HP Latex 3800 Jumbo Roll Solution

User Guide

Legal notices

The information contained herein is subject to change without notice.

The only warranties for HP Products and services are set forth in the express warranty statement accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

Safety notice

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

Trademarks

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1 Introduction

Welcome to your printer

> **NOTE:** This document refers to different printer models. The images that appear may differ from your model.

Your printer is a high-productivity industrial printer for producing signs and graphics on a wide range of flexible materials up to 3.20 m (126 in) wide. The printer uses water-based HP Latex Inks to provide high-quality, durable output. Some of the key features of the printer are:

- High quality output, with rich colors, 1200 dpi resolution, and 12 picoliter drop size

- Print on a wide range of substrates—including PVC banners, self-adhesive vinyls, papers, wall coverings, PET films, textiles, flooring, laminates, and synthetic leathers

- Durable prints with outdoor display permanence of up to three years unlaminated, and up to five years laminated

- Accurate and consistent color reproduction with automatic color calibration (built-in spectrophotometer)

- Indoor-quality prints up to 77 m²/h (830 ft²/h)

- An energy efficient LED light set, for on-the-fly visual inspection & proofing of the printed image

- Printer Status Beacon, an intuitive light signaling system to quickly identify the status of your printer from a distance

- A new package of productivity software designed to improve business and printer efficiency

- A mobile application for aiding production managers for remote monitoring, and operators for multi-printer attendance. For latest information on mobile applications visit: http://www8.hp.com/us/en/commercial-printers/latex-printers/workflow-solutions.html

- Hot swappable ink cartridge: 5 / 10 liter

- HP Print Care maintenance scheduler and proactive maintenance alerts

- Environmental differentiation with water-based HP Latex Inks

- Jumbo input and output units capable of handling rolls up to 1200 kg (2640 lb) or 1.2m (47 in) in external diameter

- Printzone lights

Documentation

The following documents can be downloaded from http://www.hp.com/go/latex3800/manuals/.

- Site preparation guide

- Introductory information

- User's guide

- Legal information

- Limited warranty

See the Solutions Web site for information about new substrates, at http://www.hp.com/go/latex3000/solutions/. A new Web-based Media Solutions Locator (http://www.hp.com/go/mediasolutionslocator) has been developed to collect available substrate configurations for latex printers.

The Quick Response (QR) code images found in some parts of this guide provide links to additional video explanations of particular topics. For an example of such an image, see The ink collector kit on page 49.

Safety precautions

Before using the Jumbo Roll equipment, read the following safety precautions and operating instructions to make sure you use (operate and maintain) 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 the appropriate measures to minimize risks to yourself and others. The equipment must be installed in a restricted access location, in which training and experience of use are required for access.

Remember that **operations must be supervised** at all times.

Warnings and cautions

The following symbols are used in this manual to ensure proper use of the equipment and to prevent it 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.

General safety guidelines

Read the Jumbo Roll Solution Installation Guide before installing and connecting the equipment. Remember that where the manufacturer is responsible for building in safety features in accordance with the latest technology, the buyer/user is obliged to acquaint operating, cleaning, and maintenance staff with the instructions and directions obtained in this manual.

The buyer/user should also take additional safety measures if the equipment is not installed according to the manufacturer's directions, and/or drawings, or if such measures are required.

⚠ **WARNING!**   If your host printer includes a printer status beacon; the information provided is for functional information purposes only, and is not related to any safety provision, or safety states. Warning labels on the printer and on the Jumbo Roll equipment must always be respected when operating them, and prevail over any status indicated by the printer status beacon or Jumbo Roll equipment pilot lights.

Turn off the equipment 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 418) in any of the following cases:

- The power cord is damaged.

- The tension bar, control panel, or steering module enclosures are damaged.

- The equipment has been damaged by an impact.

- Liquid has entered the equipment.

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

- The Residual Current Circuit Breaker in the building's Power Distribution Unit (Ground Fault Circuit Interrupter) has been repeatedly tripped.

- Fuses have blown.

- The equipment is not operating normally.

- There is any mechanical or enclosure damage.

Turn off the equipment using the Branch Circuit Breakers in either of the following cases:

- During a thunderstorm.

- During a power failure.

Take special care in zones marked with warning labels.

Do not repair or replace any part of the printer, or attempt any servicing unless specifically recommended in the user-maintenance instructions, or in published user repair instructions, that you understand and have the skills to carry out.

Do not attempt to repair, disassemble, or modify the device yourself.

- Do not use any part other than original HP Spare Parts.

- For repairing or reinstalling the device please contact your nearest service authorized provider.

- Failing to do so may result in electric shock, fire, problems with the product, or injury.

Electrical shock hazard

⚠ **WARNING!**   The e-cabinet internal circuits and motor module operate at hazardous voltages capable of causing death or serious personal injury.

Earth connection is essential before connecting the power supply. Refer to the Installation Instructions before connecting the power supply cord to the unit to determine proper input voltage configuration.

The Jumbo Roll must be connected to earth at mains outlets only.

Turn off the equipment using the Branch Circuit Breakers located in the building's Power Distribution Unit (PDU) and Turn also off the equipment mains switch before servicing. Consider the appropriate use of the provided padlock/lockers on the mains switch and/or Branch Circuit Breakers before servicing the unit as per local laws or LOTO (Lock Out/Tag Out) requirements.

To avoid the risk of electric shock:

- Do not attempt to dismantle the electrical e-cabinet and motor modules except during hardware servicing tasks. For hardware servicing tasks 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.

📝 **NOTE:** A blown fuse may indicate malfunctioning electrical circuits within the system. Call your service representative (see HP Customer Care Centers on page 418), and do not attempt to replace the fuse yourself.

Heat hazard

The drying and curing subsystems of the host printer operate at high temperatures and can cause burns if touched. LED's array supports, and 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 and curing modules or vapor removal thermal blankets.

- Take special care when accessing the substrate path.

- Take special care with zones marked with warning labels.

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

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

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

Fire hazard

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

- Always use the power supply voltage specified on the nameplate.

- Connect the power cords to dedicated lines, each protected by a branch circuit breaker according to the information detailed in the Site Preparations documentation.

- Do not insert objects through slots in the equipment.

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

- Do not use aerosol products that contain flammable gases inside or around the equipment. Do not operate the printer in an explosive atmosphere.

- Do not block or cover the openings of the equipment.

- Do not attempt to modify the drying or curing module, e-cabinet, the vapor removal thermal blankets, AC motor, or cooling fans.

- 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 consumables (foams, filters, printhead cleaner 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 the LED's arrays' supports, beam and enclosures.

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

The printer's drying and curing subsystems and Vapor Removal Thermal Blanket operate at high temperatures. Call your service representative if the printer's built-in Residual Current Circuit Breaker or the building's installation (Ground Fault Circuit Interrupter) is repeatedly tripped.

Mechanical hazard

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

> **WARNING!** Do not touch the printer substrate advance spindles, the jumbo rolls spindles, or any substrate roll under **Normal**, **Fast Movement** or **Printing** modes, as it may harm your hands or fingers.

- **IMPORTANT!** When you press a spindle valve, to minimize the risk of trapping a finger between a component and the roll, make sure nobody else is touching it at the same time. To minimize risk, it is recommended to use the same tool to deflate that was used to inflate (as opposed to using your finger).

- 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 stand beside the steering module because it travels laterally to adjust the skew during the print process.

- Never manipulate the tension bar or try to adjust its weight during the print process. Ensure the print process has finished and the Jumbo Roll has stopped before you adjust it.

- Do not adjust the skew compensator sensor position during the print process. Ensure the print process has ended and the steering module platform has stopped moving before you adjust the sensor.

- Remember there is a step between the Jumbo Roll platform and the printer, when you access the printer's substrate path during the substrate load process.

- Take care with the bars on the bottom substrate support grid when accessing the gap between the Jumbo Roll and platform, or when you access the area below the platform.

- Ensure you use the lock in safe position when the platform is opened for the substrate load process or other maintenance tasks. Appropriate locking means are provided on the fence.

- Take care to remember the step when you access the top of the Jumbo Roll platform.

- Be careful not to fall in the gaps at both sides of the Jumbo Roll platform, as you could get injured.

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

- Do not operate the equipment without the covers in place.

Chemical hazard

To identify the chemical ingredients of your consumables (material and agents), see the safety data sheets available at http://www.hp.com/go/msds. Sufficient ventilation must be provided to ensure that potential airborne exposure to these substances is adequately controlled. Consult your usual air conditioning or Environmental Health and Safety (EHS) specialist for advice on the appropriate measures for your location.

For more detailed information, see the "Ventilation and air conditioning" section included in the Site Preparation Guide, available at: http://www.hp.com/go/Latex3800/manuals/.

Light radiation hazard

Infrared (IR) radiation is emitted from the dryer module in the printer. The dryer enclosure limits radiation 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 lamps while they are on. Do not modify the dryer enclosure.

UV radiation can be emitted from the LED's array 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 for a long time at the output LED's lights while they are on.

Ventilation

Fresh air ventilation is needed to maintain comfort levels. For a more prescriptive approach to adequate ventilation, you could refer as guidance to the latest edition of the ANSI/ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers) document Ventilation for Acceptable Indoor Air Quality.

Air conditioning and 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

As with all equipment installations, to maintain ambient comfort levels, air conditioning in the work area should take into account that the equipment produces heat. Typically, the printer's power dissipation is 9-11 kW (31-38 KBTU/h), and for each Jumbo Roll unit an additional +2 kW (+7 KBTU/h) should be considered.

Air conditioning and ventilation should meet local Environmental Health and Safety (EHS) guidelines and regulations.

Sound pressure level

The sound pressure level could exceed 70 dBA in some print modes. Hearing protection may be required.

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 and Jumbo Rolls have been designed to be compatible with many of these devices.

- Always wear personal protective equipment including boots and gloves.

Ink and condensates handling

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

Use of tools and keys

Users: Daily operations including equipment settings, printing, substrate loading, optical sensor adjustment, tension bar weight regulation, replacement of ink reservoirs, and daily checks. No tool or maintenance key is required.

Maintenance personnel: Instructed hardware maintenance tasks and replacement of printheads, filters, ink waste bottles, foams, and the printhead cleaning roll. The maintenance key (printer) and a flat screwdriver are required.

Service personnel: Any repair or maintenance operation, running diagnostics, and troubleshooting. The following tools may be required:

- Maintenance key (printer)

- E-cabinet key (printer)

- Maintenance and e-cabinet key (jumbo roll)

- Mains switch key (printer)

- Mains switch key/padlock (jumbo roll)

- Internal Print Server key (printer)

- Torx screwdriver set

Maintenance key (printer)	E-cabinet key (printer)	Maintenance and e-cabinet key (jumbo roll)
Mains switch key (printer)	Mains switch key/padlock (jumbo roll)	Internal Print Server key (printer)
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.

Warning labels

WARNING! Take note of all the warning labels located on the printer and jumbo units. You must have the technical training and experience necessary to be aware of hazards when performing a task, and to take appropriate measures to minimize the risks to yourself and to others. Read the other printer manuals carefully together with this user guide before operating the Jumbo Roll.

| Label	Explanation
ELECTRIC SHOCK HAZARD Heating modules operate at hazardous voltages. Disconnect all power sources before servicing. Caution! Double pole. Neutral fusing. WARNING High leakage current. Earth connection essential before connecting supply. Before connecting Power Supply cord to the unit, refer to the Installation Instructions to determine proper input voltage configuration. Before starting, read and follow the operating and safety instructions. Avant de commencer, lisez et suivez les instructions de fonctionnement et de sécurité. Lesen und befolgen Sie bitte die Bedienungs- und Sicherheitsanweisungen, bevor Sie starten. Antes de empezar, lea y siga las instrucciones sobre funcionamiento y seguridad. 开始之前，请阅读并遵循以下操作和安全说明。 在開始之前，請先閱讀並依照操作與安全指引進行。 Located on the e-cabinet; for service personnel only	**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. Before servicing, turn off the printer using the Branch Circuit Breakers located in the building's Power Distribution Unit (PDU). **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. **Before starting** Read and follow the operating and safety instructions before starting the printer.
Located on the curing and drying modules and universal support beam.	Risk of burns. Do not touch the internal enclosures of the printer's drying and curing modules, vapor removal thermal blankets, universal support beam, and LED's array and enclosures.
Located on each side of the substrate path, close to the PPS gear	Crush hazard. Do not touch PPS while moving. When the substrate has been loaded, the carriage descends into its printing position, and could crush your hand or anything else left underneath it.

Label	Explanation
Located on each side of the substrate path, close to the PPS gear, and on each side of the Jumbo input and output units tension bar modules	Risk of trapped fingers. Do not touch gears while moving. Danger that your hands may become trapped between gearwheels.
Located internally on the substrate path and internally on the right cover; for maintenance/service personnel only	Hazardous moving part. Keep away from moving printhead carriage. When printing, the printhead carriage travels back and forth across the substrate.
Located on the dryer module; for maintenance/service personnel only	Light radiation hazard. Infrared (IR) radiation is emitted from this printer. Do not modify the dryer enclosure. You are recommended not to look directly at the lamps when they are on. The dryer enclosure limits radiation in compliance with the requirements of the exempt group of IEC 62471:2006, *Photobiological safety of lamps and lamp systems.*
Located on each side of the jumbo units tension bar, on the face between the tension bar and steering module	Mind the step. Be aware of the step between the tension bar module and the steering module structure when accessing for substrate load, skew sensor adjustment, or maintenance.
Located around the steering module base and skew sensor support	Be aware of moving parts. Identifies movable parts on the steering module structure. Do not stand in the vicinity of the steering module during printing or skew adjustment operation modes, as it may trap your toes.
Located on top of the steering module bottom covers	Do not step on. Performance of the equipment may be affected and the surface may become damaged.

Label	Explanation
	You are recommended to wear gloves when handling ink cartridges, printhead cleaning cartridges, and the printhead cleaning container.
Located on the condensation collector bottle and the printhead cleaning roll carriage	
	Sound level could exceed 70 dBA in some print modes. Hearing protection may be required.
Located at the rear, on the left cover	
	Electric shock hazard. Disconnect power before servicing. Heating modules and electrical cabinets operate at hazardous voltage.
Located internally on heating modules, electrical cabinets, and on each door that provides access to hazardous voltages; for maintenance/service personnel only	
	Hazardous moving parts. Keep away from moving fan blades.
Located internally, close to vacuum fan blades; for maintenance/ service personnel only	
	Identifies the Protective Earth (PE) terminal for qualified electricians, and bonding terminals for maintenance/service personnel only. Earth connection essential before connecting supply.

Emergency stop buttons

There are eight emergency stop buttons in the system: four distributed around the printer, and two on each side of each jumbo unit. If an emergency occurs, simply push any one of the emergency stop buttons to stop all printing processes. It doesn't matter which button is pushed, it will stop all the components (printer and jumbo

units). The "Emergency red light" then shows on the jumbo unit console, a system error message is displayed on the printer, and the fans turn at maximum speed. Ensure that all emergency stop buttons are released before restarting the printer.
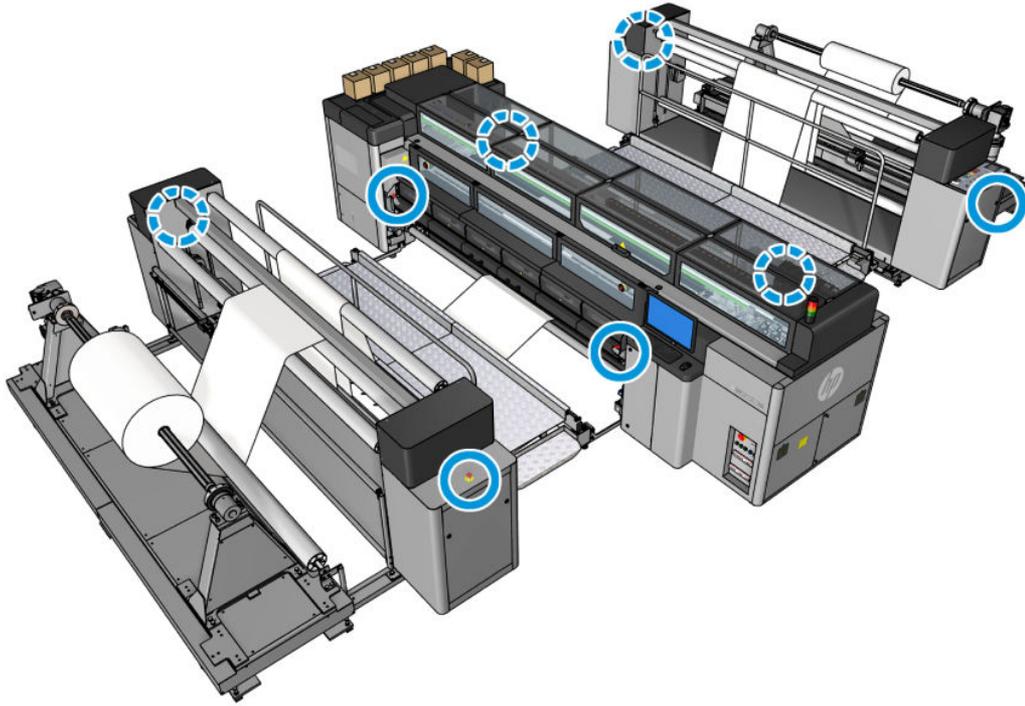

IMPORTANT: If one or more of the emergency stop switches are pushed (in an emergency or by accident), the Jumbo Roll control panel "Emergency stop" light is activated. The safety devices have to be reset before production can continue. The red emergency stop switches are easy to reset: rotate them a quarter turn to the right. Once all Emergency stop buttons are reset, the printer's blue rearm button must be pushed (as a "master enable") to re-enable operations in both the printer and jumbo unit.
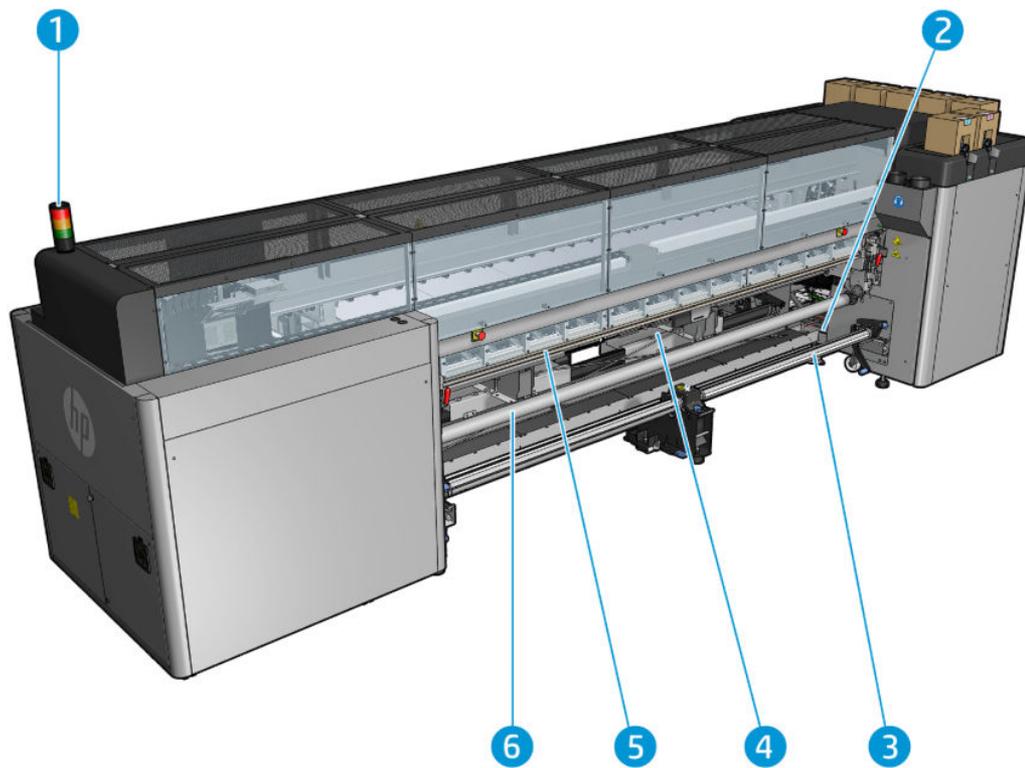
Main components

The following views of the printer illustrate the main components.

Front view HP Latex 3800 Printer
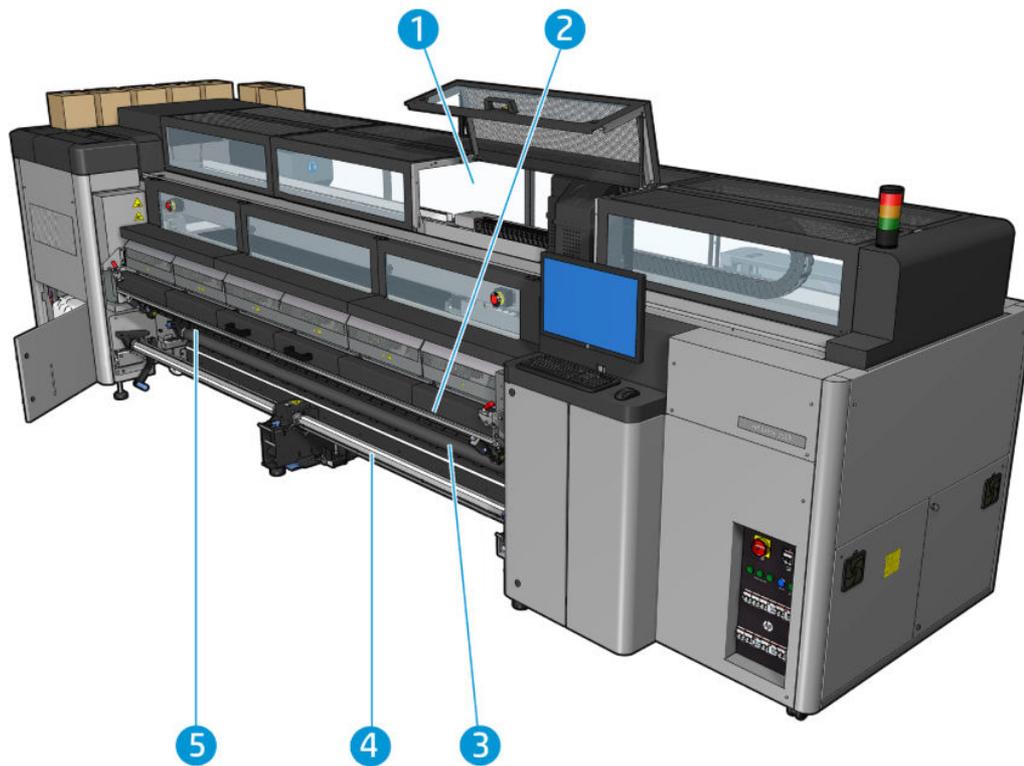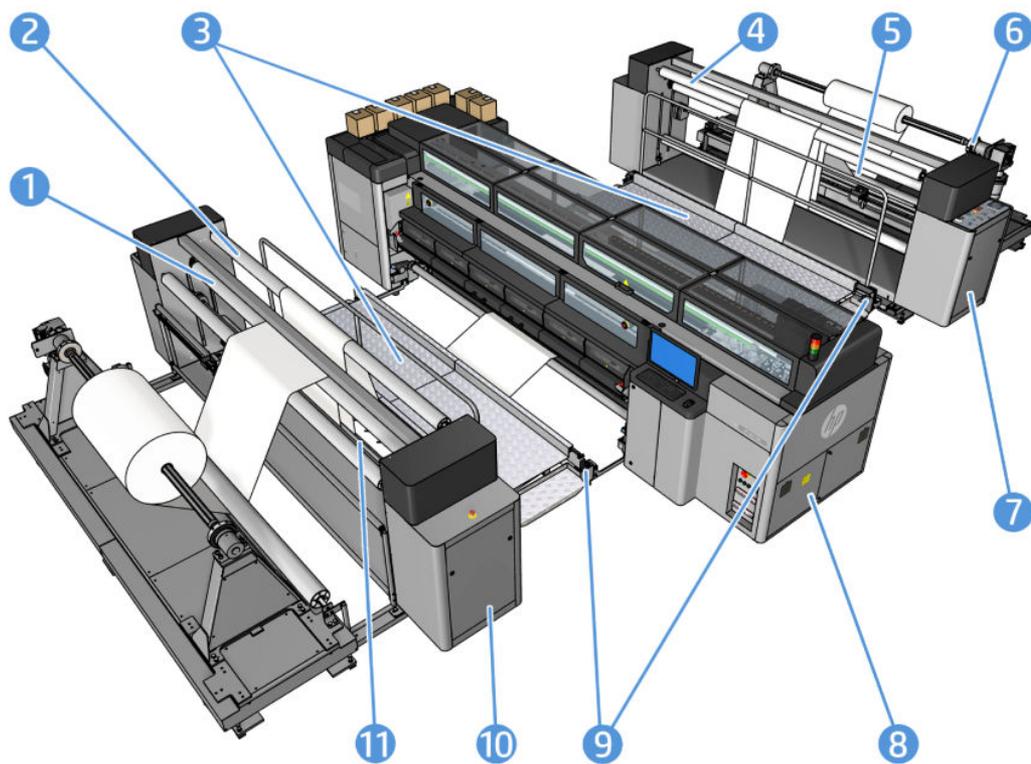

1.   Printzone lights

2.   Universal Mounting Beam

3.   Output rubber spindle

4.   Output diverter roller

5.   LED proofing lights

Rear view HP Latex 3800 Printer

1. Printer status Beacon

2. Roll-to-free-fall input

3. Input rubber spindle

4. Loading table

5. Main roller

6. Input diverter roller

HP Latex 3800 Jumbo Roll Solution

1. Tension compensator's output diverter rollers

2. Tension compensator's output diverter roller

3. Operator platforms

4. Compensator's output diverter roller

5. Tension compensator's tension bar

6. Unwinder diverter roller

7. Jumbo input unit

8. Printer

9. Operator platform diverter rollers

10. Jumbo output unit

11. Tension compensator's tension bar

Carriage view
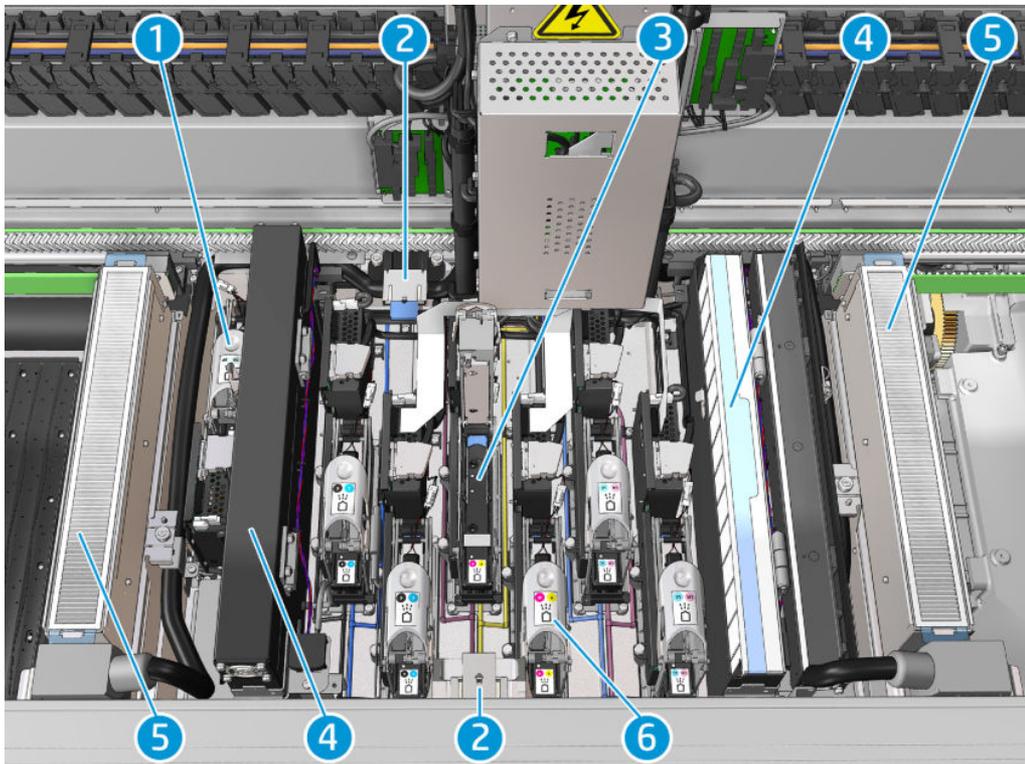
1. Optimizer printhead latch

2. Oiler foams

3. Printhead

4. Aerosol filters

5. Drying filters

6. 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 21.

- 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 173.

- 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 Jumbo Roll Solution

Make sure the jumbo input and output units are switched off, set to zero speed, and in manual mode.

1. Make sure that the two bottom rows of circuit breakers at the front right of the printer are all in the up position.
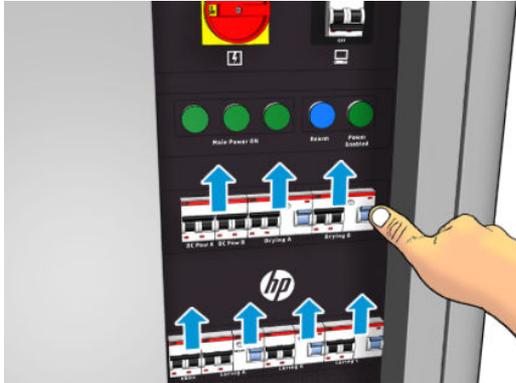
2. Turn the main switch to the on position, and also turn on the PC switch beside it.

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 424 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 424.

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 424.

9. Set the jumbo input and output units to zero, put them into manual mode and switch them on by turning the power knobs located on the left side of the control panel. The white LED indicated below should be lit.

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
0: External devices	After turning the printer switch off, switch off the devices (jumbo input and output units).	Before turning on the printer make sure that the devices (jumbo input and output units) are switched off. After level 3 has been reached on the devices, select automatic mode, and switch 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 pressing 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.

Level	Turn off	Turn on
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 Jumbo Roll Solution on page 17.
4: Reboot.	—	—
5: Reboot and print.	—	—

IMPORTANT: The printer incorporates a counter that indicates the printer usage time that remains.

Move the Jumbo Roll Solution

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 5% inclination, see the following instructions. If you wish to move the complete Jumbo Roll Solution or you need to carry out any other movement operation, call your service representative (see HP Customer Care Centers on page 418).

CAUTION: Slopes steeper than 5% may cause serious damage to the printer.

1. Turn off the printer.

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

3. Disconnect all ink cartridges and remove them from the printer. Hold the cartridge connectors in position with adhesive tape.

4. Raise the secondary feet before moving the printer.

5. Unload the split spindles and remove both center support split spindles from their base.

6. Raise the feet so that the wheels (A) touch the ground. To raise a foot:

    a. Use a 30 mm (1.18 in) 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 15 mm (0.59 in) wrench to rotate the foot upwards. Use the flat faces at the bottom of the bolt to fit the wrench.

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

    e. Use the 30 mm (1.18 in) wrench to relock the nut.

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.

7. If the printer is anchored to the floor, unanchor it; remove the 2 M20 bolts from each anchor support, then, once the printer has been moved away, there will be access to remove the anchor supports from the floor.

8. Push the printer from the outside corners of the top covers. Remember to avoid slopes steeper than 5%.

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: In the case that the printer includes a printer status beacon; the information provided 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.

The printer has a light signaling system to visually identify its status.

Printer status beacon messages 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	Alert present in the IPS (Warnings)
Green	Idle
	Printing

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

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.

IMPORTANT: The screen captures shown below are for reference, be sure to have latest firmware version installed. See Update the firmware on page 27.
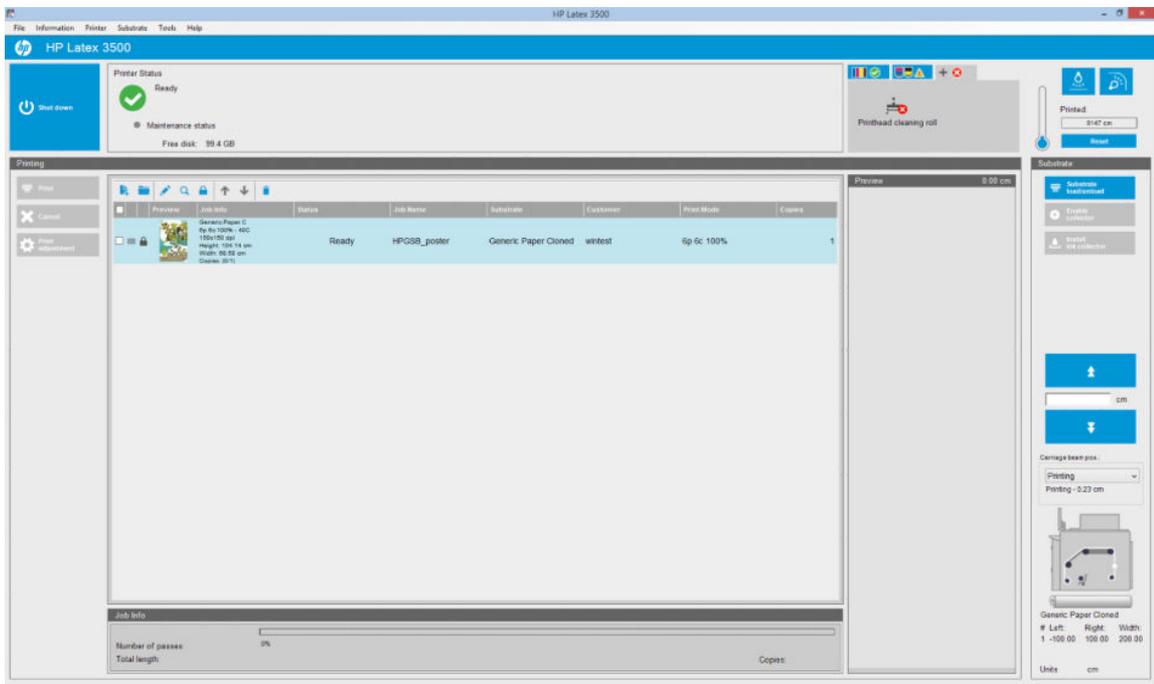
In the main screen:

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

- The top central pane shows the printer status and maintenance status. See Printer status and alerts on page 26.

- The thermometer to the right of the status pane shows the curing 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. Press 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, select the **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, select **Preferences** from the **Tools** menu. In the Preferences window, you will see four tabs.

General tab
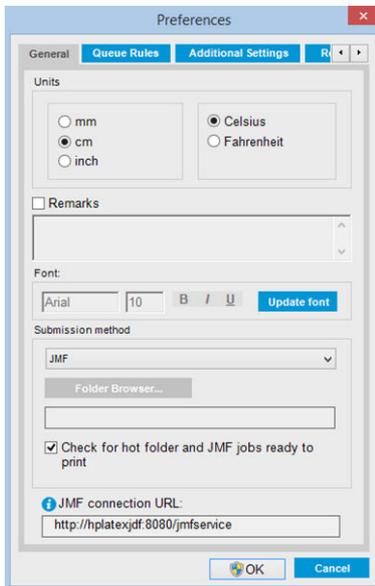
- Units of length and temperature

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

- Font of footer text

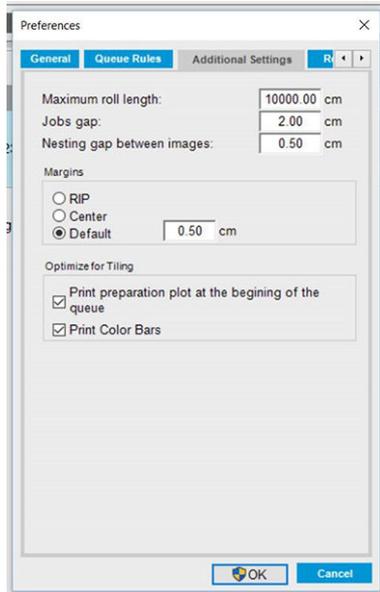- Hot folder

- JMF connection url

Queue Rules tab
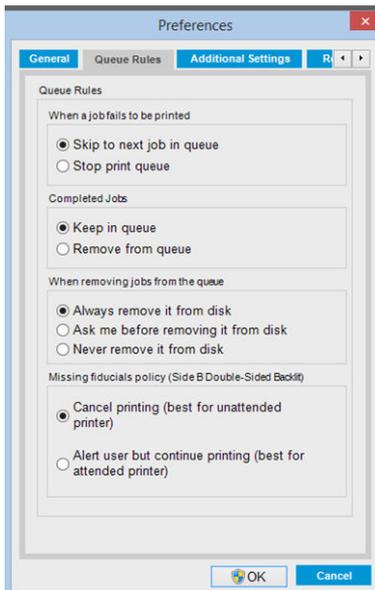
- Action when job fails

- Action when job has been printed

- Action when job is removed from the queue

- Action when fiducials are missing

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.

- Optimize for tiling:

    - Print preparation plot at the beginning of the queue.

    - Print color bars.

Remote Assistance tab
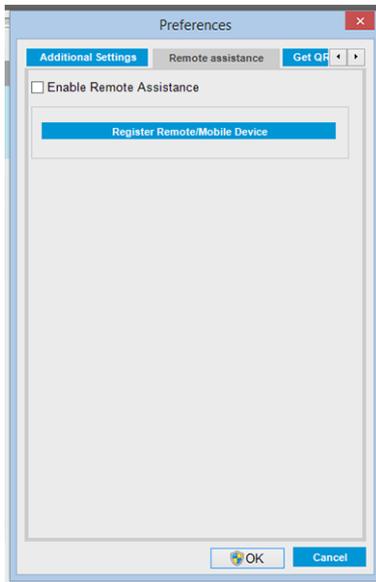
- Enable remote assistance
- Subscribe to services

Internal Print Server menus

The Internal Print Server provides the following menus.

The File menu

- Add New Job
- Add Existing Job
- Edit Job
- Delete Job
- Exit

The Information menu

- Alerts
- Supplies
- Service information

The Printer menu

- Printing adjustments
- Printhead alignment
- Printhead cleaning
- Replace printheads
- Replace cleaning roll kit
- Advance calibration
- Enable/Disable collector

The Substrate menu

- Load/Unload
- Settings
- Create
- Edit
- Clone
- Optimize for tiling
- Rename
- Remove
- Color calibration
- Presets management
- Search substrate online

The Tools menu

- Preferences
- HP Scitex Print Care
- HP Proactive Support
- Firmware update
- Restart
- Restart and print
- Wake up
- Shut down
- Reinitialize carriage

The Help menu

- About
- User's guide
- Contact HP
- HP Remote Support

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.

- **The remaining boot time** will be displayed in the Internal Printer Server while the printer is starting.
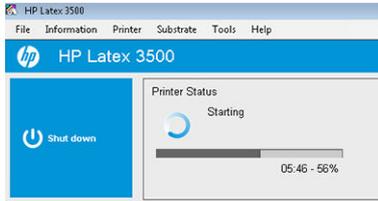
A summary list of printer alerts appears in the main window of the Internal Print Server. To display a more complete and detailed list, select **Information** > **Alerts**.

For more information about a particular alert, see Printer messages on page 424.

Maintenance status

- Green light: No maintenance is needed.

- Yellow light: Maintenance procedure date is approaching. Press the yellow button to check Print Care for details. See HP Print Care on page 173.

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

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

- Grayed out: Print Care is not running. Press 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: select **Firmware update** from the **Tools** menu.
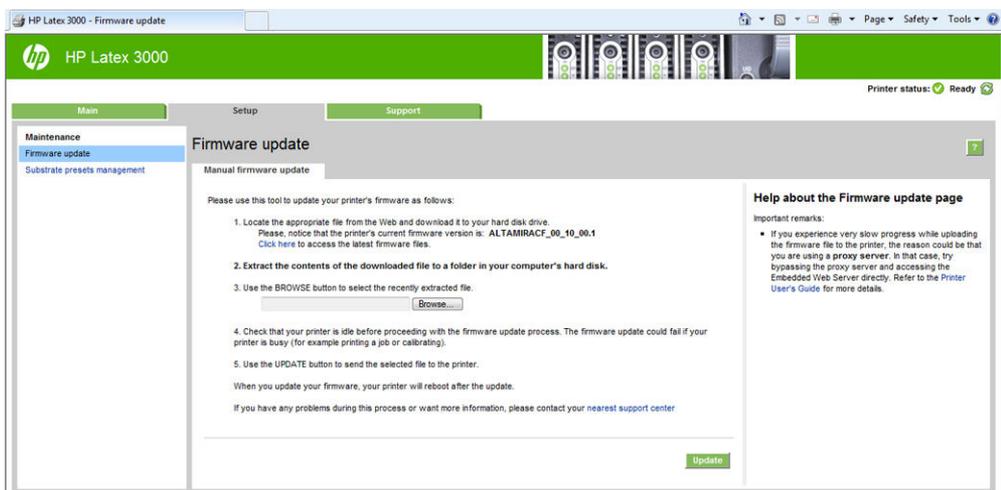
Follow the instructions on your screen to download the firmware file and store it on your hard disk. Then select the downloaded file and click **Update**.

The firmware includes a set of the most commonly used substrate presets. Extra substrate presets can be downloaded separately; see Substrate presets on page 98.

Update the Internal Print Server and HP IPS Services

📝 **IMPORTANT:** It is mandatory to remove the HP Info Retriever, the HP IPS Services and the HP Internal Printer Server software from the built-in printer computer before installing the new IPS version.

1. Download the latest version IPS package available from the HP support web site onto the IPS PC hard disk (dedicated folder recommended, not on the desktop) and unzip all the files.

2. Remove the HP Info Retriever software via the Windows control panel in case it is listed in **Programs and Features** in the Windows control panel.

3. Remove the **HP IPS Services** and/or **ProxyService** software via the Windows control panel, click the **Uninstall** button.

4. Remove the **Internal Printer Server** software via the Windows control panel. Select the **HP Internal Printer Server** application and click the **Uninstall** button. This deletes any current job in the queue except ripped files.

5. Install the **Internal Printer Server**.

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

6. Install **IPS Services**.

   Run the **Setup.exe** file inside the **HP IPS Services** folder and follow the onscreen instructions until the new software is installed..

7. Once the IPS installation process has completed, open the **IPS** application. The first time it is opened the **Data Transfer Agreement** (PDSA) window will appear. HP strongly recommends you enable it in order to take advantage of information retriever functionality and for faster improved remote support.
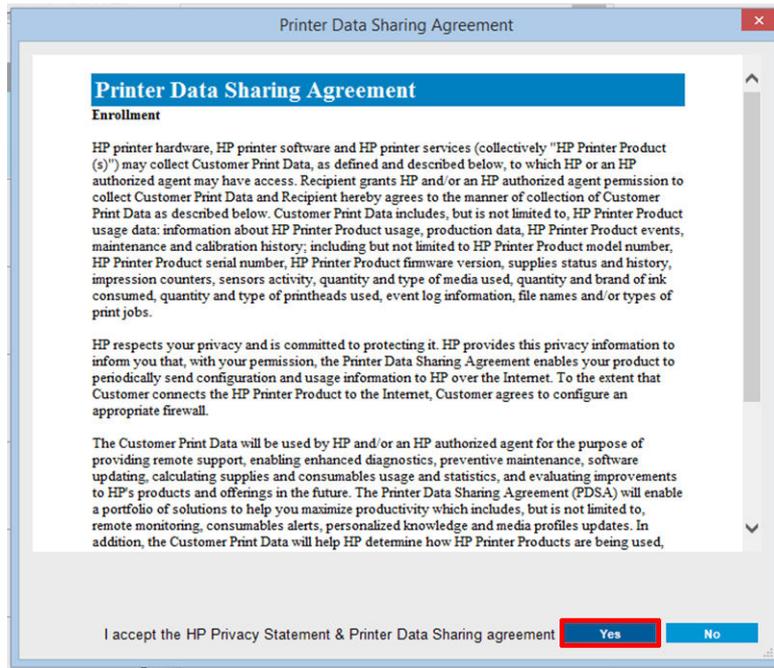
8. In the **Remote assistance** tab, go to **Tools** > **Preferences** and check the **Enable Remote Assistance** check box.
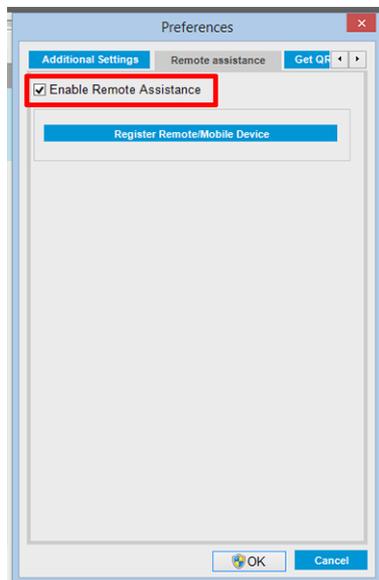
Maintain the Internal Print Server

The Internal Print Server runs under Microsoft Windows on the computer supplied with the printer. In that operating environment, there are various things you can check in order to maintain optimum performance. You can make these checks after restarting the computer and before starting the Internal Print Server.

- The user account should be a Standard account and not an Administrator account.

- No software should be installed on the computer except the software initially provided by HP (which includes antivirus software).

- Free space on the hard disk should be at least 10 GB.

- In the Control Panel, **Hardware and Sound** > **Power Options**, the high-performance power plan should be selected and sleep mode disabled.

- Turn off User Account Control from the User Accounts icon in the Windows Control Panel.

- User a blank screen saver.

- Press the **start** button and right-click **Computer**. Select **Manage** > **Device Manager** > **Disk drives**. Right-click the hard disk, and select **Properties** > **Policies**. Ensure that **Optimize for performance**, **Enable write caching on the disk** and **Enable advanced performance** are all enabled.

- Ensure that scheduled defragmentation is enabled. Press the **start** button and right-click **Computer**. Select **Manage** > **Disk Management**. Right-click the hard disk, and select **Properties** > **Tools** > **Defragment Now**, and ensure that **Run on a schedule** is enabled.

- In the Control Panel, select **System** > **Advanced system settings** > **Advanced** > **Performance** > **Visual Effects** > **Custom**. Ensure that all effects are disabled except **Enable Desktop composition**, **Enable transparent glass**, **Smooth edges of screen fonts** and **Use visual styles on windows and buttons**.

- Open Internet Explorer and select **Tools** > **Internet options** > **Connections** > **LAN settings**. If a proxy server is used, ensure that **Bypass proxy server for local addresses** is enabled.

- Ensure that the computer is connected to the Internet and use Windows Update to ensure that all available updates (including Windows Service Packs) have been installed successfully.

- Start the Internal Print Server, and use **File** > **Delete job** to delete any jobs for which there is no further use.

3 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 use 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.

What information is captured by the HP Latex 3000 printer series 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 HP Latex 3800 Printer into CALDERA RIP

From CALDERA RIP 11, the RIP can take advantage of the JDF interface in the printer by selecting the option on the printer driver setup. Once the JDF interface is enabled, the RIP will display printer status and notifications together with job status, job ink and substrate consumption.

In order to activate this functionality in the CALDERA RIP, you need to type the printer's JMF url in the JDF area of the printer configuration dialog (IPS URL). Please, make sure you have the latest driver available from the CALDERA Website.
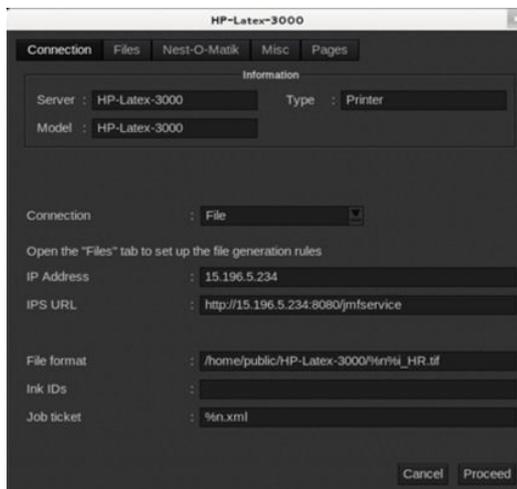
Once configured, you can display the printer status by opening the info window in the print client, and opening the spooler for the job status.
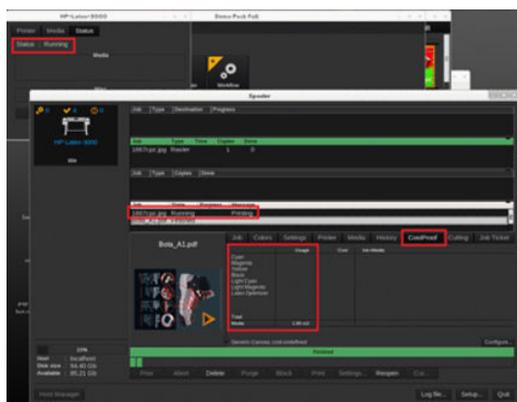
To obtain the JMF URL: Go to the **IPS PC**, on the Internal Print Server SW, and then **Tools**>**Preferences**>**General**.
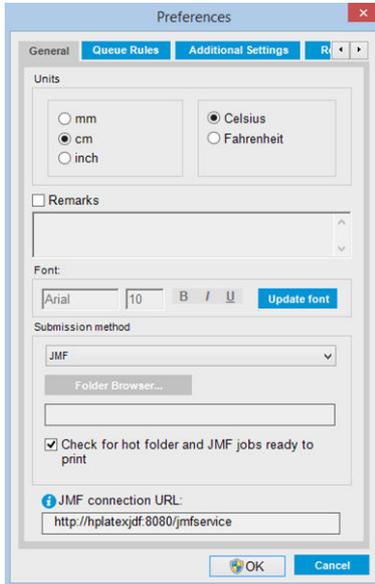

If there are problems using the printer's hostname, switch to the printer's IP using the HP Latex 3000 System Configuration Tool. For more details refer to the Service Manual or talk to your network administrator to solve hostname resolution.

How to integrate the HP Latex 3000 printer series into ONYX RIP

ONYX RIP (version ONYX 211) can take advantage of the JDF interface in the printer by selecting the option on the printer driver setup. Once the JDF interface is enabled, the RIP will display printer status and notifications together with job status, job ink and substrate consumption.

In order to activate this functionality in ONYX RIP, you need to type the printer's JMF url in the JDF area of the printer configuration dialog (JDF URL). Please, make sure you have the latest driver version from the ONYX Download manager.
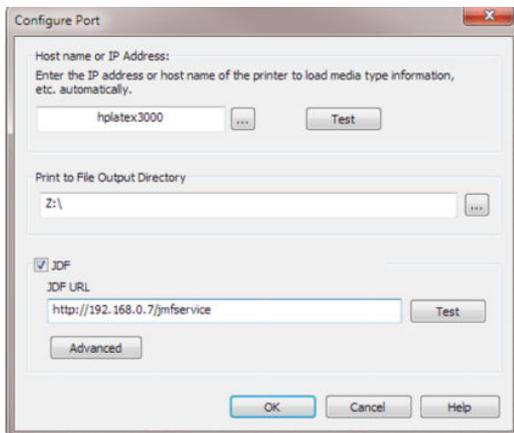
Once configured, you can display the printer and job status opening the info window in the RIP queue.
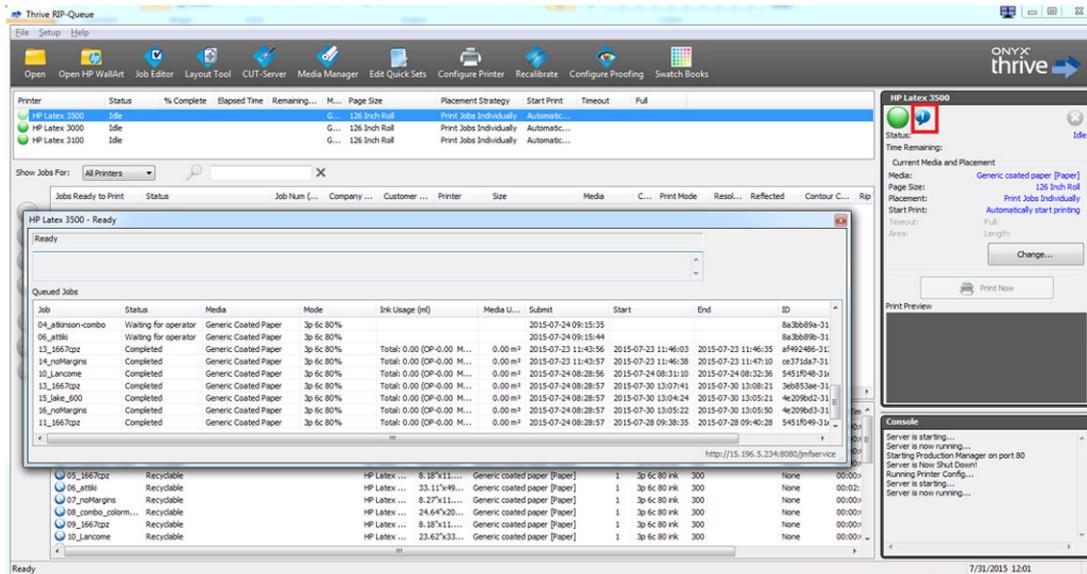
To obtain the JMF URL: Go to the **IPS PC**, on the Internal Print Server SW, and then **Tools**>**Preferences**>**General**.
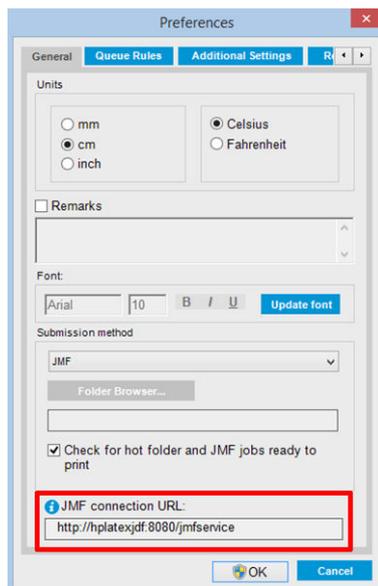
If there are problems using the printer's hostname, switch to the printer's IP using the HP Latex 3000 System Configuration Tool. For more details refer to the Service Manual or talk to your network administrator to solve hostname resolution.

Job submission methods

The HP Latex 3800 Jumbo Roll Solution supports two file submission methods (in addition to open a file directly in HP IPS UI):

Select the submission method within the Preference dialog in HP IPS **Tools**>**Preferences**>**General**, in the Submit method drop down list:
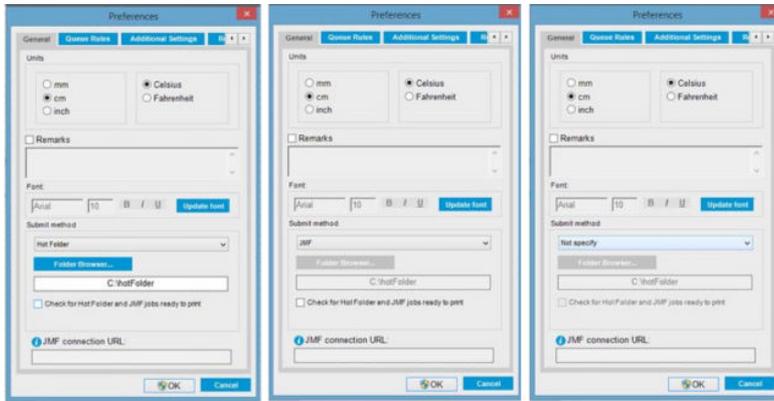
Hotfolder: Select a shared folder in the HP IPS PC and the RIP copies the output job there, the IPS automatically loads jobs into the queue.

📝 **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**.

Removing a queued job from the RIP:

Remove a job from the IPS/printer queue directly via the RIP interface, but only if it was submitted using the JMF method.

How to integrate the HP Latex 3000 printer series 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, job ink and substrate consumption, from the printer via the 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 on the gathered information from the printer.
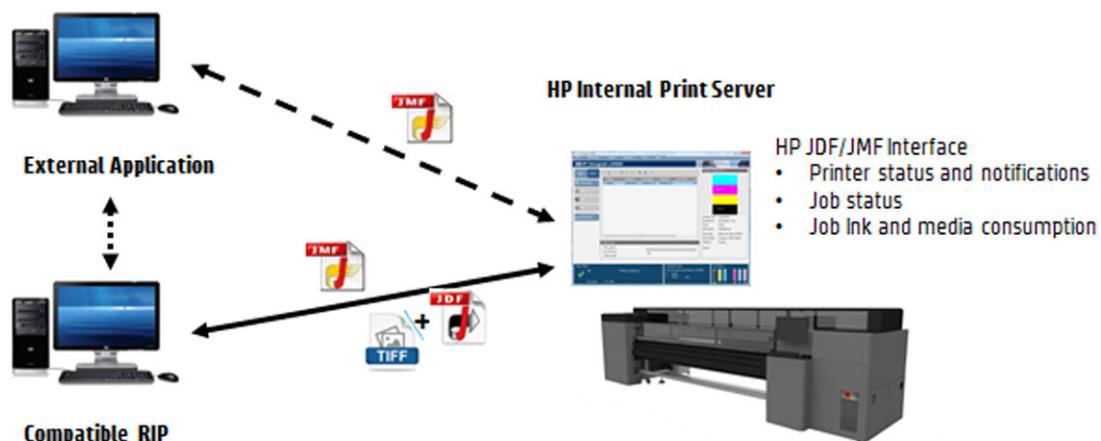
If you are using CALDERA 11 or higher versions of the software, then the MIS can communicate using the Caldera Nexio module. Caldera Nexio is a tool that connects the Caldera RIP and other third-party software using standard JDF/JMF protocols, making it possible to produce automatic sequences of actions 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.

4 Handle the substrate

Supported substrate types

The following substrate types are compatible with your printer. For specific substrate settings and profiles, see the Online substrate manager on page 113.

📝 **NOTE:** The HP Latex 3800 Jumbo Roll Solution does not support porous substrates. To check substrate porosity see Check the porosity of your substrate on page 39.

Self-adhesive vinyl

- Cast self-adhesive vinyl
- Calendered self-adhesive vinyl
- Perforated self-adhesive vinyl
- Transparent self-adhesive vinyl
- Reflective self-adhesive vinyl

PVC banner

- Frontlit banner
- Backlit banner
- Scrim banner
- Scrimless banner
- Mesh banner with liner
- Blockout banner
- Truck curtain banner or tarpaulin

Paper

- Coated paper
- Uncoated paper
- Photo paper
- Photorealistic paper

- Blue-back paper

- Self-adhesive paper

PP and PE film and banner

- Polypropylene (PP) film

- Synthetic paper (such as Yupo)

- Tyvek

- Coated PE/HDPE (polyethylene) banner

PET film

- Polyester (PET) backlit film

- Polyester (PET) frontlit film

- Polyester (PET) grey-back film

Textile

Porous textiles may be used only with the ink collector. To check the porosity of your substrate, see .

- Polyester textile and fabric

- Textile banner

- Backdrops

- Textile mesh with liner

- Frontlit textile with liner if porous

- Backlit textile with liner if porous

- Canvas

- Flag and voile with liner

- Cotton textile

- Self-adhesive textile

Decoration

- Flooring

- Laminates

- Synthetic leathers

> **NOTE:** This is an application example, not a selectable category.

- Paper wall covering or wallpaper

- PVC wall covering

- Pre-pasted wall covering

- Non-woven wall covering

- Textile wall covering

- Self-adhesive wall covering

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: **C:\Users\hplatex\Documents\HP IPS \InkTrespassingCheck\Ink_trespassing_check.pdf**.

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.

    - If the strip is non-white, the tested substrate is porous and may be used only with the ink collector installed.

11. Clean the print zone, see <u>Clean the print zone on page 192</u>.

Supported HP substrates

Category	Substrate	Color calib.	Applications
Self-adhesive vinyl	HP Air Release Adhesive Gloss Cast Vinyl Without liner: 50 microns (2 mil) • 100 g/m² • 45,7 m (150 ft) With liner: 241 microns (9.5 mil) • 260 g/m² • 45,7 m (150 ft)	Yes	Vehicle wraps, car/bus/track fleets, signs

Category	Substrate	Color calib.	Applications
	HP Permanent Gloss Adhesive Vinyl	Yes	
	Without liner: 121 microns (4.8 mil) • 150 g/m² • 45,7 m (150 ft) / 91,4 (300 ft)		
	With liner: 248 microns (9.8 mil) • 270 g/m² • 45,7 m (150 ft) / 91,4 (300 ft)		
	HP Permanent Matte Adhesive Vinyl	Yes	
	Without liner: 121 microns (4.8 mil) • 150 g/m² • 45,7 m (150 ft) / 91,4 (300 ft)		
	With liner: 248 microns (9.8 mil) • 270 g/m² • 45,7 m (150 ft) / 91,4 (300 ft)		
	HP One-View Perforated Adhesive Window Vinyl	No	
	Without liner: 165 microns (6.5 mil) • 155 g/m² • 50 m (164 ft)		
	With liner: 406 microns (16 mil) • 288 g/m² • 50 m (164 ft)		
PVC banners	HP Durable Frontlit Scrim Banner	Yes	Banners, POP, flags, track covers, wall murals
	449 microns (17.7 mil) • 535 g/m² • 35 m (115 ft)		
Paper	HP PVC-Free Wall Paper ♻	Yes	POP indoor and outdoor, windows, bus shelters, billboards, wall decorations
	177 microns (7 mil) • 175 g/m² • 30,5 (100 ft)		
	HP White Satin Poster Paper ♻		
	165 microns (6.5 mil) • 136 g/m² • 61 m (200 ft)		
	HP Photo-realistic Poster Paper ♻	Yes	
	205 microns (8.1 mil) • 205 g/m² • 61 m (200 ft)		
	HP Blue Back Billboard Paper	Yes	
	165 microns (6.5 mil) • 123 g/m² • 80 m (262 ft)		
	New HP Universal Coated Paper, 3 in core ♻	Yes	
	124 microns (4.9 mil) • 90 g/m² • 61 m (200 ft)		
	New HP Coated Paper, 3 in core ♻	Yes	
	114 microns (4.5 mil) • 90 g/m² • 61 m (200 ft)		
	New HP Universal Heavyweight Coated Paper, 3 in core ♻	Yes	
	165 microns (6.5 mil) • 125 g/m² • 61 m (200 ft)		
	New HP Heavyweight Coated Paper, 3 in core ♻	Yes	
	167 microns (6.6 mil) • 130 g/m² • 61 m (200 ft)		
	New HP Super Heavyweight Plus Matte Paper, 3 in core ♻	Yes	
	259 microns (10.2 mil) • 210 g/m² • 61 m (200 ft)		
	HP Professional Gloss Photo Paper	Yes	
	248 microns (9.8 mil)- 275 g/m2 - 30,5 m (100 ft)		

Category	Substrate	Color calib.	Applications
	HP Professional Satin Photo Paper	Yes	
	248 microns (9.2 mil) – 275 g/m2 – 30,5 m (100 ft)		
	HP Everyday Satin Photo Paper	Yes	
	187 microns (7.4 mil) – 180 g/m2 – 30,5 m (100 ft)		
PP and PE film and banners	New HP HDPE Reinforced Banner ♲	Yes	Banners, POP, flags, track covers, wall murals, large photographs, floor covering
	203 microns (8 mil) • 170 g/m² • 45,7 m (150 ft)		
	New HP Everyday Matte Polypropylene, 3 in core ♲	Yes	
	203 microns (8 mil) • 120 g/m² • 61 m (200 ft)		
	New HP Everyday Adhesive Matte Polypropylene, 3 in core	Yes	
	Without liner: 180 microns (7.1 mil) • 120 g/m² • 30,5 m (100 ft)		
	With liner: 215 microns (8.5 mil) • 168 g/m² • 30,5 m (100 ft)		
	HP DuPont Tyvek Banner ♲	No	
	304 microns (12 mil) • 135 g/m2 (4 oz) • 30,5 m (100 ft)		
PET film	HP Backlit Polyester Film ♲	Yes	Bus shelters, airport ads, POP, street ads
	304 microns (12 mil) • 135 g/m² • 30,5 m (100 ft)		
Textile	HP Light Textile Display Banner ♲	No	Indoor flags, wall murals, interior decoration, fine arts
	381 microns (15 mil) • 210 g/m² • 50 m (164 ft)		
	HP Heavy Textile Banner ♲	No	
	381 microns (15 mil) • 210 g/m² • 50 m (164 ft)		
	HP Satin Canvas	No	
	419 microns (16.5 mil) • 370 g/m² • 14,9 m (49 ft)		
	HP Premium Satin Canvas	No	
	462 microns (18.2 mil) – 381 g/m2 – 22,9 m (75 ft)		
	HP Everyday Satin Canvas	No	
	444 microns (17.5 mil) – 340 g/m2 – 22,9 m (75 ft)		

- For third-party substrate solutions with ColorPRO technology, see http://ColorPROtechnology.com/.

- HP PVC-free Wall Paper imprimé avec les encres HP Latex est classé A+ selon l'arrêté du 19 avril 2011 «Émissions dans l'air intérieur», qui définit des seuils sur l'émission de polluants volatils posant des problèmes en cas d'inhalation – sur une échelle de A+ (émission très basses) à C (émission élevée).

- HP PVC-free Wall Paper printed with HP Latex Inks is rated A+ according to *Émissions dans l'air intérieur*, which provides a statement of the level of emission of volatile substances in indoor air posing health risks if inhaled—on a scale from A+ (very low emission) to C (high emission).

* HP PVC-Free Wall Paper printed with HP Latex Inks is GREENGUARD Children & Schools Certified. See http://www.greenguard.org/.

* HP PVC-Free Wall Paper printed with HP Latex Inks meets AgBB criteria for health-related evaluation of VOC emissions of indoor building products. See http://www.umweltbundesamt.de/produkte-e/bauprodukte/agbb.htm.

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

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 423.

- 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 120.

- 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 160.

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

You can find further information on the Web:

- The specifications, finishing, processing, and warranty information for each individual HP substrate are available from http://www.globalBMG.com/hp/signagemedia and http://www.globalBMG.com/hp/HPMediaWarranties.

- HP Image Permanence information is available from http://www.globalBMG.com/hp/printpermanence.

- HP offers to recycle some substrates through the HP Take-Back Program, such as HP HDPE Reinforced Banner, HP Light Textile Display Banner, HP Heavy Textile Banner, HP Everyday Matte Polypropylene, 3-in Core, and HP DuPont Tyvek Banner. Recycling opportunities for these products may not exist in all areas. You should consult local recycling resources about recycling these products. For recycling in the USA, see the HP recycling services site, http://www.hp.com/go/recycleLFmedia/.

