HP Stitch S1000 126in Printer

User Guide

Legal notices

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Safety notice

Read and follow the operating and safety instructions before starting the printer.

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1 Introduction

Welcome to your printer

The HP Stitch S1000 126in Printer is a dye-sublimation inkjet printer designed for printing high-quality designs up to 3.2 m (126 in) wide. Some major features are:

● High quality output, with deep blacks and vivid colors, 1200 dpi native resolution, and 12 picoliter drop size

● Load either paper or fabric rolls up to 300 kg (661 lb)

● Accessible print-zone LED lighting and at-a-glance monitoring with beacon signals

● Long runs unattended with 10 L cartridges

● Prints completely dry and tightly wound, ready for calendering

● Prints on a wide range of paper (≥45 g/m²) and textiles (>90 g/m²)

● Consistent and repeatable print quality with the user-replaceable printheads and the smart nozzle compensation system

● Automatic maintenance to ensure nozzle health

● Optimal advance control with the new embedded substrate-advance sensor, capable of controlling even fabrics at high speed

● Unique drop-and-dry print-zone dryer to optimize paper control and drop placement

● Easy-to-use color management tools for enhanced color matching and consistency

● HP Print Care maintenance scheduler and proactive maintenance alerts

● Input and output spreader roller for unattended control of very-low-grammage paper tensioning

● Ink collector kit for reliable printing on porous fabrics such as flags

● Embedded smart aerosol-extraction channel to improve printer robustness

Documentation

The following documents can be downloaded from http://www.hp.com/go/StitchS1000126in/manuals/:

● Site preparation guide

● Installation guide

● Introductory information

● User guide (this document)

● Legal information

● Limited warranty

See the Solutions Web site for information about new substrates, at http://www.hp.com/go/StitchS1000126in/support/. A new Web-based Media Solutions Locator (http://www.hp.com/go/mediasolutionslocator) has been developed to collect available substrate configurations for Stitch printers.

Safety precautions

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

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 to take appropriate measures to minimize the risks to yourself and to others.

Operations must be supervised at all times.

General safety guidelines

⚠ **WARNING!** The information provided by the printer status light is only for functional information purposes and is not related to any safety provision or safety states. Warning labels on the printer must be always considered when operating the printer and prevail against any of the status indicated by the printer status lights.

Turn off the printer, using the Branch Circuit Breakers located in the building's Power Distribution Unit (PDU), and call your service representative (see HP Customer Care Centers on page 244) in any of the following cases:

- The power cord is damaged.

- The drying enclosure is damaged.

- The printer has been damaged by an impact.

- Liquid has entered the printer.

- There is smoke or an unusual smell coming from the printer.

- The printer's built-in Residual Current Circuit Breaker (Ground Fault Circuit Interrupter) has been repeatedly tripped.

- Fuses have blown.

- The printer is not operating normally.

- There is any mechanical or enclosure damage.

Turn off the printer using the Branch Circuit Breakers 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 and drying module operate at hazardous voltages capable of causing death or serious personal injury.

Turn off the printer using the Branch Circuit Breakers located in the building's Power Distribution Unit (PDU) before servicing the printer. The printer must be connected to earth at mains outlets only.

To avoid the risk of electric shock:

- Do not attempt to dismantle the drying module or e-cabinet during hardware maintenance tasks. In that case, follow the instructions strictly.

- Do not remove or open any other closed system covers or plugs.

- Do not insert objects through slots in the printer.

- Test the functionality of the Residual Circuit Breaker (RCCB) every year (refer to the procedure below).

📝 **NOTE:** A blown fuse may indicate malfunctioning electrical circuits within the system. Call your service representative (see HP Customer Care Centers on page 244), and do not attempt to replace the fuse yourself.

Checking the functionality of the Residual Circuit Breakers (RCCBs)

Following standard Residual Current Circuit Breaker (RCCB) recommendations, it is recommended that the RCCBs are tested on a yearly basis. The procedure is as follows:

1. Turn off the built-in computer using the Internal Print Server's **Shutdown** button (or, in Print Care, click **Printer tools** > **Power options** > **Shutdown**). Do not turn off the printer from the mains switch or the circuit breakers.

   ⚠ **CAUTION:** The shutdown process takes some time to complete. Wait until the green Power Enabled light is off before proceeding.

2. Once the computer is off, test that the RCCB works correctly by pressing the test button.

   ● If the RCCB does not trip when the test button is pressed, this indicates that it has failed. The RCCB must be replaced for safety reasons; call your service representative to remove and replace the RCCB.

   ● If the RCCB trips, this indicates it is working correctly; reset the RCCB to its normal on state.

Heat hazard

The drying subsystem of the printer operates at high temperatures and can cause burns if touched. LED array supports, beam, and enclosures can reach high temperatures. To avoid the risk of burns, take the following precautions:

● Do not touch the internal enclosures of the printer's drying module.

● Take special care when accessing the substrate path.

● Take special care with zones marked with warning labels.

● Do not place objects covering LED arrays supports, beam, and enclosures.

● Do not attempt to modify LED array supports, beam, and enclosures;

● Remember to let the printer cool down before performing some maintenance operations.

Fire hazard

The drying subsystem of the printer operates at high temperatures. Call your service representative if the printer's built-in Residual Current Circuit Breaker (Ground Fault Circuit Interrupter) is repeatedly tripped.

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

● Use the power supply voltage specified on the nameplate.

● Connect the power cords to dedicated lines, each protected by a branch circuit breaker as explained in the site preparation guide.

● 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 modify the drying module or the e-cabinet.

- 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). See note below. No ignition sources are close to the substrate.

> **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.

- Proper maintenance and genuine HP consumables are required to ensure that the printer operates safely as designed. The use of non-HP consumibles (foams, filters, printhead cleaning roll, and inks) may present a risk of fire.

LED's array supports, beam and enclosures can reach high temperatures. To avoid the risk of fire, take the following precautions:

- Take special care with zones marked with warning labels.

- Do not place objects covering LED's arrays supports, beam and enclosures.

- Take care not to spill liquid on the accessory. After cleaning, make sure all components are dry before using the printer.

- Do not attempt to modify LED's array supports, beam and enclosures.

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.

- Take care when using the air gun. When used for cleaning purposes, make sure to use it according to the local regulations since additional safety provisions may apply.

- Take care when handling the output cover: there is a risk of trapping your fingers. If you need to open or close it, handle it only from the center, hold it firmly, and move slowly.

> **WARNING!** Be careful when you open the loading table, **never** leave it unattended with both latches in the open position: it may open inadvertently and cause serious injuries. Always check that both latches are properly closed.

> **WARNING!** Wear protective gloves (PPE) when installing the ink collector.

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.

Sound pressure level

Operating noise emissions measured in accordance with ISO 11202 at bystander positions do not exceed a sound pressure level of 70 dB(A).

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.

For more detailed information, see the "Ventilation" and "Air conditioning" sections in the site preparation guide, available at http://www.hp.com/go/StitchS1000126in/manuals.

Heavy substrate hazard

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

- Handling heavy substrate rolls always requires two people. Care must be taken to avoid back strain and/or injury.

- Always use a forklift, pallet truck, or other handling equipment to lift substrates. The printer has been designed to be compatible with many of these devices.

- Always wear personal protective equipment including boots and gloves.

Ink handling

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

Ventilation

Fresh air ventilation is needed to maintain comfort levels. Ventilation should meet local environmental, health, and safety (EHS) guidelines and regulations. Follow the ventilation recommendations in the site preparation guide.

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

Air conditioning

In addition to fresh air ventilation, to avoid health hazards, also consider maintaining workplace ambient levels by assuring the climatic operating conditions specified in this document (see Environmental specifications on page 248) to avoid operator's 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 6.0 kW (20.5 kBTU/h).

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

NOTE: The air conditioning units should not blow air directly onto the printer.

Use of tools and keys

- **Users:** Daily operations including printer settings, printing, substrate loading, replacement of ink reservoirs, and daily checks. Do not require any tool or maintenance key.

- **Maintenance personnel:** Hardware maintenance tasks and replacement of printheads, filters, ink waste bottles, foams, and printhead cleaning roll. Require maintenance key, and flat screwdriver.

- **Service personnel:** Any repair or maintenance operation, running diagnostics, and troubleshooting. Require maintenance key, e-cabinet key, mains switch key, internal print server key, and Torx screwdriver set.
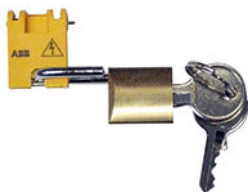
Maintenance key	E-cabinet key	Mains switch key

Internal Print Server key	Torx screwdriver set

NOTE: During the installation of the printer, the designated personnel receive training for the safe operation and maintenance of the printer. It is not allowed to use the printer without this training.

NOTE: After using the maintenance key to open a door, remember to lock it afterwards, and return the key to safe and secure storage.

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 product.

Warning labels

Label	Explanation
  Located on the e-cabinet.	**Electric shock hazard** Heating modules operate at hazardous voltage. Disconnect power source before servicing. Caution! Double pole. Neutral fusing. Refer servicing to qualified service personnel. In case of operation of the fuse, parts of the printer that remain energized may represent a hazard during servicing. Turn off the printer using both Branch Circuit Breakers located in the building's Power Distribution Unit (PDU) before servicing. **Warning** High leakage current. Current leakage may exceed 3.5 mA. Earth connection essential before connecting supply. Equipment to be connected to earthed mains only. See installation instructions before connecting to the supply. Ensure that the input voltage is within the printer's rated voltage range. The printer requires up to two dedicated lines, each protected by a branch circuit breaker according to site preparation requirements. Read and follow the operating and safety instructions before starting the printer.
  Located on each side of substrate path, close to PPS gear	Crush hazard. Do not touch PPS while moving. When substrate has been loaded, the carriage descends into its normal position, and could crush your hand or anything else left underneath it.
  Located on each side of substrate path, and close to PPS gear	Risk of trapped fingers. Do not touch gears while moving. Danger that your hands may become trapped between gearwheels.
  Located internally on substrate path, on printhead cleaning roll, and on output cover; for maintenance/service personnel only	Hazardous moving part. Keep away from moving carriage printhead. When printing, the printhead carriage travels back and forth across the substrate.

| Label	Explanation
You are recommended to wear gloves when handling ink cartridges, printhead cleaning cartridges and the printhead cleaning container. Located on ink waste bottle and web wipe	You are recommended to wear gloves when handling ink cartridges, printhead cleaning cartridges and the printhead cleaning container.
Located internally on heating modules and electrical cabinets; for maintenance/service personnel only	Electric shock hazard. Disconnect power before servicing. Heating modules and electrical cabinets operate at hazardous voltage.
Located internally, close to vacuum fan blades and Dryer PCA cooling fan; for maintenance/service personnel only	Hazardous moving parts. Keep away from moving fan blades. Internal close to Vacuum Fan Blades and Dryer PCA cooling fan.
Located on the rear area of the carriage cover, below the hinges	Risk of cutting your fingers. Watch your fingers when closing the carriage cover.
	Identifies the Protective Earth (PE) terminal for qualified electrician, and bonding terminals for maintenance/service personnel only. Earth connection essential before connecting supply.
PE1 PE2	Identifies the Protective Earth (PE) terminal for qualified electrician, and bonding terminals for maintenance/service personnel only. Earth connection essential before connecting supply.
WARNING! 6kA Short-circuit breaking capacity of printer's built-in supplementary circuit breakers	Identifies the short-circuit breaking capacity of printer's built-in supplementary circuit breakers beside mains input terminal, for qualified electrician and maintenance/service personnel only. Earth connection essential before connecting supply.

Emergency stop buttons

There are four emergency stop buttons distributed around the printer. If an emergency occurs, simply push one of the emergency stop buttons to stop all printing processes. A system error message is displayed, and the fans turn at maximum speed. Ensure that all emergency stop buttons are released before restarting the printer.

Two emergency stop buttons at the front
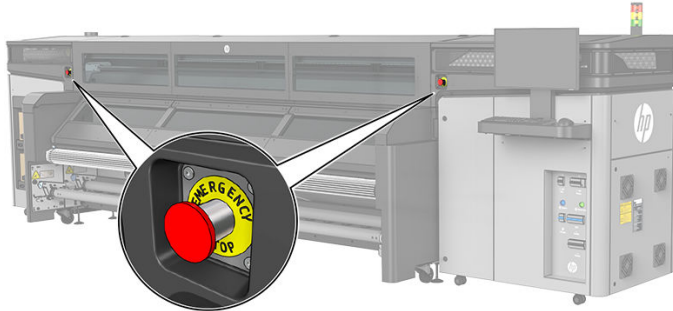
Two emergency stop buttons at the rear
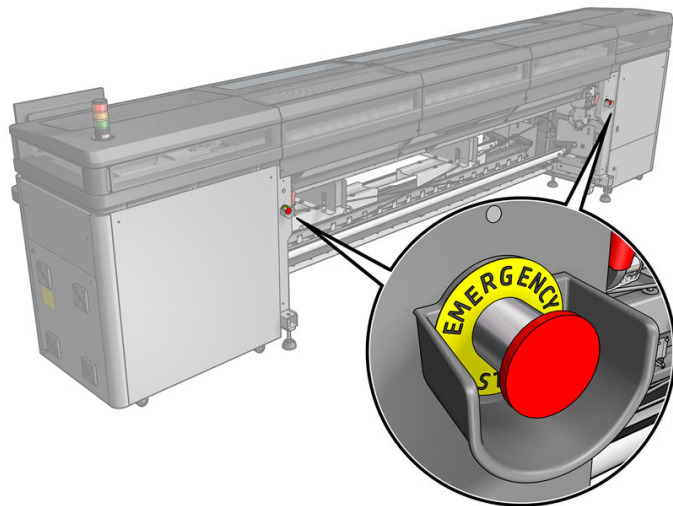
For safety reasons, access to the print zone is not permitted while printing is in progress. Therefore, if the window or the loading table is opened, power to the carriage and to the drying module is disconnected. The print is cancelled and a system error may be displayed.

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 recyclable HP large-format substrates. For more information about these HP programs, see http://www.hp.com/recycle.

The following items for your printer can be recycled by the HP supplies recycling program:

● HP 618 Stitch S Series printheads

HP 638 10-liter Stitch Dye Sublimation Ink Cartridges for the HP Stitch S1000 printer should be disposed of following the instructions on the cartridge packaging. The ink back should be removed and disposed of in compliance with federal, state, and local regulations. The other ink-cartridge parts (plastic retainer and packaging box) can be recycled through commonly available recycling programs.

Dispose of the following in compliance with the federal, state, and local regulations:

● Aerosol filters

● Left spittoon

- Ink collector

- Printhead cleaning roll

- Waste bottle

- Extractor filter

General cleaning instructions

For general cleaning, a lint-free cloth dampened with distilled water is recommended. Then leave the cleaned part to dry or use a dry cloth to dry it more quickly.

Do not spray fluids directly onto the HP product. Spray the fluid onto the cloth used for cleaning.

To remove stubborn dirt or stains, moisten a soft cloth with water and a neutral detergent, or a general-purpose industrial cleaner (such as the Simple Green industrial cleaner). Remove any remaining soap foam with a dry cloth.

For glass surfaces, HP recommends using a soft, lint-free cloth lightly moistened with a non-abrasive glass cleaner or with a general-purpose glass cleaner (such as the Simple Green glass cleaner). Remove any remaining soap foam with a lint-free cloth dampened with distilled water, and dry the glass with a dry cloth to prevent spotting.

△ CAUTION: Do not use abrasives, acetone, benzene, sodium hydroxide, or carbon tetrachloride on glass: they can damage it. Do not place or spray liquid directly onto glass: the liquid could seep under the glass and damage the device.

HP recommends using a canister of compressed air to remove dust from electronic or electrical parts.

△ CAUTION: Do not use water-based cleaners on parts with electrical contacts: such cleaners could damage electrical circuits.

CAUTION: Do not use wax, alcohol, benzene, thinner, ammonia-based cleaners, or other chemical detergents, which could damage the product or the environment.

📝 NOTE: In some locations the use of cleaning products is regulated. Ensure that your cleaning product follows federal, state, and local regulations.

Main components

The following views of the printer illustrate the main components.

Front view
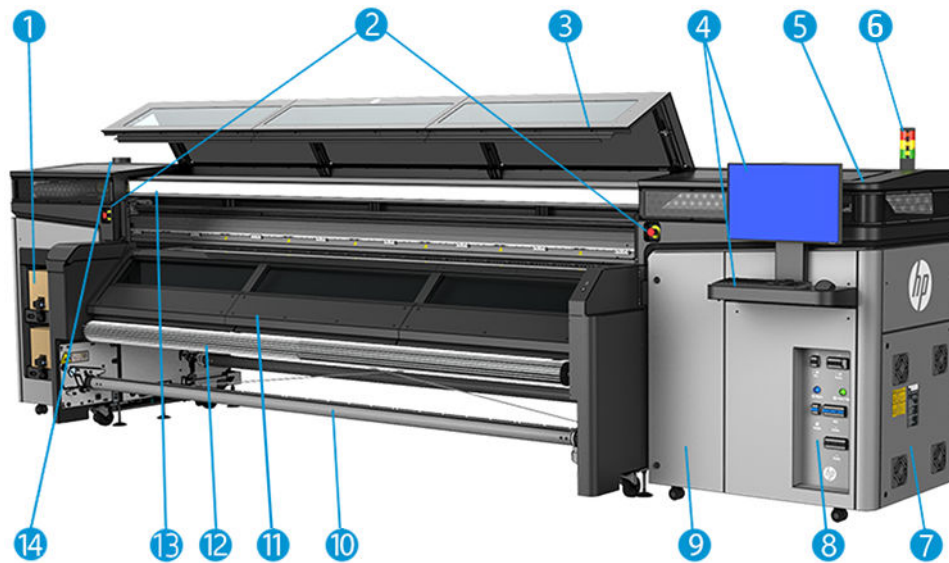
1. Ink cartridges

2. Emergency stop buttons

3. Front window for print-zone access

4. Built-in computer

5. Carriage cover

6. Printer status beacon

7. E-cabinet

8. Power switches, lights, and circuit breakers

9. Printhead cleaning roll door

10. Substrate output spindle

11. Output cover

12. Spread roller

13. Aerosol extractor

14. Aerosol extractor exhaust

Rear view
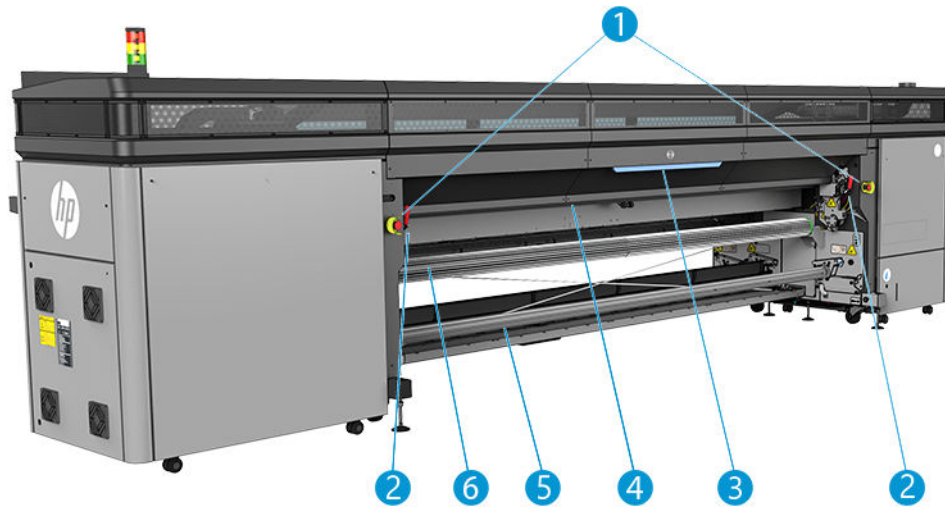
1. Emergency stop buttons
2. Loading table latches, one on each side
3. Loading table
4. Drive roller
5. Substrate input spindle
6. Spread roller

Carriage view
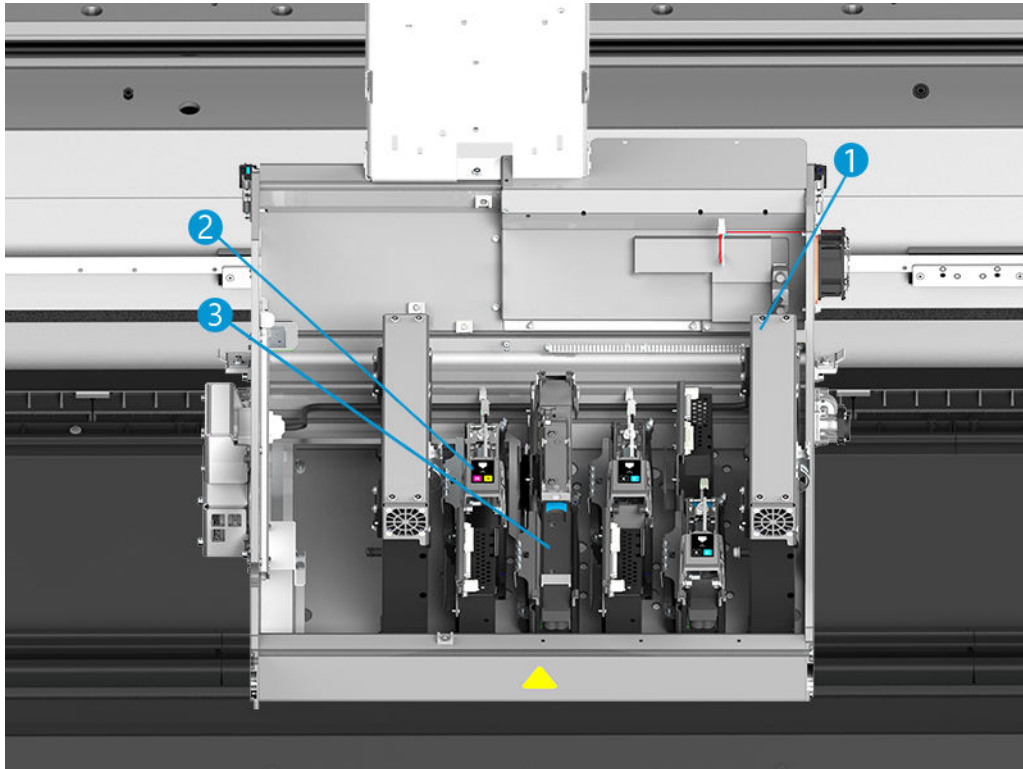
1. Aerosol filters

2. Printhead

3. Color printhead latch

Printer software

Your printer requires the following software:

*   The HP Internal Print Server is provided with your printer and is already installed in the printer's built-in computer. It displays printer alerts and a summary of printer status, manages print jobs, and must be used to interact with the printer in various ways. See HP Internal Print Server on page 18.

*   The HP Print Care program is provided with your printer and is already installed in the printer's built-in computer. It displays printer status and history in detail, and helps you to maintain the printer and solve any problems that may arise. See HP Print Care on page 100.

*   A Raster Image Processor (RIP) should be run on a separate computer; it cannot be installed on the printer's built-in computer. It is not provided with the printer and should be obtained separately. The printer is JDF-enabled. If your RIP supports this interface, it can retrieve and display printer and job status.

Turn on the printer for the first time

1. Make sure that the two bottom rows of circuit breakers at the front right of the printer are all in the up position.

2. Turn the main switch to the on position, and also turn on the computer switch beside it (labelled IPS).

3. Check that all three green lights are on. In normal operation these lights should always be on. If any of them are off, check the Internal Print Server in case there is a system error, and see Printer messages on page 250 or check with your electrician.

4. Wait for the Internal Print Server to tell you that the printer is waiting for rearm.

5. Perform a visual check of the printer.

6. Press the blue rearm button at the front right of the printer. This enables all of the printer's high-power subsystems.

7. Check that the printer-enabled green light turns on. In normal operation this light should always be on. If at any time you notice that this light is off, check the Internal Print Server in case there is a system error, and see Printer messages on page 250.

8. Wait for the Internal Print Server to indicate that the printer is ready. This can take several minutes. When initialization is complete, the Internal Print Server displays a Ready message. If a system error message is displayed, see Printer messages on page 250.

Turn the printer on and off

The printer has three power-off levels. Each of them goes deeper, until you reach complete shutdown at level 3.

| Level	Turn off	Turn on
1: Major power electronics and engine off.	Wait for the Internal Print Server to indicate that the printer is ready, then turn off the high-power subsystems by clicking the shutdown icon near the top left corner of the screen. Wait until the Internal Print Server reports that it has lost its connection to the printer. NOTE: After the printer electronics have been turned off at the Internal Print Server, the fans turn at maximum speed for safety reasons. This is normal behavior and not a cause for concern.	Click the **Wake Up** button up in the top left corner of the Internal Print Server window, and wait for the printer to turn on the high-power systems. When prompted, press the blue rearm button at the front right of the printer.
2: All printer systems off (recommended).	After completing level 1, turn off the main switch. The fans should stop.	After completing level 1, turn on the main switch, and ensure that the circuit breaker beside it is on. When prompted, press the blue rearm button and wait for the Internal Print Server to announce that the printer is Ready.
3: All printer systems and Internal Print Server off.	After completing level 2, shut down the Internal Print Server from the Windows Start button, and wait until you see a black screen with the message **No input signal**. CAUTION: The computer may be damaged if it is turned off incorrectly. Once the Internal Print Server is completely off and you see **No input signal** on the screen, turn off the computer power switch.	After completing level 2, see Turn on the printer for the first time on page 15.

Move the printer

If you wish to move the printer a short distance on the same site, across a horizontal floor with no steps and no slopes of more than 3% inclination, see the following instructions. For more difficult movement operations, call your service representative (see HP Customer Care Centers on page 244).

⚠ CAUTION: Slopes steeper than 3% may cause serious damage to the printer.

1. Turn off the printer.

2. Disconnect all power and network cables from the printer.

3. Raise the feet gradually, applying two turns each time to each foot so that the wheels (A) touch the ground. To raise a foot:

   a. Use a 24 mm (15/16 in) open end wrench to unlock the nut at the top of the foot.

   b. Rotate the nut manually down the bolt. Leave about 2 cm (0.8 in) clearance at the bottom between nut and foot.

   c. Use a 16 mm (5/8 in) open end wrench to rotate the foot upwards. Use the flat hexagonal faces at the bottom of the bolt to fit the wrench.

   d. Raise the foot as far as the bolt allows.

   e. Use the 24 mm (15/16 in) open end wrench to lock the nut again.

   ⚠ CAUTION: Take care to raise the feet as high as you can. They may break if they touch the ground while the printer is in motion.
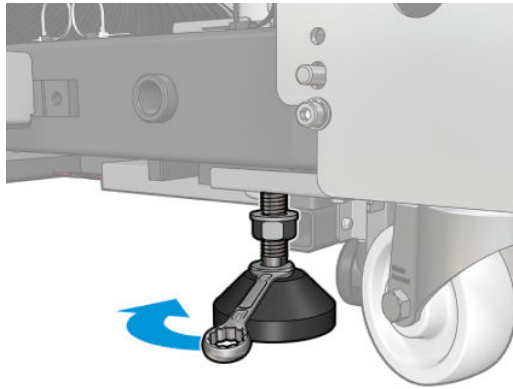
4. Push the printer from the outside corners of the main body. Remember to avoid slopes steeper than 3%.

5. Once the desired destination is reached, reverse the process described above to secure the printer in position.

After moving the printer, you may in some cases need an electrician to reconnect the power cables. You may also need to reconfigure the network, from the printer's built-in computer and from the RIP computer. See the *Installation Guide* for more details, including the minimum space required around the printer.

Printer status beacon

⚠ CAUTION: The information provided by the printer status beacon is for functional information purposes only, and is not related to any safety provision, or safety states. Warning labels on the printer must be always considered when operating the printer, and they prevail over any status indicated by the printer status beacon.

Printer status beacon colors mean:

| Color	Description
Red	Unexpected printing interruption. A job that had started to print stopped unexpectedly and appears as **Failed**. Attention required. An UI user confirmation appears in the IPS window. When attended to, the red color in the beacon changes to reflect the state of the printer.
Orange	Warning alert present in the IPS
Green	Idle
	Printing

2 HP Internal Print Server

Start the Internal Print Server

The Internal Print Server starts automatically with Windows, and runs continually, in the background if not in the foreground.

If for some reason it has stopped running, or its window is not visible, you can start it from the Windows Start menu or by double-clicking its icon on the desktop.

When it starts, the main screen appears.
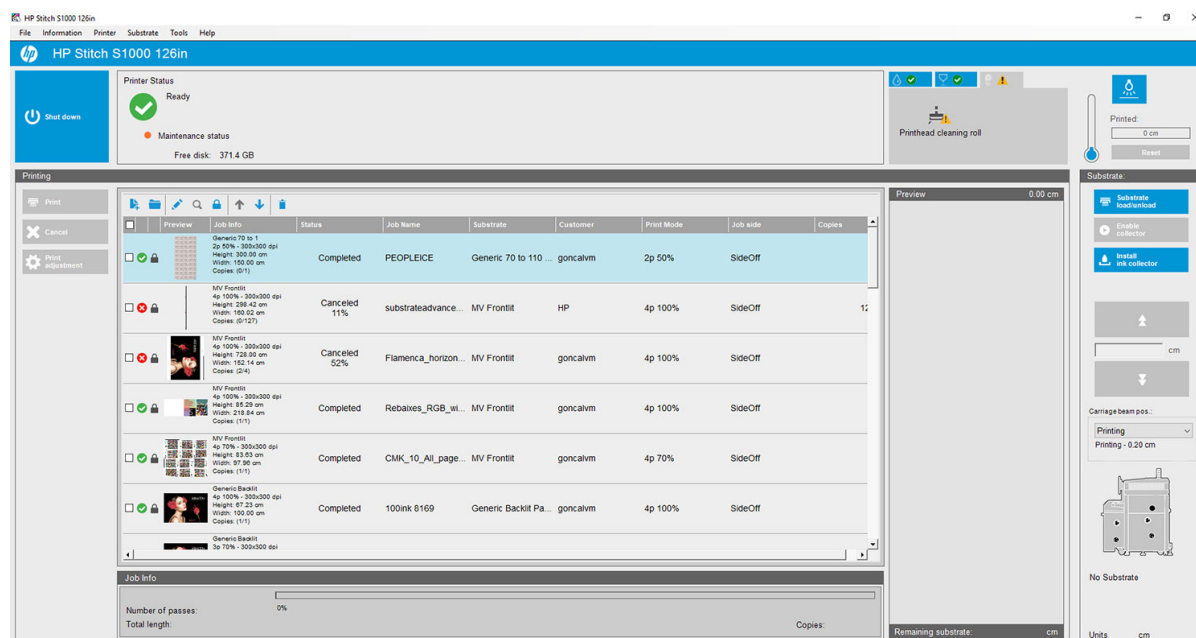
In the main screen:

- You can shut down the printer by clicking the **Shut down** button at the top left.

- The top central pane shows the printer status and maintenance status. See .

- The thermometer to the right of the status pane shows the temperature.

- To the right of the thermometer, you can see a summary of the status of the ink cartridges, the printheads, and the printhead cleaning roll.

- The Printing pane occupies most of the window, and includes:

  - The **Print**, **Cancel**, and **Print adjustment** buttons

  - The job queue

  - The print preview and job settings

- The Substrate pane includes the **Substrate load/unload**, **Enable collector**, and move carriage beam buttons; and information about how the current substrate is loaded.

Change the language of the Internal Print Server

When the Internal Print Server starts, it uses the language selected in the Windows Regional and Language Options. To change the selected language:

1. Open the Control Panel from the Start menu.

2. If you are using the Category View of the Control Panel, open the **Clock, Language, and Region** category.

3. Open the **Regional and Language Options**.

4. In the **Formats** tab, change the current format to correspond with the language you want.

5. Click the **OK** button.

The change takes effect when Windows is restarted.

Change the units of measurement in the Internal Print Server

To change the units of measurement in the Internal Print Server, click **Tools** > **Preferences** > **Units**. You can change the units of length and temperature.

Set the Internal Print Server preferences

To change the Internal Print Server's preferences, click **Preferences** from the **Tools** menu. In the Preferences window, you will see four tabs.

General tab
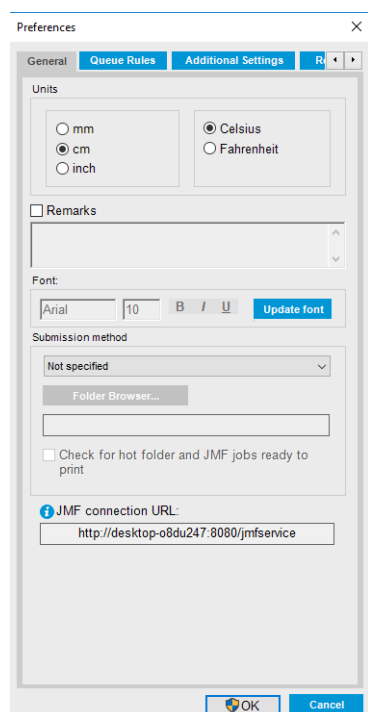
- Units of length and temperature

- Remarks (to add as a footer to the printed file)

- Font of footer text

- Hot folder

- JMF connection url

Queue Rules tab

- Action when job fails

- Action when job has been printed

- Action when job is removed from the queue

Additional Settings tab

- Maximum roll length

- Gap between jobs

- Nesting gap between images

- Margins:

  – RIP: Margins are set as defined in the RIP.

  – Center: The image is horizontally centered on the loaded substrate.

  – Default: The default margins are set to 5.0 mm (0.02 in). You can define the default left margin in the Job Properties window.

- Heating duration

Get QR code tab

Internal Print Server menus

The Internal Print Server provides the following menus.

The File menu	The Information menu	The Printer menu
● Add New Job	● Alerts	● Printing adjustments
● Add Existing Job	● Supplies	● Printhead alignment
● Edit Job	● Service information	● Printhead cleaning
● Delete Job		● Replace printheads
● Exit		● Replace cleaning roll kit
		● Advance calibration
		● Enable/Disable collector
		● Schedule printhead check and clean

The Substrate menu	The Tools menu	The Help menu
● Load/Unload	● Preferences	● About
● Settings	● HP Scitex Print Care	● User's guide
● Create	● HP Proactive Support	● Contact HP
● Edit	● Firmware update	● HP remote control
● Clone	● Wake up	
● Rename	● Shut down	
● Remove	● Reinitialize carriage	
● Color calibration		
● Presets management		
● Search substrate online		
● Substrate packages		

Printer status and alerts

The Internal Print Server displays the general status of the printer, the maintenance status, the loaded substrate, and the ink system.

The printer can communicate the following types of alerts:

Printer status

- **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.

A summary list of printer alerts appears in the main window of the Internal Print Server. To display a more complete and detailed list, click **Information** > **Alerts**.

For more information about a particular alert, see .

Maintenance status

- Green light: No maintenance is needed.

- Yellow light: Maintenance procedure date is approaching. Click the yellow button to check Print Care for details. See .

- Orange light: Maintenance is required. Click the orange button to check Print Care for details.

- Red light: Maintenance is required urgently. Click the red button to check Print Care for details.

- Grayed out: Print Care is not running. Click the orange button.

Update the firmware and the Internal Print Server

TIP: When updating the firmware and the Internal Print Server, first update the firmware and then the Internal Print Server.

Update the firmware

From time to time firmware updates will be available from HP that increase the printer's functionality and enhance its features.

Firmware updates can be downloaded from the Internet and installed in your printer using the Internal Print Server: click **Firmware update** from the **Tools** menu.
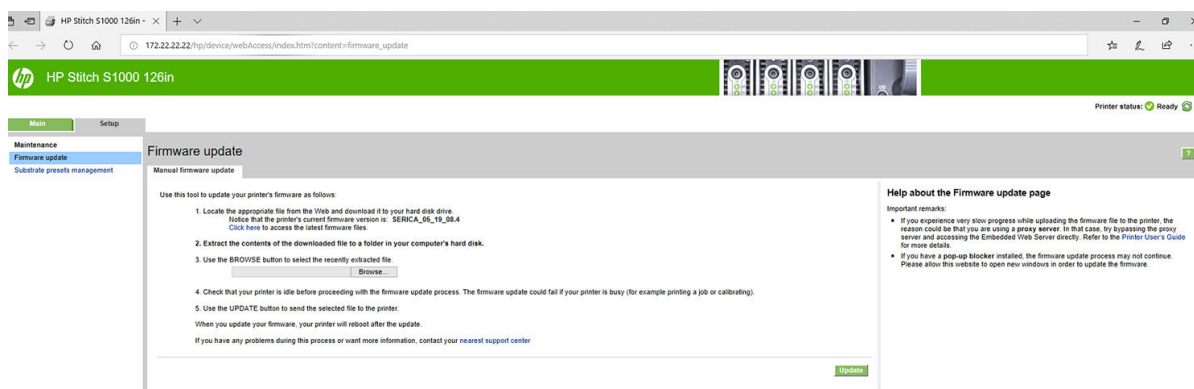
Follow the instructions on your screen to download the firmware file and store it on your hard disk. Then select the downloaded file and click **Update**.

The firmware includes a set of the most commonly used substrate presets. Extra substrate presets can be downloaded separately; see Substrate presets on page 48.

Update the Internal Print Server

IMPORTANT: Remove the previous version of the Internal Print Server in the printer's built-in computer before installing the new version.

1. Remove the current version of the Internal Print Server through the control panel. Click **Uninstall Internal Print Server Application** (this deletes any current job in the queue, but **not** ripped files).

2. Download the file to the built-in computer's hard disk (but not to the desktop).

3. Unzip/extract the files **HPIPS.msi** and **Setup.exe**.

4. Run the file **Setup.exe** and follow the onscreen instructions until the new software is installed.

Update the HP IPS Services

IMPORTANT: Remove the previous version of the Internal Print Server in the printer's built-in computer before installing the new version.

1. Remove the current version of the Internal Print Server through the control panel. Click **Uninstall Internal Print Server Application**.

2. Download the file to the built-in computer's hard disk (but not to the desktop).

3. Unzip/extract the files **HPIPSServices.msi** and **Setup.exe**.

4. Run the file **Setup.exe** and follow the onscreen instructions until the new software is installed.

3   RIP distribution

HP RIP Certification differentiates the RIP partners who reach a specific and superior level of integration, compatibility, and performance with the printer.

HP has increased the functionalities and RIPs certified for the printer.

The compatibility support matrix below presents the certified RIP partners and versions. As well as the different functionalities supported by each specific RIP partner, all certified RIP partners support, at least, all the mandatory functionalities.

	Ergosoft	Caldera 12+	Onyx 18.5+	Neostampa
HP Easy Color Profiling	Yes	Yes	No	Yes
HP Professional PANTONE Emulation	Yes	Yes	Yes	No
Configuration Center	Web-based: not RIP-dependent			

4 Printing workflows integration

Introduction to JDF

What is JDF?

JDF is a software method by which devices from a variety of vendors and manufacturers can interoperate together. It uses a text-based language known as XML that is compliant with many devices and workflow controllers in varying vertical print markets.

JDF implementation is typically based upon an MIS system to be used for job scheduling, submission, accounting, and costing. An integrator typically interfaces an MIS system to the devices that are present in a workflow through JDF technology.

JMF is a communication protocol (based upon the JDF specification) that allows devices to communicate job status information and other real-time job metrics and parameters. It can be used to poll a device for status or to watch a device at regular intervals.

Benefits of working with JDF for file submission

JDF can be useful in providing an accurate MIS-driven way to know the job status of content as well as when a device has completed a job. Since the role of an MIS is to track, schedule and cost-account for a job, JDF/JMF allows for a simple way to interface devices to an MIS for this task.

JDF and JMF can be used to be able to analyze and later perform accounting principles upon work created in a JDF workflow. A detailed analysis can be performed after a day or series of jobs to see the profit margin of a job, the costs and materials consumed, as well as inventory control and stock consignment.

HP is a partner member of the CIP4 organization, and you can obtain many more details about JDF at the CIP4 www site at http://www.cip4.org.

Working with JDF

Creating JDF job tickets

JDF Implementations typically use an MIS system to control and monitor a JDF/JMF workflow. The MIS can then monitor a device's status, can track time and consumables and provide interfacing with counting and inventory control modules integrated into an MIS. An MIS is typically the origin of a JDF job and resultant ticket. JMF communication can be used to send that ticket information to production milestones. An MIS is typically the origin of a JDF job and resultant ticket. JMF communication can be used to send that ticket information to production milestones.

What information is captured by the printer, and what can be communicated by JMF to an MIS?

The printer implements a subset of the JDF 1.5 specification, using JMF. This allows it to communicate printer-status, and notifications together with job status, job ink, and substrate consumption to external applications.

> 📝 **NOTE:** It is important to consider the fact that the RIP is capable of combining several jobs into one for the purpose of substrate optimization, and finishing. In this example, the printer sees the print as one job. In this situation, the MIS should query the RIP for the status of each individual job on the nest.

The RIP application can retrieve substrate and consumable tracking to report back to MIS.
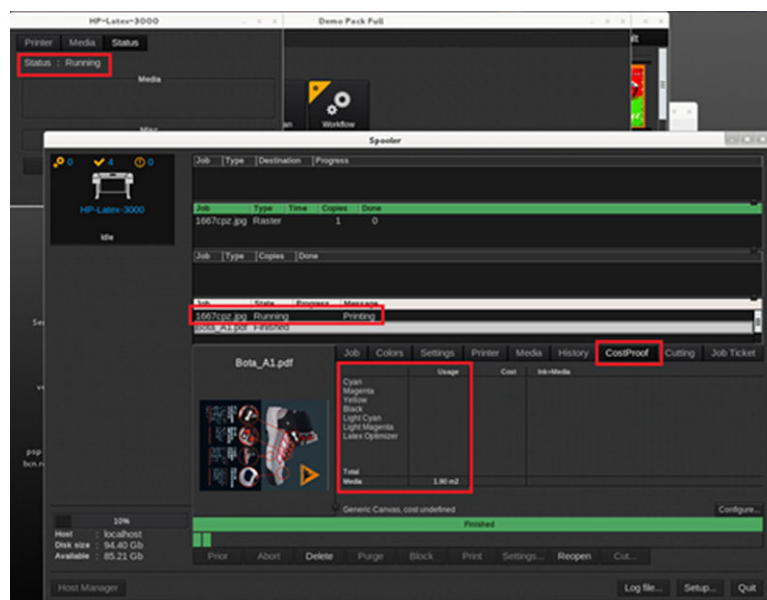
Guidelines for integration

How to integrate the printer into the Caldera RIP

The Caldera RIP can take advantage of the JDF interface in the printer by selecting the option in the printer driver setup. Once the JDF interface is enabled, the RIP will display printer status and notifications together with job status, and job ink and substrate consumption.

In order to activate this functionality in the Caldera RIP, you need to enter the printer's JMF URL into the JDF area of the printer configuration dialog (IPS URL). Make sure you have the latest driver available from the Caldera website.
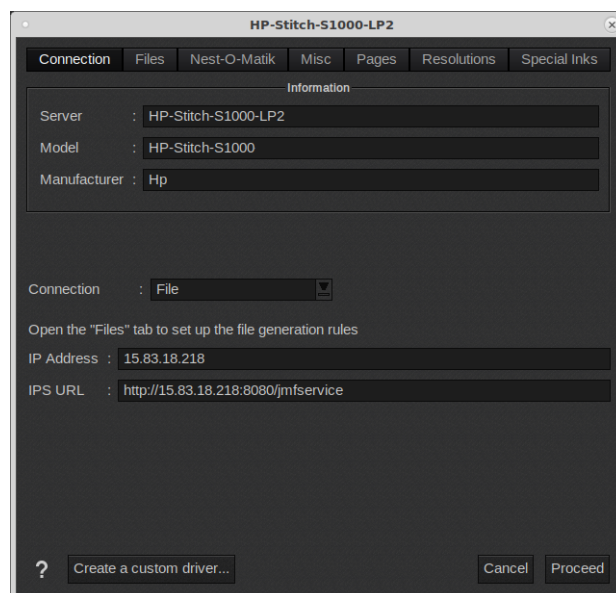
Once configured, you can display the printer status by opening the info window in the print client, and opening the spooler for the job status.

To obtain the JMF URL: In the printer's Internal Print Server, click **Tools** > **Preferences** > **General**.
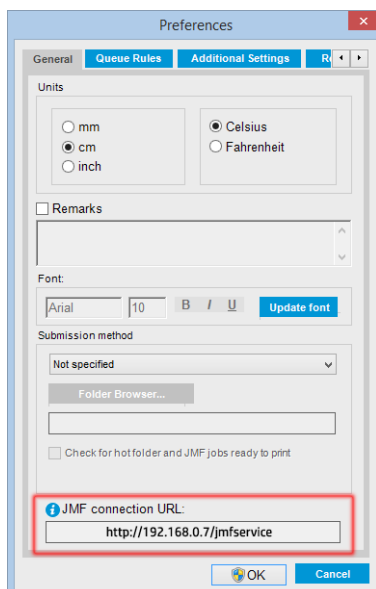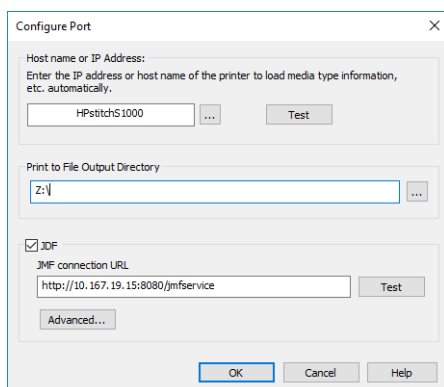

If there are problems using the printer's hostname, switch to the printer's IP using the printer's system configuration tool. For more details, see the service manual or talk to your network administrator to solve hostname resolution.

How to integrate the printer into the Onyx RIP

Onyx can take advantage of the JDF interface in the printer by selecting the option in the printer driver setup. Once the JDF interface is enabled, the RIP will display printer status and notifications together with job status and job ink and substrate consumption.

In order to activate this functionality in the Onyx RIP, you need to type the printer's JMF url in the JDF area of the printer configuration dialog (JDF URL). Ensure that you have the latest driver version from the Onyx Download manager.

Once configured, you can display the printer and job status opening the info window in the RIP queue.
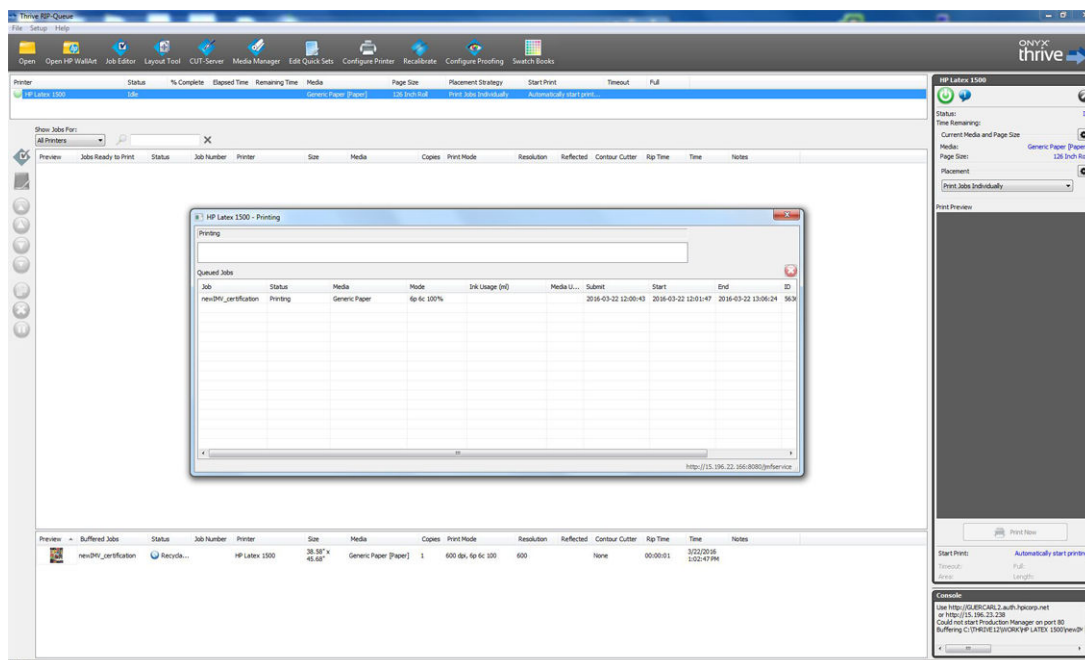
To obtain the JMF URL: In the printer's Internal Print Server, click **Tools** > **Preferences** > **General**.
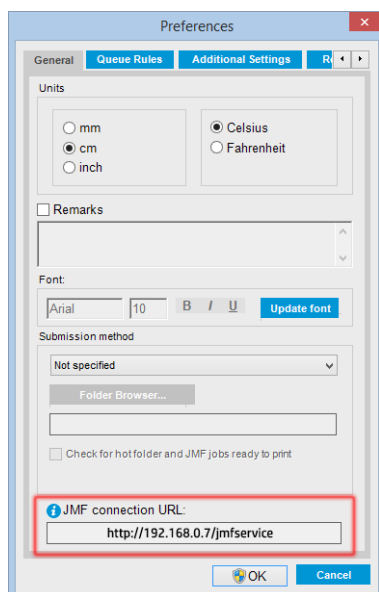
If there are problems using the printer's hostname, switch to the printer's IP using the printer's system configuration tool. For more details, see the service manual or talk to your network administrator to solve hostname resolution.

Job submission methods

The printer supports two file submission methods (in addition to open a file directly in HP IPS UI):

In the Internal Print Server, click **Tools** > **Preferences** > **General**, and select the submission method from the **Submit method** drop-down list.
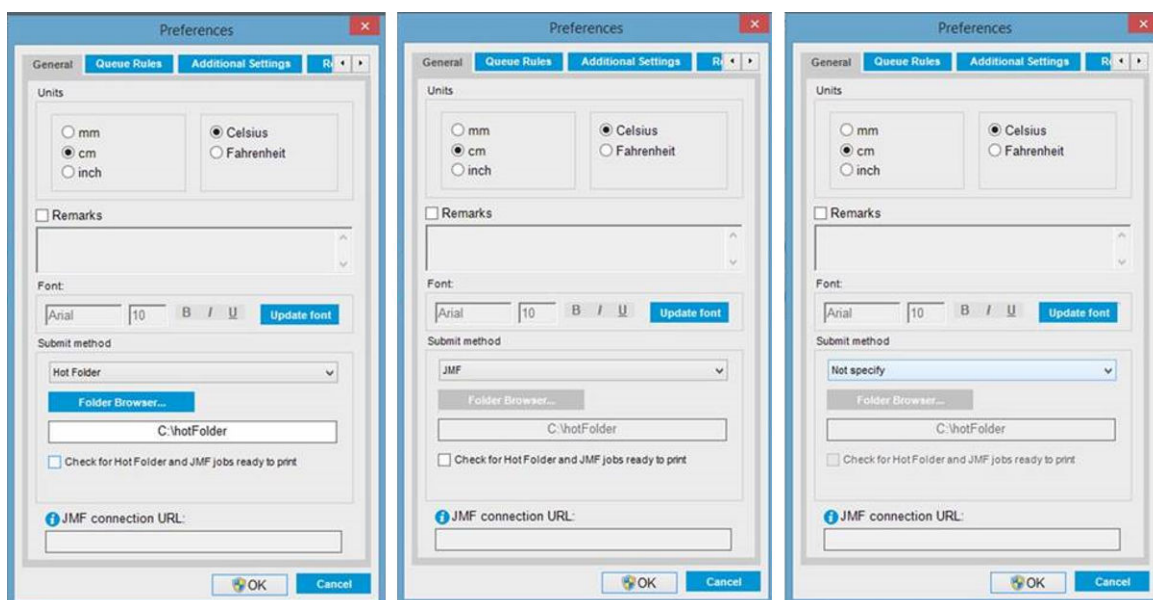
- **Hot folder**: Select a shared folder on the computer's hard disk; the RIP copies the output job there, and the Internal Print Server automatically loads jobs into the queue.

> 📝 **NOTE:** The shared folder should be the same as the one configured in the RIP.

- **JMF**: The RIP sends the location of the job via a JMF command and the IPS automatically looks for the files there and loads them directly into the printer queue.

- **Not specify**: Load the file manually in the IPS **File** > **Open**.

You can remove a job from the Internal Print Server or printer queue directly from the RIP interface, but only if it was submitted using the JMF method.

How to integrate the printer into an MIS system or production control software

Specific RIP/MIS implementations will require vendor specific configurations.

MIS or Production Control Software applications can retrieve **printer status and notifications together with job status and job ink and substrate consumption**, from the printer via the **HP JDF/JMF Interface**. It is also possible to remove a job in the printer queue via the **HP JDF/JMF Interface**.

As explained in the previous section, if the RIP combines several jobs into one before sending it to the printer, the recommendation is to connect the MIS or Production Control software to the RIP instead of the IPS in order to get the grouped jobs' individual job status.

Be sure to assign unique names to each job in order to identify them in the information gathered from the printer.

External Application

HP Internal Print Server

HP JDF/JMF Interface
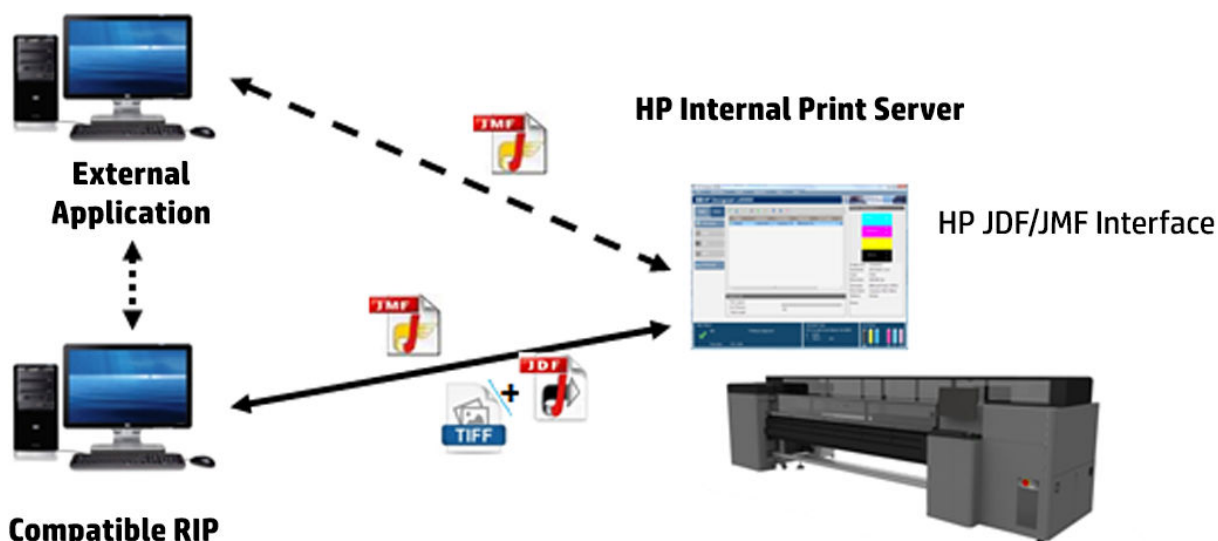
Compatible RIP

If you are using the Caldera 12 RIP, the MIS can communicate using the Caldera Nexio module. **Caldera Nexio** is a tool that connects the Caldera RIP and other third-party software using standard JDF/JMF protocols, making it possible to produce automatic sequences of actions that speed up production and advanced reports to improve operations. Please contact Caldera for further information.

Onyx customers wishing to integrate with MIS solutions can use the **Onyx Connect** module to communicate via JDF. Onyx Connect does not currently support JMF. Please contact Onyx for further information.

If you are using another RIP solution, please contact your specific RIP vendor for JDF/JMF configuration and interface guidelines.

MIS vendors or customers that would like to integrate the printer with a solution directly, can obtain the HP specifically supported JDF Software Development Kit from the HP Solutions Portal: https://developers.hp.com/lfp-enroll.

5 Handle the substrate

Supported substrate types

The following substrate types are compatible with your printer. For specific substrate settings and profiles, see Online substrate manager on page 54.

Paper

- Generic high ink density
- Generic high-weight paper
- Generic medium-weight paper
- Generic low-weight paper
- Generic backlit paper
- Generic >110 g/m² paper
- Generic 45–70 g/m² paper

Textile

To check the porosity of your substrate, see Check the porosity of your substrate on page 34.

- Generic backlit fabric
- Generic bleed-through fabric
- Generic frontlit fabric

Check the porosity of your substrate

1. If the printer has any substrate loaded, unload it.
2. Cut a piece of self-adhesive vinyl white gloss, 15 × 50 mm (0.6 × 2 in) in size.
3. Stick it to the platen, covering the substrate-advance sensor.
4. Load the substrate that you want to check.
5. Open your RIP software.
6. Obtain the test file from the printer's built-in computer.
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 may be used for printing as described in this guide.
11. Clean the print zone, see Clean the print zone on page 129.

Supported HP substrates

Portfolio summary for AMS

HP name	Main characteristics	Product category	Sizes	Key vertical
HP Stitch S Series 70 g/m² Sublimation Paper	High ink coverage Ideal for knitted and stretchy fabrics 70 g/m²	High speed Medium weight	44 in × 575 ft 64 in × 575 ft	
HP Stitch S Series Lightweight 56 g/m² Sublimation Paper	Low grammage for low transportation cost Starting with 56 g/m², then new 45 g/m²	High speed Light weight	64 in × 1640 ft (500 m) for S500 64 in × 656 ft (200 m) for S300	
HP Stitch S Series Tacky 95 g/m² Sublimation Paper	Tacky High ink coverage Ideal for sportswear 95 g/m²	Tacky High weight	44 in × 500 ft 64 in × 500 ft	

Portfolio summary for EMEA

HP name	Main characteristics	Product category	Sizes	Key vertical
HP Stitch S Series 105 g/m² Sublimation Paper	High ink coverage Ideal for knitted and stretchy fabrics 105 g/m²	High speed High weight	1320 mm × 110 m 1620 mm × 110 m	
HP Stitch S Series Lightweight 45 g/m² Sublimation Paper	Low grammage for low transportation cost 45 g/m²	High speed Light weight	1620 mm × 500 m for S500 1620 mm × 250 m for S300	
HP Stitch S Series Tacky 105 g/m² Sublimation Paper	Tacky High ink coverage Ideal for sportswear 105 g/m²	Tacky High weight	1320 mm × 120 m 1620 mm × 100 m	

Application categories

1. Sportswear (95 g/m² and 105 g/m² Tacky)
2. Fashion (45 and 56 g/m²)
3. Soft signage (70 and 95 g/m², and 105 g/m² soft signage)
4. Household (70 g/m²)

HP trademark code FSC CO17543. See http://fsc.org.

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.

Substrate tips

Maintain the substrates

Keep substrates in their sealed wrapping material while they are in storage, and store rolls vertically to avoid the migration of plasticizers in some materials.

Move substrates from the storage area to the print production area at least 24 hours before use, so that they can adapt to its temperature and humidity.

General tips

Handle unprinted and printed substrates with care, and preferably with cotton gloves, to avoid fingerprints. For heavy rolls, use a forklift, and two people wearing security shoes.

Before loading a roll:

- Check that temperature and humidity in the room are within the recommended ranges for the printer. See Environmental specifications on page 248.

- Check that neither the roll nor its core are bent or deformed, which may cause the substrate to jam in the printer.

- If the roll has been stored in a place not offering the recommended environmental conditions, allow some time for it to adapt to the temperature and humidity of the printer's environment.

- Check which is the correct side for printing, by reading the label inside the core or the note inserted into the package.

- Check that the substrate is correctly attached to the input core. Otherwise, the Internal Print Server will report an error.

- Check the substrate thickness:

  - Up to 0.4 mm (0.016 in): Print normally.

  - 0.4 to 2 mm (0.016 to 0.079 in): Raise the carriage beam to a custom position. Edge holders are not needed and should not be used.

  - More than 2 mm (0.079 in): Not supported.

While loading a roll, ensure that the leading edge is parallel and straight across the output core, and attached evenly (start taping the substrate to the core at the center, then move towards the edges).

Also ensure that the side edges of the input and output roll are properly aligned. An incorrectly loaded roll may cause waves or cockles in the substrate, leading to ink smearing and printhead crashes.

After you have loaded a roll:

- If you intend to use substrate edge holders, do not use edge holders from another printer, use only the edge holders that came with your printer.

- Check the correct carriage beam position for printing: customized position for thick substrates, printing position for others. See Set the carriage beam position on page 58.

- Check that you are using the correct substrate preset in the Internal Print Server and the correct ICC profile and other settings in the RIP.

- HP substrates are optimized to provide the best out-of-the-box printing experience with your printer.

- Use the Internal Print Server to check that any calibrations appropriate for your substrate have been done: printhead alignment, color calibration. See Printer calibration on page 88.

- Do not cut off pieces of substrate while the substrate is loaded into the printer. This may cause the remaining substrate to jam.

For the latest ICC profiles and substrate presets, see http://www.hp.com/go/mediasolutionslocator.

Color consistency

Your printer has been designed to provide an excellent experience in terms of color consistency and repeatability. This allows large jobs such as fleet graphics and wall coverings to be printed in tiles or panels, with confidence that, when the finished panels are placed edge to edge, the colors will match at the joins.

