

VariQuest[®]

Perfecta[®] 2400STP



VariQuest[®] Perfecta[®] 2400STP Scan-to-Print Poster Design System

User's Guide

Varitronics

www.variquest.com

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

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R2900332 Rev A

Standard Warranty

Varitronics, LLC warrants the equipment and accessories comprising the **VariQuest® Perfecta® 2400STP 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.

Varitronics will at its option repair, replace or refund the purchase price of any accessories, supplies or equipment found to be defective under this warranty. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

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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

Observe all warnings and instructions marked on the product. Follow these precautions to ensure proper use and handling of the printer:

- 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 Cleaning Kits) to touch internal printer parts. Doing so may cause fire, electric shock, or other serious hazards.
- Do not handle the power cord with wet hands. Doing so may cause electric shock hazard.
- Do not set heavy objects on the power cord; do not bend the cables or force them into contorted positions.
- Insert the power cord securely and completely into the wall socket and equipment inlet. A poor connection can cause a fire or an electric shock hazard.
- 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, or 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 or during a power failure.
 - The power cord or plug is damaged, the equipment has been dropped or the equipment is not operating normally.



CAUTION!

Two people are required whenever handling the printer. Take care to avoid back strain and/or injury. Use of personal protective equipment is recommended.

Other

Varitronics and Hewlett-Packard (HP) worked together to create the **VariQuest[®] Perfecta[®] 2400STP 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[®] 2400STP Poster Design System**.

Other

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1 Introduction

This chapter provides an overview of the **VariQuest® Perfecta® 2400STP Poster Design System**. 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
- “Mobile Printing and 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 wide. It also has an integrated color scanner capable of scanning images up to 24 inches wide.

Some major features of the printer are:

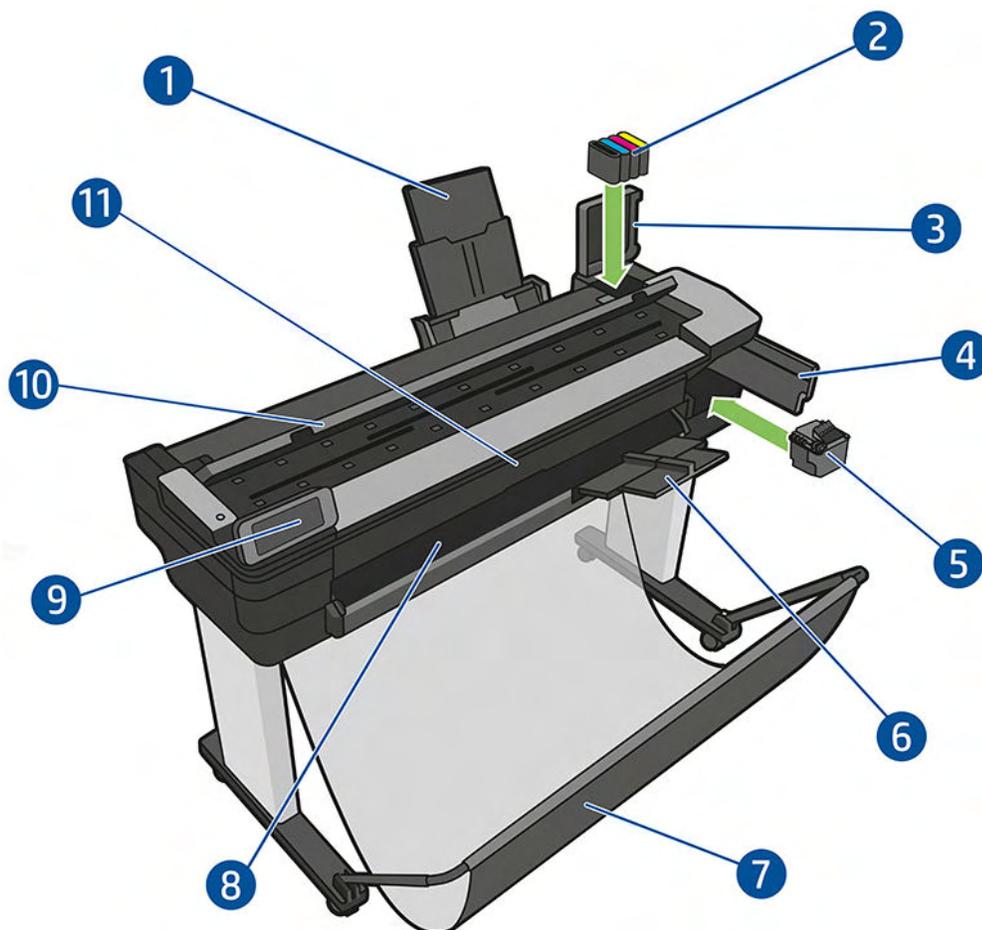
- Print resolution of up to 2400 × 1200 dpi, using the Best print-quality option, the Maximum Detail option and photo paper.
- Scan resolution of up to 600 dpi, in RGB color with 24 bits per pixel, or grayscale with 8 bits per pixel, or black and white with 1 bit per pixel.
- The printer can be controlled 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.
- Mobile Printing and scanning includes Web-connected features such as automatic firmware upgrades and HP ePrint.
- Hi-Speed USB host port for connecting a USB flash drive.
- Handles roll and cut-sheet paper, with a multi-sheet tray.
- Color emulations, see “*Printer Emulation*” on page 4-12.
- Economode for printing economically.
- Ink and paper usage information available from the Embedded Web Server, see “*Access the Embedded Web Server*” on page 2-18.
- Supplies information, troubleshooting, and firmware updates available from the HP Utility, see “*Access the Printer Utility*” on page 2-20
- Access to the online HP Support Center.

Main Components

Front View



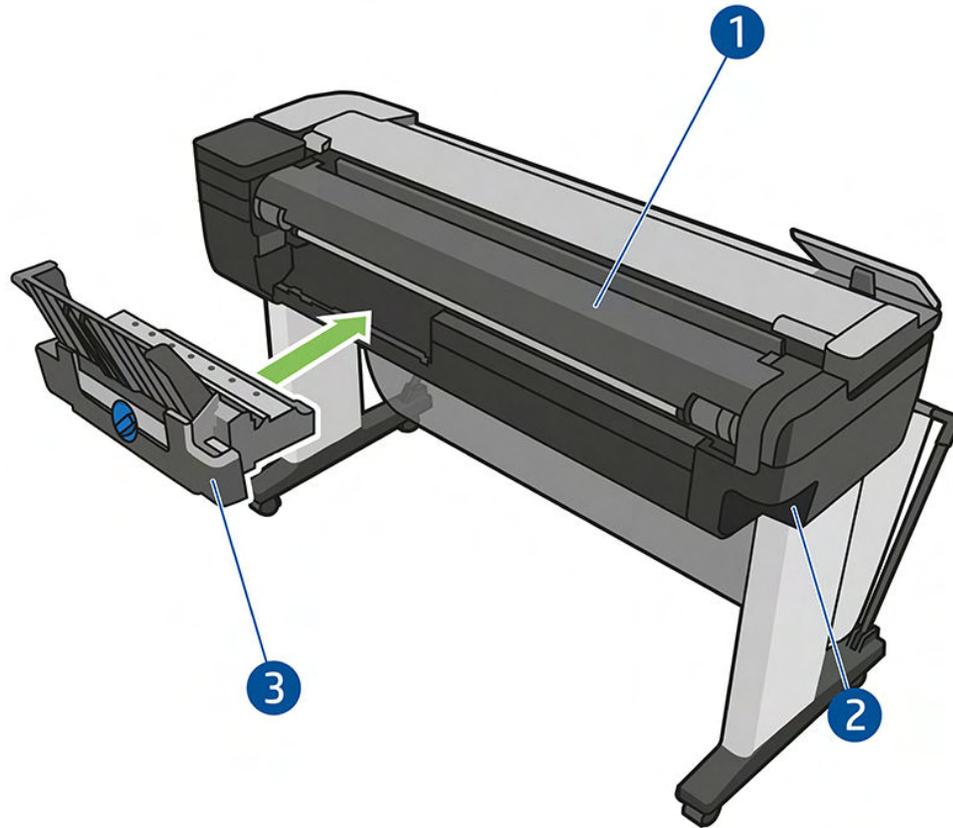
1	Multi-sheet tray extenders	7	Bin
2	Ink Cartridges	8	Output Platen
3	Ink Cartridge Cover	9	Front Panel
4	Printhead Door	10	Scanner Cover
5	Printhead	11	Front Window
6	Output Tray Extender		

Note: Image is intended to show component placement only and may not be an exact representation of your printer.

Main Components

Rear View

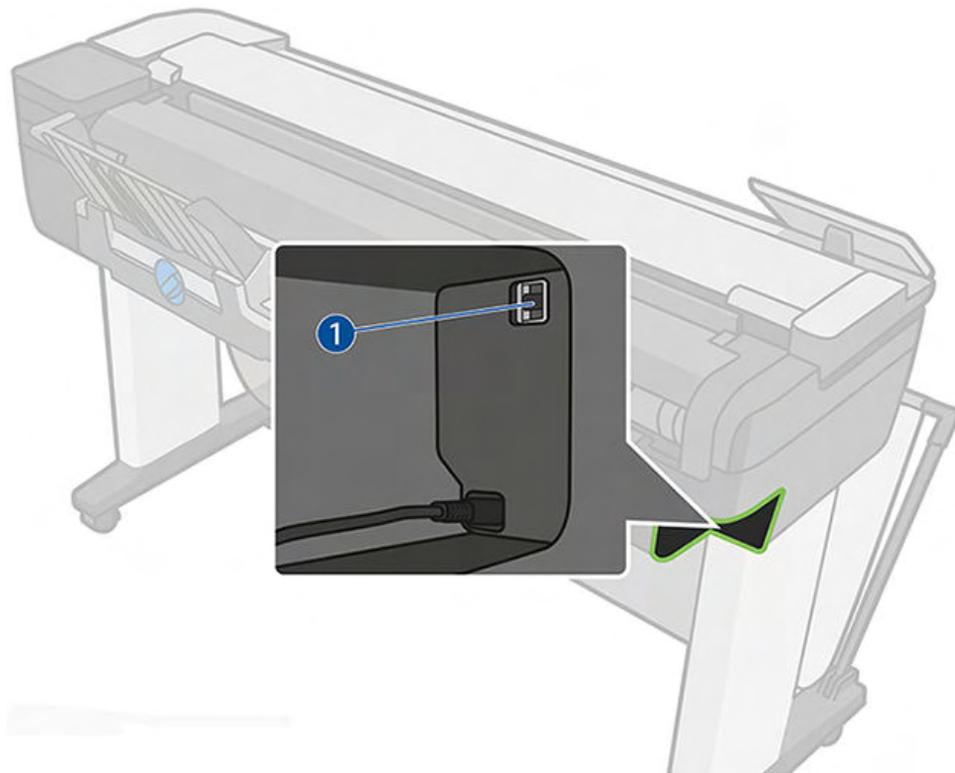
Rear View



1	Roll Cover	3	Multi-sheet Tray
2	Communication Ports		

Note: Image is intended to show component placement only and may not be an exact representation of your printer.

Communication Port



1	Ethernet Port
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Note: Image is intended to show component placement only and may not be an exact representation of your printer.

Main Components

Front Panel

Front Panel

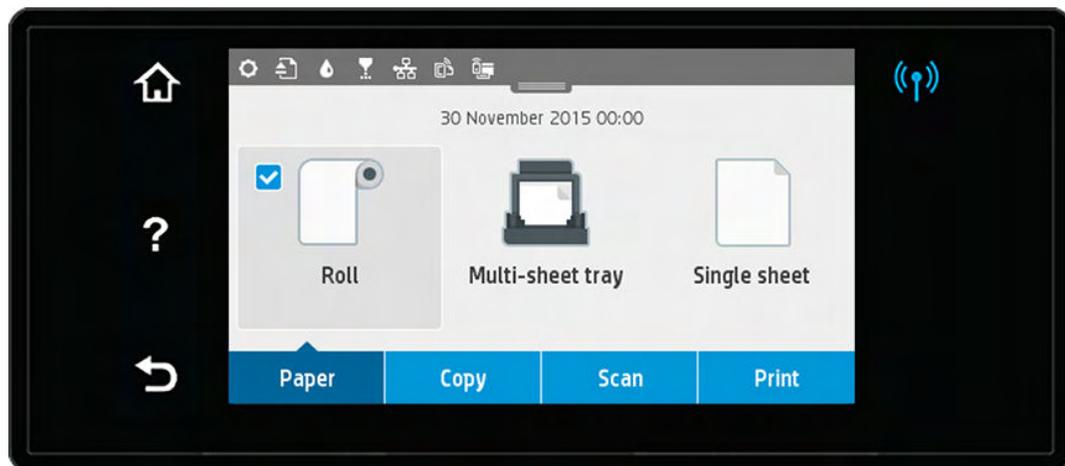
The front panel, located on the front left of the printer, is a touch-sensitive screen with a graphical user interface. It gives you complete control of your printer: from the front panel, you can print, scan, view information about the printer, change printer settings, perform calibrations and tests, 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. At the top of the central area there is a dashboard that displays the Home screen icons. To interact with these icons swipe down the dashboard status to access the Dashboard.

On the left and right sides of the screen you can see up to four fixed icons at different times. Normally they are not all displayed at the same time.

Close to 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.		Help: Press to view help about the current screen.
	Home: Press to return to the home screen.		Back: Press to go back to the previous screen.

Home Screen Dynamic Icons

The following icons are displayed only on the **Home** screen.

Paper Tab Icons			
	Roll Paper: Touch to load, unload, and change options for roll paper		Single Sheet Paper: Press to load, unload, and change options for single sheets.
	Multi-Sheet Tray: Press to change options for the multi-sheet tray, or to activate it.		
<p>Note: Active paper source is indicated by a larger icon, with a white tick in a blue circle .</p>			
Dashboard Icons			
	Tools: Touch to change printer settings.		Scan: Touch to eject scanned original.
	Ink: Touch to view ink formation.		Printhead: Touch to view printhead information.
	Mobile Printing: Touch to view information and configure ePrint to print from a computer or mobile device sending an email to the printer.		WiFi Direct: Touch to view information about wi-fi direct.
	<p>Connectivity: Touch to view connectivity status information and to perform network configuration. If a network cable is connected,  is displayed instead.</p> <p>Note: You cannot use wireless and wired network connections simultaneously.</p>		

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. Swipe down the dashboard and touch .
2. Touch **Printer Setup > Sleep Mode**.
3. Set a time between **5** and **180** minutes.

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
- The Embedded Web Server (see “*Access the Embedded Web Server*” on page 2-18). 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 2-20.). 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 “*Software and Firmware Updates*” on page 5-14.
 - 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.

Mobile Printing and Web Services

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

- Automatic firmware updates (see “*Firmware Updates*” on page 5-14).
- 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.

Mobile Printing

Mobile printing lets you print straight from your smartphone or tablet in just a few simple steps wherever you are; using your mobile device OS or sending an email to your printer with PDF, TIFF and JPEG attachments.

- iOS-Apple printing is enabled through Airprint.
- For Android printing, install the *HP Print Service App* from Google Play (if not already installed on your mobile device). Go to: <https://play.google.com/store/apps/details?id=com.hp.android.printservice&hl=en>
- You can also download *HP All-in-One Remote* for enhancing printing capabilities and enabling Scanning and Sharing from the smartphone or tablet. Go to: <mailto:https://itunes.apple.com/us/app/hp-all-in-one-printer-remote/id469284907%3Fmt=8>
- To print by email go to **HP ePrint**, enable the service and retrieve the printer’s email address.

Enable eMail Printing

1. Make sure that your printer is correctly connected to the Internet.
2. Enable Web Services during initial setup of the printer, or later by



touching  on the home screen and following the instructions on the front panel. The printer may need to restart if it has updated its firmware.

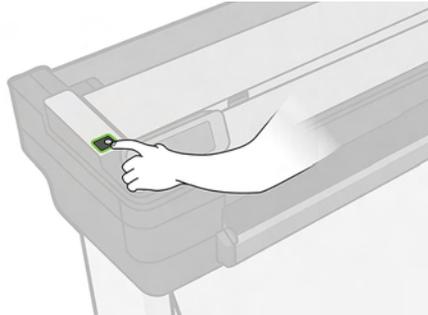
3. **Optional:** Activate your account by clicking the activation link that you will receive by email.

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

4. **Optional:** If you are the printer administrator, log in at HP Connected (<http://www.hpconnected.com>) to customize your printer’s email address or manage printer security for remote printing.

Turn Printer On and Off

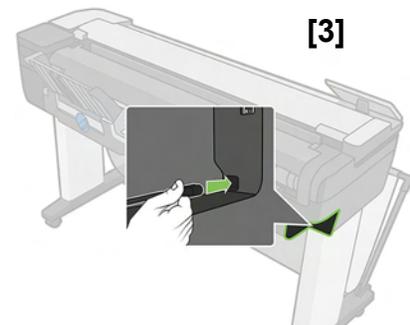
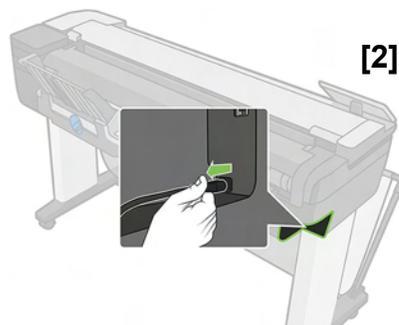
1. To turn the printer on or off, press the **Power** key on the front panel.



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 2-20.



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. Swipe down the dashboard and touch .
2. Scroll down and touch **Reports**.
3. Select the report you want from the following list:
 - **Demo Prints** (show some of the printer capabilities)
 - Drawing Demo
 - Rendering Demo
 - GIS Map
 - **User Info Prints**
 - Printer-Status Report
 - Print-quality Report
 - Network Configuration Page

Internal Prints

Enable eMail Printing

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2 Printer Setup

This chapter provides an setup and personalization of the **VariQuest® Perfecta® 2400STP Poster Design System**. 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*
- *“Connecting Design Center 2300 Software to Perfecta 2400STP Printer” on page 2-5*
- *“Mobile Printing from an iOS Device” on page 2-12*
- *“Setting Up the Printer” on page 2-15*
- *“Personalizing the Printer” on page 2-18*
- *“Manage Perfecta 2400STP Printer Security” on page 2-26*

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)
Gigabyte Ethernet	Fast; varies according to network traffic	Long: 328 ft	Requires extra equipment (switches)

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.

Wireless connection can be affected by the location of the network router and the device. In order to improve the wireless connection:

1. Position the wireless access point in a more central position of the working place as shown in figures 1 and 2. Try place away from dense materials.

Note: Metal, concrete, double thick walls are the hardest to penetrate, wood and plasterboard are easier. Consider these when positioning the printer.

2. Change the wireless channel to one that's not being used, preferably 1, 6 or 11 as these are non-overlapping channels.
3. Extend the range of the wireless network by using a simple wireless extender or adding more wireless access points as shown in figures 3 and 4.



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, swipe down the dashboard and touch .
3. Scroll down and touch **Network Setup > Wireless settings**.

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 6-74*).
- Configure the printer and driver to refer to the hostname instead of the numeric IP address (see *"Troubleshooting Data Communication Issues" on page 6-64*).
- 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 computer are connected to the network (see “*Connecting Printer to Network*” on page 2-3). The printer can be connected by Ethernet or WiFi.
- The printer and computer are connected to the internet.

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 2-17).
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. From the installation window, press **Software** and then **Install**.

Note: Your Web browser opens to display the rest of the software installation procedure.

4. Select Windows or Mac OS X software, and choose which specific software you want to install (default is all).
5. 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 networked printers, the **Printer Not Found** window displays with help to find 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.

Uninstall Printer Software

1. Use the Control Panel to uninstall the software, the same as you uninstall any other software.

Connecting Design Center 2300 Software to Perfecta 2400STP Printer

Before printing from the Design Center to the Perfecta 2400STP, you must first set up the Design Center software and the Perfecta 2400STP printer.

Configure DC2300 & Perfecta 2400STP via Wi-Fi Direct

1. Start the DC2300. The Design Center Software launches automatically.
2. In the *Welcome* screen, touch **OK**, then on the *Main Menu*, touch **Exit** and **Close Variquest Software** without following any of the setup options.
3. On the *DC2300* desktop, double-click **Perfecta 2400STP Install** icon and follow the setup instructions to install the printer driver.
4. When prompted to connect via *Wi-Fi Direct*, select **Yes**.
5. On the Perfecta 2400STP:
 - **Verify Wi-Fi Direct connection:**
 - a. Touch  at top left.
 - b. On the *Info* menu, verify the printer is connected by scrolling up to find **Direct-xx HP DesignJet**. If Wi-Fi Direct is connected, the Wi-Fi Direct network name and password will display.
 - c. If the Wi-Fi Direct network name and password is not displayed, continue to *Turn on Wi-Fi Direct*. Otherwise, go to **Step 6**.
 - **Turn on Wi-Fi Direct:**
 - a. Touch , then  again.
 - b. In the *Setup* menu, select **Wi-Fi Direct**.
 - c. In the *Wi-Fi Direct Settings* menu, toggle *Wi-Fi- Direct* to **ON**.
 - d. In *Connection Method*, choose **Manual**, then touch  to exit.
6. Connect the DC 2300 to the Perfecta 2400STP **Wi-Fi Direct Connection** (i.e., DIRECT-xx HP DesignJet) using the *Windows Wireless Network* utility.



7. Run the **VQ DC2300 Software** to complete the setup process. You can now print from the *Design Center* software to the *Perfecta 2400STP* printer.

Connecting Design Center 2300 Software to Perfecta 2400STP Printer

Configuring DC2300 & Perfecta 2400STP via a Network

Configuring DC2300 & Perfecta 2400STP via a Network

Both the DC2300 and Perfecta 2400STP must be connected to the network before starting this process.

1. Swipe down the dashboard, touch , then scroll down and touch **Network setup > Wireless** settings.
2. Then select **Wireless Setup Wizard**. The printer will search for wireless routers.

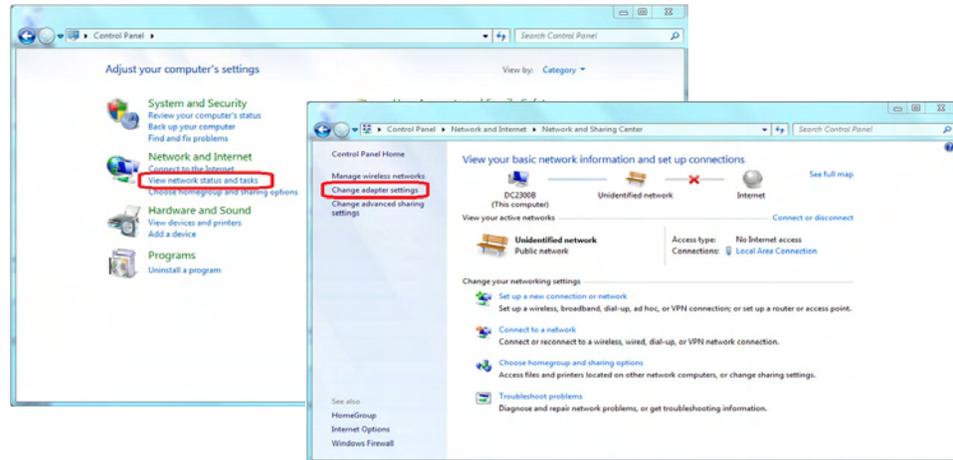


3. Choose a *Network Name*, then enter the **Password**. Touch **Apply** when done.
4. In the *Connection Successful* menu, touch **Apply**.
5. Start the **DC2300**. The Design Center Software launches automatically.
6. In the *Welcome* screen, touch **OK**, then on the *Main Menu*, touch **Exit** and **Close Variquest Software** without following any of the setup options.
7. On the DC2300 desktop, double-click **Perfecta 2400STP Install** icon and follow the setup instructions to install the printer driver.
8. If printer IP address cannot be located, enter the IP address manually (press  at top of Perfecta 2400STP panel. IP address is 2nd from top).
9. Run the **VQ DC2300 Software** to complete the setup process. You can now print from the Design Center software to the Perfecta 2400STP printer.

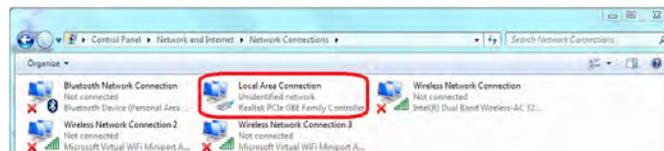
Connect DC2300 & Perfecta 2400STP without a Network

Configuring Design Center 2300

1. Press the *Windows* button and select **Control Panel**.
2. On the *Control Panel* select **View Network status and tasks**.
3. On the left side, select **Change Adapter Settings**.



4. Right click *Local Area Connection* and choose **Properties**.



5. Select **Internet Protocol Version 4 (TCP/IPv4)**, then click **Properties**.



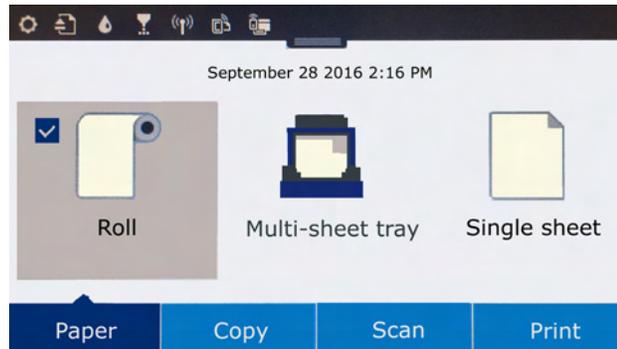
6. Select **Use the following IP Address** and enter the following:
 - **IP Address:** 192.168.1.2
 - **Subnet mask:** 255.255.255.0
7. Press **OK**.

Connecting Design Center 2300 Software to Perfecta 2400STP Printer

Connect DC2300 & Perfecta 2400STP without a Network

Configuring Perfecta 2400STP Printer

1. Touch  **Settings** at the upper left corner of the screen.



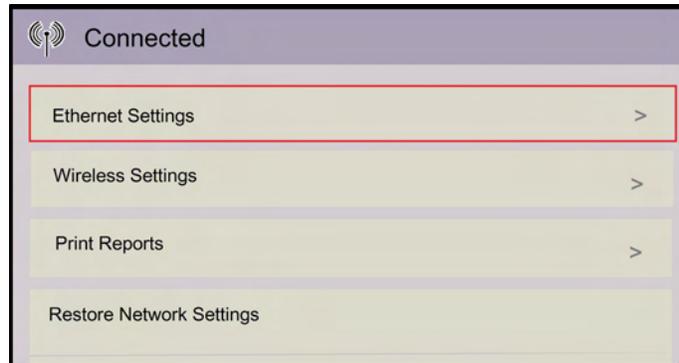
2. On the *Info* screen, touch  **Settings** again.



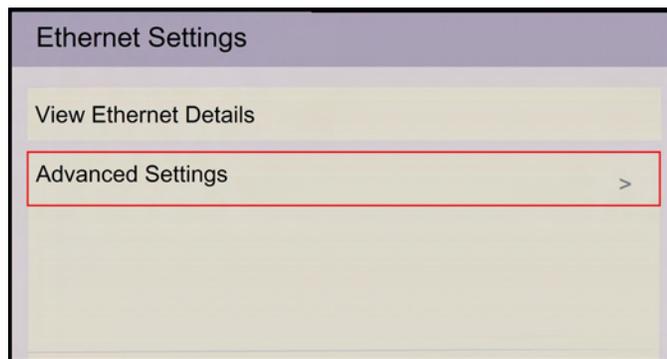
3. In the *Setup* menu, select **Network Setup**.



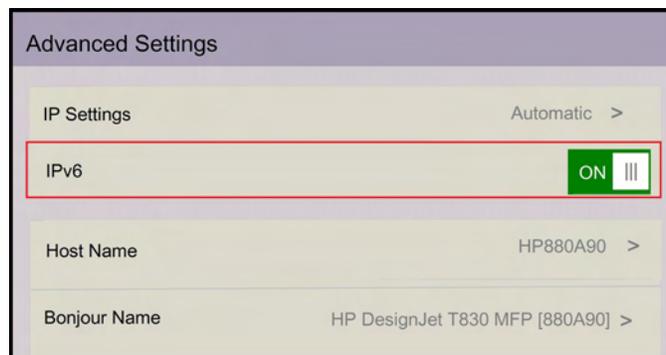
- In the *Connected* menu, select **Ethernet Settings**.



- In the *Ethernet Settings* menu, select **Advanced Settings**.



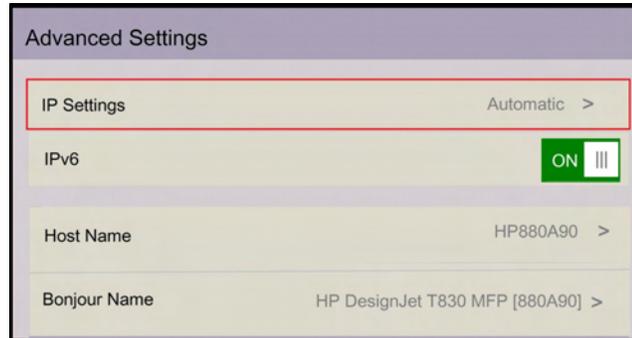
- In the *Advanced Settings* menu, set **IPv6** to **OFF**.



Connecting Design Center 2300 Software to Perfecta 2400STP Printer

Connect DC2300 & Perfecta 2400STP without a Network

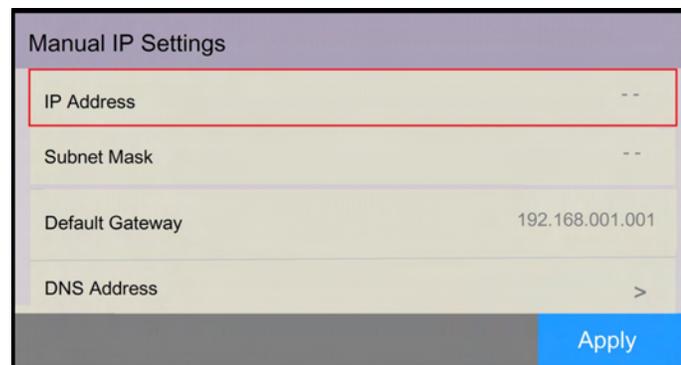
- In the *Advanced Settings* menu, select **IP Settings**.



