendars.

Network Configuration Page Details	
Section	Description
	<p>Microsoft Web Services: Enable or disable the Microsoft Web Services Dynamic Discovery (WS Discovery) protocols or Microsoft Web Services for Devices (WSD) Print services supported on the printer. Disable unused print services to prevent access through those services.</p> <hr/> <p>Note: For more information about WS Discovery and WSD Print, visit http://www.microsoft.com/.</p> <hr/> <p>SNMP (Simple Network Management Protocol): Used by network management applications for device management. The printer supports SNMPv1 protocol on IP networks.</p> <hr/> <p>WINS: If you have a Dynamic Host Configuration Protocol (DHCP) server on your network, the printer automatically obtains its IP address from that server and registers its name with any RFC 1001 and 1002-compliant dynamic name services as long as a WINS server IP address has been specified.</p>
5. Connected PC(s)	Lists the computers connected to this printer, as well as the last time these computers accessed the printer.

Troubleshooting General Printer Issues

General Printer Issues	
Problem	Suggested Action
The printer does not start.	<p>If the printer does not start (the front panel is blank), hold down the Power key for a few seconds and check whether the Power LED turns orange while the key is held down.</p> <ul style="list-style-type: none"> • If you see no orange light, no power is reaching the printer; check that the power cord is correctly plugged in. If the problem persists, contact your VariQuest dealer. • If you see the orange light, wait for the printer to make a beeping sound. <ul style="list-style-type: none"> - Three beeps or no beeps means that the front panel is broken; contact your VariQuest dealer. - One long beep means an electronic problem; contact your VariQuest dealer.
The printer does not print.	<p>If all is in order (paper loaded, all ink components installed and no file errors), there are still reasons why a file you have sent from your computer may not start printing when expected:</p> <ul style="list-style-type: none"> • You may have an electrical power problem. If there is no activity at all from the printer, and the front panel does not respond, check that the power cord is connected correctly and that there is power available at the socket. • You may be experiencing unusual electromagnetic phenomena, such as strong electromagnetic fields or severe electrical disturbances, which can cause the printer to behave strangely or even stop working. In this case, turn off the printer using the Power key on the front panel and unplug the power cord, wait until the electromagnetic environment has returned to normal, then turn it on again. If you still experience problems, please contact your VariQuest dealer. • You may not have installed in your computer the correct driver for your printer, see the Assembly instructions. • If you are printing on a sheet, you must specify Printer Autoselect or Single-Sheet or Multi-Sheet Tray as the paper source in your printer driver.

<p>The printer seems slow.</p>	<p>Check:</p> <ul style="list-style-type: none"> • That print-quality is set to Best or Max Detail. Best-quality and maximum detail prints take longer. • That the correct paper type when loading the paper is specified. Some paper types require more time for printing; for example, photo and coated papers require more drying time between passes. To find out the printer's current paper type setting, see <i>"View Paper Information" on page 3-13.</i> • If printer is connected by network, check that all components used in the network (network interface cards, hubs, routers, switches, cables) are capable of high-speed operation. Is there a lot of traffic from other devices on the network? • If your printer is connected by USB, make sure that the USB host controller and the USB hubs used (if any) are USB 2.0; and check that the USB cables are USB 2.0 certified. • If your printer is using a wireless network connection, try using a wired network or USB connection. • You specified Extended drying time in the front panel. Try changing the drying time to Optimal.
<p>The front panel is frozen.</p>	<p>If the front panel displays a fixed image and you are unable to use it, call your VariQuest dealer for support.</p>
<p>Cannot access the embedded web server.</p>	<p>If you have not done so already, read <i>"Access the Embedded Web Server" on page 2-11.</i></p> <hr/> <p>Note: If you connect directly to your printer with a USB cable, you cannot access the Embedded Web Server.</p> <hr/> <p>If you are using a proxy server, try bypassing the server and accessing the Web server directly.</p> <ul style="list-style-type: none"> • In Internet Explorer 6, go to Tools > Internet Options > Connections > LAN Settings, and check the <i>Bypass proxy server</i> for local addresses box. Alternatively, for more precise control, click the Advanced button and add the printer's IP address to the list of exceptions, for which the proxy server is not used. • If you still cannot connect, switch the printer off and back on with the Power key on the front panel.