The color variation within a printed job has been measured to be within this limit:

Maximum color difference (95% of colors) <= 2 dE 2000

📝 NOTE: This is based on reflective measurements on a 943 color target under CIE standard illuminant D50, and according to the standard CIEDE 2000 as per CIE Draft Standard DS 014-6/E:2012. 5% of colors may experience variations above 2 dE 2000. Backlit substrates measured in transmission mode may yield different results.

Color matching is dependent on many external factors. Take the following points into account to achieve this level of consistency:

- If a large job is being printed in panels, more than one roll may be required. All rolls should be from the same batch, and stored under correct conditions according to the manufacturer's specifications.

- Operating conditions (temperature and humidity) should be kept constant during the printing of the entire job.

- Ensure that a printhead check and clean routine has been run prior to starting the job. If any printhead changes are required during the job, printhead alignment and color calibration should be done.

See also Color calibration on page 93.

Substrate configurations

The substrate can be loaded in a variety of different configurations to suit your different needs. Before loading, you must go to the Internal Print Server and click **Substrate load/unload**, then select the configuration you intend to use.
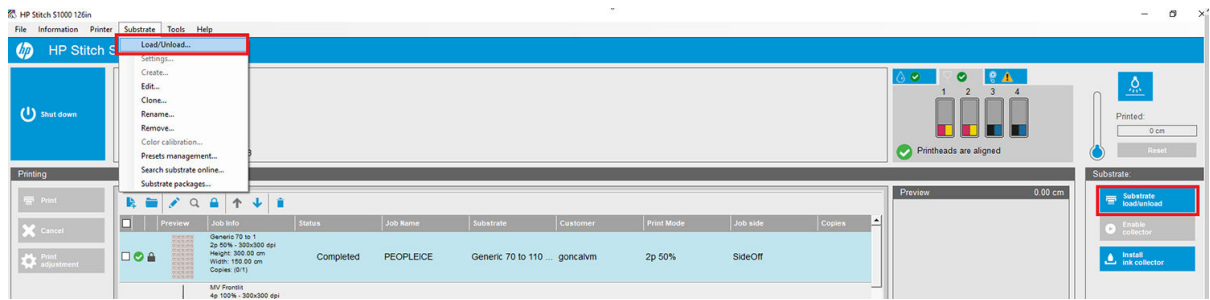
You can also start to load the substrate and start the load process by pressing the corresponding button at the input side of the printer.
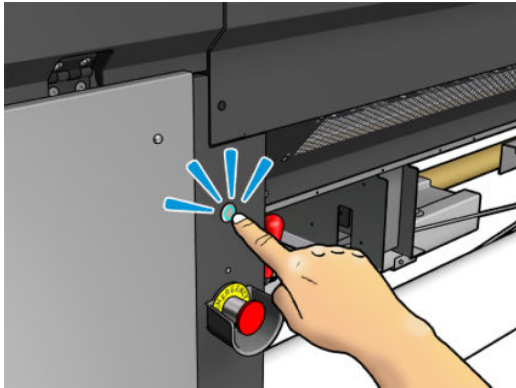
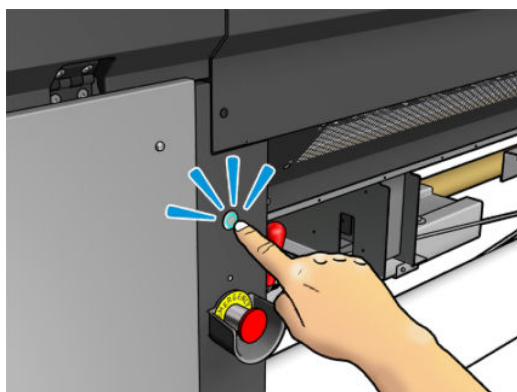The physical button is permitted when its light is on.
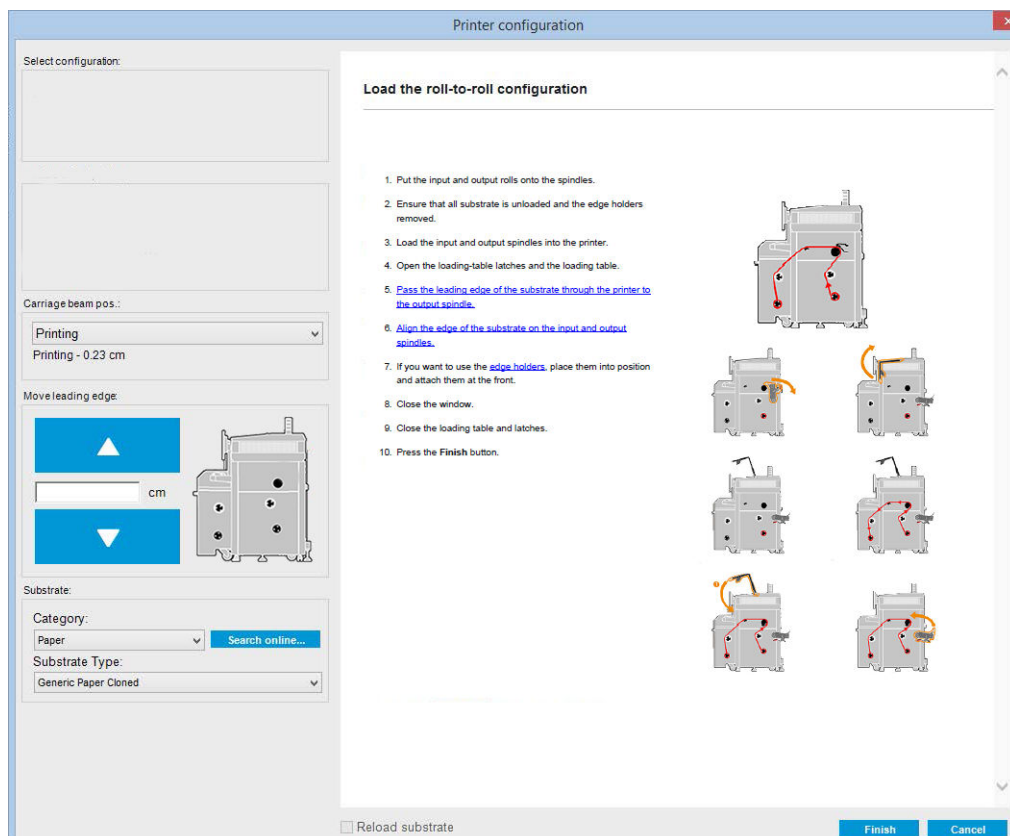
The basic printer configuration is roll-to-roll.

Prepare to print

The following steps must be followed before the printer can print:

1. Go to the Internal Print Server and click **Substrate Load/Unload** to open the Printer Configuration window or start the loading process by pressing the physical button.

2. Select the printer configuration that you intend to use; the on-screen help will appear on the left.
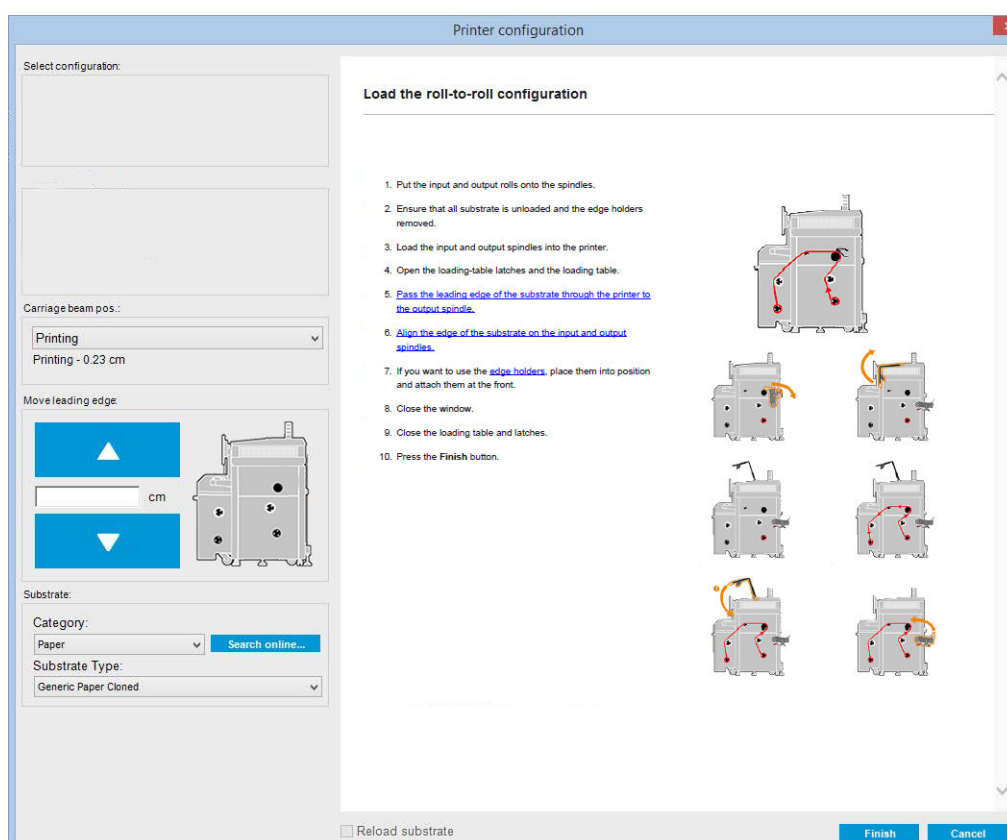
NOTE: The **Reload substrate check** box should be checked only if the printer has just previously had the same configuration (the same substrate and same profile), and because of a severe system error, you had to restart the printer.

3. Load the substrate. Substrate loading instructions are displayed in the Internal Print Server window. For more detailed instructions, see Load a roll onto the spindle on page 42 and Load a roll into the printer on page 43.

4. Select the substrate type.

5. Click the **Finish** button in the Internal Print Server to start the substrate check, then enter the substrate type in the Loaded Substrate window.

TIP: If the printer has been idle overnight with substrate loaded, and exposed to high or low temperatures, advance the substrate 13 to 25 cm (5 to 10 in) before printing, to avoid printhead crashes or ink smears on the substrate.

The substrate edge holders

The purpose of the substrate edge holders is to prevent the substrate edges from lifting up and jamming while printing. If you experience this kind of problem while printing, you can try using the edge holders to overcome it.

IMPORTANT: There are some textiles that should not be used with edge holders; check before using.

NOTE: The edge holders are not recommended when printing on substrate that is more than 0.4 mm (0.016 in) thick.

TIP: The edge holders may be easier to deploy if you raise the carriage beam (see Set the carriage beam position on page 58); however, they can be deployed without raising the carriage beam.

The correct position is illustrated below. The substrate should be free to move, and should not touch the ends of the edge holder.
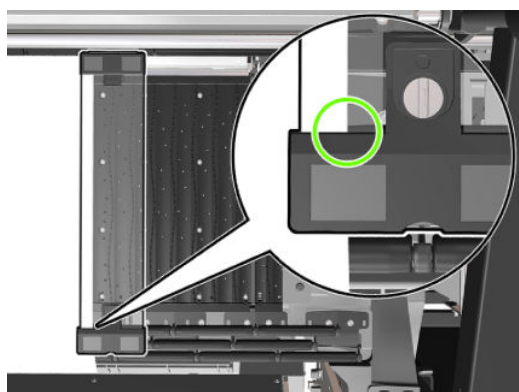
CAUTION: Wrongly positioned edge holders could severely damage the printheads and carriage.
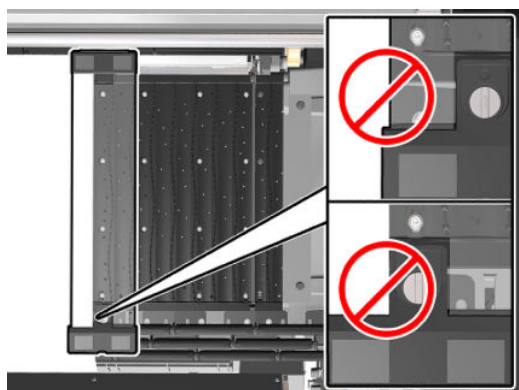
NOTE: If the substrate is loaded with the right edge outside the 161 cm position on the spindle ruler, or the left edge outside the −162 cm position, the edge holders cannot be used because there is not enough space for them.

Install an edge holder

1. Standing in front of the printer, place the magnetic side of the edge holder onto the far side of the platen and cover the edge of the substrate.
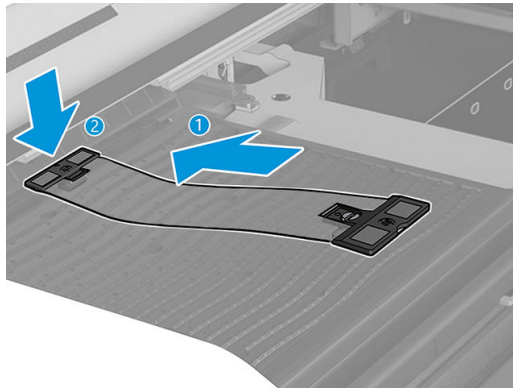
2. Attach other side of the edge holder in the space between the platen and the top diverter profile, cover the edge of the substrate with it. Make sure that each edge holder is properly positioned and not bent as this could cause a carriage crash.
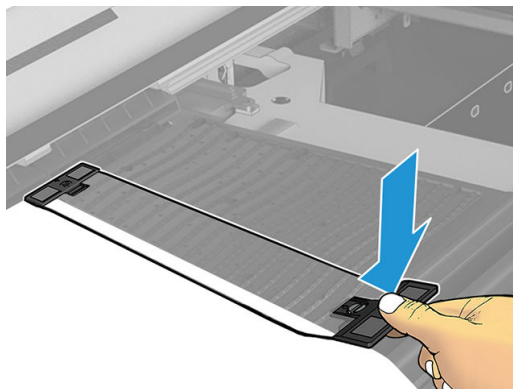
3. Turn the screw at the front part of the edge holder to fix it in place.
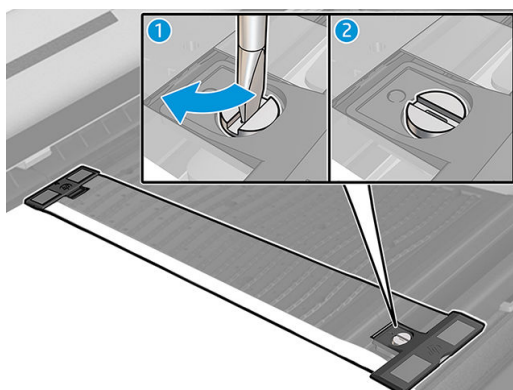
4. Ensure that the substrate is aligned with the edge holder.

⚠ CAUTION: Place the edge holder carefully. It should remain perfectly straight, otherwise it could damage the printheads and carriage.

☆ TIP: Once installed, an edge holder cannot be slid sideways. If you want to move it sideways, you must remove it and reinstall it in the new position.

Replace an edge holder strip

Replacement edge holder strips come with the printer cleaning kit. Replace the strip if it is broken (for example, by an impact) or deteriorated (for example, by accumulated ink).

1. If it is installed in the printer, remove the edge holder from the platen.

2. Remove the old strip and insert the new one.

3. Replace the edge holder on the platen, if you intend to use it.

Load a roll onto the spindle

📝 NOTE: Contact HP to know the recommended third party solutions for substrate lifter and core adaptors.

Single-roll printing

The spindle has a pneumatic connector at one end and a gear at the other.

1. Check that the gear is on the correct side.

2. Insert the spindle into the roll taking into consideration the winding direction.

   💡 TIP: The spindle is quite heavy in order to ensure stiffness and so avoid skew and wrinkles, so two people are recommended for this operation.

3. Note the position of the end of the roll on the scale marked on both sides from the center of the spindle. The input and output rolls should be positioned identically on their respective spindles.
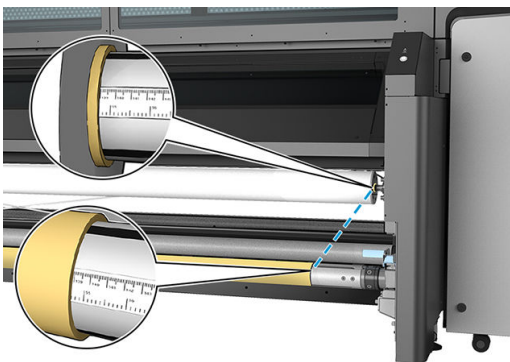
   💡 TIP: The rolls should be centered to reduce the risk of skew, wrinkles, and telescoping.
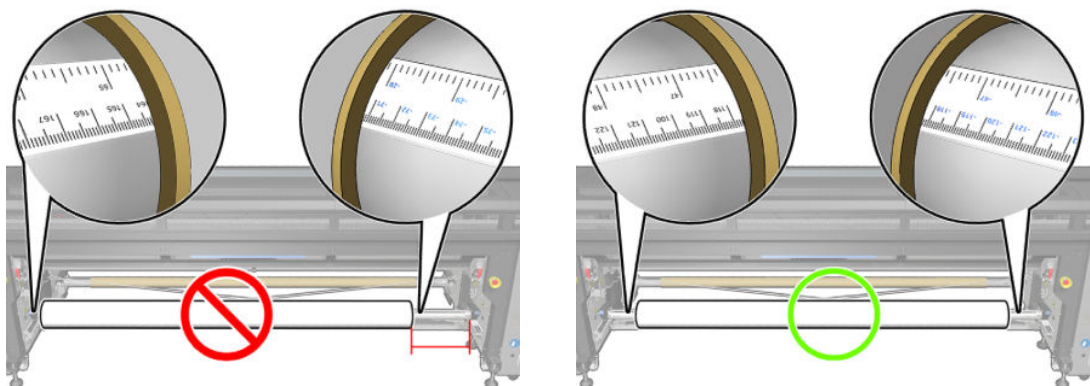
4. Connect the air gun to the pneumatic connector on the spindle, and inflate the spindle so that it cannot move inside the roll.

   💡 TIP: Before inflating, use the pneumatic gun to blow air around the valve area to remove any dirt.

WARNING! The air gun provided with the printer is only intended to inflate the spindle. When recommended to use for cleaning purposes, make sure to do so according to local regulations since additional safety provisions may apply.

TIP: If the substrate is telescoped on the input roll, there is a risk of substrate jams and damage to the printheads. Try to straighten the edges of the substrate to minimize telescoping on the input roll before loading it into the printer.

TIP: Check that the substrate is attached to the input core.

The roll is now ready to be loaded into the printer.

TIP: If you are a regular user of different substrate types, you can change rolls more quickly if you preload rolls of different substrate types on different spindles. Extra spindles are available for purchase.

Load a roll into the printer

The objective when loading substrate is to get a uniform tension across its width and length to minimize the risk of skew, wrinkles, and telescoping.

Load a roll (roll-to-roll configuration)
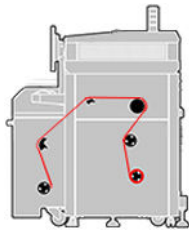
The substrate roll is mounted on the input spindle and will be collected on the output spindle. The substrate goes from the input spindle over the input spread roller, over the main roller, over the platen, over the output spread roller, and then to the output spindle.
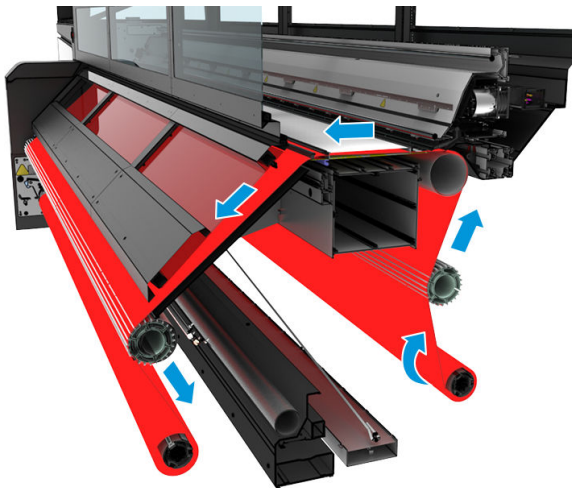
The above illustration shows the substrate loaded with the printed face inwards on both input and output rolls. You can also load substrate with the printed face outwards on either or both rolls, in which case the spindle will turn in the opposite direction. The printer asks you for the winding direction if it cannot detect it automatically.

Each of the spindles has its own motor. The motors maintain tension on the substrate. Some vacuum is applied at the level of the platen to keep the substrate flat. The substrate is moved forwards by the drive roller motor, on which there is a pinch mechanism to prevent the substrate from slipping.

Before loading a roll into the printer, you must have a roll loaded onto a spindle (the input roll) and an empty core loaded onto another spindle (the output roll). See .

NOTE: For the output roll, use a single empty core the same length as the input core. Do not place two or more shorter cores on the same spindle, which could cause substrate-advance problems.

TIP: The spindle and a roll of substrate can be heavy. You are recommended to use a forklift or some other equipment to move it into position; otherwise, lift one end into the printer, and then the other end.

1. Go to the Internal Print Server and click **Substrate Load/Unload**, then select the correct configuration.

2. In the Internal Print Server, choose from the list of substrate types the type that you have loaded.

3. If they are installed, remove the substrate edge holders from the print platen so that they do not get in the way while loading the substrate.

   CAUTION: Loading the substrate on top of the edge holders could severely damage the printheads and carriage.

4. Bring the new roll on its spindle to the rear of the printer, with the geared end of the spindle on the left.

5. Rest the ends of the spindle on the platforms provided at the rear of the printer; plastic pads are provided to absorb the impacts.

6. In the same way, load the spindle with the empty core into the front of the printer. In this case, the geared end of the spindle should be on the right.
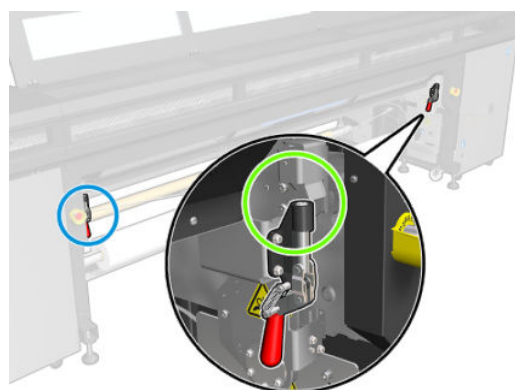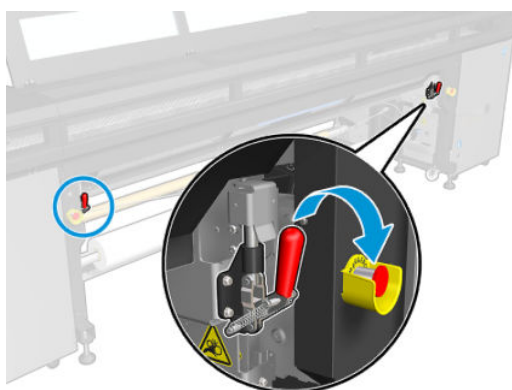
Loading substrate

1. Use the internal print server to raise the carriage beam to its loading position or start the loading process using the substrate load button.
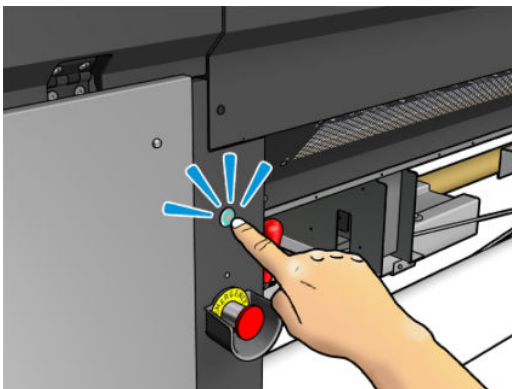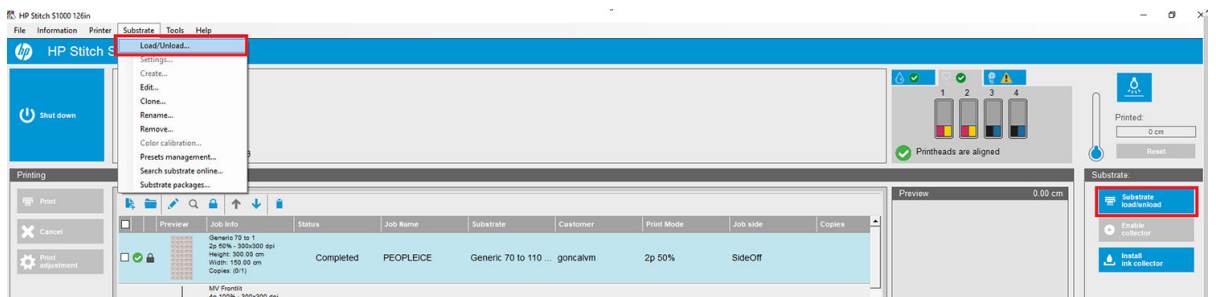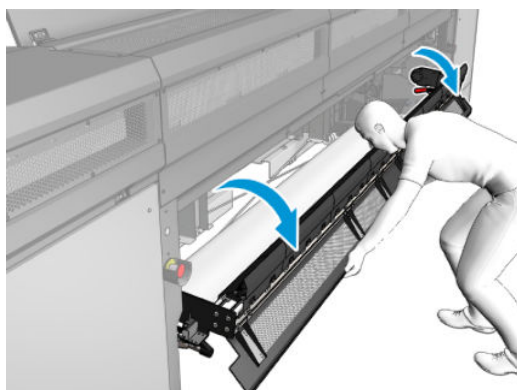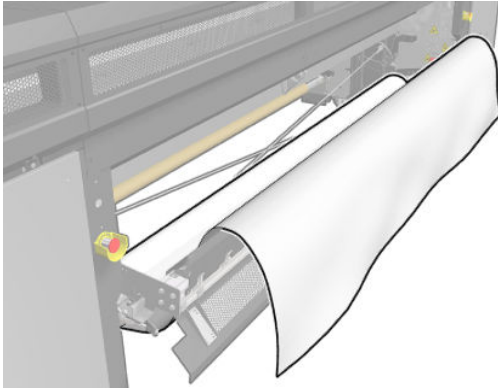
2. Open the window.
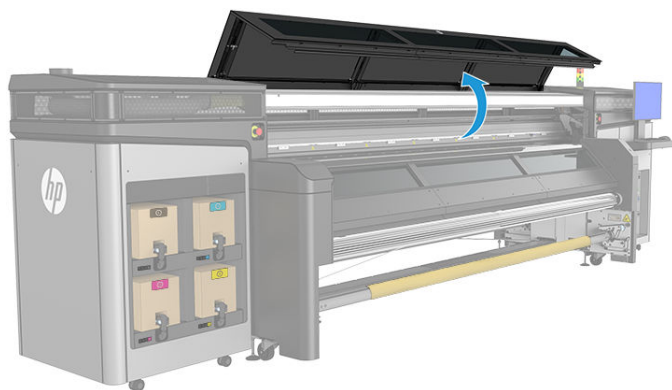
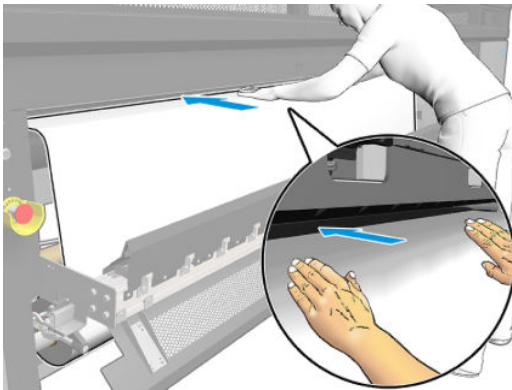3. Open the loading table latches.

4. Open the loading table.
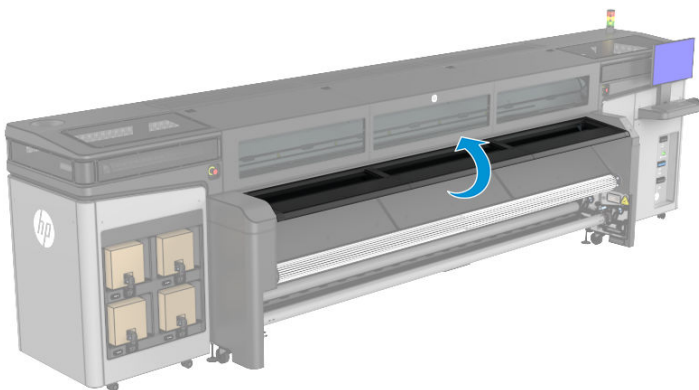
5. Unwind a length of substrate.


6. Place it in the print zone.

7. If necessary, push the substrate through the printer until it reaches the output spindle.

> **NOTE:** This may be necessary if the substrate gets stuck below the output cover during manual loading; in this case, you should open the output cover in order to clear the jam and route the substrate correctly.

8. Align the substrate by checking that the substrate edge is in the same position on the input and output spindles. This can be done by using the rulers on the spindles or by measuring the distance between the right edge and the side plate.

9. When the substrate is evenly tensioned and flat (no wrinkles or bumps), attach it to the empty core with adhesive tape. Tape it first in the center, and then at the left and right sides, making sure not to pull the substrate excessively or leave it wrinkled.
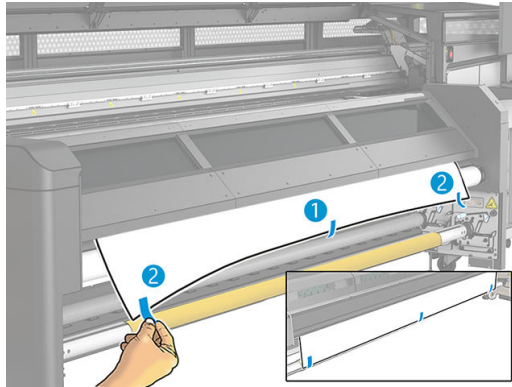
10. Close the window.

11. If you are using the substrate edge holders, place them on the platen before closing the window.

12. Use the Internal Print Server to lower the carriage beam to its printing position.

13. Go to the Internal Print Server and click the **Finish** button. The printer rotates both rolls to check their diameters, and it also checks the width of the roll, the winding direction, the vacuum, and the substrate advance calibration (this takes about a minute).

    NOTE: Some substrates (such as transparent substrates) cannot be measured by the printer in this way. In such cases, you will be asked to enter the Left Edge and Width fields yourself into the Internal Print Server. Use the ruler on the spindle to check these values.

14. An alert about substrate-advance tracking may appear at this point. For more information on when you might want to turn off automatic tracking, see .

The printer is now ready to print.

View information about the loaded substrate

Information about the loaded substrate is displayed at the bottom of the main screen of the Internal Print Server.

To see more information, click **Substrate** > **Settings**.

Unload a roll

NOTE: Contact HP to know the recommended third party solutions for substrate lifter and core adaptors.

1. Check that the printing is not printing.

2. Go to the Internal Print Server and click **Substrate Load/Unload**.

3. Lift the loading table latches at the rear of the printer.

4. If you need to raise the carriage beam, go to the Internal Print Server and click **Carriage beam position** > **Move to substrate load position**. The printer raises the carriage.

    TIP: This step is optional. It may be feasible to unload some substrates without raising the carriage beam.

5. When the carriage has been raised, cut the substrate

6. Wind the substrate manually onto the output roll.

7. Open the two latches at each side of the spindles.

8. Remove the output roll from the printer.

9. Press the valve to deflate the spindle and remove it from the roll.

IMPORTANT: When you press the spindle valve, make sure nobody else is touching the spindle/roll to minimize the risk of trapping a finger between any spindle component and the roll.


10. Rewind the substrate manually onto the input roll.

11. Open the two latches at each side of the spindles.

12. Remove the input roll from the printer.

13. Press the valve to deflate the spindle and remove it from the roll.

IMPORTANT: When you press the spindle valve, make sure nobody else is touching the spindle/roll to minimize the risk of trapping a finger between any spindle component and the roll.

The printer is now ready for new input and output rolls to be loaded.

Output platen light
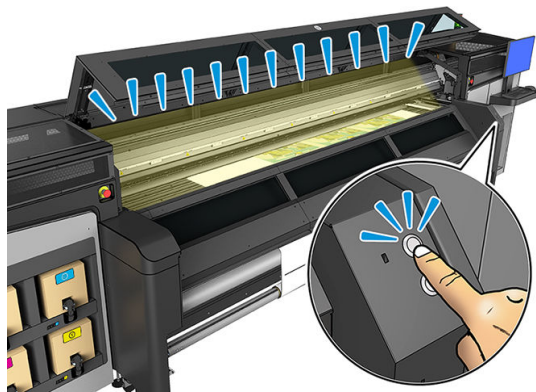
The output platen light illuminates both the platen and the job that is being printed. It can be switched on and off manually

Substrate presets

Each supported substrate type has its own characteristics. For optimum print quality, the printer changes the way it prints on each different substrate type. For example, some may need more ink and some may require higher temperatures for drying. So the printer must be given a description of the requirements of each substrate type. This description is called a substrate preset. The printer is supplied with substrate presets for some specific substrate types, and also with presets for some generic types.

As it is inconvenient to scroll through a list of all substrate types available, your printer contains substrate presets for only the most commonly used substrate types.

You can check substrate availability from the .

To install a new substrate preset without .oms, go to the Internal Print Server and click **Substrate** > **Search substrate online**, then search for your specific substrate file and click the **Down arrow** of the Status column.

To install a new substrate preset that you have downloaded, go to the Internal Print Server and click **Substrate** > **Presets management** > **Import label**, then search for your **.oms** file and click **Update**. You can also export substrate presets using **Export label**.

Export multiple presets

Multiple substrate presets can be exported together in a single .oms substrate file.

How to export multiple substrate presets

1. In the Internal Print Server, click **Substrate** > **Preset management**.
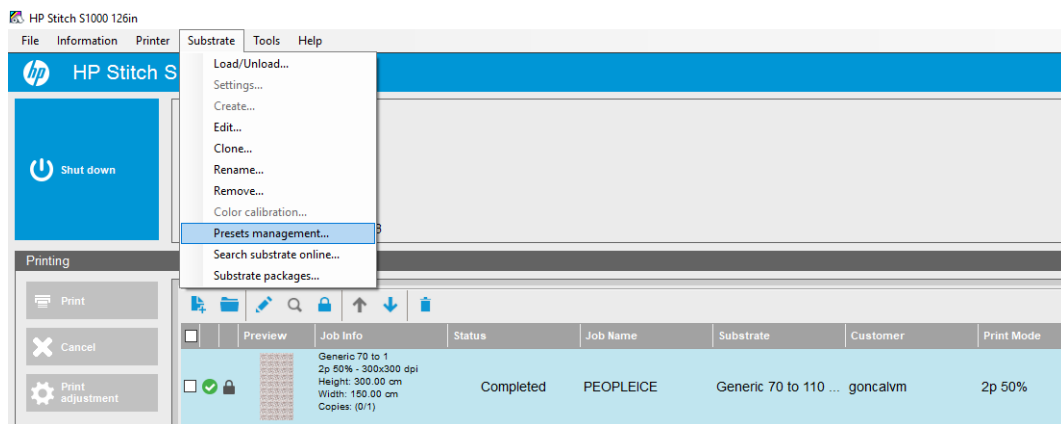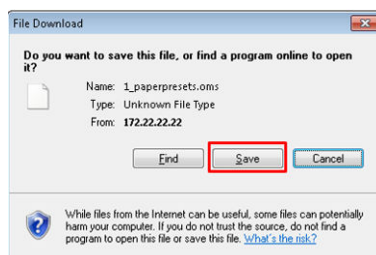

2. Go to the **Export** tab, select all the substrates to export, and click **Export**.
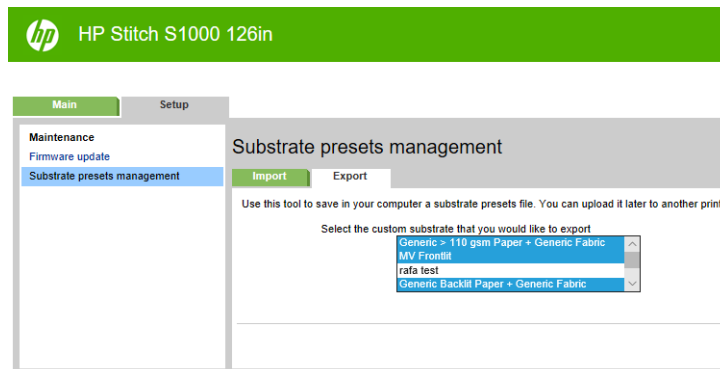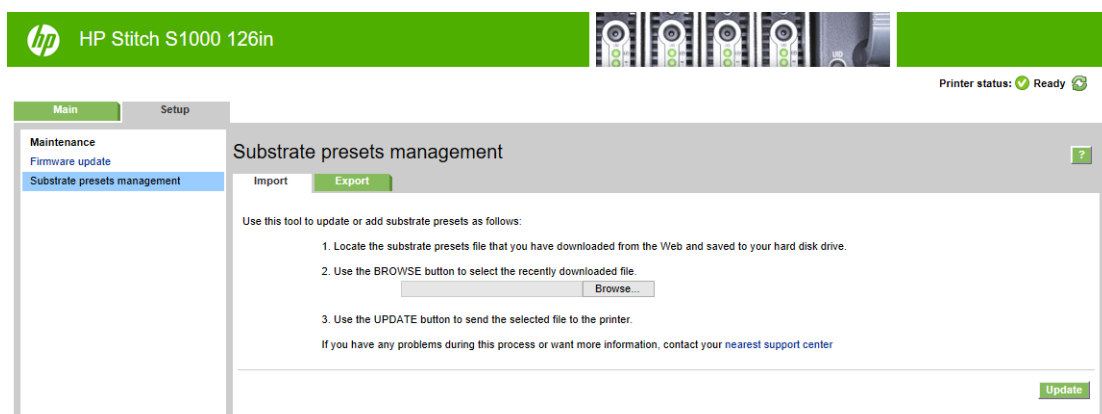

NOTE: This functionality allows up to 120 substrate presets to be exported at once.

3. A window pops up asking to save the generated .oms file. Click **Save** to continue.
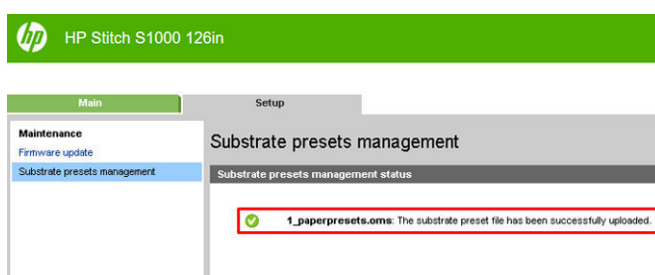

How to import the generated .oms file

1. In the Internal Print Server, click **Substrate** > **Preset management** > **Import**.

2. Browse to select the **.oms** file (in this case '1_paperpresets.oms') and click **Update**.

3. When the **.oms** file has been imported, the following information is displayed:
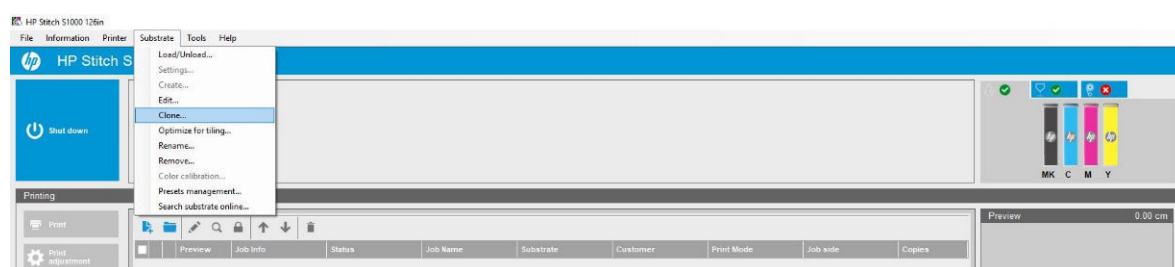

Use a new substrate

Whenever you load a new substrate type into your printer, you must choose a substrate preset for it.

1. If no specific preset for that substrate appears in the list, check the Online substrate manager on page 54 in case a preset for your substrate is available there. Alternatively, get the specific preset from your substrate reseller or the substrate manufacturer.

2. If no specific preset is available, try using a generic preset in the same substrate category.

3. If you are not satisfied with the results, you can create a new preset for your substrate. See Create a new substrate preset on page 50.

4. For full control of your preset, clone a generic preset (or the preset obtained from the Add New Substrate wizard) and adjust the settings manually. See Edit a substrate preset on page 51. This is recommended for advanced users only.
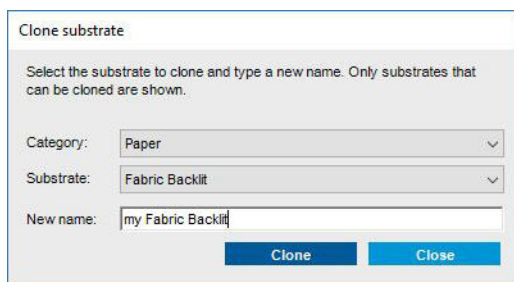
Create a new substrate preset

To create a new substrate preset, you must clone an existing one and then edit it. In the Internal Print Server, click **Substrate** > **Clone**.

In the **Clone substrate** window, choose the substrate you want to clone, and choose a new name for the clone.

NOTE: Only generic substrates can be cloned. You cannot clone a clone.

You can then proceed to edit the new preset that you have created: see Edit a substrate preset on page 51.

If you want to create a new substrate preset using the same transfer paper but with a different fabric, select the category paper and select the transfer paper substrate you are using. We recommend that you don't change the transfer paper name. If you change it, the substrate properties will not be shared.

If you want to create a new substrate preset with a different transfer paper, change the name of the transfer paper when cloning, so that substrate properties are not shared.

NOTE: If you create a new substrate preset for a new transfer paper or for a new direct-to-fabric, make sure to perform substrate-advance calibration (see Substrate-advance calibration on page 97).

Edit a substrate preset

Editing a preset has several purposes:

- You can assign a name of your own choice to a particular substrate.

- You can adjust the preset to suit the precise characteristics of your substrate.

- You can adjust the preset to your intended use of the substrate, which may range from highest-quality printing to fast production output.

To edit the technical characteristics of a custom substrate type, go to the Internal Print Server and click **Substrate** > **Edit**. This allows you to change all the important settings in the substrate preset. It is recommended for advanced users only.

NOTE: You can change only the presets that you have created yourself. The presets supplied by HP cannot be changed.

You can also create new paper modes among the large variety of print modes listed for each substrate. Thus, you can change the throughput or ink level if you like.

1. In the upper part of the Edit Substrate window, select the substrate category and the name of the specific substrate preset that you want to edit.

   NOTE: Generic presets cannot be edited.

2. In the central part of the window, select the number of passes, number of colors, and ink density; and name the combination to make it visible in the Print dialog.

3. Under the print-mode table, change the substrate settings.

4. Click **Update substrate** if you want to change the settings.

5. In the lower part of the window, change the settings for your named combination. Click **Update print mode** if you want to change an already-existing named combination.

To achieve a highly optimized preset for one specific purpose and substrate, you may need to adjust other settings to compensate. To achieve a balanced preset, you are recommended to use the Add New Substrate wizard or a generic preset.

When you have edited the substrate preset, you can change the loaded substrate as usual: **Substrate** > **Settings**.

On-the-fly adjustments

You can modify the substrate settings while printing. In the Internal Print Server main window, click the **Print adjustment** button, and a dialog box opens.

The dialog box is divided into sections for the substrate advance (see Substrate-advance calibration on page 97), the drying temperature, and the substrate tension.
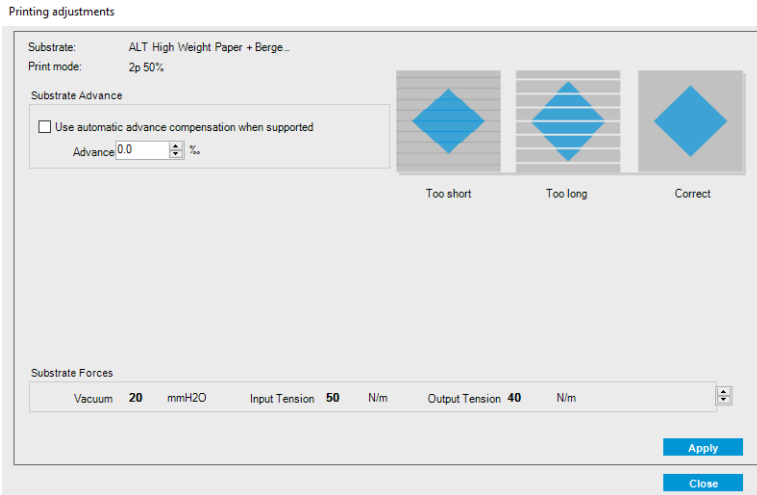
1. Adjust the vacuum level up or down. The input and output tensions are adjusted automatically, depending on the vacuum level.

2. Illustrations of the possible effects of not enough, too much, and correct tension respectively.

To apply and save the values, click the **Apply** button in the dialog box before closing it. The new settings are saved for that particular substrate type for the current and future prints. They are not applied to all substrate types.

NOTE: On-the-fly adjustments only can be done with cloned substrates. With generic substrates, this dialog box is disabled.

Optimize the preset for higher print speed

Action

Reduce the number of passes.

Optimize for ink consumption
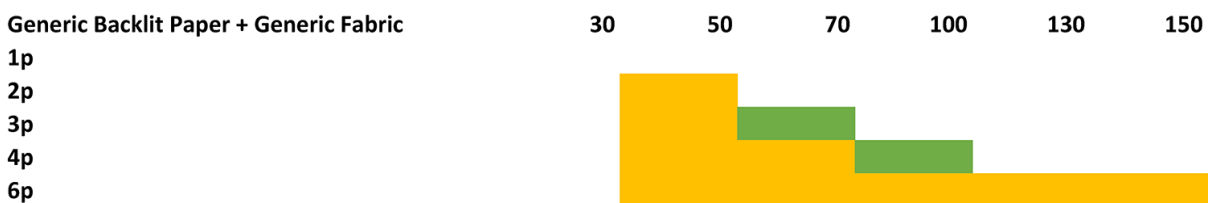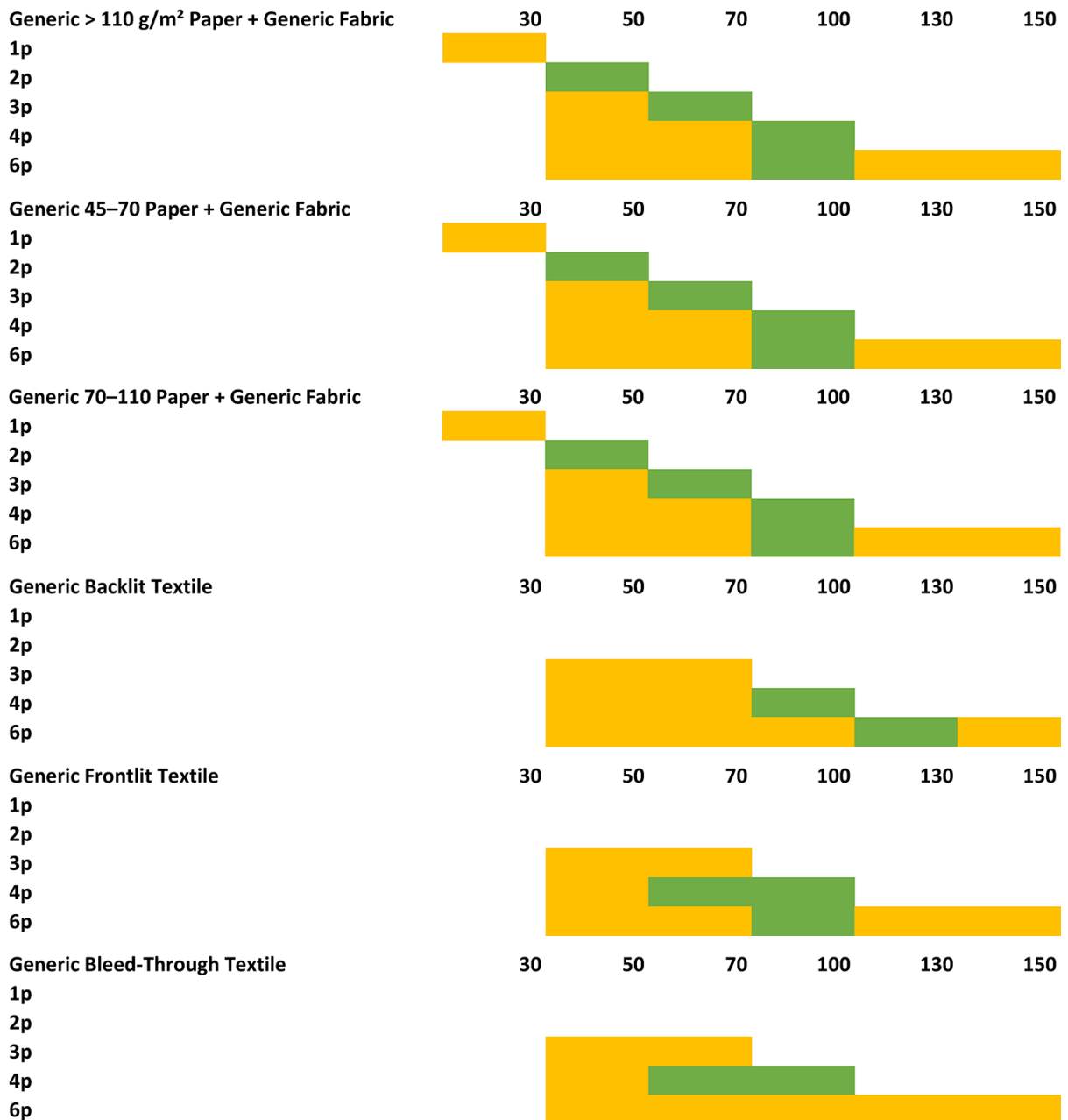
Action

Reduce ink density.

Considerations

● Reducing the ink density usually reduces the gamut and color saturation.

● A lower ink density may permit a lower number of passes.

Recommended print modes for each substrate type

Green: Recommended print mode for this substrate type

Yellow: Available print mode for this substrate type

Generic Backlit Paper + Generic Fabric	**30**	**50**	**70**	**100**	**130**	**150**
1p						
2p						
3p						
4p						
6p						

Generic > 110 g/m² Paper + Generic Fabric	30	50	70	100	130	150
1p						
2p						
3p						
4p						
6p						

Generic 45–70 Paper + Generic Fabric	30	50	70	100	130	150
1p						
2p						
3p						
4p						
6p						

Generic 70–110 Paper + Generic Fabric	30	50	70	100	130	150
1p						
2p						
3p						
4p						
6p						

Generic Backlit Textile	30	50	70	100	130	150
1p						
2p						
3p						
4p						
6p						

Generic Frontlit Textile	30	50	70	100	130	150
1p						
2p						
3p						
4p						
6p						

Generic Bleed-Through Textile	30	50	70	100	130	150
1p						
2p						
3p						
4p						
6p						

Adjust the printing workflow for optimum color performance

1. Check your substrate's color calibration status and calibrate it if recommended, by clicking **Substrate** > **Color calibration** in the Internal Print Server. See Printer calibration on page 88.

2. Create ICC profiles for your substrate; see your RIP documentation for instructions.

Remove a substrate preset

To remove a substrate preset from your printer, go to the Internal Print Server and click **Substrate** > **Remove**. Then select the category and type of the substrate you wish to remove from a list of removable substrates.

Online substrate manager

From the menu click **Substrate** > **Search substrate online**, or click the **Search online** button in the **Load printer configuration** dialog. This screen is shown:

Sorting

To sort, click on the column title or place the mouse cursor over the column title and click on the drop down arrow.

Structured search

There are several structured search fields. You can use a single search field or a combination of fields.

- There are several search options:

  – Select a manufacturer to find substrates from a specific manufacturer.

  – Select a category and grade to find specific substrate types.

  – Select applications to find optimized and certified substrates.

- Application Remote Media searches automatically.

- Click Clear filters to display the full list.

Free text search

The free text search locates substrates by checking the substrate name, supplier name, the comments and technical note, for the presence of the specified text string.

- Type a text string.

- Application Remote Media searches automatically if search text contains more than one character.

- Click Clear filters to display the full list.

Install new substrate

To install a new substrate preset, go to the Internal Print Server and click **Substrate** > **Search substrate online**, then search for the specific substrate file and click the. **Down arrow** in the status column.

Applications	Status
Billboards; Double-sided; Outdoor banners; Pop-up / Roll-up displays	↺
Design; Light boxes; Photo enlargements; POP/POS; Posters	⬇
Display panels; Displays; Light boxes; Outdoor banners; Pop-up / Roll-up displays; POP/POS; Posters; Soft signage	↺
Light boxes; Outdoor banners	⬇
Wall covering	⬇
Billboards; Building wraps; Displays; Flags; Fleet graphics; Outdoor banners; POP/POS; Posters; Soft signage; Vehicle wraps	↺
Billboards; Floor graphics; Pop-up / Roll-up displays; POP/POS; Posters; Soft signage; Windows graphics	⬇
POP/POS; Soft signage	⬇
POP/POS; Soft signage	⬇

This agreement dialog is shown:
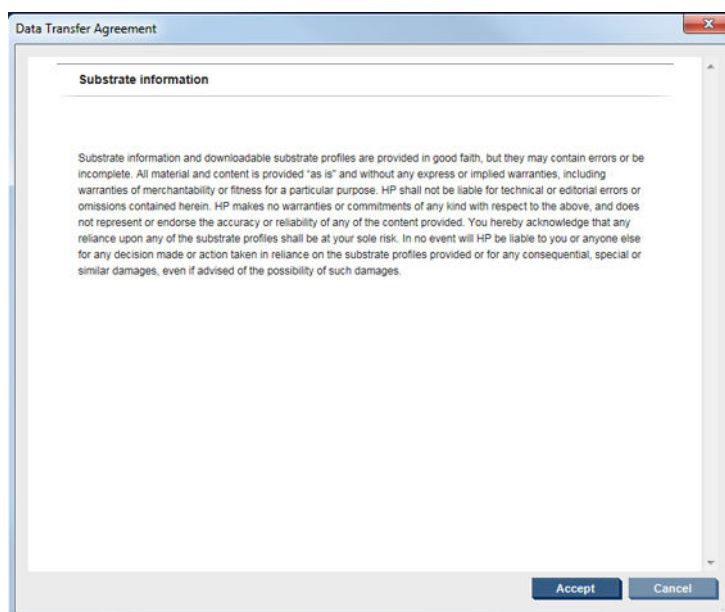
The agreement dialog must be accepted to continue with the installation.

If installation is successful a check icon is shown in the status column.
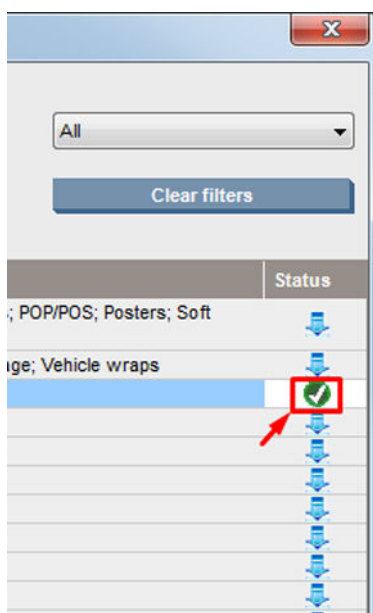
Update existing substrate

The substrate update option is shown when a new substrate version is available on the server. To update a substrate, go to Internal Print Server and click **Substrate** > **Search substrate online**, then click on the **substrate update** icon in the status column.

Substrate synchronization

In order to make sure that the RIP has the latest substrates available, check the RIP help section: **Substrate synchronization**.

In order to retrieve the new substrates installed in the printer from the RIP:

- Open the **Easy Media** component and select the printer.

- Once in the printer dialog, click **AutoSync**.

- Choose between "**Missing presets only**" or "**Full reset**".

📝 NOTE: Take into account that only substrates downloaded from the HP Media Locator will include an ICC profile. For custom substrates, an ICC profile needs to be created in, or imported to the RIP.

Set the carriage beam position

The carriage beam position determines the vertical distance between the printheads and the platen. If it is too great, print quality will be impaired. If it is too small, there is a risk that the printheads will come into contact with the substrate, causing smears or damage.

- The **substrate-load** position is not used for printing: it may be used for loading thick substrates or for maintenance tasks.

- The **printing** position is a fixed height suitable for unwrinkled substrates up to 0.4 mm (0.016 in) thick.

- A **custom** position is used for substrates thicker than 0.4 mm (0.016 in), or for substrates that wrinkle slightly due to heating. We recommend setting the custom position as follows:

  - The thickness of the substrate plus 1.9 mm for substrates that do not wrinkle.

  - The thickness of the substrate plus 2 to 3 mm for substrates that wrinkle.

  You cannot exceed the maximum height permitted by the Internal Print Server.

  ☼ **TIP:** Try to avoid wrinkling by using substrates that do not wrinkle, or by using a slower print mode that will allow you to lower the drying power.

To set the carriage beam position, go to the Internal Print Server and select the appropriate position from the drop-down list.
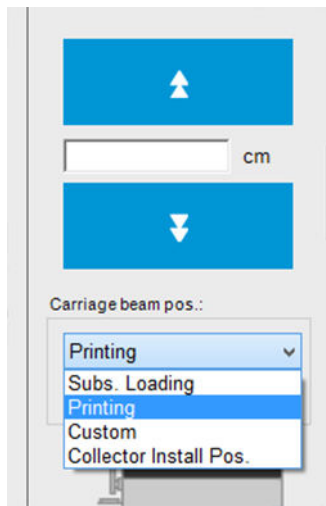
⚠ **WARNING!** Keep away from the printer's moving parts until the carriage beam has reached its new position.

⚠ **CAUTION:** Do not change the carriage beam position while the printhead cleaning roll is out of place.

6 Create and manage print jobs

Add a new print job

Each print job must be created in your Raster Image Processor (RIP) and then added to the Internal Print Server.

When the RIP has generated a print job, its output folder will contain at least three files:

- An XML or JDF file containing job settings

- A low-resolution TIFF file for use in previews

- At least one high-resolution TIFF file containing the image to be printed

The output folder should be the shared folder on the Internal Print Server computer that was created during printer installation. The Internal Print Server cannot take files directly from the network because access would not be fast enough.

1. Go to the Internal Print Server.
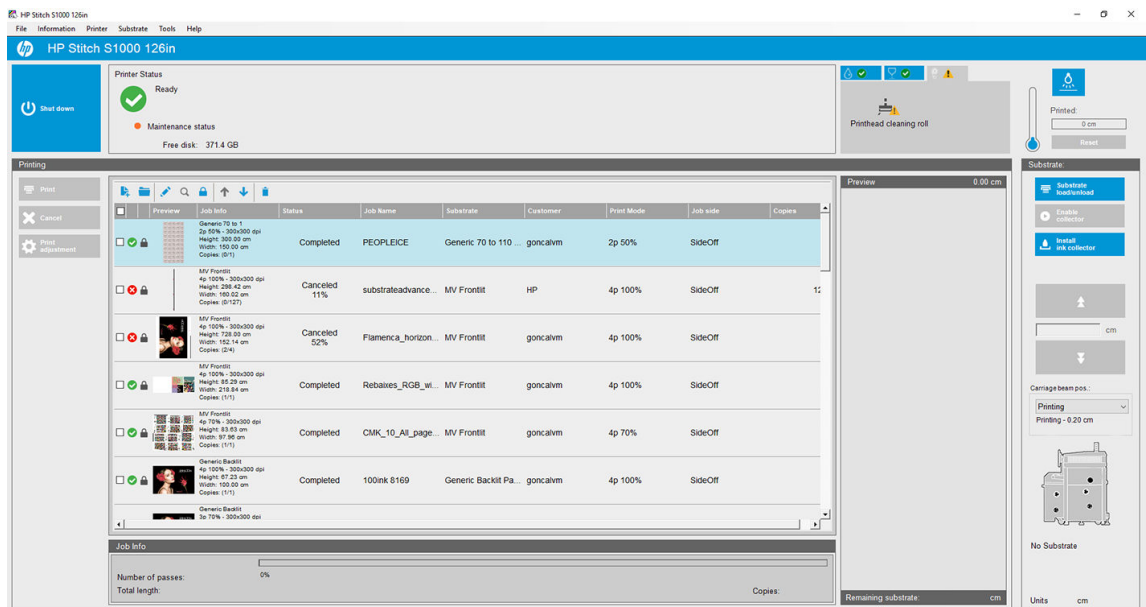
2. Click the Add New Job icon or **File** > **Add New Job**. Navigate to the folder containing the print job files, and click **Open** to import the job into the Internal Print Server.
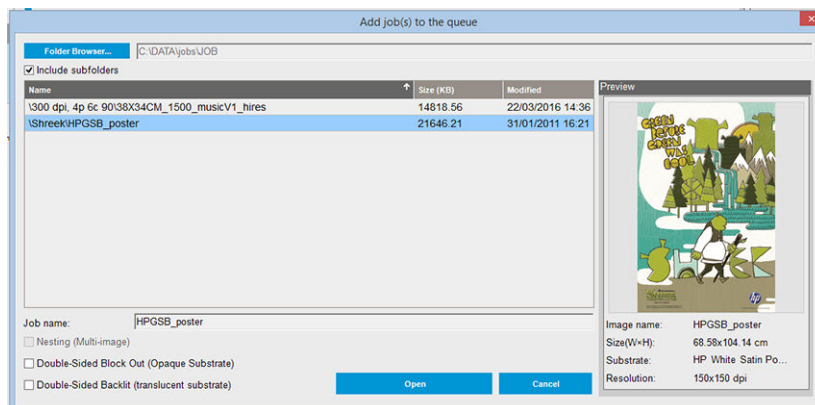
☼ **TIP:** You can sort the list by any column.