- In the *IP Settings* menu, select **Manual**.

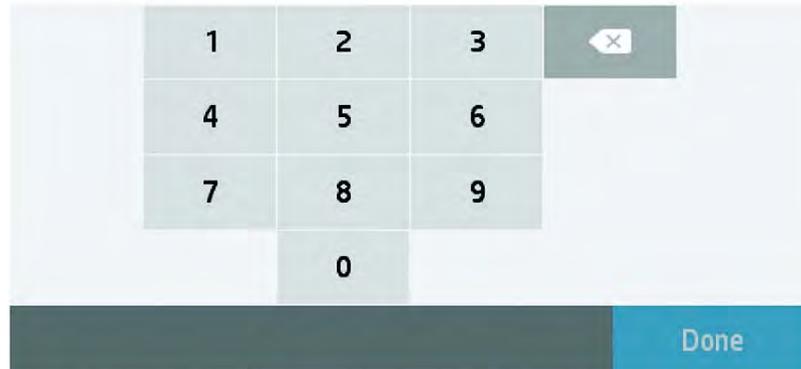


- Select **OK** on any information screens that display.
- In the *Manual IP Settings* menu, select **IP Address**.

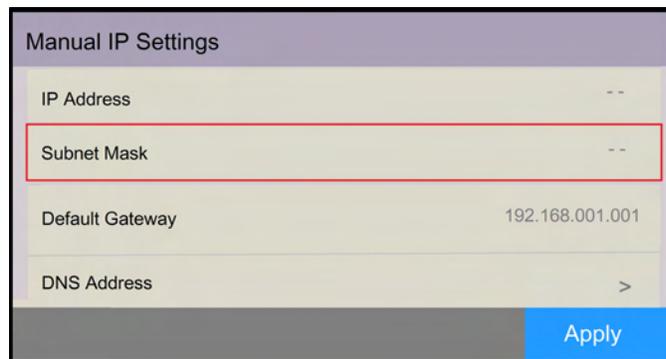


11. On the keyboard, enter **192.168.001.005**, then touch **Done**.

192.168.001.005



12. In the *Manual IP Settings* menu, select **Subnet Mask**.



13. On the keyboard, enter **255.255.255.0**, then touch **Done** and **Apply**.

Connect Perfecta 2400STP to DC2300 via Ethernet Cable

1. Connect one end of an Ethernet LAN cable to the *Perfecta 2400STP*.
2. Connect other end of Ethernet LAN cable to the *DC2300*.
3. Send print job from DC2300 software to Perfecta 2400STP.

Mobile Printing from an iOS Device

Print via Wireless Internet using iOS Device

Mobile Printing from an iOS Device

You can print directly from your smartphone or tablet in just a few simple steps wherever you are using your mobile iOS device. Method 1 is for printing from a mobile device when both your printer and device are connected to the internet. Method 2 is for printing without connecting to a wireless network.

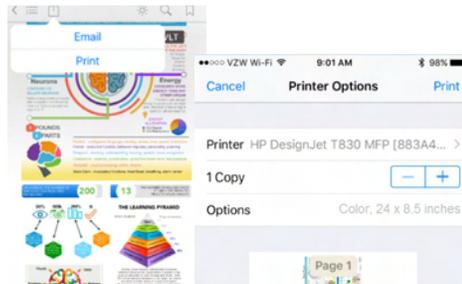
Note: Mobile printing is also supported for Android depending on the version of your device. To print from Android™ devices, download the **HP Print Service Plugin** app from Google Play.

Print via Wireless Internet using iOS Device

1. Connect the *Perfecta 2400STP* printer and your device to the local internet. Make sure your mobile device has WiFi **enabled**.

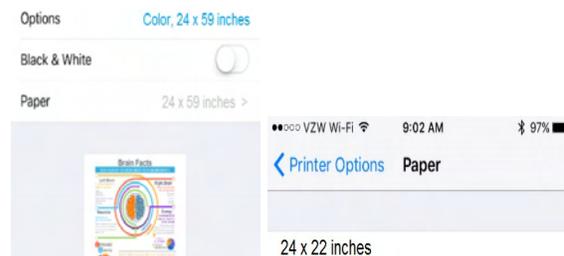
Note: The mobile device and printer **must** be connected to the same internet.

2. On your mobile device, choose the document you want, then touch **Print**.
3. Select your **Printer** (HP DesignJet T830 MFP (XXXXXX)).



4. Select paper size and other options (e.g., paper size, color, black & white).

Note: The print will automatically size itself to how it was designed. To print on the size of the loaded paper, you must select it.



5. When done, touch **Print**. The document will be sent to the Perfecta 2400STP.

Print without Wireless Network using iOS Device

To connect the printer to your phone without using a wireless network, you must use the **Direct Printing** option.

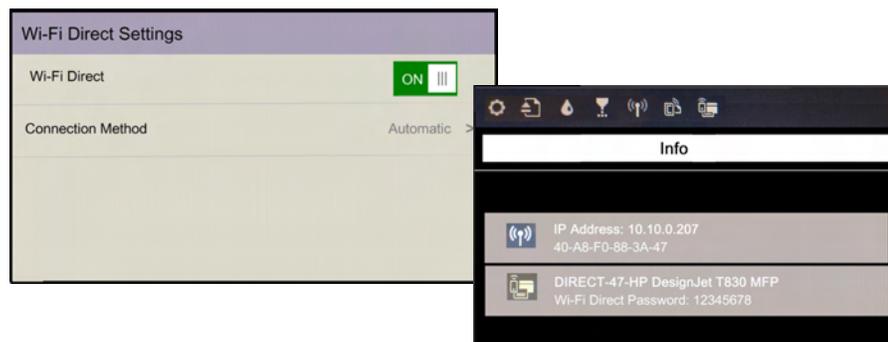
1. On the printer, select  at top of screen. The Info menu will indicate the printer is not connected.
2. Select **Setup** and choose **Wi-Fi Direct**.



3. In *Wi-Fi Direct Settings* menu, make sure *Wi-Fi Direct* is **ON**. The *Connection Method* will indicate **Manual** and the printer will change to automatic.



4. When the *Wi-Fi Direct Settings* change to Automatic, touch  to display the **Info** menu with a list of available printers. Note the password for later.



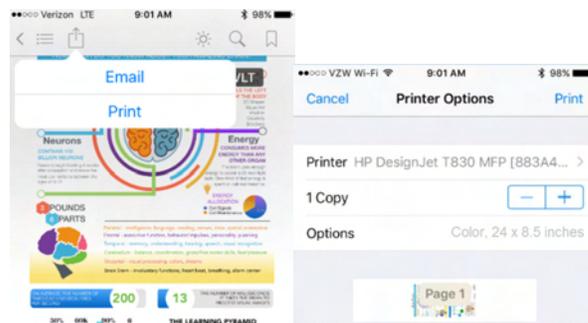
Mobile Printing from an iOS Device

Print without Wireless Network using iOS Device

- In the *Choose A Network* list, select the printer (e.g., e.g., **DIRECT-xx-HP-DesignJet**) and when prompted, enter the password from the **Info** screen.

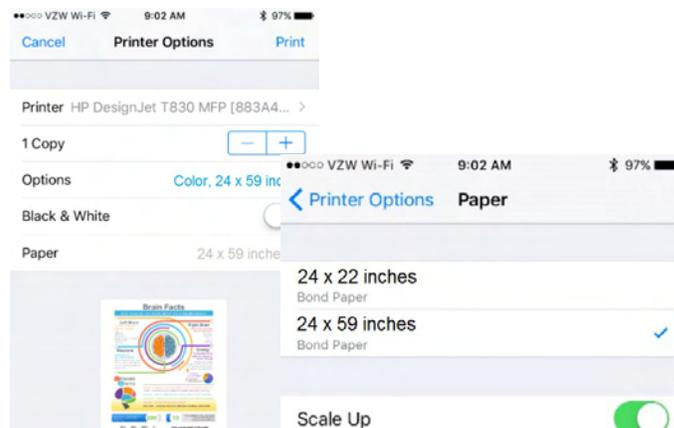


- On your mobile device, select a document, then touch **Print** and select your **Printer** (HP DesignJet T830 MFP (XXXXXX)).



- Select the paper size and other options you want (e.g., paper size, color, black & white).

Note: The print will automatically size itself to how it was designed. To print on the size of the loaded paper, you must select it.



- When done, touch **Print**. The document will be sent to the Perfecta 2400STP.

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 2-15). 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 alerts** 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

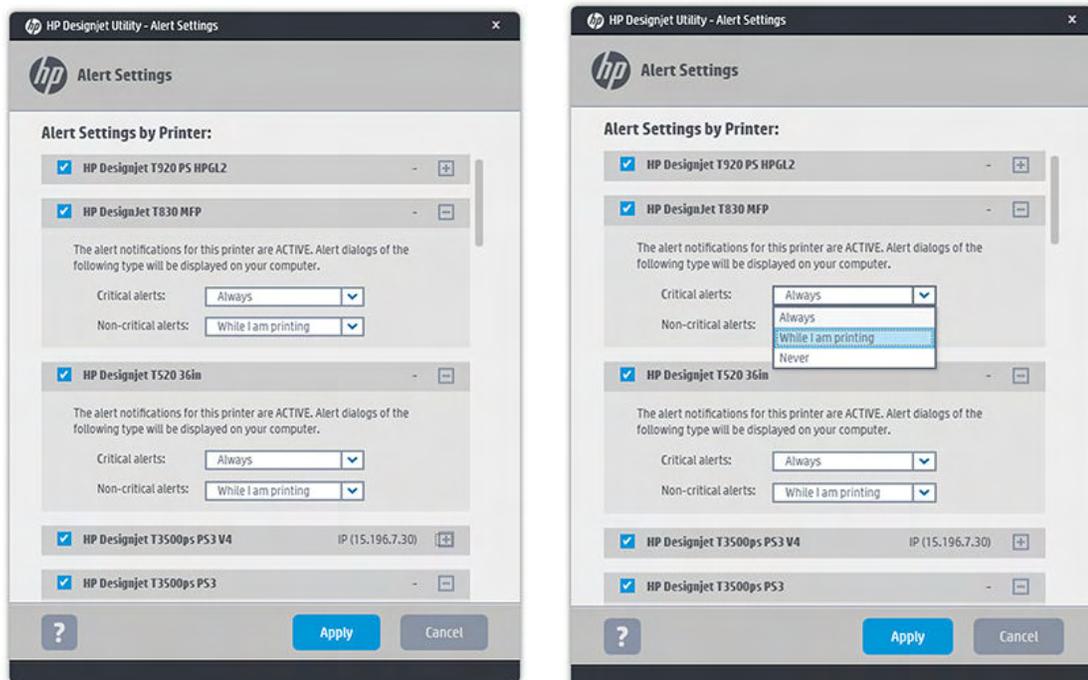
Printer alerts warn you when there is a printer problem that you can correct by taking action, or when one of your printing jobs changes its status. The alerts are displayed by the printer's front panel, by the printer utility, by the printer driver and by the Embedded Web Server.

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. In the *Alert Settings* window, use the **Alerting** slider to turn off alerts.

Note: You can choose when, if ever, to display critical or non-critical alerts.



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. To connect to a wireless network, swipe down the dashboard and touch .
3. Scroll down and touch **Web Services**.

Note: During the process, you will have access to an Automatic firmware update service. To ensure the best performance, we recommend that this service is enabled and the unit is updated with the latest firmware available.

4. Optional: If you are the printer administrator, log in at HP Connected (<http://www.hpconnected.com>) to customize your printer's email address or manage printer security for remote printing.

Congratulations, you now have completed Web Services setup. ePrint is 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. Swipe down the dashboard, then press .
2. Press **Preferences > Language**.
3. When the language select menu displays, press your preferred language.

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 10 and later
- Mozilla Firefox 35 and later
- Safari 8.x for Yosemite (OSX v10.10), Safari 7.x for Mavericks (OSX v10.9) and Safari 6.x for Mountain Lion (OSX v10.8) and later
- Google Chrome 40 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, Catalan, French, Italian, German, Polish, Russian, Simplified Chinese, Traditional Chinese, Korean, and Japanese.

There is an option at the bottom of the screen to change the language.

Personalizing the Printer

Change Sleep Mode Setting

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 > HP > 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, Dutch, 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. Swipe down on the dashboard, then touch .
2. Scroll down the menu and touch **Sleepmode**.
3. Select the wait time you want, then press **OK**.

Note: You can set the time from 5 to 180 minutes. The default time is 5 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, swipe down the dashboard, then press 
2. Scroll down the menu and touch **Auto power off**.

Change Front-Panel Display Brightness

To change the brightness of the front-panel display:

1. Swipe down the dashboard, then touch 
2. Scroll down the menu and touch **Preferences > Screen Brightness**.
3. Select the brightness value you want, then touch **Done**.

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 **Network** tab.
- **Printer Utility:** Access the Embedded Web Server through the Printer Utility.
- **Front Panel:** Swipe down the dashboard, touch , then scroll down the menu and touch **Network setup**.

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**

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

Reset Network Settings

To reset the administrator password and network settings, swipe down on the dashboard, touch , then scroll down and touch **Network setup > 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.

Change Printer Email Address

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

Manage Perfecta 2400STP Printer 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. See *"Advanced Security Options"* on page 2-26 for alternate security methods.

If you are the printer administrator, you can manage printer 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.

Advanced Security Options

There are 3 methods you can use to secure your printer from unintended users printing to your device: 1) Connect via Wi-Fi Direct, 2) Turn off Broadcast Mode and connect to the printer manually, and 3) Connect the DC2300 and Perfecta 2400STP to a private network.

Connect via Wi-Fi Direct

Connecting via Wi-Fi Direct provides a printer-generated password that you must know or have access to before you can print to the 2400STP printer. See *"Configure DC2300 & Perfecta 2400STP via Wi-Fi Direct"* on page 2-5 for details.

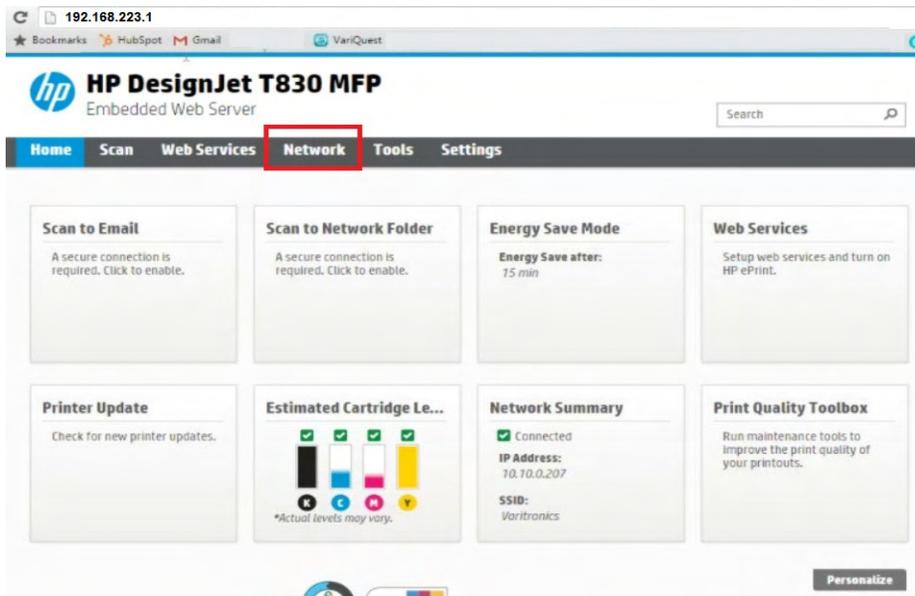
Turn off Broadcast Mode

When your printer is connected to the internet, it automatically "broadcasts" its name on the network list. You can turn this option off to prevent unauthorized users from connecting and printing to this device.

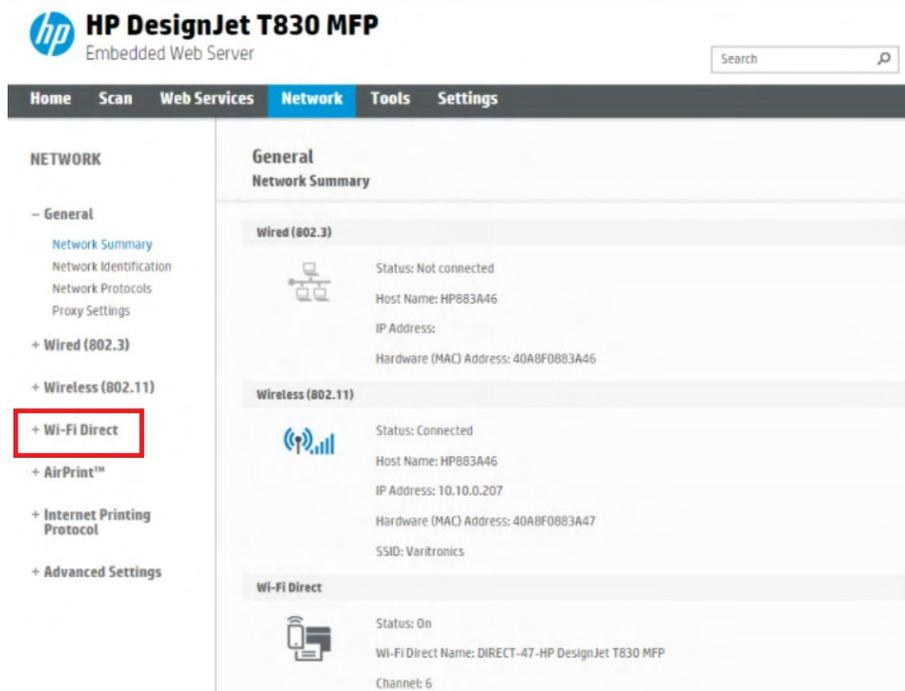


To turn off Broadcast mode:

1. On the Perfecta 2400STP, touch  at top left. Note the **IP address** and **Password** (listed 2nd from top).
2. In your *Browser*, enter IP Address **192.168.223.1**, then select **Network** tab.



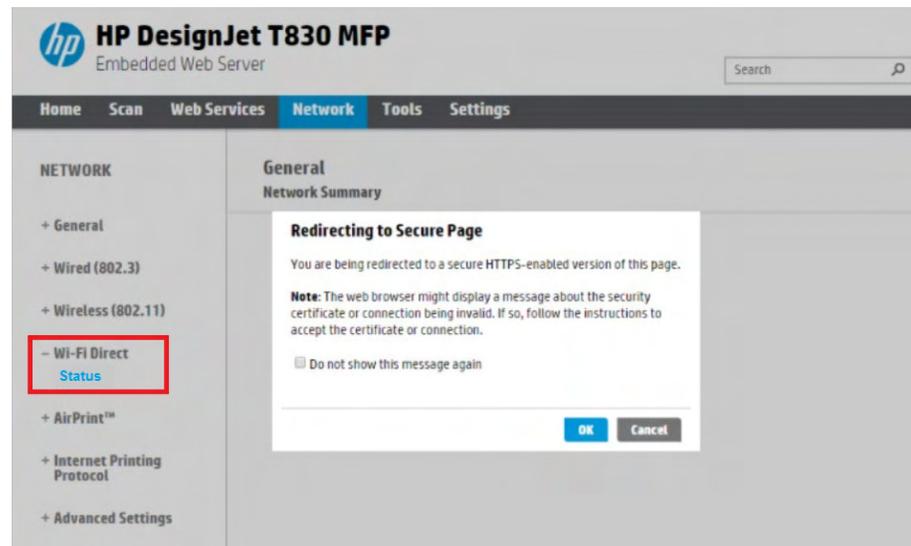
3. On the *Network* tab, select **Wi-Fi Direct**.



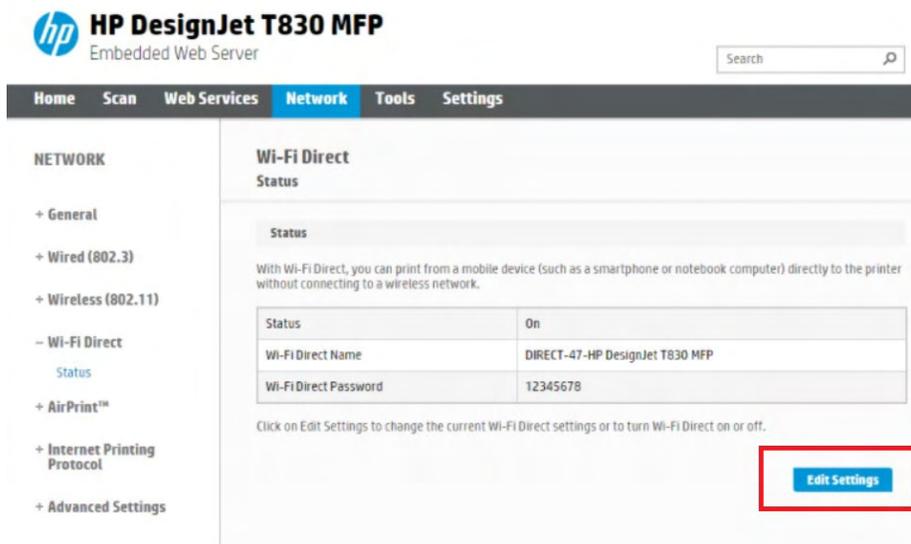
Manage Perfecta 2400STP Printer Security

Advanced Security Options

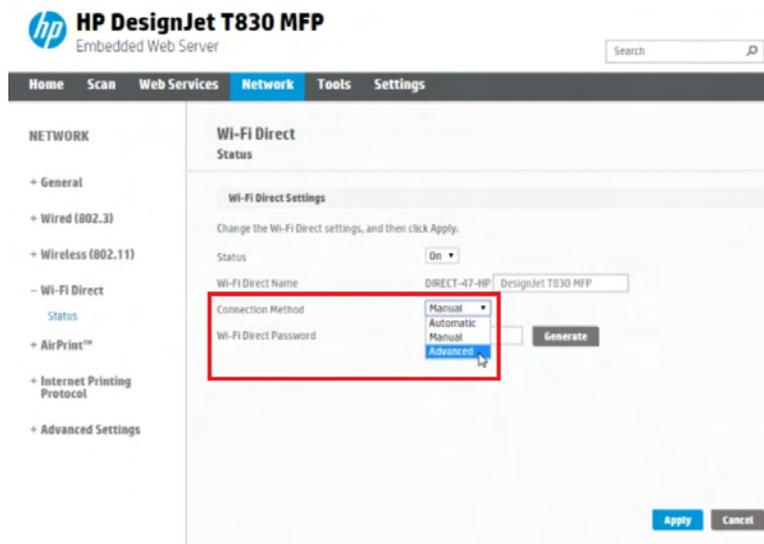
4. Select **Status**.



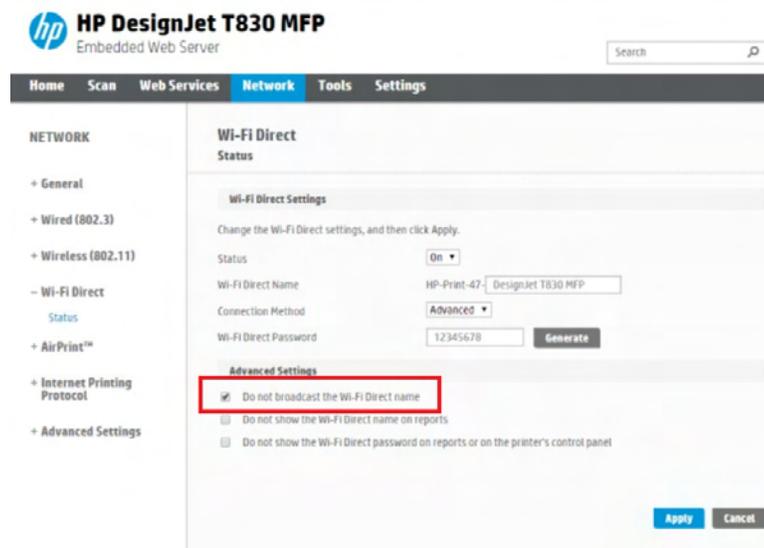
5. In the *Wi-Fi Direct* menu, select **Edit Settings**.



- Under *Connection Method*, select **Advanced**.



- Under *Advanced Settings*, select the button **Do not broadcast the Wi-Fi Direct name**, then click **Apply**.



- At the prompt indicating the changes were updated successfully, click **OK**.

Connect via a Private Network

You can connect your Perfecta 2400STP printer and the Design Center system to a private network that is not accessible to students and other unauthorized users. See your IT Specialist for connection and setup details.

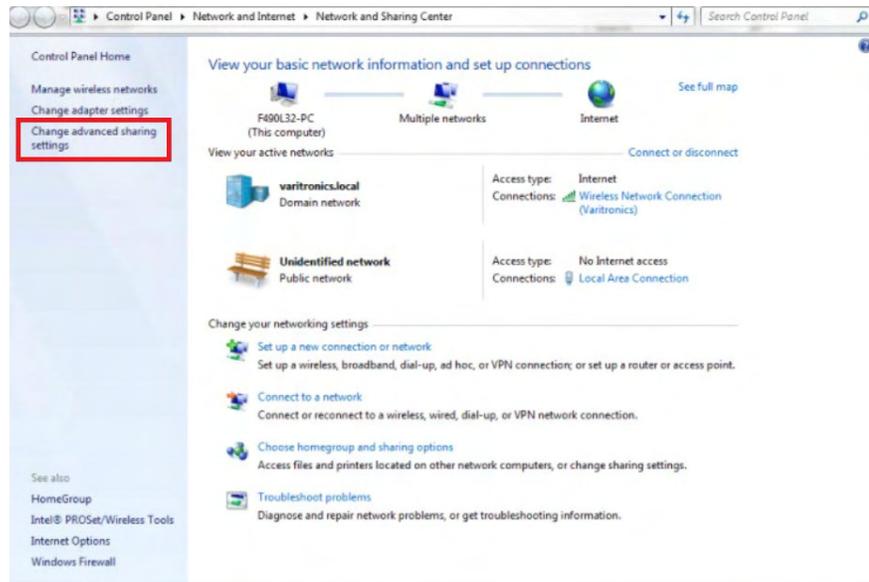
Manage Perfecta 2400STP Printer Security

Manually Connect to a Wireless Network

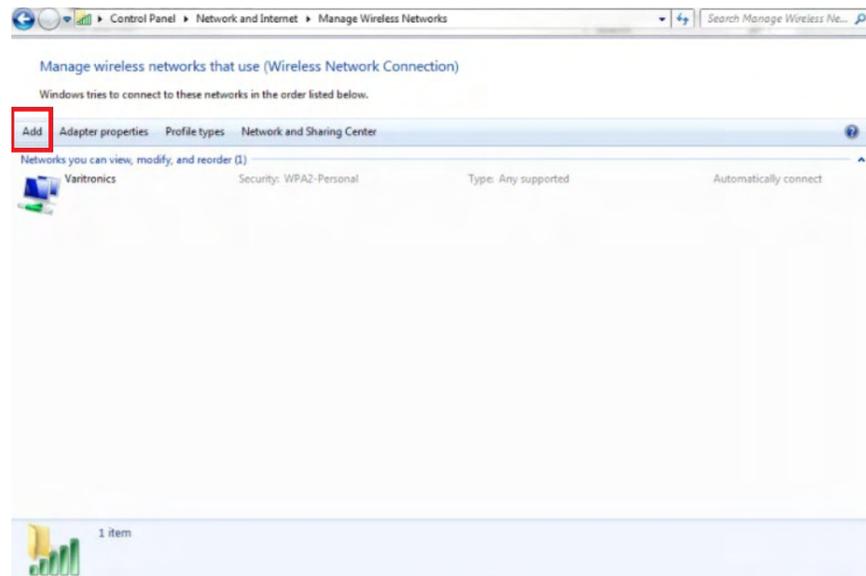
Manually Connect to a Wireless Network

With Broadcast network off, you can manually connect to the printer.

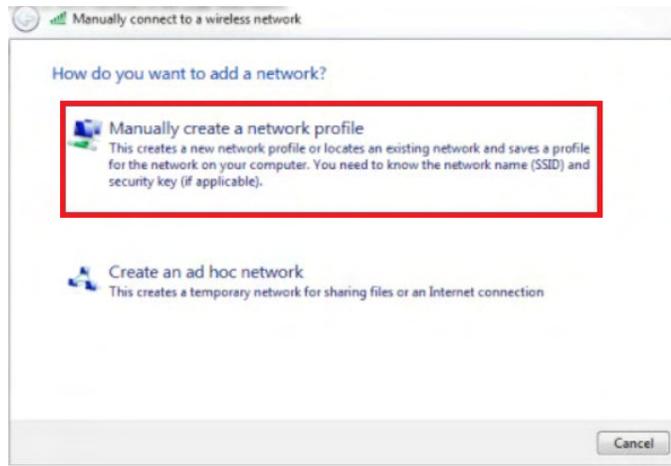
1. From the *Control Panel*, go to **Network and Sharing Center**.
2. Select **Change advanced sharing settings**.



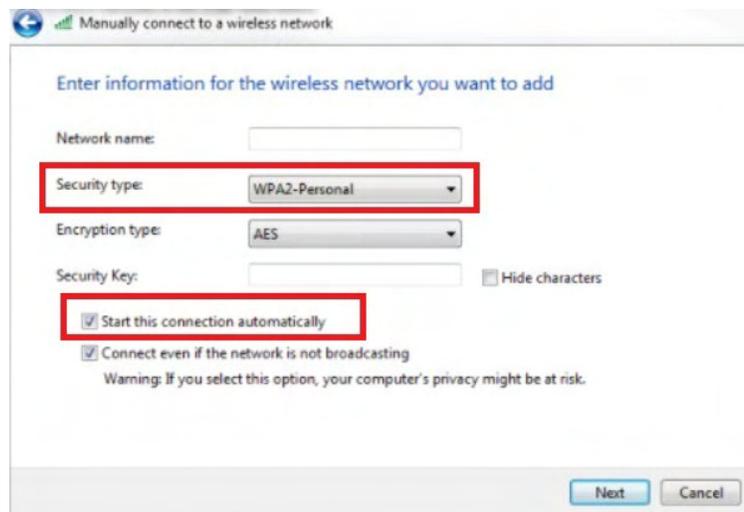
3. In *Manage Wireless Networks*, click **Add**.