    HP offers to recycle some other substrates through the standard paper recycling process, such as HP White Satin Poster Paper, HP Photo-realistic Poster Paper, HP Coated Paper (3-in core), HP Universal Coated Paper (3-in core), HP Universal Heavyweight Coated Paper (3-in core), HP Heavyweight Coated Paper (3-in core), and HP Super Heavyweight Plus Matte Paper (3-in core).

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. See step 5 in Edit a substrate preset on page 105.

- 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 167.

Substrate configurations

The substrate can be loaded in a variety of different configurations to suit different needs. To load substrate, go to the Internal Print Server, select **Substrate load/unload**, and follow the on-screen instructions which you may also find in the following sections of this document.

Printer configuration

Carriage beam pos.:
Printing
Printing - 0.23 cm

Move leading edge:
cm

Substrate:
Category:
Self-Adhesive Vinyl   Search online...
Substrate Type:
HP Permanent Gloss Adhesive Vinyl

Remaining substrate:
cm

Load a roll in an HP Latex 3800 jumbo-roll-to-jumbo-roll configuration (assisted)
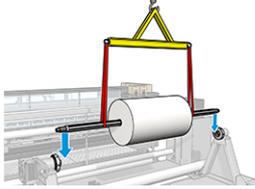
1. **Prepare printer for loading:** Powered on, armed, input and output rubber spindles, loading table and curing module in loading positions.

2. Prepare Jumbo input and output units for loading.

3. **Load substrate roll onto jumbo input unit:** Select appropriate spindle size, slide spindle into core until centered, inflate spindle, lift roll from spindle, gently lower spindle into place, and close all chucks.
   IMPORTANT: Check the orientation of the substrate roll (printed side in or out) before lowering it into the chucks.

4. **Prepare and load an output spindle and core:** Select appropriate spindle size, slide core onto spindle until centered, inflate spindle, load spindle in place, and close all chucks.

5. **Adjust input and output counterweights** based on your substrate tension requirements:

   a. Identify recommended tension for your substrate (see table).

   b. Calculate counterweights based on tension and substrate width (see table or use formula).

   c. Load counterweight bars combining the provided 2/3/5 kg weights, evenly distributed at both ends of each bar.

6. *(Recommended)* Mark expected positions of substrate edge along substrate path.

7. Thread substrate through input unit and enable it.
   CAUTION: Keep the area beneath the tension bars free from foreign objects at all

Recommended tension settings

Category	In tension [N/m]	Out tension [N/m]
PVC flooring	50	85
Laminates	10	25
Synthetic leather	40	85

Width [m]	Tension [N/m]	Counterweight [kg]
1.4	85	20
1.4	40	34
2.0	85	10
2.0	50	24
2.0	25	34
2.0	10	40

Counterweight [kg] =
$44 - (2 \times \text{width [m]} \times \text{tension [N/m]})/10$

☐ Reload substrate   ☐ Skew check   Finish   Cancel

The basic configurations are illustrated below.

- **The jumbo-roll-to-jumbo-roll configuration** is suitable to print from a jumbo roll to jumbo roll. This configuration requires jumbo input and output units.
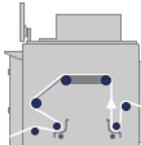
- **The jumbo-roll-to-free-fall configuration** is suitable to print from a jumbo roll and then cut and remove one or more prints as soon as they exit the printer. This configuration requires a jumbo input unit.
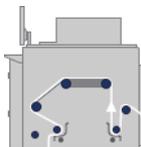
- **The jumbo-roll-to-collector configuration** is suitable to cut the substrate and remove the output roll before finishing the current print job using a particular input jumbo roll. Substrate is kept under tension between the input jumbo roll and the tension roller, but can be cut after the tension roller as it is then no longer under tension. This configuration requires a jumbo input unit.
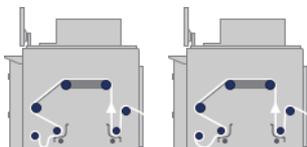
Prepare to print

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

1. Go to the Internal Print Server and select **Substrate Load/Unload** to open the Printer Configuration window.
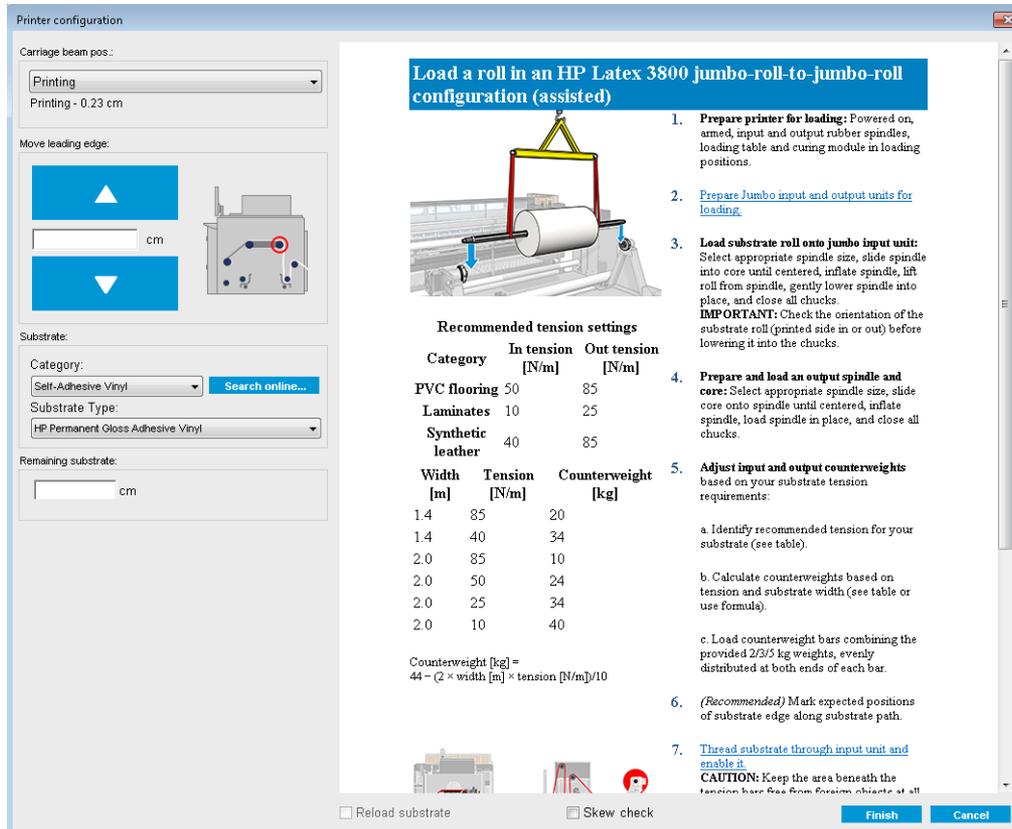
📝 **NOTE:** The **Reload substrate check** box should be checked only if the printer has just had the same configuration (same substrate, same profile), and because of a severe system error, you had to restart the printer.

2. Select the substrate type.

3. Load the substrate. Substrate loading instructions are displayed in the Internal Print Server window.

4. Press the **Finish** button in the Internal Print Server to start the substrate check.

💡 **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.

The edge holders are highly recommended when printing on textile substrates.

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 120); 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.
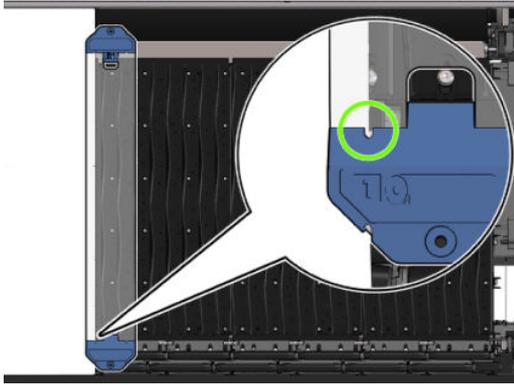
CAUTION: Wrongly positioned edge holders could severely damage the printheads and carriage.
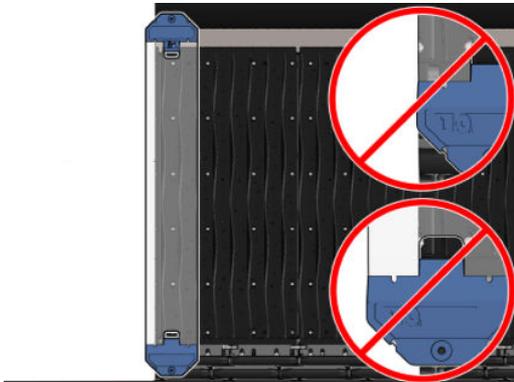
Install an edge holder

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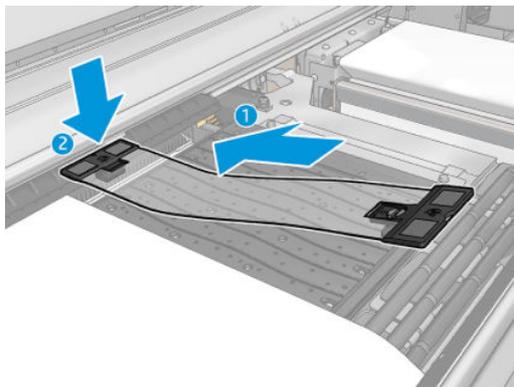
2. Attach other side of the edge holder in the space between the platen and diverter wheels, cover the edge of the substrate with it. Make sure that each edge holder is properly positioned and not bent as this could cause a carriage crash.
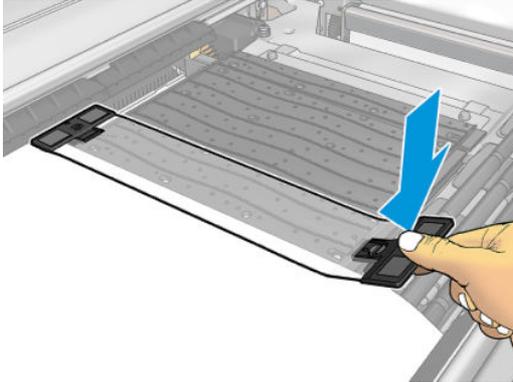
3. Turn the screw at the front part of the edge holder to fix it in place. If it interferes with the diverter wheels; move the edge holder slightly until a better position is found.
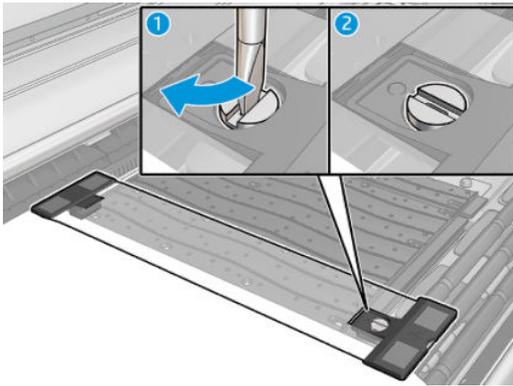
4. Ensure that the substrate is aligned with the edge holder.

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

📝 NOTE: If the edge holder interferes with a diverter wheel holder, move the edge holder slightly into a better position.

☼ 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 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.

The ink collector kit

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.

See Check the porosity of your substrate on page 39 if in doubt.

⚠ **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. Do not load substrates that cannot be used at an operating temperature above 125°C (257°F).

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.

CAUTION: Do not load substrates with auto-ignition temperatures below 250° (482°F). Ensure that 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) are: Heat flux density: 30 kW/m² (102 KBTU/h/m²) , copper calorimeter, K type thermocouple.

The above image is a QR code containing a link to a video; see Documentation on page 1.

Kit components
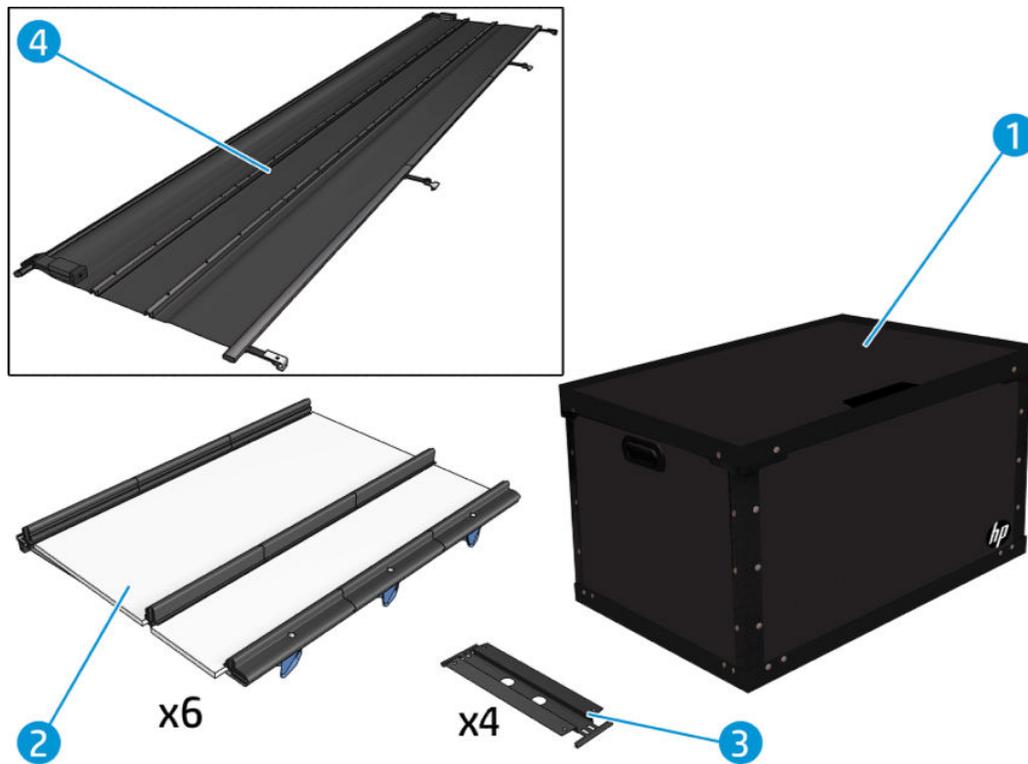
1. Ink-collector container

2. Six ink collectors with two replaceable foams

3. Four ink-collector substrate-edge holders

4. Protector

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

Install the kit

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

For more safety information, see Safety precautions on page 2

TIP: You are advised to wear gloves.

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

If necessary, clean the platen and the curing plates with a cloth dampened with an all-purpose cleaner.

Install the six ink-collector modules

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

4. Go to the Internal Print Server and press the **Install ink collector** button in the main window.

5. 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.

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

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

8. Open the front door.
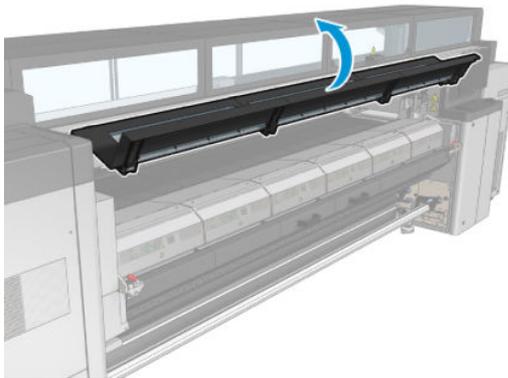
9. From the front on the right side, install the first module (1) and insert it into the guide (2).
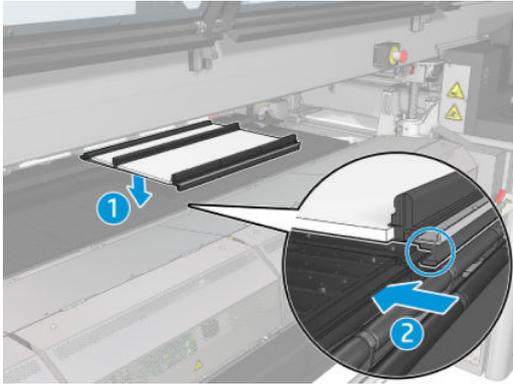
10. Slide the module to the middle until it reaches the stop.
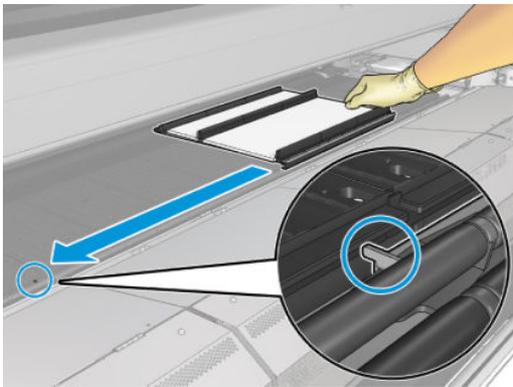
11. Insert all the ink collector modules on either side of the central one.
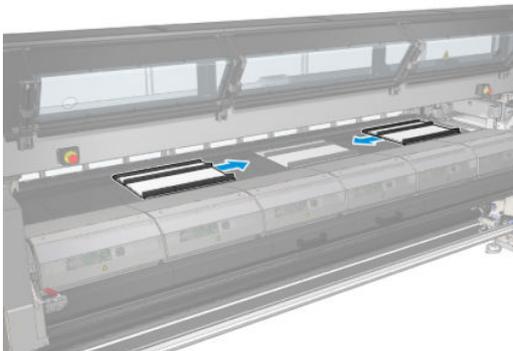
12. Attach each one that you insert to a module that is already in place.
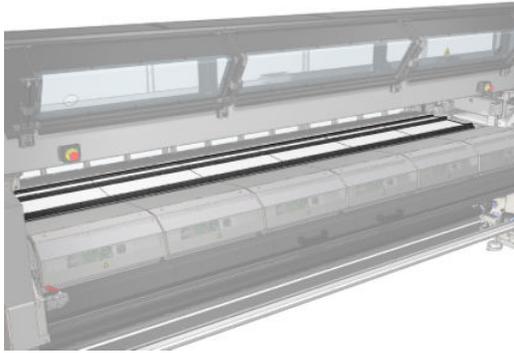
13. Go to the rear of the printer, lower the pinchwheel latches (1), and pull down the pinchwheel module to its lowest position.
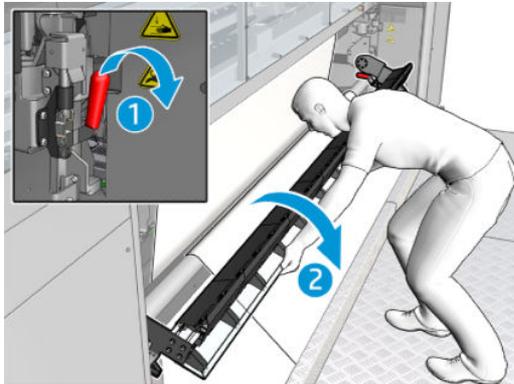
14. Close the latches of all modules (turn to the right).
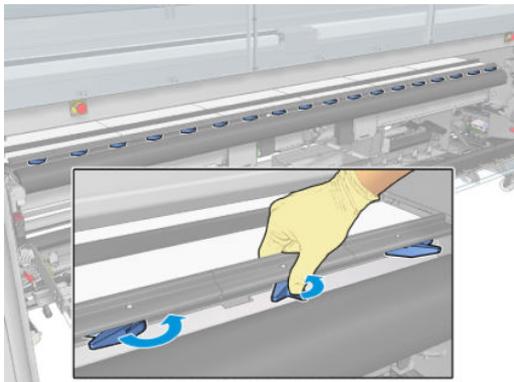
15. Check that all the ink collector modules are aligned with each other and that there are no gaps between them.
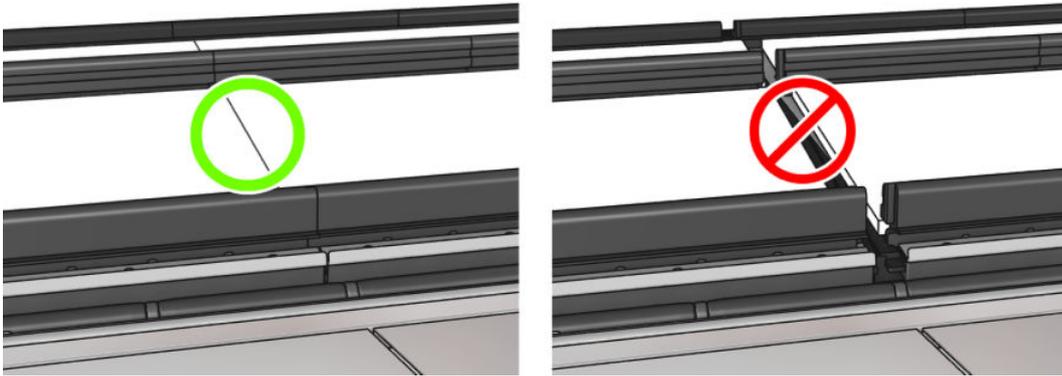
16. Check that the foams fit into the spaces provided for them. If they have expanded and no longer fit, replace them.

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

17. Lift the pinchwheel module (1) and the pinchwheel latches (2).
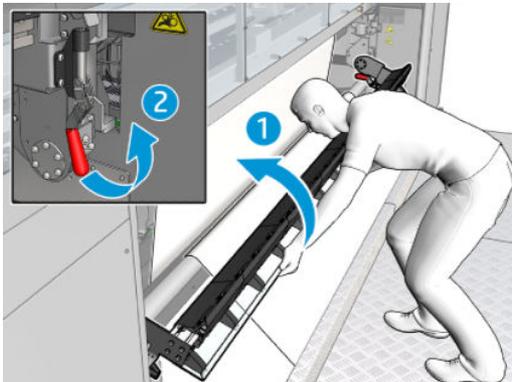
Install the protector

1. Take the rolled protector and ensure that it is completely clean and dry.

2. Place the rolled protector on the curing module. Do not open the curing module yet.
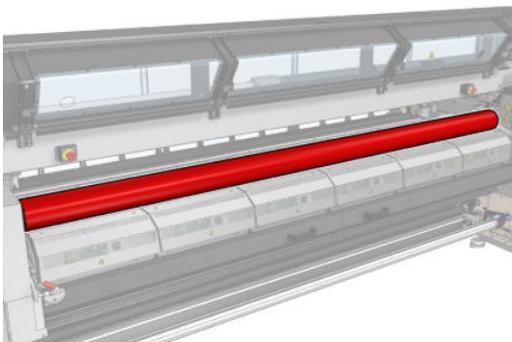
3. Slide or clip a barrier onto each end of the protector tab.
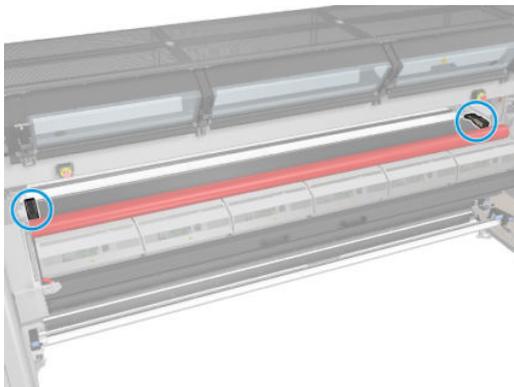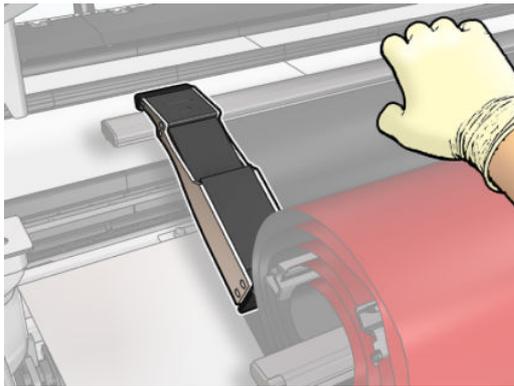
4. Place the tab of the protector (1) onto the slot (2). The black side should be face up.
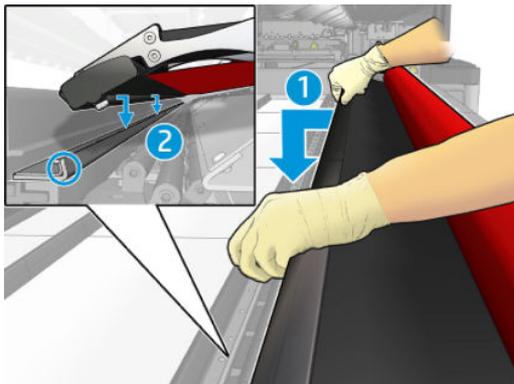
5. Open the curing module latches (1) and the curing module (2).
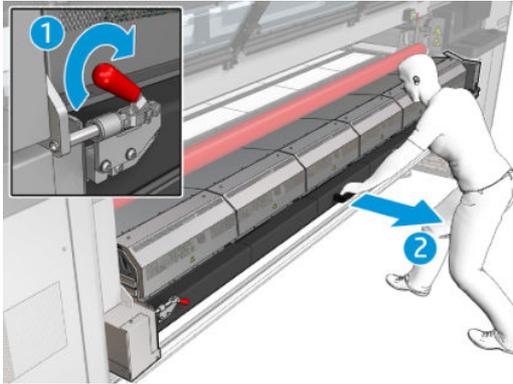
6. Drop the protector through the gap under the curing module.
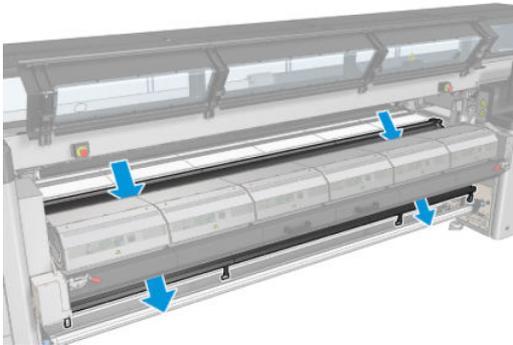
7. Close the curing module and the latches.

8. Hook the clips from the protector to the bottom part of the printer.
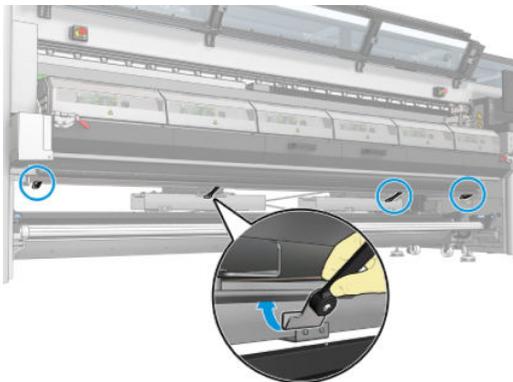
9. Close the front door.

📝 NOTE: If you plan to load substrates thicker than the value shown on the main screen, set the thickness value appropriately.

10. Press **Finish** to complete the ink collector installation. The carriage beam adjusts to the ink collector height.

Uninstall the kit

Unload the substrate (see) and remove the output spindle.

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

Uninstall the protector

1. Go to the Internal Print Server and press **Uninstall ink collector**.

2. Unhook the four clips from the bottom.
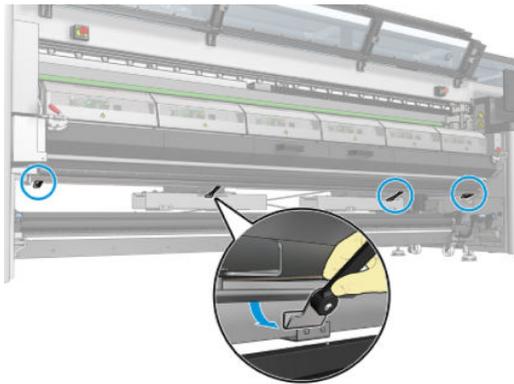
3. Extract the protector tab from the slot.
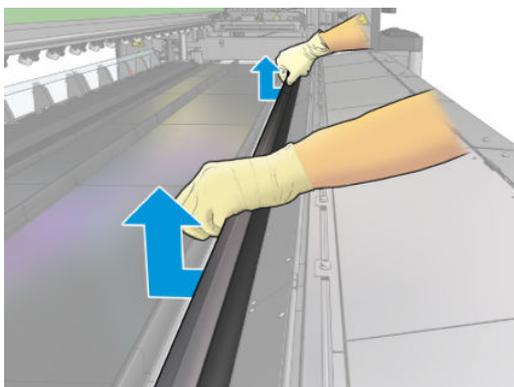
4. Open the curing module latches and curing module and leave the protector to slide down softly.

⚠ **WARNING!** Do not touch the internal enclosures of the printer's curing module: they can be hot enough to cause burns.

5. Remove the protector by the bottom part.

6. Remove the barriers, one on each side.
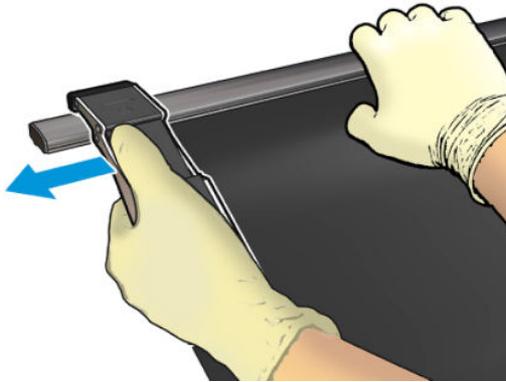
7. Check that nothing is dirty or broken. If dirty, clean with a lint-free cloth moistened with distilled water.

8. Roll up with the red side on the bottom and the black part on the top. Start rolling up on the side of the clips.
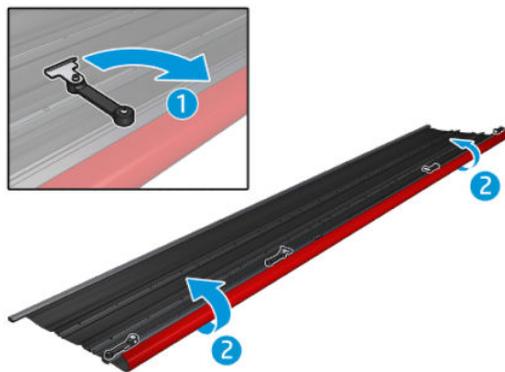
9. Place the protector in the packaging, and store it.
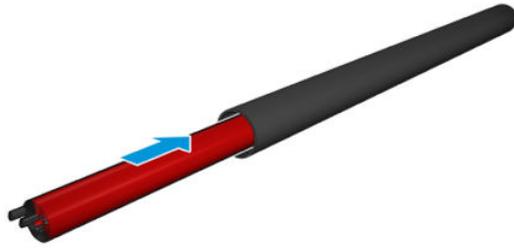
Uninstall the six ink-collector modules

1. Close the curing module and latches.

2. From the rear of the printer, open the three latches of each module.
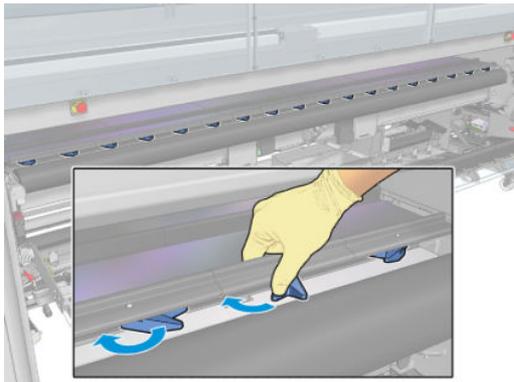
3. From the front of the printer, remove each module. First, slowly lift the back part of the ink collector module, then, take out the guide from the platen, moving the ink collector module forward towards the front of the printer.
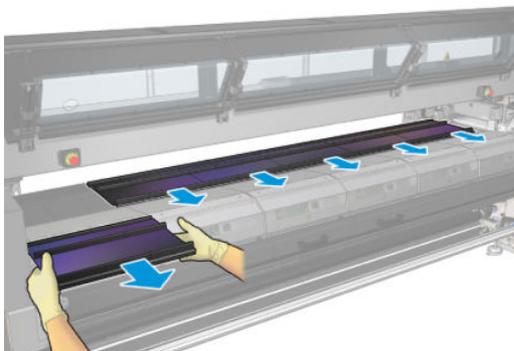
4. Press **Finish** to complete the removal process. The carriage beam moves down and the carriage moves along the platen for checking.

5. Check whether the foams need to be replaced; if so, replace them. Store them in the ink collector container, keeping the latches on top. You can also store the barriers and edge holders there.

6. Perform the maintenance operations recommended after uninstalling the kit: see .

Load a roll into the Jumbo Roll Solution

When loading substrate the objective is to achieve uniform tension across its width and length so as to minimize the risk of skew, wrinkles, and telescoping. There are various ways that the substrate can pass through the printer:

● Jumbo-roll-to-jumbo-roll configuration

● Jumbo-roll-to-free-fall configuration

● Jumbo-roll-to-collector configuration

There are two ways to load substrate for each configuration:

● Manual load: Recommended for rigid and narrow substrates

● Assisted load: Can be used to make loading flexible or loading wide substrates easier

Load a roll (jumbo-roll-to-jumbo-roll configuration)
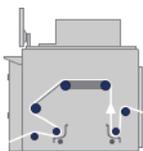
The substrate roll is mounted on the jumbo input unit unwinder, fed through the system, and collected by the jumbo output unit rewinder.

The substrate travels from the jumbo input unit unwinder, to its tension compensator module, through the printer (input diverter, input tension roller, main roller, platen, curing module, output tension roller and output diverter), to the jumbo output unit tension compensator module, and finally the rewinder.
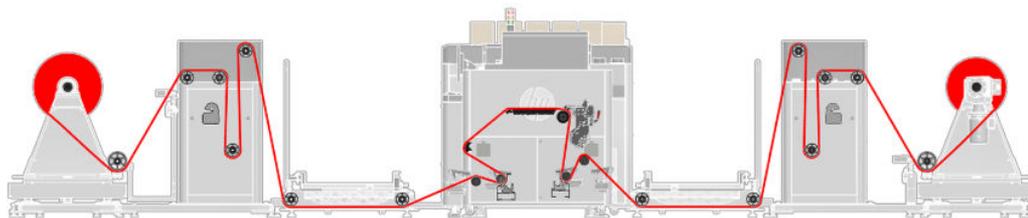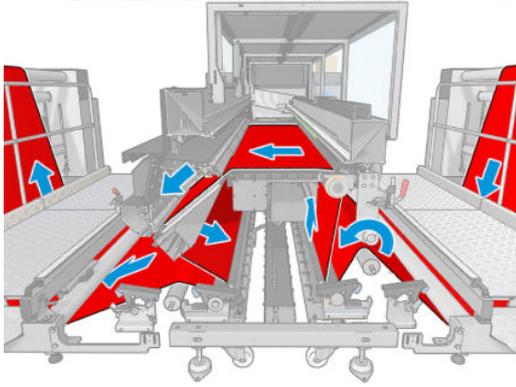
The image above shows substrate loaded in jumbo-roll-to-jumbo-roll configuration.

📝 NOTE: Substrate can be loaded with the printed side inwards or outwards on both the input and output rolls. In both cases: The jumbo input and output units must be configured respectively, while the printer itself requires no additional configuration.

Each jumbo input and output unit is equipped with an un/rewinder module, a steering module, a tension compensator module, and an operator platform. They are responsible for feeding and collecting substrate, to and from the printer on demand, at a regulated tension, with near-zero skew.

The input and output tension rollers control substrate tension inside the printer, vacuum is applied at platen level to keep it flat. The main roller motor (with a pinch mechanism to prevent substrate slipping) moves the substrate forwards.

📝 IMPORTANT: Jumbo roll and output spindle loading requires lifting and maneuvering them well above their operational height. This must be conducted by trained personnel only, and may require lifting equipment such as a crane and accessories.

Two people are recommended for loading, which takes approximately 30 minutes:

1. Go to the Internal Print Server and select **Substrate Load/Unload**.

2. Choose your substrate from the list of types.

3. Be sure you have everything prepared for maneuvering the jumbo rolls in or out of the system, and have the necessary equipment available (lifting equipment, pallets, empty cores, etc.).

📝 NOTE: All substrates can be loaded with the manual loading procedure (shown below), however it may be easier to use the assisted loading procedure if the substrate is flexible or wide.

Assisted loading

1. Make sure the printer is ready for loading.

   a. Make sure the printer is **ON** and armed.

      📝 NOTE: Jumbo input and output units can only be enabled if the printer is armed.

b. Ensure that the input and output rubber spindle levers are raised.

c. Open the latches on the input and output rubber spindles.
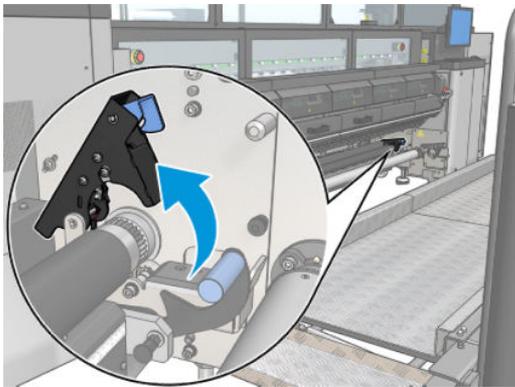
d. Move the input and output rubber spindles to the front to create space to pass the substrate behind them.

e. Open the front door.

f. Open the curing module latches.
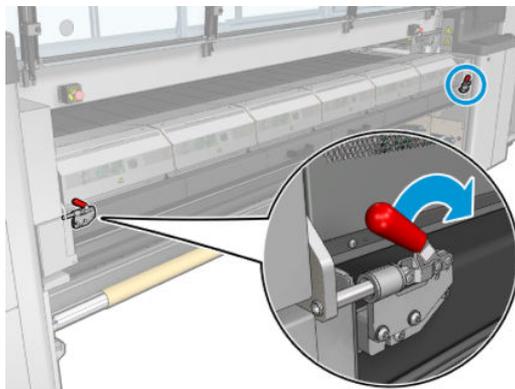
g. Open the curing module.
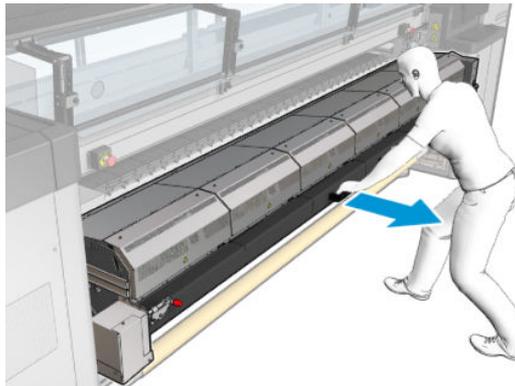
h. Open the loading table latches.
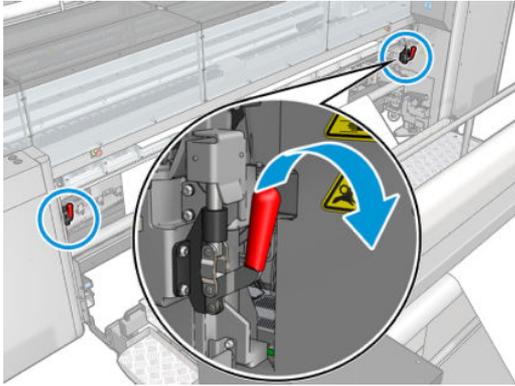
i. Open the loading table.

2. Assure both jumbo input and output units are ready for loading:

1. E-stop button
2. Error LED
3. "Disabled" LED
4. Steering controls
5. Un/rewinder mode selector
6. Un/rewinder enable/disable knob
7. Un/rewinder direction selector
8. Un/rewinder speed knob
9. Uptime meter
10. "Enabled" LED
11. Power LED

NOTE: Any jumbo unit control panel changes will require you to re-enable the unit.

a. Make sure the unwinder and rewinder speed knobs (8) are set to zero on both jumbo input and output units.

b. Make sure the unwinder and rewinder mode selector knobs (5) are set to Manual (right most position) on both jumbo input and output units.

c. Make sure both jumbo input and output units are powered on (11). Otherwise power them on by using their corresponding disconnect switches (located on the side of each of their E-cabinets).

d. Enable both jumbo input and output units by temporarily turning their unwinder and rewinder enable/disable knobs (6) clockwise until their "Enabled" LEDs (10) turn on.

e. **WARNING**: Once the input and output units are enabled, they may move unexpectedly with a risk of injury if used incorrectly. Follow the steps described here carefully to avoid risk.

f. Bring the unwinder and rewinder steering modules to their respective center positions by pressing the home button ✛ on their corresponding control panels (4). A green LED lights up on the button when pressed.

g. Open all 4 safety chucks: 2 on the input, and 2 on the output units:

⚠ CAUTION: Never open a safety chuck while the tension bar is raised, it can cause the roll to tip over because of tension from the tension bar.

i.   Verify the red dots align with each other in all 4 chucks. If not, then use the unwinder and rewinder speed knob(s) (8), and carefully turn the corresponding unwinder and rewinder motor(s) until the dots align.

ii. Open each chuck by firmly pressing its release button and sliding its external handwheel out of the way.

📝 NOTE: The handwheel should slide smoothly. If not, stop to inspect for damage or foreign objects.

h. Unlock and open both operator platforms.

> **NOTE:** Make sure to lock the platform with the secure cable attached to the railing.

3. Load the substrate roll into the jumbo input unit:

   a. Select the appropriate spindle for you core diameter.

   b. Make sure the spindle bladders are deflated, then slide the spindle into the substrate core.

   c. Use the spindle's ruler as reference to roughly center the spindle with respect to the outermost layers of your substrate roll.

   > **NOTE:** The system is designed to admit up to 100 mm telescoping in any direction.

   > **NOTE:** Centering the spindle with respect to the outermost layers helps minimize the amount of substrate advanced before the output rewinder sees a stable substrate edge (i.e. before output roll telescoping stops). Centering with respect to the core, or with respect to the most center layers, may result in a lengthy stabilization period.

   d. Inflate the spindle bladders by applying pressurized air to the bladder's inlet nozzle (located near the end of the spindle).

   > **NOTE:** There are 2 bladder nozzles on each spindle, an inlet nozzle marked "AIR IN" and an outlet nozzle marked "AIR OUT". The image below shows one such nozzle:

   e. Lift the substrate from the spindle (avoid lifting from the substrate or from the core directly), hover the roll over the unwinder taking care to orient it correctly based on the roll's winding direction

(printed side in or vice versa), and gently lower it until it rests securely on the jumbo input unit's unwinder safety chucks.

f. Close the chucks when the spindle is fully rested.

> **NOTE:** The recommended lifting technique, using an overhanging crane, is shown below:

> **NOTE:** Slings cannot be used on the square spindle surface when loading or unloading media.

4. Prepare and load an output shaft and core:

   a. Select an appropriate shaft for your core diameter.

   b. Slide the core onto the spindle, center it using the spindle's ruler as reference, and inflate the spindle bladders using pressurized air.

   c. Load the spindle and core onto the output safety chucks, then close the chucks by sliding their corresponding external handwheels.

5. Adjust the input and output tension compensator's counterweight for your substrate:

   a. With the table below, identify your input and output tension settings based on the type of substrate used:

	Jumbo input unit tension [N/m]	Jumbo output unit tension [N/m]
PVC Flooring	50	85
Laminates	10	25
Synthetic Leather	40	85

   b. Calculate the necessary input and output counterweights based on the tension settings and the substrate width with the formula below:

   Counterweight [Kg] = 56 - (2 x Media Width [m] x Tension Setting [N/m] ÷ 10)

   c. Alternatively, find some common tension-width combinations in the table below with the corresponding counterweight values:

Tension [N/m]	Width [m]	Counterweight [Kg]
110	1.4	26
110	2.0	12

Tension [N/m]	Width [m]	Counterweight [Kg]
110	2.5	2
80	1.4	34
80	2.0	24
80	2.5	16
60	1.4	40
60	2.0	32
60	2.5	26
30	1.4	48
30	2.0	44
30	2.5	42
10	1.4	54
10	2.0	52
10	2.5	50

d. Combine the available 2kg, 3kg and 5kg weights (see image below) to achieve the required total counterweight on each of the input and output tension compensator counterweight bars. Distribute the weights as evenly as possible between the 2 ends of the counterweight bars for optimal results.

6. **Optional:** Mark the expected substrate edge position at 3 key rollers along the substrate path; the printer's first diverter roller, as well as the tension compensator's first and last diverter rollers. Do this for both the input and the output units. You may do this only for one substrate edge, although it is recommended to do it for both if possible, i.e. 6 marks minimum, 12 if possible.

NOTE: Make the marks using a tape measure from the edge of each roller to find half the distance between the roller length and the substrate width. The below image has arrows indicating the 3 suggested mark locations on the jumbo input unit left substrate edge.

7. Thread substrate through the jumbo input unit and enable it.

CAUTION: Keep the area beneath both tension bars free from foreign objects at all times.

NOTE: This action causes the unwinder to start moving and feeding paper. Before you perform it, please read the following:

a. Set the jumbo input unit unwinder speed knob (8) to 30%.

b. Gently thread the substrate through, all the while aligning the edges roughly with the marks (if you made them previously). Set the unwinder speed back to zero as soon as the substrate passes the loading table. See the image and text below for how to thread the substrate:

i. Under the unwinder diverter roller.

ii. Over the tension compensator's input diverter rollers.

iii. Under the tension compensator's dancer roller.

iv. Over the tension compensator's output diverter roller.

v. Under the two operator platform diverter rollers.

vi. Over the printer's input diverter roller.

vii. Under the printer's input rubber spindle.

viii. Past the loading table.

ix. When the substrate reaches the loading table, set the speed knob back to 0.

c. Hold the substrate taut, and close the loading table.

d. Push the input rubber spindle into place, then close the latches and pinch beam lever.

e. Close the input operator platform.

f. Visually inspect the substrate's edge against the marks, and make adjustments if necessary. Avoid tearing the substrate in the process, especially when threading laminates.

g. Check the jumbo input unit spin direction knob (7) based on the substrate roll (printed side in or vice versa).

h. Set the jumbo input unit unwinder to automatic mode (5 to left position).

📝 NOTE: After the unwinder has been enabled, the input roll should automatically turn bringing the tension bar up to about 1/3 of the way along its track. If this doesn't occur, pause and troubleshoot the issue.

i. Manually adjust the position of the input steering module's sensor by loosening its fixation screw, sliding it until the substrate's edge is perfectly centered in its field of view (verify this by making sure only the number 4 LED is turned **ON**), and tightening the screw to keep it in place.

j. Turn the jumbo input unit steering module to automatic mode by pressing ⟳ on the jumbo input unit's steering control (4). A green LED lights up on the button when pressed.

> **NOTE:** Any jumbo unit control panel changes will require you to re-enable the unit.

> **NOTE:** From this point on, the input's steering module automatically moves to compensate for substrate skew/telescoping.

k. Visually inspect the substrate throughout the jumbo input unit. Look for baggy regions, tears, severe wrinkles etc. If you observe any serious defects, repeat the process above.

8. Go to the Internal Print Server and use the large blue button to advance the substrate until it reaches the output spindle. Ensure that the substrate advances smoothly and is not trapped by any obstruction. If necessary, help the substrate to advance and to pass through the curing module slot.
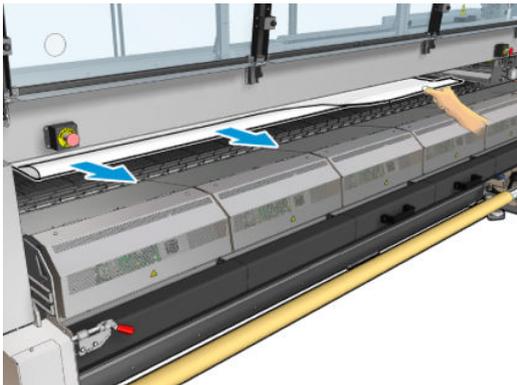
9. Keep the substrate evenly tensioned and push the output rubber spindle backwards. Take care not to trap your fingers between the roller and the black substrate guide lying underneath and behind. Close both latches and the lever.

10. Thread substrate through output jumbo roll and enable it:

    a. Keep feeding substrate using the Internal Print Server arrow buttons. It is recommended to feed 600 centimeters at a time repeatedly until the threading process is complete.

    b. Gently thread the substrate through, all the while aligning the edges roughly with the marks (if you made them previously). You may stop the printer feeding as soon as the substrate reaches the output core. See the below image and text explaining how to thread the substrate:

    i.   Under the printer's output rubber spindle.

    ii.   Over the printer's output diverter roller.

    iii. Under the two operator platform diverter rollers.

    iv.   Over the tension compensator's output diverter roller.

    v.   Under the tension compensator's tension bar.

    vi.   Over the tension compensator's output diverter rollers.

    vii. Under the rewinder diverter roller.

    c. Keep the substrate under tension and as even as possible and fix it to the core.

    d. Close the output operator platform.

e. Visually inspect the substrate's edge to the marks, and make adjustments if necessary. Avoid tearing the media in the process (especially when threading laminates).

f. Check the output unit spin direction (7), based on the substrate roll (printed in or vice versa).

g. Turn the output unit rewinder to automatic mode (5 to left position).

> **NOTE:** When the rewinder is enabled, the input roll should automatically turn bringing the tension bar up to about 1/3 of the way along its track. If this doesn't occur, pause and troubleshoot the issue.

h. Manually adjust the position of the output steering module's sensor: loosen its fixation screw, slide it until the substrate's edge is perfectly centered in its field of view (verify this by making sure only the number **4** LED is turned on), and tighten the screw to keep it in place.

i. Press the power button on the jumbo input unit's steering control (4) to turn the output unit steering module to automatic mode. A green LED lights up on the button when pressed.

> **NOTE:** Any jumbo unit control panel changes will require you to re-enable the unit.

> **NOTE:** From this point on, the output's steering module automatically moves to compensate for substrate skew/telescoping.

j. Visually inspect the substrate throughout the output unit. Look for baggy regions, tears, severe wrinkles, etc. Repeat the process above if you observe any serious defects.

11. Go to the Internal Print Server and press the **Finish** button. The printer checks the width of the roll, 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 are asked to enter the left edge and width fields into the Internal Print Server manually

12. 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.

Manual loading

1. Make sure the printer is ready for loading.

   a. Make sure the printer is **ON** and armed.

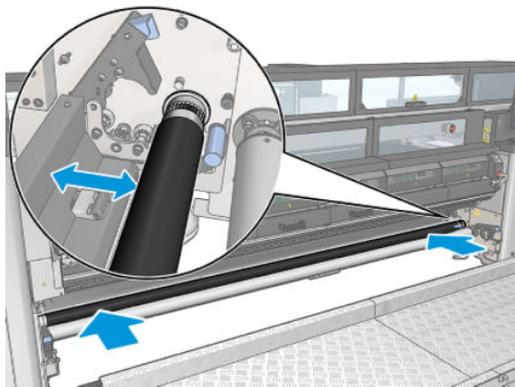   > **NOTE:** Jumbo input and output units can only be enabled if the printer is armed.

b. Ensure that the input and output rubber spindle levers are raised.
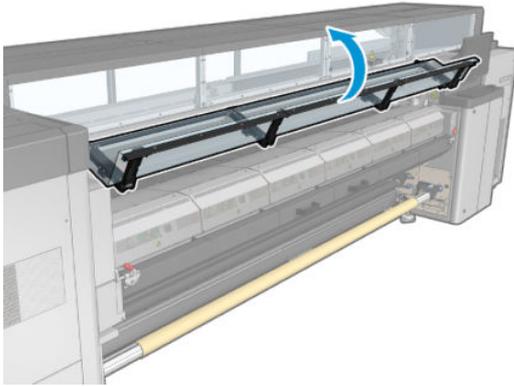

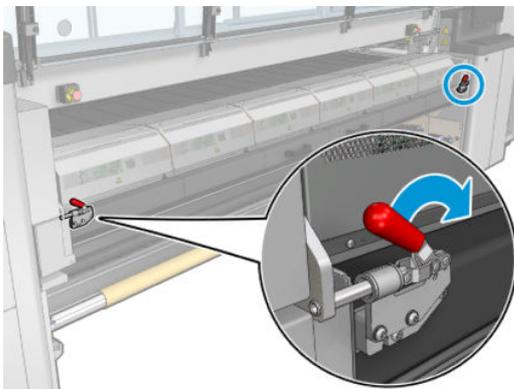**c.** Open the latches on the input and output rubber spindles.
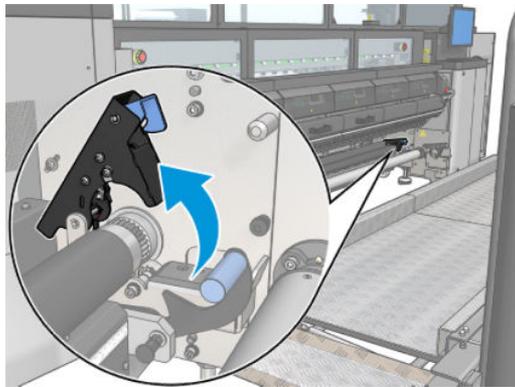
d. Move the input and output rubber spindles to the front to create space to pass the substrate behind them.
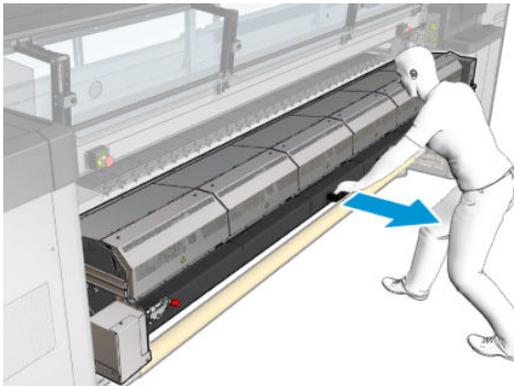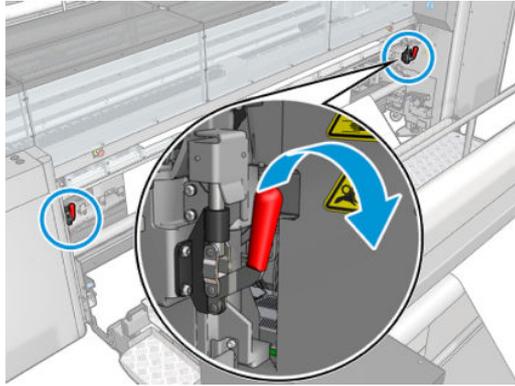
e. Open the front door.
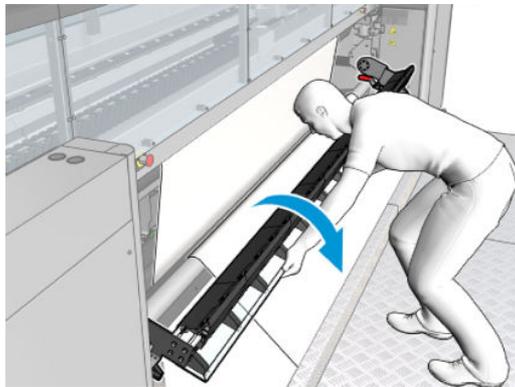

f. Open the curing module latches.

g. Open the curing module.

h. Open the loading table latches.

i. Open the loading table.

2. Use the Internal Print Server to raise the carriage beam to its loading position.

3. Assure both jumbo input and output units are ready for loading:

1.	E-stop button
2.	Error LED
3.	"Disabled" LED
4.	Steering controls
5.	Un/rewinder mode selector
6.	Un/rewinder enable/disable knob
7.	Un/rewinder direction selector
8.	Un/rewinder speed knob
9.	Uptime meter
10.	"Enabled" LED
11.	Power LED

NOTE: Any jumbo unit control panel changes will require you to re-enable the unit.

a. Make sure the unwinder and rewinder speed knobs (8) are set to zero on both jumbo input and output units.

b. Make sure the unwinder and rewinder mode selector knobs (5) are set to Manual (right most position) on both jumbo input and output units.

c. Make sure both jumbo input and output units are powered on (11). Otherwise power them on by using their corresponding disconnect switches (located on the side of each of their E-cabinets).

d. Enable both jumbo input and output units by temporarily turning their unwinder and rewinder enable/disable knobs (6) clockwise until their "Enabled" LEDs (10) turn on.

e. **WARNING**: Once the jumbo input and output units are enabled, they may move unexpectedly with a risk of injury if used incorrectly. Follow the steps described here carefully to avoid risk. See Mechanical hazard on page 5.

f. Bring the unwinder and rewinder steering modules to their respective center positions by pressing the home button on their corresponding control panels (4). A green LED lights up on the button when pressed.

📝 **NOTE:** Any jumbo unit control panel changes will require you to re-enable the unit.

g. Open all 4 safety chucks: 2 on the input, and 2 on the output units:

⚠ **CAUTION:** Never open a safety chuck while the tension bar is raised, it can cause the roll to tip over because of tension from the tension bar.

i. Verify the red dots align with each other in all 4 chucks. If not, then use the unwinder and rewinder speed knob(s) (8), and carefully turn the corresponding unwinder and rewinder motor(s) until the dots align.
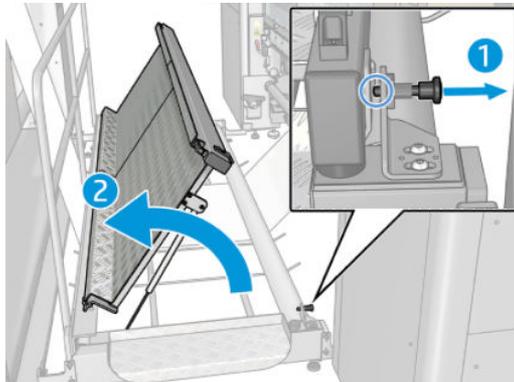
ii.   Open each chuck by firmly pressing its release button and sliding its external handwheel out of the way.

> **NOTE:** The handwheel should slide smoothly. If not, stop to inspect for damage or foreign objects.

h.   Unlock and open both operator platforms.

> **NOTE:** Make sure to lock the platform with the secure cable attached to the railing.
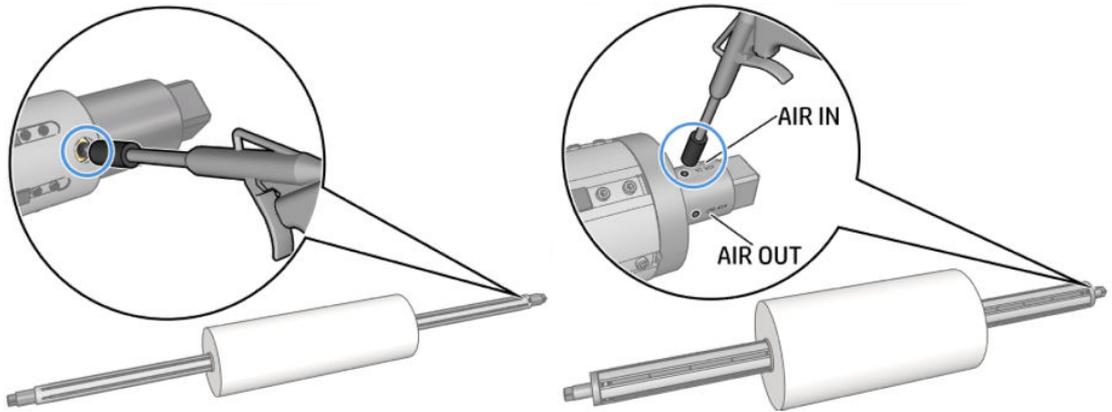

4.   Load the substrate roll into the jumbo input unit:

a.   Select the appropriate spindle for you core diameter.

b.   Make sure the spindle bladders are deflated, then slide the spindle into the substrate core.

c.   Use the spindle's ruler as reference to roughly center the spindle with respect to the outermost layers of your substrate roll.

> **NOTE:** The system is designed to admit up to 100 mm telescoping in any direction.

> **NOTE:** Centering the spindle with respect to the outermost layers helps minimize the amount of substrate advanced before the output rewinder sees a stable substrate edge (i.e. before output roll telescoping stops). Centering with respect to the core, or with respect to the most center layers, may result in a lengthy stabilization period.

d. Inflate the spindle bladders by applying pressurized air to the bladder's inlet nozzle (located near the end of the spindle).

NOTE: There are 2 bladder nozzles on each spindle, an inlet nozzle marked "AIR IN" and an outlet nozzle marked "AIR OUT". The image below shows one such nozzle:

e. Lift the substrate from the spindle (avoid lifting from the substrate or from the core directly), hover the roll over the unwinder taking care to orient it correctly based on the roll's winding direction (printed side in or vice versa), and gently lower it until it rests securely on the jumbo input unit's unwinder safety chucks.

f. Close the chucks when the spindle is fully rested.

NOTE: The recommended lifting technique, using an overhanging crane, is shown below:

NOTE: Slings cannot be used on the square spindle surface when loading or unloading media.

5. Prepare and load an output shaft and core:

   a. Select an appropriate shaft for your core diameter.

   b. Slide the core onto the spindle, center it using the spindle's ruler as reference, and inflate the spindle bladders using pressurized air.

   c. Load the spindle and core onto the output safety chucks, then close the chucks by sliding their corresponding external handwheels.

6. Adjust the input and output tension compensator's counterweight for your substrate:

a. With the table below, identify your input and output tension settings based on the type of substrate used:

	Jumbo input unit tension [N/m]	Jumbo output unit tension [N/m]
PVC Flooring	50	85
Laminates	10	25
Synthetic Leather	40	85

b. Calculate the necessary input and output counterweights based on the tension settings and the substrate width with the formula below:

Counterweight [Kg] = 56 - (2 x Media Width [m] x Tension Setting [N/m] ÷ 10)

c. Alternatively, find some common tension-width combinations in the table below with the corresponding counterweight values:

Tension [N/m]	Width [m]	Counterweight [Kg]
110	1.4	26
110	2.0	12
110	2.5	2
80	1.4	34
80	2.0	24
80	2.5	16
60	1.4	40
60	2.0	32
60	2.5	26
30	1.4	48
30	2.0	44
30	2.5	42
10	1.4	54
10	2.0	52
10	2.5	50

d. Combine the available 2kg, 3kg and 5kg weights (see image below) to achieve the required total counterweight on each of the input and output tension compensator counterweight bars. Distribute the weights as evenly as possible between the 2 ends of the counterweight bars for optimal results.

7. **Optional:** Mark the expected substrate edge position at 3 key rollers along the substrate path; the printer's first diverter roller, as well as the tension compensator's first and last diverter rollers. Do this for both the jumbo input and output units. You may do this only for one substrate edge, although it is recommended to do it for both if possible, i.e. 6 marks minimum, 12 if possible.

📝 **NOTE:** Make the marks using a tape measure from the edge of each roller to find half the distance between the roller length and the substrate width. The below image has arrows indicating the 3 suggested mark locations on the jumbo input unit, left substrate edge.

8. Thread substrate through the jumbo input unit and enable it.

⚠ **CAUTION:** Keep the area beneath both tension bars free from foreign objects at all times.

📝 **NOTE:** This action causes the unwinder to start moving and feeding paper. Before you perform it, please read the following:

a. Set the jumbo input unit unwinder speed knob (8) to 30%.

b. Gently thread the substrate through, all the while aligning the edges roughly with the marks (if you made them previously). Set the unwinder speed back to zero as soon as the substrate passes the loading table. See the image and text below for how to thread the substrate:
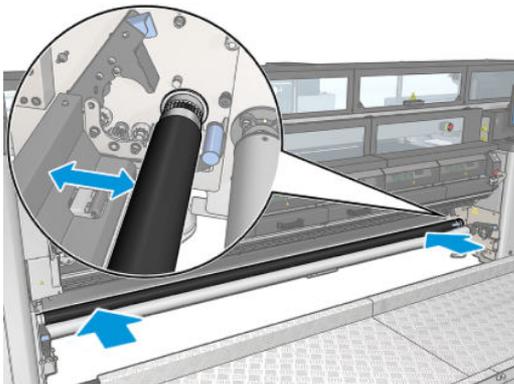

i. Under the unwinder diverter roller.

ii. Over the tension compensator's input diverter roller.

iii. Under the tension compensator's tension bar.

iv. Over the tension compensator's output diverter roller.

v. Under the two operator platform diverter rollers.

vi. Over the printer's input diverter roller.

vii. Under the printer's input rubber spindle.

viii. Past the loading table.

ix. When the substrate reaches the loading table, set the speed knob back to 0.

c. Hold the substrate taut, and close the loading table.

d. Push the input rubber spindle into place, then close the latches and pinch beam lever.

e. Close the input operator platform.

f. Visually inspect the substrate's edge against the marks, and make adjustments if necessary. Avoid tearing the substrate in the process, especially when threading laminates.

g. Check the jumbo input unit spin direction knob (7) based on the substrate roll (printed side in or vice versa).

h. Set the jumbo input unit unwinder to automatic mode (5 to left position).

📝 NOTE: After the unwinder has been enabled, the input roll should automatically turn bringing the tension bar up to about 1/3 of the way along its track. If this doesn't occur, pause and troubleshoot the issue.

i. Manually adjust the position of the input steering module's sensor by loosening its fixation screw, sliding it until the substrate's edge is perfectly centered in its field of view (verify this by making sure only the number 4 LED is turned **ON**), and tightening the screw to keep it in place.

j. Turn the jumbo input unit steering module to automatic mode by pressing the power button on the jumbo input unit's steering control (4). A green LED lights up on the button when pressed.

NOTE: Any jumbo unit control panel changes will require you to re-enable the unit.

NOTE: From this point on, the input's steering module automatically moves to compensate for substrate skew/telescoping.

k. Visually inspect the substrate throughout the jumbo input unit. Look for baggy regions, tears, severe wrinkles etc. If you observe any serious defects, repeat the process above.

9. Unwind a length of substrate.
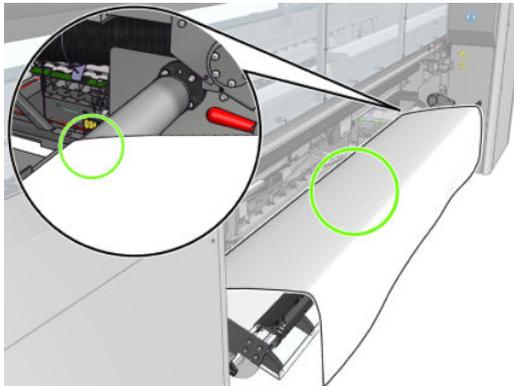
10. Place it in the print zone.
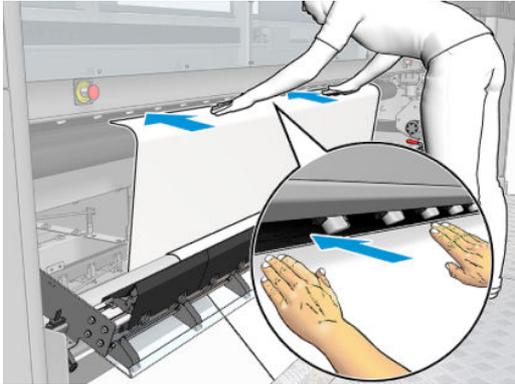
11. Push the substrate until it passes the output rubber spindle. Ensure that the substrate advances smoothly and is not trapped by any obstruction. If necessary, help the substrate to advance, and to pass through the curing module slot.

