



HP Latex 700 Printer Series
HP Latex 800 Printer Series

User Guide

Edition 1

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1 Introduction

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Welcome to your printer

Your printer is a color inkjet printer designed for printing high-quality images on flexible substrates. Some major features of the printer are shown below:

- Environmentally friendly, odorless, aqueous latex inks in eight colors plus optimizer
- No special ventilation required, no hazardous waste
- 700 series printers: Eight HP 832 Eco-Carton ink cartridges, one for each color (black, cyan, magenta, yellow, light cyan, light magenta, optimizer, and overcoat)

Additionally, two HP 832 white Eco-Carton ink cartridges for 700W printers

- 800 series printers: Eight 3 liter HP 873 Eco-Carton ink cartridges, one for each color (black, cyan, magenta, yellow, light cyan, light magenta, optimizer, and overcoat)

Additionally, two 3 liter HP 873 white Eco-Carton ink cartridges for 800W printers

- Sharpest print quality, smooth transitions, and fine details with 1200 real dpi
- Consistent and repeatable print quality at every print speed
- Prints are completely dry and ready for finishing and delivery
- Print on a wide range of substrates—including most low-cost, uncoated, solvent-compatible substrates
- A range of HP recyclable substrates is available
- Consider un-laminated use with scratch resistance comparable to hard solvent inks on SAV and PVC banners
- Durable prints with outdoor display permanence up to three years unlaminated, five years laminated
- Hundreds of ready-made substrate presets easily available
- Expand your offering with the glossiest white
 - Deliver the glossiest white on transparent and colored substrates, with high-opacity white HP Latex ink that resists yellowing over time.
 - No waste between white jobs, with removable HP Thermal Inkjet printheads stored in the offline rotating chamber.
 - White-ink automatic maintenance makes white like any other color, with automatic recirculation, automatic nozzle checks, and simple workflows.

To send print jobs to your printer, you will need Raster Image Processor (RIP) software, which should be run on a separate computer. RIP software is available from various different companies.

Printer models

	HP Latex 700 and 700W	HP Latex 800 and 800W
Supplied with the printer	HP Latex User Maintenance Kit	HP Latex User Maintenance Kit
		HP Latex Beacon
Optional accessories	HP Latex Textile Kit	HP Latex Textile Kit
	HP Latex Ink Collector	HP Latex Ink Collector
	HP Latex Wiper Roller	HP Latex Wiper Roller

	HP Latex 700 and 700W	HP Latex 800 and 800W
Consumables	HP 836 Latex Printheads	HP 836 Latex Printheads
	HP 836 Optimizer Latex Printhead	HP 836 Optimizer Latex Printhead
	HP 836 White Latex Printhead	HP 836 White Latex Printhead
	HP 832 Latex Eco-Carton Ink Cartridges	HP 873 Latex Eco-Carton Ink Cartridges
	HP 836 Ink Mix Container (for 700W only)	
	HP Latex Maintenance Cartridge	HP Latex Maintenance Cartridge

Documentation

The following documents can be downloaded from <http://www.hp.com/go/latex700/manuals/> or <http://www.hp.com/go/latex800/manuals/>:

- Introductory information
- Site preparation guide
- Printer assembly instructions
- User guide
- Legal information
- Limited warranty

The Quick Response (QR) code images found in some parts of this guide provide links to additional video explanations of particular topics. For an example of such an image, see [Main printer components on page 8](#).

Safety precautions

Before using your printer, read the following safety precautions to make sure you use the equipment safely.

This equipment is not suitable for use in locations where children are likely to be present.

You are expected to have the appropriate technical training and experience necessary to be aware of hazards to which you may be exposed in performing a task, and take appropriate measures to minimize the risks to yourself and to other people.

General safety guidelines

There are no operator-serviceable parts inside the printer except those covered by HP's Customer Self Repair program (see <http://www.hp.com/go/selfrepair/>). Refer servicing of other parts to qualified service personnel.

Turn off the printer and call your service representative in any of the following cases:

- The power cord or plug is damaged.
- The curing enclosures are damaged.
- The printer has been damaged by an impact.
- There is any mechanical or enclosure damage.
- Liquid has entered the printer.
- There is smoke or an unusual smell coming from the printer.

- The printer has been dropped or the curing module has been damaged.
- The printer is not operating normally.

Turn off the printer in either of the following cases:

- During a thunderstorm
- During a power failure

Take special care with zones marked with warning labels.

Electrical shock hazard

⚠ WARNING! The internal circuits of curing zones, curing boards, and built-in power supply operate at hazardous voltages capable of causing death or serious personal injury.

The printer uses two power cords. Unplug both power cords before servicing the printer.

To avoid the risk of electric shock:

- The printer must be connected to earthed mains outlets only.
- Do not attempt to dismantle the curing modules.
- Do not remove or open any other closed system covers or plugs.
- Do not insert objects through slots in the printer.

Heat hazard

The curing subsystems of the printer operate at high temperatures and can cause burns if touched. To avoid personal injury, take the following precautions:

- Do not touch the internal enclosures of the printer's curing zones.
- Let the printer cool down when accessing the internal curing zone and output platen in case of a substrate jam.
- Let the printer cool down before performing some maintenance operations.


Fire hazard

The curing subsystems of the printer operate at high temperatures.

To avoid the risk of fire, take the following precautions:

- The customer is responsible for meeting the printer's requirements and the Electrical Code requirements according to the local jurisdiction of the country where the equipment is installed. Use the power supply voltage specified on the nameplate.
- Connect the power cords to dedicated lines, each protected by a branch circuit breaker according to the information detailed in the site preparation guide. Do not use a power strip (relocatable power tap) to connect both power cords.
- Use only the power cords supplied by HP with the printer. Do not use a damaged power cord. Do not use the power cords with other products.
- Do not insert objects through slots in the printer.
- Take care not to spill liquid on the printer. After cleaning, make sure all components are dry before using the printer again.

- Do not use aerosol products that contain flammable gases inside or around the printer. Do not operate the printer in an explosive atmosphere.
- Do not block or cover the openings of the printer.
- Do not attempt to dismantle or modify the curing modules.
- Ensure that the operating temperature of the substrate recommended by the manufacturer is not exceeded. If this information is not available, ask the manufacturer. Do not load substrates that cannot be used at an operating temperature above 125°C (257°F).
- Do not load substrates with auto-ignition temperatures below 250°C (482°F). If this information is not available, printing must be supervised at all times. See note below.

 **NOTE:** Test method based on EN ISO 6942:2002; *Evaluation of materials and material assemblies when exposed to a source of radiant heat, method B*. The test conditions, to determine the temperature when the substrate starts ignition (either flame or glow), were: Heat flux density 30 kW/m², copper calorimeter, K type thermocouple.

Mechanical hazard

The printer has moving parts that could cause injury. To avoid personal injury, take the following precautions when working close to the printer:

- Keep your clothing and all parts of your body away from the printer's moving parts.
- Avoid wearing necklaces, bracelets, and other hanging objects.
- If your hair is long, try to secure it so that it will not fall into the printer.
- Take care that sleeves or gloves do not get caught in the printer's moving parts.
- Avoid standing close to the fans, which could cause injury and could also affect print quality (by obstructing the air flow).
- Do not touch gears or moving rolls during printing.
- Do not operate the printer with covers bypassed.
- While loading substrate, ensure that no-one else is close to the printer.

Light radiation hazard

Light radiation is emitted from the illumination of the print zone. This illumination is in compliance with the requirements of the exempt group of IEC 62471:2006, *Photobiological safety of lamps and lamp systems*. However, you are recommended not to look directly at the LEDs while they are on. Do not modify the module.

Chemical hazard

See the safety data sheets available at <http://www.hp.com/go/msds> to identify the chemical ingredients of your consumables. Sufficient ventilation needs to be provided to ensure that potential airborne exposure to these substances is adequately controlled. Consult your usual air conditioning or EHS specialist for advice on the appropriate measures for your location.

You can find more detailed information in the "Ventilation" section of the site preparation guide; see [Documentation on page 3](#).

Ventilation

Fresh air ventilation is needed to maintain comfort levels. Air conditioning and ventilation should meet local environmental, health, and safety (EHS) guidelines and regulations.

Follow the ventilation recommendations in the site preparation guide; see [Documentation on page 3](#).

⚠ CAUTION: The ventilation units should not blow air directly onto the printer.

Air conditioning

In addition to fresh air ventilation to avoid health hazards, you should maintain the operating conditions specified in [Environmental specifications on page 243](#), to avoid operator discomfort and equipment malfunction. Air conditioning in the work area should take into account that the equipment produces heat. Typically, the printer's power dissipation is 4.7 kW (13.7 kBTU/h).

Air conditioning should meet local environmental, health, and safety (EHS) guidelines and regulations.

⚠ CAUTION: The air-conditioning units should not blow air directly onto the printer.

Heavy substrate hazard

Special care must be taken to avoid personal injury when handling heavy substrates.

- Handling heavy substrate rolls may require more than one person. Care must be taken to avoid back strain and/or injury.
- Consider using a forklift, pallet truck, or other handling equipment.
- When handling heavy substrate rolls, wear personal protective equipment including boots and gloves.
- When loading rolls, remember to use the loading accessories (loading table and lifter).

Ink handling

HP recommends that you wear gloves when handling ink system components.

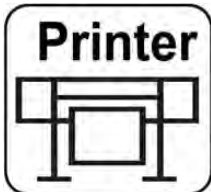
Warnings and cautions





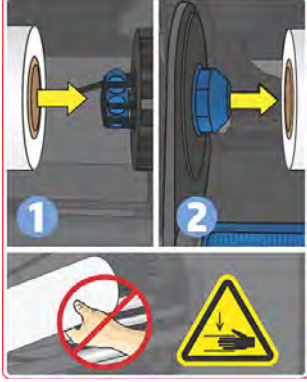

The following symbols are used in this manual to ensure the proper use of the printer and to prevent the printer from being damaged. Follow the instructions marked with these symbols.







⚠ WARNING! Failure to follow the guidelines marked with this symbol could result in serious personal injury or death.

⚠ CAUTION: Failure to follow the guidelines marked with this symbol could result in minor personal injury or damage to the printer.

Warning labels

Label	Explanation
	Printer label. To identify the printer's power cord.

Label	Explanation
	<p>Curing label. To identify the curing power cord.</p>
	<p>Electric shock hazard. Heating modules operate at hazardous voltages. Disconnect power source before servicing.</p> <p>CAUTION: Double pole. Neutral fusing.</p> <p>Equipment to be connected to earthed mains outlet only. Refer servicing to qualified service personnel. Disconnect all power cords before servicing. No operator serviceable parts inside the printer.</p> <p>Before starting, read and follow the operating and safety instructions.</p> <p>This label is located on the e-box.</p>
	<p>Risk of burns. Do not touch the curing zone or the output platen of the printer: they could be hot.</p> <p>This label is located on the front of the curing module and on the bottom part of the output platen.</p>
	<p>Crush risk. When you move the substrate input/output from the load position to the print position, there is a risk of crushing your hand between the substrate input/output and the stand. Ensure that no-one is near the printer when you move the substrate input/output.</p> <p>This label is located on the right side plate of the substrate input/output.</p>
	<p>Crush risk. Be careful when loading rolls: your hand could be crushed between the roll and the substrate input structure.</p> <p>This label is located on the substrate input structure.</p>
	<p>You are recommended to wear gloves when handling the maintenance cartridge, the platen, the ink collector, the condensates, and the condensation system components.</p> <p>This label is located on the maintenance cartridge.</p>

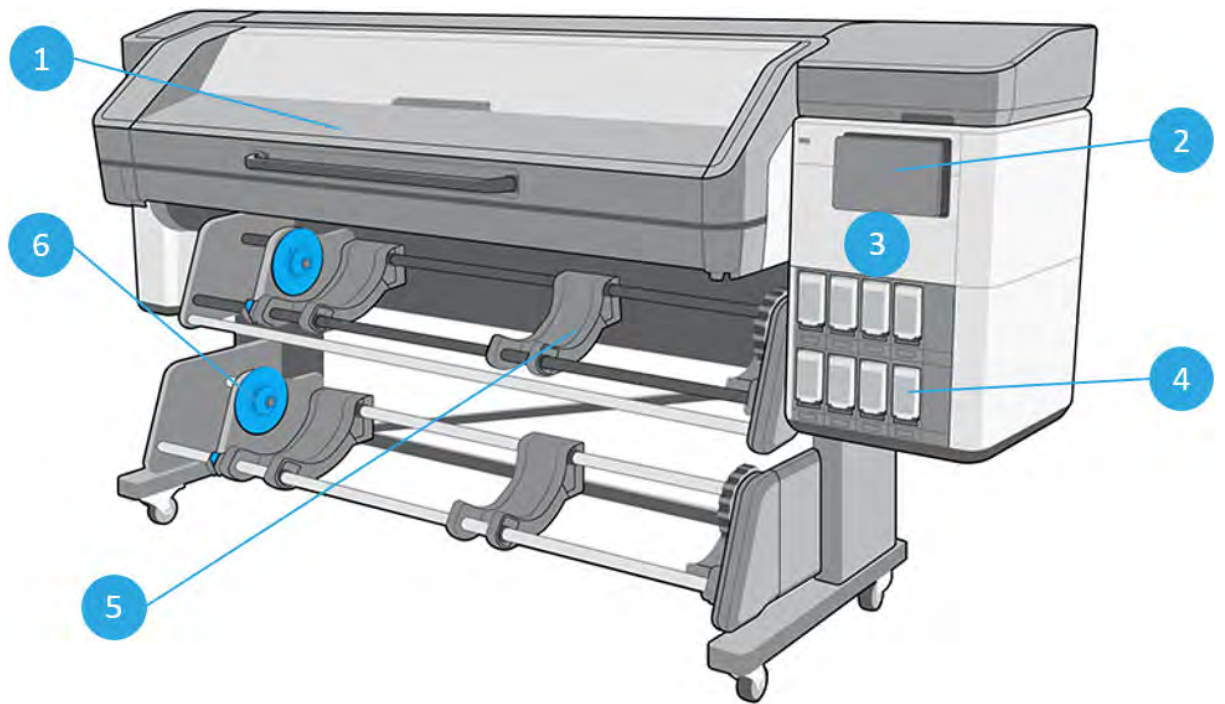
Label	Explanation
	<p>Electric shock hazard. Heating modules operate at hazardous voltages. Disconnect all power sources before servicing.</p> <p>This label is located on the curing control PCA enclosure. For service personnel only.</p>
	<p>Electric shock hazard. The printer has two input power cords. Power supplies operate at hazardous voltages. Disconnect all power cords before servicing.</p> <p>This label is located internally, close to the print-zone heating-coils enclosure between fans. For service personnel only.</p>
	<p>Hazardous moving parts. Rotating fan blades. Keep hands clear.</p> <p>These labels are located internally, close to the print-zone fans: one near the vacuum fan, one near the aerosol fan, and one on each side of the curing fans cover. For service personnel only.</p>
	<p>Hazardous area. Heating modules operate at hazardous voltages.</p> <p>Electric shock hazard. Equipment has two input power cords. Disconnect all power cords before servicing. Power supplies operate at hazardous voltages.</p> <p>Double pole, neutral fusing.</p> <p>Equipment to be connected to earthed mains outlet only.</p> <p>This label is located in the scan and air-curtain heater control enclosure. For service personnel only.</p>
	<p>The contents of the condensation collector should not be dumped down the drain, but should be disposed of in accordance with local regulations and site operation. The waste profile datasheet contains the information required for adequate disposal; it can be found at https://hpllatexknowledgecenter.com/applications/wasteprofiles/.</p> <p>This label is located on the condensation collector.</p>
	<p>Do not drink the contents of the condensation collector. You can obtain condensation collector waste information at https://hpllatexknowledgecenter.com/applications/wasteprofiles/.</p> <p>This label is located on the condensation collector.</p>

NOTE: The final label position and its size on the printer may vary slightly, but should always be visible and close to the potential risk area.

Main printer components

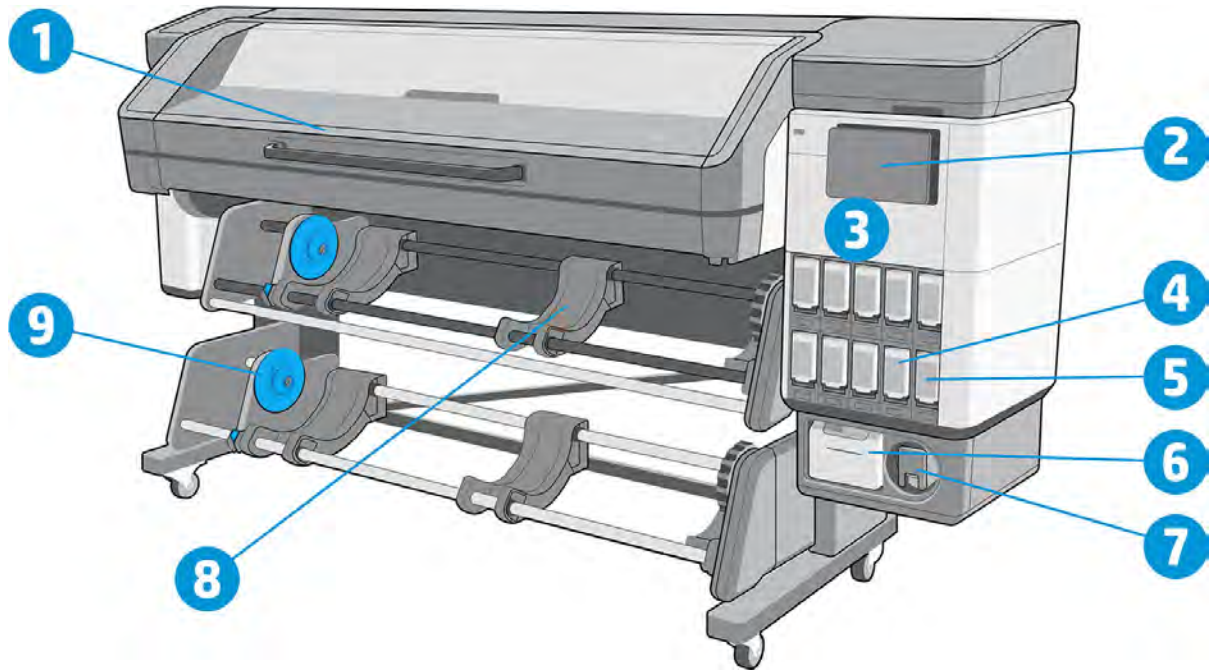
The following views of the printer illustrate its main components.

Front view (700)



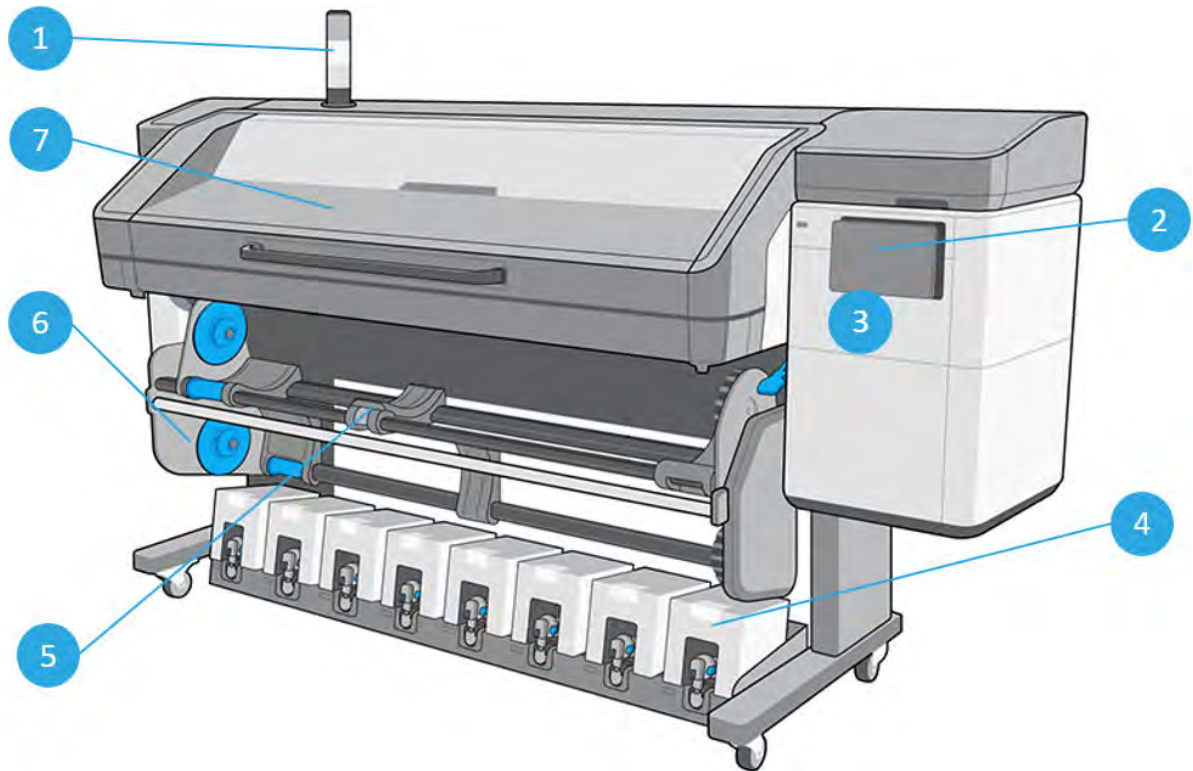
- | | |
|-------------------------------|-----------------------------|
| 1. Curing module | 4. Eco-Carton ink cartridge |
| 2. Front panel | 5. Loading table |
| 3. Maintenance cartridge door | 6. Take-up reel |

Front view (700W)



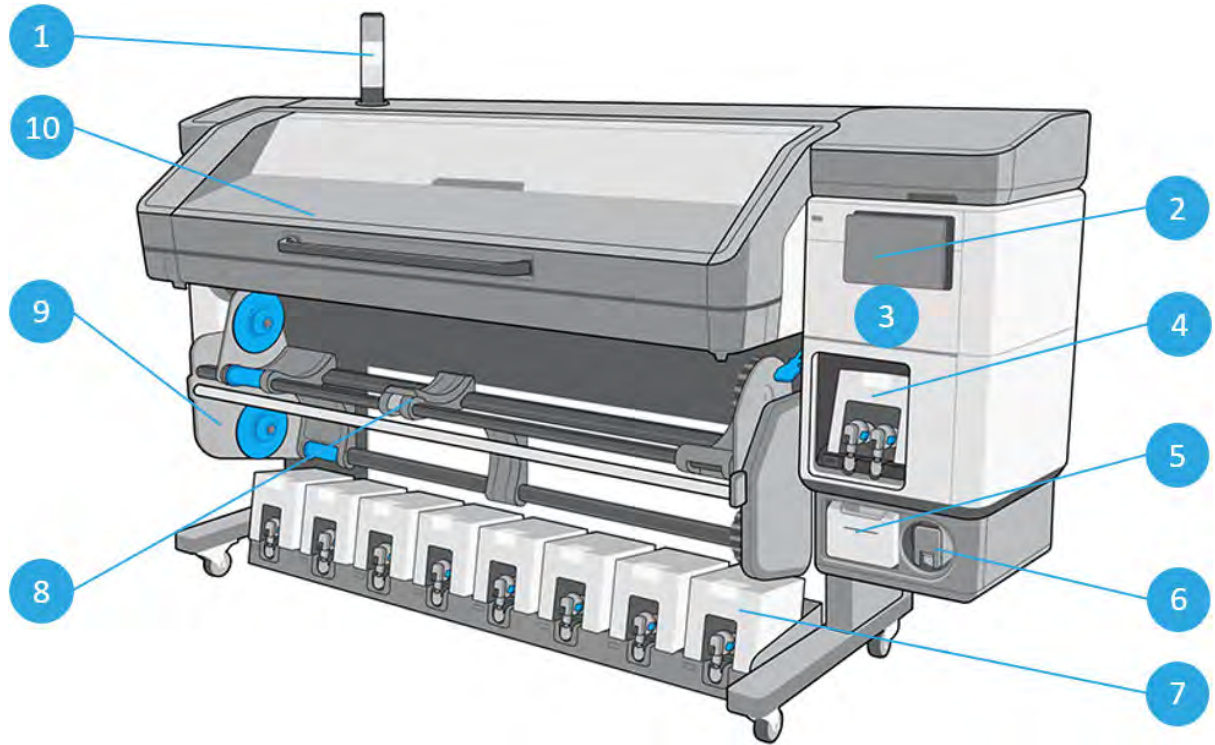
- | | |
|-------------------------------|-----------------------------------|
| 1. Curing module | 6. Water tank |
| 2. Front panel | 7. White printhead storage system |
| 3. Maintenance cartridge door | 8. Loading table |
| 4. Eco-Carton ink cartridge | 9. Take-up reel |
| 5. Ink mix container | |

Front view (800)



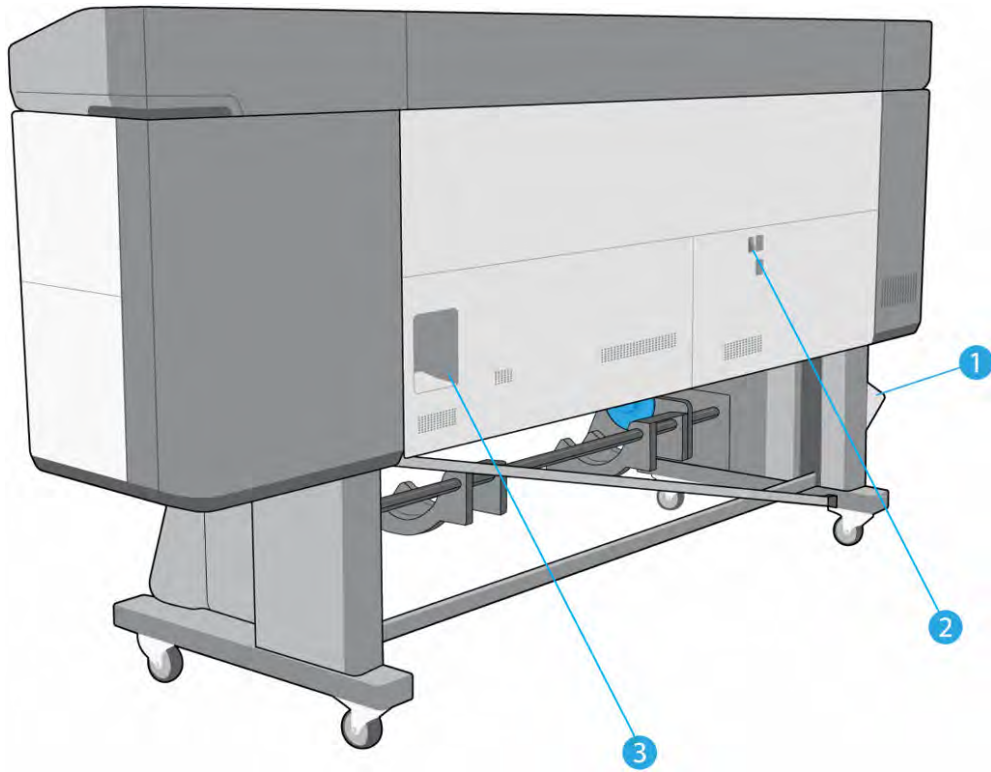
- | | |
|-------------------------------|------------------|
| 1. Beacon | 5. Loading table |
| 2. Front panel | 6. Take-up reel |
| 3. Maintenance cartridge door | 7. Curing module |
| 4. Eco-Carton ink cartridge | |

Front view (800W)



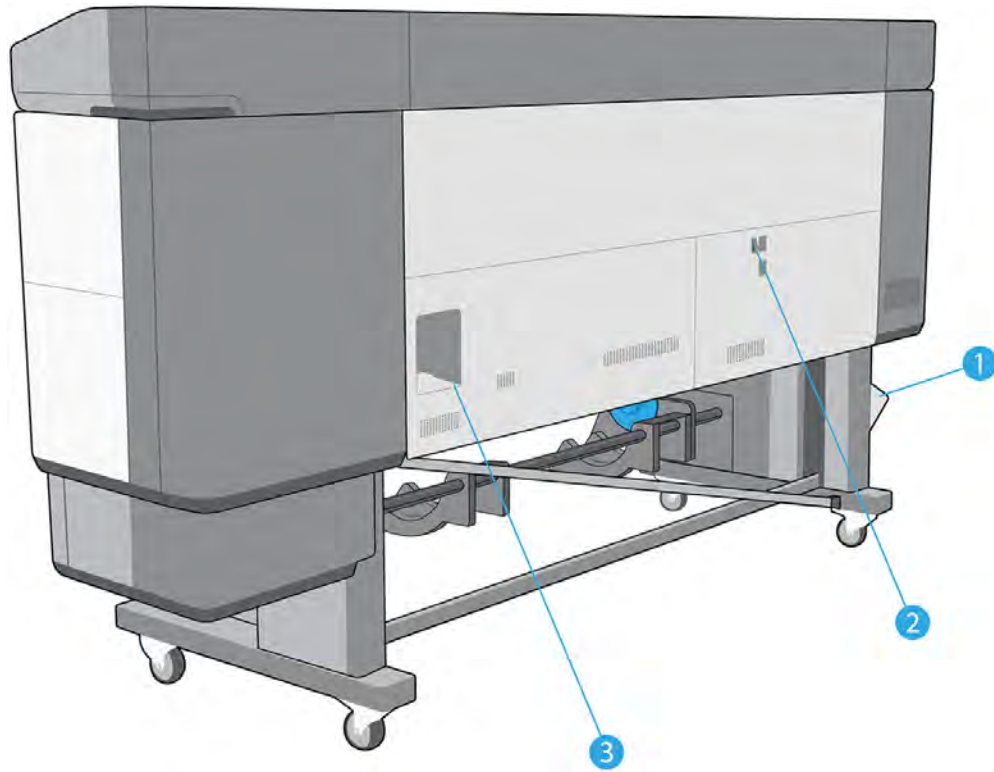
- | | |
|-----------------------------------|-----------------------------------|
| 1. Beacon | 6. White printhead storage system |
| 2. Front panel | 7. Color Eco-Carton ink cartridge |
| 3. Maintenance cartridge door | 8. Loading table |
| 4. White Eco-Carton ink cartridge | 9. Take-up reel |
| 5. Water tank | 10. Curing module |

Rear view (700)



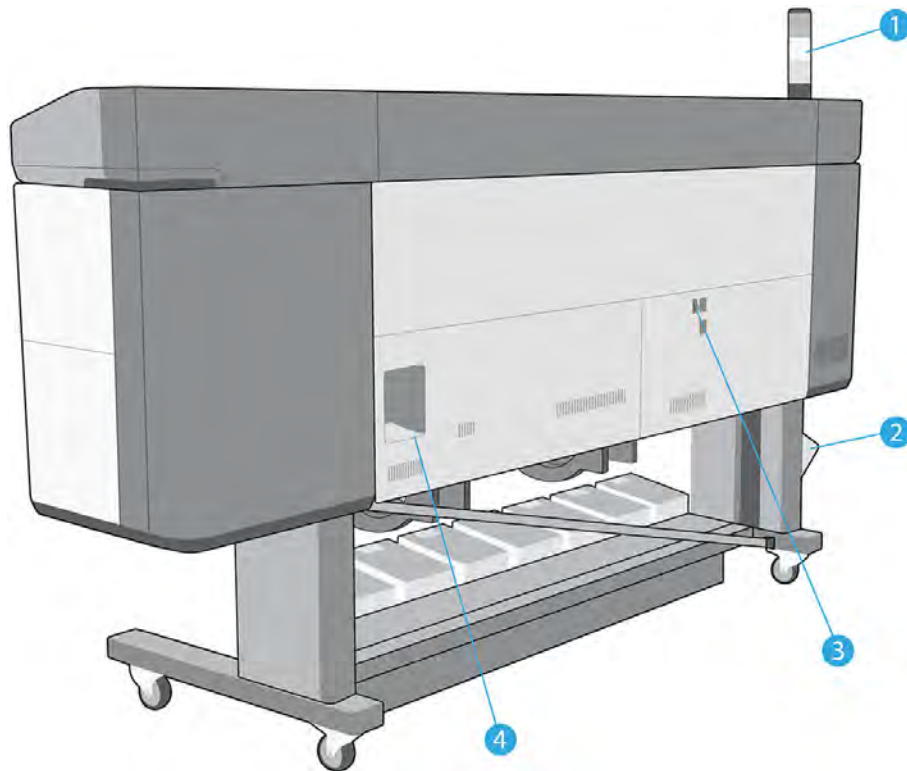
1. Condensation collector
2. Power switch and power socket
3. Sockets for communication cables and optional accessories

Rear view (700W)



1. Condensation collector
2. Power switch and power socket
3. Sockets for communication cables and optional accessories

Rear view (800)



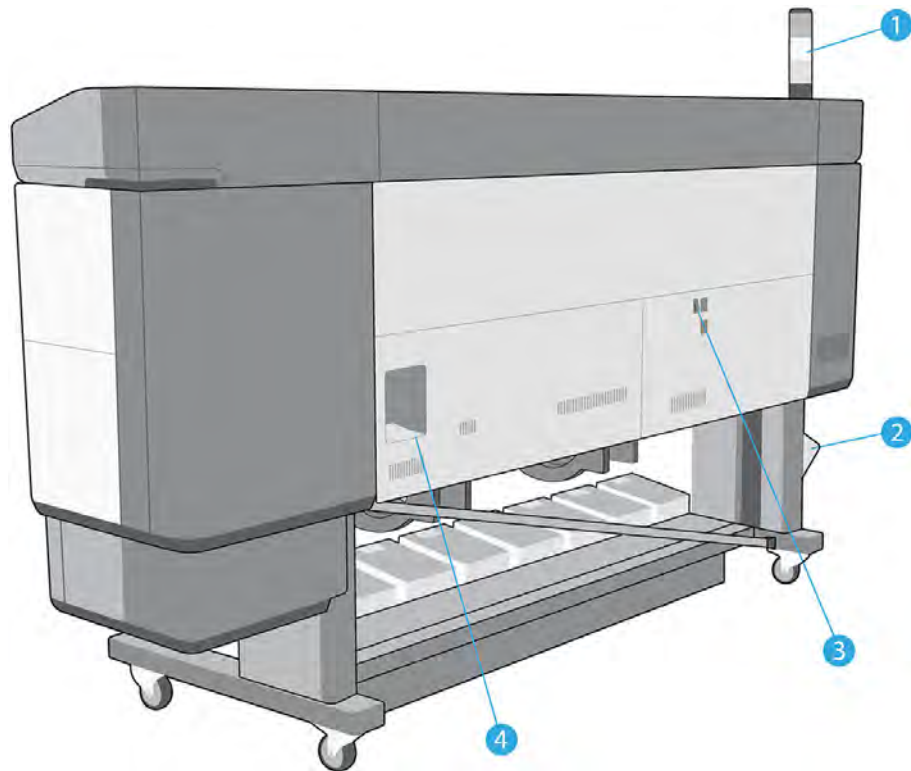
1. Beacon

2. Condensation collector

3. Power switch and power socket

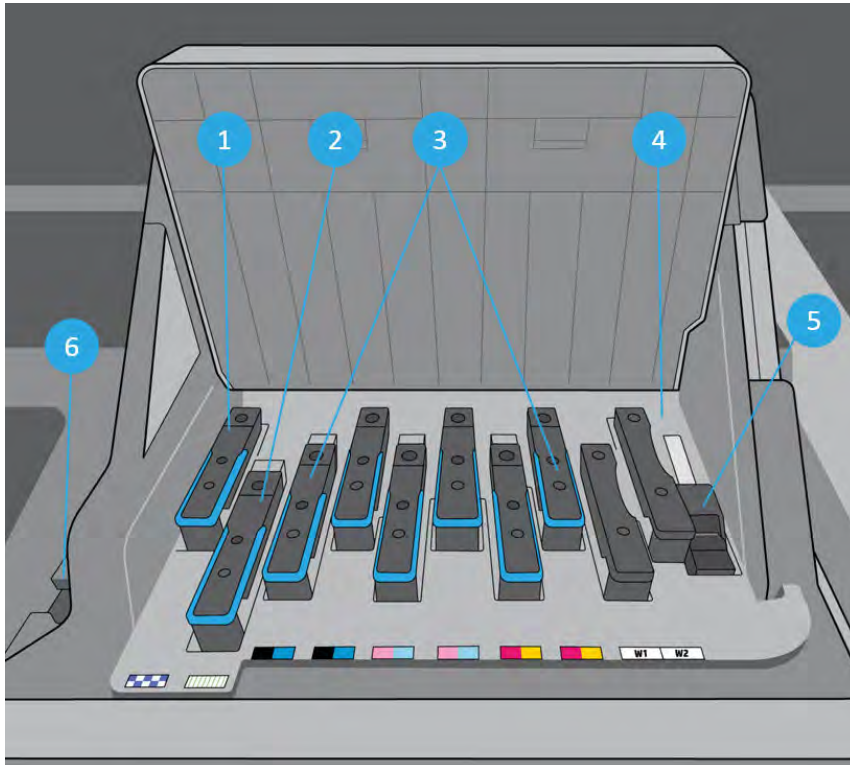
4. Sockets for communication cables and optional accessories

Rear view (800W)



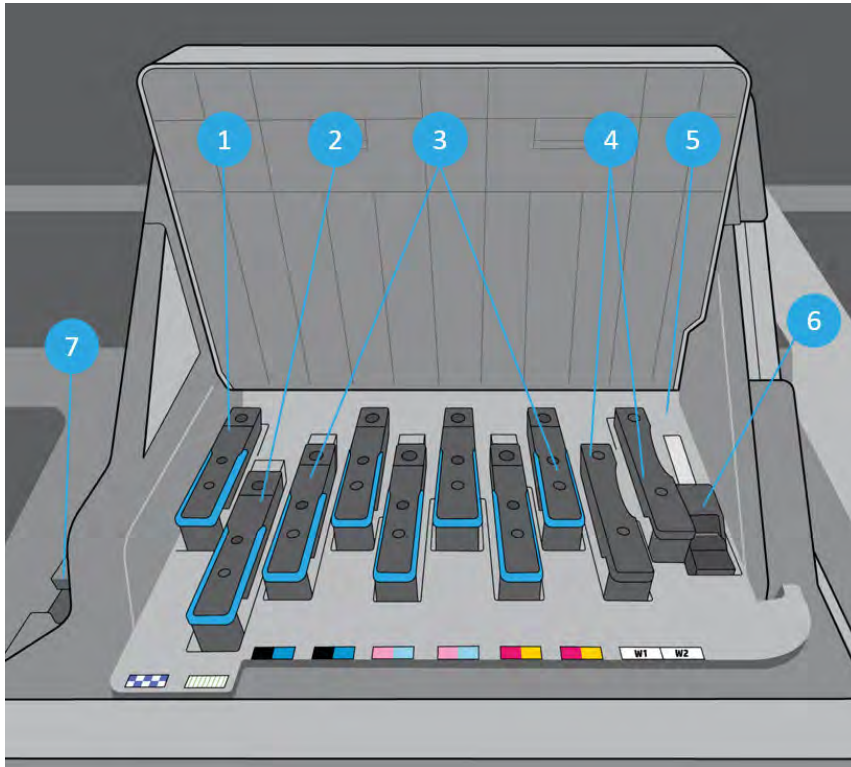
1. Beacon
2. Condensation collector
3. Power switch and power socket
4. Sockets for communication cables and optional accessories

Carriage view (700 and 800)



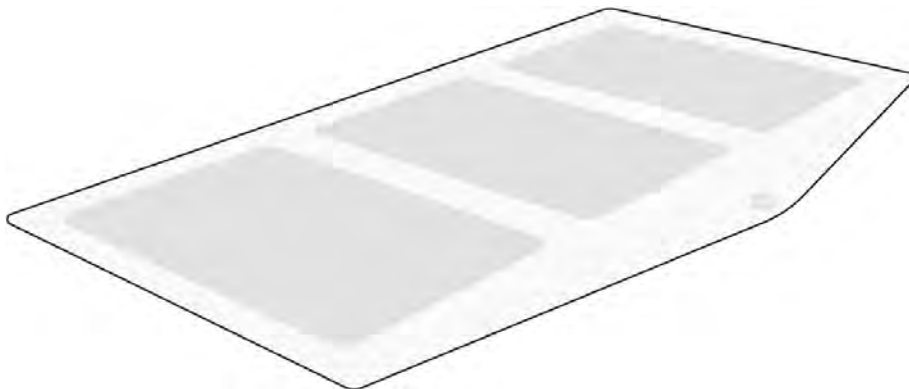
- | | |
|------------------------|----------------------------------|
| 1. Optimizer printhead | 4. Encoder sensor |
| 2. Overcoat printhead | 5. Line sensor |
| 3. Color printheads | 6. HP Embedded Spectrophotometer |

Carriage view (700W and 800W)



- | | |
|------------------------|----------------------------------|
| 1. Optimizer printhead | 5. Encoder sensor |
| 2. Overcoat printhead | 6. Line sensor |
| 3. Color printheads | 7. HP Embedded Spectrophotometer |
| 4. White printheads | |

Loading accessory




The loading accessory helps you to load some substrate types that are difficult to load without it. See [Loading accessory on page 65](#).

Beacon

The beacon provides a simple indication of printer status that is visible from a distance, so that you can easily see whether it is working normally. If there is a problem, the beacon color gives some indication of what kind of problem it is.

To install the beacon, see the printer assembly instructions.

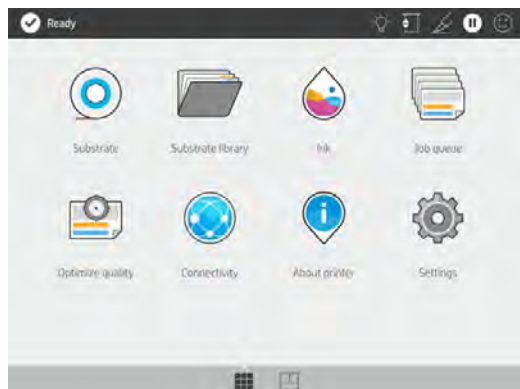
Beacon color	Meaning
Green	Printer ready (may or may not have substrate loaded)
Blinking green	Printing without any warning if a 3-liter Eco-Carton ink cartridge is out of ink
Yellow	3-liter Eco-Carton ink cartridge not present or out of ink, window open, or maintenance cartridge cover open
Blinking yellow	3-liter Eco-Carton ink cartridge not present or out of ink while printing
Red	There is a problem that prevents printing: printhead cleaning roll exhausted or not present, intermediate tank or Eco-Carton ink cartridge not present or out of ink, out of paper, window open, maintenance cartridge cover open, or printer engine failed
Blinking red	No case
All lit	Printer is temporarily engaged in an internal workflow, such as replacing the maintenance cartridge
All blinking	Printer is starting up

You can enable and disable the beacon from the  icon on the front panel.

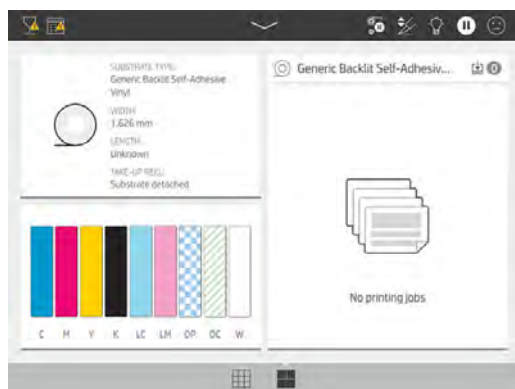
Front panel

Introduction to the front panel

The front panel is a touch-sensitive screen with a graphical user interface; it is located on the front right of the printer. It gives you complete control of your printer: from the front panel, you can 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 necessary.





There is an alternative home screen that you can see by sliding your finger across the screen to the left. It summarizes the status of the Eco-Carton ink cartridges, the substrate, and the current print job.



The front panel has a large central area to display dynamic information and icons. On the left and right sides, one or two fixed icons may be displayed.

Left and right fixed icons


- Tap  to return to the home screen.
- Tap  to go back to the last-visited screen. This does not discard any changes made in the current screen.










Home screen dynamic icons


The following items are displayed only on the home screen:

- At the top left of the screen is a message showing the printer status or the most important current alert. Tap this message to see a list of all current alerts, with an icon indicating the severity of each alert. You can tap an alert to get help in solving the problem.



- At the top right, tap  to turn on or off the print-zone illumination light.

- Tap  to view substrate status and perform substrate-handling operations.
- Tap  to open the Substrate Library and access the extensive online library of substrate presets.
- Tap  to view ink-supply status and perform ink-cartridge and printhead operations.
- Tap  to view information about the job that is currently printing.
- Tap  to optimize print quality.
- Tap  to view network and Internet status and change related settings.
- Tap  to view information about the printer.
- Tap  for help.
- Tap  to view and change printer settings in general.





If the printer is left idle for some time, it goes into sleep mode and switches off the front-panel display. To change the time that elapses before sleep mode, tap , then **Setup > Front panel options > Sleep mode wait time**. You can set a time between 5 and 60 minutes; the default is 13 minutes.

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

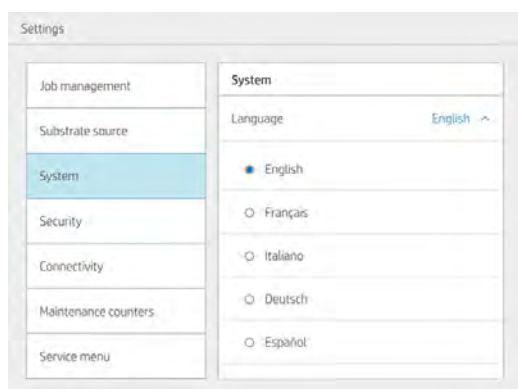
Information about specific uses of the front panel can be found throughout this guide.

Change the language of the front panel

Two methods are available to change the language that is used for the front-panel menus and messages:


- If you can understand the current front panel language, go to the front panel and tap , then **System > Language**.
- If you cannot understand the current front panel language, start with the printer turned off. Turn it on. As soon as the  icon appears, press it for a few seconds. When all icons have appeared on the front panel, tap  followed by . The front panel blinks briefly.

Whichever method you used, the language selection menu should now appear on the front panel.




Tap the name of your preferred language.

Change the sleep mode setting

If the printer is left turned on but unused for a certain period of time, it automatically goes into sleep mode to save power. The default period of time it waits is 13 minutes. To change the time the printer waits before it goes into sleep mode, go to the front panel and tap , then **System** > **Power options**. Enter the wait time that you want, from 5 to 60 minutes, then tap **OK**.


Change the loudspeaker volume

To change the volume of the printer's loudspeaker, go to the front panel and tap , then **System** > **Speaker volume**, and select **Off**, **Low**, or **High**.

Change the front panel display brightness


To change the brightness of the front-panel display, tap , then **System** > **Display brightness**, then select a value by moving the scroll bar. Tap **OK** to save the value.

Change the units of measurement

To change the units of measurement that appear on the front panel, tap , then **System** > **Unit selection**, then **English** or **Metric**.

The units of measurement can also be changed in the Embedded Web Server. See [Access the Embedded Web Server on page 29](#).

Restore factory settings

To restore the printer settings to their original values as set in the factory, go to the front panel and tap , then **System** > **Restore factory settings**. This option restores all of the printer settings except the Gigabit Ethernet settings and substrate presets.

Check printer status

The front panel and the Embedded Web Server both display the status of the printer, the loaded substrate, and the ink system.

Check the status of the Eco-Carton ink cartridges

You can see the ink levels in your Eco-Carton ink cartridges by tapping  on the front panel's home screen.



For more details about any particular ink cartridge, tap the rectangle representing that cartridge. The following information is shown:

- Status
- Estimated ink level
- Warranty status
- Manufacturer
- Capacity
- Product name
- Product number
- Serial number
- Expiration date
- Supported ink cartridges


These are the possible ink cartridge status messages that you can see on the front panel:

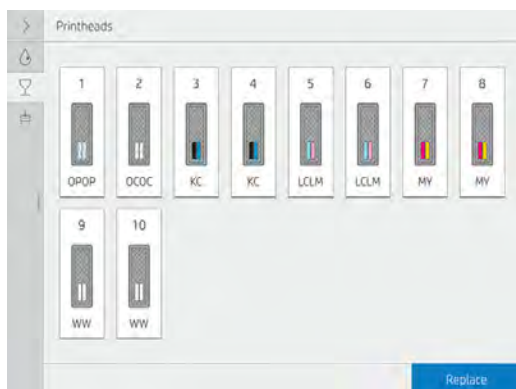
- **OK:** The cartridge is working normally, with no known problems.
- **Missing:** There is no cartridge present, or it is not correctly connected to the printer.
- **Low:** The ink level is low.
- **Very low:** The ink level is very low.
- **Empty:** The cartridge is empty.
- **Reseat:** You are recommended to remove the cartridge and then reinsert it.
- **Replace:** You are recommended to replace the cartridge with a new cartridge.
- **Expired:** The cartridge's expiration date has passed.
- **Incorrect:** The cartridge is not compatible with this printer. The message includes a list of compatible cartridges.
- **Non-HP:** The cartridge is used, refilled, or counterfeit.

You can also view the status of the ink cartridges in the Embedded Web Server. See [Access the Embedded Web Server on page 29](#).

Check the status of a printhead

The printer automatically checks and services the printheads after each print. Follow these steps to get more information on your printheads.

1. On the front panel's home screen, tap 



2. Select the printhead for which you want to see information.
3. The front panel shows the following information:
 - Status
 - Warranty status
 - Product name
 - Product number
 - Serial number
 - Ink fired
 - Install date


These are the possible printhead status messages that you can see on the front panel:

- **OK:** The printhead is working normally, with no known problems.
- **Missing:** There is no printhead present, or it is not correctly installed in the printer.
- **Reseat:** You are recommended to remove the printhead and then reinsert it. If that fails, clean the electrical connections (see [Clean the electrical connections on a printhead on page 176](#)). If that fails, replace the printhead with a new printhead (see [Replace a printhead on page 155](#)).
- **Replace:** The printhead is failing. Replace the printhead with a working printhead (see [Replace a printhead on page 155](#)).
- **Replacement incomplete:** The printhead replacement process has not completed successfully; restart the replacement process and let it finish completely.
- **Remove:** The printhead is not a suitable type for use with your printer.
- **Non-HP ink:** Ink from a used, refilled, or counterfeit ink cartridge has passed through the printhead. See the limited warranty document provided with your printer for details of the warranty implications.

You can also use the Embedded Web Server to check the printhead status and the warranty status. See [Access the Embedded Web Server on page 29](#).

Check the file system

It is possible to check the integrity of the file system on the printer's hard disk, and automatically correct any errors. You are recommended to do this about once every six months, or if you notice any trouble in accessing files on the hard disk.

To execute the file system check, go to the front panel and tap , then **Preventive maint. tasks > File system check**.

If the printer is aware of damage to the file system, for instance after a severe software problem, it may start a file system check automatically. This can take about ten minutes.

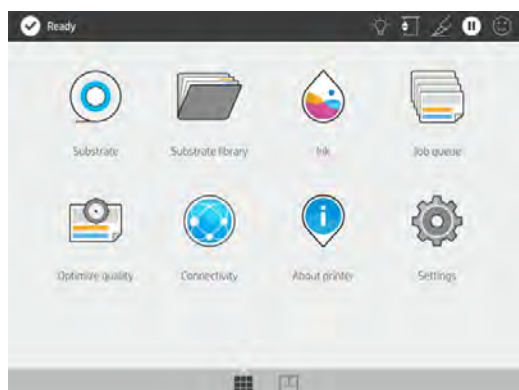
Printer alerts

The printer can communicate two types of alerts:

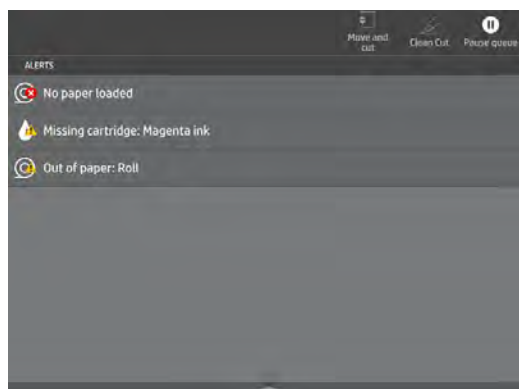
- **Errors:** When the printer is unable to print.
- **Warnings:** When the printer needs attention for an adjustment, such as a calibration, preventive maintenance, or ink cartridge replacement.
- **Advice:** When a firmware update is available or the downloaded firmware is ready to be installed.

Printer alerts appear in the front panel and in the Embedded Web Server.

- **Front-panel display:** The front panel shows the alerts in the upper left part of the screen (notification bar).



Only one alert is shown at a time. If you tap the notification bar, all the current printer alerts are shown. The list of alerts can be folded back by tapping or sliding up the bottom row of the list.



Clicking an alert opens the application that could help to resolve it. Firmware update advice is dismissed when entering the Printer application. Once dismissed, there won't be any reminder later on about the

same advice (in the case of firmware updates, a new notification appears when there a new firmware release becomes available).

- **Embedded Web Server:** The Embedded Web Server shows only one alert at a time, which is judged to be the most important.

An alert may require you to perform a maintenance operation; see [Printer maintenance on page 173](#).

The following alerts require a service engineer:

- **Curing modules cleaning** (alternatively, this can be done by anyone who has obtained an appropriate certification)
- **Recirculation cover replacement**
- **Curing heater fans replacement**
- **SAX cluster gear replacement**
- **Service station motor replacement**
- **Spit roller motor replacement**
- **PH cleaning roll motor replacement**
- **Flex cables replacement**
- **Encoder strip replacement**
- **Rod slider replacement**
- **Pinch-wheel module replacement**
- **Carriage bearings replacement**
- **Belt & tensioner replacement**
- **SAX motor replacement**

Printer status

Printer cluster status

This status can have the following values, shown in this order:

1. **Preparing to print**
2. **Printing** (including **Remaining time** in the status box)
3. **Curing**
4. **Paused**
5. **Canceling**

Ejecting and **Drying** are different statuses in the job details, but have the same “finishing” job row icon.

A status line in a job whose status is **Canceling** will appear in grey.

Up next cluster status

This status can have the following values, shown in this order:

1. **Waiting to process**
2. **Processing**
3. **Ready to print**

On hold job status

This status can have the following values, shown in chronological order, with the latest at the top:

- **On hold for paper mismatch** (width, length, out of substrate)
- **On hold for out of supplies**

History job status

This status can have the following values, shown in chronological order, with the latest at the top:


- **Printed**
- **Canceled**
- **Failed**

Check lifetime usage statistics

There are two ways of checking your printer's usage statistics:



NOTE: The accuracy of the usage statistics is not guaranteed.

- From the Embedded Web Server, go to the **Main** tab and select **History** > **Usage**. See [Embedded Web Server on page 28](#).
- From the front panel, tap , then **Setup** > **Internal prints** > **User information prints** > **Print usage report**.

HP PrintOS

HP PrintOS is a Web-based operating system for your business—an open and secure cloud-based platform. It drives productivity and inspires innovation with a unique suite of apps that deliver greater control while also simplifying production processes.

Signing up is the first step to enjoy the benefits of the completely new HP PrintOS, your cloud-based print production operating system. If you need help to connect your printer to HP PrintOS, see <https://intercom.help/hp-printos/en/articles/2681524-adding-your-hp-latex-100-300-500-series-printer-to-hp-printos>.

PrintOS advantages

- **Get control over your fleet production**

Stay on top of production even when you're away from your printer, and get data-driven insights for better decision-making and continuous improvements.

- **Easily configure your substrates remotely**

Put an end to repetitive and time-consuming processes. Backups are automatic, and you can easily restore substrate configurations.

- **Catch new growth opportunities**

Easily integrate Web-to-print decoration and signage design tools into your website and unleash your online print business potential.

PrintOS solutions

- **PrintBeat:** Remotely monitor your print production, access and download printer job information, and make effective data-driven decisions to keep improving your operations.
- **PrintOS Mobile App:** Control your print operations virtually anytime, anywhere by monitoring printer status, ink and substrate consumption, view completed jobs, and immediately identify printing issues even while on the go.
- **Configuration Center:** Remotely configure your large-format printer from any location by managing, accessing, and deploying all your printer's substrate configuration from a single place, to simplify and balance your print operations.
- **Applications Center:** Get print-ready PDF files by enabling your customers to design a variety of large-format decorative or signage applications in just minutes.
- **Service Center:** Access all service activities directly from a single portal, providing you with quick, efficient, and reliable management of service cases.

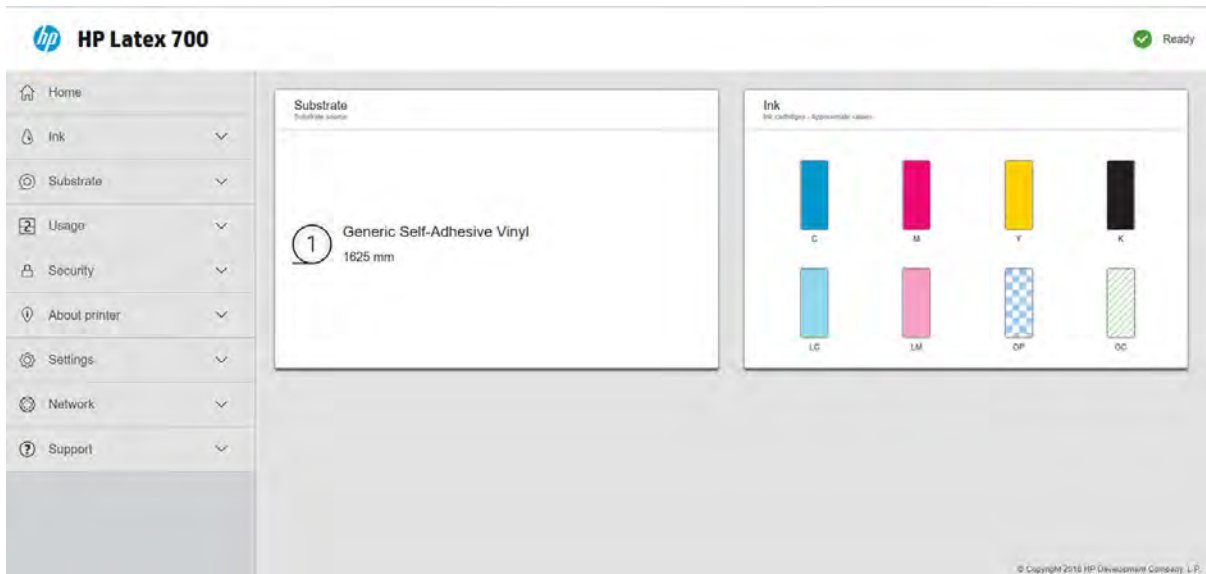
Embedded Web Server



Introduction to the Embedded Web Server

The Embedded Web Server is a Web server running inside the printer. You can use it to obtain printer information, manage settings and presets, and upload new firmware. Service engineers can use it to retrieve internal information that helps to diagnose printer problems.

You can access the Embedded Web Server remotely by using an ordinary Web browser running on any computer. See [Access the Embedded Web Server on page 29](#).




Access the Embedded Web Server

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

- Microsoft Edge 82 and later
- Apple Safari 12 and later for OS X 10.13 and later
- Mozilla Firefox 77 and later
- Google Chrome 83 or later

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

- Google Chrome (latest version) for Android 7 and later, and for iOS 11 and later
- Apple Safari 12 and later for iOS 11 and later
- Mozilla Firefox (latest version) for Android 7 and later, and for iOS 11 and later

To use the Embedded Web Server, open your Web browser and enter the printer's IP address in the browser's address bar. You can find your printer's IP address in the printer's front panel: tap the  icon.

 **NOTE:** Your browser may display a security warning when you enter the IP address. If you have entered the correct address, it is safe to ignore the warning and continue to access the Embedded Web Server.

If you follow these instructions but fail to open the Embedded Web Server, see [Cannot access the Embedded Web Server on page 235](#).

Change the language of the Embedded Web Server

The Embedded Web Server can function in any of the following languages: English, Portuguese, Spanish, Catalan, French, Dutch, Italian, German, Swedish, Polish, Russian, Simplified Chinese, Traditional Chinese, Korean, and Japanese. It uses the language that you specified in your Web browser options. If it cannot support that language, it uses the language chosen in your printer. If it cannot support that language either, it uses English.

To change the language, change your Web browser's language setting. To complete the change, close and reopen your Web browser.

View or set the date and time

To view or set the printer's date and time in the Embedded Web Server, click **Configuration > Date & time**.

Embedded Web Server security settings

In the Embedded Web Server, you can click **Security** and then **Administrator password** to create an administrator account to control access to the Embedded Web Server and the printer's front panel.

After clicking **Access control**, the administrator can create new printer user accounts and assign them specific permissions depending on their role.


Other security settings that apply to all users are available by clicking **Security settings**.

Connectivity and software instructions

Connection method

Your printer can be connected in the following way.

Connection type	Speed	Maximum cable length	Other factors
Gigabit Ethernet	Fast; varies according to network traffic	Long (100 m=328 ft)	Requires extra equipment (switches)

 **NOTE:** The speed of any network connection depends on all the components that are used in the network, which can include network interface cards, hubs, routers, switches, and cables. If any one of these components cannot operate at high speed, you will have a low-speed connection. To get the expected performance from your printer, you should use equipment that supports 1000TX Full Gigabit. The speed of your network connection can also be affected by the total amount of traffic from other devices on the network.