Troubleshooting General Printer Issues

Add Hardware Addresses to Wireless Access Point (WAP)

Alerts	
Problem	Suggested Action
<p>By default, error alerts (critical alerts) are always displayed and warning alerts (non-critical alerts) as displayed only when you are printing. If alerts are enabled and there is a problem that prevents a job from completing, you see a pop-up window, which explains the reason for the problem. Follow the instructions to achieve your required result. Your printer can communicate two types of alerts.</p> <p>Note: There are environments that do not support bidirectional communication. In those cases, alerts do not reach the job owner.</p>	
Errors	Primarily alert you to the fact that the printer is unable to work normally. However, in the printer driver, even if the printer is able to print, errors can also alert you to conditions that could ruin the print, such as clipping.
Warnings	Alert you when the printer needs attention either for an adjustment, such as a calibration or for a possible unprintable situation, such as a preventive maintenance or low ink. There are four different alerts communicators within your printer's system.
	<ul style="list-style-type: none"> • Front-panel display: The front panel shows only the most relevant alert at a time. In the case of a warning, it disappears after a timeout. There are permanent alerts, such as "ink cartridge low on ink," that reappear when the printer becomes idle and there is not another more severe alert. • Embedded Web Server: The upper-right corner of the Embedded Web Server window shows the printer status. If there is an alert in the printer, the status shows the alert text. • Driver: The driver shows alerts about job configuration settings that may produce a problem in the final output. If the printer is not ready to print, it displays a warning. • HP Utility: If the HP Utility is installed, alerts can be automatically displayed: a new panel opens on your screen with a list of alerts for each printer by the Alerts Settings in the HP Designjet Utility. You can also see the list of active alerts in the Overview tab of the HP Designjet Utility for Windows.

Front Panel Error Messages

Occasionally you may see one of the following messages appear on the front-panel display. If so, please follow the advice in the Suggested Action column.

Front Panel Error Messages	
Message	Suggested Action
[Color] cartridge has expired.	Replace the cartridge. See <i>"Replace Ink Cartridge"</i> on page 5-3.
[Color] cartridge is low on ink.	Ensure that you have a new cartridge of the same color ready.
[Color] cartridge is very low on ink.	Ensure that you have a new cartridge of the same color ready.
Depleted cartridges must be replaced to resume printing	Replace the cartridges as needed. See <i>"Replace Ink Cartridge"</i> on page 5-3.
Ink system failure Contact HP Support.	Contact your VariQuest dealer.
Maintenance 1 advised Contact HP Support.	Contact your VariQuest dealer.
Maintenance 2 advised Contact HP Support.	Contact your VariQuest dealer.
Maintenance 3 advised Contact HP Support.	Contact your VariQuest dealer.
One or more cartridges appear to be missing or damaged.	Insert cartridges of the correct color as needed. See <i>"Replace Ink Cartridge"</i> on page 5-3
Paper jam.	See <i>"Paper Loading Error Messages"</i> on page 6-4.
Paper width is smaller than the minimum size supported by the selected paper source. Load canceled.	Remove the paper and load paper of the correct size.
Loaded paper is too wide. Manual unload required.	Remove the paper manually and load paper of the correct size.
Paper too far from lateral load line. Please try again.	Remove and reload the paper.
Please manually unload roll paper and try again.	Rewind the roll manually.
Single sheet is loaded with too much skew. Please eject to unload the paper.	Remove and reload the paper.
The current job has been cancelled because the roll is out of paper. Load the roll and send the job again.	Load a new roll.