12. Keep the substrate evenly tensioned and push the output rubber spindle backwards. Take care not to trap your fingers between the roller and the black substrate guide lying underneath and behind. Close both latches and the lever.

13. Thread substrate through output jumbo roll and enable it:

    a. Keep feeding substrate using the Internal Print Server arrow buttons. It is recommended to feed 600 centimeters at a time repeatedly until the threading process is complete.

    b. Gently thread the substrate through, all the while aligning the edges roughly with the marks (if you made them previously). You may stop the printer feeding as soon as the substrate reaches the output core. See the below image and text explaining how to thread the substrate:

    i.   Under the printer's output rubber spindle.

    ii.   Over the printer's output diverter roller.

    iii.   Under the two operator platform diverter rollers.

    iv.   Over the tension compensator's output diverter roller.

    v.   Under the tension compensator's tension bar.

    vi.   Over the tension compensator's output diverter rollers.

    vii.   Under the rewinder diverter roller.

c.   Keep the substrate under tension and as even as possible and fix it to the core.

d.   Close the output operator platform.

e.   Visually inspect the substrate's edge to the marks, and make adjustments if necessary. Avoid tearing the media in the process (especially when threading laminates).

f.   Check the jumbo output unit spin direction (7), based on the substrate roll (printed in or vice versa).

g.   Turn the jumbo output unit rewinder to automatic mode (5 to left position).

> **NOTE:**   When the rewinder is enabled, the input roll should automatically turn bringing the tension bar up to about 1/3 of the way along its track. If this doesn't occur, pause and troubleshoot the issue.

h.   Manually adjust the position of the output steering module's sensor: loosen its fixation screw, slide it until the substrate's edge is perfectly centered in its field of view (verify this by making sure only the number **4** LED is turned on), and tighten the screw to keep it in place.

i.   Press the power button on the jumbo input unit's steering control (4) to turn the jumbo output unit steering module to automatic mode. A green LED lights up on the button when pressed.

> **NOTE:**   Any jumbo unit control panel changes will require you to re-enable the unit.

> **NOTE:**   From this point on, the output's steering module automatically moves to compensate for substrate skew/telescoping.

j.   Visually inspect the substrate throughout the jumbo output unit. Look for baggy regions, tears, severe wrinkles, etc. Repeat the process above if you observe any serious defects.

14. Go to the Internal Print Server and press the **Finish** button. The printer checks the width of the roll, the vacuum, and the substrate advance calibration (this takes about a minute).

15. 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.

Load a roll (jumbo-roll-to-free-fall configuration)
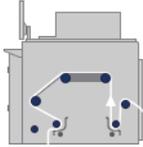
The substrate is mounted on the jumbo input unit unwinder, fed through the system, and deposited on the floor in front of the printer.

The substrate travels from the jumbo input unit unwinder to its tension compensator module, through the printer (i.e. input diverter, input tension roller, main roller, platen, curing module, and output tension roller), then continues to the floor.
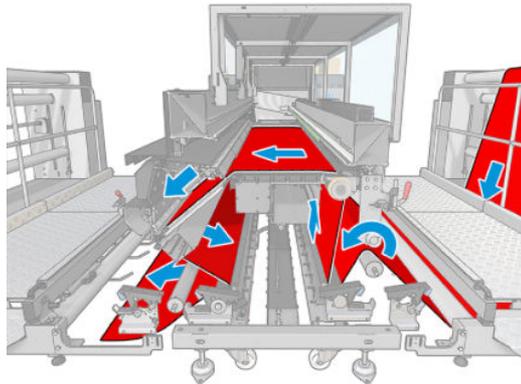
Substrate can be loaded with the printed side inwards or outwards on the input roll. In both cases, the jumbo input unit must be configured respectively, while the printer itself requires no additional configuration.

To load the substrate, follow the same procedure as , except that threading through the jumbo output unit is needed. In other words, simply skip step 10 if performing assisted loading, or step 13 if performing manual loading.

Load a roll (roll-to-collector configuration)
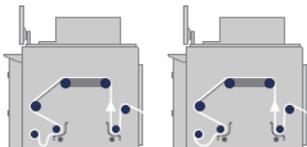
This configuration is similar to the jumbo roll-to-free-fall configuration, but with the addition of a collector roller and tension bar.
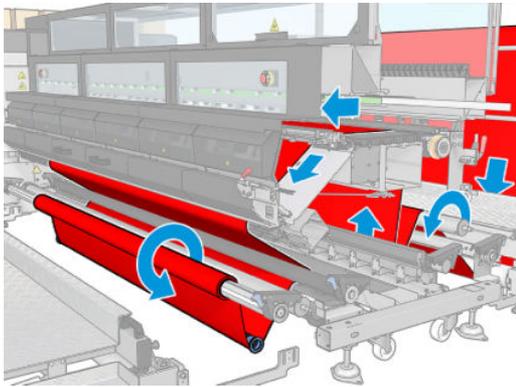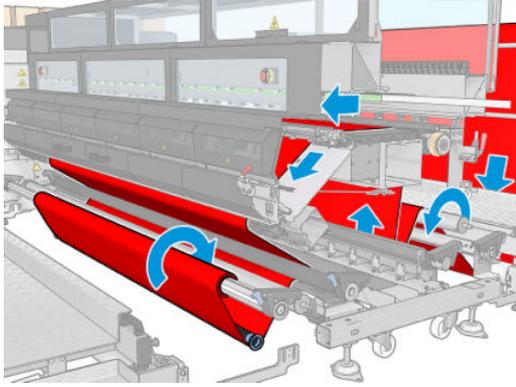
📝 **NOTE:** It is strongly recommended to remove the output diverter roller from the printer before loading substrate in this configuration. Failure to do so limits the maximum output roll diameter, and may affect the collector's functionality. To remove the output diverter roller: at each end of the diverter, loosen the set screws on the two bearing units. Slide the diverter further into one of the bearing units until the opposite end becomes free, tilt it, and slide it out

💡 **TIP:** Do not try to load or unload the collector while printing.

Before starting to load the substrate, select a tension bar of the correct length to match the substrate width. The following tubes are supplied so that you can make up tension bars of many different lengths.

- One 152-mm (6-in) tube

- Two 203-mm (8-in) tubes

- One 305-mm (12-in) tube

- One 610-mm (24-in) tube

- Two 1067-mm (42-in) tubes

- Two end flanges, to be placed at each end to avoid lateral displacement of the tension bar during printing

For example, you can make up the following tension bars:

- 914 mm (36 in): 610-mm (24-in) and 305-mm (12-in) tubes

- 1016 mm (40 in): 610-mm (24-in) and two 203-mm (8-in) tubes

- 1270 mm (50 in): 1067-mm (42-in) and 203-mm (8-in) tubes

- 1372 mm (54 in): 1067-mm (42-in) and 305-mm (12-in) tubes

- 1524 mm (60 in): 1067-mm (42-in), 305-mm (12-in) and 152-mm (6-in) tubes

- 1829 mm (72 in): 1067-mm (42-in), 610-mm (24-in) and 152-mm (6-in) tubes

- 1981 mm (78 in): 1067-mm (42-in), 610-mm (24-in) and two 152-mm (6-in) tubes

- 2032 mm (80 in): 1067-mm (42-in), 610-mm (24-in), 203-mm (8-in) and 152-mm (6-in) tubes

- 2489 mm (98 in): two 1067-mm (42-in), 203-mm (8-in) and 152-mm (6-in) tubes

- 2642 mm (104 in): two 1067-mm (42-in), 305-mm (12-in) and 203-mm (8-in) tubes

- 3200 mm (126 in): two 1067-mm (42-in), 610-mm (24-in), 305-mm (12-in) and 152-mm (6-in) tubes

1. Follow the whole loading procedure for the Load a roll (jumbo-roll-to-free-fall configuration) on page 88.

2. Load an empty substrate core onto the output spindle. Close the latches at both sides of the output spindle. See (Load a roll onto the spindle on page 91).

3. Use the Internal Print Server buttons to advance the substrate's leading edge until it reaches the collector core.

4. Tighten the substrate so that it is evenly tensioned, then attach the leading edge to the core with tape, first at the center and then at the sides. There should be no wrinkles or slackness across the substrate.

5. Use the Internal Print Server buttons again to advance the substrate, so that a substrate loop is produced between the tension roller and the collector.

6. Place the tension bar into the substrate loop.

   IMPORTANT: If you use the collector roller without removing the diverter roller, make sure to always place the tension bar between the rubber spindle and the diverter roller (never between the diverter roller and the collector roller).
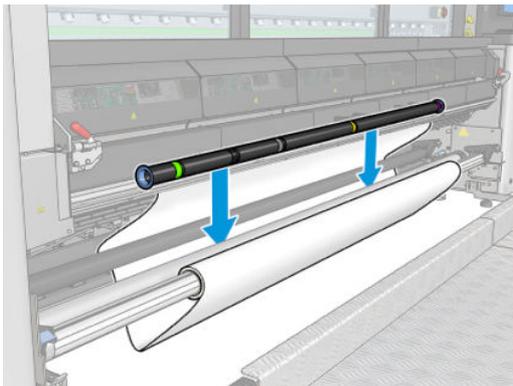
   NOTE: Loop detection is done in the center of the printer; avoid putting your foot or any other object under the collector in the center.

7. Select the winding direction: **Outwards** is recommended, as it permits an output roll up to 300 mm (11.81 in) in diameter. If you select **Inwards**, the diameter of the output roll is limited to 200 mm (7.87 in): with a fatter roll, the tension bar would start to touch the roll.

   NOTE: The winding direction cannot be changed on the fly: the collector has to be deactivated and reactivated.

8. Press the **Finish** button.

9. Go to the Internal Print Server and press the **Enable collector** button.

The printer is now ready to print.

Load a roll onto the spindle

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

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. Load an empty substrate core onto the output spindle.

💡 **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 core position should match with the substrate coming from the input jumbo roll.
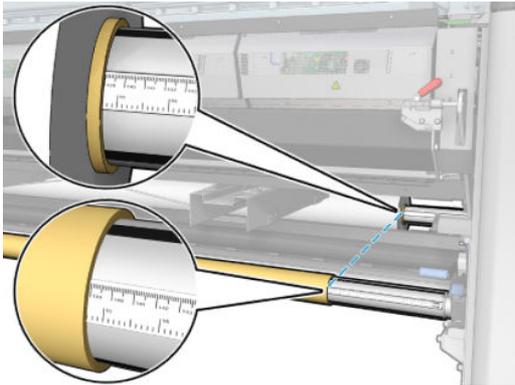
TIP: The rolls should be centered to reduce the risk of skew, wrinkles, and telescoping.
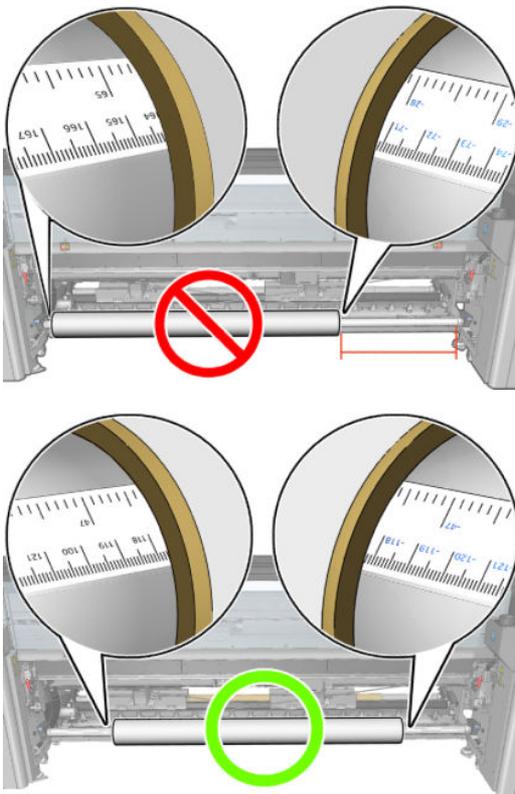
4. Connect the air gun to the pneumatic connector on the spindle, and inflate the spindle so that it cannot move inside the roll.

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.

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

How to print a quick job without threading again

1. Set jumbo output unit to manual mode. Cut the substrate close to the printer and operator platform.

2. Click **Substrate load/unload** in the Internal Print Server. If desired, check the reload substrate checkbox to reduce the loading time.

3. Press the **Finish** button.

4. The system is now ready to print-to-floor.

To print with the collector:

Remove the printer's output diverter roller:

1. Loosen the set screws on each of the bearing units supporting the roller.

2. Slide the roller into one of the bearing units until the opposing end is free, tilt the free end of the roller towards you and slide the roller out of the remaining bearing unit.

IMPORTANT: Make sure this diverter roller is installed whenever you intend to use the jumbo output unit.

Follow steps 2–9 in Load a roll (roll-to-collector configuration) on page 88.

Skew check option

This option is selected via the **Printer Configuration** window during substrate load in all previous configurations.

This option does not indicate whether the substrate is properly loaded or not, but it does provide the amount of lateral movement during the load. You can set a threshold for each substrate type.
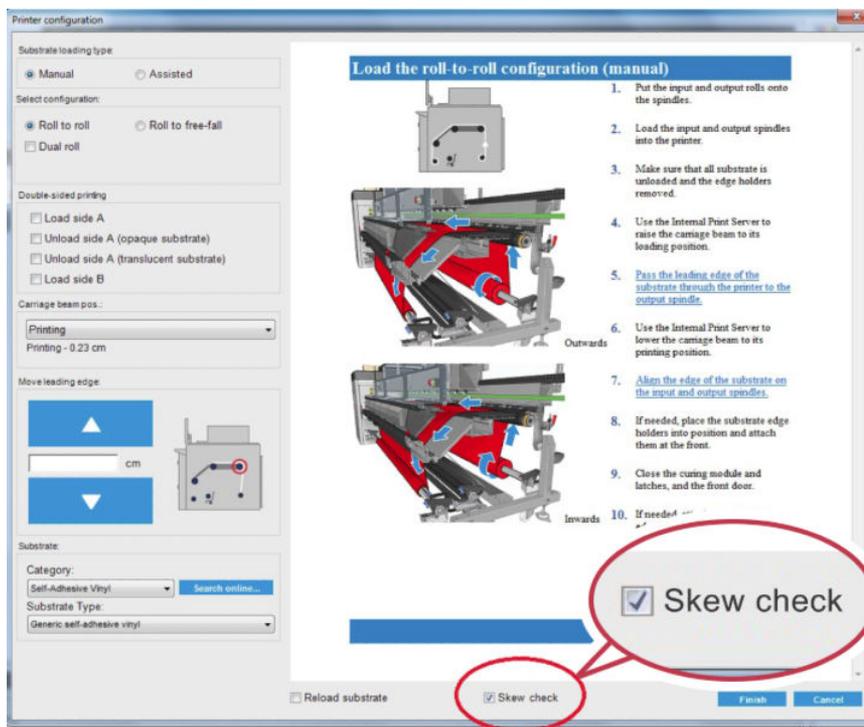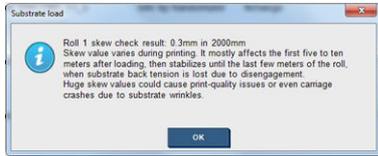
Additional notes

- When this option is selected, while loading, the printer moves the substrate backwards and forwards several times in order to measure the skew at different points.
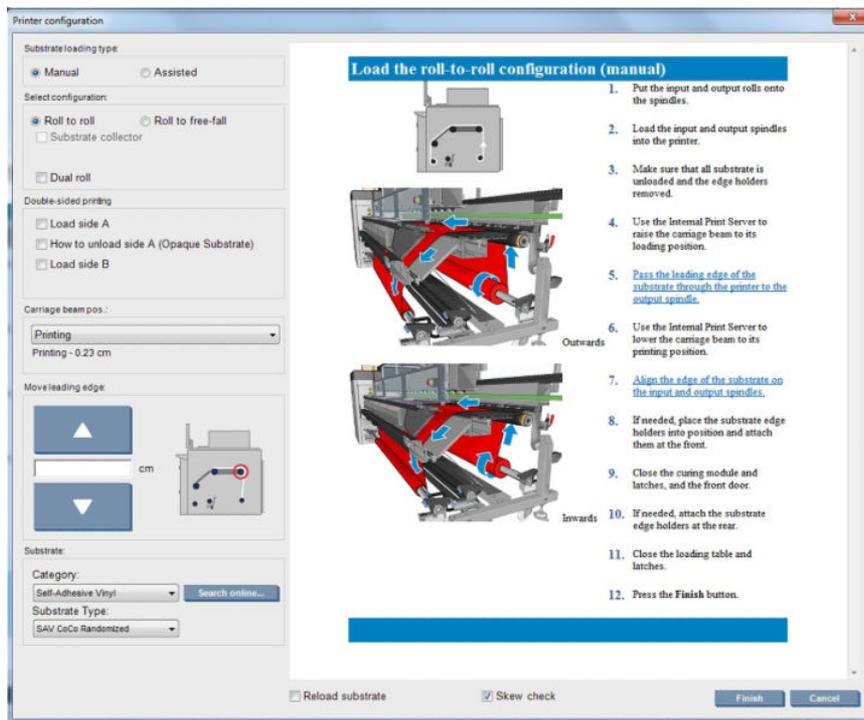
- During this phase **Calibrating advance** appears.
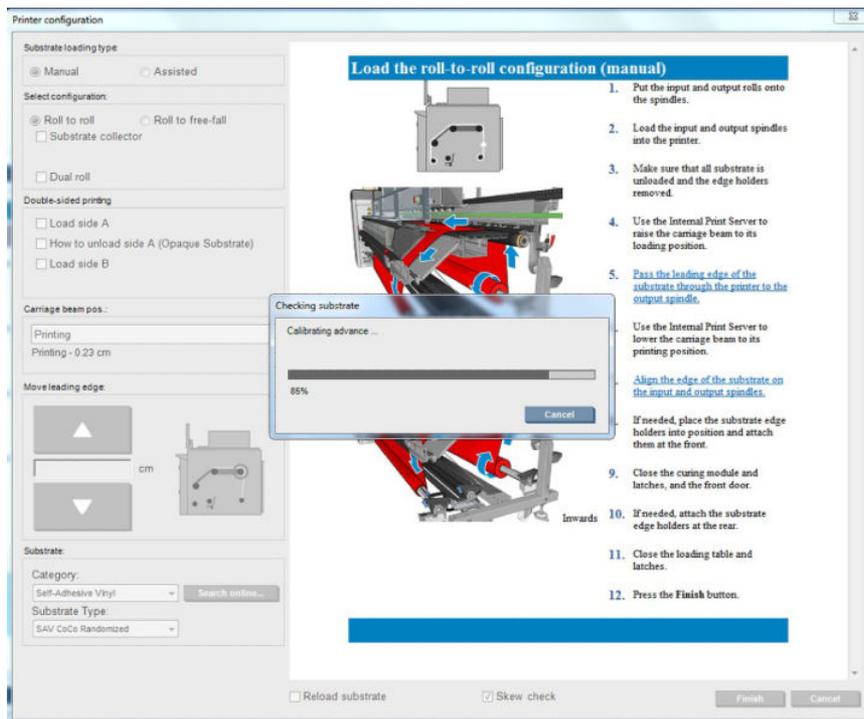
- When finished, the substrate loads, and a window appears with the skew test result.

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, select the **Substrate** menu and then **Settings**.

Unload a roll from the Jumbo Roll Solution

IMPORTANT: Make sure the printing process has completely stopped before proceeding with step 1 below.
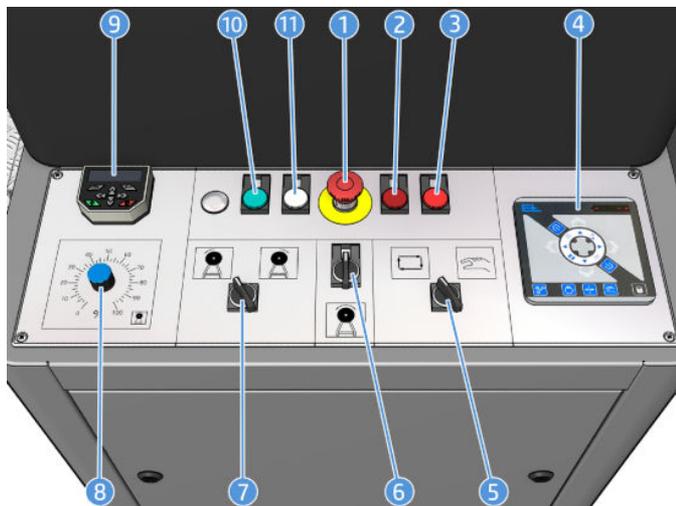
1. E-stop button
2. Error LED
3. "Disabled" LED
4. Steering controls
5. Un/rewinder mode selector
6. Un/rewinder enable/disable knob
7. Un/rewinder direction selector
8. Un/rewinder speed knob
9. Uptime meter
10. "Enabled" LED
11. Power LED

NOTE: Any jumbo unit control panel changes will require you to re-enable the unit.

1. Go to the Internal Print Server and select **Substrate Load/Unload**.

2. Set both the input unwinder mode selector (5), and steering module controls (4) to manual mode. Toggle the unwinder spin direction (7) on its control panel.

3. Gently increase the unwinder speed knob (8) in order to lower the input tension bar. Stop once the tension bar rests at its bottom most position.

4. If your setup includes a jumbo output unit, repeat steps 2 and 3 on it.

⚠ **WARNING!** Make sure the substrate web is no longer attached to the input roll. In some cases, the substrate's trailing edge will self-detach from the input roll. If not, it is recommended to cut the substrate near the printer input rubber spindle (use a tool to make a straight cut).
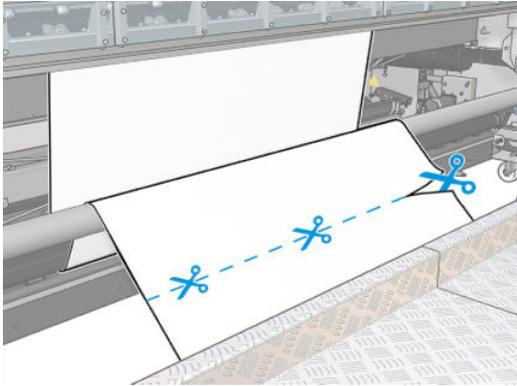
5. Rewind any excess material back onto the input roll by running the unwinder (5) in manual mode. Watch the steering sensor to make sure the excess material does not damage it. Once all the excess material has been wound up, stop the jumbo input unit. Now remove the input spindle.

6. Open the printer loading table, the input and output rubber spindle latches and lever, and bring both rubber spindles out to their loading positions.

7. Go to the Internal Print Server and use the arrow buttons to advance substrate until the trailing edge exits the printer (approximately 500cm).

8. Rewind any excess material to the output roll by running the rewinder (5) in manual model. Once all the excess material has been wound up, stop the jumbo output unit. Now remove the output spindle.

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

⚠ **CAUTION:** Never open a safety chuck while the tension bar is raised, it can cause the roll to tip over because of tension from the tension bar.

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 select **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 select **Carriage beam position** > **Move to substrate load position**. The printer raises the carriage. This process takes about 2 minutes to complete.

💡 **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

For porous substrates only, when the ink collector kit (see The ink collector kit on page 49) is in use:

        a.   Cut the substrate at the front.

        b.   Go to the rear of the printer and pull the substrate over the loading table.

        c.   Cut the substrate again.

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.

LED proofing lights

Risk of burns

For more safety information, see Safety precautions on page 2

The HP Latex 3800 Jumbo Roll Solution has a set of LED lights at the output side of the printer.

The output platform provides a standing area to check output image quality at the correct distance with appropriate light/illumination.

The set of lights allows the visual inspection of the image printed on-press. It is comprised for 2 lights:

- Front light: Mounted underneath the New Universal Mounting Beam (UMB), illuminating the print output for frontal visual assessment.

- Back light: Two strips of LED illuminating from the rear of the substrate output, providing an on-printer light source for visually assessing backlit prints; no need to stop the printer to view in a light box.

The LED proofing lights can easily be managed and switched on and off from the IPS.

IMPORTANT: After 3 minutes of being on, the LED proofing lights will automatically switch off.

CAUTION: LED proofing lights can reach high temperatures, take caution when approaching and working close to LED strips.

CAUTION: You are recommended not to look directly at the LEDS while they are on.

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 and curing. 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 <u>Online substrate manager on page 113</u>.

To install a new substrate preset without .oms, go to the Internal Print Server and select **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 select **Substrate** > **Presets management** > **Import label**, then search for your **.oms** file and click **Update**. You can also export substrate presets using **Export label**.

> 📝 **NOTE:** The maximum number of substrate presets supported by the printer is 126.

Export multiple presets

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

How to export multiple substrate presets

1. Via the IPS, select **Substrate** > **Preset management**.
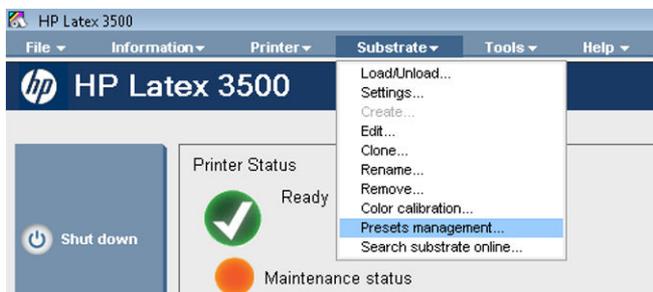
2. Go to the **Export** tab, select all the substrates to export, and click **Export**.

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

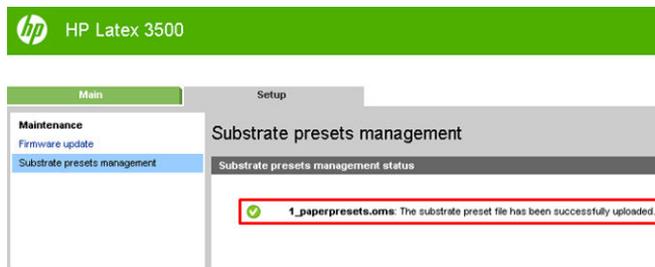3. A window pops up asking to save the generated .oms file. Click **Save** to continue.
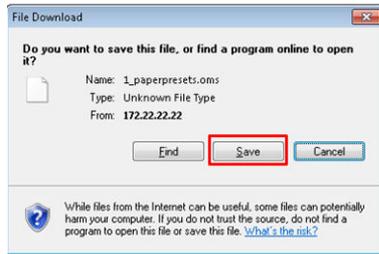
How to import the generated .oms file

1. Via the IPS, select **Substrate** > **Preset management** > **Import**.
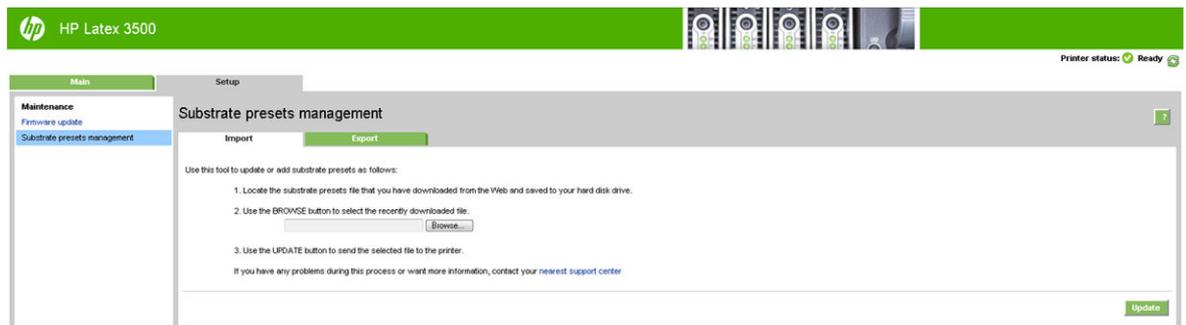
2. Browse to select the **.oms** file (in this case '1_paperpresets.oms') and click **Update**.

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 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, use the Add New Substrate wizard to create a new preset for your substrate. See .

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 105. This is recommended for advanced users only.

5. Tiling optimization for a new substrate. To optimize tiling performance, create a new substrate via the IPS (**Substrate** > **Optimize for tiling**).

Optimize for tiling

Optimize for tiling improves color consistency, specifically for tiling applications within a printer, within a single job, and within the same substrate roll, it also:

- Creates a new substrate structure, based on existing ones, with tiling specific optimizations.

- Reduces color variations during long printing to maximum color difference (95% of color) <=1 dE 2000 in Tiling mode.

- Has a workflow to create substrate optimized for tiling based on customer substrate.

- An automated introduction of preparation plot and color bars to plot stream to stabilize system during long runs.

It is/does not:

- A printer to printer color consistency solution.

- Does not modify existing print modes or substrate.

It only supports the following print modes:

- 8p 70% – 120%

- 10p 70% – 130%

- 14p 70% – 140%

1. Select **Substrate** > **Optimize for tiling**, then select the required substrate from the list.

📝 NOTE: Only substrates that can be optimized for tiling appear in the list. Supported types are: Front-lit Substrate, Vinyl, Wallpaper and PVC Banner. Substrates that have been converted as optimized for tiling will not appear.
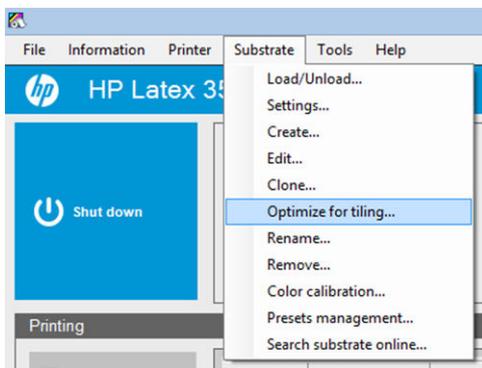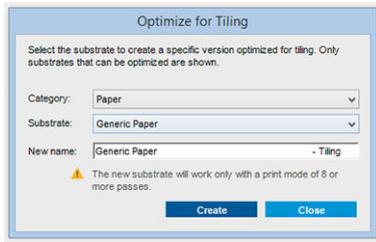
📝 **NOTE:** A **Tiling** suffix is added to the name of the substrate, you edit the name, but you cannot erase the suffix.

2. A warning about the solution space change in the new substrate appears, click **OK**.
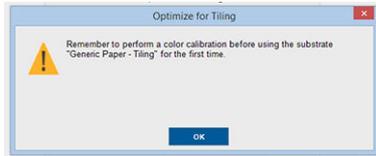
3. A window appears to recommend the CLC to select before the first time the substrate is used.

4. **System Preheat** is automatically checked for the selected tiling substrate, it is greyed out in the window, and cannot be unchecked. Only the recommended solution space, (number of passes and ink levels) appears in the tiling window.
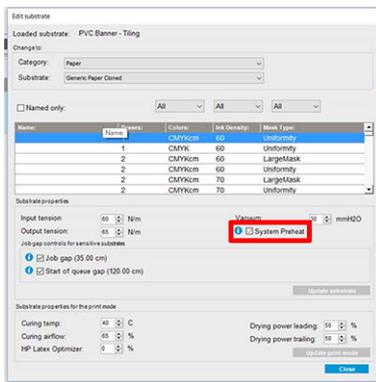
📝 **NOTE:** If the paper mode from the original substrate is not within the recommended solution space, it is deleted from the list. If the existing paper modes have been deleted during creation, a recommended paper mode is automatically added.

5. During creation, the CLC color reference is reset and the status appears as **Color reference not set** in the IPS.

📝 **NOTE:** After creation, a CLC is required to create the reference for future color calibration. A warning window appears straight after substrate creation. You can create an ICC profile from the RIP and manage the substrate as normal from this point on.

6. A beginning of job preparation plot (A) and sideway color bars (B) are automatically added.
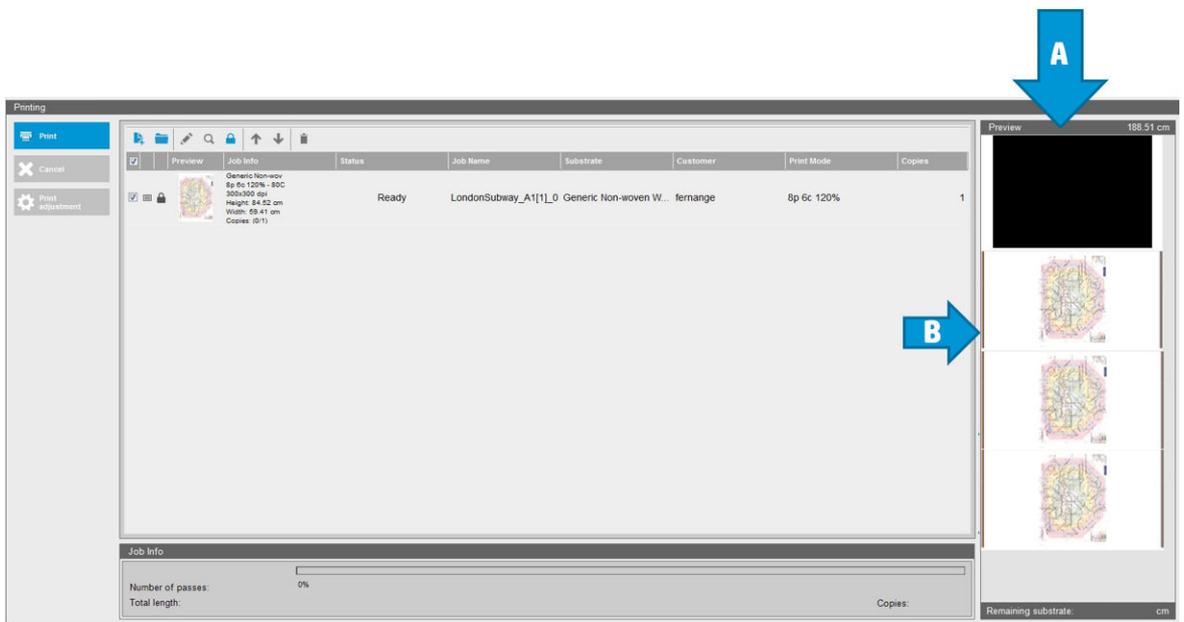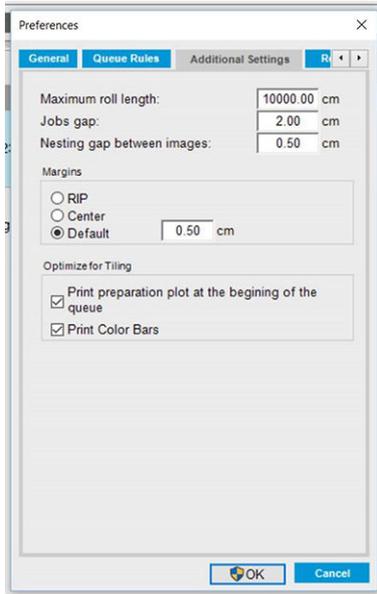
NOTE: When tiling optimized substrate is loaded, the specific workflow changes and beginning of job preparation plot and sideway color bars are automatically introduced. Workflow for non-optimized substrates is not affected.

7. Substrate can be exported from one printer to another.

IMPORTANT: Tiling substrates can only be imported with the latest firmware. See Update the firmware on page 27.

Prepare the printer for a new substrate

1. Whenever possible, try to ensure that your printer is in an optimum state before you create a new preset: run any pending maintenance task, in particular printhead checks and alignment.

2. Stop the print queue and wait for the printer to finish the current job. No jobs should be sent to the printer until the new substrate preset is complete.

3. Load your new substrate. The process of loading a substrate into the printer has been designed to be completely independent of the substrate type. When loading, follow the correct procedure and ensure that the roll width is specified, either automatically by the printer or by yourself. You may not experience the best possible results if there are significant differences between the specified and the actual roll width.

   📝 **NOTE:** You are recommended to use the roll-to-roll configuration when creating a new preset.

4. Choose a suitable carriage beam printing position: see .

Create a new substrate preset with the Add New Substrate wizard

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

To use the wizard, first ensure that the new substrate is loaded in the roll-to-roll configuration, then go to the Internal Print Server, select the **Substrate** tab, and then **Create**.

Material

The first question from the wizard asks for the primary material of which your substrate is made.

- **Self-Adhesive Vinyl** includes cast self-adhesive vinyl, calendered self-adhesive vinyl, perforated self-adhesive vinyl, transparent self-adhesive vinyl, and reflective self-adhesive vinyl.

- **PVC Banner** includes frontlit banner, backlit banner, scrim banner, scrimless banner, mesh banner with liner, blockout banner, truck curtain banner, tarpaulin, and PVC wall covering.

- **Paper** includes coated paper, uncoated paper, photo paper, photorealistic paper, blue-back paper, paper wall covering or wallpaper, self-adhesive paper, and non-woven wall covering.

- **PP & PE Film & Banner** includes polypropylene (PP) film, synthetic paper (such as Yupo), Tyvek, and PE or HDPE (polyethylene) banner.

- **PET Film** includes polyester (PET) backlit film, polyester (PET) frontlit film, and polyester (PET) grey-back film.

- **Textile** includes polyester textile and fabric, textile banner, backdrops, textile mesh with liner, frontlit textile, backlit textile, canvas, flag and voile *, cotton textile, textile wall covering, self-adhesive textile, and woven wall covering.

- **Decor materials** include vinyl flooring, deco-laminates, synthetic leather, and non-porous window-blinds.

Application

The next question asks how you intend to use your substrate.

- **Frontlit** means that the print will be viewed by light from in front of the substrate.

- **Backlit** means that the print will be viewed by light from behind the substrate.

Optimized for

The next question asks whether you want to give priority to speed, quality, or neither.

- **Print Quality:** You want the best possible print quality.

- **Print Speed:** You want fast printing.

Test print

Next, the wizard shows you the proposed settings for the first test print. These settings are generated based on the information you have already given.

📝 **NOTE:** If you are an advanced user and the suggested settings do not meet your expectations, you can select **Advanced settings** at any time and make manual changes. However, you are recommended to print the first test print as an indication of overall performance on your substrate.

📝 **NOTE:** If you cancel the test print because you are experiencing substrate issues or print-quality issues such as banding, consider modifying the substrate preset, following the guidelines provided in Troubleshoot substrate issues on page 372 and Troubleshoot print-quality issues on page 385.

When the test print has been made, the wizard asks you some questions about it.
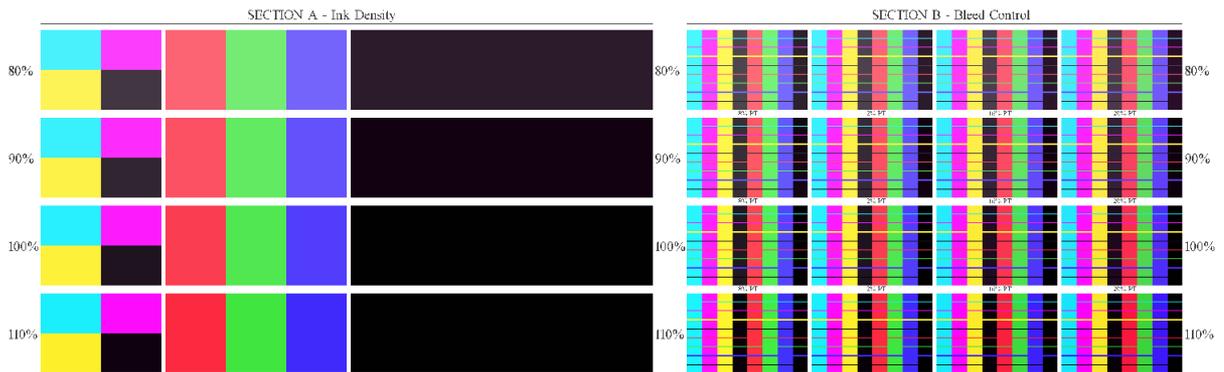
The print is organized into horizontal bands which are printed at a range of different ink densities. There are two different sections. The left part (Section A) is focused on color saturation and curing performance. The right part (Section B) is focused on the interaction of several ink densities with different levels of optimizer.

1. Start with Section A. Check whether any of the bands is completely cured. Use the black 4-color patch for this purpose. Do a smudge test if possible. Check whether any curing defects are visible. One possible curing defect appears as a pattern of small round spots on the print, from the perforated plate through which the curing air passes.

   If you have found an ink density that is perfectly cured, choose this or a lower ink density in the Ink Density drop-down menu. Never select a ink density with curing defects.

If none of the ink density bands is completely cured, or the ink density you prefer for your application is not cured, select **NONE** in the Ink Density menu. The wizard then generates another test print with different settings.

2. When you have found a satisfactory ink density, you need to select the best amount of optimizer for this ink density.

   Within the ink density band you have selected, look at Section B of the print to determine the best amount of optimizer. Look at color-to-color bleed and smooth area fills. If you see several levels of optimizer performing equally well, you are recommended to choose the lowest amount without defects.

   If you cannot find any amount of optimizer giving satisfactory performance with the selected ink density, look at neighboring ink densities (usually lower, but could be higher in some rare cases). Consider changing the selected ink density if there is a combination without defects. If you do so, remember to change the ink density in the drop-down menu.

3. Once you have found a good combination of ink density and optimizer, click **Next** to add the substrate and the printing condition you just selected. You can rename both. In some cases, several printing conditions are offered at once. You can deselect the options you are not interested in.

4. You are recommended to perform color calibration immediately after completing the wizard, to ensure that the calibration process can cope with the selected ink density.

5. The new preset is now loaded into the Internal Print Server. You can print your own test prints or create an ICC profile with your RIP software.

☼ **TIP:** If you need to provide different printing conditions or change those currently available in the new preset, you can select **Edit** from the **Substrate** menu.

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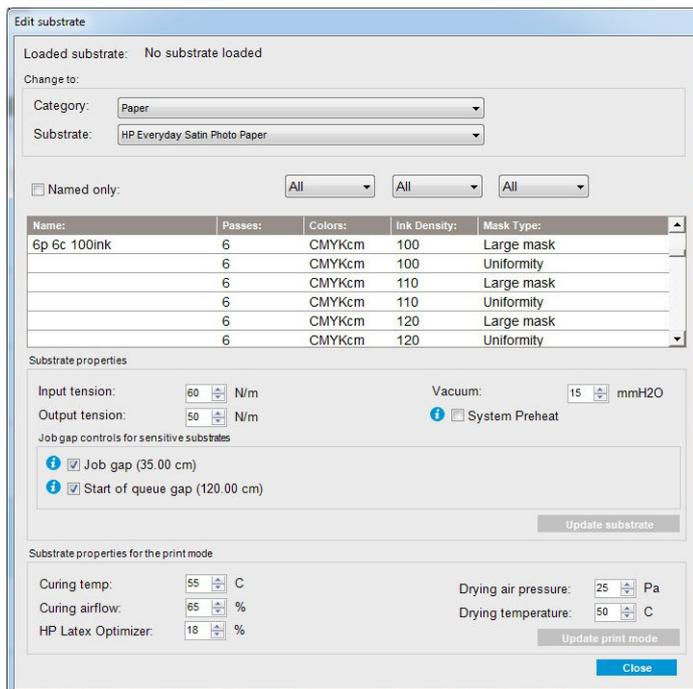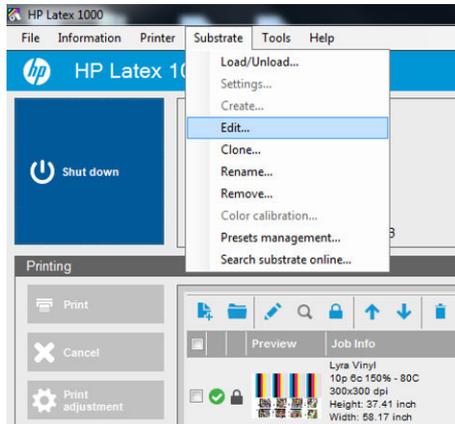
1. In the upper part of the Edit Substrate window, select the substrate category and the name of the specific substrate preset that you want to edit.

   📝 **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 printmode table, change the substrate settings. Press **Update substrate** if you want to change it.

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

   ☆ **TIP:** The recommended print mode mask type is **Large mask** to obtain the best color balance.

   TIP: The **Uniformity mask** is recommended to obtain better grain uniformity.

5. Enable **System Preheat** mode to achieve more stable color consistency over long runs. When enabled, the printer automatically runs a warm-up routine immediately prior to the real job in order to bring the print system up to a stable operating temperature. This procedure can take up to two minutes and is therefore

only recommended for those jobs that require tight color matching over long runs. Do not use this option for single prints or short runs.

System preheat is only applicable in the following print modes:

- 6p 80% – 100%

- 8p 80% – 120%

- 10p 80% – 120%

In order 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.

Printing masks

The concept of **printing masks** refers to the relative positions of the ink drops on the substrate. The mask uses a randomization algorithm to avoid visual patterns, and the result is a visually smooth surface, with minimal graininess, and no banding.

Inaccurate alignment or substrate advance can interfere with the algorithm, causing different grain patterns along long jobs. On tiling applications, differences between panels can lead to visible seams.

The new **Uniformity mask** is more robust against this kind of phenomenon, delivering a uniformly textured look in long runs, and enabling seamless tiling applications. This is why the **Uniformity mask** is recommended for applications such as wall-covering, or vehicle wrapping; while the **Large mask** is recommended for applications such as posters, roll-up banners, or backlit signs

The following images show the performance of the two types of masks when the substrate does not advance uniformly.

Large mask

Uniformity mask

How to select mask type

1. You can select the desired mask by creating the corresponding print mode on the **Edit Substrate** menu. Remember that generic substrate presets must be cloned before being edited.

2. Provide a name to the print mode with **Uniformity mask** to make it accessible for printing.
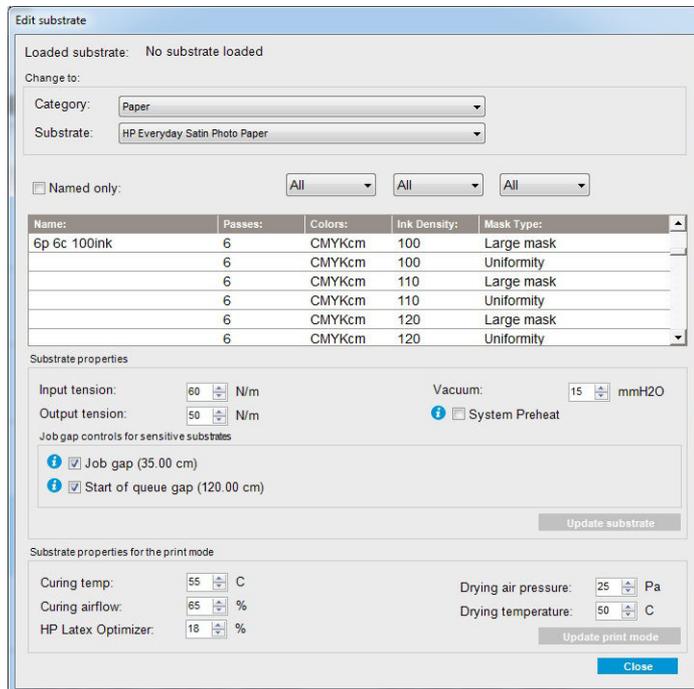
By default, all the generic print modes use the **Large mask**.

Consider the **Optimize for Tiling** option to get the best color consistency when printing tiles.

On-the-fly adjustments

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

The dialog box is divided into sections for the substrate advance (see Substrate-advance compensation on page 169), the curing and drying temperatures, and the substrate tension.
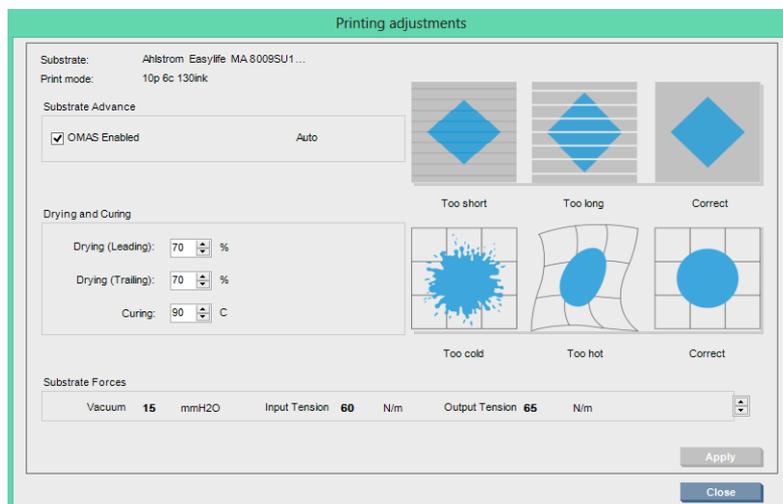
1. Adjust the drying power up or down.

2. Adjust the curing power up or down.

3. Illustrations of the possible effects of not enough, too much, and correct heating respectively.

4. Adjust the vacuum level up or down. The input and output tensions are adjusted automatically, depending on the vacuum level.

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

To apply and save the values, press 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.

Optimize the preset for higher print speed

Action

Reduce the number of passes.

Possible risks and compensations

- **Risk:** Poor curing performance.

  - **Compensation 1:** Reduce the ink density by one or two levels for each level that the number of passes is reduced.

    Example: For most front-lit materials, 6-pass 100% ink > 4-pass 80% ink > 3-pass 60% ink.

  - **Compensation 2:** Slightly increase the curing airflow to eliminate minor curing artifacts.

  - **Compensation 3:** Increase the curing temperature if you choose not to compensate with the ink density.

    > **NOTE:** This is feasible only with substrates that do not show thermal deformation defects at higher temperatures.

- **Risk:** When you reduce the number of passes, especially to 4 or fewer, some artifacts such as grain, bleed, and coalescence may become visible. It is possible to compensate to some extent with the following settings:

  - **Compensation 1:** Reduce the ink density as described above.

  - **Compensation 2:** Increase the optimizer ink level in 2% steps for each level that the number of passes is reduced.

    Example: 6-pass 12% optimizer > 4-pass 14% optimizer.

  - **Compensation 3:** Increase the drying lamp power in 10% steps for each level that the number of passes is reduced.

    Example: 6-pass 50% power > 4-pass 60% power.

Optimize for best print quality and/or widest gamut

Actions

- Use a 6-color ink set.

- Increase the number of passes.

- Increase the ink density.

Considerations

- A 6-color ink set enables smooth transitions; always use this option for best print quality.

- Use an 8-pass print mode for best print quality with frontlit substrates.

- Use a 14- or 18-pass print mode for best print quality with backlit substrates and textiles.

- When using a high number of passes, substrates can be saturated above 100% ink (example: 130% frontlit, 300% backlit). Higher ink densities may increase gamut and color saturation, and, in backlit materials, increase opacity of printed areas.

NOTE: This is highly substrate-dependent.

Optimize for ink consumption

Actions

- Reduce ink density.

- Use a 4-color ink set.

Considerations

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

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

- A 4-color ink set may reduce overall ink consumption, as the light cyan and light magenta inks are not used in printing.

  NOTE: Some ink is still used from each printhead to maintain the health of the printhead.

- A 4-color ink set is less resistant to some print-quality defects, such as contouring.

Recommended print modes for each substrate type

PVC Banner

Frontlit

Ink density	60	70	80	90	100	110	120	130	140	150	170	200	230	260	300
2p															
3p		✓	✓												
4p			✓	✓											
6p				✓	✓										
8p					✓	✓									

backlit

Ink density	60	70	80	90	100	110	120	130	140	150	170	200	230	260	300
10p									✓	✓					
14p										✓	✓		✓		
18p													✓		

PVC Mesh Banner using ink collector

frontlit

Ink density	60	70	80	90	100	110	120	130	140	150	170	200	230	260	300
2p															
3p	✓	✓													
4p			✓	✓											
6p				✓	✓										
8p					✓	✓									

Paper (coated & uncoated)

Frontlit

Ink density	60	70	80	90	100	110	120	130	140	150	170	200	230	260	300
2p															
3p		✓	✓												
4p			✓	✓											
6p				✓	✓										
8p					✓	✓	✓								

backlit

Ink density	60	70	80	90	100	110	120	130	140	150	170	200	230	260	300
8p															
10p								✓							
14p									✓						
18p										✓					

Non-woven Wallpaper

frontlit

Ink density	60	70	80	90	100	110	120	130	140	150	170	200	230	260	300
3p															
4p			✓												
6p			✓	✓	✓										
8p				✓	✓	✓	✓								

PET

frontlit

Ink density	60	70	80	90	100	110	120	130	140	150	170	200	230	260	300
6p			✓	✓	✓										
8p				✓	✓	✓									
10p					✓	✓	✓								

backlit

Ink density	60	70	80	90	100	110	120	130	140	150	170	200	230	260	300
10p										✓					
14p												✓	✓		
18p												✓	✓		

PP/PE

frontlit

Ink density	60	70	80	90	100	110	120	130	140	150	170	200	230	260	300
6p			✓	✓											
8p				✓	✓										
10p					✓	✓									

backlit

Ink density	60	70	80	90	100	110	120	130	140	150	170	200	230	260	300
10p								✓							
14p								✓		✓					
18p										✓	✓				

Textile & canvas*

frontlit

Ink density	60	70	80	90	100	110	120	130	140	150	170	200	230	260	300
10p										✓	✓				
14p										✓	✓	✓	✓	✓	
18p										✓	✓	✓	✓	✓	

backlit

Ink density	60	70	80	90	100	110	120	130	140	150	170	200	230	260	300
10p										✓	✓				
14p										✓	✓	✓	✓	✓	
18p										✓	✓	✓	✓	✓	

* Non-porous textile or canvas. See Check the porosity of your substrate on page 39.

Textile using ink collector	Ink density														
	60	70	80	90	100	110	120	130	140	150	170	200	230	260	300
frontlit 8p					✓										
10p					✓	✓	✓								
14p					✓	✓	✓	✓	✓	✓					
18p					✓	✓	✓	✓	✓	✓	✓				
20p												✓			
24p												✓	✓	✓	

NOTE: It is strongly recommended to go through a validation process to determine the application specific optimized solution.

Vinyl Flooring — Ink density chart (Frontlit: 2p, 3p, 4p, 6p, 8p; columns 60–300)

Decolaminates — Ink density chart (Frontlit: 2p, 3p, 4p, 6p, 8p; columns 60–300)

Synthetic Leather — Ink density chart (Frontlit: 2p, 3p, 4p, 6p, 8p; columns 60–300)

Window Blinds — Ink density chart (Frontlit: 10p, 14p, 18p; columns 60–300)

Adjust the printing workflow for optimum color performance

1. Check your substrate's color calibration status and calibrate it if recommended, by selecting **Substrate** > **Color calibration** in the Internal Print Server. See Printer calibration on page 160.

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 select **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 select **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 specific manufacturer substrate.
  - Select a category and grade to find specific type substrate.
  - Select applications to find optimized and certified substrate.
- Application Remote Media searches automatically.
- Click Clear filters to display the full list.

Free Text Search

The free text search locates substrate 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 select **Substrate** > **Search substrate online**, then search for the specific substrate file and click the. **Down arrow** in the status column.

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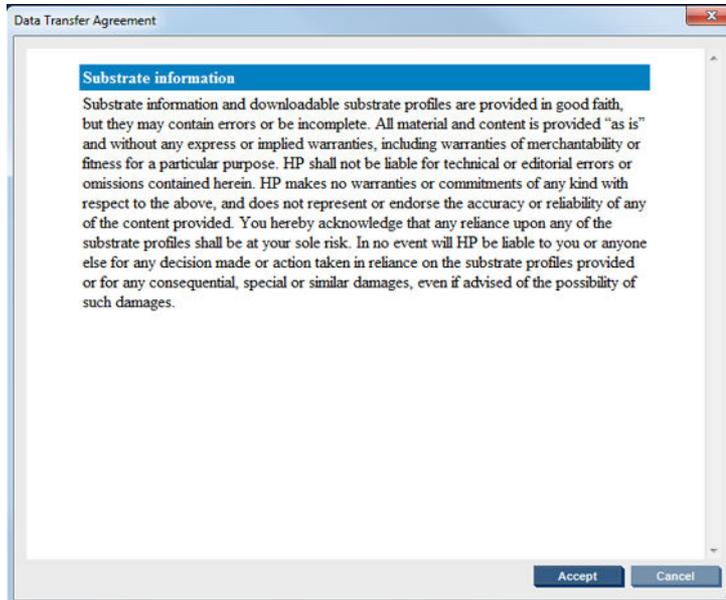
The agreement dialog must be accepted to continue with the installation.

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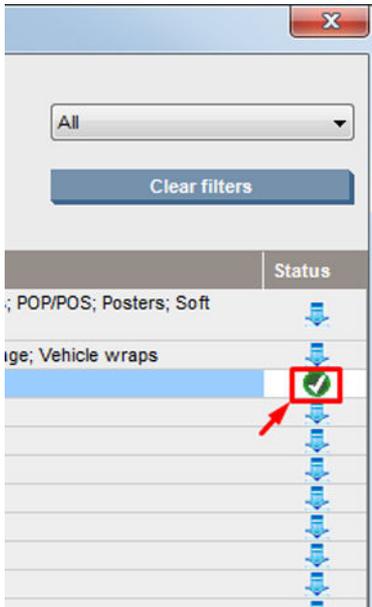
Update existing substrate

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 select **Substrate** > **Search substrate online**, then click on the **substrate update** icon in the status column.

Substrate synchronization

Onyx and Caldera RIP drivers contain all the default substrate presets and ICC profiles the HP Latex 3000 printer series comes with.

If you carry out any substrate management action in the HP IPS, go to the RIP and synchronize the substrate list.

NOTE: Any new substrate created directly in the HP IPS does not contain an ICC profile. You should create the color profile from the RIP using an external spectrophotometer.

If you download and install a substrate preset from the **Online Substrate Search** via the HP IPS, or you import a substrate preset OMES downloaded from **HP Media Locator**, the presets already contain the ICC profiles.

In order to make sure the RIP has the latest substrates available, follow these steps:

Synchronize substrates with the Caldera RIP

1. Go to the Caldera RIP software and click the **Easy Media** tool.
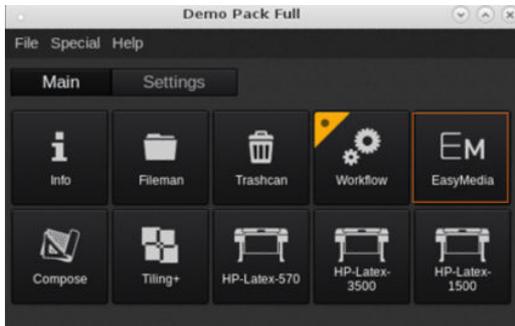
2. Click on the printer icon, then click **Next**.
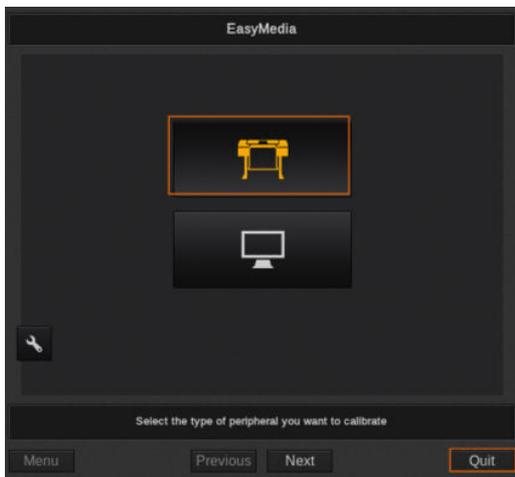
3. Select the printer to retrieve the substrate, then click **Next**.
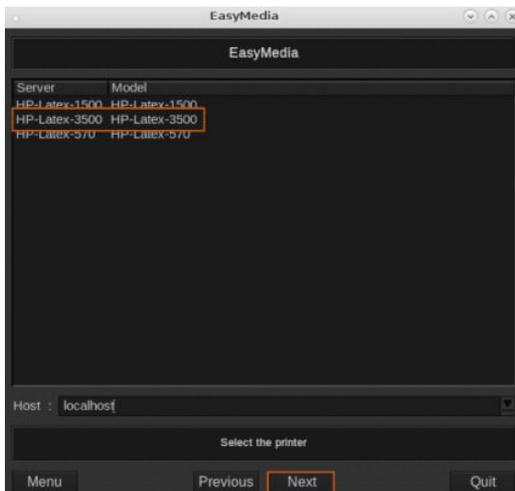
4. Click **Import**.
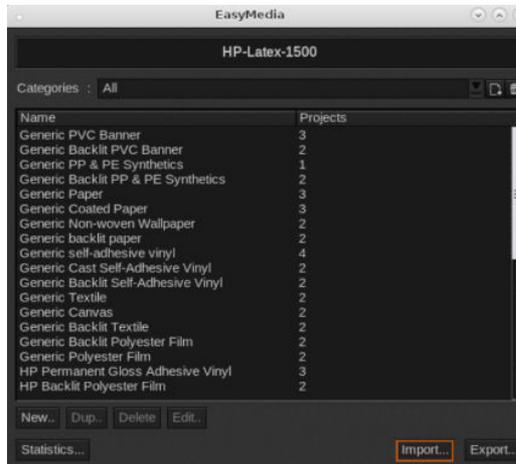
5. Click **Autosync**.
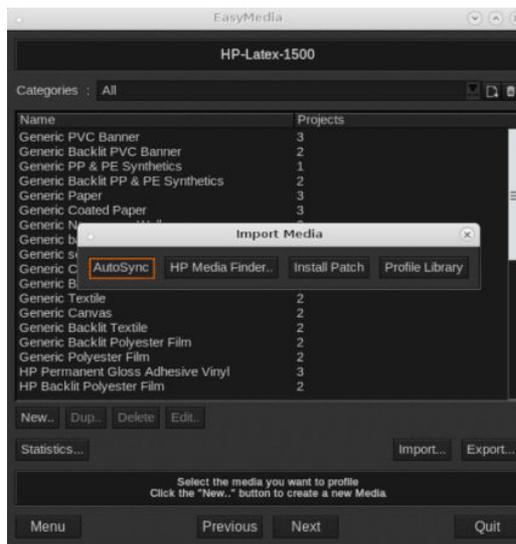
6. Click **Missing presets only**.
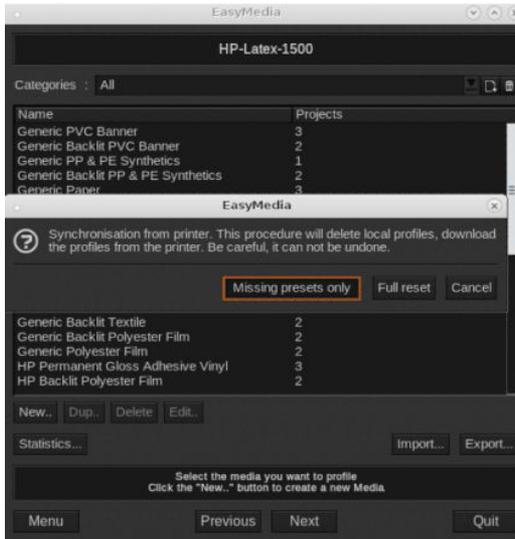
All your custom substrates from the machine are downloaded to the RIP and added to the end of the substrate list.