3. The next dialog box displays information about the job.
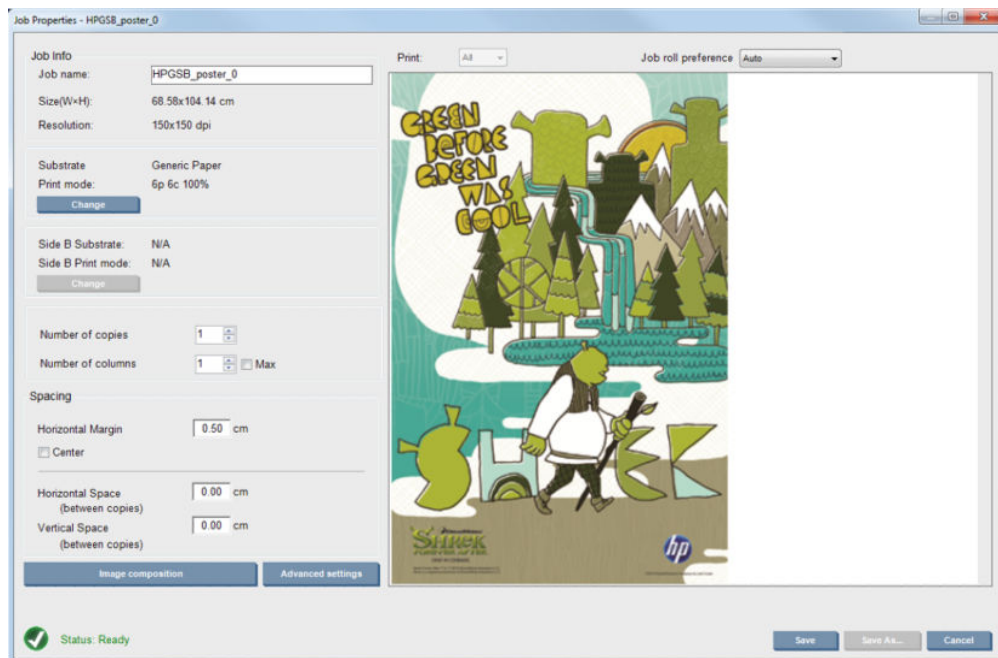
You can change the default job name the first time you open its properties window. Once you save the job name, it cannot be changed. Use the **Save As** button to create a copy of an existing job with a different name.

This dialog has the following options:

- **Number of copies:** the total number of copies to print

- **Number of columns:** the number of copies to print horizontally, across the width of the substrate

- **Max:** if this option is checked, the number of steps will be set to the maximum that will fit into the substrate width

In the **Spacing** section, this dialog gives the opportunity to define a horizontal margin that will be left blank, or to center your jobs on the substrate so that there is an equal amount of white space on both sides. If the number of copies is more than one, then it will apply these properties:

- **Horizontal Space:** the horizontal gap between copies

- **Vertical Space:** the vertical gap between copies

Although the substrate and print mode can be changed from this dialog window using the change button, it is recommended not to do so because it may adversely affect print quality. It is better to make such changes from the RIP.

The drop-down list at the top of the preview field allows to choose all sections or just one of the sections to be printed, and with the other drop-down list, can select the roll preference where the job will be queued.

4. To see more job options, click the **Advanced settings** button in the Job Properties dialog.
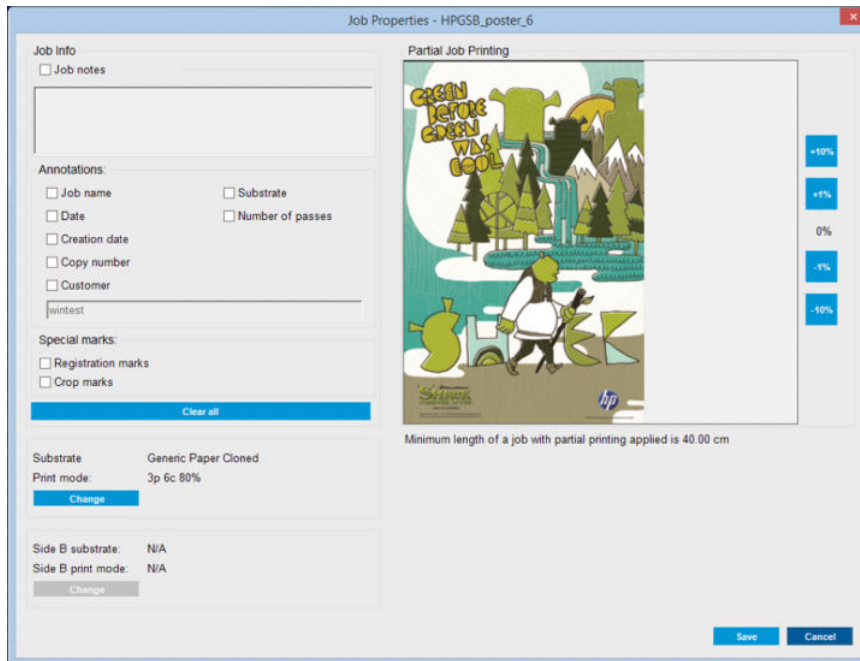
In this dialog, although the substrate and print mode can be changed from this window by using the Change button, it is recommended not to do so, because it may adversely affect print quality. It is better to make such changes from the RIP.

The **Job Info** paragraph can be used to select annotations and special marks to be printed alongside the image. The **Job Notes** field can be used to add some text to be printed in the bottom of each copy with the annotations, if any.

The **Partial Job Printing** section appears only when the number of copies is one, the job is not double sided, contains one whole image, and can be used to select the job printing offset. The hatched area will not print.

The **Easy Printing** resume can be useful to resume a job after an unexpected interruption.
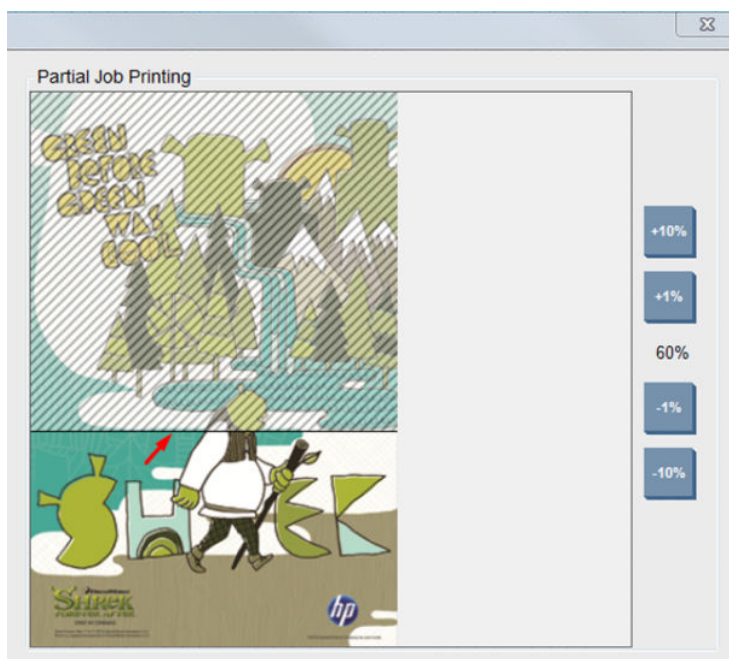
Click the **Save** button to store the advanced settings, or **Cancel** to discard them and return to the previous main dialog.

5. Click the **Save** button to store the job in the Internal Print Server for further processing in the main job dialog.

    📝 NOTE: The Internal Print Server gives you a warning if you select layout changes that are not compatible with your selections in the RIP software.

6. Click the **Save** button to store the job in the Internal Print Server for further processing.

    📝 NOTE: The Internal Print Server gives you a warning if you select layout changes that are not compatible with your selections in the RIP software.

Rotate a print job

A job can be rotated by 90 degrees in either direction by using the rotation icons at the top right of the Job Properties window of the dialog that appears when clicking the **Image composition** button.
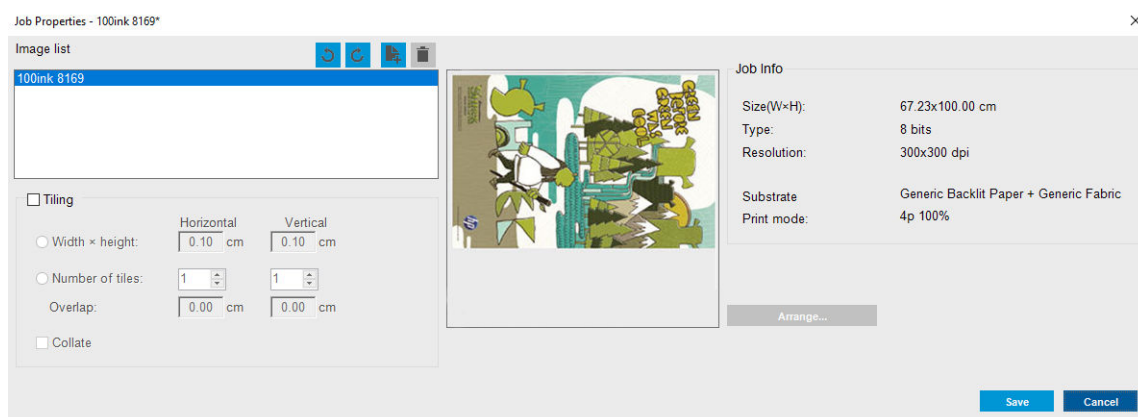
📝 NOTE: Rotation is available only when the printer is not printing.

Click the **Save** button to store the current image rotation or **Cancel** to discard the changes and return to main dialog of the properties of the job.

The rotation effect is shown in the preview. After you click the **Save** or **Save As** button in the Job Properties window, the actual rotation of the job takes place. This could take a few minutes, depending on the image size and resolution, during which time the job can neither be printed nor edited, and the job status is shown as **Rotating**.

Manage the print queue

The main screen of the Internal Print Server displays the queue of print jobs and various icons that can be used to manage the queue.
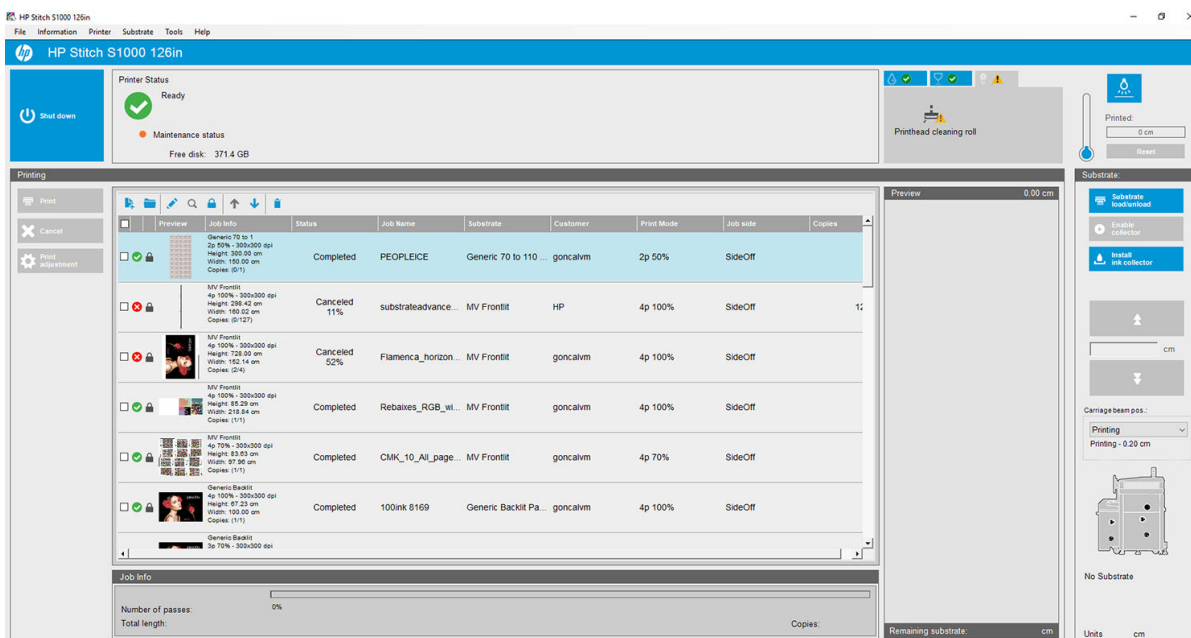
Above the print queue are the following icons:

- Add New Job : See Add a new print job on page 60.

- Add Existing Job : Return a job to the queue that has been printed already. Printed jobs remain available unless deleted manually.

- Edit Job : Edit the properties of a job in the queue.

- Proof : Proof a job in the queue (not available for nested jobs). This can be used to crop the image before printing.

- Lock Job : Lock a job in the queue.

- Up : Select the next job upwards in the queue.

- Down : Select the next job downwards in the queue.

- Remove : Delete the selected job from the queue.

You can check the boxes of the jobs you want to print, and click the **Print** button to print them.

You can cancel all jobs in the queue by clicking the **Cancel** button.

The **Print adjustment** button displays the substrate-advance calibration (which can be changed).

Delete a print job

This is the correct procedure to delete a job.

1. Remove the job from the queue by using the Remove icon or by ticking the job in the queue and clicking **Remove**. When deleting a job in this way, the files may or may not be left on the printer's hard disk, and the file may or may not still be available from the list in the Add Existing Job window, depending on the settings in **Tools** > **Preferences** > **Queue Rules**, in the section "When removing jobs from the queue".

2. Remove the job with **File** > **Delete job**, select the job and click the **Delete** button. Now the file cannot be retrieved from the **Add existing job** window.

Image composition

The Job Properties window is displayed when you import a job into the Internal Print Server, or when you right-click the job queue in the Internal Print Server.

This window contains an **Image composition** button that allows you to choose among the following alternatives:

- **Nesting (Multi-image):** The selected jobs are printed one after the other, across the width of the substrate if there is room. You can use the Advanced Nesting Arrangement window to alter the layout manually. See Introduction to JDF on page 27.

- **Double Sided**: Block out.

Nesting

Nesting is a layout method that allows you to choose the layout of your printed jobs on the substrate, relative to one another, instead of simply printing them one after another as usual. Jobs can be printed side by side if there is room.

☼ TIP: Printing jobs side by side on the substrate gives you faster throughput and uses less substrate.

You can use nesting in the Internal Print Server, from the Choose Image File window or the Job Properties window.

The Choose Image File window

From the Internal Print Server's main window, click the Add New Job icon 📲 to open the Choose Image File window. You will see the **Nesting** check box on the bottom left of the window. If you select only one job, nesting is impossible and the box is grayed out. If you select more than one job, you can click the box to enable nesting.
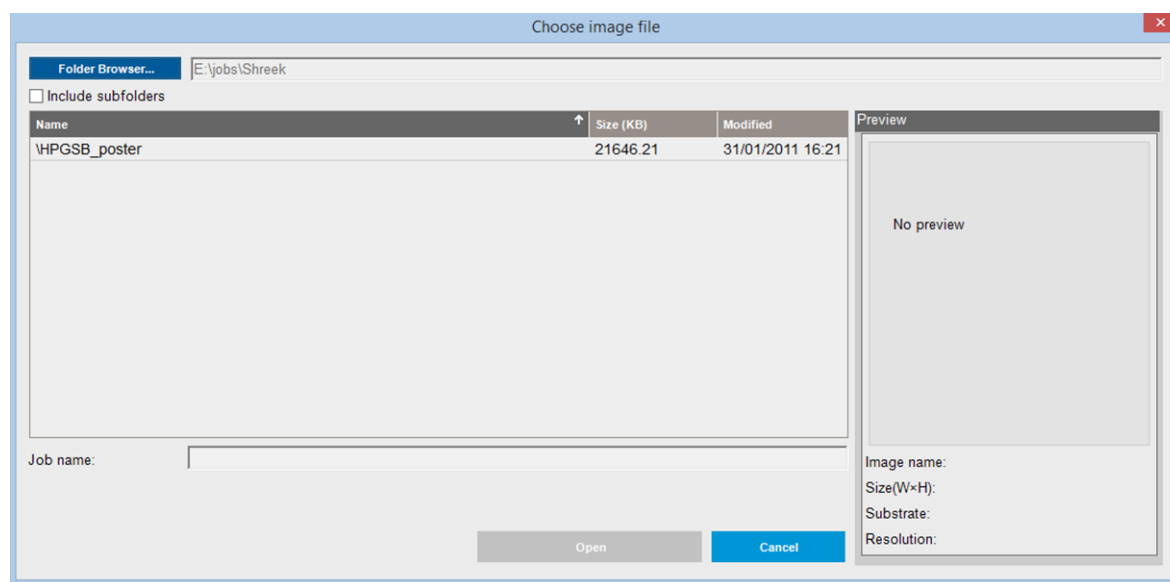
📝 NOTE: To be nested together, jobs must be of the same resolution and printed on the same substrate. Any incompatible job is added to the queue as a separate, non-nested job, and an explanatory message is displayed.

When you click the **Open** button with nesting enabled, the Advanced Nesting Arrangement window opens (see The Advanced Nesting Arrangement window on page 66).

The Job Properties window

From the Internal Print Server's main window, right-click the print queue to open the Job Properties window. In this window, you can click the Add New Job icon 📲 to add more jobs, in which case you will see a Nesting section in the Layout pane.
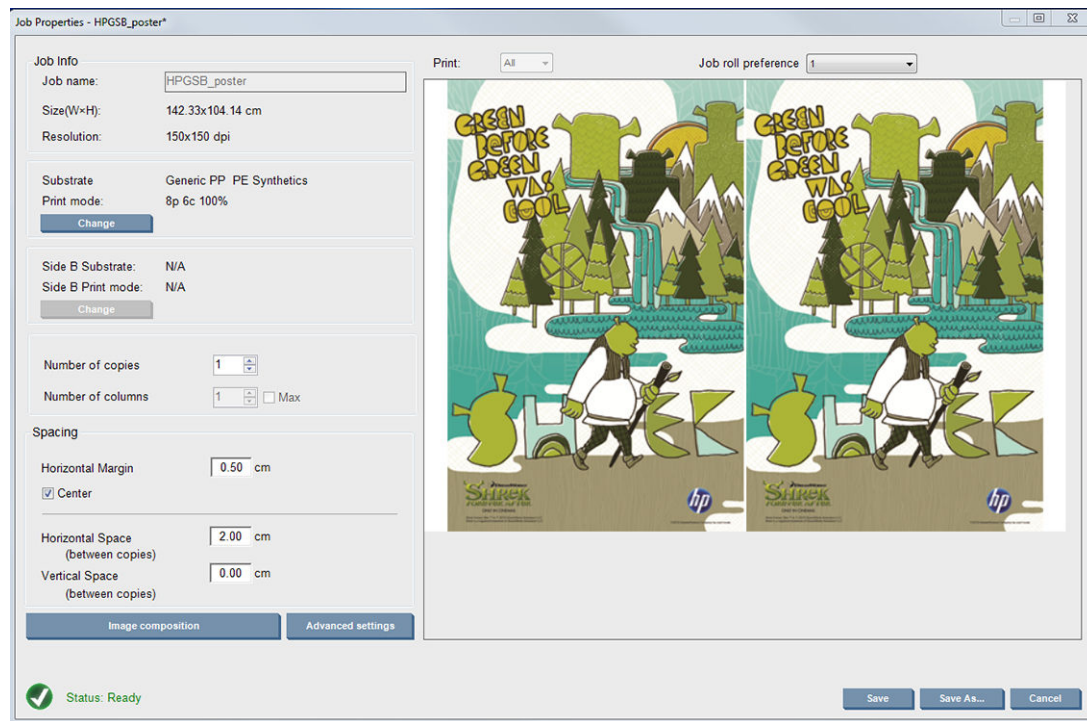
Nested jobs must all be printed with the same number of passes. Therefore, the number of passes used for all jobs will be copied from the first job.

From the current dialog, click the **Image composition** button to access another dialog where the **Arrange** button can be selected.
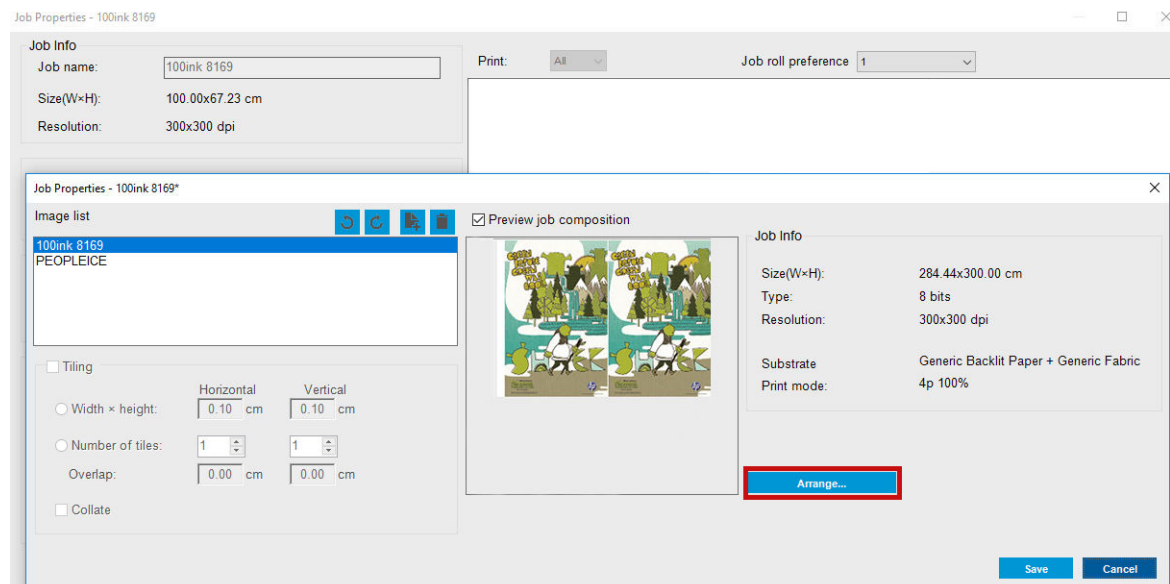
If you click the **Arrange** button in this section, the Advanced Nesting Arrangement window opens. If you use advanced nesting, the number of passes used for all jobs will be copied from the job with the highest number of passes specified.

The best location for the next added image is selected automatically.

The Advanced Nesting Arrangement window

The Advanced Nesting Arrangement window displays a preview of your jobs and their layout on the substrate.

- You can alter the layout by selecting a job in the preview and changing the Left and Top values, or by dragging with the mouse.

- You can zoom and scroll the preview.

- You can rotate images at any stage.
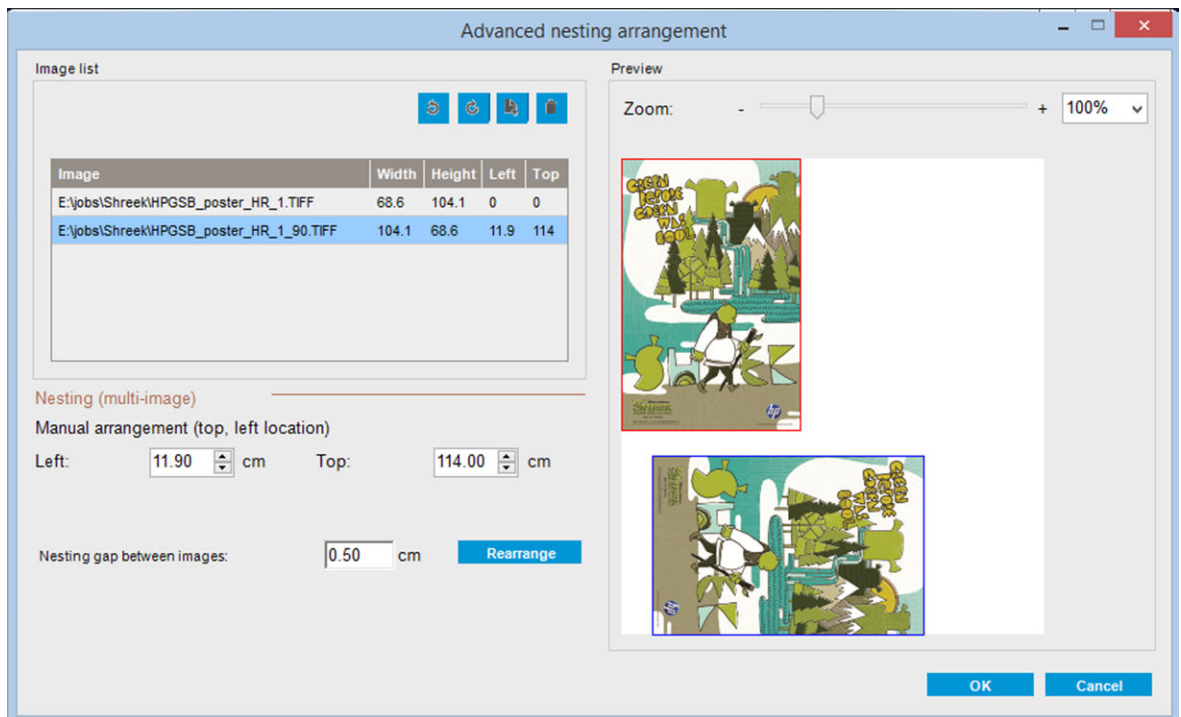
The **Rearrange** button automatically optimizes the positions of the images, keeping the established margin.

When you are satisfied with the layout, click the **OK** button.

7 Handle the ink system

- Ink system components
- How to work with ink system components

Ink system components

Ink cartridges

Ink cartridges store the ink and are connected to the printheads, which deposit the ink on the substrate.
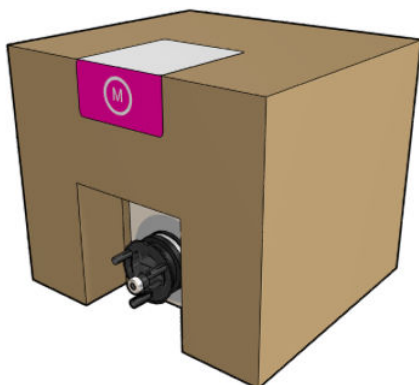
Each cartridge contains HP Dye Sublimation Ink, and consists of a bag within a recyclable cardboard box.

CAUTION: Observe precautions when handling ink cartridges because they are ESD-sensitive devices (see the Glossary on page 255). Avoid touching pins, leads, and circuitry.

If pressure is put on a cartridge while it is connected to the printer, the pressure is transmitted to the ink pressure sensor, which may break; in which case ink may leak from the cartridge. To avoid such ink leaks, avoid putting any 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.

Printheads

The printheads take ink from the ink cartridges and deposit it on the substrate.

CAUTION: Observe precautions when handling printheads because they are ESD-sensitive devices (see the Glossary on page 255). Avoid touching pins, leads and circuitry.

The printer's four-color writing system uses four dual-color printheads with a total of 41,420 nozzles.

WARNING! Printheads should be stored vertically: if boxed, with the box arrows pointing up; if out of the box, with the nozzle cap up.

Printhead cleaning roll

The printhead cleaning roll is a roll of absorbent material used in the normal operation of the printer to clean the printheads periodically (at the beginning and end of printing, on printhead check and clean, and so on). This helps the printheads to deliver continuous ink and maintain print quality.

The roll should be replaced whenever it is used up, to avoid damaging the printheads. The frequency of replacement depends on your use of the printer. A single roll will last approximately 80 liters; this may take about a month, at a usage level of 10,000 m²/month (100,000 ft²/month).

An alert is displayed when 75% of the roll has been used, and again when 95% of it has been used. You can choose to replace the roll at any time. The printer will not print when the roll has been 100% used.

If there is not enough of the roll to start a new job, the printer cancels the job.

To change the printhead cleaning roll, see . The printhead cleaning kit can be ordered in the normal way.

> ☼ **TIP:** You should not touch the printhead cleaning roll except when you need to replace it. Any interference with the roll may prevent the printer from keeping track of roll usage, in which case you may see spurious error messages, and a printing job may be cancelled unnecessarily.

Aerosol filters

The printheads produce many fine droplets of ink, most of which are placed accurately on the substrate. However, a small proportion of these droplets escape sideways; the two aerosol filters are placed on either side of the printhead carriage to intercept them.

The filters should be changed every time the printhead cleaning roll is replaced. They are provided with the printhead cleaning kit.

Left spittoon

The left spittoon is a rectangular piece of foam that allows the printhead nozzles to be refreshed at the left side, before printing a pass from left to right.

Change one or two foams from the left spittoon every time the cleaning roll is replaced. The foam is provided with the printhead cleaning kit.

Ink deposits

The printer can check the firing capacity of each single nozzle. Doing so causes small amounts of ink to accumulate close to the drop detector. This ink gradually forms ink deposits that need to be cleaned.

How to work with ink system components

Ink cartridges

Remove an ink cartridge

An ink cartridge should be removed and replaced when it is empty or past its expiry date. An empty cartridge is indicated in the Internal Print Server and by an orange blinking light beside the cartridge itself. You may also decide to remove a cartridge if it contains little ink and you want to provide for a long period of unattended printing.

The printer can continue printing without any ink cartridges for at least 10 minutes, depending on the print mode and the job being printed. Therefore, cartridges can be replaced while printing continues. A functional ink cartridge is required in order to start a new job.

1. Go to the cartridge that you intend to remove. The cartridges are arranged as shown below.
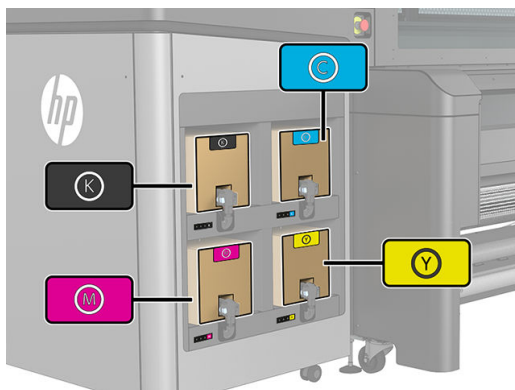
2. Disconnect the cartridge connector by pressing the tabs on each side of it and pulling it gently away from the cartridge.
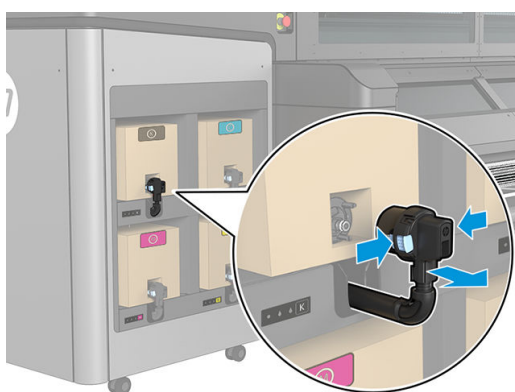
3. Remove the empty cartridge from the printer.

   📝 NOTE: Some residual ink can be expected in the cartridge, ranging from 2% to 5% of the original content.

Insert an 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. Place the cartridge on a flat surface and turn it (rotating it through 360 degrees) as many times as indicated on the label, to ensure that the ink is well mixed before use.
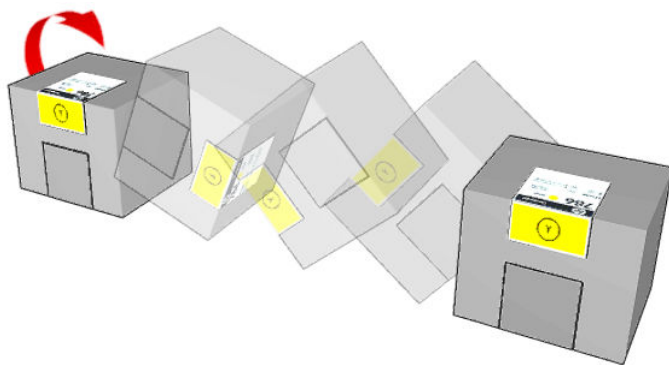
3. Tear off the square and fold it inside the handle.

4. Put the new cartridge into its correct place on the printer.

TIP: Use both hands: the cartridge is quite heavy.

5. Check that the rubber part around the needle in the cartridge connector is clean. Clean gently if necessary.

6. Connect the cartridge connector to the cartridge.
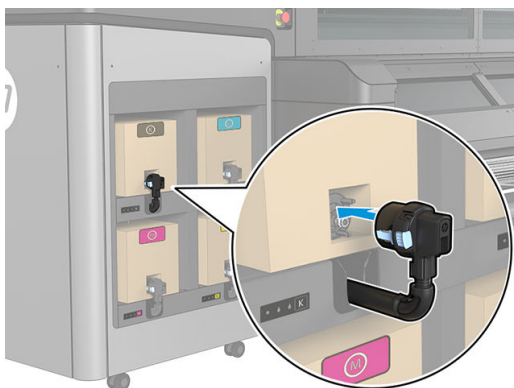
NOTE: The cartridge connectors will refuse connection to the wrong type or color of cartridge. If you cannot connect the connector easily to the cartridge, check that you have the correct cartridge.

7. Ensure that the tabs on each side of the cartridge connector are opened but in place, showing successful connection. You will hear a click.

8. A few seconds after you have connected the cartridge, the white LED should be lit. If it is not lit after 10 seconds, reconnect the cartridge. The LED will turn red if the cartridge is expired or not valid; see the Internal Print Server for further details and corrective action.

Although it is possible to use non-HP ink cartridges, this choice has several serious disadvantages. It may not be possible to determine with enough accuracy the ink level or status of used, refilled, or counterfeit ink cartridges. Any service or repair required as a result is not covered under the warranty. System ink flushing, color calibration, and printhead alignment are recommended. If you experience print-quality problems, HP recommends changing to Original HP inks.

Maintain the ink cartridges

During the normal lifetime of a cartridge, no specific maintenance is required. However, in order to maintain the best print quality, replace a cartridge when it reaches its expiration date. An alert notifies you when any cartridge reaches its expiration date.

You can also check a cartridge's expiration date at any time: see Printer status and alerts on page 23.

Check the status of the ink cartridges

The Internal Print Server provides information about the status of the ink cartridges. Additional information can be obtained from the status lights below each ink cartridge (on the left side).

- White steady light: no problems

- White slowly blinking light: cartridge in use, do not touch

- Orange blinking light: cartridge is empty

- Red steady light: there is a problem, check the Internal Print Server for more information

- All lights off: no cartridge, cartridge not connected, or unknown problem

The level of ink remaining in each color is displayed at the top right of the Internal Print Server's main screen. You can see more details of ink cartridge and printhead status by clicking **Information** > **Supplies**.

NOTE: The ink level estimates are not guaranteed to be accurate.

NOTE: If the warranty status is **See warranty note**, this indicates that expired ink is being used. If the warranty status is **Out of warranty**, this indicates that non-HP ink is being used. See the limited warranty document provided with your printer for details of the warranty implications.

Printheads

Remove a printhead

WARNING! This operation is limited to trained personnel only!

NOTE: During the installation of the printer, the designated personnel received training for safe operation and maintenance of the printer. It is not allowed to use the printer without this training.

Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard

For more safety information, see Safety precautions on page 2

If a printhead develops an electrical fault or overheats, the Internal Print Server will indicate that it should be reseated or replaced. In addition, you may wish to replace a printhead if its warranty has expired or if you feel that its performance is not adequate.

1. Ensure that the printer is not trying to print: stop the job queue.

2. In the Internal Print Server, click **Printer** > **Replace printheads**.

3. If the window is open, you are asked to close it.

4. The carriage moves automatically to service position. Open the carriage cover.
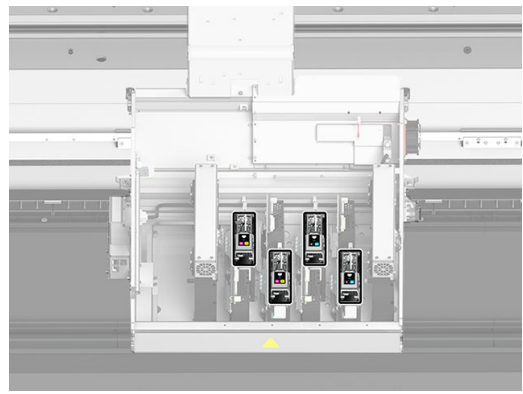
5. The Internal Print Server tells you which printhead to remove. Release the latch that secures the printhead, and lift it.
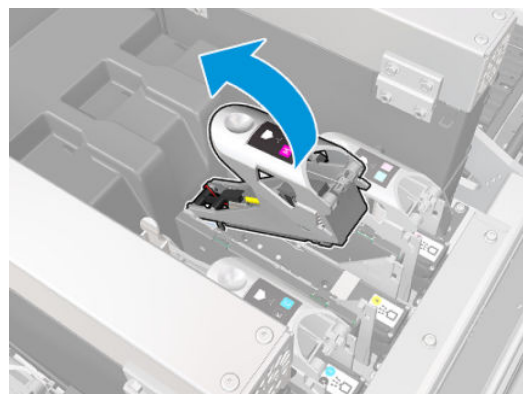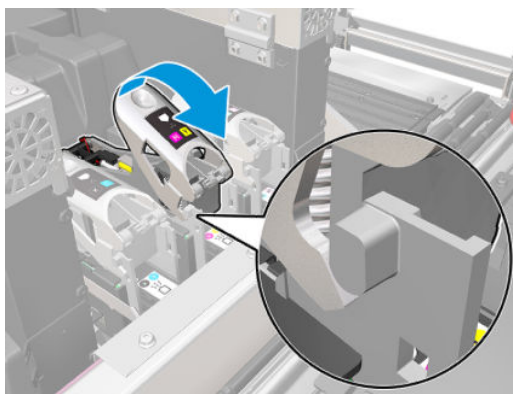
6. Lift the blue handle provided with the printhead, and pull the handle gently upwards to disconnect and extract the printhead from the carriage.
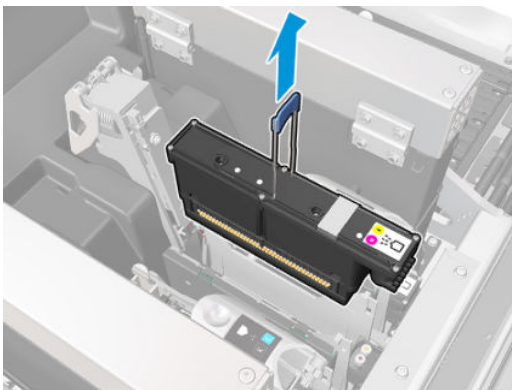
7. Remove the printhead from the printer. The original packaging materials can be used to discard the old printhead or in case there is a need to return it to HP.

> 📝 NOTE: Remember which printhead came from which slot; the printer will report an error if you later replace a printhead in a different slot.

Insert a printhead

1. Check that the new printhead is of the correct colors.

> 📝 NOTE: Each printhead has a unique shape and cannot be inserted into the wrong slot. Do not try to force it.

2. Shake the printhead according to the instructions on the packaging.

3. Remove its packaging and protective caps.

☼ **TIP:** You may wish to keep the protective caps for later reuse, in case you ever want to remove a printhead from the printer.
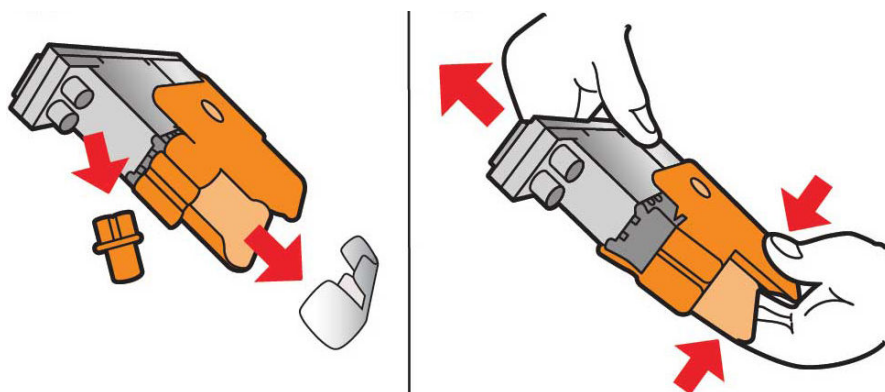
4. Put the new printhead into its correct place in the printer, and lower its handle.

⚠ **CAUTION:** Insert the printhead slowly. It is recommended to insert it as vertically as possible without hitting any parts of the carriage or the sides of the slot. It may be damaged if you insert it too fast, or if you hit something.
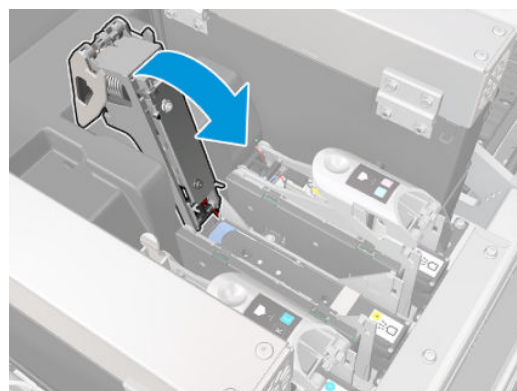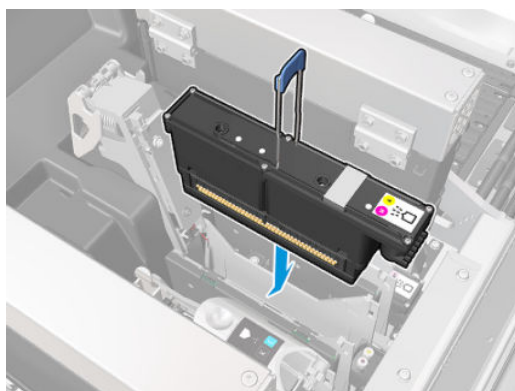
5. Lower the latch until it lies on the printhead but do not close it yet.

6. Press with two fingers on the primer to ensure the primer ports are well inserted.
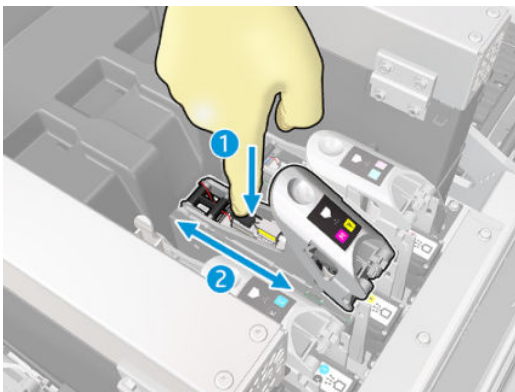
7. Secure the latch.
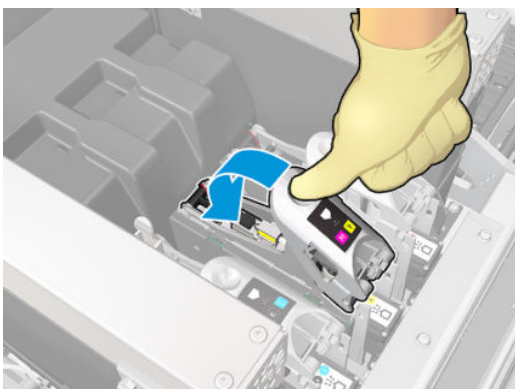
8. Close the window and click **OK**. The printer checks that the new printhead has been correctly inserted (the status is shown in the Internal Print Server), and recommends printhead alignment, which is optional.

9. Restart the job queue.

Maintain the printheads

You should perform an automatic printhead check and clean every morning, before starting to print. While the printer is idle, the components of the ink can precipitate inside the printhead and block the nozzles. The check and clean process pre-cleans the printheads, checks them with the drop detectors, and cleans them further if necessary. It takes between 10 and 30 minutes, depending on the condition of the printheads.

To maintain the best print quality, replace a printhead when it reaches its expiration date. An alert notifies you when any printhead reaches its expiration date.

You can also check a printhead's expiration date at any time: see .

Printheads should be aligned from time to time: see .

☀ **TIP:** If you remove an unexpired printhead from the printer, planning to reuse it later, the best way to protect it is by replacing the protective caps that you removed before inserting it into the printer.

Check and clean the printheads

This procedure should be followed daily.

1. Go to the Internal Print Server and click **Printer** > **Printhead cleaning**.
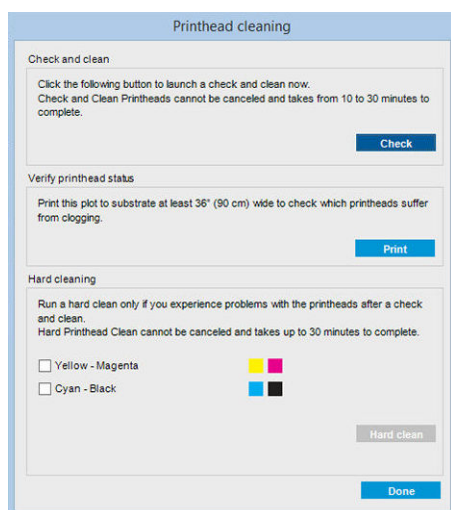
2. Click the **Check** button to perform routine cleaning automatically.

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 printer's computer. For optimal performance, use Original HP ink cartridges. HP Stitch 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) cartridges.

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

Replace the printhead cleaning roll, filters, and spittoon

⚠ **WARNING!** This operation is limited to trained personnel only!

📝 **NOTE:** During the installation of the printer, the designated personnel received training for safe operation and maintenance of the printer. It is not allowed to use the printer without this training.

| Crush hazard | Risk of trapped fingers | Hazardous moving part | Electric shock hazard |

For more safety information, see Safety precautions on page 2

When the cleaning roll reaches its end, it must be replaced, together with the aerosol filters and left spittoon. All these parts are supplied together with the printhead cleaning kit.
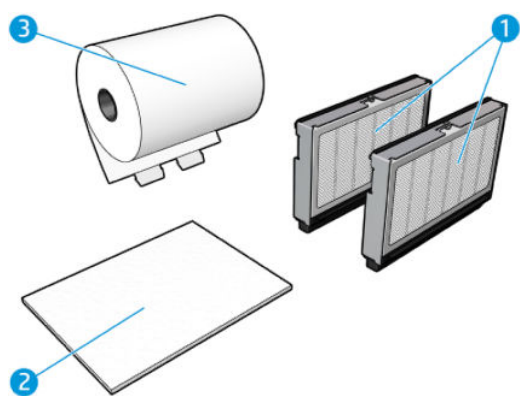
1. Aerosol filters

2. Left spittoon

3. Printhead cleaning roll

The Internal Print Server provides instructions for all replacements. Go to the Internal Print Server and click **Printer** > **Replace cleaner roll**. A wizard appears summarizing all the operations to be done:

- Replace the aerosol filters.

- Replace the left spittoon.

- Empty the printhead cleaning waste bottle.
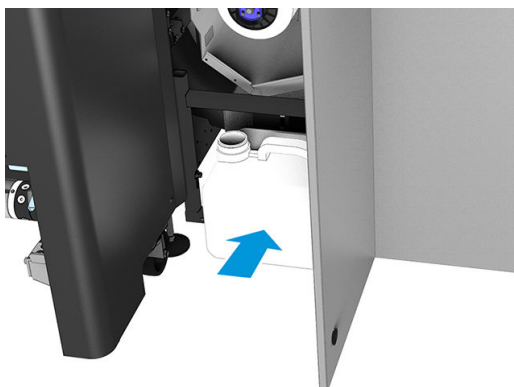
- Replace the printhead cleaning roll.

☼ **TIP:** You are recommended to wear gloves.

Click **Next** at the bottom of the wizard window to start the replacement of the aerosol filters.

Replace the aerosol filters
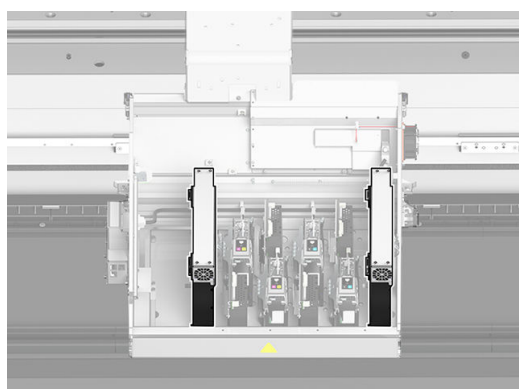
1. Ensure that the printer is not printing.

2. Ensure that all windows, covers, and doors are closed and remain in their original position.

3. Open the carriage cover.

4. Open one latch on the right side of each aerosol filter module.
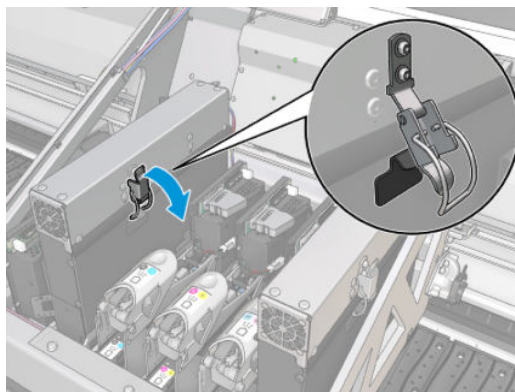
5. Open the lid of each filter.

6. Extract the frame from the aerosol container and remove the filter from the frame.
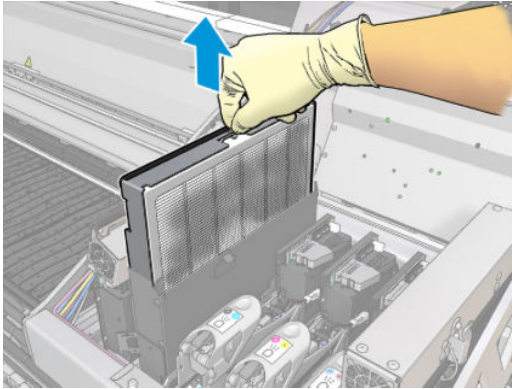
7. Clean the frame nozzle with the brush from the printer maintenance kit.
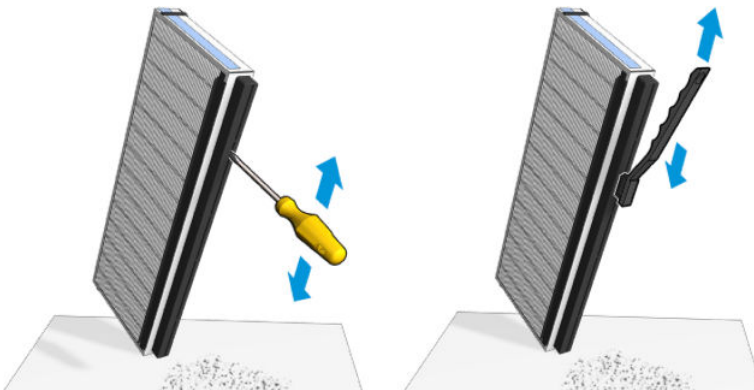
8. Wipe off all the wet ink from the aerosol nozzle plate and frame.

9. Insert the two new filters into each frame. There is only one way to insert the frames that works. If you feel resistance, try to insert the frame the other way round.
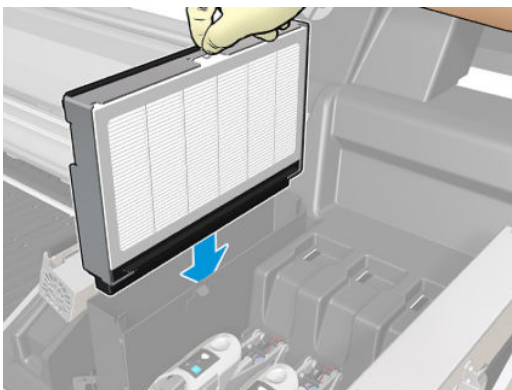
10. Close the lids.

11. Close the latches.

12. Click **Next** at the bottom of the wizard window to start the replacement of the left spittoon.

Replace the left spittoon

1. Open the window.

2. Locate the left spittoon at the left side of the print area.

3. Slide out the left spittoon foam.
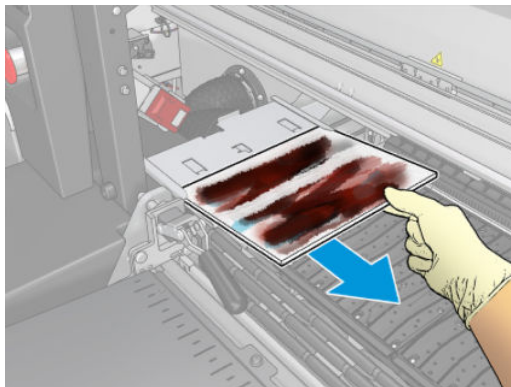
4. Insert the left spittoon into the left spittoon housing. Ensure that it is flat.
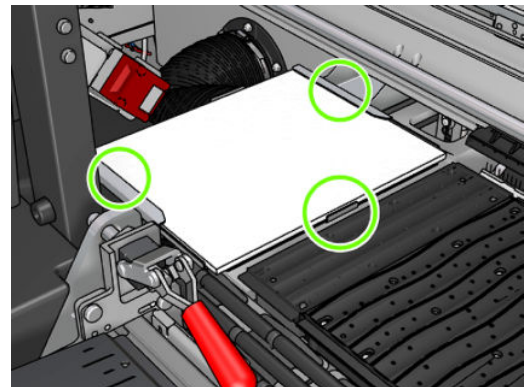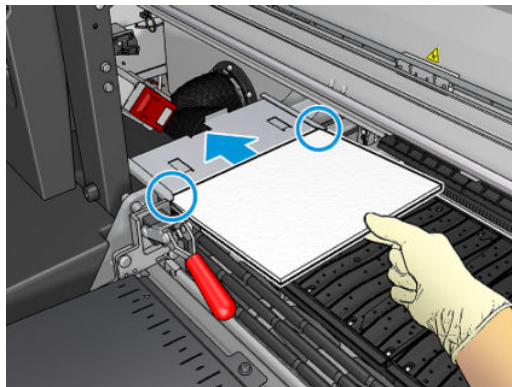
5. Click **Next** at the bottom of the wizard window to start the replacement of the printhead cleaning roll.

Replace the printhead cleaning roll

1. Any unused portion of the roll is wound on to the takeup roll at this time. You will be warned if the unused portion is more than 5% of the whole roll.

2. Unlock and open the printhead cleaning roll door on the front right of the printer.
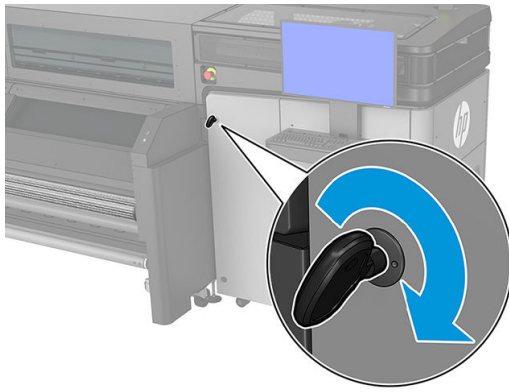
3. Open the carriage cover.

4. Pull the black knob on the upper left and move the pinch mechanism aside.
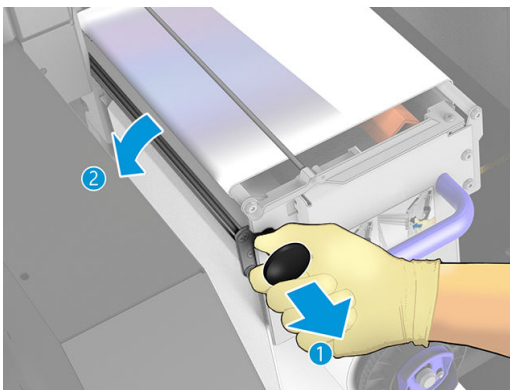
5. Remove the end of the roll and use it to remove all ink waste, dry ink, and fiber particles from the following components:

   ● Orange printhead cleaning blade
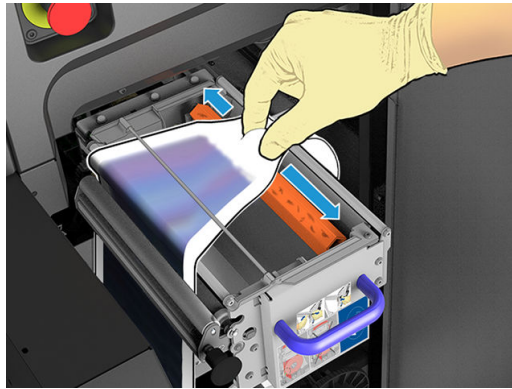
- Middle diverter (clean the whole surface)

- Sloping surfaces

- Left diverter

- Left latch

- Drive roller

- Pinch driver

- Pinch roller

IMPORTANT: Clean the pinch roller carefully with a sponge. Errors may occur if it is not clean. See also General cleaning instructions on page 11.

Also clean the tray under the pinch driver.

Make sure the drainage gap is unblocked.

6. Slide both rolls off their axles and dispose of the roll with the used cleaning material according to the instructions provided with the new roll. Also consult your local authorities to determine the correct manner in which to dispose of wastes.
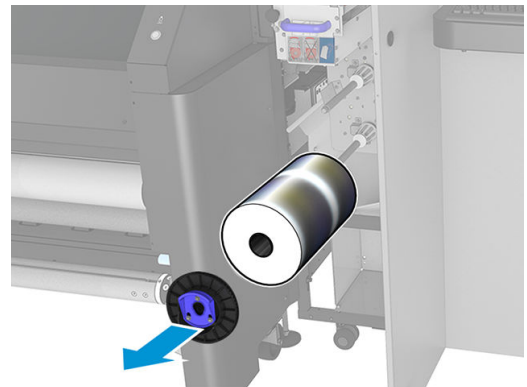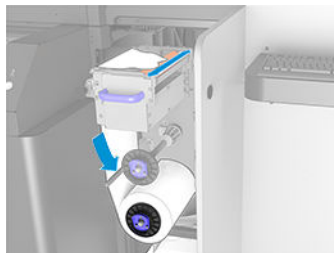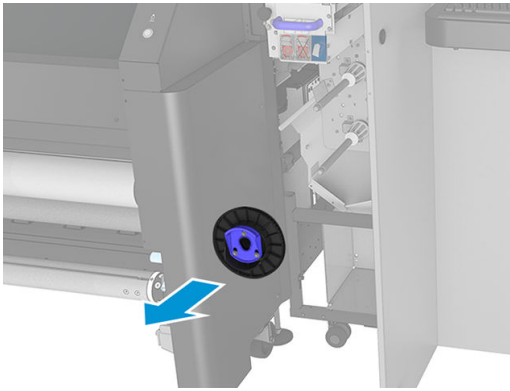
7. Keep the empty core to use as a takeup core.