Front Panel Error Messages

Add Hardware Addresses to Wireless Access Point (WAP)

You are printing a multipage job. Load another sheet to continue printing or cancel the job.	Load another single sheet.
Multi-sheet tray is out of paper. Load paper in multi-sheet tray and press OK to continue printing or cancel the job.	Load paper into the multi-sheet tray.
End of roll has been reached. It is not possible to load the roll.	Load a new roll.
Missing or failed printhead.	<p>Remove and reinsert the same printhead, or try cleaning the electrical connections. If necessary, insert a new printhead. See <i>"Replacing the Printhead"</i> on page 5-9.</p> <hr/> <p>Note: The error message does not permit returning to the home screen to start the printhead replacement. Instead, press Show more.</p> <hr/>
Refilled or depleted cartridge detected.	Check the cartridge.
Used cartridges might not have enough ink to complete startup. Open ink door to replace the cartridges.	A new printhead has been inserted without a new set of ink cartridges. Replace the cartridges not marked as new. See <i>"Replace Ink Cartridge"</i> on page 5-3.
Wrong file format.	The file format is incorrect or not supported. The printer cannot process the job, which will be discarded.
Out of memory.	The printer cannot complete the job. Resend the job, selecting Send job as bitmap in the driver: go to the <i>Advanced</i> tab, then Document options > Printer features .

Numerical Error Codes	
Error Code	Suggested Action
01.1:10	Restart the printer.
08:10, 11:10, 17:10	
21.1:10	
51.1:10, 55:10	
85.1:10, 85.2:10	
02:10	There may be a paper or carriage jam. Check and clear the paper path if necessary.
21:10	
41:10, 41.1:10, 42:10, 42.1:10, 45:10	
03.0:10	The battery of the real-time clock has expired; contact HP Support. Contact your VariQuest dealer.
79:04	Restart the printer. If the problem persists, update the firmware. See <i>"Firmware Updates"</i> on page 5-15.
87:10	There may be a paper or carriage jam. Check and clear the paper path if necessary. Also clean the carriage encoder strip; see <i>"Cleaning the Encoder Strip"</i> on page 5-12.

7 Printer Specifications

This chapter provides the specifications for the **VariQuest® Perfecta™ 2400 Poster Design System**. The following information is contained in this chapter:

- *“Functional Specifications” on page 7-2*
- *“Physical Specifications” on page 7-4*
- *“Memory Specifications” on page 7-4*
- *“Power Specifications” on page 7-4*
- *“Ecological Specifications” on page 7-4*
- *“Environmental Specifications” on page 7-5*
- *“Acoustic Specifications” on page 7-5*

Functional Specifications

Your printer is a color inkjet printer designed for printing high-quality images on paper up to 24 inches or 36 inches wide.

Ink Supplies	
Name	Description
Printhead	One printhead
Ink cartridges	Cartridges containing 29 ml of ink: yellow, magenta, and cyan
	Cartridges containing 38 ml of ink: black
	Cartridges containing 80 ml of ink: black

Paper Sizes		
Name	Minimum	Maximum
Roll width	279 mm (11 in)	610 mm (24 in) or 914 mm (36 in)
Roll length		46 m (150 feet)
Roll diameter		100 mm (3.9 in)
610 mm (24 in) roll weight		4.1 kg (9 lb)
914 mm (36 in) roll weight		6.2 kg (14 lb)
Sheet width	210 mm (8.27 in)	610 mm (24 in) or 914 mm (36 in)
Sheet length	279 mm (11 in)	1676 mm (66 in)
Paper thickness		0.3 mm (0.01 in)
Paper weight	60 g/m ²	280 g/m ² (220 g/m ² in multi-sheet tray)