Synchronize substrates with the ONYX RIP

1. For retrieving your custom substrates from the machine, click on **Configure Printer**.
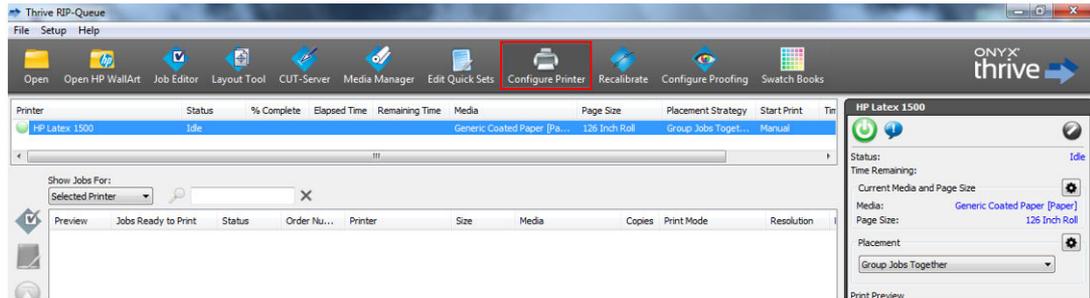
2. Click the **Device** tab, select the machine, then click **Features**.
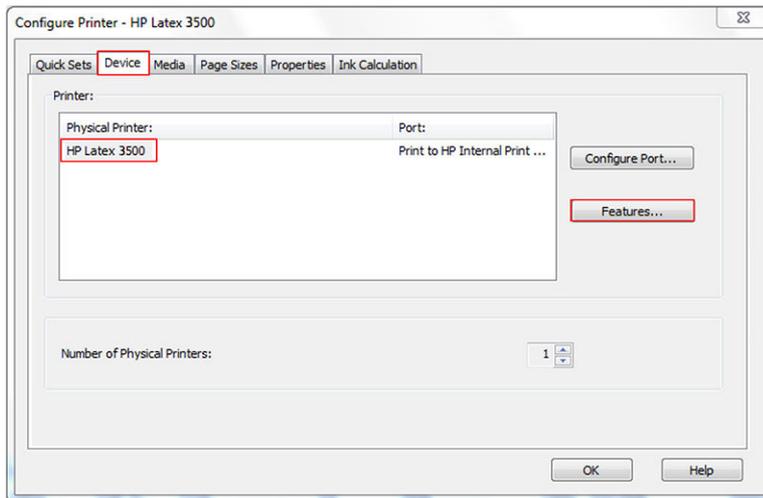
3. A new window appears, select **Global Printer Options**, then click **Configure**.
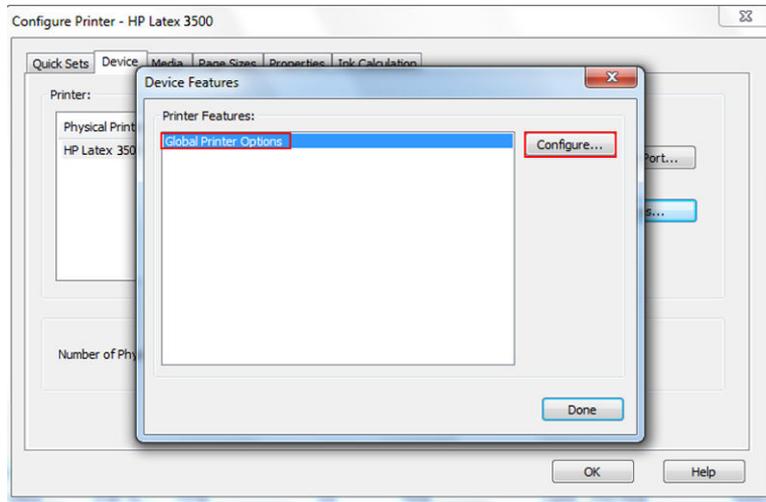
4. Another window appears, click **From Printer**.
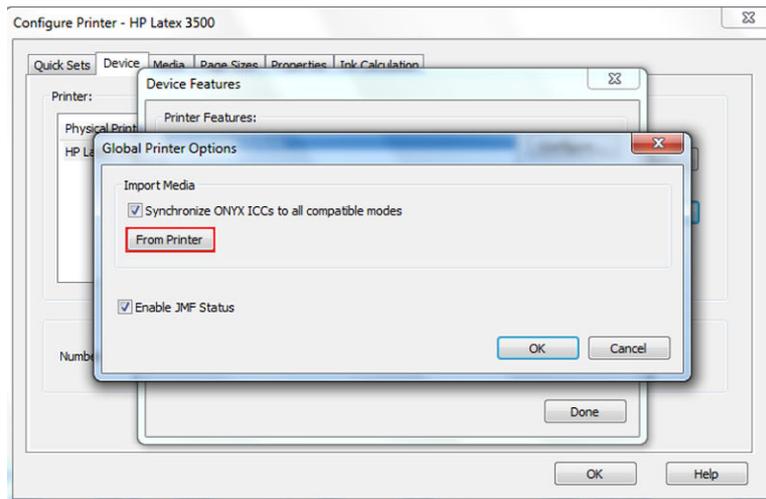
5. A new window appears, select the custom substrates you want to import, and click **OK**.
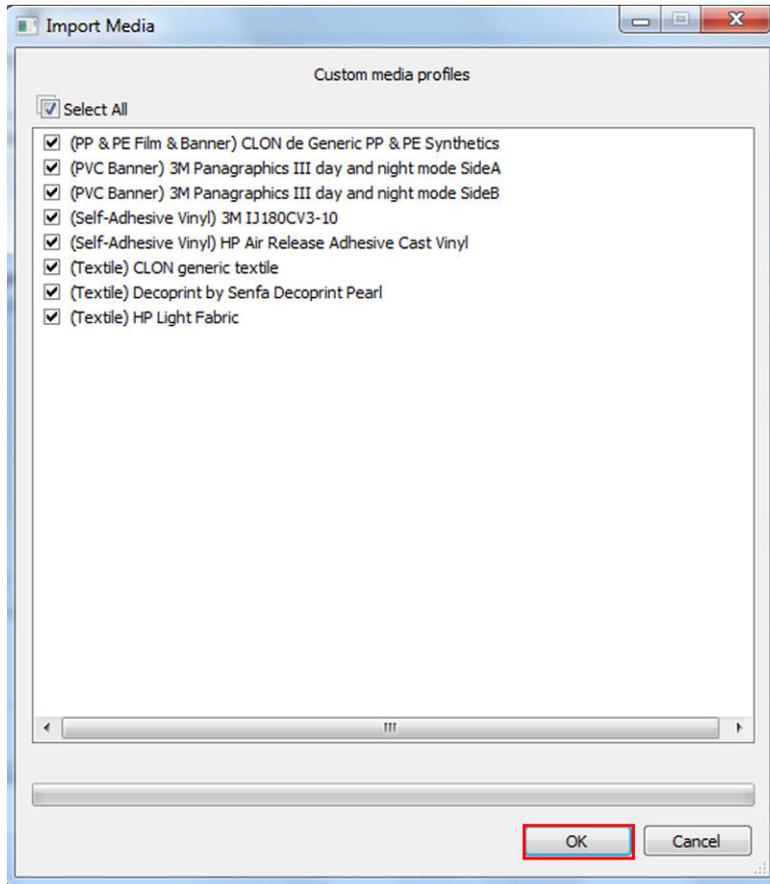
The selected substrates are now added to the Media Manager library. Close all the open windows.

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 (0.075 in) for substrates that do not wrinkle.

– The thickness of the substrate plus 2 to 3 mm (0.079 to 0.118 in) 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 and curing power.

- The **ink collector install** position is used only for installing the ink collector kit (see The ink collector kit on page 49); it is not used for printing.

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.

5 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 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.
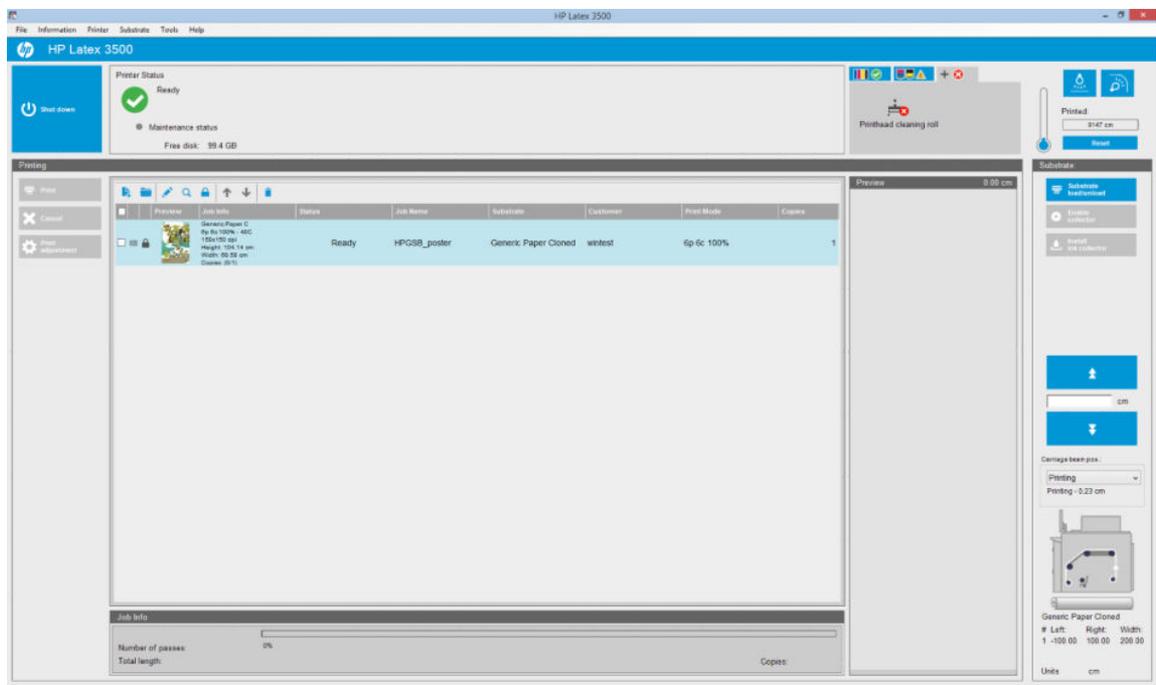
2. Select the Add New Job icon ![icon] or **File** > **Add New Job**. Navigate to the folder containing the print job files, and click **Open** to import the job into the Internal Print Server.
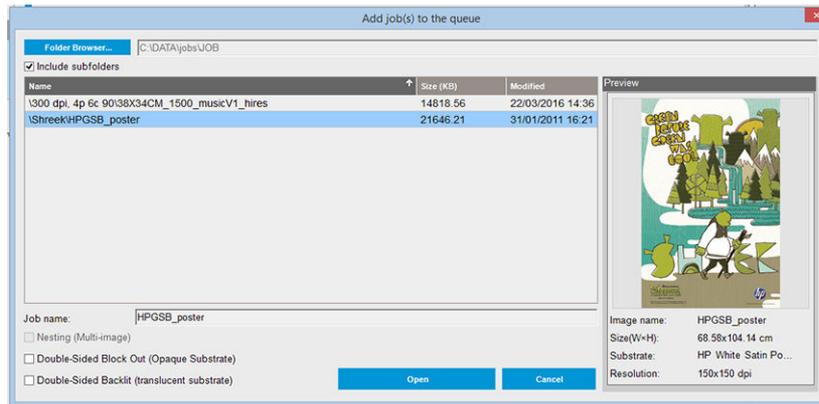
☀ TIP: You can sort the list by any column.

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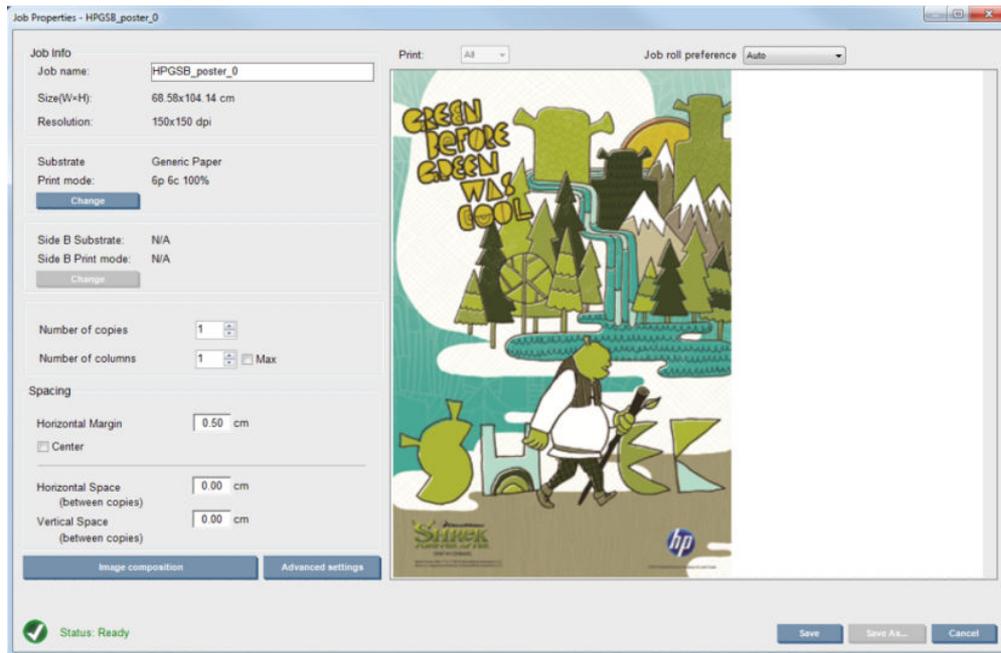
You can change the default job name the first time you open its properties window. Once you save the job name, it cannot be changed. Use the **Save As** button to create a copy of an existing job with a different name.

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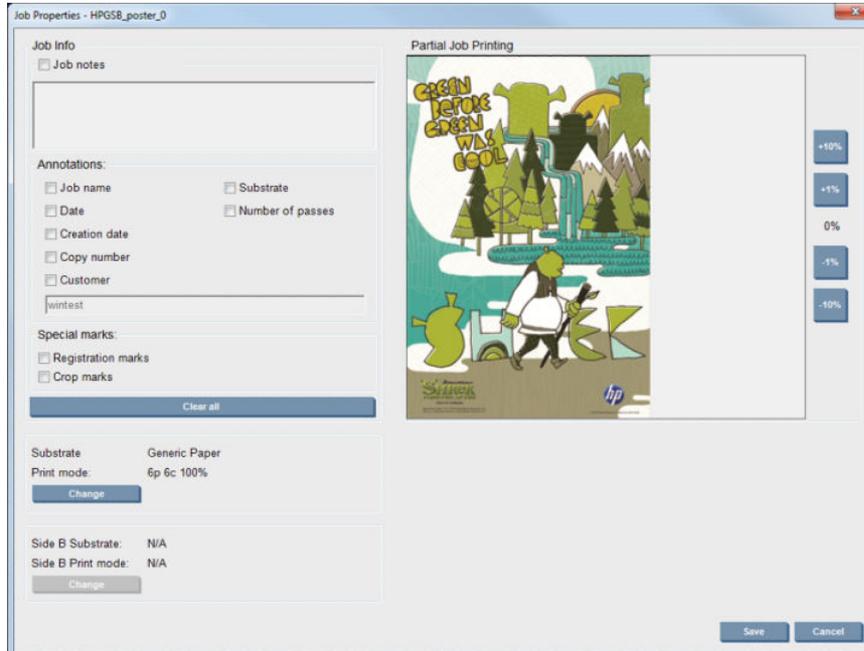
In this dialog, although the substrate and print mode can be changed from this window by using the Change button, it is recommended not to do so, because it may adversely affect print quality. It is better to make such changes from the RIP.

The **Job Info** paragraph can be used to select annotations and special marks to be printed alongside the image.

The **Partial Job Printing** section appears only when the number of copies is one, 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.

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.
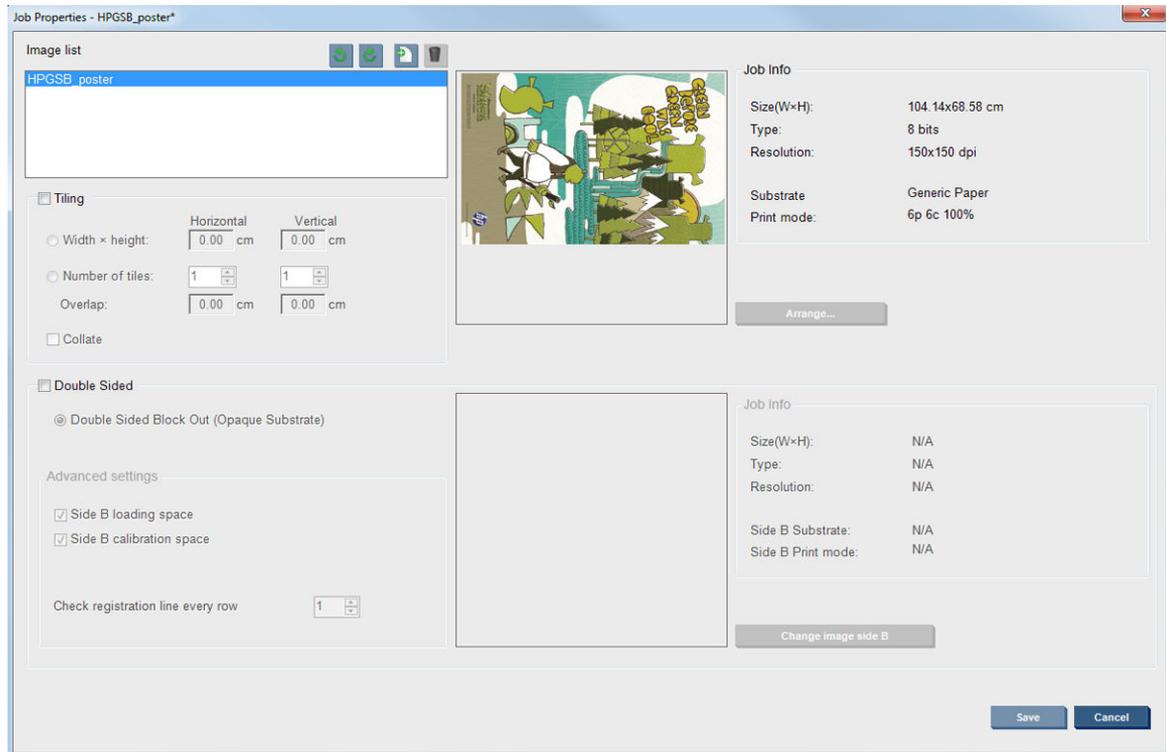
NOTE: Rotation is available only when the printer is not printing.

Press 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 press 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**. When completed, the job is ready for printing.

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.
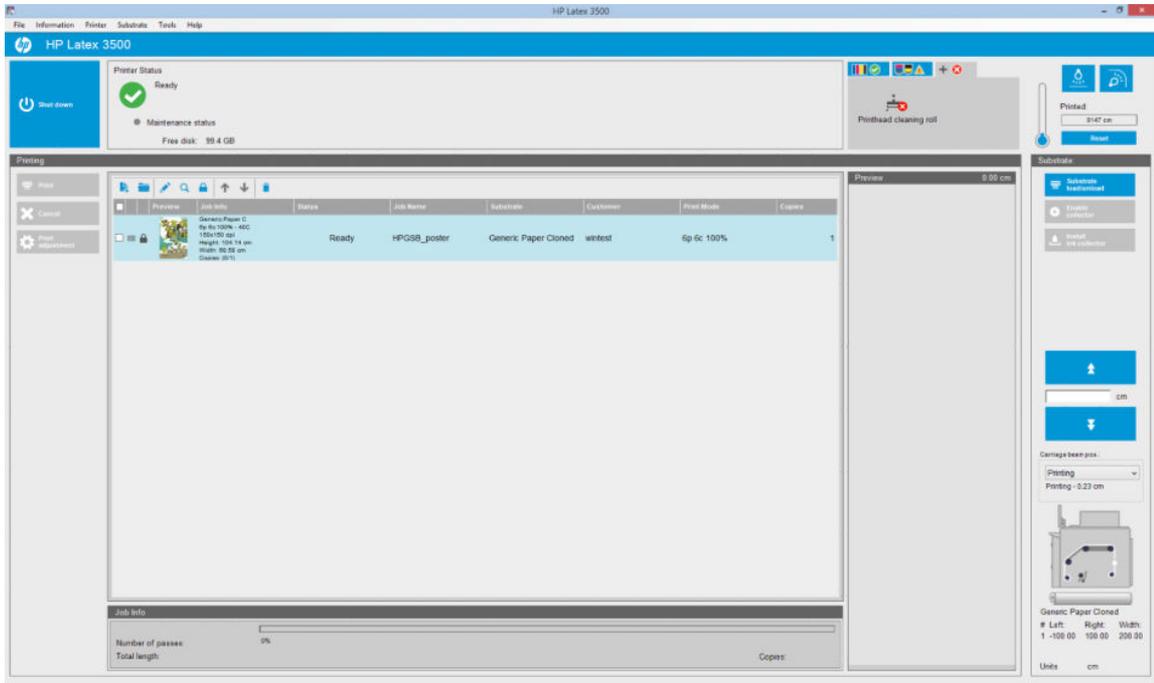
Above the print queue are the following icons:

- Add New Job ![icon]: See Add a new print job on page 122.

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

- Edit Job ![icon]: Edit the properties of a job in the queue.

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

- Up ![icon]: Select the next job upwards in the queue.

- Down ![icon]: Select the next job downwards in the queue.

- Remove ![icon]: Delete the selected job from the queue.

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

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

The **Print adjustment** button displays the substrate-advance compensation (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 ![icon] or by ticking the job in the queue and selecting **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 press 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:

- **Tiling:** A single job is printed in sections, to be put together later. See Tiling on page 128.

- **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 31.

Tiling

Tiling is a layout method that allows you to print a large image in sections, and then put the sections together later.
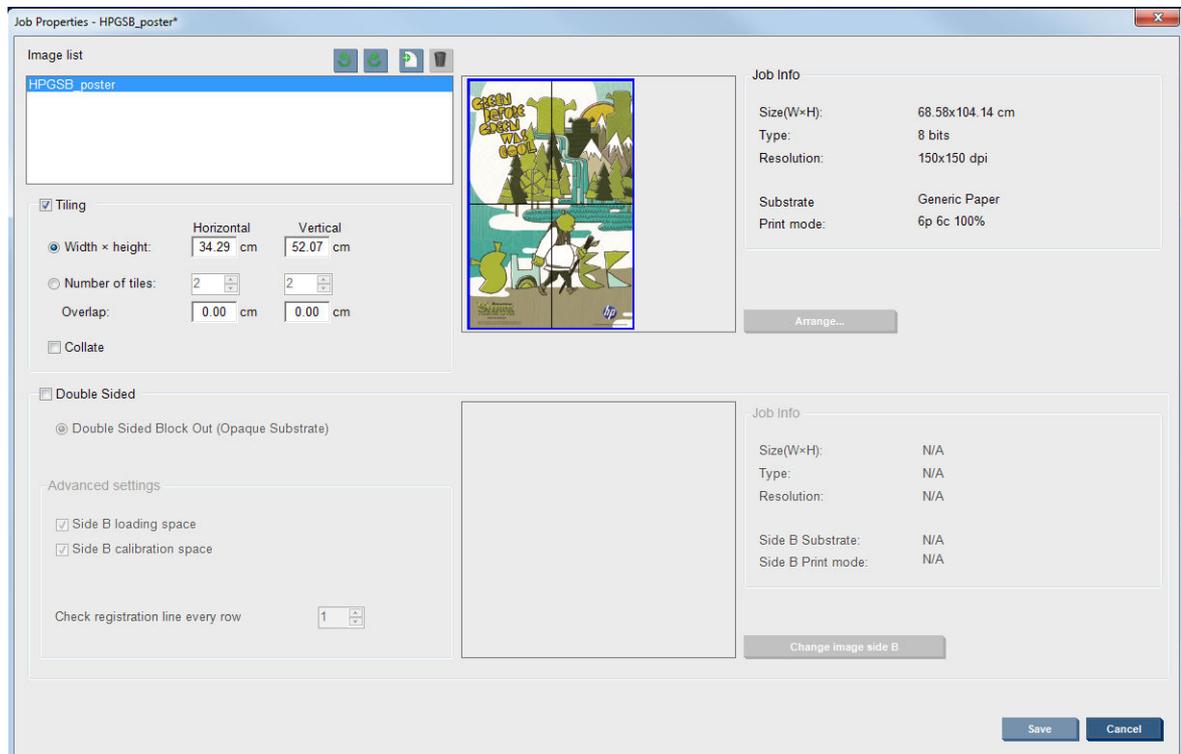
Click the Tiling Check and the Tiling section will be activated.

This composition will automatically cut your image into sections and print the sections separately. There are two alternative ways to select the size of the sections:

- Select the width and height of each section. The number of sections is then calculated automatically.

- Select the number of horizontal and vertical sections. The width and height of each section is then calculated automatically.

If you choose a non-zero overlap, the size of each section will be increased by that amount so that the printed sections will overlap when put together.

The drop-down list at the top of the preview in the main properties job dialog field allows to choose all sections or just one of the sections to be printed.
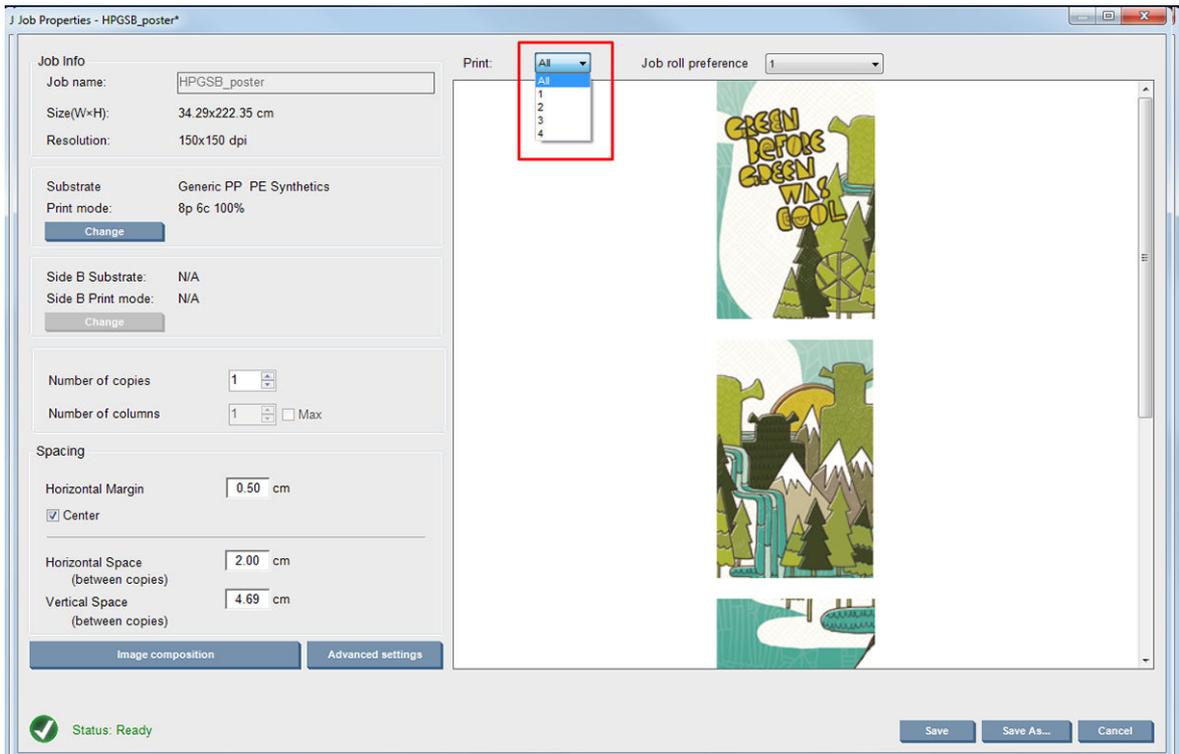
Nesting

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.
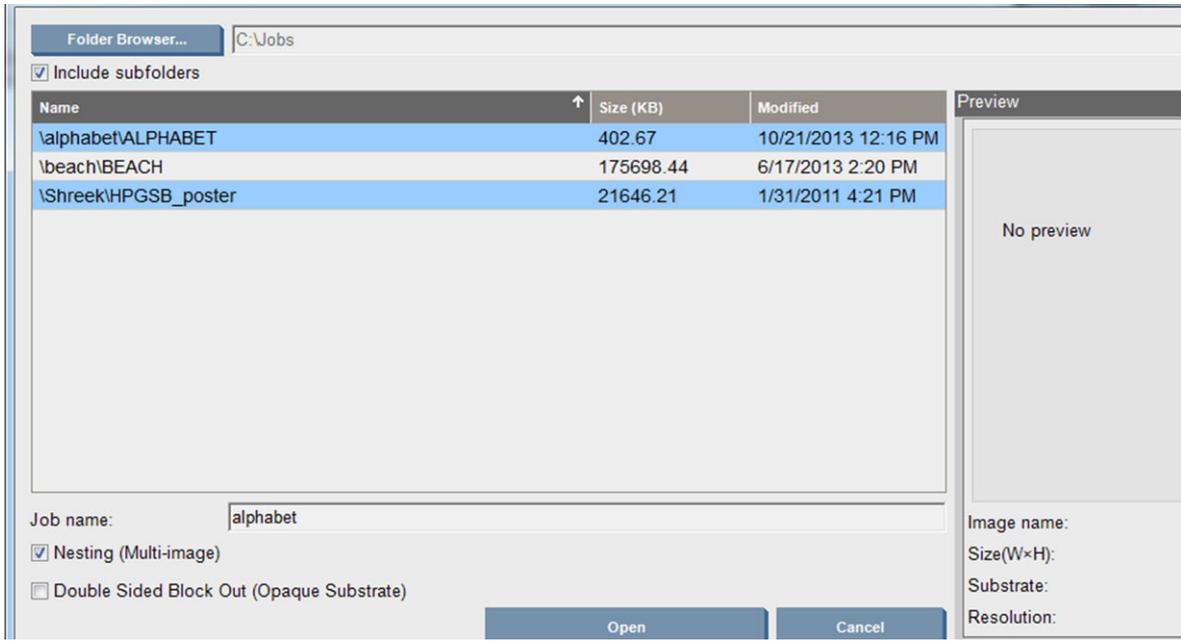
NOTE: To be nested together, jobs must be of the same resolution and printed on the same substrate. Any incompatible job is added to the queue as a separate, non-nested job, and an explanatory message is displayed.

When you press the **Open** button with nesting enabled, the Advanced Nesting Arrangement window opens (see The Advanced Nesting Arrangement window on page 131).

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.
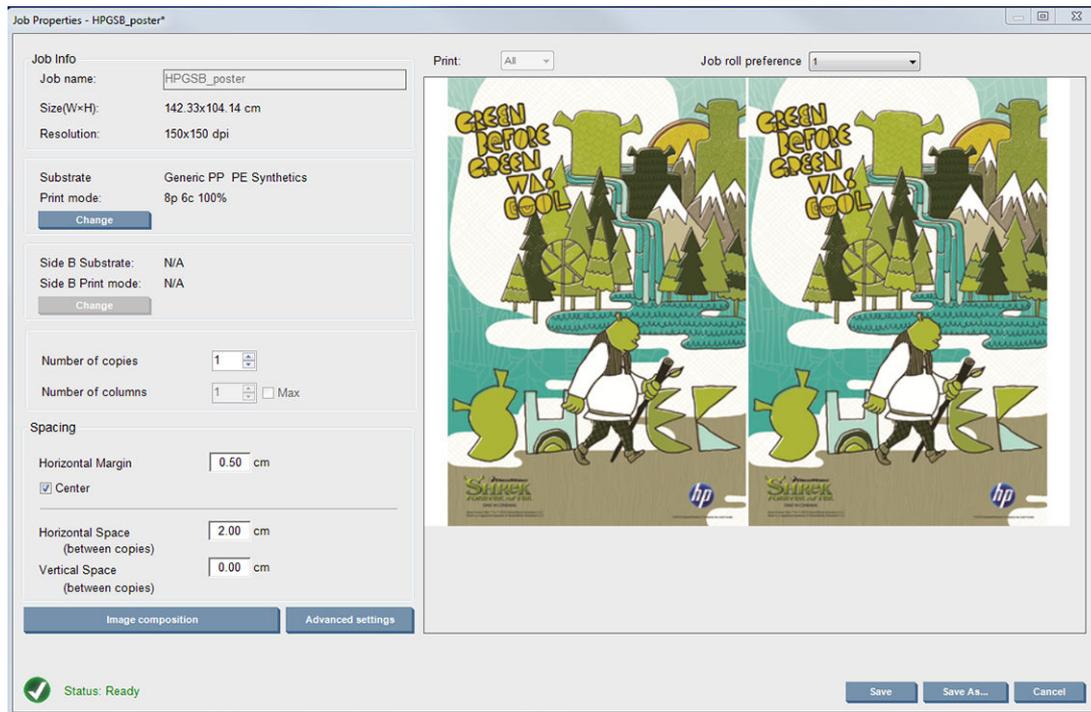
Nested jobs must all be printed with the same number of passes. Therefore, the number of passes used for all jobs will be copied from the first job.

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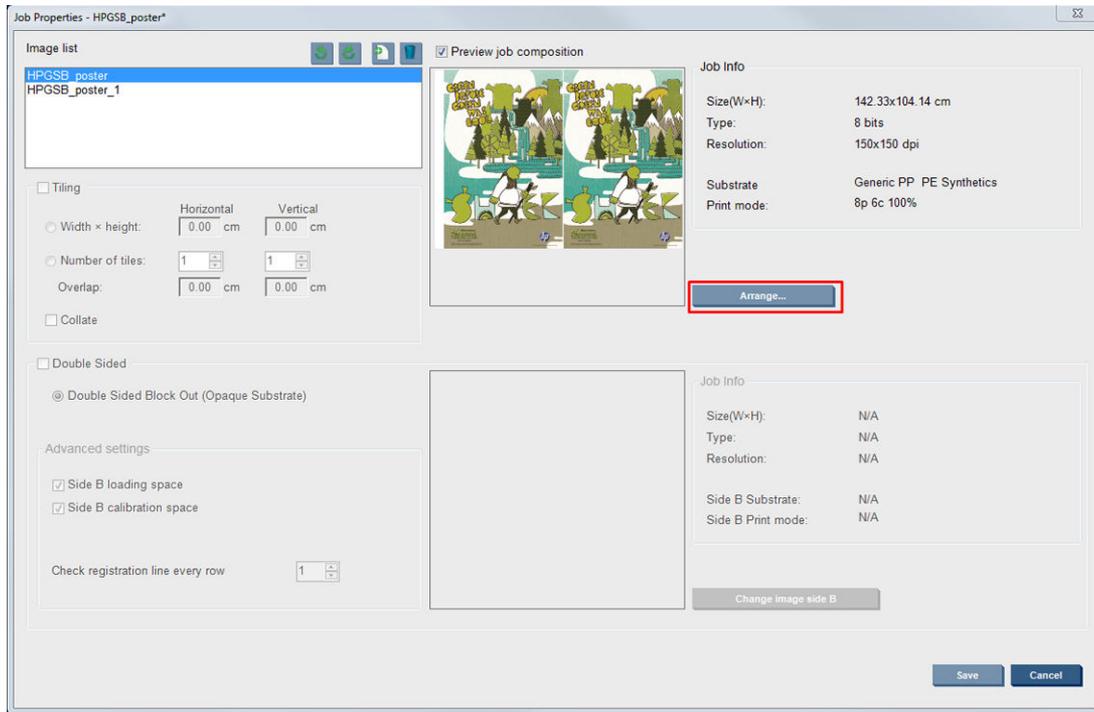
If you press the **Arrange** button in this section, the Advanced Nesting Arrangement window opens. If you use advanced nesting, the number of passes used for all jobs will be copied from the job with the highest number of passes specified.

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.

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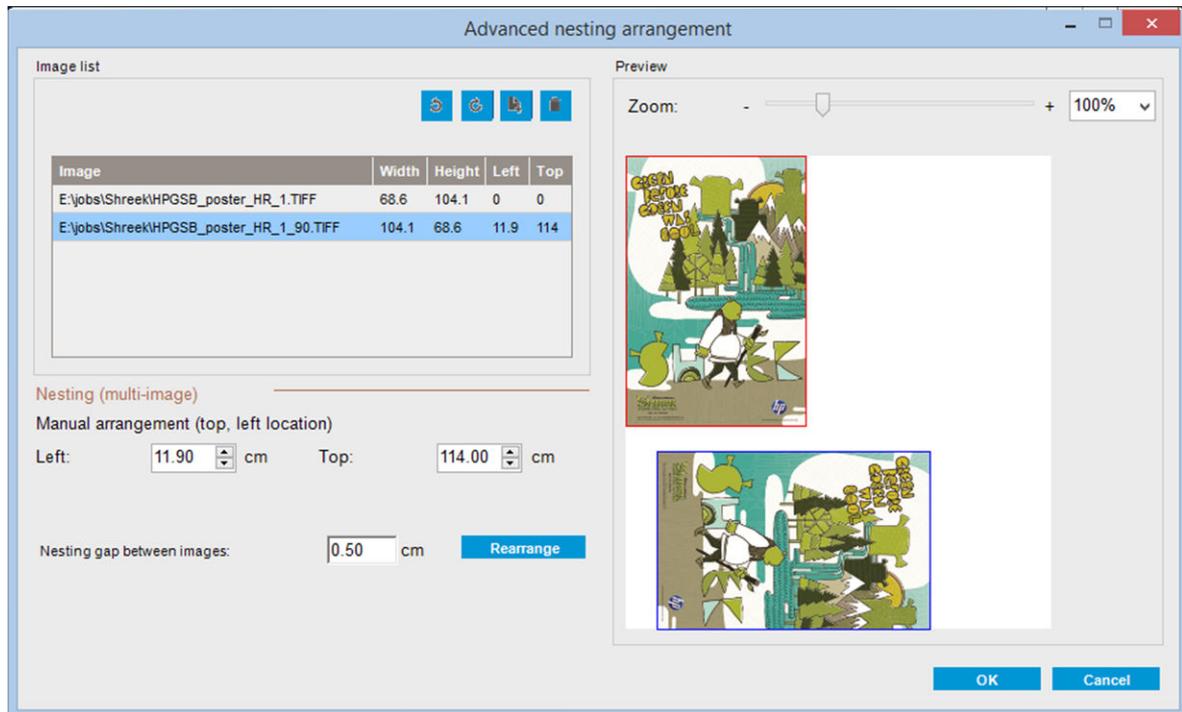
The **Rearrange** button automatically optimizes the positions of the images, keeping the established margin.

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

Restart and Print

If the printer suddenly shut downs and the Internal Print Server goes offline, you can ready the printer to continue rapidly

To use this feature, via the Internal Print Server, go to **Tools**>**Restart and Print**.
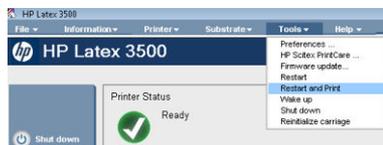
By selecting this option:

●   The substrate will automatically load during boot up. All the print queue checked jobs, except the failed one, will automatically print.

●   No operator interaction is required, just press the **re-arm** button.

6 Handle the ink system

Ink system components

Ink cartridges

Ink cartridges store the ink and are connected to the printheads, which deposit the ink on the substrate.
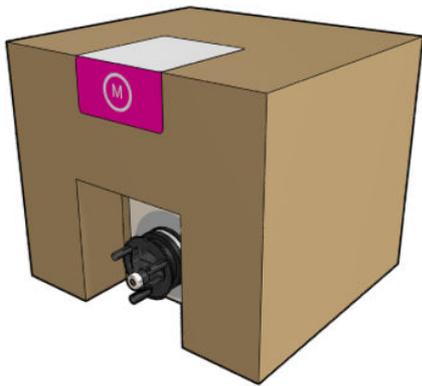
Each cartridge contains HP Latex Ink, and consists of a bag within a recyclable cardboard box. Check the regulatory and safety information label on the cartridge to ensure that no special ventilation is needed and no hazardous waste is created.

⚠ **CAUTION:** Observe precautions when handling ink cartridges because they are ESD-sensitive devices (see the Glossary on page 428). 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 428). Avoid touching pins, leads and circuitry.

The printer's six-color writing system uses six dual-color printheads with a total of 63,360 nozzles, and an HP Latex Optimizer printhead with 10,560 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 wipe 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 40 liters; this may take about 3.5 weeks at a usage level of 5,000 m²/month (50,000 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 cleaner roll, see Replace the printhead cleaning roll on page 154. The HP 881 Latex Cleaning Roll can be ordered in the normal way.

TIP: You should not touch the printhead cleaner 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 and drying 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 drying filters keep dust and aerosol off the drying lamps.

The filters should be changed every time the printhead cleaning roll is replaced. They are provided with the HP 881 Latex Cleaning Roll.

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 the left spittoon every time the cleaning roll is replaced. The foam is provided with the HP 881 Latex Cleaning Roll.

Condensation collector bottle

The printer has a system that collects most of the vapor generated while drying and curing the ink and condenses it in a bottle located at the left side of the printer. You should check the bottle from time to time and empty it when necessary. Consult your local authorities to determine the correct manner in which to dispose of wastes.

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; see Clean the drop-detector ink deposits on page 238.

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.
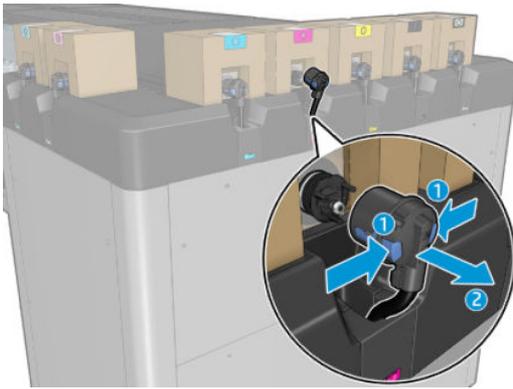
3. Remove the empty cartridge from the printer.

> 📝 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 four times (rotating it through 360 degrees) as indicated on the label, to ensure that the ink is well mixed before use.
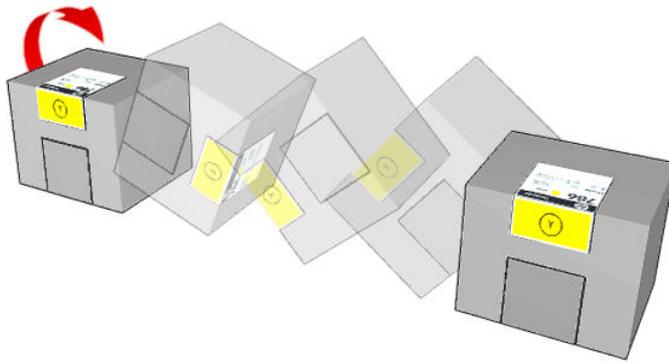
3. Tear off the square and fold it inside the handle as illustrated.

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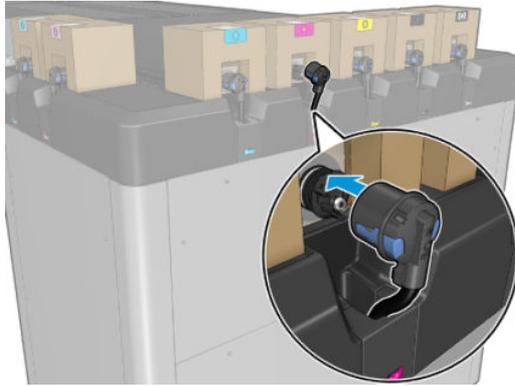
📝 **NOTE:** The cartridge connectors will refuse connection to the wrong type or color of cartridge. If you cannot connect the connector easily to the cartridge, check that you have the correct cartridge.

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 green 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 26.

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 in front of each ink cartridge (on the left side).

- Green steady light: no problems

- Green 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 selecting **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.

Misuse of ink cartridges

Consequences of using Expired ink:

- The ink delivery system of the color is marked as using expired ink.

- Affected printheads are immediately marked as using expired ink and lose their warranty. Warranty status becomes **See Warranty note**. As the printhead information is **write once only**, the status of the printhead cannot be reverted.

- Ink cartridge is marked as **Expired** and considered as used.

Recovery from expired ink usage

1. Remove the expired ink cartridge and replace it with a new one (non-expired).

2. Keep using the same printheads until 9 liters of non-expired ink are used for the ink color marked as expired. If you insert a new printhead, it will be marked as using expired ink because the ink delivery system is marked as having expired ink (the following IPS warning message will be displayed):

   "Using expired ink will invalidate the printhead warranty. Press YES to continue or NO to cancel inserting the new printhead and maintain the warranty of the printhead."

3. After consuming 9 liters of non-expired ink, the ink delivery system of the respective color recovers and is marked as using valid HP ink. The user can now proceed with printhead replacement.

   📝 **IMPORTANT:** 9 liters of non-expired ink must be consumed in the affected color in order to completely recover from the expired ink state.

Consequences of using non-HP ink

The ink delivery system of the color is marked as using non-HP ink.

- The printhead is immediately marked as using non-HP ink and the printhead loses its warranty. Warranty status becomes **See Warranty note**. As the printhead information is **write once only**, the status of the printhead cannot be reverted.

- Ink supply marked as **Non-HP** and considered as used.

- The printer enters **Safe Mode** and the drying lamps are turned OFF with a direct impact on print quality.

Recovery from non-HP ink usage

1. Remove the non-HP ink cartridge and replace it with a new one (original HP cartridge).

2. Keep using the same printheads until 9 liters of original HP ink are used for the ink color marked as non-HP. If you insert a new printhead, it will be marked as using non-HP ink because the ink delivery system is marked as having non-HP ink (the following IPS warning message will be displayed):

   "Using non-HP ink will invalidate the printhead warranty. Press YES to continue or NO to cancel inserting the new printhead and maintain the warranty of the printhead."

3. After consuming 9 liters of original HP ink, the ink delivery system of the respective color recovers and is marked as using original HP ink. The user can now proceed with printhead replacement.

   IMPORTANT: 9 liters of original HP ink must be consumed in the affected color in order to completely recover from the non-HP ink usage state.

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.

Risk of burns	Crush hazard	Risk of trapped fingers	Hazardous moving part	Light radiation hazard	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, select **Printer** > **Replace printheads**.

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

NOTE: For easier service position window access, use the retractable step located directly in front of it, underneath the operator platform: simply release the lock pin and slide it out completely.

IMPORTANT: Always lock the security pin before standing on the platform.

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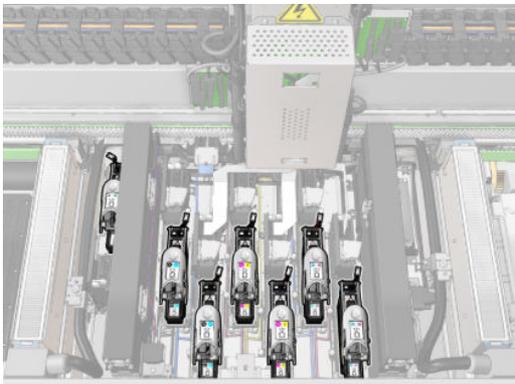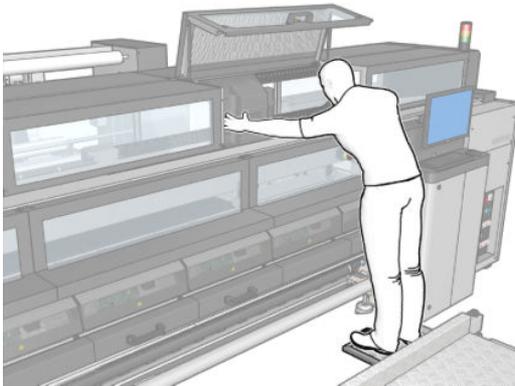
5.   The Internal Print Server tells you which printhead to remove. Release the latch that secures the printhead, and lift it.
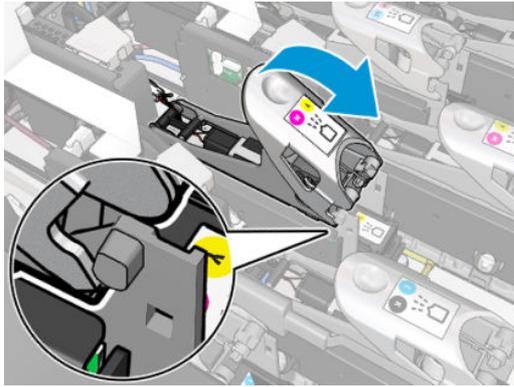
6.   Lift the handle provided with the printhead, and pull the handle gently upwards to disconnect the printhead from the carriage.
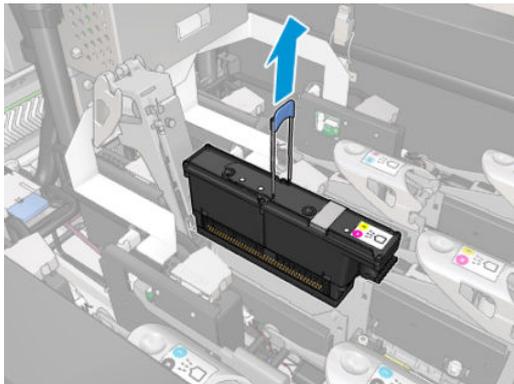
7.   Remove the printhead from the printer. The original packaging materials can be used to discard the old printhead or in case there is a need to return it to HP.

When removing the optimizer printhead

1.   Locate the optimizer printhead.
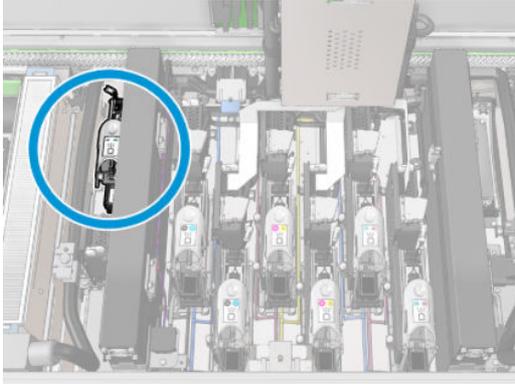
2. Push the latch handle against the rear beam as much as possible.
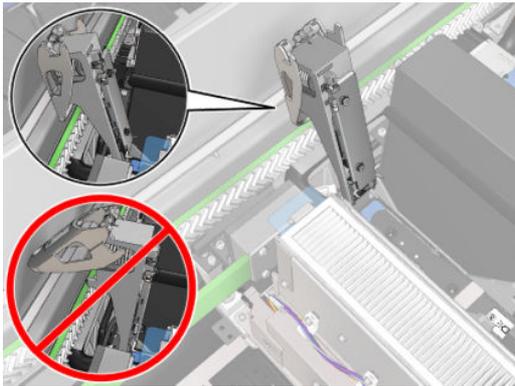
3. Tilt the printhead a little before taking it completely out of its pocket.
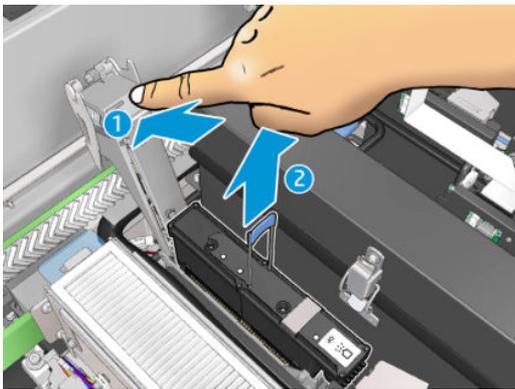
4. If the printhead is to be reused, protect it using its orange sealing cap.

⚠ CAUTION: Make sure each printhead uses its own cap and not the cap for some other printhead. This is especially important with the optimizer printhead caps as there is a high risk of nozzle damage if they are mixed with the color printheads and vice versa. The optimizer caps are labeled as shown below.

📝 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.
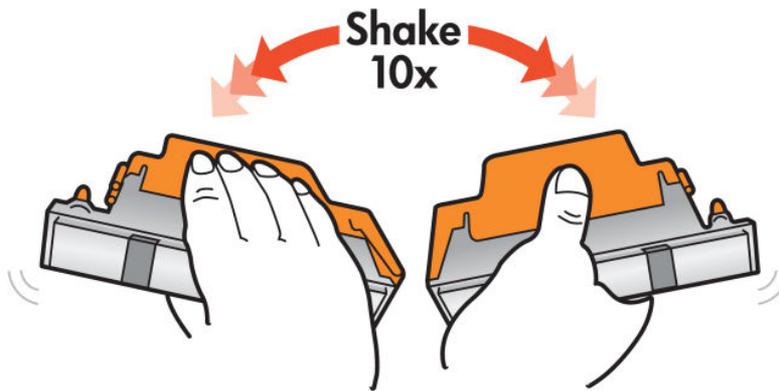
3. Remove its packaging and protective caps.

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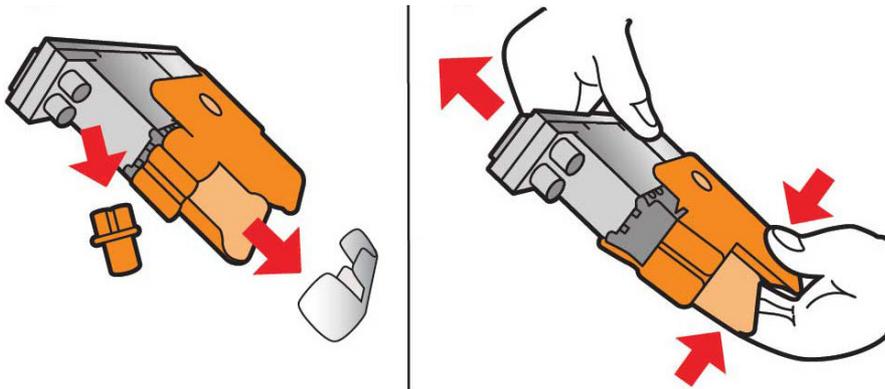
4. Put the new printhead into its correct place in the printer, and lower its handle.

⚠️ **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 inserted too fast, or if it hits something.
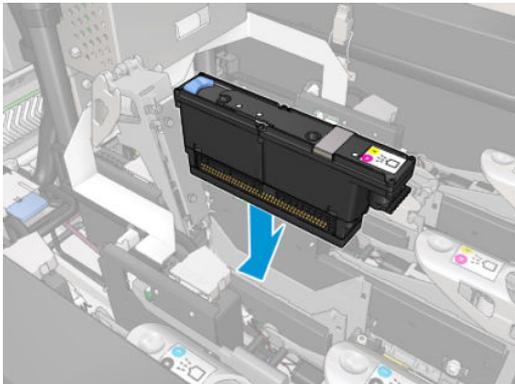
5. Lower the latch until it lies on the printhead but do not close it yet.

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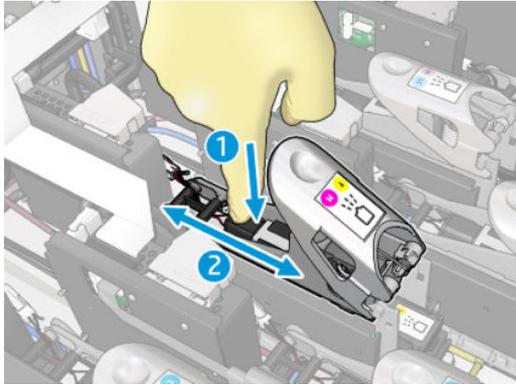
7. Secure the latch.
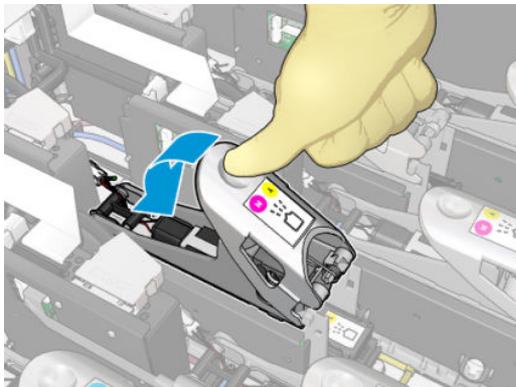
8. Close the service position window and press **OK**. The printer checks that the new printhead has been correctly inserted (the status is shown in the Internal Print Server), and recommends printhead alignment, which is optional.

9. Restart the job queue.

When inserting the optimizer printhead

1. Push the latch handle against the rear beam as much as possible.
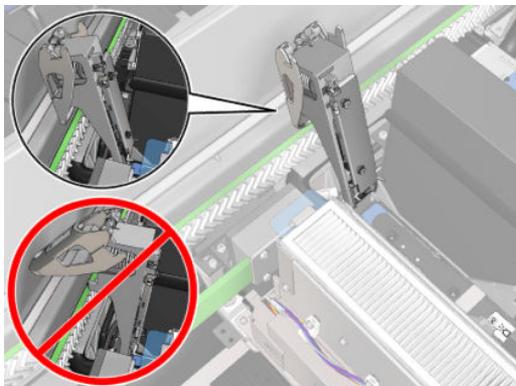
2. Insert the printhead at an angle and below the two little latches shown below. Rotate it until it is vertical and press it to insert.
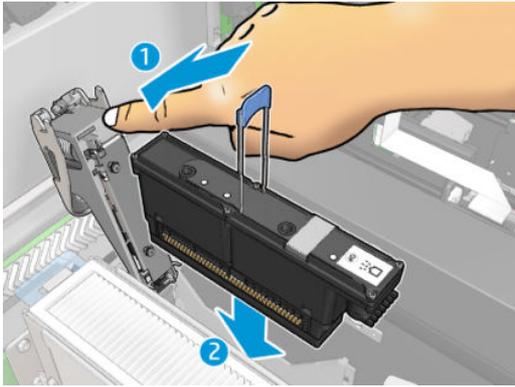
3. Press on the primer with two fingers before securing the latch to ensure proper connection.

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.

⚠ **CAUTION:** It is important to use the HP Latex Optimizer sealing cap for the HP Latex Optimizer printhead.

Check and clean the printheads

This procedure should be followed daily.

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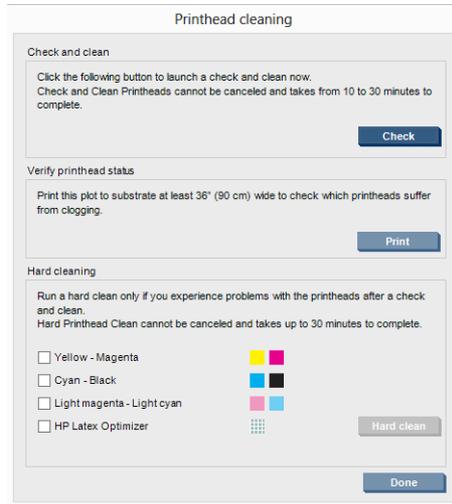
2. Press the **Check** button to perform routine cleaning automatically.

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 Latex printing systems, including Original HP inks and printheads, are designed and engineered together to provide uncompromising print quality, consistency, performance, durability, and value—with every print.

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.

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

For more safety information, see

When the cleaning roll reaches its end, it must be replaced, together with the aerosol filters, drying filters, and left spittoon. All these parts are supplied together with the HP 881 Latex Cleaning Roll.
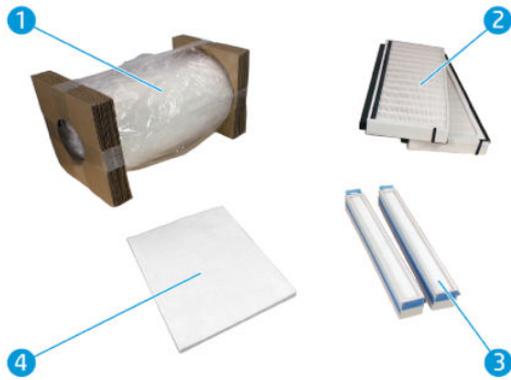
1. Printhead cleaning roll

2. Aerosol filters

3. Drying filters

4. Left spittoon

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

- Replace the aerosol filters.

- Replace the drying filters.

- Replace the left spittoon.

- 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
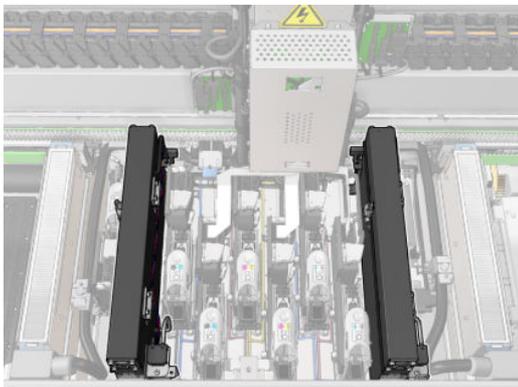
1. Ensure that the printer is not printing.

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

3.   Open the service position window.

IMPORTANT: Always lock the security pin before standing on the platform.
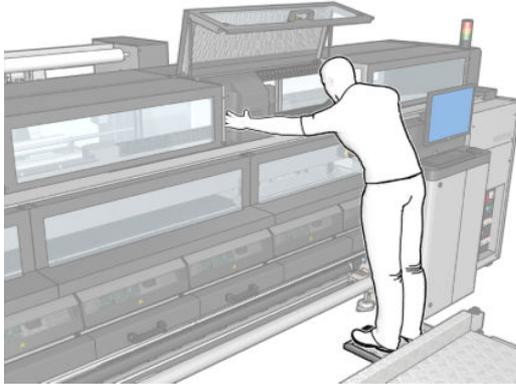
4.   Open one latch on the left side of each aerosol filter module.
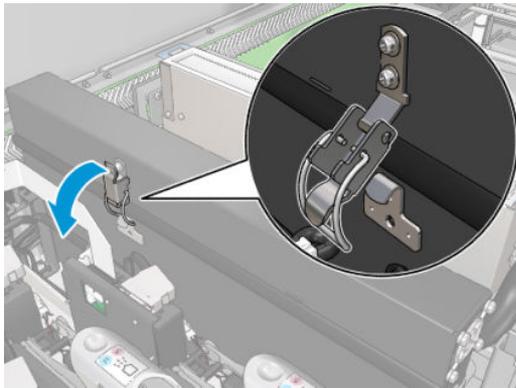
5.   Open the lid of each filter.
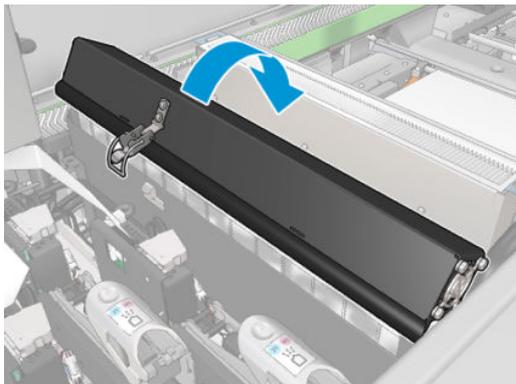
6. Remove both aerosol filters, using their handles.
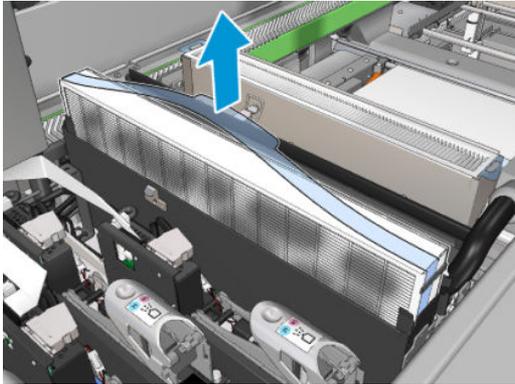
7. Insert the two new filters. There is only one way to insert them that works. If you feel resistance, try to insert the filter the other way round.
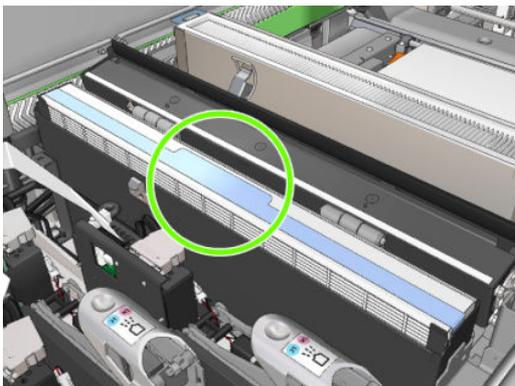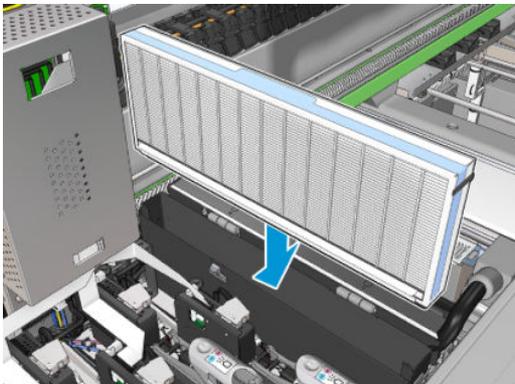
8. Close the lids.

9. Close the latches.

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

Replace the drying filters
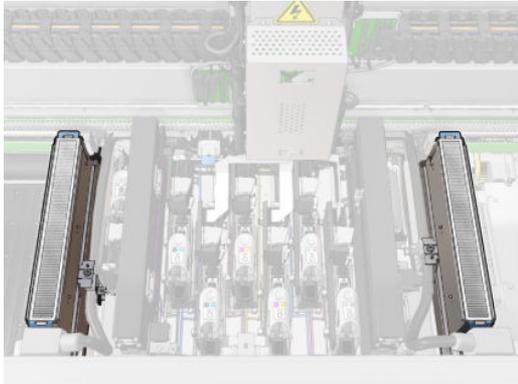
1. Handling them by the plastic flaps, remove the two drying filters from each side of the carriage.
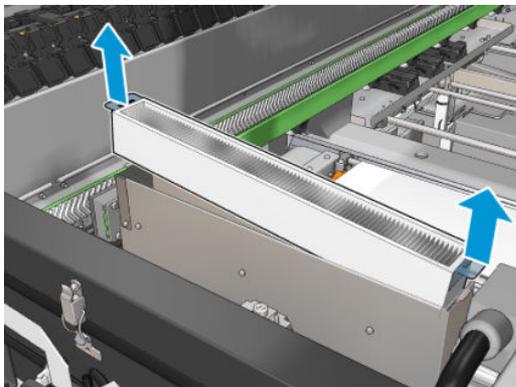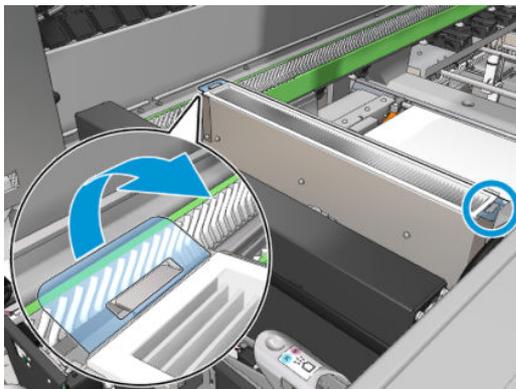
2. Insert the new filters.
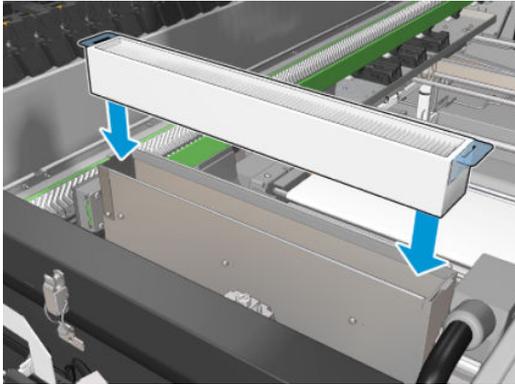
3. Attach the two plastic flaps to each filter.
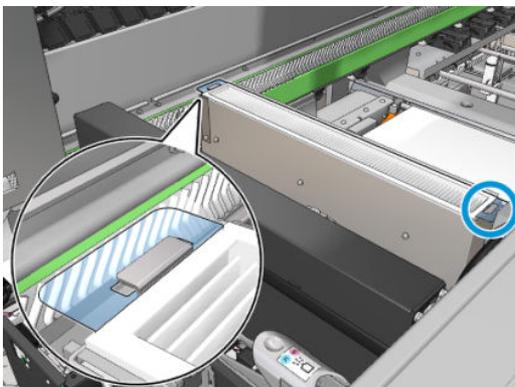
4. Close the service position window.