8. Slide the new roll onto the upper axle, by pressing on the plastic core, not on the roll.
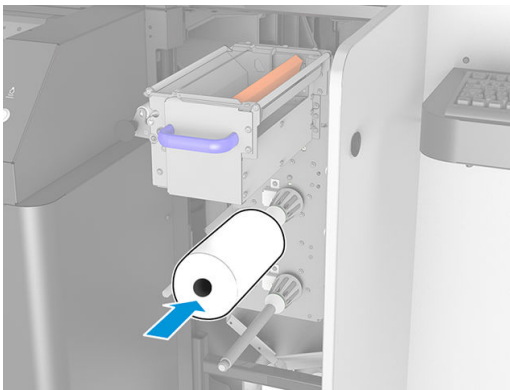
9. Insert the end cap on the upper axle, and slide it all together until you hear a click, in order to position the roll correctly.
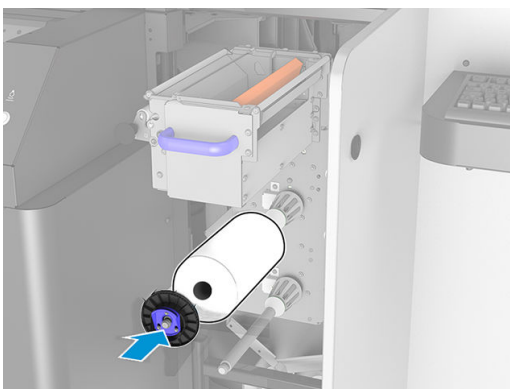
10. Pass the leading edge of the cleaning roll over the side diverters but below the central diverter, and thread the cleaning material through the pinchwheel on the left.
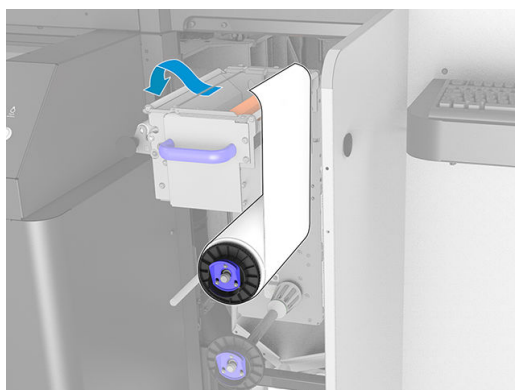
11. There is a strip of polyester film on the leading edge of the cleaning material. Insert it into the hole in the takeup core, which takes hold of it.
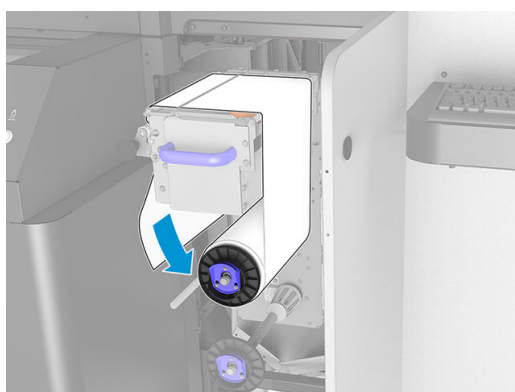
12. Slide the takeup core onto the lower axle.
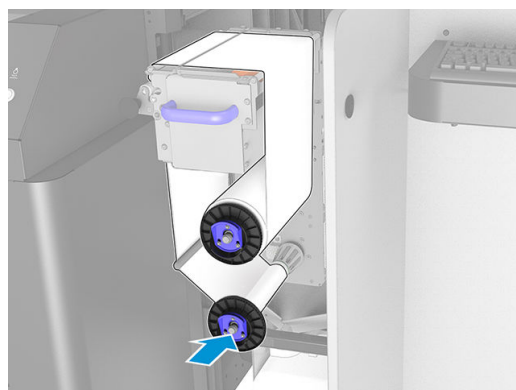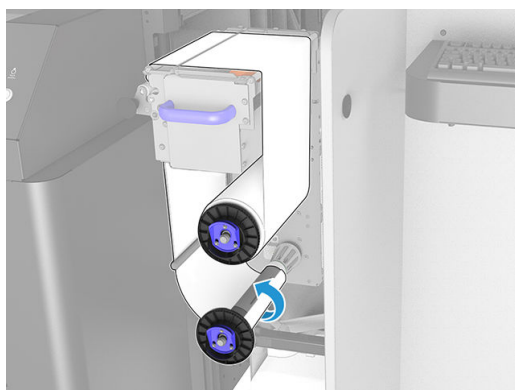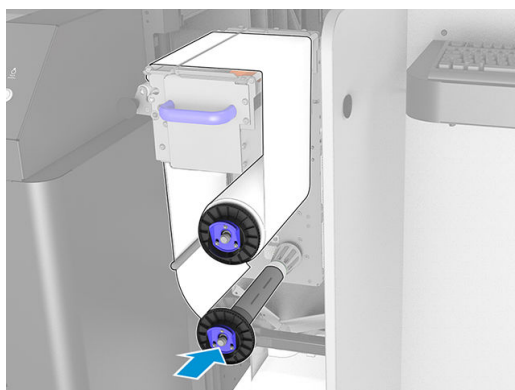
NOTE: If the cleaner roll has not been properly installed, you may see a message about clearing a printhead cleaning roll jam. Open the door, wind a little of the roll forward, then close the door. The printer will check the roll again. You will need to click **Reinitialize** to clear status errors.
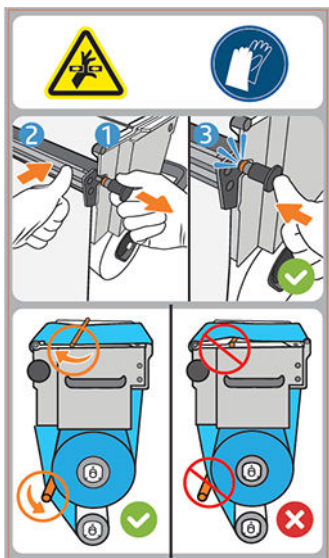
13. Restore the pinch mechanism by moving the black knob back into place. If you feel resistance because the cleaning roll is too tight, turn the roll slightly counter-clockwise.

TIP: There is a blue ring on the far side of the black knob, which should not be visible if the knob has been correctly placed. If it is visible, try again.
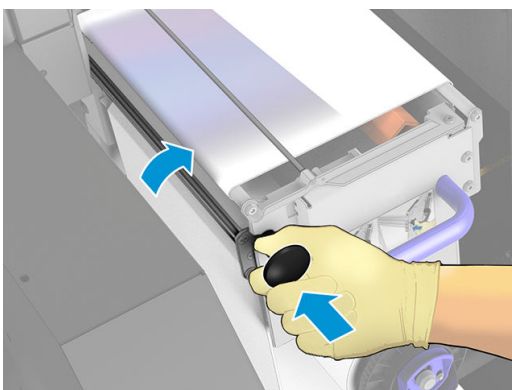
14. Empty the waste bottle.
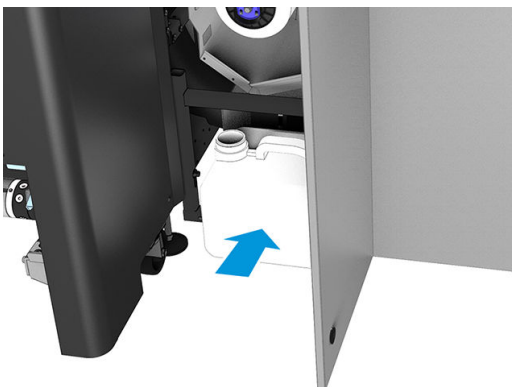
15. Close and lock the door.

16. Click **Finish**.

The printhead cleaning roll length tracking is now reset to 100%.

NOTE: If you tamper with half-used rolls, the usage shown in the Internal Print Server will not be accurate, and control of the roll may be impaired.

8 Printer calibration

Align the printheads

Precise alignment between printheads is essential for color accuracy, smooth color transitions, and sharp edges in graphical elements.

Printhead alignment is recommended in these situations:

- After replacing or reseating a printhead.

- When a new substrate is loaded and the printhead-to-paper spacing changes significantly.

- When there are print-quality problems that could be caused by printhead misalignment.

To align the printheads, go to the Internal Print Server and click **Printer** > **Printhead alignment**. There are two alignment types to choose from, automatic and manual.

Printhead alignment can be affected by wrinkles or other substrate deformations in the print zone. Therefore, if the printer has recently been printing, you should wait for some minutes while it cools down. Just in case, the printer advances the substrate before aligning the printheads.

Automatic alignment procedure

Automatic alignment is a fully automated procedure that ensures optimal print quality in most cases.

The printer prints three blocks of patterns and scans them with the built-in line sensor. This method is intended for any smooth, high-quality substrates (including vinyl and banner substrates).

Automatic alignment takes about 10 minutes. It is an unattended process, and uses printed substrate with dimensions 33 cm (13 in) wide by 21 cm (8.3 in) high. To launch, go to the Internal Print Server and click **Printer** > **Printhead alignment** > **Automatic** > **Align**.
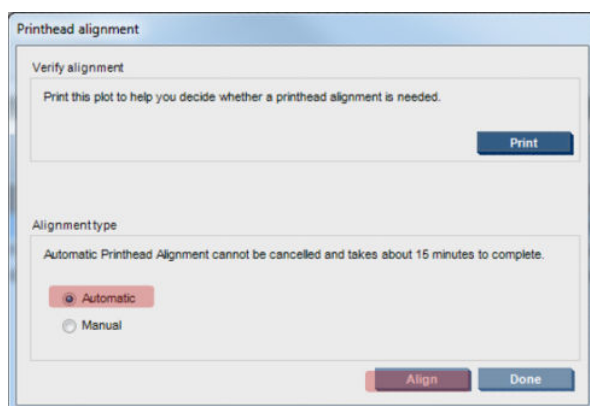
The picture below shows the scan-axis alignment of each colorant, at a speed of 60 ips.
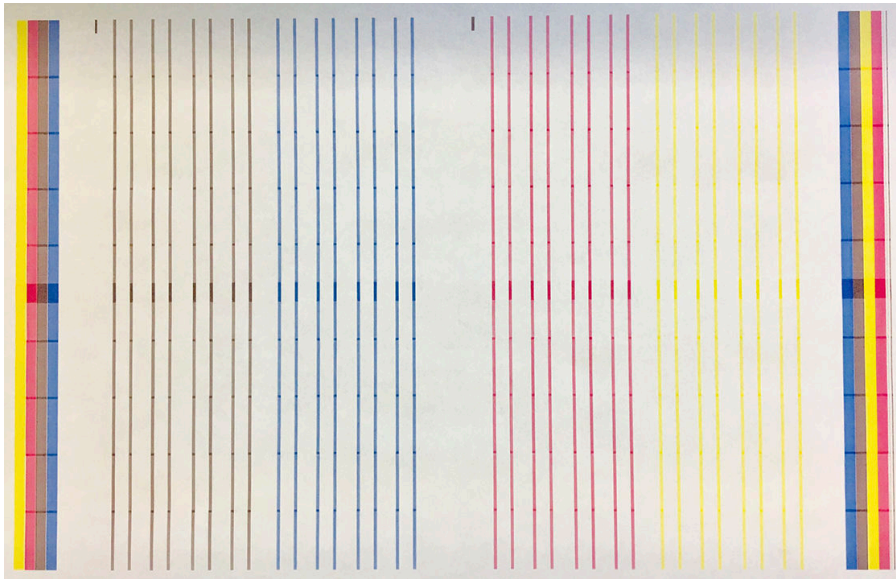
NOTE: If automatic alignment fails, see Automatic printhead alignment fails on page 238.

Manual alignment procedure

To launch manual alignment, go to the Internal Print Server and click **Printer** > **Printhead alignment** > **Manual** > **Print**.

The printer prints 21 series of patterns, each one named with a letter (A–U). You must choose the best result from each of the series (for example, number 10 in the picture below).
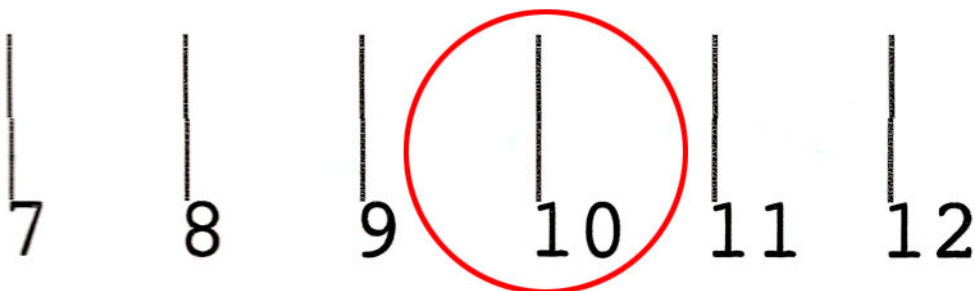
The alignment procedure takes about 10 minutes. It consumes printed substrate of 75 cm width × 55 cm height (29.5 × 21.7 in).

NOTE: Depending on the firmware version, this pattern could be slightly different.
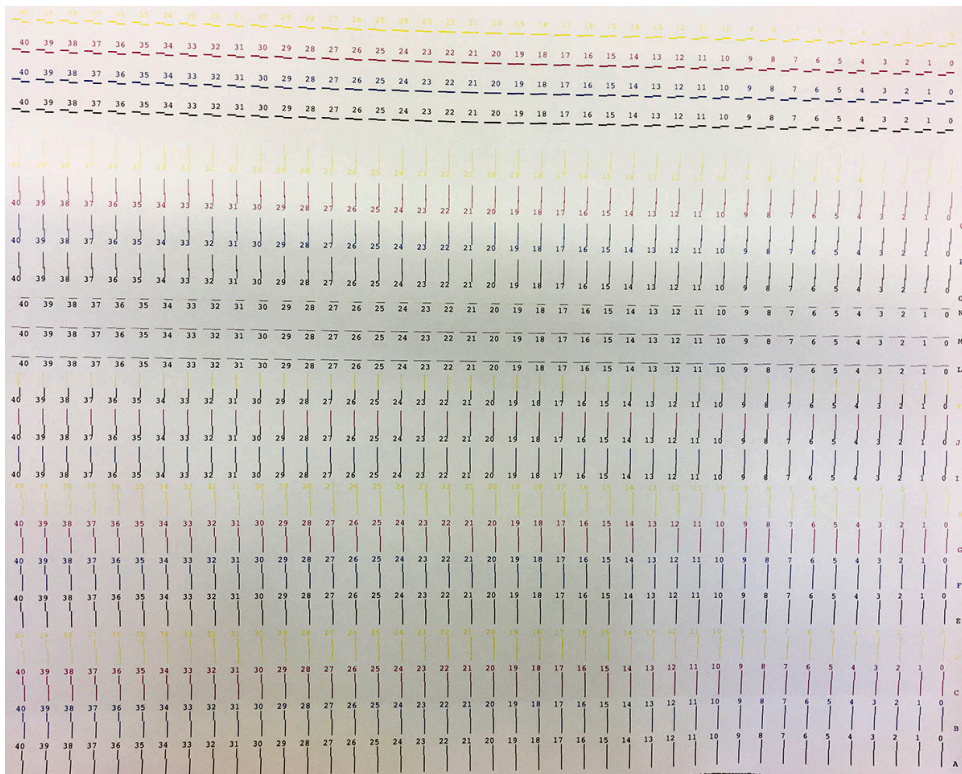
The diagram below shows the distribution of printheads in the carriage. It also shows the correspondence between printhead and patterns, with guidance on the direction of the corrections (0–40) applied.

Paper Axis Direction
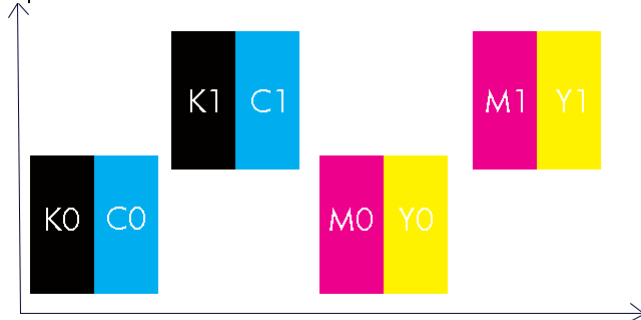
Scan Axis Direction

The following table summarizes the correction type controlled by each pattern:

Pattern	Affected printhead	Correction type
A	K1	Scan axis, bidirectional 60 ips
B	C1	Scan axis, bidirectional 60 ips
C	M1	Scan axis, bidirectional 60 ips
D	Y1	Scan axis, bidirectional 60 ips
E	K0	Scan axis, bidirectional 60 ips
F	C0	Scan axis, bidirectional 60 ips
G	M0	Scan axis, bidirectional 60 ips
H	Y0	Scan axis, bidirectional 60 ips
I	C0	Scan axis, color to color
J	M0	Scan axis, color to color

Pattern	Affected printhead	Correction type
K	Y0	Scan axis, color to color
L	C0	Substrate axis, color to color
M	M0	Substrate axis, color to color
N	Y0	Substrate axis, color to color
O	K1	Scan axis, printhead to printhead
P	C1	Scan axis, printhead to printhead
Q	M1	Scan axis, printhead to printhead
R	Y1	Scan axis, printhead to printhead
S	K1	Substrate axis, printhead to printhead
T	C1	Substrate axis, printhead to printhead
U	M1	Substrate axis, printhead to printhead
V	Y1	Substrate axis, printhead to printhead

Take this into account when trying to compensate for any misalignment observed in the printhead alignment diagnostics plot.

The central correction is 20 (15 for A), being the default value for each pattern in the Internal Print Server.

Possible difficulties with printhead alignment

A pattern shows more than one good correction

Occasionally you may find that a pattern has two or more possible good corrections, separated by two or more steps. This could be due to wrinkles on the substrate that change the printhead-to-paper spacing along the scan axis. To avoid this, ensure that the substrate is cold before starting the alignment, and advance it at least 70 cm (28 in) to ensure that it is not deformed by the previous job.

Printhead alignment diagnostics plot

The printer offers a printhead alignment diagnostics plot, to assess the quality of the current printhead alignment. To print it, in the Internal Print Server click **Printer** > **Printhead alignment** > **Verify alignment** > **Print**.

NOTE: You can use the diagnostics plot to check printhead alignment, then fine-tune the values by following the instructions on the diagnostics plot. Also, if the substrate is similar to one that you already use, you can print only the diagnostic plot (much faster than printhead alignment) and fine-tune the values in the Internal Print Server.

IMPORTANT: The diagnostic plot is not designed to fine-tune automatic printhead alignment; in that case, the diagnostic plot is only used to check printhead alignment.

The next picture shows an example of the diagnostics plot. Each part is described following the terminology of the manual alignment. Row0 is the row of printheads closer to the substrate output, while Row1 is the row of printheads closer to the substrate input. In the same plot there is an area in which the carriage layout is described with the appropriate labels, just for reference.
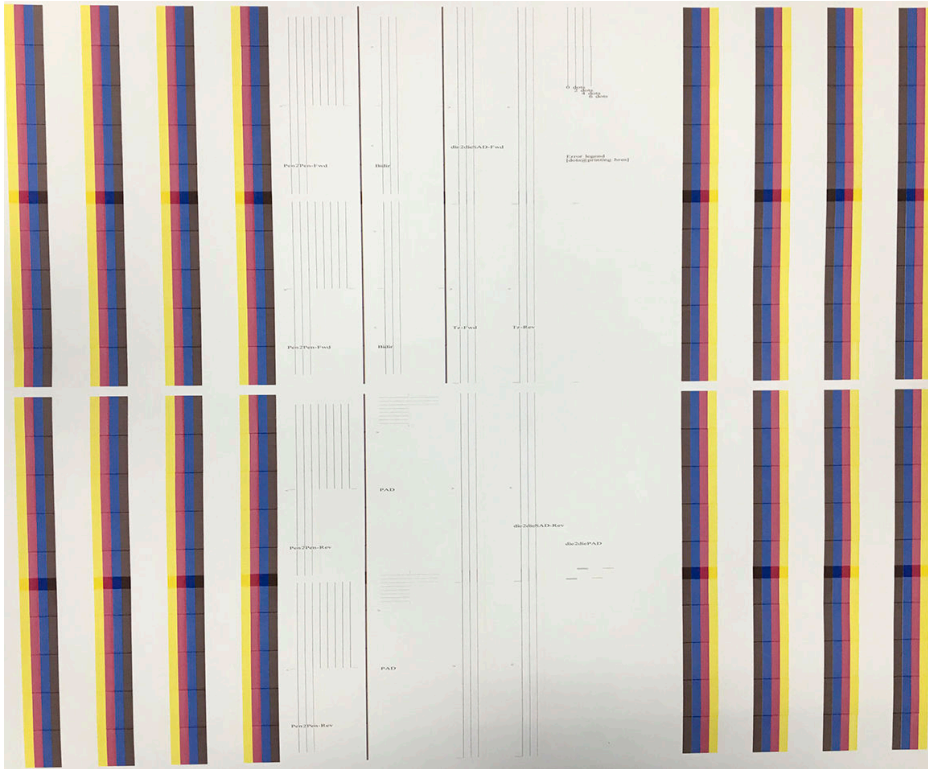
Color calibration

Color calibration enables your printer to produce consistent colors with a particular substrate type, even if printheads and ink cartridges change.

Color calibration sets the ink restriction and linearization, which varies with the drop weight of the printhead. This calibration has been designed to provide consistency as the printhead ages (drop-weight degradation) and from one printer to another. For example, to reach a maximum cyan density of 0.6, one printhead may require 3 drops while another one may require 3.5 drops (lower drop weight).

The first calibration for each new substrate sets the color reference for future calibrations. The future calibrations will therefore try to match the colors at the time of the first calibration. In this way you maintain consistency as the printhead ages.

HP substrates loaded from HP Substrate On-line Search contain color reference files.

Good nozzle health is important, and the printheads should also be as new as possible for best performance when you make the first calibration.

It is also important to have the printheads well aligned (see Align the printheads on page 89), and to make sure the substrate is advancing correctly (see Substrate-advance calibration on page 97), otherwise the color pattern may appear blurry or with slightly different colors.

To start color calibration from the Internal Print Server, click **Substrate** > **Color calibration**, then click the **Calibrate** button.

NOTE: If you are printing on transfer paper, take into account that substrates of less than 45 g/m² cannot be calibrated.

NOTE: If you are printing direct to fabric, only frontlit fabrics can be calibrated.

NOTE: Color calibration is not recommended when the carriage beam is in a higher position than normal.

The calibration process is fully automatic and can be performed unattended after you have loaded substrate of the type you wish to calibrate. Bear in mind that generic substrates cannot be calibrated; only newly created or

downloaded substrates can be calibrated. 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 and color-measured using the embedded spectrophotometer. If the scan cannot be completed successfully, a message is displayed by the Internal Print Server; see Color calibration fails on page 242.

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—except in the case of the first calibration, which sets the reference for later ones.

Calibration should be done in any of the following circumstances:

*   Whenever a new non-generic substrate type is loaded that has not yet been calibrated: to set the reference.

*   Whenever you notice excessive color differences between prints. Such color differences can be caused by aging and wear of the printheads, installing new printheads, changes in substrate characteristics between one roll and another, changing environmental conditions, and so on.

You can check the color calibration status of your substrates with the Internal Print Server: click **Substrate** > **Color calibration** > **Show all**.
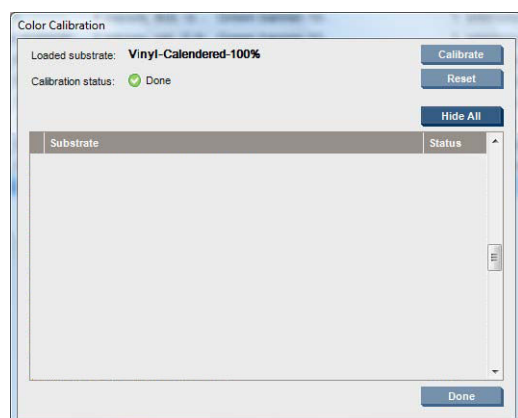
*   **Default** status indicates that this substrate has never been calibrated, and therefore no reference state is defined.

*   **Done** status indicates that a color calibration has been performed successfully on this substrate, the reference state is defined and still up to date.

*   **Obsolete** status indicates that the printer status has changed since the reference was defined, so a new calibration must be done in order to maintain color consistency.

Color calibration is based on the color measurement of printed color patches, using the embedded spectrophotometer. Some characteristics of substrates, such as surface roughness or transparency, may make reflective color measurement of some substrate types very inaccurate. Color calibration of these substrates may fail or produce unacceptable printing results.

TIP: If color calibration fails at the first attempt, it is worth trying again.

To delete the reference for a given substrate, so that you can create a new reference for that substrate, you must reset the color calibration. In the Internal Print Server, click **Substrate** > **Color calibration** > **Reset**.

Color consistency between different HP Stitch 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 93.

2. Export the calibrated substrate preset. See Substrate presets on page 48.

3. Import the substrate preset of step 2 into printer B. See Substrate presets on page 48.

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.

Color emulation of other printer models

An HP Stitch S500 64in printer can be set up to emulate colors printed by an HP Stitch S1000 126in printer.

The emulation process is done by importing a source (S1000) substrate preset into the destination (S500) printer, that was created, color-calibrated, and ICC-profiled in the source printer. The original or source substrate preset contains a number of paper modes and a color-calibration reference.

A new substrate preset is then added to the destination substrate library that keeps the same name as the source substrate preset. This destination preset contains the paper modes that are the closest equivalent to the source ones in terms of ink density and number of passes. Color emulation between source and destination, for the given substrate material, can then be achieved by performing color calibration of the destination substrate preset.

If the source substrate preset has not been color-calibrated, it can still be imported into the destination printer. A translated set of paper modes will still be created, but color emulation of the source printer cannot be optimized.

Color emulation between printers of different models is based on the same principle as color consistency between printers of the same model; that is, exporting a source color-calibrated substrate preset and then importing it and color-calibrating it in a destination printer. When the printer model is the same, most printing settings and color resources are implicitly matched, such as printing engine, mechanical settings, paper mode and associated ICC profiles. However, when emulating the colors of a different printer model, you are advised to follow these recommendations:

- Use the same substrate type in both source and destination printer (this is also recommended between printers of the same model).

- Choose a paper mode in the destination substrate preset that is as close as possible to the active paper mode in the source substrate preset.

- Use the same workflow in your RIP software to print to the source and destination printers.

☼ **TIP:** The best color emulation can be achieved by setting relative colorimetric rendering intent in the RIP for printing to both source and destination printers.

● Choose ICC profiles in the source and destination paper modes that are both made with the same type of spectrophotometer and profiling software.
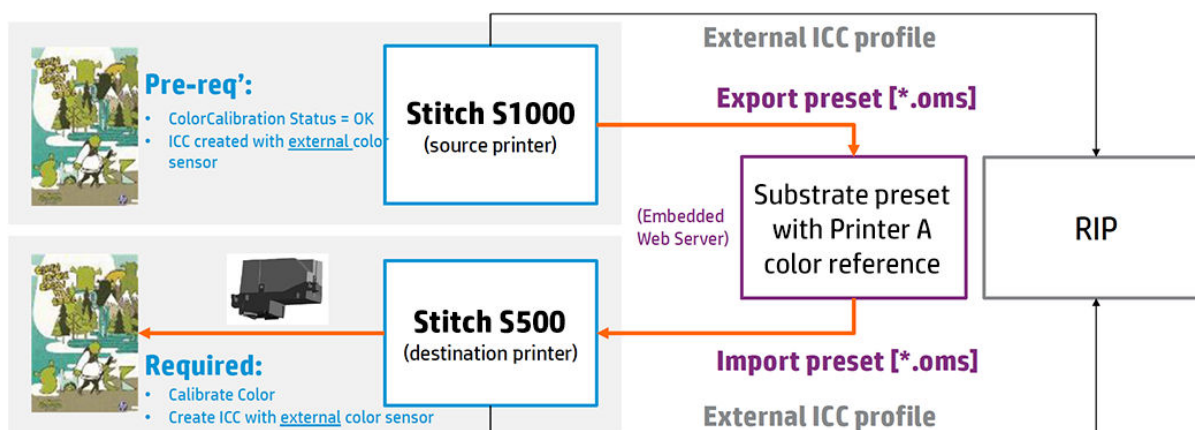
Emulating an HP Stitch S1000 on an HP Stitch S300 or S500 printer

To set up a new substrate preset in an HP Stitch S300/S500 printer that provides color emulation of a source substrate preset in an HP Stitch S1000 printer:

1. Using the HP Stitch S1000 printer, select the desired substrate preset.

2. Perform color calibration.

3. Use the Internal Print Server to export the calibrated substrate preset.

4. Using the destination HP Stitch S300/S500 printer, import the new substrate preset.

5. After a successful import, a confirmation popup window appears in the front panel. Click **OK** to continue.

6. Go to the substrate library, and select the just-created emulation substrate preset by clicking the **Select** button.

7. Click the **Modify** button to see the color emulation status of the preset. The initial color emulation status is **Not ready**.

8. Click **Done** to finish the process.

9. Perform color calibration on the S300/S500 printer.

Color 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 substrate, and your sublimation process. An ICC color profile is a description of a printer, ink, substrate, and sublimation process combination that contains all the information needed for these color conversions.

These color conversions are performed by your Raster Image Processor (RIP), not by the printer. For further information on the use of ICC profiles, see the documentation for your application software and for your RIP.

HP substrates loaded from HP Substrate On-line Search usually contain color profiles that can be used (downloaded) by the RIP.

Substrate-advance calibration

Accurate substrate advance is important to print quality because it is part of controlling the proper placement of dots on the substrate. If the substrate does not advance the proper distance between printhead passes, light or dark bands appear on the print, and there may be an increase in graininess.

The printer has a substrate-advance sensor and is calibrated to advance correctly with most of the substrates that appear in the Internal Print Server. When the substrate is loaded, the substrate-advance sensor checks the substrate and decides whether it can be adjusted automatically or not. If not, the automatic adjustment is disabled.

The printer is configured from the factory with a generic preset for the sensor, calibrated for generic substrates. To improve substrate-advance performance for each substrate, HP recommends adjusting the substrate advance for each specific preset. If you want to adjust several substrates, this must be done for each preset.
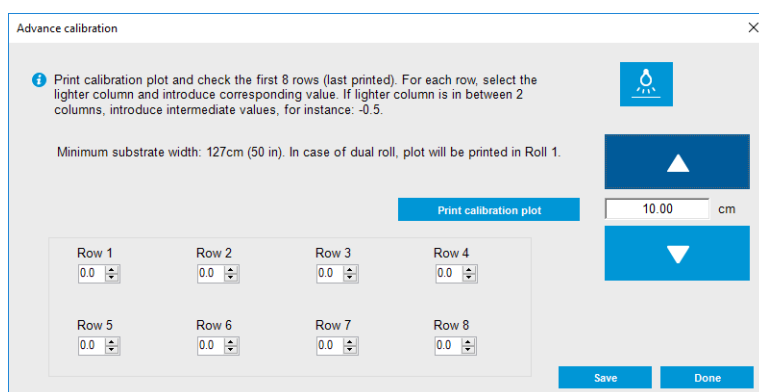
Substrate-advance calibration can help you to adjust the substrate advance more accurately. In the Internal Print Server, click **Substrate** > **Advance calibration**. The printer prints several repetitions of a special numbered pattern that help you to apply the correct substrate-advance adjustment.

📝 **NOTE:** The printheads should be correctly aligned before calibration, and the substrate-advance sensor should be clean. Otherwise, you may need to repeat the calibration after cleaning the sensor and aligning the printheads. See Clean the substrate-advance sensor on page 134 and Align the printheads on page 89.

Calibration procedure

📝 **NOTE:** Substrate-advance calibration is not available for generic substrates. If you want to calibrate such a substrate, you will have to clone the generic preset and then calibrate the clone.

1. Load the substrate that you intend to calibrate.

2. In the Internal Print Server, click **Substrate** > **Advance calibration**.

3. Click **Print calibration plot**. The printer starts to print.

4. Enter the last eight values from the diagnostic plot. Select the lightest column and enter the corresponding value. Follow the instructions on the screen.

    💡 **TIP:** If the plot shows two possible values (two continuous columns), the value to use is the average of the two. For example, if the plot indicates that the value could be +2.0 or +3.0, you can use +2.5.

5. Click **Save** to complete the calibration. Every time this preset is loaded, the printer will apply this calibration result.

📝 **NOTE:** The calibration obtained is only usable with the loaded substrate type.

📝 **IMPORTANT:** The calibration value cannot be used on another printer. If you intend to use the same substrate on multiple printers (even of the same model), you should go through the complete process on each printer.

Manual substrate-advance calibration

While printing, you can view and change the substrate-advance calibration of the currently loaded substrate at any time from the Internal Print Server by selecting the print job and then the **Printing Adj.** button, or by clicking **Printer** > **Printing adjustments**.

Alternatively, you can use the **Print adjustment** button in the Internal Print Server main window. This opens a dialog box with an advance calibration section, in which there are three main areas:

1. Check the box to enable the substrate-advance sensor. If it is disabled automatically while loading, you cannot enable it. However, if you disable it yourself, you can re-enable it.

2. If the substrate-advance sensor is disabled, you can increase or decrease the substrate-advance calibration.

3. Three images of possible defects due to substrate-advance issues, to help to you decide whether the substrate-advance calibration should be increased or decreased.

In order to apply and save the values, click the **Apply** button in the dialog box before closing it. Then the substrate-advance calibration value is saved for that particular substrate. Other substrates are not affected.

If you are using a generic substrate preset, you are recommended to clone the preset (**Substrate** > **Clone**) and work with that before adjusting the substrate-advance calibration, as the print adjustment is not available for generic presets. See Edit a substrate preset on page 51.

Calibrations specific to one substrate preset

Some calibrations that the printer performs are specific to the substrate preset in use at the time the calibration was performed and some are not. The calibrations that are specific to one substrate must be performed again if the substrate or preset is changed. Shown below are the calibrations showing which ones are specific to one preset and which ones are not:

- **Printhead alignment**: This is applied to all presets and print modes. Usually, when switching from one substrate to another, there is no need to realign the printheads. However, if the printhead-to-paper spacing has changed significantly (different thickness, for example), then the printheads should be realigned.

- **Substrate-advance calibration**: This is specific to each substrate preset.

- **Color calibration**: This is specific to each substrate preset.

Recommended calibrations after particular events

	Printhead replacement	New substrate created	New substrate imported	New substrate loaded	Print mode changed	Poor print quality
Printhead alignment	Recommended	Not needed unless new substrate has different thickness	Not needed	Not needed unless carriage beam has moved	Not needed	Recommended if relevant
Substrate-advance calibration	Not needed	Recommended	Recommended	Not needed	Not needed	Not needed
Color calibration	Recommended	Recommended	Recommended	Not needed, unless never done before	Not needed	Recommended if relevant

9 HP Print Care

Print Care is a program that helps you to maintain your printer in optimal condition and advises you how to solve any problems that occur. It can also give you full information about the current status and past history of the printer.

The program is already installed in the printer's built-in computer; you can run it by clicking its icon in the Windows Quick Launch toolbar, or by double-clicking some parts of the Internal Print Server (for instance, Print Care status).
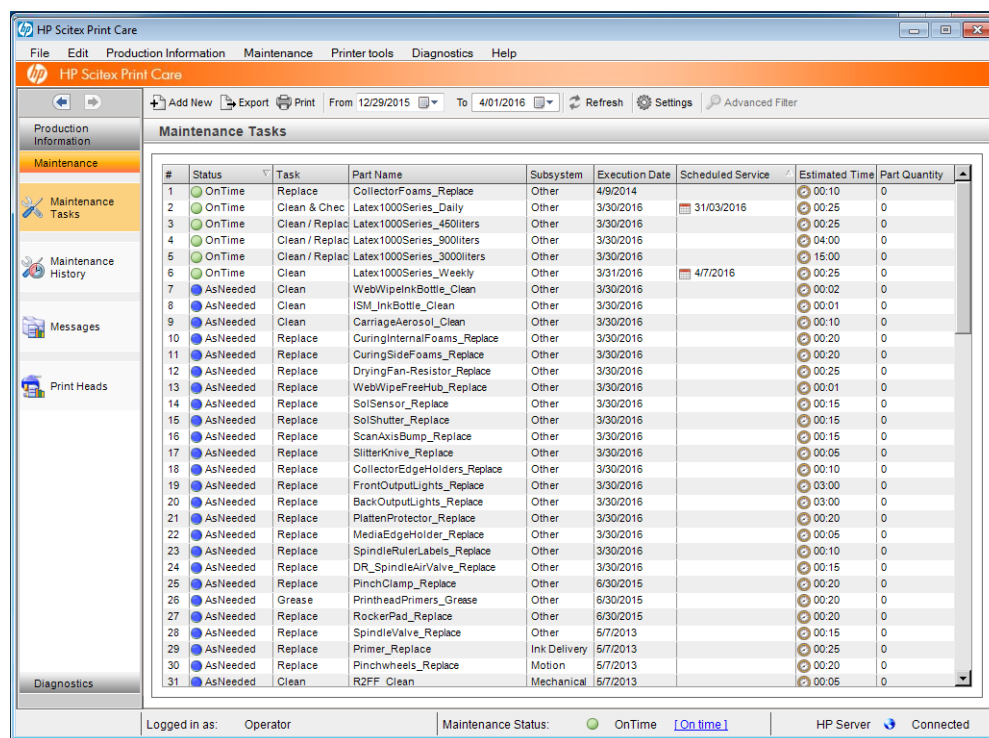
Its functions are divided into the following categories:

- **Production Information** displays information about printer status and printing history (paper usage, ink usage, jobs). The information can be displayed in graphical charts or text reports, all of which you can filter to select different subsets of information.

- **Maintenance** prompts you to perform maintenance tasks, and provides instructions on how to perform them. It can also list the maintenance tasks that have been performed in the past, and the printer messages that have been displayed in the past.

- **Diagnostics** can run functional tests on printer systems and components to check for failures and malfunctions. Each diagnostics run generates a report that provides detailed results and troubleshooting instructions. It can also list the tests that have been run in the past. See for more details.

NOTE: Individual tests are not selectable: the whole series of tests is run automatically.

- **Printer Tools** help you to perform maintenance operations without an Internet connection.

The Print Care program has online help that explains all its functions in detail.

To change the units of measurement in Print Care, click **Edit** > **Preferences** > **Units**.

Print Care uses the language selected in the Windows Regional and Language Options; to change the language, see .

Print Care diagnostics

The Print Care diagnostics help you to minimize downtime. When you call your support representative to report an issue, pass on the results of any diagnostics that you ran.
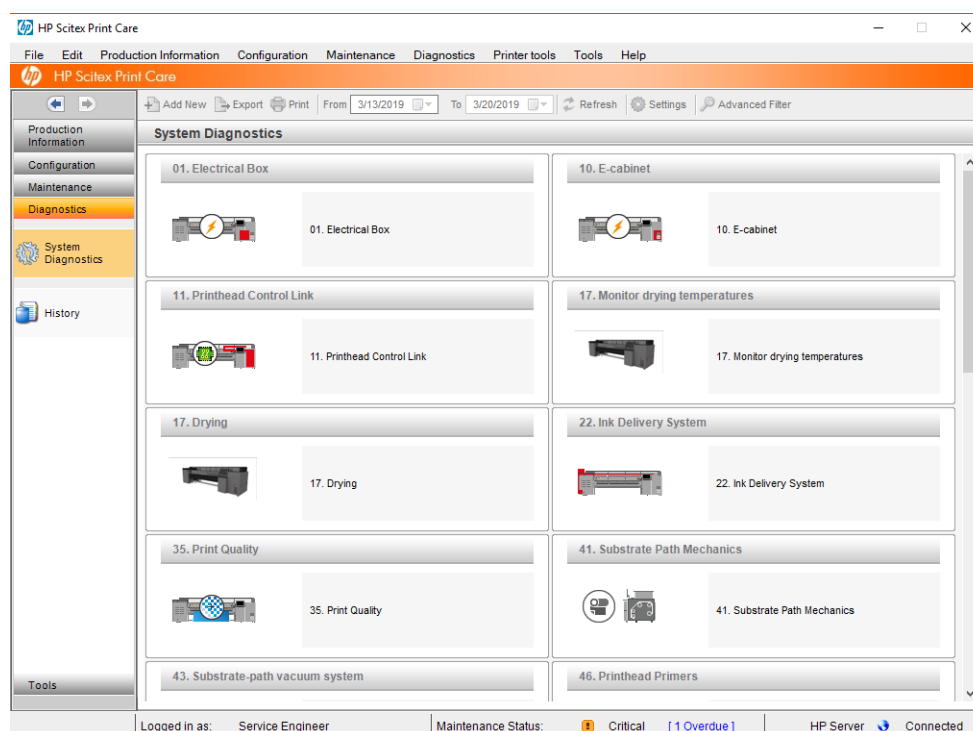
Most of these diagnostics can be run with the printer started normally. However, if you experience a severe error in the start-up progress that prevents you from running the diagnostics, an extra start-up mode has been provided for this situation. To use it, go to Print Care and click **Printer Tools** > **Power options** > **Reboot in diagnostic mode**. Then the printer will start only a minimal set of components, so the progress bar in the Internal Print Server will stop at around 20% and display **Diagnostic mode**. You can then go to the Diagnostics section and run the diagnostic you need.

NOTE: Read the descriptions of the diagnostics and follow the instructions.

IMPORTANT: When the printer is started in diagnostic mode, it is unable to print.

When you have finished the diagnostics, click **Printer Tools** > **Power options** > **Reboot** to restart the printer normally.

When you get a message from the printer with a numerical code in the form XX.XX.XX.XX:, we recommend locating the first two digits in the following table to identify the correct diagnostic.

Number	Subsystem
01	E-box

Number	Subsystem
10	E-cabinet
11	Printhead control link
17	Drying
22	Ink distribution system
41	Substrate path mechanics
43	Substrate path vacuum system
46	Printhead primers
47	Printhead cleaning roll
48	Scan beam
49	Carriage aerosol
50	Substrate-advance sensor
51	Safety interlocks
52	Drop detector
55	Carriage sensors
58	Carriage sensors
86	Scan axis
89	Illumination and buttons

NOTE: Some of these subsystems may be available only to service engineers, because they require specific knowledge or for safety reasons.

NOTE: In any case we recommend running the Safety Interlocks diagnostic to ensure that printing is not disabled by a safety interlock.

10 Ink collector

Use the ink collector

Before printing on porous substrates (textile mesh, flag, and voile), you must install the ink collector kit available as an accessory, to protect the printer from the ink that falls through the substrate. The kit should be removed before printing on non-porous substrates.

⚠ **CAUTION:** Ensure that the operating temperature of the substrate recommended by the manufacturer is not exceeded. If this information is not available, ask the manufacturer.

CAUTION: Proper maintenance and genuine HP consumables are required to ensure that the printer operates safely as designed. The use of non-HP consumables (foams, filters, printhead cleaner roll, and inks) may present a risk of fire.

CAUTION: Do not load substrates with auto-ignition temperatures below 250°C (482°F). Ensure that no ignition sources are close to the substrate.

Kit components
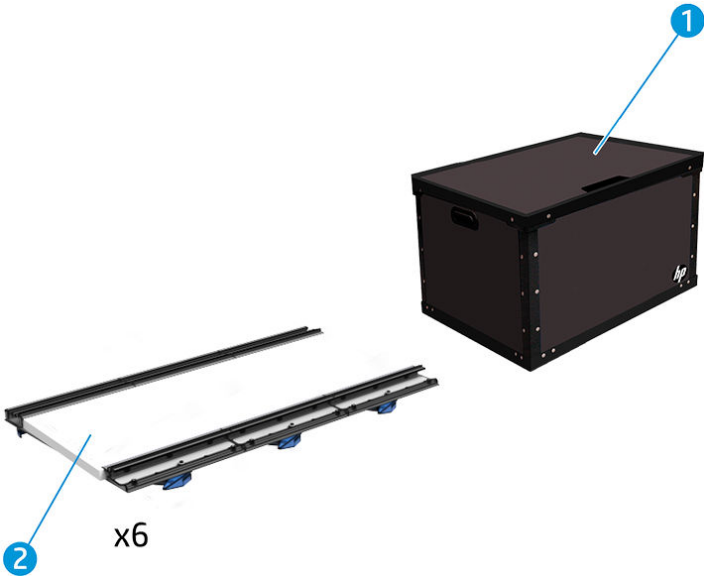
1. Ink collector container

2. Ink collector with replaceable foam

📝 **NOTE:** Keep the ink-collector container to protect and store the ink-collector parts when not in use.

Recommended solution space

Always use the default print-mode settings as a starting point for your substrate. The following settings provide good quality at nominal printing conditions for generic materials.

Green: Recommended print mode for this substrate type

Yellow: Available print mode for this substrate type

Generic Bleed-Through Textile	30	50	70	100	130	150
1p						
2p						
3p						
4p						
6p						
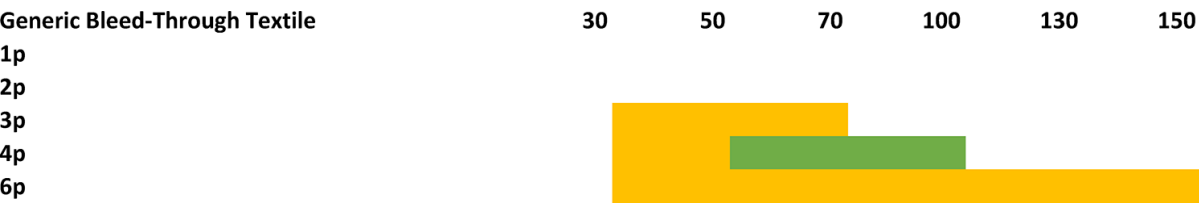
Install the kit

Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard

For more safety information, see Safety precautions on page 2

⚠ **CAUTION:**   Take care to store the ink-collector modules in the box with the blue latches upwards. Let them fall gently into the box tray.

When manipulating the ink collector modules, do not hold them by the blue latches. Use the blue latches only to secure the modules once installed on the print platen.
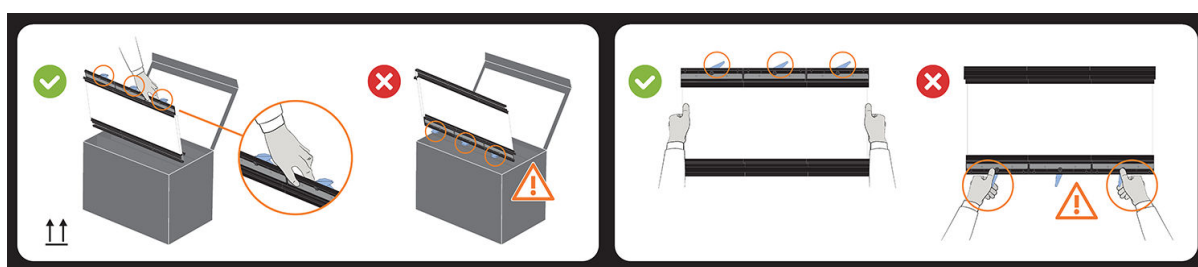
💡 **TIP:**   You are advised to wear gloves.

Install the six ink–collector modules

1. Ensure that the printer is not printing.

2. If any substrate is loaded, unload it. Then remove the edge holders from the substrate path.

3. To facilitate module installation, HP recommends raising the carriage beam to the installation position, by clicking the **Raise carriage beam to install position** button.

4. Ensure that all windows, covers and doors are closed and remain in their original position.

5. Open the ink collector container and check that the ink collector foams are dry and clean enough to be used.

    Also check that the foams fit into the spaces provided for them. If they have expanded and no longer fit, replace them.

    📝 **NOTE:**   Ensure that you dispose of the used foams correctly. Consult the guidelines from your local authority.

6. Go to the Internal Print Server and click the **Install ink collector** button on the main screen.

7. Follow the instructions in the Internal Print Server to complete the installation. If you need further information, read the steps below.

CAUTION: If you install the kit incorrectly, some parts of the printer may be damaged.

8. Ensure that the module latches are open (turned to the left).

9. To facilitate module installation, we recommend raising the carriage beam to the installation position.

10. Open the window.

11. Ensure that the label under the first module that you place is clean.

12. From the front on the right side, install the first module and insert it into the guide.

NOTE: At this point, you will have better access if you have raised the carriage beam.
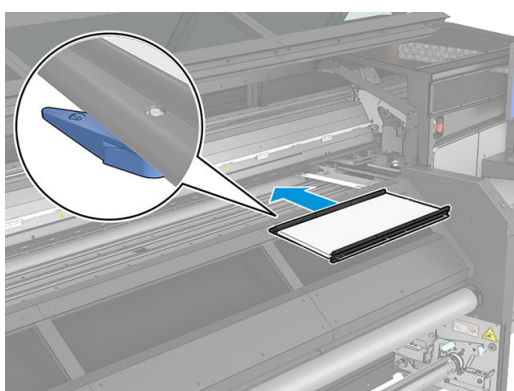
13. Insert all the ink collector modules on either side of the central one.
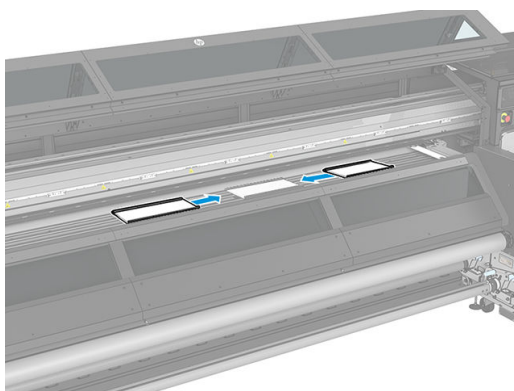
14. Attach each one inserted to a module that is already in place.
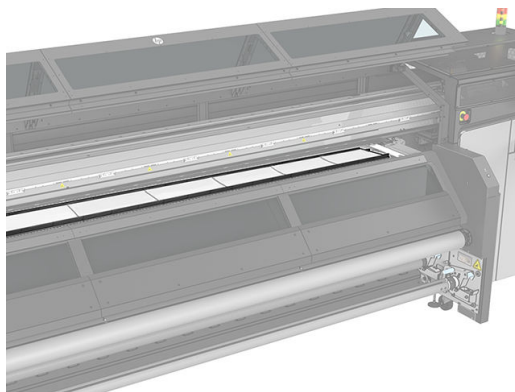
15. Check that all the ink collector modules are aligned with each other and that there are no gaps between them.
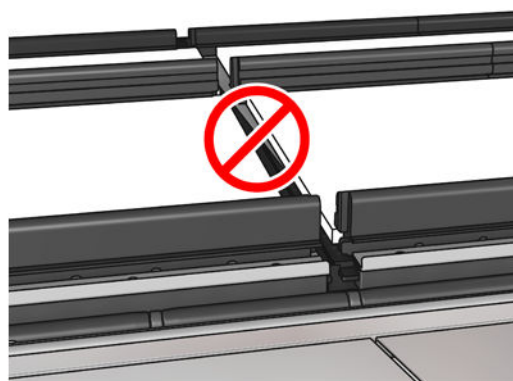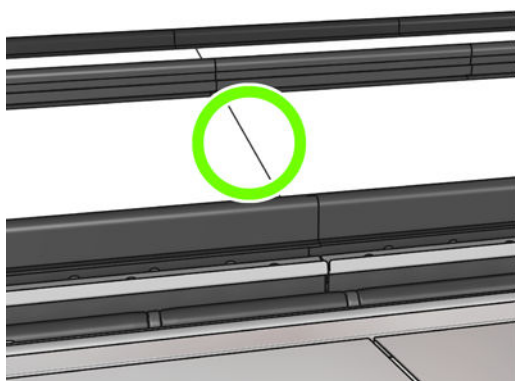
16. Close the latches of all modules (turn to the right).

> 📝 **NOTE:** You can do this from the front or from the rear of the printer.
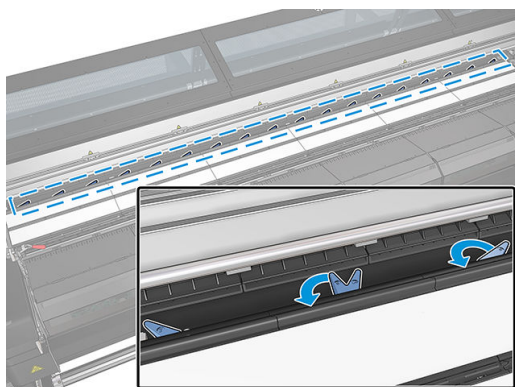
17. Optionally, install the edge holders onto the ink collector modules. See .

18. Close the window.

19. Click **Finish** to complete the ink collector installation. The carriage beam will adjust to the height of the ink collector.

Uninstall the kit

> 💡 **TIP:** You are advised to wear gloves.

Unload the substrate and remove the output spindle.

To facilitate module uninstallation, we recommend raising the carriage beam to the installation position, by clicking the **Raise carriage beam to install position** button.

Uninstall the six ink-collector modules

1. Open the three latches of each module.

2. From the front of the printer, remove each module.

3. Click **Finish** to complete the removal process. The carriage beam moves down and the carriage moves along the platen for checking.

4. Check whether the foams need to be replaced; if so, replace them. Store them in the ink collector container, keeping the latches on top.

5. Perform the maintenance operations recommended after uninstalling the kit (see).

Maintain the ink collector

Summary of maintenance operations

Frequency	Maintenance operation	Part number and description
Every 80 liters of ink	Replace the ink-collector foams on page 110	
Every 160 liters of ink	Replace the aerosol extractor filters on page 111	
After uninstalling the ink collector kit, or at the end of each roll	Clean the aerosol nozzle plate and filters on page 131	
	Wipe the ink-collector modules on page 109	
	Clean the bottom plate on page 131	
After uninstalling the ink collector kit	Printer maintenance on page 109	
	Clean the print zone on page 129	
	Clean the substrate-advance sensor on page 134	

Clean the aerosol nozzle plate and filters

See Clean the aerosol nozzle plate and filters on page 131.

Clean the output platen

See Clean the bottom plate on page 131.

Wipe the ink-collector modules

Wipe all dirty surfaces, especially the ribs that are in contact with the substrate (see Clean the ink-collector ribs on page 135). If necessary, replace the foams (see Replace the ink-collector foams on page 110).

⚠ CAUTION: Proper maintenance and genuine HP consumables are required to ensure that the printer operates safely as designed. The use of non-HP consumables (foams, filters, printhead cleaner roll, or inks) may present a risk of fire.

Printer maintenance

First ensure that you have turned the printer off, and be careful to follow the appropriate safety precautions.

| Crush hazard | Risk of trapped fingers | Hazardous moving part | Electric shock hazard |

For more safety information, see Safety precautions on page 2

After using the ink collector kit, the following parts of the printer may be dirty. Check them as follows.

Bottom plate

1.   Open the output cover so that you can access the bottom plate. See Open the output cover to the maintenance position on page 146.

2. Wipe the bottom plate with a lint-free cloth dampened with distilled water, and make sure that the platen is dry before printing. See also General cleaning instructions on page 11.
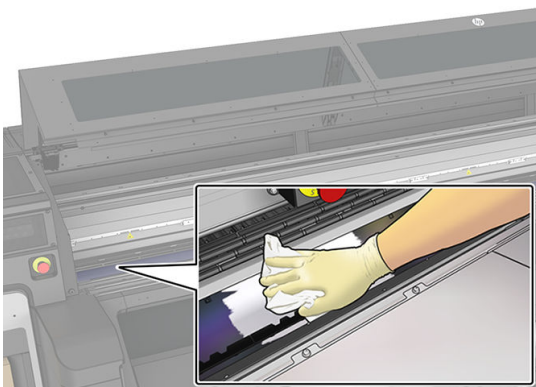
Top diverter profile

1. Wipe the top diverter profile with a lint-free cloth dampened with distilled water, and make sure that the platen is dry before printing. See also General cleaning instructions on page 11.

2. Close the window.

Clean the print zone

See Clean the print zone on page 129.

Replace the ink-collector foams

☼ **TIP:** Do this away from the printer to avoid ink dripping on the printer.

1. Slide out the dirty old foams.

2. Slide in the new foams.

Replace the aerosol extractor filters

1. HP recommends wearing gloves for this task.

2. Open the main window to access the aerosol extractor filters.

3. Remove the dirty filters.
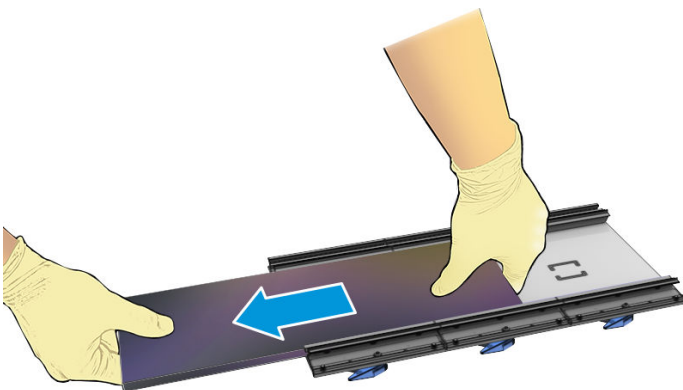
NOTE: Consult your local authorities to determine the correct manner in which to dispose of them.

4. Insert new filters. Ensure that the new filters are kept within the frame of the extractor, and be careful not to leave gaps between them.

Troubleshooting for ink-collector-enabled substrates

There are marks on ink collector enabled substrate

This problem can occur if any component in contact with the substrate is dirty or damages the substrate or its coating. Verify the pressure of the pinchwheels is correct, check for excessive dirt in the diverters, print platen, and especially the ink collector foams, and clean them if necessary.

If marks are continuous along the advance of the plot, verify substrate condition looking for unevenness in the coating of the material in the input side of the printer.

Grain and text sharpness

This problem mainly occurs when printhead calibration or substrate advance are not correct.

Printhead alignment on porous substrate may be difficult because alignment plot lines can be printed in the mesh and therefore not visible. In such cases it is recommended to run printhead alignment on a self adhesive vinyl or a substrate with a similar width to the substrate to be printed on.

With substrate advance when using the ink collector, OMAS is automatically disabled and therefore substrate advance is controlled by the drive roller encoder. Manual advance calibration adjustment can be used while printing in order to correct the advance factor for best results with the material used. If experiencing problems with substrate advance, pay special attention to substrate deformation as textile materials can be easily stretched when applying incorrect tensions, and produce advance problems. Refer to the default settings for you material.

Color consistency

Due to the porosity and unevenness of textile and mesh materials, color calibration is not enabled, and color consistency between rolls, printheads, or printers is not assured. In order to improve color consistency for long runs, make sure that substrates from the same batch are used. In order to ensure color consistency between printers, external profiling of the material is required.

Below is an example of color differences from using the same material from different batches:

11 Hardware maintenance

⚠ **WARNING!** Hardware maintenance may be performed by trained personnel only. During printer installation, the designated personnel received training for safe operation and maintenance of the printer. It is not allowed to use the printer without this training.

- Safety precautions
- Maintenance resources
- Summary of maintenance operations and kits
- How to perform maintenance operations
- How to turn the printer off and on for maintenance operations
- Daily maintenance
- 80 liter maintenance
- 750 liter maintenance
- 1500 liter maintenance
- When required

Safety precautions

Read and follow the safety precautions section to make sure you use the equipment safely: see Safety precautions on page 2.

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 to take appropriate measures to minimize the risks to yourself and to others.

Maintenance resources

Maintenance kits and tools

User maintenance operations and their timing are described in the following chart.

The printer comes with a cleaning kit, in-box material, and printer maintenance kit (PMK). These cover all maintenance operations during the first months, and consist mainly of printer requested cleaning operations via Print-Care.

The SMK (service maintenance kit) is also requested by the printer and needs to be acquired. The service team or technical support should perform SMK operations.

Kits and parts required for maintenance operations are shown below:

Name	Part number	Purpose	How to order
Printer cleaning kit	K4T88-67255 (inside printer)	User maintenance For daily and weekly maintenance checks and cleaning	Provided with the printer and included in the printer maintenance kit. Covers all required maintenance up to 900 L.
Printer maintenance kit	4DC17-67115 (inside printer)	User maintenance For 1500 liter maintenance. Printer life, approx. 1.5M carriage cycles*	The first PMK is provided with the printer; it covers all required maintenances up to 2250 liters, and includes 750 liter maintenance material up to 3 maintenances and one cleaning kit.
Service maintenance kit	K4T88-67260 (order/buy when required)	SMK1 for 5 million carriage-cycle maintenance routine SMK2 for 10 million carriage-cycle maintenance routine*	Through the usual channel

NOTE: For the latest information on kits available for your printer and their contents, see http://hp.com.

*Frequencies are approximate and will depend on print mode usage.

Up-time user spare parts kits

Name	Part number	Purpose	How to order
Basic uptime kit (optional)	4DC17-67112	Set of spare parts that can be replaced by customers and resolve the most common failures	Provided with your printer in most locations worldwide. If necessary, you can purchase the kit through the usual channel.
Expert user kit (optional)	4DC17-67113	Set of spare parts that due to their technical complexity, can be replaced only by trained customers	Through the usual channel. Requires 2 days training.

Basic uptime kit contents

- Two substrate edge holders and 24 straps
- E-cabinet fuses
- Service station caps
- Ink supply module intermediate tank
- Printhead cleaning rubber
- Printhead cleaning rubber free hub
- Prime and latch
- Spectrophotometer shutter

Expert user kit contents

- Spindle air valve
- Scan-axis bump
- Impelling belt
- Impelling tensioner
- Spectrophotometer
- Printhead interconnect
- Ink delivery system air pump and valve
- Drying diffusor
- Drying heater/fan
- Drying PCA
- Carriage oiling felts
- ISM pressure sensor

Printer cleaning kit contents

Part	Quantity
Flex cleaner and 12 flex sponges	1
Cleaning Brush	1
Cotton swabs	100
SAX Lubricant oil	4 bottles
Cleaning sponges	12
Plastic gloves	24
Grease for substrate advance worm	1
Grease syringe	1 3 ml bottle
Filters (e-cabinet, e-box)	6

Part	Quantity
Filters for drying EE fan	2
Key for carriage bearings wicks/felts replacement	1

Printer maintenance kit contents

Content	Quantity
Printer cleaning kit	1
Carriage oiling felts	1 kit
Printhead cleaning blades	3
Intermediate tanks	4
Service station cap assembly	1

NOTE: The contents of the kit may vary.

NOTE: Some keys are provided with the printer. See to identify the one you may require for maintenance operations.

Use the keys only for accessing the intended doors and keep them always under your control. Store them in a safe and secure place.