- In the *Add* menu, select **Manually create a network profile**.



- From the *Security type* drop-down list, select **WPA2-Personal**.
- Click the box for **Connect even if the network is not broadcasting**.



- Enter the **Network name** (printer name) and **Security Key** (password).

Note: To locate the *Printer Name* and *Password*, go to the *Perfecta 2400STP*, touch  at top left. The **IP address** and **Password** are listed 2nd from top.

- At the *Successfully added...* prompt, click **Close**.

Manage Perfecta 2400STP Printer Security

Manually Connect to a Wireless Network

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3 Paper Handling

This chapter provides paper handling information about the **VariQuest[®] Perfecta[™] 2400STP Poster Design System**. 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!

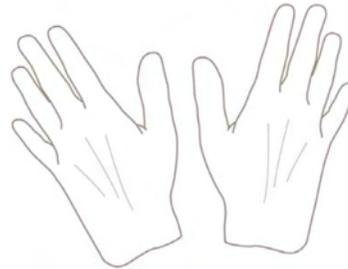
Make sure the printer wheels are locked (the brake lever is pressed down) to prevent the printer from moving.



CAUTION!

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

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.



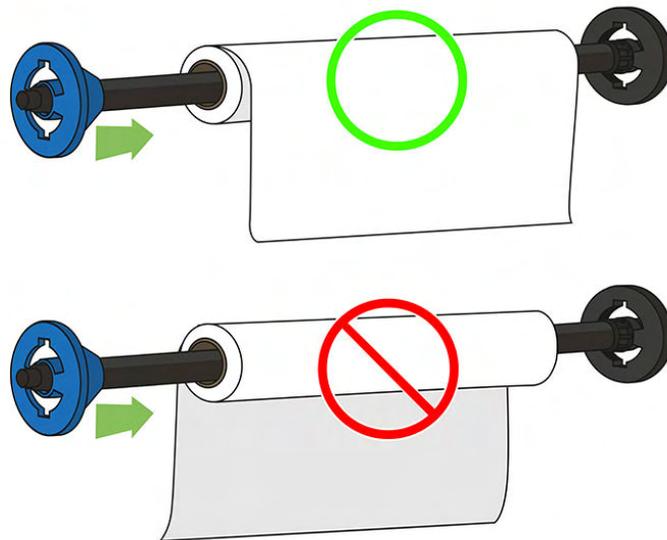
Loading Paper

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.



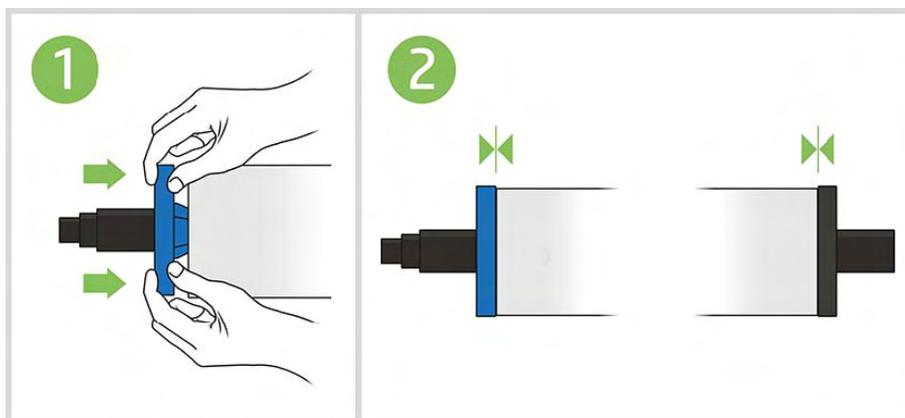
Note: From the back of the printer, the blue stopper is inserted into the right-side holder. Ensure both ends of the roll are as close to the spindle stops as possible.

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].

CAUTION!

The paper roll cannot exceed the blue hub. The printer only accepts rolls with 2-inch cores. See Chapter 7 "Functional Specifications" for more information.

Note: If you regularly use 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 the VariQuest Technical Support team for information.



Loading Paper

Load a roll into the Printer

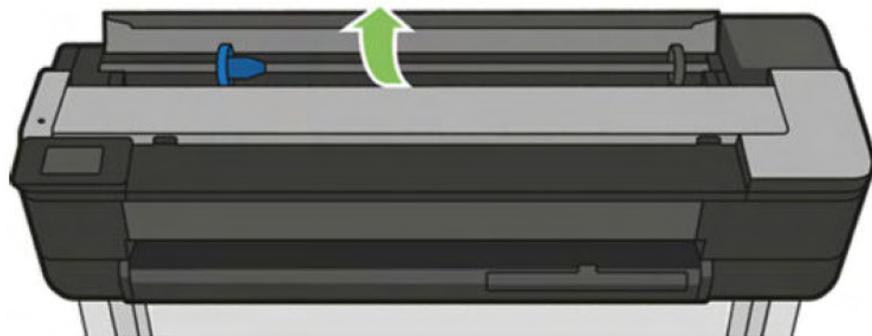
Load a roll into the Printer

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

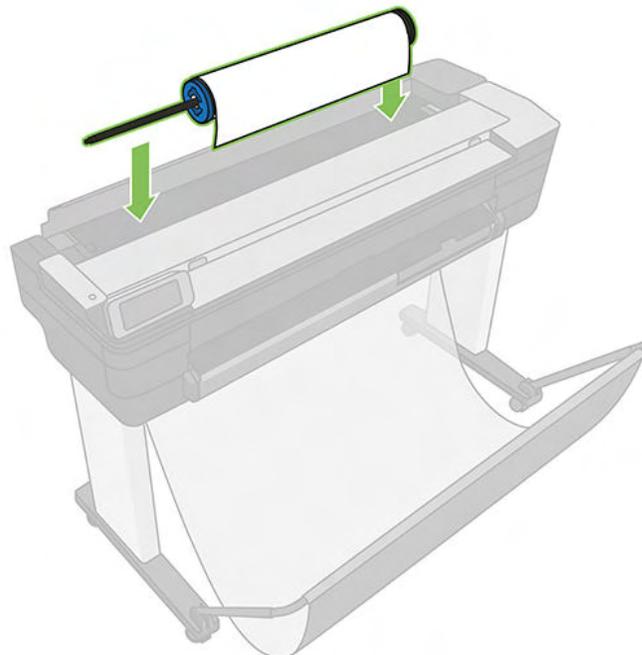
1. Swipe down on the dashboard and press , then touch **Load Roll**.

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.



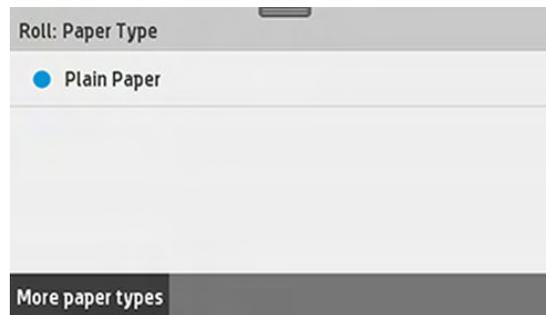
6. Roll the paper into the printer until you feel resistance and the paper flexes slightly. When the printer detects the paper, it beeps, and feeds in the paper automatically.



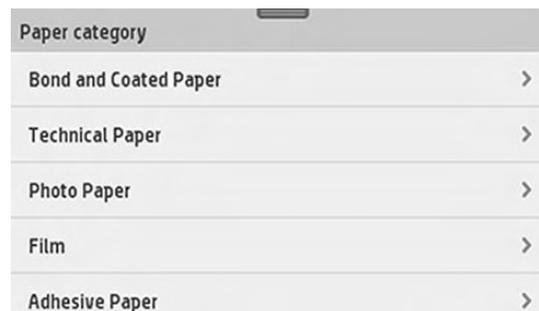
Loading Paper

Load a roll into the Printer

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



If you do not see your paper type in the front panel, touch **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. and touch **OK**.

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: swipe down on the dashboard, then touch , then **Unload a Roll**.
2. Touch **OK** when ready.

Note: 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 paper, the multi-sheet tray will become the default active paper source.

3. Confirm the paper type and size loaded on the multi-sheet tray.

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. Swipe down on the dashboard and touch , then **Load Single Sheet**. If a roll is already loaded, you must wait until it is automatically unloaded.
2. If a roll is already loaded, touch **Unload Roll** and wait until it is automatically unloaded.
3. Open the roll cover.



Note: You do not need to unload the roll and spindle to load a single sheet.

Loading Paper

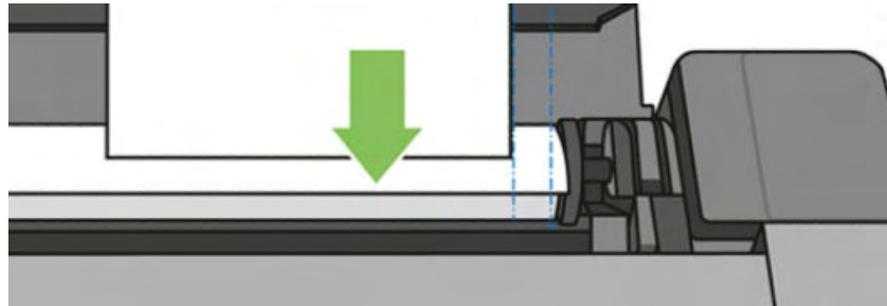
Load a Single Sheet

4. Insert the sheet into the right-hand side of the input slot.

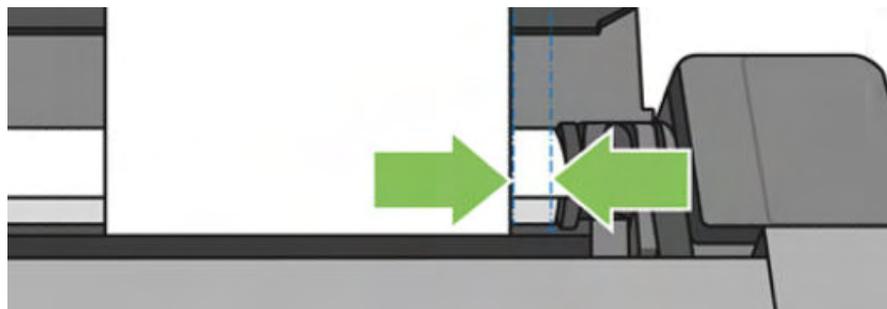


WARNING

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



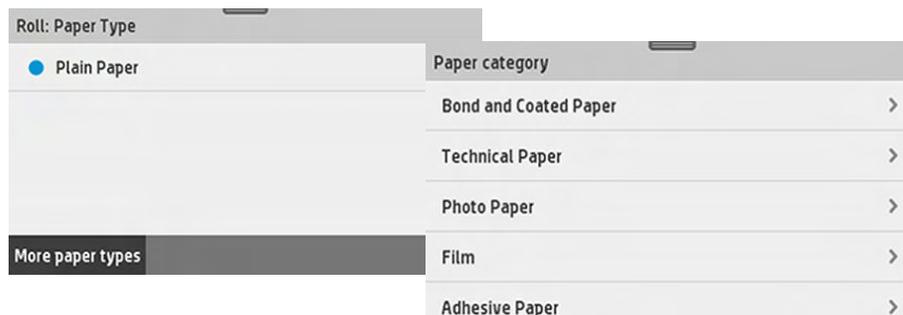
5. Align the sheet with the blue line.



6. Feed the paper into the printer until you feel resistance and the paper bends slightly. When the printer detects the paper, it beeps, and feeds in the paper automatically.
7. On the front panel, touch **OK** to continue.

- At the prompt, select the paper category and type.

Note: If you do not see your paper type in the front panel, touch **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.



- 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.

- 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

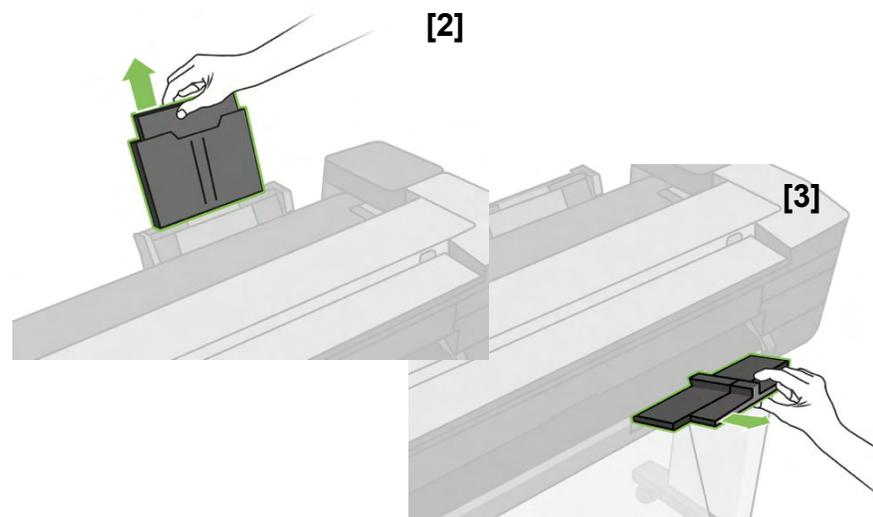
- To unload a sheet, swipe down on the dashboard and touch .
- Touch **Unload Single Sheet**.
- As the sheet unloads out of the front of the printer; either catch it manually or allow it to fall into the bin.

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

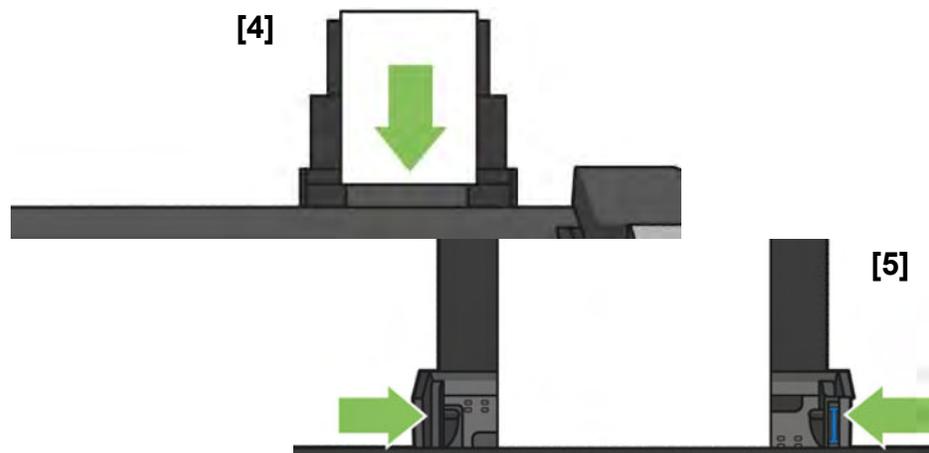
Use the Multi-Sheet Tray

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, touch , 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.



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 or no single-sheet paper is loaded, or there is no paper in the multi sheet tray, the message **Status: Not ready and 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. Swipe down the dashboard, then touch .
2. Scroll down and touch **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. Swipe down the dashboard and from the front panel, touch .
2. Touch **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.

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

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.

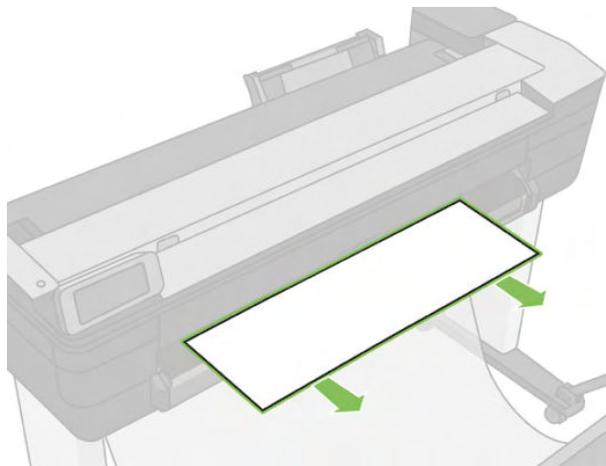
To advance form feed:

1. Swipe down the dashboard and from the front panel, touch . Choose one of the following:
 - Touch **Form feed**. The printer advances.
 - Touch **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.

2. To advance the paper without cutting it, swipe down on the dashboard, touch , then touch **Form Feed**.

4 Printing

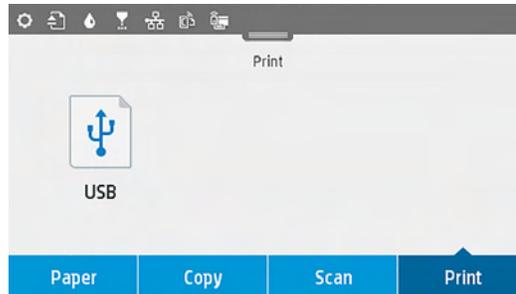
This chapter provides printing information about the **VariQuest® Perfecta® 2400STP Poster Design System**. The following information is contained in this chapter:

- *“Print from USB” on page 4-2*
- *“Print from a Computer” on page 4-4*
- *“Advanced Print Settings” on page 4-4*
- *“Color Management” on page 4-11*
- *“Scanning” on page 4-13*
- *“Copying” on page 4-32*
- *“Mobile Printing” on page 4-35*
- *“Printing Examples” on page 4-37*

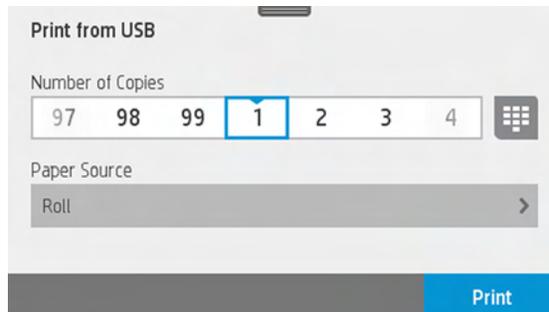
Print from USB

1. Swipe down the dashboard and touch the **Print** tab.

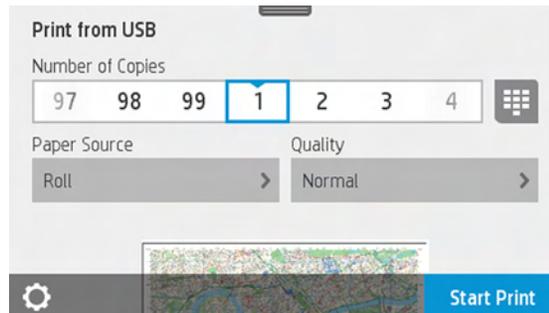
Note: If you haven't connected your USB flash drive yet, a message will prompt you to do it.



2. Touch **Print from USB**. A list of the documents that can be printed will display. You can sort them by touching:
 - Name
 - Date
 - Size
 - Type (JPEG, TIFF, HP-GL/2)
3. You can also search for the file by name. A keyboard will pop up; type the name of the file and touch **Find**.
4. If an HP-GL/2 file is selected, the following screen will display:



5. Touch the name of the file you want to print.
6. Choose the settings:
 - Number of copies (enter the name manually)
 - Paper source (single sheet, multi-sheet, paper roll).
7. Touch **Print** to start printing the document.
8. To cancel the job in process, touch **X**.
9. To print an image, touch the name of the image you want.
10. To edit the image settings, touch the image as select the settings you want:
 - Brightness
 - Rotate image
 - Select color settings.
11. When done, touch **Start Print**.



Print settings

To change the print settings:

1. Swipe down the dashboard and touch any of the following to modify the settings:
 - Tray or paper
 - Color
 - Quality
 - Resize
 - Margin
2. Save the new settings as default by touching **Save current settings**.

Mobile printing

You print from your smartphone or tablet. See “*Mobile printing*” on page 4-3 for more information

Print from a Computer

Before you can print from a computer, the correct printer driver must be installed on the computer (see “Setting Up the Printer” on page 2-15), and the computer must be connected to the printer by network or WiFi.

When the printer driver has been installed and the computer connected to the printer, 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 printer. To satisfy all requirements., these methods offer a relatively large number of settings.

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

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 4-10.

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).

Advanced Print Settings

Custom Paper Sizes

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 4-9.

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. 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:

- In the printer driver *Paper Type* option, select **Use printer settings/Any**.
- In the Windows driver dialog, select *Paper/Quality* tab, then in the *Paper Type* drop-down list, select **User printer settings**.

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 **Layout/Options** 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.

Note: If you are printing to a single sheet, you must ensure that the image can actually fit onto the sheet, otherwise the image will be clipped.

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:

Note: Economode is even faster draft-quality printing and is intended mainly for documents containing only text and line drawings.

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:

Note: This option is available only if you are printing on glossy paper and have selected **Best** print quality.

1. Select **Custom Print Quality Options** and check the image resolution.
2. To improve print sharpness, select **Maximum Detail** option.

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 **Layout/Output** tab.
2. Select one or more of the these options:
 - **Remove 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.

Color Management

Printing Greyscale or Black-and-White

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.

Scanning

Suitable Paper Types

The scanner may not support the full range of paper types that may be used by the printer. The following paper categories are supported by the scanner.

- **White paper:** Any matte original printed with inkjet technology (e.g., anything printed on Universal Inkjet Bond Paper, Coated Paper, Heavyweight Coated Paper, plain paper).
- **Photo paper:** Glossy and satin originals. Inkjet, offset, and traditional photo technologies are supported (e.g., any photo or other image printed on Universal High Gloss Photo Paper or Premium Instant Dry Gloss/Satin Photo Paper).

Note: For some specific photo originals, completely accurate results may not be achieved.



CAUTION!

Photo and glossy papers may be scratched while passing through the scanner.

-
- **Translucent paper:** Semi-transparent tracing papers (> 65 g/m²), including Natural Tracing Paper, Vellum, and Translucent Bond.
 - **Blueprints:** For scanning blueprint originals with optimum results, in grayscale only. This option greatly enhances the contrast of the resulting image.
 - **Unsupported Paper Types:** This scanner does not support the following paper types:
 - Film
 - Backlit material
 - Cling material
 - Translucent paper (< 65 g/m²)



CAUTION!

Do not use documents with staples or rough surfaces/materials than can damage the scanner glass

The following image is a QR code containing a link to a video to get more information about how to scan.

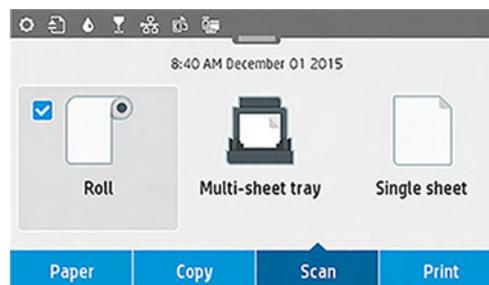
Scan to File

You can scan to the following destinations:

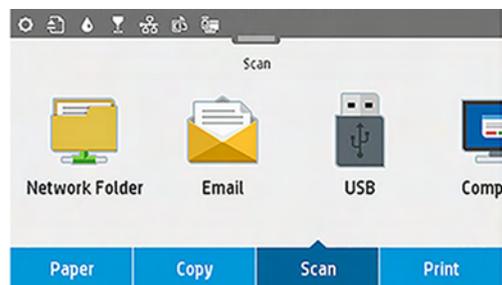
- Computer
- Network folder
- Email
- USB

You can start a scanning process in two ways:

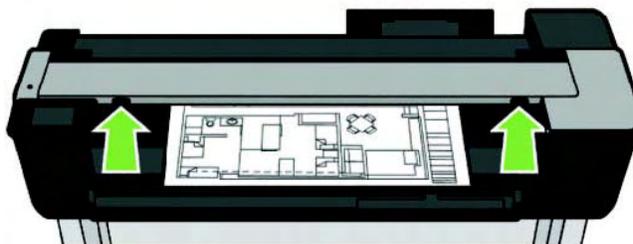
1. On the front panel, touch **Scan** tab.



2. Select where you want to store the scanned image.



3. Feed the document directly:
 - Load the sheet with the printed side facing up (you can also load the sheet before step 1, if you prefer).
 - Align the center of the sheet approximately with the center of the scanner. Use the standard size markings to help you.



Note: The maximum allowed paper length depends on the paper width and scan resolution. An alert is displayed if the maximum memory is exceeded.

4. Push the sheet into the insertion slot until you feel it contact the rollers. The scanner will automatically grab the sheet and move it into position for scanning. If you feel that the sheet has loaded badly and you want to try again, you can pull it out manually.

Important

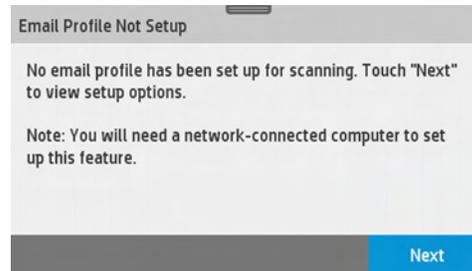
Do not try to feed the scanner while the printer is printing. Only one action can be done at a time. Paper will not be accepted by the scanner during printing.

5. At the front panel, go to the home screen and touch the **Scan** tab, then select where you would like to store the scanned image:

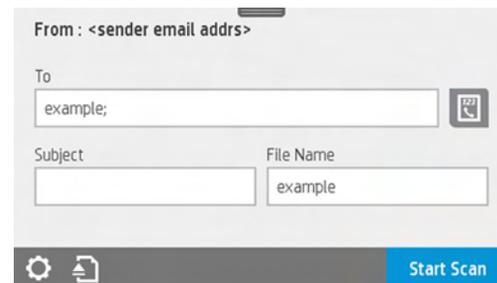
Scan to Email

Before scanning, make sure you have followed the **Scan to email setup** process. The scan-to-email setup must be done from the **Embedded Web Server**. For more information, go to “*Scan to Email*” on page 4-16.

If the setup process has not been done, the following message displays:



1. Touch **Next**.
2. Enter the email address(es) to which the scanned job will be sent. The Scan-to-email user interface options are:
 - Sender
 - Send to:
 - Contact
 - Group
 - Addresses



3. Swipe down the dashboard and touch  to change the Scan-to-Email settings. For further information, go to “*Scan to Email*” on page 4-16.
4. To continue:
 - Touch  to eject the already fed document.
 - Touch **Start Scan** to start the scanning process.

Note: If a scanned image is larger than the maximum size permitted, the printer will ask if you want to try to send it anyway. To change this option, go to the Embedded Web Server and select **Scan to email setup > Maximum size of email**.

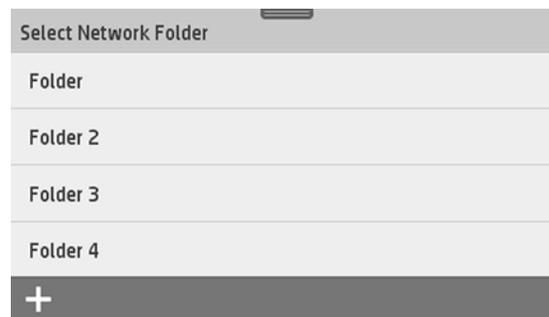
Scan to a Network Folder

Before starting the process, make sure you have followed the **Scan to Network folder setup** process. The **scan to Network folder setup** must be done from the Embedded Web Server. For more information, go to **Scan to Network folder setup** process on “*Scan to Network Setup Process*” on page 4-24.

Note: You can also use the Printer Utility to access the Scan to network option.

To scan to a network folder:

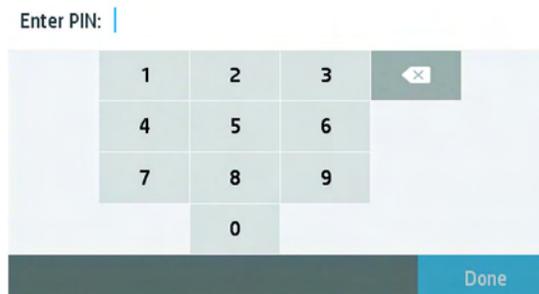
1. Choose a folder accessible through the network.
2. To create and/or change the folder options, go to the Embedded Web Server, and follow the instructions of the **Network folder setup** process.



3. Enter the **security PIN** (if prompted).

Note: A security PIN can be associated with each folder; check Network folder setup on “*Scan to Network Setup Process*” on page 4-24.

4. Touch **Done**.



Scanning

Scan to File

5. In the *Scan to* screen, enter the folder(s) to which the scanned job will be sent. The Scan-to-Network folder options are:
 - Save As
 - File Name
 - Resolution



6. Swipe down the dashboard and touch  to change the network folder settings. For further information on settings go to “*Scan to Network Setup Process*” on page 4-24.
7. To continue:
 - Touch  to eject the already fed document.
 - Touch **Start Scan** to start the scanning process.