Connect the printer to your network



The printer is able to configure itself automatically for most networks, in a similar way to any computer in the same network. The first time you connect it to a network, this process may take a few minutes. If necessary, see [Advanced network configuration on page 32](#).


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

tap .

Network configuration

For more details about the current network configuration, go to the front panel and tap , then **Connectivity > Network connectivity > Gigabit Ethernet > Modify configuration**. From here it is possible, though not normally necessary, to change the settings manually. This can also be done remotely using the Embedded Web Server: click **Network > Configuration TCP/IP**.

 **TIP:** You may find it helpful to print out the full printer network configuration on paper. This can be done from the front panel: tap , then **Internal prints > Service information prints > Print connectivity configuration**. If you do not print out the full network configuration, consider making a note of the printer's IP address and network name.

If you accidentally misconfigure the printer's network settings, you can restore the network settings to their factory values from the front panel: tap , then **Connectivity > Network connectivity > Advanced > Restore factory settings**. Then you must restart the printer. This automatically provides a working network configuration for most networks. The printer's other settings remain unchanged.

Using IPv6

Your printer supports almost all network connectivity features using IPv6, just as it does using IPv4. To make full use of IPv6, you may need to connect your printer to an IPv6 network in which there are IPv6 routers and servers.

In most IPv6 networks, the printer will configure itself automatically as follows, and no user configuration is necessary:


1. The printer assigns itself a link-local IPv6 address (which starts with "fe80::").
2. The printer assigns itself stateless IPv6 addresses as indicated to it by any IPv6 routers on the network.
3. If no stateless IPv6 addresses can be assigned, the printer will try to obtain IPv6 addresses using DHCPv6. It will also do so if the routers instruct it to do so.

The stateless and DHCPv6 IPv6 addresses can be used to access the printer, and in most IPv6 networks this will be appropriate.

The link-local IPv6 address works only in the local subnet. Although it is possible to access the printer using this address, it is not recommended.

It is possible to assign a manual IPv6 address to the printer, using the front panel or the Embedded Web Server. It is also possible to disable IPv6 completely in the printer. However, it is not possible to disable IPv4 in the printer, and therefore it is not possible to configure the printer as IPv6-only.

 **NOTE:** In typical IPv6 use, your printer will have multiple IPv6 addresses, although it has only one IPv4 address.

 **TIP:** You are recommended to give a name to the printer. You can do this from the front panel or (more easily) from the Embedded Web Server.

TIP: You will generally find it easier to use IPv4 unless you have a specific need to use IPv6.

Microsoft Windows Vista, Microsoft Windows Server 2008, later versions of Windows, and the new HP Printing and Imaging devices have IPv6 enabled by default. For further information on IPv6, see <http://h20000.www2.hp.com/bc/docs/support/SupportManual/c00840100/c00840100.pdf>. This document discusses how name resolution plays a fundamental role in Dual-Stack transition methods. Using the name resolution algorithm in Windows, the document goes through various network environments and studies how the introduction of routable IPv6 addresses will affect network applications. It also discusses DHCPv6, SLAAC and the impact to DNS, and makes some recommendations.

Connect the printer to the Internet

To connect to the Internet, go to the front panel and tap , then **Connectivity > Network**.

An Internet connection is needed for various printer functions described in this guide, such as the Embedded Web Server.

RIP software installation

Install the RIP software by following the instructions provided with the software.

RIP software uses the following ports for printer communication and job submission, so you must ensure that your RIP host system can connect to these ports: 80, 8085, 8086, 8090, 9100.

Advanced network configuration

You will probably not need to read this section, but the information is provided as it may be useful in some cases.

The printer provides a single RJ-45 connector port for a network connection. In order to meet Class B limits, the use of shielded I/O cables is required.

The embedded Jetdirect print server supports connection to IEEE 802.3 10Base-T Ethernet, IEEE 802.3u 100Base-TX Fast Ethernet and 802.3ab 1000Base-T Gigabit Ethernet compliant networks. When connected and powered on, the printer auto-negotiates with your network to operate with a link speed of 10, 100, or 1000 Mbps, and to communicate using full- or half-duplex mode. However, you can manually configure the link using the printer's front panel, or through other configuration tools once network communication is established.

The printer can support multiple network protocols simultaneously, including TCP/IPv4 and TCP/IPv6. For security, it includes features to control IP traffic to and from the printer.

Verify correct operation

1. Print an IO Configuration page to check for status messages.
2. In the upper section of the IO Configuration page, look for the status message **I/O Card Ready**.
3. If **I/O Card Ready** appears, the print server is operating properly. Proceed to the next section.

If a message other than **I/O Card Ready** appears, try the following:

- a. Turn the printer off and then on again to re-initialize the print server.
- b. Check that the status indicator lights (LEDs) are providing proper status.



NOTE: See [Troubleshooting on page 33](#) for link configuration and troubleshooting information.

See the *HP Jetdirect Print Servers Administrator's Guide* for your print server model to interpret and troubleshoot other messages.

Preconfigure network settings if required

If your network requires that you configure network settings before you add the printer to your network systems, you can do so now.

However, in most cases, you can skip this section. Instead, you can proceed directly to the next section to install the printer on your network computer systems. The network installation software will allow you to configure basic network settings and add the printer to your system configuration.

Tools for preconfiguration

The following tools can be used to preconfigure your network settings:

- The front panel
- The Embedded Web Server
- You can use an advanced configuration method, such as BootP, DHCP, Telnet, or the arp and ping commands. For instructions, see the *HP Jetdirect Print Servers Administrator's Guide* for your print server model.

After the printer is configured with network settings, the configuration values are saved and maintained even after it is turned off and on again.

Troubleshooting

IO Configuration page

The IO Configuration page provides comprehensive print server status. It is an important diagnostic tool, especially if network communications are not available. For a description of messages that may appear on the IO Configuration page, see the *HP Jetdirect Print Servers Administrator's Guide* for your print server model.

LEDs

The printer has status lights (LEDs) that indicate the link status and network activity:

- When the green light is on, the printer has successfully linked to the network.
- When the yellow light is blinking, there is network transmission activity.

Link troubleshooting

If the printer does not successfully connect to the network:

- Both LEDs will be off.
- **LAN Error - Loss of Carrier** will be indicated on the IO Configuration page.

If a link failure is indicated, try the following:

- Check cable connections.
- Print an IO Configuration page and check link settings.

Item	Description
Port Config	<p>If the printer is properly linked, this item has one of the following values:</p> <ul style="list-style-type: none">• 10BASE-T HALF: 10 Mbps, half-duplex• 10BASE-T FULL: 10 Mbps, full-duplex• 100TX-HALF: 100 Mbps, half-duplex• 100TX-FULL: 100 Mbps, full-duplex• 1000TX FULL <p>If the printer is not properly linked, one of the following messages will appear:</p> <ul style="list-style-type: none">• UNKNOWN: The printer is in an initialization state.• DISCONNECTED: A network connection has not been detected. Check network cables. Reconfigure the link settings, or restart the printer.
Auto Negotiation	<p>Indicates whether auto-negotiation for link configuration is on or off.</p> <ul style="list-style-type: none">• ON (default): The printer will attempt to automatically configure itself onto the network at the proper speed and communication mode.• OFF: You must manually configure the link speed and communication mode using the front panel. Your settings must match those of the network for proper operation.

Reset network parameters

Network parameters (for example, the IP address) can be reset to factory default values by a cold reset: turning the printer off and on again. After a cold reset, print an IO Configuration page to confirm that factory-reset values have been assigned.

⚠ CAUTION: A factory-installed HP Jetdirect X.509 certificate will be saved over a cold reset to factory default values. However, a Certificate Authority (CA) certificate that has been installed by the user to validate a network authentication server will not be saved.

Menu items

Menu item	Sub-menu item	Sub-menu item	Values and Description
TCP/IP	Host Name		An alphanumeric string, up to 32 characters, used to identify the device. This name is listed on the HP Jetdirect configuration page. The default host name is NPIxxxxxx, where xxxxxx is the last six digits of the LAN hardware (MAC) address.
	IPV4 Settings	Config Method	<p>Specifies the method that TCP/IPv4 parameters will be configured on the HP Jetdirect print server.</p> <p>Bootp: Use BootP (Bootstrap Protocol) for automatic configuration from a BootP server.</p> <p>DHCP (default): Use DHCP (Dynamic Host Configuration Protocol) for automatic configuration from a DHCPv4 server. If selected and a DHCP lease exists, DHCP Release and DHCP Renew menus are available to set DHCP lease options.</p> <p>Auto IP: Use automatic link-local IPv4 addressing. An address in the form 169.254.x.x is assigned automatically.</p> <p>Manual: Use the Manual Settings menu to configure TCP/IPv4 parameters.</p>
		DHCP Release	<p>This menu appears if Config Method was set to DHCP and a DHCP lease for the print server exists.</p> <p>No (default): The current DHCP lease is saved.</p> <p>Yes: The current DHCP lease and the leased IP address are released.</p>
		DHCP Renew	<p>This menu appears if Config Method was set to DHCP and a DHCP lease for the print server exists.</p> <p>No (default): The print server does not request to renew the DHCP lease.</p> <p>Yes: The print server requests to renew the current DHCP lease.</p>
		Manual Settings	<p>(Available only if Config Method is set to Manual) Configure parameters directly from the printer control panel:</p> <p>IP Address: The unique IP address of the printer (n.n.n.n).</p> <p>Subnet Mask: The subnet mask for the printer (n.n.n.n).</p> <p>Syslog Server: The IP address of the syslog server (n.n.n.n) used to receive and log syslog messages.</p> <p>Default Gateway: The IP address (n.n.n.n) of the gateway or router used for communications with other networks.</p> <p>Idle Timeout: The time period, in seconds, after which an idle TCP print data connection is closed (default is 270 seconds, 0 disables the timeout).</p>

Menu item	Sub-menu item	Sub-menu item	Values and Description
		Default IP	<p>Specify the IP address to default to when the print server is unable to obtain an IP address from the network during a forced TCP/IP reconfiguration (for example, when manually configured to use BootP or DHCP).</p> <p>Auto IP: A link-local IP address 169.254.x.x is set.</p> <p>Legacy: The address 192.0.0.192 is set, consistent with older HP Jetdirect devices.</p>
		Primary DNS	<p>Specify the IP address (n.n.n.n) of a Primary DNS Server.</p> <p>NOTE: This item appears only if Manual configuration is a higher priority than DHCP in the Config. Precedence table, configured through the embedded Web server.</p>
		Secondary DNS	<p>Specify the IP address (n.n.n.n) of a Secondary Domain Name System (DNS) Server.</p> <p>NOTE: This item will appear only if Manual configuration is a higher priority than DHCP in the Config. Precedence table, configured through the embedded Web server.</p>
	IPv6 Settings	Enable	<p>Use this item to enable or disable IPv6 operation on the print server.</p> <p>Off: IPv6 is disabled.</p> <p>On (default): IPv6 is enabled.</p>
		Address	<p>Use this item to manually configure an IPv6 address.</p> <p>Manual Settings: Use the Manual Settings menu to enable and manually configure a TCP/IPv6 address.</p> <p>Enable: Select this item and choose On to enable manual configuration, or Off to disable manual configuration.</p> <p>Address: Use this item to type a 32 hexadecimal digit IPv6 node address that uses the colon hexadecimal syntax.</p>
		DHCPv6 Policy	<p>Router Specified: The stateful auto-configuration method to be used by the print server is determined by a router. The router specifies whether the print server obtains its address, its configuration information, or both from a DHCPv6 server.</p> <p>Router Unavailable: If a router is not available, the print server should attempt to obtain its stateful configuration from a DHCPv6 server.</p> <p>Always: Whether or not a router is available, the print server always attempts to obtain its stateful configuration from a DHCPv6 server.</p>
		Primary DNS	<p>Use this item to specify an IPv6 address for a primary DNS server that the print server should use.</p> <p>NOTE: This item will appear only if Manual configuration is a higher priority than DHCP in the Config Precedence table, configured through the embedded Web server.</p>
		Secondary DNS	<p>Use this item to specify an IPv6 address for a secondary DNS server that the print server should use.</p> <p>NOTE: This item will appear only if Manual configuration is a higher priority than DHCP in the Config Precedence table, configured through the embedded Web server.</p>

Menu item	Sub-menu item	Sub-menu item	Values and Description
	Proxy Server		<p>Specifies the proxy server to be used by embedded applications in the device. A proxy server is typically used by network clients for Internet access. It caches Web pages, and provides a degree of Internet security, for those clients.</p> <p>NOTE: If your local network has a proxy server, check that you have configured it correctly in your HP Latex network settings at the printer's front panel.</p> <p>To specify a proxy server, enter its IPv4 address or fully-qualified domain name. The name can be up to 255 octets.</p> <p>For some networks, you may need to contact your Independent Service Provider (ISP) for the proxy server address.</p>
	Proxy Port		<p>Type the port number used by the proxy server for client support. The port number identifies the port reserved for proxy activity on your network, and can be a value from 0 to 65535.</p>
Information	Print Sec Page		<p>Yes: Prints a page that contains the current security settings on the HP Jetdirect print server.</p> <p>No (default): A security settings page is not printed.</p>
Security	Secure Web		<p>For configuration management, specify whether the embedded Web server will accept communications using HTTPS (Secure HTTP) only, or both HTTP and HTTPS.</p> <p>HTTPS Required: For secure, encrypted communications, only HTTPS access is accepted. The print server will appear as a secure site. Choosing this option may cause the RIP to malfunction; HP recommends HTTP/HTTPS optional.</p> <p>HTTP/HTTPS optional: Access using either HTTP or HTTPS is permitted.</p> <p>NOTE: The factory default setting depends on the print server model.</p>

Menu item	Sub-menu item	Sub-menu item	Values and Description
	Reset Security		<p>Specify whether the current security settings on the print server will be saved or reset to factory defaults.</p> <p>No (default): The current security settings are maintained.</p> <p>Yes: Security settings are reset to factory defaults.</p>
Link Speed			<p>The link speed and communication mode of the print server must match the network. The available settings depend on the device and installed print server. Select one of the following link configuration settings:</p> <p>CAUTION: If you change the link setting, network communications with the print server and network device might be lost.</p> <p>Auto (default): The print server uses auto-negotiation to configure itself with the highest link speed and communication mode allowed. If auto-negotiation fails, either 100TX HALF or 10TX HALF is set depending on the detected link speed of the hub/switch port. (A 1000T half-duplex selection is not supported.)</p> <p>10T Half: 10 Mbps, half-duplex operation.</p> <p>10T Full: 10 Mbps, Full-duplex operation.</p> <p>100TX Half: 100 Mbps, half-duplex operation.</p> <p>100TX Full: 100 Mbps, full-duplex operation.</p> <p>100TX Auto: Limits auto-negotiation to a maximum link speed of 100 Mbps.</p> <p>1000TX Full: 1000 Mbps, full-duplex operation.</p>

Embedded services

Key networking services embedded in the printer are listed below. For the latest features and services, visit <http://www.hp.com/go/jetdirect>.

- Configuration and Management
 - BootP/DHCP (IPv4 only)
 - DHCPv6
 - TFTP (IPv4 only)
 - Web Proxy (Automatic/Manual cURL)
 - LLNMR
 - Telnet (IPv4 only)
 - SNMP (v1, v2c, v3) agents
 - Bonjour (for Mac OS X)
 - FTP (File Transfer Protocol)

- Embedded Web Server, HTTP (TCP port 80)
- Embedded Web Server, HTTPS (TCP port 443)
- Printing
 - Raw IP printing (HP-proprietary TCP ports 9100, 9101, 9102)
- Security
 - SNMP v3
 - SSL/TLS
 - Firewall

Turn the printer on and off

To turn on the printer, ensure that the power switch at the rear of the printer is turned on, then press the power button beside the front panel.


You can leave the printer on without wasting energy. Leaving it on improves response time. When the printer has not been used for a certain period of time, it saves power by going into sleep mode. Pressing the power button returns it to active mode, and it can resume printing immediately.

To turn off the printer, the normal and recommended method is to press the power button.

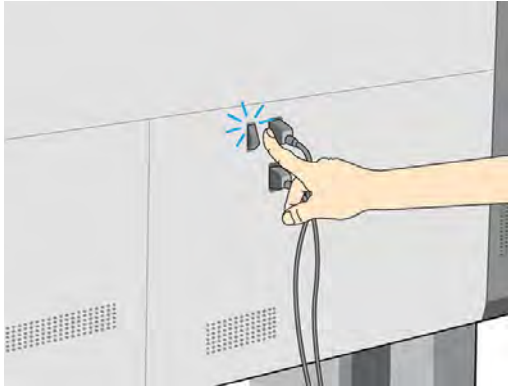


When you turn off the printer this way, the printheads are automatically stored with the maintenance cartridge, which prevents them from drying out.

However, if you plan to leave the printer turned off for a long period of time (this does not apply to the 700W and 800W printers), you are recommended to turn it off using the power button, and then also turn off the power switch at the rear.

 **IMPORTANT:** The 700W and 800W printers should never be turned off: use sleep mode instead.

Automatic white-ink maintenance cannot occur when the printer is completely turned off; and the white-ink printheads cannot survive for more than 8 hours without maintenance.



To turn the printer back on later, use the power switch at the rear. If the printer does not start automatically, press the power button.

When the printer is turned on, it takes 2–3 minutes to initialize itself.

Restart the printer

In some circumstances you may be advised to restart the printer.

1. Turn off the printer by pressing the power button and then turning off the power switch at the rear of the printer.



IMPORTANT: Then wait for at least 10 seconds. Otherwise, the front panel, power button, and speaker may not work correctly.

2. Turn on the power switch at the rear of the printer.
3. If the front panel does not activate, press the power button.

How to print (overview)

1. Load the substrate. The printheads are automatically aligned.
2. Perform color calibration.
3. Send a job to the printer.

2 Useful links

Visit the HP Latex Knowledge Center at <http://www.hp.com/communities/HPLatex>, where you can find detailed information about our HP Latex products and applications, and use the forum to discuss anything related to the business.

Product documentation: <http://www.hp.com/go/latex700/manuals/> or <http://www.hp.com/go/latex800/manuals/>

Videos about how to use the printer: <http://www.hp.com/supportvideos/> or <http://www.youtube.com/HPSupportAdvanced>

Information about software RIPs, applications, solutions, inks, and substrates: <http://www.hp.com/go/latex700/solutions/> or <http://www.hp.com/go/latex800/solutions/>

Substrate presets: <http://www.hp.com/go/mediasolutionslocator> (see [HP Media Locator on page 93](#))

HP Support: <http://www.hp.com/go/latex700/support/> or <http://www.hp.com/go/latex800/support/>

Embedded Web Server: Use the printer's IP address (see [Access the Embedded Web Server on page 29](#))

When you need help

In most countries, support is provided by HP support partners (usually the company that sold you the printer). If this is not the case in your country, contact HP Support on the Web as shown above.

Help is also available to you by telephone. What to do before you call:

- Review the troubleshooting suggestions in this guide.
- Review your RIP's documentation, if relevant.
- Please have the following information available:
 - The printer you are using: the product and serial numbers



NOTE: This information is available from the front panel: tap . You may also find it on a label at the rear of the printer.

- If there is an error code on the front panel, note it down; see [System error codes on page 238](#)
- The RIP you are using, and its version number
- If you have a print-quality problem: the substrate reference, and the name and origin of the substrate preset used to print on it.
- The service information report (see [Service information on page 41](#))

Telephone number

Your HP Support telephone number is available on the Web: please visit http://welcome.hp.com/country/us/en/wwcontact_us.html.

Service information

The printer can produce on request a list of many aspects of its current status, some of which may be useful to a service engineer trying to fix a problem. There are two different ways to request this list:

To request this list, go to the Embedded Web Server (see [Access the Embedded Web Server on page 29](#)). Select the **Support** tab and then **Service > Service information**. This will generate a diagnostic package containing all the information pages.

If you need to send the list by email, you can save the page as a file from your Web browser, and later send the file. Alternatively, from Internet Explorer you can send the page directly: select **File > Send > Page by email**.

3 Handle the substrate

- [Overview](#)
- [How to store and handle substrate](#)
- [Load a roll into the printer](#)
- [Porous substrates](#)
- [Ink collector](#)
- [Loading accessory](#)
- [Assisted manual load](#)
- [Edge holders](#)
- [Unload a roll from the printer](#)
- [How to lift the pinchwheels](#)
- [Take-up reel](#)
- [Wiper roller](#)
- [View information about the substrate](#)
- [Change substrate width and right edge position](#)
- [Substrate length tracking](#)
- [Cut substrate](#)
- [Printing on textiles](#)

Overview

You can print on a wide variety of printing materials, all of which are referred to in this guide as substrates.

Substrate tips

Choosing the correct substrate for your needs is an essential step in ensuring good print quality.


Here are some tips about substrate usage:

- Allow all substrates to adapt to room conditions, out of the packaging, for 24 hours before using them for printing.
- Handle film and photo substrates by the edges, or wear cotton gloves. Skin oils can be transferred to the substrate, leaving fingerprint marks.
- Keep the substrate tightly wound on the roll throughout the loading and unloading procedures. To make sure that the roll stays tightly wound, consider using tape to stick the leading edge of the roll to the core just before removing the roll from the printer. You can keep the roll taped during storage. If the roll starts to unwind, it can become difficult to handle.

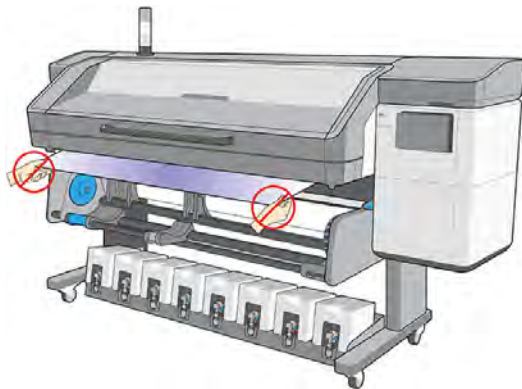


NOTE: The use of tape to stick the leading edge of the roll to the core is especially important for heavy substrates, because the inherent stiffness of the substrate can cause it to loosen and unwind from the core.

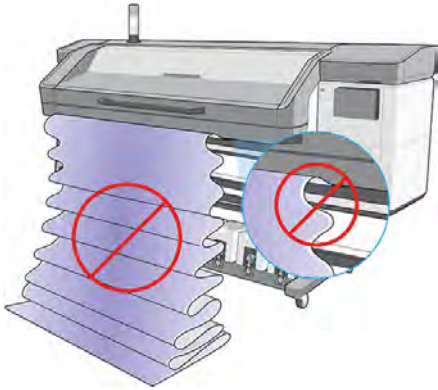
- Print quality could be impaired if you use a substrate that is unsuitable for your image.
- Make sure that the appropriate print-quality setting is selected in the RIP.
- Whenever you load a roll, the front panel prompts you to specify the substrate type that you are loading. For good print quality, it is essential to specify this correctly. Check that the substrate name is the same in the front panel and in the RIP.

If the names are not the same, tap  on the front panel, then **Substrate source**, then **...**, then **Settings > Roll > Type**.

- Do not pull the printed substrate while the printer is printing; this can cause severe print-quality defects.



- When printing a series of jobs, do not let the printed substrate obstruct the output path: this can cause severe print-quality defects.



- HP recommends using the take-up reel for better control of the substrate, for all except very short jobs. See [Take-up reel on page 79](#).
- To print on textile substrates, in most cases you should use the ink collector and loading accessory. See [Ink collector on page 57](#).
- For more substrate tips, see [Load a roll into the printer on page 51](#) and [Assisted manual load on page 71](#).

⚠ CAUTION: Removing the substrate from the printer manually without using the front panel could damage the printer. Do this only when necessary to clear a substrate jam.

Supported substrate categories

Substrate category	Substrate types	Generic substrate names
Self-Adhesive Vinyl	Cast self-adhesive vinyl	Generic Self-Adhesive Vinyl
	Calendered self-adhesive vinyl	Generic Self-Adhesive Vinyl Vivid
	Perforated self-adhesive vinyl	
	Transparent self-adhesive vinyl	
	Reflective self-adhesive vinyl	
Textile	Polyester textile and fabric	Generic Textile
	Textile banner	Generic Canvas & Coated Textiles
	Backdrops	
	Textile mesh with liner	
	Frontlit textile, with liner if porous	
	Backlit textile, with liner if porous	
	Canvas	
	Flag and voile with liner	
	Cotton textile	
	Self-adhesive textile	

Substrate category	Substrate types	Generic substrate names
PVC Banner	Frontlit banner	Generic PVC Banner
	Backlit banner	Generic Backlit PVC Banner
	Scrim banner	
	Scrimless banner	
	Mesh banner with liner	
	Blockout banner	
	Truck curtain banner or tarpaulin	
PP and PE Film and Banner	Polypropylene (PP) film	Generic PP & PE Synthetics
	Synthetic paper (such as Yupo)	
	Tyvek	
	Coated PE/HDPE (polyethylene) banner	
PET Film	Polyester (PET) backlit film	Generic Polyester Film
	Polyester (PET) frontlit film	Generic Backlit Polyester Film
	Polyester (PET) grey-back film	
Paper	Coated paper	Generic Paper
	Uncoated paper	Generic Coated Paper
	Photo paper	Generic Backlit Paper
	Photorealistic paper	
	Blue-back paper	
	Self-adhesive paper	

Supported HP substrates







Key to application categories

1. Trade show and event displays
2. Backlit displays
3. Fleet graphics and vehicle wraps
4. Signage
5. Window graphics
6. POP and retail displays
7. Posters and photo enlargements
8. Textiles (fabric printing)
9. Billboards
10. Art reproductions














11. Banners



12. Interior decorations

Substrates	Application categories											
	1	2	3	4	5	6	7	8	9	10	11	12
HP banners												
HP Double-sided Blockout Banner 330 microns (13 mil) • 510 g/m ² 	•					•					•	
HP Everyday Matte Polypropylene, 3-in Core 203 microns (8 mil) • 120 g/m ² • 61 m (200 ft) 	•					•	•				•	
HP self-adhesive materials												
HP Prime Gloss CP Base film: 86 microns (3.4 mil) DSPE paper liner: 140 g/m ² 	•			•	•	•						
HP Prime Gloss GP Base film: 86 microns (3.4 mil) DSPE low-profile air-release paper liner: 160 g/m ² 	•			•	•	•						
HP Prime Matte Air GP Base film: 86 microns (3.4 mil) DSPE low-profile air-release paper liner: 160 g/m ² 	•			•	•	•						
HP Prime Matte Air GR Base film: 86 microns (3.4 mil) DSPE low-profile air-release paper liner: 160 g/m ² 	•			•	•	•						

Substrates	Application categories												
	1	2	3	4	5	6	7	8	9	10	11	12	
HP Optimal Gloss Air GRP Base film: 76 microns (3 mil) DSPE low-profile air-release paper liner: 160 g/m ² 	•		•	•	•	•							•
HP Gloss Polymeric Overlamine Base film: 76 microns (3 mil) DSPE paper liner: 140 g/m ² 	•		•	•	•	•							
HP Matte Polymeric Overlamine Base film: 76 microns (3 mil) DSPE paper liner: 140 g/m ² 	•		•	•	•	•							
HP Permanent Gloss Adhesive Vinyl Without liner: 121 microns (4.8 mil) • 150 g/m ² With liner: 266 microns (10.5 mil) • 280 g/m ² 45.7 m (150 ft) and 91.4 m (300 ft) 	•			•		•							
HP Permanent Matte Adhesive Vinyl Without liner: 121 microns (4.8 mil) • 150 g/m ² With liner: 266 microns (10.5 mil) • 280 g/m ² 45.7 m (150 ft) and 91.4 m (300 ft) 	•			•		•							
HP Premium Removable Gloss Adhesive Vinyl Without liner: 96 microns (3.8 mil) • 136 g/m ² • 45.7 m (150 ft) With liner: 284 microns (11.2 mil) • 298 g/m ² • 45.7 m (150 ft) 	•			•		•							
HP Everyday Adhesive Matte Polypropylene, 3-in Core Base film: 119 microns (4.7 mil) • 75 g/m ² PET liner: 50 g/m ²	•			•		•							

Substrates	Application categories											
	1	2	3	4	5	6	7	8	9	10	11	12
HP films												
HP Backlit Polyester Film 220 microns (8.7 mil) • 285 g/m ² • 30.5 m (100 ft) 	•	•				•	•					
HP Everyday Blockout Display Film 248 microns (9.8 mil) • 220 g/m ² 	•			•		•					•	
HP fabrics												
HP Light Fabric 381 microns (15 mil) • 218 g/m ² • 45.7 m (150 ft)  	•					•		•			•	•
HP Durable Backlit Fabric 152 microns (6 mil) • 147 g/m ²   	•	•				•		•			•	•
HP wall coverings												
HP PVC-free Wall Paper 177 microns (7 mil) • 175 g/m ² 30.5 m (100 ft) and 91.4 m (300 ft)  	•							•				•
HP PVC-free Durable Smooth Wall Paper 431 microns (17 mil) • 290 g/m ² • 30.5 m (100 ft)   	•							•				•
HP PVC-free Durable Suede Wall Paper 431 microns (17 mil) • 290 g/m ² • 30.5 m (100 ft)   	•							•				•
HP papers and photographic papers												


Substrates	Application categories											
	1	2	3	4	5	6	7	8	9	10	11	12
HP White Satin Poster Paper 165 microns (6.5 mil) • 136 g/m ² • 61 m (200 ft)  	•	•				•	•		•			
HP Photo-realistic Paper 205 microns (8.1 mil) • 205 g/m ² 	•					•	•					
HP Premium Poster Paper 228 microns (9 mil) • 200 g/m ² • 61 m (200 ft)  	•					•	•					
HP Satin Wrapping Paper, 3-in Core 99 microns (3.9 mil) • 100 g/m ²  						•	•					
HP Universal Heavyweight Coated Paper, 3-in Core 172 microns (6.8 mil) • 131 g/m ² (33 lbs) • 61 m (200 ft)  						•	•					
HP Super Heavyweight Plus Matte Paper, 3-in Core 264 microns (10.4 mil) • 210 g/m ² (55 lb) • 61 m (200 ft)  	•					•	•					
HP Professional Gloss Photo Paper 248 microns (9.8 mil) • 275 g/m ² • 30.5 m (100 ft) 	•					•	•					•
HP Professional Satin Photo Paper 248 microns (9.8 mil) • 275 g/m ² • 30.5 m (100 ft) 	•					•	•					•

Substrates	Application categories											
	1	2	3	4	5	6	7	8	9	10	11	12
HP Everyday Satin Photo Paper 187 microns (7.4 mil) • 180 g/m ² • 30.5 m (100 ft) 	•					•	•					•
HP Matte Litho-realistic Paper 307 microns (12.1 mil) • 269 g/m ² 							•			•		•
HP canvas materials												
HP Premium Satin Canvas 462 microns (18.2 mil) • 381 g/m ² • 22.9 m (75 ft)	•					•	•			•		
HP Everyday Satin Canvas 444 microns (17.5 mil) • 340 g/m ² • 22.9 m (75 ft)	•					•	•			•		

- For detailed information on the HP large-format printing materials portfolio, and to order, see <http://HPLFMedia.com>.
- For substrate solutions with ColorPRO technology, see <http://ColorPROtechnology.com/>.
- HP PVC-free Wall Paper printed with HP Latex Inks is rated A+ according to *Émissions dans l'air intérieur*, which provides a statement of the level of emission of volatile substances in indoor air posing health risks if inhaled—on a scale from A+ (very low emission) to C (high emission).
- HP PVC-Free Wall Paper and HP PVC-free Durable Smooth Wall Paper printed with HP Latex Inks are UL GREENGUARD GOLD Certified. See <http://www.greenguard.org/>.
- HP PVC-Free Wall Paper and HP PVC-free Durable Smooth Wall Paper printed with HP Latex Inks meet AgBB criteria for health-related evaluation of VOC emissions of indoor building products. See <http://www.umweltbundesamt.de/produkte-e/bauprodukte/agbb.htm>.



HP trademark code FSC C017543. See <http://fsc.org>.

Products marked with  do not contain substances listed as SHVC (155) per Annex XIV of the EU REACH directive (published on June 16, 2014) in concentrations exceeding 0,1%. To determine the status of SVHC in HP products, see the HP REACH Declaration published at HP Printing Products and Consumable Supplies. Logo source: Copyright European Chemical Agency.



HP large-format substrate take-back program availability varies. Some recyclable HP substrates can be recycled through commonly available recycling programs. Recycling programs may not exist in your area. See <http://www.hp.com/recycle/> for details.

How to store and handle substrate

Tips

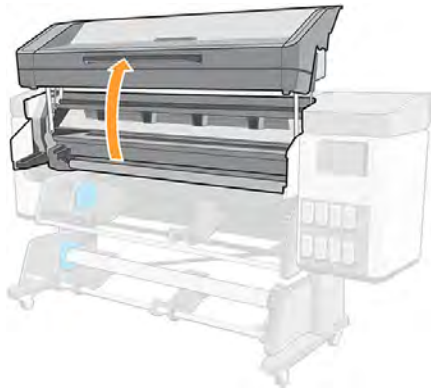
- Always keep unused rolls wrapped in the plastic wrap to prevent discoloration and dust accumulation. Rewrap partially used rolls if they are not being used.
- Do not stack rolls.
- Allow all substrates to adapt to room conditions out of the packaging for 24 hours before printing.
- Handle film and glossy substrates by the edges or wear cotton gloves. Skin oils can be transferred to the substrate, leaving fingerprint marks.
- Keep the substrate tightly wound on the roll throughout the loading and unloading procedures. If the roll starts to unwind, it can become difficult to handle.

Load a roll into the printer

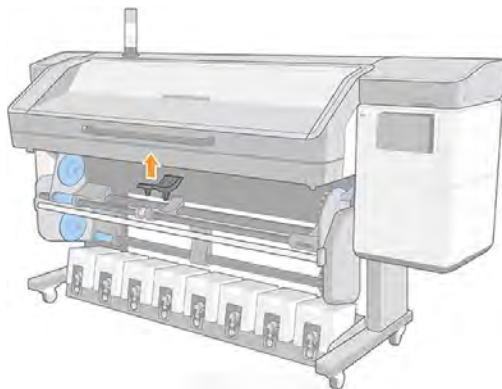
 **TIP:** To load a roll of textile substrate, see [Loading accessory on page 65](#); and remember to use the ink collector if the substrate is porous (which textiles usually are).

TIP: When loading very thin or very thick substrates, or substrates with a tendency to curl, you should follow the manual loading procedure to reduce the risk of substrate jams and printhead crashes; see [Assisted manual load on page 71](#).

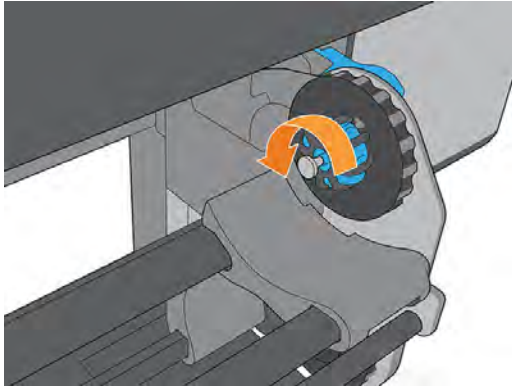
1. Lift the curing module.



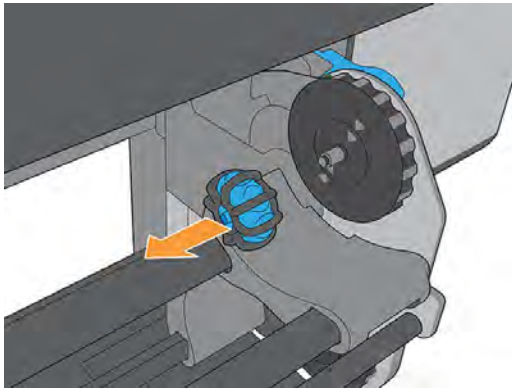
2. For roll diameters greater than 200 mm, remove the loading table spacers.



3. For rolls with a core diameter of 2 inches, install the 2 inch hub kit.
 - a. Remove the central screw (manually or using a flat screwdriver) on both sides.



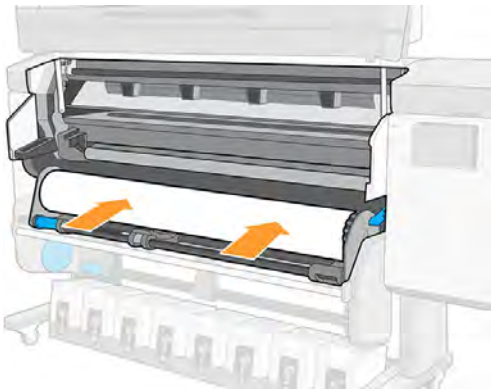
b. Remove the right and left hub 3 inch assemblies.



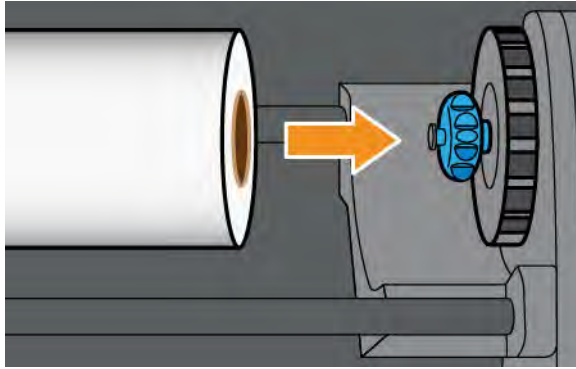
c. Install the right and left hub 2 inch assemblies.

d. Install the central screws (manually or using a flat screwdriver) on both sides.

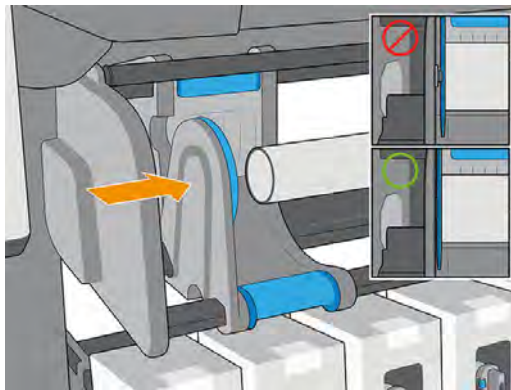
4. Put the roll onto the table.




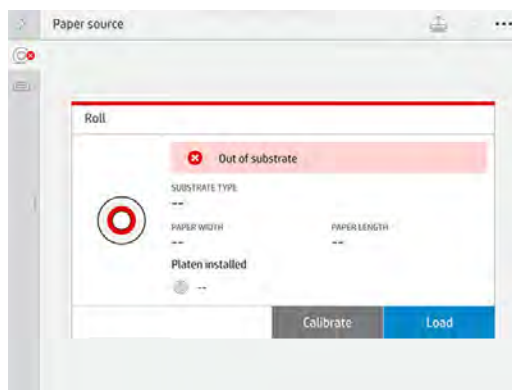
5. Insert the roll onto the right-hand hub.




6. Lift the left-hand side of the roll and insert the left-hand hub. Press to ensure that it is tightly inserted.



7. At the printer's front panel, tap , then **Load**.



Alternatively, tap , then **Substrate** > **Substrate load** > **Load roll**.

8. The load configuration screen appears.
- Skew acceptance: The available values are between 1 and 5, default 3. The printer automatically tries to correct the skew, then warns you if the skew is still over the limit you have set; but you can choose to continue loading.
 - Length tracking: If you check the box and give the length of your roll, the printer calculates the spare paper when printing and reports the remaining length. See [Substrate length tracking on page 86](#).
 - Print zone: Choose **Platen** or **Ink collector**. See [Ink collector on page 57](#).

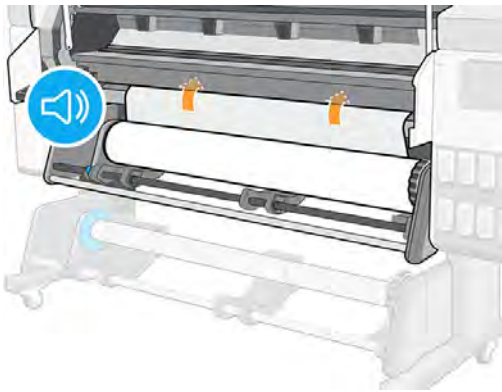
- Use loading accessory for textile, flimsy, or high-friction substrates: See [Loading accessory on page 65](#).
- Assisted manual load for stiff or curly substrates: See [Assisted manual load on page 71](#).
- Use edge holders: See [Edge holders on page 73](#).
- Wiper roller for substrates with print-quality issues due to surface contamination: See [Wiper roller on page 84](#).

When you have made your choices, instructions are displayed.

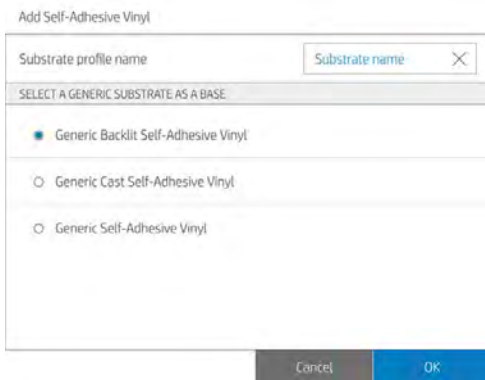
9. Insert the leading edge of the substrate into the printer's substrate path.

⚠ WARNING! Take care not to insert your fingers with the substrate.

The printer beeps when it detects and accepts the leading edge of the substrate.

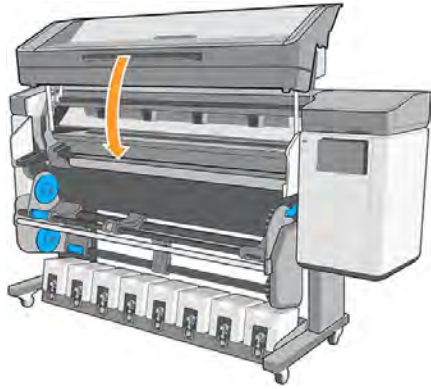


10. Select the category and name of the substrate you are loading.

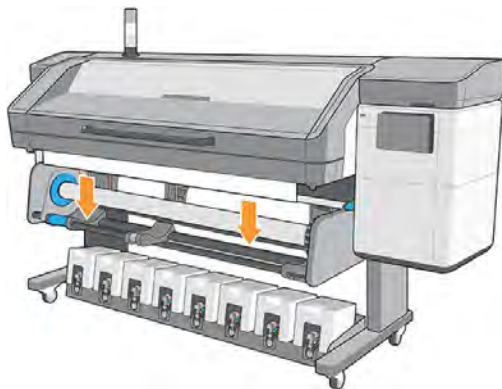


📝 NOTE: You should select the same substrate name that you are using in your RIP software.

11. Lower the curing module.



12. The printer checks the substrate in various ways and may ask you to correct problems with skew or tension. In case of a problem during this process, lifting the window will pause the load procedure and release the substrate so that you can correct its position manually.
13. Wait until the substrate emerges from the printer.



⚠ WARNING! Take care not to touch the curing zone or the platen, which may be hot.



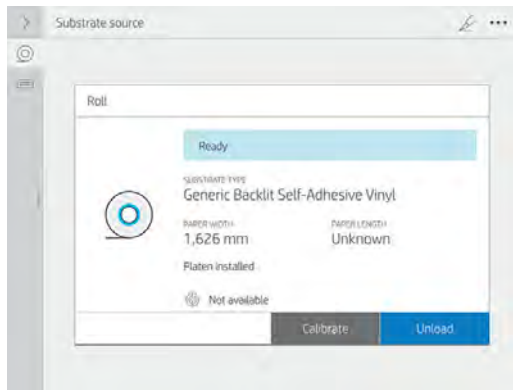
Risk of burns

For more safety information, please see [Safety precautions on page 3](#)

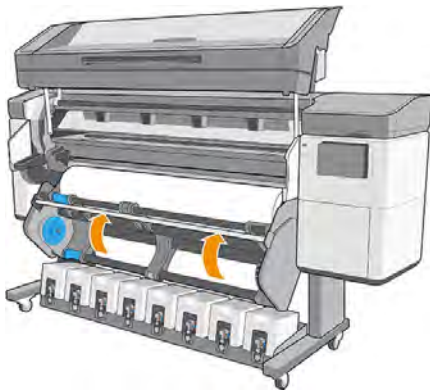
📝 NOTE: If you have an unexpected problem at any stage of the substrate loading procedure, see [Substrate cannot be loaded successfully on page 116](#).

14. The printer calibrates the substrate advance.

15. The printer indicates that it is ready for printing.



16. 800 series only: Rotate the substrate pivot system inside the printer.



Porous substrates

Porous substrates may be used with the printer and the ink collector, with which you must use the take-up reel.

Printing on porous substrates is optimized by using the loading accessory and checking the option in the Load Substrate screen.

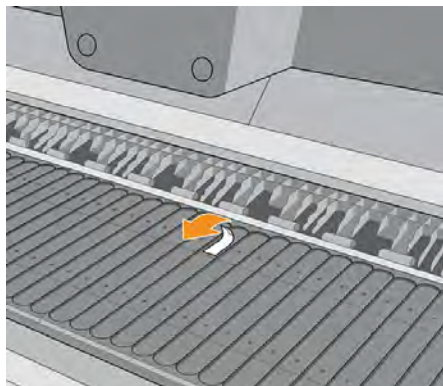
To check the porosity of your substrate, proceed as follows.

1. If the printer has any substrate loaded, unload it.
2. Cut a piece of self-adhesive vinyl white gloss 10 × 35 mm (0.4 × 1.4 in) in size.
3. Stick it to the platen as shown.



4. Load the substrate that you want to check.

5. Open your RIP software.
6. Download the test file from inside the printer: http://printerIP/hp/device/webAccess/images/Ink_trespassing_check.pdf, where *printerIP* is the IP address of your printer.
7. Print the test file using the number of passes and substrate preset that you intend to use in future with this substrate (or a similar profile in terms of ink limit).
8. Unload the substrate.
9. Remove the strip of self-adhesive vinyl from the platen.




10. Look at the self-adhesive vinyl you have taken from the platen.
 - If the strip is completely white (has no ink on it), the tested substrate is non-porous and can be used without the ink collector.
 - If there some ink on the strip, the tested substrate is porous and should be used with the ink collector.
11. Clean the platen: see [Clean the platen and the substrate-advance sensor window \(PMK19\) on page 184](#).

Ink collector

The ink collector should be used instead of the platen whenever you intend to print on a porous substrate. See [Porous substrates on page 56](#).

The platen and the ink collector both come in seven parts. To install the ink collector, first unlock and remove the seven parts of the platen. Then install the seven parts of the ink collector in their place.

The ink collector comes with consumable parts that should be attached to the ink collector. They can be attached before or after installing the ink collector in the printer; but before loading any substrate. To attach these parts, put them vertically into the ink collector and press until the two snaps on each part have clicked into place.

 **TIP:** You are recommended to use the take-up reel with the ink collector. See [Take-up reel on page 79](#).

 **WARNING!** Avoid moving parts. Handle fragile parts with care. You are recommended to wear gloves.



Moving part



Fragile



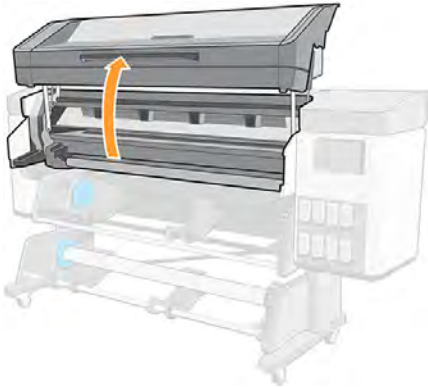
Wear gloves

For more safety information, please see [Safety precautions on page 3](#)

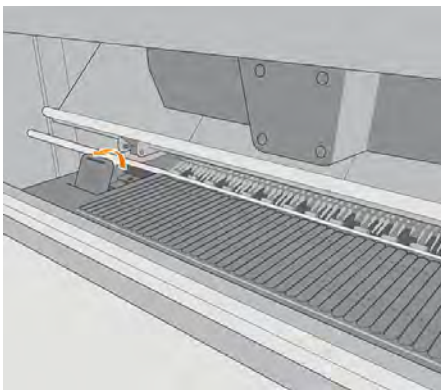
Uninstall the platens

It is necessary to remove all the platens, because they are not compatible with the ink collector.

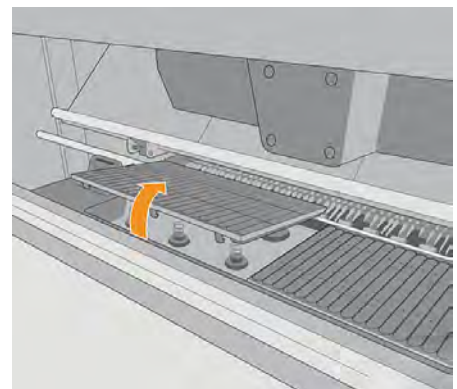
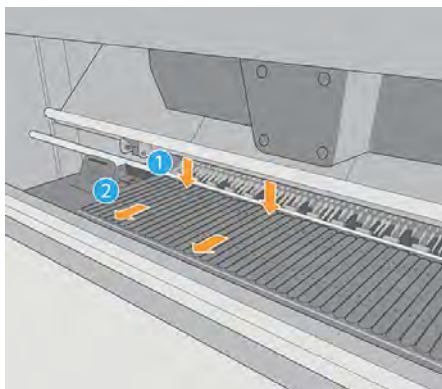
1. Lift the curing module.



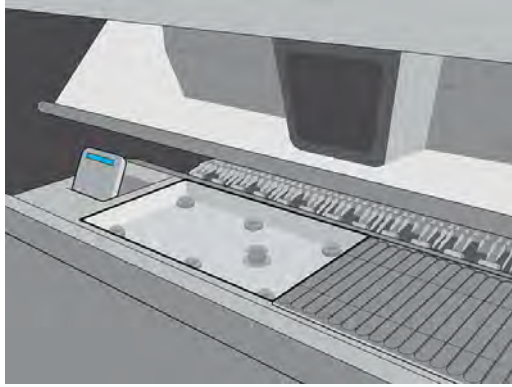
2. Pull up the safety lever on the left-hand side of the platen.



3. Press down the platen with both hands and pull it towards you. Then the platen will come up.



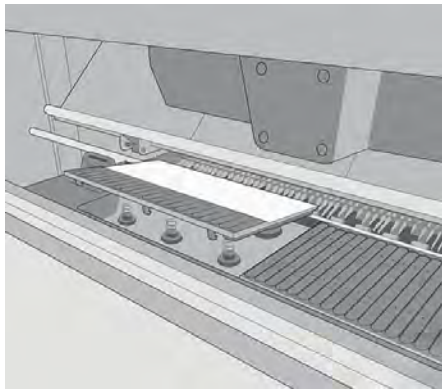
4. Once the platen is in the high position, take it out of the printer.



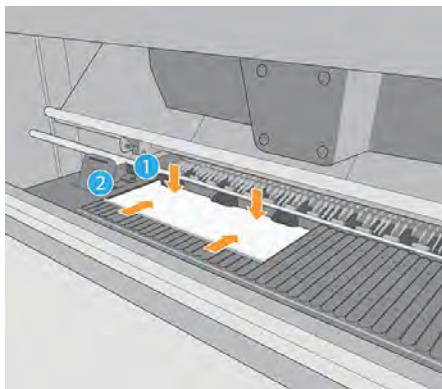
5. Take out all the platens.

Install the ink collectors

1. Ensure that the safety lever is open (up position).
2. Adjust the ink-collector hooks with the spring holders.



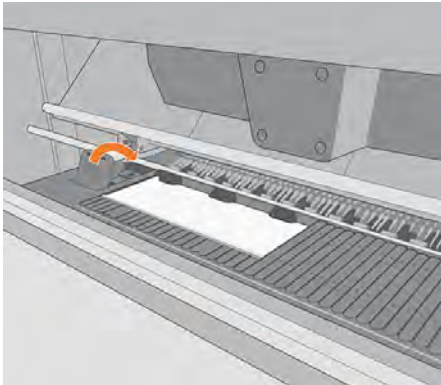
3. Press down the ink collector with both hands and simultaneously push it towards the back of the printer.



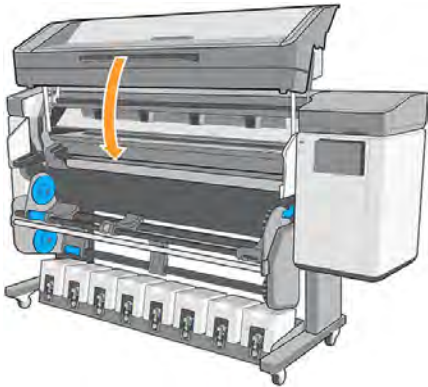
4. Install all seven ink collectors.
5. Once installed, ensure that all the ink collectors are at the same level.

6. Close the safety lever (down position).

⚠ CAUTION: If you feel resistance when closing the lever, do not try to force it. Ensure that all print-zone parts have been correctly assembled.

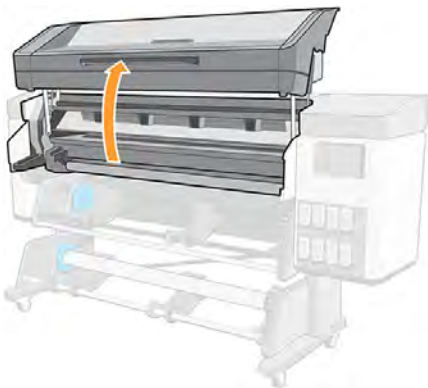


7. Lower the curing module.

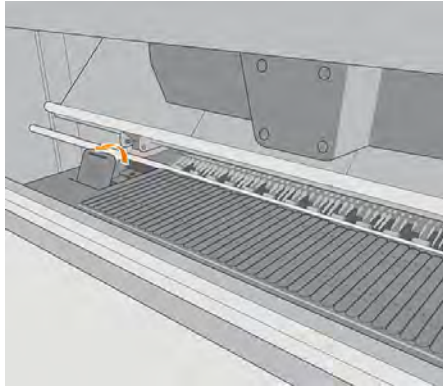


Uninstall an ink collector

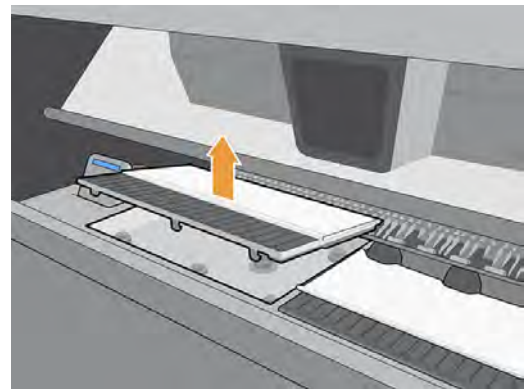
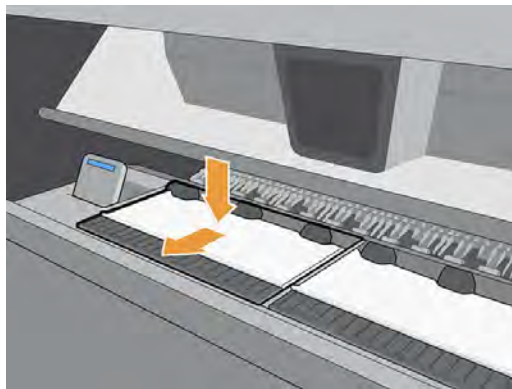
1. Lift the curing module.



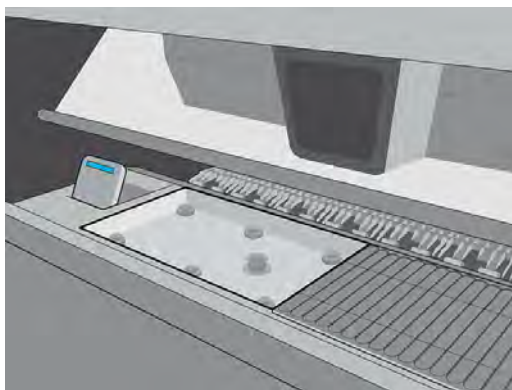
2. Pull up the safety lever on the left-hand side of the platen.



3. Press down the ink collector with both hands and pull it towards you. Then the ink collector will come up.



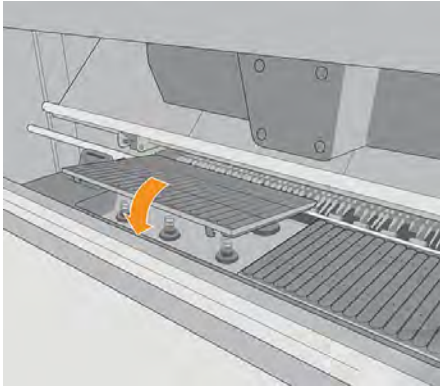
4. Remove the ink collector from the printer.



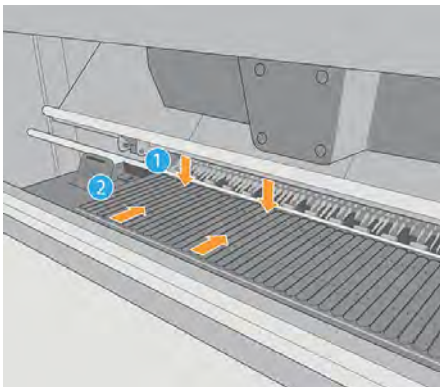
Install the platens

1. Ensure that the safety lever is open (up position).

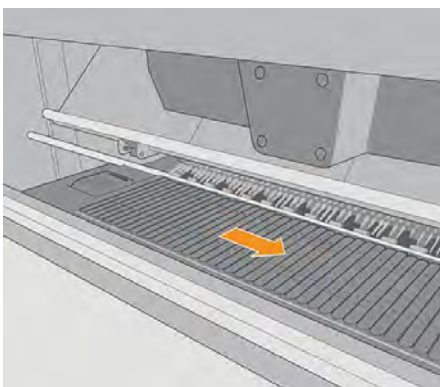
2. Adjust the platen with the spring.



3. Press down the platen with both hands and push it towards the rear of the printer.

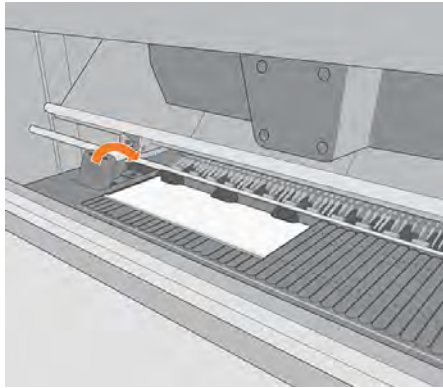


4. When you have installed all the platens, check that they are all well adjusted and that there are no gaps between them.

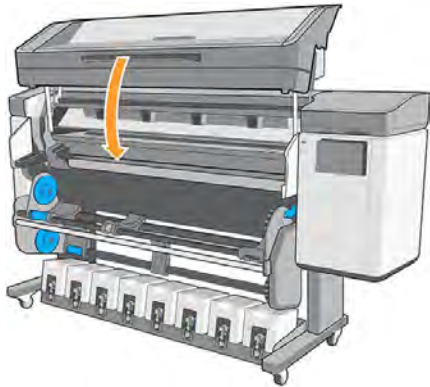


5. Close the safety lever (down position).

⚠ CAUTION: If you feel resistance when closing the lever, do not try to force it. Ensure that all print-zone parts have been correctly assembled.

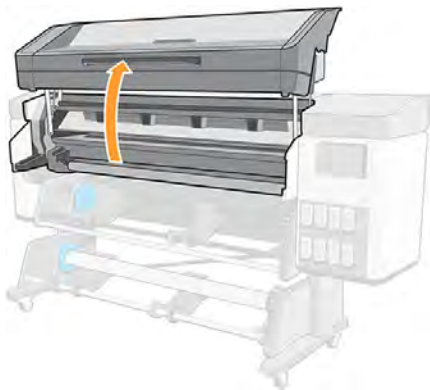


6. Lower the curing module.

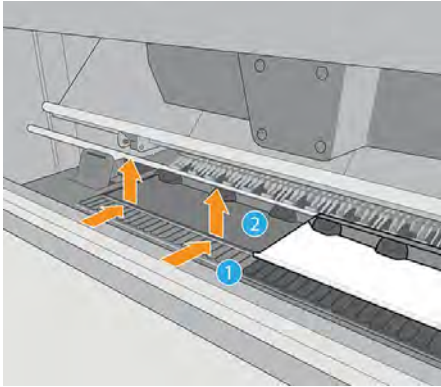


Uninstall the ink collector consumables

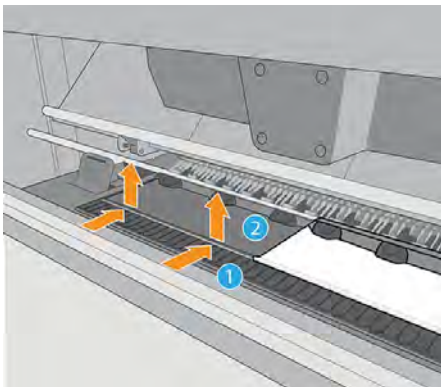
1. Lift the curing module.