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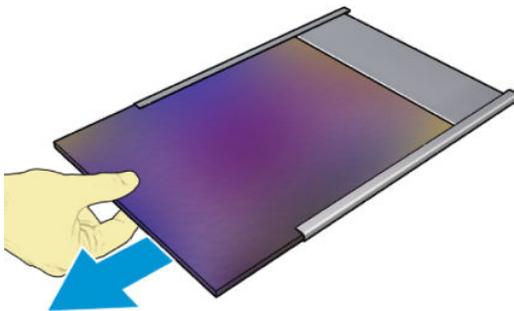
Replace the left spittoon

1. Open the front door.
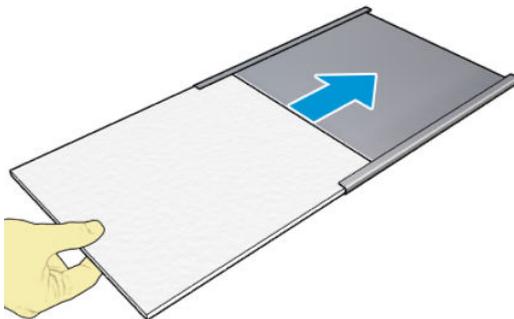
2. Locate the left spittoon at the left side of the print area.
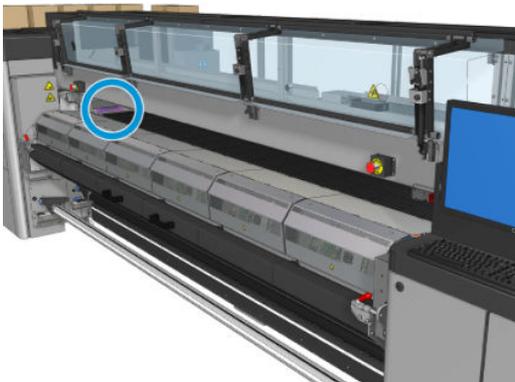
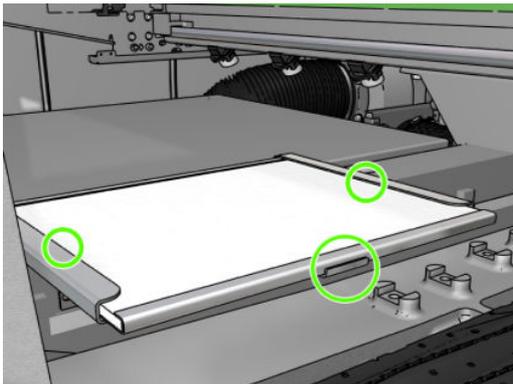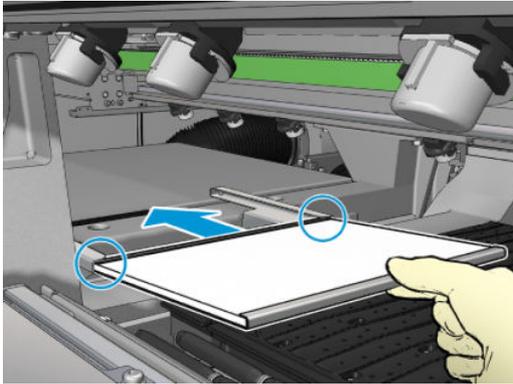3. Slide out the left spittoon foam with its frame.
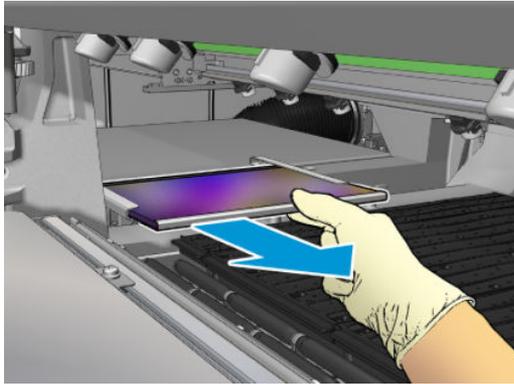
4. Remove the foam from the frame.

5. Insert the new foam into the frame, making sure it is flat, and without wrinkles.

6.   Insert the frame into place in the left spittoon housing. Ensure that it is flat.


7.   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.
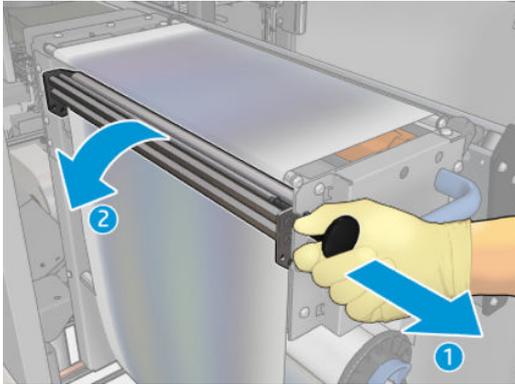
2. In order to replace the printhead cleaning roll, unlock and open the door on the front right of the printer.
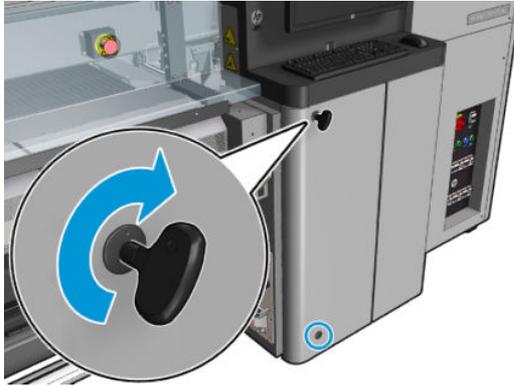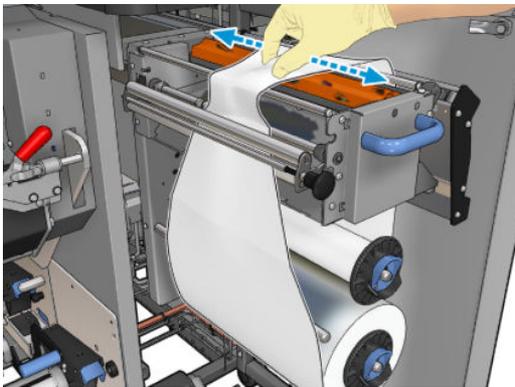

3. Grip the handle and pull the whole printhead cleaning roll assembly out through the door.
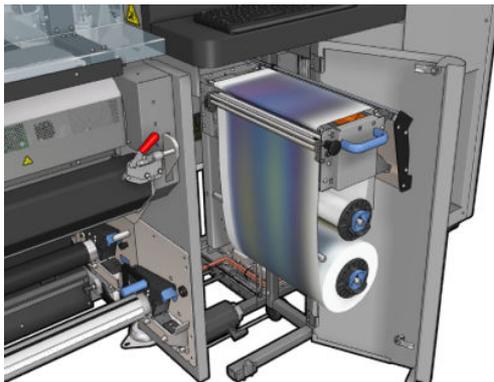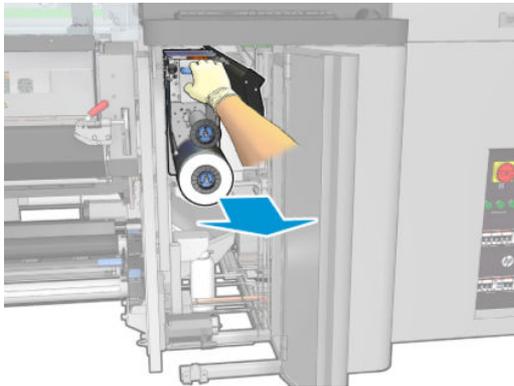
4. Pull the black knob on the upper left and move the pinch system aside.

5. Clean the rubber blade with the end of the roll.

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. Keep the empty core to use as a takeup core.
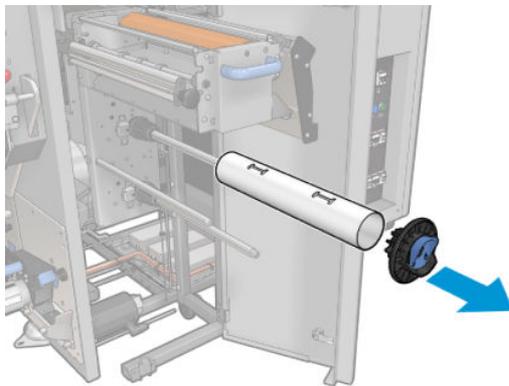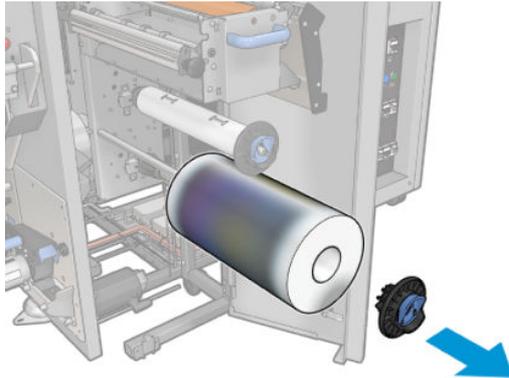
7. Slide the new roll onto the upper axle.

8. Insert the upper axle, placing the end cap on the side, and slide it all together until you hear a click.

9. Pass the leading edge of the roll over the upper rollers, and thread the cleaning material through the rollers on the left.
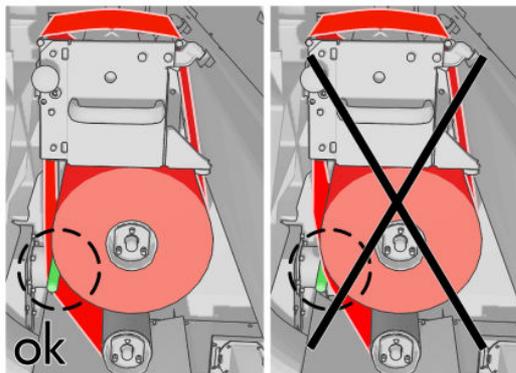
10. There is a strip of polyester film on the leading edge of the cleaning material. Insert it into the hole in the takeup core, which takes hold of it.

11. Slide the takeup core onto the lower axle.
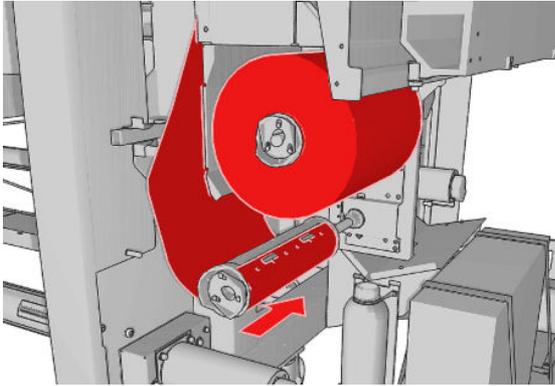
NOTE: If the cleaner roll has not been properly installed, you may see a message about clearing a printhead cleaning roll jam. Pull the whole assembly out, wind a little of the roll forward, then slide it back in again. The printer will check the roll again.

NOTE: Do not cut the cleaning material in order to reattach it to the lower roller. An unexpected roll radius can produce errors on the cleaning roll system.

12. Restore the pinch system 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 green 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.
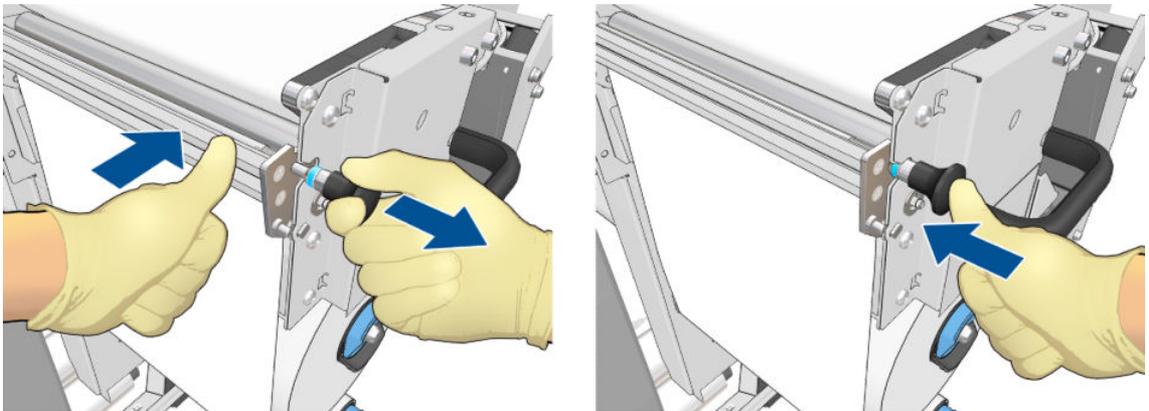
13. Grip the handle and push the whole printhead cleaning roll assembly back into the printer. Ensure that you push it as far as it will go.
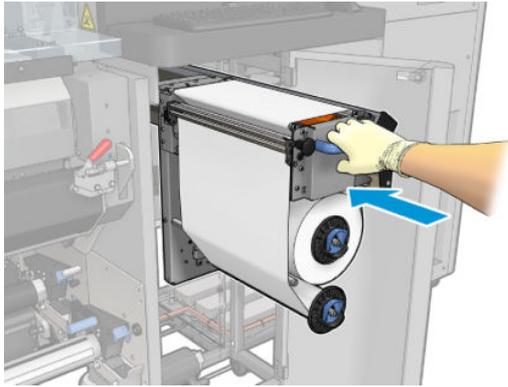
14. Close and lock the door.

15. Click **Finish** in the wizard window.

The printhead cleaning roll length tracking is now reset to zero.

NOTE: If you tamper with half-used rolls, the usage shown in the Internal Print Server will not be accurate.

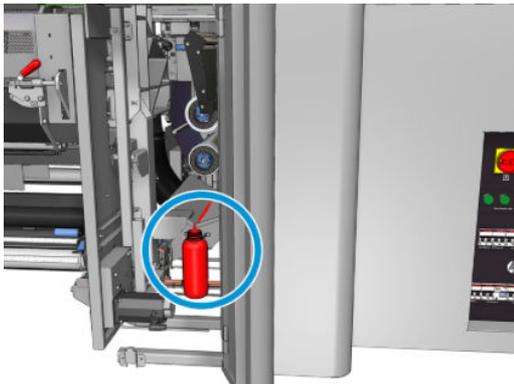Do not empty or remove the drain container: this is done by a service engineer during preventive maintenance.

7 Printer calibration

Align the printheads

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

NOTE: You are recommended to align the printheads only when using a single-roll-to-roll configuration.

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 select **Printer** > **Printhead alignment**.

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.

Alignment procedure

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).
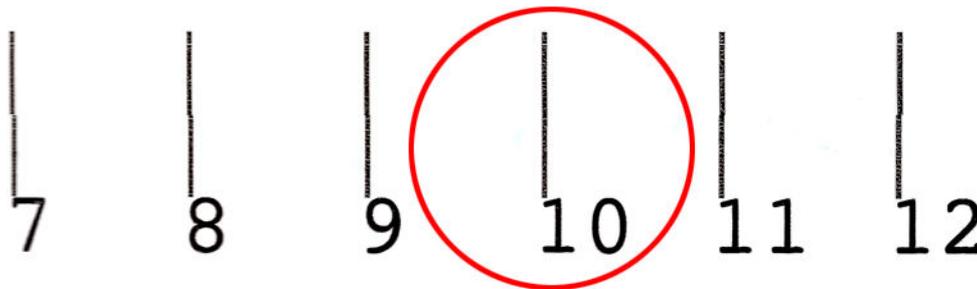
The alignment procedure includes both the colored printheads and the optimizer printhead, and takes about 10 minutes. It consumes printed substrate of 84 cm width x 37 cm height (33.1 × 14.6 in).

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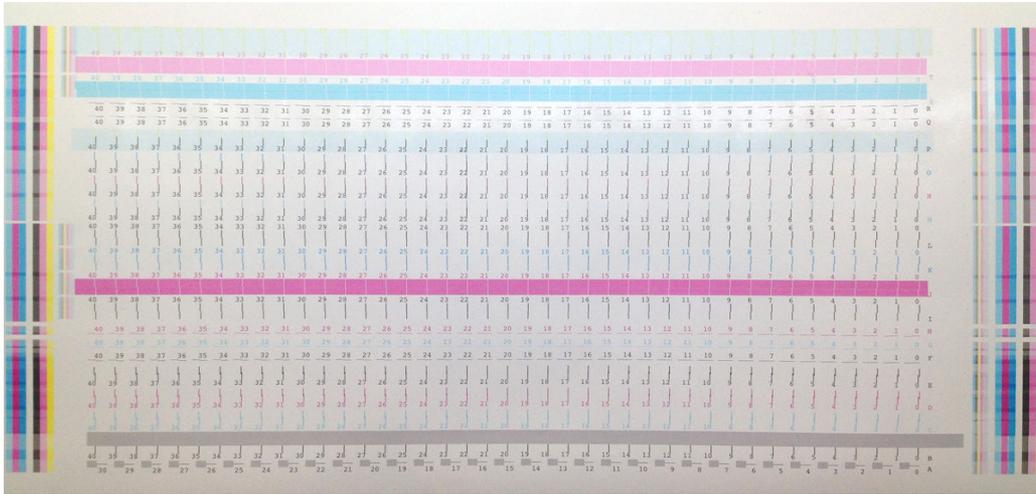
The picture below shows the distribution of printheads in the carriage. It also shows the correspondence between printhead and patterns, with guidance on the direction of the corrections (0–40) applied.
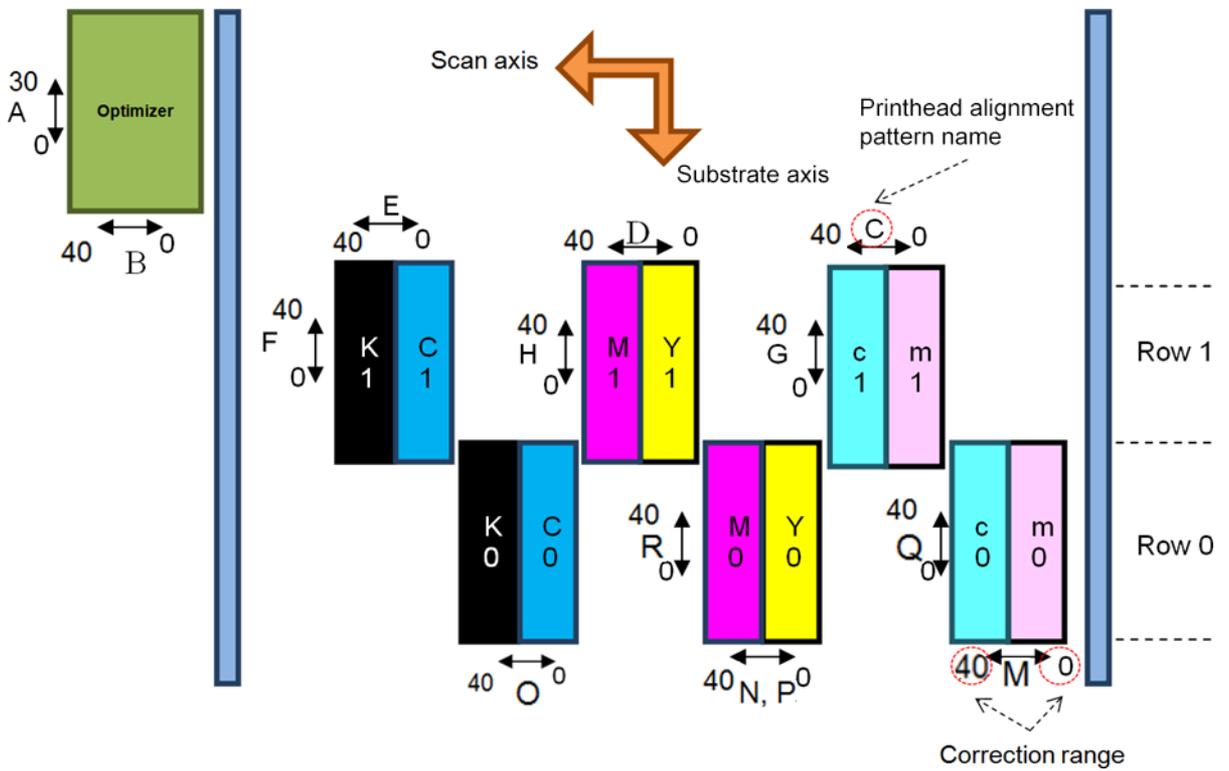
The following table summarizes the correction type controlled by each pattern.

Pattern	Affected printheads	Correction type
A	Optimizer	Substrate axis
B	Optimizer	Scan axis
C	c1, m1	Scan axis
D	M1, Y1	Scan axis
E	K1, C1	Scan axis

Pattern	Affected printheads	Correction type
F	K1, C1	Substrate axis
G	c1, m1	Substrate axis
H	M1, Y1	Substrate axis
I	K	Scan axis, bidirectional
J	M	Scan axis, bidirectional
K	C	Scan axis, bidirectional
L	C, M, Y, K, c, m, opt	Scan axis, bidirectional, 1200 dpi
M	c0, m0	Scan axis
N	M0	Scan axis
O	C0	Scan axis
P	Y0	Scan axis
Q	c0, m0	Substrate axis
R	M0, Y0	Substrate axis
S	c	Scan axis, bidirectional
T	m	Scan axis, bidirectional
U	Y	Scan axis, bidirectional

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.

Aligning the optimizer printhead

The optimizer ink is transparent, so it is not easy to detect visually. To make it easier, a background of composite ink has been added on top of it. It highlights the optimizer, making it visible most of the time.

The patterns A and B are intended to align the optimizer printhead to the colored printheads in both directions (scan axis and substrate axis).

The image below shows the background with the optimizer lines on top of it.
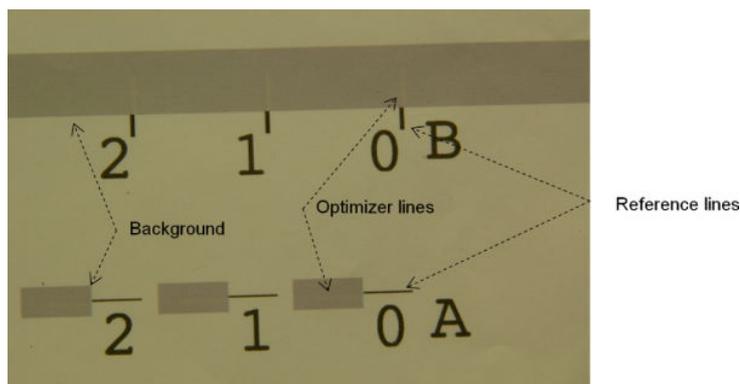
Possible difficulties with printhead alignment

The optimizer ink is invisible or hardly visible

The composite background to highlight the optimizer ink works for most substrates, but occasionally, with some substrates, there is not enough contrast to highlight the optimizer ink. In these cases there are two possible solutions:

- Load a different substrate with more contrast to perform the alignment.

- Insert an intermediate correction (A=15, B=20), assuming the optimizer is well aligned. In this case, take a close look afterwards for associated defects, such as bleed, halo, or wicking (see Bleed, halo, wicking on page 400).

Another possibility is that the optimizer printhead or the colored printheads may have too many clogged nozzles, resulting in a poor background area fill, which makes it difficult to detect the optimizer bars. In this case, see Check and clean the printheads on page 146.

The optimizer printhead is still misaligned in the substrate axis after alignment

The optimizer printhead is staggered and there is a gap between it and the other printheads, so in the patterns A and B a substrate advance is needed to align it to the background and the reference black. If the substrate advance is inaccurate, the optimizer correction for the substrate axis (pattern A) may not be valid. You may detect some bleed in the boundaries between colors in the substrate axis direction, usually when passing from high ink density areas to lower ink density areas. In this case, ensure that the substrate advance is accurate (see Substrate-advance compensation on page 169) before performing alignment.

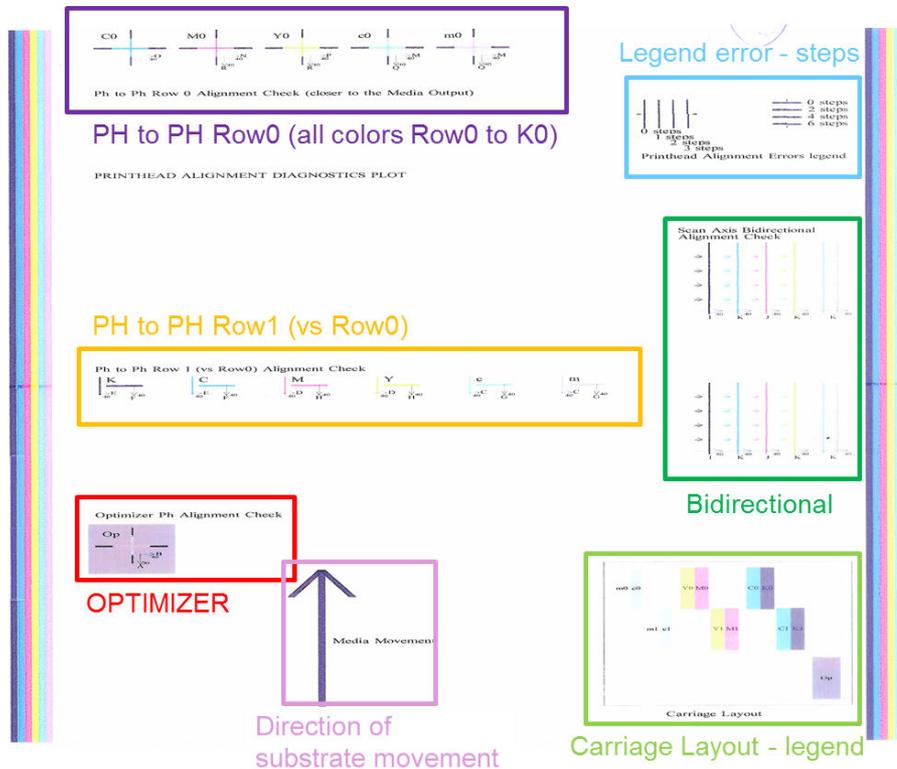## A pattern shows more than one good correction

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 (27.6 in) to ensure that it is not deformed by the curing of 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 select **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.

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.

PH to PH Row0 (all colors Row0 to K0)

PRINTHEAD ALIGNMENT DIAGNOSTICS PLOT

Legend error - steps

Printhead Alignment Errors legend

PH to PH Row1 (vs Row0)

Ph to Ph Row 1 (vs Row0) Alignment Check

Scan Axis Bidirectional
Alignment Check

Bidirectional

Optimizer Ph Alignment Check

OPTIMIZER

Direction of
substrate movement

Media Movement

Carriage Layout

Carriage Layout - legend

## Zone 1: Printhead Row0 alignment check (closer to the substrate output)

This area shows the printhead-to-printhead alignment for the first row of color printheads. Each printhead has crosses, where it is compared to a reference printhead. In this case the black printhead has been chosen as a reference.

The colors are labeled C0, M0, Y0, c0, m0, where the '0' specifies that it is the first row of printheads. In each case, the inner cross should be aligned with the outer cross.
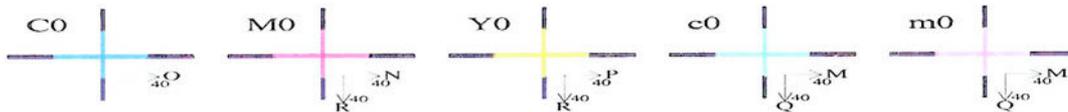
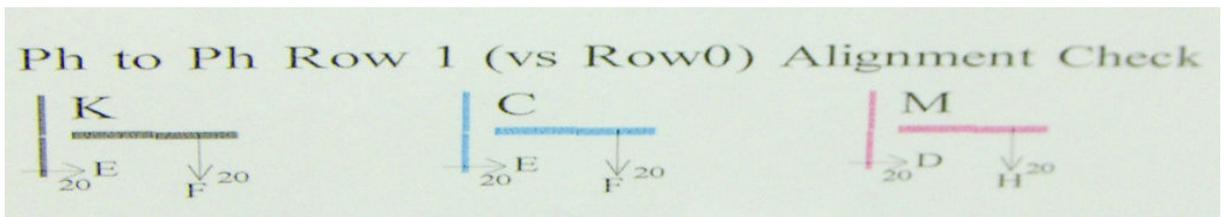Ph to Ph Row 0 Alignment Check (closer to the Media Output)

In case of misalignment the arrows indicate the pattern of the manual alignment that will correct the misalignment. Also, the '20' label indicates the direction towards where the line will be moved when a '20' value is applied. For example, imagine that in the manual alignment the chosen value for L is 12, and the chosen value for 0 is 7. Imagine also a misplacement in the c0:

L=12
O=7

Better correction

L<12
O>7
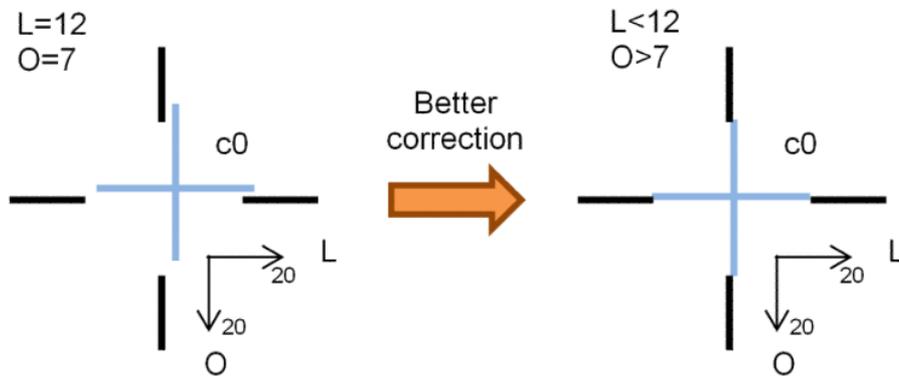
- **Scan axis misplacement:** The c0 line is displaced to the right. Since the '20' arrow points to the right, if you apply values bigger than your actual value it will be moved further to the right. But, since the vertical c0 line is displaced to the right, you need to move it to the left. Therefore, a value lower than your actual selection (L=12) is needed.

- **Substrate axis misplacement:** The c0 line is displaced to the top. Since the '20' arrow points to the bottom, if you apply values bigger than your actual value it will be moved to the bottom. This is just what you want, so a value higher than the actual selection (O=7) is needed.

Zone 2: Printhead to printhead Row1 (versus Row0) alignment check

This area shows the printhead-to-printhead alignment for the second row of color printheads. Each color is referenced to the same color in Row0. The alignment is correct if no discontinuity or step is detected in any direction.
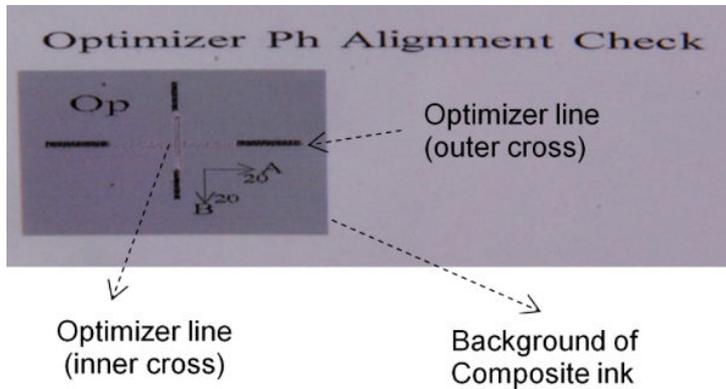

As in the description of the previous area, in case of misalignment the arrows indicate the pattern of the manual alignment that will correct the misalignment. Also, the '20' label indicates the direction in which the line will be moved if a '20' value is applied. For example, imagine that in the manual alignment the chosen value for D is 12, and the chosen value for H is 7. Imagine also a misplacement in the M:

D=12
H=7

Better correction

D>12
H<7
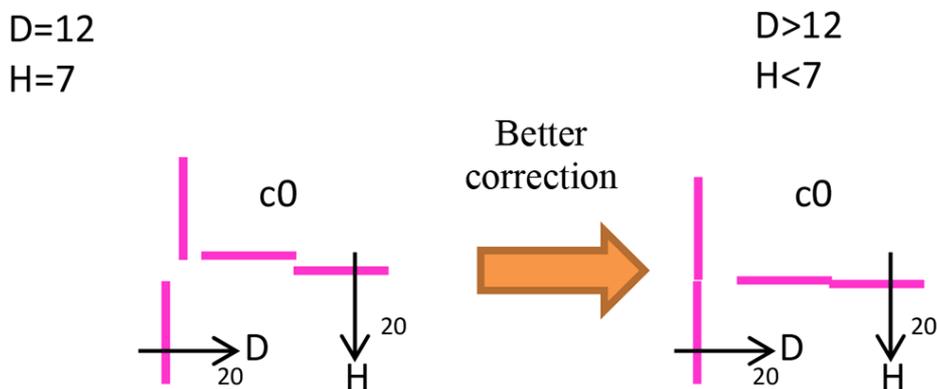
As in the previous zone, increasing D and decreasing H will help to improve the results.
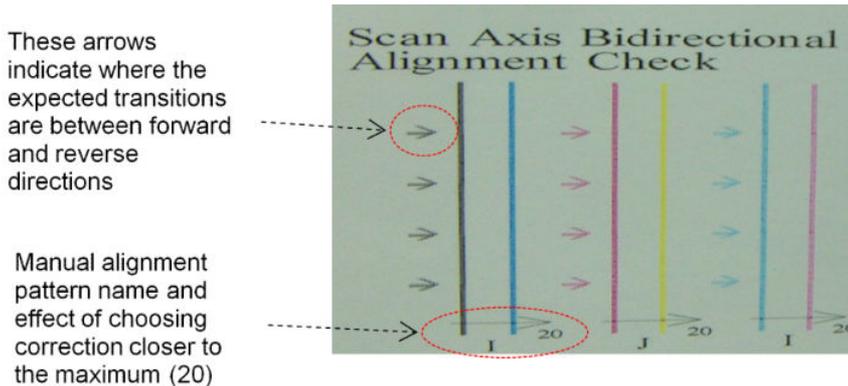
Zone 3: Optimizer printhead alignment check

This area shows the optimizer-to-color printhead alignment. The optimizer is referenced to the black ink. It works exactly the same as Zone 1. However, there is a background color that highlights the presence of the optimizer.

Optimizer line (outer cross)

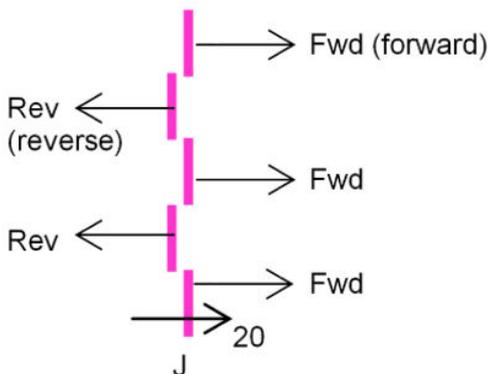Optimizer line (inner cross)

Background of Composite ink

Zone 4: Scan-axis bidirectional alignment check

This area shows scan-axis bidirectional alignment between colors. As in the description of the previous areas, in case of misalignment the bottom arrows indicate the pattern of the manual alignment that will correct the misalignment (I, J patterns). Also, the '20' label indicates the direction in which the line will be moved if a '20' value is applied.

These arrows indicate where the expected transitions are between forward and reverse directions

Manual alignment pattern name and effect of choosing correction closer to the maximum (20)

This pattern is formed by a series of vertical lines, printed unpaired as follows:

The correct bidirectional alignment has been found when the Fwd and Rev lines are perfectly aligned.

The following example shows a misalignment situation with an existing correction J=13, and how to correct it.

In this case, the diagram shows that we need to change the value corresponding to the J pattern. Also it indicates that the correction needs to be moved towards lower values, because the '20' value would move it in the wrong direction.

Color calibration

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

There are no factory-reference color-calibration values in the printer or within the presets: the first calibration for each substrate sets the color reference for future calibrations. The future calibrations will therefore try to match the colors of the first calibration. In this way you maintain consistency as the printhead ages.

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 160), and to make sure the substrate is advancing correctly (see Substrate-advance compensation on page 169), otherwise the color pattern may appear blurry or with slightly different colors.
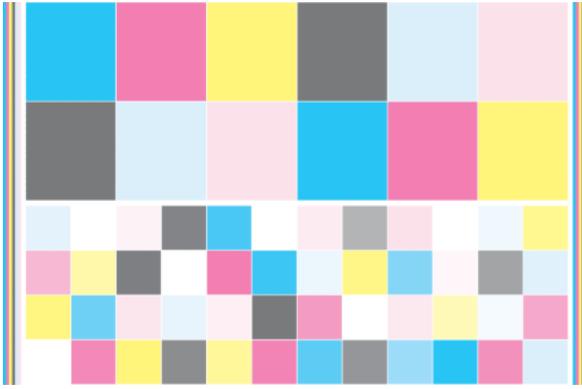
To start color calibration from the Internal Print Server, select **Substrate** > **Color calibration**, then click the **Calibrate** button.

NOTE: Only non-porous substrates wider than 61 cm (24 in) can be calibrated. Porous substrates cannot 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. 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 416.

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 substrate type is introduced 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: select **Substrate** > **Color calibration** > **Show all**.
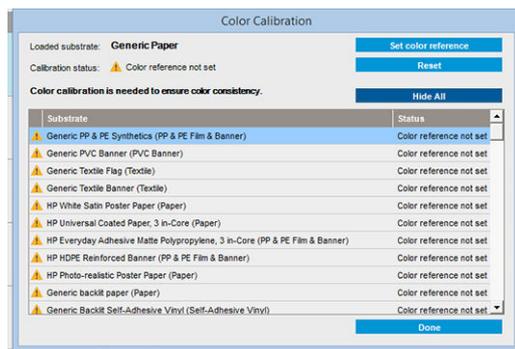
● **Default:** Color reference not set.

● **Done:** Color reference set.

● **Obsolete:** Calibration obsolete.

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, select **Substrate** > **Color calibration** > **Reset**.

You should calibrate a substrate type before creating its color profile; however, you can later recalibrate without needing to recreate the color profile.

Color consistency between different HP Latex 3000 printers

It is possible to print consistent colors on different HP Latex 3000 printers by exporting a calibrated substrate preset (see Substrate presets on page 98) from one calibrated printer to another. This process ensures that both printers use the same color references.

1. Create the reference for the first printer: do at least the first color calibration with the substrate in question.

2. Export the substrate preset from the first printer. The reference is also exported.

3. Import the substrate preset to the second printer.

4. Perform color calibration with the same substrate for the second printer, to make it consistent with the reference imported with the preset.

Now both printers have the same reference for the same substrate, and all the consecutive color calibrations will be trying to match this reference state.

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, and your substrate. An ICC color profile is a description of a printer, ink, and substrate 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.

Substrate-advance compensation

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.

If the substrate cannot be adjusted automatically by the substrate-advance sensor and the substrate advance is not correct, you may wish to change the substrate-advance compensation manually. See Troubleshoot print-quality issues on page 385 for steps to determine whether substrate-advance compensation will help you. In general, substrate-advance calibration is recommended when you see print-quality problems related to substrate advance, or when you define a new substrate.

NOTE: Manual substrate-advance compensation is available only when the substrate-advance sensor is disabled—automatically, or manually through the Printing adjustments button in the Internal Print Server main window.

The substrate-advance sensor may not work correctly if it is dirty. See Clean the substrate-advance sensor on page 194.

If the sensor was dirty, after cleaning it the advance compensation already calculated may not be valid, so you are recommended to set the advance compensation for this substrate to zero and check that the advance is correct. If the advance is still not accurate, follow the advance compensation process, bearing in mind that the sensor is not dirty and probably your substrate type is not compatible with it.

Manual substrate-advance compensation

While printing, you can view and change the substrate-advance compensation 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 selecting **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 compensation section, in which there are three main areas:
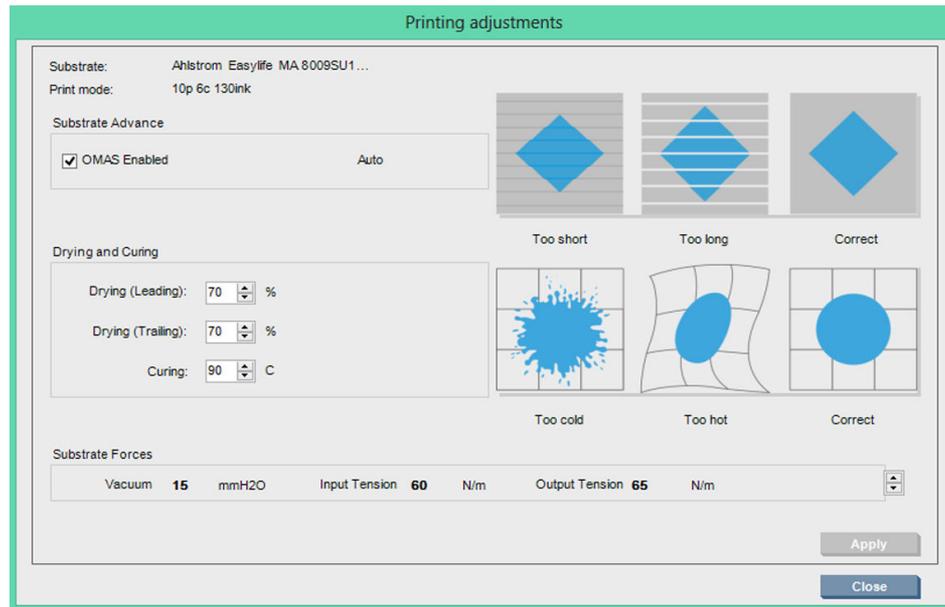
1. Check the box to enable the OMAS (substrate-advance sensor). If it is disabled automatically while loading, you cannot enable it. However, if you disable it yourself, you can re-enable it.

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

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

In order to apply and save the values, press the **Apply** button in the dialog box before closing it. Then the substrate-advance compensation 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 compensation, as the print adjustment is not available for generic presets. See Edit a substrate preset on page 105.

Substrate-advance test print

The substrate-advance test print can help you to adjust the substrate advance more accurately. In the Internal Print Server, select **Printer** > **Advance calibration**. The printer prints several repetitions of a special numbered pattern that help you to apply the correct substrate-advance adjustment. Locate the pattern in the center of the substrate.

NOTE: Printheads must be correctly aligned before the test.
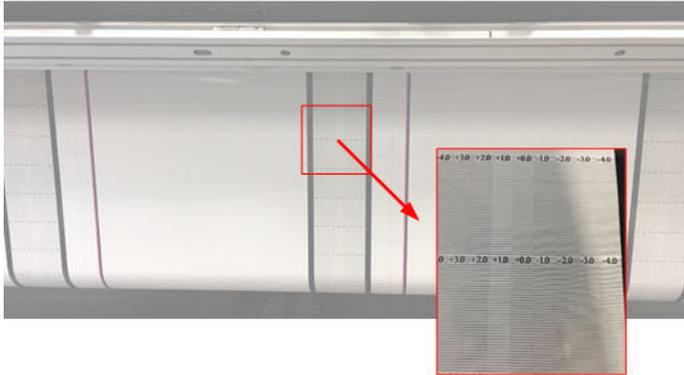
The following steps describe the process to determine the IPS **Printing adjustment** dialog advance compensation value.

1. While the test is being printed, in the last 8–10 plots of the substrate central pattern (the sides might be affected by skew), locate the value that corresponds to the lightest column.

   TIP: If the test shows two possible values (two continuous columns), the value selected is the average of both values. For example, if the test says the value could be +2.0/+3.0, then +2.5 is selected.

2. Via **IPS** > **Printer** > **Printing adjustments**, look for the current advance value set and add to this number the value chosen in step number 1. For example, if the value shown in the **Printing adjustment** dialog is -2.0 and the chosen value in the first step is +2.5, then the value chosen should be +0.5.

   NOTE: The print adjustments dialog is only enabled when printing with non-generic substrate presets.

3. Insert the chosen advance compensation value, and select **Apply** to implement the change.
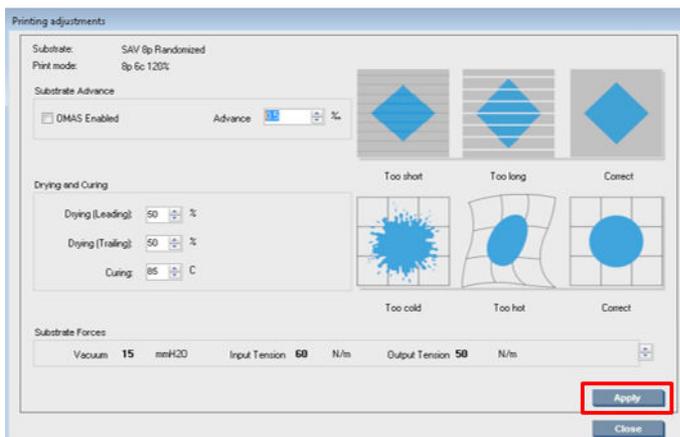
By applying the correct advance compensation value, the lightest columns should be located at value 0. This means the printer compensates for the substrate advance error, and provides good substrate feed.

NOTE: The manual substrate advance compensation obtained through this process is only usable for the loaded substrate. It is important to note that this value cannot be used on another printer. If you planned to use the same substrate on multiple printers you need go through the complete process on each printer.

TIP: The value used for the substrate advance depends directly on the thickness of the substrate, and needs to be changed only when you are suffering print-quality issues that are caused by the substrate advance, as explained in Substrate-advance sensor check on page 391. To obtain the right value faster and more accurately, see the following table:

Normal substrate advance value based on substrate thickness							
50 µm (2 mil)	150 µm (5.9 mil)	250 µm (9.8 mil)	400 µm (15.7 mil)	550 µm (21.7 mil)	700 µm (27.6 mil)	850 µm (33.5 mil)	1000 µm (39.4 mil)
+1.8 ‰	+0.9 ‰	0	−1.0 ‰	−1.8 ‰	−2.7 ‰	−4.5 ‰	−6.8 ‰

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, etc.), then the printheads should be realigned.

- **Substrate Advance Compensation**: 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
Color calibration	Recommended	Recommended	Recommended	Not needed, unless never done before	Not needed	Recommended if relevant
Substrate advance compensation	Not needed	Not needed, as long as the substrate-advance sensor is working	Not needed, as long as the substrate-advance sensor is working	Not needed, as long as the substrate-advance sensor is working	Not needed	Recommended if relevant

8 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).
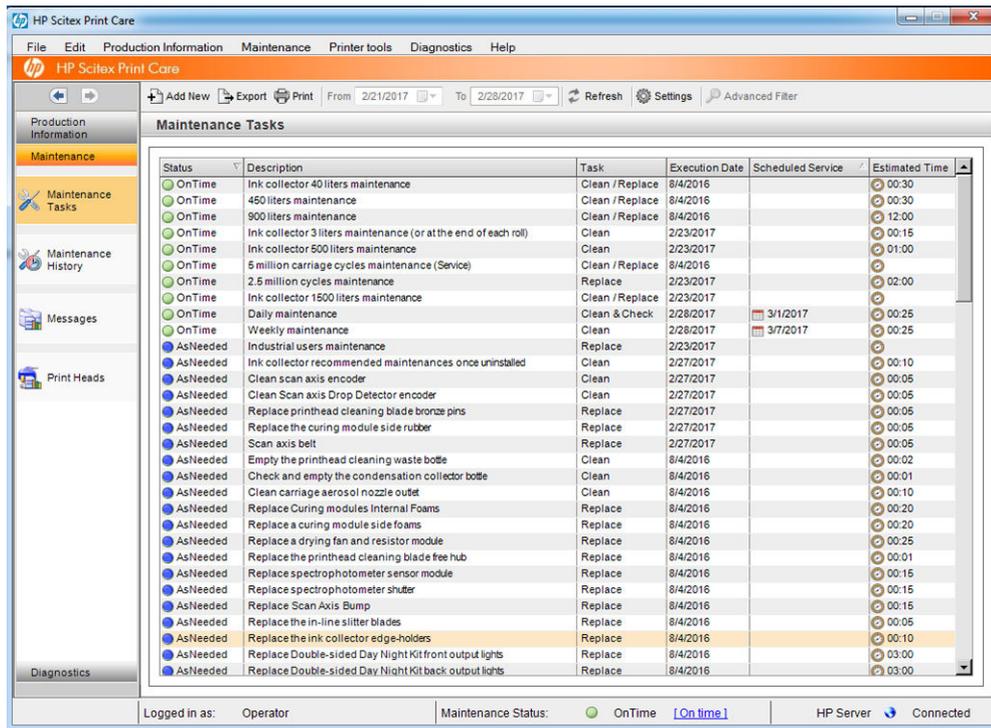
Its functions are divided into the following categories..

- **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, select **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.
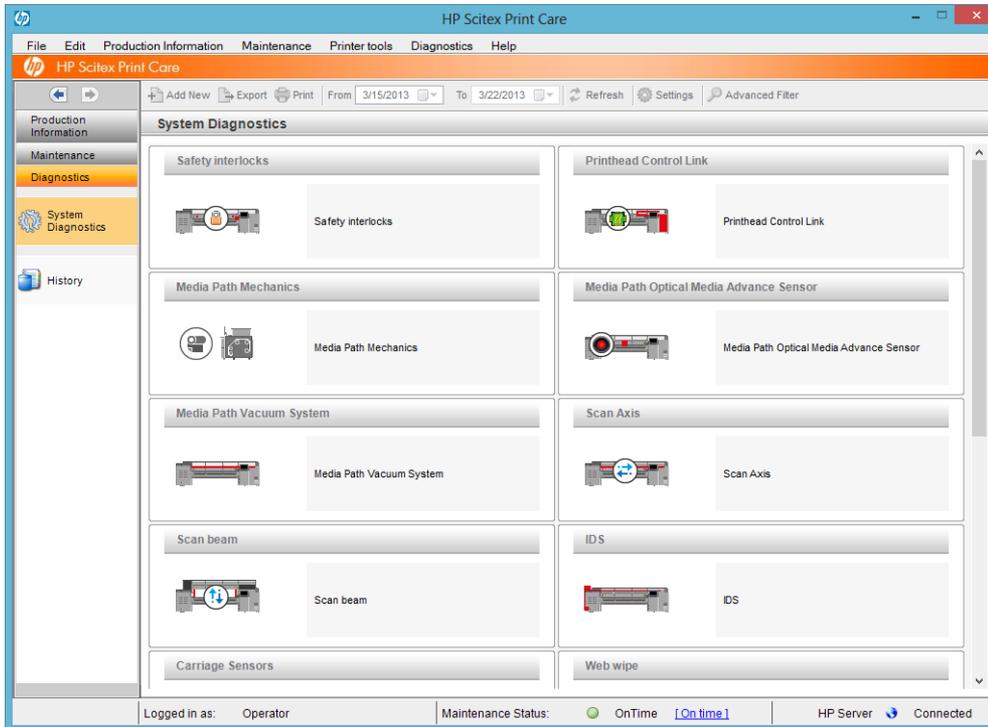
Most of these diagnostics can be run with the printer started normally. However, if you experience a severe error in the start-up progress that prevents you from running the diagnostics, an extra start-up mode has been provided for this situation. To use it, go to Print Care and select **Printer Tools** > **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, select **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:XX, we recommend locating the first two digits in the following table to identify the correct diagnostic.

Number	Subsystem
01	E-box
10	E-cabinet
11	Printhead control link
15	Drying
16	Curing
21	Drop detector/Capping station
22	Ink distribution system
41	Substrate path mechanics
43	Substrate path vacuum system

Number	Subsystem
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

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.

Update the Print Care software

While the printer is connected to the Internet, Print Care checks periodically for updates. An alert will pop up if an update is available. When this happens, follow the instructions to update the software.

NOTE: This update applies only to the Print Care software engine. The maintenance wizards and other content are accessed directly in the cloud every time they are needed. Therefore, they are automatically updated as soon as the content in the cloud is updated.

Reinstall the Print Care software

If Print Care needs to be reinstalled, contact your service representative.

NOTE: Print Care needs to be reinstalled whenever the printer changes ownership.

9 Hardware maintenance

The HP Latex 3800 Jumbo Roll Solution is sold with a 3 year HP Service contract. For further information, contact your service representative.

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

Before using the Jumbo Roll Solution, read the general safety precautions and operating instructions so as to use (operate and maintain) 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.

Before maintenance

Turn off the equipment using the branch circuit breakers located in the building's power distribution unit (PDU), and also turn off the equipment mains switch before servicing. Take into consideration the appropriate use of the padlock/lockers provided on the mains switch, and/or branch circuit breakers, before servicing the unit as per local laws or LOTO (Lock Out/Tag Out) requirements.

| Electric shock hazard | Risk of trapped fingers | Mind the step | Do not step on | Be aware of moving parts |

After maintenance

WARNING! **Starting the equipment**. Before you start the equipment, check whether it is safe for both people, and the machine. Remove all items that could cause personal injury, or damage the machine. Make sure nobody is working on the machine.

User maintenance kits

Maintenance resources			Cleaning kit	User maintenance kit	Service maintenance kit	Textile service maintenance kit	User up-time kit	Reseller up-time kit
When	Who	Inbox						
On demand clean	User	X	X					
Weekly maintenance	User	X	X					
125 liter maintenance	User	X	X					
500 liter maintenance	User		X	X				
1500 liter maintenance	User			X				
3000 liter maintenance	Contact your support rep.				X			
Dual side clean	User		X					
Ink collector daily maintenance	User							
Ink collector 40 liter maintenance	User							
Ink collector 500 liter maintenance	User					X		
Ink collector 1500 liter maintenance	Contact your support rep.							
User repair	User					X		
Service repair	Contact your support rep.						X	
Full printer inspection	Contact your support rep.						X	

HP Latex 3x00 Printer Series maintenance kits and tools

Name	Part number	Purpose	How to order
HP Latex 3x00 Series Cleaning Kit	CZ056-67390	Weekly maintenance, and the 125 liter maintenance routines (about 12 times)*	Provided with your printer and included in the Printer Maintenance Kit

Name	Part number	Purpose	How to order
Carriage Rail Cleaning Tool		For the 125 liter maintenance routines*	Provided with your printer
HP Latex 3000 Series Printer Maintenance Kit	1HA07-67008 / 1VT19A	For the 1500 liter maintenance routines*	Through the usual channel
HP Latex 3x00 Series Standard Uptime Kit	D4J02A / CZ056-67421	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.
HP Latex 3x00 Expert Kit	1HA07-67041	Set of spare parts that can be replaced by expert/trained customers	Through the usual channel

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

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

HP Latex 3x00 Printer Cleaning Kit contents

Part	Quantity	Use in maintenance
Flex cleaner and 12 flex sponges	1	Clean printhead contacts, printhead side (see The Internal Print Server recommends replacing or reseating a printhead on page 409)
Brush	1	Clean printhead contacts, carriage side (see The Internal Print Server recommends replacing or reseating a printhead on page 409)
Cotton swabs	100	Clean the substrate advance sensor (OMAS) (see Clean the substrate-advance sensor on page 194) and the line sensor (see Clean the bottom of the carriage, the drying glasses, and the line and crash sensors on page 233)
Carriage rail cleaning wicks	6 bags of 20	Cleaning (see Clean the carriage rails and replace the oiler foams on page 207)
Lubricant oil	3 bottles of 10 ml	Lubrication (see Clean the carriage rails and replace the oiler foams on page 207)
Oiler foams	6 bags of 2	Replacement (see Clean the carriage rails and replace the oiler foams on page 207)
Oiler wicks	12 sets	Replacement (see Clean the carriage rails and replace the oiler foams on page 207)
Grease syringe	3 ml	Grease small parts; but not for greasing carriage beam screws
Cleaning sponges	6	General cleaning
Plastic gloves	6 sets	General maintenance processes
E-cabinet and e-box filters	6 sets of 2	Fan filters replacement (see Replace the e-cabinet fan filters on page 253)

HP Latex 3x00 Printer Maintenance Kit contents

Content	Quantity
Cabinet Ebox filters assembly	2

Content	Quantity
Printhead cleaning rubber assembly	3
HP Latex 3x00 Cleaning Kit	1
Upgrade 5 printhead cleaning rubber blades	1
Machine Grease and Oil kit	1
Pads	1
Diverter wheels	2

NOTE: The contents of the kit may vary.

NOTE: Some keys are provided with the printer. See Safety precautions on page 2 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 steel scourer, for Clean the bottom of the carriage, the drying glasses, and the line and crash sensors on page 233; Clean the drying module quartz glass and air outlet on page 306; and Clean the drop-detector ink deposits on page 238.

Absorbent all-purpose cloth, for cleaning covers.

Isopropyl alcohol, for cleaning

NOTE: If you are in an area (such as California) that regulates VOC cleaning and maintenance fluids, instead of isopropyl alcohol use a VOC-certified cleaner such as a properly diluted Simple Green All-Purpose Cleaner.

Distilled water, for general cleaning	Vacuum cleaner, handy or normal, with nozzle accessories; for Clean the rear scan-axis beam on page 263.	Flashlight, for general use.
Folding steps, for general use.	A flat screwdriver.	Torx screwdriver set

How to perform maintenance operations

The Maintenance section of the Print Care program (see HP Print Care on page 173) 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.

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 on page 187.

- 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.

Risk of burns	Crush hazard	Risk of trapped fingers	Hazardous moving part	Light radiation hazard	Electric shock hazard

For more safety information, see Safety precautions on page 2
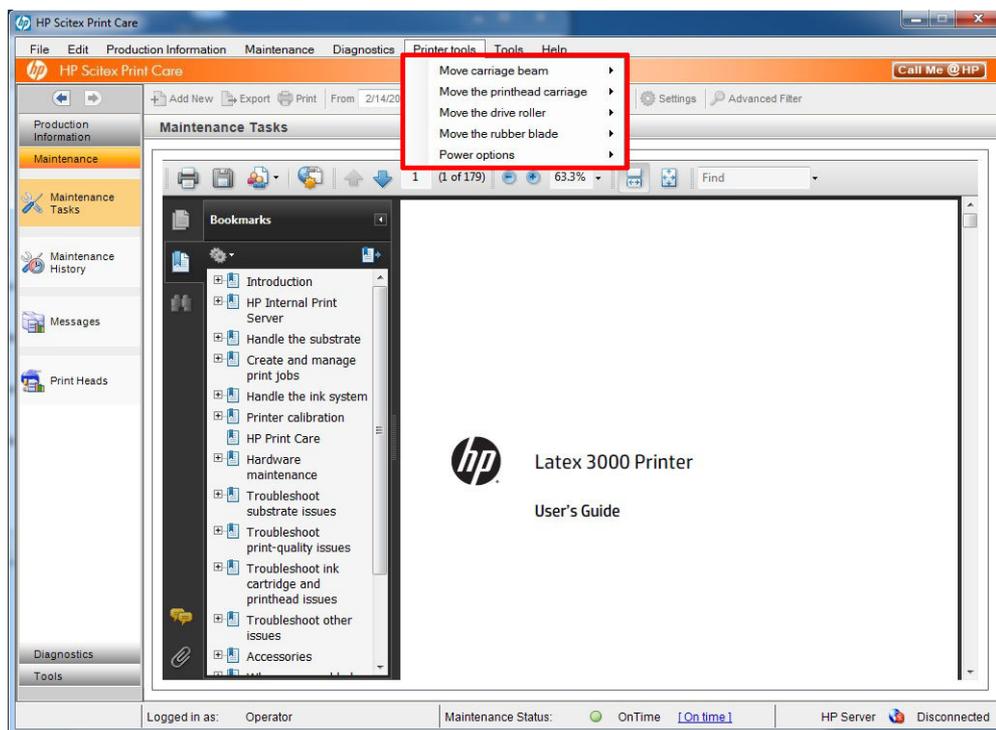
- To move the carriage beam, select **Printer tools** > **Move the carriage beam**.

    – **Move up**

    – **Move down**

- To move the printhead carriage, select **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, select **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, select **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, select **Printer tools** > **Power options** > **Shutdown**.
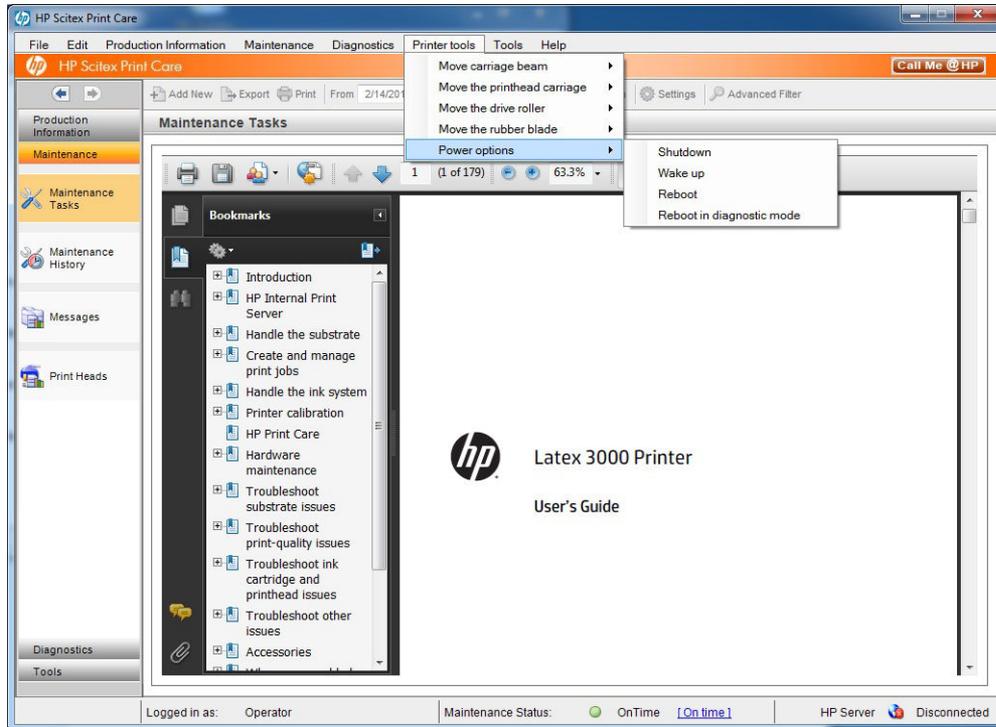
CAUTION: The shutdown process takes some time to complete. Wait until the green power light is off before proceeding.

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.

Summary of maintenance operations

Table 9-1 Maintenance operations for all substrates

Frequency	Maintenance operation	Cross-reference	Part number and/or description
Weekly	Clean the print zone	Clean the print zone on page 192	HP Latex 3x00 Printer Cleaning Kit, provided with your printer
	Clean the substrate-advance sensor	Clean the substrate-advance sensor on page 194	HP Latex 3x00 Printer Cleaning Kit, provided with your printer
	Clean the aerosol filters	Clean the aerosol filters on page 196	Brush
	Clean the pinchwheels and drive roller	Clean the pinchwheels and drive roller on page 199	Clean lint-free cloth and distilled water
	Clean the output platen	Clean the output platen on page 201	Clean lint-free cloth
	Empty the condensation collector bottle	Empty the condensation collector bottle on page 203	
Every 125 liters of ink	Clean the carriage rails and replace the oiler foams	Clean the carriage rails and replace the oiler foams on page 207	HP Latex 3x00 Printer Cleaning Kit and Carriage Rail Cleaning Tool, provided with your printer
	Empty the oil collector caps	Empty the oil collector caps on page 223	
	Clean the bottom of the carriage, the drying glasses, and the line and crash sensors	Clean the bottom of the carriage, the drying glasses, and the line and crash sensors on page 233	HP Latex 3x00 Printer Cleaning Kit, provided with your printer
	Clean the drop-detector ink deposits	Clean the drop-detector ink deposits on page 238	Scourer (not provided)
	Clean the e-cabinet fan filters	Clean the e-cabinet fan filters on page 241	HP Latex 3x00 Printer Cleaning Kit, included in your printer
	Clean the e-box fan filter	Clean the e-box fan filter on page 243	HP Latex 3x00 Printer Cleaning Kit, included in your printer
	Clean substrate input/output gears and spindle metal debris	Clean substrate input/output gears and spindle metal debris on page 247	Brush
Every 500 liters of ink	Replace the rubber blade	Replace the rubber blade on page 249	1HA07-67008 or 1VT19A: Printer Maintenance Kit Spare printhead cleaning blades provided with your printer.
Every 1500 liters of ink	Replace the e-cabinet fan filters	Replace the e-cabinet fan filters on page 253	HP Latex 3x00 Printer Cleaning Kit, included in your printer
	Replace e-box fan filter	Replace e-box fan filter on page 255	HP Latex 3x00 Printer Cleaning Kit, included in your printer
	Clean the impinging plate	Clean the impinging plate on page 258	Clean lint-free cloth and distilled water
	Clean the vapor removal external filter	Clean the vapor removal external filter on page 261	Brush and vacuum cleaner
	Clean the rear scan-axis beam	Clean the rear scan-axis beam on page 263	Vacuum cleaner and an absorbent all-purpose cloth (not provided)

Table 9-1 Maintenance operations for all substrates (continued)

Frequency	Maintenance operation	Cross-reference	Part number and/or description
	Clean and grease the substrate drive transmission gears and rods	Clean and grease the substrate drive transmission gears and rods on page 265	Grease and oil kit, included in the Printer Maintenance kit. Gloves (not provided)
	Grease the carriage beam screws	Grease the carriage beam screws on page 267	1HA07-67008 or 1VT19A: Printer Maintenance Kit
	Clean and grease the service station transmission and rods	Clean and grease the service station transmission and rods on page 269	Grease and oil kit, included in the Printer Maintenance kit. Gloves (not provided)
	Empty the drop detector ink vessel	Empty the drop detector ink vessel on page 270	
	Replace the rubber blade	Replace the rubber blade on page 249	
	Clean the carriage rails and replace the oiler foams	Clean the carriage rails and replace the oiler foams on page 207	HP Latex 3x00 Printer Cleaning Kit and Carriage Rail Cleaning Tool, provided with your printer
	Grease the printhead primers	Grease the printhead primers on page 272	Grease and oil kit, included in the Printer Maintenance kit.
	Replace the rocker pads	Replace the rocker pads on page 342	
Every 1500 liters of ink: check and replace if required	Replace curing fan and resistors		
	Replace substrate output spindle lever		
	Replace bearings		
Every 3000 liters (approx. once every 5 years)	3000 liters can be reached by printing 480,000 m² with 4 passes, or 320,000 m² with 6 passes, or 190,000 m² with 8 passes	To be done by a service engineer. Call your service representative (see HP Customer Care Centers on page 418).	
When required	Check and clean printheads	Check and clean the printheads on page 146	
	Check the printer for dust and aerosol	Check the printer for dust and aerosol on page 276	Clean lint-free cloth and distilled water
	Check the print output areas for ink droplets or condensation	Check the printer for dust and aerosol on page 276	Clean lint-free cloth and distilled water
	Clean and check the substrate-advance sensor	Clean the substrate-advance sensor on page 194	HP Latex 3x00 Printer Cleaning Kit, provided with your printer
	Replace a pinchwheel submodule	Replace a pinchwheel submodule on page 277	CZ056-67097: Pinch assembly, included in the HP Latex 3000 Series Standard Uptime Kit (D4J02A)
	Replace a primer	Replace a primer on page 280	1HA07-67018: Primer and latch, included in the HP Latex 3000 Series Standard Uptime Kit (D4J02A)
	Replace the aerosol module fans	Replace the aerosol fan module on page 285	CZ056-67246: Aerosol top case assembly, included in the HP Latex 3000 Series Standard Uptime Kit (D4J02A)

Table 9-1 Maintenance operations for all substrates (continued)

Frequency	Maintenance operation	Cross-reference	Part number and/or description
	Replace the drying fans array	Replace the drying fans array on page 290	CZ056-67023: Drying fan case right or CZ056-67024: Drying fan case left, both included in the HP Latex 3000 Series Standard Uptime Kit (D4J02A)
	Replace the drying lamps	Replace the drying lamps on page 295	When required, use CZ056-67322: Drying NIR lamp, included in the HP Latex 3000 Series Standard Uptime Kit (D4J02A)
	Clean the drying module quartz glass and air outlet	Clean the drying module quartz glass and air outlet on page 306	Clean lint-free cloth and distilled water
	Replace the drying quartz glass	Replace the drying quartz glass on page 313	CZ056-67252: Drying quartz glass right or CZ056-67253: Drying quartz glass left, both included in the HP Latex 3000 Series Standard Uptime Kit (D4J02A)
	Replace a curing fan and resistor module	Replace a curing fan and resistor module on page 318	CZ056-67054: Curing heater and fan module, included in the HP Latex 3000 Series Standard Uptime Kit (D4J02A)
	Replace a service station cap	Replace a service station cap on page 322	CZ056-67036: SVS Caps Kit, included in the HP Latex 3000 Series Standard Uptime Kit (D4J02A)
	Replace an intermediate tank	Replace an intermediate tank on page 325	CZ056-67073: ISM intermediate tank, included in the HP Latex 3000 Series Standard Uptime Kit (D4J02A)
	Replace an e-cabinet fuse	Replace an e-cabinet fuse on page 328	CZ056-67136: E-cabinet PCA Fuses Kit, included in the HP Latex 3000 Series Standard Uptime Kit (D4J02A)
	Clean the printhead contacts	Clean the printhead contacts on page 330	HP Latex 3x00 Printer Cleaning Kit, provided with your printer
	Replace a spindle valve	Replace a spindle valve on page 336	Q6702-67025: Spindle air valve, included in the HP Latex 3000 Series Standard Uptime Kit (D4J02A)
	Clean the roll-to-free-fall roller and pinchwheels	Clean the roll-to-free-fall roller and pinchwheels on page 337	Clean lint-free cloth, and possibly isopropyl alcohol (for persistent dirt) NOTE: If you are in an area (such as California) that regulates VOC cleaning and maintenance fluids, instead of isopropyl alcohol use a VOC-certified cleaner such as a properly diluted Simple Green All-Purpose Cleaner.
	Clean the carriage rails manually	Clean the carriage rails manually on page 340	Clean lint-free cloth and distilled water
	Grease the printhead primers	Grease the printhead primers on page 272	Grease and oil kit, included in the Printer Maintenance kit.
	Pinch clamp replacement	Pinch clamp replacement on page 341	

Table 9-1 Maintenance operations for all substrates (continued)

Frequency	Maintenance operation	Cross-reference	Part number and/or description
	Replace the rocker pad	Replace the rocker pads on page 342	
	Clean the scan axis encoder	Clean the scan axis encoder on page 343	Gloves. Clean lint-free cloth and distilled water
	Replace the curing module side rubber	Replace the curing module side rubber on page 345	
	Clean the service station caps	Clean the service station caps on page 346	
	Clean the vapor removal external filter	Clean the vapor removal external filter on page 261	Brush
	Clean the bottom of the carriage, the drying glasses, and the line sensor	Clean the bottom of the carriage, the drying glasses, and the line and crash sensors on page 233	HP Latex 3x00 Printer Cleaning Kit, provided with your printer
	Empty the condensation collector bottle	Empty the condensation collector bottle on page 203	
	Empty printhead cleaning waste bottle	Empty the printhead cleaning waste bottle on page 347	
	Clean the perforated plate	Clean the perforated plate on page 349	Clean lint-free cloth and distilled water

Table 9-2 Additional maintenance operations for porous substrates

Frequency	Maintenance operation	Cross-reference	Part number and/or description
Ink collector 3 liter/daily maintenance	Clean the aerosol filters	Clean the aerosol filters on page 196	Dry aerosol and a brush
	Wipe the protector	Wipe the protector on page 352	Clean lint-free cloth and distilled water
	Wipe the ribs of the ink collector modules	Wipe the ribs of the ink collector modules on page 354	Clean lint-free cloth and distilled water
	Clean condensates from the output platen and output beams	Clean condensates from the output platen and output beams on page 203	Clean lint-free cloth
Ink collector: after uninstalling the ink collector kit maintenance	Clean the aerosol filters	Clean the aerosol filters on page 196	Dry aerosol and a brush
	Wipe the protector	Wipe the protector on page 355	Clean lint-free cloth
	Wipe the ink collector modules	Wipe the ink collector modules on page 355	Clean lint-free cloth
	Clean the curing module and airlet plates	Clean the curing module and airlet plates on page 356	Clean lint-free cloth dampened with isopropyl alcohol NOTE: If you are in an area (such as California) that regulates VOC cleaning and maintenance fluids, instead of isopropyl alcohol use a VOC-certified cleaner such as a properly diluted Simple Green All-Purpose Cleaner.