Scan to Computer

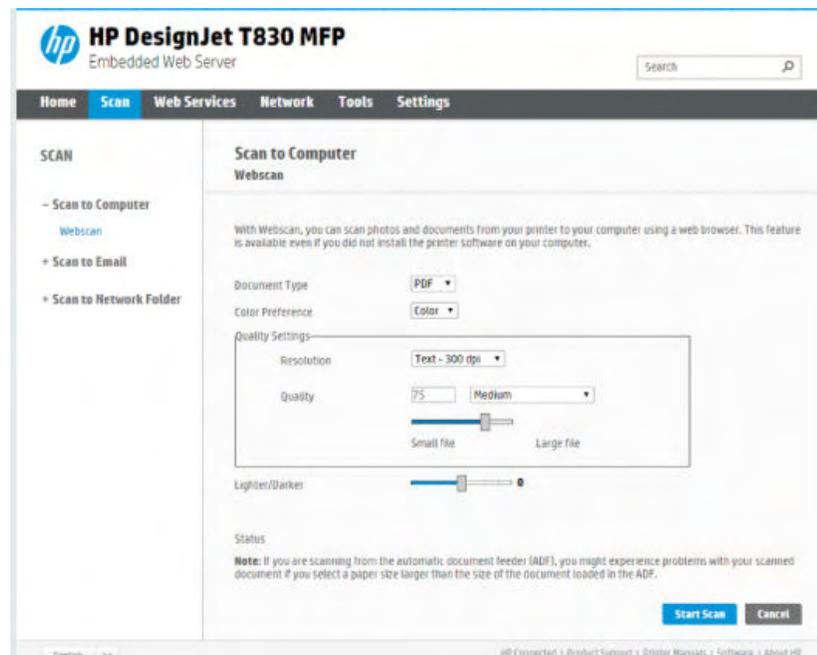
There are two ways of scanning to a computer:

- **Webscan:** You can scan to computer from the Embedded Web Server. Look for the **Scan to computer** option, then select **Webscan**. There are fewer scan settings available for scanning to a computer.

Note: This option must be enabled on the Embedded Web Server to be able to Webscan. For more information go to **Scan to computer setup > Webscan**. See “Webscan” on page 4-29.

- Touch **Start Scan** to start the process. Your default browser will open on your computer with a PDF viewer showing the scanned image.
- Save the image to your computer.

Note:



- **WSD (from server and from printer).**

Note: This option must be configured on your computer before you can Scan to computer from server/from printer. For more information on **Scan to computer from server/ from printer setup** see “From Server/From Printer” on page 4-30.

Scanning

Scan to File

Scan to USB

When scanning to USB, a folder named **HPSCANS** is created on the USB drive and the file is saved in that folder. The file format is saved as PDF, JPEG, or TIFF using an automatically generated file name if you have not given it one.



Scan to USB user interface options:

- Save As (format file)
- File name
- Resolution

To scan to USB:

1. Swipe down the dashboard and touch  to change Scan-to-USB settings. For further information on settings go to “Scan Settings Available” on page 4-21.
2. Touch  to eject the already fed document.
3. Touch **Start Scan** to start the scanning process.

Scanning from a Mobile Device

You can also scan from your smartphone or tablet: See “Mobile printing” on page 4-3.

Scan Settings Available

Note: Some of the default scan settings are displayed in the list below.

To change scan settings:

1. Touch **Settings** to see the complete list of settings.
2. Check that the *Original type* setting corresponds to the paper type you intend to scan.
3. Change scan settings as desired.
4. When done, touch **Save current settings**, then touch **Back** to return to where you were.

Original

- **Lighter/Darker:** Allows you to modify the lightness of the scan using a slider.
- **Background noise removal:** Clears the noise on the original background.
- **Background color removal:** Cleans the color in the original background.
- **Blueprint:** Used for scanning blueprint originals with optimum results. This option converts to greyscale and inverts the colors, if needed, producing a white background with black lines.
- **Translucent Media:** A mode specifically for scanning NTP/vellum/other translucent media.

Scan Settings

- **Resolutions:** Lets you specify the scan resolution (200, 300, 600 dpi)
- **Color options:** Lets you choose color, greyscale, or black and white scanning.
- **Auto De-skew:** Corrects the skew automatically (default is **On**).
- **Scan full width (36"):** Does not crop the scan to the original edges (default is **Off**).

Save Settings

- **Save as:** Format Lets you specify the format of the file in which the scanned image will be saved: TIFF, JPEG, or PDF.
- **File Name**
- **File compression:** allows you to specify the level of compression: High (the default level), Medium, or Low. This option is available if the format is JPEG or PDF.

Defaults

- **Save current settings**
- **Restore to factory defaults**

Scanning

Scan Options Setup Process

Scan Options Setup Process

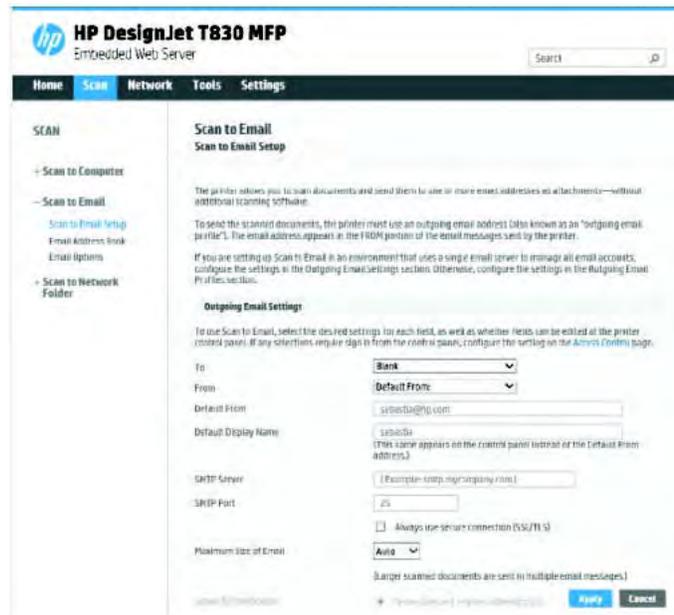
A scanned image may be saved in a USB flash drive, in a network folder, or in an email. The USB flash drive option requires no preparation, but the other options will not work until they have been set up in the following way.

To set up scan options:

1. Go to the **Embedded Web Server** in your computer.
2. Access the *Embedded Web Server* by typing the printer's **IP address** into your browser.
3. Find your printer's IP address on the dashboard Home screen.
4. Once in the Embedded Web Server, look for the option you want to set up.

Scan to Email Setup Process

1. To set up Scan to email, follow the process in the Embedded Web Server.
2. Enter or change the available options (see list below).



Outgoing Email Settings:

- **To:** Select the default address destination
- **From:** Define the default email address for the sender
- **Default from:** Specify the default email name
- **Default display name:** Specify the default name for the email sender

SMTP Server: the IP address 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.

SMTP Port: Set the default SMTP port number of your outgoing email server

Maximum size of email: Defined by your email server

Server Authentication: Depends on your email server settings

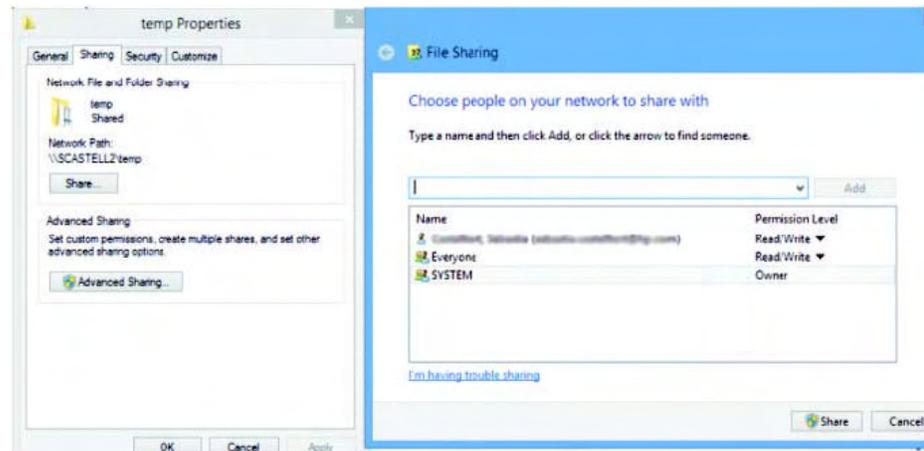
Scan to Network Setup Process

A scanned image may be saved in a network folder. The USB flash drive option requires no preparation, but the other options will not work until they have been set up in the following way.

To set up the Scan to network folder, you must first create a folder on your computer.

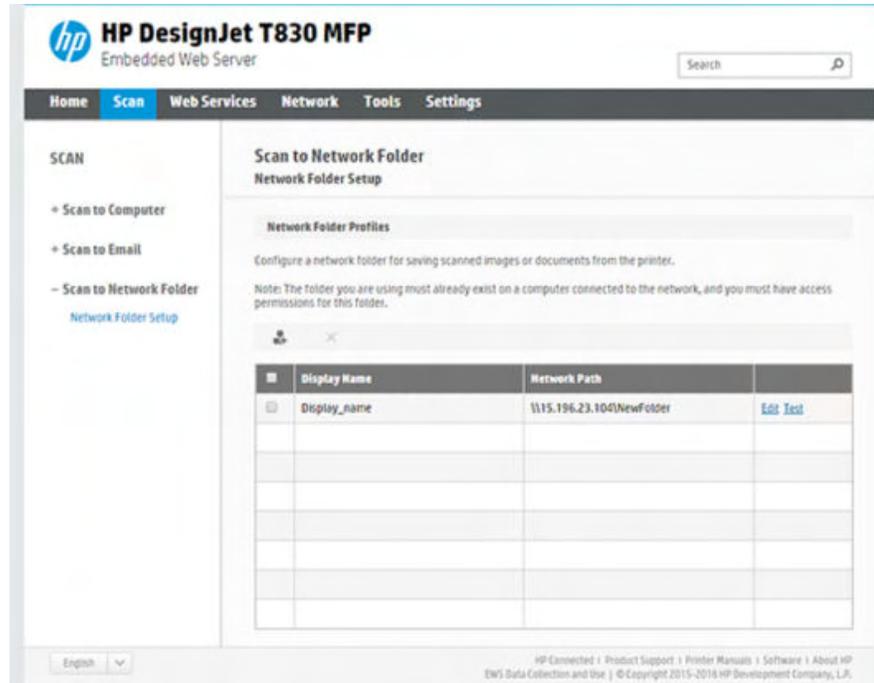
To create a scan to network folder:

1. Create a folder on a computer that the scanner can access through the network.
2. Create a user account on the same computer for the printer.
3. Change the sharing options of the folder so that it is shared with the *scanner user*, and assign full control of the folder to that user.
4. Create a share name for the folder.



5. Once the shared folder is created, go to the **Embedded Web Server** and follow the instructions under the *Scan to network folder setup process*.

- In the printer's Embedded Web Server, select the **Scan** tab and then **Scan to network folder**. See "Access the Embedded Web Server" on page 2-18.



- Select an existing profile or to create a new network folder profile.

Scanning

Scan to Network Setup Process

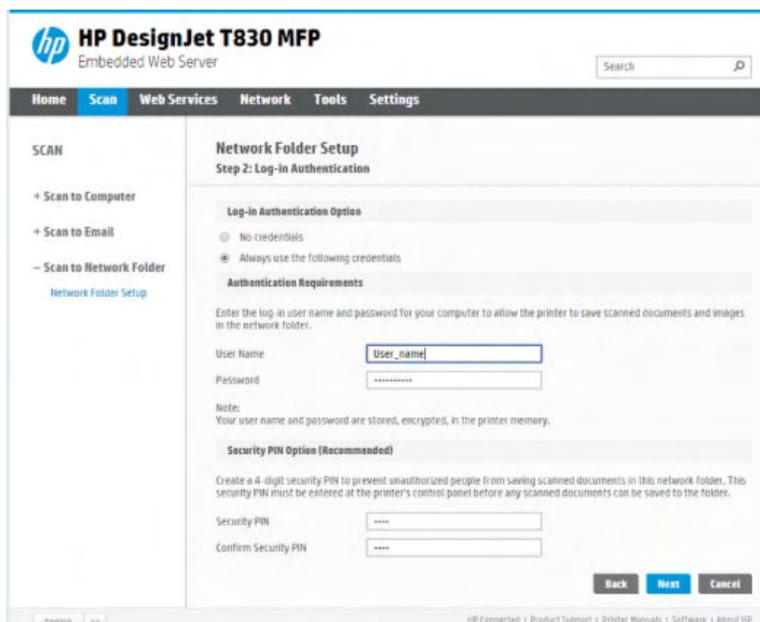
8. Write a name for the folder and type the network path.
 - **Display Name:** Displayed in the front panel when you are choosing the scan destination. It may be different from the network or FTP folder name.
 - **Network Path:** Include the network name of the remote computer.
 - **Server and Folder names:** Used to connect to the shared folder by building a network folder path as follows: `\\server name\folder name`
 - **Network Path:** The name or IP address of the remote computer and the name of the shared folder.

The screenshot shows the HP DesignJet T830 MFP Embedded Web Server interface. The main navigation bar includes Home, Scan, Web Services, Network, Tools, and Settings. The left sidebar lists scanning options: Scan to Computer, Scan to Email, and Scan to Network Folder. The main content area is titled 'Network Folder Setup' and 'Step 1: Network Folder'. It contains instructions: 'Assign a name for the folder, and then enter the folder's network path. (The name you assign will appear on the printer's control panel display.)'. There are two input fields: 'Display Name' with the placeholder 'Display_name' and 'Network Path' with the placeholder '\\15.196.23.100\NewFolder'. At the bottom right, there are 'Next' and 'Cancel' buttons. The footer includes 'English' and copyright information: 'HP Connected | Product Support | Printer Manuals | Software | About HP | EWS Data Collection and Use | © Copyright 2015-2016 HP Development Company, L.P.'

9. Select **Next** to continue.

10. Define Log-in Authentication settings:

- **User name:** Contains the name of the 'scanner user'.
- **Password:** Contains the password of the 'scanner user'.



11. Enter user name and password of the 'scanner user' that you have already created on the remote computer.

Note: Leave user domain field empty unless user is a member of a Windows domain. If user is only a local user of the remote computer, leave field empty. You can use the name (instead of IP address) in server name field only if the shared folder is on a Windows computer in the same local network. The name must be simple (up to 16 characters long) without a domain suffix (no dots in the name). Fully qualified DNS domain names are not supported. If the product and network folder are in different networks, or if the remote computer is not running Windows, then you must use the IPv4 address instead of the name of the remote computer. On IPv6 networks, IPv6 address is also supported.

12. Select **Next** to continue.

- Define the **Setup Configuration** for files scanned to the network folder.

Note: The scan settings defined for a folder, are exclusive for the setup folder.

- Define the scan settings fields for files scanned to the network folder.
 - Original size** lets you resize the print: to a percentage of its original size, or to fit a particular paper size (default is 100% of its original size).
 - Darkness**
- Define the file settings fields for files scanned to the network folder.
 - Default file name**
 - Default file type**
 - Default color preference**
 - Default output quality**
 - Default resolution**
 - Black TIFF compression**
 - Color/Grayscale TIFF compression**
- Click **Save only** to save the configuration or click **Save and Test** to save the configuration and perform a test to check the network folder is correctly set up.

Note: You can check any time that the shared folder remains accessible by clicking **Test** in the Embedded Web Server. A correctly configured shared folder can become inaccessible if the user's password is changed or if the shared folder is moved or deleted.

- Click **Add** to save the configuration.

Note: If the printer has already been configured for scanning to the network and you want to use a different shared folder, click **Edit**.

Scan to computer

There are two ways to scan to a computer:

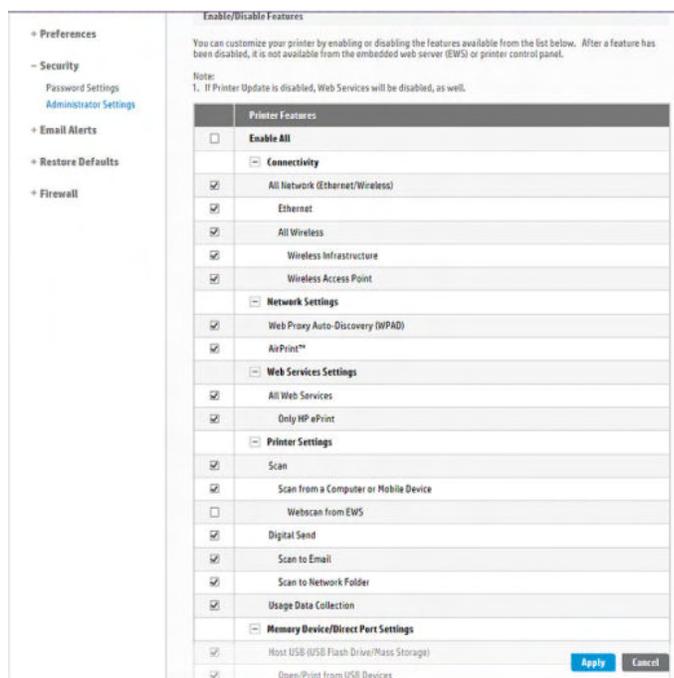
- webscan
- from server/from printer

Webscan

To use Webscan, the option has to be enabled in the Embedded Web Server. Under the **Settings** tab, look for **Webscan from EWS** and make sure it is enabled.

To enable Webscan:

1. Under the **Settings** tab, select **Security > Administrator settings**.
2. Under **Printer features**, choose an option:
 - **Enable all.**
 - **Printer settings > Webscan from EWS.**
3. Select **Apply**.



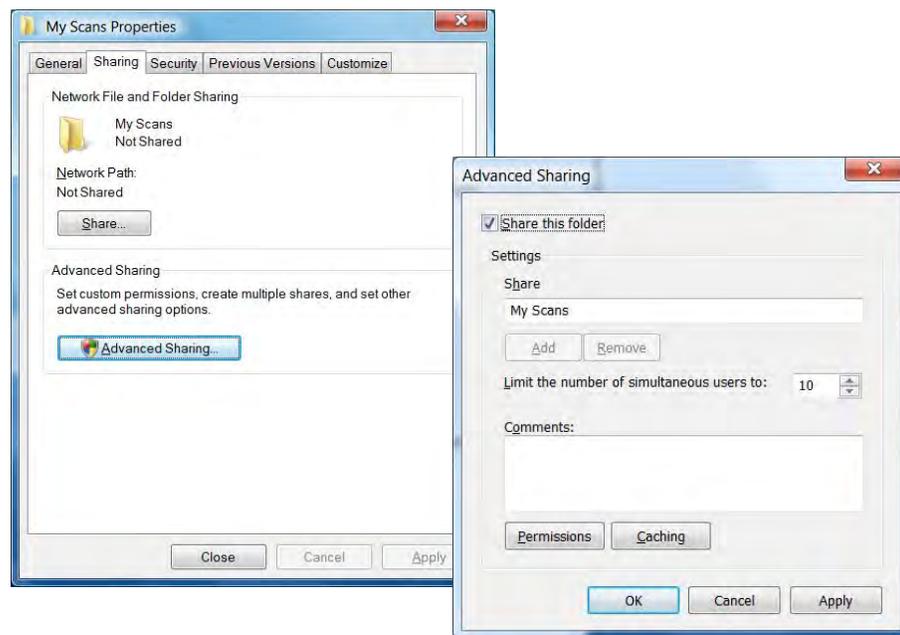
From Server/From Printer

To scan from server/from printer, you have to follow Windows setup process defined for adding a device.

1. Locate **Devices and printers > Add a device** and follow the instructions.

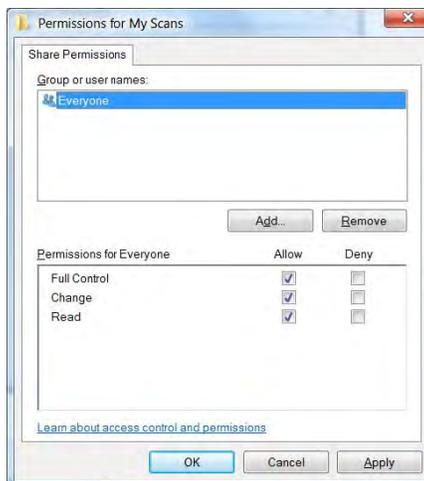
Example: Create a scan-to-network folder under Windows

1. Create a new user account for the 'scanner user' on the remote computer. You can use an existing user account for this purpose, but it is not recommended.
2. Create a new folder on the remote computer, unless you want to use an existing folder.
3. Right-click the folder and select **Properties**.
4. In the **Sharing** tab, click **Advanced Sharing**.
5. Check the **Share this folder** box.



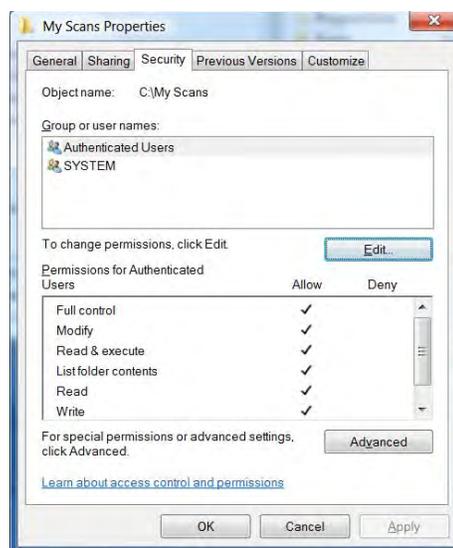
Note: You must verify that the 'scanner user' has full read/write control over the shared folder.

- Click **Permissions** and grant **Full Control** to the user (or to any group that includes that user).



- If there is a **Security** tab in the Properties window for the folder, you must also grant the same user **Full Control** over the folder in the **Security** tab. Only some file systems such as NTFS require this.

The *scanner user* can now access the folder and write files to it. You must next configure the printer to send scans to the folder.



Mobile scanning

You can also scan from your smartphone or tablet. See “*Mobile printing*” on page 4-3 for more information.

Copying

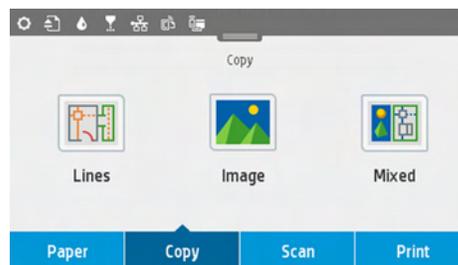
When performing the copy process, the printer first scans the original into its memory and then prints the scanned image.

Note: The maximum paper length allowed depends on the paper width and scan resolution. An alert is displayed if the maximum memory is exceeded.

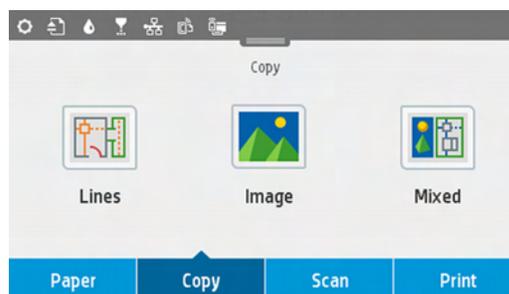
CAUTION!

Do not try to feed the scanner while the printer is printing. Only one action can be done at a time. Paper will not be accepted by the scanner during printing

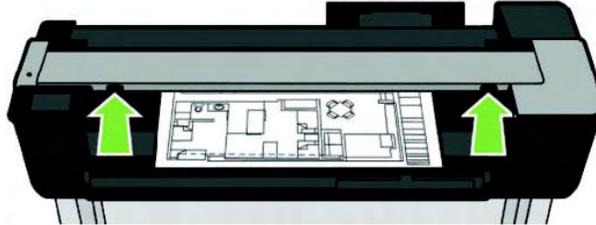
1. On the front panel, touch the **Copy** tab.



2. Touch the suitable option for your document:
 - **Lines**
 - **Image**
 - **Mixed** (both images and lines, such as a map)
3. Select the number of copies that you want . You can choose a number ranging from 1 to 99. You can enter the number manually or select it from a slider.
4. Select the paper source you are going to copy to:
 - **Roll**
 - **Multi-sheet tray**
 - **Single sheet**
5. Select the copy quality option: **Best, Normal, Draft.**
6. Touch **Copy**. You will be prompted to load the original document if you haven't already.



7. Push the sheet into the insertion slot until you feel it contact the rollers. The scanner will automatically grab the sheet and move it into position for scanning.
8. If the sheet has loaded badly, you can pull it out manually and retry.



Copy Settings

1. Touch  **Settings** to see the complete list of settings.
2. When satisfied with the scan settings, touch **Save** current settings, then touch **Back** to return to the previous screen.

Some of the default copy settings are:

Original Settings

- **Content type**
- **Lighter/darker:** Adjust lightness of the copy.
- **Background noise removal:** Reduces image defects such as wrinkles.
- **Background color removal:** Reduces color defects in the original background.
- **Blueprint:** Copy blueprint originals with optimum results. This option converts images to greyscale and inverts the colors, if needed, producing a white background with black lines.
- **Translucent Media:** Used specifically for copying images that are on NTP/vellum/other translucent media (as opposed to opaque media) to obtain optimum results.

Scanning

- **Color options:** Specify the colors for your copy (color, greyscale, black and white).
- **Auto De-Skew:** Automatically corrects skew (default is **On**).
- **Scan full width 36in:** Ensures the copy is not cropped to the edge of original image (default is **Off**).

Printing Settings

- **Resize:** Lets you resize the print to a percentage of the original size, or to fit the copy to a particular paper size (default is 100% of the original size).
- **Paper Source:** Choose between Roll, Multi-sheet Tray or Single Sheet when printing.
- **Copy Margins:** Lets you decide how to manage printer margins. You can print the scanned image as is and add margins or you can clip the image with the printing margins (Add to Contents, Clip to Contents).
- **Quality:** Defines copy resolution and print quality.

Defaults

- Save current settings
- Restore to factory defaults

Mobile Printing

You can print to your printer from many mobile devices and from almost any location. There are two main methods of Mobile Printing:

- Direct printing by connection to the same network
- Printing by email

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

- Automatic firmware updates (see “*Automatic Firmware Update*” on page 2-15)
- Print from almost anywhere
- Print from almost any device, including smartphones, tablets, and laptops

See <http://www.hp.com/go/designjetprinters> for more detailed information.

You can enable Web Services when setting up the printer: see “*Setup Web Services*” on page 2-17 or the *Assembly Instructions* for more information.

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 [Connecting the printer on page 15](#).

Print from Mobile Device

iPhone, iPad

Printing with AirPrint™ is simple, all you have to do is make sure your device and printer are operating on the same network and follow the steps below.

1. **Choose your content:** open the document or photo you want to print, then tap the share button.
2. **Select print icon:** Swipe screen to reveal print button on bottom, then tap the print icon.
3. **Print:** Confirm the correct printer and print setting are selected, then tap **Print** and collect your documents.

All Androids

Printing with Android devices is simple and depending on your model, printing may already be preloaded on your device. If it is not, download the HP Print Service Plugin from the Google play store to get started.

1. **Choose your content:** Open the document or photo you want to print, tap the menu icon and select **Print**.
2. **Choose your printer:** Select from the list of printers that appears.
3. **Print:** Confirm the correct printer and print setting are selected, then tap **Print** and collect your documents.

Print by Email (HP ePrint)

If you can email it, you can print it. Simply attach a PDF or other print-ready file to an email message and send it to your printer's dedicated address.

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:

- Files must be in PDF, JPEG, or TIFF formats.
- Maximum file size is 10 MB, but your email server may have a lower limit.
- 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, Scan, and Share from All-in-One (AIO) Remote App

Use the screen on your mobile device to control printer scan and print functions. Send scans directly to your mobile device from your printer. Print PDF, photos, email attachments, and more from virtually anywhere.

Note: Mobile devices must have an Internet connection and email capability.

Scan and copy control requires that the mobile device and printer be on the same wireless network or have a wireless-direct connection to the printer.

Apple/Android Printing

1. **Choose your content:** Open the document or photo you want to print, tap the share icon and select **AiO**.
2. **Open in All-in-One Remote:** Go to settings to adjust Quality or Color Mode if necessary.
3. **Print:** Confirm the correct printer and print setting are selected, then tap **Print** and collect your documents.

Apple/Android Scanning and Sharing

1. **Load document to be scanned:** Place document on the printer.
2. **Open in All-in-One Remote:** Trigger scanning from the app. You can store the document in your mobile device.
3. **Share:** Select sharing through email or your preferred repository.

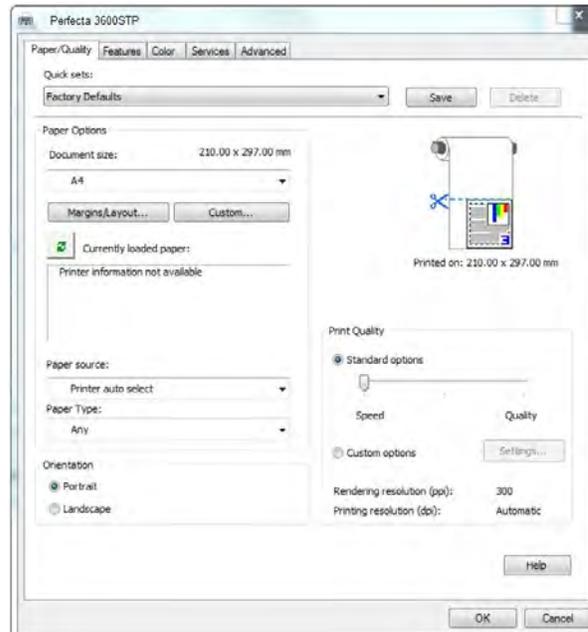
Mobile Specifications

- Mobile devices must have an Internet connection and email capability.
- Scan and copy control requires that the mobile device and printer be on the same wireless network or have a wireless-direct connection to the printer.
- Printing requires an Internet connection to an HP printer.
- iOS 7.0 and above, or Android KitKat4.4 and above, is required.