Maintenance tools recommended but not provided

Spiral brushes, for

Absorbent all-purpose cloth, for cleaning covers, sensors, and delicate parts

Distilled water for general cleaning

Vacuum cleaner, handy or normal, with nozzle accessories; for Clean the scan-axis beam on page 183	Flashlight, for general use	Folding steps, for general use
A flat screwdriver	Allen keys	Torx screwdriver set

Summary of maintenance operations and kits

Periodical maintenance operations

Frequency	Maintenance operation	Cross-reference	Part number and description
Daily	Check and clean the printer, print zone, and output platen	Check and clean the printer, print zone, and output platen on page 129	Printer cleaning kit, provided with your printer Recommended when using the ink collector: every roll switch, or when uninstalling the ink collector.
	Clean the aerosol nozzle plate and filters	Clean the aerosol nozzle plate and filters on page 131	
	Clean the substrate-advance sensor	Clean the substrate-advance sensor on page 134	Printer cleaning kit, provided with your printer
	Clean ink-collector ribs	Clean the ink-collector ribs on page 135	Printer cleaning kit, provided with your printer Recommended when using the ink collector: every roll switch, or when uninstalling the ink collector.
Every 80 liters of ink	Check and clean the printer, print zone, and output platen	Check and clean the printer, print zone, and output platen on page 129	Printer cleaning kit, provided with your printer
	Clean the bottom of the carriage and the line sensor	Clean the bottom of the carriage and the line sensor on page 138	Printer cleaning kit, provided with your printer
	Clean the drop detector and the capping station	Clean the drop detector and the capping station on page 140	
	Clean the e-box fan filter	Clean the e-box fan filters on page 142	Printer cleaning kit, included in your printer
	Clean the e-cabinet fan filters	Clean the e-cabinet fan filters on page 144	Printer cleaning kit, included in your printer
	Clean the output cover	Clean the output cover on page 146	
	Clean the carriage cooling fan	Clean the carriage cooling fan on page 148	Printer cleaning kit, included in your printer
	Clean two dryer PCA fan filters	Clean two dryer PCA fan filters on page 149	
	Empty printhead waste bottle	Empty the printhead cleaning waste bottle on page 152	
Every 750 liters of ink	Clean the drive roller and pinchwheels	Clean the drive roller and pinchwheels on page 155	
	Clean and lubricate the scan axis and mechanical transmissions	Clean and lubricate the scan axis and mechanical transmissions on page 156	
	Clean and lubricate the drop-detector rods	Clean and lubricate the drop-detector rods on page 160	
	Clean the scan-axis encoder	Clean the scan-axis encoder on page 161	

Periodical maintenance operations (continued)

Frequency	Maintenance operation	Cross-reference	Part number and description
Every 1500 liters of ink (Preventive Maintenance Kit, service included in some contractual modes)	Clean the substrate drive transmission	Clean the substrate drive transmission on page 164	
	Grease the printhead primers	Grease the printhead primers on page 164	
	Clean impelling dust in scan axis chain	Clean impelling dust in scan-axis chain on page 166	
	Clean the drying fans and diffuser	Clean the drying fans and diffuser on page 167	
	Clean the drop-detector encoder strip	Clean the drop-detector encoder strip on page 169	
	Replace the printhead cleaning blade	Replace the printhead cleaning blade on page 170	
	Replace the carriage felts and clean and oil the scan axis and rods	Replace the carriage oil wicks, felts, and clean and oil the scan axis rods on page 172	
	Replace an intermediate tank	Replace an intermediate tank on page 174	
	Replace the e-cabinet fan filters	Replace the e-cabinet fan filters on page 175	
	Replace e-box fan filter	Replace e-box fan filter on page 176	
	Replace dryer fan filter	Replace the dryer fan filters on page 178	
	Replace a service station cap	Replace a service station cap on page 179	K4T88-67073: SVS Caps Kit, included in the basic uptime kit
Every 3000 liters of ink (or 5 million scan-axis cycles)		To be done by a service engineer. Call your service representative (see HP Customer Care Centers on page 244).	
Every 6000 liters of ink (or 10 million scan-axis cycles)		To be done by a service engineer. Call your service representative (see HP Customer Care Centers on page 244).	

When-required maintenance operations

Frequency	Maintenance operation	Cross-reference	Part number and description
When required	Printer safety check	Printer safety check on page 182	
	Check and clean printheads	Check and clean the printheads on page 76	
	Clean the scan-axis beam	Clean the scan-axis beam on page 183	
	Clean the printhead contacts	Clean the printhead contacts on page 186	
	Clean the carriage rails manually	Clean the carriage rails manually on page 189	
	Check and clean dirt from scan axis and mechanical transmissions	Check and clean dirt from scan axis and mechanical transmissions on page 191	

Frequency	Maintenance operation	Cross-reference	Part number and description
	Replace a pinchwheel submodule	Replace a pinchwheel submodule on page 192	
	Replace a primer and latch	Replace a primer and latch on page 194	K4T88-67013: Primer and latch, included in the basic uptime kit
	Replace the aerosol fan module (trained expert users only)	Replace the aerosol fan module (trained expert users only) on page 197	K4T88-67003: Aerosol top case assembly, included in the basic uptime kit
	Replace an intermediate tank	Replace an intermediate tank (trained users only) on page 201	CZ056-67073: ISM intermediate tank, included in the basic uptime kit
	Replace an e-cabinet fuse	Replace an e-cabinet fuse on page 203	K4T88-67209: E-cabinet PCA Fuses Kit, included in the basic uptime kit
	Replace a spindle valve	Replace a spindle valve on page 205	
	Replace pinch clamp	Replace the pinch clamp on page 206	
	Replace spindle gear and end cap	Replace spindle gear and end cap on page 206	
	Replace the drying fan and resistor module	Replace the drying fan and resistor module on page 210	
	Replace the spectrophotometer shutter	Replace the spectrophotometer shutter on page 214	

The table below includes cleaning or replacement of basic parts. The tools are included in kits.

On demand oiling and greasing operations

Clean and grease operations	Cross-reference	Part number and description
Grease the printhead primers	Grease the printhead primers on page 164	Printer cleaning kit, provided with your printer

ON demand operations and customer replaceable parts (CSR)

Frequency	Maintenance operation	Cross-reference	Part number and description
Operations and parts to be replaced as required, on demand in case of breaks or low performance	Clean the printhead pocket and electrical contacts	Clean the printhead contacts on page 186	Printer cleaning kit, provided with your printer
	Clean the pinchwheels and drive roller	Clean the drive roller and pinchwheels on page 155	
	Clean and check substrate advance sensor	Clean the substrate-advance sensor on page 134	
	Grease the printhead primers	Grease the printhead primers on page 164	
	Replace a primer and latch	Replace a primer and latch on page 194	K4T88-67013: Primer and latch, included in the basic uptime kit
	Replace the aerosol module fans	Replace the aerosol fan module (trained expert users only) on page 197	K4T88-67003: Aerosol top case assembly, included in the basic uptime kit
	Replace a service station cap	Replace a service station cap on page 179	K4T88-67073: SVS Caps Kit, included in the basic uptime kit

ON demand operations and customer replaceable parts (CSR) (continued)

Frequency	Maintenance operation	Cross-reference	Part number and description
	Replace an intermediate tank	Replace an intermediate tank (trained users only) on page 201	CZ056-67073: ISM intermediate tank, included in the basic uptime kit
	Replace an e-cabinet fuse	Replace an e-cabinet fuse on page 203	K4T88-67209: E-cabinet PCA Fuses Kit, included in the basic uptime kit
	Replace an edge holder strip	Replace an edge holder strip on page 41	
	Replace the spectrophotometer shutter	Replace the spectrophotometer shutter on page 214	
	Pinch clamp replacement	Replace the pinch clamp on page 206	
	Replace a pinchwheel submodule	Replace a pinchwheel submodule on page 192	
	Replace spindle valve	Replace a spindle valve on page 205	K4G10-67094: Spindle air valve, included in the basic uptime kit
	Replace the printhead cleaning blade	Replace the printhead cleaning blade on page 170	
	Replace spindle gear and end cap	Replace spindle gear and end cap on page 206	
	Replace a spindle valve	Replace a spindle valve on page 205	

How to perform maintenance operations

The Maintenance section of the Print Care program (see HP Print Care on page 100) reminds you when routine hardware maintenance should be done.

Perform maintenance with Print Care wizards

If your printer is connected to the Internet, Print Care provides guidance (wizards) to help you to perform the maintenance operations correctly. Click the maintenance operation and the wizard will appear; then follow its instructions.

Maintenance Tasks

#	Status	Task	Part Name	Subsystem	Execution Date	Scheduled Service	Estimated Time	Part Quantity
1	OnTime	Replace	CollectorFoams_Replace	Other	4/9/2014		00:10	0
2	OnTime	Clean & Chec	Latex1000Series_Daily	Other	3/30/2016	31/03/2016	00:25	0
3	OnTime	Clean / Replac	Latex1000Series_450liters	Other	3/30/2016		00:25	0
4	OnTime	Clean / Replac	Latex1000Series_900liters	Other	3/30/2016		04:00	0
5	OnTime	Clean / Replac	Latex1000Series_3000liters	Other	3/30/2016		15:00	0
6	OnTime	Clean	Latex1000Series_Weekly	Other	3/31/2016	4/7/2016	00:25	0
7	AsNeeded	Clean	WebWipeInkBottle_Clean	Other	3/30/2016		00:02	0
8	AsNeeded	Clean	ISM_InkBottle_Clean	Other	3/30/2016		00:01	0
9	AsNeeded	Clean	CarriageAerosol_Clean	Other	3/30/2016		00:10	0
10	AsNeeded	Replace	CuringInternalFoams_Replace	Other	3/30/2016		00:20	0
11	AsNeeded	Replace	CuringSideFoams_Replace	Other	3/30/2016		00:20	0
12	AsNeeded	Replace	DryingFan-Resistor_Replace	Other	3/30/2016		00:25	0
13	AsNeeded	Replace	WebWipeFreeHub_Replace	Other	3/30/2016		00:01	0
14	AsNeeded	Replace	SolSensor_Replace	Other	3/30/2016		00:15	0
15	AsNeeded	Replace	SolShutter_Replace	Other	3/30/2016		00:15	0
16	AsNeeded	Replace	ScanAxisBump_Replace	Other	3/30/2016		00:15	0
17	AsNeeded	Replace	SlitterKnive_Replace	Other	3/30/2016		00:06	0
18	AsNeeded	Replace	CollectorEdgeHolders_Replace	Other	3/30/2016		00:10	0
19	AsNeeded	Replace	FrontOutputLights_Replace	Other	3/30/2016		03:00	0
20	AsNeeded	Replace	BackOutputLights_Replace	Other	3/30/2016		03:00	0
21	AsNeeded	Replace	PlattenProtector_Replace	Other	3/30/2016		00:20	0
22	AsNeeded	Replace	MediaEdgeHolder_Replace	Other	3/30/2016		00:05	0
23	AsNeeded	Replace	SpindleRulerLabels_Replace	Other	3/30/2016		00:10	0
24	AsNeeded	Replace	DR_SpindleAirValve_Replace	Other	3/30/2016		00:15	0
25	AsNeeded	Replace	PinchClamp_Replace	Other	6/30/2015		00:20	0
26	AsNeeded	Grease	PrintheadPrimers_Grease	Other	6/30/2015		00:20	0
27	AsNeeded	Replace	RockerPad_Replace	Other	6/30/2015		00:20	0
28	AsNeeded	Replace	SpindleValve_Replace	Other	5/7/2013		00:15	0
29	AsNeeded	Replace	Primer_Replace	Ink Delivery	5/7/2013		00:25	0
30	AsNeeded	Replace	Pinchwheels_Replace	Motion	5/7/2013		00:20	0
31	AsNeeded	Clean	R2FF_Clean	Mechanical	5/7/2013		00:05	0

Logged in as: Operator Maintenance Status: OnTime [On time] HP Server Connected

IMPORTANT: Strictly follow all the recommended steps for safety reasons. For example, switching the printer off protects you from electric shock and hazardous moving parts, among other risks; it may also be required for other reasons.

IMPORTANT: Follow the wizard to the end so that the appropriate alert is reset automatically.

The wizard has the necessary buttons so that all printer actions, such as moving the carriage beam, can be done directly from the wizard when they are needed.

It also provides instructions to replace parts and resolve the most common failures.

Because this information is in the HP cloud, HP can update and improve it so that Print Care will always show the latest version.

Perform maintenance without Print Care wizards

IMPORTANT: If your printer is **not connected** to the Internet, you must perform maintenance operations manually with the help of this guide. Without a connection:

- **The alerts are never reset.** Both the Internal Print Server and Print Care always show a red alert for maintenance status.

- Tracking the maintenances must be done manually, according to the time and ink usage thresholds shown in the Summary of maintenance operations and kits on page 119.

- This guide appears in the Print Care window, for reference, instead of the list of maintenances.

HP strongly recommends an Internet connection as it makes it much easier to deal with the maintenance tasks of the printer, in addition to providing auto-update of the maintenance procedure and automatic notification of firmware upgrades. Contact your service representative for more information.

IMPORTANT: Strictly follow all the recommended steps for safety reasons. For example, switching the printer off protects you from electric shock and hazardous moving parts, among other risks; it may also be required for other reasons.

The following printer-system movements and processes are required during maintenance operations. The **Printer tools** menu in Print Care can be used when the printer is not connected to the Internet. Remember to follow all the safety precautions.
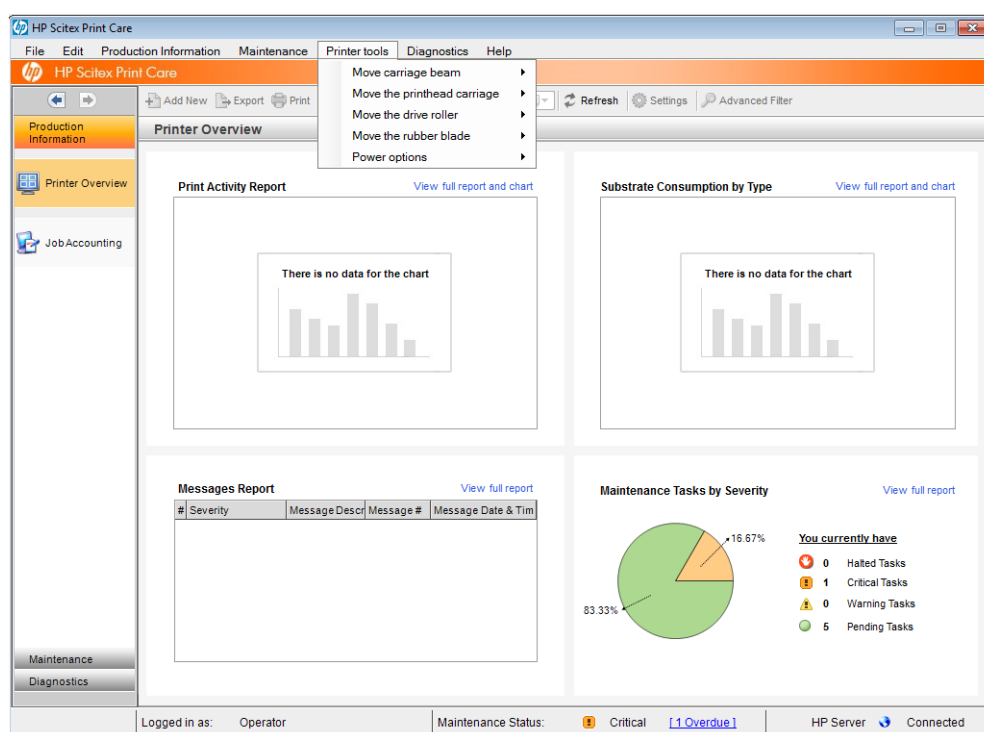
Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard

For more safety information, see Safety precautions on page 2

- To move the carriage beam, click **Printer tools** > **Move the carriage beam**.

  – **Move up**

  – **Move down**

- To move the printhead carriage, click **Printer tools** > **Move the printhead carriage**.

  – **Move to the service position**

  – **Move to the leftmost position**

  – **Move to the normal position**

- To move the drive roller, click **Printer tools** > **Move the drive roller**.

– **Move (backwards)**

– **Move (forwards)**

– **Stop**

Other warnings

– 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.

– Do not touch gears or moving rolls during printing.

● To move the rubber blade, click **Printer tools** > **Move the rubber blade**.

– **Move to service position**

– **Move to normal position**

How to turn the printer off and on for maintenance operations

IMPORTANT: When performing maintenance operations, **always** turn the printer off and on as described below. Do not use the normal procedure.

IMPORTANT: Strictly follow all the recommended steps, for safety reasons.

NOTE: If your printer is connected to the Internet, you do not need to remember these instructions, because they are included in the maintenance wizards.

Turn the printer off

1. In Print Care, click **Printer tools** > **Power options** > **Shutdown**.
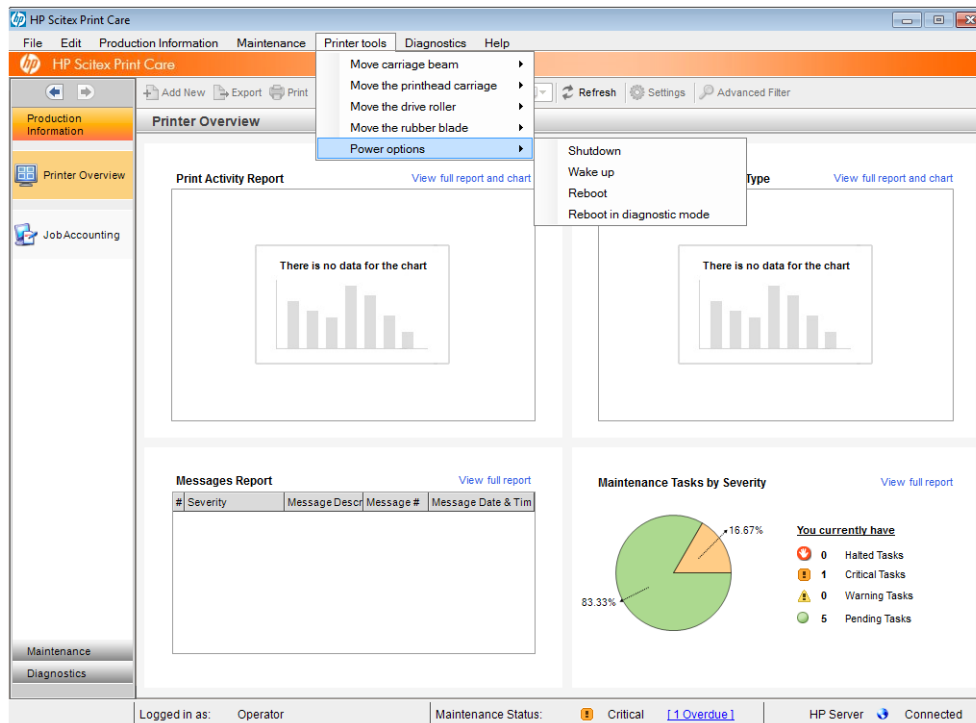
CAUTION: The shutdown process takes some time to complete. Wait until the green power light is off before proceeding.

2.   Turn off the printer using the main switch at the front right of the printer.

CAUTION: With this procedure, the printhead carriage will not return to the normal position, and therefore the printheads will remain uncapped. Make sure the maintenance operation is done quickly to minimize the time in which the printheads are uncapped.

Turn the printer on

1.   Turn on the printer using the main switch at the front right of the printer.

2.   Pay attention to the Internal Print Server and rearm the printer when requested, as usual.

⚠ CAUTION: In some maintenance procedures, the carriage beam is up when you turn on the printer, and the carriage moves during initialization. Avoid putting any part of your body in the print area.

Daily maintenance

Before any cleaning maintenance, ensure that you have turned the printer off, and be careful to follow the appropriate safety precautions.

Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard

For more safety information, see Safety precautions on page 2

The following maintenance procedures are required daily:

- Check and clean the printer, print zone, and output platen

- Clean the aerosol nozzle plate and filters

- Clean the substrate-advance sensor

- Clean the ink-collector ribs

Check and clean the printer, print zone, and output platen

| ⚠	⚠	⚠	⚠
Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard

For more safety information, see Safety precautions on page 2

Check and clean the printer

1. Check the printer for dust and aerosol on the covers, windows, computer screen etc.

2. If condensation is seen on the inside of the window over the middle of the printer, wipe it with a dry cloth. Use folding steps to reach the inside of the window.

   *Some cleaning operations are on demand depending on your print duty cycle, substrates or print modes used, and environment.

3. Check the bottom of the carriage and aerosol outlet nozzle is not clogged.

4. Clean the service station cap and the left spittoon area. If dust or ink is found, wipe it off with a lint-free cloth dampened with distilled water only. See also General cleaning instructions on page 11.

For a more thorough clean up, follow the steps described in the following sections.

Clean the print zone

The platen should be cleaned whenever it is visibly dirty, or when you notice marks on the back of the substrate. Before cleaning the platen, take notice of the substrate-advance sensor in the middle of the platen: clean it, but be careful to avoid scratching it.

If you sometimes print with very small side margins and with substrate edge holders, ink may accumulate on the edge holders, which can cause smears on your prints and blocked nozzles in the printheads.

Check the substrate edge holder strips daily for dried ink or any other defect. If necessary, replace the strip with a new one. See Replace an edge holder strip on page 41.

Prepare to clean the print zone

1. Ensure that you have the printer cleaning kit, provided with your printer.

2. Ensure that the printer is not printing.

3. Unload the substrate.

4. Ensure that all windows, covers, and doors are closed and remain in their original positions.

5. Turn off the printer in the correct way for maintenance operations: see Turn the printer off on page 125.

6. Open the window.
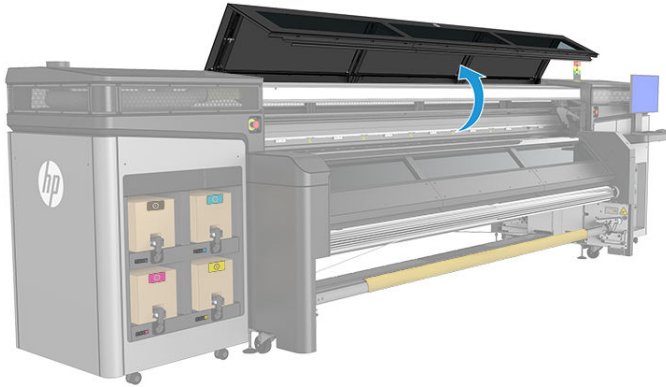
Remove the edge holders (if they are in use)

1. Remove the two substrate edge holders from the platen.

2. Replace the edge holder strips if necessary. See Replace an edge holder strip on page 41.

Clean the platen

1. Clean the platen with a clean cloth dampened with distilled water. Be very careful not to touch the printheads

2. Check the print zone and remove any dirt, aerosol or ink from the platen. Check the substrate paths, focusing on the bottom-plate zone. Check the print output areas for ink drops, aerosol, or condensation. Clean the substrate edge holders if required.

   See also General cleaning instructions on page 11.
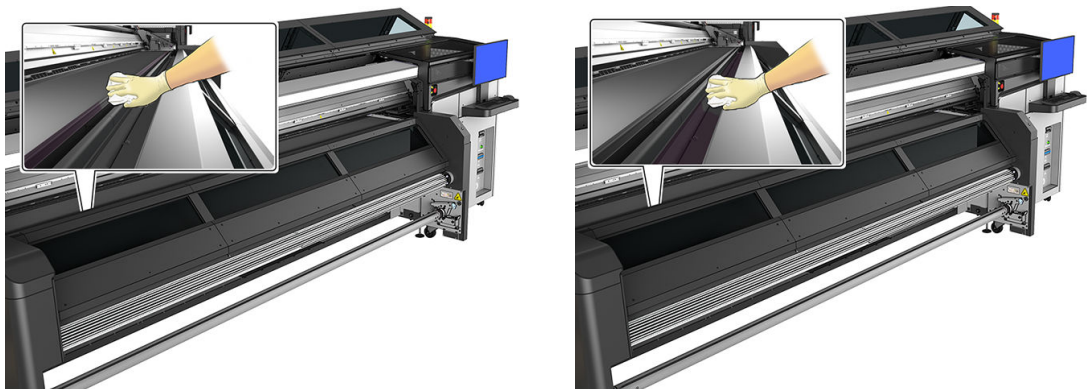
Clean the substrate-advance sensor

▲ See Clean the substrate-advance sensor on page 134.

Clean the output platen lights

▲   Clean the output platen lights with a clean cloth or a piece of cellulose paper dampened with distilled water. See also General cleaning instructions on page 11.

Clean the bottom plate

The bottom plate is made of plain sheet metal with two rows of plastic ramps.

Prepare to clean the bottom plate

1.   Ensure that the printer is not printing.

2.   Unload the substrate.

3.   Turn off the printer in the correct manner for maintenance operations: see Turn the printer off on page 125.

Clean the bottom plate

▲   In order to clean the bottom plate, access it from the top of the output cover. See General cleaning instructions on page 11.

Finish off cleaning the output platen

1.   Put the spindle back in position.

2.   Ensure that the cleaned parts are completely dry and all vapor has completely evaporated.

Clean the aerosol nozzle plate and filters

| Crush hazard | Risk of trapped fingers | Hazardous moving part | Electric shock hazard |

For more safety information, see Safety precautions on page 2

The aerosol nozzle plate and filters should be kept clean for optimal performance and reliability. It is critical that when the nozzle plate is in some printing conditions with high scan beam or textile materials that more aerosol is generated, and blocks the aerosol removal system nozzle or filter.
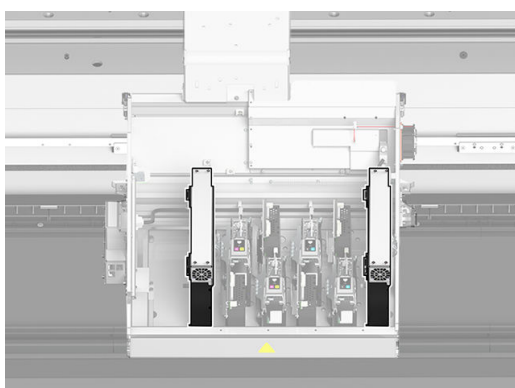
1. Ensure that the printer is not printing.

2. Ensure that all windows, covers, and doors are closed and remain in their original positions.

3. Move the printhead carriage to the service position.

4. Open the carriage cover.

5. Open one latch on the right side of each aerosol filter module.
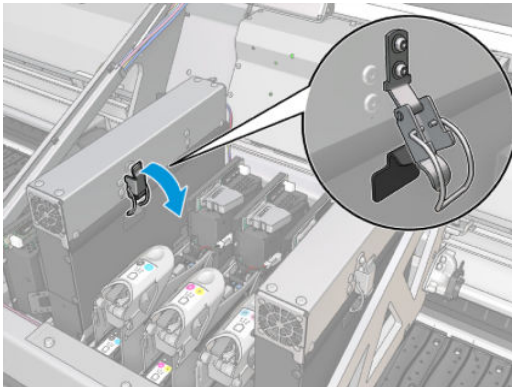
6. Open the lid of each filter.

7. Remove both aerosol filters, using their handles.
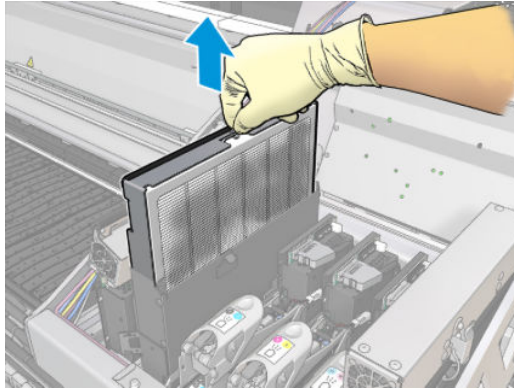
8. Use a flat screwdriver to remove the dry aerosol and then a brush to remove any remaining dirt. Try to avoid loose dirt falling into the filter.
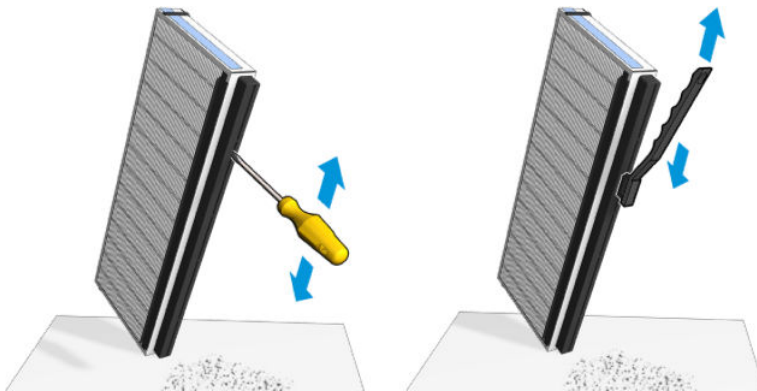
💡 **TIP:** It is recommended to remove the filter from the frame to better access and clean the nozzle.

📝 **IMPORTANT:** Be sure to reinstall the filter on the frame before you reinstall it on the printer.

9. Wipe off all wet ink from the aerosol nozzle plate and frame.

10. Reinsert both filters. There is only one way to insert them that works. If you feel resistance, try to insert the filter the other way round.
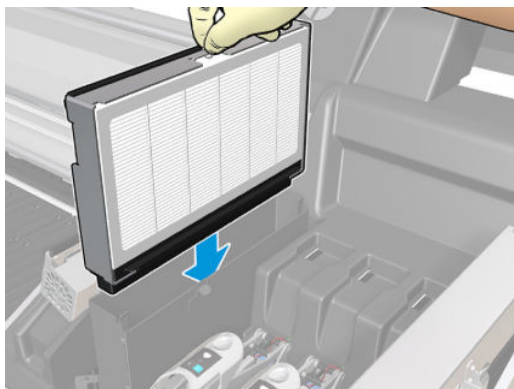
11. Close the lids.

12. Close the latches.

13. Close the carriage cover.

14. Move the printhead carriage back to the working position.

Clean the substrate-advance sensor

Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard

For more safety information, see Safety precautions on page 2

Remember that porous substrates, or substrates with porous liners, are not supported without the ink collector accessory and should not be used with your printer. However, under normal printing conditions with non-porous substrates, some dirt, dust, and ink aerosol can reach the substrate-advance sensor window and impair the performance of the sensor.

Prepare to clean the substrate-advance sensor

1. Ensure that you have the printer cleaning kit, provided with your printer.

2. Ensure that the printer is not printing.

3. Unload the substrate.

4. Ensure that all windows, covers, and doors are closed and remain in their original position.

5. Open the window.
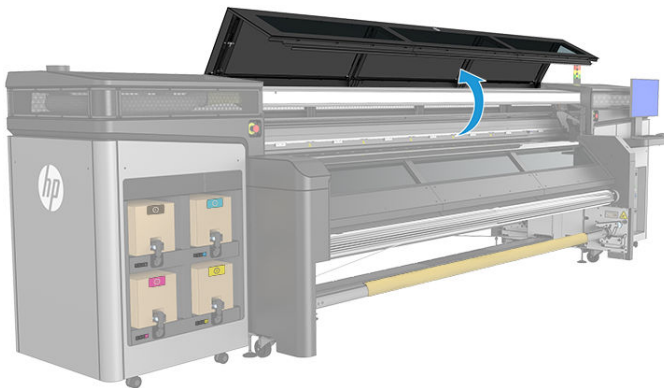
Clean the substrate-advance sensor

1. Find the sensor in the middle of the platen.
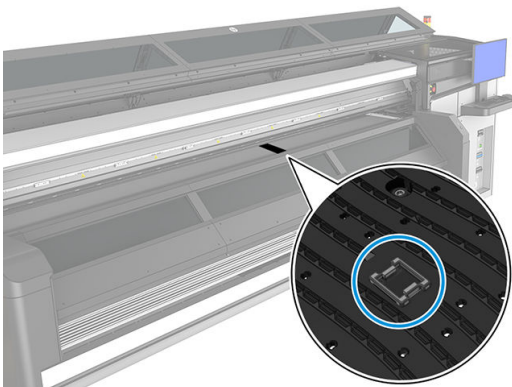
2. Clean the platen area around the sensor thoroughly with a clean cloth. See General cleaning instructions on page 11.
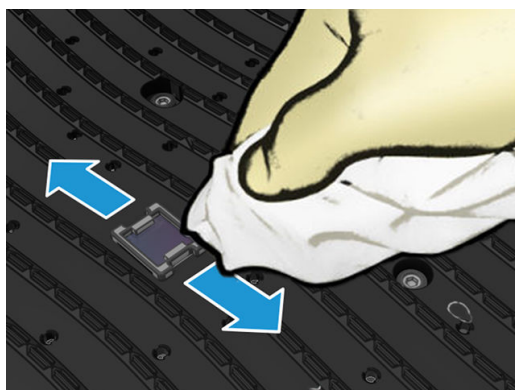
3. Wipe the sensor window with one of the cotton swabs provided in the Printer Cleaning Kit, slightly dampened (not soaked) with distilled water. If the sensor window is heavily coated with dry ink, you may need to apply some pressure while wiping, helping the cotton to absorb the ink. See also General cleaning instructions on page 11.
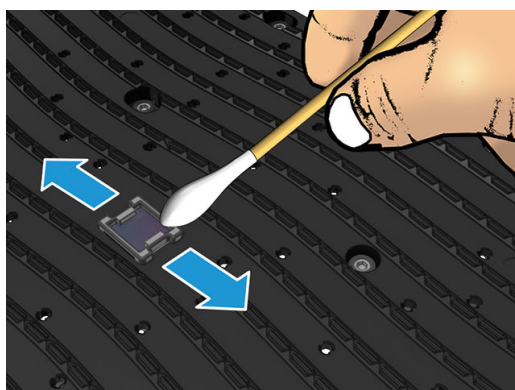
4. Continue cleaning with fresh swabs until the cotton stays clean and the sensor window looks clean.

☼ TIP: When reflecting ambient light, a clean sensor window shows a blue-colored reflection that should extend uniformly across its whole surface. You can see this reflection by moving closer and slightly changing your angle of view.

Finish off cleaning the substrate-advance sensor

1. Close the front door.

2. Ensure that all windows, covers, and doors are closed and remain in their original position.

3. Move the carriage beam back to its normal position.

4. Run a diagnostic test to check that the sensor is now working correctly.

Clean the ink-collector ribs

Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard

For more safety information, see Safety precautions on page 2

The ribs should be cleaned whenever they are visibly dirty, or when you notice marks on the back of the substrate.

Prepare to clean the ribs

1. Ensure that you have the printer cleaning kit (provided with your printer).

2. Ensure that the printer is not printing.

3. Unload the substrate.

4. Ensure that all windows, covers, and doors are closed and remain in their original positions.

5. Turn off the printer in the correct way for maintenance operations: see Turn the printer off on page 125.

Clean the ribs

▲ Clean the ribs with a clean cloth dampened with distilled water. See also General cleaning instructions on page 11.

⚠ **CAUTION:** Take care with the dryer outlets to avoid cutting your fingers.

80 liter maintenance

Before any cleaning maintenance, ensure that you have turned the printer off, and be careful to follow the appropriate safety precautions.

Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard

For more safety information, see Safety precautions on page 2

The following maintenance procedures are required every 80 liters:

- Clean the bottom of the carriage and the line sensor

- Clean the drop detector and the capping station

- Clean the e-box fan filters

- Clean the e-cabinet fan filters

- Clean the output cover

- Clean the carriage cooling fan

- Clean two dryer PCA fan filters

- Empty the printhead cleaning waste bottle

Clean the bottom of the carriage and the line sensor

Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard

For more safety information, see Safety precautions on page 2

Prepare to clean the carriage bottom

1. Ensure that you have the printer cleaning kit, provided with your printer.

2. Ensure that the printer is not printing.

3. Unload the substrate.

4. Ensure that all windows, covers, and doors are closed and remain in their original positions.

5. Move the printhead carriage to the service position.

6. Move the carriage beam to its highest position.

7. Turn off the printer in the correct way for maintenance operations: see Turn the printer off on page 125.

8. Tools required:

9. Open the window.

NOTE: For some operations, there is better access from the back of the printer. Open the loading table too if you find it useful.

10. Move the printhead carriage and place it above the printhead cleaning roll.

Clean the carriage bottom

1. Unlock and open the printhead cleaning roll door.
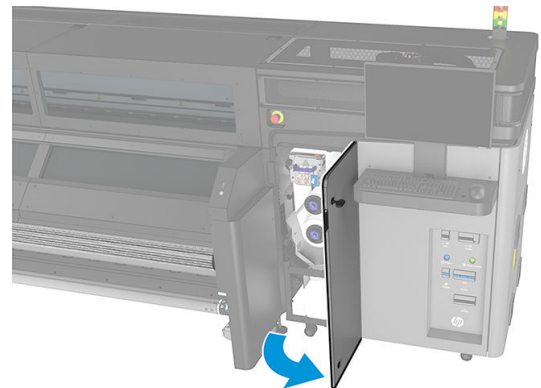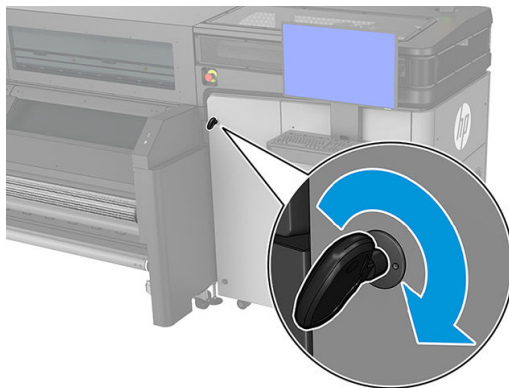
2. Clean the carriage bottom with a lint-free cloth dampened with distilled water. Be very careful not to touch the printheads. See also General cleaning instructions on page 11.
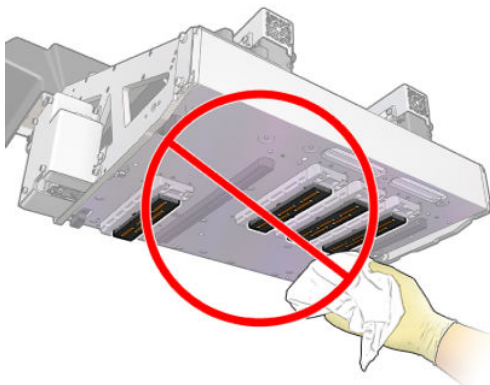
Clean the line sensor

▲ Wipe both line sensors and the spectrophotometer with one of the cotton swabs provided in the Printer Cleaning Kit, slightly dampened (see General cleaning instructions on page 11).
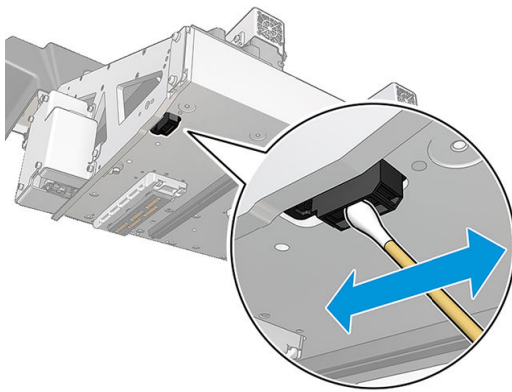
Finish off cleaning the carriage bottom

1.   Ensure that the cleaned parts are completely dry and that all vapor has completely evaporated.

2.   Close and lock the printhead cleaning roll door.

3.   Ensure that all windows, covers, and doors are closed and remain in their original positions.

4.   Turn on the printer in the correct way for maintenance operations: see Turn the printer on on page 126.

5.   Move the carriage beam back to its working position.

6.   Move the carriage back to its working position.

Clean the drop detector and the capping station

Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard
For more safety information, see Safety precautions on page 2			

Prepare to clean the substrate-advance sensor

On the following screen, the drop detector diagnostic will launch in order to move the carriage and drop detector to the service position.

⚠ **WARNING!**   Read the instructions below before clicking **Next**.

1.   Run the diagnostic to move the drop detector and carriage to the service position.
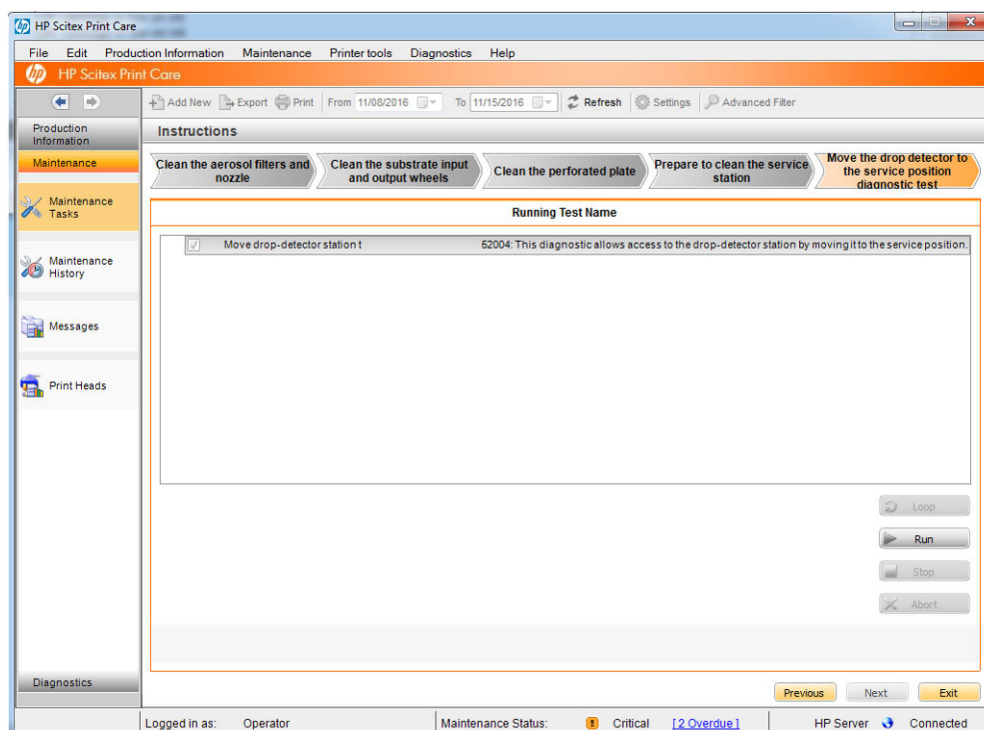
2. Once the drop detector is in the service position, turn off the printer in the correct way for maintenance operations: see Turn the printer off on page 125.

3. Open the carriage cover.

4. Put on gloves to protect your hands.

5. Clean the top surface of the service station with a dampened lint-free cloth. See General cleaning instructions on page 11.
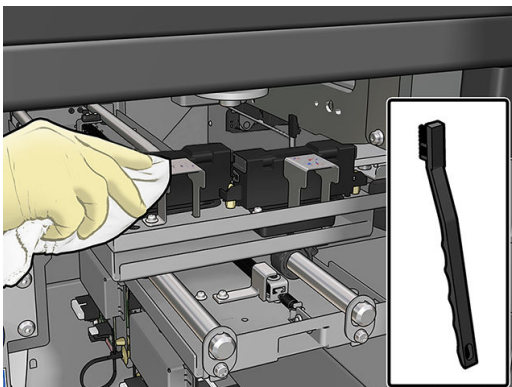
6. Take special care when cleaning the metallic plates close to the drop-detector module.

Finish off cleaning the drop detector and the capping station

1. Close and lock the printhead cleaning roll door.

2. Close the carriage cover.

3. Turn on the printer using the main switch, see Turn the printer on on page 126.

📝 **NOTE:** While the printer restarts, the carriage and drop detector move back to their normal positions.

4. Finish the diagnostic. Click **Next** even if the diagnostic fails, as cleaning has already completed.

Clean the e-box fan filters

| Crush hazard | Risk of trapped fingers | Hazardous moving part | Electric shock hazard | Moving fan blades |

For more safety information, see Safety precautions on page 2

Prepare to clean the e-box fan filter

The e-box fan filter is provided with your printer in the printer cleaning kit.

1. Turn off the printer and the power-enable switch.

2. Locate the rear right panel assembly.

3. Remove the two T-20 screws that attach the rear right panel assembly.
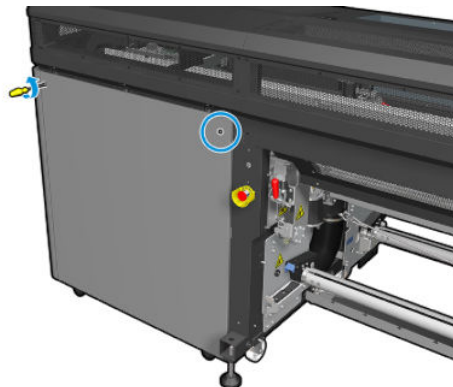
4. Remove the rear right panel assembly.
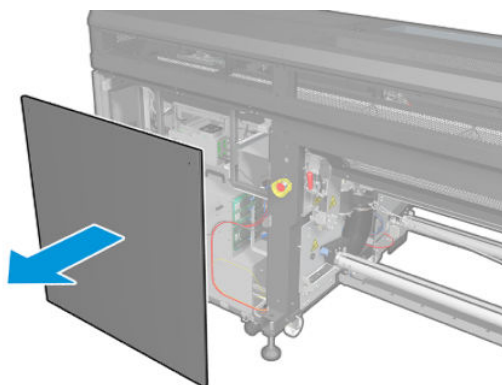
5. Remove the T-20 screw from the e-box support and pull it out carefully.
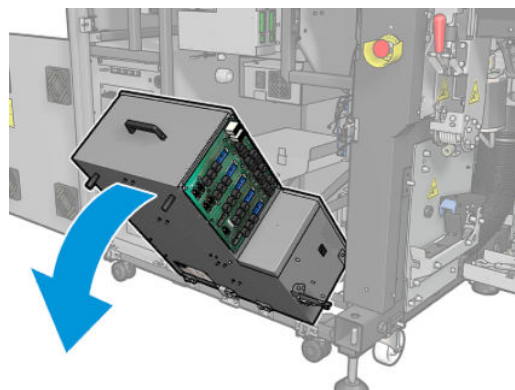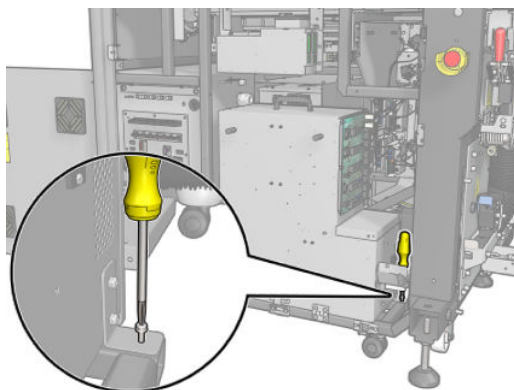
Clean the e-box fan filter

1. Pull off the plastic fan filter cover.
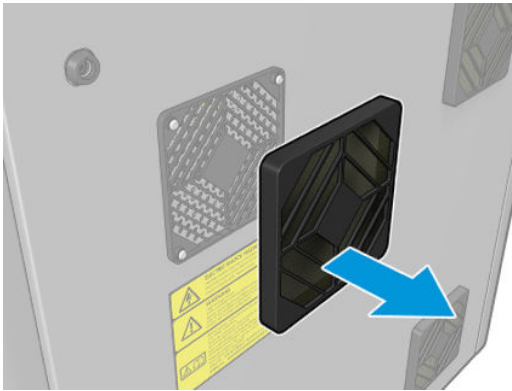
2. Take the fan filter and clean by blowing it with the air gun. Be careful to locate it back correctly: it must cover the fan's square surface.

> **⚠ WARNING!** The air gun provided with the printer is only intended to inflate the spindle. When recommended to use for cleaning purposes, make sure to do so according to local regulations since additional safety provisions may apply.
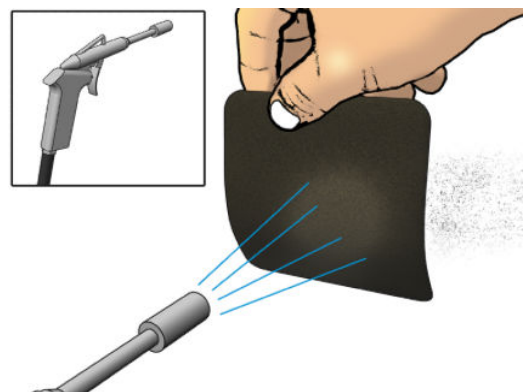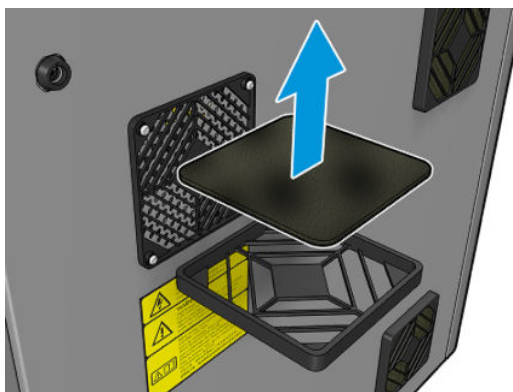
3. Put back the fan cover.
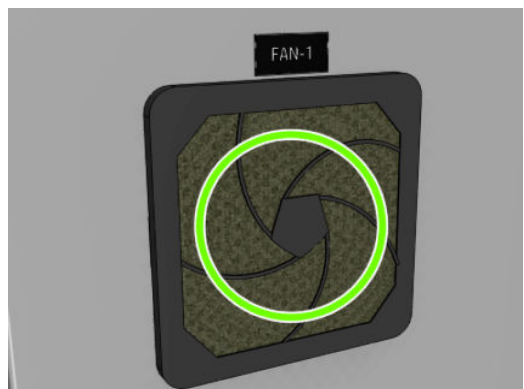
Clean the e-cabinet fan filters

Prepare to clean the e-cabinet fan filters

1. Ensure that the printer is not printing.

2. Locate the fan filters on the printer.
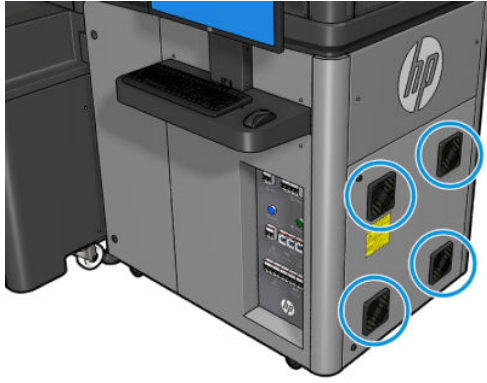
Clean the e-cabinet fan filters

1. Pull off the plastic fan filter cover.
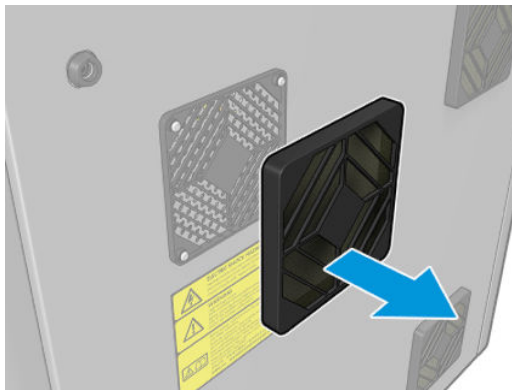
2. For each fan, take the fan filter and clean by blowing it with the air gun. Be careful to locate it back correctly: it must cover the fan's square surface.

⚠ **WARNING!** The air gun provided with the printer is only intended to inflate the spindle. When recommended to use for cleaning purposes, make sure to do so according to local regulations since additional safety provisions may apply.
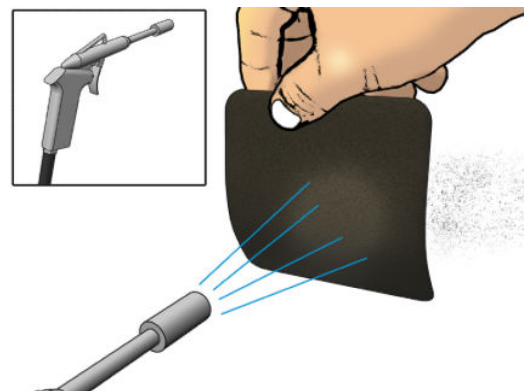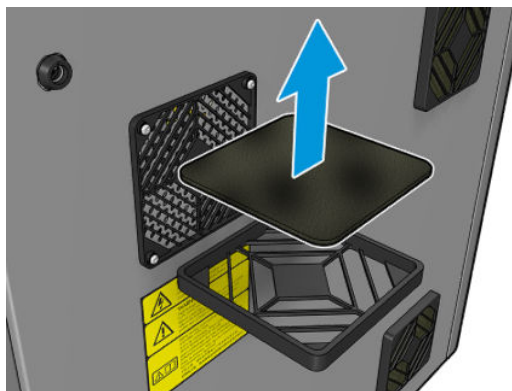
3. Put back the fan cover.
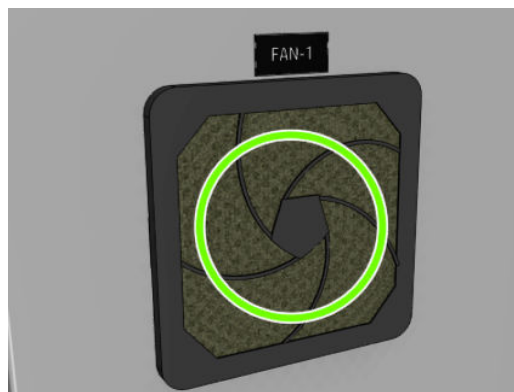
Clean the output cover

Hazardous moving part

For more safety information, see

If condensation is seen on the inside of the window over the middle of the printer, wipe it with a dry cloth.

Prepare to clean the output cover

1. Ensure that the printer is not printing.

2. Unload the substrate.

3. Turn off the printer in the correct way for maintenance operations: see .

Open the output cover to the maintenance position

1. Remove the stopper, using a flat screwdriver.
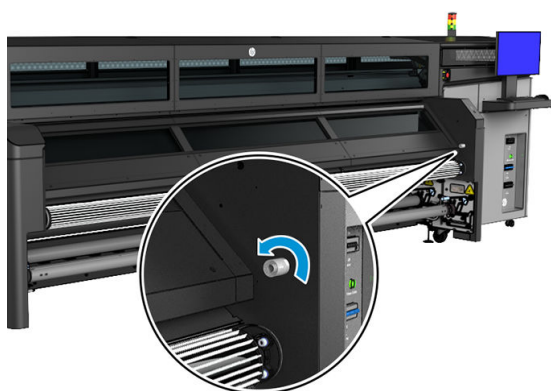
2. Open the output cover.
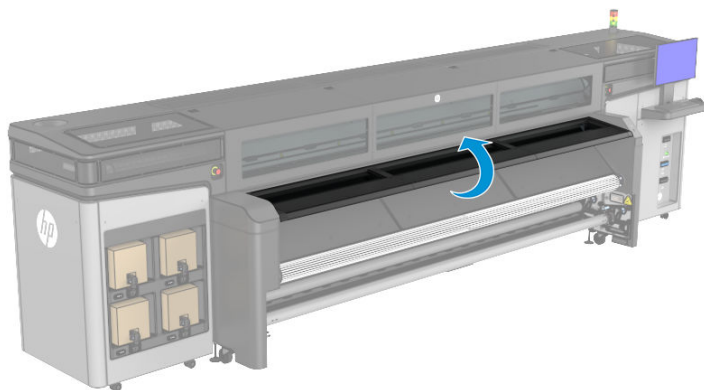
Clean the output cover

1. Use a dry cloth to remove the aerosol from the internal surface of the output cover.

2. Use a dry cloth to remove the aerosol from the surface of the bottom plate.
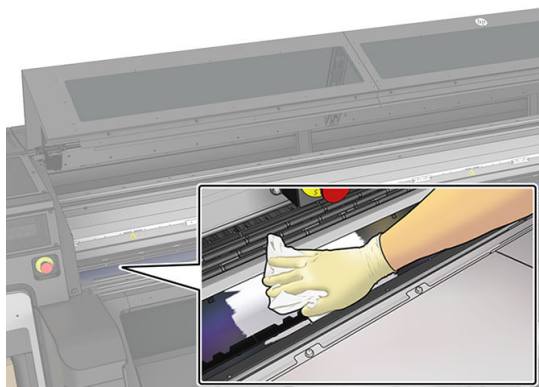
Return the output cover to a safe position

1. Close the output cover.

2. Attach the stopper, using a flat screwdriver.

3. Turn on the printer in the correct way for maintenance operations: see Turn the printer on on page 126.

Clean the carriage cooling fan

Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard

For more safety information, see Safety precautions on page 2

Prepare to clean the carriage cooling fan

1. Ensure that you have the printer cleaning kit, provided with your printer.

2. Ensure that the printer is not printing.

3. Unload the substrate.

4. Ensure that all windows, covers, and doors are closed and remain in their original positions.

5. Move the printhead carriage to the service position.

6. Move the carriage beam to its highest position.

7. Turn off the printer in the correct way for maintenance operations: see Turn the printer off on page 125.

8. Open the carriage cover.

Clean the carriage cooling fan

1. Move the carriage by hand to the left if needed in order to access the carriage cooling fan.

2. Clean the carriage cooling fan with a lint-free cloth dampened with distilled water. See also General cleaning instructions on page 11.
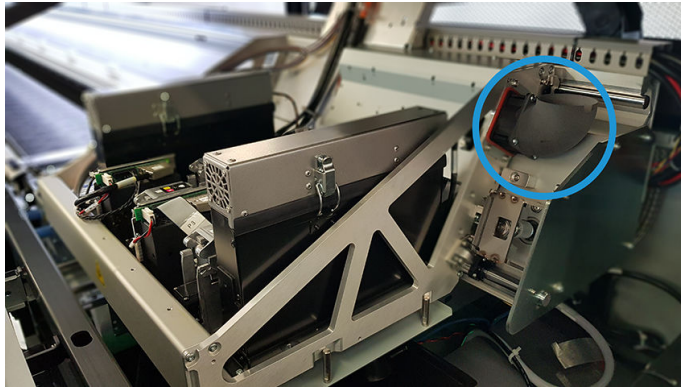
Finish cleaning the carriage cooling fan

1. Ensure that the cleaned parts are completely dry and all vapor has totally evaporated.

2. Close the carriage cover.

3. Turn on the printer in the correct way for maintenance operations: see Turn the printer on on page 126.

4. Move the carriage back to its working position.

Clean two dryer PCA fan filters

| Crush hazard | Risk of trapped fingers | Hazardous moving part | Electric shock hazard | Moving fan blades |

For more safety information, see Safety precautions on page 2

Prepare to clean two dryer PCA fan filters

1. Turn off the printer and the power-enable switch.

2. Locate the rear right panel assembly.

Clean the right dryer PCA fan filter

1. Remove the two T-20 screws that attach the rear right panel assembly.
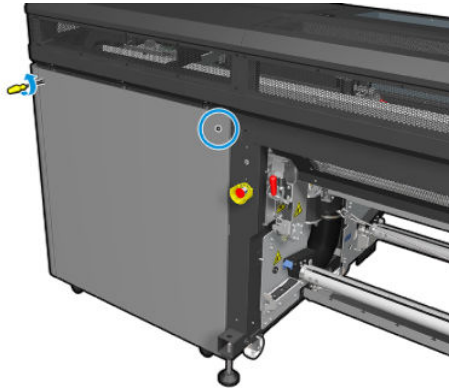
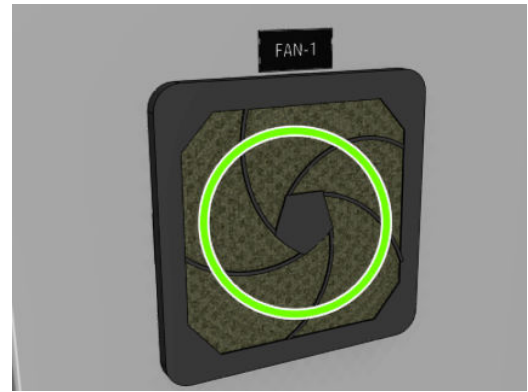2. Remove the rear right panel assembly and locate the first Dryer PCA fan filter.
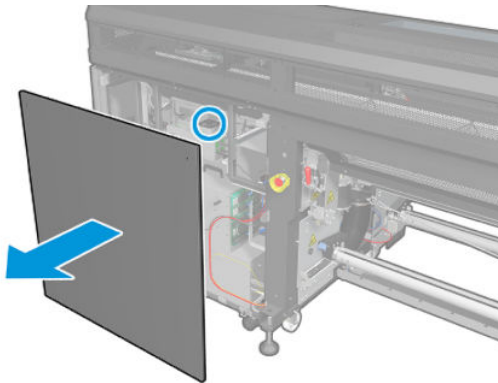
3. Pull off the plastic fan filter cover.