Frequency	Maintenance operation	Cross-reference	Part number and/or description
	Clean the print zone	Clean the print zone on page 192	HP Latex 3x00 Printer Cleaning Kit, provided with your printer
	Clean the substrate-advance sensor	Clean the substrate-advance sensor on page 194	HP Latex 3x00 Printer Cleaning Kit, provided with your printer
Ink collector 40 liter maintenance	Replace the ink collector foams	Replace the ink collector foams on page 359	
	Clean the curing module and airlet plates	Clean the curing module and airlet plates on page 356	Clean lint-free cloth dampened with isopropyl alcohol NOTE: If you are in an area (such as California) that regulates VOC cleaning and maintenance fluids, instead of isopropyl alcohol use a VOC-certified cleaner such as a properly diluted Simple Green All-Purpose Cleaner.
	Clean condensates from the output platen and output beams	Clean condensates from the output platen and output beams on page 203	Clean lint-free cloth
Ink collector 500 liter maintenance	Clean the curing fan grid and internal foam	Clean the curing fan grid and internal foam on page 361	Clean lint-free cloth dampened with isopropyl alcohol NOTE: If you are in an area (such as California) that regulates VOC cleaning and maintenance fluids, instead of isopropyl alcohol use a VOC-certified cleaner such as a properly diluted Simple Green All-Purpose Cleaner.
	Clean the curing module and airlet plates	Clean the curing module and airlet plates on page 356	Curing Heater and Fan Module Kit (CZ056-67054), included in the HP Latex 3000 Series Standard Uptime Kit (D4J02A)
	Replace a curing fan and resistor module	Replace a curing fan and resistor module on page 318	CZ056-67054: Curing heater and fan module, included in the HP Latex 3000 Series Standard Uptime Kit (D4J02A)
	Replace the protector and textile substrate edge holder	Replace protector and textile substrate edge holder on page 364	
Ink collector 1500 liter maintenance	To be done by a service engineer. Call your service representative (see HP Customer Care Centers on page 418).		

Mandatory

You must perform an automatic printhead check and clean every morning. See Check and clean the printheads on page 146.

Weekly

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

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

For more safety information, see Safety precautions on page 2

Introduction

The following maintenance procedures are required weekly:

- Clean the print zone on page 192
- Clean the substrate-advance sensor on page 194
- Clean the aerosol filters on page 196
- Clean the pinchwheels and drive roller on page 199
- Clean the output platen on page 201
- Empty the condensation collector bottle on page 203

Clean the print zone

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

For more safety information, see Safety precautions on page 2

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 weekly for dried ink or any other defect. If necessary, replace the strip with a new one. See Replace an edge holder strip on page 48.

Prepare to clean the print zone

1. Ensure that you have the HP Latex 3x00 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 carriage beam to its highest position (this takes about 2 minutes).

6. Turn off the printer in the correct way for maintenance operations: see Turn the printer off on page 184.

7. Open the front door.
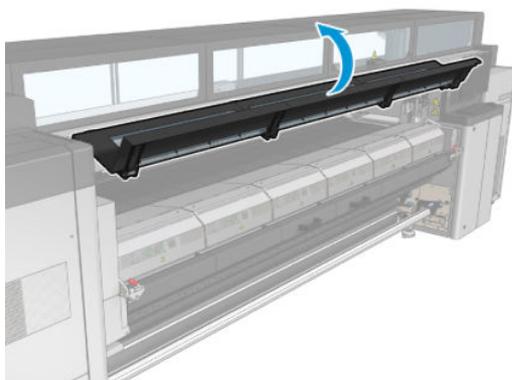
Remove the edge holders (if they are in use)

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 48.

Clean the platen

▲ Clean the platen with a clean cloth dampened with distilled water, and make sure that the platen is dry before printing.
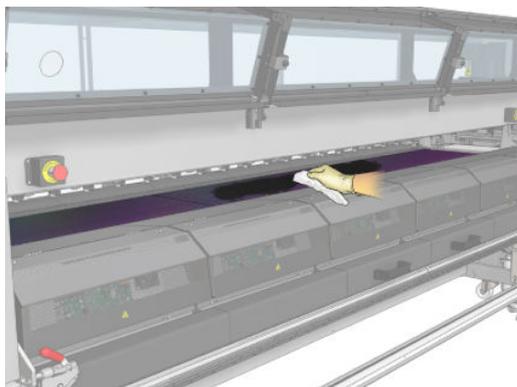
Clean the substrate-advance sensor

▲   See Clean the substrate-advance sensor on page 194.

Clean the substrate-advance sensor

Risk of burns	Crush hazard	Risk of trapped fingers	Hazardous moving part	Light radiation hazard	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 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 HP Latex 3x00 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.   Move the carriage beam to its highest position (this takes about 2 minutes).

6.   Open the front door.
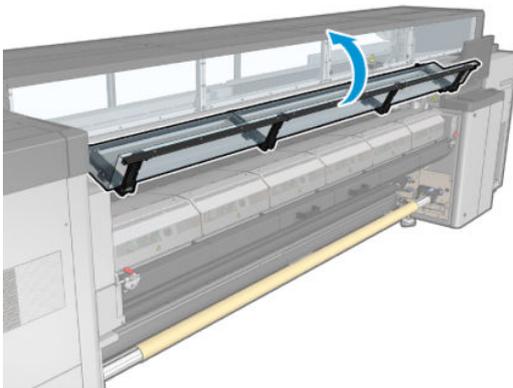
Clean the substrate-advance sensor

1.   Find the sensor in the middle of the platen.
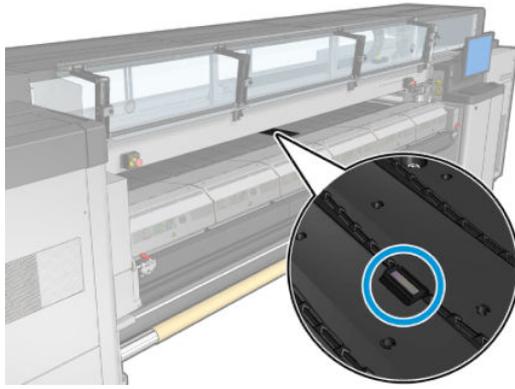
2. Clean the platen area around the sensor thoroughly with a clean cloth dampened with distilled water.
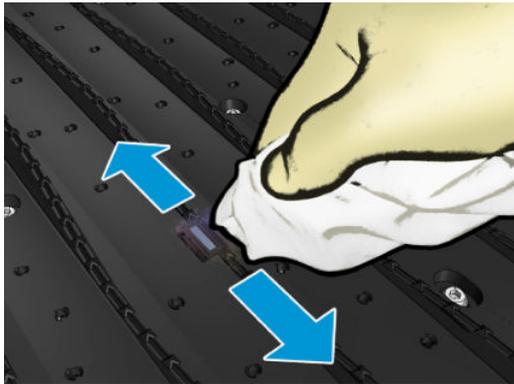
3. Wipe the sensor window with one of the cotton swabs provided in the Printer Cleaning Kit, slightly dampened (not soaked) with isopropyl alcohol, to remove dried ink. If the sensor window is heavily coated with dry ink, you may need to apply some pressure while wiping, helping the cotton to absorb the ink.

NOTE: If you are in an area (such as California) that regulates VOC cleaning and maintenance fluids, instead of isopropyl alcohol use a VOC-certified cleaner such as a properly diluted Simple Green All-Purpose Cleaner.
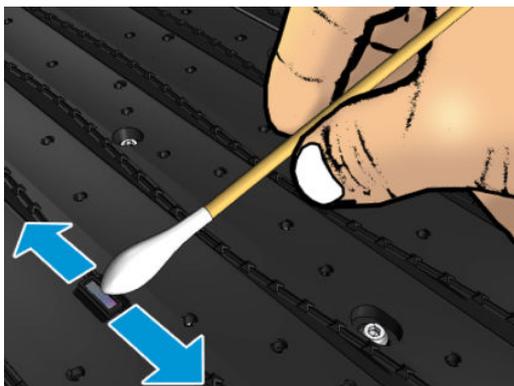
4. Continue cleaning with fresh swabs until the cotton stays clean and the sensor window looks clean.

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. Wait 3 or 4 minutes, so that the alcohol can evaporate completely.

2. Close the front door.

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

4. Move the carriage beam back to its normal position (this takes about 2 minutes).

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

Clean the aerosol filters

Risk of burns	Crush hazard	Risk of trapped fingers	Hazardous moving part	Light radiation hazard	Electric shock hazard

For more safety information, see Safety precautions on page 2

The aerosol filters should be kept clean for optimal performance and reliability.
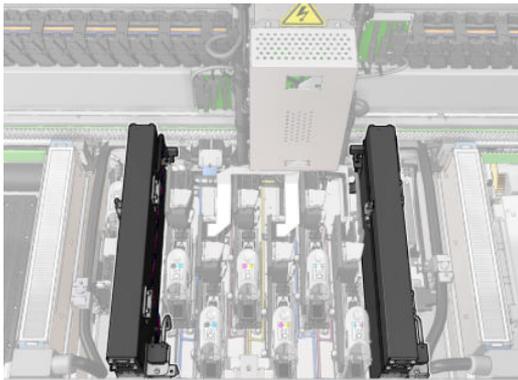
1. Ensure that the printer is not printing.

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

3. Open the service position window.

NOTE: For easier service position window access, use the retractable step located directly in front of it, underneath the operator platform: simply release the lock pin and slide it out completely.

IMPORTANT: Always lock the security pin before standing on the platform.
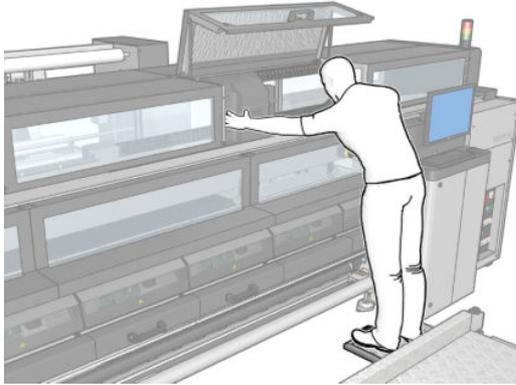
4. Open one latch on the left side of each aerosol filter module.
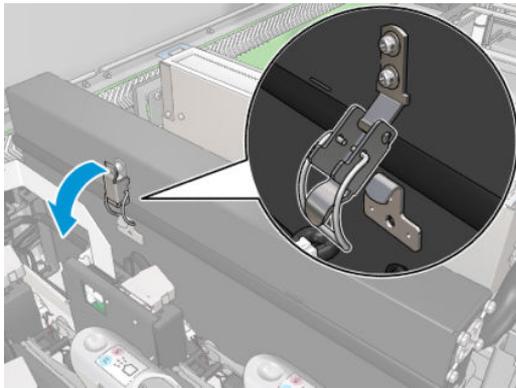
5. Open the lid of each filter.
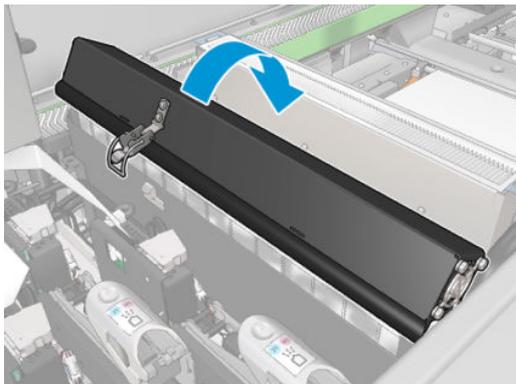
6. Remove both aerosol filters, using their handles.
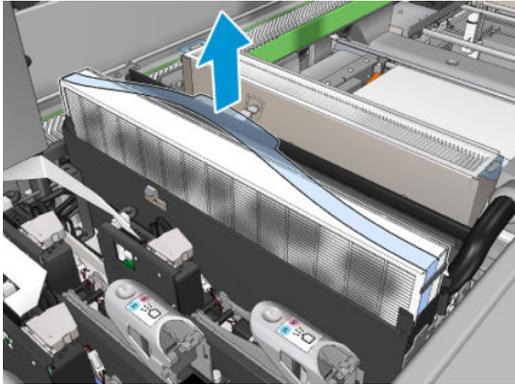
7. Use a flat screwdriver to remove the dry aerosol and then a brush to remove any remaining dirt. Try to avoid loose dirt falling into the filter.
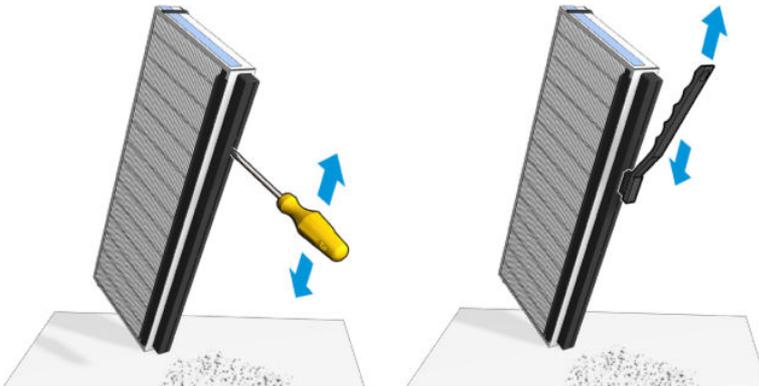
8. Reinsert both filters. There is only one way to insert them that works. If you feel resistance, try to insert the filter the other way round.
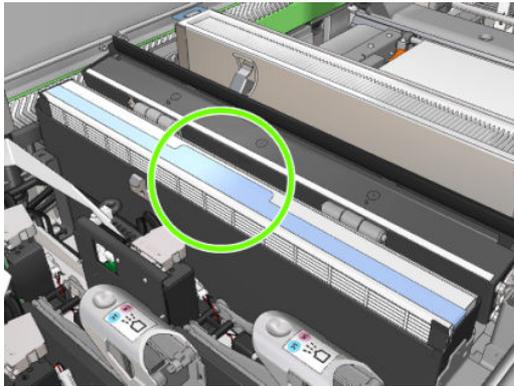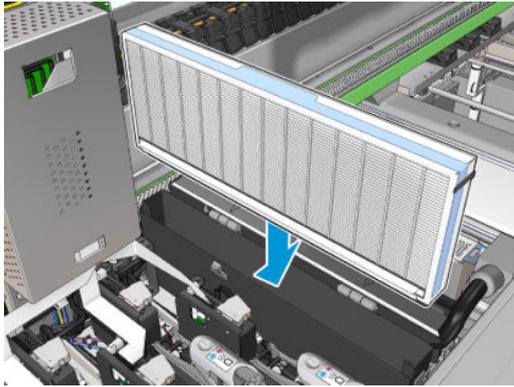
9. Close the lids.

10. Close the latches.

11. Close the service position window.

Clean the pinchwheels and drive roller

Risk of burns	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.
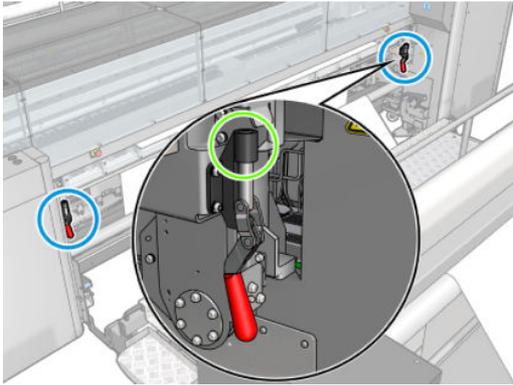
2. Pull the pinchwheel module to its lowest position.
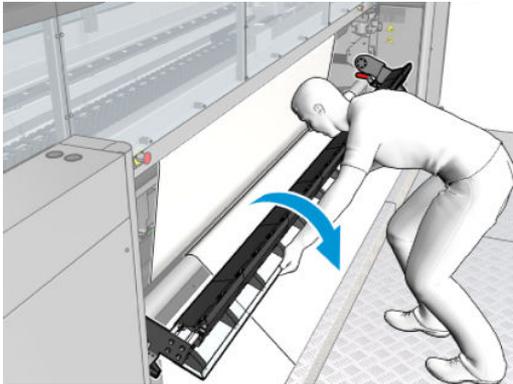
3. Clean the pinchwheels carefully with a cloth dampened with water; do not use petroleum-based cleaning liquids.
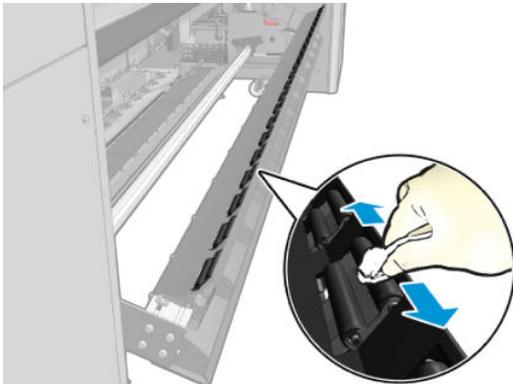
Clean the drive roller

1. Start the drive roller moving slowly backwards.

2. Clean the roller with a clean cloth dampened with distilled 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).
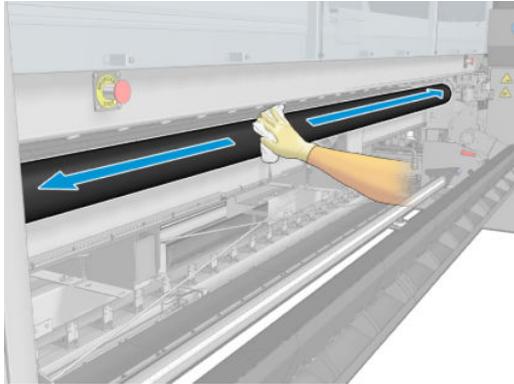
3. Stop the drive roller.

4. Wait until the roller is dry.

5. Return the pinchwheel module to its original position and close the latches.

Clean the output platen

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

For more safety information, see Safety precautions on page 2

The output platen is made of plain sheet metal with two rows of plastic ramps.

Prepare to clean the output platen

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 184.

4. Wait for the curing modules to cool down (approx. 5 min).

Pull out the curing assembly

1. Open the front door.
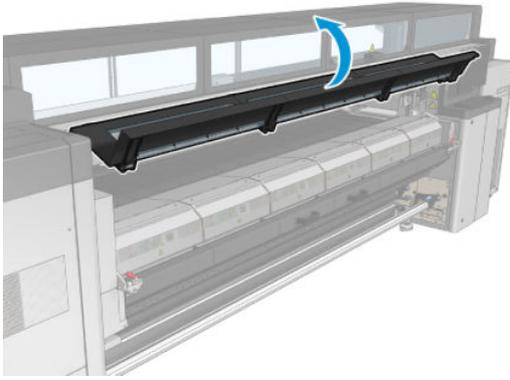
2. Open the curing module latches.
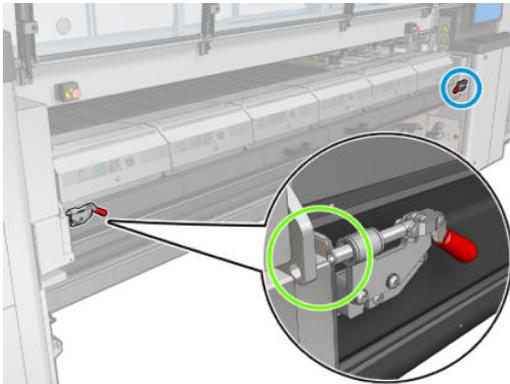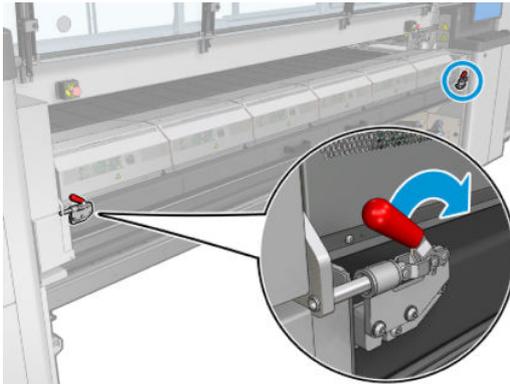
3. Pull out the curing assembly.
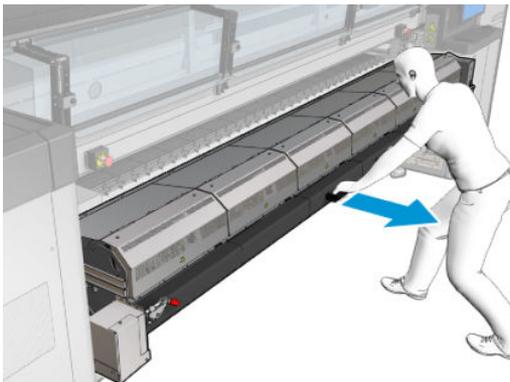
Clean the output platen

▲ In order to clean the output platen, access it from the top of the curing module.

Clean condensates from the output platen and output beams

1. If working with the ink collector, extra action is required to the clean the condensates from the output platen and output beams when removing the ink collector. Make sure that no condensates are left on the output platen, the bottom plate sides, or the paper path.
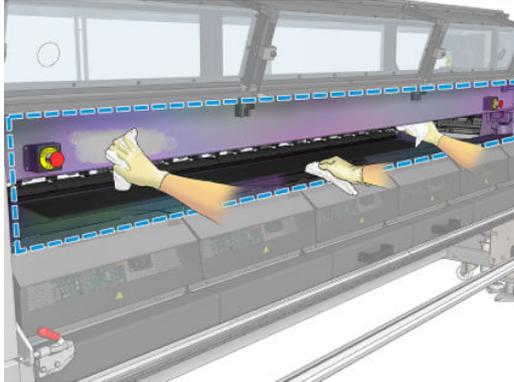
2. Check that the window rubber is not broken.

3. Clean the underneath part of the printer. Sitting or lying on the floor, clean the printer with a lint-free cloth dampened with distilled water.

4. Make sure there are no condensates or dirt in the following parts:

   ● Under the print zone and the structure beam sides

   ● Roll-to-free fall and/or diverters

   ● Drive roller

5. Open the printhead cleaning door and remove condensates or dirt from the substrate input drive motor.

Finish off cleaning the output platen

1. Push the curing assembly back to its working position.

2. Close the curing latches.

3. Put the spindle back in position.

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

Empty the condensation collector bottle

☼ TIP: You are recommended to wear gloves for this operation.

The condensation collector bottle is stored behind the left cover at the front of the printer. You can see the level of liquid in the bottle through a narrow window at the bottom of the cover.
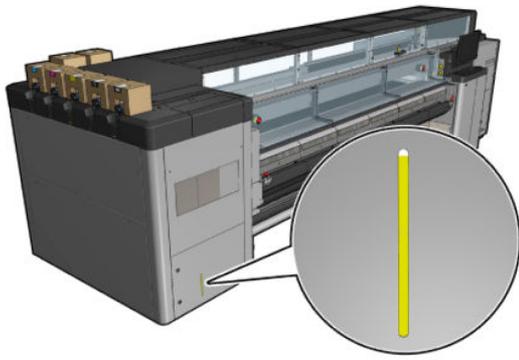
The bottle should be emptied before it is full, which will typically be after about 60–70 liters of ink have been used. You should check the bottle periodically, depending on your usage of the printer.

Empty the bottle

1. To remove the bottle, first open the two locks on the left, then open the cover; the hinges are on the right.
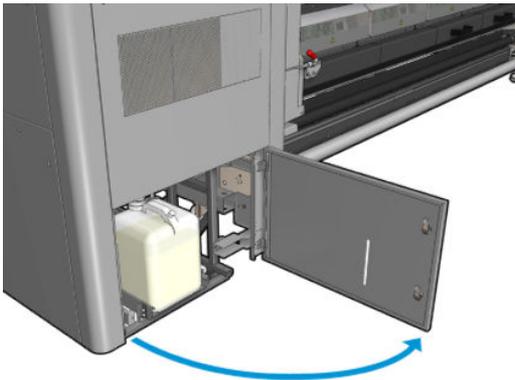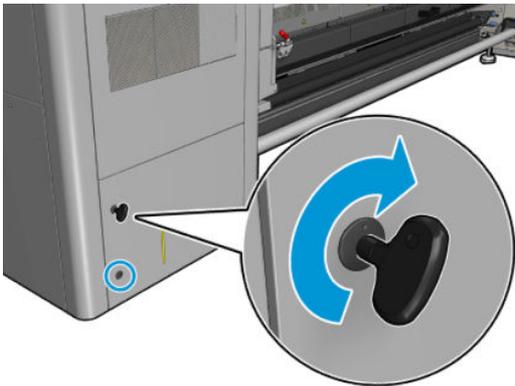
2. Remove the bottle.
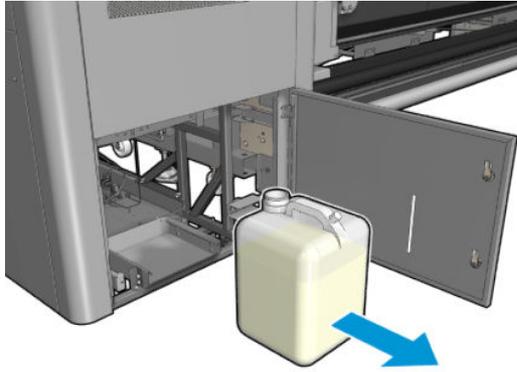
3. Empty the bottle.

📝 **NOTE:** The condensates are a mix of ink additives and water. Dispose of the condensates according to local regulations. Find the Safety Data Sheets (MSDS) of the ink in http://www.hp.com/go/msds.

4. Put back the empty bottle.
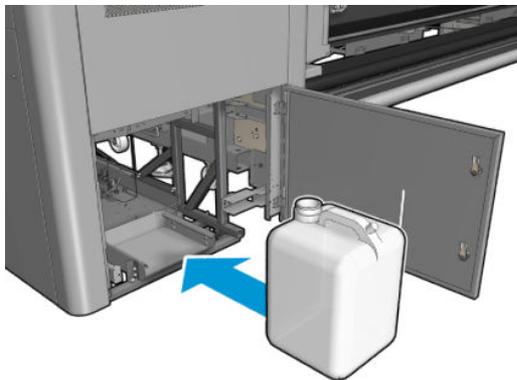
5. Take care that the mouth of the bottle is well positioned to receive the liquid falling from above.
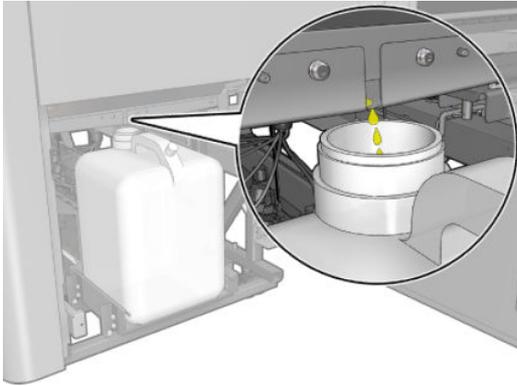
6. Close the door.

Every 125 liters of ink

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

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

For more safety information, see Safety precautions on page 2

Introduction

The following maintenance procedures are required every 125 liters of ink:

- Clean the carriage rails and replace the oiler foams on page 207

- Empty the oil collector caps on page 223

- Clean the bottom of the carriage, the drying glasses, and the line and crash sensors on page 233

- Clean the drop-detector ink deposits on page 238

- Clean the e-cabinet fan filters on page 241

- Clean the e-box fan filter on page 243

- Clean substrate input/output gears and spindle metal debris on page 247

Clean the carriage rails and replace the oiler foams

Risk of burns	Crush hazard	Risk of trapped fingers	Hazardous moving part	Light radiation hazard	Electric shock hazard

For more safety information, see Safety precautions on page 2

For the latest information, see http://www.hp.com/go/latex3000/manuals/.

Prepare to clean the carriage rails

1. Ensure that you have the Carriage Rail Cleaning Tool provided with your printer.
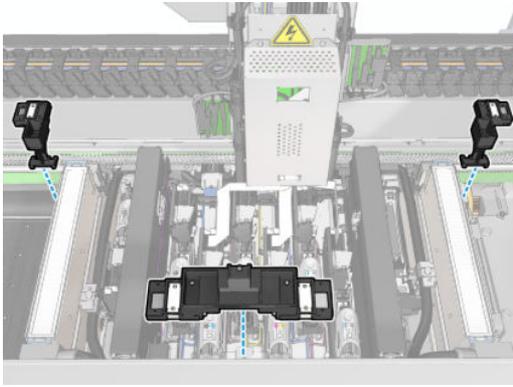
2. Ensure that you have the cleaning wicks (one bag of 20) and a 10 ml bottle of lubricant oil from the HP Latex 3x00 Printer Cleaning Kit, also provided with your printer.

3. Ensure that the printer is not printing.

4. You are recommended to wear gloves.

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

Clean the carriage rails

1. Insert the cleaning wicks into each of the sections of the Carriage Rail Cleaning Tool.

   ● Front section: 5 wicks on each side (total 10)

   ● Rear sections: 5 wicks in each section
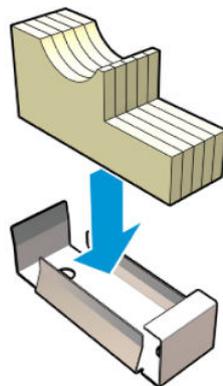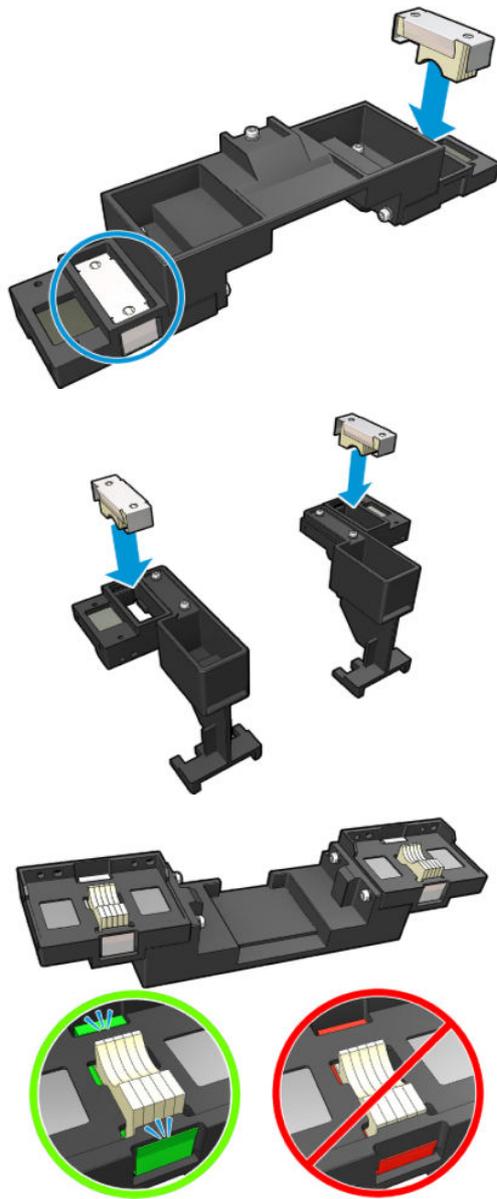
2. Moisten the surface of the wicks with the lubricant oil until it turns yellow. A fifth of the bottle should be enough for all 20 wicks.
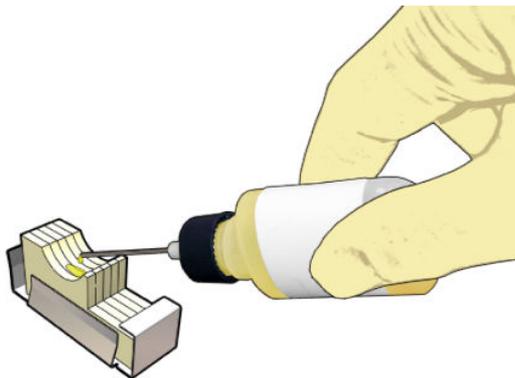
3. Run the diagnostic test to clean the carriage rail.

    The carriage will perform a series of movements and will stop at the service position.

4. Open the service position window.

    📝 NOTE: For easier service position window access, use the retractable step located directly in front of it, underneath the operator platform: simply release the lock pin and slide it out completely.

    📝 IMPORTANT: Always lock the security pin before standing on the platform.
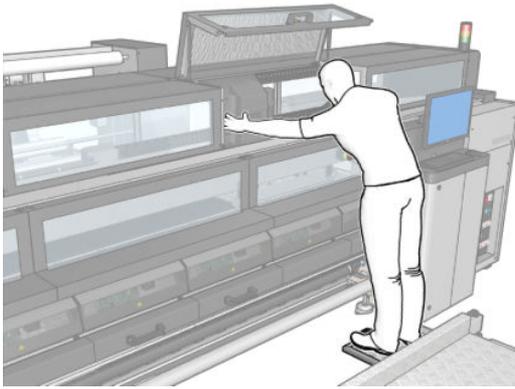
    ⚠ WARNING! Remove the 2 drying air deflectors.
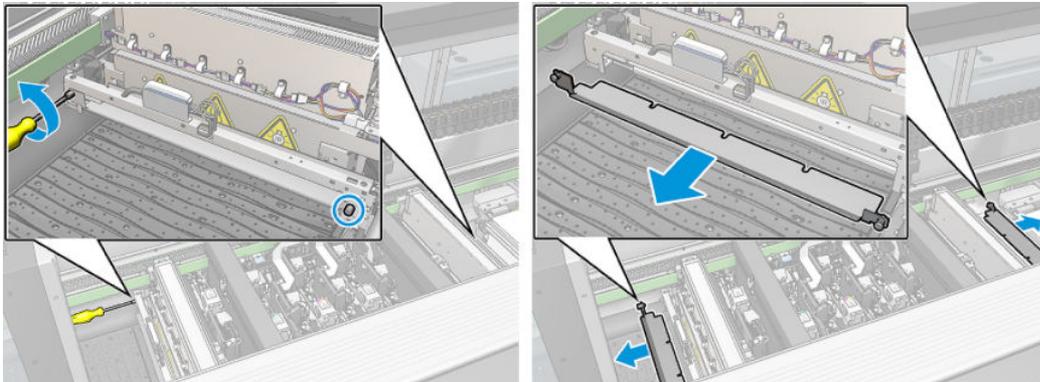
5. Insert the Carriage Rail Cleaning Tool front section.

⚠ CAUTION: If you cancel the process before completion, remember to remove the tool from inside the printer.
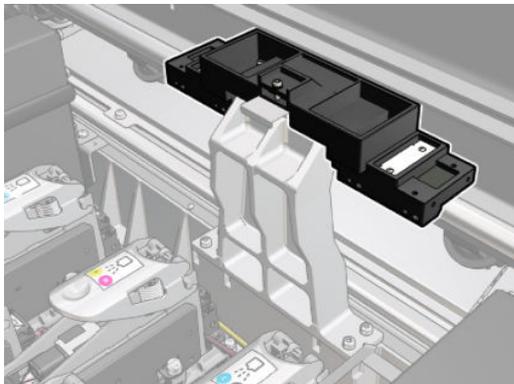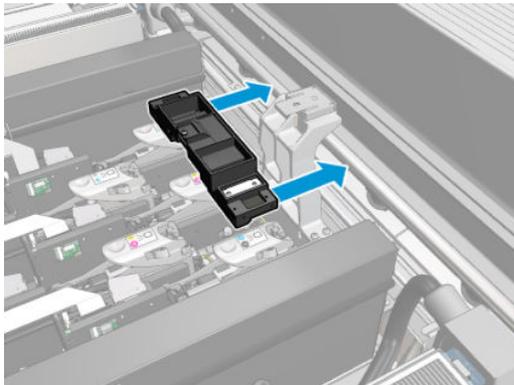
6. Insert the Carriage Rail Cleaning Tool rear sections.
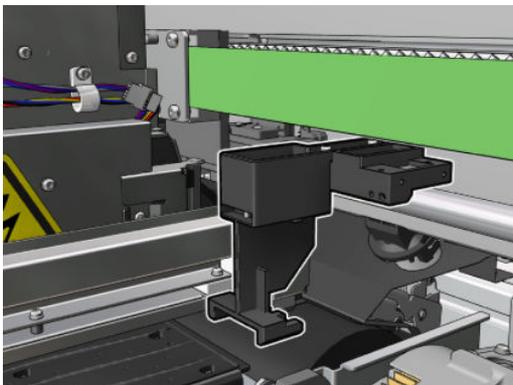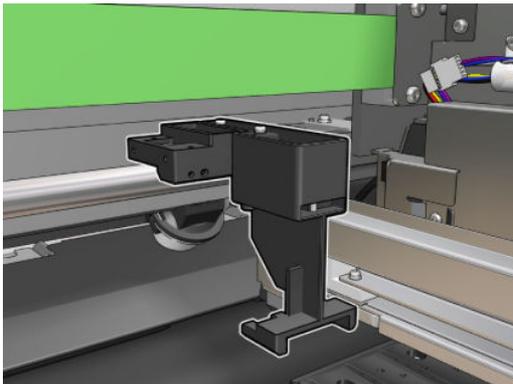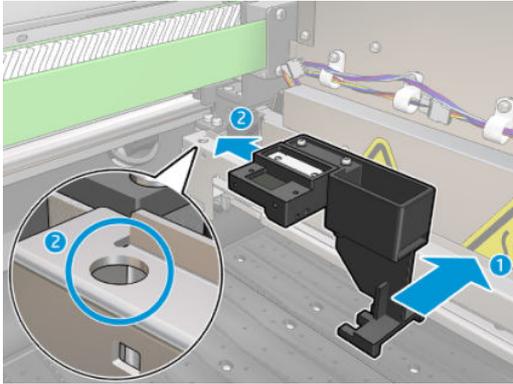
7. Close the service position window and click **Continue**.

8. When prompted, open the service position window.

📝 **NOTE:** For easier service position window access, use the retractable step located directly in front of it, underneath the operator platform: simply release the lock pin and slide it out completely.

📝 **IMPORTANT:** Always lock the security pin before standing on the platform.
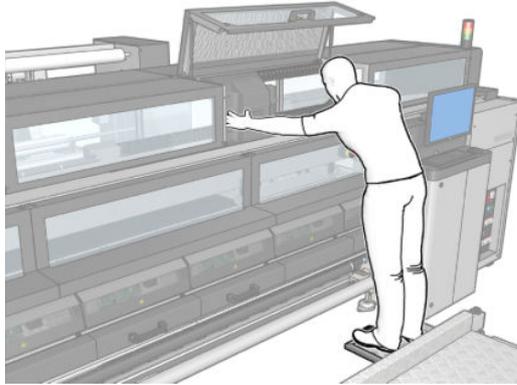
9. Remove the three Carriage Rail Cleaning Tool sections. Add the drying air deflectors.

10. Close the service position window. The carriage returns to its normal position.

11. Remove the cleaning wicks from the Carriage Rail Cleaning Tool sections and dispose of them appropriately, according to local regulations.

📝 **NOTE:** If this carriage rail cleaning process fails, there is an alternative procedure: see Clean the carriage rails manually on page 340.

Prepare to replace the oiler foams

1. Ensure that you have the Oiler Foams Kit included in the HP Latex 3x00 Printer Cleaning Kit, provided with your printer.

2. Take the replacement oiler foams and wicks from the kit.

3. Move the carriage to the service position.

4. Turn off the printer in the correct way for maintenance operations: see Turn the printer off on page 184.

5. Open the service position window.

> **NOTE:** For easier service position window access, use the retractable step located directly in front of it, underneath the operator platform: simply release the lock pin and slide it out completely.

> **IMPORTANT:** Always lock the security pin before standing on the platform.
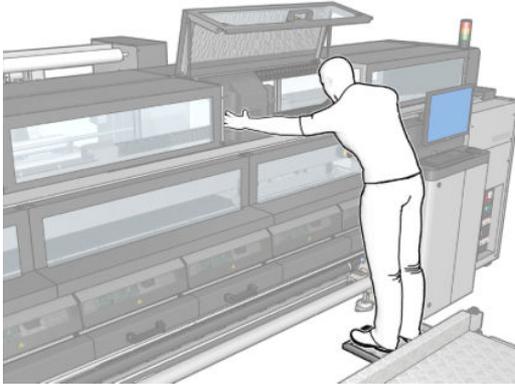

Replace the front oiler foam and wicks

1. Locate the front oiler foam in the carriage.
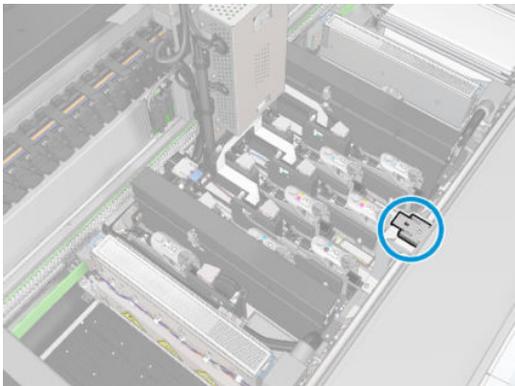
2. Slide off the cover of the front oiler foam.
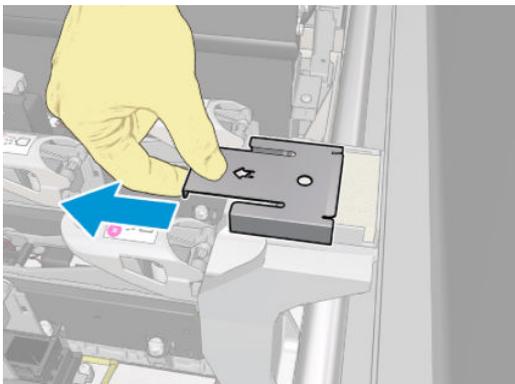
3. Remove the old foam.
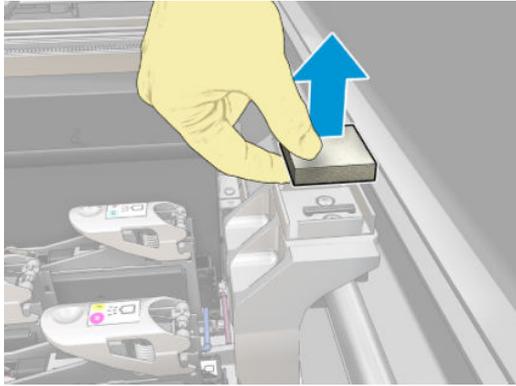
4. Remove the old wicks.
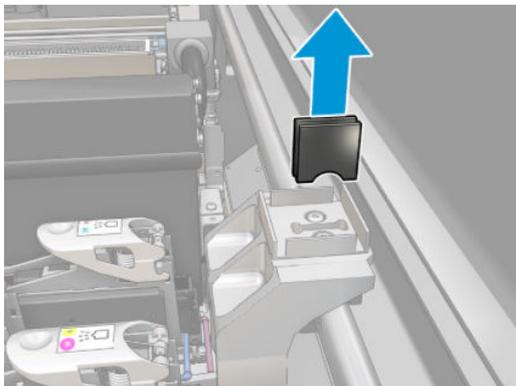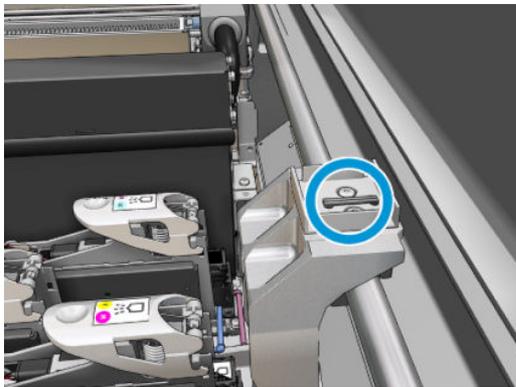
5. Insert the new wicks.
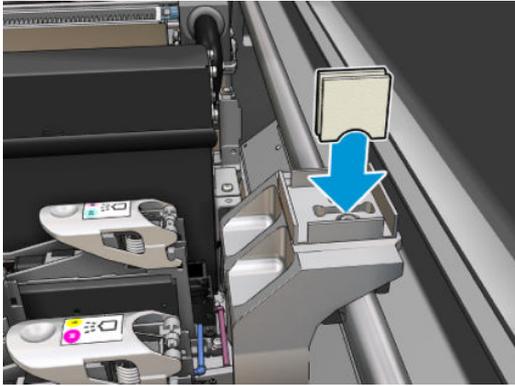
6. Insert the new foam.
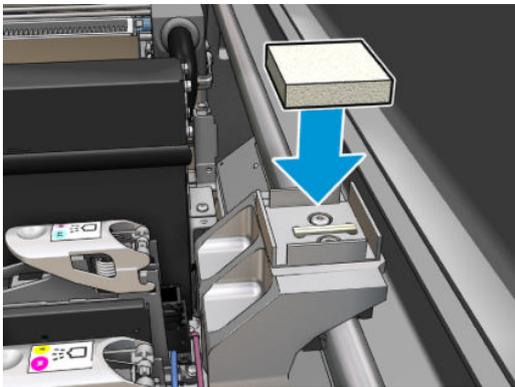
7. Put back the cover.
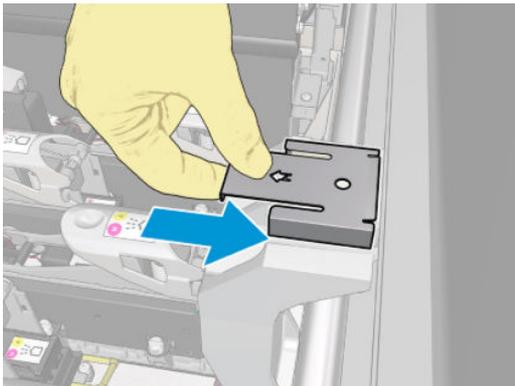
Replace the rear oiler foam and wicks

1. Locate the rear oiler foam in the carriage.
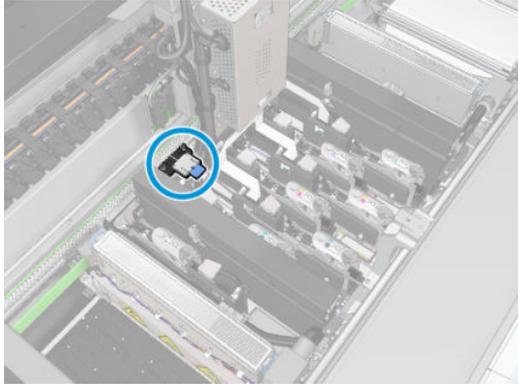
2. Slide off the cover of the rear oiler foam.
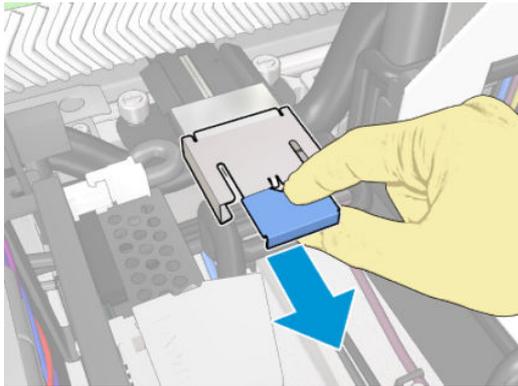
3. Remove the old foam.
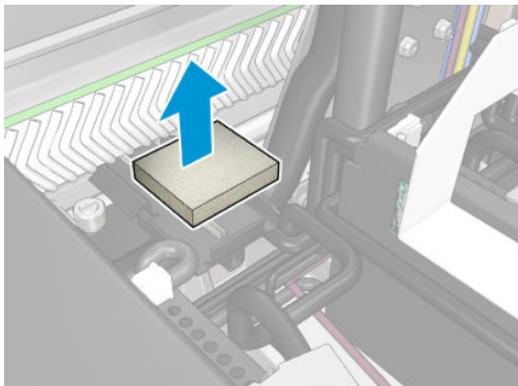
4. Loosen the two screws that attach the black oiler holder to the carriage, and pull the holder out of the carriage
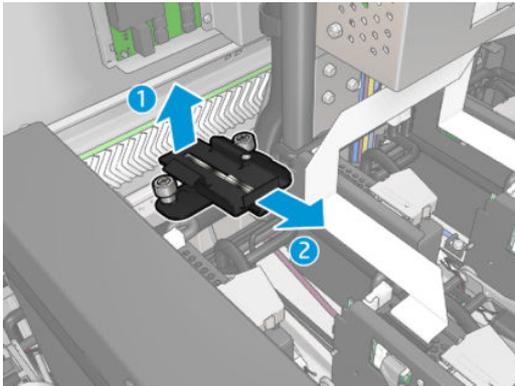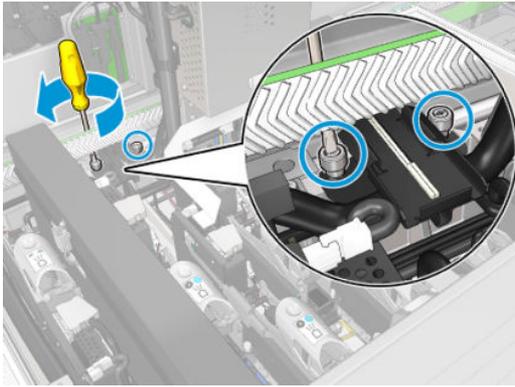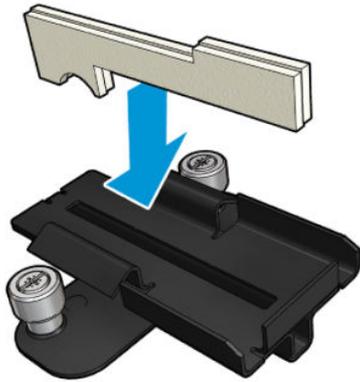
5. If the oiler also has a felt retainer fitted, remove it, and the 2 used felts. If not, skip this step.
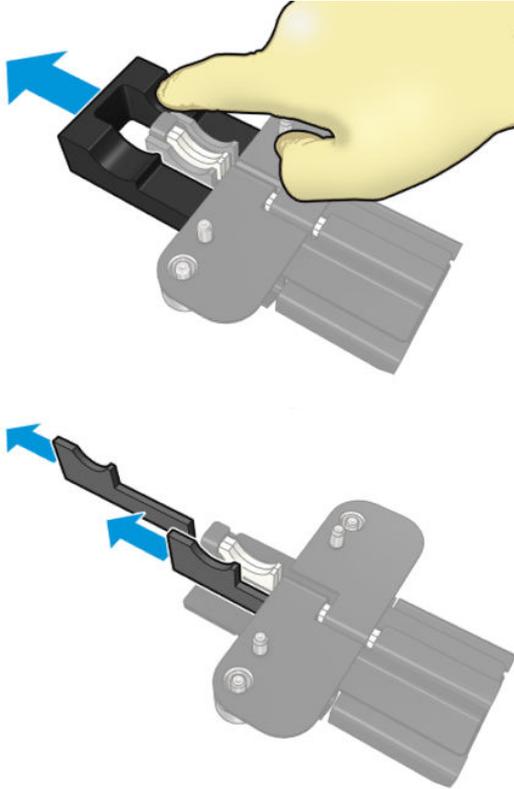
6. Remove the used wicks.
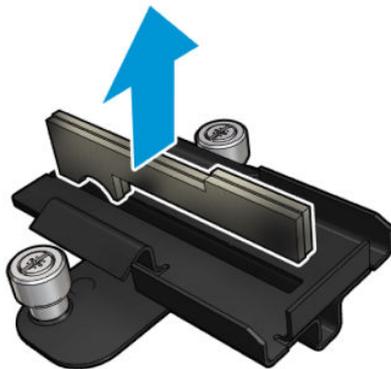
7. Insert the new wicks.

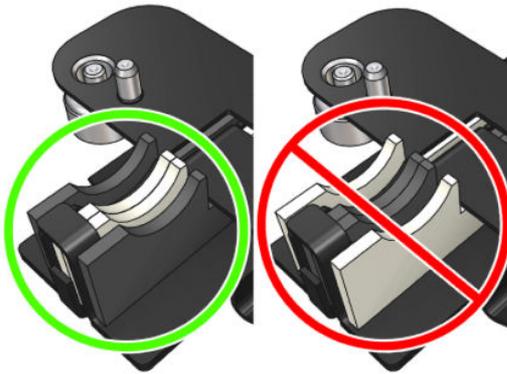
Check that the wicks are inserted correctly.

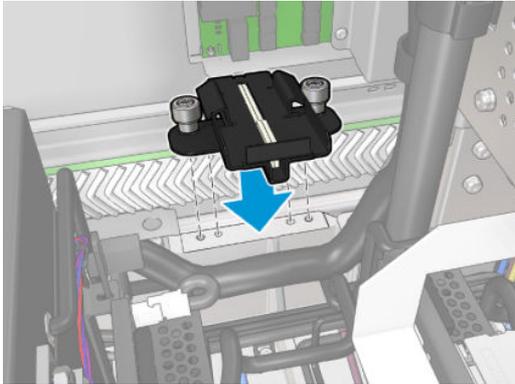8. If the oiler had the felt retainer fitted, insert 2 new felts, one on each side. If not, go to step 10.
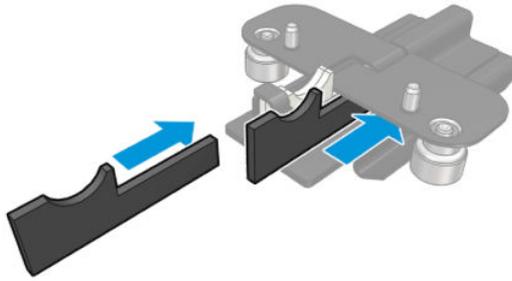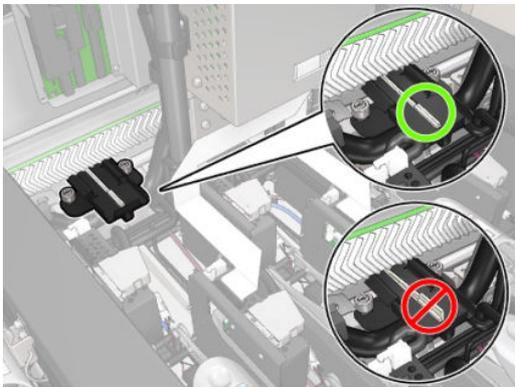
9. Insert the felt retainer.
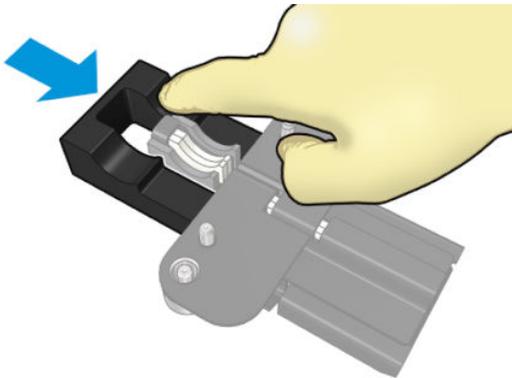
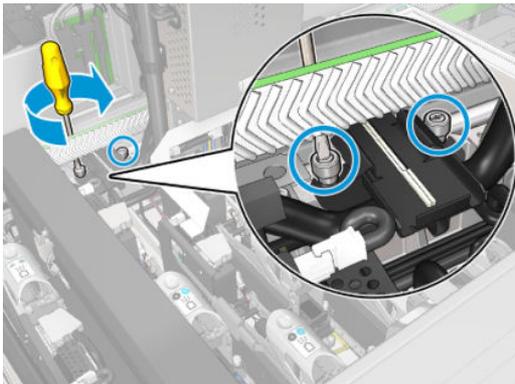Check that the wicks and retainer are inserted and fitted correctly.

10. Put the black oiler holder back into position. The holder has two pins to locate it properly.
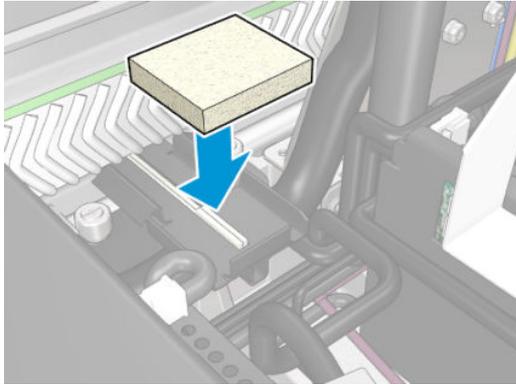

11. Check again that the new wicks are inserted correctly.

12. Tighten the screws.

13. Insert the new foam.

14. Slide in the cover.

15. Close the service position window.

Finish off replacing the oiler foams

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 Turn the printer on on page 185.

Empty the oil collector caps

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

For more safety information, see Safety precautions on page 2

Prepare to empty the oil collector caps

1. Ensure that you have a flashlight (not provided) as recommended in the maintenance tool set.
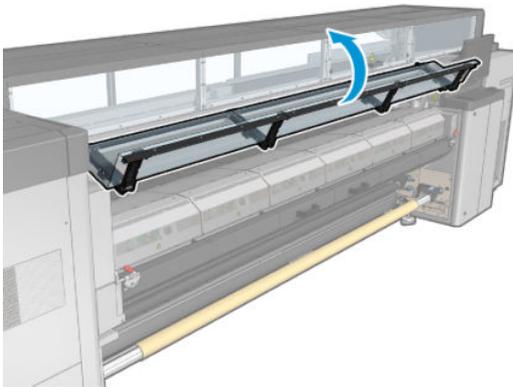
2. Ensure that the printer is not printing.

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 .
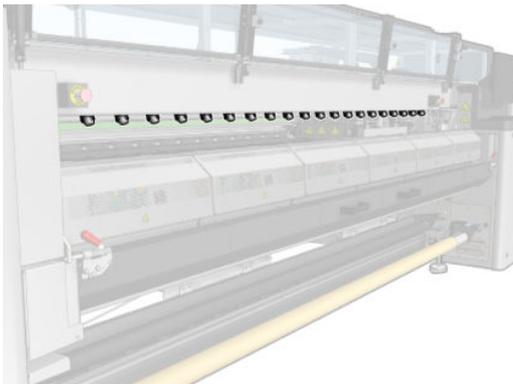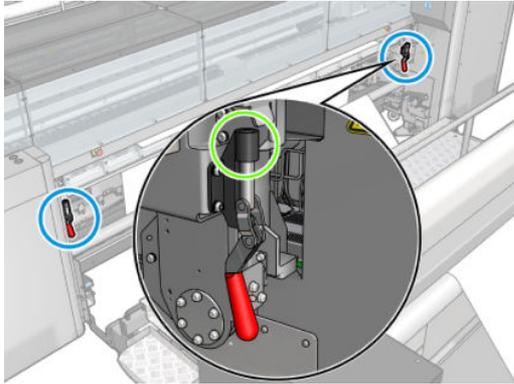

Empty the oil collector caps

1. Open the front door.

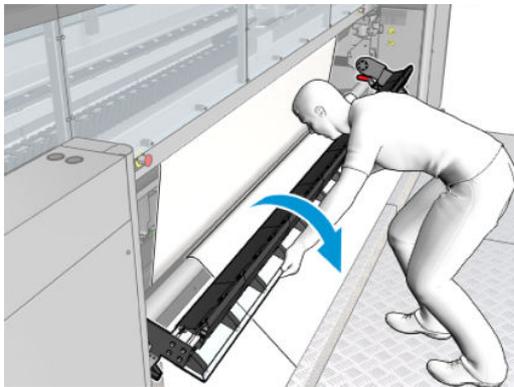2. Check all of the front collectors at the center of the printer.