Printing Resolutions			
Print Quality	Maximum Detail	Rendering Resolution (ppi)	Printing Resolution (dpi)
Best (glossy paper*)	On	1200 × 1200	2400 × 1200
	Off	600 × 600	1200 × 1200
Best (other papers)	Off	600 × 600	1200 × 1200
Normal	Off	600 × 600	1200 × 1200
Fast	Off	600 × 600	1200 × 1200
Econofast	Off	600 × 600	1200 × 1200

Margins	
Margin	Size
Top, right and left margins	5 mm (0.2 in)
Bottom margin (trailing edge)	5 mm (0.2 in) (roll) 17 mm (0.67 in) (sheet)

Mechanical Accuracy
±0.1% of the specified vector length or ±0.2 mm (whichever is greater) at 23°C (73°F), 50-60% relative humidity, on E/A0 printing material in Best or Normal mode with HP Matte Film roll feed.

Supported Graphics Languages
HP-GL/2 and HP RTL (Windows)

Physical Specifications

Printer Physical Specifications		
	Minimum	Maximum
Weight		39 kg (86.0 lb)
Width		1287 mm (50.67 in)
Depth	527 mm (20.7 in)	896 mm (35.3 in)
Height	936 mm (36.9 in) with stand	1155 mm (45.47 in) with stand and multi-sheet tray extended

Memory Specifications

Printer Memory Specifications
1 GB Memory

Power Specifications

Printer Power Specifications	
Specification	Rating
Source	100–240 V ac $\pm 10\%$, auto-ranging
Frequency	50/60 Hz
Maximum current	1200 mA
Average consumption	35 W

Ecological Specifications

Printer Ecological Specifications
This product complies with the WEEE Directive 2002/96/EC and RoHS Directive 2002/95/EC. To determine the ENERGY STAR qualification status of these product models, please go to http://www.hp.com/go/energystar .

Environmental Specifications

Printer Environmental Specifications	
Specification	Rating
Operating temperature	5 to 40°C (41 to 104°F)
Recommended operating temperature	15 to 35°C (59 to 95°F), depending on paper type
Storage temperature	–25 to 55°C (–13 to 131°F)
Recommended operating humidity	20 to 80% RH, depending on paper type
Storage humidity	0 to 95% RH

Acoustic Specifications

Printer Acoustic Specifications	
Specification	Rating
Idle sound power level	< 3.4 B (A)
Operating sound power level	6.5 B (A)
Idle sound pressure at bystander position	<16 dB (A)
Operating sound pressure at bystander position	48 dB (A)
Note: Printer acoustic specifications (declared according to ISO 9296).	

7 Glossary

This chapter provides a description of some of the terms used in the **VariQuest® Perfecta™ 2400 Poster Design System** user guide.

Glossary

Bonjour: Apple Computer's trade name for its implementation of the IETF Zeroconf specification framework, a computer network technology used in Apple's Mac OS X from version 10.2 onwards. It is used to discover services available on a local area network. It was originally known as Rendezvous.

Color accuracy: The ability to print colors that match the original image as closely as possible, bearing in mind that all devices have a limited color gamut and may not be physically capable of matching certain colors precisely.

Color consistency: The ability to print the same colors from a particular print job from print to print and from printer to printer.

Color model: A system of representing colors by numbers, such as RGB or CMYK.

Color space: A color model in which each color is represented by a specific set of numbers. Many different color spaces can use the same color model: for instance, monitors generally use the RGB color model, but they have different color spaces, because a particular set of RGB numbers results in different colors on different monitors.

Cutter: A printer component that slides back and forth across the platen to cut the paper.

ESD: ElectroStatic Discharge. Static electricity is common in daily life. It is the spark when touching the car door, or the cling of clothing. Although controlled static electricity has some useful applications, uncontrolled electrostatic discharges are one of the main hazards to electronic products. Therefore, to prevent damage some precautions are needed when setting up the printer, or handling ESD sensitive devices. This type of damage may reduce the life expectancy of the device. One way to minimize uncontrolled ESDs, and therefore reduce this type of damage is by touching any exposed grounded part of the printer (mainly metal parts) before handling ESD sensitive devices (such as the printhead or ink cartridges). Additionally, to reduce the generation of electrostatic charge in your body try to avoid working in a carpeted area, and keep your body movements to a minimum when handling ESD sensitive devices. Also, avoid working in low humidity environments.