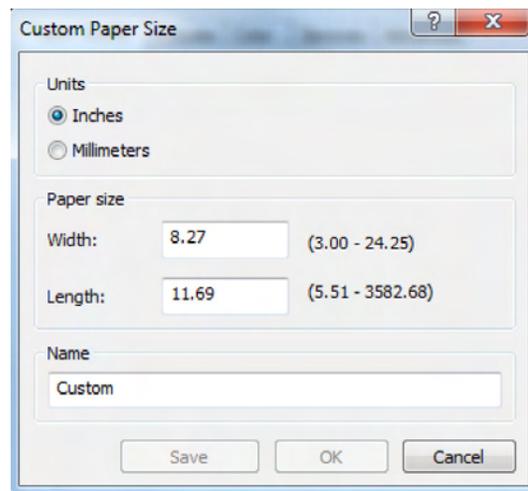
Printing Examples

Adobe Acrobat

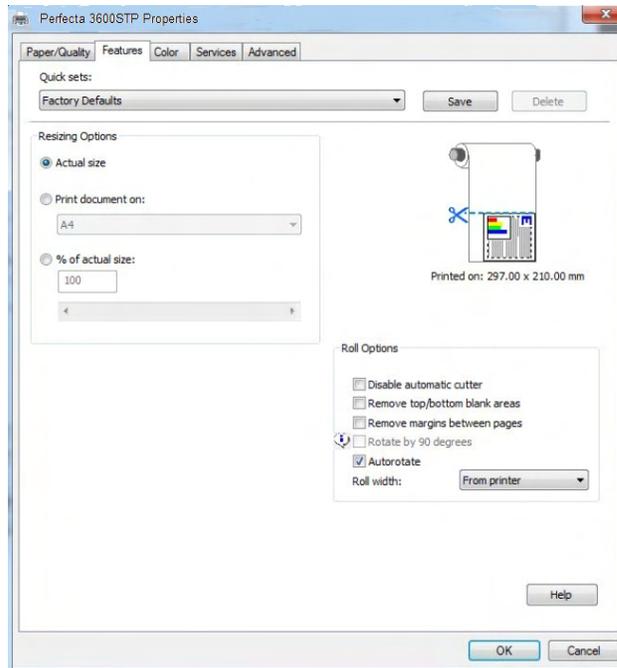
4. Press **Properties**, then select the **Paper/Quality** tab.



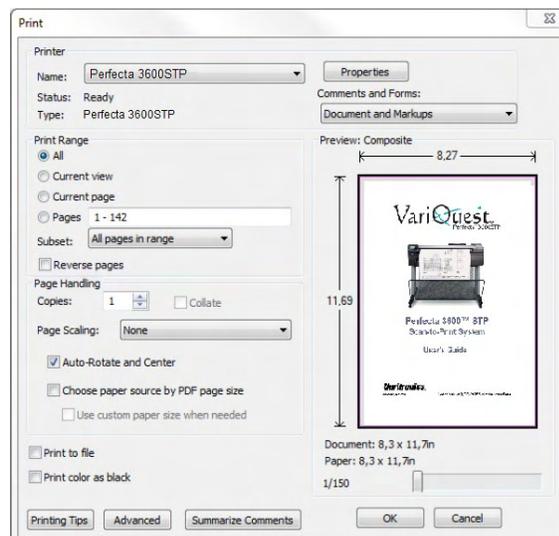
5. Choose the **Document Size** and **Print Quality** you want to use.
 - or -
 To define a new custom paper size, press **Custom**.



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

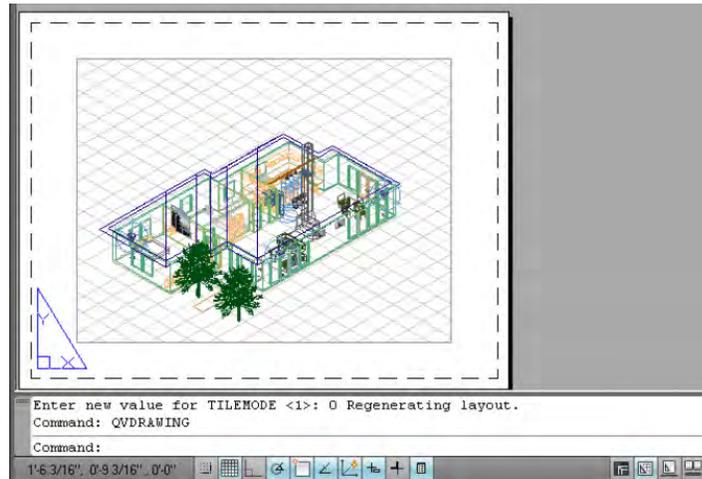


7. Click **OK**.
8. In the *Print* dialog, check that the print preview seems correct., then click **OK**.



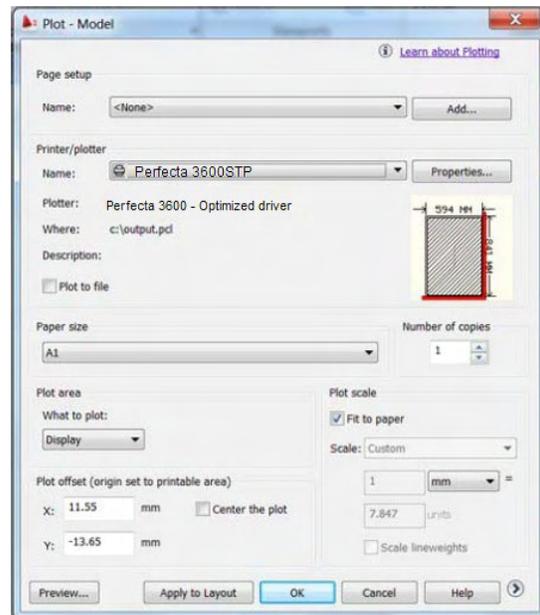
Print from Autodesk AutoCAD

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

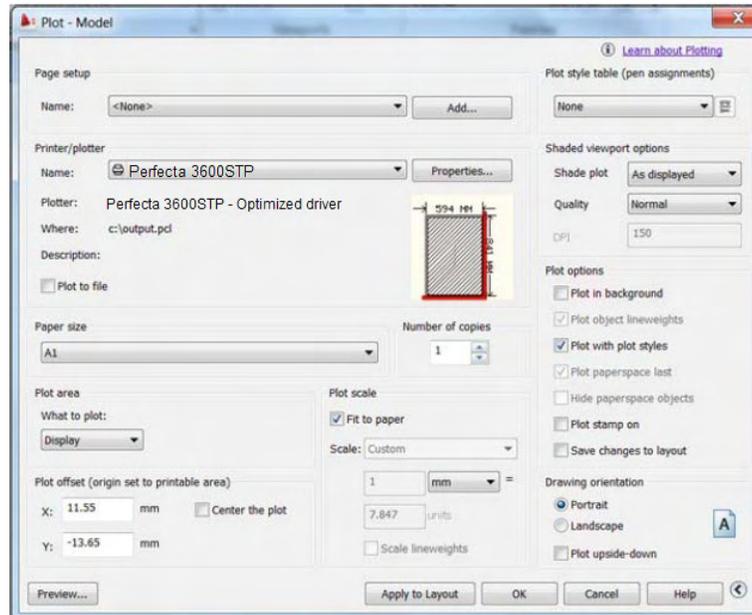


To print from AutoCAD:

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

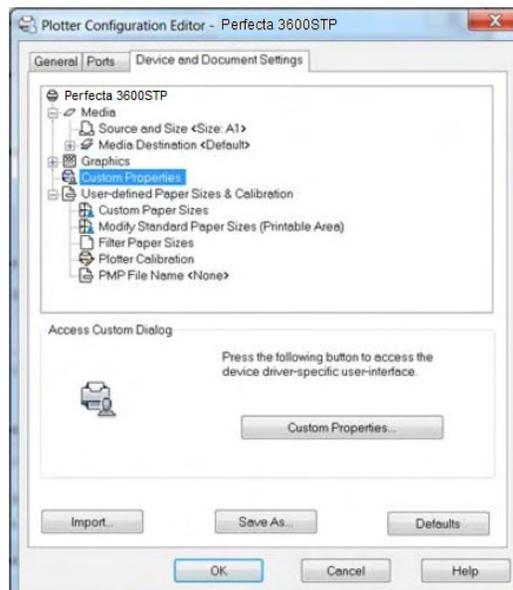


- To view more options, press the circular button in the lower right corner of the window.



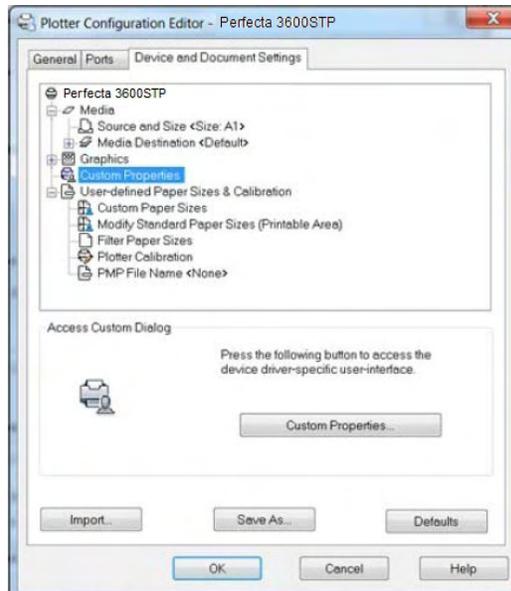
Note: The Quality option does not refer to the final print quality but to the quality of AutoCAD viewport objects that are sent for printing.

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

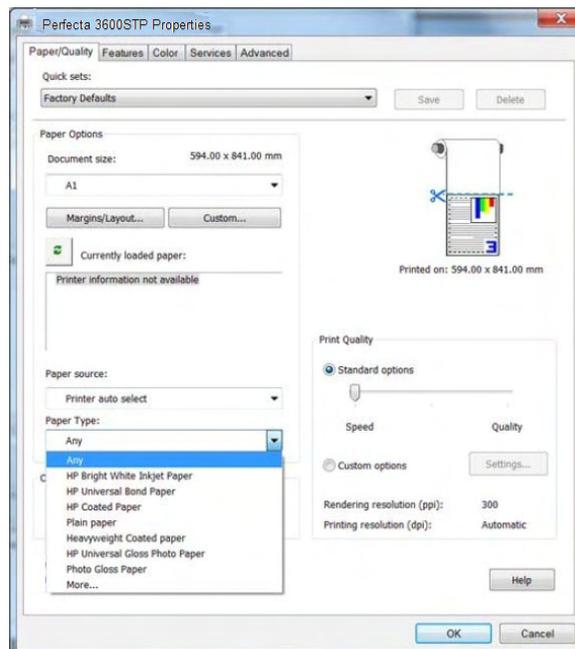


Printing Examples
 Print from Autodesk AutoCAD

4. Press **Custom Properties**.



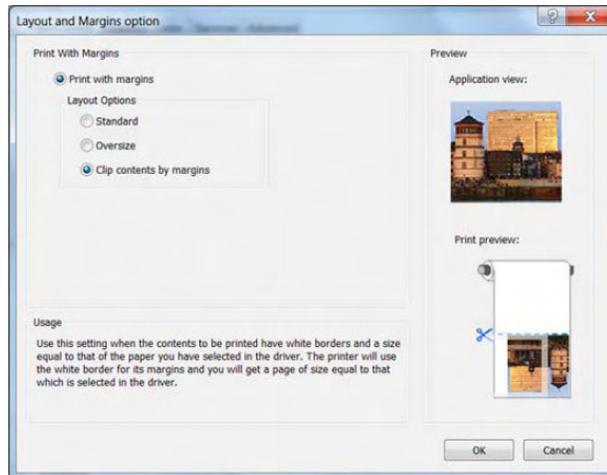
5. In the **Paper/Quality** tab, select the paper type that you intend to use.



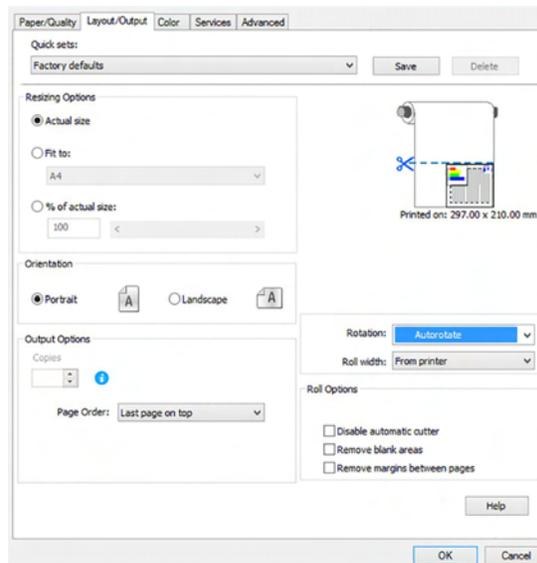
6. Select the print quality (your choice between speed and quality of printing).

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

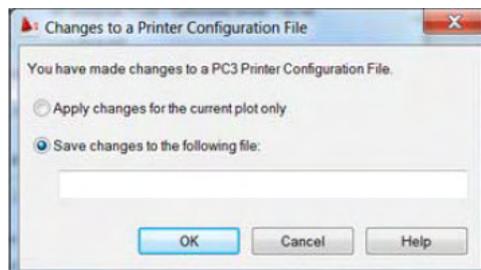
- Press **Margins/Layout** button and select **Clip contents by margins**.



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



- 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 **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

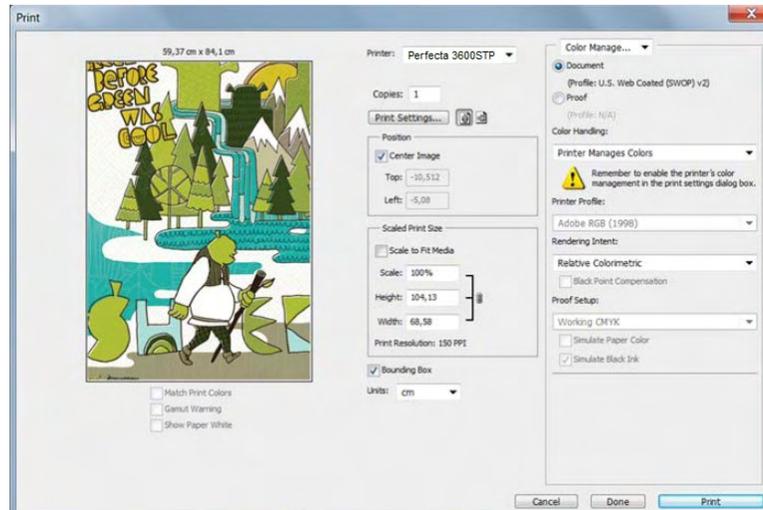
Use this option when the contents to be printed have white borders and a size equal to that of the paper you have selected. The printer will use the white border for its margins and you will get a page of size equal to that which is selected in the driver.

To setup clip contents by margins:

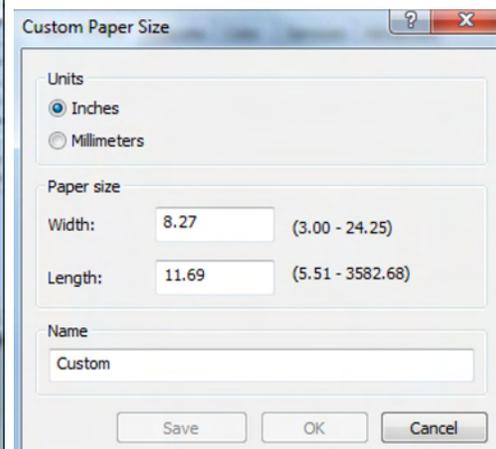
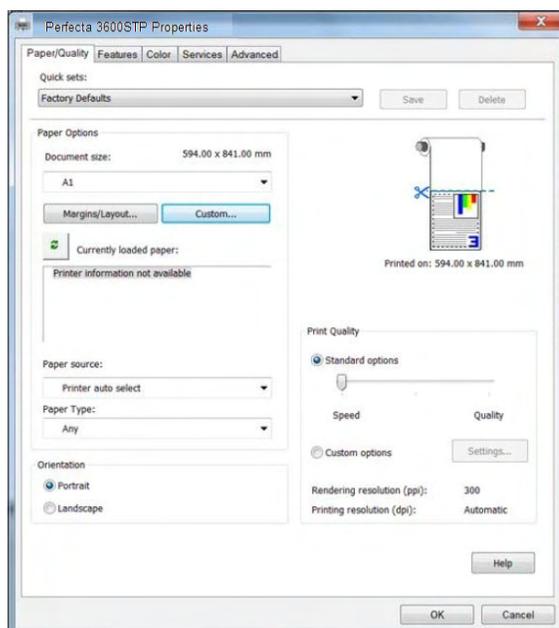
1. Select **Paper/Quality>Margins/Layout>Print with Margins>Layout>Clip Contents by Margins**.

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**.

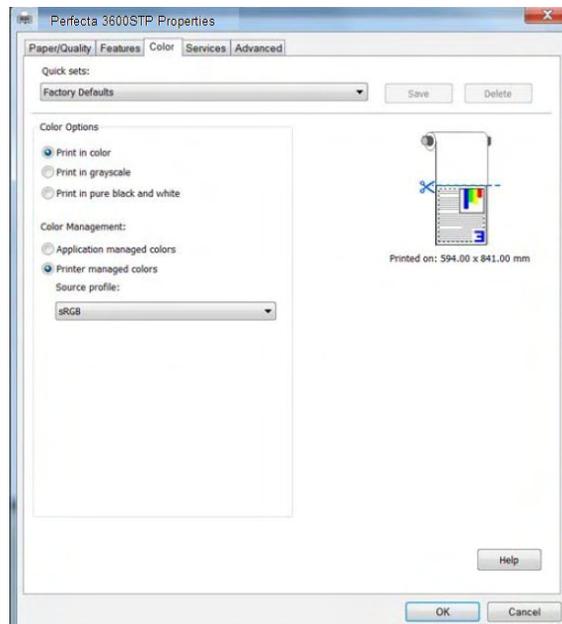


Printing Examples

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.

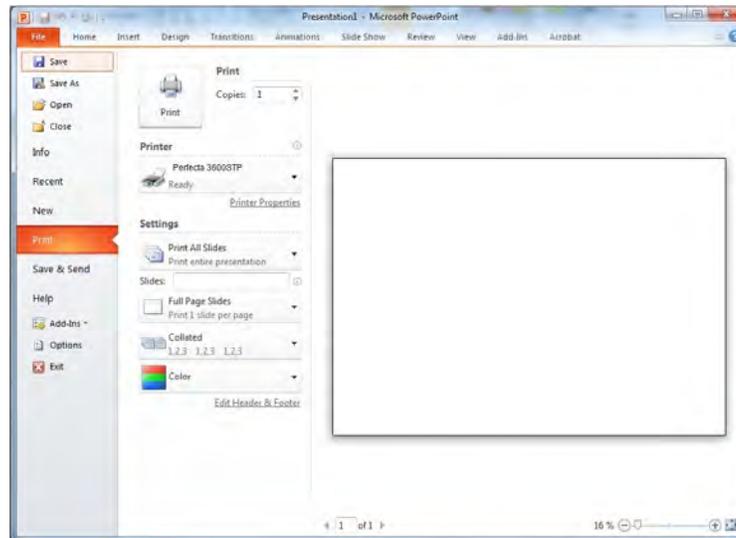


Print and Scale from Microsoft Office

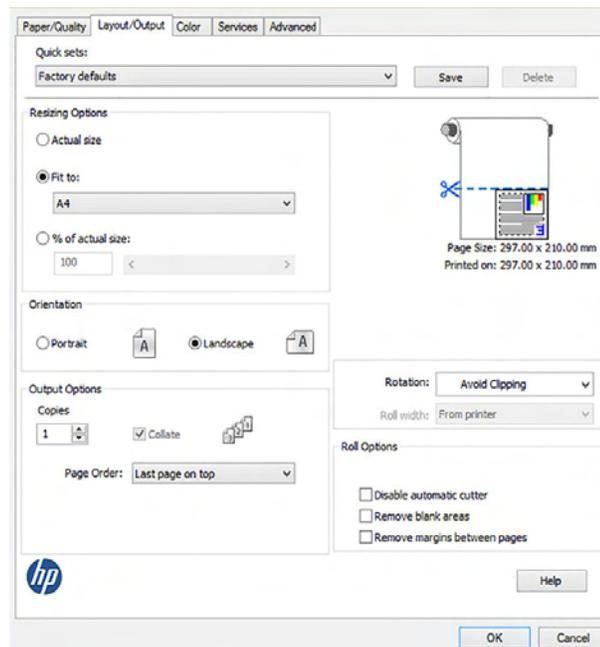
This section demonstrates how to print and scale from the applications in Microsoft Office 2013.

PowerPoint

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



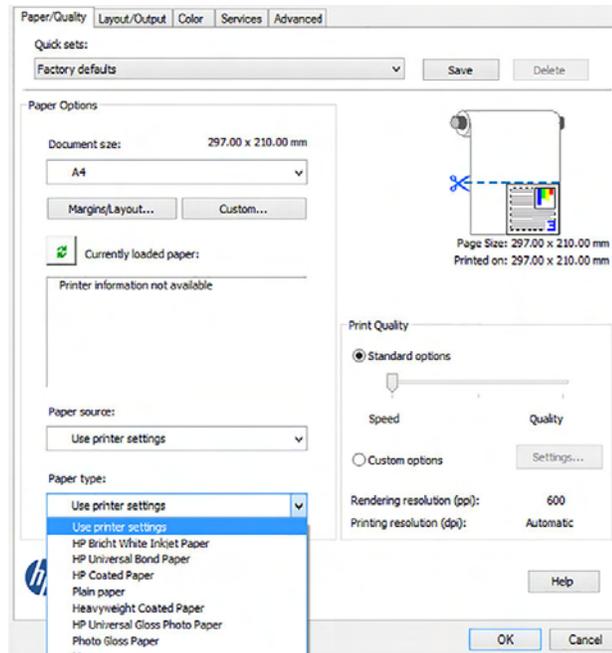
2. Select **Printer Properties > Layout/Output > Fit to** to scale the document to a specific size.



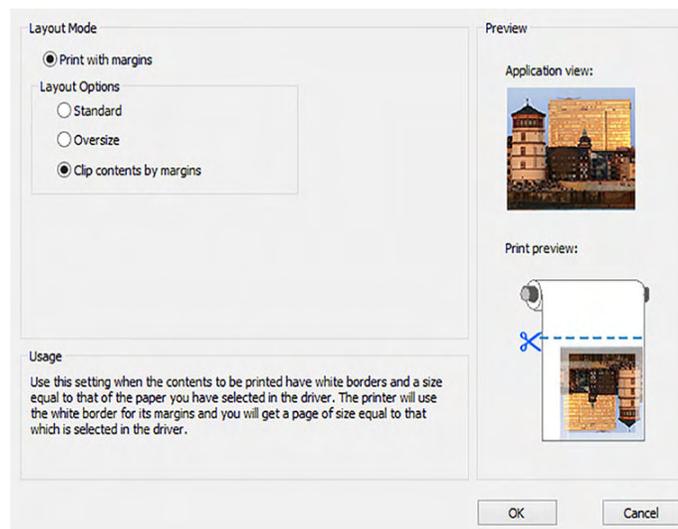
Printing Examples

Print and Scale from Microsoft Office

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

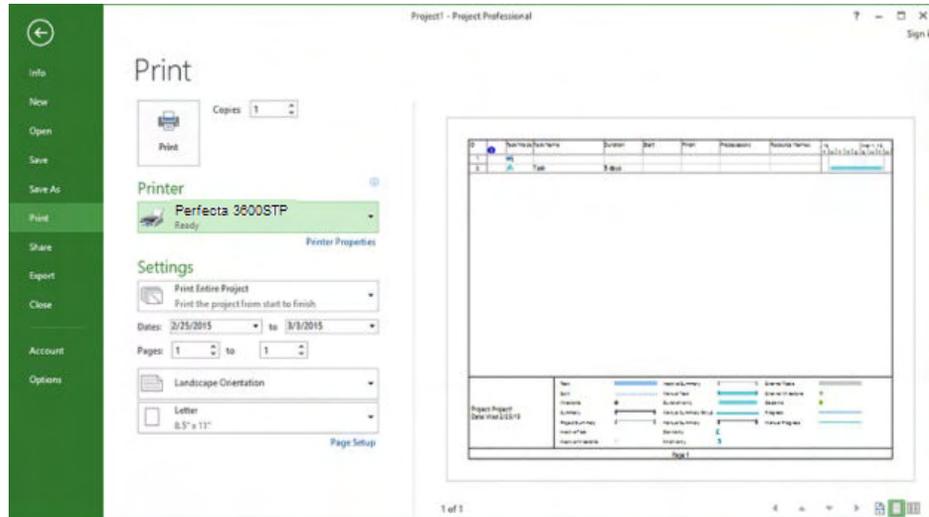


4. Select **Margins/Layout**, then select **Clip contents by margins** to keep the size.



Project

1. Select **File>Print**.



2. Select **Page Setup** and choose the **Paper Size** from the drop-down list.

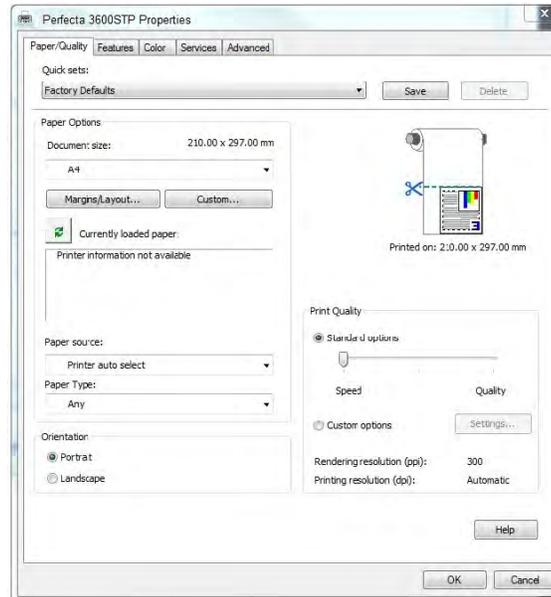


3. Select **Options** to go to the printer driver.

Printing Examples

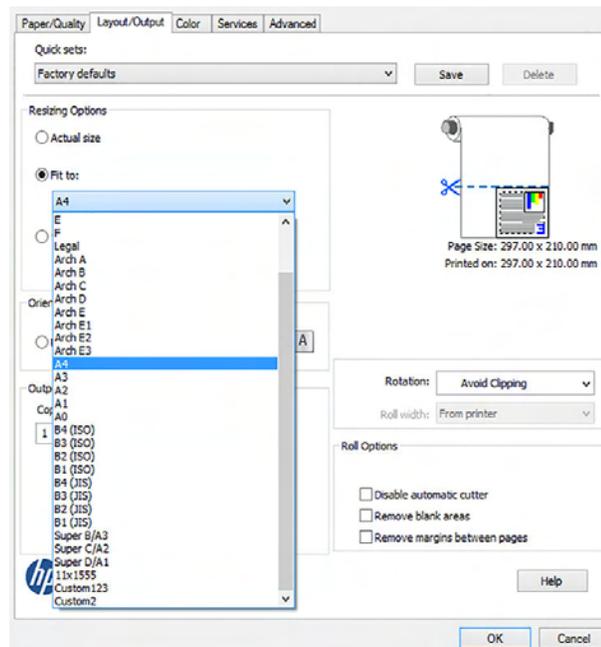
Print and Scale from Microsoft Office

4. Select the **Paper/Quality** tab and verify the settings:
 - **Paper source:** User Printer settings
 - **Paper Type:** Use Printer Settings



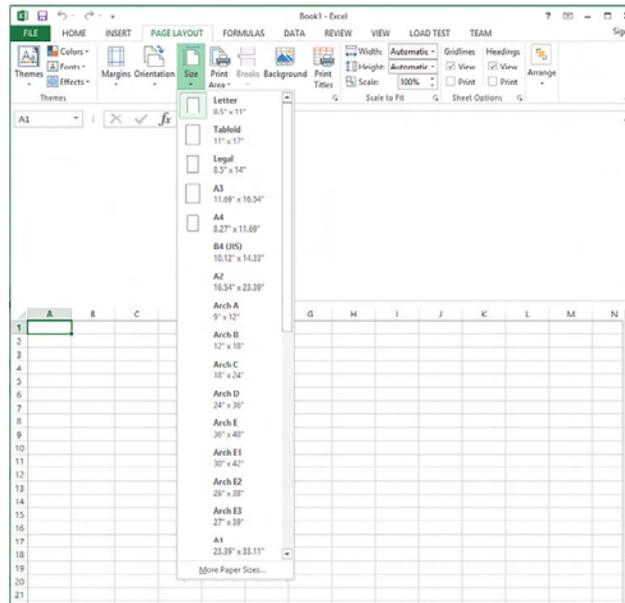
5. Select **Layout > Fit to** to scale the document to a specific size.

Note: You can also scale the document in Project.

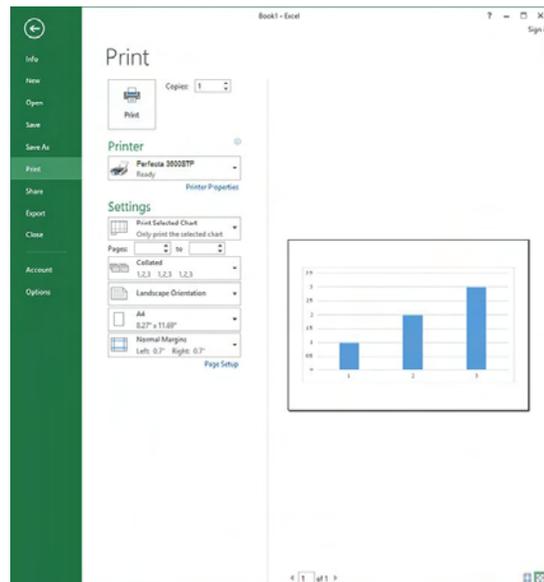


Excel

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



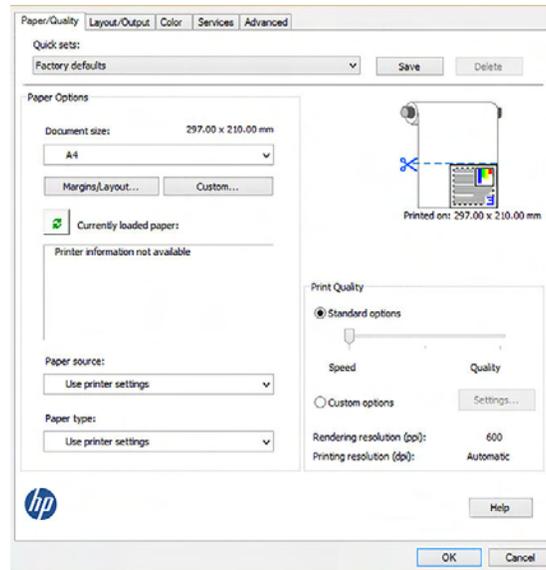
3. Select the *File* tab.
4. Select **Print**, and select the name of your printer.