4. Take the fan filter and clean by blowing it with the air gun.

   ⚠ **WARNING!** The air gun provided with the printer is only intended to inflate the spindle. When recommended to use for cleaning purposes, make sure to do so according to local regulations since additional safety provisions may apply.
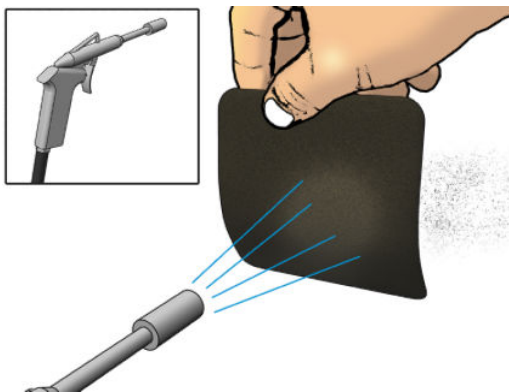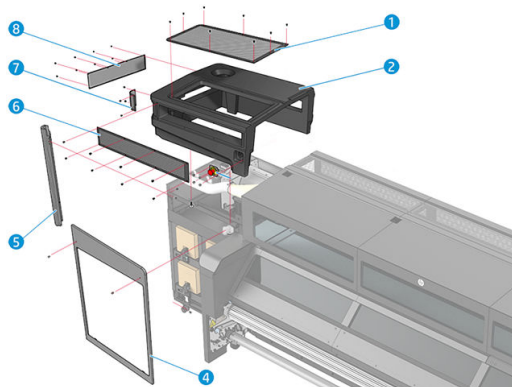

5. Put back the fan cover. Be careful to put it back correctly: it must cover the fan's square surface.

Clean the left dryer PCA fan filter

1. Remove the seven screws that attach the top left perforated metal sheet (1 in figure below).

2. Locate the fan and pull off the plastic fan filter cover.

3. Take the fan filter and clean by blowing it with the air gun.

    ⚠ WARNING!   The air gun provided with the printer is only intended to inflate the spindle. When recommended to use for cleaning purposes, make sure to do so according to local regulations since additional safety provisions may apply.
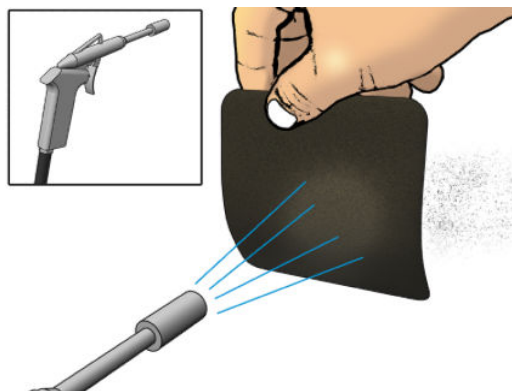
4. Put back the fan cover. Be careful to put it back correctly: it must cover the fan's square surface.
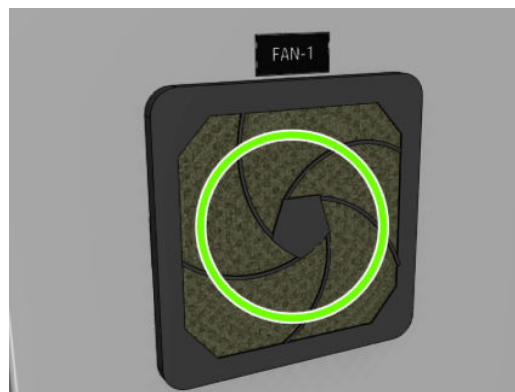
Empty the printhead cleaning waste bottle

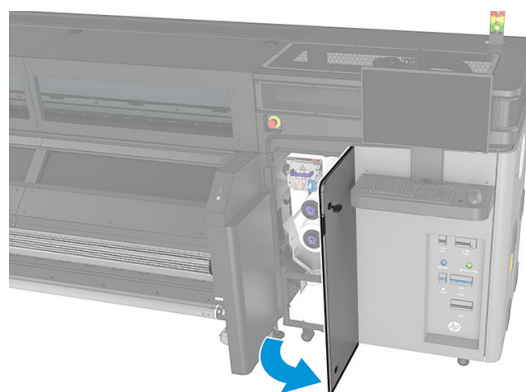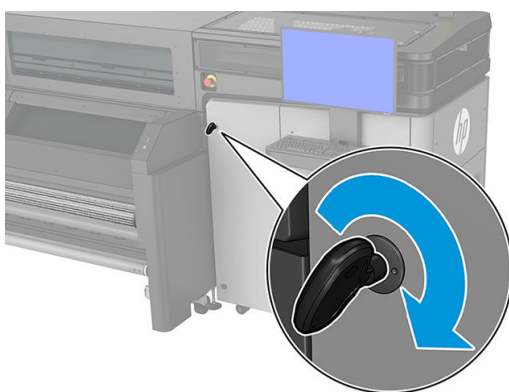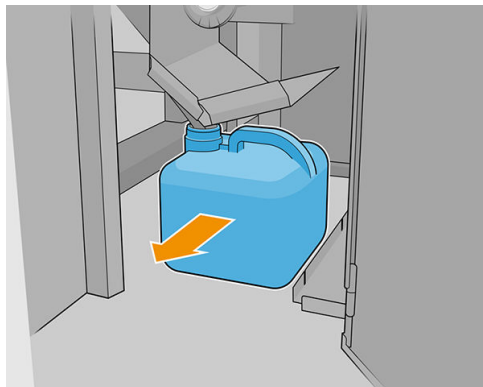|			
Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard

For more safety information, see Safety precautions on page 2

1. Ensure that the printer is not printing.

2. Unlock and open the printhead cleaning roll door.

3. Remove the waste bottle.

💡 **TIP:** You are recommended to wear gloves for this operation.

4. Empty the waste bottle.

📝 **NOTE:** The bottle contains a mixture of ink additives and water. Dispose of this mixture according to local regulations. You can find the Safety Data Sheets (SDS) for the ink at http://www.hp.com/go/msds.

5. Put the emptied bottle back in place. Take care that the mouth of the bottle is well positioned to receive the liquid falling from above.
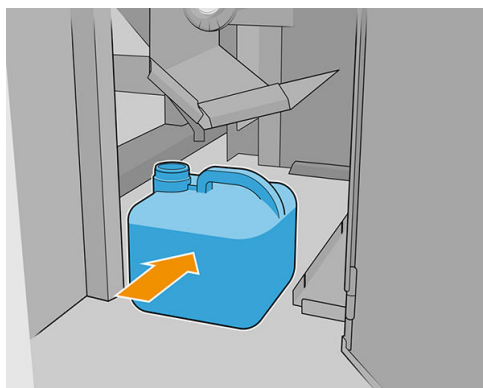
6. Close and lock the printhead cleaning roll door.

750 liter maintenance

Before any cleaning maintenance, ensure that you have turned the printer off, and be careful to follow the appropriate safety precautions.

Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard

For more safety information, see

The following maintenance procedures are required every 750 liters:

- Clean the drive roller and pinchwheels
- Clean and lubricate the scan axis and mechanical transmissions
- Clean and lubricate the drop-detector rods
- Clean the scan-axis encoder

Clean the drive roller and pinchwheels

Crush hazard	Risk of trapped fingers	Hazardous moving part

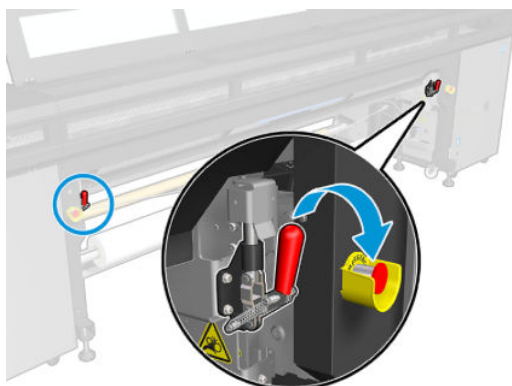For more safety information, see Safety precautions on page 2

The drive roller should be cleaned whenever it is visibly dirty, or when you notice that substrate advance is no longer smooth and regular.

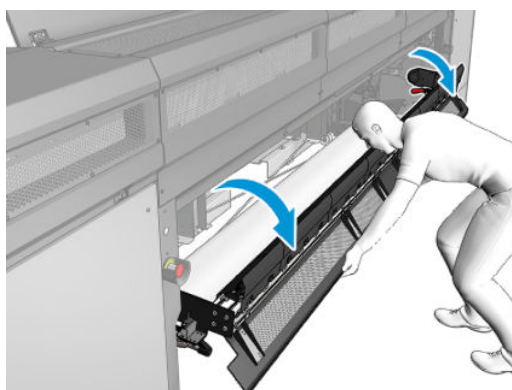## Prepare to clean the pinchwheels and drive roller

1. Ensure that the printer is not printing.
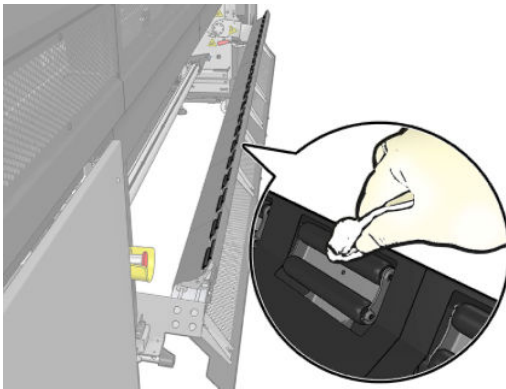
2. Unload the substrate.

Clean the pinchwheels

1. Open the latches.

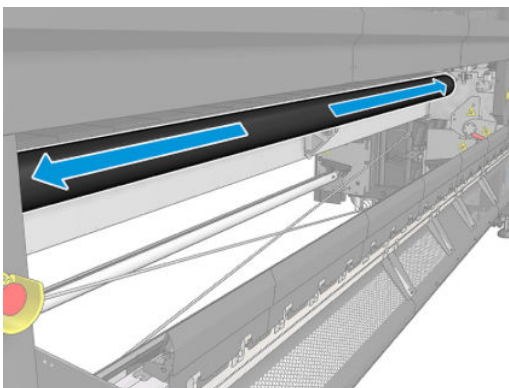2. Pull the pinchwheel module to its lowest position.

3. Clean the pinchwheels carefully with a cloth dampened with water; do not use petroleum-based cleaning liquids.

Clean the drive roller

1. Start the drive roller moving slowly backwards.

2. Clean the roller with a clean cloth dampened with water; do not use petroleum-based cleaning liquids.

   ⚠ **CAUTION:** Take care not to allow the roller to trap your hands while cleaning (this is less likely if it is moving backwards).

3. Stop the drive roller.

4. Wait until the roller is dry.

5. Return the pinchwheel module to its original position and close the latches.

Clean and lubricate the scan axis and mechanical transmissions

| Crush hazard | Risk of trapped fingers | Hazardous moving part | Electric shock hazard | Risk of cutting fingers |

For more safety information, see Safety precautions on page 2

Prepare to clean the carriage rails

1. Ensure that you have the printer maintenance kit, which includes two right oiling felts, two left oiling felts, the required tools (Torx 8 and 3 mm Allen key) to remove and replace the screws holding them to the carriage and cloths.

2. The oiling felts are already soaked in oil, but lubricating oil bottles are included in case it has been used up already for some reason (for example, the environment caused dirt/dust accumulation), and has been noticed that the carriage rails were dry even after the felts have passed along them. You can add one drop of oil into the felt (be careful as oil could spill) via the holes indicated:
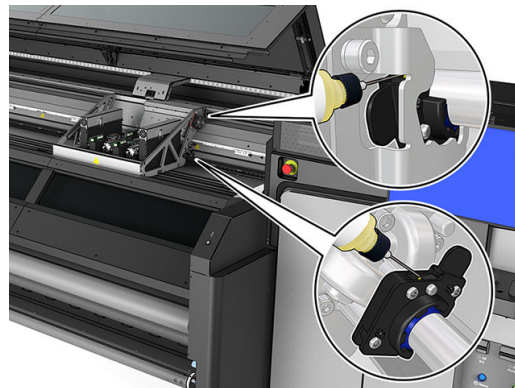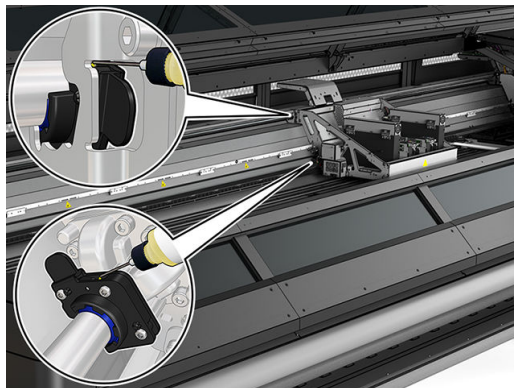

3. Ensure that the printer is turned off in the correct way for maintenance operations: see .

4. You are recommended to wear gloves when manipulating oiled parts (not for fastening/unfastening screws).

5. Ensure that all windows, covers, and doors are closed and remain in their original positions.

Clean the carriage rails

1. Open the front window in order to access the carriage rails.

   IMPORTANT: Take care not to damage the strip encoder.
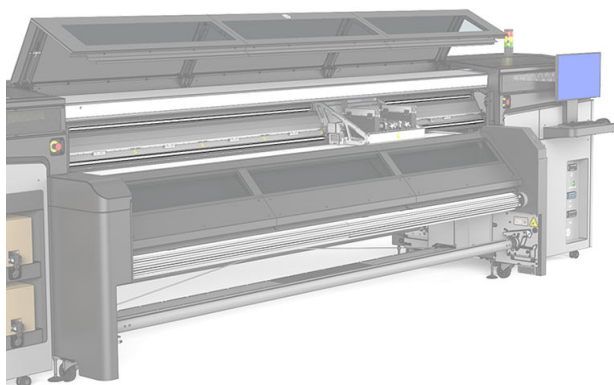
2. Clean the carriage rails with absorbent kitchen paper or with one of the cloths provided. See General cleaning instructions on page 11.

TIP: It may help to use a small ladder or similar to better reach the carriage rails.

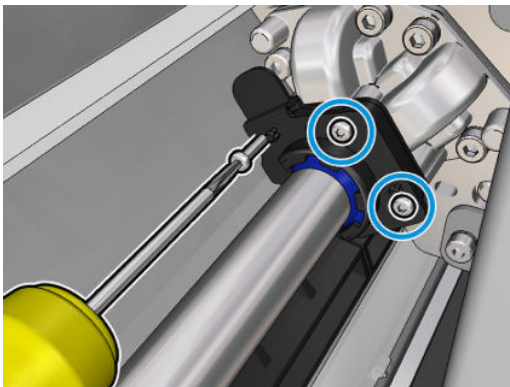**IMPORTANT:** Take special care when cleaning the front lower rail to avoid cutting yourself with or breaking the encoder strip.
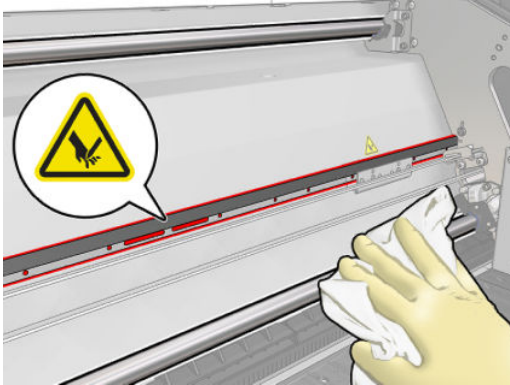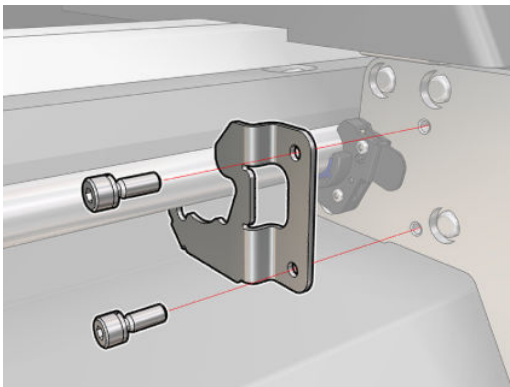

Replace the oiler felts

1. Remove the left oiler-felt screws, using a Torx 8 screwdriver and 3 mm Allen key to unfasten the screws.
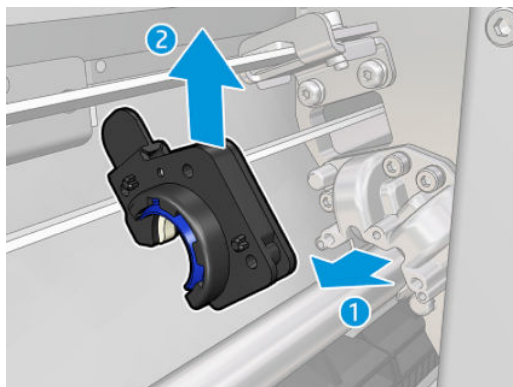
IMPORTANT: Take care not to lose the screws once removed.


2. Remove and guard the metal part covering the rear oiling felt.

3. Move the felts to be replaced a few millimeters away from the carriage and then pull them out of the carriage rail (turning them clockwise or counterclockwise will help). Dispose of the used/dirty felts as waste material.

4. Take the two clean left oiling felts from the printer maintenance kit and install them.

    Make sure that once installed the blue plastic part in the oiler felt has to be outwards (not inwards).
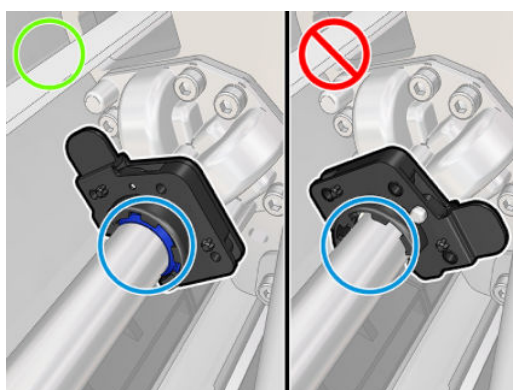
5. Insert the oiling felts into each rail and slide towards the carriage. Notice the cross shaped features in the oiler felt housing shown below have to go into the holes provided in the carriage. Also, for the rear oiler felt notice two pins in the carriage have to pass through holes in the oiler felt housing.

6. Replace the screws previously removed to fix the felts to the carriage.

    📝 NOTE: For the rear felt replace the sheet metal part previously removed before replacing the screws.

7. Move the carriage manually to the left until the right felts are accessible.

8. Repeat steps 1, 2, 3, and 4 for the right felts.

1. Clean the right part of both carriage rails with a clean cloth because the carriage was covering that area before.

2. When finished move the carriage carefully back to the right until it stops.

3. Close the window.

4. Turn on the printer in the correct way for maintenance operations: see Turn the printer on on page 126.

Clean and lubricate the drop-detector rods

Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard

For more safety information, see Safety precautions on page 2

1. Turn off the printer in the correct way for maintenance operations: see Turn the printer off on page 125.

2. Open the carriage cover.

3. Put on gloves to protect your hands.

4. Clean both rods with a dampened lint-free cloth. See General cleaning instructions on page 11.

5. Put a few oil drops along the drop-detector rods.

6. Close the carriage cover.

7. Turn on the printer in the correct way for maintenance operations: see Turn the printer on on page 126.

Clean the scan-axis encoder

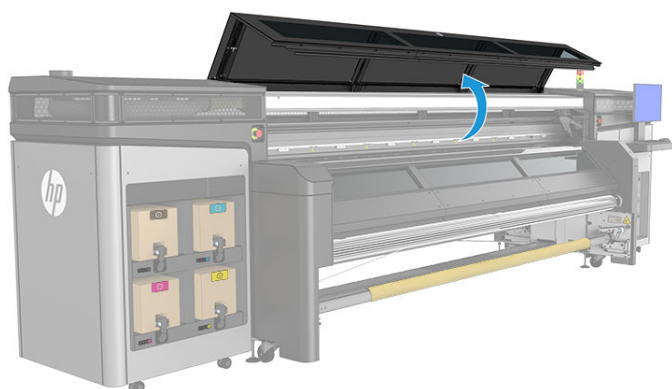| Crush hazard | Risk of trapped fingers | Hazardous moving part | Electric shock hazard | Moving fan blades |

For more safety information, see Safety precautions on page 2

Process
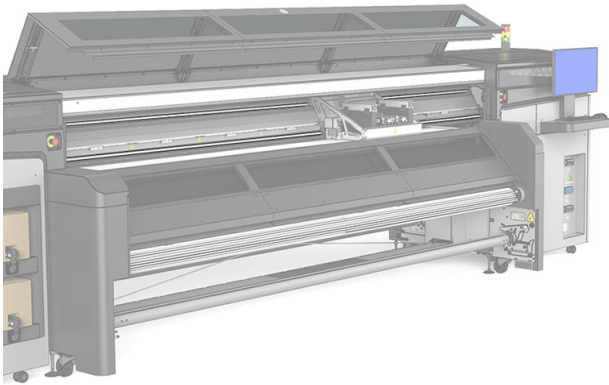
1. Turn off the printer in the correct way for maintenance operations: see Turn the printer off on page 125.

2. Open the window.

3.   Check whether the encoder strip needs to be cleaned. If so, gently clean it with a wipe. Take special care, as the strip is weak and easy to break. Clean the dirty areas only.

4.   Run the scan-axis length diagnostic test.

1500 liter maintenance

Before any cleaning maintenance, ensure that you have turned the printer off, and be careful to follow the appropriate safety precautions.

Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard

For more safety information, see Safety precautions on page 2

The following maintenance procedures are required every 1500 liters:

- Clean the substrate drive transmission
- Grease the printhead primers
- Clean impelling dust in scan-axis chain
- Clean the drying fans and diffuser
- Clean the drop-detector encoder strip
- Replace the printhead cleaning blade
- Replace the carriage oil wicks, felts, and clean and oil the scan axis rods
- Replace an intermediate tank
- Replace the e-cabinet fan filters
- Replace e-box fan filter
- Replace the dryer fan filters
- Replace a service station cap

Clean the substrate drive transmission

Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard	Risk of cutting fingers

For more safety information, see Safety precautions on page 2

Prepare to clean the substrate drive

1. Move the carriage beam to the highest position.

2. Turn off the printer in the correct way for maintenance operations: see Turn the printer off on page 125.

3. Open the loading table.

4. Carefully raise the plastic cover.

Clean the substrate drive

1. Clean the bronze gear through the space created, taking care not to damage the encoder.

2. Grease the transmission through the gap.

Grease the printhead primers

Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard

For more safety information, see Safety precautions on page 2

📝 **NOTE:** Perform this procedure when the system error 46.02.0Y:06 appears.

Prepare to grease the printhead primers

1. Ensure that the printer is not printing.

2. Ensure that all windows, covers, and doors are closed and remain in their original position.

3. Move the printhead carriage to the service position.

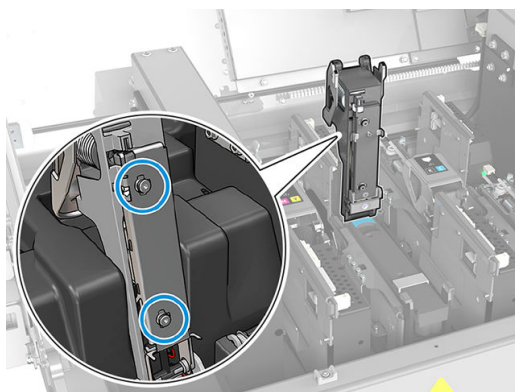4. Turn off the printer in the correct way for maintenance operations: see Turn the printer off on page 125.

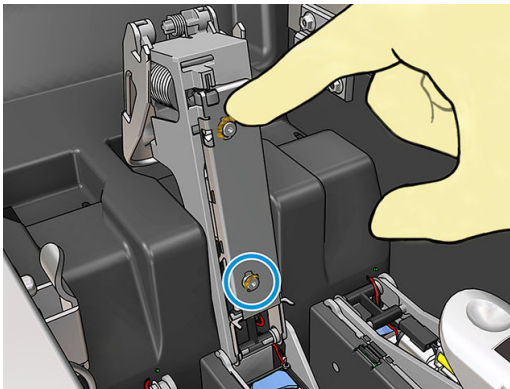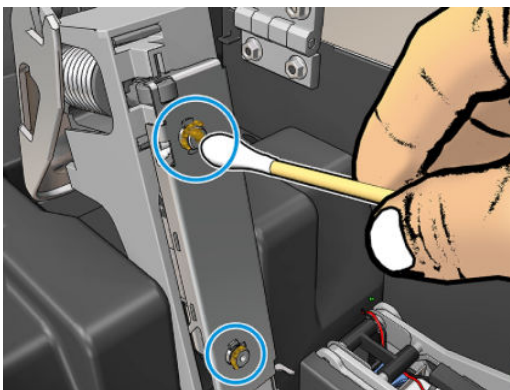5.   Open the carriage cover.

Grease the printhead primers

1.   Remove the carriage cover.

2.   After lifting the printhead covers, two 'O' rings can be seen that seal the joints between the printhead cover and printhead.

3. With a finger, apply a little grease to the 'O' rings to improve their performance. A suitable grease is available in a syringe from the cleaning kit.

The grease should be applied to the black rubber part only. If grease gets into the central hole, remove it with a toothpick or similar tool.

4. Close the printhead cover, the carriage cover, and the printhead access door.

Clean impelling dust in scan-axis chain

| Crush hazard | Risk of trapped fingers | Hazardous moving part | Electric shock hazard | Moving fan blades |

For more safety information, see Safety precautions on page 2

Prepare to clean impelling dust in scan-axis chain

1. Turn off the printer in the correct way for maintenance operations: see Turn the printer off on page 125.

2. Open the window.

Clean impelling dust in scan-axis chain

1. Visually check the carriage chain for dust, debris, or pieces of rubber, aerosol, and so on.

2. If any of the above are present, clean with a handheld home vacuum cleaner.

3. At the end of the 1500 liter maintenance task, a diagnostic runs to ensure correct function and performance.

Clean the drying fans and diffuser

Crush hazard	Risk of trapped fingers	Hazardous moving part

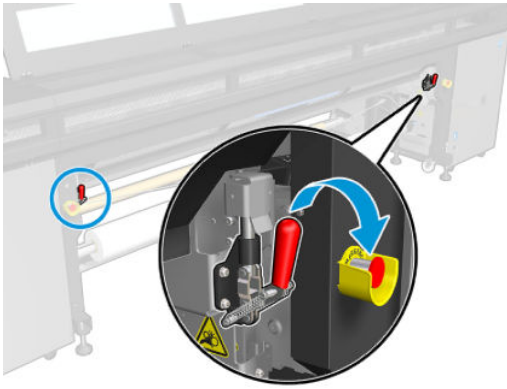For more safety information, see Safety precautions on page 2

The drive roller should be cleaned whenever it is visibly dirty, or when you notice that substrate advance is no longer smooth and regular.

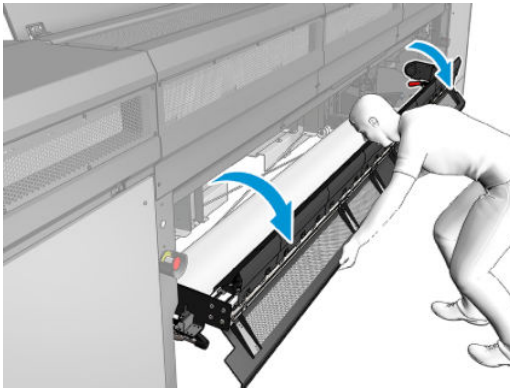## Prepare to clean the drying fans and diffuser

1. Ensure that the printer is not printing.

2. Unload the substrate.
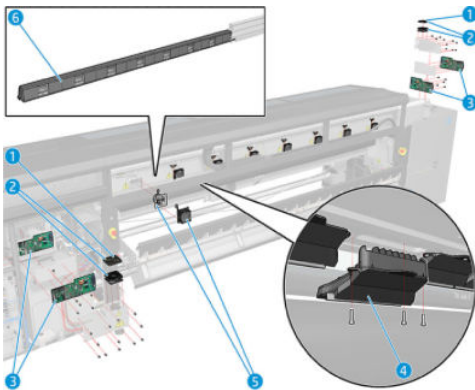
Clean the drying fans and diffuser

1. Open the latches.
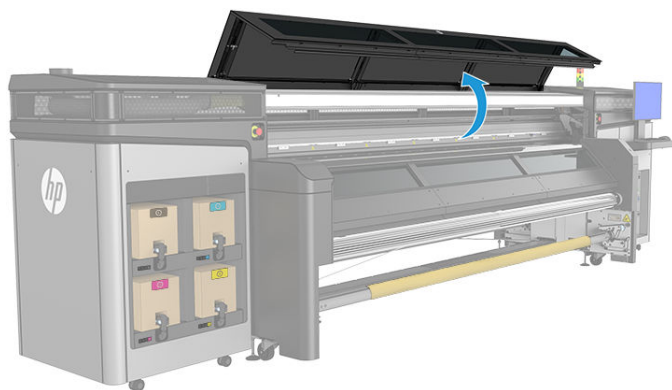
2. Pull the pinchwheel module to its lowest position.

3. Remove any dust from the drying fans with a lint-free cloth dampened with distilled water (5 in figure below). See General cleaning instructions on page 11.
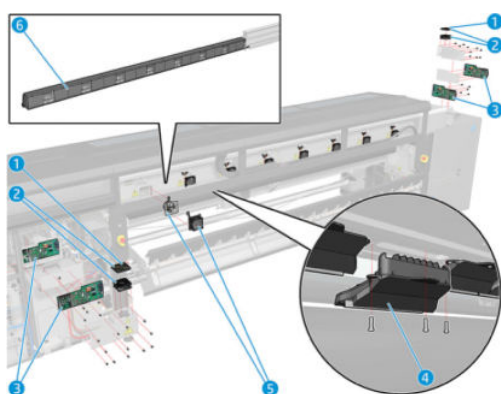

4. Wait until the drying fans are dry.

5. Return the pinchwheel module to its original position and close the latches.

6. Open the window.

7. Remove any dust from the drying diffuser, clean with a brush and vacuum the outlet nozzle of the heater diffusers (4 in figure below). Uninstall if not needed.

8. Close the window.

Clean the drop-detector encoder strip

| Crush hazard | Risk of trapped fingers | Hazardous moving part | Electric shock hazard |

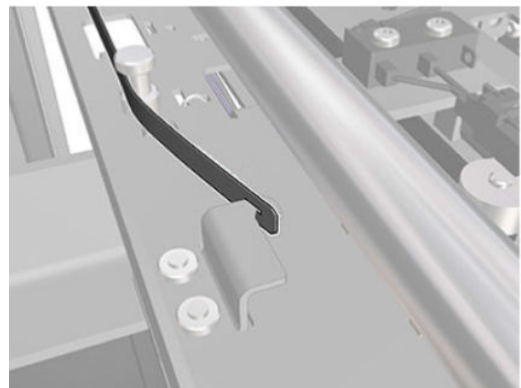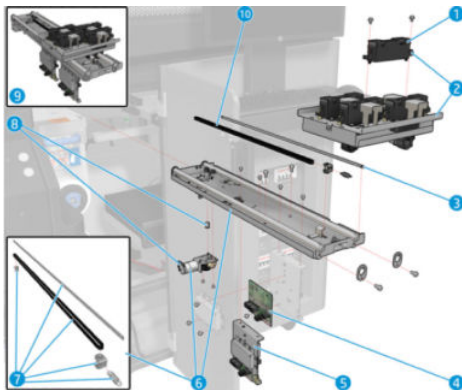For more safety information, see Safety precautions on page 2

1. Turn off the printer in the correct way for maintenance operations: see Turn the printer off on page 125.

2. Open the carriage cover.

3. Put on gloves to protect your hands.

4. If dirty, clean the drop-detector encoder strip with a lint-free cloth dampened with distilled water (3 in figure below). See General cleaning instructions on page 11.

5. Ensure that the cleaned strip is completely dry.

6. Close the carriage cover.

7. Turn on the printer in the correct way for maintenance operations: see Turn the printer on on page 126.

Replace the printhead cleaning blade

| Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard

For more safety information, see Safety precautions on page 2

Prepare to replace the rubber blade

1. Ensure that you have the printhead cleaning roll rubber blade kit, which is included in the printer maintenance kit but can also be purchased separately.

2. Ensure that the printer is not printing.

3. Open the carriage cover.

4. Put on gloves to protect your hands.

5. Open the pinchwheel (pull out and rotate the black plastic knob).
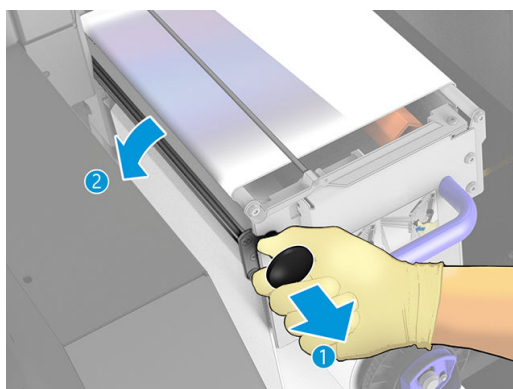
6. Move the printhead cleaning material aside in order to uncover the rubber blade.
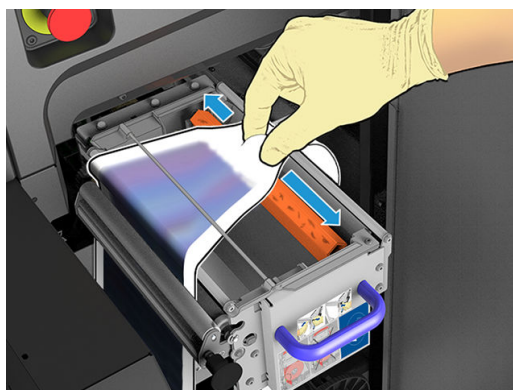
Replace the rubber blade

1. Move the rubber blade to the replacement position and remove it.
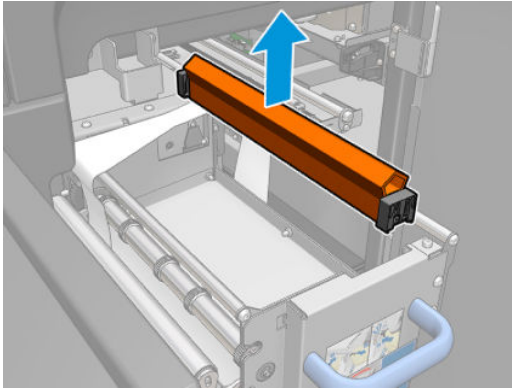
2. Place the new one in position.

📝 **NOTE:** The black element has to stay firmly in place on the corresponding printer support.
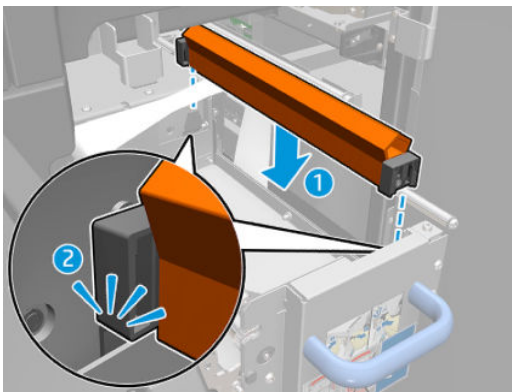
📝 **IMPORTANT:** Be careful not to damage the printhead cleaning material when replacing the rubber blade.

Finish off after replacing the rubber blade

1. Push the printhead cleaning material back into place and close the pinchwheel (using the black plastic knob).

2. Carefully push the printhead cleaning roll carriage back into its working position.

3. Close the carriage cover.

4. From printcare, run printhead cleaner calibration.

Replace the carriage oil wicks, felts, and clean and oil the scan axis rods

| Crush hazard | Risk of trapped fingers | Hazardous moving part | Electric shock hazard | Moving fan blades |

For more safety information, see Safety precautions on page 2

Removal

1. Open the carriage cover.

2. Move the carriage to its service position; but do not leave the carriage out of its home position too long.

3. Turn off the printer in the correct way for maintenance operations: see .

4. Unscrew the felts and wicks retainers as indicated.

Installation

1. Replace the required parts (foams and/or wicks).

2. Reassemble, close the window and switch the printer on again in order to move carriage to its capping position.

3. At the end of the maintenance, the scan axis friction test (Diagnostic) runs to ensure correct function and performance.

Replace an intermediate tank

Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard	Moving fan blades

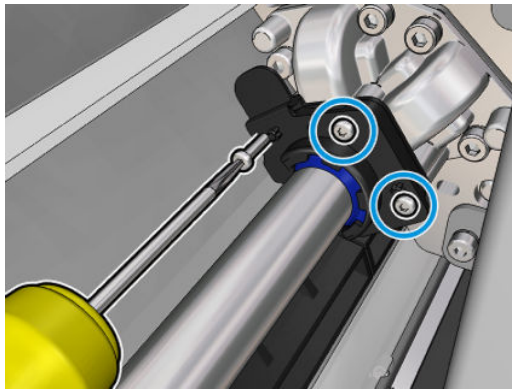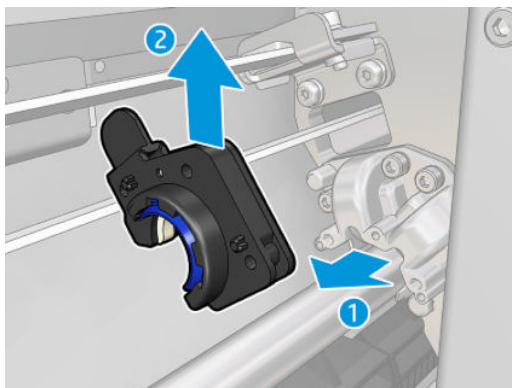For more safety information, see Safety precautions on page 2

1. Ensure that you have the Intermediate Tank Kit, which is included in the basic uptime kit.

2. Ensure that the printer is not printing.

3. Turn off the printer in the correct way for maintenance operations: see Turn the printer off on page 125.

Replace an intermediate tank

1. Remove the screws and the cover to access the intermediate tanks.
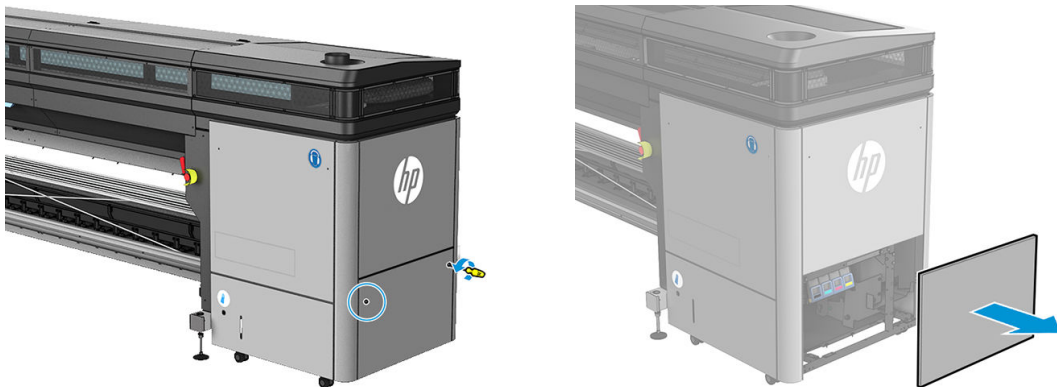
2. Remove all the intermediate tanks.
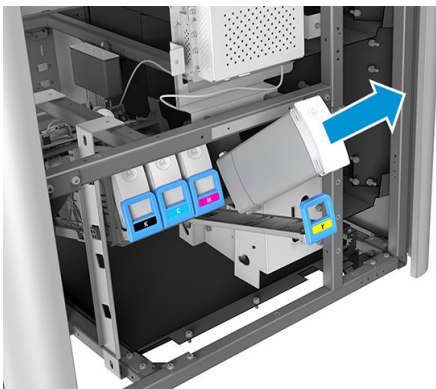
3. Reinstall all the intermediate tanks.

4. Replace the cover and fix with the screws.

Finish off after replacing an intermediate tank

1. Turn on the printer in the correct way for maintenance operations: see Turn the printer on on page 126.

2. Once the printer is on, restart the printer again in diagnostic mode.

3. Click **Next**, when prompted the printer will automatically run the diagnostic test to refill the intermediate tank.

    📝 **IMPORTANT:** Do not use the printer until the diagnostic has finished.

Replace the e-cabinet fan filters

Prepare to replace the e-cabinet fan filters

1. E-cabinet fan filters are provided with your printer in the printer cleaning kit: the necessary sets of two filters are provided; only one set is needed for this operation.
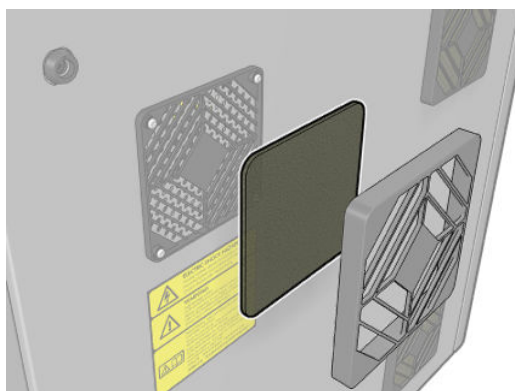
2. Ensure that the printer is not printing.

3. Locate the fan filters on the printer.

Replace the e-cabinet fan filters

1. Pull off the plastic fan filter cover.
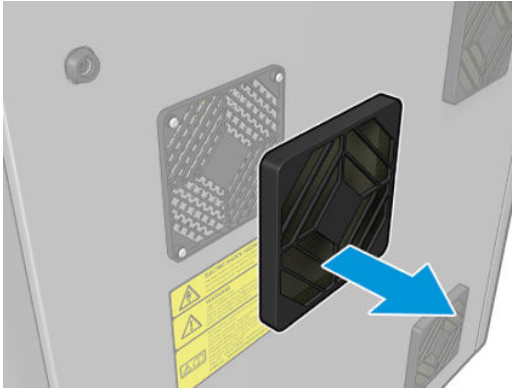
2. For each fan, change the fan filter for the new one provided. Be careful to locate it correctly: it must cover the fan's square surface.
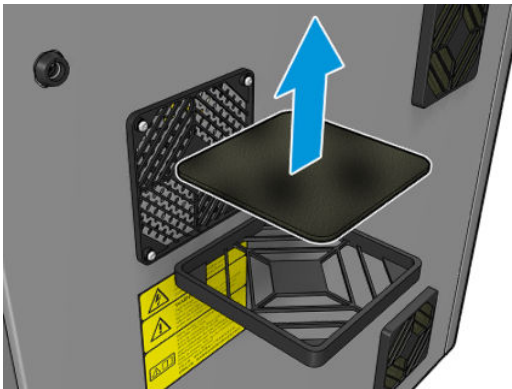
3. Put back the fan cover.
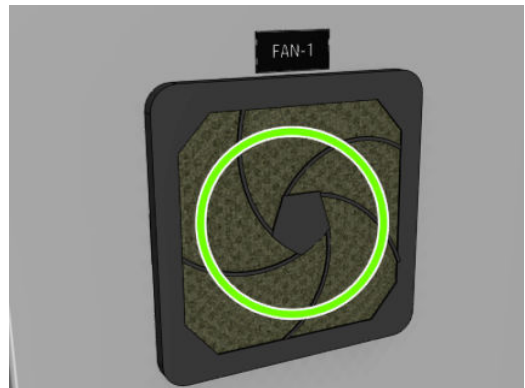
Replace e-box fan filter

| Crush hazard | Risk of trapped fingers | Hazardous moving part | Electric shock hazard | Moving fan blades |

For more safety information, see Safety precautions on page 2

Prepare to replace the e-box fan filter

The e-box fan filter is provided with your printer in the printer cleaning kit.

1. Turn off the printer and the power-enable switch.

2. Locate the rear right panel assembly.

3. Remove the two T-20 screws that attach the rear right panel assembly.
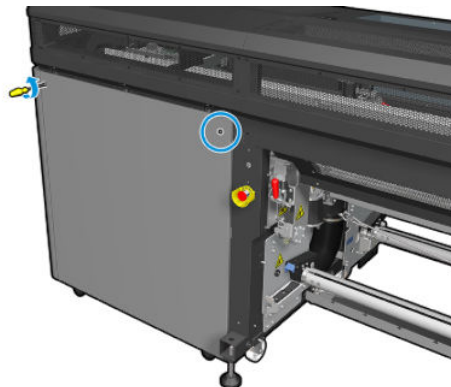
4. Remove the rear right panel assembly.
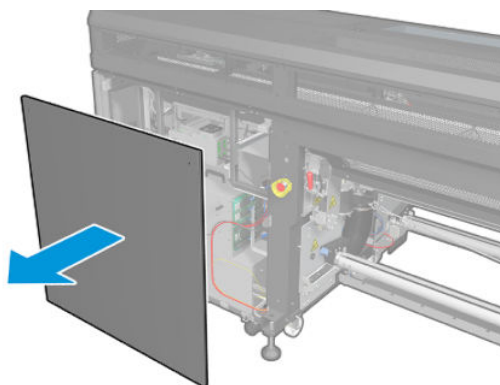
5. Remove the two T-20 screws from the e-box support and pull it out carefully.
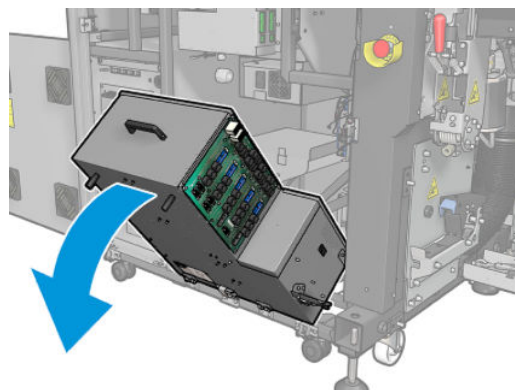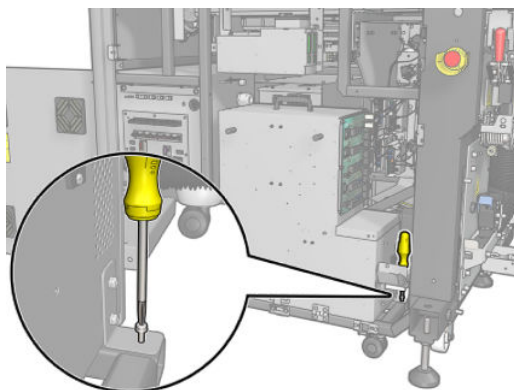
Replace the e-box fan filter

1. Pull off the plastic fan filter cover.
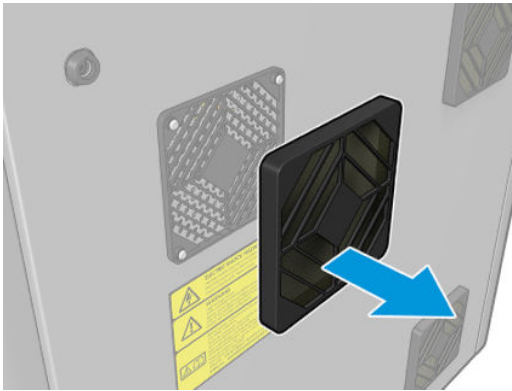
2. Change the fan filter for the new one provided. Be careful to locate it correctly: it must cover the fan's square surface.
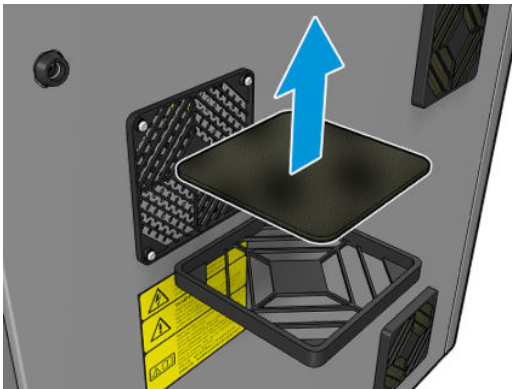
3. Put back the fan cover.
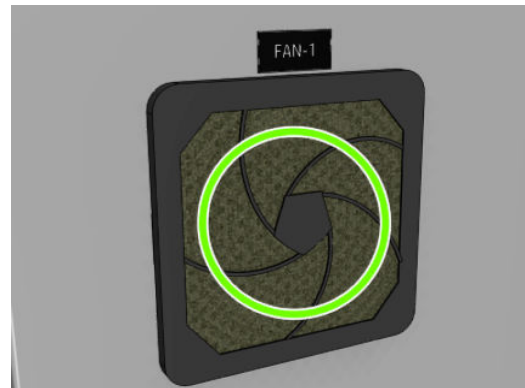
Replace the dryer fan filters

Before any cleaning maintenance, ensure that you have turned the printer off, and be careful to follow the appropriate safety precautions.

Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard

For more safety information, see Safety precautions on page 2

CAUTION: Be careful not to damage your hands.

CAUTION: Be careful not to transfer dirt to other printer parts.

1. Turn off the printer.

2. Open the dryer cover.

3. Remove filter clips with care.

4. Manually clean the filters with a normal vacuum cleaner.

Replace a service station cap

Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard

For more safety information, see Safety precautions on page 2

### Prepare to replace a service station cap

1. Ensure that you have the service station caps kit, which is included in the basic uptime kit.

2. Ensure that the printer is not printing.

3. Ensure that all windows, covers, and doors are closed and remain in their original position.

4. Move the carriage to the service position.

5. Turn off the printer in the correct way for maintenance operations: see Turn the printer off on page 125.

Replace a service station cap

1. Open the carriage cover.

2. Remove the service station cap by pressing on the four lateral fixings (two each side), and pulling up.
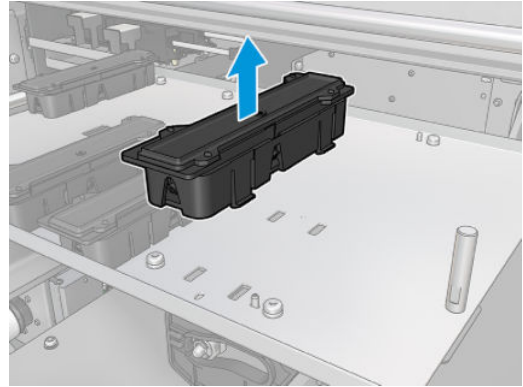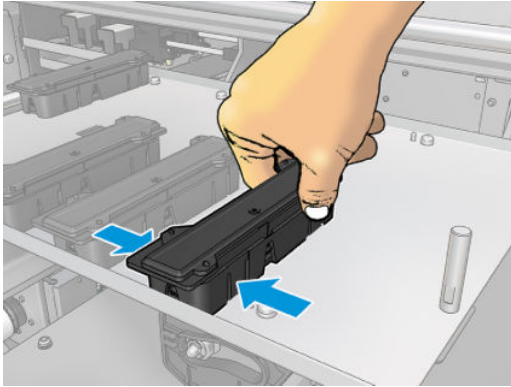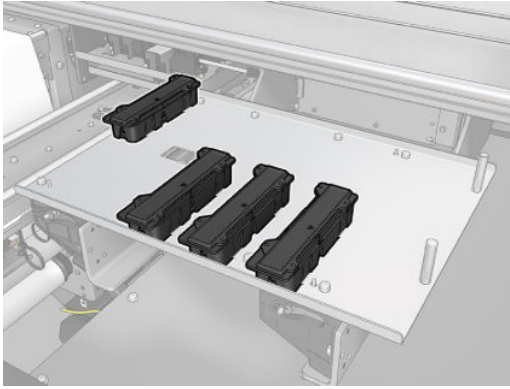
3. Take the new service station cap and install it by pressing the fixings to lock it into position.

📝 **IMPORTANT:** Make sure when in place, that the rubber surface that covers the service station cap is well located on the four pins.

Repeat this replacement process for all service station caps that have to be replaced.

Finish off after replacing a service station cap

1. Close the carriage cover.

2. Turn on the printer in the correct way for maintenance operations: see .

When required

Before any cleaning maintenance, ensure that you have turned the printer off, and be careful to follow the appropriate safety precautions.

Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard

For more safety information, see Safety precautions on page 2

Apart from the periodic cycle- and ink-consumption-based maintenance procedures, there are other maintenance tasks that have to be carried out when required:

- Printer safety check

- Check and clean the printheads

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- Clean the printhead contacts

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- Check and clean dirt from scan axis and mechanical transmissions

- Replace a pinchwheel submodule

- Replace a primer and latch

- Replace the aerosol fan module (trained expert users only)

- Replace an intermediate tank (trained users only)

- Replace an e-cabinet fuse

- Replace a spindle valve

- Replace the pinch clamp

- Replace spindle gear and end cap

- Replace the drying fan and resistor module

- Replace the spectrophotometer shutter

Printer safety check

Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard

For more safety information, see Safety precautions on page 2

Check the status of the alarms in the IPS. Check that the beacon works and there are no critical errors. Check the status of door and covers, make sure they are all closed before you start to print. Make sure the carriage beam is in the right position, and the loading table well closed.
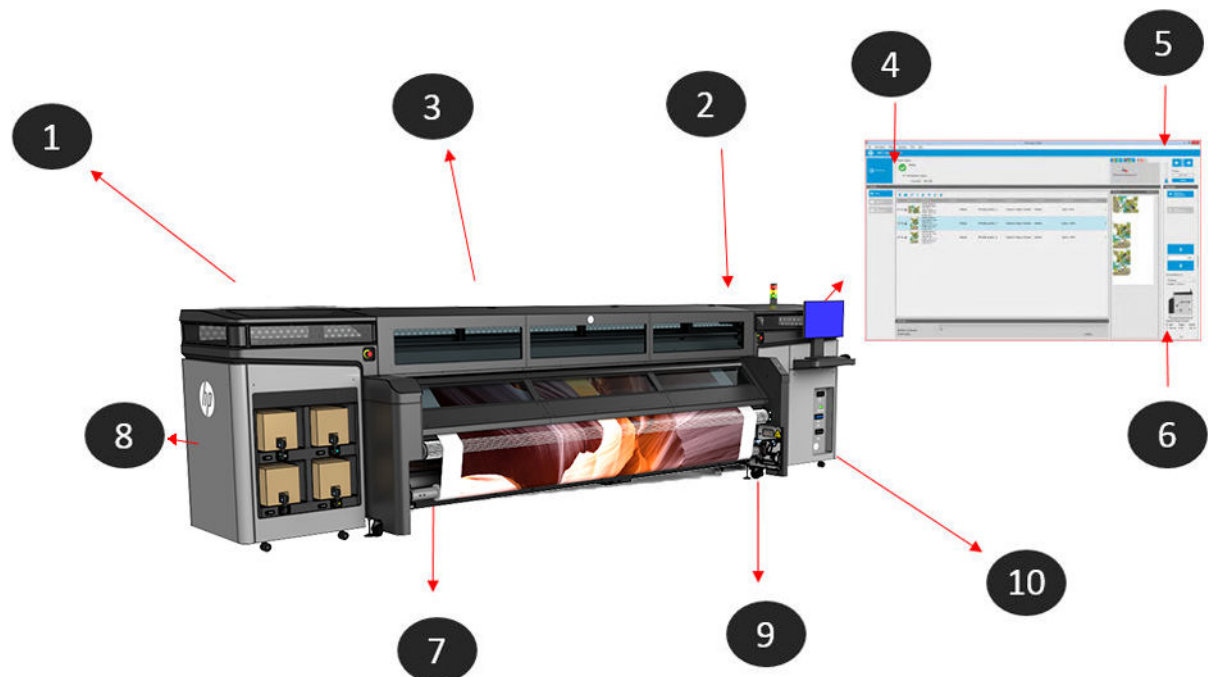
1. Check that all doors and covers are closed before you start to print.

2. Check that the beacon is indicating **Ready**.

3. Check that the carriage beam is in the right position for the task you are going to perform, see Set the carriage beam position on page 58 for more information. Make sure there is nothing left on the printzone that should not be there.

4. Check that the Internal Print Server is indicating **Ready** with no alerts or maintenance required. Take the corresponding actions if required.

5. Check the Internal Print Server that there are no messages referring to supplies.

6. Check the Internal Print Server that there are no messages referring to substrate load.

7. Check that the substrate is loaded correctly, the loading table is closed, and the substrate edge holders are in place.

8. Check that the cartridges and the waste bottle are correct, empty the waste bottle if needed.

9. Check that the printhead cleaning waste bottle is correct, empty if needed.

10. Check that e-Cabinet filters are clean and the e-Cabinet is closed.

Check and clean the printheads

Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard

For more safety information, see Safety precautions on page 2

1. Go to the Internal Print Server and click **Printer** > **Printhead cleaning**.

2. Click the **Check** button to perform routine cleaning automatically.

Clean the scan-axis beam

Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard

For more safety information, see Safety precautions on page 2

Prepare to clean the rear scan-axis beam

1. Ensure that you have a vacuum cleaner and an absorbent all-purpose cloth (not provided).
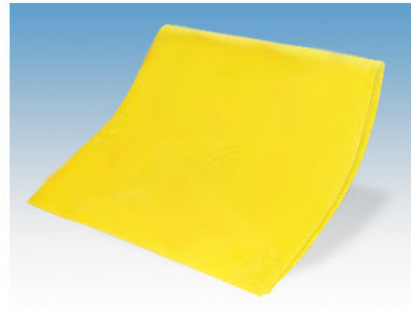
2. Ensure that the printer is not printing.

3. Ensure that all windows, covers, and doors are closed and remain in their original position.

4. Move the carriage to its leftmost position.

5. Turn off the printer in the correct way for maintenance operations: see Turn the printer off on page 125.

Clean the rear scan-axis beam

1. Open the window.
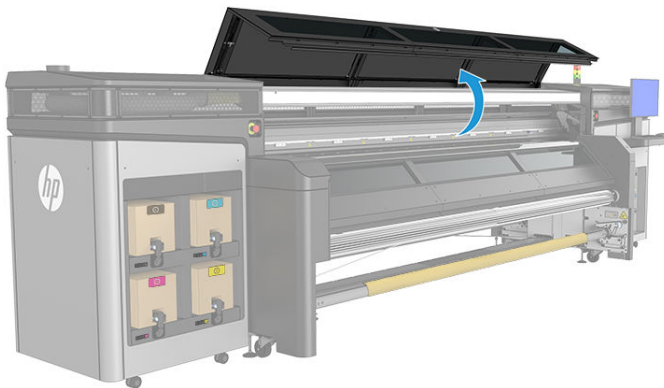
2. Move the carriage to the IDS side of the printer.

3. Remove the screws indicated below and remove the covers.
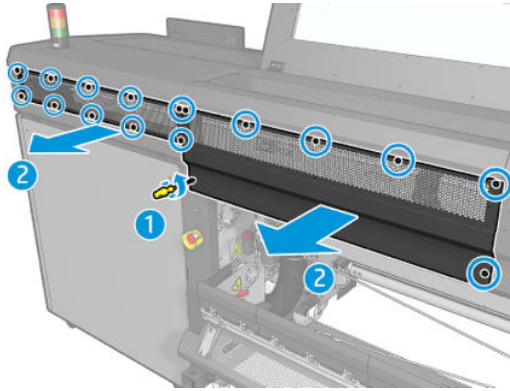
4. Clean the dust from the rear scan-axis beam, using a vacuum cleaner.
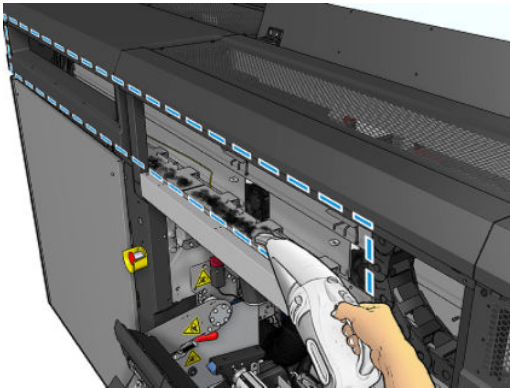
Alternatively, use an absorbent cloth, moistened with deionized water, to wipe off the dust. Ensure that the dust adheres to the cloth and does not fall into the printer.
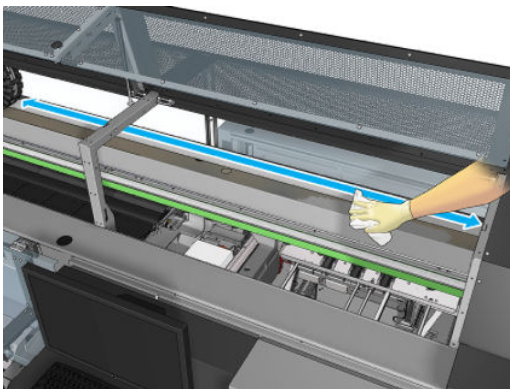
5. Use the absorbent cloth, moistened with deionized water, to wipe off any other dirt stuck to the scan-axis beam.

Finish off after cleaning the rear scan-axis beam

1. Lower the transparent cover and screw it into place.

2. Turn on the printer in the correct way for maintenance operations: see .

Clean the printhead contacts

⚠ **WARNING!**   This operation is limited to trained personnel only!

📝 **NOTE:**   During the installation of the printer, the designated personnel received training for safe operation and maintenance of the printer. It is not allowed to use the printer without this training.

⚠ **WARNING!**   Read and follow the safety precautions section to make sure you use the equipment safely: see Safety precautions on page 2. 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 to take appropriate measures to minimize the risks to yourself and to others.

| Crush hazard | Risk of trapped fingers | Hazardous moving part |

For more safety information, see Safety precautions on page 2

Prepare to clean the printhead contacts

1.   Ensure that you have the printer cleaning kit, which is provided with your printer.

2.   Ensure that the printer is not printing.

3.   Identify which printheads need cleaning, usually after the Internal Print Server recommends replacing or reseating them.

4.   Ensure that all windows, covers, and doors are closed and remain in their original position.

5.   Move the printhead carriage to the service position.

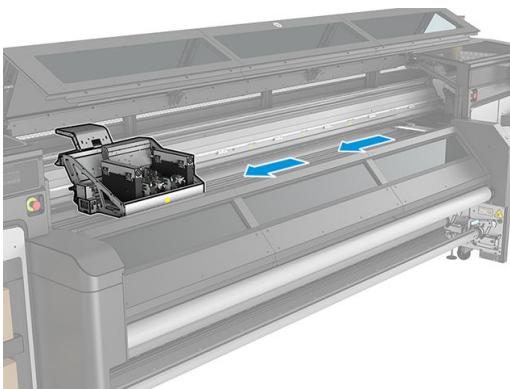6.   Turn off the printer in the correct way for maintenance operations: see Turn the printer off on page 125.

7.   Open the carriage cover.


Clean the printhead contacts (in the carriage slot)

1.   Carefully remove the printheads that may need cleaning from the carriage and protect them using their orange sealing caps.

⚠ CAUTION: Ensure that each printhead uses its own color cap.

💡 TIP: Remember which printhead came from which slot; the printer will report an error if you later replace a printhead in the wrong slot.

2.   Illuminate the printhead slot in the carriage and check the electrical connections to the printhead for dirt.

💡 TIP: Placing some white paper behind the electrical connections will improve contrast and may help you to check for dirt.

3.   Clean the dirty connections gently but thoroughly using a lint-free cloth. A piece of paper or cloth can be used to collect the dirt.