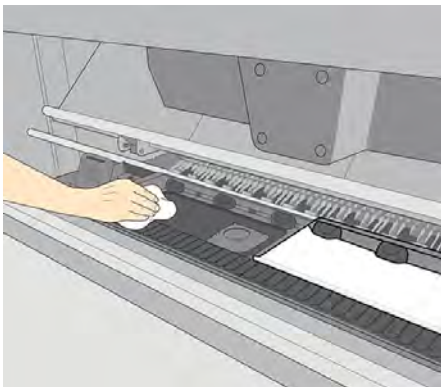
2. Push in both small tabs, then pull up.



3. Remove the ink collector consumables from the printer.



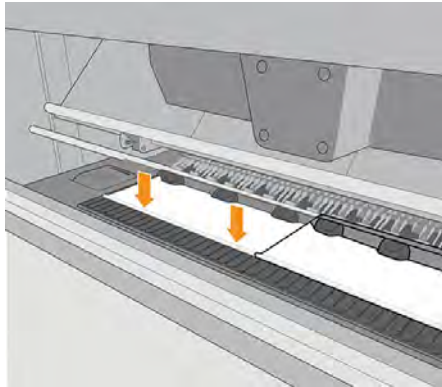
4. Clean the ink collector support.



Install the ink collector consumables

1. Place the central part into the ink collector.

2. Push the small tabs so that the central part fits into the ink collector (they should be a click as it achieves the correct position).




3. When the consumables have been installed, lower the curing module.

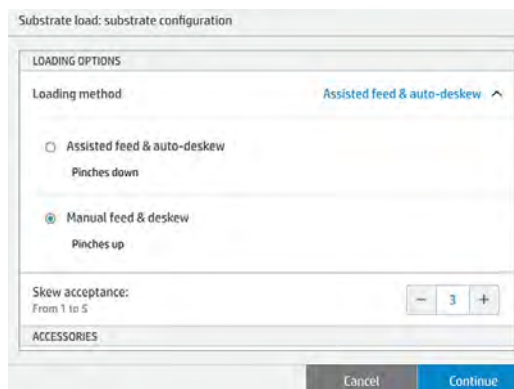
Loading accessory

The loading accessory is designed to help in loading banner/textile/mesh substrates. It is recommended when loading such substrates, but not obligatory.

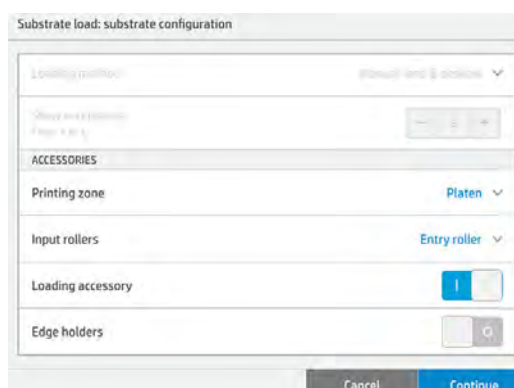
 **NOTE:** The edge holders can be used whether or not you decide to use the loading accessory.

Loading substrate with the loading accessory


1. At the front panel, tap , then **Load > Substrate configuration**. In the LOADING OPTIONS section, tap **Manual feed & deskew**.



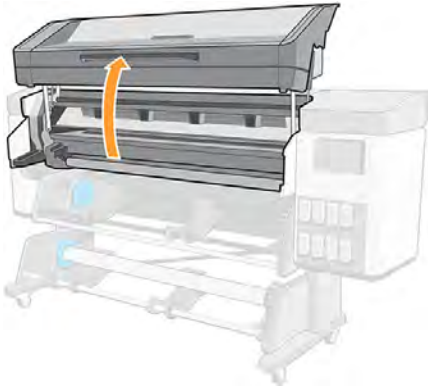
2. Scroll down to the ACCESSORIES section and turn on **Loading accessory**.



3. Select the category and name of the substrate that you intend to load.

 **NOTE:** Select the same substrate name that you are using in your RIP software.

4. Lift the curing module.



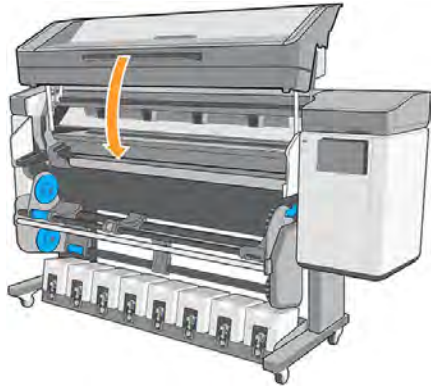
5. Insert the loading accessory up to the end of the platen.



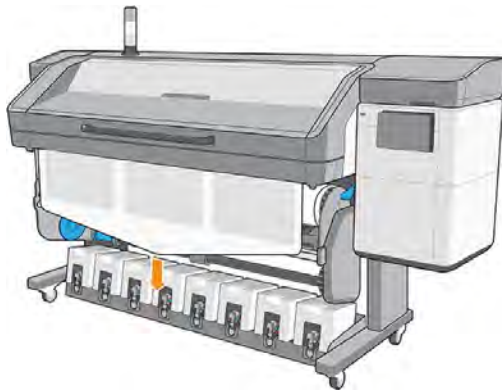
6. Open the flaps, and insert the leading edge of the substrate under the flaps.
7. Lower the flaps to cover the leading edge of the substrate. The black patches are magnetic and grip the substrate.



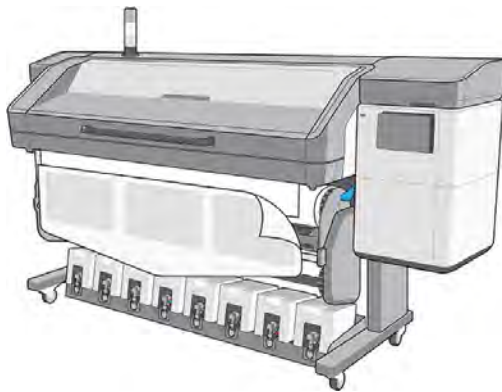
8. Lower the curing module.



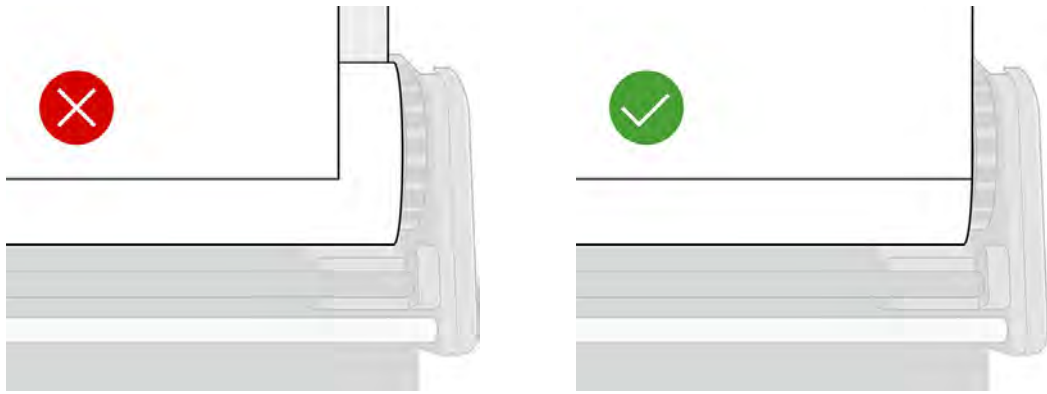
9. Use the front panel to advance the substrate until it falls from the curing module. The loading accessory passes through the printer's substrate path with the substrate.




10. After passing through the printer, the loading accessory can be removed by hand.



11. Align the right edge of the substrate with the input roll.



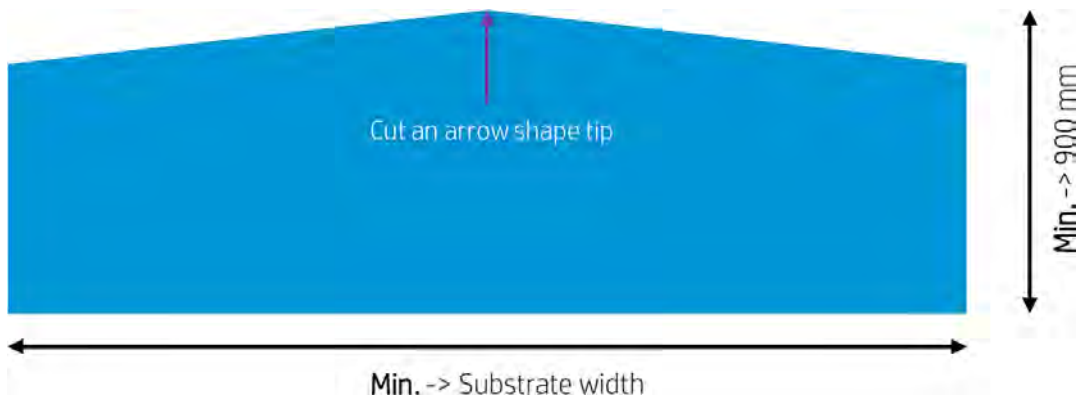
12. The printer does not automatically check for skew when a porous or thin substrate is loaded with the loading accessory option checked. Follow the instructions in [Load a roll onto the take-up reel on page 79](#) to minimize skew.
13. If you are loading transparent substrate without opaque borders, you are asked to enter the width of the substrate.
14. The printer calibrates the substrate advance.

 **NOTE:** You are recommended to use the take-up reel; however, it is not obligatory.

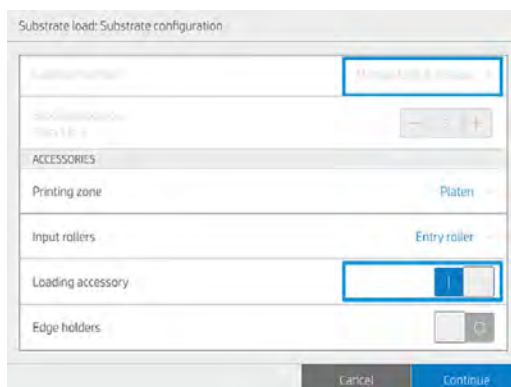
Do-it-yourself loading accessory

 **NOTE:** For occasional use only, you can make your own loading accessory as described below. For frequent use, HP recommends purchasing the standard loading accessory.

1. Take a self-adhesive vinyl substrate and cut it as shown below.



2. At the front panel, select **Manual feed & deskew** and **Loading accessory**.



3. Load the accessory until the tip reaches the cutter rail, then tap **Continue**. This lowers the pinchwheels to hold the accessory in place.

💡 **TIP:** Load the self-adhesive vinyl with the liner down (as for a normal print), to simplify the attachment of the fabric.



4. Remove the substrate's liner.


💡 **TIP:** Stick it to the vacuum beam to simplify the attachment of the fabric.



5. Attach the fabric to the vinyl.



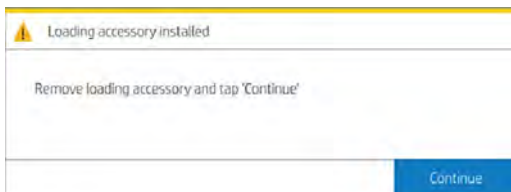
- Continue the loading process, tapping the down arrow on the front panel to advance the substrate until the leading edge reaches the roll.

 **TIP:** While advancing the substrate, manually unwind the input roll to prevent the fabric from detaching from the accessory.

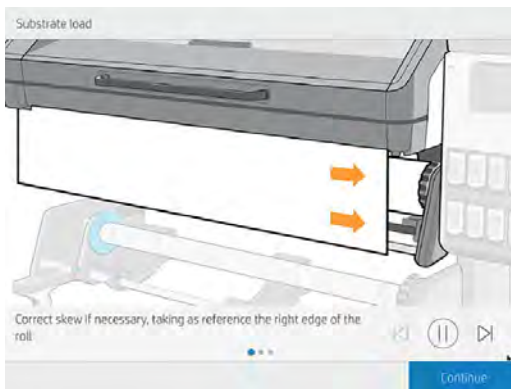
TIP: Pull the tip of the accessory when it reaches the curing output stage, to help the fabric to advance.



- Remove the accessory.



- Align the substrate.



Limitations

- Some fabrics have a low adhesion to the self-adhesive vinyl, requiring a loop in the input (unwind the input) before starting to load, so that you can pull the substrate and load it.
- Reuse of the loading accessory depends on the type of fabric:
 - Backlit: Good reuse (high adhesion)
 - Frontlit: Poor reuse (low adhesion)

Risks

- High adhesion with some very plastic substrates (such as some backlit substrates) could make it difficult to remove the loading accessory (low severity).
- Unloading the substrate with the loading accessory attached could damage the printer if the self-adhesive vinyl gets stuck at the drive roller (low probability).


Assisted manual load

The assisted manual load procedure should be used in the following cases:

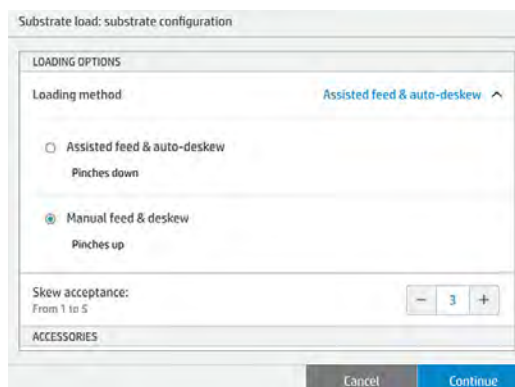
- The substrate is unusually thin or unusually thick.
- The substrate has ragged edges.
- The substrate tends to curl at the edges.
- The printing side of the substrate faces outwards.

In other cases, you are recommended to use the normal loading procedure. See [Load a roll into the printer on page 51](#).

To start the assisted manual load procedure, you need to have a roll loaded on the pivot table rewinder.

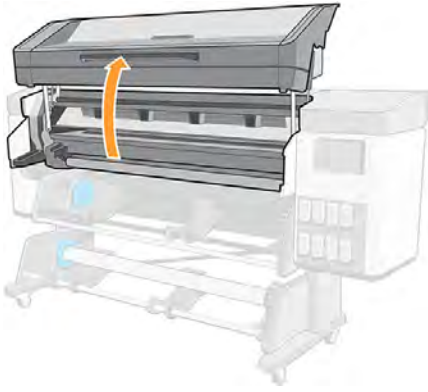
The normal minimum substrate width is 23 inches (584 mm). To load substrates down to a minimum width of 10 inches (254 mm), go to the front panel and tap , then **Substrate** > **Substrate handling options** > **Enable narrow substrate**. With this option, print quality is not guaranteed.

1. Start the substrate loading procedure as usual (see [Load a roll into the printer on page 51](#)), and make sure to tap **Manual feed & deskew** in the load configuration screen.



You can alternatively launch the manual load from the **Substrate** box in the front panel screen that you can see by sliding your finger to the left.

2. Lift the curing module.



3. Carefully insert the leading edge of the substrate above the input roller, making sure the substrate remains taut during the process. Avoid rewinding the substrate manually, unless the printer asks you to do so.
4. Feed in the substrate until it reaches the printing platen (open the window to help pull the substrate through).
5. Continue feeding the substrate at least until the leading edge is at the same height as the substrate roll. Align the right edge of the substrate with the right edge of the roll.

⚠ WARNING! Do not touch the printer's curing enclosure: the internal surfaces could be hot. Also beware of getting your fingers trapped in the substrate path.



Risk of burns



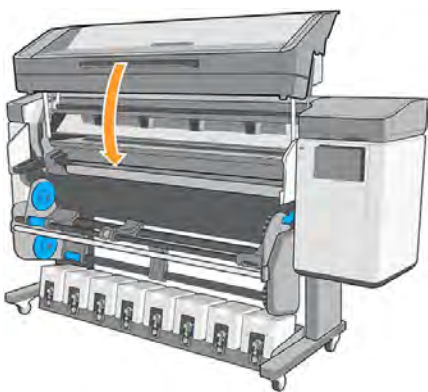
Risk of trapped fingers

For more safety information, please see [Safety precautions on page 3](#)

💡 TIP: If the substrate you are using tends to curl, keep feeding the substrate until the edge is out of the printer. You are also recommended to use the take-up reel, or to disable the cutter from the front panel if not using the take-up reel.

TIP: If the substrate gets stuck in the print zone, open the curing window to help it pass through.

6. Lower the curing module.



The rest of the assisted load procedure is the same as in the normal load procedure. See [Load a roll into the printer on page 51](#).


Edge holders

The edge holders are designed to prevent the edges of the substrate from rising while printing is in progress. They are recommended only when the edges of the substrate tend to lift up and touch or damage the printheads. They can be used with the platen or with the ink collector. When not in use, they should be stored outside the printer.



If they are needed often, they can be stored inside the printer, to the left and right of the print platen, to avoid substrate jams when loading the next substrate.

 **NOTE:** The edge holders extend 6 mm over the edge of the substrate. You should set a minimum left and right margin of 7 mm (0.3 in) in the RIP when using edge holders, otherwise the printer could try to print on the edge holders.

 **IMPORTANT:** If you choose to use them, you should move them into parking position when prompted by the front panel (this prompt appears when the **Use edge holders** checkbox has been checked). Otherwise, the printer may detect the wrong roll width.

The edge holders should be placed on the platen so that they overlap the left and right edges of the substrate. Align the dotted line on the edge holder with the lateral edge of the substrate.

 **WARNING!** Avoid moving parts. Handle fragile parts with care. You are recommended to wear gloves.



Moving part



Fragile

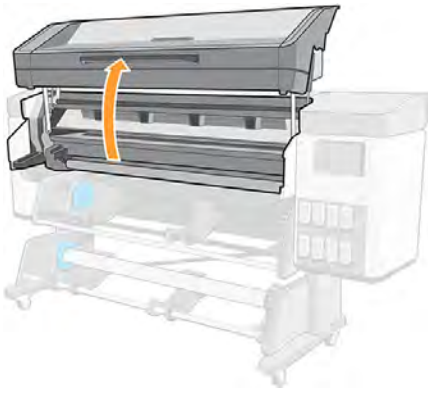


Wear gloves

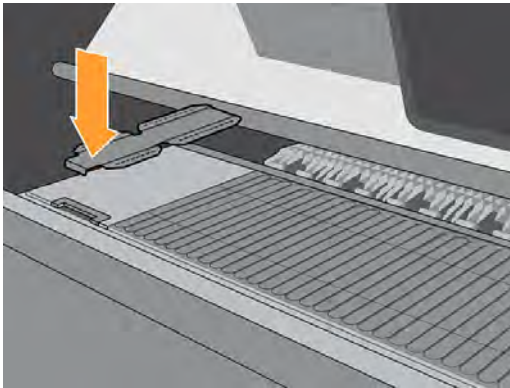
For more safety information, please see [Safety precautions on page 3](#)

Place edge holders

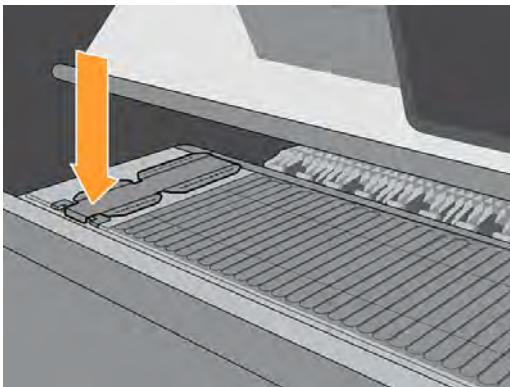
1. Lift the curing module.



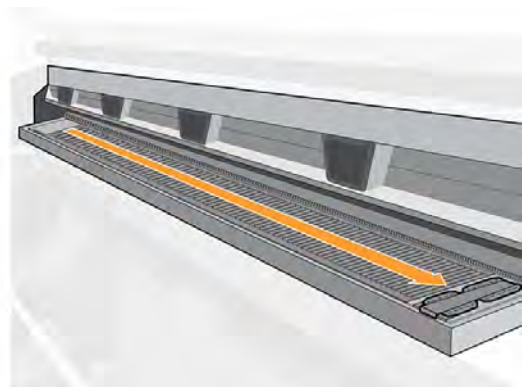
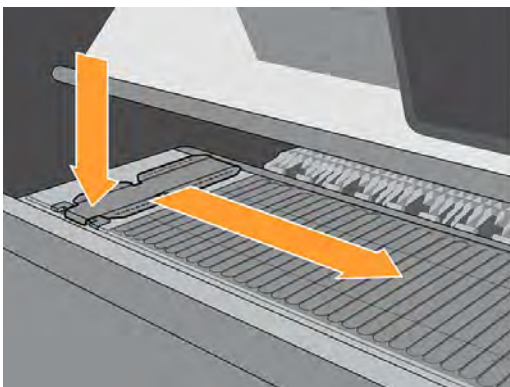
2. Place an edge holder into the small gap on the left of the platen module or ink collector.



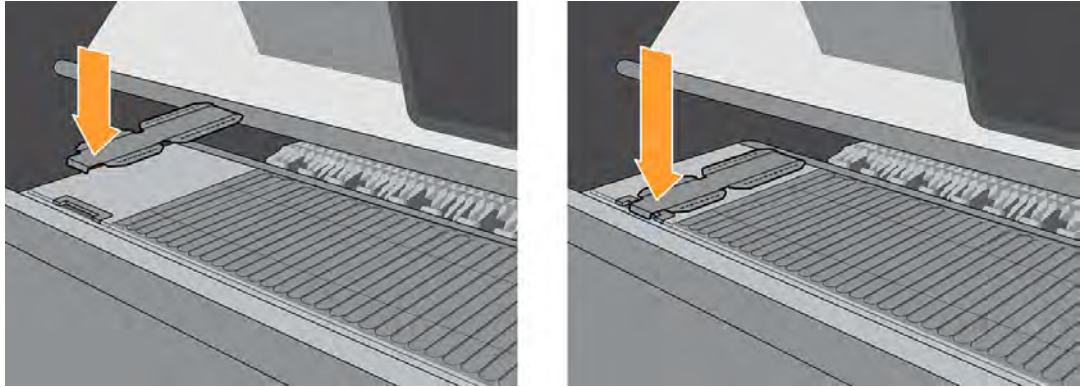
3. Press the front of the edge holder down into the gap until it fits onto the rail.



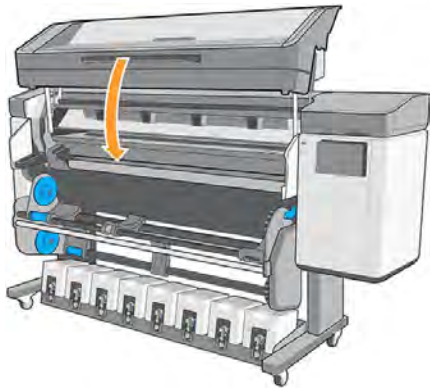
4. Slide the edge holder onto the platen module or ink collector, from its left position, as far to the right as possible.



5. Insert the second edge holder on the left and leave it there.



6. Lower the curing module.

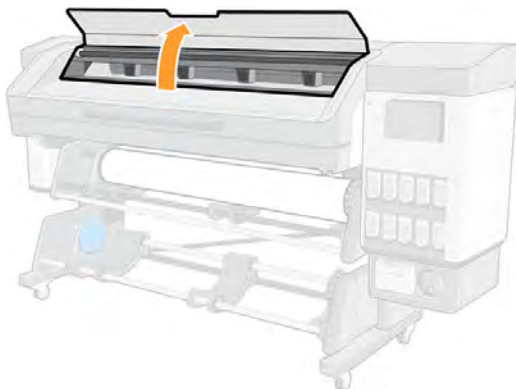


7. Leave the edge holders in parking position at each end of the platen module or ink collector (left and right).

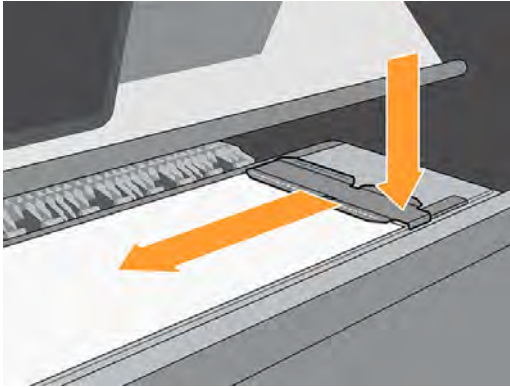
Align the edge holders

When the substrate has been loaded, align it with the dotted line on the edge holder. Misalignment could result in a substrate jam, or damage to the substrate or to the printheads.

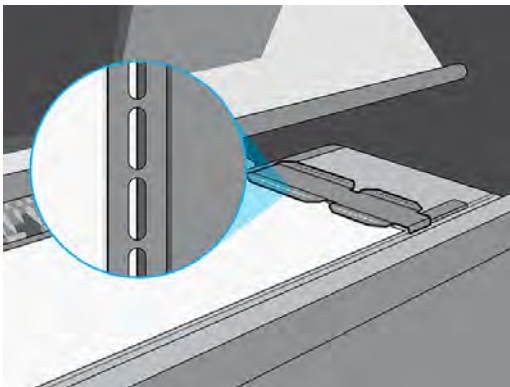
1. Load the substrate (see [Load a roll into the printer on page 51](#)).
2. Open the print-zone window.



3. Move the edge holders to overlap the edges of the substrate.



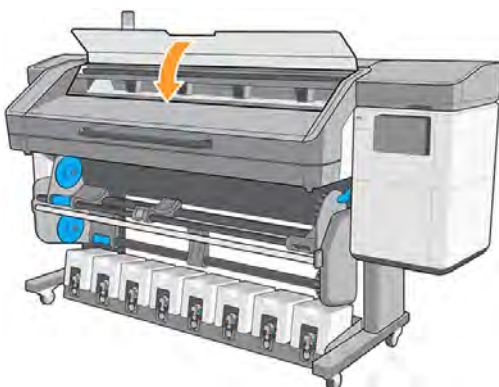
4. Align the groove in the middle of the edge holder with the edge of the substrate.



To avoid possible jams, HP recommends that the substrate's lateral edge is completely under the edge holder's surface.




5. Close the print-zone window.



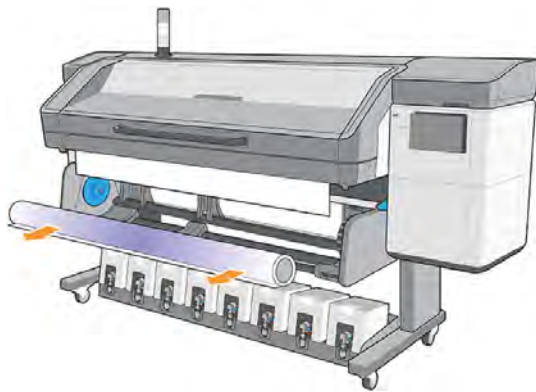
Uninstall the edge holders

1. Unload the substrate (see [Unload a roll from the printer on page 77](#)).
2. Place the edge holder in the left parking position.
3. Press the front of the edge holder forward until it pops off the rail.
4. Remove the edge holder.
5. Repeat the process with the other edge holder.

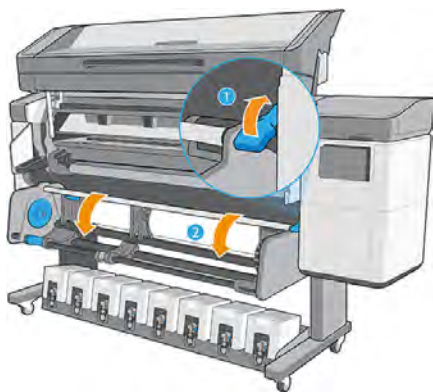
Unload a roll from the printer


 **TIP:** HP recommends not leaving the substrate loaded when the printer will not be in use for a long period of time, such as overnight or at weekends. Substrate left loaded may become deformed, causing problems such as printhead crashes.

1. If you used the take-up reel during printing, unload the printed roll from the take-up reel. See [Unload the take-up reel on page 82](#).



2. 800 series only: Rotate the pivot system so that the input roll is accessible.



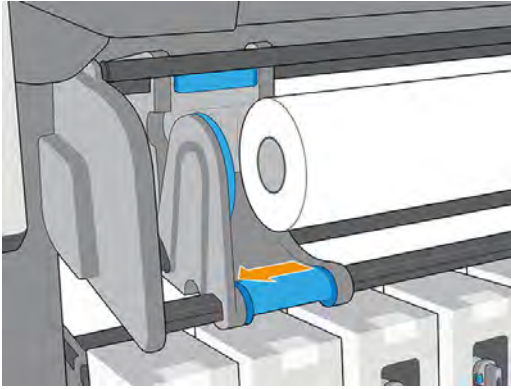
3. On the printer's front panel, tap  then **Unload**.

Alternatively, you can tap , then **Substrate > Unload substrate**.

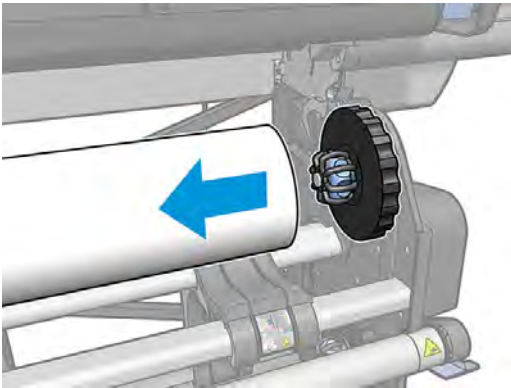
4. If the printer has been tracking the length of the substrate, the front panel displays the remaining length so that you can note it for future reference. See [Substrate length tracking on page 86](#).

Tap **OK** to continue.

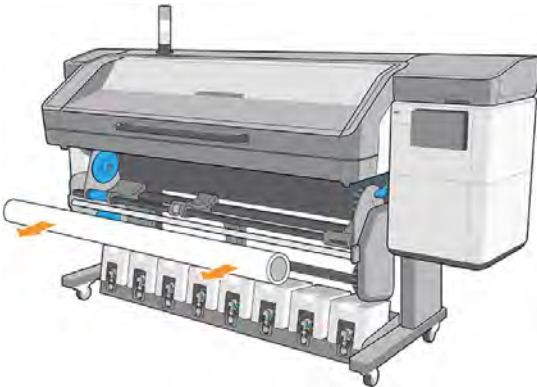
5. When the printer has rewound the roll, remove the left hub from the roll.



6. Remove the roll from the right hub.



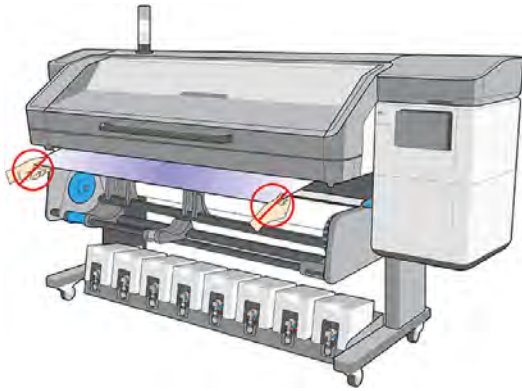
7. Remove the substrate from the loading table.



 **IMPORTANT:** If you reach the end of the roll and the substrate becomes detached from the core:

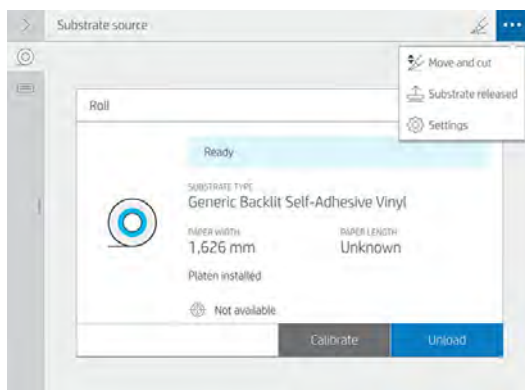
- Print-quality issues may occur on the last few centimeters of the substrate due to lack of tension.
- The tape or glue at the end of the substrate may stick to the curing mechanism.
- If the printer goes into sleep mode with the core detached, then when waking up it will be as if there is no substrate, and a printhead crash may occur.

When lifting the pinchwheels (see [How to lift the pinchwheels on page 79](#)) to unload the substrate, avoid pulling the substrate out through the print zone, which could leave the tape or glue at the end of the substrate stuck behind the pinchwheels.

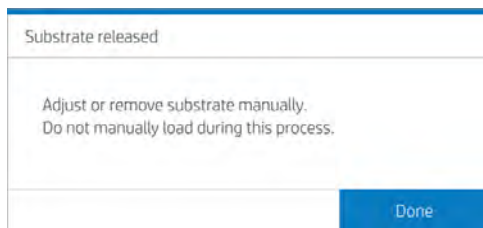


How to lift the pinchwheels

When you need to lift the pinchwheels to release the substrate, go to the front panel and tap **⋮**, then **Substrate released**.




Once the pinchwheels are released, move the substrate manually. When you finish the process, tap **Done**.



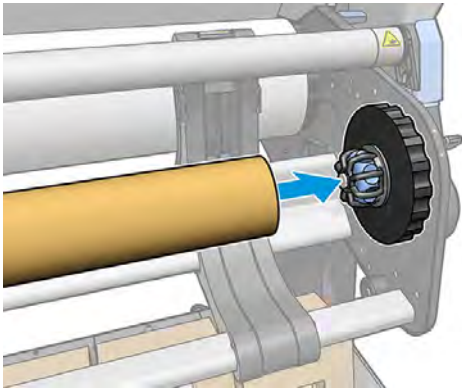
Take-up reel



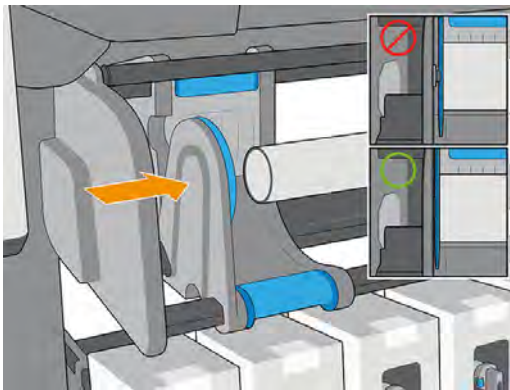
Load a roll onto the take-up reel

 **NOTE:** The take-up reel is enabled by turning the output roll one full turn in the desired direction of winding.

1. Load a core onto the take-up reel. Insert it first onto the right hub.

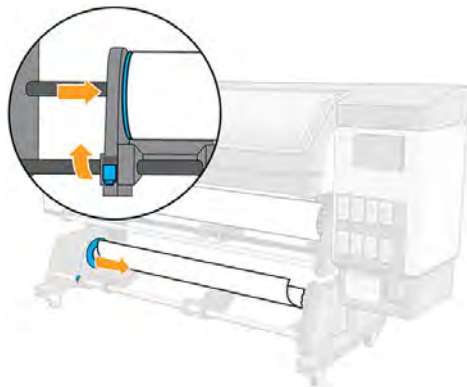


2. 800 series only: Insert the left hub into the core. Press laterally to ensure that it is tightly inserted.

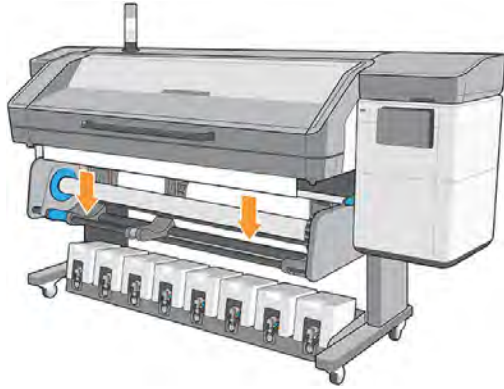


700 series only

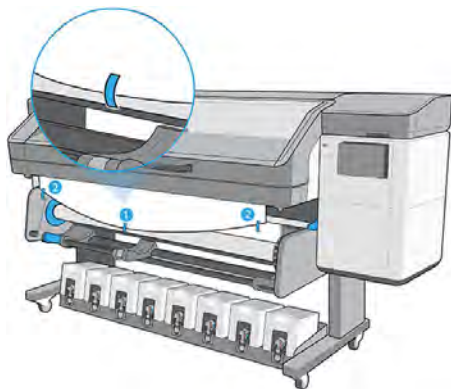
- a. Insert the left hub into the core. Press laterally to ensure that it is tightly inserted.
- b. Raise the brake lever so that the hub does not move.




3. Advance the substrate until it reaches the take-up reel core.

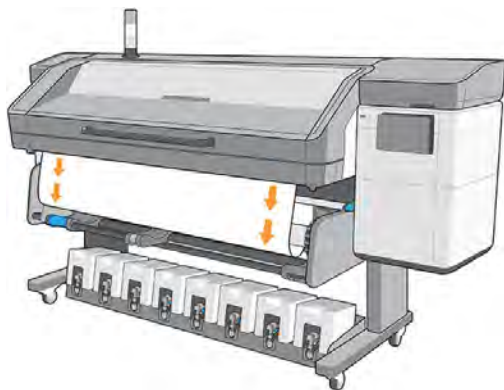


4. Pull down the center of the substrate's leading edge to straighten the substrate. Do not attempt to pull more substrate out of the printer.
5. Tape the leading edge of the substrate to the core in the center, then at each side. Make sure that the substrate is straight.



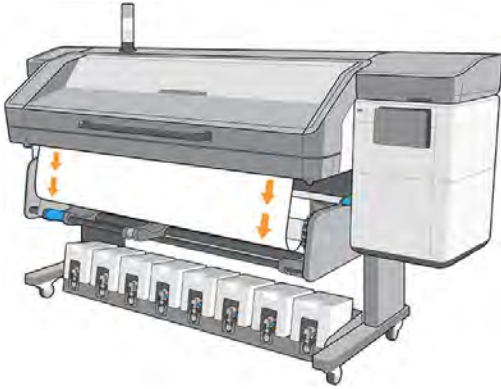
 **NOTE:** Depending on whether you want to print the images facing in or out, place the tape accordingly.


6. Tap the button on the front panel to advance the substrate, creating a loop.



7. Turn the right hub disc through a quarter-revolution; then the printer will detect it. The printer memorizes the length of the substrate and synchronizes the substrate advance with the take-up reel.

8. Tap the button on the front panel to advance the substrate again.

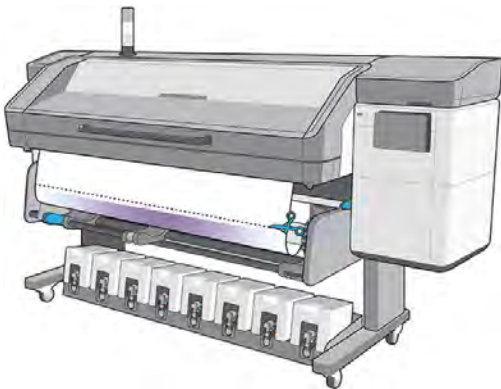



 **NOTE:** The normal mode of operation of the take-up reel when printing is to collect the substrate and, once it is tensioned, release some substrate back to provide optimal advance accuracy.

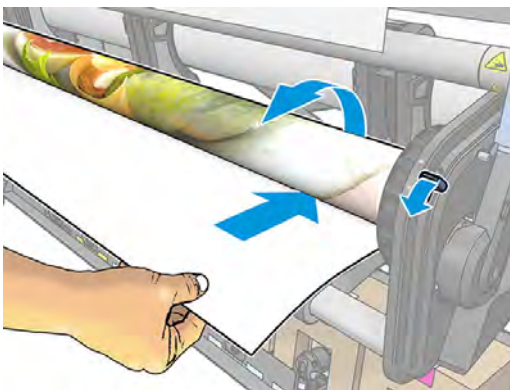
Unload the take-up reel

1. Tap  in the front panel's top bar.

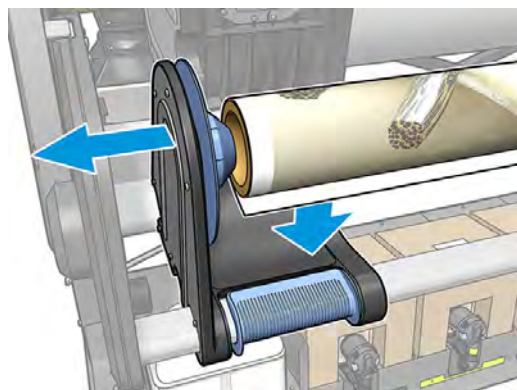
If the substrate cannot be cut by the automatic cutter, cut it with scissors as shown below; do not cut it on top of the cutter beam.



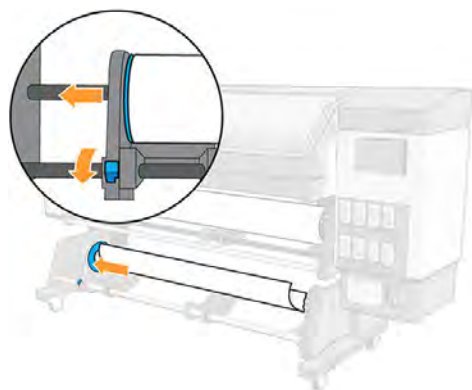
2. At the front panel, tap , then **Output option** > **Deactivate take-up reel**. A popup announces **Take-up reel deactivated**.
3. While holding the substrate, turn the right-hub disc on the take-up reel to wind the remainder of the substrate around the take-up reel.



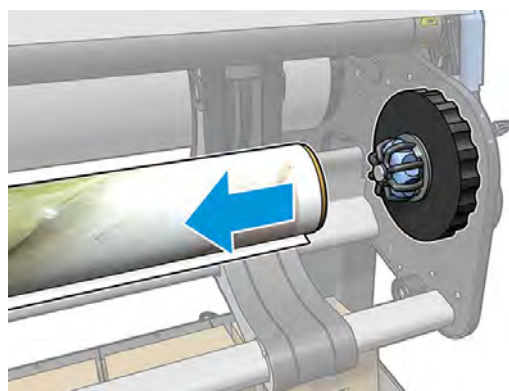
4. 800 series only: Unlock the brake and remove the left hub from the roll, resting the roll on the table.



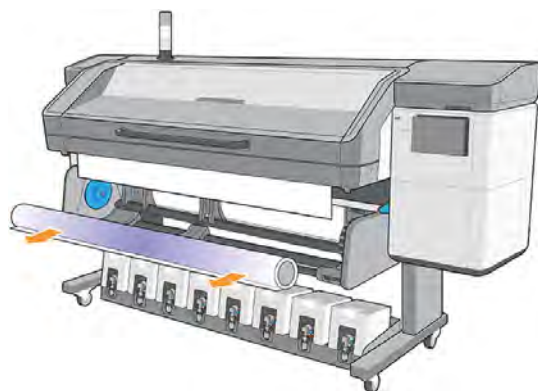
700 series only: Lower the brake lever and remove the left hub from the roll.



5. Remove the roll from the right hub.




6. Remove the roll from the printer.




How to load the take-up reel for tiling applications

 **NOTE:** Loading the take-up reel correctly is crucial to achieve the best performance for tiling applications.

1. Load the substrate as usual.
2. Load an empty core onto the take-up reel.

 **TIP:** 700 and 700W printers: Do not forget to close the brake.

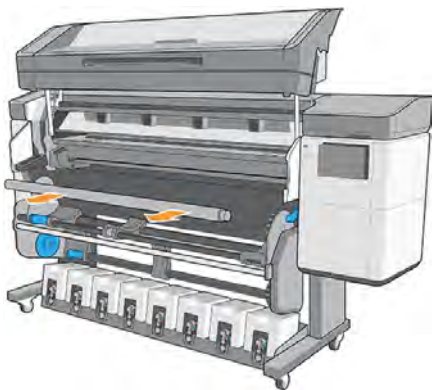
3. Advance the substrate until the leading edge is level with the take-up reel.
4. Lift the pinchwheels (see [How to lift the pinchwheels on page 79](#)).
5. Align the right edge of the substrate with the right edge of the input roll to minimize loading skew.
6. Tap **Done** at the front panel to lower the pinchwheels.
7. Tape the leading edge to the take-up reel core: first the center, keeping it tight to avoid skew, then the corners.
8. Use the front panel to advance the substrate, and engage the take-up reel by turning it one turn.
9. Perform take-up reel calibration from the front panel: tap , then **Output options > Calibrate**. This adjusts the substrate advance, taking into account the take-up reel's output tension for added accuracy.

Wiper roller

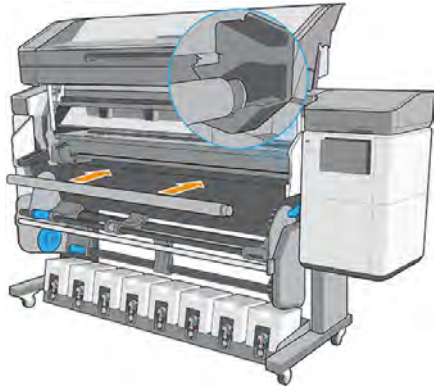
The wiper roller is designed to wipe the printable surface of banner and vinyl substrates, to improve the quality of the surface before printing.

Installation

1. Before loading the substrate, remove the smooth black input roller.



2. Insert in its place the wiper roller, covered in foam, with the gear on the right-hand side.



3. The printer detects that the wiper roller is in use, and displays it as available in the Substrate and Loading screens. It also displays the length of substrate that has been printed using the wiper roller.
4. Continue with the usual substrate loading procedure.


Tips

- After loading, the first 400 mm of substrate between the wiper roller and the print zone has not been wiped. You can add that distance as a top margin in your RIP, or you can move the substrate back and forth from the **Substrate** menu to wipe that area before printing.
- 800 series only: To obtain the most benefit from the wiper roller, ensure that the pivot table is in the inner position, so that the substrate has maximum contact with the wiper roller.
- For some vinyl substrates, you can optimize performance by increasing the input tension to 15 N·m in your substrate preset. See [Modify a substrate preset on page 94](#).
- If the wiping is not effective enough, consider either using a slower print mode or adding delays between passes in the substrate presets to allow more passes of the roller per substrate advance.

Replacement

- The wiper roller foam does not last indefinitely and should be replaced after extended use. The printer tracks the length of substrate wiped by the roller, and displays a warning when replacement is due.
- Extract the right end cap with the gear from the old roller, and insert the gear into the replacement unit.
- Then reset the **Replace wiper roller** counter in the printer's front panel.

View information about the substrate

On the front panel's home screen, tap .

The following information appears on the front panel, if any substrate is loaded.

Substrate section

- The substrate type
- The substrate name
- The substrate width in millimeters (estimated by the printer)

- The remaining length of the substrate, if known, and whether length tracking is set to **Manual** in the loading configuration screen
- The color calibration status and a button to launch color calibration

Accessories section

- The printing zone (platen or ink collector)
- The wiper roller status
 - **Ready:** The wiper roller is loaded and ready for use.
 - **Recommended to change:** The wiper roller is loaded but has passed its expected lifetime: more than 1800 m (70866 in) printed. It may not work correctly.
 - **Not present:** The wiper roller is not installed.
- Wiper roller meters/inches printed

The **More actions** button allows you to launch the following actions:

- Wiper roller replacement
- Take-up reel instructions

If no substrate is loaded, the message **Out of substrate** appears.

The same information appears on the Embedded Web Server's Supplies page.

Change substrate width and right edge position

If the substrate edges are not correctly found by the printer, they can be changed from the front panel by tapping



then **Substrate > Substrate handling options > Substrate width**.




TIP: Bear in mind that automatic edge detection will not be attempted again until the next substrate load.

Substrate length tracking

The substrate length tracking feature enables you to keep track of how much substrate remains on the roll.

1. When the roll is first loaded onto the printer, you have the option (in the Load Configuration screen) to enter the length of substrate on the roll. The amount of substrate that is subsequently used is then tracked.
2. When the substrate is unloaded, the front panel displays the amount remaining so that you can note it for future reference.

Cut substrate

This option is available from the printer's front panel. If you tap , then the scissors icon, the printer normally advances the substrate 150 mm (5.9 in) and cuts it.

This is a high-performance cutter, which can cut most substrates, except textiles and some other particularly tough substrates.

In normal use, the cutter will last as long as the printer. However, cutter life is significantly reduced if you often cut relatively tough substrates.

⚠ CAUTION: Do not cut the substrate manually above the print zone, which could damage the platen.

📝 NOTE: The cutter should be used only when the printer is in automatic mode. Do not use it in manual mode.

Printing on textiles

- If you expect to print more than 10 m² per day, HP recommends purchasing the textile kit.



Otherwise, you can perform manual loading with the loading accessory. See [Loading accessory on page 65](#).

- If printing more than 10 m² per day, use the output-platen protector (OPP).
- Generic output tension settings are calculated for printing with the OPP. If you experience substrate-advance errors while printing without the OPP, reduce the output tension.
- If you are not using the ink collector, use OMAS+ .

⚠ CAUTION: If you print more than 10 m² per day without the ink collector, you may experience condensation in the OMAS+.

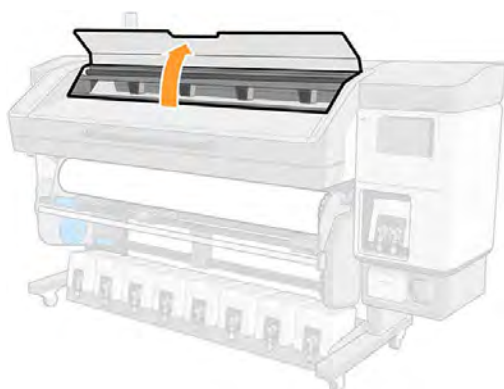
- When printing on sticky backlit substrates or slightly stretchy substrates, reduce the input tension (output tension > input tension).
- The output platen can increase the friction of the textile. If you notice any related issue, you can increase the output tension.
- Always attach textiles to the take-up reel.

📝 IMPORTANT: When using the take-up reel, attach the center of the substrate edge first, and then the corners.

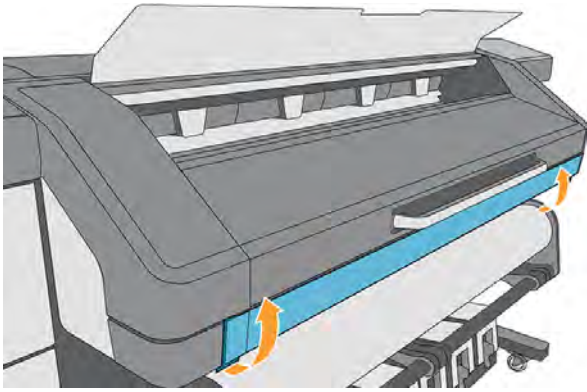
Textile kit

Install the output-platen protector

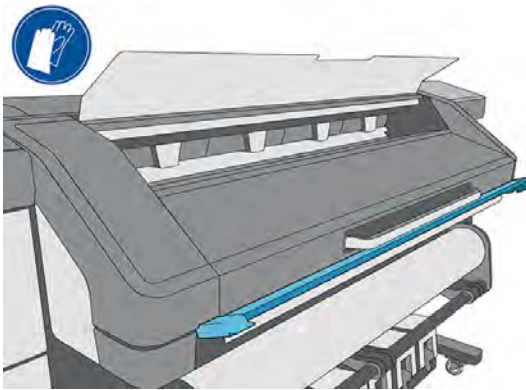
1.



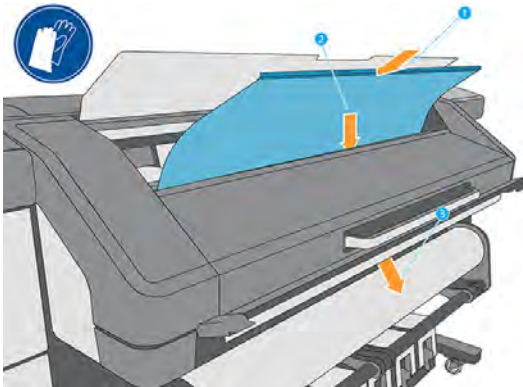
2.



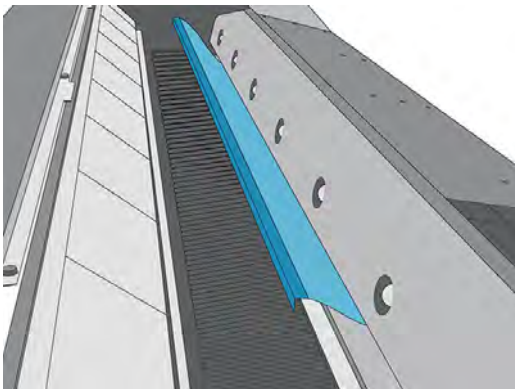
3.



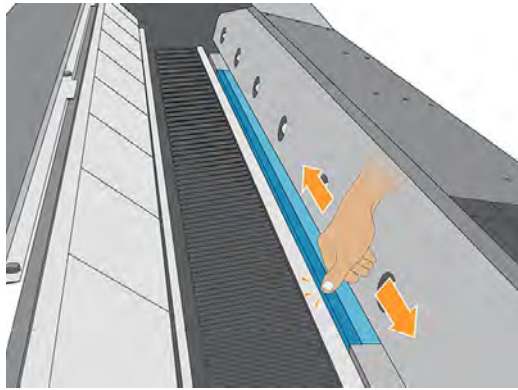
4.



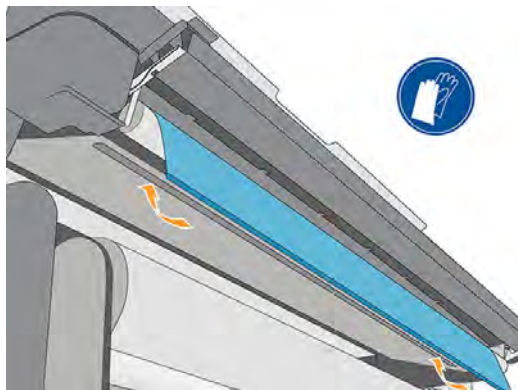
5.



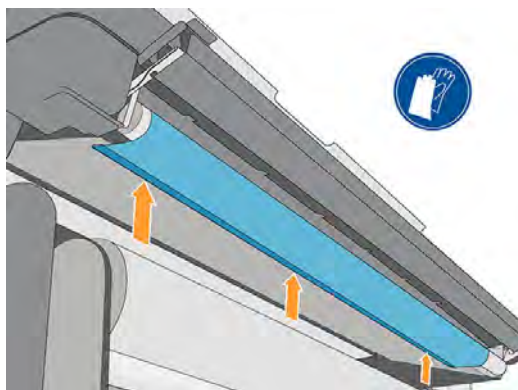
6.



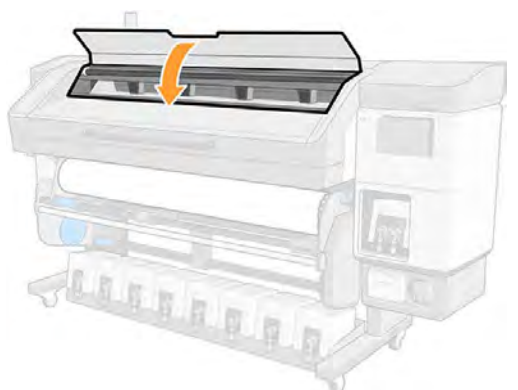
7.



8.



9.



4 Substrate settings

- [Substrate presets](#)
- [Configuration Center](#)
- [Online search](#)
- [HP Media Locator](#)
- [Generic presets](#)
- [Clone a substrate preset](#)
- [Modify a substrate preset](#)
- [Add a new substrate preset](#)
- [Save your substrate presets in the cloud](#)
- [Delete a substrate preset](#)
- [Printing speed, tips and tricks](#)
- [Color calibration](#)
- [Color consistency between different 700 and 800 series printers](#)
- [ICC profiles](#)
- [Full calibration](#)

Substrate presets

Each substrate type has its own characteristics. To obtain the best print quality, the printer has to adapt its printing parameters to each different substrate type. For example, some may need more ink and some may require higher temperatures for curing. A specification of the correct printing parameters for a particular substrate type is called a substrate preset.

The substrate preset contains a color profile in International Color Consortium (ICC) format, which describes the color characteristics of the combination of printer, inks, and substrate. It also contains information about other parameters (such as curing temperature, vacuum pressure, and substrate-advance compensation) that are not directly related to color. Substrate presets (also known as Open Media System or OMES packages) are installed in the printer, and automatically copied to supported RIP software whenever it is connected to the printer.

The printer comes with substrate presets for the most commonly used generic substrates. Some presets may come preinstalled in your printer (such as HP Vinyl presets); use them only with the substrates for which they were created. For other substrates, presets named Generic are recommended over other preinstalled presets. However, the best performance can be achieved only with presets made specifically for your substrate. There are various ways to obtain more presets:

- From the Configuration Center you can check substrate presets from your own printers, from the HP Media Locator and from your reseller, all in one place, and deploy them to your printers.
- Use the **Online search** function on the front panel or the HP Media Locator on the Web to browse, search, and download a specific preset for your substrate.
- Download a preset from the RIP vendor's website, or from the substrate vendor's website.
- Use a generic preset designed for your substrate category, even though it is not fine-tuned for the specific substrate type. Bear in mind that generic substrate settings cannot be modified; instead, the preset can be cloned and then modified.
- Create a new preset, starting from another profile as a base, using the **Add new** button.

If you can find a ready-made preset for your specific substrate, you are recommended to use it.

Configuration Center

The Configuration Center is part of PrintOS. It allows you to check substrate presets and deploy them to your printers.

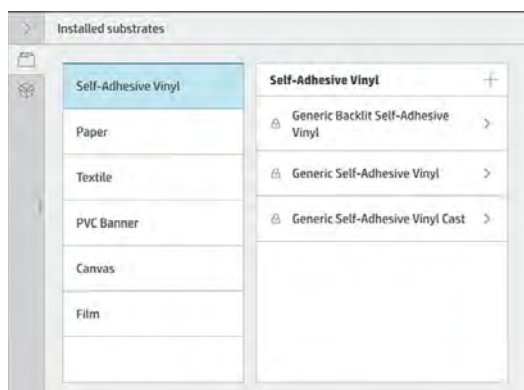
1. Go to PrintOS (<http://www.printos.com>) and access the Configuration Center from the **Apps** menu in the top right corner.
2. Click **Substrate library** in the left menu.
3. Add the substrate presets that you want by clicking the **Add** button on the rightmost.
4. Once you are done, click **Deploy** and choose to which printers you want to send the selected presets.
5. From the printer's front panel, go to **Substrate library** > **Substrate packages** to download and install your presets.

Online search

You can search online for a substrate preset by using the online search function within the Substrate Library front-panel menu.

The printer connects to the HP Media Locator database on the Internet and allows you to search all available substrate presets for your particular printer model, including HP and third-party substrate brands. Hundreds of

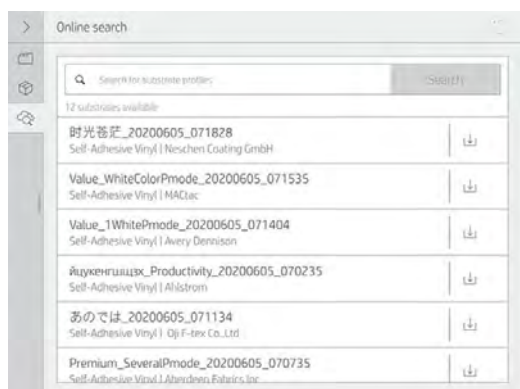
different substrate presets may be available, and the database of substrate presets is continuously updated and expanded. You will always get the most up-to-date content in this way.



When the printer is connected to the database (this may take a few seconds), a list of all available substrate presets for your printer model is displayed. You can browse the list by scrolling it, and get details on any preset by tapping its name.

Besides browsing, you can look for presets using free-text search, which allows you to type in any text using an on-screen virtual keyboard; all substrate presets containing that text in any part of their name or description will be displayed. For example, if you search for "vinyl" then substrate descriptions such as "self-adhesive vinyl" or "vinyl banner" will match and be displayed. The search is case-insensitive; that is, "vinyl" will match both "vinyl" and "Vinyl".

Once you have located the substrate preset of your choice, tapping its download icon will queue it for automatic download and installation in the background. You can select as many substrate presets as you want for download and installation (they will be processed in the order that they were selected). You can return to another part of the Media Manager or another front panel screen at any time after queuing presets for download, and this will not interrupt the download and installation process.



Once a substrate preset has been downloaded in the background, it is checked and installed on the printer's hard disk. During checking and installation, a full-screen message is shown on the front panel. This message disappears when checking and installation is complete.