3. Open the loading table latches.

4. Open the loading table.

5. Check all of the back collectors at the center of the printer.
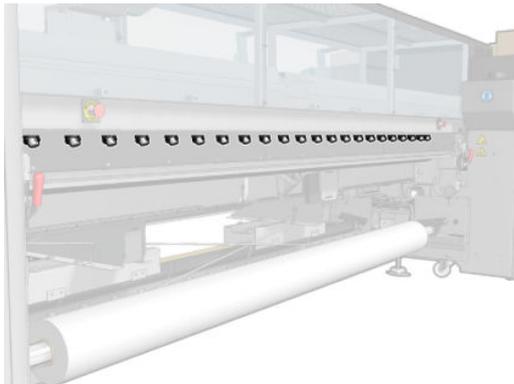
6. Open the printhead cleaning roll door at the front right of the printer.
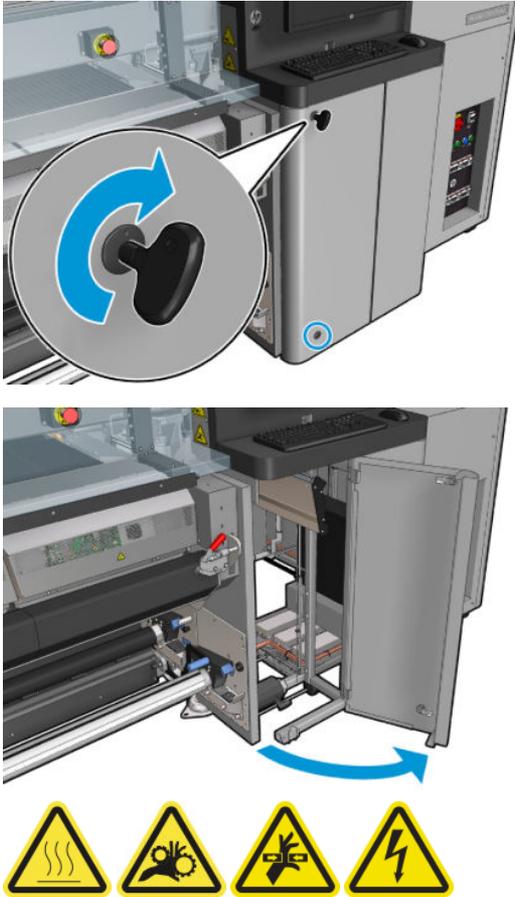
7. Check the front and back collectors visible from the door.
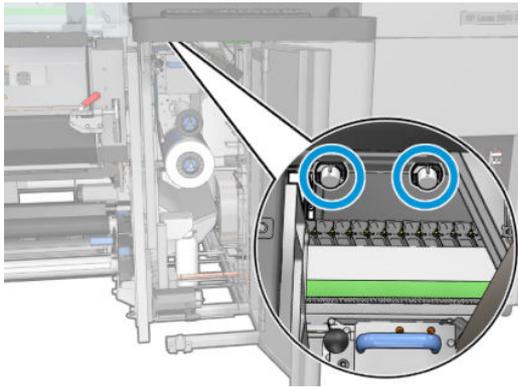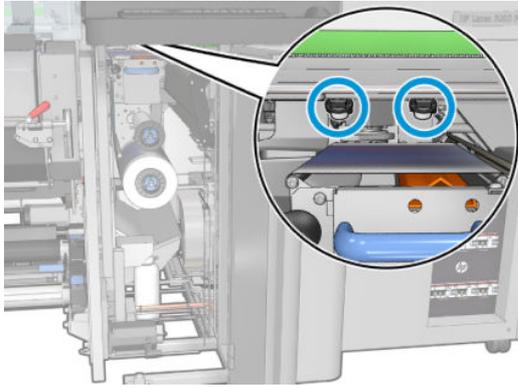
8. Unscrew and remove the cover to access the capping station.
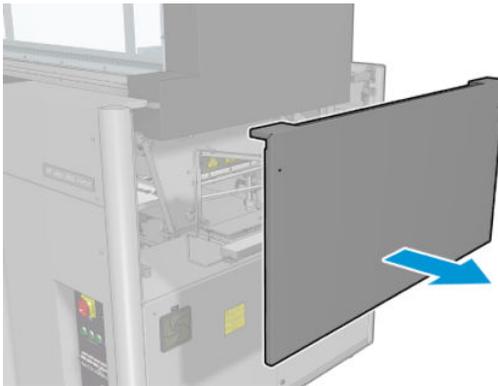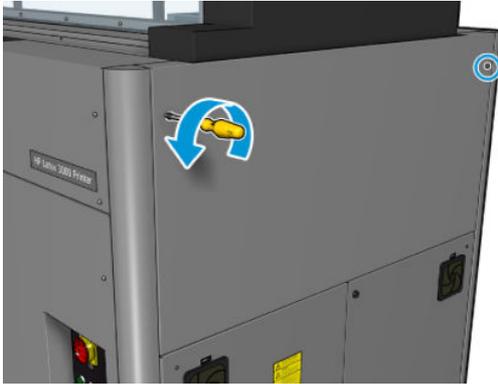
9. Check the front and back collectors visible from the opened cover.
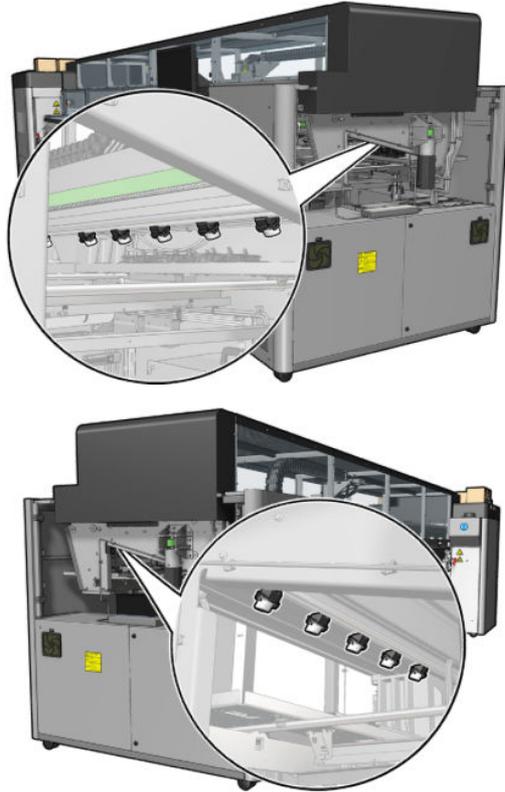
Also check the trays on the right; clean them if necessary by absorbing the oil with a cloth or other absorbent material.
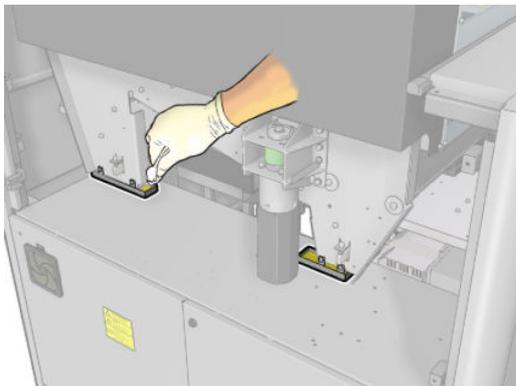
10. Unscrew the pointed screws and remove the left cover.
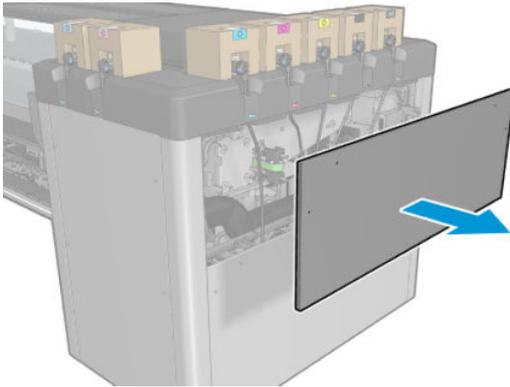
11. Check the front and back collectors visible from the opened cover. One of the back screws has no collector, as indicated below.
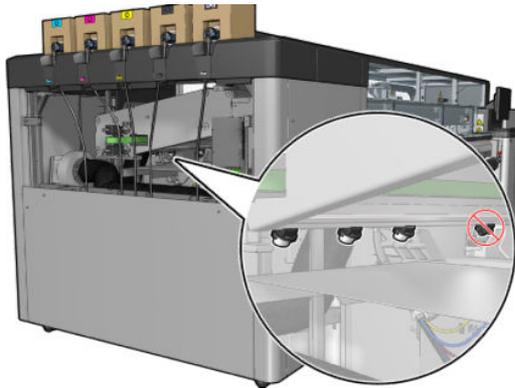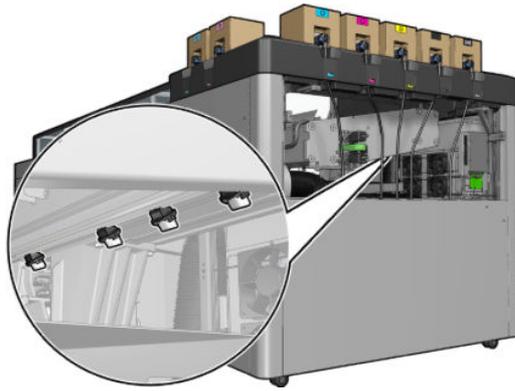
Also check the tray on the left; clean it if necessary by absorbing the oil with a cloth or other absorbent material.
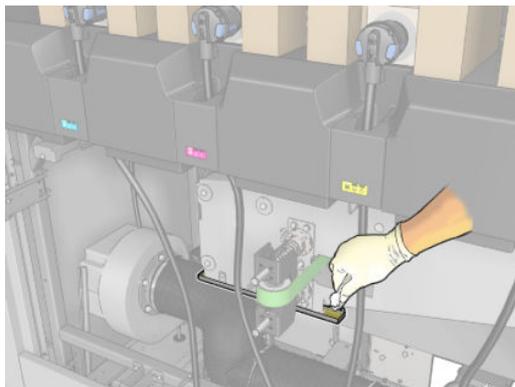
12. In each case, remove and empty the collectors that are full, as shown below, and dispose of the oil according to local regulations.

Maximum oil level
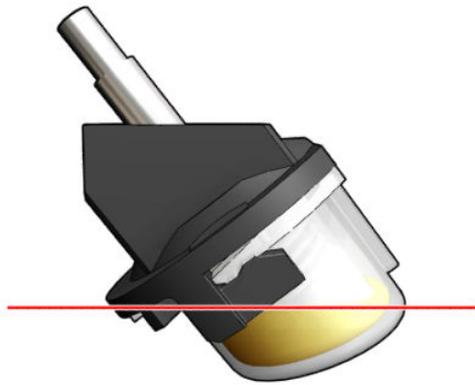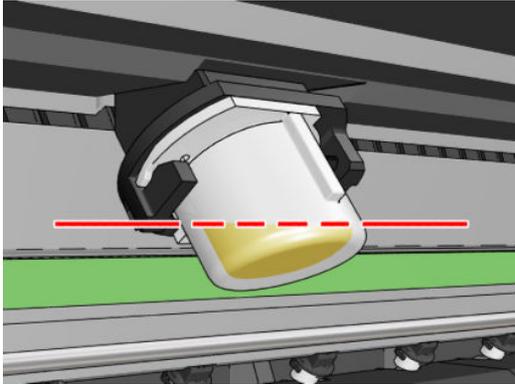
Remove collector
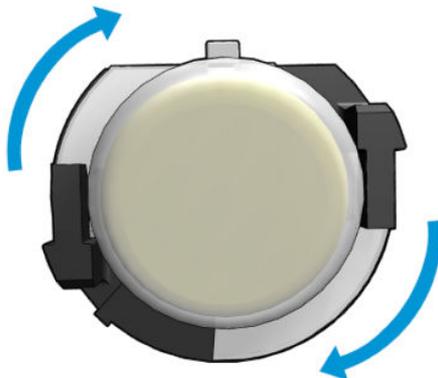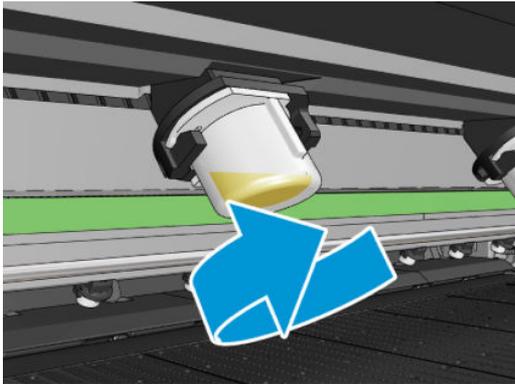
13. Put the emptied collectors back into place.

14. Recheck that all the emptied collectors in the each accessed area are back in place.

Finish off after emptying the oil collector caps

1. Close the loading table and secure the latches.

2. Close the front door.

3. Put back the covers and screw them into place.

4. Close the printhead cleaning roll door.

5. Turn on the printer in the correct way for maintenance operations: see Turn the printer on on page 185.

Clean the bottom of the carriage, the drying glasses, and the line and crash sensors

Risk of burns	Crush hazard	Risk of trapped fingers	Hazardous moving part	Light radiation hazard	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 HP Latex 3x00 Printer Cleaning Kit, provided with your printer.

    📝 NOTE: A steel scourer is not provided but will also be needed.

2. Ensure that the printer is not printing.

3. Unload the substrate.

4. Wait for the drying modules to cool down (about 10 min).

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

6. Move the printhead carriage to the service position.

7. Move the carriage beam to its highest position (this takes about 2 minutes).

8. Turn off the printer in the correct way for maintenance operations: see Turn the printer off on page 184.

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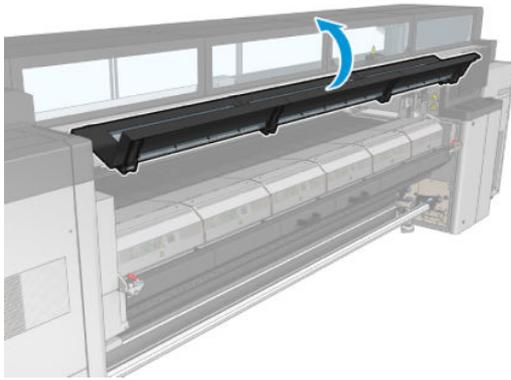
NOTE: For some operations, there is better access from the back of the printer. Open the loading table too if you find it useful.

Clean the carriage bottom

▲ Clean the carriage bottom with a lint-free cloth dampened with distilled water. **Be very careful not to touch the printheads.**
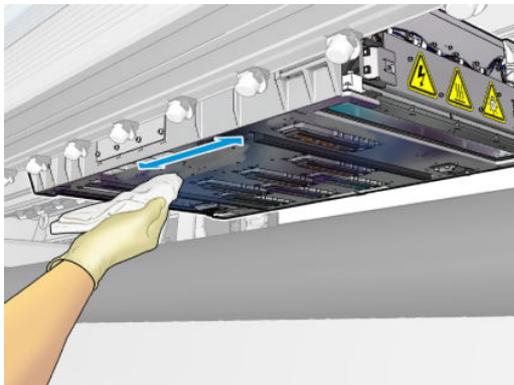
Clean the aerosol nozzles

▲ Clean the aerosol nozzles with a dampened cloth.
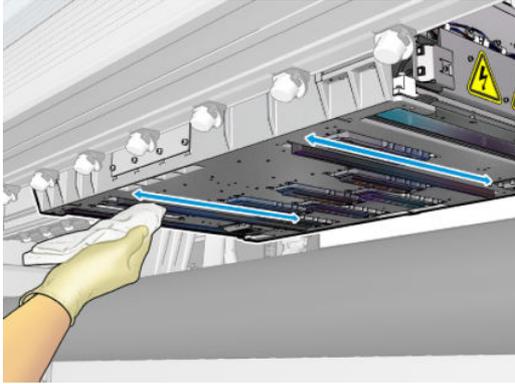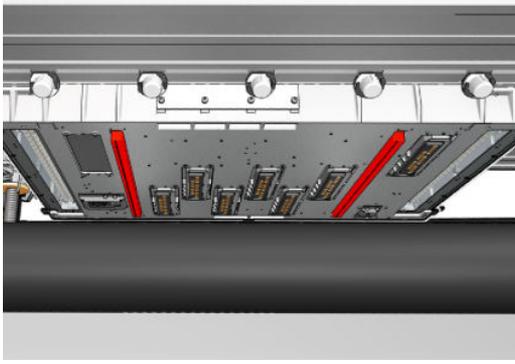
Clean the drying glasses

1. Clean the drying glasses with a dampened cloth.
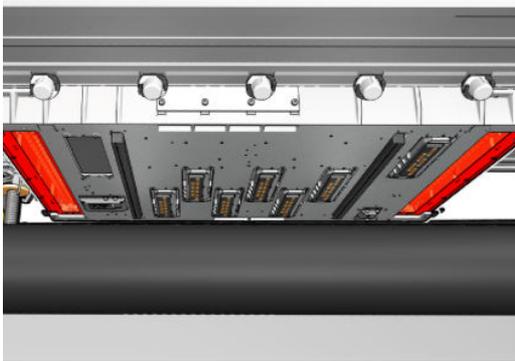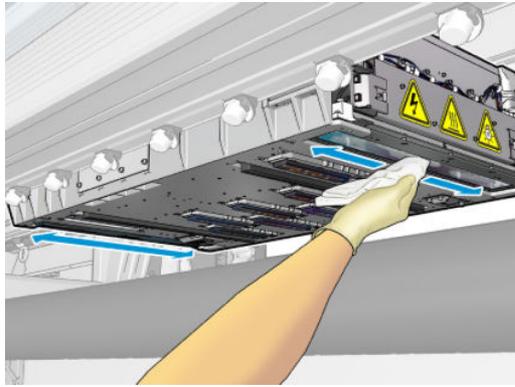
2. Clean the drying glasses with a steel scourer.

3. Continue cleaning the drying glasses with cloth and scourer until they are completely clean.

Clean the line and crash sensors

1. Wipe the line sensor and two crash sensors with one of the cotton swabs provided in the Printer Cleaning Kit, slightly dampened with distilled water.
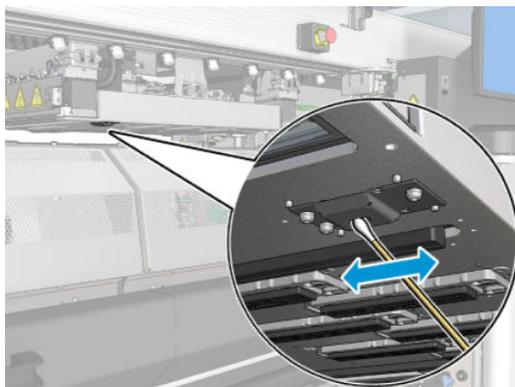
2. Wipe the crash sensor emitter and receiver lenses located at both sides of the carriage with one of the cotton swabs (provided in the Printer Cleaning Kit) slightly dampened with water. Once cleaned, ensure the parts are completely dry.

Finish off cleaning the carriage bottom

1. Close the front door.

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

3. Turn on the printer in the correct way for maintenance operations: see .

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

5. Move the carriage beam back to its working position (this takes about 2 minutes).

6. Move the carriage back to its working position.

Clean the drop-detector ink deposits

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

For more safety information, see Safety precautions on page 2

NOTE: These ink deposits are dried and cured onto surfaces and may be difficult to remove.

Prepare to clean the ink deposits

1. Ensure that you have a steel scourer (not provided).

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 184.

Clean the ink deposits

1. Unscrew and open the right front cover to access the capping station.
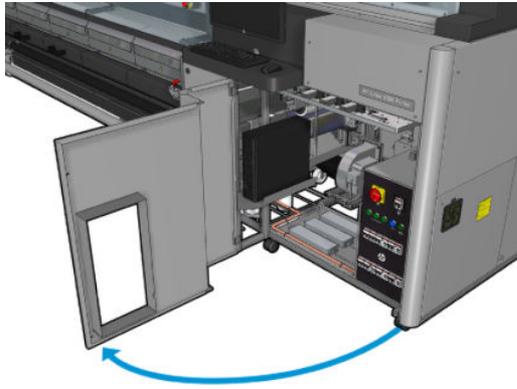
2. There are seven ink deposits to be cleaned.
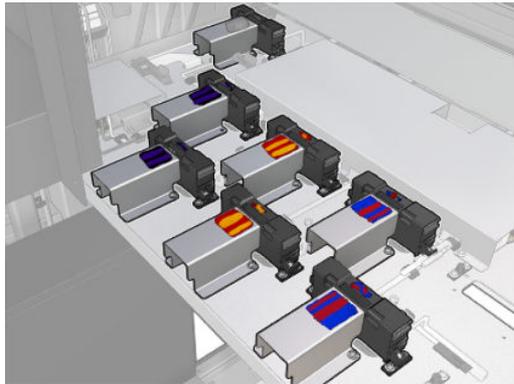
3. Dampen the surface of each ink deposit with a cloth dampened with isopropyl alcohol.

📝 NOTE: If you are in an area (such as California) that regulates VOC cleaning and maintenance fluids, instead of isopropyl alcohol use a VOC-certified cleaner such as a properly diluted Simple Green All-Purpose Cleaner.
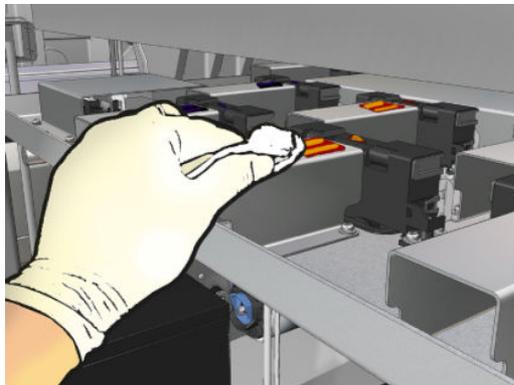
4. Scrub the surface of each ink deposit with the steel scourer, taking care to move it from the inside of the printer towards the outside, to avoid pushing dirt into the drop detector.
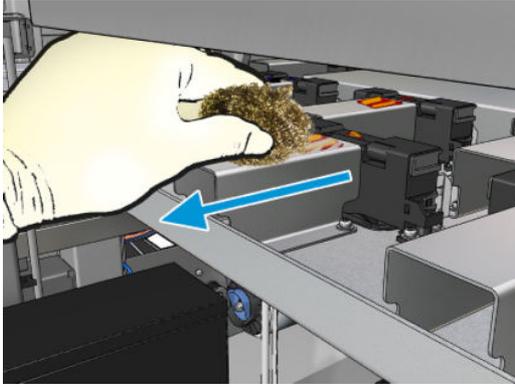
> **TIP:** If access or visibility is not good enough, remove the upper section of the right front cover by unscrewing the screws shown below.
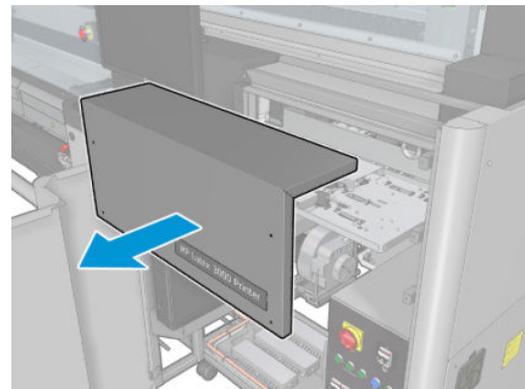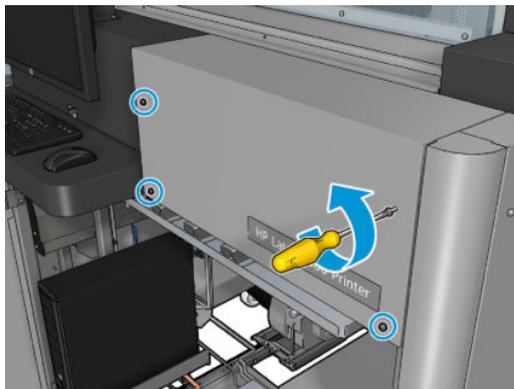
5. Clean the surface of each ink deposit with a cloth dampened with isopropyl alcohol.

> **NOTE:** If you are in an area (such as California) that regulates VOC cleaning and maintenance fluids, instead of isopropyl alcohol use a VOC-certified cleaner such as a properly diluted Simple Green All-Purpose Cleaner.
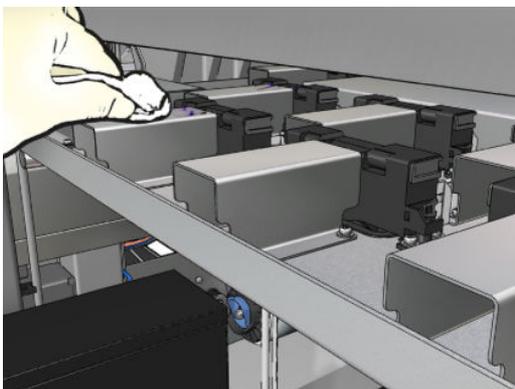
Finish off after cleaning the ink deposits

1. If you removed it earlier, put back the upper section of the right front cover and screw it into place.

2. Close the right front cover and screw it into place.

3. Ensure that the cleaned parts are completely dry.

4. Turn on the printer in the correct way for maintenance operations: see Turn the printer on on page 185.

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.
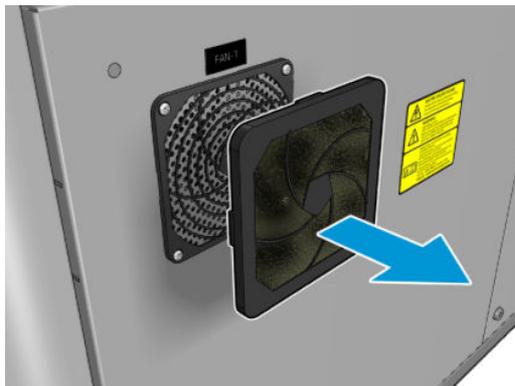
2. For each fan, take the fan filter and clean by blowing it with the air gun. Be careful to locate it back correctly: it must cover the fan's square surface.

> **⚠ 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.
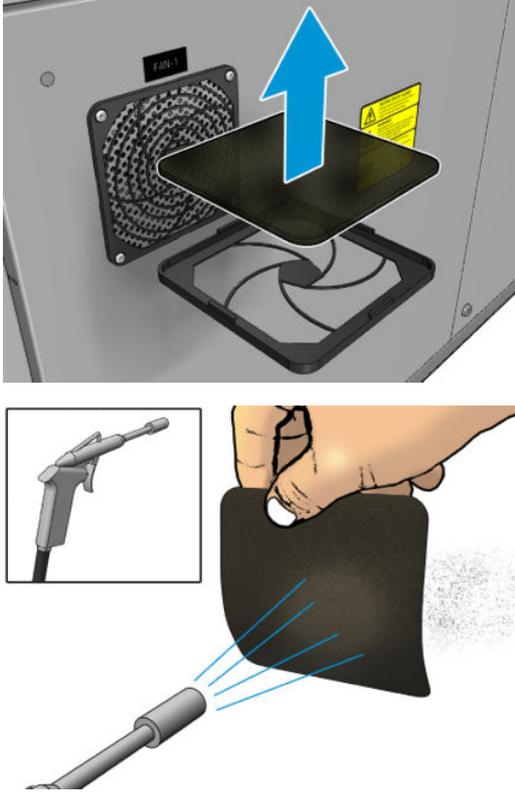
3. Put back the fan cover.

Clean the e-box fan filter

Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard	Moving fan blades

For more safety information, see

Prepare to clean the e-box fan filter

1. Turn off the printer and the power-enable switch.

2. Locate the rear right panel assembly.

3. Remove the two pointed T-20 screws that attach the rear right panel assembly.
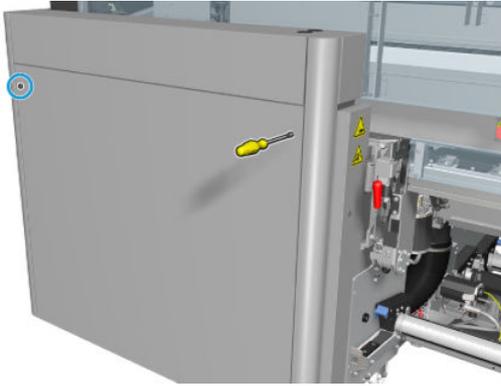
4. Remove the rear right panel assembly.
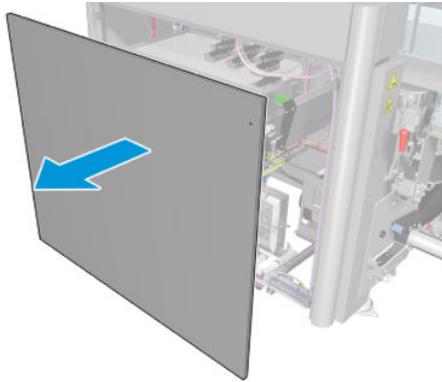
5. Remove the two T-20 screws from the e-box support and pull it out carefully.
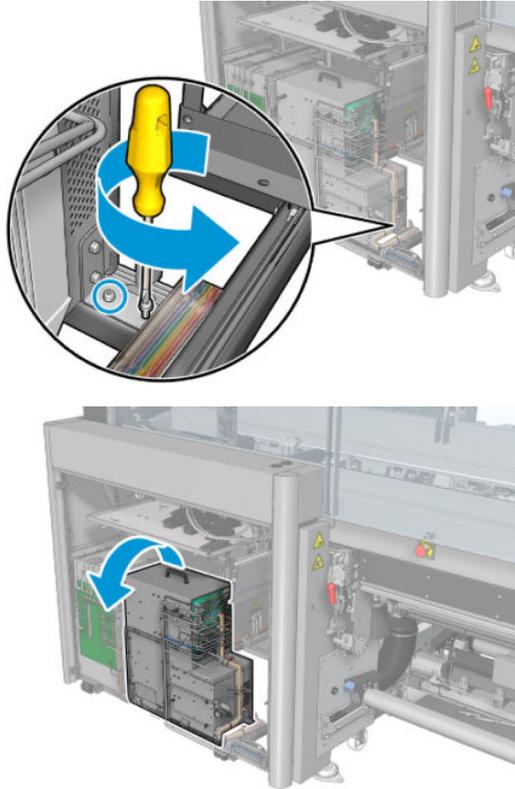
Clean the e-box fan filter

1. Pull off the plastic fan filter cover.
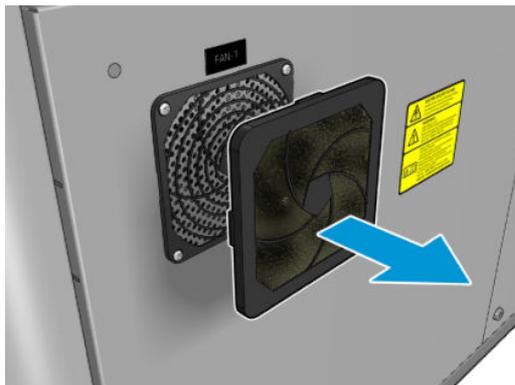
2. Take the fan filter and clean by blowing it with the air gun. Be careful to locate it back correctly: it must cover the fan's square surface.

⚠ 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.
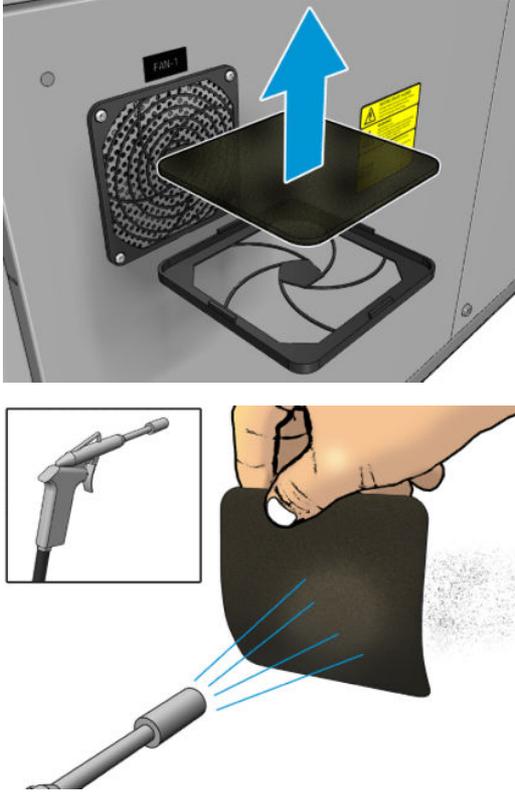
3. Put back the fan cover.
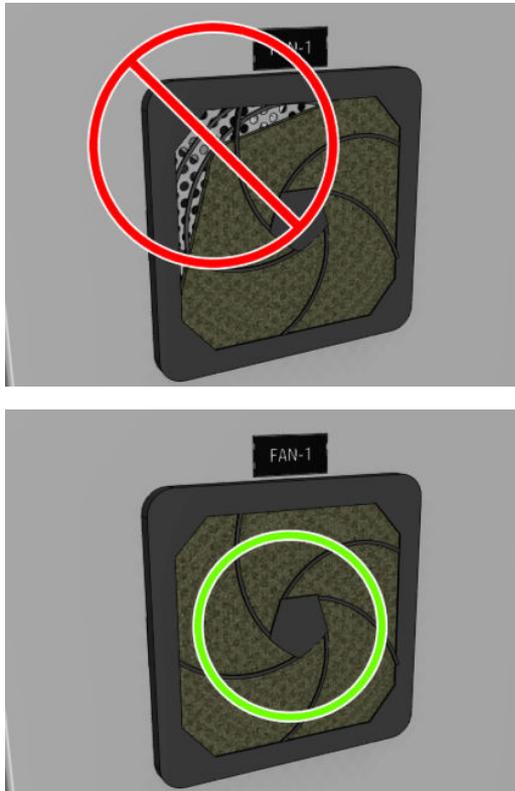
Clean substrate input/output gears and spindle metal debris

Risk of burns	Crush hazard	Risk of trapped fingers	Hazardous moving part	Light radiation hazard	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 184.

2. Remove the spindle.

3. Clean any metal debris from the bearings with a brush.
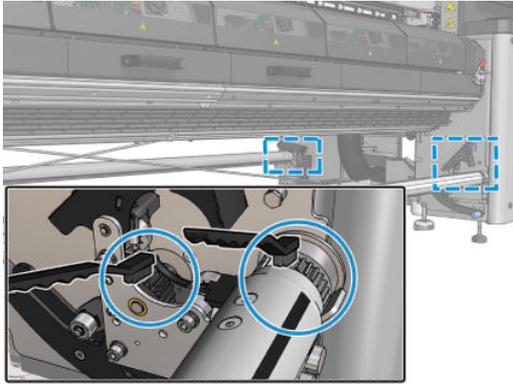
Every 500 liters of ink

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

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

For more safety information, see Safety precautions on page 2

Introduction

The following maintenance procedures are required every 500 liters of ink:

- Replace the rubber blade on page 249

Replace the rubber blade

Risk of burns	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 (CZ056-67046), which is included in the Printer Maintenance Kit (1HA07-67008 or 1VT19A) but can also be purchased separately.

2. Ensure that the printer is not printing.

3. Unlock and open the printhead cleaning roll door.
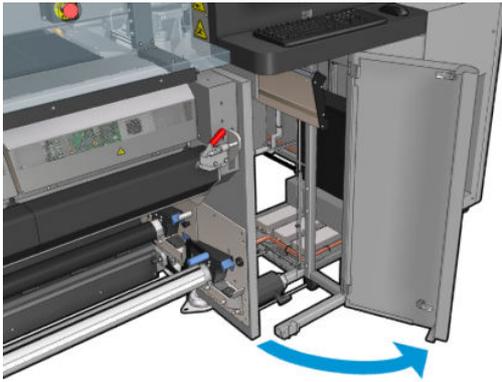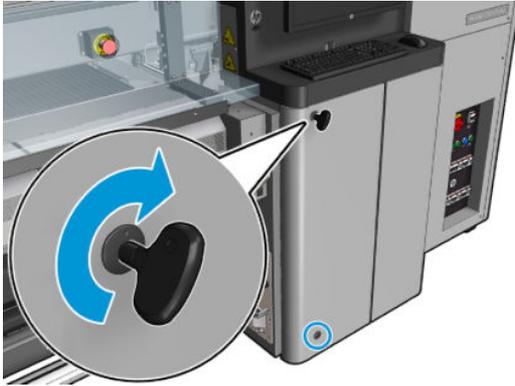
4. Pull out the printhead cleaning roll carriage.
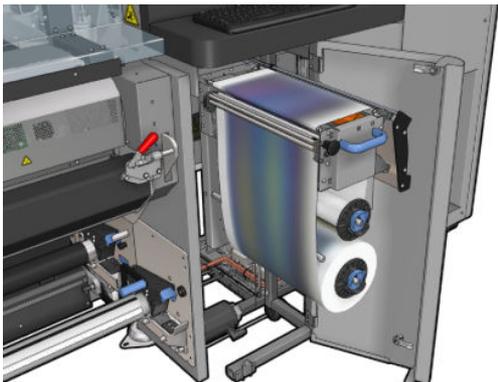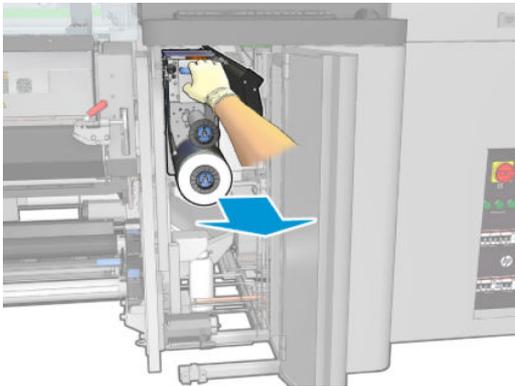
5. Put on gloves to protect your hands.

6. Open the pinchwheel (pull out and rotate the black plastic knob).
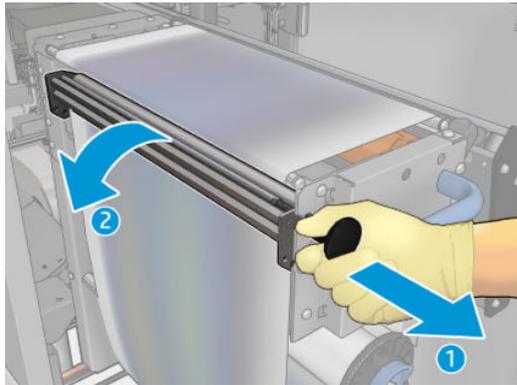
7. Move the printhead cleaning material aside in order to uncover the rubber blade.
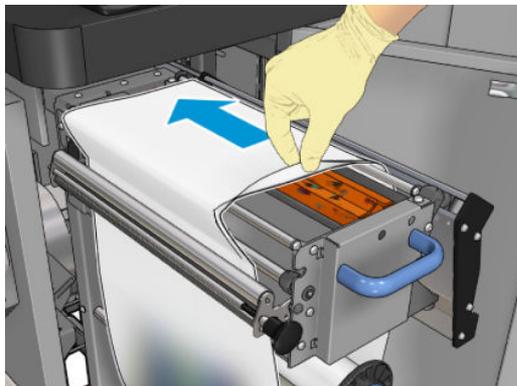
Replace the rubber blade

1. Move the rubber blade to the replacement position.
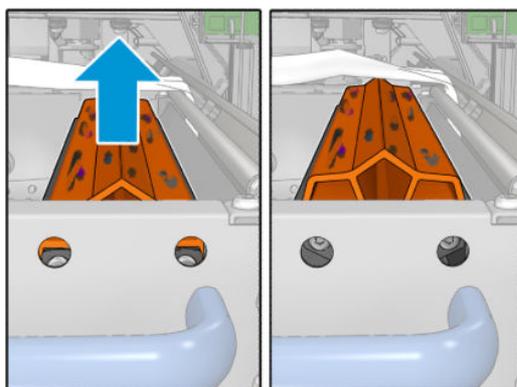
2. Use a torx 15 screwdriver to remove the two screws shown below. While you unscrew them, you must hold the two spacers shown on the right (otherwise, they will fall and might get lost).
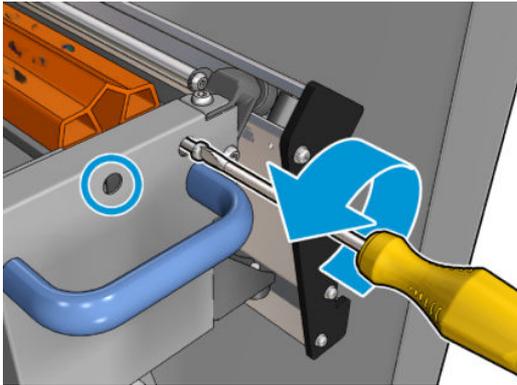
3. Remove the spacers.
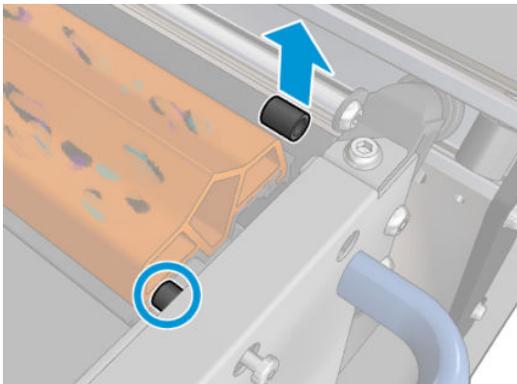
4. Remove the rubber blade and place the new one in position.
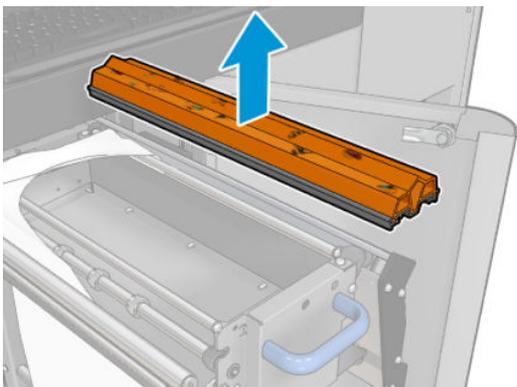
5. Replace the screws. Screw them in with one hand while holding the spacer in place.

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 and lock the door.

Every 1500 liters of ink

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

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

For more safety information, see Safety precautions on page 2

Introduction

The following maintenance procedures are required every 1500 liters of ink:

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 HP Latex 3x00 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.
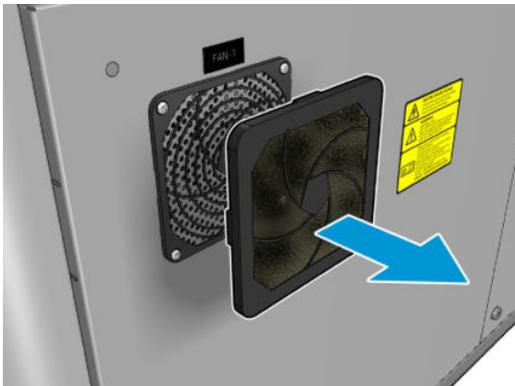
2. For each fan, change the fan filter for the new one provided. Be careful to locate it correctly: it must cover the fan's square surface.
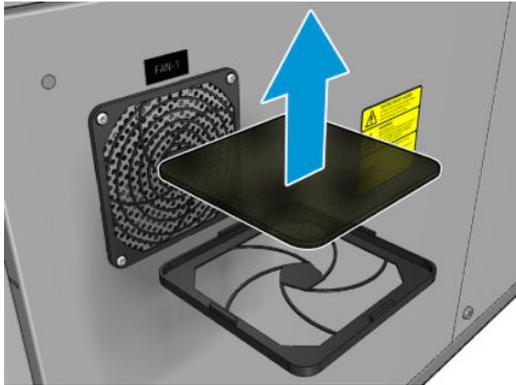
3. Put back the fan cover.
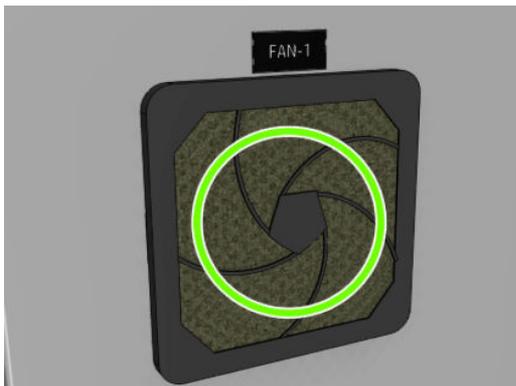
Replace e-box fan filter

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 HP Latex 3x00 Printer Cleaning Kit.

1. Turn off the printer and the power-enable switch.

2. Locate the rear right panel assembly.

3. Remove the two pointed T-20 screws that attach the rear right panel assembly.
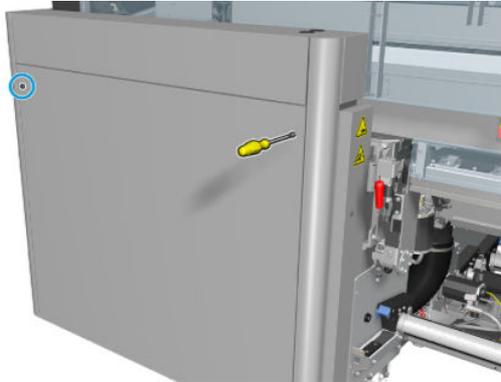
4. Remove the rear right panel assembly.
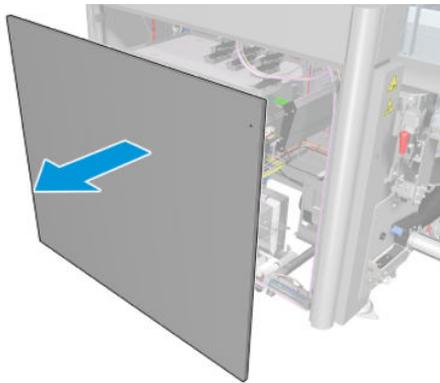
5. Remove the two T-20 screws from the e-box support and pull it out carefully.
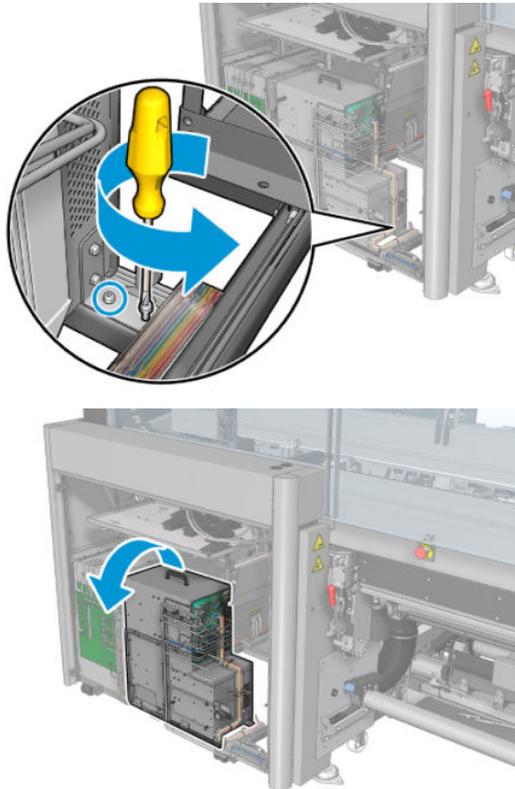
Replace the e-box fan filter

1. Pull off the plastic fan filter cover.
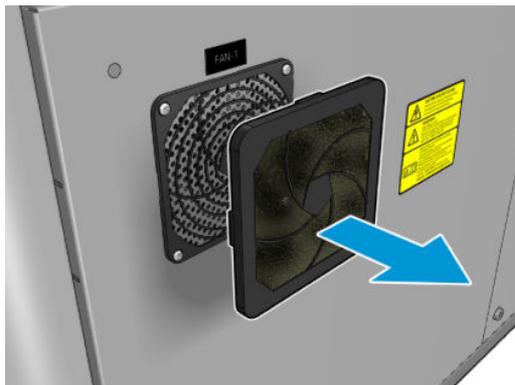
2. Change the fan filter for the new one provided. Be careful to locate it correctly: it must cover the fan's square surface.
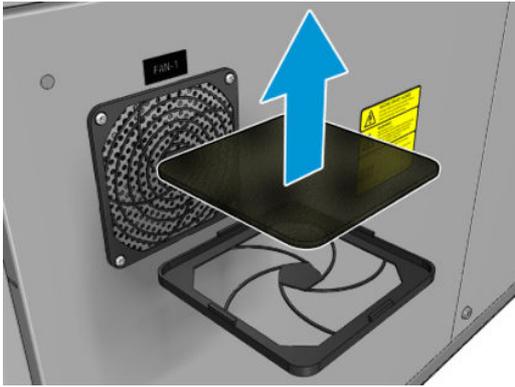
3. Put back the fan cover.
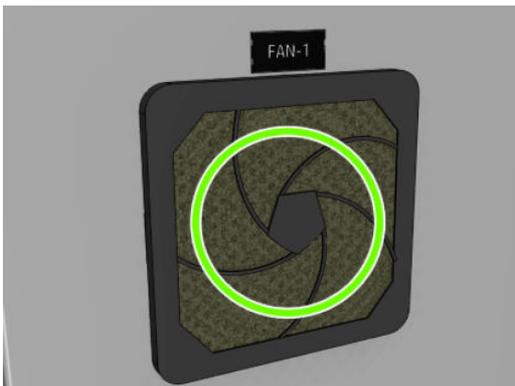
Clean the impinging plate

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

For more safety information, see Safety precautions on page 2

The perforated plate is a drilled metallic sheet located in the curing assembly. Through its holes the curing fans blow hot air onto the substrate.

Prepare to clean the impinging plate

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 .

4. Wait for the curing modules to cool down (approx. 5 min).

5. Remove the spindle.

Pull out the curing assembly

1. Open the front door.
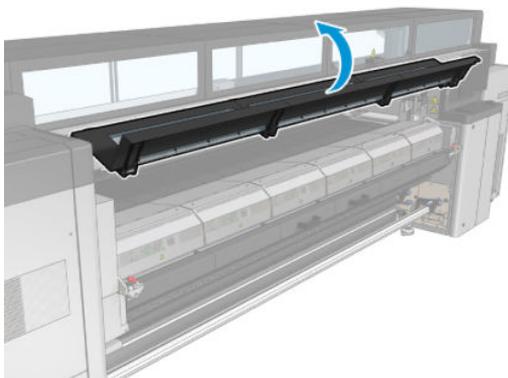
2. Open the curing module latches.
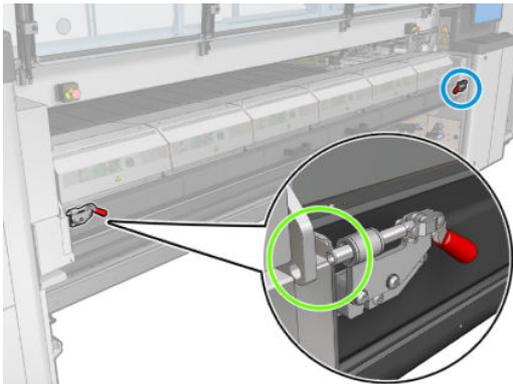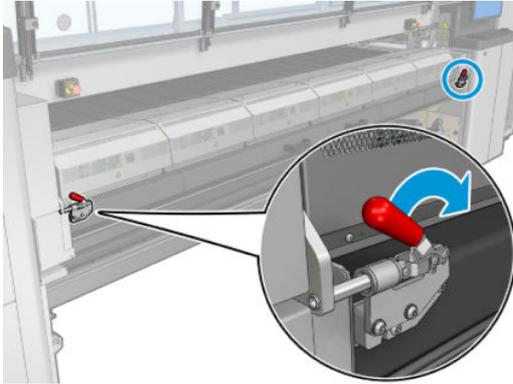
3. Pull out the curing assembly.
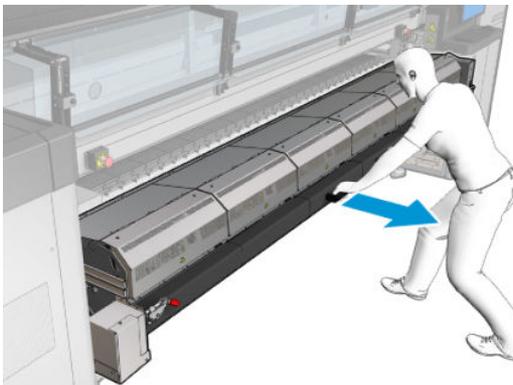
Clean the impinging plate

▲ Lying on the floor as shown in the picture, clean the perforated plate of the curing modules with a lint-free cloth dampened with distilled water.
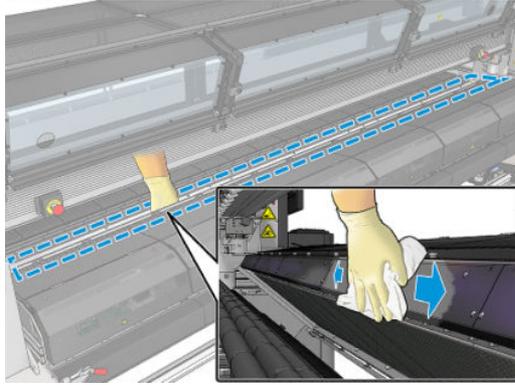
Finish off cleaning the impinging plate

1. Push the curing assembly back to its working position.

2. Close the curing latches.

3. Put the spindle back in position.

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

5. Turn on the printer in the correct way for maintenance operations: see Turn the printer on on page 185.

Clean the vapor removal external 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

Process

1. Switch off the printer.

2. Unscrew and open the back cover.
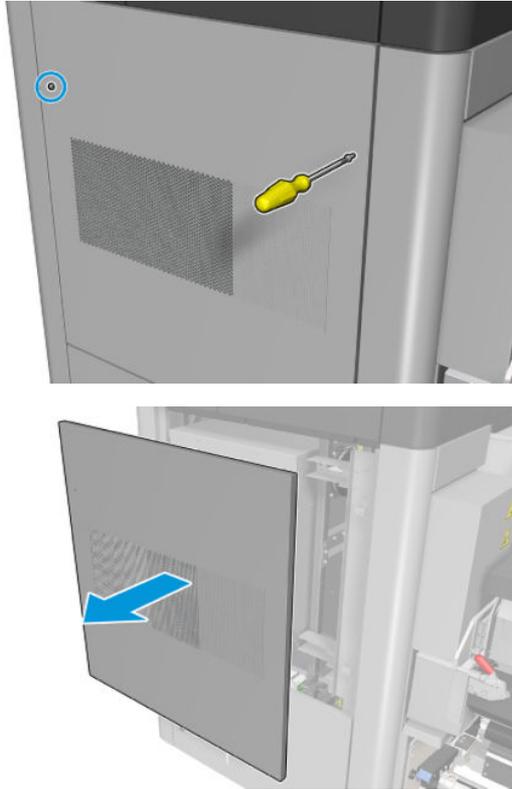
3. Using a brush and vacuum cleaner, clean the metal filter.
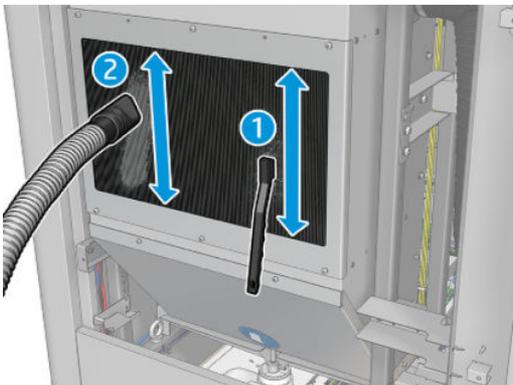
4. While here, check the fans to see if they also need cleaning.

5. Reinstall the cover.

6. Switch on the printer.

Clean the rear scan-axis beam

Risk of burns	Crush hazard	Risk of trapped fingers	Hazardous moving part	Light radiation hazard	Electric shock hazard

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 .

Clean the rear scan-axis beam

1. Open the service position window.

   📝 NOTE: For easier service position window access, use the retractable step located directly in front of it, underneath the operator platform: simply release the lock pin and slide it out completely.

   📝 IMPORTANT: Always lock the security pin before standing on the platform.
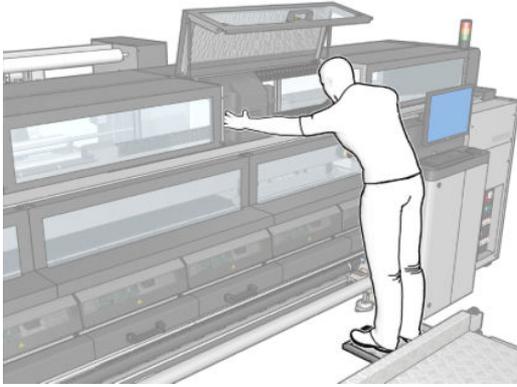
2. Remove the pointed screws indicated below and open the transparent cover at the right of the service position window.
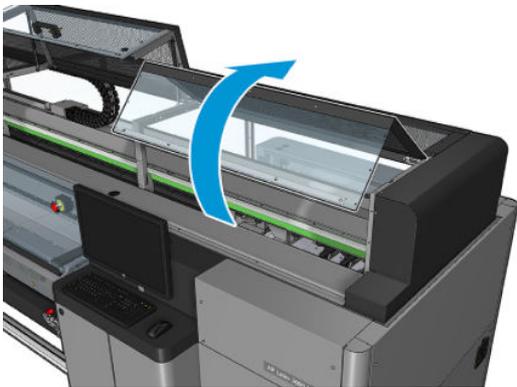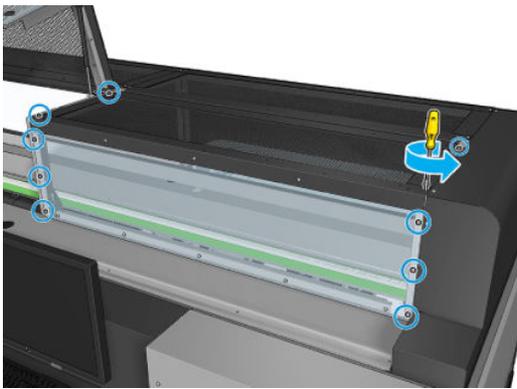
3. Clean the dust from the rear scan-axis beam, using a vacuum cleaner.

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.
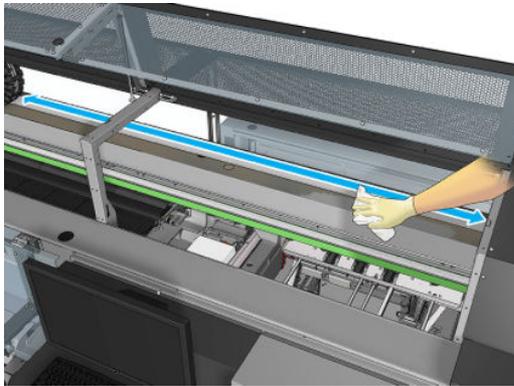
4. Use the absorbent cloth, moistened with deionized water, to wipe off any other dirt stuck to the scan-axis beam.

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 and grease the substrate drive transmission gears and rods

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

For more safety information, see

NOTE: Use gloves when applying grease to the gears.

Clean and grease the substrate drive transmission gears

1. Ensure you have the machine grease and oil kit, included in the Printer Maintenance kit.

2. Unload the substrate.

3. Turn off the printer and the power-enable switch.

4. Open the pinch clamps.

5. Clean the exposed part of the substrate drive roller gear with a lint-free cloth dampened with isopropyl alcohol.

   NOTE: If you are in an area (such as California) that regulates VOC cleaning and maintenance fluids, instead of isopropyl alcohol use a VOC-certified cleaner such as a properly diluted Simple Green All-Purpose Cleaner.

6. Using gloves put some grease on your finger.

7. Apply some grease to the exposed part of the substrate drive roller gear by moving your finger up and down the gear, filling the threads with grease.

   WARNING! Do not remove the gear's plastic cover to grease it, as it would uncover the encoder disc too, allowing it to get dirty.

8. Hand spin drive roller motor coupling, applying grease to all the gear threads.

   NOTE: Do not put grease on the outside of the threads or on the bottom or top of the screw.

Clean and oil the rods

1. Clean both rods with a lint-free cloth dampened with isopropyl alcohol.

   NOTE: If you are in an area (such as California) that regulates VOC cleaning and maintenance fluids, instead of isopropyl alcohol use a VOC-certified cleaner such as a properly diluted Simple Green All-Purpose Cleaner.

2. Put a few oil drops along both the capping and the drop detector rods.

Finishing off greasing the substrate drive transmission gears

1. Remove any extra grease.

2. Make sure that no other parts of the printer have any grease that may prevent it from working correctly.

3. Turn on the printer.

Grease the carriage beam screws

Risk of burns	Crush hazard	Risk of trapped fingers	Hazardous moving part	Light radiation hazard	Electric shock hazard

For more safety information, see Safety precautions on page 2

Prepare to grease the carriage beam screws

1. Ensure that you have the Machine Grease and Oil Kit (Q6702-60546), which is included in the Printer Maintenance Kit (1HA07-67008 or 1VT19A).

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 beam to its highest position (this takes about 2 minutes).

5. Open the front door.
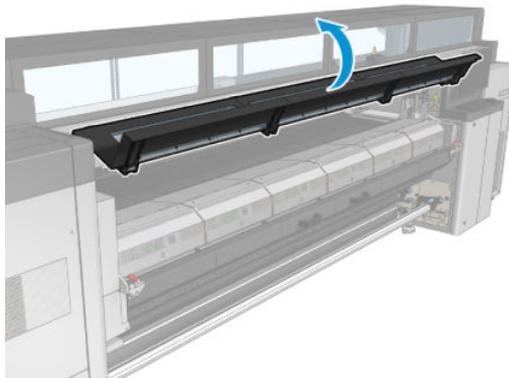
Grease the carriage beam screws

1. Put some grease on your finger.

2. Apply the grease to the exposed, middle part of the carriage beam screw by moving your finger up and down the screw, filling the threads with grease.

3. Continue applying the grease until the whole middle section of the screw, all the way around the screw, is greased.

NOTE: Do not put grease on the outside of the threads or on the bottom or top of the screw.

4. Repeat the above steps for each screw.
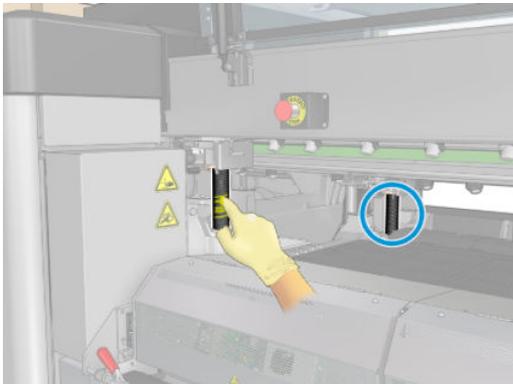
Spread the grease

1. Move the carriage beam back to its normal position so that the grease spreads along the screw (this takes about 2 minutes).

2. Move the carriage beam to its highest position (this takes about 2 minutes).

3. Repeat the above steps twice more to spread the grease fully.

Finish off greasing the carriage beam screws

1. Remove any extra grease.

2. Make sure that the platen and the carriage beam low switch does not have any grease that will prevent it from working correctly. If grease is interfering with the switch, remove the switch, and gently clean the grease from it.

3. Close the front door and ensure that all doors and covers are back in place.

4. Move the carriage beam back to its normal position (this takes about 2 minutes).

Clean and grease the service station transmission and rods

Risk of burns	Crush hazard	Risk of trapped fingers	Hazardous moving part	Light radiation hazard	Electric shock hazard

For more safety information, see

NOTE: Use gloves when applying grease to the gears.

Clean and grease the service station transmission

1. Ensure you have the machine grease and oil kit, included in the Printer Maintenance kit.

2. Move the carriage beam to its highest position (it takes around 2 minutes).

3. Move the carriage to service position.

4. Turn off the printer and the power-enable switch.

5. Remove the 2 screws holding the rear right panel.

6. Clean the helical gear with a lint-free cloth dampened with isopropyl alcohol.

    NOTE: If you are in an area (such as California) that regulates VOC cleaning and maintenance fluids, instead of isopropyl alcohol use a VOC-certified cleaner such as a properly diluted Simple Green All-Purpose Cleaner.

7. Using gloves put some grease on your finger.

8. Apply some grease to the helical gear by moving your finger backward and forward.

9. Continue applying grease until the whole transmission is greased.

10. Repeat the process with the other helical gear.

Clean and oil the rods

1. Clean both rods with a lint-free cloth dampened with isopropyl alcohol.

NOTE: If you are in an area (such as California) that regulates VOC cleaning and maintenance fluids, instead of isopropyl alcohol use a VOC-certified cleaner such as a properly diluted Simple Green All-Purpose Cleaner.

2. Put a few oil drops along both the capping and the drop detector rods.

Finishing off greasing the service station transmission

1. Remove any extra grease.

2. Make sure that no other parts of the printer have any grease that may prevent it from working correctly.

3. Place the 2 screws holding the rear right panel.

4. Turn on the printer.

Empty the drop detector ink vessel

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

For more safety information, see Safety precautions on page 2

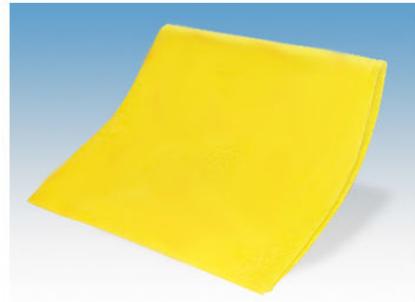### Prepare to clean the ink vessel

1. Ensure that the printer is not printing.

2. Turn off the printer in the correct way for maintenance operations: see Turn the printer off on page 184.

Clean the ink vessel

1. Unscrew and open the right front cover to access the capping station.
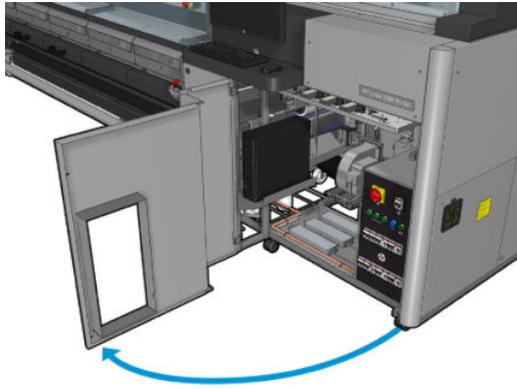
2. There are seven ink vessels to be cleaned.
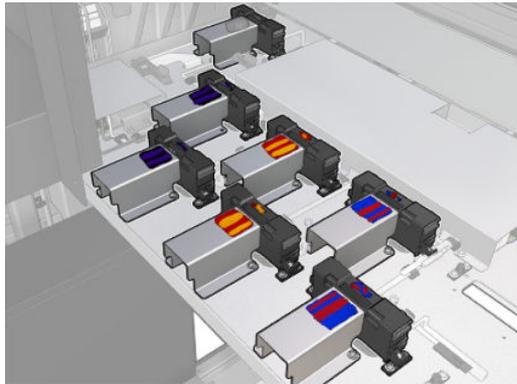
3. Remove the screws that fix the ink vessel.
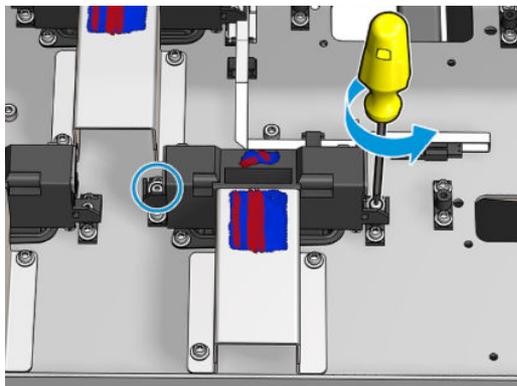
4. Move the ink vessel enough to clean the dry ink that is deposited underneath.

   ⚙ TIP: Use a vacuum cleaner to do so easily.
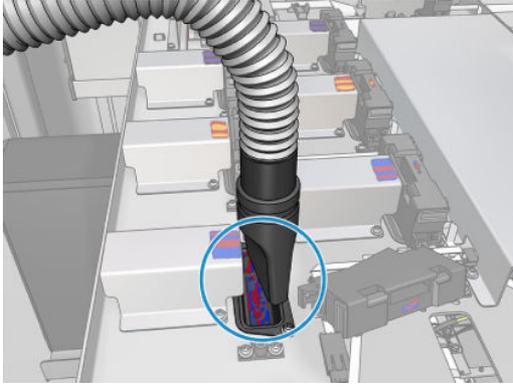
> **TIP:** If access or visibility is not good enough, remove the upper section of the right front cover by unscrewing the screws shown below.
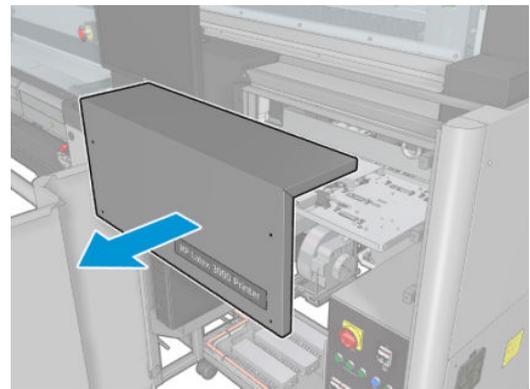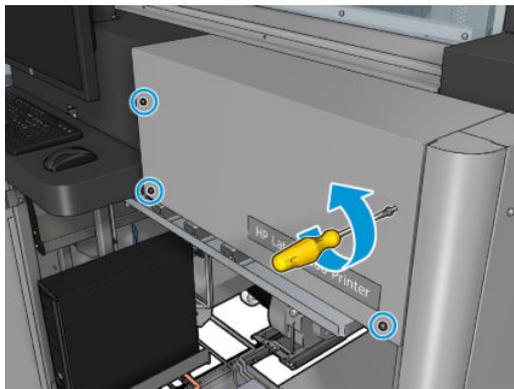
5. Reinstall the ink vessel.