📝 IMPORTANT: Clean in a vertical movement, horizontal movement could damage the pins.
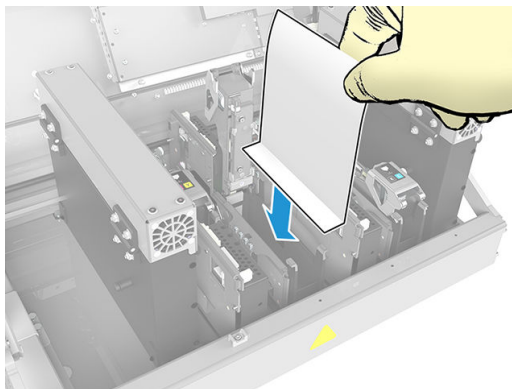
4. Remove the piece of paper or cloth to prevent the dirt from spreading.
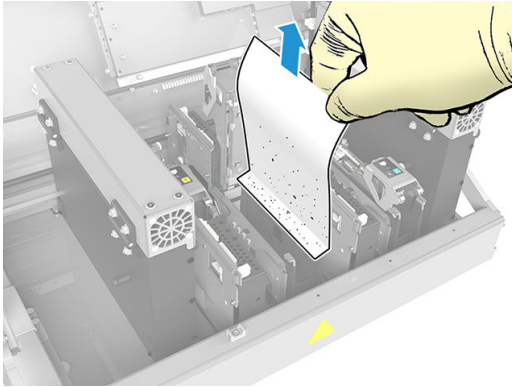
5. Illuminate the printhead slot again to check that the electrical connections are now clean and undamaged.

Clean the printhead contacts (on the printhead)

1. Use an appropriate wipe that doesn't lose fibers to carefully clean the EE connectors.

2. Attention: Only apply vertical movements because the EE connectors can be damaged if cleaned in other directions.

3. Take special care to clean the bottom part of the printhead pocket

4. Remove the printhead cap and locate the contacts.
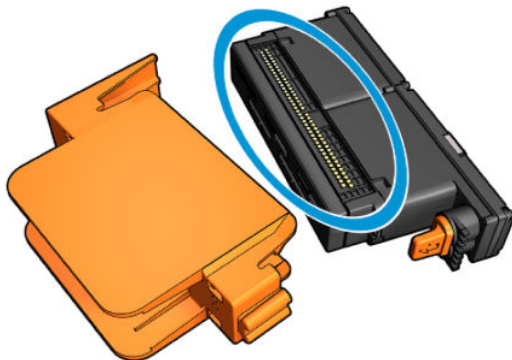
5. Clean the contacts.
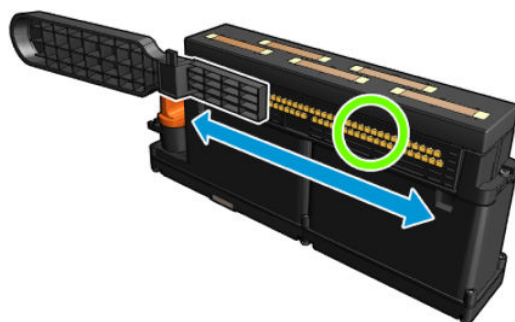
⚠ **CAUTION:** Do **not** use the printhead interconnect wiper to clean the nozzles!
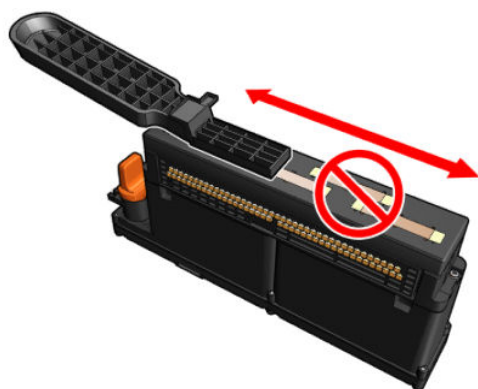
Finish off cleaning the printhead contacts

1. Wait until the contacts are dry.

2. Put back the printheads, each in the same slot from which it came.

3. Close the carriage cover.

4. Turn on the printer in the correct way for maintenance operations: see .

Clean the carriage rails manually

Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard

For more safety information, see

📝 **NOTE:** Perform this procedure only if the automatic cleaning procedure fails.

Prepare to clean the carriage rails manually

1. Ensure that the printer is not printing.

2. You are recommended to wear gloves.

3. Ensure that all windows, covers, and doors are closed and remain in their original position.

4. Move the carriage beam to its highest position.

5. Turn off the printer in the correct way for maintenance operations: see Turn the printer off on page 125.

6. Open the front door.
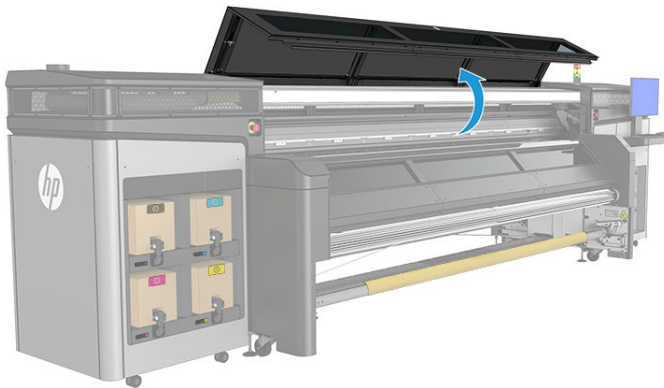
Clean the carriage rails manually

1. Standing at the front of the printer, clean the front rail using a lint-free cloth dampened with distilled water. See General cleaning instructions on page 11.
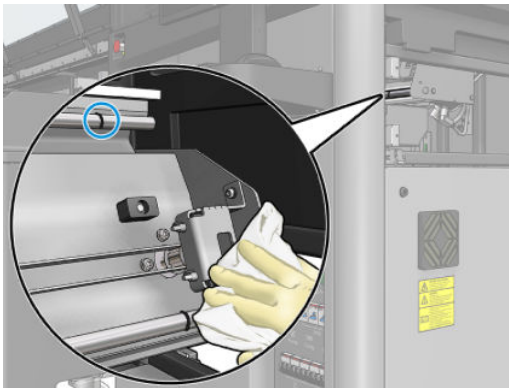
2. Close the front door.

3. Go to the rear of the printer and open the loading table.

4. Standing at the rear of the printer, clean the rear rail in the same way. You can access the rail from below, through the gap between the platen and the beam.
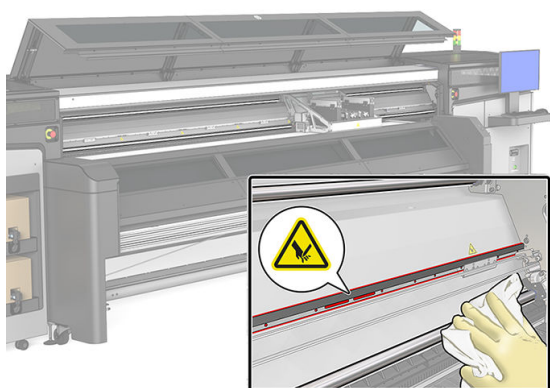
CAUTION: Be careful not to stain the encoder strip. Keep the cloth well away from the encoder housing.

5. Ensure that the cleaned parts are completely dry and all vapor has completely evaporated.

6. Close the loading table.

Finish off cleaning the carriage rails manually

1. Ensure that all windows, covers, and doors are closed and remain in their original position.

2. Turn on the printer in the correct way for maintenance operations: see .

Check and clean dirt from scan axis and mechanical transmissions

Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard	Moving fan blades

For more safety information, see

Process

1. Switch off the printer.

2. Open the window.

3. Clean the scan axis rails with a wipe. Take special care to clean the sides.
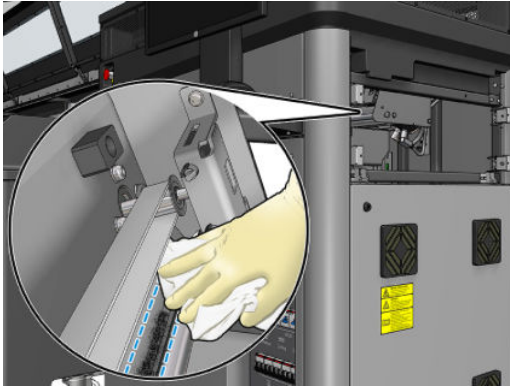
4. Lubricate the 2 rods with a few drops of oil.
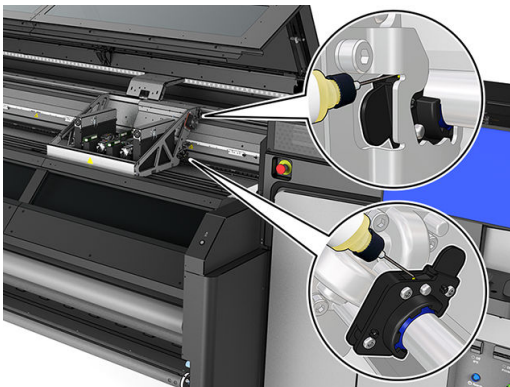
5. Run the scan axis length diagnostic test.

Replace a pinchwheel submodule

Prepare to replace a pinchwheel submodule

▲ Ensure that you have the pinchwheel assembly, which is included in the basic uptime kit.

Replace a pinchwheel submodule

1. Open the loading table.

2. Locate the pinchwheeel submodule that needs replacement.
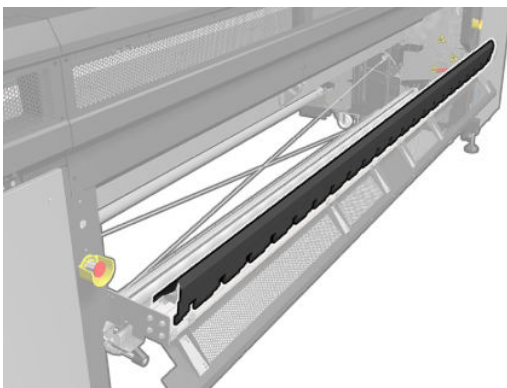
3. Remove the screws shown below.
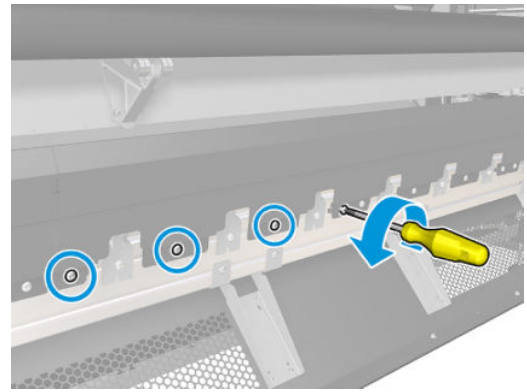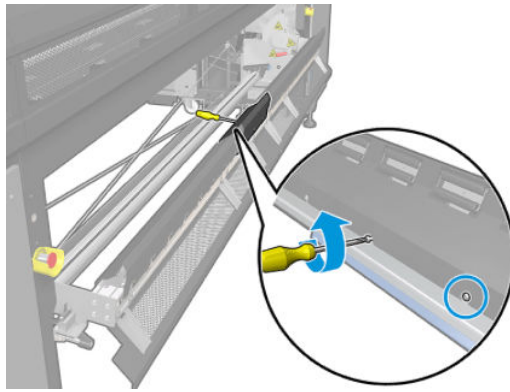
4. Remove the pinchwheel cover.
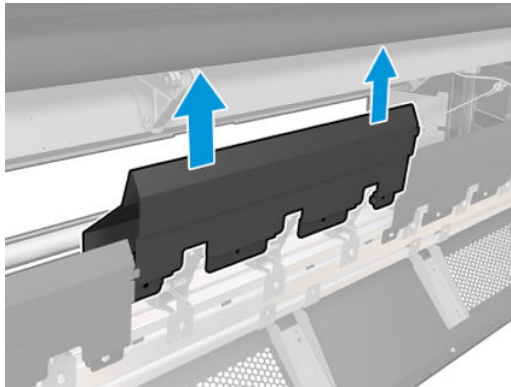
5. Remove the screws that attach the pinchwheel submodule.
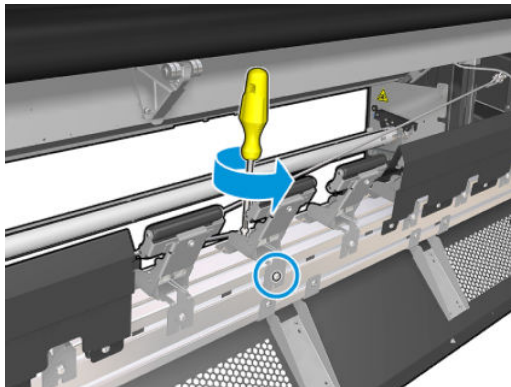
6. Remove the broken submodule.
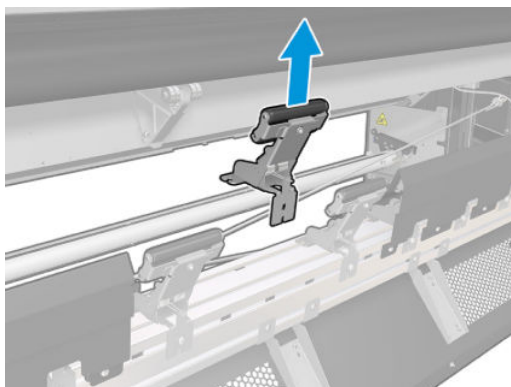
7. Place the new submodule and attach the screws.

8. Place the cover and insert the screws.

9. Close the loading table.

Replace a primer and latch

Crush hazard	Risk of trapped fingers	Hazardous moving part

For more safety information, see Safety precautions on page 2

Prepare to replace a primer

1. Ensure that you have the primer and latch kit, which is included in the basic uptime kit.

2. Ensure that the printer is not printing.

3. Ensure that all windows, covers, and doors are closed and remain in their original position.

4. Move the carriage to the service position.

5. Turn off the printer in the correct way for maintenance operations: see Turn the printer off on page 125.

6. Open the carriage cover.

Replace a primer and latch

1. Disconnect the two primer cable connectors at the back of the printhead that needs the primer replaced.
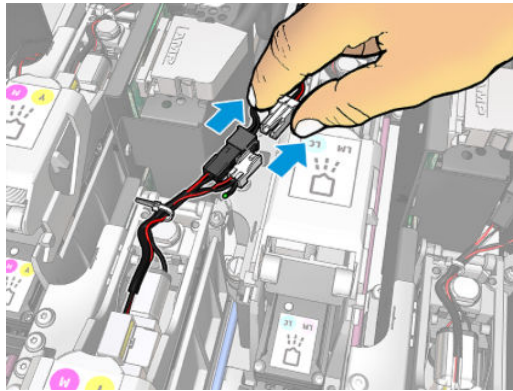
2. Release the handle. It is not usually necessary to remove the printhead.
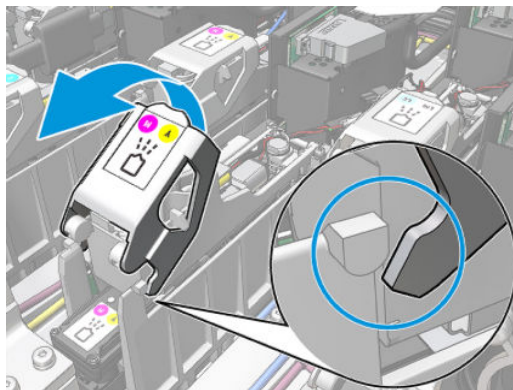
3. Loosen the T10 screw (do not remove the screw, just loosen it) and release the sheet metal tab.
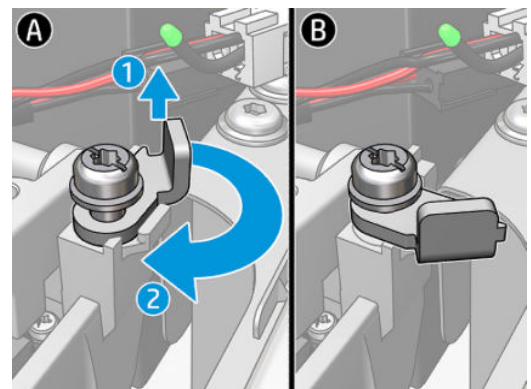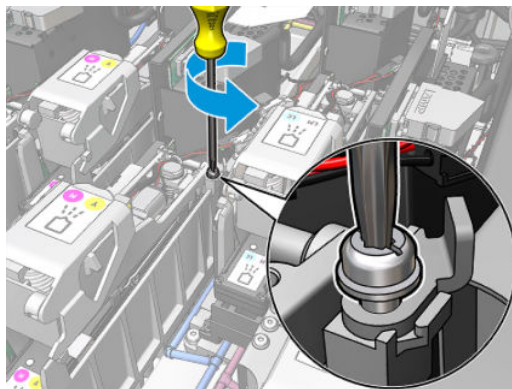
4. Remove the latch.
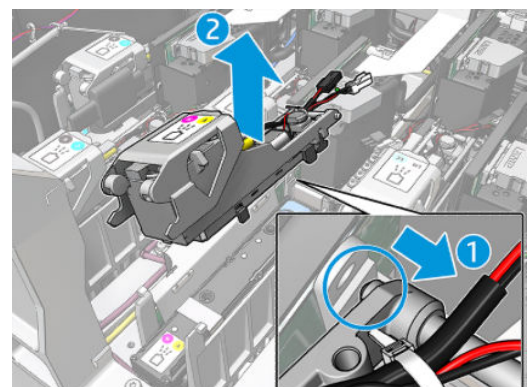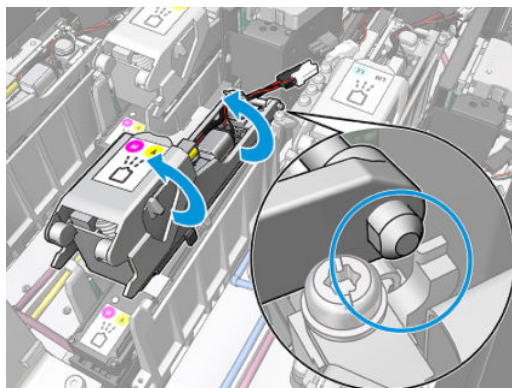
5. Stick the corresponding printhead color label on the latch. Be careful with the orientation.

6. Install the new latch with primer. Do not close the handle yet.
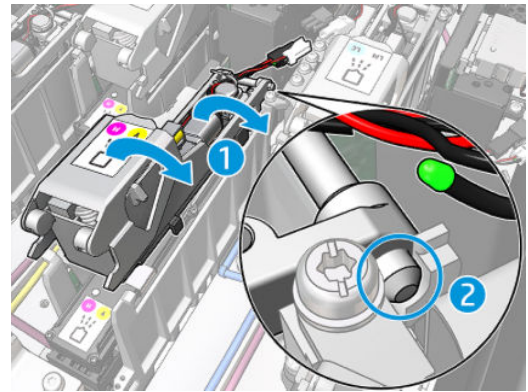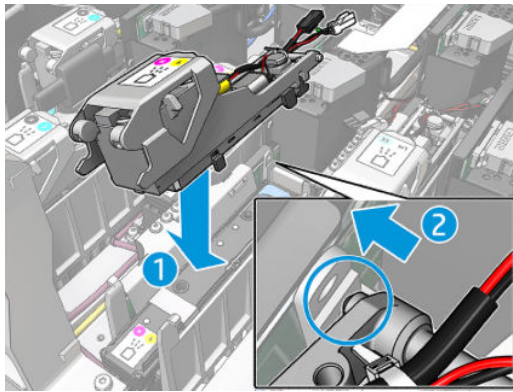
7. Close the sheet metal tab and tighten the T10 screw.
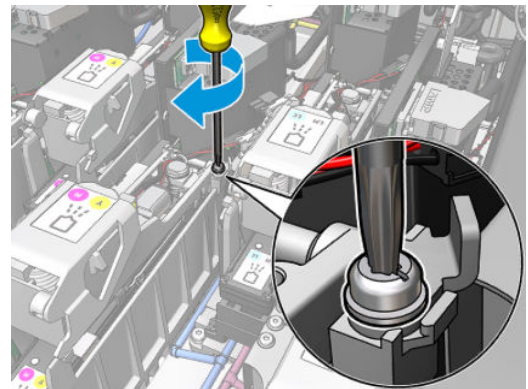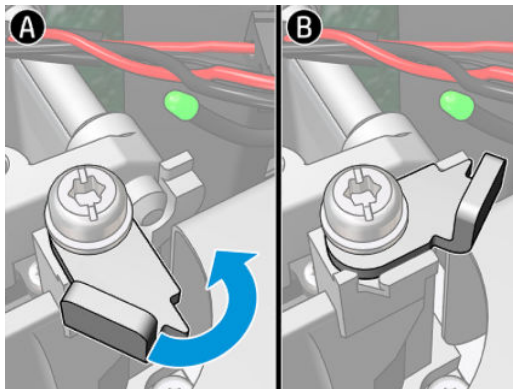
8. Close the handle.
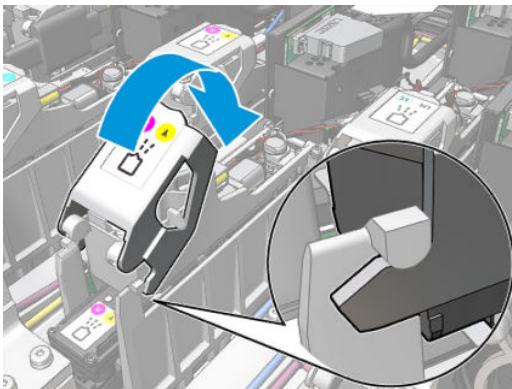
9. Connect the two primer cable connectors.
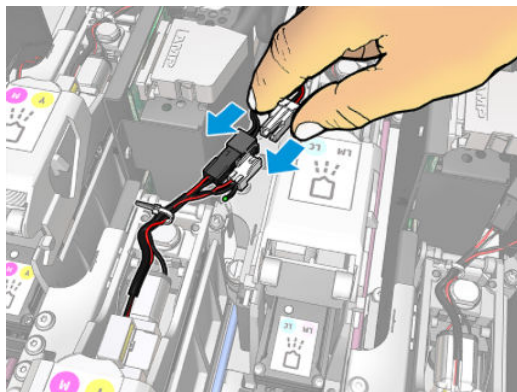
Finish off replacing a primer

1. Close the carriage cover.

2. Turn on the printer in the correct way for maintenance operations: see Turn the printer on on page 126.

3. Run a diagnostic test to check that the new primer is working correctly, and calibrate it.

4. Dispose of the old primer.

Replace the aerosol fan module (trained expert users only)

Crush hazard	Risk of trapped fingers	Hazardous moving part
For more safety information, see Safety precautions on page 2		

Prepare to replace the aerosol fans module

1. Ensure that you have the aerosol fan module, which is included in the basic uptime kit.

2. Ensure that the printer is not printing.

3. Ensure that all windows, covers, and doors are closed and remain in their original position.

4. Move the carriage to the service position.

5. Turn off the printer in the correct way for maintenance operations: see Turn the printer off on page 125.

6. Open the carriage cover.

Replace the aerosol fan module

1. Open the aerosol fan cover, as if you were going to replace the filters. See Replace the aerosol filters on page 78.
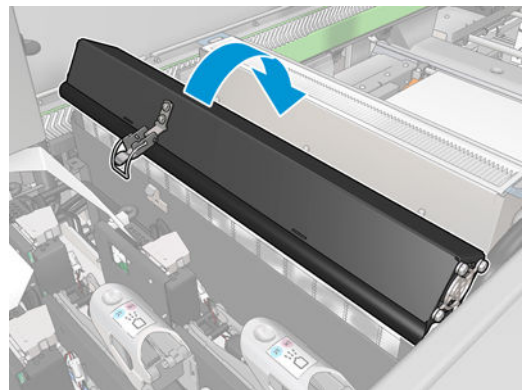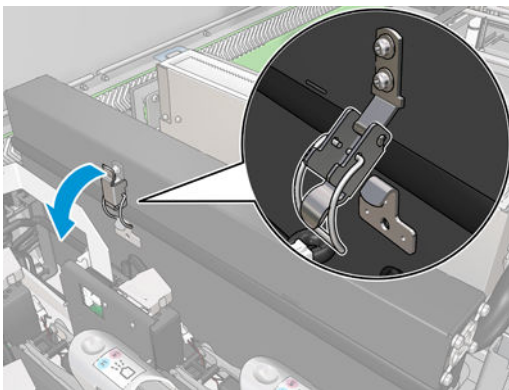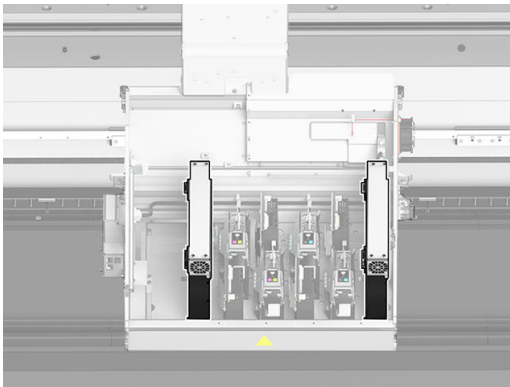
2. Remove the two screws that attach the cover, and remove the cover.
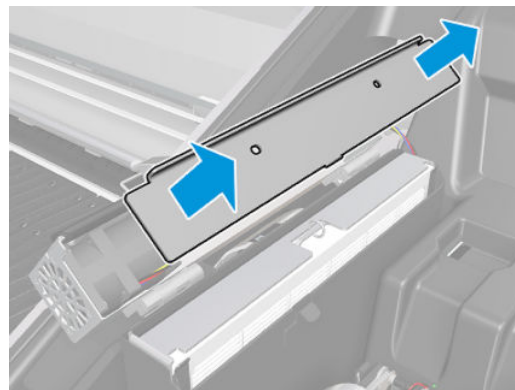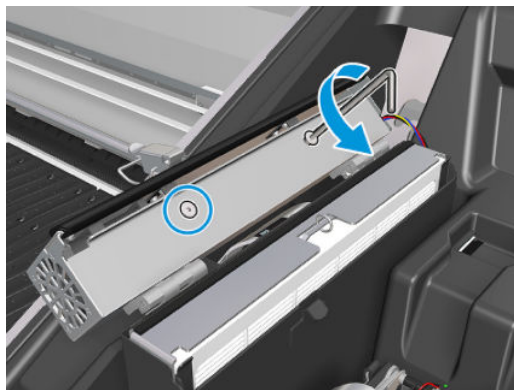
3. Disconnect the aerosol fan cable connector.

4. Remove the main cable harness from the cover slot.
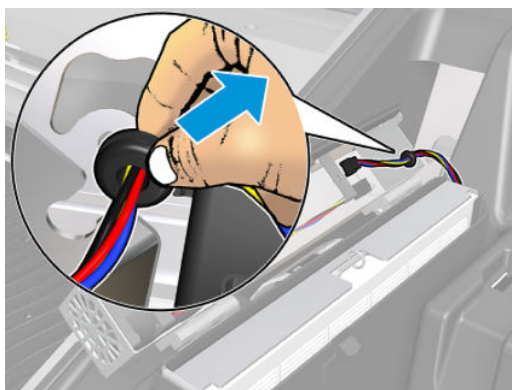
5. Close the cover.
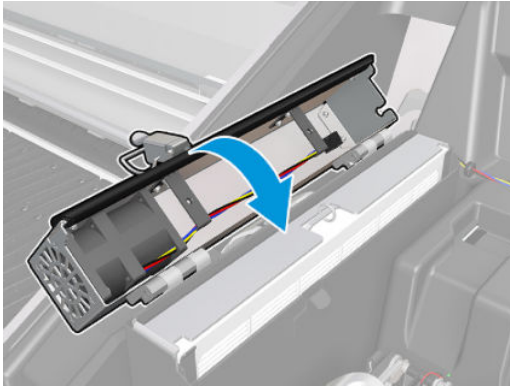
6. Remove the nuts from the hinges. You must hold the nuts to prevent them from falling and get lost inside the carriage.
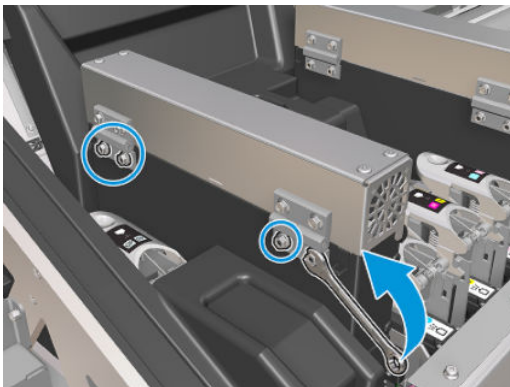
7. Remove the aerosol fan module and insert the new one.
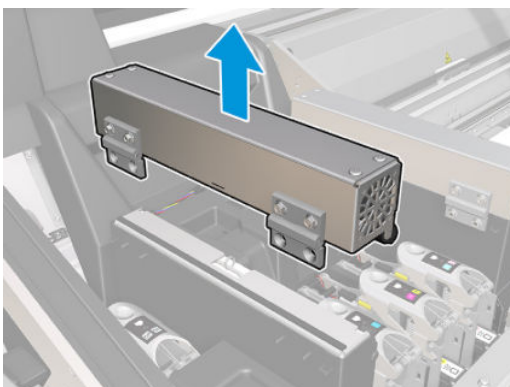
8. Put the hinges back in place, put back the nuts and tighten them.

9. Open the new aerosol fan cover.

10. Remove the two screws that attach the new fan cover, and remove the cover.

11. Connect the aerosol fan cable connectors.

    📝 IMPORTANT: Make sure the fan cable is correctly connected.

12. Route the main cable harness and insert the grommet in the cover slot. Make sure the cables are not tight inside the cover.

13. Install the aerosol fan cover and attach the two screws.

14. Close the cover.

Finish off replacing the aerosol fan module

1. Close the carriage cover.

   ⚠ **CAUTION:** Do not leave anything in the way of the carriage.

2. Turn on the printer in the correct way for maintenance operations: see Turn the printer on on page 126.

3. Run a diagnostic test to check that the aerosol fans are working correctly.

4. Dispose of the old aerosol module fans.

Replace an intermediate tank (trained users only)

Risk of trapped fingers	Hazardous moving part

For more safety information, see Safety precautions on page 2

You will need to replace an intermediate tank if the bag breaks.

1. Ensure that you have the intermediate tank kit, which is included in the basic uptime kit.

2. Ensure that the printer is not printing.

3. Turn off the printer in the correct way for maintenance operations: see Turn the printer off on page 125.

Replace an intermediate tank

1. Remove the screws and the cover to access the intermediate tanks.
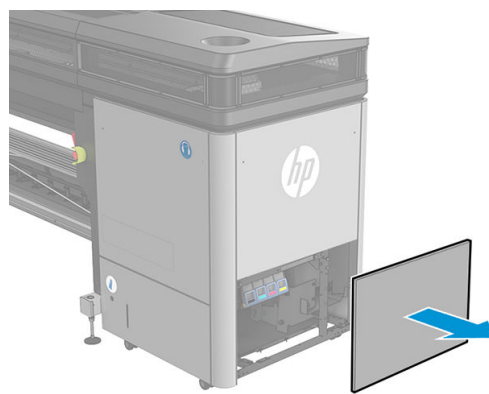
2. Remove the intermediate tank with the broken bag.
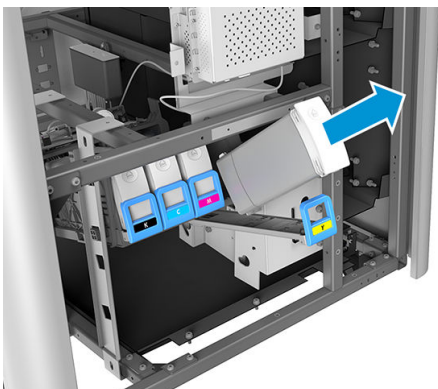
3. Put a piece of cloth in its place.

4. Unplug the air tube from each bottle shown below.
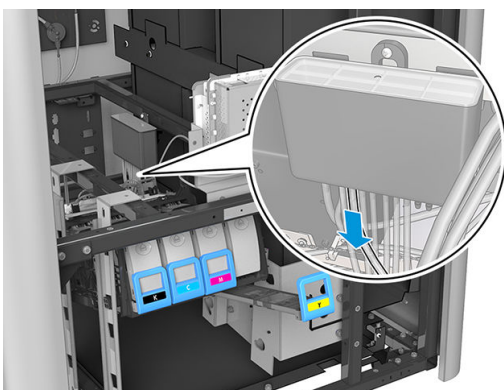
5. From the air tube, inject air (using the air pressure gun, for example) to clean the interior of the tube. The ink accumulated in the interior of the tube should be ejected onto the piece of cloth that you have put in place of the intermediate tank.

6. If air is not enough to clean it, use water, and then air again to remove the water and dry the tube.

7. Remove the cloth.

8. Plug in the air tubes.

9. Insert the new intermediate tank.

10. Put back the cover and screw in the screws.

Finish off after replacing an intermediate tank

1. Turn on the printer in the correct way for maintenance operations: see Turn the printer on on page 126.

2. Run a diagnostic test to refill the intermediate tank.

Replace an e-cabinet fuse

Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard

For more safety information, see Safety precautions on page 2

⚠ **CAUTION:** Do not attempt to replace fuses other than those in this specific area of the e-cabinet. These are the only ones you are allowed to replace. Call your service representative in all other cases.

Prepare to replace an e-cabinet fuse

1. Ensure that you have the e-cabinet PCA fuses kit, which is included in the basic uptime kit.

2. Check the Print Care error message log to find out which fuse needs to be replaced.

3. Turn off the printer in the correct way for maintenance operations: see Turn the printer off on page 125.

Replace an e-cabinet fuse

1. Ensure that the printer is not printing.

2. Remove the screws shown below, then remove the rear right cover.
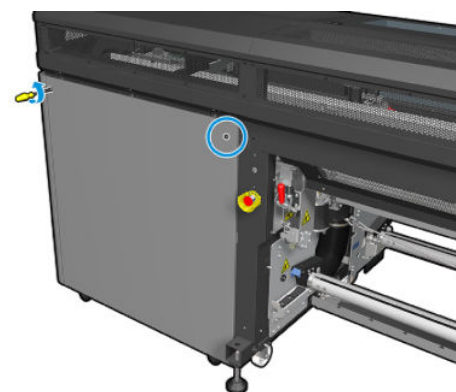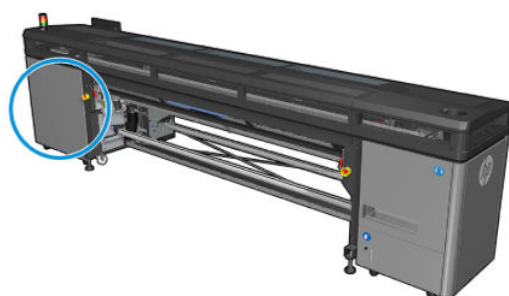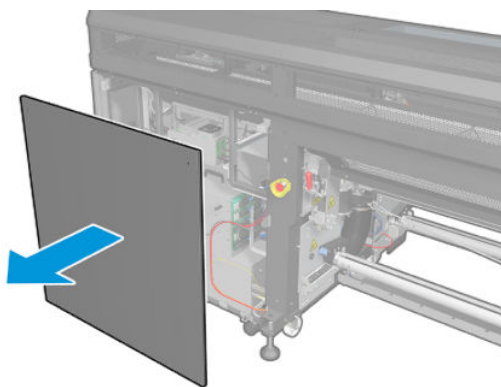
3. Locate the e-cabinet fuses.
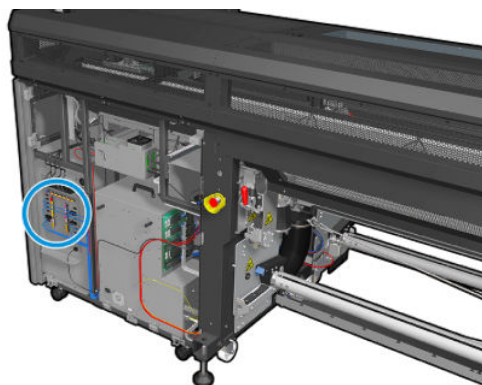
4. Locate the failing fuse identified by the Print Care error message logs.
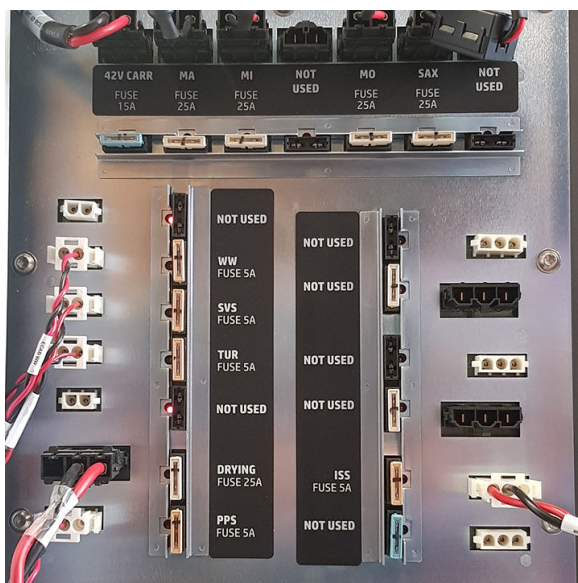
5. Pull out the fuse and insert a new one. Ensure that the new fuse matches the old one in size, rating, and color.

6. Run a diagnostic test to check that the new fuse is working correctly.

⚠ CAUTION: Fire risk! A blown fuse may indicate malfunctioning electrical circuits within the system. If a fuse trips repeatedly, call your service representative and do not attempt to replace the fuse with one with a higher current rating.

7. Dispose of the old fuse.

8. Put back the rear right cover and screw it into place.

9. Turn on the printer in the correct way for maintenance operations: see Turn the printer on on page 126.

Replace a spindle valve

Risk of trapped fingers

For more safety information, see Safety precautions on page 2

Prepare to replace a spindle valve

1. Ensure that you have the spindle air valve, which is included in the basic uptime kit.

2. Ensure that you have an 11 mm (7/16 inch) tube wrench key and the pneumatic gun.

3. Ensure that the printer is not printing.

4. Press the valve to deflate the spindle.

Replace a spindle valve

1. Remove the spindle valve with the tube wrench key.
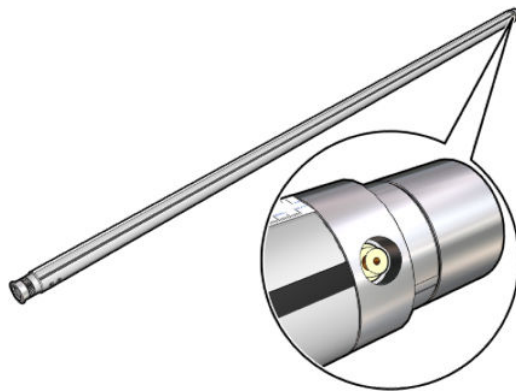
2. Insert the new valve and tighten it. The valve must be well seated in position and firm, but do not force it with the key.

Finish off replacing a spindle valve

▲ Test the new valve by inflating and deflating the spindle.

Replace the pinch clamp

Crush hazard	Risk of trapped fingers	Hazardous moving part	Risk of cutting fingers

For more safety information, see Safety precautions on page 2

Removal

1. Ensure that the printer is not printing.

2. Turn off the printer and the power-enable switch.

3. Locate the pinch clamp to be replaced and open it.

4. Remove the four T-30 screws and the pinch clamp.
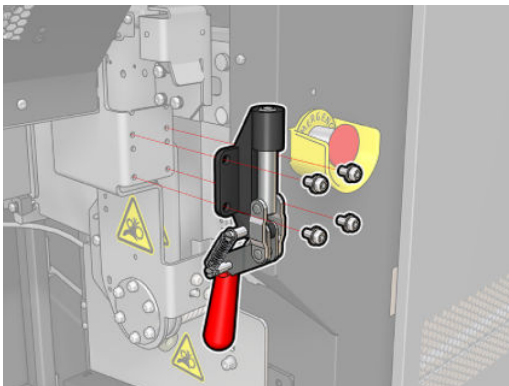
Installation

1. Install the new pinch clamp and attach it with the screws.

2. Perform the safety interlock diagnostic (51001).

Replace spindle gear and end cap

Risk of trapped fingers

For more safety information, see Safety precautions on page 2

📝 IMPORTANT: Check the gears to install in each spindle, as not all can be used in any of them.

Removal

1. Remove the spindle from the printer.

2. Place the gearwheel side in an elevated position.
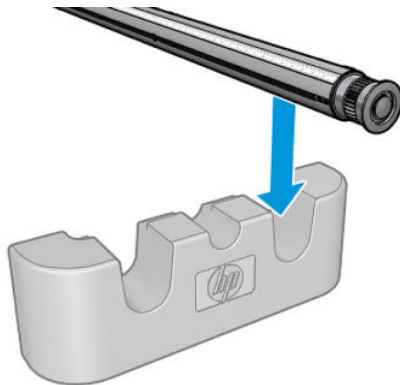
3. Remove the C-clip.
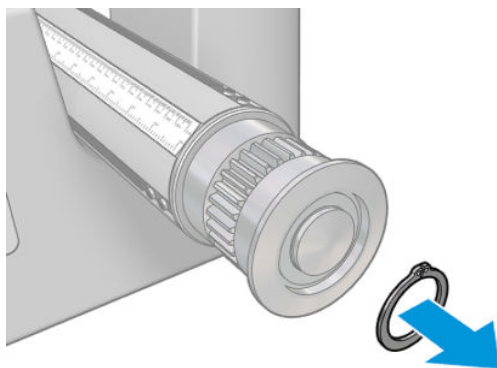
4. Remove the end cap. If necessary, you can use the gear extractor to remove the end cap.
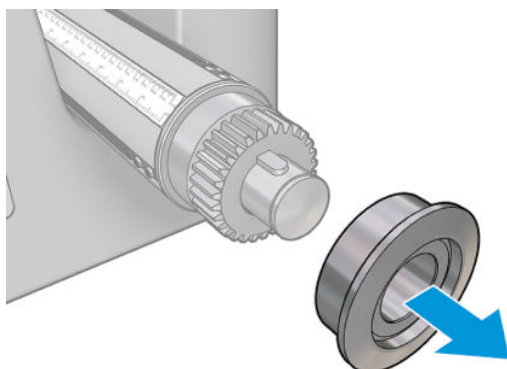
5. Remove the gearwheel, using the gear extractor.
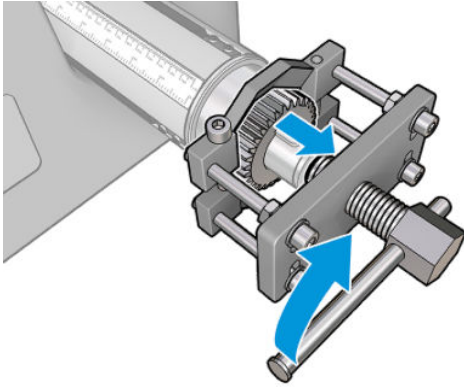
Installation

1. If necessary, use sandpaper for 5 minutes to increase the diameter where the gear slides in. The same could be done for the end cap.
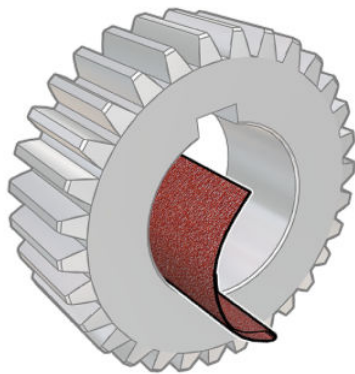
One small piece of sandpaper is provided with the upgrade kit. If it is not enough, use some similar sandpaper.

2. In some cases, the black gear may not be well positioned: the axis on which the gear slides can have slack. When placing the gear, it is important that there is no slack, or it will not be possible to place the C-clip. The two axis positions are shown below, with the gear in two different positions:
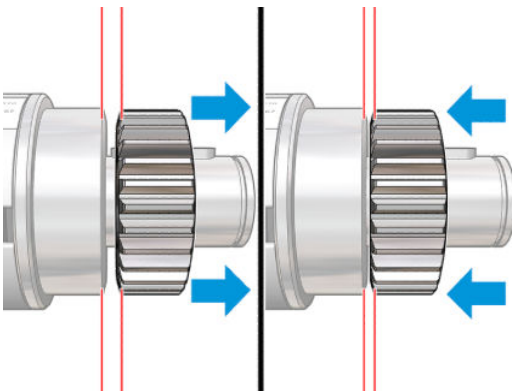
There may be up to 2 mm of slack when moving the gear left and right.

A small steel cylinder is provided in the kit:

a. Move the gear as far to the left as it will go.

b. Place the cylinder provided with the kit as shown in the picture below, and hold it in place.
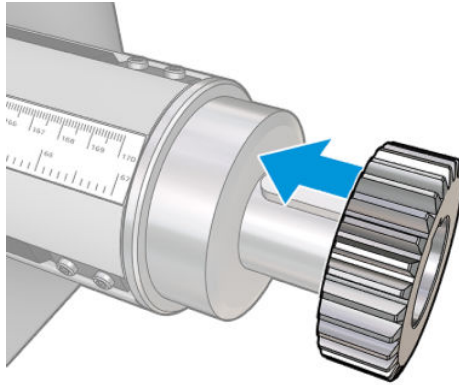
⚠ CAUTION: Be careful not to trap your fingers.
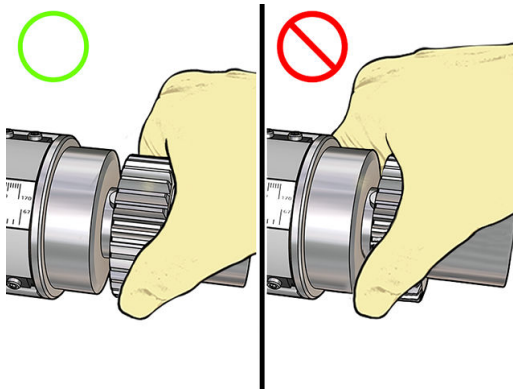
c. Hit the right end of the cylinder with a hammer (not provided) to force the gear onto the axis.
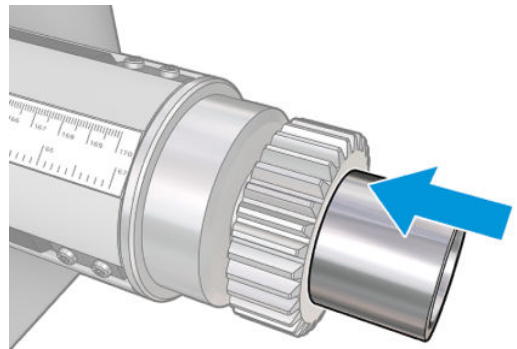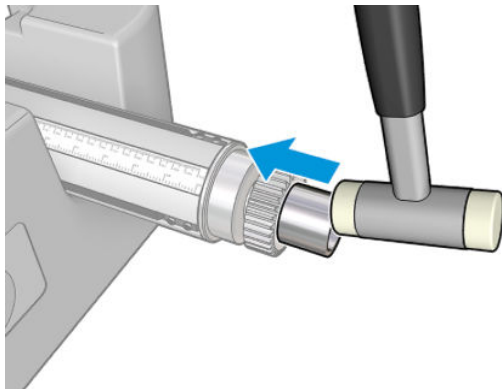
If necessary, try again after using the sandpaper.

3. Insert the end cap. Use sandpaper if necessary.
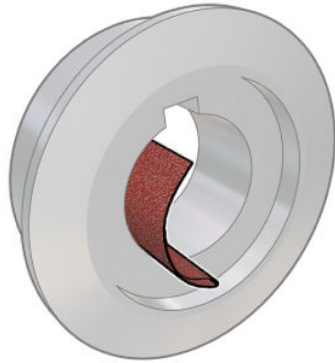
You can also use a flat screwdriver to fix the shaft in place (as shown), and hit the end cap with a nylon hammer.
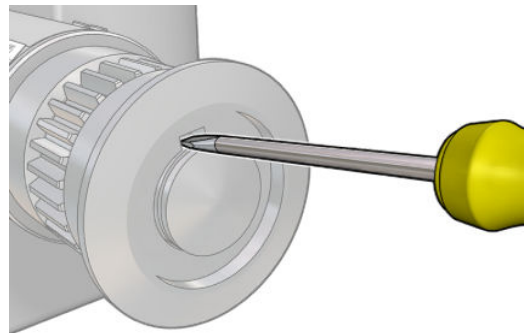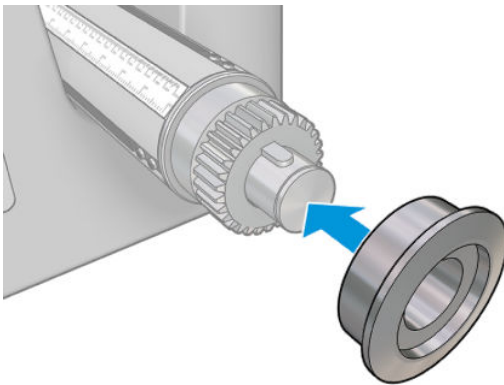
4. Insert the C-clip.
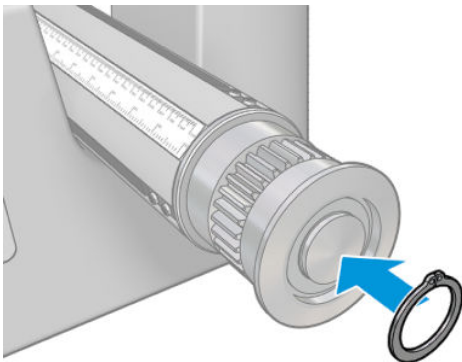
5. Put the spindle back into the printer.

Replace the drying fan and resistor module

Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard

For more safety information, see Safety precautions on page 2

Preparation

1. Move the carriage beam to the loading position.

2. Turn off the printer and the power-enable switch.

3. Open the loading table.
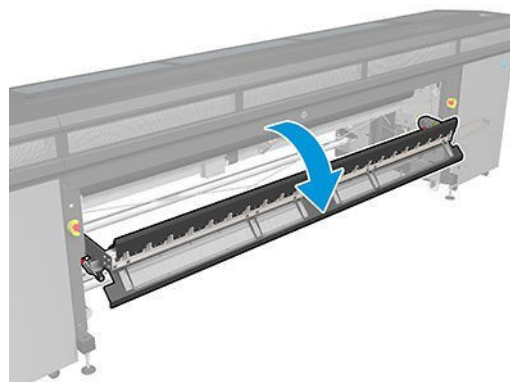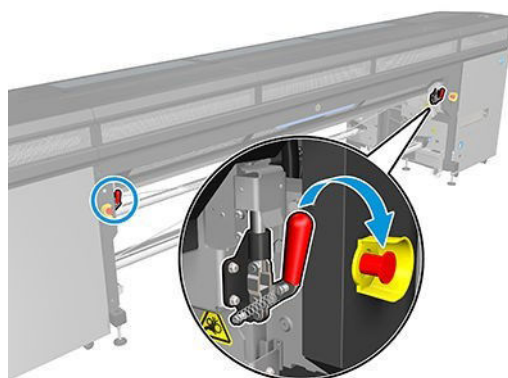
Removal

1. Remove the seven cover screws.
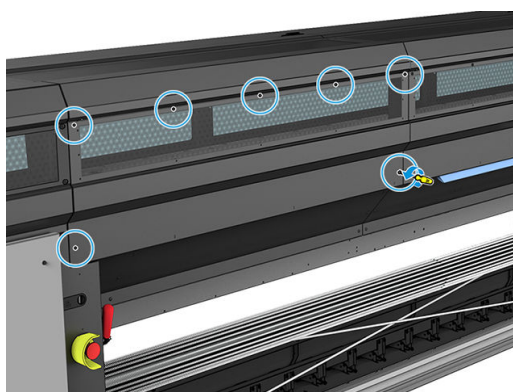
2. Remove the cover.
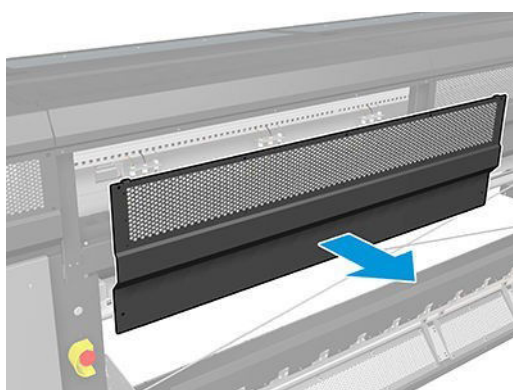
3. Remove another screw.
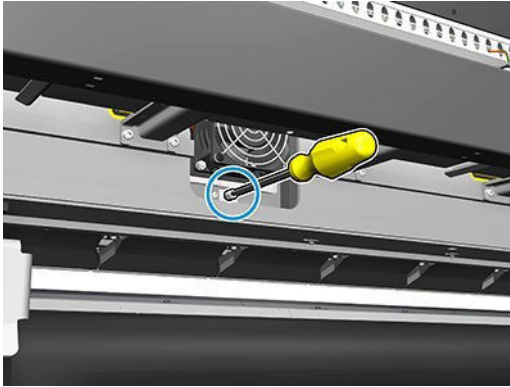
4. Disconnect and unroute the cables (from the motor cable tie where marked).

    📝 NOTE: The red cable goes through the left cable tie and is connected to the left connector. The colored cable passes through the right cable tie and is connected to the middle connector. The thinnest cable goes through the right cable tie and is connected to the right connector.

5. Remove the fan.
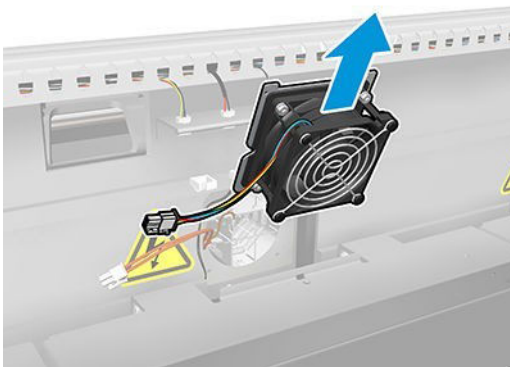
6. Remove the heater.
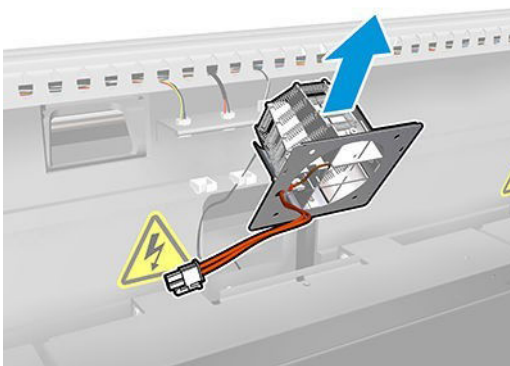
Installation

1. Put the heater in place with its pins.
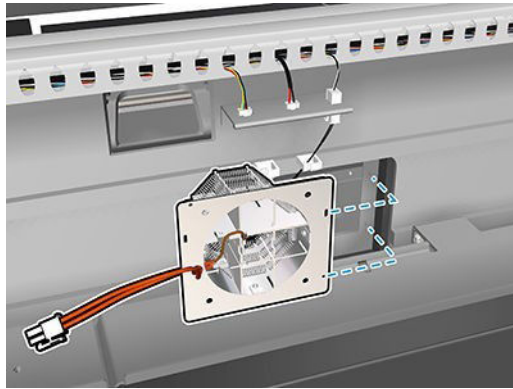
2. Put the fan in place with its pins.

   IMPORTANT: The fan cable **must** go in with the hook facing to the left.
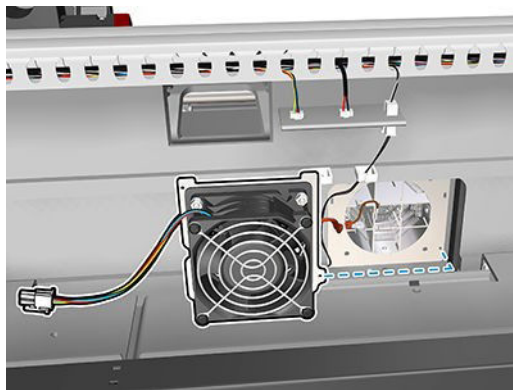
3. Insert and tighten one screw.
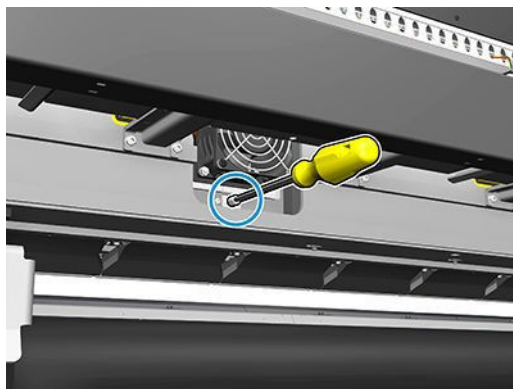
4. Reconnect the cables.

5. Reattach the cover with its seven screws.
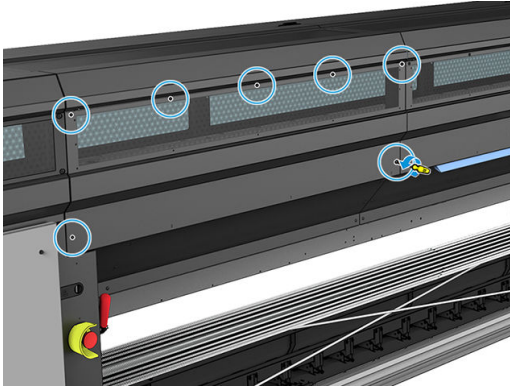
Conclusion

1. Close the loading table.

2. Turn on the printer in the correct way for maintenance operations: see Turn the printer on on page 126.

Replace the spectrophotometer shutter

| Crush hazard | Risk of trapped fingers | Hazardous moving part | Electric shock hazard |

For more safety information, see Safety precautions on page 2

Removal

1. Turn off the printer and the power-enable switch.

2. Remove two cover screws from the front left cover.

3. Remove the front left cover.
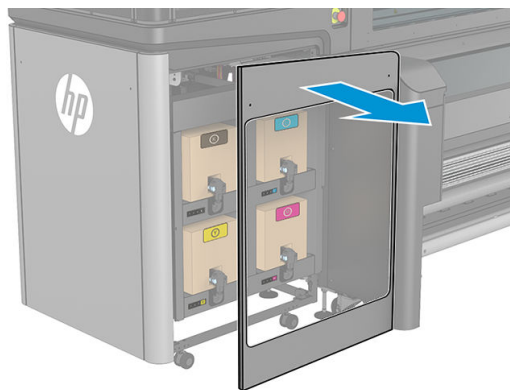
4. Locate the spectophotometer shutter.

5. Unplug the power cable.
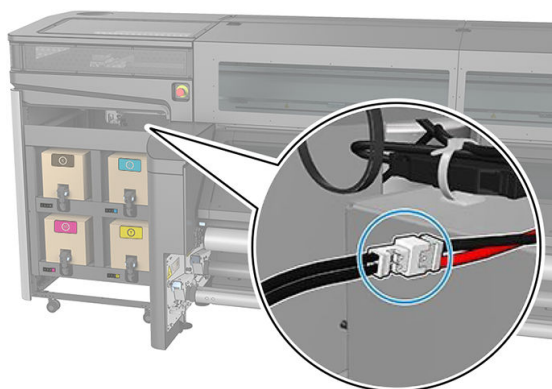
6. Remove one screw and keep it for the new spectrophotometer.
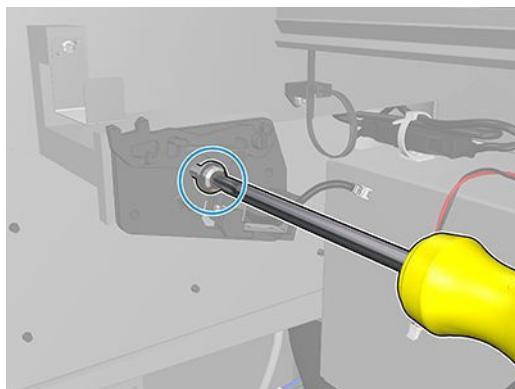
7. Remove the spectrophotometer shutter.
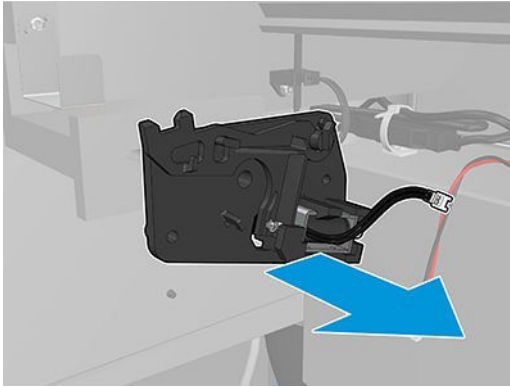
Installation

1. Locate the new spectrophotometer shutter in the appropriate kit.

2. Place it where the old one was installed and attach it with the screw.
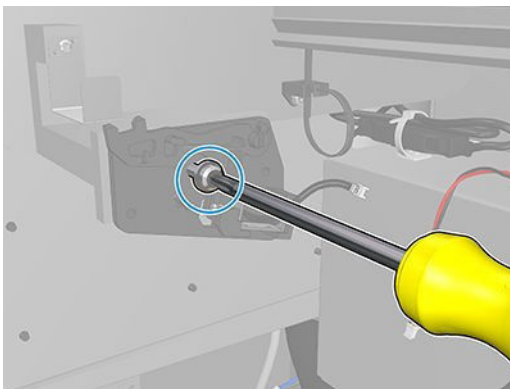
3. Plug in the cover cable.

4. Reinstall the front left cover.

5. Turn on the power-enable switch and the printer.

12 Troubleshoot substrate issues

Loading issues

The substrate cannot be loaded successfully

- A substrate cannot be loaded unless all printer subsystems (such as the ink system) are ready.