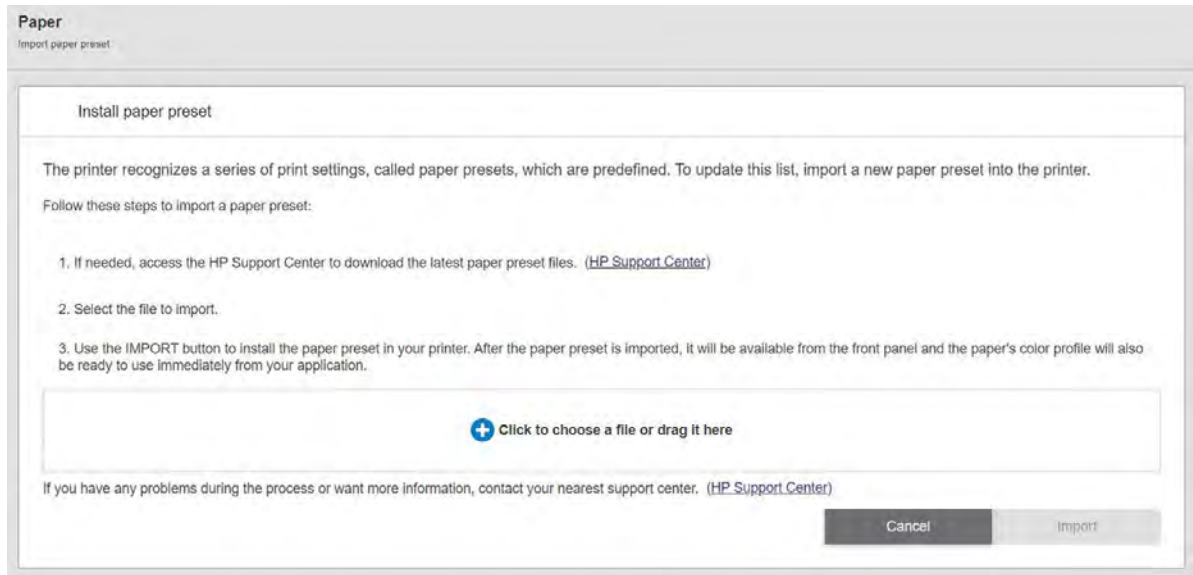
The new substrate preset now appears in the Substrate Library together with all previously installed and factory-provided presets, and is ready for use.

Some supported RIPs may implement a similar online substrate-preset search function accessing the same HP Media Locator database. Whether you use the printer's front panel search or RIP-based search does not matter: the end result is the same. Supported RIP software synchronizes its substrate preset list with the printer, so that printer and RIP will always have the same list.

HP Media Locator

The HP Media Locator database of substrate presets can also be accessed from a Web browser by visiting <http://www.hp.com/go/mediasolutionslocator>. This provides access to the database for different regions, printer models, applications, suppliers, substrate types, and so on.

When you have located the substrate preset of your choice, you can download it to your computer. To install the preset into the printer with which you want to use it, use the printer's Embedded Web Server. Navigate to the **Setup > Substrate presets management > Import** screen.



Click **Browse** to browse to the substrate preset file that you have previously downloaded to your computer, then click **Update** to install the preset in your printer.

The Embedded Web Server also allows you to export one or more substrate presets from your printer for use with another printer of the same model. To export more than one substrate preset at a time, click the substrate presets you want to export while pressing the **Ctrl** key. All exported presets will be saved in the same **paperpresets.oms** file.

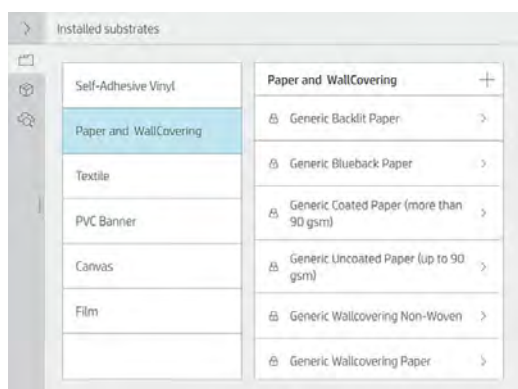
When importing a previously exported substrate preset, you may see a message warning you that the package is not signed (only packages downloaded from the HP Media Locator internet database are digitally signed, as a form of authentication); you can either ignore the warning and continue with the installation, or abort the installation.

If you get an error message while exporting:

- Check that you have enough disk space available.
- Check whether importing multiple substrate presets will exceed the maximum permitted for the printer (10 presets).

Generic presets

Generic presets are each designed for a whole substrate category, rather than for a particular substrate type. They cannot be edited, erased, saved, color-calibrated or ICC profiled; but they can be cloned. Therefore, you must clone a generic preset in order to be able to color-calibrate the substrate, or to modify any other property.



In addition, you always need to clone from a generic preset in order to perform calibrations, even if you don't want to change any setting.


The printer provides generic presets for the supported substrate categories: see [Supported substrate categories on page 44](#).

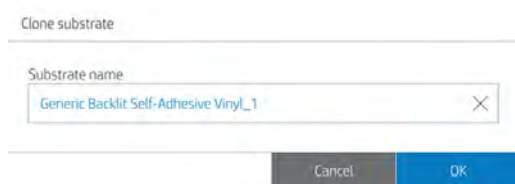
Clone a substrate preset

You may wish to clone and edit a preset for various reasons:

- To assign a name of your own choice to the preset
- To adjust the preset to the precise characteristics of your substrate
- To adjust the preset to your intended use of the substrate, which may range from highest-quality printing to fast production output.

To clone a substrate preset, follow these steps:


1. At the front panel, tap , then **Substrate category**, then tap a generic substrate name.
2. Tap **...** at the top right corner.
3. Tap **Clone** to clone the preset, and enter a name for the new preset.

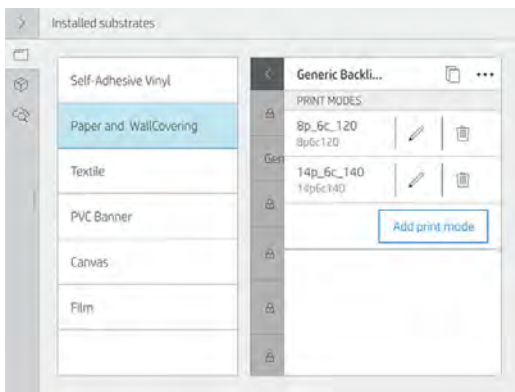



Your new preset will appear at the end of the generic preset list.


Modify a substrate preset

You can modify a preset by tapping **Modify**.

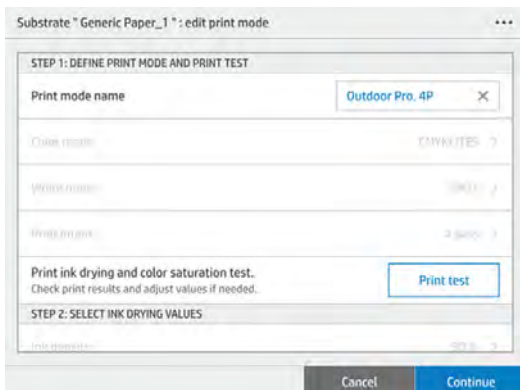
Then click the  icon of the print mode that you want to modify; or click **Add new print mode**. You can delete or change the name of any print mode; although you should keep at least one print mode.



 **NOTE:** The number of passes in an existing print mode cannot be changed. If you want to change the number of passes, create a new print mode.

 **NOTE:** You are not allowed to create two print modes with the same number of passes, the same efficiency mode, and the same color saturation.

To change the values, you must print a test plot. Check it and choose the number in the pull-down color-saturation menu that matches your preferences in terms of curing and drying. If none of the options are good enough, try changing the temperature and reprint. You can also change the substrate-advance settings.



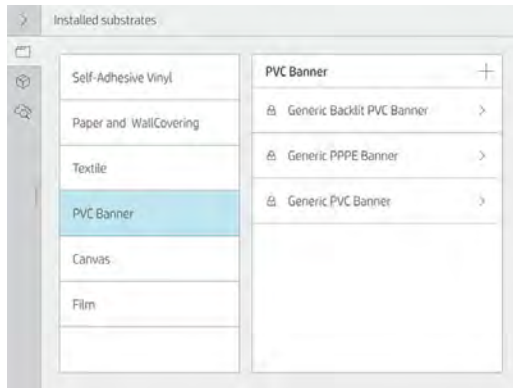
Add a new substrate preset

If you cannot find a ready-made preset for your substrate, and prefer not to use a generic preset or edit an existing preset, you can make your own preset from scratch.

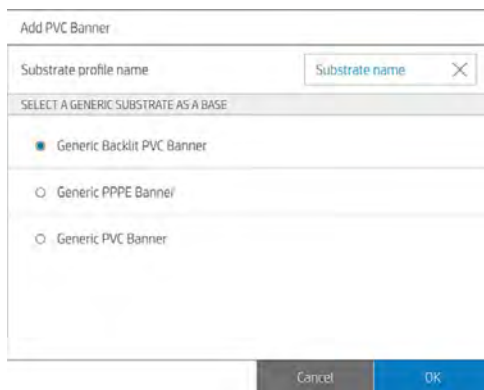
The Add New Substrate wizard guides you to work out the best settings for your substrate. It first requests some information about the substrate and your intended use of it, then prints some test prints and asks you to evaluate them. From this information, it creates the new preset.

1. Ensure that the printer is in the Ready state.
2. Stop the print queue.
3. Load your new substrate, selecting the most similar substrate when asked to do so; or select **None of these**.

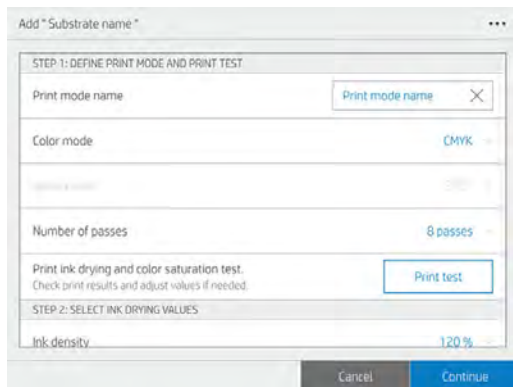
- When the substrate has been loaded, go to the Substrate Library on the front panel, and choose the substrate category in the left column of the Substrate Library screen (**PVC Banner** in this example), then click **PVC banner +** at the top of the right column.



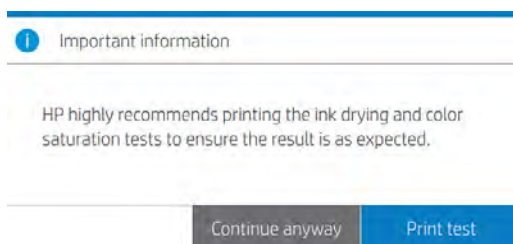
- Your new preset will be based on a generic preset; if there are multiple generic presets in that category, the front panel asks you to choose one of them.



- The front panel guides you through the subsequent steps to create your new preset.



- The following screen is displayed.



8. Tap the **Print test** button to produce the ink drying and color saturation test print; then continue adjusting the settings and printing again until you are satisfied with the result.

 **NOTE:** You can omit this step if you already know the settings that you want to use.

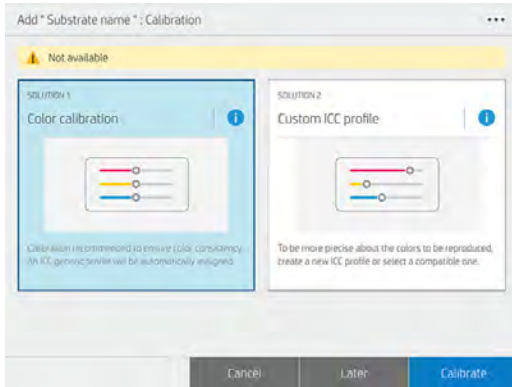
9. If you cannot reach a satisfactory result, you may want to tap **Advanced settings** and try adjusting those settings, which are intended for people who understand their implications.

To go back to the previous screen, tap .



- Inter-pass delay offset: The time delay between passes to allow for smoother drying. Increase the delay if you have seen banding on your prints.
- Vacuum: Sets the vacuum value in the print zone to hold the substrate flat. Increase if the substrate suffers from crashes or smears, decrease if you see banding or graininess.
- Overcoat level: Overcoat makes prints more durable and resistant to scratches. However, you intend to laminate your prints, you may not want to use any overcoat, as it decreases laminant adherence.
- Latex optimizer level: If you have bleed or coalescence, you can increase the optimizer level until you see a significant impact on gloss or color saturation.
- Optimizer level in color edges. This adjusts optimizer density to improve jagged or bleeding edges in areas with contrasting ink densities. The rest of the print keeps the default optimizer level.
- Advance factor: Use only when printing without the substrate-advance sensor, to increase or decrease the substrate advance in each carriage pass.
- Input tension: Substrate rewinder tension, increase in case of wrinkled substrate in the print zone.
- Print-zone temperature. If you notice bleeding (ink spreading across different color areas) or poorly dried prints, increase the temperature. If you notice high coalescence (non-uniformity in same-color areas), decrease the temperature.
- Output tension. If wrinkles appear across the substrate, or it is not flat when leaving the print zone, increase the tension. If a central wrinkle appears along the substrate, decrease the tension.

- When you have finished, tap **Continue** to perform color calibration.



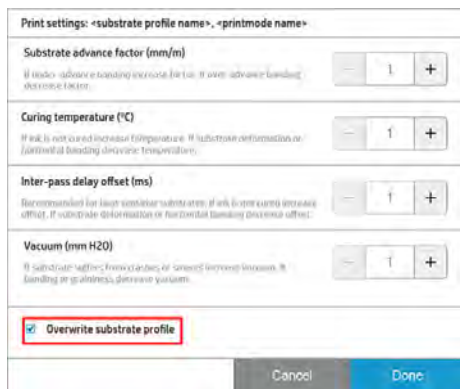
- Enter your substrate name and click **Set color reference**. See [Color calibration on page 101](#).
- After the automatic color calibration process has completed, we recommend using the generic ICC profile; alternatively, you can choose to create a new profile or to copy a profile already assigned to a different print mode for this substrate (if there are any such profiles). The **Create ICC profile** button is disabled until color calibration is complete. See [ICC profiles on page 104](#).

Change settings while printing

You can use the front panel to adjust the following settings while printing, unless you are using a generic or other non-editable preset.

- To change substrate-advance, temperature, inter-pass delay offset, and vacuum settings while printing, tap **Adjustments** in the front panel's print job screen, and choose the setting that you want to adjust. The changes that you make take effect immediately, but they are not saved: the next job will use the settings in the substrate preset as usual.

Tap **Done** to use the new settings; tap **Cancel** to return to the previous settings.




- To change substrate-advance calibration while printing (in case of banding): tap **Adjustments** > **Adjust substrate advance**. The changes that you make take effect immediately, but they are not saved for the next job. See also [Substrate advance adjustment while printing on page 127](#).

To make permanent substrate-advance changes, use the RIP or front panel to modify the substrate preset.

Temperature profile


Many of the main and advanced substrate settings are related to temperature control, since this is a critical area for correct printing results with latex inks on a wide variety of substrates.

NOTE: There is a delay between making a change and seeing the results. See the front panel for actual temperature checking.

 **NOTE:** If you selected English units of measurement, you may notice some discrepancies, as the printer works in Celsius and makes the conversion.

Select the number of passes

Increasing the number of passes will tend to improve the print quality but reduce the speed of printing.

 **NOTE:** The following table is for the normal ink limit unless otherwise indicated.

Category	Substrate name	Generic print modes			
		6p6c-100	8p6c-110 8-pass UNI	12p6c-120	
Self-adhesive vinyl	Generic Self-Adhesive Vinyl	6p6c-100	8p6c-110 8-pass UNI	12p6c-120	
	Generic Self-Adhesive Vinyl (white modes)	OF100W	UF100W	SP100W	SP160W
	Generic Cast Self-Adhesive Vinyl	8p6c-110 8-pass UNI	12p6c-120		
	Generic Backlit Self-Adhesive Vinyl	8p6c-120 8-pass UNI	14p6c-140		
Banner	Generic PVC Banner	4p6c-100	6p6c-110		
	Generic Backlit PVC Banner	8p6c-120	14p6c-140		
	Generic Dual-Sided PVC Banner	4p6c-100	6p6c-110	8p6c-120	
	Generic PP & PE Banner	4p6c-100	6p6c-110	8p6c-120	
Paper and wallcovering	Generic Uncoated Paper (up to 90 g/m ²)	4p6c-90	6p6c-100		
	Generic Coated Paper (more than 90 g/m ²)	4p6c-90	6p6c-90	8p6c-100	12p6c-120
	HP PhotoRealistic	4p6c-90	6p6c-90	8p6c-100	12p6c-120
	Generic Blueback Paper	6p6c-90			
	Generic Wallcovering Non-Woven base	6p6c-90	8p6c-100	12p6c-120	
	Generic Wallcovering Woven base	6p6c-100	8p6c-110	12p6c-120	
	Generic Wallcovering Paper base	6p6c-100	8p6c-110	12p6c-120	
	Generic Backlit Paper	8p6c-120	14p6c-140		
PET film	Generic Polyester Film	8p6c-120	12p6c-120		
	Generic Polyester Film (white modes)	OF100W	UF100W	SP100W	SP160W
	Generic Backlit Polyester Film	12p6c-130	16p6c-150		
	Generic Polypropylene Film	4p6c-90	6p6c-100	8p6c-110	12p6c-120
	Generic Backlit Polypropylene Film	8p6c-120	14p6c-140		
Textile	Generic Textile	8p6c-120	14p6c-170	18p6c-200	
	Generic Backlit Textile	14p6c-200	18p6c-260		
Canvas	Generic Canvas	6p6c-110	8p6c-120		

Print modes explanation

For example, 8p6c-110 means:

- 8 passes
- 6 colors
- Ink density 110%

 **NOTE:** More specific settings for many substrates from different vendors are available in the HP Substrate Finder at <http://www.hp.com/go/latexmediafinder/>.

 **NOTE:** After selecting the number of passes in the Add New Print Mode screen, make sure to reset your print mode to default category values for that print mode.

Tips

- For fast layout proofing on low-cost substrates, a low-ink 2-pass print mode has been enabled. It is recommended for paper-based substrates only, as curing may not work correctly for other substrate types in this mode.
- 1 to 2 passes provide lower print quality. Also, the color gamut will be slightly reduced, as total ink is limited to allow for curing.
- 8-pass unidirectional mode is designed to minimize banding for high-quality prints on some particular substrates.
- 1200 dpi print resolution is available in the 18-pass print mode only. If you intend to use it, ensure that you have a specific substrate preset for this print mode, because reusing others may not deliver the expected print quality.

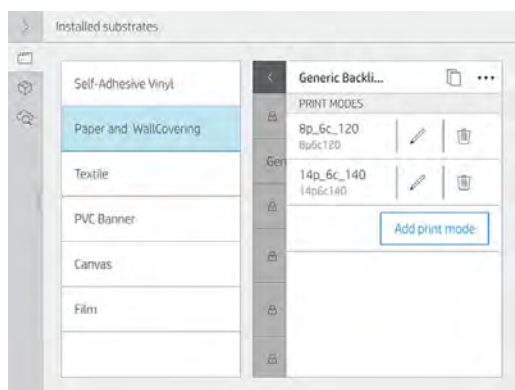
Save your substrate presets in the cloud

If your printer is connected to PrintOS, you can have a secured copy of your substrate presets. Any update that you make to a substrate preset or any new one that you create will automatically be saved in Configuration Center.

Delete a substrate preset

You can delete substrate presets that you have added yourself, but not those that were supplied with the printer.

To do so, tap the name of the substrate preset, then tap **...** at the top right, then tap **Delete**.




If you delete a preset, you will lose the reference to that substrate in the usage and accounting information. Instead of the name of the substrate, from that moment on you will see “Deleted substrate” in the usage and accounting information.

Printing speed, tips and tricks

The obvious way to increase speed is to reduce the number of print passes, although this will tend to reduce print quality. Bear in mind the following considerations:

- With fewer than 6 passes, the printer is more sensitive to substrate-advance problems, and you may need to reduce the ink quantity to improve print quality.
- As you reduce the number of passes, the best curing temperature may be more difficult to find, and may be more sensitive to the ambient temperature and humidity.

Here are some other suggestions for increasing the speed of printing.

- Concatenating prints saves time, because one can be printed while another is being cured.
- Disable the cutter: Tap , then **Substrate handling options > Cutter > Off**. With most substrates, this saves some time at the end of the printing process.
- Use the take-up reel



NOTE: Printing a single job for more than 2 hours can reduce the life of the printheads.

See also [Printer seems slow on page 236](#).

Color calibration

The purpose of color calibration is to produce consistent colors with the specific printheads, inks, and substrate that you are using, and in your particular environmental conditions. After color calibration, you can expect to get very similar prints from your printer on different occasions.

Calibration should be done in any of the following circumstances:

- Whenever a new substrate type is introduced that has not yet been calibrated.
- Whenever you notice excessive color differences between prints. Such color differences are mainly caused by aging and wear of the printheads, installing new printheads, and changes in substrate characteristics between one roll and another.
- Whenever you replace a color printhead.
- Whenever the color calibration status is **Obsolete**.

700W and 800W printers only: Color calibration adjusts the results you get with colored inks, but white ink does not need calibrating and is not calibrated. To calibrate non-white ink on a white-specific substrate (such as a transparent or black substrate), load instead an opaque, white, non-textured substrate and perform the calibration with that, selecting in the front panel the white-specific substrate that you want to calibrate. If you load a colored or non-opaque substrate and try to perform color calibration, the printer will display an error message.


Each substrate must be calibrated independently.

In some cases it is not possible to calibrate a specific substrate. In such cases, the **Calibrate** and **Reset** options are not available:

- The loaded substrate has a generic preset (generic presets are not editable).
- The loaded substrate has a preset that is not editable for some other reason.
- The loaded substrate is not suitable for color calibration, because the internal spectrophotometer is unable to read the substrate properly. This may be the case for transparent, backlit, or textile substrates, for example.



NOTE: Color calibration may not work correctly with non-HP ink.


Color calibration can be launched from the front panel by tapping  and then **Color calibration**; or when adding a new substrate. You can also launch color calibration from the substrate library.

In outline, the process consists of the following steps.

1. A calibration target is printed.
2. The colors on the calibration target are measured automatically.
3. The calibration target measurements are compared with an internal reference to calculate the necessary calibration tables for consistent color printing on the substrate in use.

For a substrate without a reference, such as one created by cloning a generic preset, the current printing color is taken as a reference in its initial color calibration. This means that, after the first color calibration, the printed colors do not change, but are recorded as the reference for future calibrations. Subsequent color calibrations compare calibration target colors with the recorded reference, in order to calculate new calibration tables for consistent color printing on that particular substrate type.

This does not apply to substrate presets downloaded from the Media Locator, as they are already calibrated. Also, there are some substrates that already have a calibration set.

From the front panel, you can delete the current calibration reference and table, as if that particular substrate had never been calibrated. So, the next time you calibrate it, a new color reference will be set. Tap ,

Settings > Reset calibrations > Reset color calibration.

Color calibration as described above is not recommended for the following substrate types. It may be possible to calibrate some of these substrates by using an external color measurement device, driven by an external RIP.


- Non-opaque substrates such as clear film and backlit substrates.
- Substrates with an uneven surface, such as perforated vinyl and punched-window substrates.
- Porous substrates that require the use of the ink collector.


Substrates suitable for color calibration include even-surfaced adhesive vinyls (neither punched nor perforated), PVC banners, and papers.

Recommendations for optimal color calibration

- The color calibration test chart is printed using a fixed print mode with a high number of passes and fixed curing and drying settings to ensure printing consistency. However, parameters affecting substrate advance should be fine-tuned, printheads should be aligned, and nozzle health should be checked, before starting color calibration for the first time. Crosses at the sides of the color target will help you to diagnose substrate-advance problems.
- Perform color calibrations with the printer in its normal environment and in typical condition. For example, calibrate when the printer has been printing for some time, not at the beginning of the day or after an idle period.
- Advance the substrate about 75 cm (30 in) before printing the color target, to ensure that the substrate is fresh.

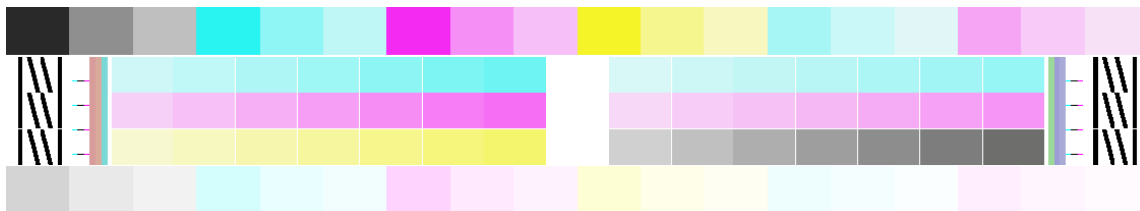
Color calibration procedure

To start color calibration of the loaded substrate from the front panel, select , then **Color calibration**. Color calibration can also be run while adding a new substrate (see [Add a new substrate preset on page 95](#)).


 **NOTE:** Only substrates at least 51 cm (20 in) wide can be calibrated.

The calibration process is fully automatic and can be performed unattended after you have loaded substrate of the type you wish to calibrate. The process takes about 15 minutes and consists of the following steps:


1. The color calibration test chart is printed, which contains patches of different densities of each ink used in your printer.



2. The test chart is scanned by the HP Embedded Spectrophotometer. If the scan cannot be completed successfully, a message is displayed on the front panel; see [System error codes on page 238](#).
3. From the measurements made by the spectrophotometer, the printer calculates the necessary correction tables to apply to your print jobs, for consistent color printing on that substrate type.

You can check the color calibration status of your substrate by tapping  on the front panel.

- **Recommended** status indicates that this substrate has never been calibrated. In this case, the factory-default color tables will be applied to print jobs, as there is no reference state defined. After one or more color calibrations have been performed, tapping the **Reset** button returns the status to Recommended.
- **OK** status indicates that a color calibration has been performed successfully at least once on this substrate, and therefore a color reference state is defined.
- **Obsolete** status indicates that the last color calibration may be out of date. For instance, color calibration status is set to Obsolete whenever a printhead is replaced. The color reference state remains defined.
- **N/A** indicates that this substrate cannot be color-calibrated.

 **NOTE:** Generic substrates cannot be color-calibrated, although such substrates may be suitable for color calibration. You can color-calibrate clones of most generic substrates.

 **TIP:** If color calibration fails, it is worth trying again.

TIP: If the first color calibration of a new substrate fails, tap the **Reset** button before trying again.

Color consistency between different 700 and 800 series printers

It is possible to cross-calibrate color between two or more printers for particular substrates. After cross-calibrating a given substrate, you can expect to get very similar prints from either printer when using the same substrate.

1. Choose printer A to be the reference printer, and use it to perform color calibration on the substrate in question. See [Color calibration on page 101](#).
2. Export the calibrated substrate preset. See [HP Media Locator on page 93](#).
3. Import the substrate preset of step 2 into printer B. See [HP Media Locator on page 93](#).
4. Color-calibrate the preset with printer B.

5. Colors printed with printer A and printer B, on that substrate, should now be very similar.
6. To add more printers (C, D, and so on), proceed as you did with printer B.

ICC profiles

Color calibration provides consistent colors, but consistent colors are not necessarily accurate. For instance, if your printer prints all colors as black, its colors may be consistent but they are not accurate.

In order to print accurate colors, it is necessary to convert the color values in your files to the color values that will produce the correct colors from your printer, your inks, your print mode, and your substrate. An ICC profile is a description of a printer, ink, print mode, and substrate combination that contains all the information needed for these color conversions.

These color conversions may be performed by your Raster Image Processor (RIP), if it offers that possibility; they are not performed by the printer. For further information on the use of ICC profiles, see the documentation for your application software and for your RIP.

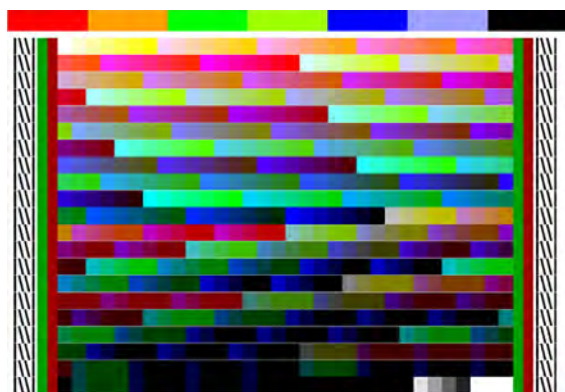
In addition to the ICC profiles used for printing, you may wish to calibrate and profile your monitor (display device), so that the colors you see on the screen relate more closely to those that you see on your prints.

Generating color profiles with the HP Embedded Spectrophotometer

It is possible to create an ICC profile automatically for a given substrate and print mode, when adding or editing a substrate. See [Add a new substrate preset on page 95](#) and [Modify a substrate preset on page 94](#).

After tapping the **Create ICC profile** button the following process takes place:

1. A profiling test chart is printed on the loaded substrate using the selected print mode.
2. The printed test chart is measured with the HP Embedded Spectrophotometer.
3. The color measurements are related to the target colorant values by the printer's firmware to generate the ICC profile.
4. The ICC profile is stored in the substrate preset for that print mode.



NOTE: Although color profiles obtained in one particular print mode can be reused when printing with other print modes, the most accurate color reproduction can only be achieved if profiling is made with exactly the same print mode that is used for printing. For example, if you use a color profile obtained with a 12-pass standard print mode, you may see some color difference when you use it to print with an 8-pass speed print mode.

Full calibration


Full calibration helps you to print colors consistently, reaching optimal printer performance without using working hours. The sequence of operations is completely unattended and is recommended when you own

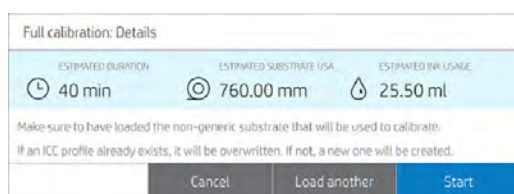
multiple printers, in order to achieve printer-to-printer consistency with least effort; or if you need to print consistent jobs on the same substrates for days or weeks.

It is a combination of three calibrations:

- Automatic printhead alignment: see [Automatic alignment on page 153](#).
- Color calibration: see [Color calibration on page 101](#).
- ICC profiling: see [ICC profiles on page 104](#).

To run this sequence of calibrations:

1. Load the substrate and attach it to the take-up reel.
2. Select a cloned substrate in the front panel (see [Clone a substrate preset on page 94](#)).
3. Tap  on the front panel and scroll down to select **Advanced calibrations**.
4. Tap the **Full calibration** button, then **Continue**.
5. If all the preconditions are met, the sequence starts when you tap the **Start** button.



6. Synchronize the RIP to ensure that the new ICC profile is downloaded from the printer.


Note that

- ICC profiling is done at the highest-quality print mode.
For example, if a cloned substrate contains 6p, 8p, and 12p print modes, the ICC is generated for 12p. If you want to create the ICC profile for 8p, first delete 12p from the cloned substrate (see [Modify a substrate preset on page 94](#)).
- The previous ICC profile will be overwritten, and there is no way to recover it.
- Some substrate categories do not allow color calibration or ICC profiling, in which case the sequence will stop at the beginning.
- Automatic printhead alignment is in common across substrates, color calibration is valid for a specific substrate and in common for all print modes, and the ICC profile is specific for each print mode.
- To take advantage of the new ICC profile, the job must be submitted by the external RIP, and color management must be properly set. Jobs reprinted from the front panel are already color managed, so any new ICC profile will be ignored.

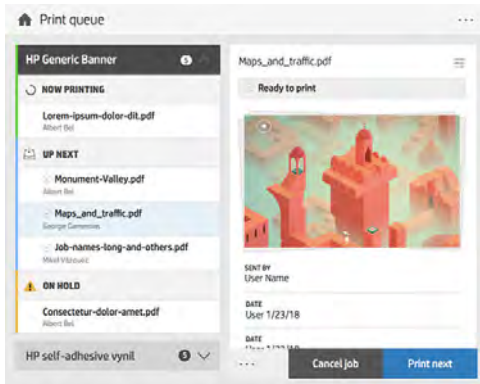
5 Job queue management

- [Job queue in the front panel](#)
 - [Job queue settings](#)
 - [Pause the job queue](#)
 - [Reprint](#)
 - [Reorder jobs](#)
 - [Select when to print a job](#)
 - [See job details](#)
 - [Adjust print settings](#)
 - [Job queue options](#)
 - [Default printing preferences](#)
 - [Job deletion](#)

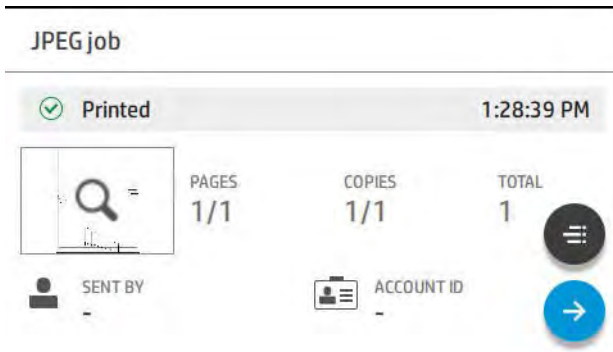
Job queue in the front panel

Tap  on the home screen to view the job queue on the front panel.

The print queue includes jobs that are being received, parsed, rendered, printed, already printed, and so on, organized by type of substrate. There are two clusters depending on the substrate type profiling: loaded substrate and not loaded substrate. Substrate clusters will be generated when a new substrate type is received in the job queue.



Tap the name of the job to see all the job details, including information about status, pages, copies, total, and preview.




In an active queue, the job you are printing appears in the middle of the queue, with printed jobs below and jobs to be printed above. You can scroll up and down. Once scrolled, the queue remains static and does not move automatically.

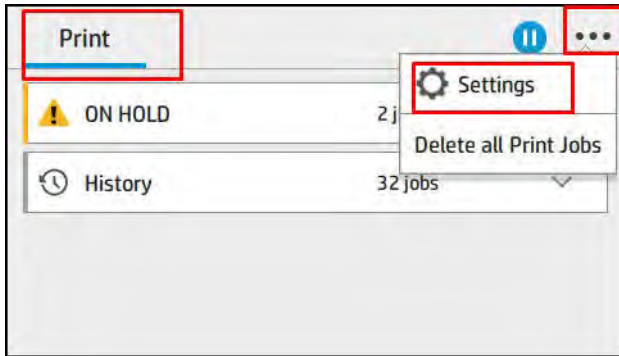
Jobs in the left pane are divided into four categories:

- 1. Loaded substrate.** This cluster is visible only when a substrate has been loaded. It is present even when there are no jobs assigned to it. It can contain four types of subclusters that will be present only when containing jobs. They are shown in the following order (from top to bottom):
 - a. Now printing
 - b. Up next
 - c. Nesting
 - d. On hold
- 2. Not loaded substrate.** This cluster is visible only when a job whose substrate is not loaded is sent to the job queue. The job queue can have as many “Not loaded substrate” clusters as there are jobs with a different substrate than the loaded one. Clusters of this type are ordered alphabetically.



3. **Undefined substrate.** This cluster is visible only when there are one or more jobs whose substrate is undefined.
4. **History.** This cluster, which is always visible, contains jobs that have been previously present in other clusters.

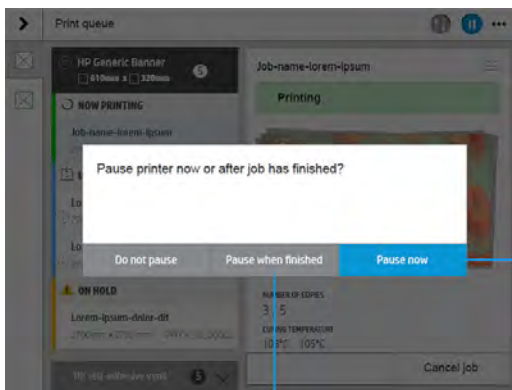
Job queue settings

Some of the actions in the job queue are determined by the settings selected. Some default settings may be worth changing, depending on your environment. To do so, tap  on the home screen, then **Job management**. Alternatively, in the job queue app, tap **...** at the top right, then **Settings**.

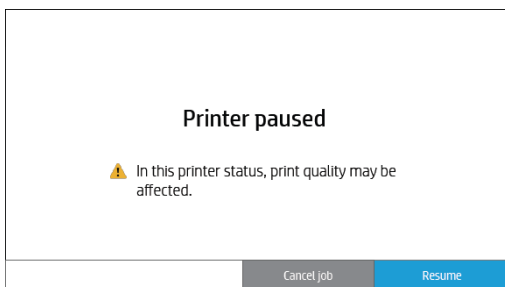


Pause the job queue

You can pause the job queue by tapping  and resume by tapping . There are two possibilities: you can pause the printer while it is printing a job, or in between jobs.



If you pause a job while it is printing, you can resume or cancel it later.

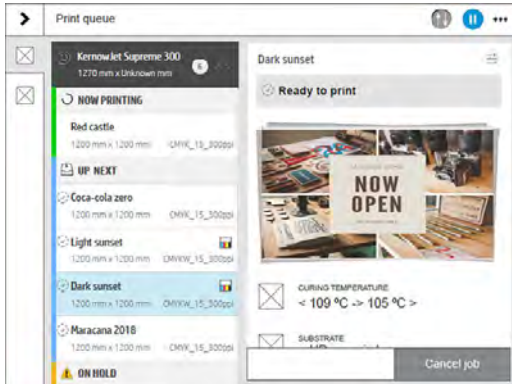


Reprint

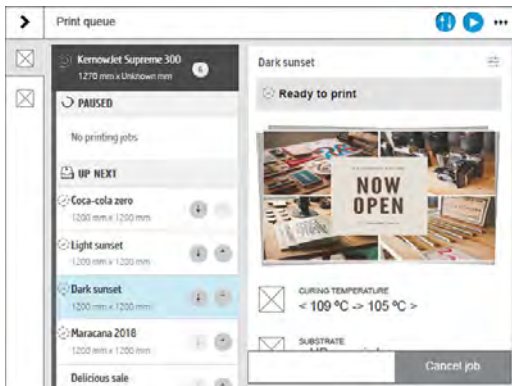
In the History section, tap the job you want to reprint. On the details screen, tap the **Printer** button. On the next screen, you can select the number of copies, the source, and the destination.

Reorder jobs


You can change the position of a job in the job queue to decide when a job will be printed. On the front panel, tap




On the next screen, you can reorder your jobs.



Select when to print a job

You can select at what point you want to print a job in the queue. Tap  then **Job management > When to start printing**.


 **NOTE:** These options cannot be used with PostScript jobs.

You can select from three options:

- **After processing:** The printer waits until the whole page has been processed, then starts to print. This is the slowest option, but ensures the best print quality in large or complex prints.
- **Immediately:** The printer prints the page as it is processed. This is the fastest option, but the printer may stop halfway through a print to process data. This option is not recommended for complex images with dense color.
- **Optimized:** The printer calculates the best time to begin printing the page. This is the default option, because it is usually the best compromise between the other options.

See job details

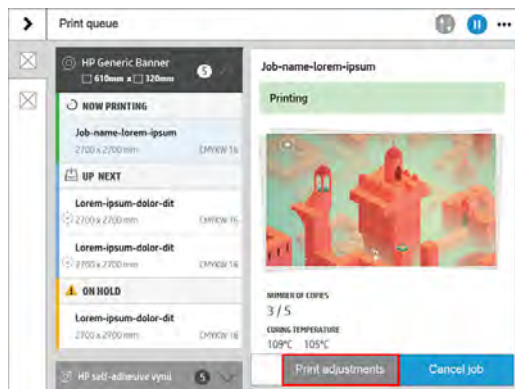
Tap the name of the job to show its details, including information about status, pages, copies, total, and preview. Scroll down as necessary to see all of the information.

By tapping the thumbnail, you can navigate over all pages of the job. Tap  to show or hide the toolbar. From there you can zoom in and out and see more information about each page.

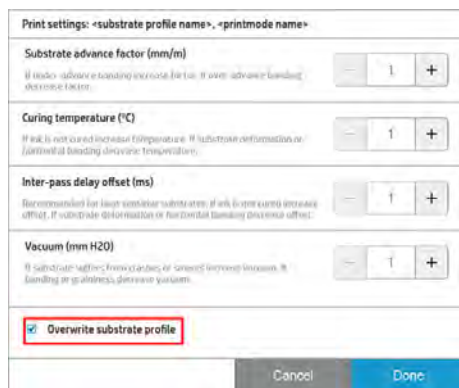
In an active queue, the job you are printing appears in the middle of the queue, with printed jobs below and jobs to be printed above.

Adjust print settings

You can change some print settings while a job is printing. Select the job, and tap **Print adjustments**.



The following print settings can be edited while printing. The changes will be overwritten in the profile when selecting **Overwrite substrate profile**.




Job queue options

To change the job queue options, tap , then **Job management > Job queue**.

You can select the maximum number of printed jobs to have in the queue, when to delete printed jobs, and whether to delete jobs on hold after a specified time.

Default printing preferences

To define the default properties of jobs sent to your printer from remote locations, tap , then **Default printing configuration**.

You can define settings in the following areas: **Print quality, Color, Paper, Margins, HP-GL/2, PostScript, Print retrieval**.

Job deletion

If the printer runs out of storage space for new jobs, the oldest printed jobs are automatically deleted from the queue.

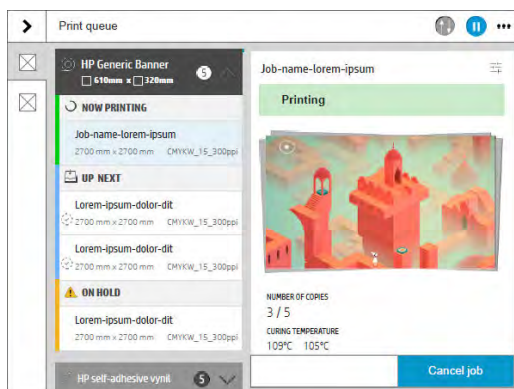
You can request that printed jobs should be automatically deleted from the queue when the total number of printed jobs exceeds a specified limit (the maximum number in the history setting), or when the jobs were printed more than a specified time ago (clear history settings).

To delete jobs on hold, the setting **Delete jobs on hold** allows you to define the time after which these jobs will be removed (2–48 h).

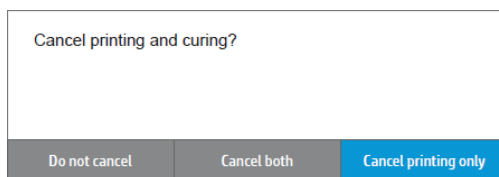
To delete a job manually, select the job and tap **Delete** in the **⋮** menu. To delete all jobs, tap **Delete all jobs** in the **⋮** menu; the whole job queue will be deleted.

The **Delete** option deletes the job from the queue, while the **Cancel** option cancels the job but leaves it in the queue, marked as **Canceled by the user** in the history category.

To cancel a job while printing, tap **Cancel job**.



Then you can decide whether you want to cancel printing only, or both printing and curing.



To cancel a job from the **UP NEXT** category, tap the job name on the list and then tap **Cancel job** at the bottom right.

6 Retrieving printer usage information

- [Get printer accounting information](#)
- [Check usage from PrintOS PrintBeat](#)
- [Check usage statistics for a job](#)
- [Check cost assignment](#)

Get printer accounting information

There are different ways of getting accounting information from your printer.

- View printer usage statistics for the whole lifetime of the printer, see [Check usage from PrintOS PrintBeat on page 114](#).
- View ink and paper usage for each of your recent jobs, see [Check usage statistics for a job on page 114](#).
- Use a third-party application to request printer status, printer usage, or job accounting data from the printer through the Internet. The printer provides data in XML to the application whenever requested. HP provides a Software Development Kit to facilitate the development of such applications.

Check usage from PrintOS PrintBeat

From PrintOS PrintBeat, you can remotely monitor your print production, accessing and downloading data to take decisions with accurate and up-to-date information.

1. Ensure that your printer is registered with PrintOS (see [HP PrintOS on page 27](#)).
2. Access PrintOS at <http://www.printos.com> or by using the PrintOS Mobile App.
3. Enter your credentials.
4. Enter the applications menu and select **PrintBeat**.
5. Select **Historical reports** to access information on the following subjects:
 - Print production
 - Printer status
 - Printer availability
 - Substrate consumption
 - Ink consumption
6. For an overview of printer performance, select the **PrintBeat** tab.

Check usage statistics for a job

1. Ensure that your printer is registered with PrintOS (see [HP PrintOS on page 27](#)).
2. Access PrintOS at <http://www.printos.com> or by using the PrintOS Mobile App.
3. Enter your credentials.
4. Select **Jobs** to access the job history and job details for all your printers.
5. Customize the time frame and deep-dive into the job details.
6. Download the information into a CSV file for easy sharing.

Check cost assignment

1. Ensure that your printer is registered with PrintOS (see [HP PrintOS on page 27](#)).
2. Access PrintOS at <http://www.printos.com> or by using the PrintOS Mobile App..
3. Enter your credentials.
4. Select the **Settings** tab to set your costs.
5. Select **Jobs** to access the job history for all your printers. The costs you have set are automatically assigned to each job.
6. Download the information into a CSV file for easy sharing.

7 Troubleshoot substrate issues

- [Substrate cannot be loaded successfully](#)
- [Substrate is mispositioned](#)
- [Substrate has jammed](#)
- [Substrate is deformed or wrinkled](#)
- [Substrate has shrunk or expanded](#)
- [Substrate has bow deformation](#)
- [Automatic cutter does not work](#)
- [Take-up reel substrate jam](#)


Substrate cannot be loaded successfully

Suggestions

- Reread the loading instructions, and make sure that you are following them. See [Handle the substrate on page 42](#).
- When loading a textile substrate, remember to use the loading accessory, and select **Use loading accessory** in the configuration screen.
- If automatic loading is unsuccessful, try assisted manual loading instead.
- The substrate might be loaded at an angle (skewed or mislocated). Make sure that the right edge of the substrate is aligned with the roll on the input module.
- The substrate might be crumpled or warped, or have irregular edges. See [Substrate is deformed or wrinkled on page 118](#).
- If the substrate jams in the substrate path to the platen, the leading edge of the substrate might not be straight or clean. Remove the initial 2 cm (1 in) of substrate from the roll and try again. This might be necessary even with a new roll of substrate.

Substrate is mispositioned

If the front panel indicates that the substrate is mispositioned, proceed as follows:

1. Tap , then **Substrate > Release substrate**.
2. Feed the substrate until it hangs in front of the printer, and align the right edge with the input roll.
3. Tap **OK**.

Substrate has jammed

When a jam occurs, a message usually appears in the front panel, with one of several error codes (see [System error codes on page 238](#)).

If you are trying to load a very thin or very thick substrate, or a textile, remember to follow the special procedure for loading such substrates. See [Loading accessory on page 65](#).

 **TIP:** HP recommends not leaving the substrate loaded when the printer will not be in use for a long period of time, such as overnight or at weekends. Substrate left loaded may become deformed, causing problems such as printhead crashes.

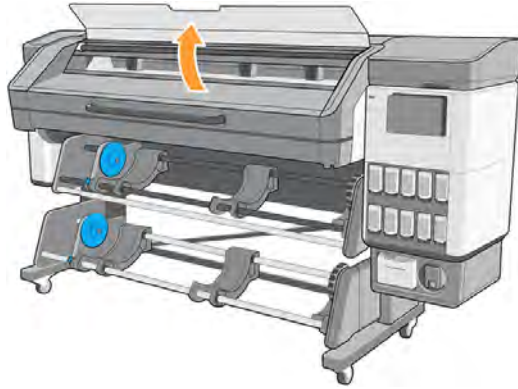
Check the substrate path

This problem can occur when a roll has finished and the end of the roll is stuck to the cardboard core. If this has happened, cut the end of the roll away from the core. Then feed the substrate through the printer, and load a new roll.

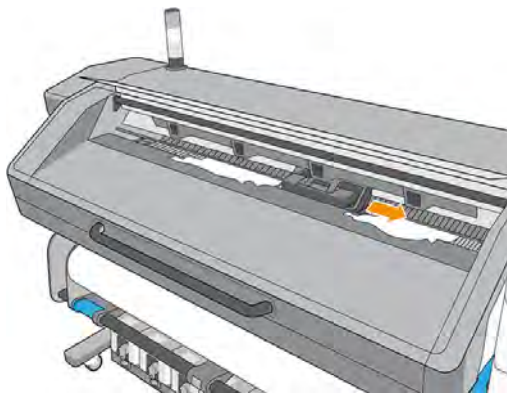
Otherwise:

1. Turn off the printer at the front panel, then also switch off the power switch at the rear.

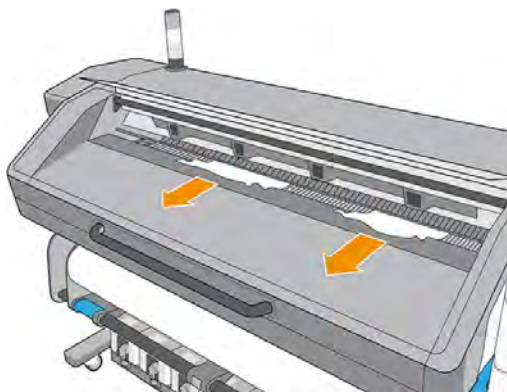
2. Open the printer window.



3. Cut the substrate where it enters the printer, and rewind the input roll.
4. Try to move the printhead carriage out of the way.



5. Carefully remove as much as possible of the jammed substrate from the top of the printer. Cut the substrate if necessary. The pinchwheels should have lifted to simplify clearing the jam. If this has not happened, restart the printer with the window open to force the pinchwheel movement and the release of the substrate.



⚠ CAUTION: Try to avoid pulling the substrate out through the input path, because this reverses the normal direction of movement, and could damage printer parts.

⚠ WARNING! Do not touch the printer's curing enclosure, which could be hot.



6. Make sure that there are no pieces of substrate left in the printer. In particular, check in and under the curing module, and in the substrate path.
7. Close the window.
8. Turn on the printer.
9. Reload the roll.
10. If some substrate continues to cause an obstruction within the printer, it can often be cleared by loading a rigid substrate type into the printer.
11. If you find that you have print-quality problems after a jam, try realigning the printheads. See [Align the printheads on page 153](#).

Avoiding substrate jams while printing

Substrate jams may be caused by loading the substrate with too much skew: do not ignore the warning message that appears during the loading procedure in this case.

They may also be caused by not enough vacuum suction in the printing zone. If you decide to increase the suction, do not exceed the following limits: 20 mmH₂O for banners and 50 mmH₂O for other substrate families.

If you experience jams only at the beginning of a print, try the following suggestions:

- Disable the automatic cutter.
- Increase the vacuum level in steps of 10 mmH₂O. Do not exceed the following limits: 20 mmH₂O for banners, 50 mmH₂O for vinyl and films, and 80 mmH₂O for other substrate families.
- Increase the number of passes.
- Make sure that the substrate is stored in the same room in which the printer is located.
- Try using the substrate edge holders if the sides of the substrate are lifting.
- Make sure the curing door is open while loading. See [Load a roll into the printer on page 51](#).

When starting to print, ensure that the curing door remains open until the substrate is out of the curing module or the take-up reel is connected, except:

- For certain substrates that are able to leave the curing zone successfully.
- When the take-up reel is connected before printing.

Substrate is deformed or wrinkled

If your substrate is deformed or wrinkled by the curing process, change the temperature settings before printing the next job, and advance the substrate, using the **Move substrate** option in the front panel's **Substrate** menu, so that the next job will be printed on undamaged substrate.

If the problem appears only at the beginning of the print, try the following suggestions:

- Disable the automatic cutter.
- Increase the vacuum level in steps of 10 mmH₂O. Do not exceed the following limits: 20 mmH₂O for banners, 50 mmH₂O for vinyl and films, and 80 mmH₂O for other substrate families.

- Increase the number of passes.
- Make sure that the substrate is stored in the same room in which the printer is located.

Substrate has shrunk or expanded

During the printing process, some substrates may shrink, while others may expand. If this happens, the dimensions of the print will not be correct.

As a general rule, you can expect the following percentages of shrinkage:

- Banners: less than 0.3%
- Self-adhesive vinyls: less than 0.2%
- Papers: expansion less than 0.3%

The framing problem may be solved by printing a sample and adjusting the size of the image in the RIP. You may reuse this value for all your future prints with the same substrate, although special care must be taken when using banners, as the shrinkage may vary up to 1% depending on the amount of ink used in the print.

You can expect the following variations from one print to another:

- Banners (6-pass): ± 1 mm/m
- Self-adhesive vinyls: ± 0.5 mm/m
- Non-woven wallpapers: ± 0.8 mm/m
- Woven wallpapers: ± 0.6 mm/m

To solve the tiling problem and improve the repeatability of the printed size, HP recommends ensuring that the substrate-advance sensor is enabled in the RIP's substrate preset, as this will improve the stability of the prints over time. See [How to load the take-up reel for tiling applications on page 84](#).

HP also recommends tiling together areas with similar amounts of ink. If this is not possible, print the areas with different amounts of ink as different jobs and modify the length of the job with less ink in the RIP to match its size with the job with high ink content.

The take-up reel's working force can be changed in the substrate settings.

Substrate has bow deformation

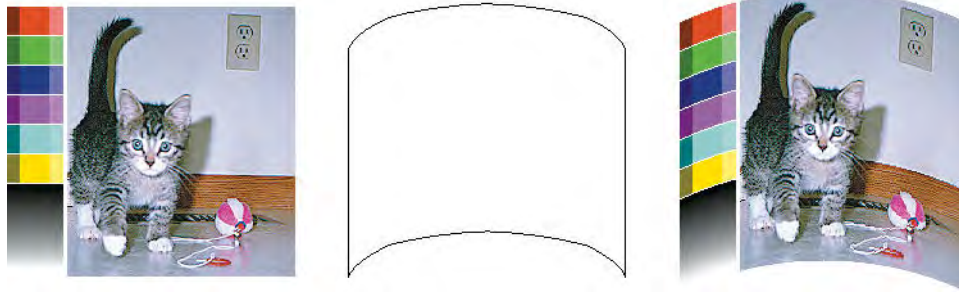
The following substrates may suffer from bow deformation during printing, as a result of which the print will appear curved:

- Self-adhesive vinyl substrates (some specific calendared vinyls only)
- Cellulose-based poster papers with no backing nor coating, including HP Photorealistic

This deformation may be particularly noticeable in the following applications:

- Printing images that will later be cut automatically or manually. When there is bow deformation, cutters that are aligned on the sides may lose alignment in the center.
- Poster printing, if the poster is framed or mounted on a straight surface.

The example below shows an original image, the substrate suffering from bow deformation, and the resulting print, also suffering from bow deformation.




You can compensate for this effect and restore the original shape of your image: select a correction value from -6 to +6 in your RIP or in the substrate library. To apply the correction in your RIP, please refer to your RIP documentation.

The chosen value should represent the vertical distance that the centre of the substrate has moved with respect to the left and right edges. If the deformation moves the center of the substrate in the direction of substrate advance, the correction value should be negative; if in the reverse direction, the correction value should be positive. In practice, the required correction value is normally negative.

TIP: You can use the diagnostic image provided in <http://IPaddress/hp/device/webAccess/diagnostic/StraightnessOptimizationPlot.pdf> (where *IPaddress* is the IP address of your printer) to help you to determine the correct value to apply.

Automatic cutter does not work

The automatic cutter is turned off in either of the following cases:

- When it has been manually disabled from the RIP or from the front panel. To disable the cutter from the front panel, tap , then **Output options > Cutter > Horizontal cutter**.
- When the take-up reel is enabled.

Take-up reel substrate jam

If the substrate is severely damaged on the take-up reel, do not use the printer's cutter to cut and remove the substrate. Instead, cut the substrate manually as close as possible to the curing output, then remove the roll.

If the problem remains after removing the substrate jam, unload the take-up reel from the front panel and load it again.

8 Troubleshoot print-quality issues

- [General printing advice](#)
- [Optimize print quality](#)
- [Improve print quality](#)
- [Most-common print-quality problems](#)

General printing advice

Use the following approach when you have any print-quality problem:

- Ensure that the substrate type that you select on the front panel, and in your RIP software, is the same as the substrate type that is loaded in the printer. Make sure that the substrate type has been calibrated (including substrate-advance calibration, printhead alignment, and color calibration).

⚠ CAUTION: If you have the wrong substrate type selected, you could experience poor print quality and incorrect colors, and perhaps even damage to the printheads.

- Ensure that you are using the correct substrate preset for your substrate, with the correct ICC profile, or that you have followed the correct procedure to generate a new substrate preset (see [Add a new substrate preset on page 95](#)).
- Ensure that you are using appropriate print-quality settings in your RIP software.
- Ensure that your environmental conditions (temperature, humidity) are in the recommended range. See [Environmental specifications on page 243](#).
- Ensure that you shake your ink cartridges before installing them. See [Replace a 1 liter Eco-Carton ink cartridge on page 143](#) or [Replace a 3 liter Eco-Carton ink cartridge on page 151](#).
- Ensure that your ink cartridges have not passed their expiration dates. See [Maintain the Eco-Carton ink cartridges on page 143](#).
- Avoid touching the substrate while printing is in progress.
- Printing jobs with a lot of ink in fast modes (commonly 6 passes or below) may result in not-completely-dry output and/or other print-quality problems. Consider using modes with higher passes when printing with a lot of ink, or increase the curing temperature. Note that increasing the curing temperature may deform your substrate (see [Substrate is deformed or wrinkled on page 118](#)).

If these basic checks do not solve your problem, there is more specific advice in the table below.

NOTE: This table takes into account issues that were not solved by doing the basic checks.

Recommendations before printing:

- Copy from a generic or download from PrintOS Media Solution Locator
- Perform a color calibration (LUC)

Basic checks:

- ✓ Printhead nozzle health
- ✓ Printhead alignment
- ✓ Substrate advance
- ✓ Correct substrate load

↑ Increasing setting affects the print-quality issue positively
↓ Decreasing setting affects the print-quality issue positively
↻ Tweak this knob to troubleshoot

Changing the setting excessively could provoke another print-quality defect


- Smears/bleeds
- Substrate odorless
- RB streaks
- (Turbidity)
- Horizontal banding
- Coalescence issues
- Advance issues
- Vertical banding

Follow the troubleshooting order given by the numbers

Steps	Horizontal banding		Vertical banding	Grain	Text/line quality	Bleed	Print not cured	Smears		White-ink issues		Durability	
	Dark to light zone banding	Gloss banding						From curing	From carriage	DC halo	UF vertical banding	WTCM	Wet
Passes	18 For SAV: don't forget the 8p uni	1 ↑	4 ↑	2 ↑			3 ↑	5 ↑	6 ↑		2 ↑		
Ink density	10% (if you decrease ink density, decrease curing temperature)	2 ↓	1 ↓	3 ↓			4 ↓	4 ↓	5 ↓		3. White % ↓		
Optimizer	3%	3 ☹		1 ☹	1 ☹	1 ↑							
OP level in color edges	1 drop				2 ↑	3 ↑							
OP offset in color edges	1 pixel				2 ↑	3 ↑							
Overcoat	0.5 dpp		1 ☹							2 ↓			1 ↑
Curing temperature	2°C		2 ↑	3 ↑			1 ↑	2 ↓	3 ↓			2 ↓	1 ↑
Inter-s swath delay	50 ms (if you add inter-s swath delay, decrease curing temperature)						2 ↑	3 ↑	4 ↑		1 ↑		
Vacuum	5 mm H ₂ O for ± 30 range 10 mm H ₂ O for >30 range		2 ↓		3 ↓				2 ↑				
Print-zone temperature	2°C		3 ↑			2 ↑					4 ↑		
Print-zone airflow	50 cm/s		3 ↑										
Input tension	• 6 for general substrates • 8 or 10 for thin substrates if it wrinkles • 0 for textile backfills that stick to the roll												
Output tension	• 4 for general substrates • 8 or 12 for very rigid substrates							1 ↑					
Extra info	For self-adhesive vinyl, check for alternative substrate and the 8p uni print mode For whites, increase passes (same)			4. Check substrate quality/laging	4 -Split bars -Relayout -Change printhead	For white, increase passes (same density, higher passes)	5. Curing module issue	From pinches: 1. Set extra top margin, 2. Put out of curing, 3. Attach to TUR.	1. Use TUR.	1. Use transparent (SAV or PET) generic preset.	1. Smart choice	Alternative substrate Cleaners: 1. Use only water and low concentration soap. 2. Wait 24 h before cleaning.	3. Lamination (OC=0)

Optimize print quality

This application can help you to adjust the printer when it is not performing as expected.

You can start the application by tapping  on the front panel. It has various sections with different purposes:

- Generic solutions that readjust the printer. Each generic solution is a set of actions launched all in one.
- All available test plots that can be run.
- Maintenance routines for various printer assets.
- A list of possible actions that can help to solve the potential printing problem when the printer is wrongly adjusted.

The following calibrations are available:


- **Printhead cleaning** prevents or responds to small print-quality degradations. This option cleans all printheads: you cannot select specific printheads for cleaning.
- **Automatic printhead alignment** automatically fine-tunes the overlap between printhead printing areas. It is recommended for opaque substrates.
- **Color calibration** helps to maintain color consistency between different prints on the same substrate type.
- **Substrate-advance calibration** corrects repetitive lighter or darker bands on printed output.
- **Printhead hard cleaning** can put an end to severe print-quality degradations. You can select specific printheads for cleaning.

The following test plots are available:

- Print the **Printhead status plot** to check nozzle status.
- Print the **Alignment status plot** to identify defective lines.

Improve print quality

If you still experience print-quality problems after using [Optimize print quality on page 123](#), you can follow a more hands-on print-quality troubleshooting procedure, by printing, interpreting, and performing corrective actions. See the flowchart for full details of the recommended process.