Ethernet: A popular computer networking technology for local area networks.

Fast Ethernet: An Ethernet network capable of transferring data at up to 100,000,000 bits/second. Fast Ethernet interfaces are capable of negotiating slower speeds when required for compatibility with older Ethernet devices.

Firmware: Software that controls your printer's functionality and is stored semi-permanently in the printer (it can be updated).

Gamut: The range of colors and density values reproducible on an output device, such as a printer or monitor.

Hi-Speed USB: A version of USB, sometimes called USB 2.0, that can run 40 times faster than original USB, but is otherwise compatible with original USB. Most personal computers today use Hi-Speed USB.

HP RTL: Hewlett-Packard Raster Transfer Language: a language defined by HP to describe raster (bitmap) graphics.

HP-GL/2: Hewlett-Packard Graphics Language 2: a language defined by HP to describe vector graphics.

I/O: Input/Output: this term describes the passing of data between one device and another.

ICC: The International Color Consortium, a group of companies that have agreed on a common standard for color profiles.

Ink cartridge: A removable printer component that stores ink of a particular color and provides it to the printhead.

IP address: May mean an IPv4 address (most likely) or an IPv6 address.

IPSec: A sophisticated mechanism for providing network security by authenticating and encrypting IP packets sent between nodes on a network. Each network node (computer or device) has an IPSec configuration. Applications are usually unaware whether IPSec is being used or not.

IPv4 address: A unique identifier that identifies a particular node on an IPv4 network. An IPv4 address consists of four integers separated by full stops. Most networks in the world use IPv4 addresses.

IPv6 address: A unique identifier that identifies a particular node on an IPv6 network. An IPv6 address consists of up to 8 groups of hexadecimal digits separated by colons. Each groups contains up to 4 hexadecimal digits. Only a few new networks in the world use IPv6 addresses.

LED: Light-Emitting Diode: a semiconductor device that emits light when electrically stimulated.

MAC address: Media Access Control address: a unique identifier used to identify a particular device on a network. It is a lower-level identifier than the IP address. Thus, a device may have both a MAC address and an IP address.

Network: A network is a set of connections that pass data between computers and devices. Every device is able to communicate with every other device in the same network. This allows data to be moved between computers and devices, and allows devices such as printers to be shared between many computers.

Nozzle: One of many tiny holes in a printhead through which ink is deposited onto the paper.

Paper: A thin, flat material made to be written or printed on; most commonly made from fibers of some kind which are pulped, dried and pressed.

Platen: The flat surface within the printer over which the paper passes while it is being printed on.

Printer driver: Software that converts a print job in a generalized format into data suitable for a particular printer.

Printhead: A removable printer component that takes ink of one or more colors from the corresponding ink cartridge(s) and deposits it on the paper, through a cluster of nozzles.

Spindle: A rod that supports a roll of paper while it is being used for printing.

TCP/IP: Transmission Control Protocol/Internet Protocol: the communications protocols on which the Internet is based.

USB: Universal Serial Bus: a standard serial bus designed to connect devices to computers. Your printer supports Hi-Speed USB (sometimes called USB 2.0).

USB device port: A square USB socket found on USB devices, through which a computer can control the device. For a computer to print to your printer using a USB connection, the computer must be connected to the printer's USB device port.

USB host port: A rectangular USB socket such as those found on computers. A printer can control USB devices that are connected to such a port. Your printer has two USB host ports, which it uses to control accessories and USB flash drives.

WiFi: This term is used for any wireless local area network products that are based on the Institute of Electrical and Electronics Engineers' (IEEE) 802.11 standards.