Printing Examples

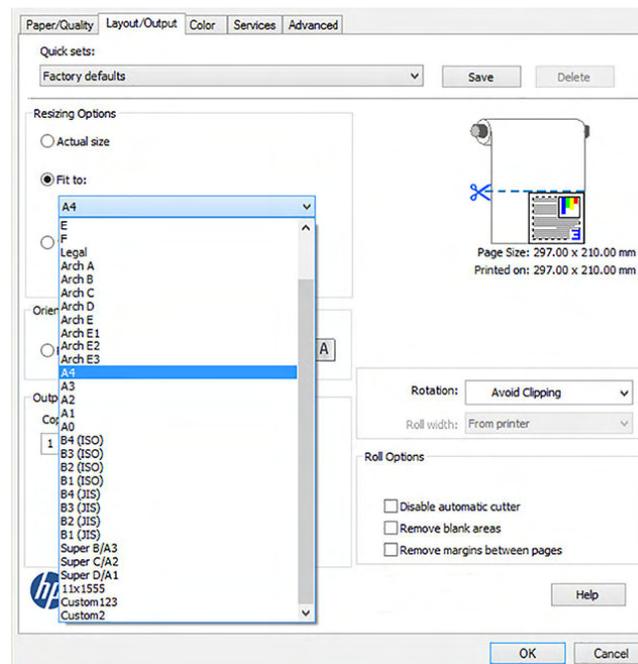
Print and Scale from Microsoft Office

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 **Layout/Output** > **Fit to** 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® 2400STP Poster Design System**. The following information is contained in this chapter:

- *“Ink Cartridge Maintenance” on page 5-2*
- *“Printer Maintenance” on page 5-5*
- *“Software and Firmware Updates” on page 5-14*
- *“Printer Maintenance Kits” on page 5-15*
- *“Scanner Maintenance” 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.



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.

Note: This printer is not designed to use continuous ink systems. To resume printing, remove continuous ink system and install genuine (or compatible) cartridges.

Note: This printer is designed for ink cartridges to be used until they are empty. Refilling cartridges prior to depletion might cause your printer to fail. If this happens, insert a new cartridge (either genuine or compatible) to continue printing.

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 us 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 products. 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. Swipe down on the dashboard of the front panel and press .
2. Touch the desired ink level for more information.

Replace Ink Cartridge

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

- Ink cartridge is very low. You should replace it with a full cartridge for unattended printing (you can use 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. 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 the printer **ON**.
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, then press the ink cartridge to unlock it.
5. Remove the ink cartridge.



6. 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.
7. Close the ink cartridge cover.



Ink Cartridge Maintenance

About the Printhead

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 A-2). Avoid touching pins, leads, and circuitry.

Printer Maintenance

The printer is not designed for any purpose other than printing, copying and scanning. 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 determine if 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. Swipe down the front panel and press .
4. Scroll down the menu and touch **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.

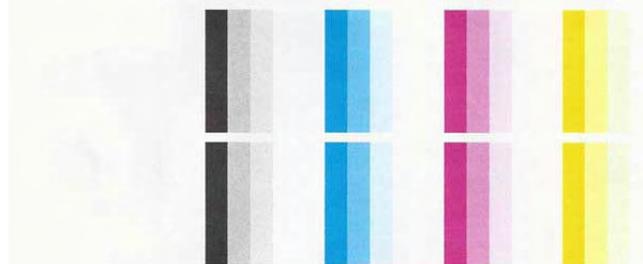
Test Pattern 1

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, 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 **Printer 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 “General Paper Loading Tips” on page 3-2. 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. Swipe down the dashboard on the front panel and press .
4. Press **Printer 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

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.

The following QR code image contains a link to a video to get more information about how to replace a printhead.

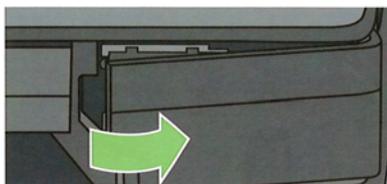


Important

Do not open any covers during this process.

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. Swipe down the dashboard on the front panel and press .
4. Scroll down the menu and select **Printer Maintenance > Replace Printhead**.
5. Open the printhead door.



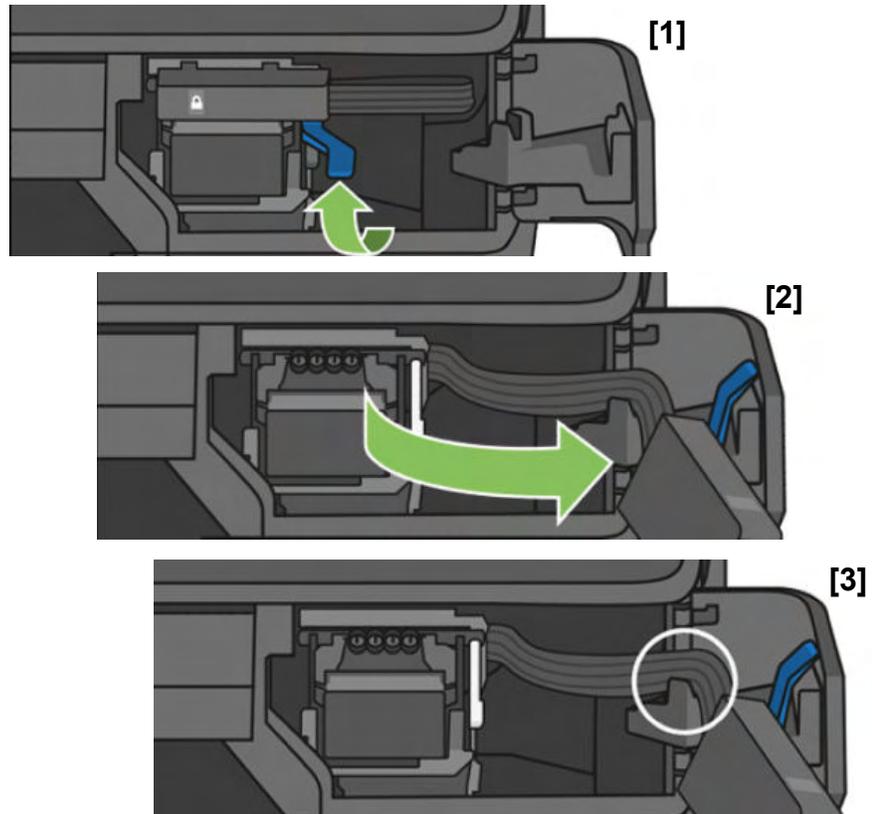
6. Locate the tubes connector lever (blue) to release the ink tubes.



Printer Maintenance

Replacing the Printhead

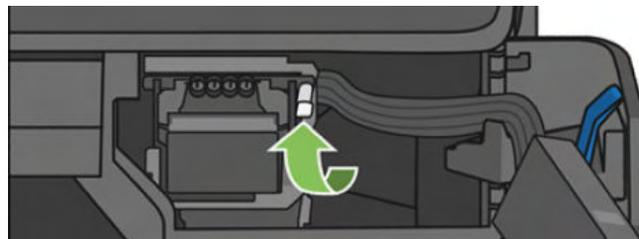
7. Raise the blue lever to release the tube connector [1] and store the tubes connector on the holder in the printer door [2]. Make sure the ink tubes are secured in the door [3].



8. Locate the printhead lever (white).



9. Raise the lever to release the printhead.

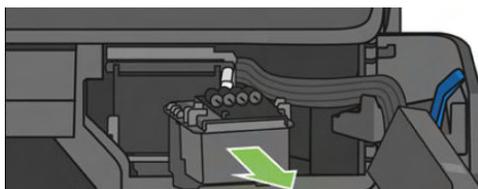


10. Remove the printheads.



CAUTION!

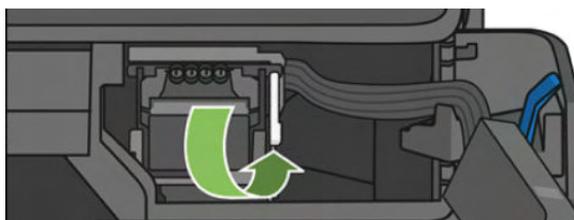
Handle with care to avoid getting ink on the connections.



11. **Insert** the new printhead [1] and lower the white printhead lever [2].

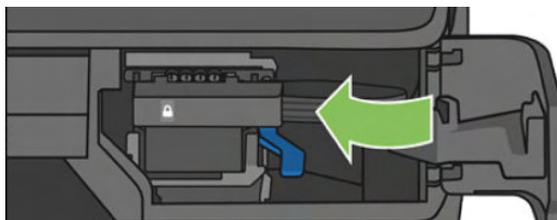


[1]



[2]

12. Insert the tubes connector into the printhead and make sure it locks.



[1]



[2]

13. Close the door and follow the instructions on the front panel. to perform a printhead alignment. The printer will prepare the printhead for use. This takes about 6 minutes.

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 does not advance the correct distance between printhead passes, light or dark bands may appear in the print and image grain may increase.

The printer is calibrated to advance correctly with all paper types that display in the front panel. When you a paper type (of loaded paper), the printer adjusts the rate at which to advance the paper while printing.

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 print-quality issues on page 135 to determine whether paper advance calibration will solve your issue.

Recalibrating Paper Advance

1. Swipe down the dashboard on the front panel and touch ,
2. Scroll down the menu and touch **Printer maintenance > Paper advance calibration > Calibrate paper**. The printer automatically recalibrates the paper advance and prints a paper advance calibration image which you can send to the stacker or basket.
3. Wait until the front panel displays the status screen, then 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 see improvement in your print, continue with the next step. If you are dissatisfied with the recalibration, return to the default calibration, see *"Return to Default Calibration,"* page 5-13.
5. To fine-tune the calibration or if you are using a transparent paper, swipe down the dashboard and touch , then scroll down the menu and touch **Image quality maintenance > Paper advance calibration > Adjust paper advance**.
6. Select the percentage of change from **-99% to +99%**.
 - **Light banding:** Decrease the percentage.
 - **Dark banding:** Increase the percentage.
7. Touch **OK** on the front panel, to save the value.
8. Wait until the front panel displays the status screen and reprint your print.

Return to Default Calibration

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. Swipe down the dashboard on the front panel and touch ,
2. Scroll down and touch **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

Your printer can be disassembled from the stand to move it. Use the blue knob to perform this operation. If you need to move or store the printer, prepare it correctly to avoid possible damage to it.

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 left of 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.

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.

Software and Firmware Updates

Firmware Updates

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

The following QR code image contains a link to a video to get more information about updating your firmware.



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 2-15.

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

Update from Front Panel

1. Swipe down the dashboard on the front panel and touch ,
2. Scroll down the menu and touch **Web Services setup > Product Update**.
3. Touch **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

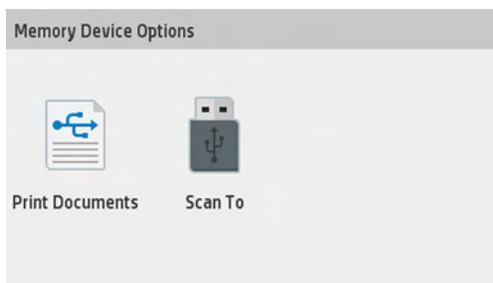
1. Select **Firmware Update**.

Update from HP Designjet Utility

1. In the HP Designjet Utility in Windows, select your printer from the **Admin** tab.
2. Follow the steps in the **Firmware Update** section.

Using a USB Pen Drive

1. Download the corresponding file from the web at <http://www.hp.com/go/T830/support>.
2. Copy the file to the root of the **USB pen drive**.
3. Plug in the USB host and wait until the front panel shows a new icon.

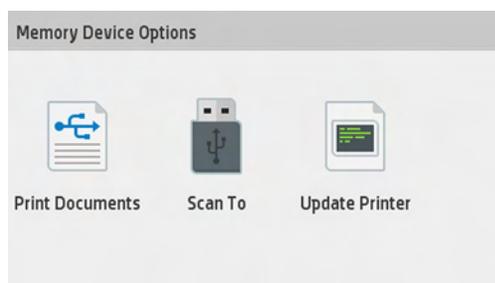


Important

This can take about 30 seconds.

4. When displayed, touch the icon **Update Printer** and follow the instructions on the front panel.

Note: The firmware includes a set of the most commonly used paper presets.



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/T520/drivers>.

Printer Maintenance Kits

Two 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.

Scanner Maintenance

Clean the Scan Bars

Scanner Maintenance

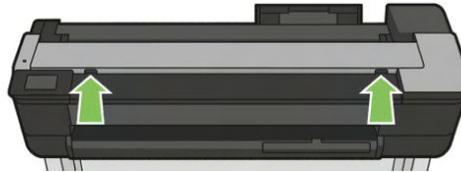
Clean the Scan Bars

The following QR code image contains a link to a video to get more information about cleaning and replacing the scan bar.



Note: You should clean the scan bars periodically, depending on how often you use the scanner.

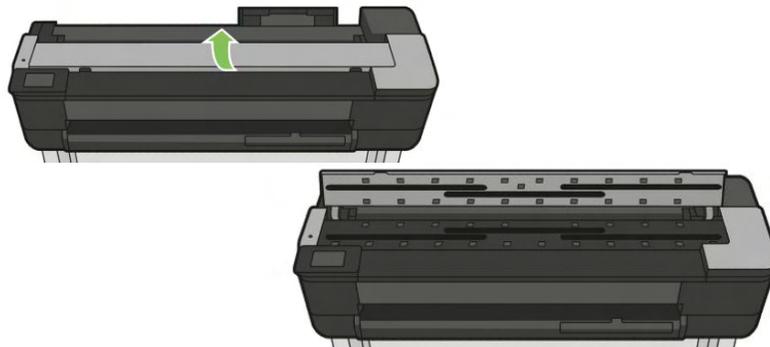
1. On the left of the front panel, press **Power**  to turn off the printer.
2. Turn off the power switch at the rear, and disconnect the power cord connected to the printer.
3. Press the two small indented buttons at the front of the scanner to open the scanner cover.



WARNING

Take care while the scanner lid is open to avoid trapping or crushing your fingers or hand.

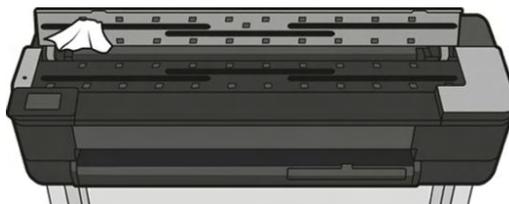
4. Lift the scanner cover.



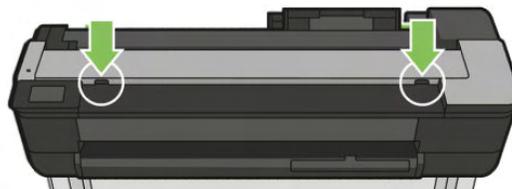
5. Clean the scan bars and the surrounding area with a lint-free cloth.



6. For more thorough cleaning, clean the calibration surfaces and the feed rollers.



7. Close the scanner cover and gently push it down to lock it into place.



8. Clean the area immediately in front of the scanner, where the scanned sheet rests before scanning.
9. Reconnect the power cable, turn on the power switch at the rear, and press **Power**  to turn on the printer.

Calibrate the Scanner

Your scanner has been calibrated at the factory and should not need recalibration during their lifetimes. However, because of environmental changes, the scanner may start showing image defects that can be easily corrected by recalibrating the scanner.

The procedure takes less than 10 minutes, and we recommend that you recalibrate the scanner whenever undesired artifacts or a lack of quality in scanned files or copies appears.

Note: Keep in mind the limitations of CIS technology. Scanners based on CIS technology have a high optical resolution within their focus plane, at the price of a very limited depth of field. Hence, the images are sharp and detailed when the scanned original is perfectly flat against the glass plate. However, whenever the original contains wrinkles or folds, these defects are clearly visible in the scanned image (as shown in the following example).

If you perform calibration successfully and still have concerns about the image quality, please read *“Troubleshooting Scan and Copy Issues”* on page 6-32 in order to detect whether you are facing a product limitation, and may want to consider buying a CCD scanner.

To calibrate the scanner:

1. Clean the scanner. See *“Clean the Scan Bars”* on page 5-16.
2. Swipe down the dashboard on the front panel and touch ,
3. Scroll down the menu and touch **Image Quality Maintenance** and touch **Alignment calibration**.
4. Follow the instructions in the front panel.

If calibration fails:

1. Verify the printer is turned on and ready for normal operation.
2. Verify the scanner is working correctly. To test it, scan a small document to file.
3. Verify the scanner is clean before calibration. If in doubt, clean the scanner and restart the calibration process.
4. Eject and reload the calibration sheet, checking that it is clean, in good condition, face up and perfectly centered in the scanner.
5. If the previous steps do not help, eject the sheet and restart the printer (turn off and on). When the system has restarted, repeat the calibration.

Note: If you cannot perform the calibration successfully in three consecutive attempts, contact your Varitronics Dealer for support.

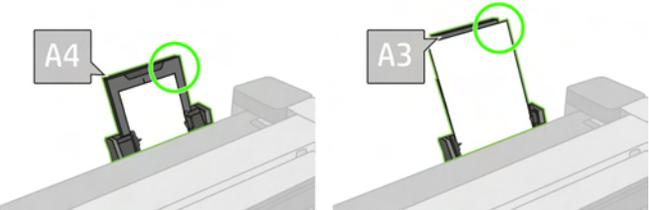
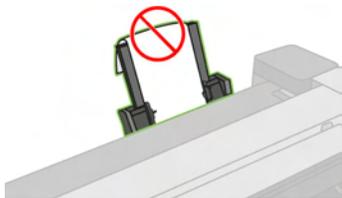
6 Troubleshooting

This chapter provides information about troubleshoot the **VariQuest® Perfecta® 2400STP Poster Design System**. 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 6-14*
- *“Troubleshooting Scanner Printing Issues” on page 6-31*
- *“Troubleshooting Scan and Copy Issues” on page 6-32*
- *“Scanner Diagnostic Plot” on page 6-55*
- *“Troubleshooting Ink Cartridge and Printhead Issues” on page 6-62*
- *“Troubleshooting Data Communication Issues” on page 6-64*
- *“Network Configuration Page” on page 6-71*
- *“Troubleshooting General Printer Issues” on page 6-74*
- *“Front Panel Error Messages” on page 6-77*

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 (Continued)	
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="text-align: center;">  </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. Paper width is smaller than the minimum size supported by the selected paper source.	<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 A3 must be loaded 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.
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.

Paper Type Missing from Printer Driver

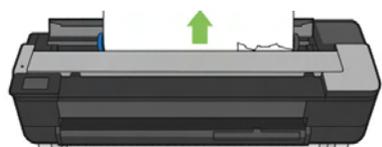
To work with a paper not in the driver, you can use your paper as one of the presets already in the driver, however, you must identify whether your paper is transparent or translucent, photo or bond, coated or technical.

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

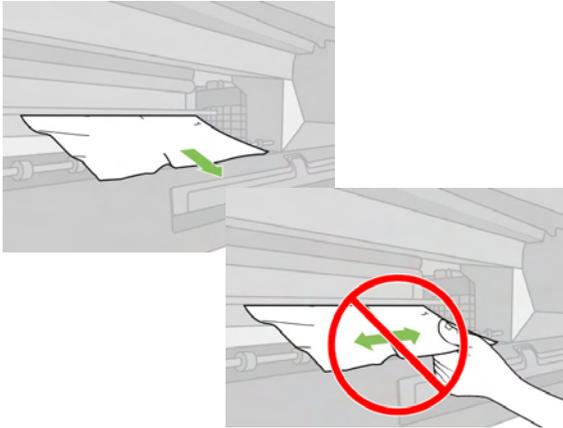
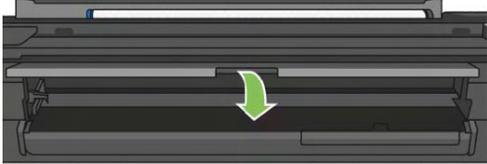
Transparent or Translucent Film	
Paper Type	Suggested Action
Transparent (e.g., transparency)	<ul style="list-style-type: none"> Select paper type Film > Transparent/Clear film.
Translucent (e.g., technical paper)	<ul style="list-style-type: none"> Select paper type Film > Matte film.
Photo Paper	
Paper Type/Finish	Suggested Action
Photo Paper	<ul style="list-style-type: none"> Use the Photo Paper category.
Glossy/High Gloss Paper	<ul style="list-style-type: none"> Select paper type Photo Gloss Paper.
Semi-Gloss/Satin/Pearl/Luster Finish	<ul style="list-style-type: none"> Select paper type Photo Semi-gloss/Satin Paper. <p>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.</p>
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	<ul style="list-style-type: none"> 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)	<ul style="list-style-type: none"> Select paper type Bond and Coated Paper > Plain Paper. You can also select Recycled Bond Paper.
Light-coated Papers (<110 g/m2)	<ul style="list-style-type: none"> Select paper type Bond and Coated Paper > HP Coated Paper.
Heavyweight Coated Papers (<200 g/m2)	<ul style="list-style-type: none"> Select paper type Bond and Coated Paper > Heavyweight Coated Paper.

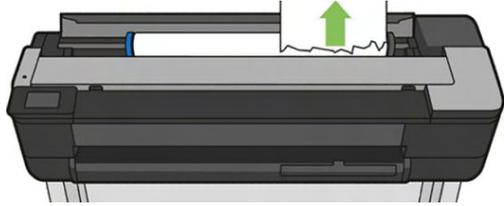
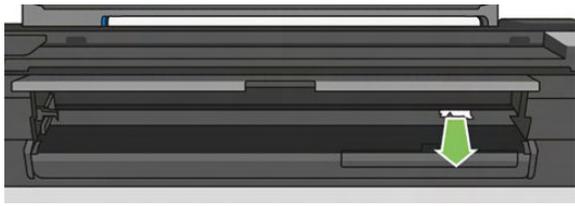
Troubleshooting Paper or Paper Quality Issues

Ink or Wrinkling Problems	
Problem	Suggested Action
Black ink is easily removed when touched.	This happens when your paper is incompatible with matte black ink. To use an optimized ink combination: <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.	This happens when too much ink is used. To use less ink, select a thinner category. Matte paper categories from thinnest to thickest are: <ul style="list-style-type: none"> • Plain Paper • Coated Paper • Heavyweight Coated Paper For other image quality problems, see <i>“Troubleshooting Paper or Paper Quality Issues” on page 6-6</i> .
Wrong Paper Type Printed	
Problem	Suggested Action
The printer prints your job before you were able to load your desired paper.	In the printer driver, you may have Any selected for the <i>Paper Type</i> . When <i>Any</i> is selected, the printer will print immediately on whichever paper is loaded. Load your desired paper, see <i>“Loading Paper” on page 3-3</i> , and select your paper type specifically in the driver. <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. <hr/> Note: Any is the driver default.
Paper Mismatch	
Problem	Suggested Action
Printer stops or stays in wait mode.	If the paper currently loaded is not suitable for a particular job, the printer stops and waits for you to decide what to do. Loaded paper may be considered unsuitable if: <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. 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: <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.

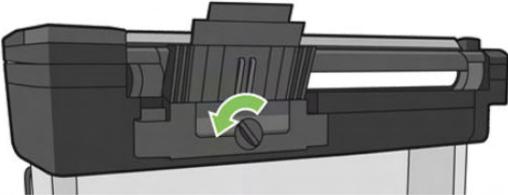
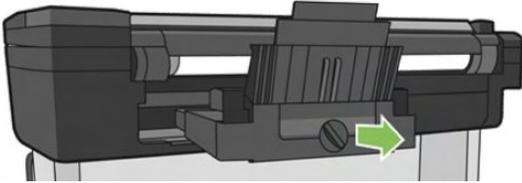
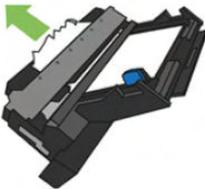
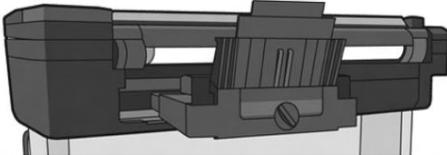
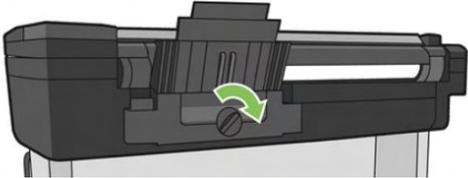
Paper Jams	
Problem	Suggested Action
Paper Roll Jammed.	<p>When a paper jam occurs, a message normally displays on the front panel.</p> <ol style="list-style-type: none"> 1. Open the top cover. <div style="text-align: center;">  </div> 2. Rewind the roll. You may feel resistance if the paper is stuck; pull firmly. <div style="text-align: center;">  </div> 3. Cut the paper if needed <div style="text-align: center;">  </div> 4. Rewind the roll. <div style="text-align: center;">  </div> 5. Carefully remove any of the jammed paper that you can lift up and out from the top of the printer. <div style="text-align: center;">  </div>

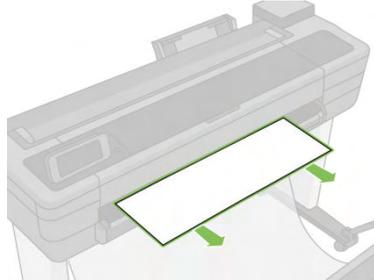
Troubleshooting Paper or Paper Quality Issues

Paper Jams (Continued)	
Problem	Suggested Action
	<p>6. Open the front window.</p>  <p>7. Try to move the printhead carriage out of the way .</p> <p>8. Carefully remove any of the jammed paper that you can from the front window.</p>  <p><i>Take care not to damage printer's inside components. Do not move the paper sideways, as it could damage the printer.</i></p>
	<p>9. Close the front window.</p> 
	<p>10. Close the roll cover.</p> 
	<p>11. Reload the roll or load a new sheet; see Paper handling on page 33</p>

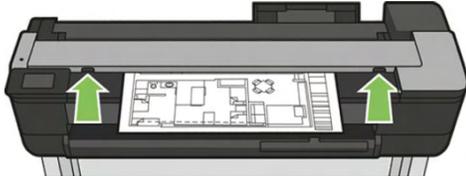
Paper Jams (Continued)	
Problem	Suggested Action
Single-sheet paper has jammed.	1. Remove the single sheet from the printer. 
	2. Open the front cover. 
	3. Remove any of the jammed paper. 
	4. Close the front cover. 

Troubleshooting Paper or Paper Quality Issues

Paper Jams (Continued)	
Problem	Suggested Action
The multi-sheet tray has jammed.	<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 extenders, making it 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.  <ol style="list-style-type: none"> 6. Remove all paper from the printer.  <ol style="list-style-type: none"> 7. Replace the tray. 8. Lock the tray. 

Paper Output Problems	
Problem	Suggested Action
A strip stays on the output trays 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>“Change Cutter Settings” 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 Paper or Paper Quality Issues

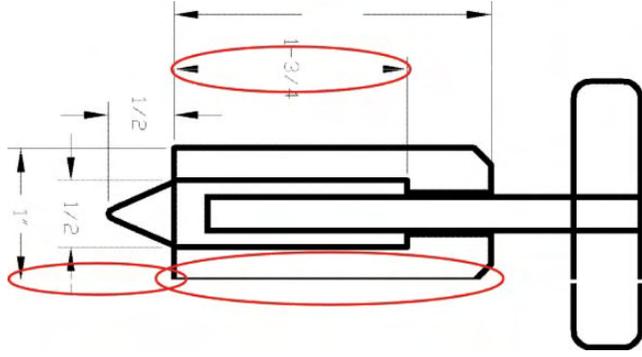
Scanner Problems	
Problem	Suggested Action
The scanner does not load the original.	<p>If you have difficulty loading the original when scanning, try the following:</p> <ol style="list-style-type: none"> 1. Check that the unit is on. 2. Wait until the unit has booted up completely and is idle. 3. Check for messages in the Touch Panel. 4. If you completed the previous steps, verify that the original meets the scanner specifications. 5. Make sure you are loading the original far enough into the scanner so that it can be detected. 6. Make sure the leading edge of the original is flat and the is even when loading it. If not, trim the leading edge so the media enters the scanner smoothly. 7. Try using a different media type to eliminate the scanner hardware as an issue.
Scanner is jammed.	<p>When a paper jam occurs, a message normally appears on the front-panel display. To clear a scanner paper jam:</p> <ol style="list-style-type: none"> 1. Open scanner lid. <div style="text-align: center; margin: 10px 0;">  </div> 2. Pull paper out from one of the following paths: <ul style="list-style-type: none"> - Top-rear area at the back. <div style="text-align: center; margin: 10px 0;">  </div> <ul style="list-style-type: none"> - Front bottom area between scanner platen and front window. <i>Do not move the paper sideways as it could damage the scanner.</i> <div style="text-align: center; margin: 10px 0;">  </div>

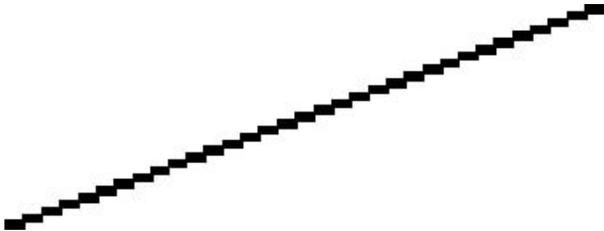
Scanner Problems (Continued)	
Problem	Suggested Action
	<p>3. Using your fingers, you can turn the rubber wheels to get better access to the paper and clear any debris.</p> 
	<p>4. Close the scanner lid.</p> 

Troubleshooting Print Quality Issues

General Printing Tips	
Problem	Suggested Action
<p>When you have any print-quality problems:</p>	<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 “View Paper Information” on page 3-13). Also make sure that the paper type selected in your software is the same as the paper type loaded into the printer. <i>If you have the wrong paper type selected, you could experience poor print quality and incorrect colors, and possibly damage the printhead.</i> • Check that you are using the most appropriate print-quality settings for your purposes (see “Printing” on page 4-1). 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 “Environmental Specifications” on page 7-6.