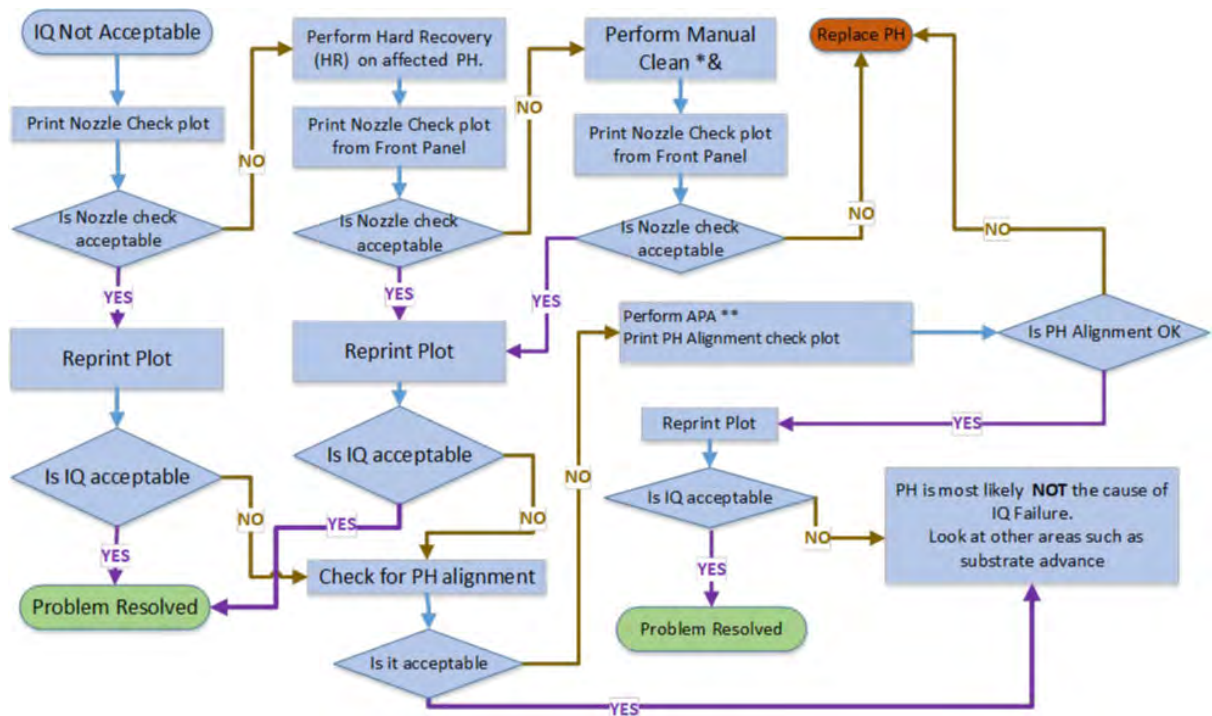
1. Print the printhead status plot: see [Printhead status plot on page 124](#).
2. If nozzle health seems poor (defects in area fills, many nozzles not working), go to the front panel and tap , then **Advanced calibrations** > **Printhead hard cleaning** > **Continue**, and select the printhead(s) to be cleaned. You can do this twice, but no more than twice.

As a last resort, you can clean a printhead manually with a soft, fiber-free cloth dampened with de-ionized water. Clean gently, with minimal pressure.

3. Reprint the printhead status plot. If nozzle health still seems poor, replace the faulty printhead(s).
4. If nozzle health now seems good, but your own prints still have quality defects, check the printhead alignment: see [Alignment status plot on page 125](#).

5. Check the weight of your printheads. If a color printhead is below 54 g, or a white printhead is below 57 g, replace the printhead.
6. If nozzle health and printhead alignment both seem good, and the printheads are not underweight, but your own prints still have quality defects, the problem is probably not caused by the printheads. Check the substrate advance: see [Substrate-advance calibration plot on page 126](#).

The flowchart below shows the process in more detail.



*& As a last resort, you can clean a printhead manually with a soft, fiber-free cloth dampened with de-ionized water. Clean gently, with minimal pressure.

** Manual alignment only if the substrate does not support automatic printhead alignment (APA).

For white printheads, the recovery will be performed on one or both depending on the type of print:


- UF prints: HR on W2
- OF prints: HR on W1
- Spot mode: Both W1 and W2

Acceptable nozzle check

- This is not easily quantifiable. A printhead can still give good print quality with many nozzles out.
- Check the area fills for banding lines.

Printhead status plot


The printhead status plot consists of patterns that are designed to highlight printhead reliability problems. It helps to determine whether any printhead is experiencing clogging or other problems.

To print this plot, go to the front panel and tap , then **...**, then **Printhead status plot**. Vinyl, preferably gloss at least 24 inches wide, is recommended for maximum visibility. Other substrate types may not show enough detail to see the optimizer dashes clearly.

The plot consists of area fills (filled rectangles in each color), followed by small dashes, one for each nozzle on each printhead.



For each individual colored pattern, check that most of the dashes are present. If the first area fills have banding, compare with the respective color in dashes below.



 **IMPORTANT:** Nozzle health is not normally perfect, and does not need to be perfect: the printer is designed to perform well with some nozzles not functioning. However, if many nozzles are not functioning, you may start to see visible defects in the area fills and in your prints.

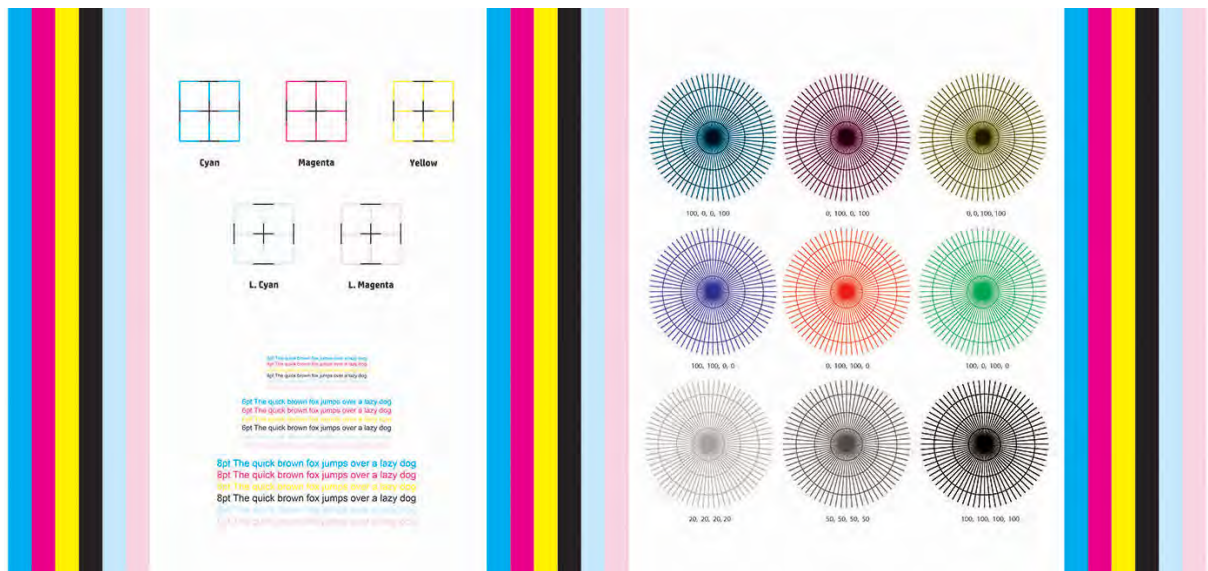
Corrective action

1. Clean any faulty printheads. See [Clean the printheads on page 176](#). Then reprint the printhead status plot to see whether the problem has been solved.
2. If the problem persists, clean the printheads again, and reprint the printhead status plot to see whether the problem has been solved.
3. If the problem continues to persist, replace any persistently faulty printheads. See [Replace a printhead on page 155](#).

Alignment status plot

To print the printhead alignment status plot:

1. Use the same substrate type that you were using when you detected a problem. Or consider using vinyl gloss substrate for better visibility of the optimizer in particular.
2. Go to the front panel and tap , then , then **Alignment status plot**.



Check the continuity of the thin diagnostic lines on the alignment status plot. In one section, colored lines are printed in line with black lines to test the alignment from one color to another. In another section, there is a block containing text to check the alignment between the reverse and forward pass of a primary color.

The optimizer fluid is transparent and cannot usually be seen directly. The fluid can be seen on some substrates (such as self-adhesive vinyl) when printed in conjunction with the colored inks. The cross pattern that is printed above the reference scale is printed in this way and can be used to evaluate the alignment of the optimizer on some substrates. In a well-aligned system, the light-colored cross at the center of the pattern will be aligned with the four black lines at the sides of the pattern.


If the printheads are misaligned or you feel unsure about them—for example, because a substrate crash occurred—then align the printheads. See [Align the printheads on page 153](#).

Substrate-advance calibration plot

To fine-tune the quality of your print, you may need to adjust the rate at which the substrate advances. The substrate advance determines the placement of dots on the substrate. If the substrate is not advanced correctly, light or dark bands appear in the printed image and the grain in the print may increase.

You can modify the substrate advance from the RIP or front panel with the substrate-advance parameter in the substrate preset.


To print the substrate-advance check plot:

1. Use the same substrate type that you were using when you detected a problem.
2. Check that the selected substrate type is the same as the substrate type that is loaded into the printer.
3. Go to the front panel and tap .

The substrate-advance check plot consists of several columns with a number at the bottom of each one. Locate the lightest of the columns and enter its number into the Substrate Advance parameter for each print mode of the current substrate preset.

Two plots are printed horizontally next to each other. The one on the right uses less ink and is optimized for substrate families such as papers and polypropylenes. The one on the left is optimized for vinyls and similar substrate families.



 **NOTE:** Minor substrate-advance inaccuracies (± 2 around the 0 value) are unlikely to result in any print-quality problem, especially with print modes of more than 8 passes.

Substrate advance adjustment while printing

If you are using no more than six passes, you can fine-tune the substrate advance while printing: tap , then

Adjustments > Adjust substrate advance. Select a value of change from -10 mm/m to $+10$ mm/m (or mils/inch). To correct light banding, decrease the value. To correct dark banding, increase the value.

If you are using eight passes or more, a wrong advance adjustment will not produce banding but graininess, which is harder to assess visually. Therefore, in this case you are recommended to use only the adjustment plot.

When you have chosen a value and tapped **OK**, the rest of your job will be printed with that value, but it will be reset to zero at the end of the job. Add the value found to the Substrate Advance value in the preset to print all future jobs with the new setting.

What to do if problems persist

If you still experience print-quality problems after applying the advice in this chapter, here are some additional tips to consider:

- Try [Full calibration on page 104](#).
- Try selecting a higher print-quality option in your RIP software, by increasing the number of passes.
- Check that your printer firmware is up to date. See [Firmware update on page 225](#).
- Check that you have the correct settings in your software program.
- Call your service representative. See [When you need help on page 40](#).

Most-common print-quality problems

Graininess



A print is said to be grainy when it contains perceptible grain, giving it a mottled appearance.

If you see this kind of problem:

- Check the nozzle health of all printheads, including those for transparent inks.
 - Print the printhead status plot. See [Printhead status plot on page 124](#).
 - If necessary, clean the printheads. See [Clean the printheads on page 176](#).
 - Sometimes a single cleaning action may not be enough. Reprint the status plot and consider cleaning again.
- The printheads may be misaligned. This is likely if you have not aligned the printheads for a long time, or if there has been a substrate jam. Align the printheads if necessary (see [Align the printheads on page 153](#)). You can check whether it is necessary by using the printhead alignment status plot (see [Alignment status plot on page 125](#)).
- Graininess may be attributable to substrate-advance problems. Try fine-tuning the substrate advance; see [Substrate-advance calibration plot on page 126](#).
- In particular, if you are printing with eight or more passes, the substrate advance may need fine adjustment. See [Substrate-advance calibration plot on page 126](#).
- If the problem persists, you can decrease the ink density, and modify the optimizer level in the advanced substrate settings.
- Some vinyl and banner rolls may have a defective coating (perhaps caused by age), which can cause uneven and grainy area fills, especially when printing with too few passes. Try the following solutions:
 - Go to your substrate library on the front panel or in your RIP. Select your print mode and increase the amount of optimizer in the the advanced settings. See [Add a new substrate preset on page 95](#).
 - Clean the optimizer printhead.
 - Use the wiper roller accessory (see [Wiper roller on page 84](#)).

If these suggestions do not solve your problem, consider changing to another roll.

Horizontal banding



Try the following remedies if your printed image suffers from added horizontal lines as shown (the color may vary):

- If you are using a print mode with six or fewer passes, try increasing the number of passes. Some degree of banding can be expected with few passes.
- If bands affect all colors across the width of the printed image, the cause is probably a substrate-advance problem. Use the front panel to adjust the substrate advance on the fly (see [Substrate advance adjustment while printing on page 127](#)). If you have dark bands, increase the substrate advance; if you have light bands, decrease it. When you find the right adjustment, store the value in the front panel for future prints on the same substrate.

Another cause could be a fiber attached to one of the printheads. Turn off the printer, then remove the printheads one at a time and remove any fibers that you see attached to them.


- If bands affect only some colors, the cause could be a defective printhead.
 - Check the banding in area fills; if you can identify the defective printhead, clean it. See [Clean the printheads on page 176](#).
 - Print the printhead status plot (see [Printhead status plot on page 124](#)). If necessary, clean the printheads. See [Clean the printheads on page 176](#).
 - Sometimes a single cleaning action may not completely clean every nozzle. Print the status plot and consider cleaning again.
 - Align the printheads (see [Align the printheads on page 153](#)). If necessary, align them manually.
 - Print the printhead status plot again. Identify the printhead with the greatest number of blocked nozzles, and replace it.
- If bands affect most of the colors, the printheads could be misaligned. This is likely if you have not aligned the printheads for a long time, or if there has been a substrate jam. Align the printheads if necessary (see [Align the printheads on page 153](#)). You can check whether it is necessary by printing the printhead alignment status plot (see [Alignment status plot on page 125](#)).
- Due to the printhead servicing routines while printing, some fibers or small amounts of ink may be deposited on a nozzle, causing it to fail temporarily. This is very unlikely and may just cause a couple of isolated bands. It is also very unlikely for this to be repeated within the same or subsequent print jobs. However, if you notice it, try cleaning the printheads (see [Clean the printheads on page 176](#)).

If the problem persists, call your service representative (see [When you need help on page 40](#)).

Vertical banding



Different kinds of vertical bands may appear, for different reasons:

- Regular vertical bands matching the shape of the platen may be seen on paper-based substrates and in general on thin substrates in medium-density area fills such as grays or violets. Try the following suggestions to mitigate this problem:
 - Align the printheads. See [Align the printheads on page 153](#).
 - Reduce the vacuum level in steps of 5 mmH₂O when printing on vinyl. Do not exceed the lower limit of 10 mmH₂O for vinyls or 25 mmH₂O for papers to avoid crashes and/or smears. Consider using the substrate edge holders to avoid lateral crashes. See [Edge holders on page 73](#).
 - Consider using the take-up reel, for better control of the substrate.
 - This kind of banding is less visible when the printer is stable at high temperature (after more than half an hour of continuous printing). You can help to avoid visible banding by modifying the printing queue so that vulnerable or important prints are printed later; or by pre-warming the printer by using the option available in your RIP.
- Thin vertical dark bands, typically seen in the first 150–200 mm of the print in high-density area fills or in backlit applications
 - Reduce the ink quantity if possible.
 - Disable the cutter and advance the substrate manually about 100–150 mm before the first print.
 - When using backlit and synthetic substrates, decrease the vacuum level to values around 5–15, depending on the substrate thickness. More vacuum is normally applied to thick substrates and less to thin substrates.
 - Increase the number of passes.
 - If applicable, use the RIP to group jobs together, so that printer temperatures remain more stable between jobs.
- Thick vertical band not coinciding with the shape of the platen; can be seen on vinyl or backlit substrates with dense area fills such as green or orange
 - Tap , then **Image quality maintenance** > **Printzone airflow**, and change the option from **High** (default) to **Low**. Graininess level may increase with the **Low** option, so you are recommended to revert to **High** when finishing the job.
- Irregular or isolated vertical bands with abnormal levels of graininess

- Increase the vacuum level in steps of 5 mmH₂O. Do not exceed the following limits: 20 mmH₂O for banners and 50 mmH₂O for other substrate families.
- In backlit applications, increase the number of passes to 20, maintaining the vacuum level below 20 mmH₂O.
- If the banding appears only at the beginning of the print, disable the cutter and advance the substrate manually about 100–150 mm before the first print.
- If the problem persists, check that all platens are well installed, and that they are all level with each other.

Color variation and text-line correction

If some printhead nozzles are in use while others in the same printhead are not, water evaporates slowly from the ink in the unused nozzles, making the color more intense. Thus, in such cases you may notice variations in color intensity in areas where the color of the image should be constant.



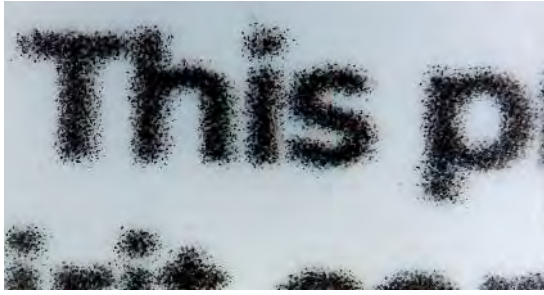
If you notice such a problem, there are various possible solutions.

1. If you notice the variation in intensity near one side of the print, try rotating the image by 90 or 180 degrees before printing. This may solve the problem in some cases, as all the nozzles are refreshed whenever they enter the service station between passes.
2. Use your RIP to add lateral color bars at the sides of the print. The color bars are designed to exercise all the printhead nozzles, to prevent the problem from occurring.

 **NOTE:** Not all RIPs provide this option.



3. Add lateral color bars to the image, manually, before printing. In this case, you can either use the standard colors, or decide to include a particular color in which you have noticed the problem. The recommended width of each color bar is 3 mm.



If text, lines, or light solid areas are rough or blurred, try the following suggestions:

- Check the nozzle health of all printheads, including those for transparent inks.
 - Print the printhead status plot. See [Printhead status plot on page 124](#).
 - If necessary, clean the printheads. See [Clean the printheads on page 176](#).
 - Sometimes a single cleaning action may not be enough. Reprint the status plot and consider cleaning again.
- The printheads may be misaligned. This is likely if you have not aligned the printheads for a long time, or if there has been a substrate jam. Print the printhead alignment status plot (see [Alignment status plot on page 125](#)), and align the printheads if necessary (see [Align the printheads on page 153](#)).
- If the problem persists, you can modify the optimizer level in the advanced substrate settings.
- Water evaporates slowly from the ink in the unused nozzles, so the first drops of ink are ejected with lower velocity. This may happen, for example, in nozzles not used during a whole printed swath, causing the text or lines to be rough or blurred. You are recommended to go through steps 1 to 3 as described above.
- If a light area is close to the edge while printing on a thin substrate, ensure that the substrate is loaded with the substrate edge on a rib of the platen to avoid local blurring. Alternatively, try rotating the image by 90 or 180 degrees so that the affected area is not at the edge of the substrate.

Print is deformed into a curved shape

This may occur as a result of substrate bow deformation. See [Substrate has bow deformation on page 119](#).

Misaligned colors



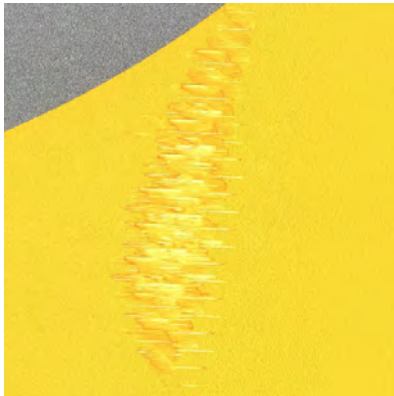
If the colors are misaligned in any direction, the printheads may be misaligned. This is likely if you have not aligned the printheads for a long time, or if there has been a substrate jam. Align the printheads if necessary (see [Align the printheads on page 153](#)). You can check whether it is necessary by printing the printhead alignment status plot (see [Alignment status plot on page 125](#)).

Black areas look hazy

If black areas look hazy or not sufficiently black, try these suggestions:

- Increase the number of passes.
- Laminate the print.
- Substrate presets are designed to achieve consistent and reliable print quality on a broad range of substrates. However, you may want to consider investing in the color management process, using external tools and/or experts, to get specific results.

Ink smears



Ink smears may be seen on the print for the following reasons:

- The substrate is skewed. Do not ignore the warning message that appears during the loading procedure if there is significant skew.
- The substrate is not flat in the print zone. Try the following possible solutions:
 - Increase the vacuum level in steps of 5 mmH₂O.
 - Reduce the curing temperature. You will probably need to increase the number of passes in order to achieve adequate curing.
 - Check whether there are fibers on the printheads.

If the problem appears only at the sides of the print, because the edges are uneven or the substrate is curled upward at the sides, consider using the edge holders (see [Edge holders on page 73](#)).

If the problem appears only at the beginning of the print, try the following suggestions:

- Increase the vacuum level in steps of 5 mmH₂O. Do not exceed the following limits: 20 mmH₂O for banners, 45 mmH₂O for vinyl, and 60 mmH₂O for other substrates. If the vacuum level is too high, you may see an increase in graininess due to too much friction between the rear surface of the substrate and the platen while advancing the substrate during printing; you may also see vertical bands matching the contours of the print platen.
- Decrease the number of passes.
- Make sure that the substrate is stored in the same room in which the printer is located.



NOTE: Several substrates are sensitive to ambient conditions (temperature and humidity): if the ambient conditions are outside the recommended range, this may affect loading and printing.

Bleeding



A small color migration may be observed at the border between different colors. It can also happen at the border between a color and blank substrate (no ink), reducing the sharpness of the shape. On some substrates, a halo can be observed at the border between colors.

Try the following suggestions:

- Check the nozzle health of all printheads, including those for transparent inks.
 - Print the printhead status plot. See [Printhead status plot on page 124](#).
 - If necessary, clean the printheads. See [Clean the printheads on page 176](#).
 - Sometimes a single cleaning action may not be enough. Reprint the status plot and consider cleaning again.
- The printheads may be misaligned. This is likely if you have not aligned the printheads for a long time, or if there has been a substrate jam. Print the printhead alignment status plot (see [Alignment status plot on page 125](#)), and align the printheads if necessary (see [Align the printheads on page 153](#)).
- If the problem persists, you can decrease the ink density, modify the optimizer level, or increase the drying temperature in the advanced substrate settings.

 **NOTE:** Increasing the drying temperature can affect coalescence and other defects.

Uneven appearance in area fill

Subtle color differences may be seen in high-density area fills on some substrates if they are stored partially covered after printing. In the period immediately after printing, such substrates should be stored either totally covered or totally uncovered. It may be advisable to avoid prolonged face-to-face contact between two prints. This problem tends to disappear if the substrate is left uncovered for some time.

Alternatively, especially with vinyls and banners, some individual rolls may have a defective coating; for instance, the coating may have aged. This can cause uneven area fills in light areas. In this case, try using the wiper roller; if that fails, try a new roll.

Ink is oily or smudges when touched

There are various different circumstances in which these symptoms can be seen:

- When the symptoms can be seen only at the start of the first print after the printer has been idle for some time (especially when the start of the print uses a lot of ink)

This may be just a temporary problem: try reprinting, and perhaps slightly reduce the ink limits. It may be worth adjusting the print queue so that the first job is not difficult to cure (uses a lot of ink).

- When the symptoms can be seen only in certain parts of the print that use a lot of ink

Increase the curing temperature, decrease the overall ink quantity, increase the number of passes, and/or modify the inter-pass delay offset (in the RIP or front panel) to allow better drying on consecutive passes.

- When the symptoms appear after reducing the number of passes

Increase the curing temperature, decrease the overall ink quantity, and/or modify the inter-pass delay offset (in the RIP or front panel) to allow better drying on consecutive passes.

- When the oily finish appears minutes or hours after printing

Store the print face-up and uncovered; the effect normally disappears after a while.



NOTE: If you decrease the overall ink quantity, you may notice less color saturation.



TIP: To clean the prints, use only water and low-concentration mild soap solution. Do not use alcohol solvent-based cleaners. Wait 24 hours before cleaning.

You could try using a different substrate, which may have a higher resistance to this effect.

Dimensions of the print are wrong

As the substrate is heated during the curing process, some substrates will shrink (and some may expand) after the image has been printed. This may be inconvenient if the print has to be framed or if several prints are to be tiled one next to the other.

See [Substrate has shrunk or expanded on page 119](#).

Tiling issues

The most common problems when printing tiles are as follows:

- Color variation tile-to-tile

In some cases, contiguous tiles with the same background solid color may show differences in color between the right side of the first tile and the left side of the second tile. This is a common issue of inkjet printers (both thermal inkjet and piezo inkjet), where there are slight color variations as the swath advances.

To improve color consistency side-to-side and tile-to-tile, follow these recommendations:

- Ensure that your environmental conditions are suitable for best print quality. See [Environmental specifications on page 243](#).
- Print on a substrate already attached to the take-up reel.
- Use a print mode with a high number of passes: 8 passes are recommended for tiling mode.
- Use a print mode with a low ink density: the lower the better.
- Avoid printing with a cold printer: print 50 cm no more than 15 minutes before the tiling job. A nozzle health check is enough to warm up the printer.

Since the biggest color differences are between the left edge and the right edge, the effect may sometimes be seen when putting two tiles together. This issue can easily be overcome by inverting alternate tiles, which has the effect of placing the right side of the first tile next to the right side of the second tile and the left side of the second tile next to the left side of the third, so all contiguous areas have been printed in the same point of the swath and, hence, have the same color. This is a feature that all RIPs have available.

- Dimensional variations from tile to tile

Some specific banner substrates may not have uniform dimensional stability when printing very long tiles. The result is that the length of the tile may be different between the left and the right side (for instance, a 9-meter-long tile may be about 1 cm longer on the right than on the left side). While this is not noticeable with individual plots, it affects the alignment between panels in tiling applications. Substrate types that show this behavior tend to show it constantly along the roll. So, when present, this issue can easily be overcome by inverting alternate tiles as described above.

- Length consistency

When using the take-up reel, you can get better length consistency with increased take-up reel working force, although some substrates are sensitive to output tension, and print quality may be affected. You can change the take-up reel working force in the substrate preset, see [Substrate has shrunk or expanded on page 119](#).

- Self-adhesive vinyl usually requires lower output tension.
- Paper may require higher output tension.

Other settings that can affect length consistency:

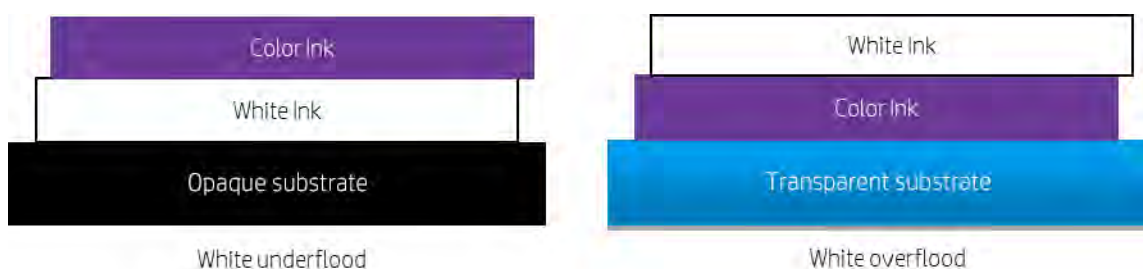
- Temperature: The higher the temperature, the more the substrate tends to deform. If you observe substrate deformation after printing, lowering the temperature can help to reduce the deformation.
- Vacuum: High levels of vacuum can help to control the substrate in the print zone, but when the level is too high it can also affect the substrate advance. Therefore reducing the vacuum can help to improve length consistency. Take into account that, when the take-up reel is used, less vacuum is needed.

- In bidirectional printing, minor differences in tone may be noticed on close inspection

This happens because the drying times are not the same across the scan axis. Adding a small inter-pass delay offset of about 0.5–1 second may give better results.

White-to-color misalignment

This problem is seen only when printing a white layer over or under the color layer.



The problem is that the white layer is not aligned with the color layer, and so some white is seen outside the color image.



Try the following suggestions:

- The printheads may be misaligned. This is likely if you have not aligned the printheads for a long time, or if there has been a substrate jam. Print the printhead alignment status plot (see [Alignment status plot on page 125](#)), and align the printheads if necessary (see [Align the printheads on page 153](#)).
- If the mismatch appears in the direction of substrate advance, the cause is probably a substrate-advance issue. Use the front panel to adjust the substrate advance on the fly (see [Substrate advance adjustment while printing on page 127](#)). If you have dark bands, increase the substrate advance; if you have light bands, decrease it. When you find the right adjustment, store the value in the front panel for future prints on the same substrate.
- If the problem is caused by substrate deformation, try reducing the curing temperature for the most heat-sensitive substrates.
- If the problem persists, you can try various ways of shrinking the white layer:
 - Recommended: Use your RIP's smart choke facility, and try setting it to 3 pixels.
 - Use your RIP's choke facility.
 - Shrink the white layer in your image editor.

 **NOTE:** Shrinking the white layer too much may cause other defects at the edges of the print.

9 Handle the ink system

- [700 series ink system](#)
- [800 series ink system](#)
- [Align the printheads](#)
- [Replace a printhead](#)
- [How to store and ship printheads](#)
- [Replace the maintenance cartridge](#)
- [Printing with white ink \(700W and 800W models only\)](#)

700 series ink system

Eco-Carton ink cartridges

The printer's eight Eco-Carton ink cartridges provide magenta, light magenta, black, yellow, light cyan, cyan, overcoat, and optimizer ink to the printheads. The 700W printer can also use white Eco-Carton ink cartridges.

Each cartridge has a capacity of 1 liter. They are kept on the right side of the printer.



Eco-Carton ink cartridges require no maintenance or cleaning, but must be shaken before installation. High-quality printing results continue throughout the lifespan of the cartridge.

HP Latex Optimizer enables high quality at high speed. HP Latex Optimizer consists of positively-charged (cationic) polymers suspended in a colorless, water-based ink vehicle. It reacts with the ink pigments, which are negatively-charged (anionic), to immobilize them rapidly on the print surface. This produces sharp text and image detail by suppressing feathering and color bleed especially at high productivity levels.

HP Latex Optimizer also enables the drying and curing process of the HP Latex inks to operate at lower temperatures and to be more energy-efficient, which has the additional benefits of allowing wide substrate support and reduced power consumption.

Durable and flexible water-based ink provides high adhesion and outstanding scratch resistance with the new HP Latex Overcoat fluid.

⚠ CAUTION: Observe precautions when handling Eco-Carton ink cartridges because they are ESD-sensitive devices (see [Glossary on page 247](#)). Avoid touching pins, leads, and circuitry.

⚠ CAUTION: Installing a unshaken cartridge may lead to print-quality issues, printhead failure, or ink delivery system malfunction.

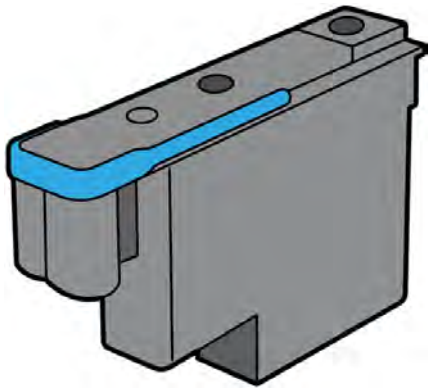
📝 NOTE: Dynamic security enabled printer. Only intended to be used with cartridges using an HP original chip. Cartridges using a non-HP chip may not work, and those that work today may not work in the future. More at: <http://www.hp.com/go/learnaboutsupplies>.

📝 NOTE: This printer is not designed to use continuous ink systems. To resume printing, remove any continuous ink system and install genuine HP (or compatible) Eco-Carton ink cartridges.

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

Printheads

The printheads deposit ink on the substrate.



There are three categories of printheads. When put into the printer for the first time, you can connect each printhead to a slot of the appropriate category:

- **Latex printheads**
- **Optimizer printheads** can be put into optimizer slots only, and can never be swapped to other slots, whether new or used.
- **White-ink printheads** (700W printers only) can be put into white slots only, and can never be swapped to other slots, whether new or used.

TIP: When you insert a printhead into a slot for the first time, HP recommends marking that printhead visibly to identify its position, as the printhead can be removed at any moment for various reasons, but it will only work again if put into the same slot as before.

The printheads are extremely durable and do **not** need to be replaced every time an ink cartridge is replaced.

To maintain optimum print quality, the printheads are automatically tested at regular intervals, and automatically serviced when necessary. This takes a little time and can occasionally delay printing.

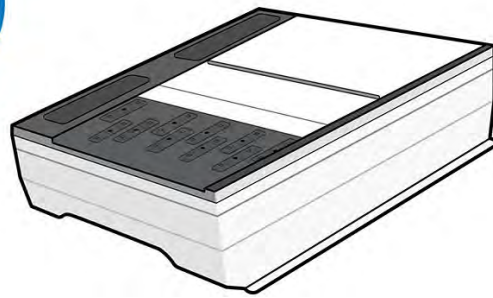
When a printhead eventually needs to be replaced, the front panel will display a message.

CAUTION: Avoid touching pins, leads, and circuitry when handling printheads because these elements are sensitive to electrostatic discharge. Such devices are called ESD-sensitive devices. See [Glossary on page 247](#). Electrostatic discharges are one of the main hazards to electronics products. This type of damage can reduce the life expectancy of the device.

CAUTION: If you want to remove a printhead from the printer and preserve it for later use, wait for the printer to cool down, then reinstall the cap and plug; but never install a clear optimizer cap or white plug on a non-optimizer printhead. Optimizer printheads have clear caps and white plugs, while the other printheads have orange caps and plugs. Installing the wrong cap and plug can cause irrecoverable printhead damage.


Maintenance cartridge

The maintenance cartridge cleans and maintains the printheads, and seals the printheads when they are not in use to prevent them from drying out. It is also used to store waste ink.



 **IMPORTANT:** Keep the maintenance cartridge horizontal when removing it, to avoid spilling ink.

The cartridge contains a roll of cloth, which is used to clean the printheads. You are notified when 92% of the roll has been used, after which the cartridge should continue to function for about another 140 m² (1500 ft²) of printed area. A new roll lasts for about 1850 m² (20000 ft²) of printed area.

 **NOTE:** These figures can vary considerably depending on the image density, the print mode, and the ambient temperature. The cloth will be exhausted much faster with a high-density print, many passes, and a hot environment.

 **NOTE:** The maintenance cartridge is checked to detect end of roll when the printer is turned on and at the end of each print job.

The printer will refuse to start a print job if it detects the end of the cleaning roll. You should then replace the maintenance cartridge with a new one.


Condensation collector

Vapors from high-productivity printing are condensed in the condensation collector for convenient disposal, avoiding uncontrolled condensation on windows, floors, walls, substrate, and so on.



The contents of the condensation collector cannot be dumped down the drain, but should be disposed of in accordance with local regulations and site operation. For further information, see <https://hplatexknowledgecenter.com/applications/wasteprofiles/>.

The condensation collector should be replaced or emptied in the following situations:

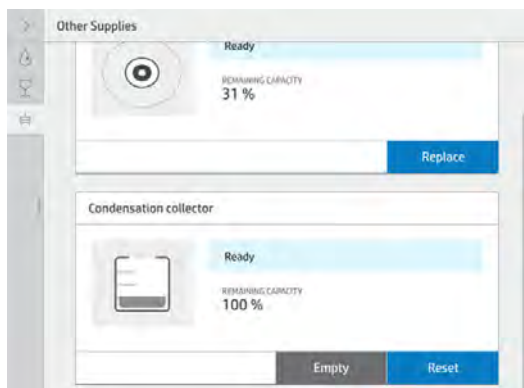
- The printer shows a condensation collector alert on the front panel.
- The condensation collector has reached its capacity: see the level indicator on the collector.

 **NOTE:** The volume of condensation collected may vary depending on usage mode, room temperature, and humidity. This means that the condensation level shown on the front panel may not match the level inside the condensation collector.

Replace or empty the condensation collector


1. At the front panel, tap , then .


2. In the Condensation Collector section, you can see the level of condensation in the collector. Tap the **Empty** button, and the front panel will explain how to proceed.




3. When the collector has been emptied, remember to reset the counter by tapping the **Reset** button.
4. The front panel asks you to confirm that the condensation collector level will be reset. Tap **OK** to confirm.

Safe mode

Under certain conditions, including printer operation outside of environmental specifications, and when a used, refilled, or counterfeit ink cartridge has been detected, the printer will operate in 'safe' mode. HP is unable to warrant the performance of the printing system when operated outside of environmental specifications or when a used, refilled, or counterfeit ink cartridge is installed. Safe mode is designed to protect the printer and the printheads from damage due to unexpected conditions, and is in operation when the  icon is displayed on the front panel. For optimal performance, use Original HP Eco-Carton ink cartridges. HP Latex printing systems, including Original HP inks and printheads, are designed and engineered together to provide uncompromising print quality, consistency, performance, durability, and value—with every print.


 **NOTE:** This printer is not designed to use continuous ink systems. To resume printing, remove the continuous ink system and install genuine HP (or compatible) Eco-Carton ink cartridges.

 **NOTE:** The printer's Eco-Carton ink cartridges are designed to be used until they are empty. Refilling cartridges before they are empty could cause the printer to fail. If this happens, insert a new cartridge (genuine HP or compatible) to continue printing.

Ink system tips

For best results, always follow these guidelines:

- Follow the instructions on the front panel during installation.
- Shake the ink cartridges gently before installing them, or when the ink is depleted.

 **CAUTION:** Installing a unshaken cartridge may lead to print-quality issues, printhead failure, or ink delivery system malfunction.

- Allow the printer and the maintenance cartridge to clean the printheads automatically.
- Avoid unnecessary removal of the ink cartridges and printheads.
- Make sure that you comply with all applicable laws and regulations when disposing of ink system consumables.


Maintain the Eco-Carton ink cartridges


During the normal lifetime of a cartridge, no specific maintenance is required. You should replace a cartridge when it has reached its expiration date. See the ink cartridge information on the front panel for the expiration date.

Replace a 1 liter Eco-Carton ink cartridge

Eco-Carton ink cartridges should be replaced for the following two reasons:


- The ink cartridge is empty or faulty, and you must replace it to continue printing.
- 700W printers only: The ink cartridge is very low and you want to replace it with a full cartridge for unattended printing. You can use the remaining ink in the first cartridge at a more convenient time.

 **NOTE:** 700W printers only: If an ink cartridge runs out of ink while printing, the front panel prompts you to replace the ink cartridge. The printer has an internal tank that allows it to continue printing without pause while a new ink cartridge is inserted. However, if the internal tank is depleted, the job is paused and will resume afterwards. This pause may affect the print quality of the job.

 **CAUTION:** The procedure to remove an ink cartridge must be initiated from the front panel. Do not remove an ink cartridge until the front panel prompts you. If you remove an ink cartridge incorrectly, the printer may subsequently reject that cartridge.

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

CAUTION: Observe precautions when handling ink cartridges because they are ESD-sensitive devices. Avoid touching pins, leads, or circuitry.

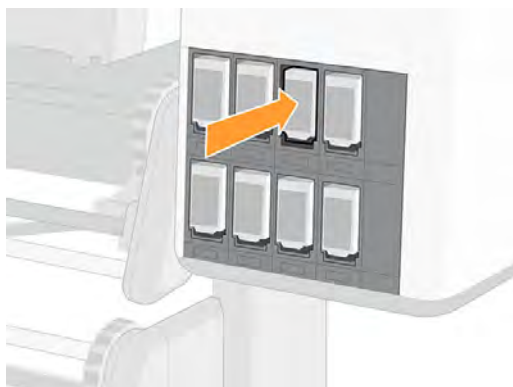
 **WARNING!** Make sure that the printer wheels are locked (the lever is pressed down) to prevent the printer from moving.

Remove an Eco-Carton ink cartridge

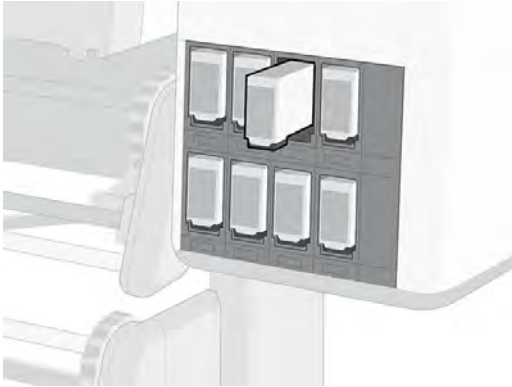
1. On the printer's front panel, tap , then **Replace ink cartridges**.

Alternatively, tap  then **Ink > Replace ink cartridges**.

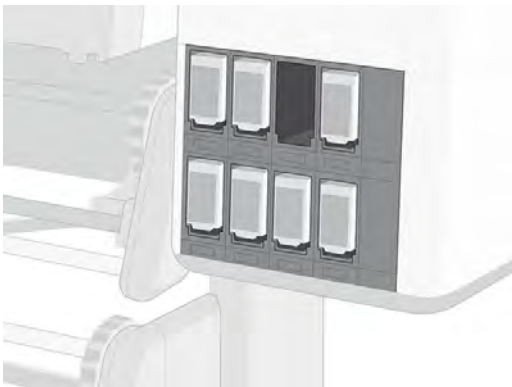
2. Push the cartridge that you want to remove.



3. The cartridge comes out.



4. Remove the cartridge from the printer.

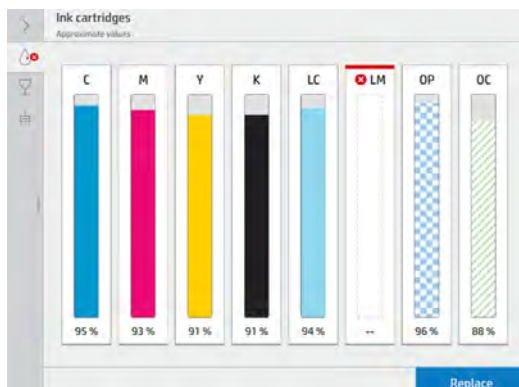


⚠ CAUTION: There is a humidifier that seals the needle of the printer when the ink cartridge is removed. If you notice that the needle is not covered by the humidifier, call your service representative to prevent problems with the ink system.

📝 NOTE: Avoid touching the end of the cartridge that is inserted into the printer, because the connection might be coated with ink.

📝 NOTE: If necessary, store a partially-used ink cartridge in the same position as if it were inserted in the printer.


5. The front panel identifies the missing ink cartridge.

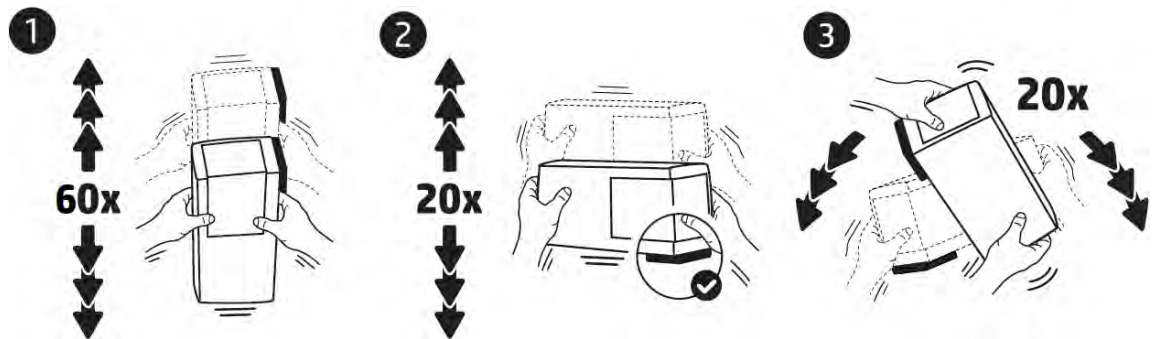


📝 IMPORTANT: 700W printers only: If the white ink cartridge (upper row) is removed while there is still ink in the ink mix container (lower row), the printer will ask you to reinsert the cartridge and wait while the ink is transferred to it. You cannot install a new cartridge until the ink mix container is empty.

Insert an Eco-Carton ink cartridge

1. Pick up the new Eco-Carton ink cartridge and find the label that identifies the ink color. Hold the ink cartridge so that you can see the label at the left and front.
2. Check that the colored label above the empty slot in the printer matches the color of the label on the cartridge.
3. Shake the ink cartridges vigorously before installing them.

 **IMPORTANT:** Before installing a white-ink cartridge, tilt it 100 times as shown below. This should take less than 2 minutes.



 **CAUTION:** Installing an unshaken white-ink cartridge may lead to print-quality issues, printhead failure, or ink delivery system malfunction.

4. Insert the ink cartridge into the correct slot and push it until it locks into position.



5. The front-panel display confirms that all cartridges have been correctly inserted.

Refilled and non-HP ink cartridges



HP recommends that you replace an empty cartridge with a new HP cartridge.

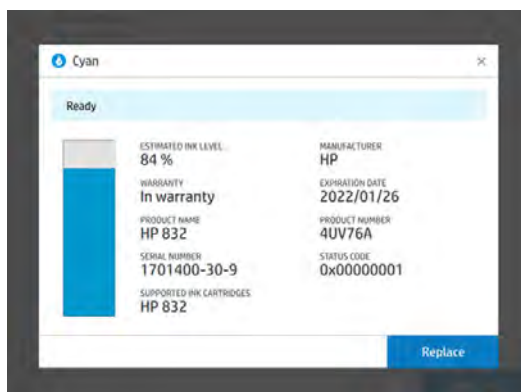
The use of refilled or non-HP ink cartridges has several disadvantages:





- If printer failure or damage is attributable to the use of a non-HP or refilled ink cartridge, HP will charge its standard time and materials charges to service the printer for the particular failure or damage, even if the printer is within its warranty period.
- If failure or damage to printheads, ink cartridges, or other ink supplies is attributable to the use of non-HP, expired or refilled ink cartridge, HP is not responsible for the cost of replacement.
- Print quality may be impaired.
- The printer will be unable to estimate the ink level in the cartridge, and will report it as empty.

If you decide to use refilled or non-HP ink cartridges, you will need to follow these instructions to make the printer use a cartridge that it believes to be empty.

CAUTION: Running completely out of ink can damage the printheads. Damage attributable to printing with empty ink cartridges is not covered under the warranty. Forcing the printer to accept empty cartridges will empty the ink delivery system as well. Once emptied, ink must be used to refill the system and reprime the printhead when a new ink cartridge is installed.

1. Install the cartridge in the printer (see [Replace a 1 liter Eco-Carton ink cartridge on page 143](#)).
2. The front panel will indicate that the cartridge is empty, and the cartridge removal process will start. Tap  to stop this automatic process.
3. You can see the ink levels in your ink cartridges by tapping  on the front panel's home screen.
4. Tap any cartridge to see more detailed information.



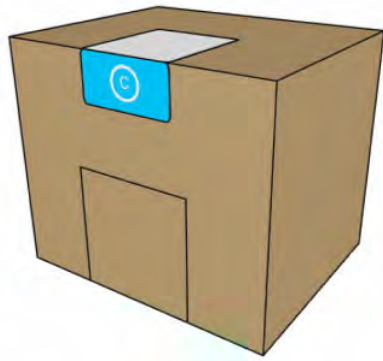
5. On the right-hand side of the front panel, tap the following sequence: , , , . These icons are not illuminated; but, if you tap them successfully, the front panel displays a series of warning messages. In response to each message, tap **Cancel** to cancel the process, or **OK** to confirm that you wish to continue.
6. When you have tapped **OK** in response to all warning messages, the front panel gives the usual ink cartridge status display, but the cartridge is shown as empty with a warning sign.

800 series ink system

Eco-Carton ink cartridges

The printer's seven large Eco-Carton ink cartridges provide magenta, light magenta, black, yellow, light cyan, cyan, and optimizer ink to the printheads. 800W printers can also use white Eco-Carton ink cartridges. Eco-Carton ink cartridges store the ink and are connected to the printheads, which deposit the ink on the substrate.

White cartridges have two connectors because the box contains two bags.



Each cartridge contains 3 liters of HP Latex ink, and consists of a bag within a recyclable cardboard box. The cartridges are kept on a shelf at the bottom of the printer.

HP Latex Optimizer enables high quality at high speed. HP Latex Optimizer consists of positively-charged (cationic) polymers suspended in a colorless, water-based ink vehicle. It reacts with the ink pigments, which are negatively-charged (anionic), to immobilize them rapidly on the print surface. This produces sharp text and image detail by suppressing feathering and color bleed especially at high productivity levels.

HP Latex Optimizer also enables the drying and curing process of the HP Latex inks to operate at lower temperatures and to be more energy-efficient, which has the additional benefits of allowing wide substrate support and reduced power consumption.

Check the regulatory and safety information label on the cartridge to ensure that no special ventilation is needed and no hazardous waste is created.

⚠ CAUTION: Observe precautions when handling ink cartridges because they are ESD-sensitive devices. Avoid touching pins, leads, and circuitry.

Excessive pressure on a cartridge can cause ink leaks. Avoid putting pressure on cartridges while they are connected to the printer. In particular:

- Always disconnect cartridges from the printer before handling them.
- Never place anything heavy—more than 1 kg (2.2 lb)—on top of a cartridge.
- Take care not to drop a cartridge.
- Do not try to force the last of the ink out of an almost-empty cartridge by pressing the ink bag inside the cartridge.

Ink cartridges require no maintenance or cleaning, but you must follow the instructions on the label before installation. High-quality printing results continue even when the ink levels are getting low.

⚠ CAUTION: Non-genuine or altered cartridges are not supported by the printer; if they are detected, printing is stopped.

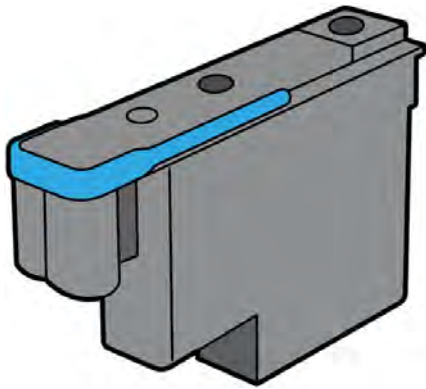
📄 NOTE: Dynamic security enabled printer. Only intended to be used with cartridges using an HP original chip. Cartridges using a non-HP chip may not work, and those that work today may not work in the future. More at: <http://www.hp.com/go/learnaboutsupplies>.

📄 NOTE: This printer is not designed to use continuous ink systems. To resume printing, remove any continuous ink system and install genuine HP (or compatible) Eco-Carton ink cartridges.

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

Printheads

The printheads deposit ink on the substrate. Each printhead, except the optimizer printhead, is connected to two ink cartridges.



The printheads are extremely durable and do **not** need to be replaced every time an ink cartridge is replaced. They provide excellent results even when the ink cartridges contain a low level of ink.

To maintain optimum print quality, the printheads are automatically tested at regular intervals, and automatically serviced when necessary. This takes a little time and can occasionally delay printing.

When a printhead eventually needs to be replaced, the front panel will display a message.

⚠ CAUTION: Avoid touching pins, leads, and circuitry when handling printheads because these elements are sensitive to electrostatic discharge. Such devices are called ESD-sensitive devices. Electrostatic discharges are one of the main hazards to electronics products. This type of damage can reduce the life expectancy of the device.

CAUTION: If you want to remove a printhead from the printer and preserve it for later use, reinstall the cap and plug, but never install a clear optimizer cap or white plug on a non-optimizer printhead. Optimizer printheads have clear caps and white plugs, while the other printheads have orange caps and plugs. Installing the wrong cap and plug can cause irrecoverable printhead damage.


Maintenance cartridge

The maintenance cartridge cleans and maintains the printheads, and seals the printheads when they are not in use to prevent them from drying out. It is also used to store waste ink.



📌 IMPORTANT: Keep the maintenance cartridge horizontal when removing it, to avoid spilling ink.

The cartridge contains a roll of cloth, which is used to clean the printheads. You are notified when 92% of the roll has been used, after which the cartridge should continue to function for about another 140 m² (1500 ft²) of printed area. A new roll lasts for about 1850 m² (20000 ft²) of printed area.

 **NOTE:** These figures can vary considerably depending on the image density, the print mode, and the ambient temperature. The cloth will be exhausted much faster with a high-density print, many passes, and a hot environment.

 **NOTE:** The maintenance cartridge is checked to detect end of roll when the printer is turned on and at the end of each print job.

The printer will refuse to start a print job if it detects the end of the cleaning roll. You should then replace the maintenance cartridge with a new one.


Condensation collector

Vapors from high-productivity printing are condensed in the condensation collector for convenient disposal, avoiding uncontrolled condensation on windows, floors, walls, substrate, and so on.



The contents of the condensation collector cannot be dumped down the drain, but should be disposed of in accordance with local regulations and site operation. For further information, see <https://hpllatexknowledgecenter.com/applications/wasteprofiles/>.

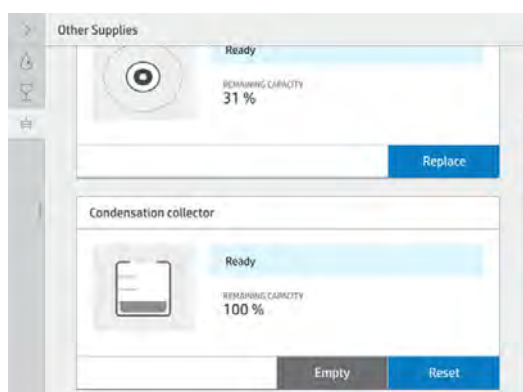
The condensation collector should be replaced or emptied in the following situations:

- The printer shows a condensation collector alert on the front panel.
- The condensation collector has reached its capacity: see the level indicator on the collector.

 **NOTE:** The volume of condensation collected may vary depending on usage mode, room temperature, and humidity. This means that the condensation level shown on the front panel may not match the level inside the condensation collector.


Replace or empty the condensation collector

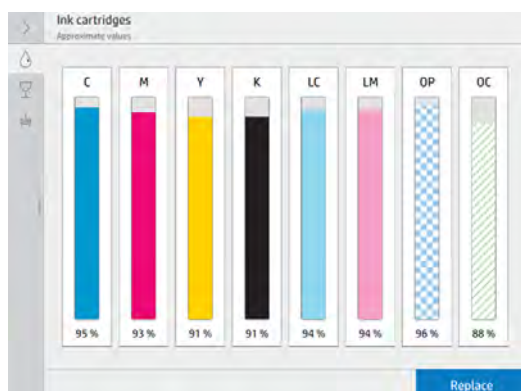
1. At the front panel, tap , then .
2. Information appears on the level of condensation in the collector. Tap the **Empty** button, and the front panel will explain how to proceed.



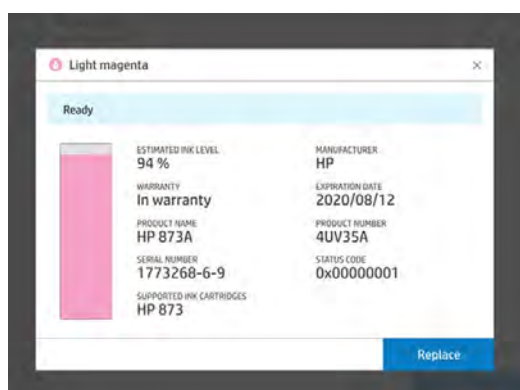
3. When the collector has been emptied, remember to reset the counter by tapping the **Reset** button.
4. The front panel asks you to confirm that the condensation collector level will be reset. Tap **OK** to confirm.

Check the status of the Eco-Carton ink cartridges

You can see the ink levels in your ink cartridges by tapping  on the front panel's home screen.



For more details about any particular ink cartridge or intermediate tank, tap the corresponding rectangle. The following information is shown.



These are the possible ink-cartridge status messages that you can see on the front panel:

- **OK:** The cartridge is working normally, with no known problems.
- **Missing:** There is no cartridge present, or it is not correctly connected to the printer.
- **Low:** The ink level is low.
- **Very low:** The ink level is very low.
- **Empty:** The cartridge is empty.
- **Reseat:** You are recommended to remove the cartridge, shake it well, and then reinsert it.
- **Replace:** You are recommended to replace the cartridge with a new cartridge.
- **Expired:** The cartridge's expiration date has passed.
- **Incorrect:** The cartridge is not compatible with this printer. The message includes a list of compatible cartridges.
- **Almost end of life:** The cartridge is near the end of its lifespan.
- **End of life:** The cartridge has reached the end of its lifespan, and should be changed whenever you have emptied it.

Ink system tips

For best results, always follow these guidelines:

- Follow the instructions on the front panel during installation.
- Avoid unnecessary removal of the ink cartridges.

Make sure that you comply with all applicable laws and regulations when disposing of ink system consumables.

Replace a 3 liter Eco-Carton ink cartridge

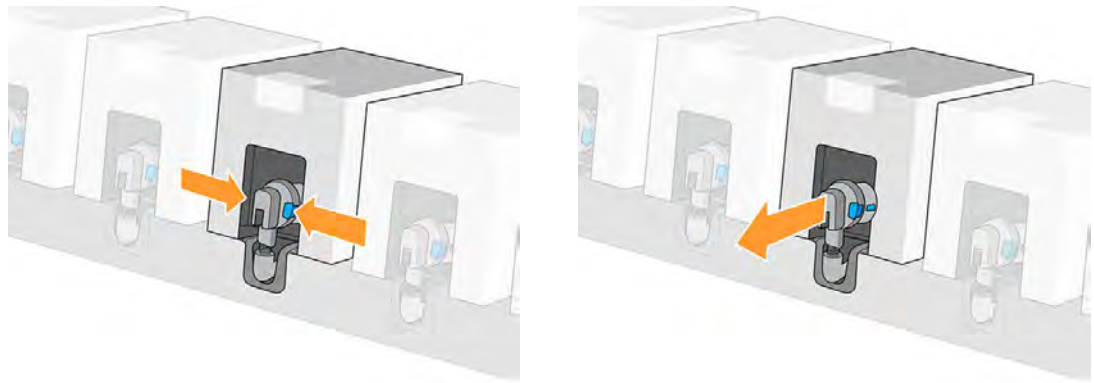
During the normal lifetime of a cartridge, no specific maintenance is required. You should replace a cartridge when it has reached its expiration date (18 months of life), or when the printer requests it. See the ink cartridge information on the front panel for the expiration date.

Remove an Eco-Carton ink cartridge

1. On the printer's front panel, tap , then **Replace large cartridges**.


Alternatively, tap , then **Ink supplies > Replace large cartridges**.

2. Disconnect the cartridge connector by pressing the tabs on each side of it and pulling it gently away from the cartridge.



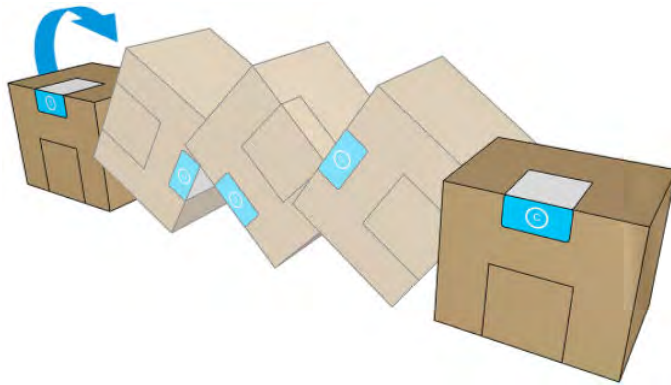
3. Remove the empty cartridge from the printer.

Insert an Eco-Carton ink cartridge

 **NOTE:** The ink cartridge is supplied in an insulating bag; do not open it until you are ready to use the cartridge.

1. Check that the new cartridge is of the correct color.

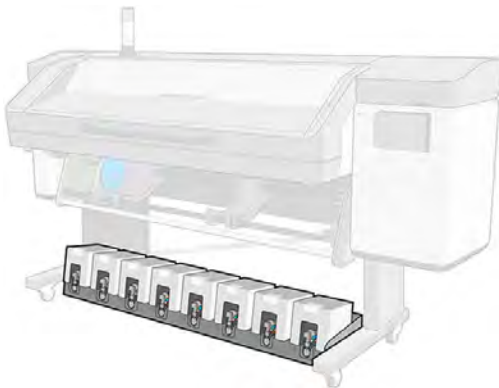
2. Turn the cartridge four times, rotating it through a total of 360 degrees, to ensure that the ink is well mixed before use.



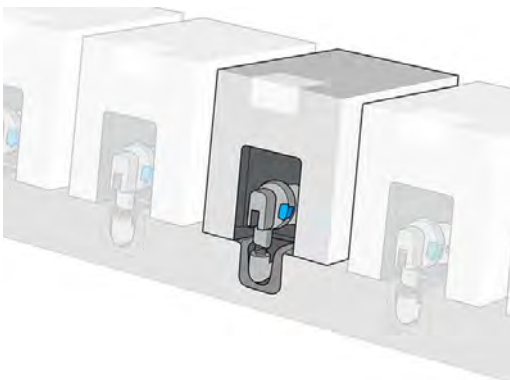
IMPORTANT: Before installing a white-ink cartridge, tilt it forwards and backwards 60 times. This should take less than 2 minutes.

CAUTION: Installing a unshaken white-ink cartridge may lead to print-quality issues, printhead failure, or ink delivery system malfunction.

3. Tear off the square cover, then fold the handle inwards.
4. Put the new cartridge into its correct place on the printer.



5. Check that the rubber part around the needle in the cartridge connector is clean. Clean gently with a cloth if necessary.
6. Connect the connector to the cartridge.