- Check that the spindle is correctly inflated.

- Try using the Internal Print Server to advance the substrate at least 3 m (10 ft), then move it back and try to load it again. If it will not load, perhaps the substrate is not attached to the input core: try a different roll.

- If the Internal Print Server displays a message 'The carriage beam height is not suitable for loading substrate', call your service representative (see HP Customer Care Centers on page 244).

The substrate has jammed

If the printer reports a substrate jam, follow these steps.

1. Press an emergency stop button as quickly as possible to minimize damage to the printheads.

   NOTE: The printer may shut itself down automatically.

2. Wait about 10 minutes for the printer to cool down.

3. Open the front door.
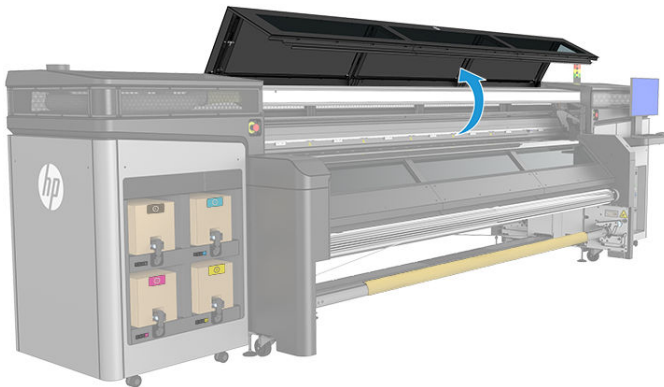
4. Remove all substrate and pieces of substrate from the printing zone and from any other parts of the printer into which they may have fallen. Make sure that nothing remains on the substrate path. If you are unable to remove all obstructions, call your service representative (see HP Customer Care Centers on page 244).

5. Use Print Care to start the printer in service mode.

6. Use the Print Care diagnostic menu to raise the carriage beam, and check underneath for any pieces of substrate.

7. Use the same menu to lower the carriage beam to its normal position.

8. Before restarting the printer, check that all circuit breakers are on and all emergency stop buttons released.

9. Use Print Care to restart the printer in normal mode.

10. Reload the substrate.

The substrate is not attached to the core and/or spindle

If the printer detects a lack of tension during the substrate check after loading, it will ask you to confirm the winding direction.

If the roll is not firmly attached during printing, you may see banding on your prints, or hear metallic noises.

If you see an error message numbered 41.00.00.62 or 41.00.01.62 while printing, it means that the substrate may have become detached from the spindle, or the core is slipping on the spindle. This could mean that you have reached the end of the roll, or the spindle is not correctly inflated. The substrate is automatically unloaded when this error occurs.

You should respond to this error in the following ways:

- Check whether you have reached the end of a roll.

- Check that the spindle is correctly inflated.

- Check that the inner diameter of each substrate core is not too large for the spindle.

If the roll is not firmly attached to the input core, proceed as follows.

1. Unload the roll from the input spindle and load it onto the output spindle. Take care to avoid telescoping.

2. Raise the pinches and, using the Internal Print Server, raise the carriage beam to its maximum height.

3. Unload substrate from the roll and pass it backwards through the printer towards the input spindle. Attach it to the empty core on the input spindle, securing it with adhesive tape. Wrap a couple of turns of substrate around the input core. Take care to align the substrate with the output roll.

4. Lower the pinchwheels.

5. Go to the Internal Print Server and click **Substrate Load/Unload**, then select the printer configuration and click **Load**.

6. Select the correct substrate in the Internal Print Server.

7. Click **Move substrate** in the Internal Print Server, then **Back**, and wait until all the roll has been wound onto the input spindle.

8. You may decide to cancel rewinding when the substrate is detached from the output roll. Then attach it to the output core to print immediately, or rewind it completely onto the input core if you want to remove the roll.

The substrate is not flat

If the substrate does not lie flat when it comes out of the printer, but has shallow waves in it, you are likely to see defects in the printed image, such as vertical stripes. This can happen when you use thin substrate that becomes saturated with ink; it can also be caused by the combination of heat and vacuum pressure that is applied to the substrate.
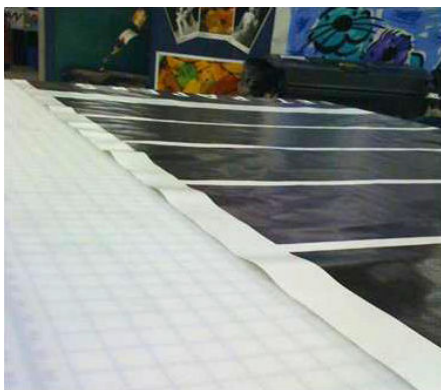
1. Check that the substrate type you have loaded corresponds to the substrate type selected in the Internal Print Server and in your software.

2. If you are using a paper-based substrate, try changing to a thicker substrate, or reduce the amount of ink.

Printing issues

A spindle latch suddenly opens during printer operation

If a spindle latch is not closed before starting the substrate load, or it is opened by someone after the spindle was already moving or while the substrate was under tension, the spindle can move out of place. Closing the latch in those conditions can cause an incomplete latch engagement, and then at some point the latch may spontaneously open completely.

The best solution is to eliminate substrate tension, avoid spindle movement, and then close the latch properly. To do this, return to the substrate load/unload menu, ensure that the spindle is properly in place (in case of doubt, extract it a bit and then push it back fully inside again), then close the latch (the blue part should now go down completely).

The substrate advances with a loud continuous sound of vibration

A loud continuous sound of vibration during the substrate advance can be caused in the following ways:

- The input spindle is not applying tension.

- Wrong tension or vacuum settings result in an incorrect balance of forces on the main roller.

If you hear this sound, here are some suggestions:

1. Check that the substrate you are using is the same as the one you have selected in the Internal Print Server.

2. Check that you are using the generic substrate presets for the category. The use of incorrect values may result in incorrect substrate behavior.

   📝 **NOTE:** Only substrates with high friction along the platen or substrates that easily wrinkle with temperature need high output tension values. Check that your output tension is recommended for your substrate.

3. Check that there is no telescoping of the input roll.

4. Reload the substrate and try to minimize skew while loading. Check that you using the correct loading procedure.

5. Increase the input tension in steps of +5 N/m from the recommended setting for each category until you eliminate the issue.

There is skew or telescoping on the output spindle

Extreme skew (approximately 10 mm peak to peak) and telescoping in the output spindle while it winds can be caused in three main ways:

- The substrate has not been correctly loaded and aligned during the loading procedure.

- The roll loaded on the input spindle is skewed, and this skew is transferred to the output spindle.

- The roll loaded on the input spindle has been wound with different tensions at its two ends.

  Printing on rolls that are not wound accurately during manufacturing may lead to wrinkles and skew problems and, generally, this problem can be identified easily because you can see a loss of tension at one side of the substrate between the input roll and the main roller. In that case, see the relevant information provided in the section There are wrinkles and ink smears on the substrate on page 221.

💡 **TIP:** When suffering from extreme skew that tends to increase (normally with highly temperature-sensitive substrates), try to use a thicker core that is not deformed by the rubber traction grooves on the spindle when inflated. Then follow the guidelines below for reducing skew.

Generally, the main contributor to skew is an imprecise substrate load, and the effects of that are worse with wide rolls. However, if you have some skew or telescoping but this does not affect your print quality, and does not generate wrinkles in the substrate (see There are wrinkles and ink smears on the substrate on page 221), there is no need to take any action. However, you are recommended to reload the substrate in order to eliminate any potential problem.

Some substrate rolls already come with skew; in that case the recommendations are as follows:

1. Try to load the substrate following the correct procedure, taking as a reference of the roll's width the average between peaks of skew.

2. Start with the recommended configuration for each substrate, and increase vacuum and tension step by step, in steps of 5 mmH$_2$O for vacuum and 5 N·m for tension.

There are wrinkles and ink smears on the substrate

Wrinkles in the substrate indicate that the substrate settings that control the substrate shape are not optimized. This can cause various printing defects:

- Colored bands in area fills in the vicinity of the wrinkles

- Ink smears if the printhead touches the substrate

- Cockle

- A substrate crash if the printhead's movement over the substrate is impeded

There are various reasons why wrinkles and other consequent effects could appear while printing:

- Incorrect loading of the substrate

- Incorrect routing of the substrate through the printer

- Incorrectly positioned edge holders

- Drying temperature too high for the substrate

- Differential expansion of the substrate due to variations in temperature

- Insufficient tension settings

- Non-uniform tension across the substrate when loading

- The roll loaded on the input spindle has been wound with different tensions at its two ends.

NOTE: When printing with rolls that have not been precisely wound with the same tension along their width during manufacturing, you may notice that, while printing, one of the sides of the substrate between the input spindle and the main roller loses all tension. This may cause wrinkles on the platen or telescoping on the output spindle.

If your prints suffer from any of the defects caused by wrinkles, here are some suggestions.

1. Check that the substrate you are using is the same type as the one you have selected in the Internal Print Server.

2. Check that you are using the generic substrate preset for the substrate category. The use of incorrect values may cause incorrect substrate behavior.

3. Check that there is no telescoping of the input roll.

4. Reload the substrate and try to minimize skew while loading. Check that you are loading the substrate using the correct procedure.

5. If you have experienced a substrate crash because the lateral edge of the substrate in the print zone is not flat enough, and is raised or even partially cut because you are not using edge holders, then you are recommended to use them.
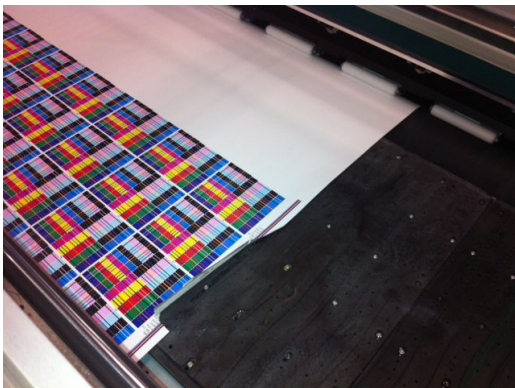
> **NOTE:** If you are already using edge holders, check that they are correctly positioned (see The substrate edge holders on page 40).

6. Start with the recommended configuration for each substrate, and increase vacuum and tension step by step, in steps of 5 mmH$_2$O for vacuum and 5 N·m for tension.

> **TIP:** If you have suffered a substrate crash, try starting with step iv and moving backwards up the table until you find settings that work.

7. Try increasing the drying airflow to help the substrate to dry faster.

8. Try raising the carriage beam slightly, so that the printhead is not so close to the substrate.

For information on how to adjust printer settings, see Edit a substrate preset on page 51.

There are ink marks on the substrate

This problem can occur if any component in contact with the substrate is dirty. Check the pinchwheels, bottom plate, print platen, output cover, and roller, and clean them if necessary.

If the ink marks occur at the sides of the substrate and not in the center, and you are using the substrate edge holders, check that they are correctly placed and clean.

The substrate sticks to the platen

When the substrate sticks to the platen, the most likely causes are excessive heat applied by the drying system, excessive vacuum, or a dirty platen, which increases friction and can impede the substrate advance. In the latter case, the substrate may rise up in a bubble or wave before reaching the platen.

Here are some suggested ways to correct the problem:

1. Check that the substrate you are using is the same type as the one you have selected in the Internal Print Server.

2. Check that you are printing on the correct side of the substrate.

3. Check that you are using the generic substrate preset for the substrate category. The use of incorrect values could cause incorrect substrate behavior.

4. Reload the substrate and try to minimize skew while loading. Check that you are loading the substrate using the correct procedure.

5. Start with the recommended configuration for each substrate, and increase vacuum and tension step by step, in steps of 5 mmH$_2$O for vacuum and 5 N·m for tension.

There are physical marks on the substrate

This only can occur when substrates sensitive to permanent deformation are used. These marks are usually seen in isolated areas and mainly caused by substrate tension.

Here are some suggested ways to correct the problem:

1. Check that the substrate you are using is the same type as the one you have selected in the Internal Print Server.

2. Check that you are using the generic substrate preset for the substrate category. The use of incorrect values could cause incorrect substrate behavior.

3. Reload the substrate and try to minimize skew while loading. Check that you are loading the substrate using the correct procedure.

4. Start with the recommended configuration for each substrate, and reduce vacuum and tension step by step, in steps of 5 mmH$_2$O for vacuum and 5 N·m for tension.

There are drops of ink on the substrate

NOTE: In the above example, the distance between the drops is about 1 cm (0.4 in).

1. If you are using the substrate edge holders, clean them.

2. Clean the sides of the printheads and the sides of the printhead slots.

3. Clean the electrical connections to the printheads. See The Internal Print Server recommends replacing or reseating a printhead on page 235.

Print length issues

The print is shorter than expected

Some substrates naturally contract when they are printed on and cured, this can mean the total length of the print is shorter than expected. If this is the case, you can expand the length of the print from the RIP, which will compensate for the contraction of the substrate. Alternatively, change to a less thermal-dependent substrate to reduce the contraction.

How to achieve better consistency between jobs of the same length

The printer has been designed to maximize consistency in the length of the printed substrate. However, there are external variables that can contribute to variability: substrate variations and enviromental conditions.

1. Select a substrate which is less susceptible to expansion when being printed on. Most paper-based substrates have a tendency to expand.

- If you need to print on a substrate susceptible to expansion:

  – Ensure that the density of ink is similar between each tile (if not, the tile with less ink might be shorter).

  – If possible, decrease the heating temperature.

  – Reduce the ink restrictions as much as possible.

- Make sure that the roll is left within the room where the printer is located for at least 24 hours, this is to ensure the complete roll has the same temperature as the printer.

2. **Do not touch** the print adjustments (no change of substrate advance calibration) between tiles.

3. Print all the tiles at once.

- Do not split the jobs at different times (1 tile one day, and the 2nd tile the 2nd day)

- Do **not** change the print mode or the substrate width between tiles.

To print the tiles all at once, we recommend the following:

a. Create the tiles from the Internal Print Server.

b. If you are creating the tiles from the RIP, ensure that you send all the tiles within the same jobs sent to the printer/Internal Print Server.

The objective is to make sure that there is no pause between the tiles. When using the Queue mode in the Internal Print Server, there is still a small time between jobs, which could add more variability between the lengths of the tiles.

4. In order to make sure that even the first tile has less difference in length compared with the other ones, add a top margin of 50 cm.

In case you have to reprint one tile, in order to ensure the length will be as close as the previous jobs:

- Make sure that the substrate and also the ambient temperature of the printer are the same as when the previous job was printed.

- Add a top margin of 50 cm.

But in any case, when having to reprint a tile later, there is a higher probability that the length will be different from the other tile length. The total length repeatability depends on the substrate, the changes in environmental conditions, and the contents of each job (mainly when the substrate is reacting differently depending on the ink density).

13 Troubleshoot print-quality issues

General advice

Your printer has been designed and qualified to the highest standards to provide the optimal compromise between print quality and productivity. Prints for outdoor use can accommodate more visible defects as they are viewed from a long distance. For shorter distances, as in indoor advertising, defects need to be less visible.

In general, follow these recommendations:

- Avoid touching the substrate while printing is in progress.

- Judge the print quality after the print has been completely processed. In some cases, defects seen while printing disappear after the image is calendered.

- Check that the environmental conditions (room temperature and humidity) are in the recommended range. See Environmental specifications on page 248.

Before troubleshooting, check the following points:

- To achieve the best performance from your printer, use only genuine HP supplies and accessories, whose reliability and performance have been thoroughly tested to give trouble-free performance and best-quality prints.

- Check that the substrate type selected in the Internal Print Server is the same as the substrate type loaded into the printer.

  ⚠ **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.

- Check that you are printing on the right side of the substrate.

- Check that you are using in the RIP software the correct substrate preset, which includes the ICC profile for your substrate and print mode.

- Check whether there are any outstanding printer alerts in the Internal Print Server. React to the alert as instructed in this guide.

In particular:

- Make sure the substrate is flat and has no wrinkles. See Troubleshoot substrate issues on page 217.

- Check that the substrate has no skew or telescoping. Check that you are loading the substrate using the correct process. See Load a roll into the printer on page 43.

- For color consistency issues, check that the color calibration was performed when the substrate was added to the Internal Print Server. See Use a new substrate on page 50.

- Make sure it has also been performed in the current conditions, especially considering substrate batch and printheads. See Color calibration on page 93.

What can affect print quality

Print mode

The choice of the print mode defines the number of passes with which the job is printed and the quantity of ink that is used for printing. Thus, it can naturally affect overall print quality. For instance, reducing the number of passes reduces the time that the substrate spends in the print zone, so it decreases the drying time, which can cause various effects such as bleeding; and increasing the ink quantity can cause coalescence.

Handling the print modes is explained in Create and manage print jobs on page 59. It is also possible to design customized print modes for cloned substrates, as explained in Handle the substrate on page 33.

Nozzle health

Bad printhead health (clogged nozzles) can cause various defects, such as horizontal banding.

See Check and clean the printheads on page 183. The check-and-clean process will check the printheads, recover the ones with clogged nozzles if possible, and replace the nozzles that are still clogged with healthy ones for printing.

Substrate settings

Substrate settings contain the system print parameters used by the printer for a given substrate. These parameters include: input and output tension, vacuum, drying temperature, and drying pressure. All these parameters can have a significant impact on print quality. For instance, insufficient drying temperature can cause bleeding.

Generic substrates have predefined substrate settings that are not editable. But it is possible to clone generic substrates and change the settings of the cloned substrates, as explained in Edit a substrate preset on page 51.

Substrate advance

Wrong or inconsistent substrate advance can be the root cause of various print-quality defects, in particular horizontal banding.

You can run the Pixart diagnostic test from the Print Care window, which will tell you whether the substrate-advance sensor is working correctly or not (dirty or damaged).

If the sensor is dirty, see Clean the substrate-advance sensor on page 134. This should be done weekly in any case, as a part of routine maintenance.

Even if the sensor is working correctly, the substrate may not be navigable, meaning that the sensor cannot see it properly (as in the case of transparent substrates or substrates with a very smooth backing layer). In such cases, the sensor disables itself automatically, and HP recommends an alternative method: see Substrate-advance calibration on page 97.

Printhead alignment

The concept and purpose of printhead alignment are explained in Printer calibration on page 88. Many print-quality defects may be due to printhead misalignment. For instance, grain can be caused by wrong bidirectional alignment in the scan-axis direction. Also, horizontal banding can be caused by color misalignment in the print-axis direction.

HP recommends automatic alignment: Automatic alignment procedure on page 89. However, if you prefer, you can choose manual alignment: Manual alignment procedure on page 90.

To check the alignment, see Printhead alignment diagnostics plot on page 92.

Print-quality troubleshooting

Here is a list of the most common defects. For each of these defects, there are several potential root causes, which can be checked and solved by one or several of the methods mentioned above.

	Banding	Grain	Color	Ink migration	Bleeding	Edge roughness, text quality
Passes	X	X			X	X
Ink			X	X		
Alignment	X	X	X			X
Substrate advance	X	X				X

	Banding	Grain	Color	Ink migration	Bleeding	Edge roughness, text quality
Substrate settings	X	X		X	X	X
Color calibration			X			
Nozzle health	X					

Banding

Horizontal thin lines
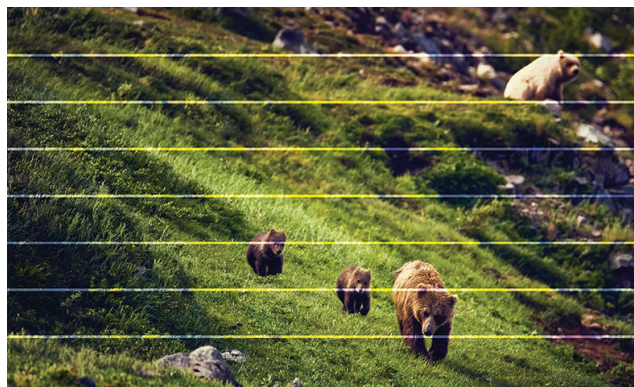
These are thin lines across the entire print, at regular intervals, most easily seen in solid fills.

Likely causes

- Misalignment between colors. See Printhead alignment on page 227.

- Inaccurate substrate advance. Under-advancing causes dark lines, over-advancing causes light lines. See Substrate advance on page 227.

- Clogged nozzles can cause light lines. See Nozzle health on page 227.

Horizontal dark/light zone banding

These are periodic horizontal bands formed of a light band and a consecutive darker band, most easily seen in solid fills (such as light purple or gray).

Likely causes

- Bidirectional or color misalignment. See Printhead alignment on page 227.

- Coalescence, due to an excess of ink. Change to more passes with lower ink density. See Print mode on page 226.

- Inaccurate substrate advance (under-advancing). See Substrate advance on page 227.

- Insufficient drying. See Substrate settings on page 227.

Aeroworms

Aeroworms consist of thin bands with a higher density than the surrounding area. They are about 6 cm long and have a horizontal tendency, but they curve like worms. They are not continuous across the substrate, and seem to appear at random.

Likely causes

- Print mode: Increase the number of passes or reduce the ink density. See Print mode on page 226.

- Check that the aerosol filters are not saturated or broken. See Replace the aerosol filters on page 78.

Vertical banding

Likely causes

- Misalignment can cause vertical microbanding. See Printhead alignment on page 227.

- If suction is too high, the substrate can be deformed by the platen. Decrease the vacuum setting. See Substrate settings on page 227.

Color

Misalignment

Colors appear misaligned. Typically, lines and text are most affected by this issue.

Likely causes

- Misalignment between colors. See Printhead alignment on page 227.

Accuracy

Ideally, the colors that you see on the screen should match the colors on the print. In practice, you may find that the colors are not sufficiently accurate.

Likely causes

- Color calibration provides consistent colors, but consistent colors are not necessarily accurate. However, if the combination of substrate and printheads has not been calibrated recently (or ever), that is a possible source of color inaccuracy. You can eliminate the possibility by performing a color calibration. See Color calibration on page 93.

- If you are using the wrong ICC profile, your colors are likely to be inaccurate. Check which profile you are using. If necessary, you can make your own ICC profile for the printer, printheads, print modes, and substrate that you are using. See Print mode on page 226 and Substrate settings on page 227.

- Ink density affects color saturation. If the color saturation of your print seems wrong, try changing the ink density in the substrate preset; you may need to change the number of passes at the same time. See Substrate settings on page 227.

Grain

The print shows a higher level of grain than expected, either throughout the print or in some specific areas. The examples below show the typical grainy morphology in textile and paper samples.

Textile
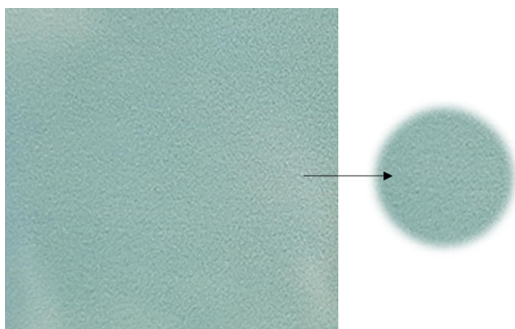
Paper
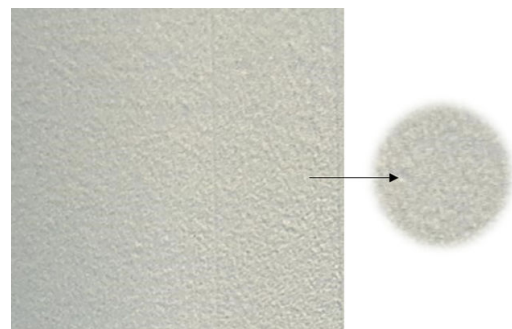
- Bidirectional or color misalignment. See Printhead alignment on page 227.

- Inaccurate substrate advance. See Substrate advance on page 227.

- Coalescence due to insufficient drying:

  - Change to more passes with lower ink density. See Print mode on page 226.

  - Insufficient drying. See Substrate settings on page 227.

- If you see patches of high grain in some local areas of the print, this could be caused by wrinkles in the substrate. See There are wrinkles and ink smears on the substrate on page 221.
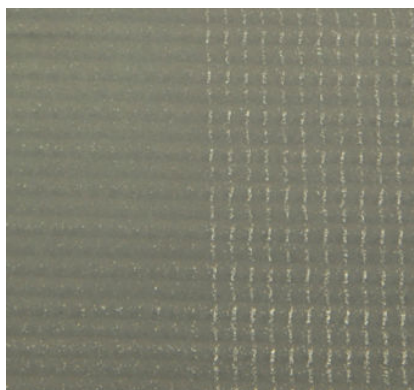
Bleeding

Sometimes a small color migration may be observed at the border between different colors (bleeding). It may also happen at the border between a color and blank substrate (no ink), reducing the sharpness of the border.

Likely causes

- Change to more passes with lower ink density. See Print mode on page 226.

- Insufficient drying. See Substrate settings on page 227.

Edge roughness, text quality

The edges of objects may appear rough or blurred; this is especially noticeable in text. Examples of edge roughness in textile and paper samples are displayed below.

Textile	Paper

- Change to more passes with lower ink density. See [Print mode on page 226](#).

- Insufficient drying. See [Substrate settings on page 227](#).

- Bidirectional misalignment. See [Printhead alignment on page 227](#).

- Inaccurate substrate advance. See [Substrate advance on page 227](#).

Ink migration

The ink does not completely dry when printing direct-to-fabric applications. When rolling the substrate after printing, ink is transferred to the wrong side of the printed substrate..
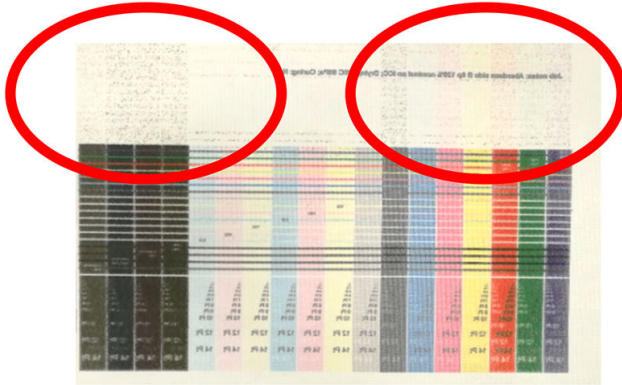
Likely causes

- Insufficient drying. See [Substrate settings on page 227](#).

- Change to more passes with lower ink density. See [Print mode on page 226](#).

14 Troubleshoot ink cartridge and printhead issues

- Ink cartridges
- Printheads
- Printhead cleaning roll errors

Ink cartridges

Cannot insert an ink cartridge

1. Check that the cartridge (type and capacity) is the correct one for the printer. See http://www.hp.com for the latest information on printer supplies.

2. Use the correct procedure to change ink cartridges, through the Internal Print Server. See Remove an ink cartridge on page 70.

3. Check that there is no obstruction in the ink cartridge connector.

4. Check that the ink cartridge is of the correct color. A connector will refuse to connect to a cartridge of the wrong color.

5. Check that the ink cartridge is correctly oriented (compare with the others).

The Internal Print Server does not recognize an ink cartridge

1. Ensure that you have inserted the cartridge correctly and fully. You should hear a click.

2. Ensure that the tabs on each side of the cartridge connector are opened but in place, showing a successful connection.

3. If the problem persists, check the ink cartridge connector (see Bent ink cartridge connector on page 234).

4. If the problem still persists, call your service representative (see HP Customer Care Centers on page 244).

The Internal Print Server recommends replacing or reseating an ink cartridge

1. Disconnect the ink cartridge.

2. Reconnect the ink cartridge and check the Internal Print Server message.

3. If the problem persists, check the ink cartridge connector (see Bent ink cartridge connector on page 234).

4. If the problem persists, insert a new ink cartridge.

5. If the problem still persists, call your service representative (see HP Customer Care Centers on page 244).

Bent ink cartridge connector

You may find that the ink cartridge connectors have become bent while the cartridge was disconnected (see Remove an ink cartridge on page 70). This means that they cannot connect properly, and you will see a reseat message.

To correct this problem, use pliers to straighten the connectors so that they will fit into their slots.

Printheads

Cannot insert a printhead

1. Check that you are inserting the printhead into the correct slot.

2. Use the correct procedure to change printheads, through the Internal Print Server. See Remove a printhead on page 73 and Insert a printhead on page 74.

3. Check that there is no obstruction in the printhead slot.

4. Check that the printhead is correctly oriented (compare with the others).

The Internal Print Server recommends replacing or reseating a printhead

General recommendations

1. Remove the printhead.

2. Reinsert the printhead into the carriage and check the Internal Print Server message.

3. If the problem persists, check the printhead contacts for dirt or aerosol and clean them if necessary. See Clean the printhead contacts on page 186.

4. Find more troubleshooting information in the following sections, Problem due to overheating on page 235 and Problem due to the primer system on page 235.

5. If the problem persists, insert a new printhead.

6. If no printhead works in that slot, call your service representative (see HP Customer Care Centers on page 244).

Problem due to overheating

A printhead may overheat for several reasons:

- The room temperature may be too high.

- The printhead may be suffering from blocked nozzles. You may be able to cure this problem by cleaning the printheads (see Check and clean the printheads on page 76).

- The printhead may be faulty, in which case it should be replaced.

Problem due to the primer system

Primers are important to the printheads' nozzle health. When there is a problem with a primer, the Internal Print Server displays the following messages.

During a printhead replacement

- A reseat message for a particular printhead

- A printhead replacement incomplete message

- A numerical error code starting with 46 (46.0X.0Y:ZZ)

During a printhead servicing routine

- A reseat message for a particular printhead

- A numerical error code starting with 46 (46.0X.0Y:ZZ)

The message **46.05.0Y:06 – Primer 0Y leakage detected** indicates that one of the primer systems leaks. The number 0Y, where Y ranges from 1 to 7, indicates which primer is leaking.

You are recommended to:

- Run the primer diagnostic test from the Print Care window to confirm the cause of the error.

- Reseat the printhead. Make sure to push the primer into position before securing the latch. While running the test, you will already have done it at least once.
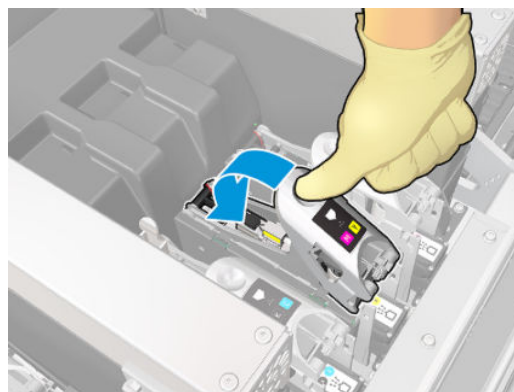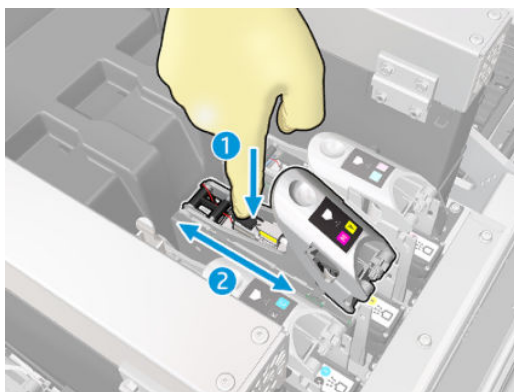
- Check that the O-rings in the primer ports are not broken or damaged. Replace the primer if any O-ring is missing or dented.
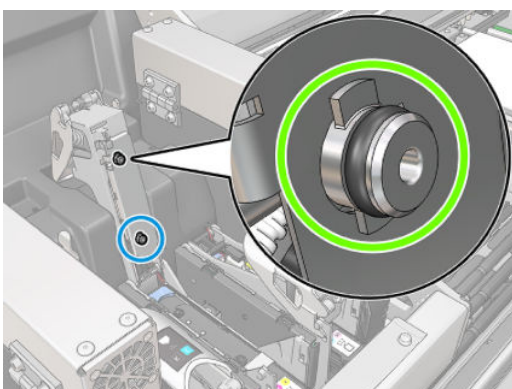
- Replace the primer. See Replace a primer and latch on page 194.

- Grease the printhead primers. See Grease the printhead primers on page 164.

If none of these actions resolve the problem, call your service representative.

If you see the message **46.01.0Y:YY**, run the primer diagnostic test from the Print Care window to confirm the cause of the error.

If the test instructs you to replace the primer, replace it. See Replace a primer and latch on page 194. Otherwise, call your service representative with the test results at hand.

Printhead health troubleshooting

There are two diagnostics to check the status of the printheads: the printhead status plot and the drop detector diagnostics in Print Care. Always use both, as they provide complementary information.

Printhead status plot

To print the printhead status plot, go to the Internal Print Server, click **Printer** > **Printhead cleaning** and click the **Print** button.

The following image is printed.
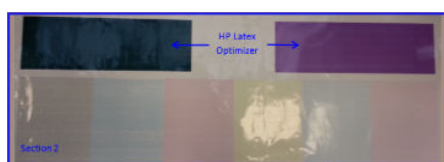
▲ The image below shows plainly which nozzles in each printhead are printing and not printing.

For reference, each one of the 5 areas (square in the picture and 1 to 5) of each color corresponds to approximately 1000 nozzles.

Drop-detector diagnostics

Execute the drop-detector diagnostics from the Print Care window. This will identify blocked nozzles in each printhead.

Decision table

The following table summarizes the data that can be seen in each diagnostic, the possible causes, and the decisions.

Mid-tones (section 1)	Nozzle health (section 2)	Drop detector	Possible cause	Action
No banding	< 300 blocked (all colors)	< 300 blocked (all colors)	Other	Continue banding troubleshooting.
Banding in all colors	< 300 blocked (all colors)	< 300 blocked (all colors)	Substrate advance, or other	Check the substrate-advance sensor. Continue banding troubleshooting.
Banding in one color	< 300 blocked (that color)	< 300 blocked (that color)	Other	Continue banding troubleshooting.

Mid-tones (section 1)	Nozzle health (section 2)	Drop detector	Possible cause	Action
	> 300 blocked	> 300 blocked	Printhead failure	Hard-clean the printhead, twice if necessary.
				Replace the printhead.
N/A	< 300 blocked (at least one color)	> 300 blocked (at least one color)	Drop detection failure	Call your service representative.

Hard clean

To perform a hard cleaning routine, go to the Internal Print Server, click **Printer** > **Printhead cleaning**, select the printhead(s) to clean and click the **Hard clean** button.

Sometimes, when the printhead is quite damaged, running the hard-clean routine twice helps to recover its performance.

New printhead is rejected

If the printer will not accept a new printhead, try the following steps in sequence:

1. Ensure that the printhead was correctly stored in its orange cap.

2. Ensure that the electrical contacts are clean.

3. Run the primer system diagnostic.

4. Assume that the printhead is faulty, and try another one.

5. If no printhead works in that slot, call your service representative.

Automatic printhead alignment fails

Automatic printhead alignment may fail occasionally. You may see the alert **Automatic Printhead Alignment cancelled because of scanning errors**, which can be caused by different problems:

- The scans of the printed blocks cannot be performed reliably on the current substrate. The scans of the patterns maybe unreliable or impossible on substrates that are non-white, transparent, or translucent, or have a very rough or punched surface. For these substrates, automatic printhead alignment using the built-in line sensor may not be possible.

- Some patterns of the automatic printhead alignment plot are defective due to:

— Stains or printhead crash marks on the substrate that can be easily seen by visual inspection of the three blocks in the plot. Make sure the substrate has no stains before running automatic printhead alignment.

— Printhead crash marks may occur when the substrate is wrinkled. See There are wrinkles and ink smears on the substrate on page 221

— Generally poor print quality due to clogged nozzles. See Check and clean the printheads on page 76.

● Either the built-in line sensor is not working properly or is not well calibrated. Automatic printhead alignment uses the black colorant as reference to align the rest of colorants, therefore the line sensor has a specific calibration that saves the proper distance between the line sensor and the black printhead (see Print Care diagnostics on page 101). If the LsToK (line sensor to black) calibration is not done, it can be seen by a visual inspection of the plot. In this case, the black patch is overlapping the spitbars of the first block of patterns, shown here:
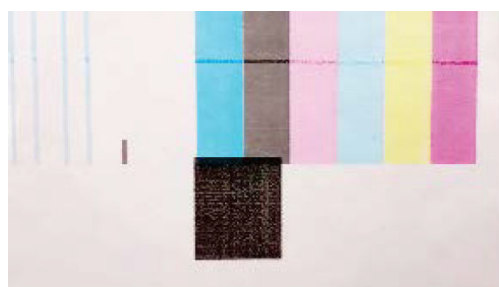
Incorrect calibration of LstoK   Successful calibration of LsToK
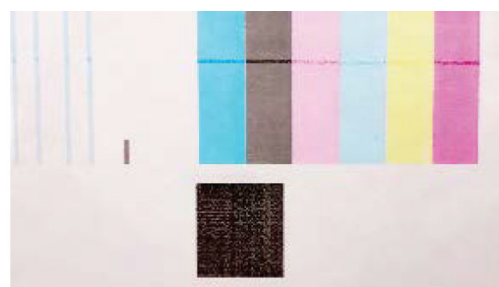
If the problem persists, call your service representative (see HP Customer Care Centers on page 244)

Printhead cleaning roll errors

You should not touch the printhead cleaning roll except when you need to replace it.

When the printhead cleaning roll reaches its end, it should be replaced. Always do this by following the Internal Print Server wizard. See Replace the printhead cleaning roll, filters, and spittoon on page 77.

Any handling of the roll may prevent the printer from keeping track of roll usage, in which case you may see spurious error messages, and a printing job may be cancelled unnecessarily.

15 Troubleshoot other issues

The printer does not start

1. Check that the power supply to the printer is working.

2. Check that the main power switch and PC switch are both on.

3. Check that the main power lights are on and the circuit breakers are all up.

4. Check that the IPS is working with no alerts showing.

5. Try turning the main switch off (not the PC switch) and turning it on again after 10 seconds.

6. If any of the circuit breakers trip (from up to down) while the printer is operating, switch off the printer and call your service representative (see HP Customer Care Centers on page 244).

The printer does not print

If all is in order (substrate loaded, all ink components installed, and no file errors), there are still reasons why a file you have sent from your computer may not start printing when expected:

- You may have an electrical power problem. If there is no activity at all from the printer, nor from its built-in computer, check that the power cables are connected correctly and that there is power available at the source.

- You may be experiencing unusual electromagnetic phenomena, such as strong electromagnetic fields or severe electrical disturbances, which can cause the printer to behave strangely or even stop working. In this case, turn off the printer, wait until the electromagnetic environment has returned to normal, then turn it on again. If you still experience problems, call your service representative (see HP Customer Care Centers on page 244).

The printer cannot be restarted from the Internal Print Server

In rare cases, the printer may be unresponsive to the **Shutdown** and **Wake up** buttons. If this happens, turn off the main switch, then turn it on again after 10 seconds and restart the built-in computer.

The printer seems slow

You may experience a temporary delay while the printer's drying module is warming up.

In some circumstances, the printer will deliberately print more slowly than usual to prevent the printheads from overheating. There are several possible reasons why a printhead may start to overheat:

- The room temperature is too high.

- The printhead is suffering from blocked nozzles (see Check and clean the printheads on page 76).

- The printhead is faulty and should be replaced.

Request to reinitialize the carriage

In some cases you may be asked to reinitialize the carriage. This operation restarts some mechanical subsystems, avoiding the need to restart the whole printer.

The Internal Print Server cannot detect the printer

If the Internal Print Server cannot establish communication with the printer, without apparent reason of after modifying Windows properties, follow these steps:

1. Use the **Wake up** button in the **Tools** menu to try to reactivate the printer.

2. Turn off the printer's main switch, then turn it on again after 10 seconds and restart the built-in computer.

3. Check the cable connecting the built-in computer to the printer.

4. Check that the Internal Print Server is correctly set up.

5. Contact your service representative.

Print Care spontaneously restarts

The Print Care software may restart itself when it detects that the printer's firmware or the Internal Print Server or some of their components have been updated, so this can happen from time to time.

Color calibration fails

Automatic color calibration may fail occasionally. You may see the alert **Color calibration cancelled because of scanning errors**, which can be caused by various different problems:

- Reflective color measurements of the printed target cannot be performed reliably on the current substrate. Reflective color measurement can be unreliable or impossible on substrates that are non-white, transparent or translucent, very glossy, or have a very rough or punched surface. For these substrates, automated color calibration using the embedded spectrophotometer may not be possible.

- Some of the color measurements of the color calibration test chart are defective due to:

  - Stains or printhead crash marks on the substrate, that can be easily seen by visual inspection of the printed chart. Make sure the substrate has no stains before running color calibration. Printhead crash marks may occur when the substrate is wrinkled. See There are wrinkles and ink smears on the substrate on page 221.

  - Wrinkles or bubbles in the substrate, even when there has been no printhead crash.

  - Generally poor print quality (such as banding). See Troubleshoot print-quality issues on page 225.

- Either the embedded spectrophotometer or the line sensor is not working properly. If the problem persists, call your service representative (see HP Customer Care Centers on page 244).

16 When you need help

HP Support is available, use the Remote Support HP option, in the IPS Help menu to connect. Call your remote support assistant and follow his instructions. Enter the 6 digit code when provided by the operator to allow remote connection: Webcam streaming is now possible. The call can include chat, remote desktop access, and the sharing of files, images, and video.

> **NOTE:** Remote support may not be available if you are not directly supported by HP or if you have not accepted the Data Transfer Agreement. To enable HP Support, go to the Internal Print Server, click **Tools** > **Preferences** > **Remote assistance**, and ensure that the Enable Remote Assistance checkbox is ticked.
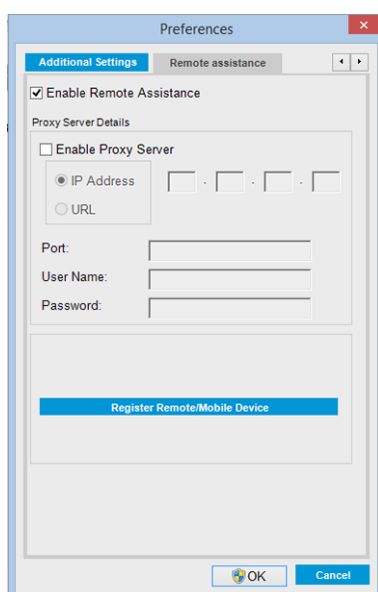
HP Proactive Support

HP Proactive Support helps reduce costly printer downtime by preemptively identifying, diagnosing and resolving printer issues before they become problems for you. HP's Proactive Support tool is designed to help businesses of all sizes reduce support costs and maximize productivity—all with the click of a mouse.

A component of the HP Imaging and Printing suite of services, Proactive Support helps you gain control of your printing environment—with a clear focus on maximizing the value of your investment, increasing printer uptime and reducing printer management costs.

HP recommends that you enable Proactive Support right away to save you time and prevent problems before they occur, reducing costly downtime. Proactive Support runs diagnostics and checks for software and firmware updates.

You can enable Proactive Support in the Internal Print Server by clicking **Tools** > **Proactive Support**, where you can specify the frequency of connections between your computer and HP's Web server, and the frequency of diagnostic checks. You can also choose to run the diagnostic checks at any time.

If Proactive Support finds any potential problem, it notifies you with an alert, which will explain the problem and recommend a solution. In some cases, the solution may be applied automatically; in other cases, you may be asked to perform some procedure to solve the problem.

HP Customer Care

HP Customer Care offers award-winning support to ensure you get the most from your printer, providing comprehensive, proven support expertise and new technologies to give you unique end-to-end support. Services include setup and installation, troubleshooting tools, warranty upgrades, repair and exchange services, phone and Web support, software updates and self-maintenance services. To find out more about HP Customer Care, visit us at:

http://www.hp.com/go/graphic-arts/

or call us on the telephone (see HP Customer Care Centers on page 244). To register your warranty:

http://register.hp.com/

HP Customer Care Centers

Help is available to you by telephone. For the right telephone numbers in your location, see http://www.hp.com/go/StitchS1000126in/support.

What to do before you call

- Review the troubleshooting suggestions in this guide.

- Review your RIP's documentation, if relevant.

- Ensure that you have the following information available:

  - The printer you are using: the product number and the serial number, found on the label on the door of the electrical compartment

  - If there is an error code in the Internal Print Server window, note it down; see Printer messages on page 250

  - The printer's Service ID

  - The RIP you are using, and its version number

  - The software application you are using, and its version number

  - If you have a problem directly related to an ink supply component (printhead, ink cartridge), take note of the product part number and warranty end date.

  - The text displayed by the Internal Print Server when you click **Help** > **About**

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:

- In the Internal Print Server, click **Information** > **Service information**.

- From any computer with Internet access, enter the URL of your printer into a Web browser, followed by `/hp/device/webAccess/allServicePlot.htm`. For instance, if the URL of your printer is **http://123.123.123.123**, enter `http://123.123.123.123/hp/device/webAccess/allServicePlot.htm`.

You can request the whole list, which takes a significant time to generate; or you can request specific parts of it. If in doubt, you are recommended to request the whole list (click **All pages**).

If you need to send the list by e-mail, you can save the page as a file from your Web browser, and later send the file.

17 Printer specifications

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Functional specifications

Ink supplies

Printheads	Cyan and black, yellow and magenta
Ink cartridges	Cyan, magenta, yellow, black

Substrate sizes

	Minimum	Maximum
Roll width	635 mm (25 in)	3.20 m (126 in)
Roll diameter	80 mm (3.15 in) (core diameter)	350 mm (13.8 in)
Roll weight		300 kg (661 lb)

NOTE: Narrow substrates can be damaged during printing if they are very weak.

Passes, resolutions, and speeds

		Resolution (ppi)		Printing speed (m²/h)	Printing speed (ft²/h)
Passes	Ink density	Rendering	Printing	3.2 m roll	126 inch roll
1	≤ 30%	300 × 300	600 × 1200	390	4197
2	≤ 50%	300 × 300	600 × 1201	220	2368
3	≤ 70%	300 × 300	600 × 1202	160	1722
4	≤ 100%	300 × 300	600 × 1203	130	1400
6	≤ 150%	300 × 300	600 × 1204	100	1076

Physical specifications

Weight	1300 kg (2866 lb)
Width	5.74 m (226 in)
Depth	1.38 m (54.3 in)
Height	1.67 m (65.7 in)

Memory specifications for the Internal Print Server computer

Memory (DRAM) supplied	8 GB
Hard disk	500 GB

Power specifications

The drying components are powered with a three-phase line that requires a power distribution unit (PDU).

Mains power, input rated current	
3-phase (line-to-line voltage)	200–240 V AC (±10%), 50/60 Hz, 32 A max
3-phase (line-to-line voltage)	380–415 V AC (±10%), 50/60Hz, 23 A max
PC power (optional), input rated current	
1-phase	100–127 V AC (±10%), 50/60Hz, 10 max
1-phase	200–240 V AC (±10%), 50/60Hz, 10 max

Air supply requirements (pneumatic spindle)

Air pressure supply

The pneumatic spindle requires an air compressor or a pressurized air line, not supplied with the printer.

☼ **TIP:** You are recommended to use a pressure gauge that indicates the pressure in bars.

Air pressure	5.5 bar (80 psi)
Minimum airflow	Recommendation: 30 l/min
Lubricator	Not recommended
Air filter (recommended)	Recommendation: 5 µm, auto-drain, 99.97% coalescing efficiency
Regulator (required)	Regulator with pressure gauge

Pneumatic connector

The printer comes with an air gun that you must attach to your air supply. In order to connect your air supply to the air gun, you must meet the following requirements:

- 9.84 mm (0.25 in) female connector, BSP or NPT thread

- Tape to secure the connection and prevent air leaks

Ecological specifications

For the up-to-date ecological specifications of your printer, go to http://www.hp.com/ and search for "ecological specifications".

Environmental specifications

	Temperature range	Humidity range	Temperature gradient
Operating for optimal print quality	20 to 25°C (68 to 77°F)	30 to 60% relative humidity	10°C/h (18°F/h) or less
Operating for standard printing	15 to 30°C (59 to 86°F)	20 to 70% relative humidity	10°C/h (18°F/h) or less

	Temperature range	Humidity range	Temperature gradient
Not operating, in transport or storage, ink in tubes	5 to 55°C (41 to 131°F)	90% relative humidity at 55°C (131°F)	10°C/h (18°F/h) or less
Not operating, in transport or storage, no ink in tubes *	−10 to 55°C (26 to 131°F)	90% relative humidity at 55°C (131°F)	10°C/h (18°F/h) or less

* If the printer is going to be kept at a temperature of less than 5°C, call your service representative to empty the ink from the tubes.

Maximum operating altitude: 3000 m (10000 ft)

The printer should not be exposed to direct sunlight or any other strong light source, and it should not be used in a dusty environment.

Acoustic specifications

Average idle sound pressure at bystander position	< 52 dB (A)
Average operating sound pressure at bystander position	< 64 dB (A)

Exhaust specifications

The aerosol extractor provided contains only passive elements. The exit exhaust, diameter 114 mm (4.5 in), should be connected to the customer's exhaust installation, ensuring a minimum airflow of 300 m³/h and a minimum pressure of −1500 Pa, measured at the printer's aerosol-extractor exhaust.

HP recommends using the exhaust system independent from the application. However, for specific applications where the ink collector is needed, the exhaust system must be connected. In addition, HP recommends conducting the exhaust air outside the room.
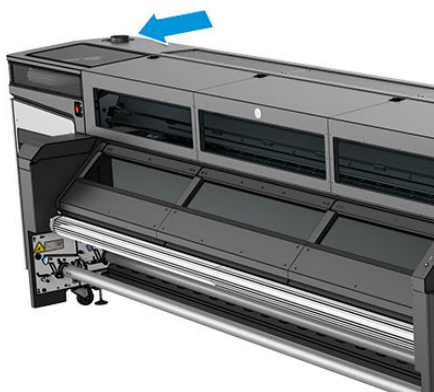
A   Printer messages

Occasionally you may see messages such as the following in the Internal Print Server window.

There are two types: text messages, which are more informative, and messages containing numerical codes, which mean that the printer has detected a problem or malfunction.

When one of these messages appears, follow any instructions provided by the printer, and consult the tables below. If you feel in doubt about the correct response, or if you have followed the recommendation but the problem persists, call your service representative. See HP Customer Care Centers on page 244.

Text messages

Message	Recommendation
{Color} cartridge has expired	You are advised to replace the ink cartridge. See Remove an ink cartridge on page 70.
{Color} cartridge is altered	You are advised to replace the ink cartridge. See Remove an ink cartridge on page 70.
{Color} cartridge is low on inkIt is recommended to use the exhaust system independently on the application. However, for specific applications where the ink collector is needed, the connection of the exhaust system is mandatory. In addition, HP recommends to conduct the exhaust air outside of the room.	Be ready to replace the ink cartridge soon.
{Color} cartridge is missing	Install the correct ink cartridge. See Insert an ink cartridge on page 71.
{Color} cartridge is non-HP ink	You are recommended to install an HP ink cartridge for best performance.
{Color} cartridge is out of ink	Replace the ink cartridge. See Remove an ink cartridge on page 70.
{Color} printhead is missing	Install the correct printhead. See Insert a printhead on page 74.
{Color} printhead out of warranty	The printhead's warranty has ended, because of the length of time it has been in operation, because of the volume of ink used, or because non-HP ink has been used in the system. See the limited warranty document.
An error has occurred in printhead detection	Remove the printhead, clean any ink from the electrical connectors on the printhead (do not try to clean the nozzles), and reinsert the printhead. See The Internal Print Server recommends replacing or reseating a printhead on page 235.
Checking file system	After a dirty power off, the printer performs a file system check, which will take some minutes.
Checking printer	The printer is completing checks and cool-down cycle after finishing a job.
Clean drop detector spittoon	You are advised to clean the ink deposits.

Text messages (continued)

Message	Recommendation
Cleaner roll jam.	Go to the Internal Print Server and select the Ink System menu, then **Check cleaner roll**. Pull out the printhead cleaning roll assembly, raise the pinchwheels, wind the roll forward manually, then lower the pinchwheels and push the assembly back into the printer.
Color calibration cancelled because of scanning errors	The color calibration chart could not be scanned successfully with the current substrate. See Color calibration fails on page 242.
FW upgrade post actions	The firmware update is being performed.
Initializing	The Internal Print Server is connecting to the printer.
Initializing, please wait	The Internal Print Server is starting the printer.
Ink drying	The printer is drying the last passes of a job after printing it.
Ink system not ready to print	Wait a while. If the printer does not recover, restart it.
Job canceled due to lack of data received from the IPS	If the problem persists, check the configuration of the Internal Print Server computer.
Line sensor calib. error: substrate too small	Load a larger substrate.
Low cleaner roll	Be ready to replace the printhead cleaning roll soon.
Lower lever	Lower the substrate pressure handles.
Maintenance #N advised. Please contact HP	You are advised to contact your service representative. See HP Customer Care Centers on page 244.
No substrate loaded	Load substrate.
Offline	The printer is shut down or not detected.
Please close safety sensor	An open safety circuit has been detected, and should be closed in order to continue working.
Please turn emergency stop buttons to release them.	An emergency button has been pressed, and must be released to continue working.
Preparing to print	The printer is performing checks and warm-up prior to printing.
Printer cannot carry on printing	Check that the three-phase power supply is working and that the ambient temperature is within the normal range. This problem can also be caused by holes in the substrate, by reflective or transparent substrates, or by a dirty or faulty temperature sensor.
Printer cannot cool down	If the ambient temperature is within the normal range, this problem may be caused by removing the substrate too quickly after printing. Try leaving the substrate in the printer until temperatures settle down after printing.
Printer cannot warm up	Check that the three-phase power supply is working. This problem can also be caused by holes in the substrate, by reflective or transparent substrates, or by a dirty or faulty temperature sensor.
Printheads not aligned	Align the printheads. See Align the printheads on page 89.
Printhead replacement incomplete	The printhead replacement process was unsuccessful. See The Internal Print Server recommends replacing or reseating a printhead on page 235.
Printing	The printer is printing.
Ready	The printer is ready to receive and print a job.
Remove {color} printhead	Remove the printhead. See Remove a printhead on page 73.
Replace {color} cartridge	Replace the ink cartridge. See The Internal Print Server recommends replacing or reseating an ink cartridge on page 234.

Text messages (continued)

Message	Recommendation
Replace {color} printhead	Replace the printhead. See The Internal Print Server recommends replacing or reseating a printhead on page 235.
Replace aerosol filter	You are advised to replace both aerosol filters. See Replace the aerosol filters on page 78.
Reseat {color} cartridge	Reseat the ink cartridge. See The Internal Print Server recommends replacing or reseating an ink cartridge on page 234.
Reseat {color} printhead	Reseat the printhead. See The Internal Print Server recommends replacing or reseating a printhead on page 235.
Select substrate name in the IPS	Select the name of the loaded substrate in the Internal Print Server.
Starting up	The printer is being detected while starting up.
Substrate jam: remove substrate	See The substrate has jammed on page 218.
Substrate may be detached from the rear spindle or slippage detected. Substrate will be unloaded.	See The substrate is not attached to the core and/or spindle on page 218.
System error	The printer has a system error. In the alert window, you should see the numerical code of the system error.
System in sleep mode	The printer is in sleep mode.
The front cover is open. Close the front cover to continue printing. If the problem persists, run a diagnostic to identify the issue.	Proceed as described in the message.
The loading table is not closed. Close the loading table to continue printing. If the problem persists, run a diagnostic to identify the issue.	Proceed as described in the message.
The main window is open. Close the window to continue printing. If the problem persists, run a diagnostic to identify the issue.	Proceed as described in the message.
Very low cleaner roll	Be ready to replace the printhead cleaning roll very soon.
Visually check printer for readiness, then press the blinking rearm button to provide full power.	Press the blue, blinking button to finish the printer's start-up procedure.

Numerical error codes

Error code	Recommendation
10.04.XX:YY	Problem with e-cabinet fuses. The message in the IPS will indicate which fuse is causing the issue in order to replace it. Diagnostic E-cabinet state can be used to confirm that the issue is solved.
10.06.09:40	The emergency stops and/or safety relay have been activated. Check that the emergency stops are not activated. If the problem persists, run a diagnostic to identify the issue.
22.02.0X:06	Intermediate tank broken bag detected. Proceed with the intermediate tank maintenance procedure (see the Print Care wizard: "Replace an intermediate tank").
22.02.0X:07	Intermediate tank end of life reached. Proceed with the intermediate tank maintenance procedure (see the Print Care wizard: "Replace an intermediate tank").
22.02.01:74	Intermediate tank empty. Proceed with the intermediate tank maintenance procedure (see the Print Care wizard: "Replace an intermediate tank"). If during the replacement you detect that there is still ink in the replaced Intermediate tank, call your support representative.
46.05.0X:06	Primer X leakage. Reset primer latch and/or check o-rings. If problem persists, call your support representative.
47.01.06:52	Printhead cleaning roll pinch unlocked. Ensure that the pinch system of the printhead cleaning roll assembly is properly closed, and that there is no slippage between the core of the printhead cleaning roller and its motor.

Error code	Recommendation
58.02.00:02	Spectrophotometer shutter door open/close check fail. Run the Color sensor check diagnostic and check at the IDS side of the printer that the shutter is opening and closing properly. If the door is opening and closing but the printer does not detect it, clean the spectrophotometer. If the door is not opening and closing, install a new shutter mechanism (see Replace the spectrophotometer shutter on page 214). If the problem persists, call your support representative.
58.03.00:84	Spectrophotometer calibration failure. Run the Color sensor check diagnostic. If there is an issue related to the spectrophotometer shutter, replace it (see Replace the spectrophotometer shutter on page 214). Otherwise clean the spectrophotometer. If the problem persists, call your support representative.
86.01.00:01	Carriage movement failure. Ensure that maintenance routines are up to date, then perform Reinitialize carriage from the Internal Print Server. Also perform the carriage-rail cleaning process (see Clean and lubricate the scan axis and mechanical transmissions on page 156).

NOTE: The above table includes the most significant numerical codes. If you receive an error code that is not in the table, follow the instructions in the message.

B Summary of common sublimation problems

This is a table of common sublimation 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, see the relevant chapter in this guide.

Problem	Symptom	Cause	Solution
Ghosting	A faint image on a printed sheet in a place not intended	Motion of paper during sublimation	Increase pressure or apply more tension to the paper.
Yellowness	Textile becomes yellowish	Temperature too high	Use lower temperature for this material.
Stickiness	Support paper or transfer paper stuck over the textile	Coating of textile and paper not compatible	Use correct paper and textile configuration.
Worming	Vertical marks with lower gamut or white marks	Wrinkles on transfer paper, textile, or support paper	Ensure good positioning of paper and textile, apply correct tension. Use sticky paper.
Image deformation	Image smaller than expected	Temperature shrinkage	Calculate shrinkage and print larger image.
Bleed through	Side-to-side color differences	Too low residential time or temperature for this material	Improve calender condition, raise residential time, and increase temperature.
Pinholes	White point on image	Dust over paper or textile	Ensure clean environment.
Cloudiness	Text quality with smaller definition	Residential time too high	Increase pressure or decrease residential time.
Low color saturation	Image with less gamut than expected	Bad calendering conditions	Look for best calender configuration for this material.

Glossary

Aerosol filter

The printheads produce many fine droplets of ink, most of which are placed accurately on the substrate. However, a small proportion of these droplets escape sideways; the two aerosol filters are placed on either side of the printhead carriage to intercept them.

Bleeding

A print-quality defect that occurs when the ink spreads on the substrate across areas of different colors.

Carriage beam

The beam supporting the printhead carriage as it moves back and forth across the printer.

Coalescence

A print-quality defect that looks like a higher level of whiter grain.

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, bearing in mind that all devices have a limited color gamut and may not be physically capable of matching certain colors precisely.

Color consistency

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

Color model

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

Color space

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

CSR

Customer replaceable parts.

Drying

The heat applied in the printing zone removes water and fixes the image to the substrate.

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 the electronics 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 or render it unusable. One way to minimize uncontrolled ESDs, and therefore 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). Additionally, to reduce the generation of electrostatic charge in your body try to avoid working in a carpeted area, and keep your body movements to a minimum when handling ESD sensitive devices. Also, avoid working in low humidity environments.

Ethernet

A popular computer networking technology for local area networks.

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.

I/O

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

ICC

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

Ink cartridge

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

Ink density

The relative amount of ink that is deposited on the substrate per unit of area.

Ink deposit

The printheads sometimes expel a small amount of ink into the ink deposits in order to check the status of each nozzle.

Ink limits

A means of specifying the maximum amount of ink of all colors in total that can be laid down onto a given substrate.

Ink restrictions

A means of specifying the maximum amount of each color of ink that can be laid down onto a given substrate.

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.

Nozzle

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

Passes

The number of passes specifies how many times the printheads will print over the same area of substrate.

Platen

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

Printhead

A removable printer component that takes ink of a particular color or colors from the corresponding ink cartridge(s) and deposits it on the substrate, through a cluster of nozzles.

Printhead cleaning roll

A roll of absorbent material used to clean surplus ink from the printheads after each pass over the substrate.

Spindle

A rod that supports a roll of substrate while it is being used for printing.

Substrate

A thin, flat material made to be printed on.

TCP/IP

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

Tension

Tension is applied at the input and the output side of the printer. It needs to be evenly distributed along the whole width of the substrate, thus substrate loading is a critical operation.

Vacuum pressure

The vacuum applied to the substrate in the printing zone helps to hold the substrate down on the print platen, keeping the distance to the printheads constant.

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