Horizontal Banding	
Problem	Suggested Action
<p>Horizontal lines across the image.</p>	<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 <i>Speed</i>, try setting it to <i>Quality</i>. 3. Print the Print Diagnostic Report. See <i>“Print Quality Diagnostic Report”</i> on page 5-6. 4. If printhead is working correctly, perform the paper advance calibration: see <i>“Calibrating the Paper Advance”</i> on page 5-12. 5. If the problem continues to persist, contact your VariQuest dealer for further support.

Incorrect Line Weight	
Problem	Suggested Action
Line weight on image incorrect.	<p>If your printed image has lines that are too thick, too thin or missing:</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). Select the custom print-quality options in the driver dialog, and try turning on the Maximum detail option (if available). 3. If the resolution of your image is greater than the printing resolution, you may notice a loss of line quality. See the <i>Max. Application Resolution</i> option in the driver dialog's <i>Advanced</i> tab, under <i>Document Options > Printer Features</i>. 4. If lines are too thin or missing, print the Print Quality Diagnostic Report. See “<i>Print Quality Diagnostic Report</i>” on page 5-6. 5. If the problem persists, perform paper advance calibration: see “<i>Calibrating the Paper Advance</i>” on page 5-12. 6. If the problem continues to persist, contact your VariQuest dealer for further support.

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” on page 4-1.</i> 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” on page 5-6.</i> 2. Align the printhead if recommended in the report.

Troubleshooting Print Quality Issues

Discontinuous Lines	
Problem	Suggested Action
<p>Lines are broken or not continuous.</p>	<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> <div style="text-align: center;">  </div> <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”</i> on page 7-6. 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”</i> on page 3-13. 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”</i> on page 5-6. 8. Align the printhead if recommended in the report.

Troubleshooting Print Quality Issues

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 5-12.

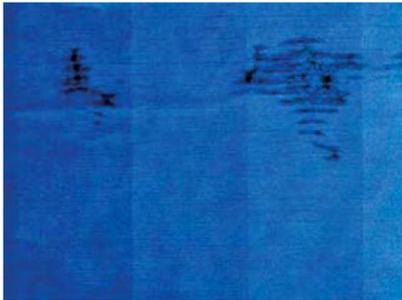
Blurred or Grainy Image	
Problem	Suggested Action
<p>The whole image is blurry or grainy.</p>	<div style="text-align: center;">  </div> <ol style="list-style-type: none"> 1. Check that: <ul style="list-style-type: none"> • The loaded paper type corresponds to the paper type selected in the front panel 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. 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. 4. If the problem persists, perform paper advance calibration: see <i>“Calibrating the Paper Advance”</i> on page 5-12. 5. If the problem continues to persist, contact your VariQuest dealer for further support.

Troubleshooting Print Quality Issues

Paper Rippled	
Problem	Suggested Action
<p>The paper is not flat after printing.</p>	<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> <div style="text-align: center;">  </div> <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” on page 3-13.</i> 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
<p>The paper is scuffed or scratched when it comes out of the printer.</p>	<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.

Troubleshooting Print Quality Issues

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> <p><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> <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. <div style="text-align: center;">  </div>
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.	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. To avoid matte black ink, you select Photo Glossy Paper as the paper type (in the Photo Paper category).

Object Edges Not Sharp	
Problem	Suggested Action
The edges of objects are stepped or not sharp.	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: <div data-bbox="743 856 1393 1142" data-label="Image"> </div> <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.

Troubleshooting Print Quality Issues

Object Edges Dark	
Problem	Suggested Action
<p>The edges of objects are darker than expected.</p>	<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> <div style="text-align: center;">  </div> <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
<p>Print has vertical bands of different colors along it.</p>	<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 <i>Speed</i>, try setting it to Quality.

White Spots on Print	
Problem	Suggested Action
<p>White spots appear on the printed paper.</p>	<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> <div style="text-align: center;">  </div> <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>

Troubleshooting Print Quality Issues

Image is Incomplete	
Problem	Suggested Action
<p>The image is clipped at the bottom.</p>	<p>Check the following:</p> <ul style="list-style-type: none"> • If you pressed  before all the printer received all of the data, 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
<p>The image is clipped when printed.</p>	<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 <i>"Choose Margins Options"</i> on page 4-8). • 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 CoreIDRAW, 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, Normal or 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.

Troubleshooting Print Quality Issues

Some Objects Missing from Image	
Problem	Suggested Action
Some objects are missing from the 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.</p> <p>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><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
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” on page 4-1</i>. • 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>“Software and Firmware Updates” on page 5-14</i>. Check that you have the right settings in your software application.

Troubleshooting Scanner Printing Issues

Scanner Printing Issues	
Problem	Suggested Action
<p>Cannot access the network folder.</p>	<p>If you have set up a network folder (see “Scan to Network Setup Process” on page 4-24), but the printer cannot access it, check that:</p> <ul style="list-style-type: none"> • each field is filled in correctly. • the printer is connected to the network. • the remote computer is switched on, working normally and connected to the network. • the folder is shared. • you can put files into the same folder from a different computer on the network, using the printer's logon credentials. • the printer and remote computer are in the same network subnet; if not, check that network routers are configured to forward the CIFS protocol traffic (also known as Samba).
<p>Scanning to file is slow,</p>	<p>Scanning large formats creates large files. This means that scanning to file can take time even under optimal system configurations and conditions. This is especially true when scanning across a network. However, if you think scanning to file with your system is unreasonably slow, try the following to locate and solve the problem.</p> <ul style="list-style-type: none"> • Check scan job status on front panel. If it takes too long, you can cancel it. • Check that <i>Resolution</i> setting is right for the job. Not all scanning tasks require high resolutions. Lowering resolution will speed up the scanning process. For JPEG and PDF scan jobs, you can also change <i>Quality</i>. Lower quality values produce smaller files. • Check network configuration. Your network should be a transfer rate of Gigabit Ethernet or higher to achieve optimal scanning speeds. Networks with a 10/100 Ethernet configuration have slower transfer rates. • Contact your network administrator for information about your network configuration, transfer rates, scan-to-file destinations on the network and possible solutions for increasing speeds. • If scanning to files on the network is too slow and the network configuration cannot be changed, improved speeds can be achieved by scanning to a USB flash drive. • If scanning to a USB flash drive seems slow, check your USB flash drive interface compatibility. Your system supports a Hi-Speed USB interface. Your USB flash drive should be compatible with Hi-Speed USB (i.e., USB 2). Also check that your USB flash drive contains enough storage space for scanned large-format images.

Troubleshooting Scan and Copy Issues

This section describes the most common copy & scan defects and failure modes, sorted by relevance and frequency of appearance. A defect is a common image artifact that usually appears when using any CIS scanner. These are due to incorrect settings, product limitations, or easily solvable mistakes. A failure mode is due to malfunctions of some of the scanner components.

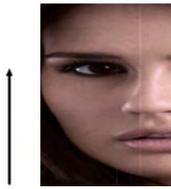
Scanner cleanliness is paramount to ensure good image quality. Before proceeding with any troubleshooting, please make sure the glass scan bars are clean and in good condition and the pressure sliders (wide, white plastic parts) are also in good and clean condition.

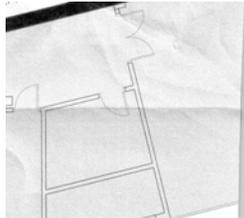
Some of the corrective actions proposed here require the use of the Scanner Diagnostic Plot, which you can print and scan as indicated in The scanner diagnostic plot on page 167. When copying, to be sure that the defect does not come from the printing function, use this diagnostic plot to detect any scanning issue.



CAUTION!

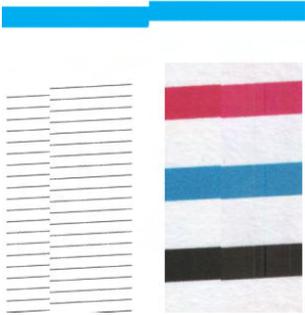
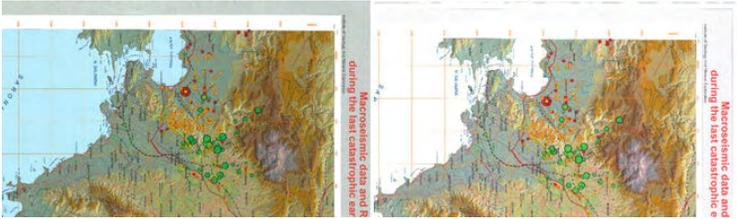
Do not use any printed version of this guide to test the scanner, as the resolution of the images included here is insufficient. Use the diagnostic plot when recommended in response to any of the errors described in this chapter.

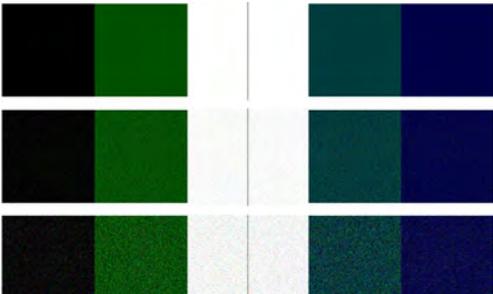
Copy and Scan Quality Issues	
Problem	Suggested Action
Random vertical lines.	<p>This is one of the most common issues in sheet-fed scanners. Usually, the vertical streaks are caused by dust particles inside the scanner, or mis-calibration of the scanner (in these cases, the problem can be solved). The examples show some images suffering from vertical lines or streaks (note the black arrow indicating the scanning direction in these examples).</p> <ol style="list-style-type: none"> 1. Clean the scanner's glass scan bars and the original to be scanned as described in <i>"Clean the Scan Bars"</i> on page 5-16. Re-boot the printer and re-scan your original. 2. If streaks remain, recalibrate the scanner as indicated in <i>"Calibrate the Scanner"</i> on page 5-18. Re-boot the scanner and re-scan your original after calibration is completed. 3. If the streaks still remain, check the scanner's glass scan bars and sliders visually. If they are damaged (scratched or broken), contact your authorized VariQuest Dealer or VariQuest Customer Service. <hr/> <p>Note: Vertical streaks cannot always be solved, due to the technological limitations of CIS technology. If the streaks remain after the corrective actions previously described, no further action can be taken to improve the image quality, except to buy a more expensive CCD scanner.</p> <hr/> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div>

Copy and Scan Quality Issues (Continued)	
Problem	Suggested Action
<p>Wrinkles or folds.</p>	<p>Scanners based on CIS technology have a high optical resolution within their focus plane, at the price of a very limited depth of field. The images are sharp and detailed when the scanned original is perfectly flat against the glass plate. However, if the original contains wrinkles or folds, these defects are clearly visible in the scanned image (see example).</p> <div style="text-align: center;">  </div> <ol style="list-style-type: none"> 1. To correct: <ul style="list-style-type: none"> • Scan: Re-scan the original and set the background color and noise removal to Off. • Copy: Set the content type to IMAGE. 2. If the problem persists: <ul style="list-style-type: none"> • Scan: Re-scan the original at a lower scanner resolution (300 dpi or lower resolution). • Copy: Set resolution to Fast or Normal <hr/> <p>Note: It may also help to flatten the original manually as much as possible before scanning it again.</p> <hr/> <p>Note: Due to the technological limitations of CIS technology, the problem of wrinkles cannot always be solved. If the wrinkles remain after the corrective actions explained above, then no further action can be taken to improve the image quality, except to buy a more expensive CCD scanner.</p>

Copy and Scan Quality Issues (Continued)

Problem	Suggested Action
<p>Line discontinuities</p>	<p>When scanning or copying large originals, you may sometimes find issues such as shown in the following image, where a straight line (does not have to be horizontal) appears with discontinuities or small steps. Note the black arrow indicating the scanning direction in this example.</p>  <p>To correct:</p> <ol style="list-style-type: none"> 1. Repeat the scan, making sure the product is correctly positioned (i.e., flat on the floor and does not move). <hr/> <p>Note: Turning the original 90 or 180 degrees and scanning it again may also solve the problem.</p> <hr/> <ol style="list-style-type: none"> 2. If the problem persists, check that the original to be scanned is not skewed and that it does not become skewed during the scan. If so, see <i>“Troubleshooting Scanner Printing Issues”</i> on page 6-31. <hr/> <p>Note: Also try deactivating the automatic de-skew algorithm as indicated in <i>“Troubleshooting Scanner Printing Issues”</i> on page 6-31.</p> <hr/> <ol style="list-style-type: none"> 3. If there is no skew but the problem persists, clean and calibrate the scanner as indicated in <i>“Clean the Scan Bars”</i> on page 5-16 and <i>“Calibrate the Scanner”</i> on page 5-18. 4. Take care not to move the printer during the calibration, and check that the maintenance sheet is correctly positioned before starting the calibration. Also check that the maintenance sheet is not damaged before calibrating the scanner (an old or damaged maintenance sheet may cause this problem); if damaged, reprint it as explained in <i>“Calibrate the Scanner”</i> on page 5-18).

Copy and Scan Quality Issues (Continued)	
Problem	Suggested Action
<p>Problem persists.</p>	<p>If the problem persists, analyze the following areas of the diagnostic plot:</p> <ul style="list-style-type: none"> ▲ D, H and L (for three modules, 0-Left, 1-Middle, and 2-Right and its intersection) <p>If you see any of these defects in the studied areas, contact your VariQuest dealer and report a “line discontinuities” error after calibration.</p> <div style="text-align: center;">  </div> <p>The four vertical thin black lines at the beginning and end of the diagnostic plot show, approximately, the position of the intersection between scan bars, where this kind of error usually appears. If the error appears outside these areas, contact your VariQuest dealer and report a “line discontinuities within a scan bar”.</p>
<p>Light colored area fills are missing in the scan or copy.</p>	<p>When scanning or copying a map with a light area at the top, the Background color removal setting could interpret it as a background color, therefore removing it and other similar areas. The example below shows the original image on the left and the scanned image on the right.</p> <div style="text-align: center;">  </div> <ol style="list-style-type: none"> Repeat the scan or copy with <i>Background color removal</i> set to Off, or if copying, select Image as the content type. See “Scan Settings Available” on page 4-21 and “Copy Settings” on page 4-34. If the problem persists, clean and calibrate the scanner as indicated in “Clean the Scan Bars” on page 5-16 and “Calibrate the Scanner” on page 5-18. Repeat again with Background color removal set to Off.

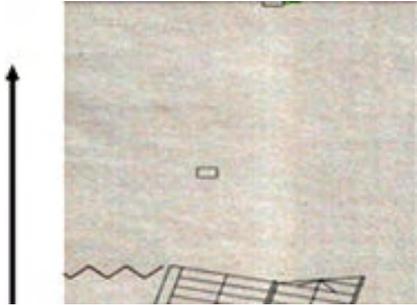
Copy and Scan Quality Issues (Continued)	
Problem	Suggested Action
<p>Grain in area fills when scanning plain paper</p>	<p>When making copies of an original containing area fills, if the paper used in the printer is plain paper (e.g., Universal Bond or Bright White Inkjet Bond), some grain may appear in the image. This error may also appear in scanned files of originals that were printed on textured paper. The example shows the original image on the left and the scanned, grainy image on the right.</p> <div style="text-align: center;">  </div> <ol style="list-style-type: none"> 1. Check the original for dirt or fingerprints, or if the grain is already present in the print. If not, then go to step 2. 2. If original is a copy, repeat the copy after setting the content type to Image. 3. If the problem persists and the problem appears: <ul style="list-style-type: none"> • when copying, use Best quality. We recommend using coated or glossy paper to avoid grain in copies. • in a scanned file, scan at a lower resolution (300 dpi or lower). 4. If the problem continues, clean and calibrate the scanner as indicated in <i>“Clean the Scan Bars” on page 5-16</i> and <i>“Calibrate the Scanner” on page 5-18</i>. 5. Check that the maintenance sheet is clean, and is not damaged before calibrating the scanner (an old or damaged maintenance sheet may cause this problem); if it is damaged, reprint it as explained in Calibrate the scanner (see <i>“Calibrate the Scanner” on page 5-18</i>). 6. If the problem persists, analyze areas I and J of the diagnostic plot across modules =, 1 and 3. In the three examples, the top example is ideal, the middle example is acceptable; but, if you see something similar to the bottom example (or worse), contact your VariQuest dealer and report “grain in area fills.” <div style="text-align: center;">  </div>

Troubleshooting Scan and Copy Issues

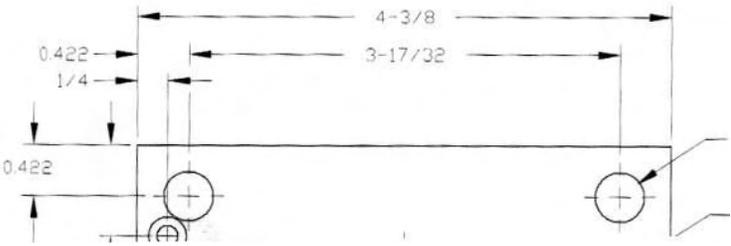
Copy and Scan Quality Issues (Continued)	
Problem	Suggested Action
<p>Small color differences between adjacent scan bars.</p>	<p>When scanning wide plots, slightly different colors can sometimes be seen at both sides of the junction between two scan bars. This issue, if present, can be easily seen by analyzing patterns A and G of the diagnostic plot at the intersection between scan bars (see the examples). Note the black arrow indicating the scanning direction in these examples.</p> <div style="text-align: center;"> </div>

Copy and Scan Quality Issues (Continued)	
Problem	Suggested Action
<p>Large color differences between adjacent scan bars.</p>	<p>Sometimes the color mismatch between adjacent modules can be significant, showing a serious scanner malfunction (see example).</p> <div style="text-align: center;">  </div> <p>If this occurs, see <i>“Completely wrong colors.”</i> on page 6-50.</p> <ol style="list-style-type: none"> 1. Reboot the scanner and repeat the scan or copy. 2. If the problem persists, repeat the scan or copy, setting the background color removal to Off or turning the original 90 degrees before scanning it again. 3. If the problem continues, clean and calibrate the scanner as indicated in <i>“Clean the Scan Bars”</i> on page 5-16 and <i>“Calibrate the Scanner”</i> on page 5-18. <ul style="list-style-type: none"> • If calibration ended without errors, try to scan or copy again. 4. If the problem persists, analyze patterns A and G in the diagnostic plot. <ul style="list-style-type: none"> • If you see color differences between left and right sides of the bars for neutral and vivid colors, contact your VariQuest dealer and report “small color differences between adjacent scan bars.” • If you see color differences for vivid colors but not for neutral colors, see <i>“Clipping in dark or light areas.”</i> on page 6-44. See also <i>“Grain in area fills when scanning plain paper”</i> on page 6-37.

Troubleshooting Scan and Copy Issues

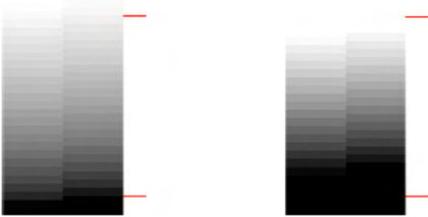
Copy and Scan Quality Issues (Continued)	
Problem	Suggested Action
<p>Vertical light lines at intersection between scanner scan bars.</p>	<p>When scanning large uniform area fills that are made of some light color, sometimes light vertical bands (~ 0.5 cm wide) occur at the intersection between two scan bars (see example). Note the black arrow indicating the scanning direction.</p> <div style="text-align: center;">  </div> <ol style="list-style-type: none"> 1. Reboot the printer and set the background color removal to Off or turn the original 90 degrees, then scan or copy again. 2. If the problem persists: <ul style="list-style-type: none"> • clean and calibrate the scanner as indicated in “<i>Clean the Scan Bars</i>” on page 5-16 and “<i>Calibrate the Scanner</i>” on page 5-18. • analyze pattern number B of the diagnostic plot at the intersections between scan bars. The example shows a good result on the left and a bad result on the right: the latter has light vertical banding 0.5 cm wide at the intersection between two scan bars. <div style="text-align: center;">  </div> <p>If you see the kind of result shown, contact your VariQuest dealer and report “vertical light bands in area fills at the intersection between scan bars, after calibrating the scanner”.</p>

Copy and Scan Quality Issues (Continued)

Problem	Suggested Action
<p>Variable line thickness or missing lines.</p>	<p>When scanning some CAD plots at low resolution (mostly when working with grey scale or black-and-white prints that contain very thin lines), you may see a variation in line thickness, or even some missing lines, in some places.</p>  <ol style="list-style-type: none"> 1. Repeat the scan or copy using a higher resolution (600 dpi). <ul style="list-style-type: none"> - Scans: Set <i>Background color removal</i> to Off. - Copies: Set content type to Mixed. - You should also deactivate the automatic de-skew as explained in “A copied or scanned image is very skewed” on page 6-54. - If working in black-and-white mode, try using grey scale. 2. If the problem persists, turn the original plot 90 degrees before scanning it again. 3. If the problem continues, clean and calibrate the scanner as indicated in “Clean the Scan Bars” on page 5-16 and “Calibrate the Scanner” on page 5-18. 4. If the problem continues, see “Defocus, blurring and fading colors.” on page 6-47.

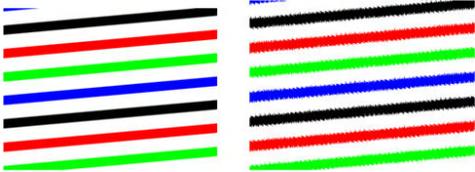
Copy and Scan Quality Issues (Continued)	
Problem	Suggested Action
<p>Inaccurately produced colors.</p>	<p>You have to deal with several variables if you want perfect color matching between the original you are scanning and the copy or scanned file you obtain as a result. Follow these guidelines if you find undesired colors as in the example (original on left, scanned image on right).</p>  <ol style="list-style-type: none"> 1. Consider your originals: <ul style="list-style-type: none"> • Copies: Good color matching between a given original and its copy can be achieved only if both are printed on the same type of paper. • Scans: Good color matching can be achieved only if your monitor is color-calibrated or compliant with sRGB or AdobeRGB standards. 2. Reboot the printer and scan or copy again. 3. If the above conditions are met, consider that various scanner settings can affect the final color result (see “Scan Settings Available” on page 4-21 and “Copy Settings” on page 4-34). To obtain the best possible colors, set: <ul style="list-style-type: none"> • <i>Darker/Lighter</i> = Normal • <i>Background color and noise removal</i> = Off • <i>Content Type</i> = Image (only if copying) • <i>Translucent Media</i> = not selected. 4. For optimum color results, clean the scan bars (see “Clean the Scan Bars” on page 5-16 and “Calibrate the Scanner” on page 5-18). 5. Avoid placing scanner in direct sunlight or near sources of heat or cold.

Copy and Scan Quality Issues (Continued)	
Problem	Suggested Action
<p>Color fringing.</p>	<p>Color fringing occurs when the scanner is affected by incorrect paper advance and/or miscalibration. (some color fringing is unavoidable, especially at high scanning speeds). Fringing is most noticeable at the borders of sharp black text over a white background, as in the example (original on left, scanned image on right). Note the black arrow indicating the scanning direction.</p>  <ol style="list-style-type: none"> 1. Repeat the scan after changing the following: <ul style="list-style-type: none"> • Scan: Increase resolution (300dpi or higher quality) • Copy: Best resolution • Turn original 90 degrees, if possible. 2. If the problem persists, clean and calibrate the scanner as indicated in <i>“Clean the Scan Bars”</i> on page 5-16 and <i>“Calibrate the Scanner”</i> on page 5-18. 3. If the problem still persists, analyze the E patterns of the diagnostic plot. The black horizontal lines appear slightly colored at the top and bottom of each end (example on right). Normally, they look red at the top and blue or green at the bottom, but it could be the other way around.  <ol style="list-style-type: none"> 4. If you see this effect, contact your VariQuest dealer and report “color fringing problem after calibration.”

Copy and Scan Quality Issues (Continued)	
Problem	Suggested Action
<p>Clipping in dark or light areas.</p>	<p>Scanned file or copy of your plots loses detail in light or dark areas (or both). See example (original on left, scanned image on right).</p> <div style="display: flex; justify-content: space-around; align-items: center;">  </div> <ol style="list-style-type: none"> 1. If making copies with an original printed on photographic paper and you are copying onto matte paper, this problem is expected. However, you can try the following to improve quality: <ul style="list-style-type: none"> - Reboot the printer. - Set <i>Background color</i> and <i>Noise removal</i> to Off - Change Lighter/Darker settings (this also applies if experiencing this problem in scanned files). 2. If the problem persists, repeat the scan or copy using a higher resolution: <ul style="list-style-type: none"> - Scan: 300 dpi or higher - Copy: Normal or Best, <i>Content type</i> to Image 3. If problem persists, recalibrate scanner as indicated in “<i>Calibrate the Scanner</i>” on page 5-18. Clean the maintenance sheet and check that it is not damaged before calibrating the scanner (if so, reprint as described in “<i>Scanner Diagnostic Plot</i>” on page 6-55. Re-scan after calibration is completed. 4. If problem persists, analyze patterns M (0, 1 and 2 modules) of the diagnostic plot. If you can distinguish lightness steps beyond the upper and lower specified thresholds, the scanner is fine. Examples show correct and incorrect functioning. <div style="display: flex; justify-content: space-around; align-items: center; margin: 10px 0;">  </div> <ol style="list-style-type: none"> 5. If the scanned pattern looks like the one on the right (incorrect), whether clipping is in dark and/or light areas, contact your VariQuest dealer and report “Clipping in dark/light areas.”

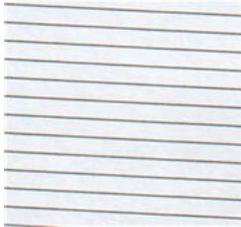
Copy and Scan Quality Issues (Continued)	
Problem	Suggested Action
<p>Flare in the image when scanning glossy originals.</p>	<p>If the scanner is miscalibrated or if the original plot is very glossy or reflective, you can sometimes find flare in the scanned image (original on left, scanned image on right).</p> <div style="text-align: center;">  </div> <p>Image © www.convincingblack.com, reproduced with permission.</p> <ol style="list-style-type: none"> 1. Clean the original and the scanner's glass plate, then scan again. See <i>"Clean the Scan Bars"</i> on page 5-16. 2. If the problem persists, recalibrate the scanner as indicated in <i>"Calibrate the Scanner"</i> on page 5-18. Re-scan original after calibration is completed. 3. If the problem persists, see <i>"Clipping in dark or light areas."</i> on page 6-44.
<p>Vertical red and green bands over white or black background</p>	<p>If the scanner has not been calibrated for a long period of time, or if the last calibration failed, you can sometimes see defects (original on left, scanned image on right). Note the black arrow indicating the scanning direction.</p> <div style="text-align: center;">  </div> <ol style="list-style-type: none"> 1. Reboot the printer and re-scan or copy. 2. Clean and calibrate the scanner as indicated in <i>"Clean the Scan Bars"</i> on page 5-16 and <i>"Calibrate the Scanner"</i> on page 5-18. 3. If calibration failed, see <i>"Calibrate the Scanner"</i> on page 5-18. If calibration ended correctly, scan original again and check that the colored vertical bands have disappeared. 4. If the problem persists, contact your VariQuest dealer and report "vertical red/green bands after calibration."

Troubleshooting Scan and Copy Issues

Copy and Scan Quality Issues (Continued)	
Problem	Suggested Action
Vibration	<p>If the printer is not properly placed on a flat surface or if the scanner lid does not close correctly, you may sometimes find that the scanned image suffers from vibration (original on left, scanned image on right).</p> <div style="text-align: center;">  </div> <ol style="list-style-type: none"> 1. Place the scanner on a flat surface and close the scanner lid correctly. Rescan the original. 2. If the problem persists, change (increase or decrease) the scanning resolution and re-scan the original. If possible, turn the original 90 degrees before rescanning. 3. If the problem persists, analyze pattern D of the diagnostic plot. If you see the problem shown on the right, contact your VariQuest dealer and report a “vibration problem.” <div style="text-align: center;">  </div>

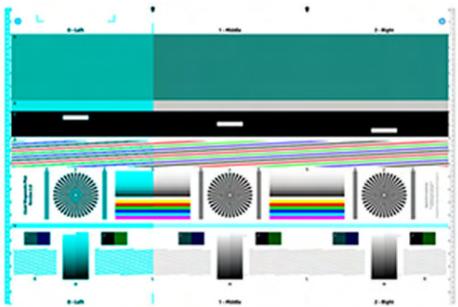
Copy and Scan Quality Issues (Continued)

Problem	Suggested Action
<p>Defocus, blurring and fading colors.</p>	<p>CIS technology scanners are tuned to work at a fixed focal distance and are very sensitive to small variations in the position of the original with respect to the scanner glass plate. If the scanner lid is not properly closed or if the original has deep wrinkles or texture, you may sometimes find problems as in the example (on right), where the scanned image is blurred and colors are faded.</p> <div data-bbox="784 583 1219 848" style="text-align: center;"> </div> <ol style="list-style-type: none"> 1. Check the scanner lid is properly closed. Open and close the scanner lid by pushing it down until you hear a click. Then calibrate the scanner as indicated in <i>“Clean the Scan Bars”</i> on page 5-16, reboot and repeat the scan. 2. If the problem persists, repeat with these settings: <ul style="list-style-type: none"> - Scan: Resolution of 300dpi or higher, Background color removal Off - Copy: Resolution Normal or Best, content type Mixed 3. If the problem persists, analyze pattern F in modules 0, 1 and 2 of the diagnostic plot. A correct example is shown (right), followed by two incorrect examples. <p>Note: There is a black ring near the center of pattern F. In this step, you must look at the region near the black ring.</p> <div data-bbox="662 1381 1393 1587" style="text-align: center;"> </div> <ol style="list-style-type: none"> 4. If you can see discontinuities in the black and white lines, contact your VariQuest dealer and report a “defocus or blurring” error.