Align the printheads

The printer performs printhead alignment whenever printheads are replaced. If no substrate is loaded when a printhead is replaced, the printer will perform the alignment the next time you load substrate.

You may also be recommended to align the printheads to solve a print-quality problem.

Automatic alignment

First make sure that you have a roll of opaque, white substrate loaded in the printer. Colored substrates, glossy canvas, coarse textiles, and transparent materials such as translucent bond, clear film, tracing substrate and vellum are not suitable for automatic printhead alignment. For these substrates, you should align the printheads manually (see [Manual alignment on page 153](#)) or perform the automatic alignment on a supported substrate of similar thickness first, then change to the special substrate. Alignment settings are retained through substrate changes until a new printhead alignment is performed.

The HP Latex Optimizer can be aligned only on certain substrates such as self-adhesive vinyl. The pattern varies according to the substrate.

To request printhead alignment from the front panel (if the alignment is not performed automatically), tap



The process takes about 11 minutes and starts immediately, unless an image is currently being printed. If a print job is in progress, the alignment will be done as soon as the current print job is finished.

White-ink automatic alignment

The procedure is the same as for color printheads.

At the front panel, tap , then **Automatic printhead alignment > White > Continue**.

Extra-fluids automatic alignment

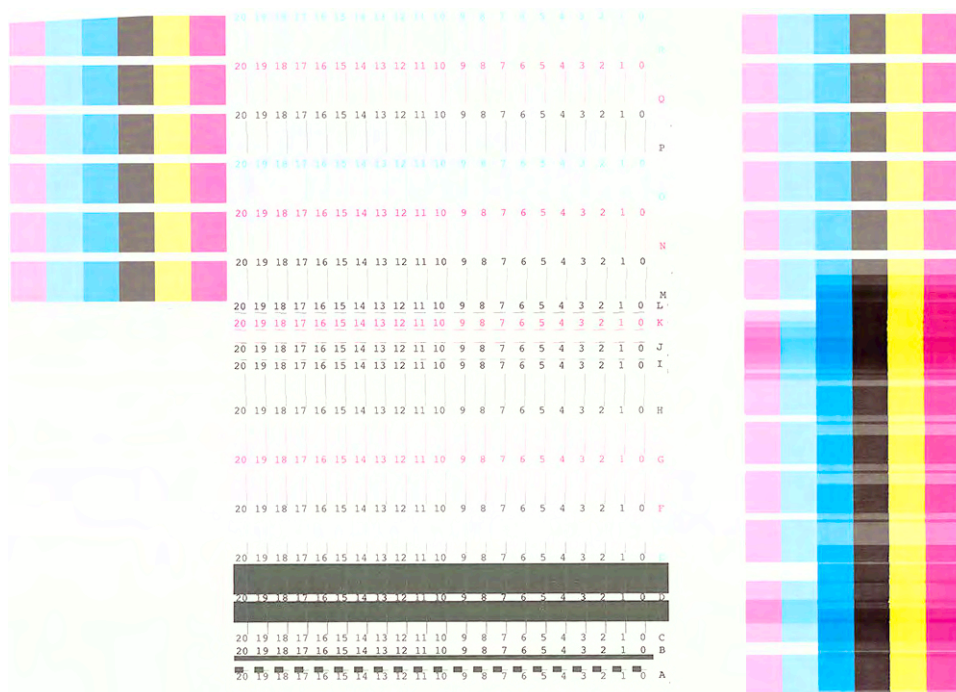
The HP Latex Optimizer can be aligned only on certain substrates such as self-adhesive vinyl. The pattern varies according to the substrate.

The procedure is the same as for color printheads.

At the front panel, tap , then **Automatic printhead alignment > Optimizer + overcoat > Continue**.


Manual alignment

To request a manual printhead alignment from the front panel, tap 



The printer prints 32 rows labelled from A to AF. Inspect the print and write down the number of the straightest line in each row (for example, A:9).

The first blocks of patterns printed on a grey background are used to align the HP Latex Optimizer and Overcoat. These will be visible only on certain substrates, such as self-adhesive vinyl. If the best alignment pattern cannot be determined, the default value of 10 should be used.

To enter the correction values at the front panel, tap , then **Advanced calibrations > Manual printhead alignment > Continue**. Enter each value into the window labelled with the same letter as the corresponding pattern.

White-ink manual alignment

The procedure is the same as for color printheads.

To enter the correction values at the front panel, tap , then **Advanced calibrations > Manual printhead alignment > White > Continue**.

Enter each value into the window labeled with the same letter as the corresponding pattern.

Extra-fluids manual alignment

The procedure is the same as for color printheads.



To enter the correction values at the front panel, tap , then **Advanced calibrations > Manual printhead alignment > Optimizer + overcoat > Continue**.

Enter each value into the window labeled with the same letter as the corresponding pattern.

Replace a printhead



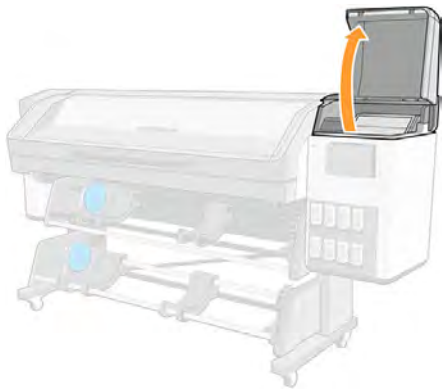
Remove a printhead

1. On the printer's front panel, tap , then , then **Replace printheads**.
2. The carriage moves to the removal position.

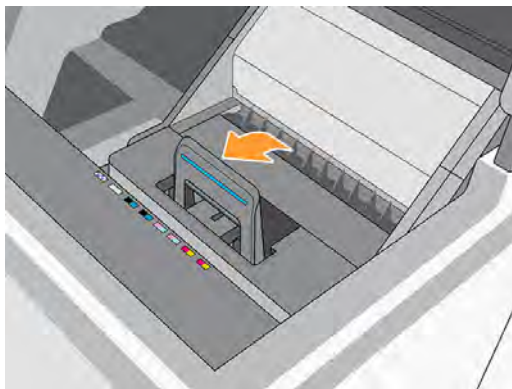
CAUTION: If the carriage remains in the removal position for more than 3 minutes without inserting or removing any printheads, it will attempt to return back to its home position to the right.

CAUTION: Observe precautions when handling printheads because they are ESD-sensitive devices. Avoid touching pins, leads, or circuitry.

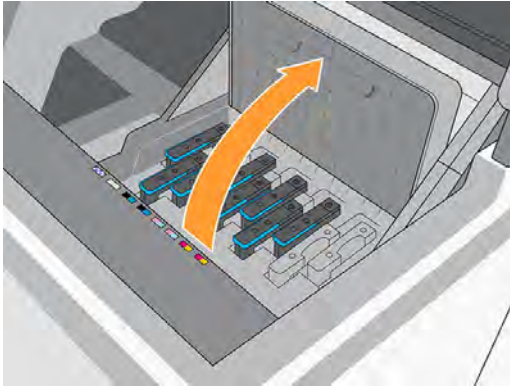
3. When the carriage has stopped moving, the front panel prompts you to open the carriage cover.



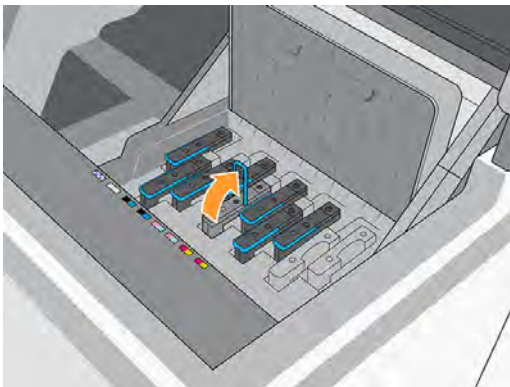
4. Pull up and release the latch on top of the carriage.



5. Lift up the cover. This provides access to the printheads.

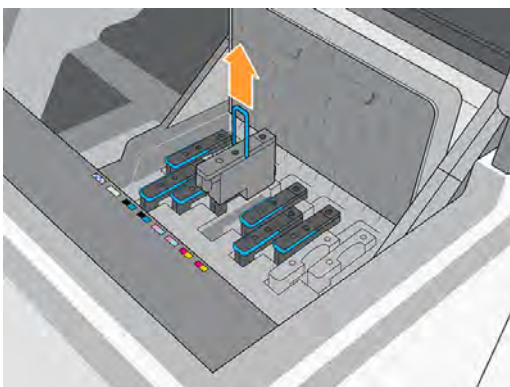


6. To remove a printhead, lift up the blue handle.



7. Using the blue handle, gently disengage the printhead, then gently pull it upwards until the printhead is released from the carriage.

⚠ CAUTION: Do not pull abruptly. That action can damage the printhead.



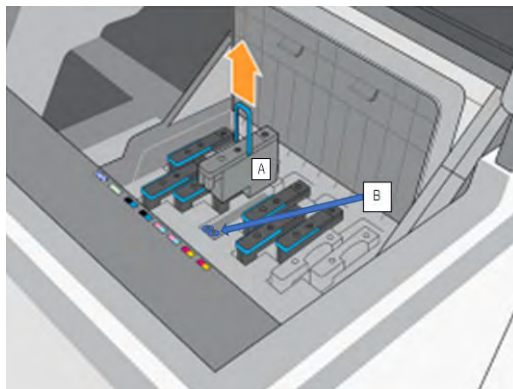
⚠ CAUTION: If you want to preserve the old printhead for later use, reinstall the cap and plug, but never install a clear optimizer cap or white plug on a non-optimizer printhead, or an orange cap or plug on an optimizer printhead. Optimizer printheads have clear caps and white plugs, while the other printheads have orange caps and plugs. Installing the wrong cap and plug can cause irrecoverable printhead damage.

8. The front-panel display identifies the missing printhead.



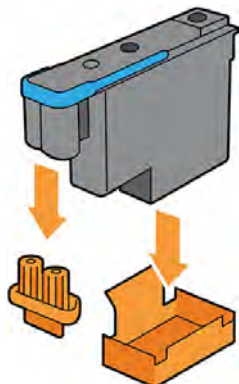
9. Check whether the fluid interconnect tower has a lot of ink on it. If so, clean it with a lint-free cloth before inserting a new printhead.

The fluid interconnect tower (B) is the structure into which the printhead (A) is inserted, and through which the ink arrives at the printhead.

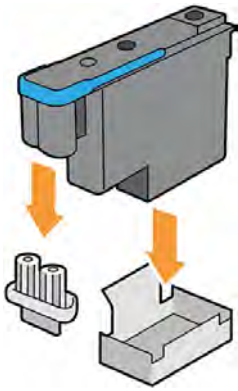


Insert a printhead

1. Remove the orange protective caps by pulling them down.



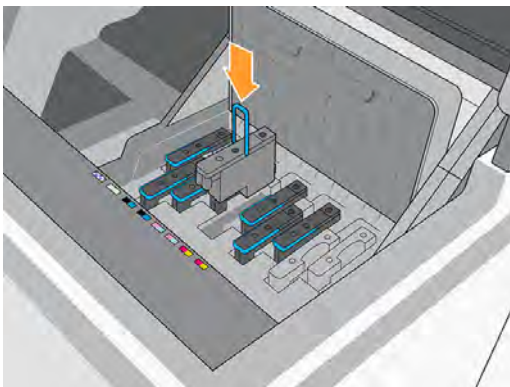
 **NOTE:** The optimizer protective caps are white or transparent.



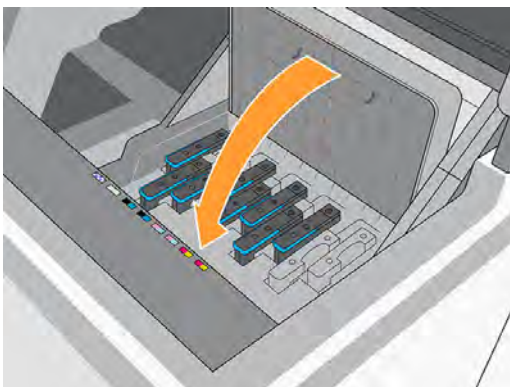
2. The printhead is designed to prevent you from accidentally inserting it into the wrong slot. Check that the colored label on the printhead matches the colored label of the carriage slot into which the printhead is to be inserted.
3. Insert the new printhead into its correct slot in the carriage.

⚠ CAUTION: Insert the printhead slowly and vertically, straight down. It can be damaged if you insert it too quickly, or at an angle, or if you rotate it as you insert it.

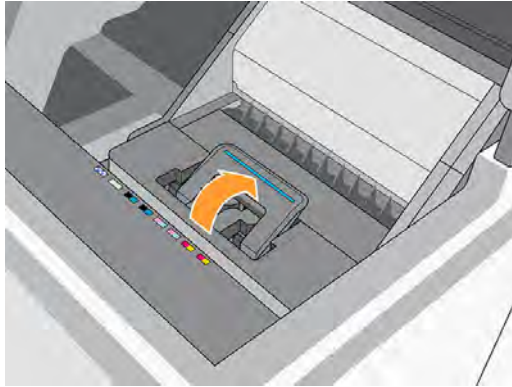
You may feel some resistance when inserting the printhead, so you need to press it down firmly but smoothly. You should hear a beep and see confirmation on the front-panel display that the printhead has been inserted.




4. Insert all of the other printheads that need to be installed, and close the carriage cover.



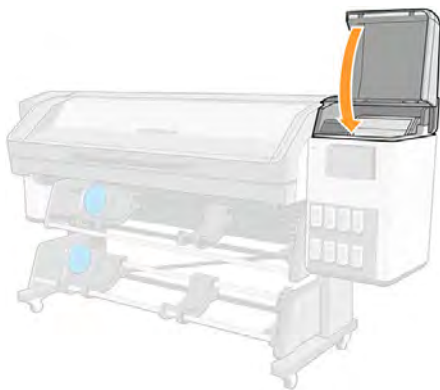
5. Lower the latch to rest on the carriage cover.



When all of the printheads have been inserted correctly and the printer has accepted them, the printer beeps.


 **NOTE:** If the printer does not beep when you insert the printhead and the **Replace** message appears on the front-panel display, you might need to reinsert the printhead.

6. Close the carriage cover.



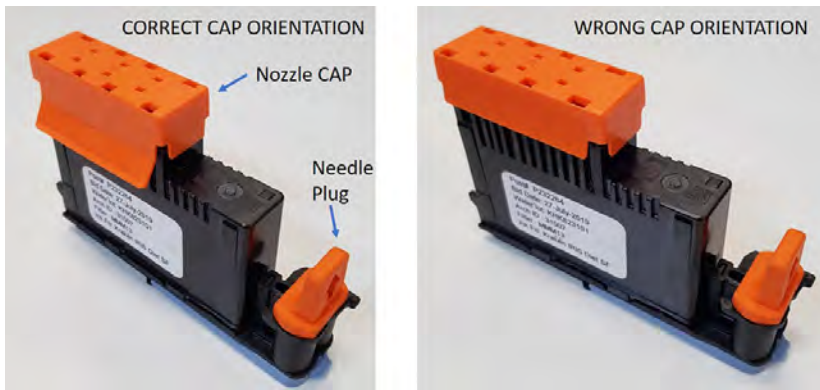
7. The front-panel display confirms that all of the printheads are correctly inserted. The printer starts checking and preparing the printheads. The default routine process, when all printheads are changed, takes up to 18 minutes. If the printer identifies a problem when preparing the printheads, the process takes longer, up to 30 minutes. For a single printhead insertion, the time varies between 10 and 20 minutes. After all printheads are checked and prepared, the printhead realignment procedure runs automatically if substrate is loaded.

How to store and ship printheads

 **IMPORTANT:** This section does not apply to white printheads.

If you ever need to remove the color printheads from the printer and store them, take the following precautions:

- Ensure that the orange nozzle cap is correctly placed on the printhead.





 **IMPORTANT:** Ensure that the correct nozzle cap and needle plug are used for each printhead.

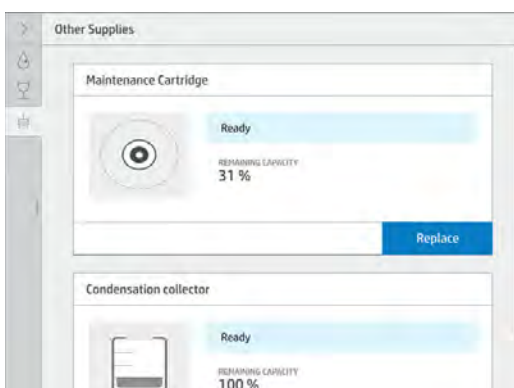
- The optimizer printhead has a white nozzle cap and needle plug.
 - All other color printheads have an orange nozzle cap and needle plug.
-
- **Do not** interchange colors, which can permanently damage nozzles. HP recommends storing the packaging material of each printhead (box, kid, nozzle cap, and needle plug) safely in case of need.
 - Store each printhead with nozzles facing down: that is, resting on the nozzle cap. Do not store printheads with nozzles facing up.



Replace the maintenance cartridge

You should replace the maintenance cartridge when prompted to do so by the front panel.

1. On the printer's front panel, tap , then .
2. In the Maintenance Cartridge section, tap **Replace** > **Start**.



3. The maintenance cartridge is located in a slot underneath the front panel, at the front of the printer. Open the door.




 **IMPORTANT:** When removing a maintenance cartridge, remember that it is full of ink. Therefore:

- Wear gloves.



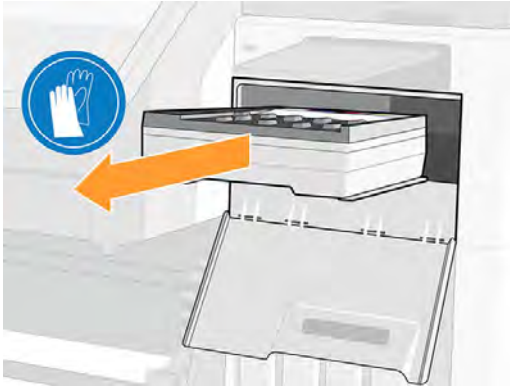
- Remove it carefully and horizontally to avoid splashing.
- Always handle and store the replaced maintenance cartridge upright, facing up.

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

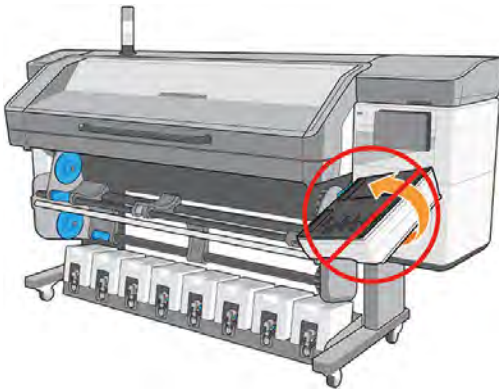
4. The maintenance cartridge has a handle on the front. To remove the cartridge, just slide it out.



5. When you have slid it out partway, hold it on each side with both hands: it is heavy.



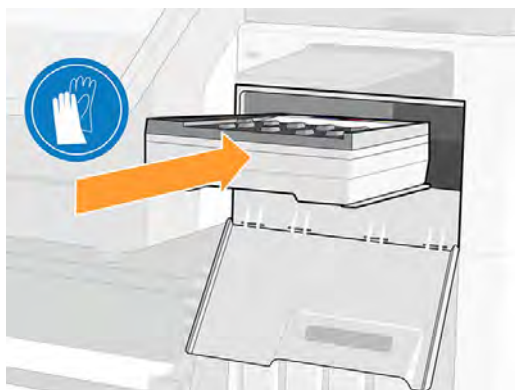
 **IMPORTANT:** Slide it out horizontally to avoid spills, as it is full of ink.



6. Store the old maintenance cartridge.
7. Remove the plastic cover from the new maintenance cartridge.



8. Insert the maintenance cartridge into the slot, in the direction indicated by the arrow.




9. Push the maintenance cartridge in until it does not protrude from the slot. You will notice that the printer takes it; do not use excessive force.

 **NOTE:** The front panel will not show the new maintenance cartridge until the door is closed.

10. When you have inserted the maintenance cartridge into the printer, close the door.



11. Clean the encoder strip: see [Clean the encoder strip \(PMK13\) on page 182](#).

 **NOTE:** Before it can resume printing, the printer needs all the ink cartridges, printheads, and maintenance cartridge to be installed, and the printer window and maintenance cartridge door to be closed.

Printing with white ink (700W and 800W models only)

Printing with white ink is useful mainly when printing on non-white substrates, such as dark, colored, metallic, or transparent substrates. The following basic design techniques may be used:

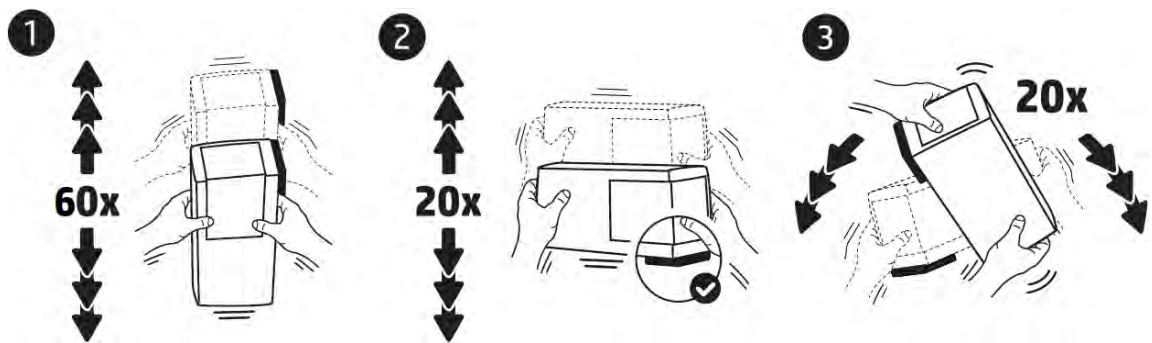
- **Underflood:** A solid rectangle (or irregular shape) of white ink is printed as the first layer, then a colored image is printed as the second layer, on top of it. When used on a non-white or reflective surface, this can provide better color saturation or allow colors that are similar to the substrate color to be visible.
- **Overflood:** A colored image is printed as the first layer, then a solid rectangle (or irregular shape) of white ink is printed as the second layer, on top of it. This is most often done with transparent substrates to create a sign that is viewed on a light box (for example, a shopping mall map, airport advertisement, or bus stop signage). When viewed from the opposite side of the substrate on which it was printed, the image must be reversed (mirrored) in the RIP or application software before printing.

- **Spot color:** Any white shape (including text) that is cured with and in the same plane as the rest of the artwork, rather than in a separate plane or layer. In conventional (analog) offset or screen printing, this might be called a *knockout*, because none of the colors are overprinted.
- **Sandwich mode:** A white layer is embedded between two different images, allowing each image to be seen from one side of the substrate.

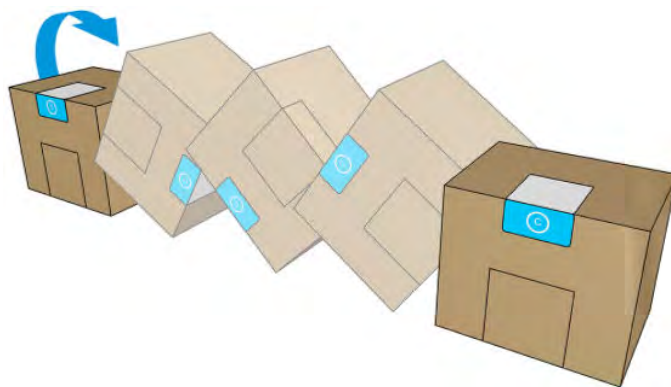
There are two kinds of white ink cartridges, depending on your printer model:

- 1-liter Eco-Carton ink cartridges for 700W printers. There are two independent ink supplies: the top one is the white ink cartridge and the bottom one is the ink mix container. Take care not to swap the ink cartridge and the ink mix container. The ink cartridge is replaced when it is empty; the ink mix container remains in the printer until the printer advises you to replace it. At this time, the printer transfers any ink in the ink mix container to the cartridge, and you cannot install a new cartridge until the ink mix container is empty.

Before inserting a new white cartridge, shake it vigorously 100 times, as illustrated below. This should take less than 2 minutes.



- 3-liter Eco-Carton ink cartridges for 800W printers, each consisting of a single cardboard box containing two bags. Turn the cartridge 60 times, rotating it through a total of 360 degrees, to ensure that the ink is well mixed before use.




IMPORTANT: Before installing a white-ink cartridge, tilt it backwards and forwards 60 times.

White printheads need manual cleaning periodically, in addition to the automatic servicing that all printheads receive.


IMPORTANT: White ink cartridges, and either white printheads or auxiliary white printheads, should remain permanently installed to avoid printhead damage, even if you are not currently using white ink in your jobs. The white recirculation requires a minimum level of ink in the cartridge to maintain the white system.

NOTE: When printing a CMYK or CMYKcm image without a white under-fill on non-white substrate, color saturation may be reduced, depending on the color of the substrate.

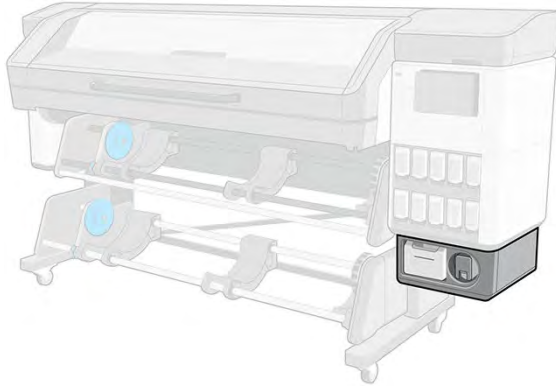
NOTE: White ink has a maximum shelf life of 12 months from the date of manufacture, or 6 months from the date of installation.


 **NOTE:** White ink has a tendency to settle over time.

White printhead storage system

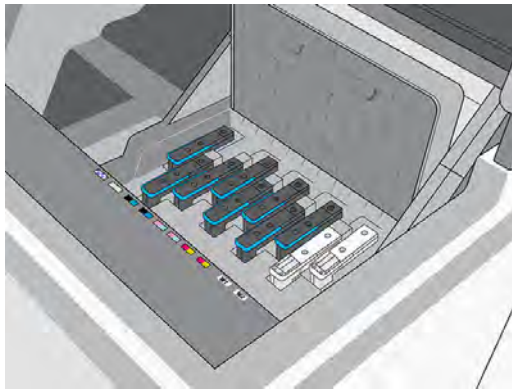
 **IMPORTANT:** When white-ink printheads are installed, the printer performs automatic maintenance routines periodically to ensure that they function correctly.

The white printhead storage system allows you to extend the life of white printheads when they are not being used.




 **IMPORTANT:** If you do not intend to use white ink, you should remove the white printheads and store them in the storage system. Otherwise some white ink will be wasted during routine maintenance.

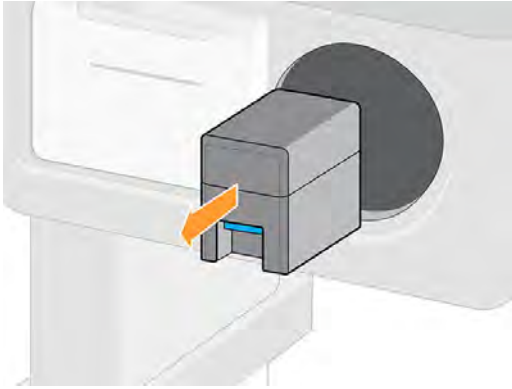
1. Ensure that the printer is not trying to print: stop the print queue.
2. At the front panel, tap **Replace** in the Printheads section.
3. Remove the two white printheads from the carriage.



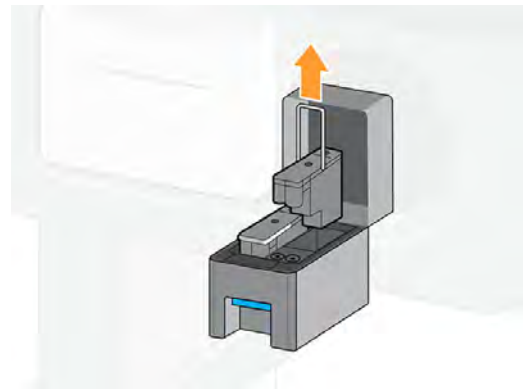
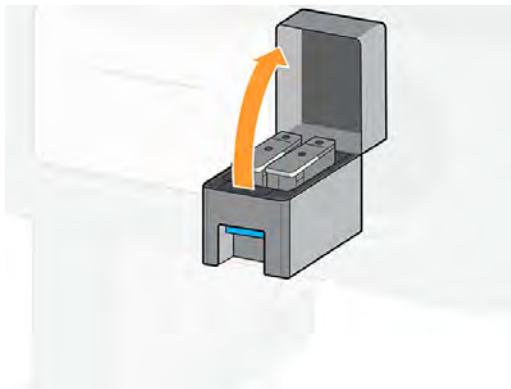
4. Check the bottoms of the white printheads. If you see some ink (which can happen because of the automatic recirculation), clean them gently with a soft, fiber-free cloth and de-ionized or distilled water.

 **NOTE:** To provide the best possible printhead reliability, the white printheads may need to be cooled down. HP recommends following the cool-down process whenever the printer requests it, first removing the white printheads from the carriage.

5. Remove the printhead storage box from the storage system.



6. Open the storage box and remove both auxiliary printheads from it.

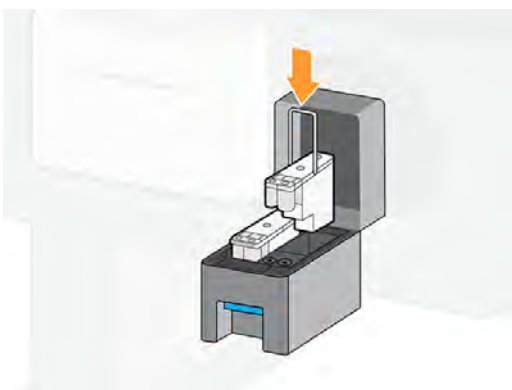


7. Check the bottom plate of each white printhead. If there is some ink on it (which can happen because of the automatic recirculation), clean it gently with a soft, fiber-free cloth dampened with de-ionized or distilled water.
8. Regularly check the plastic needles in the printhead carriage slot, which protect the printheads. If necessary, clean them with distilled water, then dry them before installing the printhead.

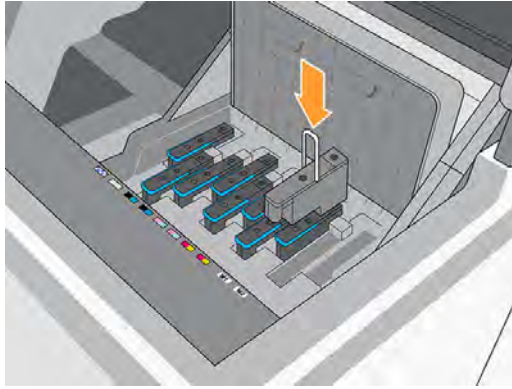
⚠ CAUTION: Printheads should be kept either in the carriage slot or in the storage system, otherwise nozzles and needles may become clogged.

9. Put the white printhead into the storage box, then put the storage box back into the storage system.

📄 IMPORTANT: The storage box is labelled. Be careful to put the white printhead into the correct slot.



10. Insert the auxiliary white printhead into the carriage in place of the white printhead.



 **IMPORTANT:** Do not try to print without a full set of printheads installed in the carriage.

IMPORTANT: If any component of the white module is broken, or if a white cartridge is empty, the recirculation process could be affected. You are recommended to replace these components promptly when necessary.

You can leave the white printheads in the storage system for as long as you like.

To use them again, reverse the above procedure.

 **IMPORTANT:** Be careful to put each white printhead into its own white slot in the carriage.

IMPORTANT: The 700W and 800W printers should never be turned off: use sleep mode instead.

Automatic white-ink maintenance cannot occur when the printer is completely turned off; and the white-ink printheads cannot survive for more than 8 hours without maintenance.

Preparing a white job in your design software

Prepare the job using layers. Before sending it to the RIP, you should ensure that the part of the image to be printed in white is on a separate layer named **spot**: a name that the printer will recognize.

When the image is ready, send it to the RIP.

If your file does not have a layer named **spot**, you can add a white layer from the RIP.

Preparing the job in the RIP

In the RIP, choose the desired print mode. This selection places the white layer defined in the application into its desired position: Over, Under, or Spot (at the same level as the color layers). Assigning a print mode with white ink to a job with no white layer will cover the whole printing area with white. When ready, send the job to the printer.

The selectable options and their effects are as follows.



Overflood: White ink is printed on the substrate, enabling you to print color on top of a non-white or translucent substrate.



Underflood: The white layer is printed on top of the color layer, enabling you to create new colors by playing with white ink translucency. This is used to print on transparent substrates such as acrylic, transparent film, or glass.



Spot: White ink is printed in the same way as any other color.



Sandwich: A white layer is embedded between two different images, allowing a different image to be seen on each side of the shape.

Water tank

Before printing with white ink, make sure that the water tank is full of distilled water.

To refill the water tank:

1. Pull out the tank.
2. Remove the cap and refill the tank with distilled water up to the line.
3. Put back the cap and close the tank.
4. Put the tank back into place.

Ink mix container (700W only)


The ink mix container should be replaced every 2 years, or sooner. The front panel indicates when replacement is needed.

 **IMPORTANT:** The white ink cartridge should be replaced at the same time.

Printhead maintenance


- Group all the white jobs of the day in one run.
- Extract the white printheads no more than once per day and only after cooling down.
- Always follow the printhead replacement procedure in the printer. Failure to do so will affect printhead life and may void the printhead warranty.

Use of white ink	Recommendation	Maximum white-ink waste per week	Maximum time per week
Up to 2 days per week	Maintain the white printheads in the rotating chamber.	<p>Always takes out</p> <ul style="list-style-type: none"> 1 day: 6 ml 2 days: 13.2 ml total <p>Takes out after 2 days</p> <ul style="list-style-type: none"> 2 days: 13.5 ml total 	<p>Always takes out</p> <ul style="list-style-type: none"> 1 day: 12 min 2 days: 24 min <p>Takes out after 2 days</p> <ul style="list-style-type: none"> 12 min
More than 2 days per week	<p>Extract the printheads:</p> <ul style="list-style-type: none"> When the printer will not be used in the next 24 hours When printing a full roll or more of only color jobs 	<p>Takes out once per week</p> <ul style="list-style-type: none"> 5 days 1 shift: 34.2 ml total <p>Takes out every day</p> <ul style="list-style-type: none"> 5 days 1 shift: 33 ml total 	<p>Takes out once per week</p> <ul style="list-style-type: none"> 5 days 1 shift: 12 min <p>Takes out every day</p> <ul style="list-style-type: none"> 5 days 1 shift: 60 min

 **NOTE:** If you often use white ink, keeping the printheads in the carriage will keep them maintained, but ink waste will start to increase. Any time a job is printed with the printhead inside the carriage, the beginning of the job will cause 3.6 ml to be wasted.

Before storing printheads in the rotating chamber

- Always allow the white printhead removal maintenance routine to complete before removing printheads from the carriage.
- Remove printheads from the carriage carefully placing a cloth below the needle to prevent ink droplets from falling onto the carriage.
- Check the bottoms of the white printheads. If you see any ink, clean them gently with a soft, fiber-free cloth and de-ionized or distilled water.
- Clean the printhead sides and connector area with a cloth to prevent ink accumulation.
- Check whether the fluid interconnect tower has a lot of ink on it. If so, clean it with a lint-free cloth.
- Clean the plastic needles of the rotating chamber if there is dried ink on them.
- Place printheads in the rotating chamber in the same slot.


 **NOTE:** Auxiliary printheads should be kept in the rotating chamber when not in the printer. If they are damaged, ink recirculation could be impacted, resulting in print-quality or reliability issues.


10 Troubleshoot ink-system issues

- [Cannot insert an ink cartridge \(700 series\)](#)
- [Cannot insert an ink cartridge \(800 series\)](#)
- [Installation of an unshaken cartridge](#)
- [Front panel recommends reseating or replacing a printhead](#)
- [Cannot insert a printhead](#)
- [Cannot insert the maintenance cartridge](#)

Cannot insert an ink cartridge (700 series)

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, the arrow on its front should face upwards.

 **TIP:** 700W only: If you remove the ink mix container or the 1 liter white cartridge when internal ink recirculation has not finished, the printer will not allow you to insert any new cartridge. Reinsert whatever you removed and wait for the recirculation to finish, then try again.

 **CAUTION:** Never clean inside the ink cartridge slots.

Cannot insert an ink cartridge (800 series)

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, the arrow on its front should face upwards.

Installation of an unshaken cartridge

Installing a white-ink cartridge not properly shaken may impact print quality, damage the white printhead, and degrade the performance of the white-ink delivery system.

You may face the following issues if an unshaken white cartridge is installed.

Sudden change of opacity

1. Remove the white-ink cartridge, shake it, and reinstall it.
2. Perform hard printhead cleaning (see [Improve print quality on page 123](#)) six times to remove the ink from the printhead and ink delivery system.
3. If the problem persists, contact your service representative.

Reseat printhead

1. Remove the white-ink cartridge, shake it, and reinstall it.
2. Reinstall the printheads.
3. If the problem persists, clean with distilled water.
4. If the problem persists, replace the printheads.
5. If the problem persists, contact your service representative.

Recirculation timeouts: system errors 0022-0010-0190, 0022-0010-0197, 0022-0010-0198, 0022-0010-0199

1. Remove the white-ink cartridge, shake it, and reinstall it.
2. If the problem persists, contact your service representative.

Printhead blockage: system errors 0022-0010-0192, 0022-0010-0193, 0022-0010-0195, 0022-0010-0196, 1027-0002-0145

1. Remove the white-ink cartridge, shake it, and reinstall it.
2. Check that the primer rubbers are in place (structure and latch).
3. If the problem persists, replace the printheads.
4. If the problem persists, contact your service representative.

Dummy blockage: system error 1027-0002-0145

1. Remove the white-ink cartridge, shake it, and reinstall it.
2. Shake the dummy printheads and reinstall them.
3. If the problem persists, replace the dummy printheads.
4. If the problem persists, contact your service representative.

PIP wrong calibration: system error 0022-0010-0146


1. Remove the white-ink cartridge, shake it, and reinstall it.
2. If the problem persists, contact your service representative.

Front panel recommends reseating or replacing a printhead

1. Remove the printhead and check that it is free from physical damage and from ink stains on the electrical connections.
2. If necessary, clean the electrical connections between the printhead and the carriage. See [Clean the electrical connections on a printhead on page 176](#).
3. Reinsert the printhead into the carriage and check the front panel message.
4. If the problem persists, restart the printer.
5. If the problem persists, insert a new printhead.
6. If the problem persists, there may be a problem with the printer, rather than with the printhead.

Cannot insert a printhead

1. Check that you have the correct type of printhead (model number).
2. Check that you have removed the orange protective caps from the printhead.

 **NOTE:** Optimizer printhead caps are white or transparent.

3. Check that the colored label on the printhead is the same color as the label on the slot.
4. Check that the printhead is correctly oriented (compare with the others).
5. Check that you have closed and latched the printhead cover.

Cannot insert the maintenance cartridge

Check that the maintenance cartridge has the correct model number and is correctly oriented.

11 Printer maintenance

For the tasks in this chapter, you may need the user maintenance kit that was provided with your printer.


- [General cleaning instructions](#)
- [Maintenance tools recommended but not provided](#)
- [Clean the printheads](#)
- [Clean the electrical connections on a printhead](#)
- [Clean and lubricate the printhead carriage rod](#)
- [Clean the encoder strip \(PMK13\)](#)
- [Clean the platen and the substrate-advance sensor window \(PMK19\)](#)
- [Replace the lubrication felt \(PMK18\)](#)
- [Replace or empty the condensation collector](#)
- [Check and clean the plastic needles in the printhead slot](#)
- [Replace the plastic needles in the printhead slot](#)
- [Replace the ink mix container \(PMK15\)](#)
- [Clean the exterior of the printer](#)
- [Clean the curing modules \(PMK14\)](#)
- [Service maintenance](#)

General cleaning instructions

- For general cleaning, a lint-free cloth dampened with distilled water is recommended. Let the cleaned part dry or use a cloth to dry it completely.

Do not spray fluids directly onto the product. Spray the fluid onto the cloth used for cleaning.

- To remove stubborn dirt or stains, moisten a soft, fiber-free cloth with water and a neutral detergent, or general-purpose industrial cleaner (such as Simple Green industrial cleaner). Remove any remaining soap foam with a dry cloth.
- For glass surfaces, use a soft, lint-free cloth lightly moistened with a non-abrasive glass cleaner or with general-purpose glass cleaner (such as Simple Green glass cleaner). Remove any remaining soap foam with a lint-free cloth dampened with distilled water, and dry it with a dry cloth to prevent spotting.

 **CAUTION:** Do not use abrasives, acetone, benzene, sodium hydroxide, or carbon tetrachloride on the glass; they can damage it. Do not place or spray liquid directly onto the glass: the liquid could seep under the glass and damage the product.

- HP recommends using a canister of compressed air to remove dust from electronic and electrical parts.

 **CAUTION:** Do not use water-based cleaning liquids on parts with electrical contacts, which could cause damage.

 **CAUTION:** Do not use wax, alcohol, benzene, thinner, ammonia-based cleaners, or other chemical detergents, to prevent damage to the product and to the environment.

 **NOTE:** In some locations the use of cleaning products is regulated. Ensure that your cleaner follows federal, state, and local regulations.

Maintenance tools recommended but not provided



Folding steps, for general use



Vacuum cleaner, handy or normal, with nozzle accessories



Flashlight, for general use



Distilled water for general cleaning, or isopropyl alcohol when indicated



A flat screwdriver




Allen keys


NOTE: If you are in an area (such as California) that regulates VOC cleaning and maintenance fluids, instead of isopropyl alcohol use a VOC-certified cleaner such as a properly diluted Simple Green All-Purpose Cleaner.

Clean the printheads

Periodic printhead cleaning is performed automatically, as long as the printer is kept turned on. However, you should clean the printheads if you are experiencing poor print quality and cannot resolve the issues by other methods. This ensures that there is fresh ink in the nozzles and helps to prevent nozzle clogs.

If you have printed the printhead status plot (see [Printhead status plot on page 124](#)), you know which colors are failing. Clean any printhead that is not performing adequately. If you are not sure which printheads to clean, clean all of the printheads.

 **NOTE:** A small number of blocked nozzles are unlikely to have any visible effect on your prints, as the printer has been designed to compensate for this problem during multi-pass printing.

To clean the printheads (which often enables them to recover from problems), go to the printer's front panel and tap , then select which printheads you want to clean. You can clean all of the printheads or only some of them. Select from the following options:

- Print test plot
- Clean all
- Clean LM-LC
- Clean K-C
- Clean M-Y
- Clean OP

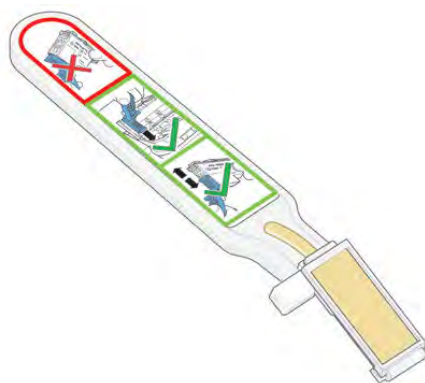
Cleaning all printheads takes about 5 minutes. Cleaning any two printheads takes about 3 minutes.

 **NOTE:** Cleaning all printheads uses more ink than cleaning a single pair.

Clean the electrical connections on a printhead

It is possible that the printer will not recognize a printhead after it has been installed. This can happen when ink builds up on the electrical connections between the printhead and the printhead carriage. Under these circumstances, HP recommends that you clean the electrical connections on the printhead. However, routine cleaning of the connections when no problems are apparent is *not* recommended.

A carriage interconnect wiper is included with your printer in the user maintenance kit.

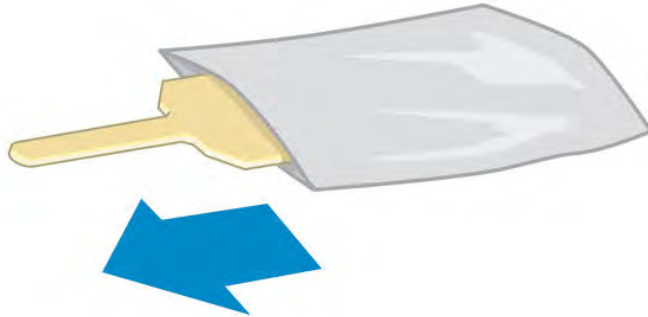


Use this to clean the electrical interconnects on both the printhead carriage and the printhead if the **Reseat** or **Replace** message persists next to the printhead on the front-panel display.

 **TIP:** You are recommended to wear gloves.



1. Remove a new pre-moistened replacement sponge from its pouch.

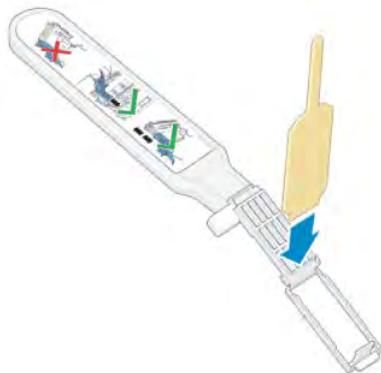


A supply of sponges is included in the box with the wiper. If all sponges have been used, more can be obtained by calling your service representative.

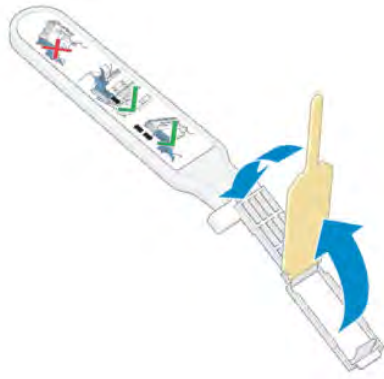
2. Open the carriage interconnect wiper.



3. Load the sponge by positioning the sponge on the face of the carriage interconnect wiper with the shorter tab in the locating slot.

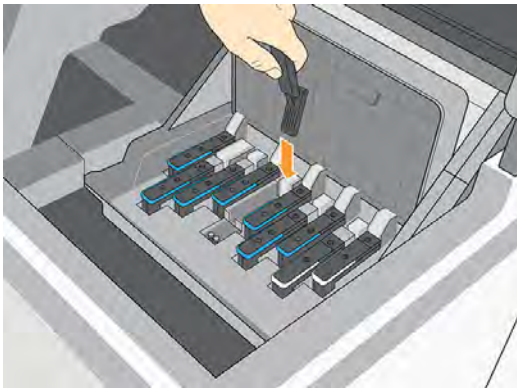


4. Close the carriage interconnect wiper, trapping the sponge in place.

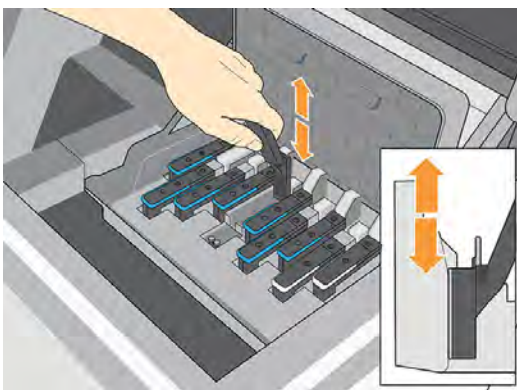


5. Open the printhead carriage latch and extract the printhead that is causing the problem, as indicated on the front panel. See [Replace a printhead on page 155](#).
6. Insert the carriage interconnect wiper into the printhead slot at the back. Wipe the electrical contacts by inserting the tool between the electrical connections at the back of the slot and the steel spring, with the sponge facing away from you and towards the electrical contacts. Try to avoid picking up any ink deposit that may have accumulated on the bottom surface of the slot.

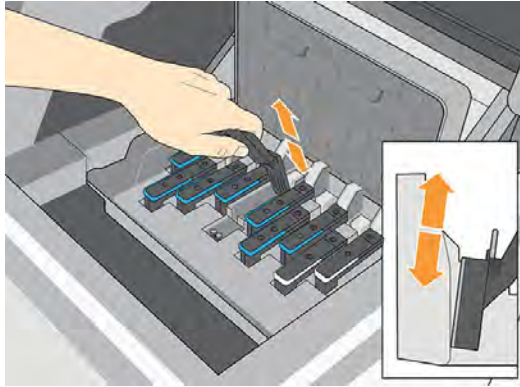
⚠ CAUTION: If the carriage remains in the central part of the printer for more than 7 minutes, it attempts to return to its home position to the right.



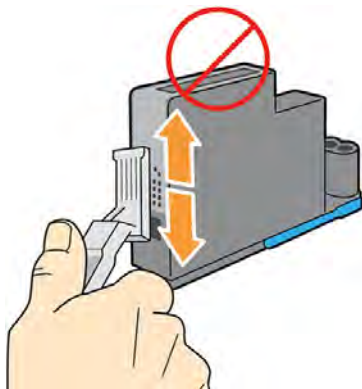
7. Rub the sponge against the contacts with a *light* force along the entire depth of the flex connector, inserting the wiper as far as allowed by the mechanical stop on the tool.



8. Take special care to clean all contacts thoroughly, including the ones at the lowest point of the connector.

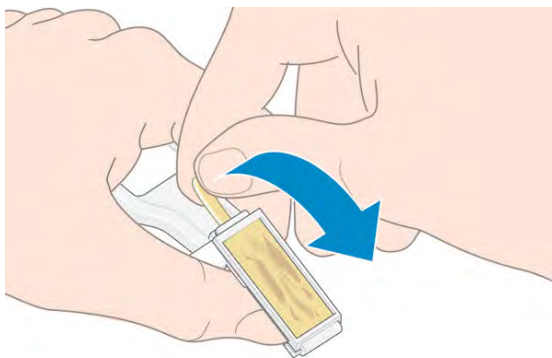


9. Using the same sponge, clean the lower strip of electrical contacts on the printhead (unless the printhead is new). Avoid touching the upper set of electrical contacts.

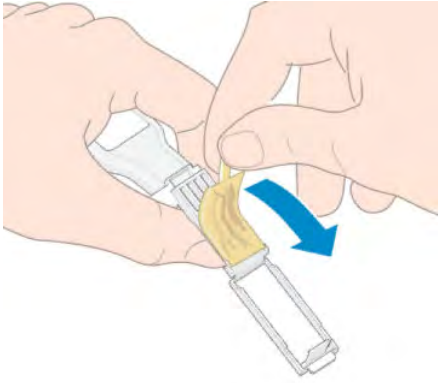


⚠ CAUTION: Do not touch the surface of the printhead that contains the nozzles, because the nozzles are easily damaged.

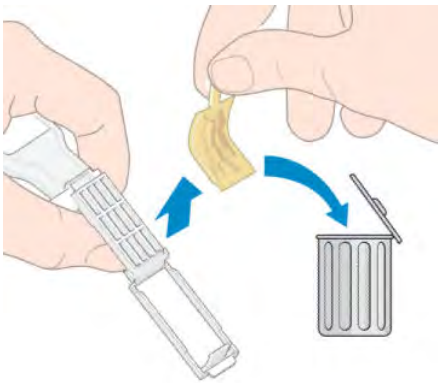
10. After waiting a few moments to allow both connectors to dry, replace the printhead into the printhead carriage. See [Replace a printhead on page 155](#).
11. After completing the cleaning process, open the carriage interconnect wiper by pulling on the sponge tab.



12. Remove the soiled sponge from the carriage interconnect wiper.




13. Dispose of the soiled sponge in a safe place to prevent the transfer of ink onto hands and clothing.




If the front panel continues to show the **Reseat** or **Replace** message, replace the printhead or call your service representative.

Clean and lubricate the printhead carriage rod

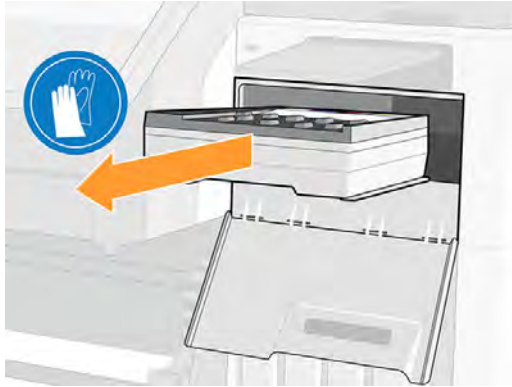
Perform this maintenance operation if you see the error 0086-0003-0079, which is caused by scan-axis motor friction.

 **NOTE:** In some circumstances, such as in ambient temperatures above the printer's operational specification (see [Environmental specifications on page 243](#)), or if there is a significant amount of dust in the air, the lubrication of the slider rods may be impaired, which can affect the performance of the printer.

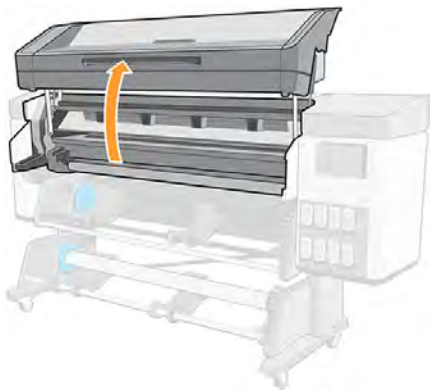
 **CAUTION:** The printheads may be damaged if left uncapped for a long period. Therefore, HP recommends completing this process and restarting the printer within 10 minutes.

1. Turn off the printer.

2. Remove the maintenance cartridge.



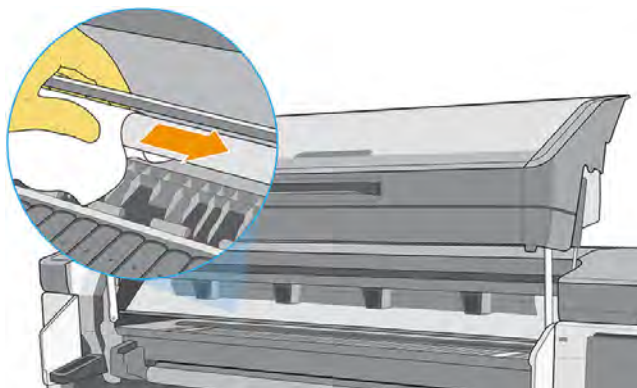
3. Lift the curing module.



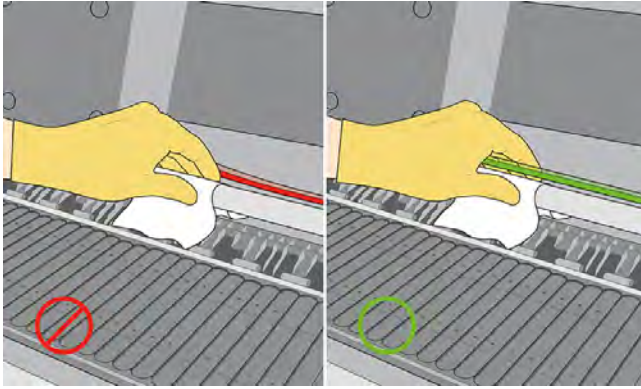
4. Clean the printhead carriage rod using a clean cloth dampened with a general-purpose industrial cleaner (such as Simple Green). Take care to clean the whole rod, including the part under the left cover.

⚠ CAUTION: Do not use commercial cleaners or abrasive cleaners.

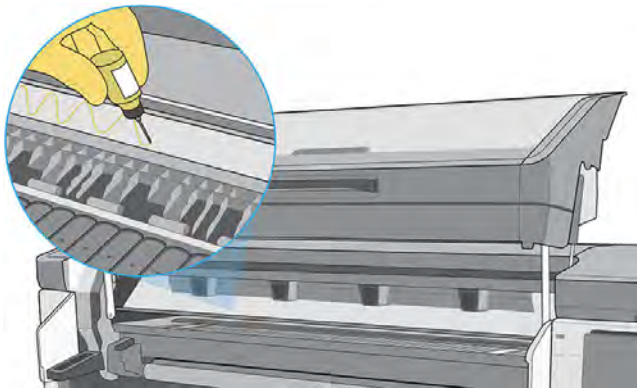
⚠ WARNING! Avoid moving parts. You are recommended to wear gloves.



⚠ CAUTION: While cleaning, be careful not to damage the plastic encoder strip located on top of the rod.



5. Move the carriage manually to the other side of the printer.
6. Clean the right-hand end of the printhead carriage rod area under the right cover as described in step 4.
7. Take the bottle of oil from the user maintenance kit that is supplied with your printer (a replacement kit can be ordered if necessary: part number Y0U21-67014).
8. Deposit a very thin zig-zag trickle of oil along the rod.



 **NOTE:** While lubricating, be careful not to drop oil on the encoder strip located on top of the rod.

9. Move the carriage manually from one side of the printer to the other, to distribute the oil along the rod.
10. Clean the encoder strip in case any oil has fallen on it. See [Clean the encoder strip \(PMK13\) on page 182](#).
11. Lower the curing module.
12. Insert the maintenance cartridge.
13. Turn on the printer.

Clean the encoder strip (PMK13)

Cleaning the encoder strip is a vital part of the printer's maintenance and can clear a variety of system errors:

- 0086-0003-0059 or 0086-0010-0084 system errors and related mispositioning of the carriage assembly errors, such as the carriage bumping into the side of the printer.
- 0086-0003-0061 system errors, related to failures starting and homing the carriage on the scan axis.
- There are occasions when a dirty encoder strip can cause substrate loading issues, as the carriage cannot correctly detect the position of the substrate.

The encoder strip should be cleaned when requested by the printer. The front panel displays a message when cleaning is required: **For optimal printer performance follow the Clean the encoder strip process as described in the User Guide.**

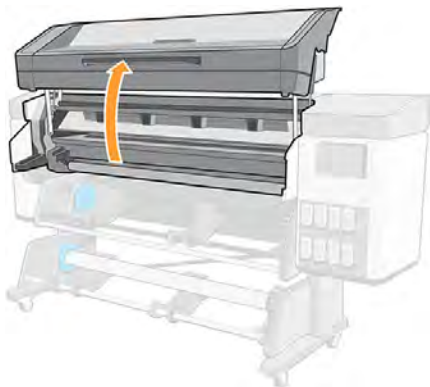
 **IMPORTANT:** You should also clean the encoder strip after replacing the maintenance cartridge.

Cleaning procedure

1. Turn off the printer.
2. Remove the maintenance cartridge.

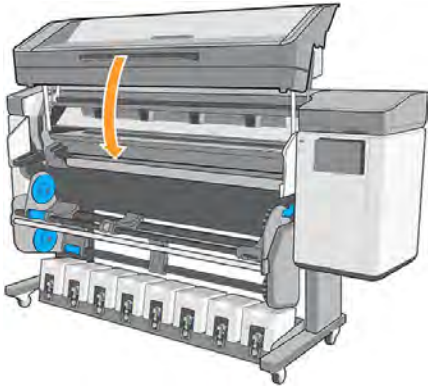


3. Lift the curing module.



4. Clean the left-hand side of the encoder strip with a lint-free cloth dampened with distilled water or general-purpose industrial cleaner.
5. Move the carriage manually to the other side of the printer.
6. Clean the right-hand side of the encoder strip with a lint-free cloth dampened with distilled water or general-purpose industrial cleaner.

7. Lower the curing module.





8. Insert the maintenance cartridge.
9. Turn on the printer.


Clean the platen and the substrate-advance sensor window (PMK19)

You should clean your print platen after every 40 liters of ink used (the front panel will remind you with an alert), and additionally when you notice any of the following symptoms:

- Ink smearing when printing with presets that used to work well (vacuum loss)
- More frequent substrate jams
- Ink stains and marks on the back of your prints
- Advance issues even when using the substrate-advance sensor

 **NOTE:** If you print on wide substrate after having printed on narrower substrate, you may find that the left side of the platen has become dirty. If this contaminated section of the platen is not cleaned, it could leave marks on the back of the substrate.

 **NOTE:** Do not print on porous substrates when using the platen, as it will get dirty. Use the ink collector for porous substrates.

 **CAUTION:** Be careful not to damage the substrate-advance sensor when cleaning the platen. The sensor is the very small rectangular window in the second platen from the right.

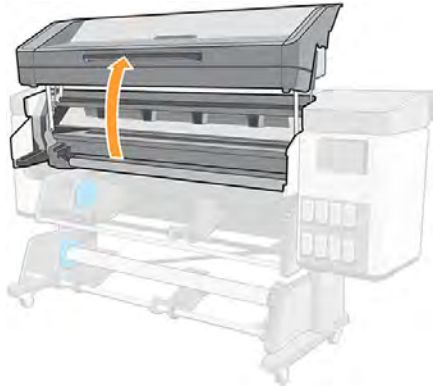
 **TIP:** You are recommended to wear gloves.



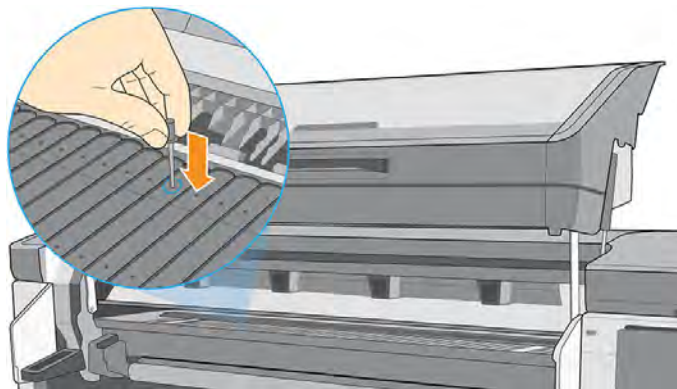
Follow these instructions to clean the platen.

1. Unload all substrate from the printer. See [Unload a roll from the printer on page 77](#).
2. Turn off the printer.

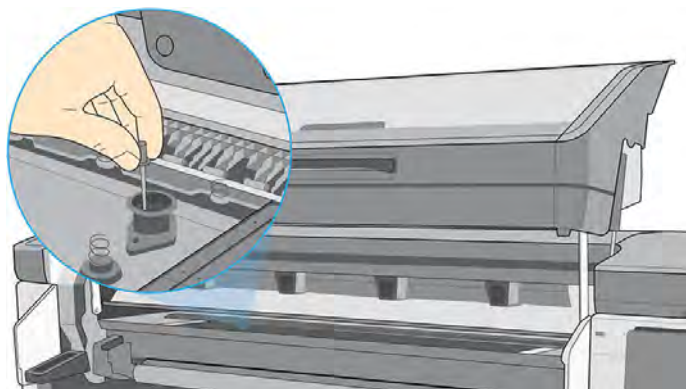
3. Lift the curing module.



4. Use a 1 mm pin to unclog every hole in the print platen. Make sure to push the pin all the way through. Remains of ink and substrate fibers tend to accumulate in the holes and diminish the vacuum effect.



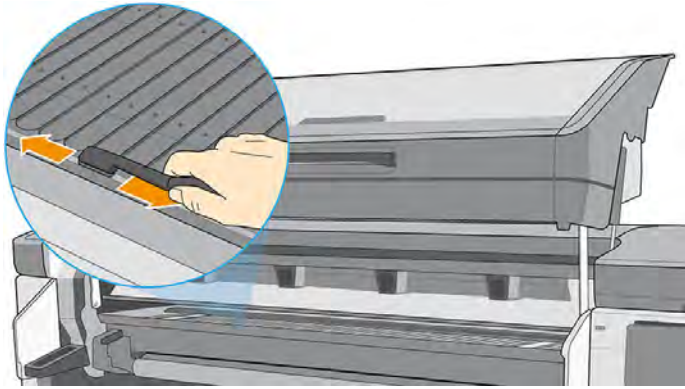
5. Remove the platen or ink collector: see [ink collector on page 57](#). With the same 1 mm pin or tweezers, remove all remains of ink and substrate fibers inside the vacuum suction cups. Then reinstall the platen or ink collector.



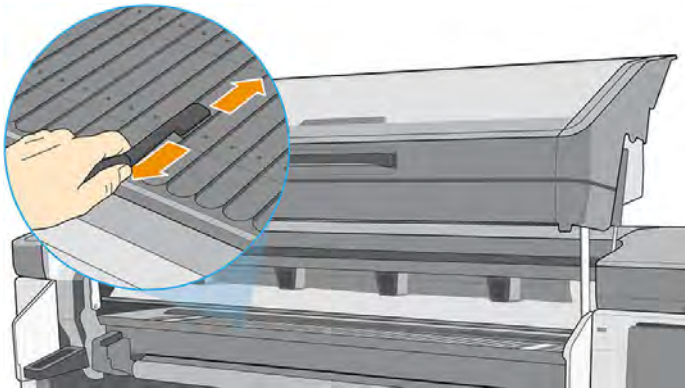
If you find ink stains on the back of your prints or have trouble with the substrate-advance sensor, continue with the following steps:

1. Use a clean, absorbent lint-free cloth to wipe any wet ink thoroughly from the cutter rail and platen.

2. With a dry brush, remove dry, loosened ink deposits from the cutter rail.




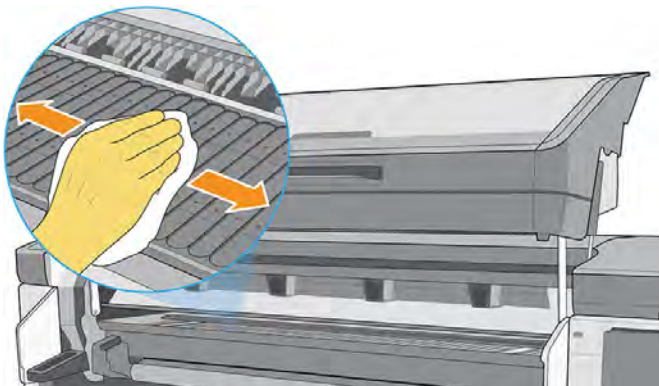
3. With the same dry brush, remove dry, loosened ink deposits from the platen surface.



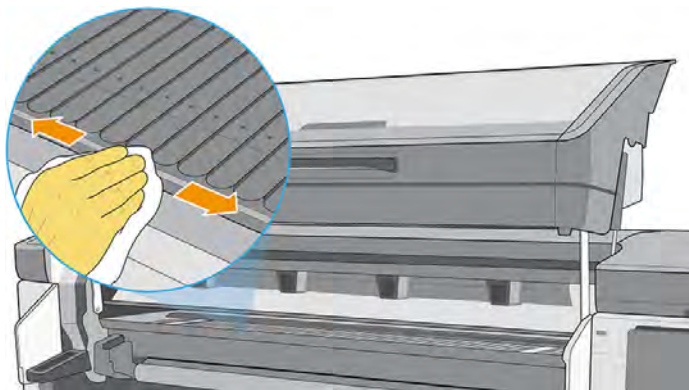
4. Slightly dampen a clean cloth with a general-purpose industrial cleaner (such as Simple Green) to wipe the remaining dry ink deposits from the platen.

 **NOTE:** Dry ink deposits take longer to remove.

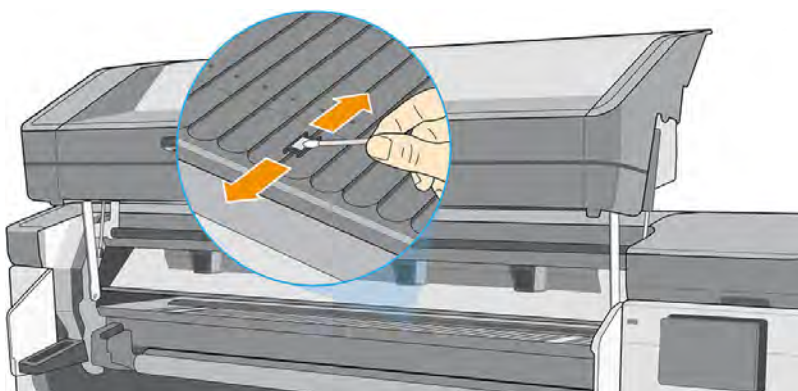
 **CAUTION:** Do not use commercial cleaners or abrasive cleaners. Do not wet the platen directly, because you will leave too much moisture behind, which could damage the substrate-advance sensor.




5. Use the damp cloth to remove remaining dry ink deposits from the cutter rail.



6. Wipe the substrate-advance sensor window with a cotton swab to remove wet ink. It is a very small rectangular window in the second platen from the right.



 **NOTE:** If there is ink below the window, remove the platen and clean the bottom of the window in the same way.

If the sensor window is heavily coated with dried ink, you may need to apply some pressure while wiping, helping the cotton to absorb the ink. Continue cleaning with fresh swabs until the cotton stays clean and the sensor window looks clean.

7. Wait 3 or 4 minutes to let the cleaning liquid evaporate, before turning on the printer and reloading the substrate.

Replace the lubrication felt (PMK18)

1. When you start this operation, the printer will launch the scan-axis friction test (0086-10). Tap **OK** on different pages until the test is finished.

2. Rotate the front panel.



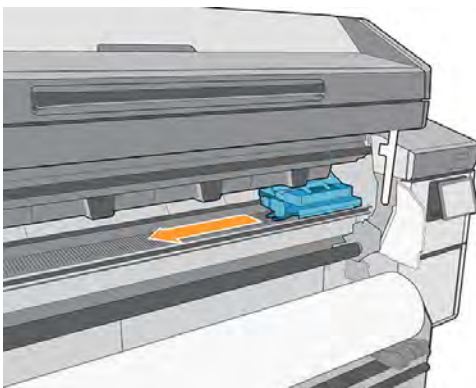
3. Open the maintenance cartridge door.



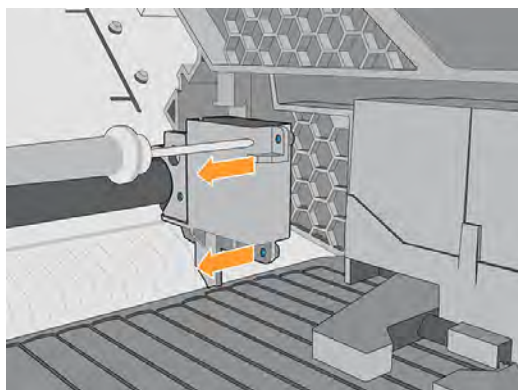
4. Remove the maintenance cartridge by sliding it out. It has a handle on the front.



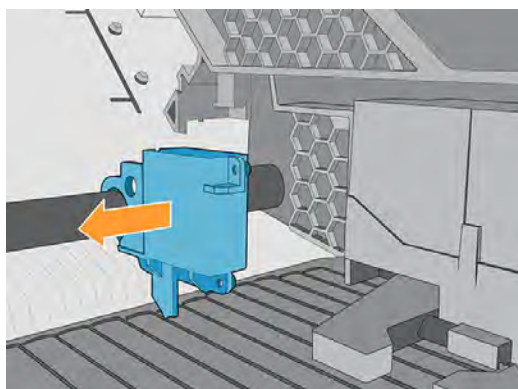
5. Lift the curing module and move the carriage to the middle of the print zone.



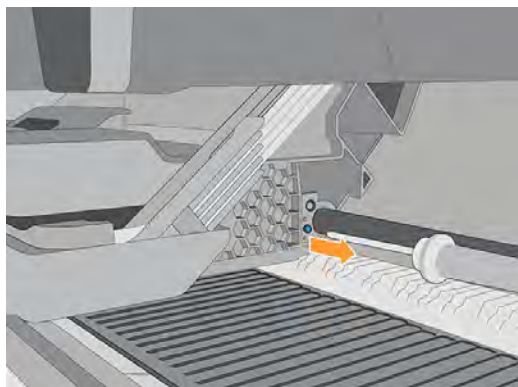
6. Unscrew three oiler screws at the left side of the carriage.



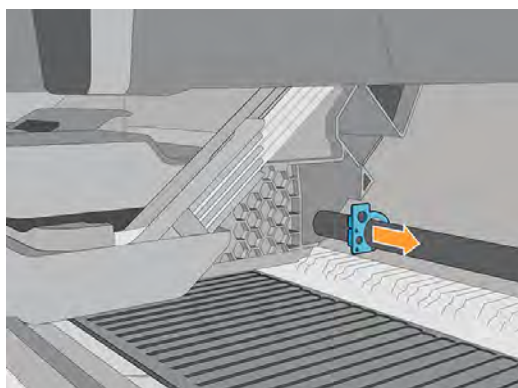
7. Remove the oiler.



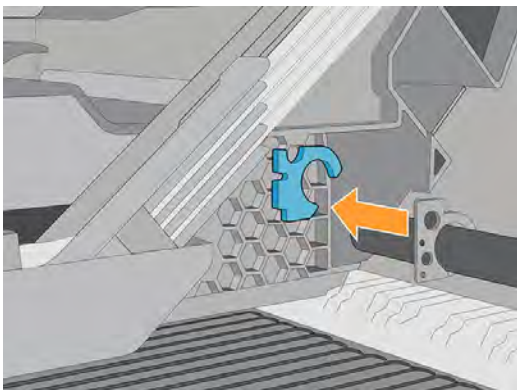
8. Unscrew the felt retainer screw at the right side of the carriage.



9. Pull out the felt retainer.



10. Remove the lubrication felt.



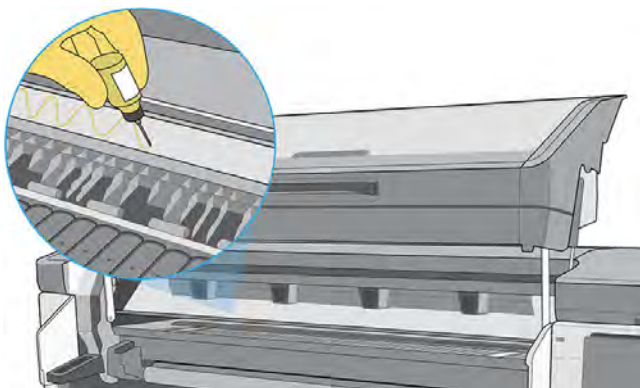
11. Replace the lubrication felt by installing the lubrication felts kit (YOU21-67014), then follow the removal steps in reverse order.
12. Do not move the carriage. Clean the left side of the carriage rod using a clean cloth dampened with a general-purpose industrial cleaner (such as Simple Green). Take care to clean the part under the left cover.

⚠ CAUTION: Do not use commercial cleaners or abrasive cleaners.

⚠ WARNING! Avoid moving parts. You are recommended to wear gloves.



13. Clean the left-hand side of the encoder strip with a lint-free cloth dampened with distilled water or general-purpose industrial cleaner (such as Simple Green).
14. Move the carriage manually to the left of the printer.
15. Clean the right-hand side of the carriage rod using a clean cloth dampened with a general-purpose industrial cleaner. Take care to clean the part under the right cover.
16. Clean the right-hand side of the encoder strip with a lint-free cloth dampened with distilled water or general-purpose industrial cleaner.
17. Move the carriage manually to the right of the printer.
18. Take the bottle of oil from the lubrication felts kit (YOU21-67014) and deposit a very thin zig-zag trickle of oil along the rod.





📝 NOTE: While lubricating, be careful not to drop oil on the encoder strip located on top of the rod.

19. Reinstall the maintenance cartridge and close the door.
20. Lower the curing module.
21. Tap **OK** to continue.
22. The printer launches the scan-axis friction test (0086-10). Tap **OK** on different pages until the test is finished.

Replace or empty the condensation collector

The condensation collector should be replaced or emptied in the following situations:

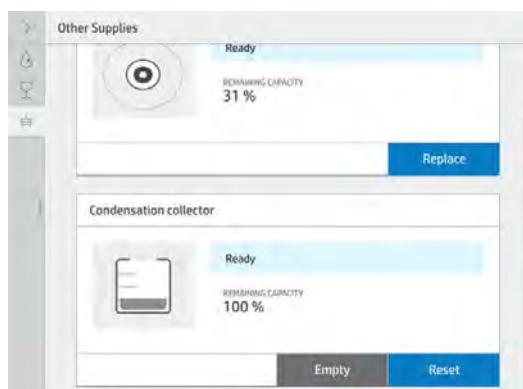
- When the printer shows a condensation-collector alert on the front panel.
- When the condensation collector has reached its capacity: see the level indicator on the collector.

1. At the front panel, tap , then  at the left of the screen, then scroll down to find the condensation collector area. Information appears on the level of condensation in the collector.

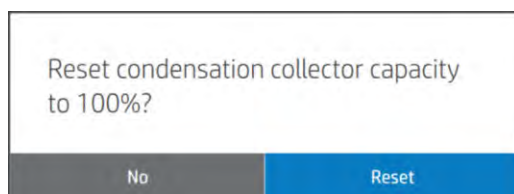
2. Tap the **Empty** button. The front panel explains how to proceed.

You are recommended to wear gloves.

3. When the ink collector has been emptied, tap **OK**, and remember to reset the counter by tapping the **Reset** button.



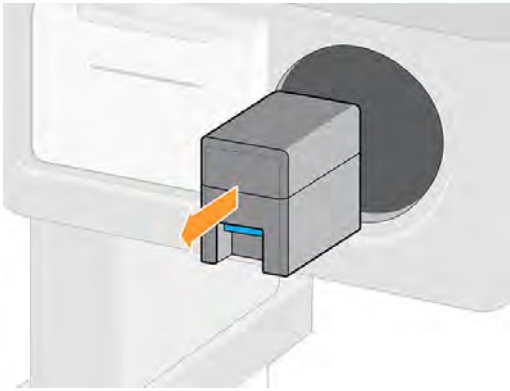
4. The front panel asks you to confirm that the condensation collector level will be reset.



Check and clean the plastic needles in the printhead slot

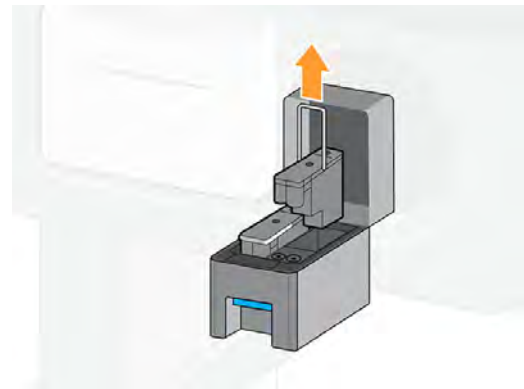
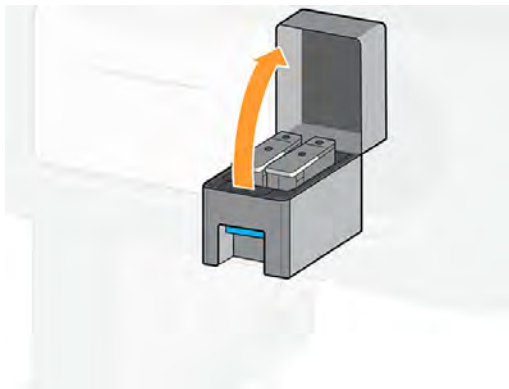
HP recommends cleaning the plastic needles once a month.

1. Remove the storage box from the storage system.

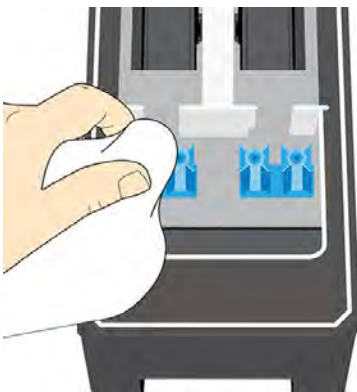


2. Open the storage box and remove the printheads inside (auxiliary or white printheads).

⚠ CAUTION: HP recommends performing these operations without pausing, otherwise needles are left exposed to the air and the ink may dry out. It is best to do the maintenance when the printheads are installed on the carriage.

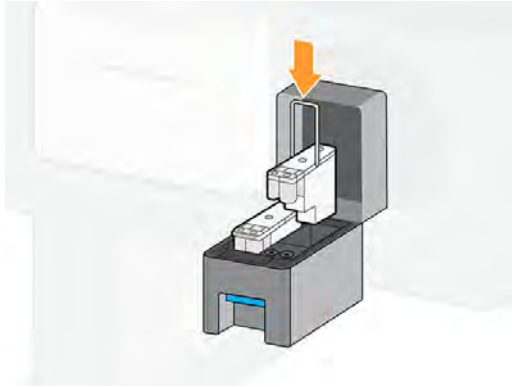


3. Check the plastic needles and clean off any ink remaining on them with a soft, fiber-free cloth dampened with distilled water.



4. With a dry cloth, dry the remaining water on the plastic needles.

5. Put the printheads into the storage box.



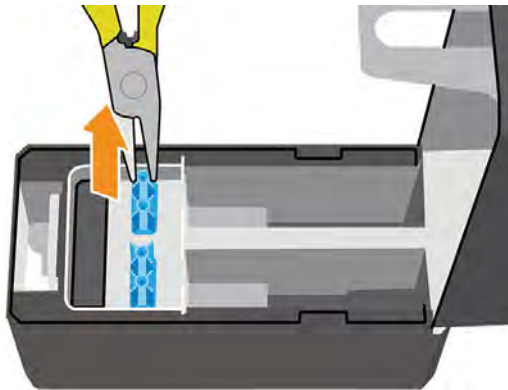
6. Put the storage box back into the storage system.

Replace the plastic needles in the printhead slot

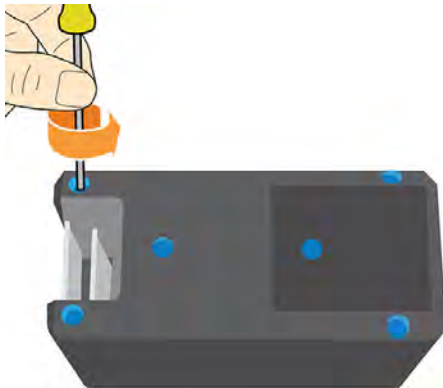
Needles should be replaced only when damaged.

CAUTION: The screws should not be reinstalled more than three times.

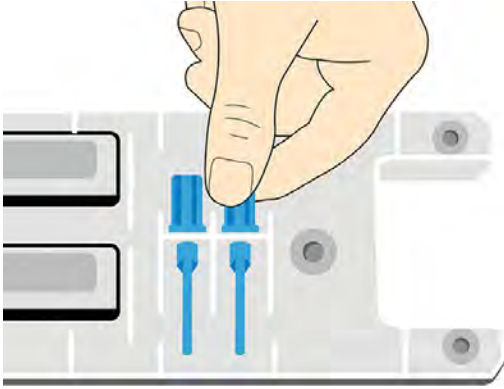
1. Remove the damaged plastic needle by pulling it from the top with pliers.



2. Remove the six screws from the bottom part.



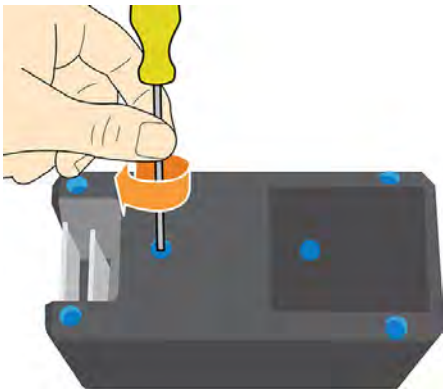
3. Take a new plastic needle from inside the plastic part or from the user maintenance kit.



4. Insert the new plastic needle from the top, and pull it from below with pliers.



5. Assemble the plastic part and reinstall the six screws.



Replace the ink mix container (PMK15)

The ink mix container should be replaced every 2 years, if not sooner. The front panel indicates when replacement is needed.

 **IMPORTANT:** Whenever you replace the ink mix container, you should also replace the white ink cartridge.

To replace the ink mix container, see [Replace a 1 liter Eco-Carton ink cartridge on page 143](#).

Clean the exterior of the printer

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

There may be some dampness from condensation under the fans of the curing module, which should be wiped with a dry cloth.

⚠ 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.

Clean the curing modules (PMK14)

The front panel indicates when the curing modules need cleaning, which is important to provide correct curing.

The cleaning will be done by your service representative if the printer is within warranty or under a specific service contract.

Whoever does the cleaning should obtain the appropriate certification from HP: see <http://www.hp.com/go/latex700-800/curing-certification/>.

NOTICE: HP is not responsible for any injuries sustained if its instructions for this operation are not followed.

Service maintenance

During the life of your printer, components that are used constantly can wear out.

Regular maintenance is critical to avoid these components degrading to the point that the printer breaks down. The printer keeps track of various parameters such as the line-sensor degradation, the number of cycles that the carriage makes across the axis of the printer, and the total quantity of ink used.

The printer uses these numbers to track the need for service maintenance, and displays one of the following messages on the front panel:

- Curing modules cleaning
- Recirculation cover replacement
- Curing heater fans replacement
- SAX cluster gear replacement
- Service station motor replacement
- Spit roller motor replacement
- PH cleaning roll motor replacement
- Flex cables replacement
- Encoder strip replacement
- Rod slider replacement
- Pinch-wheel module replacement
- Carriage bearings replacement
- Belt & tensioner replacement
- SAX motor replacement

These messages mean that some components are nearing the end of their lives. You may be able to continue printing for a period of time, depending on your use of the printer. However, HP strongly recommends that you call your service representative and arrange for a service maintenance visit. The service engineer can then

replace the worn parts on-site, which will prolong the life of the printer and enable continued, safe and optimized operation. Under some circumstances, if some of these maintenances are not performed, the printer may stop printing and you will not be able to send new jobs from the RIP. At that point, you will need to contact your service representative.

All these parts will be replaced preventively by your service representative if the printer is within warranty or under a specific support contract. During a service maintenance visit, the service engineer replaces several parts at once, avoiding the need for repeat visits.



NOTE: In order to be able to replace the different parts before they reach their end of life, the printer must be connected to the Internet and the PDSA must be accepted.

12 Customer Self-Repair parts

HP's Customer Self-Repair program offers our customers the fastest service under either warranty or contract. It enables HP to ship replacement parts directly to you (the end user) so that you can replace them. Using this program, you can replace parts at your own convenience.

Convenient, easy to use

- An HP Support Specialist will diagnose and assess whether a replacement part is required to address a defective hardware component.
- Replacement parts are express-shipped; most in-stock parts are shipped the very same day you contact HP.
- Available for most HP products currently under warranty or contract.
- Available in most countries.

For more information about Customer Self-Repair, see <http://www.hp.com/go/selfrepair/>.

This chapter describes the following specific repair operations:

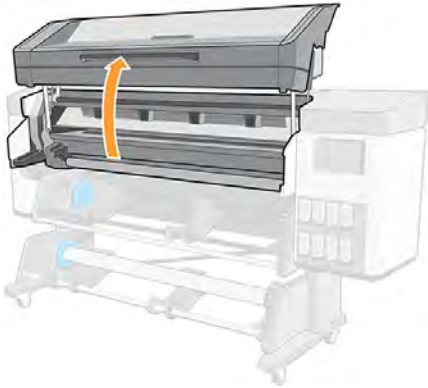
- [Install the ink collector](#)
- [Substrate load spacer](#)
- [Replace the line sensor](#)
- [Replace the lubrication felt](#)
- [Print platen](#)
- [Replace the vacuum rubber](#)
- [Replace the ink-collector sensor](#)
- [Replace the lifting mechanism handle](#)
- [Replace the deflector fan unit](#)
- [Replace the cutter](#)
- [Replace the optical sensor](#)
- [Replace the carriage cover](#)

Install the ink collector

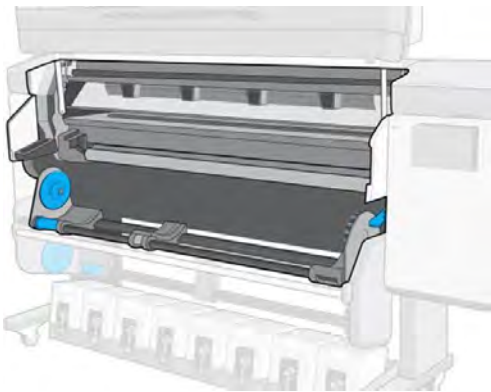
See [Ink collector](#) on page 57.

Substrate load spacer

1.



2.

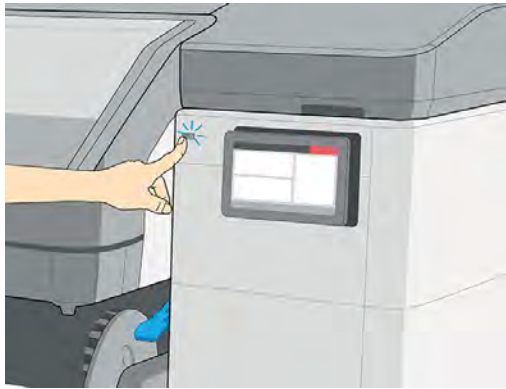


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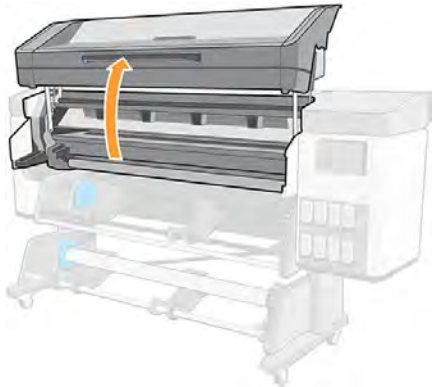


Replace the line sensor

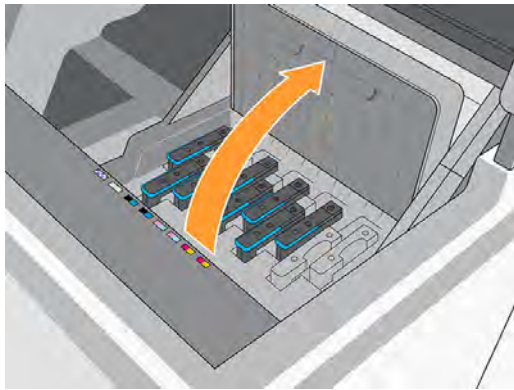
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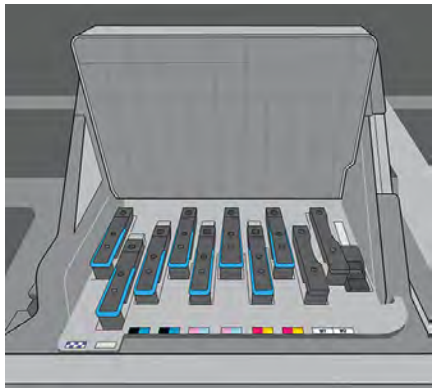
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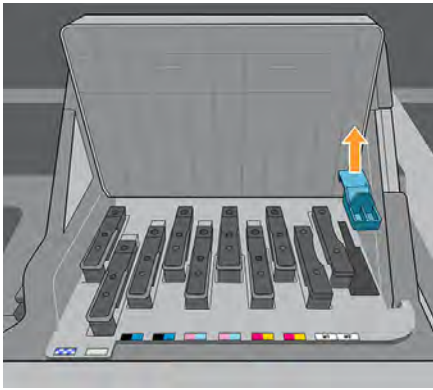
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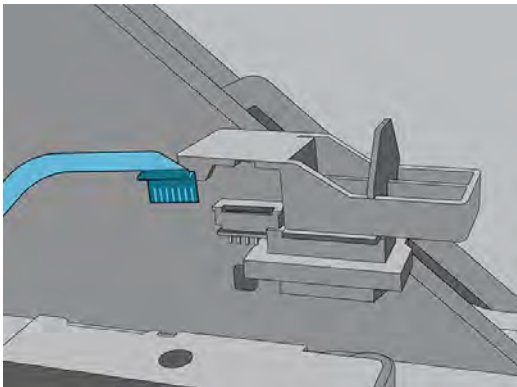
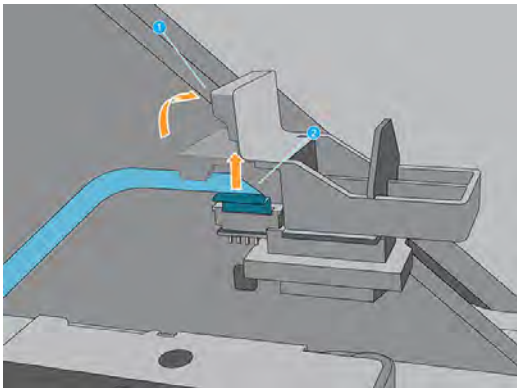
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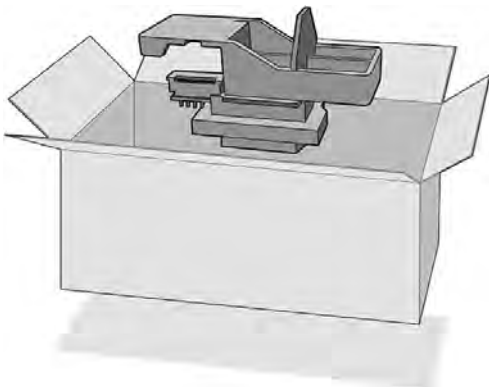
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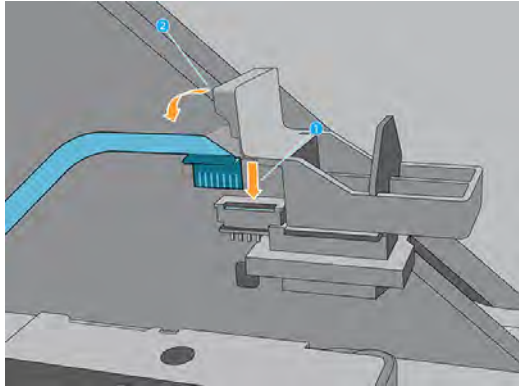
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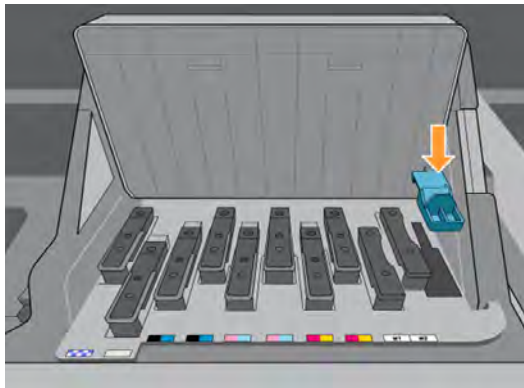
7.



8.



9.



Replace the lubrication felt

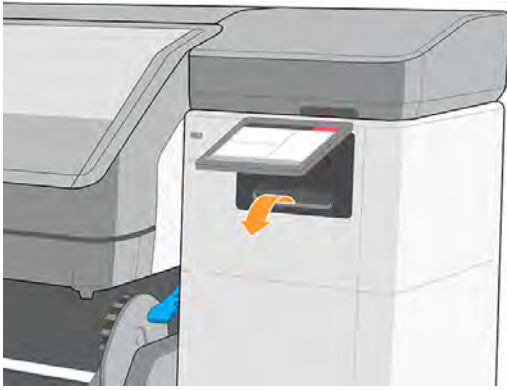
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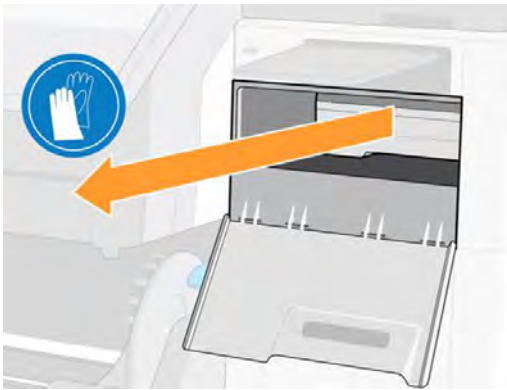
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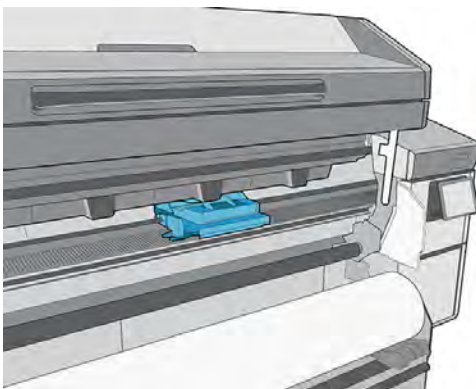
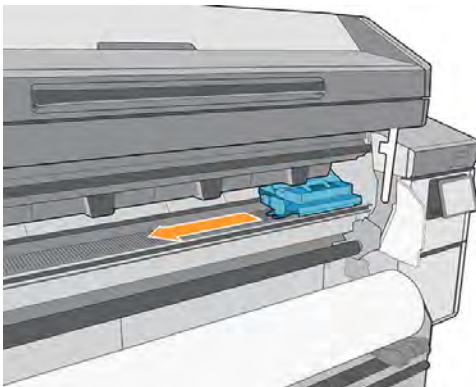
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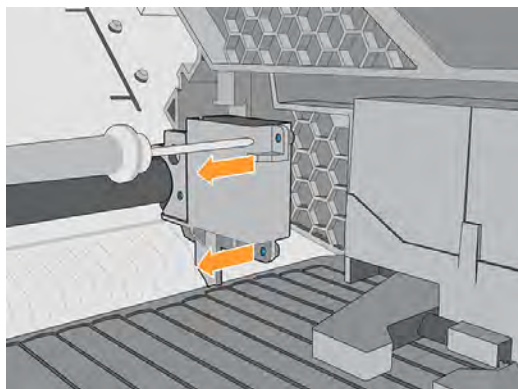
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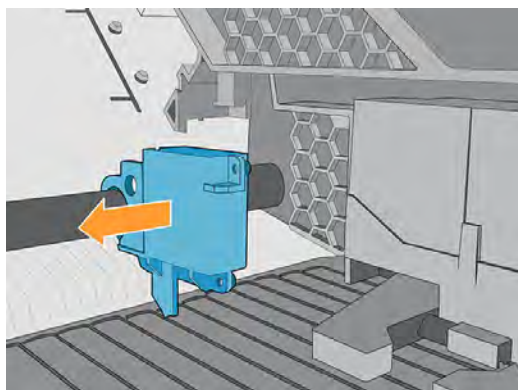
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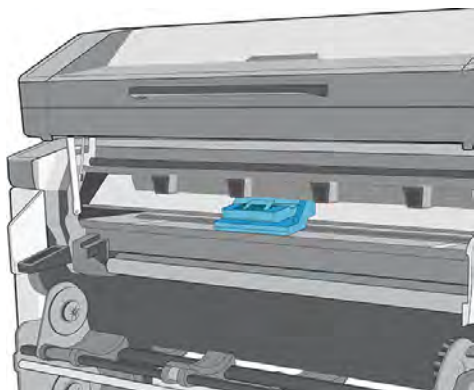
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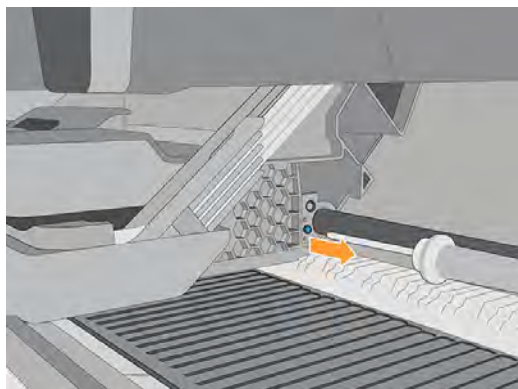
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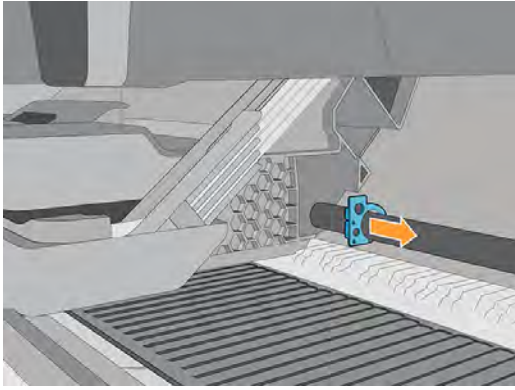
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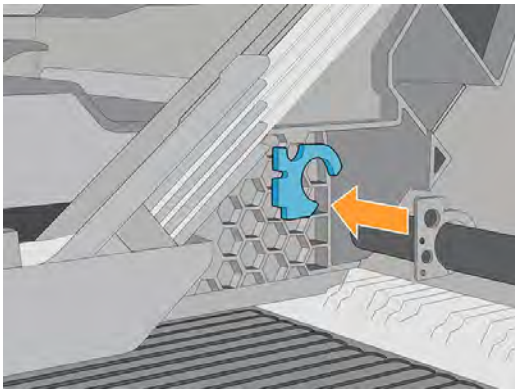
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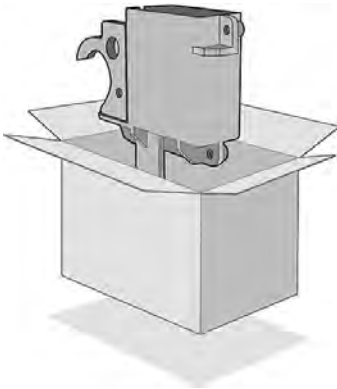
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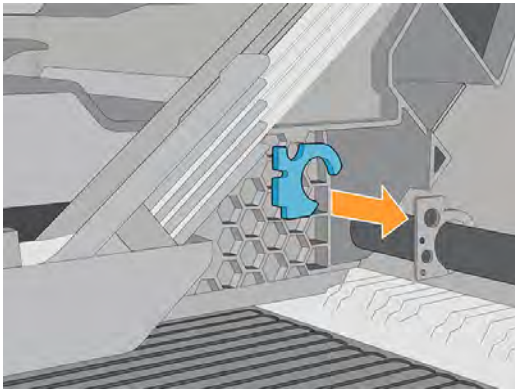
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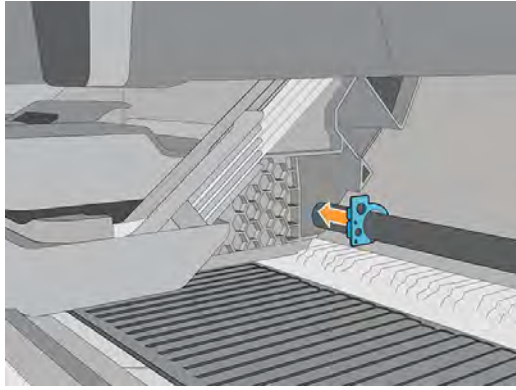
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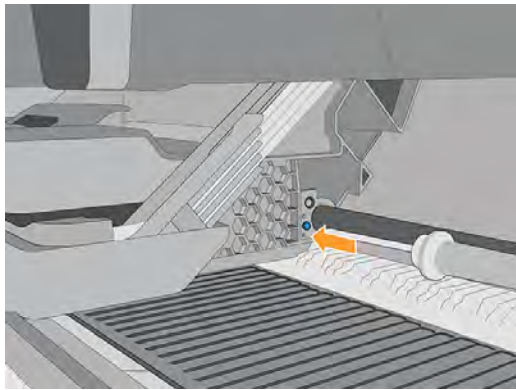
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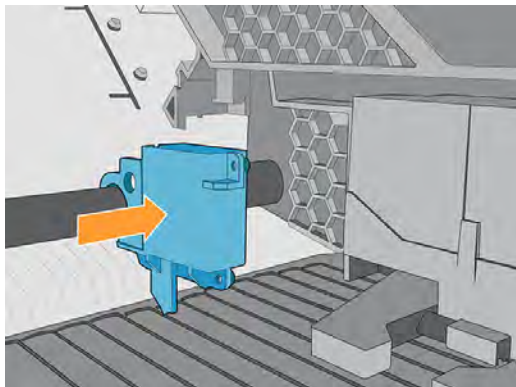
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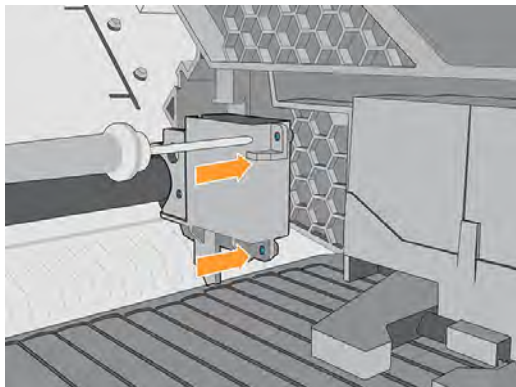
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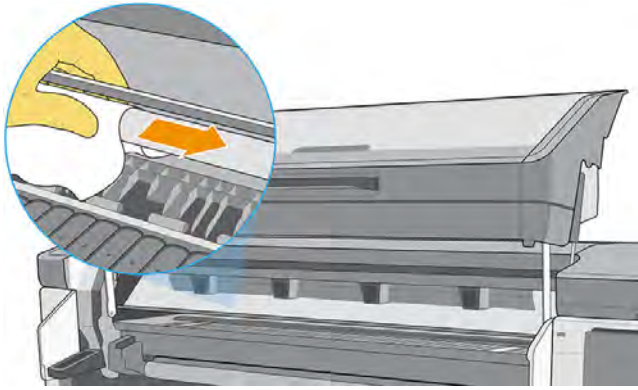
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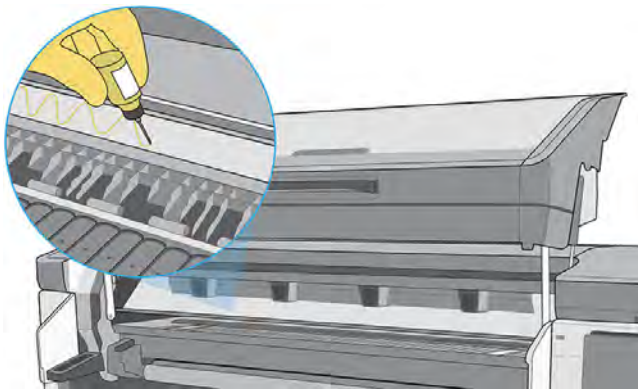
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18.



19.

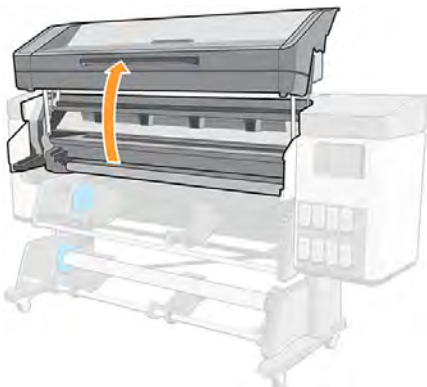


Print platen

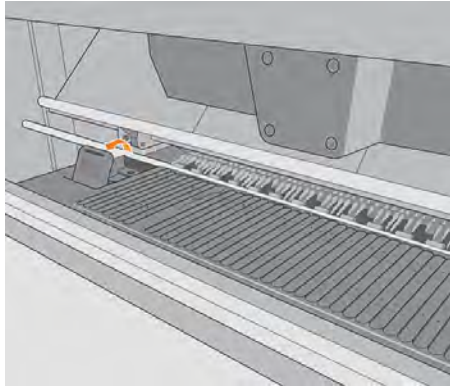
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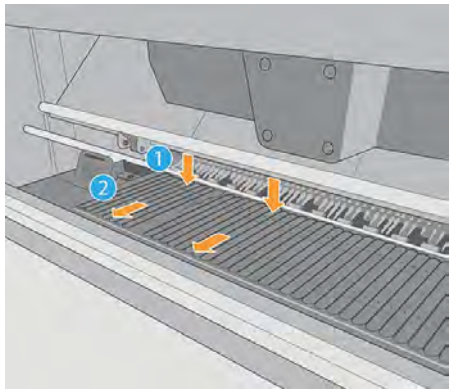
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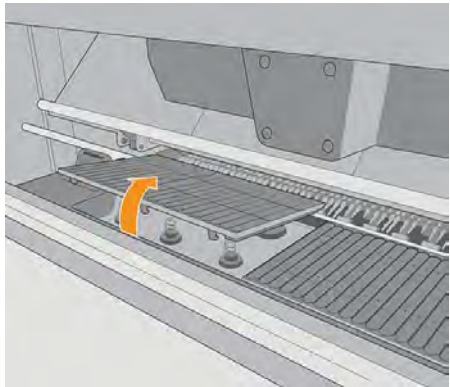
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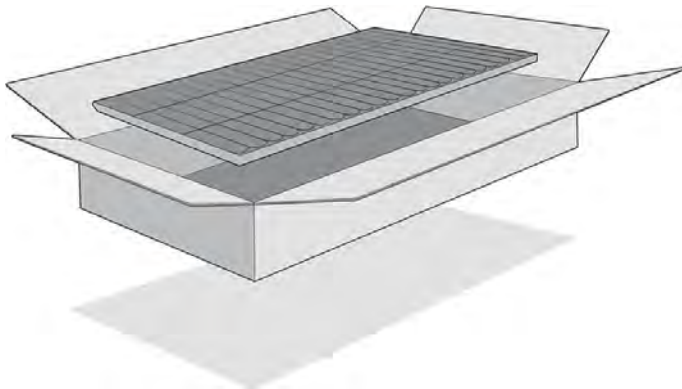
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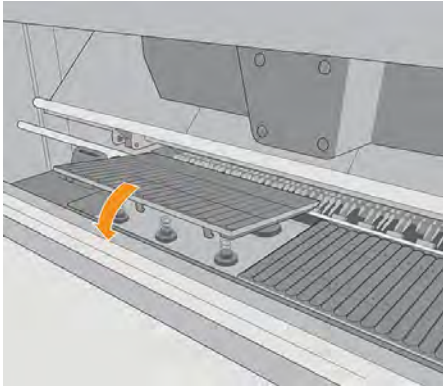
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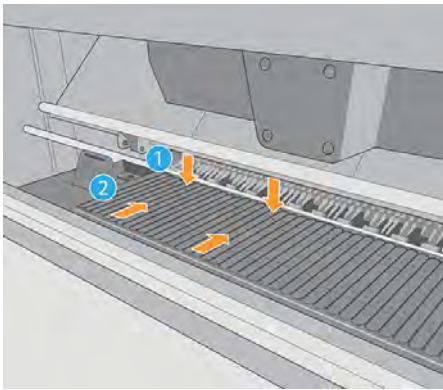
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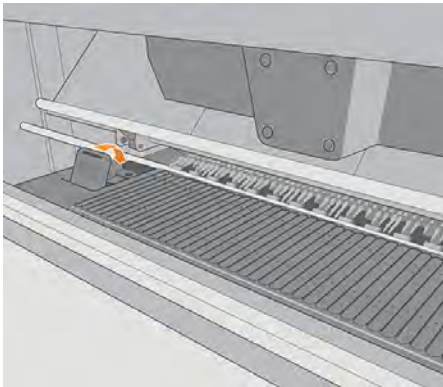
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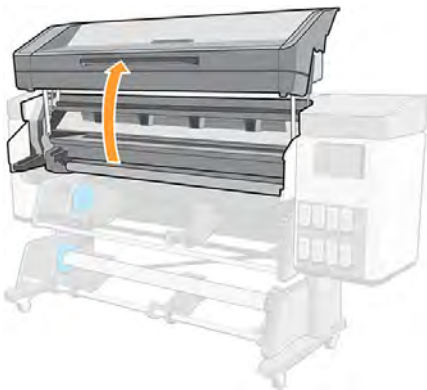


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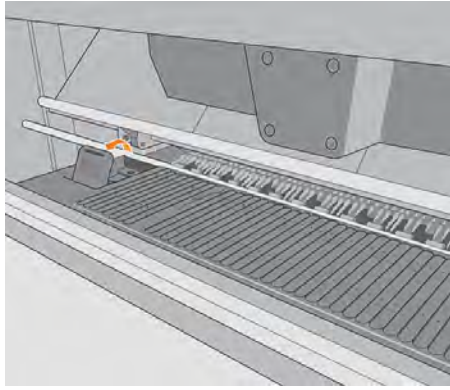


Replace the vacuum rubber

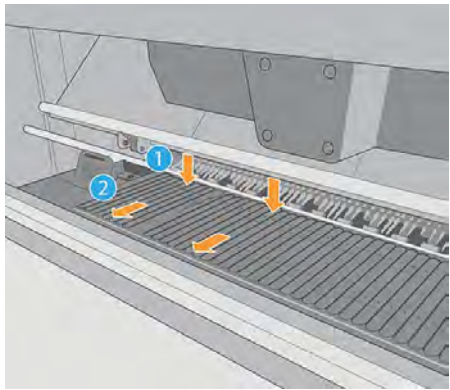
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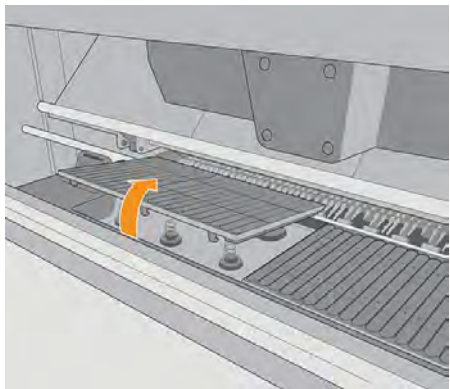
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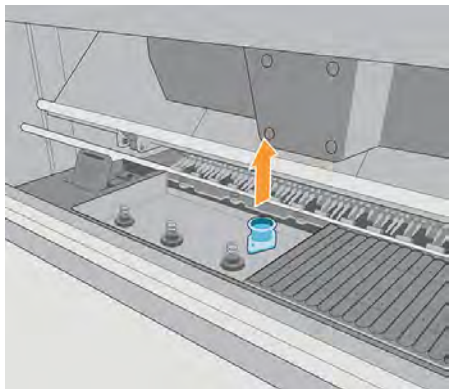
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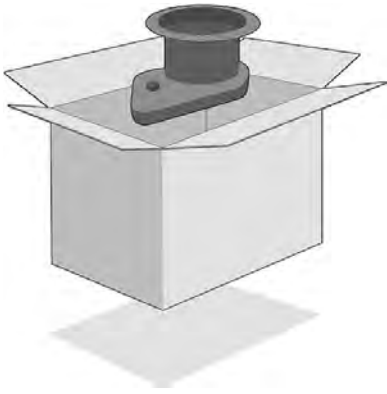
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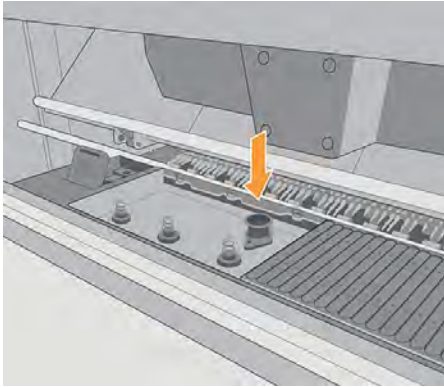
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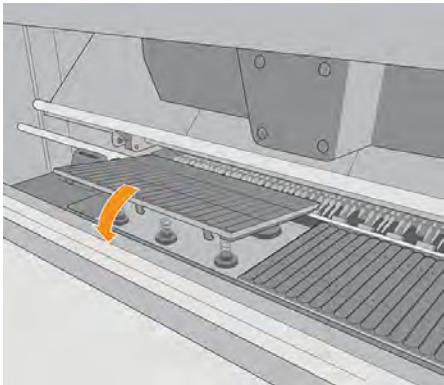
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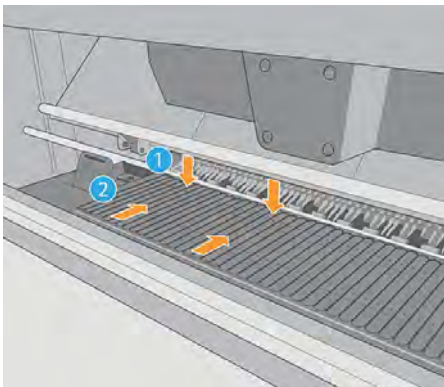
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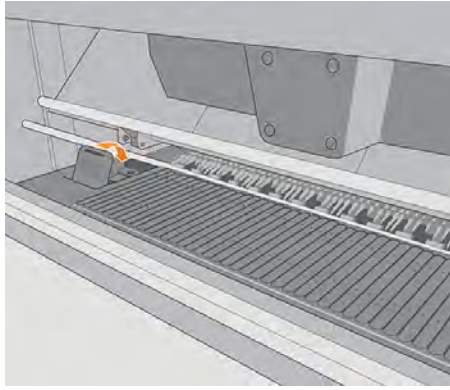
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9.

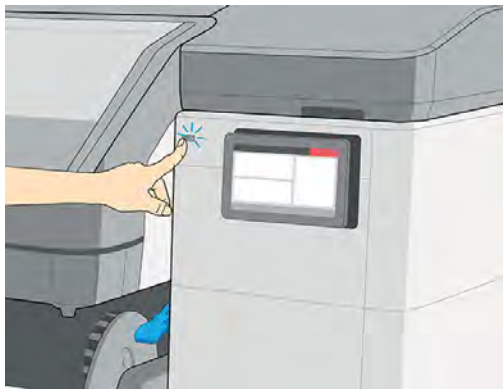


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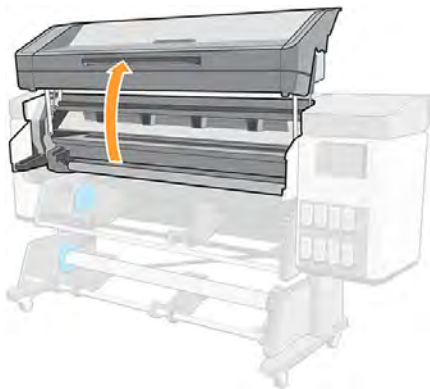


Replace the ink-collector sensor

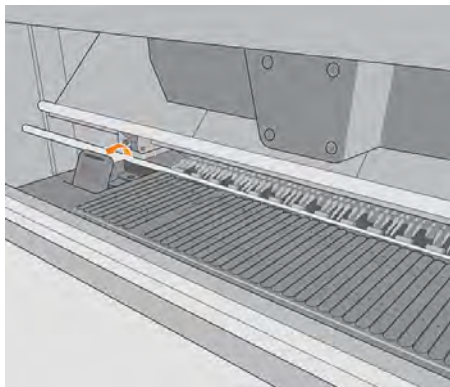
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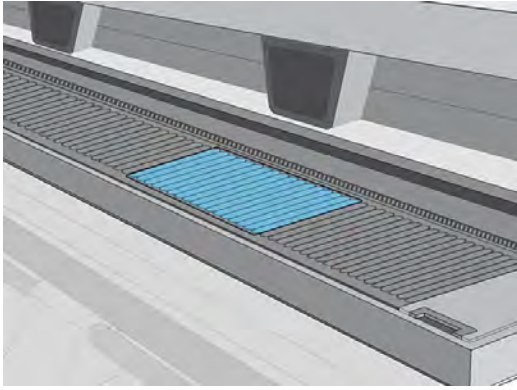
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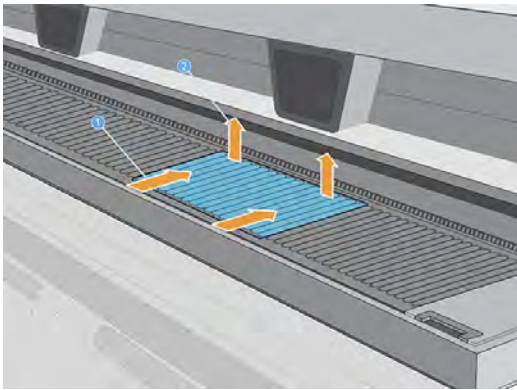
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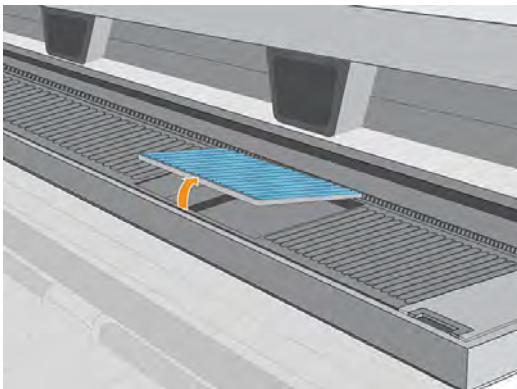
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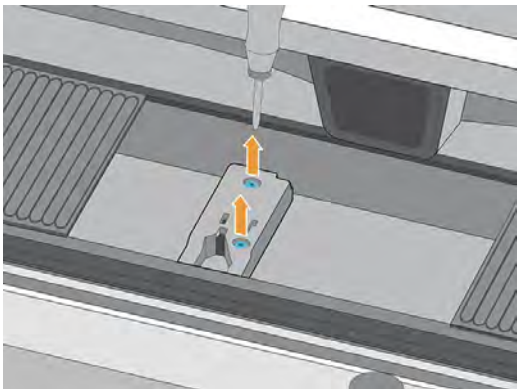
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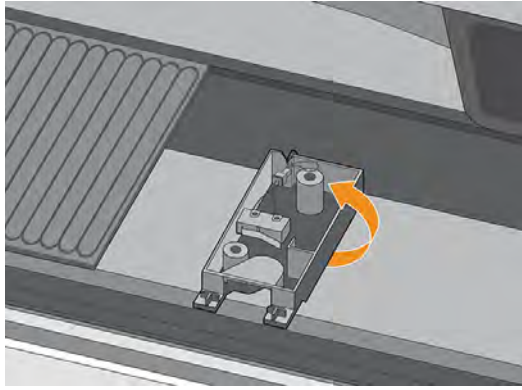
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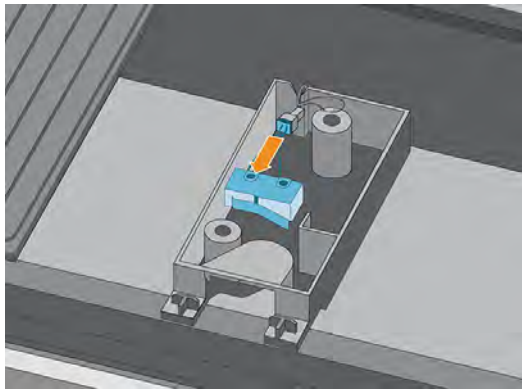
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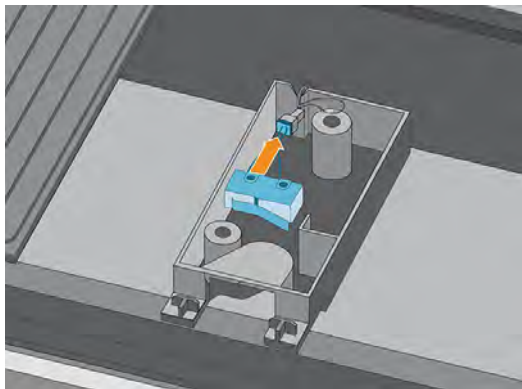
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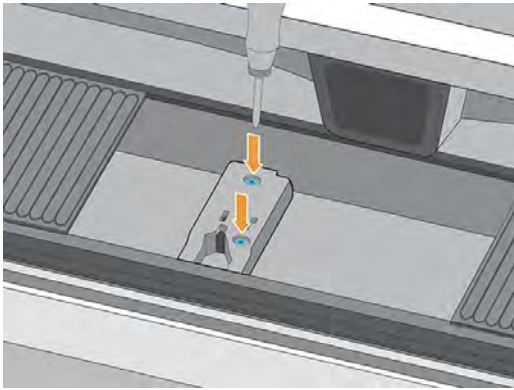
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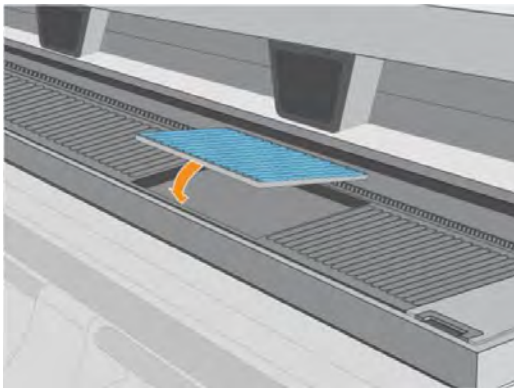
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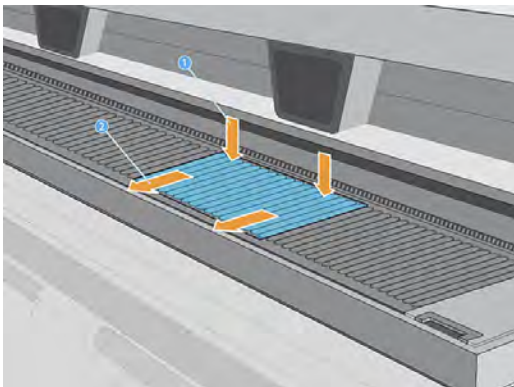
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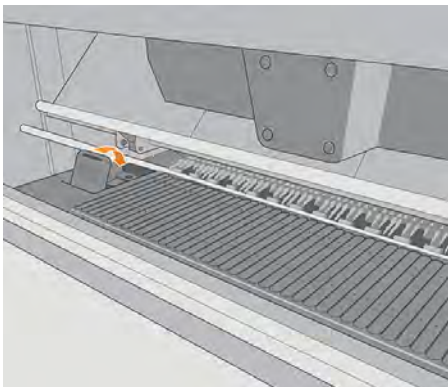
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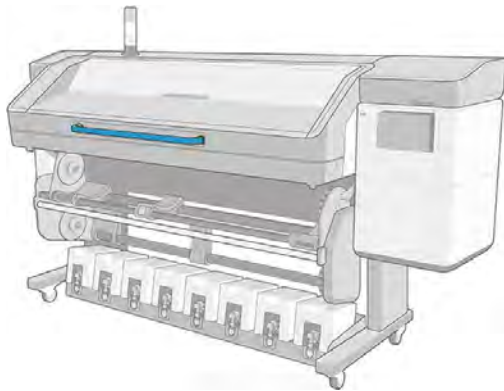


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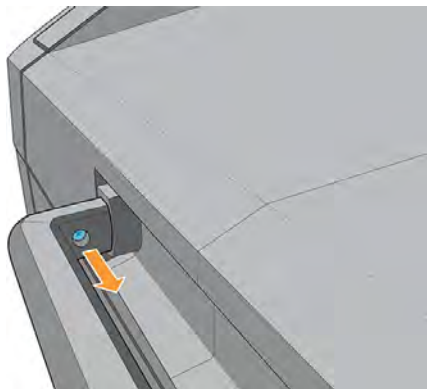


Replace the lifting mechanism handle

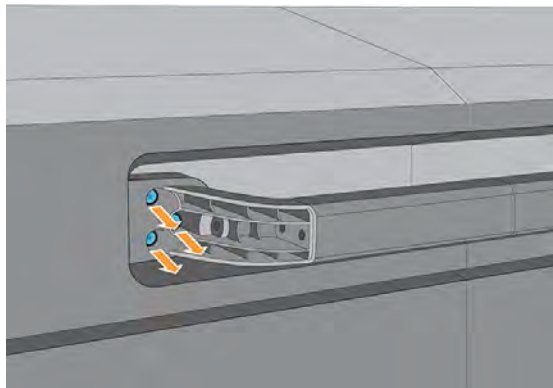
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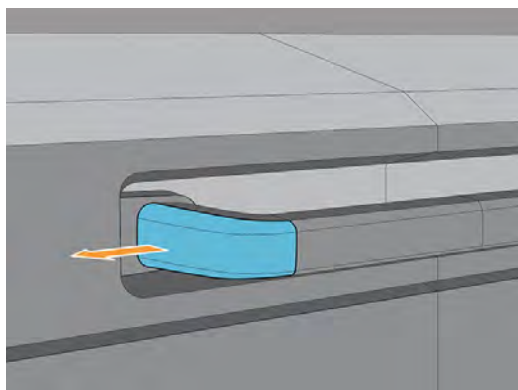
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3.