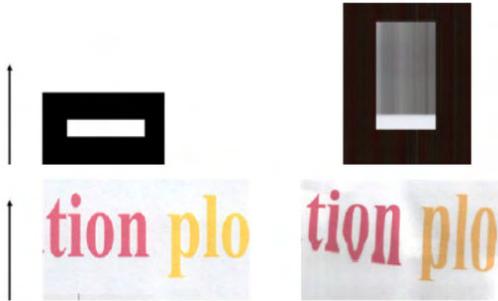
Copy and Scan Quality Issues (Continued)	
Problem	Suggested Action
<p>Incorrect paper advance, skew during scanning, or horizontal wrinkles</p>	<p>You may encounter problems with some thick glossy originals moving through the scanner's paper path and/or the original may become skewed during the scanning process.</p> <p>If some paper rollers are not working correctly, the paper may get stuck in some regions and not in others. As a result, you may find small horizontal wrinkles in the scanned image.</p> <ol style="list-style-type: none"> 1. Turn your original 90 degrees and repeat your scan. 2. If the problem persists: <ul style="list-style-type: none"> - Open the scanner lid. - Clean the feed wheels (small black rubber) and the pressure sliders (wide white plastic). - If you find dust particles or objects that obstruct movement of the pressure sliders, try to remove them. - Close the scanner lid and repeat the scan. 3. If the problem persists, restart the scanner by turning it off and on again. If an error message displays during the operation, contact your VariQuest dealer and report the error message. If no error message displays, repeat the scan. 4. If the problem persists, analyze patterns D, K and L of the diagnostic plot. The plot should look like this: <div style="text-align: center; margin: 10px 0;">  </div> 5. If you see an image resembling the incorrect examples below, contact your VariQuest dealer and report an "incorrect paper advance" problem. <div style="text-align: center; margin-top: 10px;">  </div>

Copy and Scan Quality Issues (Continued)	
Problem	Suggested Action
<p>Vertical black band 30cm wide.</p>	<p>The scanner contains various scanner scan bars, each of which covers an area 30 cm (12 in) wide. If one of the modules fails and the scanner hardware check does not detect the failure, the scanned image or copy may have a black vertical band corresponding to the area covered by a single scan bar (see example on the right). Note the black arrow indicating the scanning direction.</p> <div style="text-align: center;">  </div> <p style="text-align: center;">Original Scan affected by a failing scanbar</p> <ol style="list-style-type: none"> 1. Restart the scanner by turning it off and on again. If you find an error message displays, contact your VariQuest dealer and report the error message. If no error message displays, repeat the scan. 2. If the problem persists, recalibrate the scanner as indicated in <i>“Calibrate the Scanner”</i> on page 5-18. If this operation fails, contact your VariQuest dealer with the error code displayed on the front panel. If no error code displays, repeat the scan. 3. If the problem persists, contact your VariQuest dealer and report a “vertical black band 30 cm wide.”
<p>The scanner damages some originals.</p>	<p>This scanner may cause vertical scratches on inkjet originals on thick glossy paper. Very thin tracing paper or old originals may also be damaged. This is because CIS technology requires the original to be held down with high pressure to obtain accurate results and avoid blurring and defocus problems.</p> <p>If the original you intend to scan is valuable, and if it belongs to one of the types described above (inkjet-printed, thick, glossy original or old/thin/tracing paper original), HP recommends using a CCD scanner.</p>

Copy and Scan Quality Issues (Continued)

Problem	Suggested Action
<p>Completely wrong colors.</p>	<p>If some of the LEDs used for illumination in the scanner scan bars are failing or the last calibration did not work correctly, although no error message was displayed, you may experience some completely wrong colors in your scanned images (see example, original left, scanned image on right).</p>  <ol style="list-style-type: none"> 1. Restart the scanner by turning it off and on again. If an error message displays during this operation, contact your VariQuest dealer and report the error message. 2. If no error message displays during the restart process, recalibrate the scanner, as indicated in <i>“Calibrate the Scanner” on page 5-18</i>. If some error message display, contact your VariQuest dealer and report the error, adding that it displayed after seeing “completely wrong colors in the scanned image.” 3. If calibration succeeded, reboot and repeat the scan and check the colors. 4. If the colors are still wrong, analyze the whole diagnostic sheet. Check for completely wrong colors in the area corresponding to just one of the scan bars (see figure). If so, contact your VariQuest dealer and report “completely wrong colors after calibration,” and report the letter of the scan bar that is failing (module A in the example). 

Copy and Scan Quality Issues (Continued)

Problem	Suggested Action
<p>Vertical distortion.</p>	<p>If the lid sensor of the scanner fails, the scanner cannot detect when the lid is open. As a result, you can start a scan and at some point find that the pressure sliders do not move the original through the scanner paper path. You may see images like the following when this happens (original on left, scanned image on right). Note the black arrow indicating the scanning direction.</p>  <ol style="list-style-type: none"> 1. Open and close the scanner lid by pushing it down until you hear a click. 2. Repeat the scan and visually check that the original advances correctly through the scanner path. 3. If original does not advance, contact your VariQuest dealer and report an "incorrect paper advance" error. <p>Remember that the scanner is not intended to work with originals thicker than 0.75 mm (29 mil).</p>

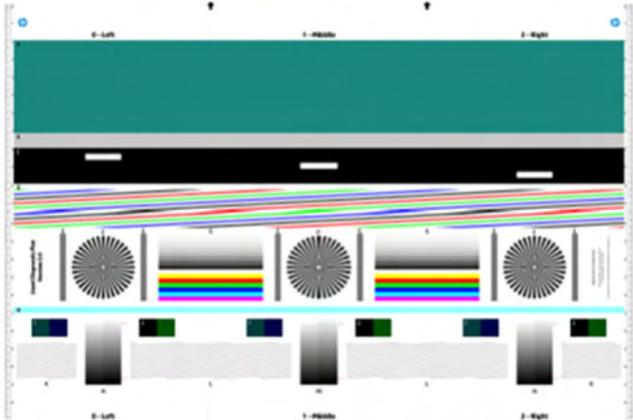
Copy and Scan Quality Issues (Continued)

Problem	Suggested Action
<p>Object replication (ghosting).</p>	<p>This error very rarely appears in CIS scanners. However, you can occasionally find image defects like the following (original on left, scanned image on right).</p> <div data-bbox="662 495 1386 724" data-label="Image"> </div> <p>Image © www.convincingblack.com, reproduced with permission.</p> <ol style="list-style-type: none"> 1. Restart the printer. 2. Calibrate the scanner, as indicated in <i>“Calibrate the Scanner” on page 5-18.</i> 3. Repeat the scan. <ul style="list-style-type: none"> - Turn the original 90 degrees, if possible before re-scanning. - Modify Lighter/Darker setting. 4. If the problem persists, analyze pattern C, modules 0, 1 and 2, of the diagnostic plot. If you see the kind of error shown on the right, contact your VariQuest dealer and report an "object replication" issue. <div data-bbox="662 1157 1386 1243" data-label="Image"> </div>

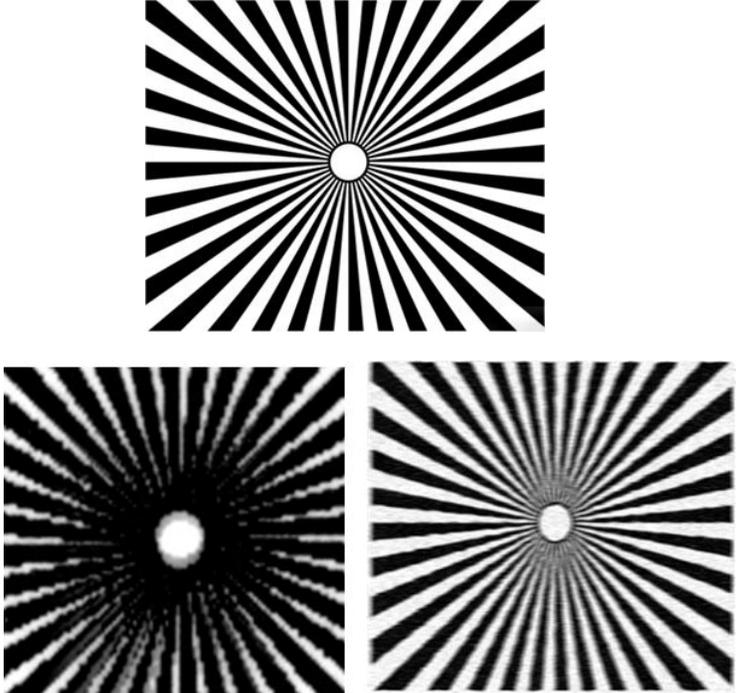
Copy and Scan Quality Issues (Continued)	
Problem	Suggested Action
<p>Clipping or incorrect scale factor when down-scaling in copies and prints</p>	<p>When doing copies or prints (from USB, Embedded Web Server, or printer driver), the scaling setting is available with various possible options. If experiencing problems related to border clipping, or it seems that the print has lost the scale-factor adjustment, read this section select the best value for future scaling settings.</p> <ul style="list-style-type: none"> • Custom (Precise scaling): The content of the original image is scaled by the percentage factor that you select. For example, in an original CAD image with a 1:100 scale, if you select a scale to 50%, the printed plot will have an accurate scale of 1:200. Regardless, in down-scalings, when selecting a fixed percentage, some clipping of the marginal content of the plot may occur, as it is impossible for the printer cannot print up to the borders of the paper. • Fit to (Scale to fit into page size): The content of the original image is scaled by the percentage necessary to make sure that all content is correctly printed and no clipping occurs. Regardless, in down-scalings, when selecting fit to page, the scale-factor adjustment may not be an integer divisor of the original. For example, in an original CAD plot with a 1:100 scale on A2 paper size, if you select a scale to fit on A3 paper size, the scaling factor will not be exactly 50% and the scale of the printed plot will not be 1:200 exactly. However, the plot will be printed completely without clipping any content.
<p>Incorrect edge detection, mostly when scanning tracing paper.</p>	<p>Tracing or translucent papers can be scanned with good results, although totally transparent papers are not supported. However, the resulting image may have extra margins or some clipping of the content in some situations when paper edge detection is not accurate. This may also happen when scanning plain paper if the glass plate is dirty. To avoid these undesired effects, follow these recommendations.</p> <ul style="list-style-type: none"> • Carefully clean the scanner's glass plate and the original to be scanned with a cloth. • Turn the original 90 degrees if possible and re-scan it <hr/> <p>Note: Remember to select Translucent as the paper type at the scanner if your original is translucent.</p> <hr/> <ul style="list-style-type: none"> • If the problem persists, calibrate your scanner, and re-scan your original afterwards. • If the problem persists with translucent paper, attach a sheet of white paper to the back of the original to be scanned.

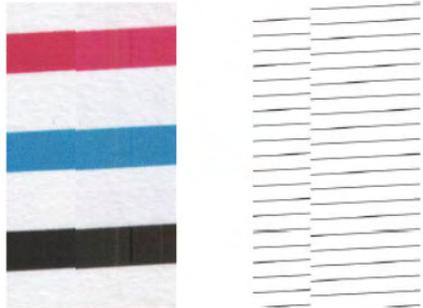
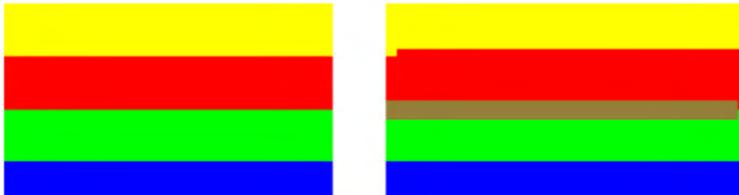
Copy and Scan Quality Issues (Continued)	
Problem	Suggested Action
<p>A copied or scanned image is very skewed</p>	<p>Originals are often loaded into the scanner with some degree of skew. To correct for this unavoidable problem, the scanner has a built-in automatic de-skew algorithm, which measures the skew in the original and rotates the scanned image so the result is perfectly straight. However, in some cases the de-skew algorithm may increase the skew rather than correcting it. In other cases, the skew is so bad that it cannot be automatically corrected.</p> <ol style="list-style-type: none"> 1. To load the original with minimum skew, grasp the original at the left and right edges, with the image facing up. Avoid resting your hands or the original on the scanner's input tray. 2. Push the original into the scanner insertion slot until you feel the whole top border of the original pressing against the scanner rubber rolls. The rolls will load the original after a 0.5 second delay. Remove your hands from the original. If you are not happy with the way the scanner grabbed the original, you can touch  and try again. 3. You can deactivate the automatic de-skew algorithm by touching , then Scan preferences or Copy preferences (you may want to deactivate it in one case but not in the other). You can also deactivate the automatic de-skew from the Settings button before every new scanner job.

Scanner Diagnostic Plot

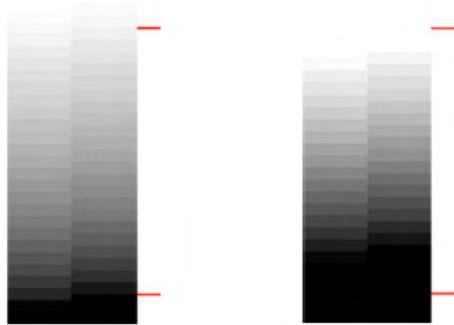
Paper Jams	
Problem	Suggested Action
<p>Prepare printer and paper to print diagnostic sheet.</p>	<ol style="list-style-type: none"> 1. Turn on printer and wait until it is functioning. 2. Select the paper on which the diagnostic plot is going to be printed (you can reuse the diagnostic plot any time in the future, if it is saved carefully). Ideally, the diagnostic plot should be printed on heavyweight paper. <p>Note: Please do not use recycled or tracing paper to print this plot. The size of the diagnostic plot is 610 × 914 mm (24 × 36 in). It can be printed on any 914 mm (36 in) landscape or 610 mm (24 in) portrait paper roll. You can also use a single sheet that is at least 610 × 914 mm (24 × 36 in).</p> <ol style="list-style-type: none"> 3. From the front panel, touch . 4. Touch Internal prints > Scanner IQ plot or Image Quality Maintenance > Scanner IQ plot > Printer maintenance > Scanner Diagnostic.
<p>Visual check for errors while printing diagnostic sheet.</p>	<p>Once the diagnostic plot is printed, the first step is to check that all the patterns included in it are correctly printed. The diagnostic plot, if printed correctly, should look like this:</p>  <p>Some common defects that may appear in a printed diagnostic plot are described in this section. If you find any of these problems, you should follow the recommended recovery procedure. See the “<i>Troubleshooting Print Quality Issues</i>” on page 6-14.</p> <p>Once the printer has been diagnosed and is working correctly, reprint the diagnostic sheet as described in “<i>Prepare printer and paper to print diagnostic sheet.</i>” on page 6-55.</p>

Scanner Diagnostic Plot

Paper Jams (Continued)	
Problem	Suggested Action
Resolution	<p>By looking at pattern F you may find problems with the printer's resolution for the loaded paper. Usually, this test does not reveal a printer problem, but a defect in the paper, which may not be suitable for printing the diagnostic sheet with the required quality. The following example shows a correct resolution. Two defective examples follow.</p> <div style="text-align: center;">  </div>

Paper Jams (Continued)	
Problem	Suggested Action
Alignment	<p>Looking at patterns D, K, and L, you may find problems with the printer's printhead alignment, which can cause defects such as the following.</p> <div style="text-align: center;">  </div> <p>Misalignment problems is visible in patterns D and G in the form of color fringing (which is exaggerated below, on the right). That is, the limits between two strong colors are not well defined or a third color appears between them.</p> <div style="text-align: center;">  </div> <p>Finally, a special pattern for checking the printer's printhead alignment is located at the top left of the diagnostic sheet. This pattern has no number as it is not used for scanner checking. It is made of three colored crosses that may be used to identify the problem in question. The correct pattern is shown on the left, an example of misalignment on the right.</p> <div style="text-align: center;">  </div>

Scanner Diagnostic Plot

Paper Jams (Continued)	
Problem	Suggested Action
Loss of shadow or highlight details.	<p>Looking at pattern H, you may find a problem with the printer or the paper. If you can distinguish lightness steps beyond the upper and lower specified thresholds, then the printer is fine. Here you can see examples of correct functioning on the left, incorrect on the right.</p> <div style="text-align: center;">  </div> <p>If the printer does not pass this test, check that you have correctly selected the paper type and the Best quality.</p>
Printer banding.	<p>Patterns A, B, and C show vertical banding problems. See <i>“Horizontal lines across the image.”</i> on page 6-15.</p> <div style="display: flex; justify-content: space-around; align-items: center;">  </div>

Paper Jams (Continued)	
Problem	Suggested Action
Streaks	<p>Patterns A, B, C, G and H show examples of vertical streaks. This occurs if the printer's printheads are not working correctly. Replacing the printhead for the color showing the streaks may solve the problem.</p> 
Grain	<p>Patterns A, B, and C, displays examples of problems in the printer's paper advance or the printheads that cause visible grain in area fills. The following examples show this defect (originals on left, printed images on right).</p> 

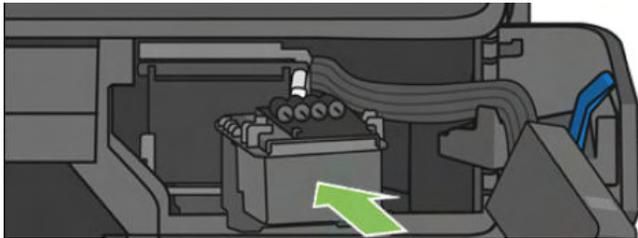
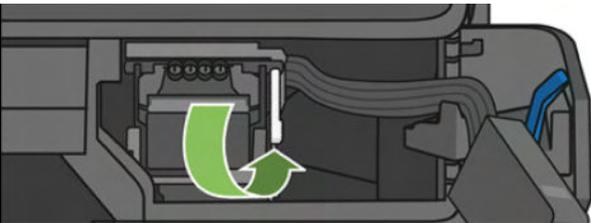
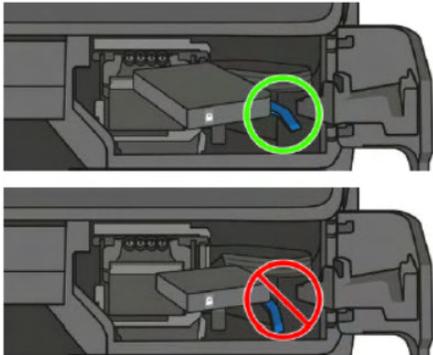
Paper Jams (Continued)	
Problem	Suggested Action
Scan or copy the diagnostic plot.	<p>There are two options for evaluating the diagnostic plot: scanning into a JPEG file, or copying onto paper. We recommend using the scan option, so the generated file can be analyzed more easily by a remote support engineer if necessary.</p> <p>To scan: Adjust your computer's monitor as described in "<i>Monitor calibration.</i>" on page 6-61. Once you have scanned the diagnostic plot, open the scanned file in any image viewer software and select a zoom of 100% for correct visual evaluation of patterns.</p> <p>To copy: Make sure that a paper roll at least 36 in. (914 mm) wide is loaded in the printer. Ideally, the same type of paper used to print the diagnostic plot should be used for copying it.</p> <p>Use the following settings:</p> <p>Scan</p> <ul style="list-style-type: none"> • Resolution: 600 dpi • File type: JPG • Compression: Medium • Paper type: Photo or matte, according to the paper used to print the diagnostic plot. Use photo if in doubt. <p>Copy</p> <ul style="list-style-type: none"> • Content type: Image <p>Load the diagnostic plot into the scanner input tray with printed side up. The black arrows on the diagnostic plot indicate the direction of loading. Make sure the diagnostic plot is loaded without skew and it is centered (i.e., it covers the whole scanner area).</p> <p>Once you have scanned the diagnostic plot (if using the scan option), open the scanned file in any image viewer software and select a zoom of 100% for correct visual evaluation of patterns.</p>

Paper Jams (Continued)	
Problem	Suggested Action
Monitor calibration.	<p>The monitor on which the plot is going to be evaluated should ideally be calibrated. As this is not always possible, follow this easy procedure for adjusting the brightness and contrast of the monitor to see the patterns correctly.</p> <p>Adjust the brightness and contrast of your monitor until you can see a difference in lightness between these two squares:</p> <div style="text-align: center;">  </div> <p>Now you are ready to check each pattern individually.</p>
Save the diagnostic plot for future use.	We recommend that you save the diagnostic plot for future use.

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. <i>Never clean inside the ink cartridge slots.</i>

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 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
<p>Printhead cannot be inserted into the printer.</p>	<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.  <ol style="list-style-type: none"> 4. Check that you have correctly latched the printhead, see <i>"Replacing the Printhead"</i> on page 5-9. 
<p>Cannot connect tubes to the printhead.</p>	<p>Check that the printhead is correctly inserted. See <i>"Printhead cannot be inserted into the printer."</i> on page 6-63.</p>  <p>Check that the tubes connector lever (blue) is up before connecting the tubes connector.</p>

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. • Try another interface cable. • If the printer is connected to a wireless network, request a diagnostic report: press , then touch Print Details. Also try moving the printer closer to the wireless router, or connecting the printer by wired network. <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"> 1. From the front panel, swipe down on the dashboard, then touch  or . 2. At the bottom of the screen, press Settings > Advanced setup > IP settings. 3. 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"> 1. Swipe down the front panel and note the IP address and hostname (HPXXXXXX format). 2. From PC, go to Control Panel > Printers, right-click the printer and select Properties > Ports > Configure Port, and in the <i>Printer name or IP address field</i> enter the hostname.

Wired Network Issues	
Problem	Suggested Action
<p>Unable to install the software provided with the printer.</p>	<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 2-22.</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 6-64.</i></p>
<p>Network port does not match the IP address of the printer.</p>	<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. <li style="text-align: center;">- 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
<p>Cannot connect wirelessly. This printer supports 2.4 GHz Wireless connection. 5 GHz is not supported.</p>	<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 Wireless 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, swipe down on the dashboard, then touch , 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
<p>Advanced Wireless Network Troubleshooting: Problems persist even after trying suggested actions.</p>	<p>If you have tried the previous suggestions and are still unable to 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"> • Print the printer's Wireless Configuration page (see "<i>Configure Network Settings</i>" on page 2-22). After the page prints, check the Network Status and URL. The Network Status is Ready if the printer is actively connected to a network. The URL is the network address assigned to the printer by your router; you need it to connect to the printer's Embedded Web Server. • 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
	<p>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" on page 2-18</i>).</p> <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. <p>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.</p> <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.

Wireless Network Issues	
Problem	Suggested Action
	<p>If you install the HP software a second time, the installer may create a second version of the printer driver in your Printers or Printers and Faxes folder. If you have difficulties printing or connecting to the printer, make sure the correct version of the printer driver is set as the default.</p> <ol style="list-style-type: none"> 1. Click Start > Settings then click Printers or Printers and Faxes. <p style="text-align: center;">- or -</p> <ol style="list-style-type: none"> 2. Click Start > Control Panel, then double-click Printers. 3. Right-click the printer icon, then click Properties > Document Defaults, or Printing Preferences. 4. On the Ports tab, look for a port in the list with a checkmark. The version of the printer driver that is connected wirelessly has Standard TCP/IP Port as the Port description next to the checkmark. 5. Right-click the printer icon for the version of the printer driver that is connected wirelessly, and select Set as Default Printer. 6. Try restarting the HP Network Device Support service. <ol style="list-style-type: none"> a. Delete any print jobs currently in the print queue. b. On the desktop, right-click My Computer or Computer, then click Manage. c. Double-click Services and Applications, then click Services. d. Scroll down the list of services, right-click HP Network Devices Support, then click Restart. e. After the service restarts, try using the printer over the network again. <p>Note: If you are able to use the printer over the network, your network setup was successful.</p> <hr/> <p>Note: If you still cannot use the printer over the network, or if you have periodic problems in doing so, your firewall may be interfering, or there may be a problem with your network configuration or router. Contact the person who set up your network or the router manufacturer for help.</p>

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
<p>Need to add a hardware address(es) to a wireless access point (WAP).</p>	<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 Details”</i> on page 6-72. 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. Swipe down the dashboard, then touch .
2. Scroll down the menu, then touch **Reports > Network Configuration Page**.



HP Network Configuration Page	
General Information	
Network Status	Offline
Network Connection Type	None
WiFi (2.4 GHz) Extended Range Server	192.168.1.210
Primary Username	192.168.1.210
Username	HPMS75P
Serial Number	W1921681210000
Admin Password	Not Set
IEEE 802.11 Wireless	
Hardware Address (MAC)	080056171001
Link Configuration	None
IEEE 802.11 Wireless	
Hardware Address (MAC)	080056171001
Status	Disconnected
Communication Mode	Ad-hoc
Network Page (SSID)	HP-secure-80211E
Port 1 (USB)	
Status	Enabled
HPDS	
Status Name	Enabled
Service Name	Office HP ePrint (80211E)
SLP	
Status	Enabled
Microsoft Web Services	
WSD Discovery	Enabled
WSD Print	Enabled
WSD 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	<p>Information about more advanced network settings:</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <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> <p>Note: For more information about WS Discovery and WSD Print, visit http://www.microsoft.com/.</p>

Network Configuration Page Details	
Section	Description
	<p>SNMP (Simple Network Management Protocol): Used by network management applications for device management. The printer supports SNMPv1 protocol on IP networks.</p> <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.

General Printer Issues (Continued)

<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"</i> on page 3-13. • 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 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"</i> on page 2-18.</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, go to Tools > Internet Options > Connections > LAN Settings, and check the <i>Bypass proxy server for local addresses</i> 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) are 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	<p>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.</p>
Warnings	<p>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.</p>
	<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 <i>Overview</i> 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 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.
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.
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.

Front Panel Error Messages

Add Hardware Addresses to Wireless Access Point (WAP)

Front Panel Error Messages (Continued)	
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>
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 .
Scanner paper jam.	Open scanner cover and clear the jam.
Scanner Dust detected.	Clean the scanner.
Scanner Out of memory.	Scan at a lower resolution and/or increase compression.

Numerical Error Codes	
Error Code	Suggested Action
0001 - 0001	Restart the printer.
0081 - 0008	There may be a paper or carriage jam. Check and clear the paper path if necessary.
0001 - 0082	The battery of the real-time clock has expired. Contact your VariQuest dealer.
0021 - 0059, 0021 - 0017	Service station error. There may be a paper or carriage jam. Clear and check the paper path, if necessary, and restart the printer.
0021 - 0161	Service station error. Restart the printer.
0041 - 0017, 0042 - 0117	There may be a paper or carriage jam. Check and clear the paper path if necessary.
0079 - 0000	Restart the printer. If the problem persists, update the firmware. See <i>"Software Updates"</i> on page 5-15.
0085 - XXXX	Feeding paper problem. Restart the printer.
0086 - 0008	There may be a paper or carriage jam. Check and clear the paper path if necessary. Also clean the carriage encoder strip.
0009 - XXXX	Scanner error. Restart the printer.
	For any other error code, restart the printer. If the problem persists contact HP Support

Front Panel Error Messages

Add Hardware Addresses to Wireless Access Point (WAP)

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7 Printer Specifications

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

- “*Functional Specifications*” on page 7-2
- “*Physical Specifications*” on page 7-5
- “*Memory Specifications*” on page 7-5
- “*Power Specifications*” on page 7-5
- “*Ecological Specifications*” on page 7-5
- “*Environmental Specifications*” on page 7-6
- “*Acoustic Specifications*” on page 7-6
- “*Wireless Frequency Bands*” on page 7-6

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 69 ml of ink: black, yellow, cyan and magenta.

Paper Sizes		
Name	Minimum	Maximum
Roll width	279 mm (11 in)	610 mm (24 in)
Roll length		46 m (150 feet)
Roll diameter		100 mm (3.9 in)
914 mm (36 in) roll weight		6.2 kg (14 lb)
Sheet width	210 mm (8.27 in)	610 mm (24 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)
Multi-sheet stacking		5 mm height

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 and multi-sheet) 17 mm (0.67 in) (single 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), CALS G4

Functional Specifications

Mobile Printing Specifications	
Mobile printing	Yes, directly from both iOS with AirPrint and Android with HP Print Service Plugin
Mobile devices supported by HP Mobile printing	Smartphones and tablets
Supported operating systems	iOS, Android, Windows
OS Versions	iOS from 7.0 and Android from 4.4, Windows any
Connectivity requirements	Printer and mobile device must use the same network
Supported file formats	PDF, JPEG

Email Printing Specifications	
Mobile devices supported	Smartphones, tablets, PC
Supported operating systems	Any, as long as it has email
Connectivity requirements	Cloud connection
Cloud features	Remote printing through email
Supported file formats	PDF, JPEG, TIFF
Max file size	10 MB

HP All-in-One Printing Remote App Specifications	
Printing app	HP All-in-One Printer Remote app
Mobile devices supported	Smartphones, tablets, PC
Supported operating systems	iOS and Android
OS versions	iOS from 7.0 and Android from 4.4
Connectivity requirements	Printer and mobile device must use the same network
Supported file formats	PDF, JPEG and also can be printed web pages, email attachments, Microsoft Office documents

Physical Specifications

Printer Physical Specifications		
	Minimum	Maximum
Weight		62.5 kg (137.79 lb)
Width		1402.5 mm (55.22 in)
Depth	629.19 mm (24.77 in)	896 mm (35.3 in)
Height	966 mm (38.03 in) with stand 306 mm (12.05 in) without stand 1155mm (45.47 in) with trays open	1155 mm (45.47 in) 306mm (12.05) without stand Scanner open: 1060mm 41.73 in) 1155 mm (45.47) with trays open

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 WEEE Directive 2012/19/EU and RoHS Directive 2011/55/EU. To determine ENERGY STAR and EPAT registration status , go to http://www.hp.com/go/ecolabels .

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)

Wireless Frequency Bands

Wireless Frequency Bands
The printer is identified to work in the wireless frequency band of: 2.4 GHz (802.11b/g/n)

A Glossary

This chapter provides a description of some of the terms used in the **VariQuest[®]** *Perfecta[®] 2400STP 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.

Gigabyte Ethernet: An Ethernet network capable of transferring data at up to 1000,000,000 bits/second. Fast Ethernet interfaces are capable of negotiating slower speeds when required for compatibility with older Ethernet devices.

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 on 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.