4.

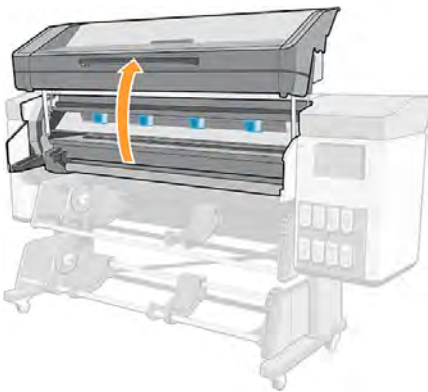


Replace the deflector fan unit

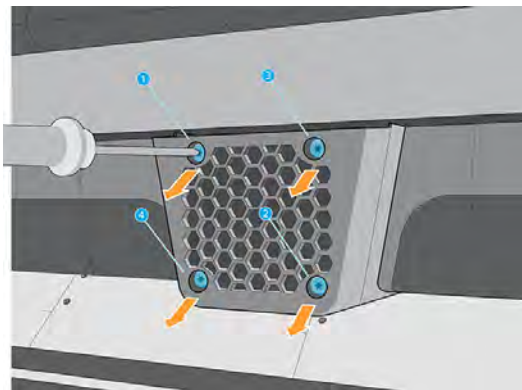
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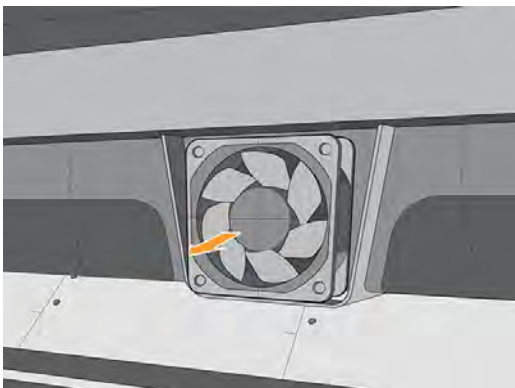
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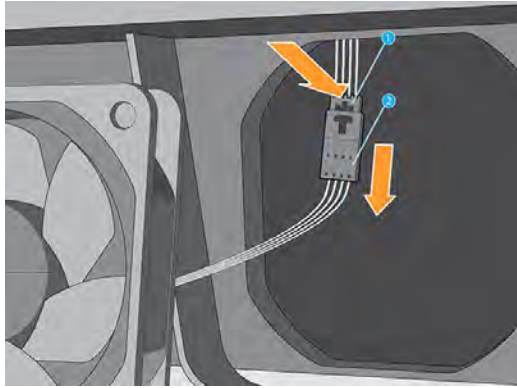
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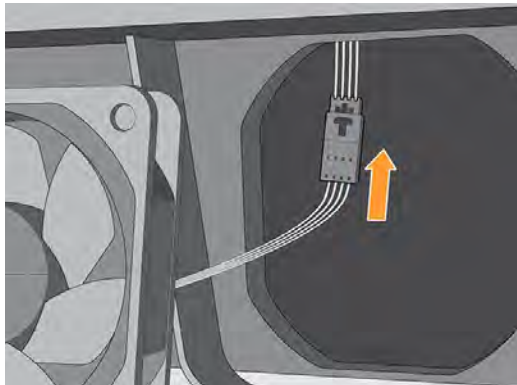
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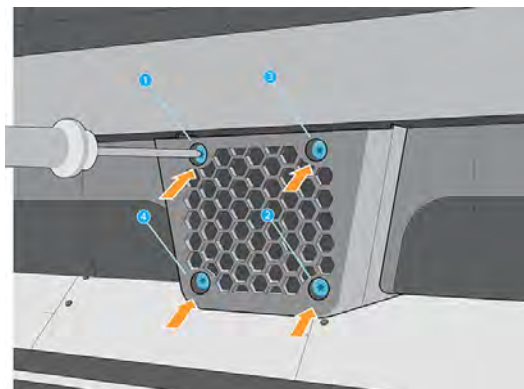
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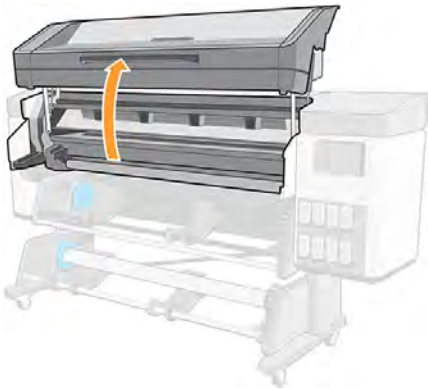


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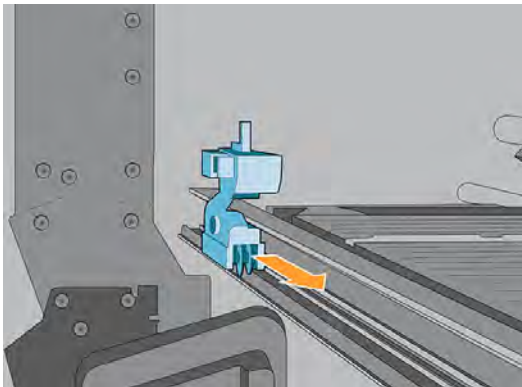


Replace the cutter

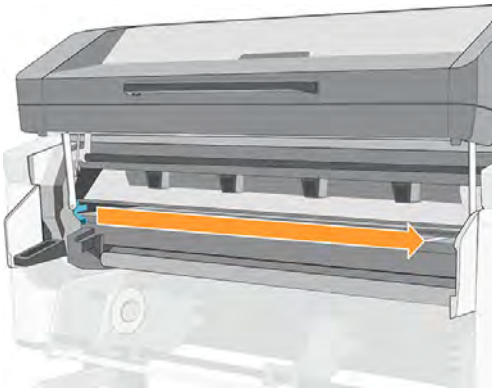
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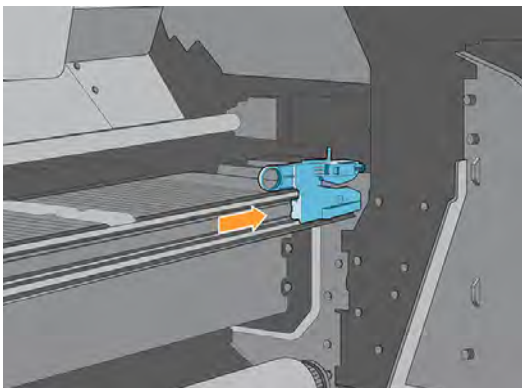
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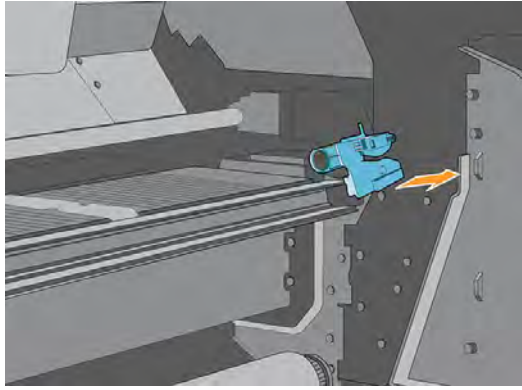
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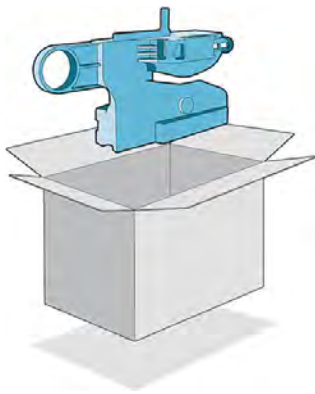
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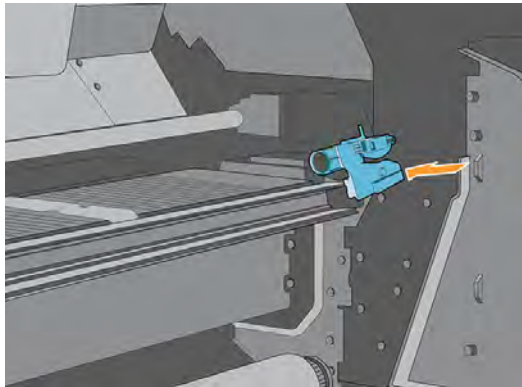
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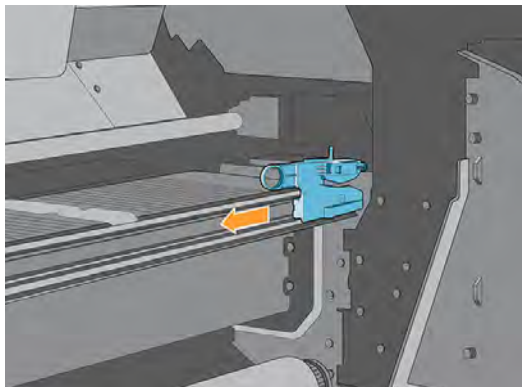
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7.



8.

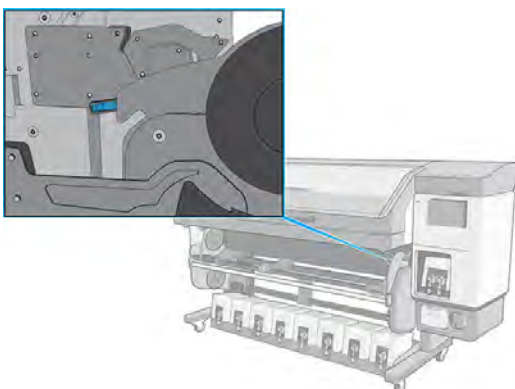


Replace the optical sensor

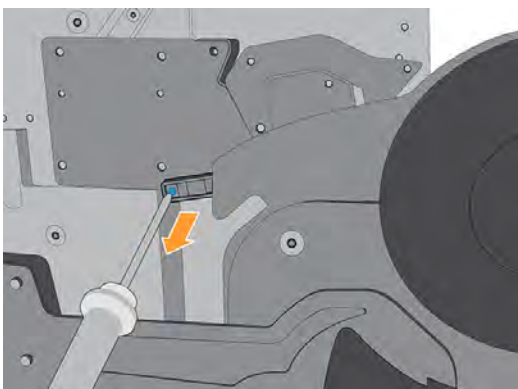
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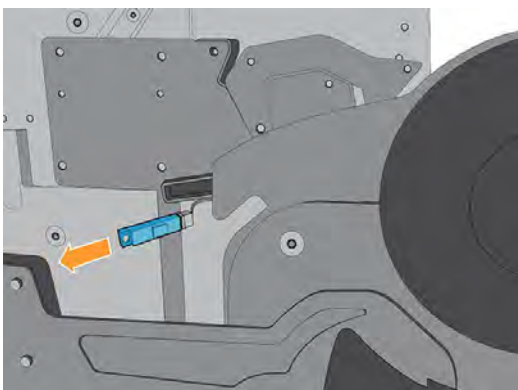
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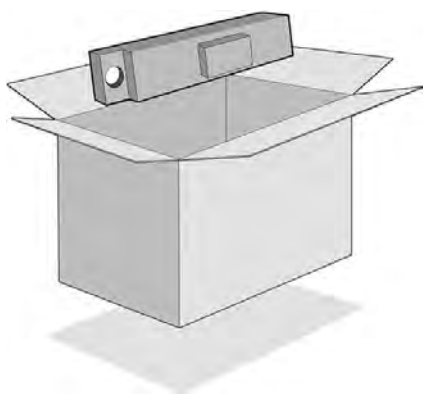
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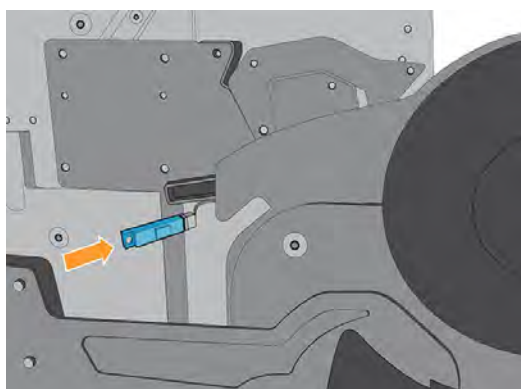
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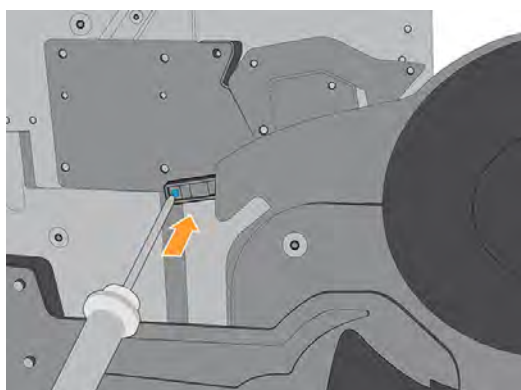
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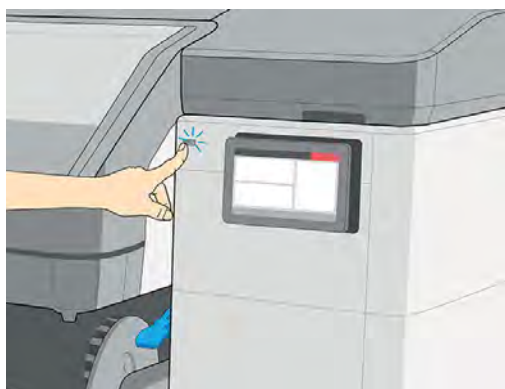


7.



Replace the carriage cover

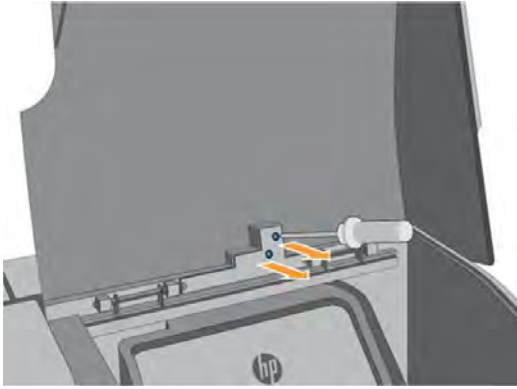
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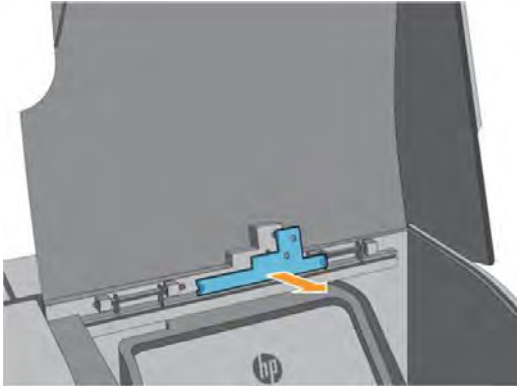
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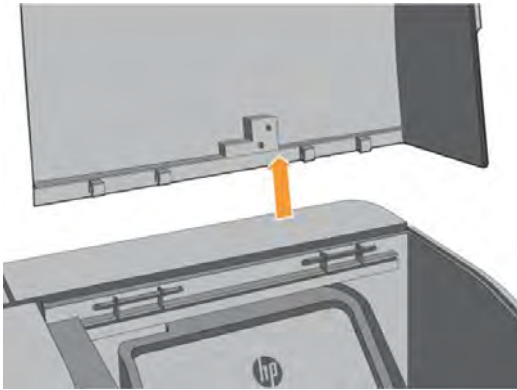
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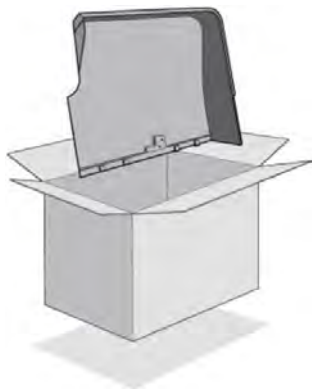
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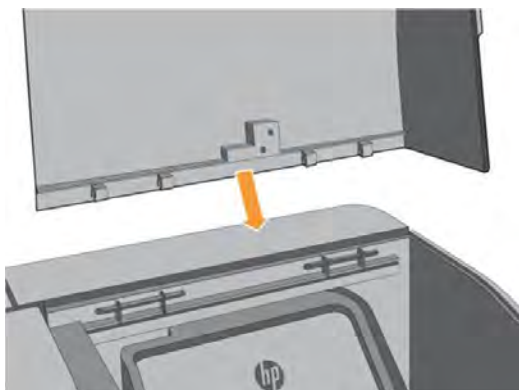
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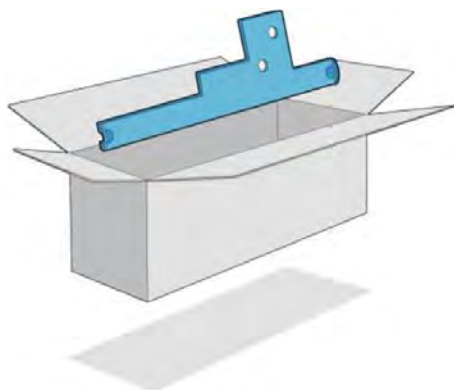
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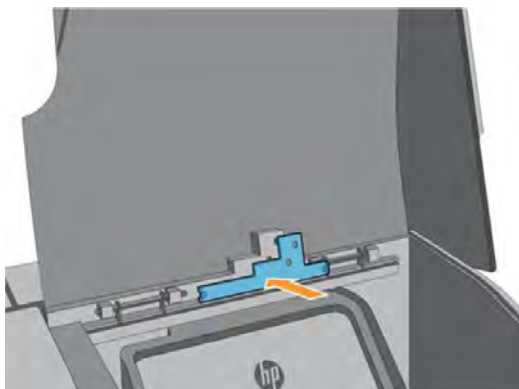
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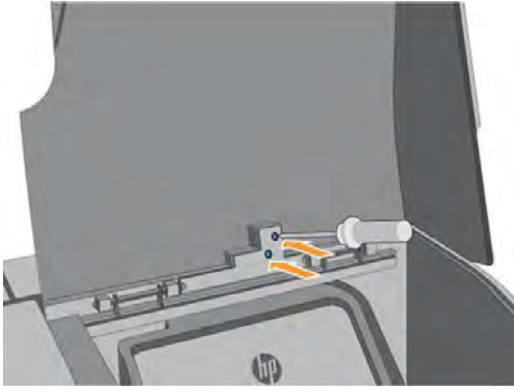
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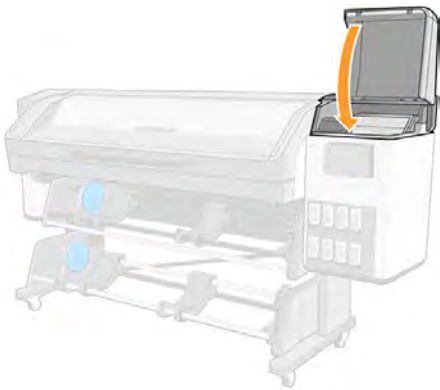
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10.



11.



13 Firmware update

The printer's various functions are controlled by software that resides in the printer, also known as firmware.

From time to time, firmware updates become available from HP. These updates increase the printer's functionality and enhance its features.

Firmware update using a USB flash drive

When installing the printer for the first time you may be asked to update the firmware. For this purpose, you need a USB flash drive with the following specifications:

- USB 2.0-compatible
- 4 GB capacity
- FAT32 preformatted
- No hardware encryption

Perform the firmware update

1. Download the firmware update from <http://www.hp.com/go/latex700/support/> or <http://www.hp.com/go/latex800/support/> and store it on the USB flash drive.



IMPORTANT: The USB flash drive should contain only one firmware file (.fmw) in the drive's root folder, and no other files.

2. Turn off the printer.
3. Connect the USB flash drive to the USB connector at the rear of the printer.
4. Turn on the printer.
5. Follow the instructions on the front panel.

Subsequent firmware updates can be installed in your printer in the same way, or by using the printer's Embedded Web Server.

Firmware update using the Embedded Web Server

1. To access the Embedded Web Server from any computer, see [Access the Embedded Web Server on page 29](#).
2. In the Embedded Web Server, click **About printer** > **Manual firmware update**.
3. Follow the on-screen instructions to download the firmware file from <http://www.hp.com/go/latex700/support/> or <http://www.hp.com/go/latex800/support/>, and store it on your hard disk. Then select the downloaded **.fmw** file and click **Update**.



If you experience very slow progress while uploading the firmware file to the printer, the reason could be that you are using a proxy server. In that case, try bypassing the proxy server and accessing the Embedded Web Server directly.

- In Internet Explorer for Windows, go to **Tools** > **Internet Options** > **Connections** > **LAN Settings**, and select the **Bypass proxy server for local addresses** check 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.
- In Firefox for Windows, go to **Tools** > **Options** > **Network** > **Connection** > **Settings**, and select the **Direct connection to the Internet** check box. Alternatively, when the **Manual proxy configuration** check box is selected, add the printer's IP address to the list of exceptions, for which the proxy server is not used.
- In Firefox for Linux, go to **Edit** > **Preferences** > **Network** > **Connection** > **Settings**, and select the **Direct connection to the Internet** check box. Alternatively, when the **Manual proxy configuration** check box is selected, add the printer's IP address to the list of exceptions, for which the proxy server is not used.

Automatic firmware updates

Automatic firmware updates are a convenience that is possible with Web-connected printers. Your printer can automatically download the latest firmware release and install it for you.

Important notes

- Your printer must be connected to the Internet.
- To configure automatic firmware updates, you can use the front panel or the Embedded Web Server (**About printer** > **Firmware update**, then tap ).
- If an administrator password has been set, it will be required to change these settings.
- A firmware update package can be large; you may want to consider whether there are any implications for your network or Internet connection.
- A firmware update is downloaded in the background: the printer can be printing at the same time. However, it cannot be installed in the background: printing must stop.
- To activate or to disable the automatic check or download, go to the front panel and tap , then **Updates** > **Firmware updates**.

14 Move or store the printer

Move the printer

If you need to move your printer, prepare it correctly to avoid possible damage.

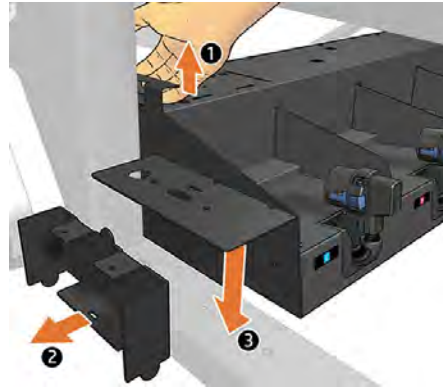
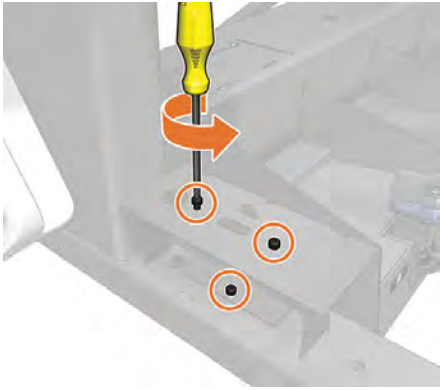
1. Remove all ink cartridges (see [Remove an Eco-Carton ink cartridge on page 151](#)) and the maintenance cartridge; unload all substrate.
2. Make sure you empty the condensation collector. Remember to connect the cap to the condensation collector after emptying it.
3. Remove the printheads from the carriage and store them with their caps on.
4. Make sure that the printhead carriage is located at the right of the print zone, and blocked with the orange lock saved from the printer installation.
5. Make sure that the **Ready** message appears on the front panel.
6. Turn off the power by using the power button on the front panel.
7. Also switch off the power switch at the rear of the printer.
8. Disconnect any cables that connect the printer to a network, a computer, or a scanner.
9. For correct environmental storage conditions, see [Environmental specifications on page 243](#).
10. Make sure that all stand screws are tightened to a recommended torque of 2.8 N·m (25 lbf·in).
11. 800 series only: Place the ink supply tray in its moving position. See [Preparing the ink supply tray \(800 series only\) on page 227](#).



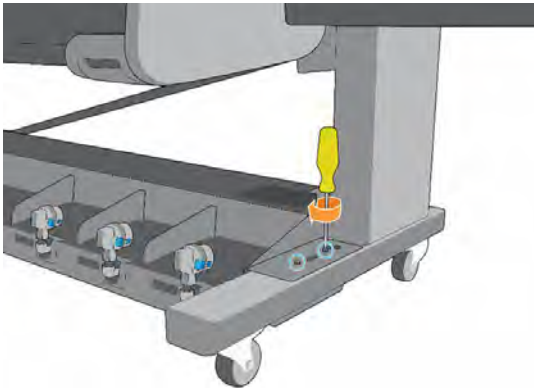
NOTE: If the printer or ink cartridges are moved from a cold location to a warm and humid location, water from the atmosphere can condense on the printer parts and cartridges and can result in ink leaks and printer errors. In this case, HP recommends that you wait at least 3 hours before turning on the printer or installing the ink cartridges, to allow the condensation to evaporate.

Preparing the ink supply tray (800 series only)

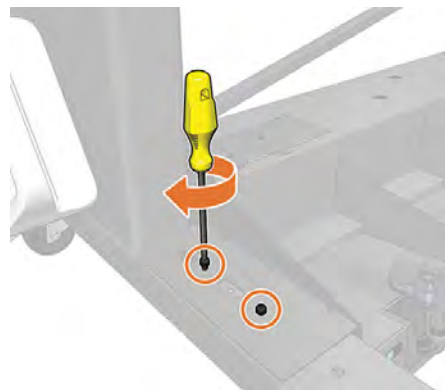
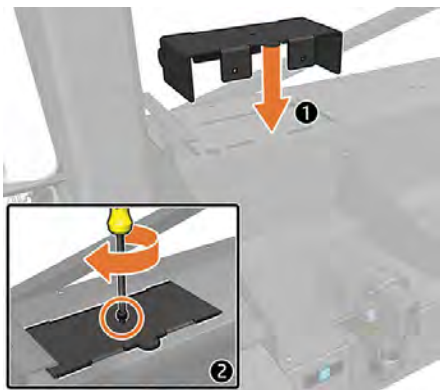
1. Remove the screw on top of the lifting pieces, situated at left and right of the rear of the printer, then remove the lifting pieces from the printer.



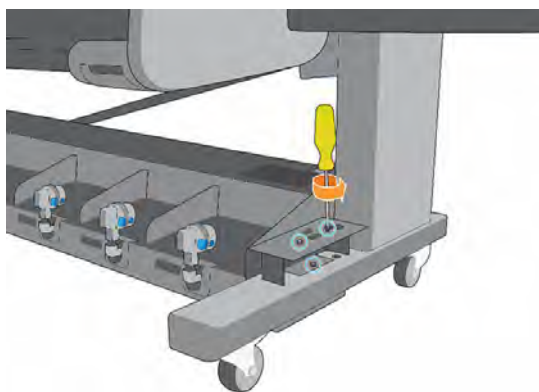
2. Remove the screws from the ink supply tray.



3. Using the tray handle, lift the ink supply tray, and place the lifting piece under the tray.



4. Screw the lifting piece tightly to the tray, using the same screws that you removed from it earlier, with a recommended torque of 2.8 N·m (25 lbf·in).




5. Repeat the same process on the other side of the printer.

Repeat the same process in the opposite order to take out the lifting pieces and store them in the storage position.

 **TIP:** HP recommends starting on the right of the printer, to adjust the ink supply tray correctly in its printing position.


Store the printer

 **IMPORTANT:** The 700W and 800W printers should never be turned off: use sleep mode instead.

Automatic white-ink maintenance cannot occur when the printer is completely turned off; and the white-ink printheads cannot survive for more than 8 hours without maintenance.

If you need to store your printer for an extended period of time, prepare it correctly to avoid possible damage:

1. Do not remove the printheads or the maintenance cartridge. The printheads should be in capping.
2. Make sure that the printhead carriage is located in the service station (at the right end of the printer).
3. Make sure you empty the condensation collector. Remember to connect the cap to the condensation collector after emptying it.
4. Remove all ink cartridges and unload all substrate.
5. Make sure that the **Ready** message appears on the front panel.
6. Turn off the power by using the power button on the front panel.
7. Also switch off the power switch at the rear of the printer.
8. Disconnect any cables that connect the printer to a network, a computer, or a scanner.
9. For correct environmental storage conditions, see [Environmental specifications on page 243](#).

 **NOTE:** If the printer or ink cartridges are moved from a cold location to a warm and humid location, water from the atmosphere can condense on the printer parts and cartridges and can result in ink leaks and printer errors. In this case, HP recommends that you wait at least 3 hours before turning on the printer or installing the ink cartridges, to allow the condensation to evaporate.

 **NOTE:** When restarting the printer after a storage period, you may need to clean the printheads.

Storage outside environmental specifications

If you need to store the printer in conditions outside the environmental specifications (see [Environmental specifications on page 243](#)), contact your service representative..

15 Supplies and accessories

There are two alternative ways to order supplies or accessories:

- Visit <http://www.hp.com/go/latex700/accessories/> or <http://www.hp.com/go/latex800/accessories/> on the Web. There you will also see the latest list of supplies and accessories for your printer.
- Contact HP Support (see [When you need help on page 40](#)), and check that what you want is available in your area.

The rest of this chapter lists the available supplies and accessories, and their part numbers, at the time of writing.

Order ink supplies

You can order the following ink supplies for your printer.

Eco-Carton ink cartridges for HP Latex 700 series printers

- HP 832 1 L Black Latex Eco-Carton Ink Cartridge
 - HP 832 1 L Cyan Latex Eco-Carton Ink Cartridge
 - HP 832 1 L Magenta Latex Eco-Carton Ink Cartridge
 - HP 832 1 L Yellow Latex Eco-Carton Ink Cartridge
 - HP 832 1 L Light Cyan Latex Eco-Carton Ink Cartridge
 - HP 832 1 L Light Magenta Latex Eco-Carton Ink Cartridge
 - HP 832 1 L Optimizer Latex Eco-Carton Ink Cartridge
 - HP 832 1 L Overcoat Latex Eco-Carton Ink Cartridge
 - HP 832 1 L White Latex Eco-Carton Ink Cartridge (for HP Latex 700W only)
 - HP 832 Ink Mix Container (for HP Latex 700W only)
-

High-volume Eco-Carton ink cartridges for HP Latex 800 series printers

- HP 873A 3 L Black Latex Eco-Carton Ink Cartridge
 - HP 873A 3 L Cyan Latex Eco-Carton Ink Cartridge
 - HP 873A 3 L Magenta Latex Eco-Carton Ink Cartridge
 - HP 873A 3 L Yellow Latex Eco-Carton Ink Cartridge
 - HP 873A 3 L Light Cyan Latex Eco-Carton Ink Cartridge
 - HP 873A 3 L Light Magenta Latex Eco-Carton Ink Cartridge
 - HP 873A 3 L Optimizer Latex Eco-Carton Ink Cartridge
-

High-volume Eco-Carton ink cartridges for HP Latex 800 series printers (continued)

HP 873A 3 L Overcoat Latex Eco-Carton Ink Cartridge

HP 873 3 L White Latex Eco-Carton Ink Cartridge (for HP Latex 800W only)

Printheads

Printhead

HP 836 White Latex Printhead

HP 836 Optimizer Latex Printhead

HP 836 Latex Printhead

Other supplies

Item

HP Latex Maintenance Cartridge

HP Latex Wiper Roller (M0E29-67061)


HP Latex Ink Collector


Disposal instructions

HP provides many free and convenient ways to recycle your used original HP ink supplies. Additionally, HP provides a free program for business customers to return signage printed using selected eligible and recyclable HP large-format substrates. For more information about these HP programs, see <http://www.hp.com/recycle>.

For your printer, the following items can be recycled through the HP Planet Partners program:

- HP 832 Series 1-liter Latex Ink Cartridges
- HP 836 Series Latex Printheads
- HP recyclable large-format substrates
- HP Sign and Display large-format substrates—recyclable or eligible for return through the HP Large Format Media take-back program

 **NOTE:** Visit <http://www.hp.com/recycle/> for details of the HP Planet Partners program: features, availability, and how to participate. The program may not be available in your area. Where this program is not available, consult the Material Safety Data Sheet (MSDS) available at <http://www.hp.com/go/ecodata/> to determine the appropriate method of disposal.

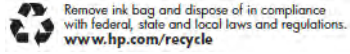
 **NOTE:** Recyclable HP substrates can be recycled through commonly available recycling programs, or according to region-specific practices. Some HP substrates are eligible for return through the HP Large Format Media take-back program, which may or may not exist in your area. See <http://www.HPLFMedia.com/hp/ecosolutions/> for details.

HP 873 Series 3-liter Latex Eco-Carton Ink Cartridges for the HP Latex 800 series printers should be disposed of by following the instructions on the cartridge packaging.

Dispose of the following supplies and accessories in compliance with federal, state, and local regulations:

- HP Latex Maintenance Cartridge
- HP Latex 700/800 Series Wiper Roller
- HP Latex 700/800 Series Ink Collector
- HP Latex 700/800 Series Condensation Collector

HP recommends that you wear gloves when handling the maintenance cartridge, the platen, the ink collector, condensates, and the condensation system components.




16 Troubleshoot other issues

- [Printer cannot get an IP address](#)
- [Cannot access the Embedded Web Server](#)
- [Printer is not printing](#)
- [Program slows down or stalls while generating the print job](#)
- [Printer seems slow](#)
- [Communication failures between computer and printer](#)
- [Cannot connect to services such as firmware update, online search, or the Customer Involvement Program](#)
- [System error codes](#)



Printer cannot get an IP address

If your network has no DHCP server, the printer cannot automatically retrieve an IP address. In this case, you must set the printer's IP address manually, in the following way.

1. From the front panel, tap , then **Setup > Network connectivity > Gigabit Ethernet > Modify configuration > TCP/ IP > IPV4 settings > Config method > Manual**.
2. From the IPV4 Settings menu, select **Manual settings > IP address**.
3. Enter the IP address that you wish to use, and tap **OK** when finished.

Cannot access the Embedded Web Server

If you have not done so already, please read the instructions in [Access the Embedded Web Server on page 29](#).

1. Go to the front panel and tap , then **Connectivity > Network Connectivity > Advanced > Allow EWS > On**.
2. Tap , then **Connectivity > Network information**.
3. The information should read: **IP enabled: Yes**. If it does not, you might need to use a different connection.

If you still cannot access the Embedded Web Server, turn the printer off with the power button on the front panel and then turn it on again.


If you experience very slow progress while trying to access the Embedded Web Server, the problem could be that you are using a proxy server. Try bypassing the proxy server and accessing the Embedded Web Server directly.

- In Internet Explorer 6 for Windows, go to **Tools > Internet Options > Connections > LAN Settings**, and select the **Bypass proxy server for local addresses** check 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.
- In Firefox 3.0 for Windows, go to **Tools > Options > Network > Connection > Settings**, and select the **Direct connection to the Internet** check box. Alternatively, when the **Manual proxy configuration** check box is selected, add the printer's IP address to the list of exceptions, for which the proxy server is not used.
- In Firefox 2.0 for Linux, go to **Edit > Preferences > Network > Connection > Settings**, and select the **Direct connection to the Internet** check box. Alternatively, when the **Manual proxy configuration** check box is selected, add the printer's IP address to the list of exceptions, for which the proxy server is not used.

Printer is not printing

If a file you have sent from your computer is not printing when expected, the possible reasons include the following:

- Check that the curing module, top window, and maintenance cartridge doors are closed.
- There may be a problem with the electrical power. If the printer is not performing and the front panel does not respond, check that the power switch at the rear is on, the power cable is correctly connected, and the electrical socket is providing power.
- The network cable is disconnected, or you have problems with your communications setup. See [Communication failures between computer and printer on page 237](#), or contact your IT department or communications system provider.

- Check all the alerts on the front panel—there may be more than one, hidden under the first—by dragging down the top bar of the home screen. The alerts may explain why printing has stopped, such as:
 - An ink supply is empty.
 - A printhead is missing or damaged.
 - The substrate is mispositioned.
- Check that the job in your RIP software is configured to be printed on the same substrate that you have selected in the front panel (the details of this operation may vary depending on your RIP software). Check that the loaded substrate is wide enough for your image plus the required margins.
- The roll has a length tracking option activated. Check that the remaining length of your roll is enough for your job. This information can be found from the  icon in the front panel or in your RIP software (the location of the menu may vary depending on your RIP software).
- The printer and your RIP software have a special feature to predict the ink consumption of your job and estimate whether there is enough ink in your supplies to print the job. Check in your RIP software whether the ink estimation option is activated, and the estimation status for your job (the details of this operation may vary depending on your RIP software).
- In some very unlikely scenarios, the substrate preset you are using may be corrupted due to transfer synchronization issues. Try printing with a generic preset; if this prints well, you can fix the problem by deleting the troublesome preset from the substrate library in the front panel and the RIP software. Then reinstall the substrate, either manually or from the online search in the front panel.
- Unusual electromagnetic phenomena may exist, such as strong electromagnetic fields or severe electrical disturbances. Such occurrences can cause the printer to behave strangely, or even stop working. Turn off the printer by using the power button on the front panel, wait until the electromagnetic environment has returned to normal, then turn the printer on again. If the problems persist, call your service representative.

Program slows down or stalls while generating the print job

Check that your computer meets the RIP software minimum system requirements.

Large quantities of data are required to generate a high-quality large-format print job, which can cause your software to slow down significantly or stall. Lowering the print resolution may help to avoid this problem; however, lowering the print resolution reduces print quality.

Printer seems slow

Here are some possible explanations:

- If you request the highest possible print quality in the RIP, printing will be relatively slow compared with draft-quality printing.
- Check that the substrate loaded in the printer belongs to the substrate family that appears on the front panel.
- Is your printer connected to a network? Check that all components used in the network (network interface cards, hubs, routers, switches, and cables) are capable of Gigabit Ethernet operation. Is there a lot of traffic from other devices on the network? Is the proxy server configured correctly in your printer? Are the printer's required ports accessible from your RIP host?

- Are the printheads in good condition? Printing time tends to increase when a printhead needs cleaning. Check the printhead status on the front panel or through the Embedded Web Server. Clean or replace printheads if necessary.
- Does your image contain high-density black fills? That may increase printing time.

See also [Printer status on page 26](#).

Communication failures between computer and printer

Some symptoms are:

- The front-panel display does not show the **Receiving** message when you have sent an image to the printer.
- The printer displays an error message while printing, such as error 0090-0007-0089 or 0090-0007-0096. See [System error codes on page 238](#).
- Your RIP stalls when transferring data.



To solve a communication problem:


- Make sure that you have selected the correct printer in your RIP.
- Check that your printer network settings are correctly configured: run the connectivity wizard from the printer's front panel. See [Connect the printer to the Internet on page 31](#).
- Check that the printer's required ports are accessible from your RIP host.
- Remember that large images usually require more time to receive, process, and print.
- If the printer is connected to your RIP through any other intermediate devices, such as switch boxes, buffer boxes, cable adapters, or cable converters, remove the intermediate device and try connecting the printer directly to your computer.
- Try changing the I/O timeout, which specifies the time that an idle connection is allowed to remain open when the printer is waiting for a remote computer. The default value is 270 seconds. To change the I/O timeout, go to the Embedded Web Server and select the **Networking** tab, then the **Advanced** tab.


If these suggestions do not solve your problem, try connecting your RIP host system directly to the printer, with a point-to-point connection. Use the DHCP network configuration in the printer.

Cannot connect to services such as firmware update, online search, or the Customer Involvement Program

If your printer has difficulty in connecting to the Internet, it may start the Connectivity Wizard automatically. You can also start the wizard manually at any time:

- From the front panel: Tap , then **Connectivity** > **Connectivity wizard**.
- From the front panel: Tap , then **Internal prints** > **Service information prints** > **Print connectivity config**. In this case, the results are printed out.

 **NOTE:** The results printed out are from the last run of the Connectivity wizard, so you must already have run the Connectivity wizard in order to get any results.

The Connectivity Wizard performs a series of tests automatically. You can also choose to perform individual tests. From the front panel, tap , then **Connectivity > Diagnostics & troubleshooting**. The following options are available:

- **All tests**
- **Network connectivity test:** Check the printer's connection to the local area network.
- **Internet connectivity test:** Check the printer's connection to the Internet.
- **Firmware update test:** Check the printer's connection to HP's firmware update servers.
- **Email server test:** Check the printer's connection to the configured email server.
- **Customer Involvement Program test:** Check the printer's connection to the CIP.
- **HP Media Locator configuration settings:** Check that you can access the online substrate preset library.

Alternatively, these tests can be launched from the Embedded Web Server: select **Support > Connectivity troubleshooting**.

If any test fails, the printer describes the problem and recommends how to solve it.

System error codes

The front panel may occasionally display a system error, consisting of a numerical code of 12 digits followed by the recommended action that you should take.

In most cases you will be asked to restart the printer. When the printer starts, it can diagnose the issue better and may be able to fix it automatically. If the problem persists after restarting, contact your service representative and be ready to give the numerical code from the error message. If the error message contains some other recommended action, follow the instructions.

Reading a system error code

System error codes explain which component or system is failing, and what action should be taken to resolve the problem.

System error codes have been defined in the format D0XX-nnYY-mmZZ.

Values of D (device)

0	Printer
1	Accessories
8	Internal printer firmware error
9	Internal host software error

Values of XX for device 0 (printer)

01	E-box
10	Power management
11	Pipeline and trailing cable
16	Curing
17	Drying

Values of XX for device 0 (printer) (continued)

21	Service station
22	Ink delivery system
27	Printheads
30	Vapor removal
43	Substrate vacuum
45	BIOS, formatter, hard disk
46	Printer ID
47	Printhead cleaning roll
55	Carriage line sensor
58	Carriage color sensor
65	Substrate path
80	User interface
86	Scan-axis system and carriage
88	Printhead primers
90	Internal firmware
99	System

0027-0001-XX84

This error indicates printhead voltage issues.

Replace the printhead. If the problem disappears, the printhead was damaged. Otherwise, the problem is in the printer hardware; contact your service representative.

0027-0001-XX99

This error indicates printhead voltage issues.

Replace the printhead. If the problem disappears, the printhead was damaged. Otherwise, the problem is in the printer hardware; contact your service representative.


8XXX-XXXX-0000

All system errors with the format 8XXX-XXXX-0000 are firmware assertion failures, which are usually fatal: the system stops working.

They occur very rarely, because they are unanticipated error conditions. After one of these has been reported to HP and analyzed, it is no longer entirely unanticipated, so it is less likely to occur again.

After restarting the printer, your first step should be to make sure you have the latest firmware version: update it if necessary, which may solve the problem. If the problem persists, please contact your HP service representative.

Printer logs

If you go to the front panel and tap , then **Setup > Printer logs**, you can choose to display on the front panel a log of recent system errors, warnings, or printhead or ink cartridge events.

17 Printer specifications

- [Functional specifications](#)
- [Physical specifications](#)
- [Memory specifications](#)
- [Power specifications](#)
- [Ecological specifications](#)
- [Environmental specifications](#)
- [Acoustic specifications](#)

Functional specifications

Ink cartridges

- 700 series printers: Eight HP 832 Eco-Carton ink cartridges, one for each color (black, cyan, magenta, yellow, light cyan, light magenta, optimizer, and overcoat)

Additionally, two HP 832 white Eco-Carton ink cartridges for 700W printers

- 800 series printers: Eight 3 liter HP 873 Eco-Carton ink cartridges, one for each color (black, cyan, magenta, yellow, light cyan, light magenta, optimizer, and overcoat)

Additionally, two 3 liter HP 873 white Eco-Carton ink cartridges for 800W printers

Ink supplies

Printheads	Cyan/black, yellow/magenta, light magenta/light cyan, overcoat, and optimizer
Ink cartridges	Yellow, black, magenta, light magenta, cyan, light cyan, overcoat, and optimizer HP Latex 700 series cartridges contain 775 ml of ink; HP Latex 800 series cartridges contain 3 liters of ink
Maintenance cartridge	Non-color-specific

Substrate sizes

	Minimum	Maximum
Width	584 mm (23 in) Narrow substrate: 254 mm (10 in)	1626 mm (64 in)
Length	1.5 m (59 in)	Roll with maximum external diameter of 275 mm (10.8 in)
Weight		55 kg (121 lb)


The printer supports a substrate core diameter of 76.2 mm (3 in); it requires an accessory to support 50.8 mm (2 in) cores.

Printing speeds

Passes	Approximate printing speed (m ² /h)	
	700 series	800 series
1 : Maximum speed	105	122
2 : Draft	60	68
4 : High-speed banner	31	36
4 : High-speed paper or self-adhesive vinyl	26	31
6 : Production (fast)	21	25
8 : Production (quality)	17	20
10 : Quality	15	18
12 : High-saturation	16	17
8P UNI : High-definition	11	11

Printing speeds (continued)

Passes	Approximate printing speed (m ² /h)	
	700 series	800 series
14 : Quality backlit or textile	12	14
16 : High-saturation backlit	11	11
18 : High-saturation textile	10	10

 **NOTE:** Environmental conditions, job length, and ink density influence the maximum speed you can achieve with a particular print mode. Special-purpose options such as the use of the ink collector also have an effect on printing speed.

The maximum print resolution of the printer is 1200 × 1200 dpi. See your RIP documentation to find the resolutions supported by your RIP.

Margins

Side margins	5 mm (0.2 in), or 10 mm (0.4 in) with edge holders
Top margin (leading edge)	5 mm (0.2 in)
Bottom margin (trailing edge)	5 mm (0.2 in) (none) 100 mm (3.9 in) (small) 150 mm (5.9 in) (normal) 200 mm (7.9 in) (extra) 300 mm (11.8 in) (extra) 400 mm (15.7 in) (extra) 500 mm (19.7 in) (extra)

Physical specifications

Physical specifications with packaging

Printer model	Length	Width	Height	Weight
700	2800 mm (110.2 in)	1130 mm (44.5 in)	1270 mm (50.0 in)	362 kg (798 lb)
700 W	2800 mm (110.2 in)	1130 mm (44.5 in)	1270 mm (50.0 in)	368 kg (811 lb)
800	2753 mm (108.4 in)	1100 mm (43.3 in)	1734 mm (68.3 in)	430 kg (948 lb)
800 W	2753 mm (108.4 in)	1100 mm (43.3 in)	1734 mm (68.3 in)	437 kg (963 lb)

Physical specifications without packaging

Printer model	Length	Width	Height	Weight
700 (curing module down)	2583 mm (101.7 in)	852 mm (33.5 in)	1402 mm (55.2 in)	261 kg (575 lb)
700 (curing module up)	2583 mm (101.7 in)	776 mm (30.6 in)	1869 mm (73.6 in)	261 kg (575 lb)
700 W (curing module down)	2583 mm (101.7 in)	852 mm (33.5 in)	1402 mm (55.2 in)	267 kg (589 lb)

Physical specifications without packaging (continued)

Printer model	Length	Width	Height	Weight
700 W (curing module up)	2583 mm (101.7 in)	776 mm (30.6 in)	1869 mm (73.6 in)	267 kg (589 lb)
800 (curing module down)	2583 mm (101.7 in)	866 mm (34.1 in)	1402 mm (55.2 in)	292 kg (644 lb)
800 (curing module up)	2583 mm (101.7 in)	776 mm (30.6 in)	1869 mm (73.6 in)	292 kg (644 lb)
800 (with beacon)	2583 mm (101.7 in)	866 mm (34.1 in)	1677 mm (66.0 in)	292 kg (644 lb)
800 W (curing module down)	2583 mm (101.7 in)	866 mm (34.1 in)	1402 mm (55.2 in)	300 kg (661 lb)
800 W (curing module up)	2583 mm (101.7 in)	776 mm (30.6 in)	1869 mm (73.6 in)	300 kg (661 lb)
800 W (with beacon)	2583 mm (101.7 in)	866 mm (34.1 in)	1677 mm (66.0 in)	300 kg (661 lb)

Memory specifications

Memory specifications

Physical memory (DRAM)	1 GB
Hard disk	500 GB

Power specifications

Single phase line specifications

	HP Latex 700 series	HP Latex 800 series
Number of power cords	2	
Input voltage	200–240 V (two wires and protective earth)	
Input frequency	50 / 60 Hz	
Maximum load current (per power cord)	Printer: 13 A Curing: 9 A	Printer: 16 A Curing: 16 A
Printing power consumption ¹	1.5–2.6 kW (3.6 kW peak)	1.8–2.8 kW (5.0 kW peak)
Power consumption in ready mode	95 W	105 W

¹ Final printing power consumption may be affected by room and printing temperature, input voltage, and other factors.

Ecological specifications

For the up-to-date ecological specifications of your printer, please go to <http://www.hp.com/> and search for "ecological specifications".


Environmental specifications


Printer environmental specifications

Relative humidity range for best print quality	40–60%, depending on substrate type
Relative humidity range for printing	20–80%, depending on substrate type
Temperature range for best print quality	20 to 25°C (68 to 77°F), depending on substrate type

Printer environmental specifications (continued)

Temperature range for printing	15 to 30°C (59 to 86°F), depending on substrate type
Temperature range when not in operation	-15 to +55°C (+5 to +131°F)
Temperature gradient	no more than 10°C/h (18°F/h)
Maximum altitude when printing	3000 m (10000 ft)

 **NOTE:** The printer must be kept indoors.

 **NOTE:** If the printer or ink cartridges are moved from a cold location to a warm and humid location, water from the atmosphere can condense on the printer parts and cartridges and can result in ink leaks and printer errors. In this case, HP recommends that you wait at least 3 hours before turning on the printer or installing the ink cartridges, to allow the condensation to evaporate.

Acoustic specifications

Printer acoustic specifications

Sound pressure	Printing	60 dB (A)
	Ready (standby)	38 dB (A)
	Asleep	< 20 dB (A)
Sound power	Printing	7.8 B (A)
	Ready (standby)	5.5 B (A)
	Asleep	< 4 B (A)

A Summary of common printing problems

This is a table of common problems and the parameters that can be changed in order to solve the problem. Some possible side-effects are also shown. For a more detailed treatment of any particular problem, please see the relevant chapter in this guide.

Problem	Parameter	Change	Possible side-effects
Durability problems, ink smudges, or oily finish	Curing temperature	Increase	Substrate jam, substrate damage, ink smears
	Number of passes	Increase	Slower printing
	Inter-pass delay offset	Increase	Slower printing
Substrate jam, substrate damage, ink smears	Curing temperature	Decrease	Less durability (smudges), oily finish
	Vacuum	Increase	Substrate skew, vertical banding if increased too much
	Top and/or bottom margins	Increase	Waste of substrate
	Edge holders	Use	The minimum side margins increase slightly, reducing the maximum width of the printed image
Vertical banding	Vacuum level	Decrease	Substrate jam
	Take-up reel	Use	
Horizontal banding	Clean printheads		
	Number of passes	Increase	Slower printing
	Clean substrate-advance sensor		
	Inter-pass delay offset	Increase	Slower printing
Coalescence graininess in low-to-medium area fills	Align printheads		
	Number of passes	Increase	Slower printing
	Optimizer level	Increase	Reduced gloss in dark area fills. With some substrates, may have no effect on coalescence. Consider using the advanced optimizer check plot to select the best optimizer level.
	Efficiency mode	Disable	More ink consumption
	Wiper roller	Activate	
	Dirty roll or defective coating		Consider trying a new roll if the wiper roller fails to solve the problem. Some substrates deteriorate during long periods of storage.
Graininess, color misregistration or lack of sharpness	Align printheads		
	Clean substrate-advance sensor		

Problem	Parameter	Change	Possible side-effects
	Disable the substrate-advance sensor and calibrate the substrate advance manually	NOTE: Some substrates (porous/translucent/transparent) are not compatible with the substrate-advance sensor, which should be disabled before printing on these substrates.	
Black areas look hazy or image gloss is not uniform	Modify color separations and dark color generation		
	Number of passes	Increase	Slower printing
	Curing temperature	Decrease	Less durability (smudges), oily finish
Bleeding between inks or wicking into white areas	Align printheads		
	Align optimizer manually	If necessary, load a self-adhesive vinyl to achieve good alignment	
	Ink limits	Decrease	Reduced color gamut
	Optimizer level	Increase	Reduced gloss in dark area fills. With some substrates, may have no effect on bleeding or wicking.
	Clean optimizer printhead		
Lack of sharpness in text or solid areas	Align printheads		
	Align optimizer manually	If necessary, load a self-adhesive vinyl to achieve good alignment.	
	Color bars	Add, manually or in RIP	Some waste of substrate and ink
Subtle color variations in solid areas	Color bars	Add, manually or in RIP	Some waste of substrate and ink
	Color-variation and text-line correction	Apply	White areas may appear slightly different.

Glossary

Airflow

Air is blown through the printing zone to speed up the drying process.

Back tension

The backwards tension applied to the substrate by the input spindle, which must be constant across the width of the substrate. Too much or too little tension may cause substrate deformation and print quality defects.

Bidirectional

Bidirectional printing means that the printheads print while moving in both directions. This increases the speed of printing.

Bleeding

A print-quality defect that occurs when the ink spreads on the substrate across areas of different colors.

Coalescence

A print-quality defect that occurs when the ink coalesces on the substrate within an area of the same color.

Cockle

A substrate condition in which it is not lying perfectly flat, but rises and falls slightly in shallow waves.

Color accuracy

The ability to print colors that match the original image as closely as possible, given the fact that all devices have a limited color gamut and might not be able to match certain colors precisely.

Color consistency

The ability to print the same colors in a particular print job, from print to print and from printer to printer.

Curing

The substrate is heated in the curing zone to coalesce the latex, creating a polymeric film which acts as a protective layer, while at the same time removing the remaining co-solvents from the print. Curing is vital to ensure the durability of the printed images. Too high or too low a curing temperature may cause print quality defects.

Cutter

A printer component that slides from left to right across the platen to cut the substrate.

Edge holder

A metal piece designed to prevent the edge of the substrate from rising while printing is in progress.

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 product, 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 to reduce this type of damage, is by touching any exposed grounded part of the product (mainly metal parts) before handling ESD-sensitive devices, such as the printheads or ink cartridges. To reduce the generation of electrostatic charge in your body, try to avoid working in a carpeted area, keep your body movements to a minimum when handling ESD-sensitive devices, and avoid working in low-humidity environments.

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.

HDPE

High Density Polyethylene.

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 density

The relative amount of ink that is deposited on the substrate per unit of area.

IP address

A unique identifier that identifies a particular node on a TCP/IP network. It consists of four integers separated by dots.

LED

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

Loading accessory

A flexible plastic accessory that fits over the leading edge of the substrate while it is being loaded into the printer. Some substrates are difficult to load without this accessory.

Nozzle

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

OMAS

The Optical Media Advance Sensor, otherwise known as the substrate-advance sensor. The sensor located in the print platen that tracks the substrate movement and increases its accuracy.

Passes

The number of print passes specifies how many times the printheads will print on the same area of substrate. A higher number of passes tends to improve print quality and printhead health, but reduces the speed of printing.

PC

Polycarbonate.

PE

Polyethylene.

PET

Polyethylene Terephthalate (polyester).

PLA

Polylactic Acid.

Platen

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

PP

Polypropylene.

Printhead

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

PVC

Polyvinyl Chloride.

Substrate

A thin, flat material designed to be printed on, made of paper or other materials.

Substrate preset

The substrate preset contains the ICC color profile, which describes the color characteristics of the substrate. It also contains information about other characteristics (RIP and printer settings, such as drying and curing temperatures, vacuum pressure, and substrate-advance compensation) and requirements of the substrate that are not directly related to color.

Substrate-advance compensation

A slight adjustment to the amount of substrate advance between print passes, to compensate for the characteristics of different substrate types. The printer normally performs this adjustment automatically, but may need to be recalibrated for substrates not supported by HP, or for an unusual ambient temperature or humidity. Incorrect substrate-advance compensation may cause banding with fewer than 8 passes, or graininess with 8 passes or more.

Substrate-advance sensor

The sensor located in the print platen that tracks the substrate movement and increases its accuracy. Also known as OMAS (Optical Media Advance Sensor).

Vacuum pressure

The substrate is held flat against the platen by vacuum suction. Too much or too little suction may cause print quality defects. Too little suction may also cause a substrate jam or damage the printheads.

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