Finish off after cleaning the ink vessels

1. If you removed it earlier, put back the upper section of the right front cover and screw it into place.

2. Close the right front cover and screw it into place.

3. Ensure that the cleaned parts are completely dry.

4. Turn on the printer in the correct way for maintenance operations: see .

Grease the printhead primers

Risk of burns	Crush hazard	Risk of trapped fingers	Hazardous moving part	Light radiation hazard	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 184.

5. Open the service position window.

NOTE: For easier service position window access, use the retractable step located directly in front of it, underneath the operator platform: simply release the lock pin and slide it out completely.

**IMPORTANT:** Always lock the security pin before standing on the platform.
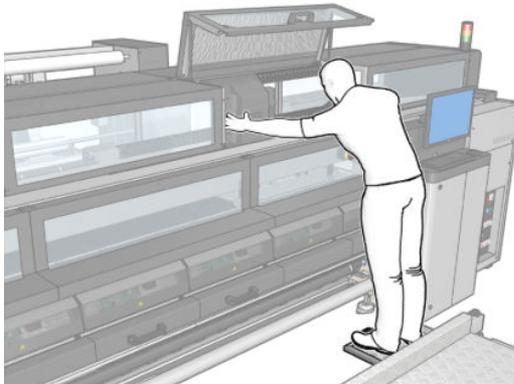
Grease the printhead primers

1. After lifting the printhead covers, two 'O' rings can be seen that seal the joints between the printhead cover and printhead.
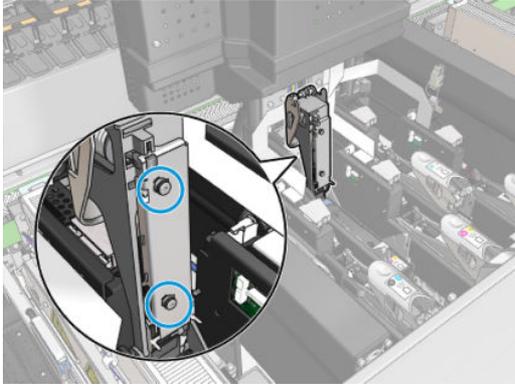
2. With a finger, apply a little grease to the 'O' rings to improve their performance. A suitable grease is available in a syringe from the cleaning kit.
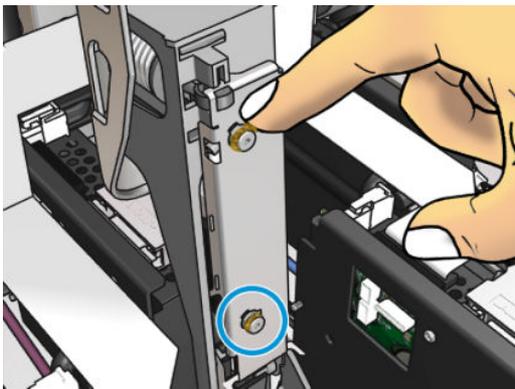
The grease should be applied to the black rubber part only. If grease gets into the central hole, remove it with a toothpick or similar tool.
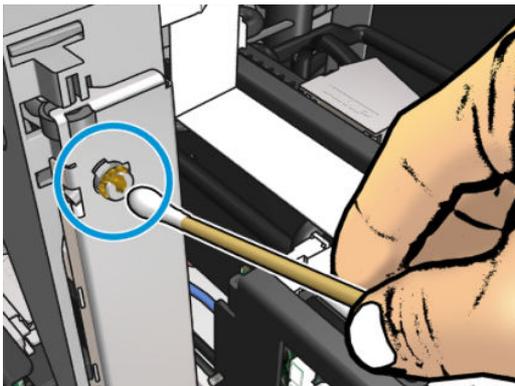
3. Close the printhead cover, the carriage cover, and the printhead access door.

When required

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

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

For more safety information, see Safety precautions on page 2

Introduction

The following maintenance procedures are needed when required:

- Check and clean the printheads on page 146
- Check the printer for dust and aerosol on page 276
- Clean the substrate-advance sensor on page 194
- Replace a pinchwheel submodule on page 277
- Replace a primer on page 280
- Replace the aerosol fan module on page 285
- Replace the drying fans array on page 290
- Replace the drying lamps on page 295
- Clean the drying module quartz glass and air outlet on page 306
- Replace the drying quartz glass on page 313
- Replace a curing fan and resistor module on page 318
- Replace a service station cap on page 322
- Replace an intermediate tank on page 325
- Replace an e-cabinet fuse on page 328
- Clean the printhead contacts on page 330
- Replace a spindle valve on page 336
- Clean the roll-to-free-fall roller and pinchwheels on page 337
- Clean the carriage rails manually on page 340
- Grease the printhead primers on page 272
- Pinch clamp replacement on page 341

- [Replace the rocker pads on page 342](#)

- [Clean the scan axis encoder on page 343](#)

- [Replace the curing module side rubber on page 345](#)

- [Clean the service station caps on page 346](#)

- [Clean the vapor removal external filter on page 261](#)

- [Clean the bottom of the carriage, the drying glasses, and the line and crash sensors on page 233](#)

- [Empty the condensation collector bottle on page 203](#)

- [Empty the printhead cleaning waste bottle on page 347](#)

- [Clean the perforated plate on page 349](#)

Check the printer for dust and aerosol

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

⚠️	⚠️	⚠️
Risk of burns	Hazardous moving part	Electric shock hazard

For more safety information, see [Safety precautions on page 2](#)

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

If you see condensation on the inside of the transparent cover over the middle of the printer, wipe it with a dry cloth. To reach the inside of the cover, unscrew the pointed screws and lift the cover.
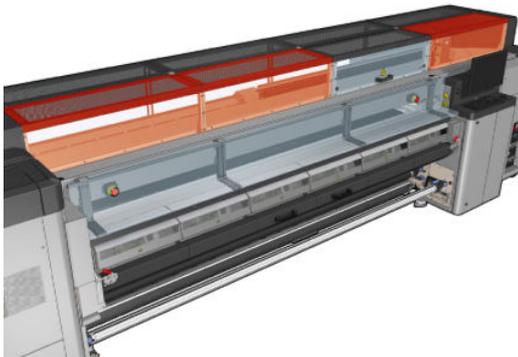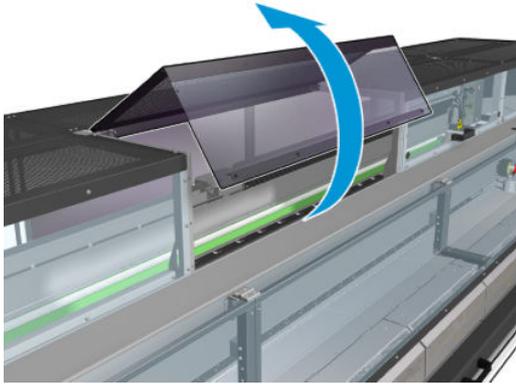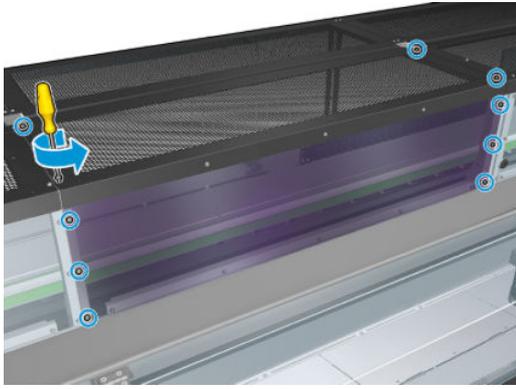
Check the print output areas for ink droplets, aerosol, or condensation, especially the area around and below the diverter wheels and the tension roller.

If you find dust or ink, wipe it off with a lint-free cloth, moistened with distilled water.

Reinstall all removed covers and ensure all doors are closed before turning on the printer.

Replace a pinchwheel submodule

Prepare to replace a pinchwheel submodule

▲   Ensure that you have the Pinchwheel Assembly (CZ056-67097), which is included in the HP Latex 3000 Series Standard Uptime Kit (D4J02A).

Replace a pinchwheel submodule

1.   Open the loading table.

2. Locate the pinchwheeel submodule that needs replacement.
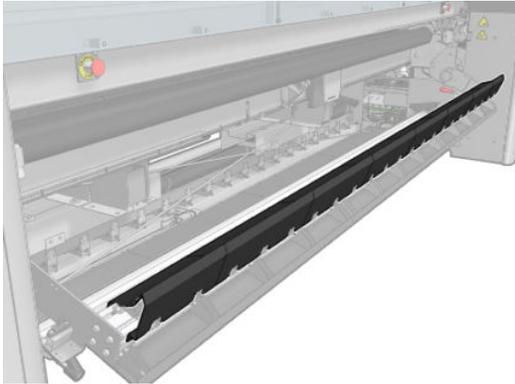
3. Remove the screws shown below.
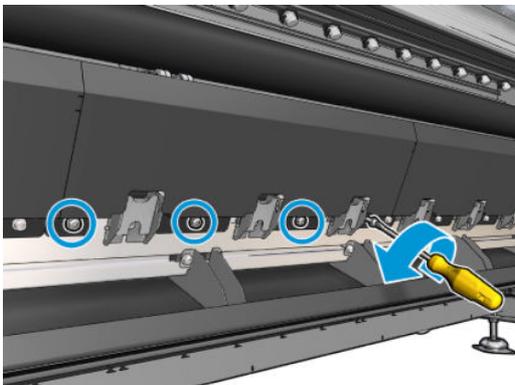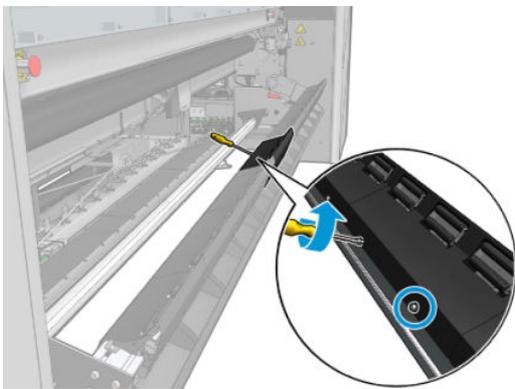
4. Remove the pinchwheel cover.
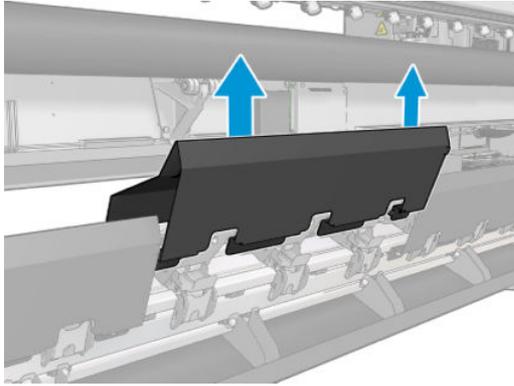
5. Remove the screws that attach the pinchwheel submodule.
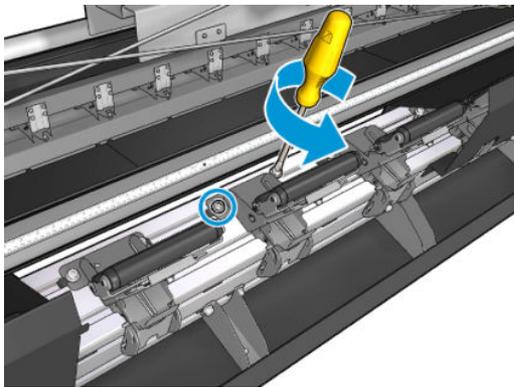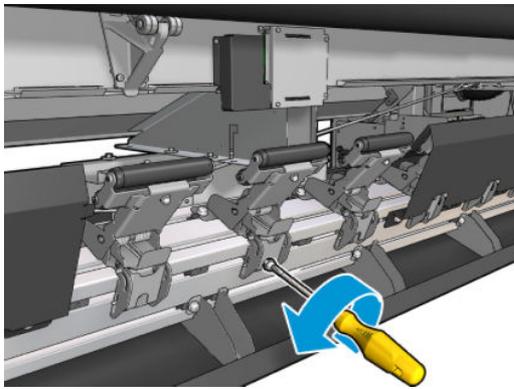
6. Remove the broken submodule.
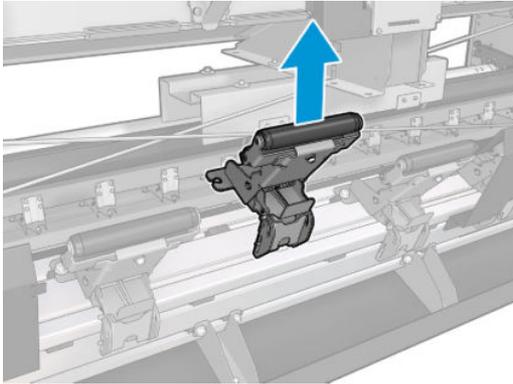
7. Place the new submodule and attach the screws.

8. Place the cover and insert the screws.

9. Close the loading table.

Replace a primer

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

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 1HA07-67018, which is included in the HP Latex 3000 Series Standard Uptime Kit (D4J02A).

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 .

6. Open the service position window.

> **NOTE:** For easier service position window access, use the retractable step located directly in front of it, underneath the operator platform: simply release the lock pin and slide it out completely.

> **IMPORTANT:** Always lock the security pin before standing on the platform.

Replace a primer

1. Disconnect the two primer cable connectors at the back of the printhead that needs the primer replaced.
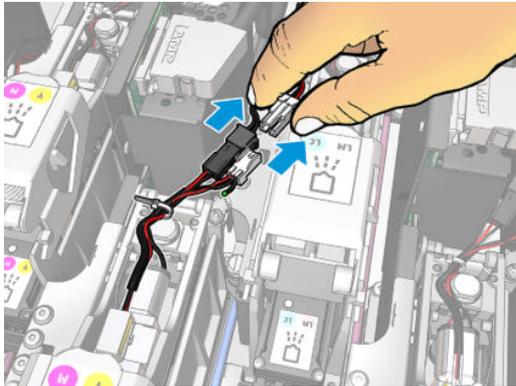
2. Release the handle. It is not usually necessary to remove the printhead.
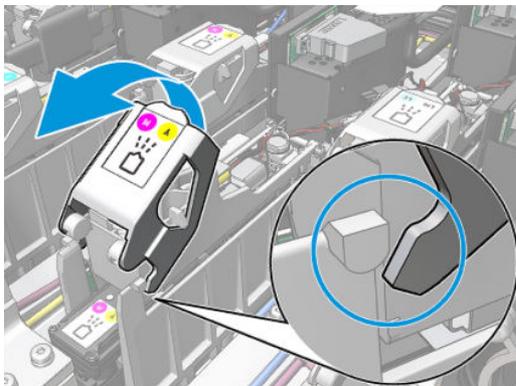
3. Loosen the T10 screw (do not remove the screw, just loosen it) and release the sheet metal tab.
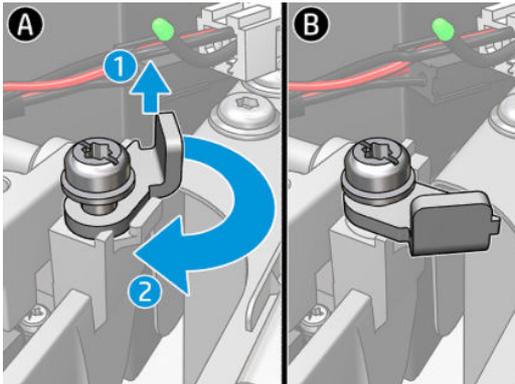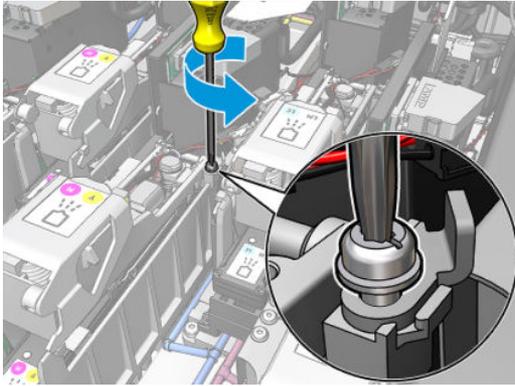
4. Remove the latch.
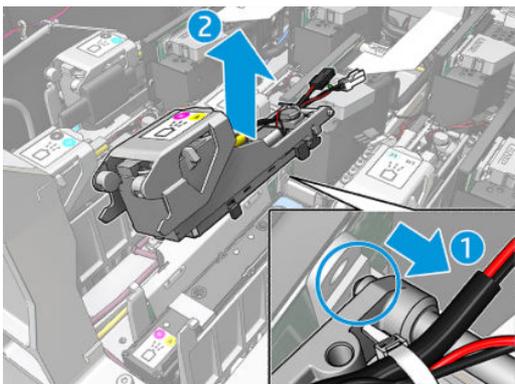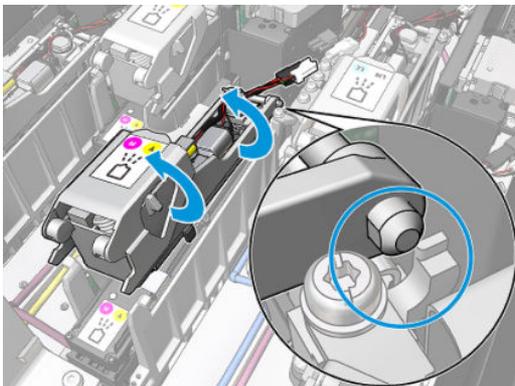
5. Stick the corresponding printhead color label on the latch. Be careful with the orientation.

6. Install the new latch with primer. Do not close the handle yet.
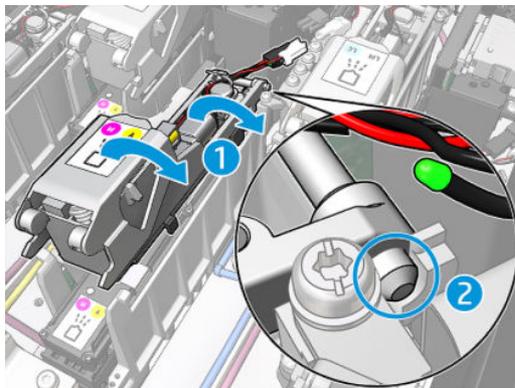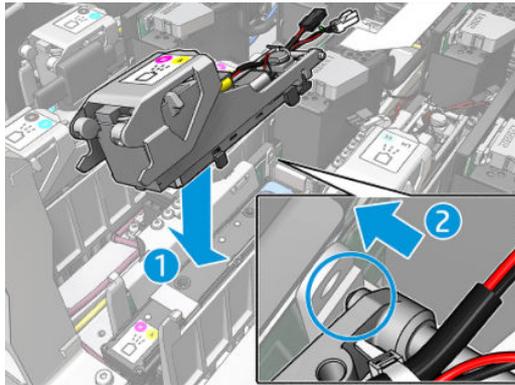
7. Close the sheet metal tab and tighten the T10 screw.
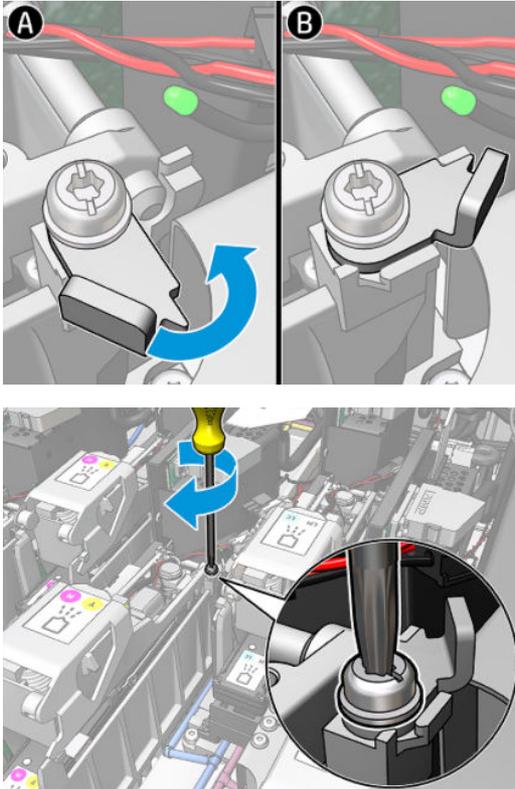
8. Close the handle.
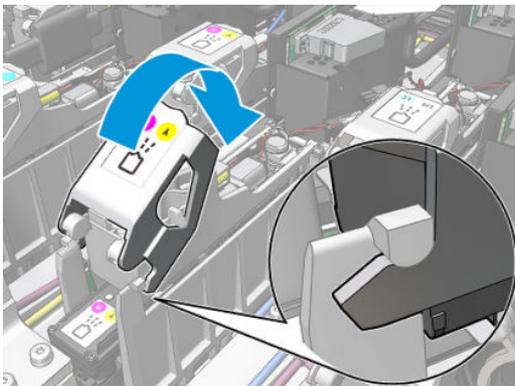
9. Connect the two primer cable connectors.
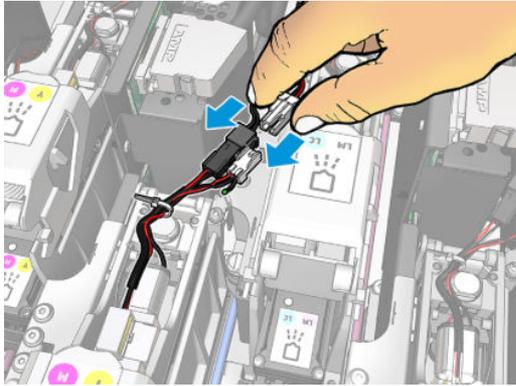
Finish off replacing a primer

1. Close the service position window.

2. Turn on the printer in the correct way for maintenance operations: see .

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

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

For more safety information, see

Prepare to replace the aerosol fans module

1. Ensure that you have the Aerosol Fan Module (CZ056-67246), which is included in the HP Latex 3000 Series Standard Uptime Kit (D4J02A).

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 184.

6. Open the service position window.

📝 NOTE: For easier service position window access, use the retractable step located directly in front of it, underneath the operator platform: simply release the lock pin and slide it out completely.

📝 IMPORTANT: Always lock the security pin before standing on the platform.

Replace the aerosol fan module

1. Open the aerosol fan cover, as if you were going to replace the filters.
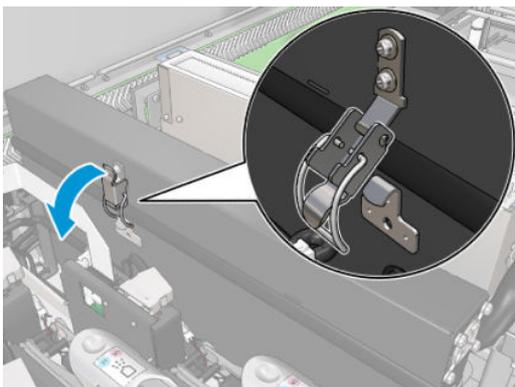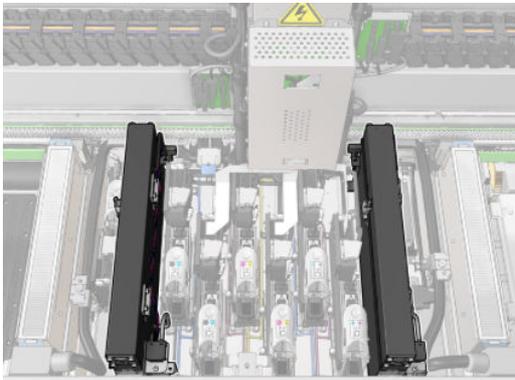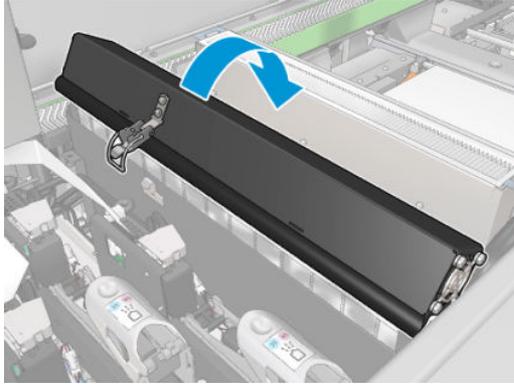
2. Remove the three screws that attach the cover, and remove the cover.
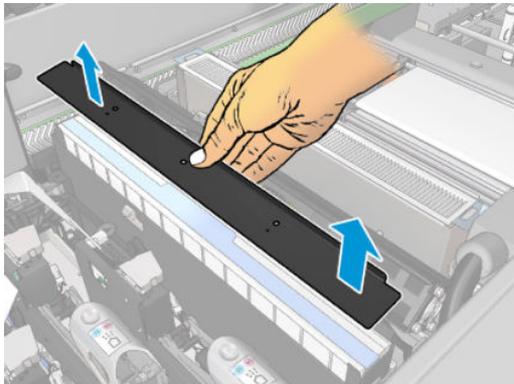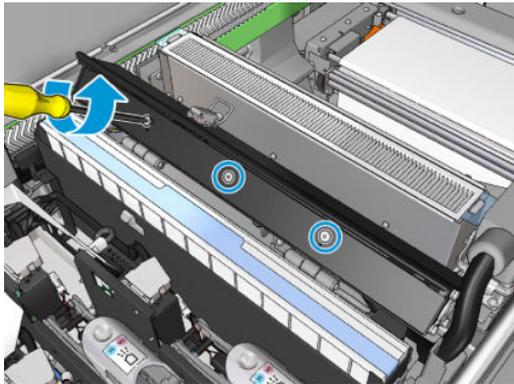
3. Disconnect the two aerosol fan cable connectors.
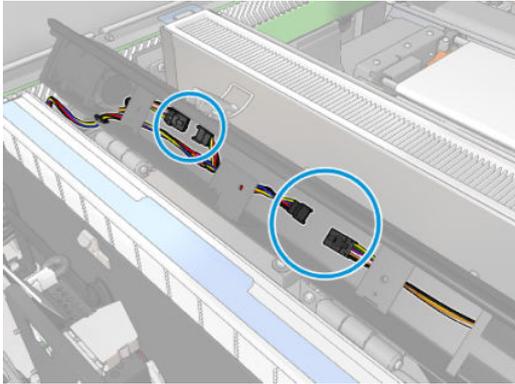
4. Remove the main cable harness from the cover slot.
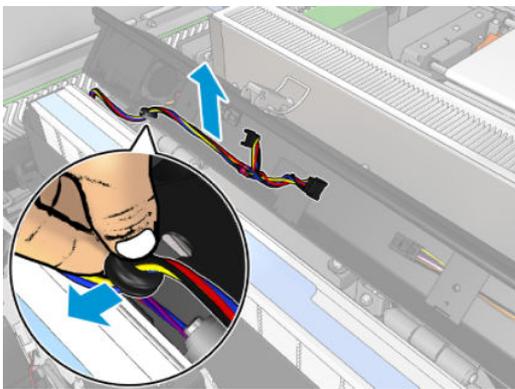
5. Close the cover.
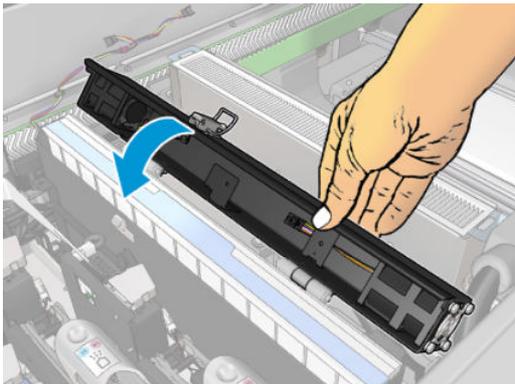
6. Remove the nuts from the hinges. You must hold the nuts to prevent them from falling and get lost inside the carriage.
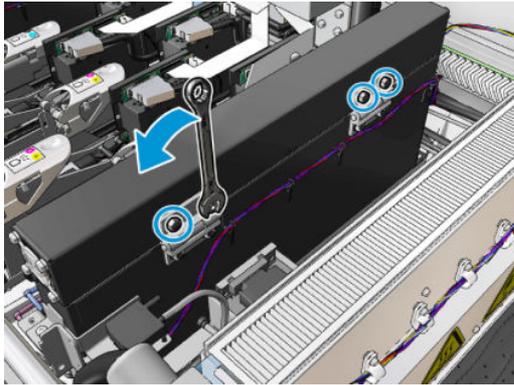
7. Remove the aerosol fan module and insert the new one.
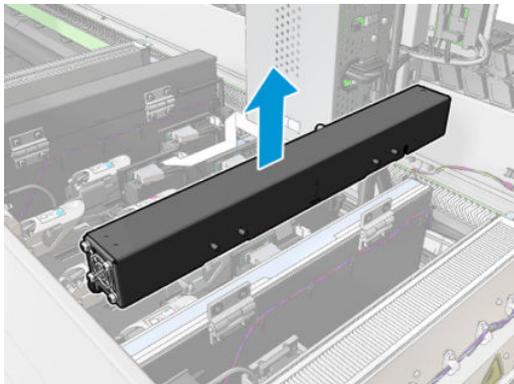
8. Put the hinges back in place, put back the nuts and tighten them.

9. Open the new aerosol fan cover.

10. Remove the three screws that attach the new fan cover, and remove the cover.

11. Connect the two aerosol fan cable connectors.

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 three screws.

14. Close the cover.

Finish off replacing the aerosol fan module

1. Close the service position window.

    ⚠ CAUTION: Do not leave anything in the way of the carriage.

2. Turn on the printer in the correct way for maintenance operations: see .

3. Run a diagnostic test to check that the aerosol fans are working correctly.

4. Dispose of the old aerosol module fans.

Replace the drying fans array

Risk of burns	Crush hazard	Risk of trapped fingers	Hazardous moving part	Light radiation hazard	Electric shock hazard

For more safety information, see Safety precautions on page 2

Prepare to replace the drying fan array

1. Ensure that you have the necessary Drying Fans Array Kit: for the left drying module (CZ056-67024) or the right drying module (CZ056-67023). Both kits are included in the HP Latex 3000 Series Standard Uptime Kit (D4J02A).

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 184.

6. Open the service position window.

📝 **NOTE:** For easier service position window access, use the retractable step located directly in front of it, underneath the operator platform: simply release the lock pin and slide it out completely.

📝 **IMPORTANT:** Always lock the security pin before standing on the platform.

Drying lamps emitter—safety precautions

CAUTION: Disregard of the safety precautions or improper operation of the infrared emitter can lead to injuries and material damage.

CAUTION: The IR heating device must be operated only by specialists or trained personnel.

The operator of the system must compile specific operating instructions for the training of operating personnel.

CAUTION: The safety and functional reliability of the IR heating device are guaranteed only in the event of use of original accessories and spare parts from Heraeus Noblelight.

WARNING! After an emitter break, a dangerous voltage may be exposed to contact by the heating spiral.

Remove the drying module
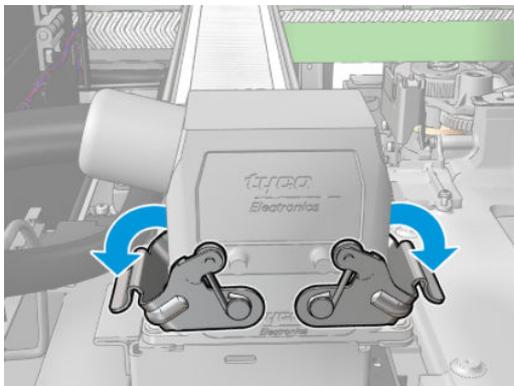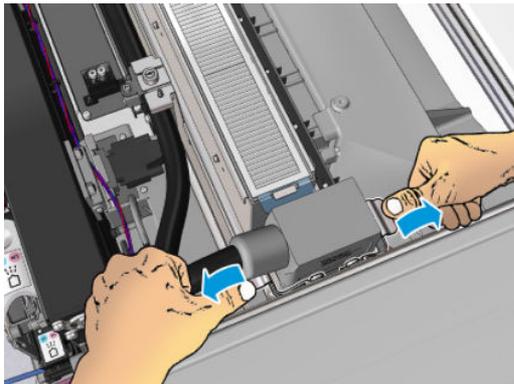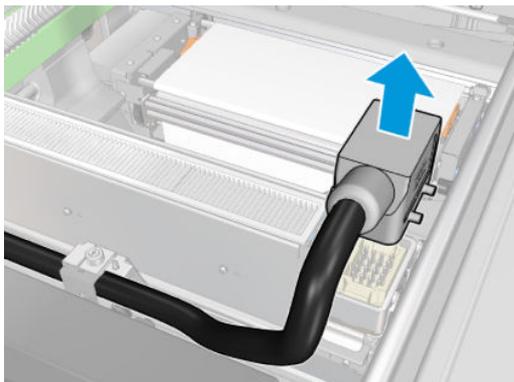
1. Remove the electrical connector latch.

2. Unplug the connector.

3. Unscrew the three screws shown below in order to remove the drying module (the left module is shown).

4. Pull the drying module carefully out of the carriage and lay it gently on a table.
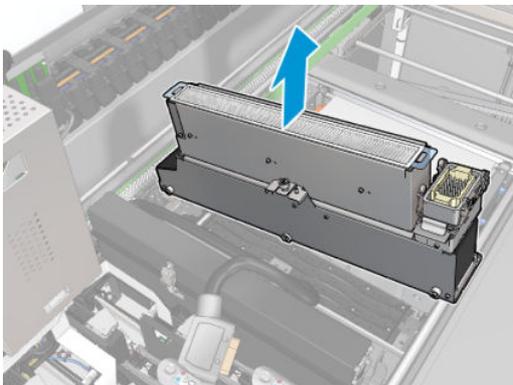
Replace the drying fans array

1. Remove the drying filter.

2. Disconnect the drying fans array connector.
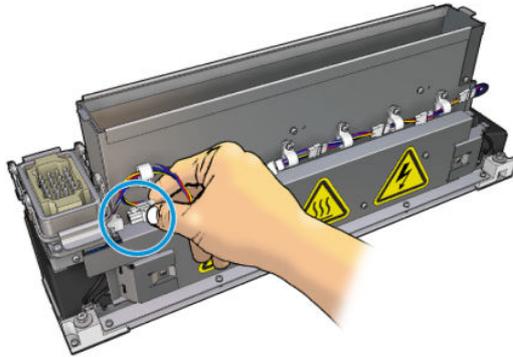
3. Remove the screw attaching the drying fans array to the drying module.
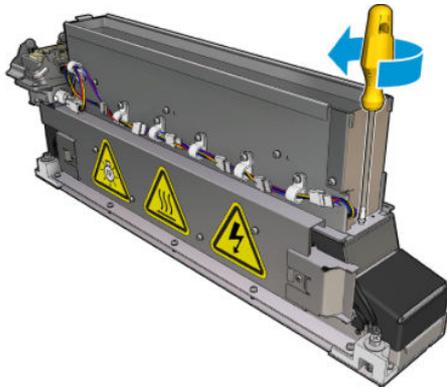
4. Remove the drying fans array and place the new array. There are two pins on each side of the drying module to ensure that it is placed in the correct position.
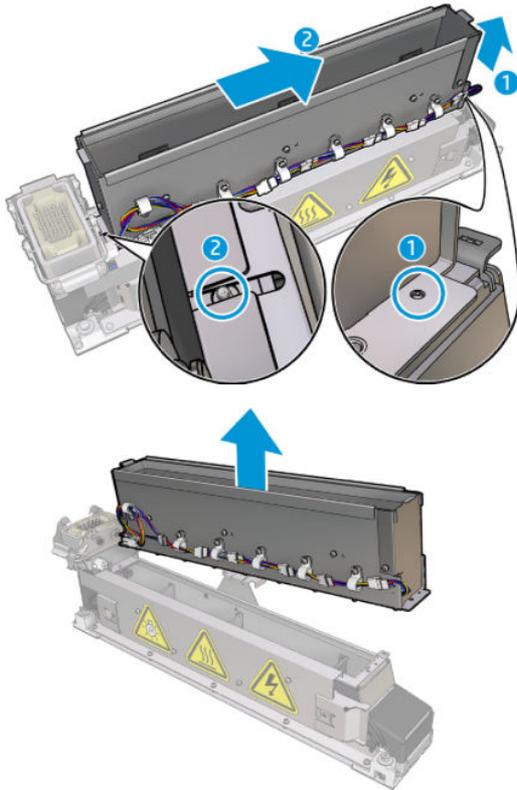
5. Put back the screw that you removed earlier.

6. Reconnect the drying fans array connector.

7. Reinstall the drying filter.

Reinstall the drying module

1. Reinstall the drying module into the carriage and tighten the three screws that attach it to the carriage.

2. Reconnect the electrical connector and close the latches.
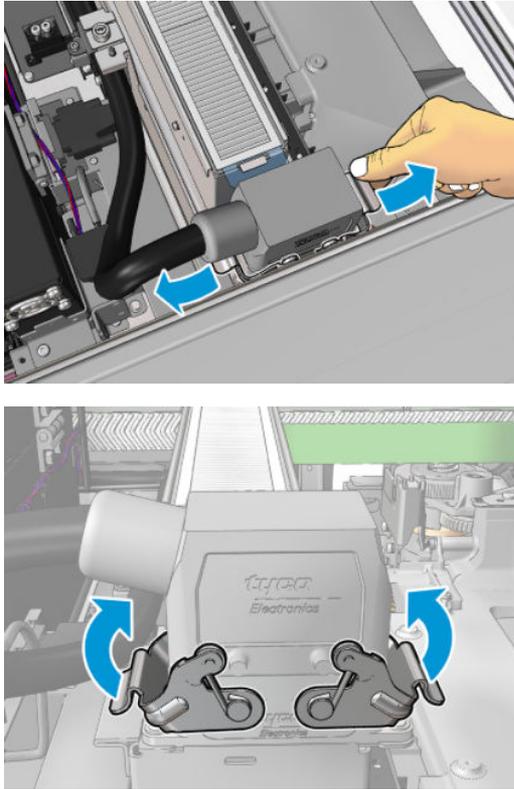
Finish off replacing the drying fans array

1. Close the service position window.

   ⚠ **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 185.

3. Dispose of the old drying fans array according to local regulations.

Replace the drying lamps

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

For more safety information, see Safety precautions on page 2

Prepare to replace the drying lamps

1. Ensure that you have the Drying Filter Lamps Kit (CZ056-67322), which is included in the HP Latex 3000 Series Standard Uptime Kit (D4J02A).

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 <u>Turn the printer off on page 184</u>.

6. Open the service position window.

   NOTE: For easier service position window access, use the retractable step located directly in front of it, underneath the operator platform: simply release the lock pin and slide it out completely.

   IMPORTANT: Always lock the security pin before standing on the platform.

7. Perform the following processes for both drying modules (left and right).

Remove the drying module

1. Remove the electrical connector latch.

2. Unplug the connector.

3. Unscrew the three screws shown below in order to remove the drying module (the left module is shown).

4. Pull the drying module carefully out of the carriage and lay it gently on a table.

Drying lamps emitter—safety precautions

CAUTION: Disregard of the safety precautions or improper operation of the infrared emitter can lead to injuries and material damage.

CAUTION: The IR heating device must be operated only by specialists or trained personnel.

The operator of the system must compile specific operating instructions for the training of operating personnel.

CAUTION: The safety and functional reliability of the IR heating device are guaranteed only in the event of use of original accessories and spare parts from Heraeus Noblelight.

WARNING! After an emitter break, a dangerous voltage may be exposed to contact by the heating spiral.

Transport and handling

Transport the IR emitter, in the packaging provided, to the place of installation.

CAUTION: If the IR emitter must be transported without its packaging, wear linen gloves. Fingerprints on the quartz tube will cause devitrification, which leads to radiation losses and mechanical failure.
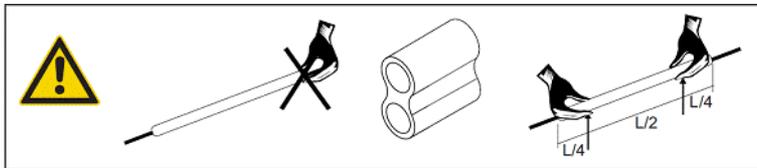
Always carry the emitter with both hands. Carry it so that the cross section faces up, to avoid bending and breaking.

- Grip the emitter only by the glass tube, and not by the connection cable, pinches, or ceramics.

- Avoid any pressure on the flat base.

When installing IR emitters

CAUTION: We recommend that you wear protective goggles when installing or replacing emitters, to protect yourself from broken glass that you may come into contact with.

CAUTION: Pulling the connection cable must not cause any tension on the flat base. Bending radius of connection cable: > 30 mm (1.18 in).

After installation, the quartz glass tube of the IR emitter must be cleaned of any soiling or perspiration. For this purpose, use the cleaning cloth included in our delivery, or a clean linen cloth (without textile finishing agents) soaked in methylated spirit, to remove any impurities and soiling or fingerprints from the surface.

⚠ CAUTION: The reflector side must not be cleaned.

Replace the drying lamps

1. To separate the drying glass and air outlet from the rest of the module, remove the three screws shown below.
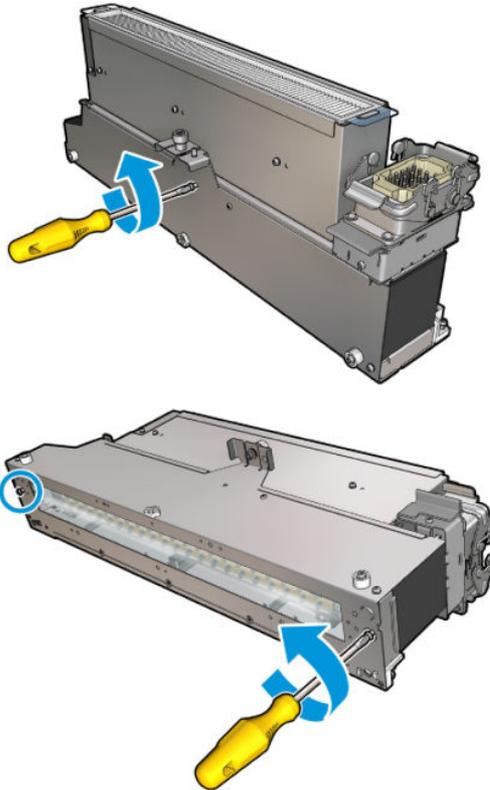
2. Take out the drying lamps section of the drying module.
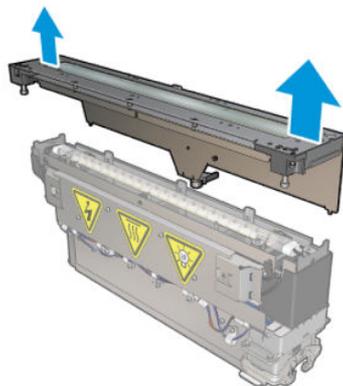
3. Remove the two screws shown below.
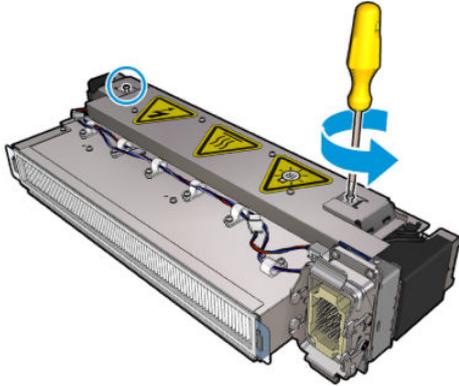
4. Pull out the two clamps.
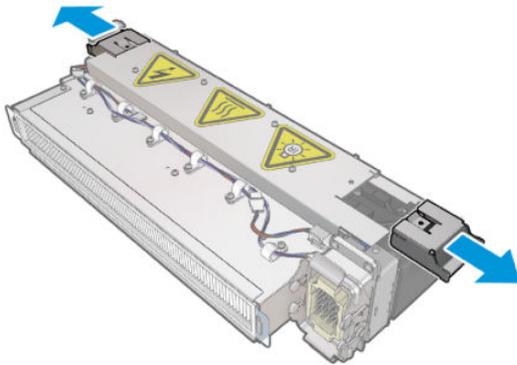
5. Disconnect the four dryer lamp cables.
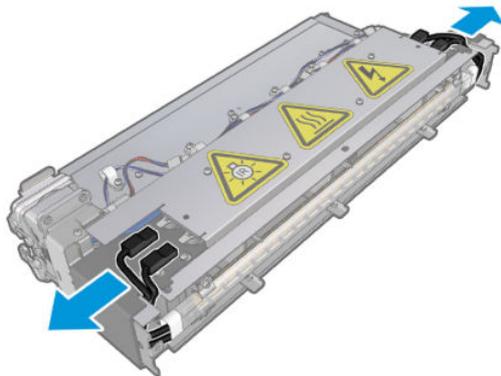
6. Locate the lamp latches.
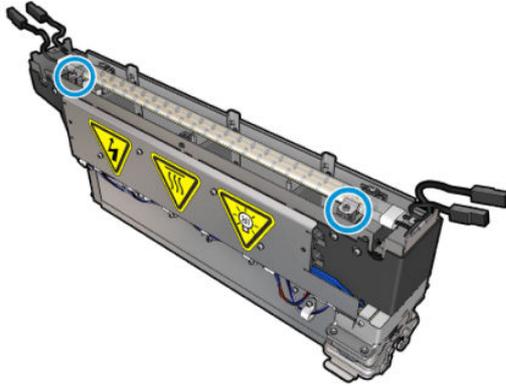
7. Release the screws that secure the lamp latches, and rotate the latches 180° to set the lamp free.
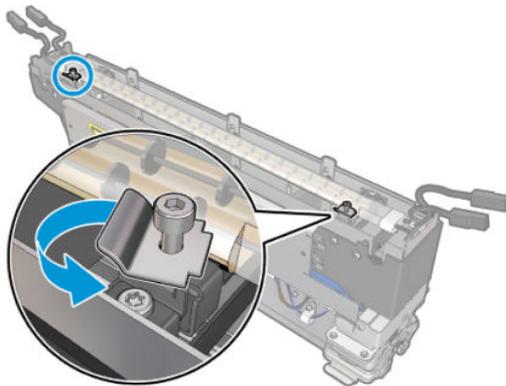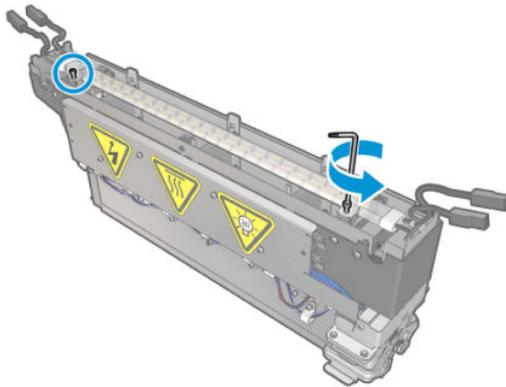
8. Rotate and pull out the old lamp.
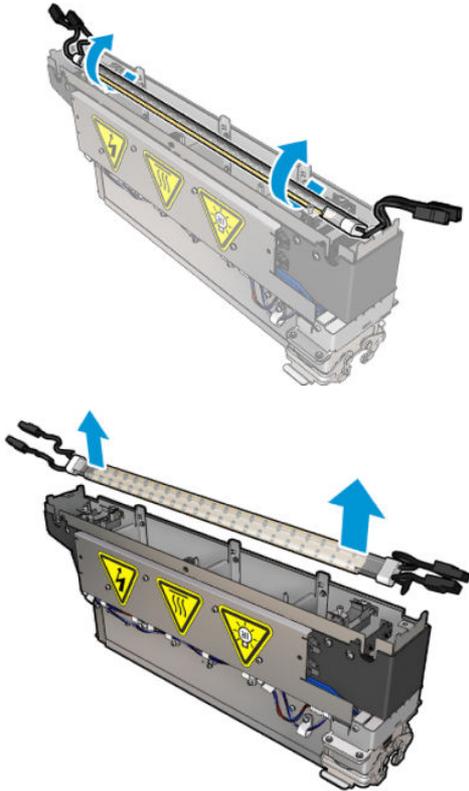
9. Carefully install the new lamp. Leave the golden side down towards the interior of the module; when correctly installed, the internal wires of the lamp are visible.
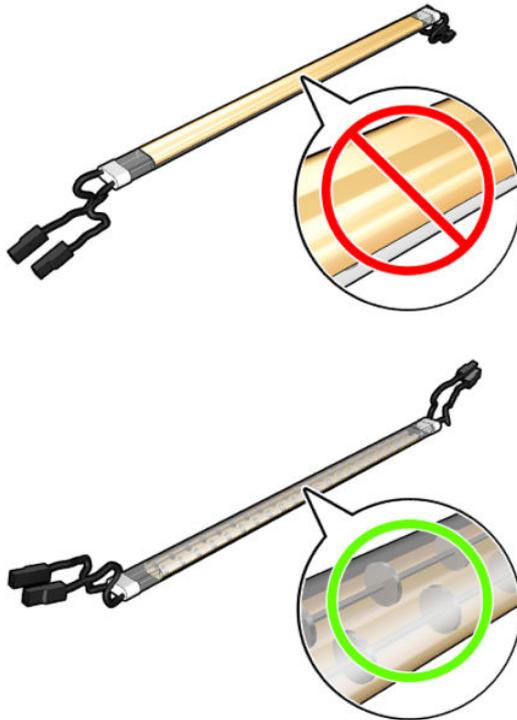
NOTE: The lamp is symmetrical lengthwise and both orientations are correct.
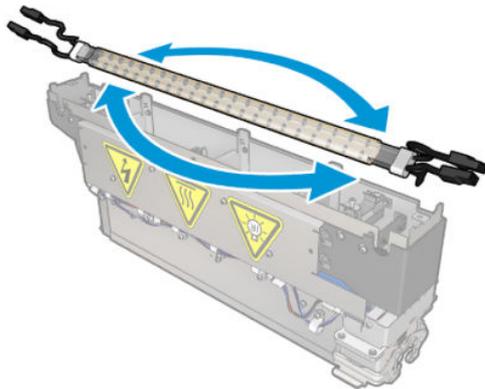
10. Rotate the latches back to the normal position and insert the screws.

11. Connect the cables of the new lamps. There is no mandatory orientation of the cables (top or bottom).

12. Ensure that the fast-on connectors are well assembled. Push them into the 'click' position for proper retention. Check that the plastic insulation covers the whole terminal after assembly.

13. Add and screw in both clamps.

Clean the drying quartz glass and the air outlet

1. Take the drying quartz glass and air outlet, which you have already removed.

2. Moisten both sides of the glass with a lint-free cloth dampened with distilled water.

3. Scrub both sides of the glass with the steel scourer.

4. Repeat the above two steps as many times as needed to remove any visible ink stains on the glass.

5. Clean the air outlet using the same damp cloth.

Reassemble the drying module

1. Reassemble the drying lamps with the drying quartz and air outlet. Check that the cables are properly routed inside the module before assembly.

2. Insert the three screws.

3. Ensure that the cleaned parts are completely dry and all vapor has completely evaporated before turning on the printer.

Reinstall the drying module

1. Install the drying module into the carriage and tighten the three screws that attach it to the carriage.

2. Reconnect the electrical connector and close the latches.

Finish off replacing the drying lamps

1. Close the service position window.

⚠ **CAUTION:** Do not leave anything in the way of the carriage.

2. Turn on the printer in the correct way for maintenance operations: see <u>Turn the printer on on page 185</u>.

3. Dispose of the old lamps according to local regulations.

Clean the drying module quartz glass and air outlet

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

For more safety information, see <u>Safety precautions on page 2</u>

Prepare to replace the drying lamps

1. Ensure that the printer is not printing.

2. Ensure that all windows, covers, and doors are closed and remain in their original position.
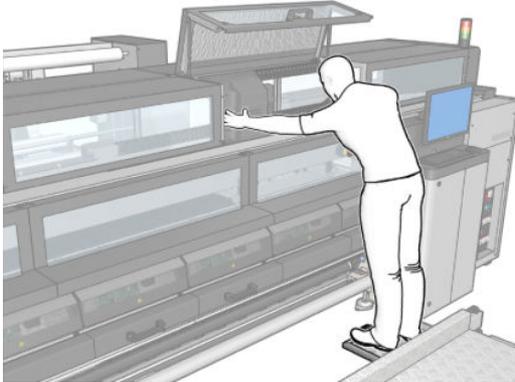
3. Move the carriage to the service position.

4. Turn off the printer in the correct way for maintenance operations: see Turn the printer off on page 184.


5. Open the service position window.

    NOTE: For easier service position window access, use the retractable step located directly in front of it, underneath the operator platform: simply release the lock pin and slide it out completely.

   **IMPORTANT:** Always lock the security pin before standing on the platform.

6. Perform the following processes for both drying modules (left and right).

Remove the drying module

1. Remove the electrical connector latch.

2. Unplug the connector.

3. Unscrew the three screws shown below in order to remove the drying module (the left module is shown).

4. Pull the drying module carefully out of the carriage and lay it gently on a table.

Drying lamps emitter—safety precautions

CAUTION: Disregard of the safety precautions or improper operation of the infrared emitter can lead to injuries and material damage.

CAUTION: The IR heating device must be operated only by specialists or trained personnel.

The operator of the system must compile specific operating instructions for the training of operating personnel.

CAUTION: The safety and functional reliability of the IR heating device are guaranteed only in the event of use of original accessories and spare parts from Heraeus Noblelight.

WARNING! After an emitter break, a dangerous voltage may be exposed to contact by the heating spiral.

CAUTION: The reflector side must not be cleaned.

Remove the drying quartz

1. To separate the drying glass and air outlet from the rest of the module, remove the three screws shown below.
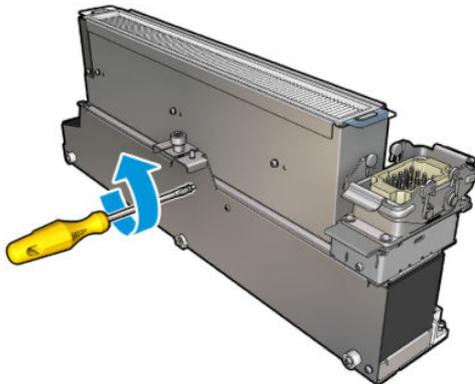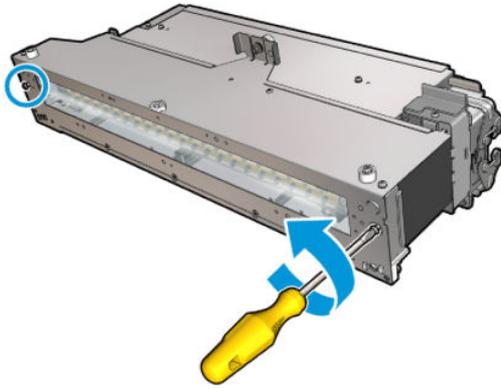
2. Take out the drying lamps section of the drying module.

Clean the drying quartz glass and the air outlet

1. Take the drying quartz glass and air outlet, which you have already removed.

2. Moisten both sides of the glass with a lint-free cloth dampened with distilled water.

3. Scrub both sides of the glass with the steel scourer.

4. Repeat the above two steps as many times as needed to remove any visible ink stains on the glass.

5. Clean the air outlet using the same damp cloth.

Reassemble the drying module

1. Reassemble the drying lamps with the drying quartz and air outlet. Check that the cables are properly routed inside the module before assembly.

2. Insert the three screws.

3. Ensure that the cleaned parts are completely dry and all vapor has completely evaporated before turning on the printer.

Reinstall the drying module

1. Install the drying module into the carriage and tighten the three screws that attach it to the carriage.

2. Reconnect the electrical connector and close the latches.

Finish off replacing the drying lamps

1. Close the service position window.

   ⚠ **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 185.

Replace the drying quartz glass

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

For more safety information, see Safety precautions on page 2

Prepare to replace the drying quartz glass

1. Ensure that you have the necessary Drying Quartz Glass Kit: for the left drying module (CZ056-67253) or the right drying module (CZ056-67252). Both kits are included in the HP Latex 3000 Series Standard Uptime Kit (D4J02A).

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 184.

6. Open the service position window.

📝 NOTE: For easier service position window access, use the retractable step located directly in front of it, underneath the operator platform: simply release the lock pin and slide it out completely.

📝 IMPORTANT: Always lock the security pin before standing on the platform.

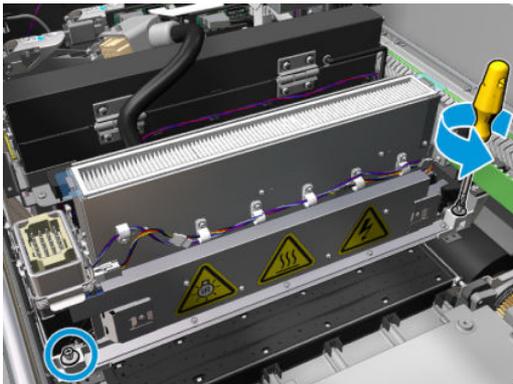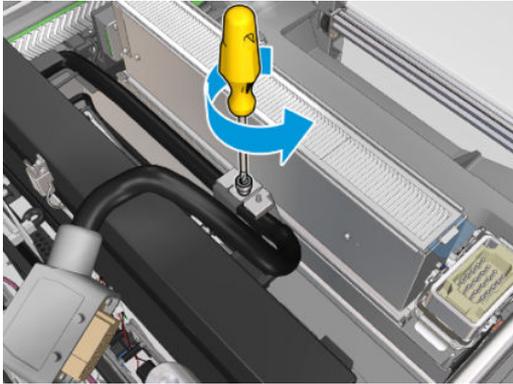### Remove the drying module
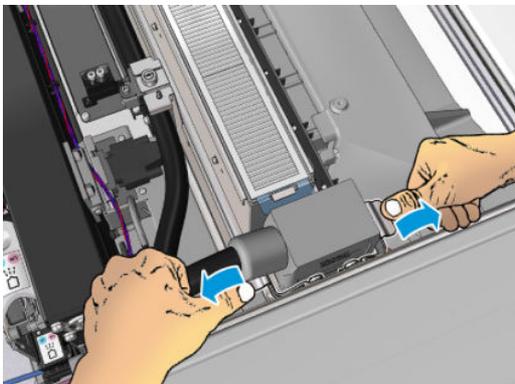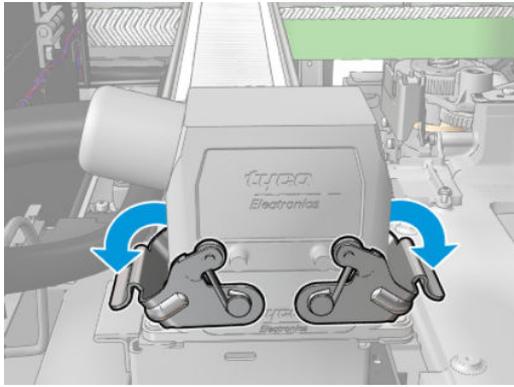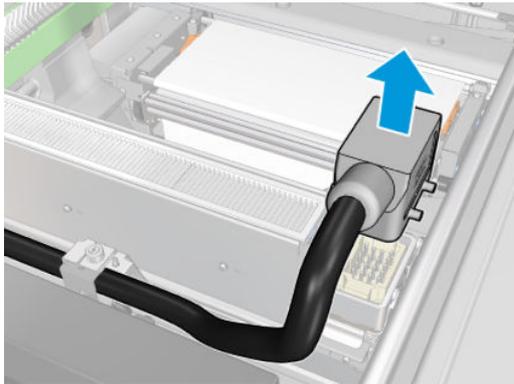
1. Remove the electrical connector latch.

2. Unplug the connector.

3. Unscrew the three screws shown below in order to remove the drying module (the left module is shown).
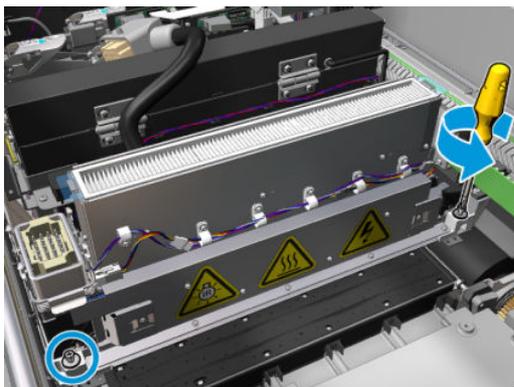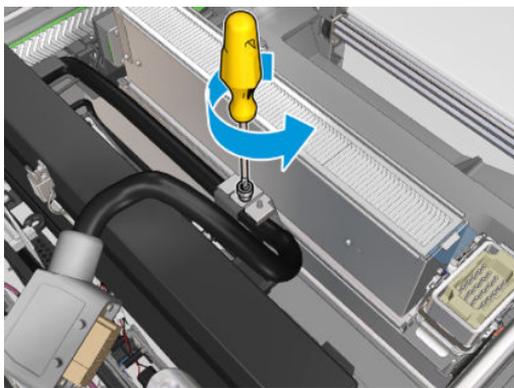
4. Pull the drying module carefully out of the carriage and lay it gently on a table.
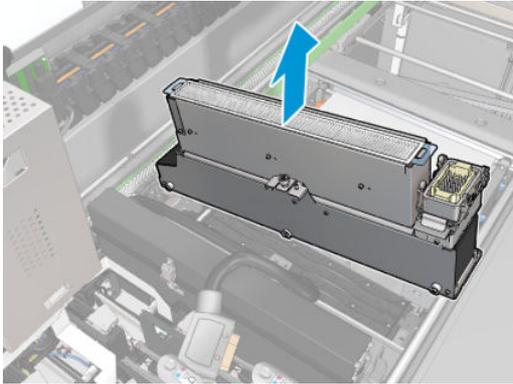
## Replace the drying quartz glass

1. To separate the drying glass and air outlet from the rest of the module, remove the three screws shown below.
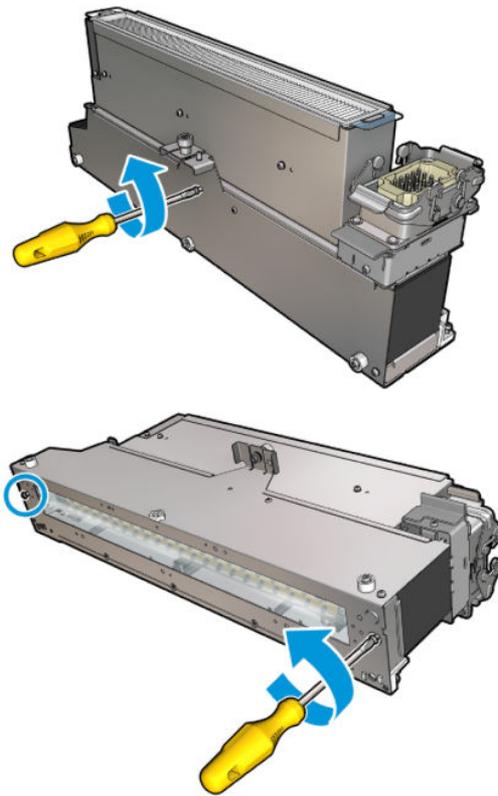
2. Assemble the drying lamps section and the new drying glass and air outlet.

3. Insert the three screws.

Reinstall the drying module

1. Reinstall the drying module into the carriage and tighten the three screws that attach it to the carriage.

2. Reconnect the electrical connector and close the latches.
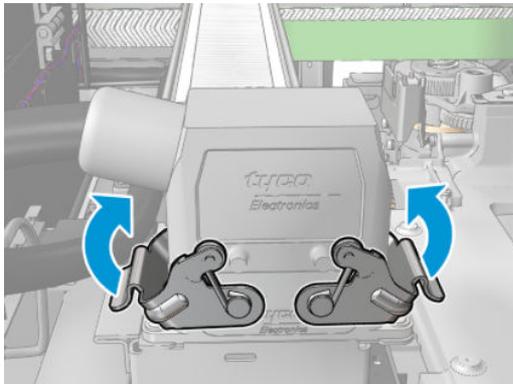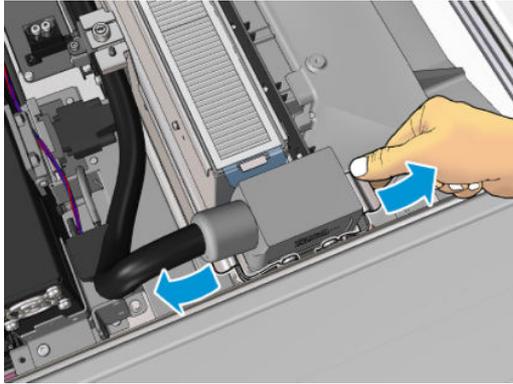
Finish off replacing the drying quartz glass

1. Close the service position window.

   ⚠ **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 185.

3. Dispose of the old quartz glass according to local regulations.

Replace a curing fan and resistor module

Risk of burns	Crush hazard	Risk of trapped fingers	Hazardous moving part	Light radiation hazard	Electric shock hazard	Moving fan blades

For more safety information, see Safety precautions on page 2

Prepare to replace a curing fan and resistor module

1. Ensure that you have the Curing Heater and Fan Module Kit (CZ056-67054), which is included in the HP Latex 3000 Series Standard Uptime Kit (D4J02A).

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 184.

4. Wait for the curing modules to cool down.

Replace a curing fan and resistor module

1. Open the front door.
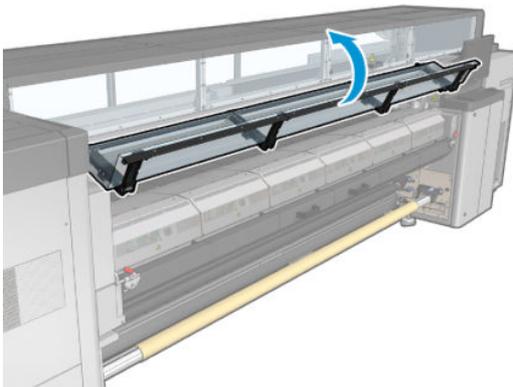
2. Use a flat screwdriver to remove the screws of the curing module.
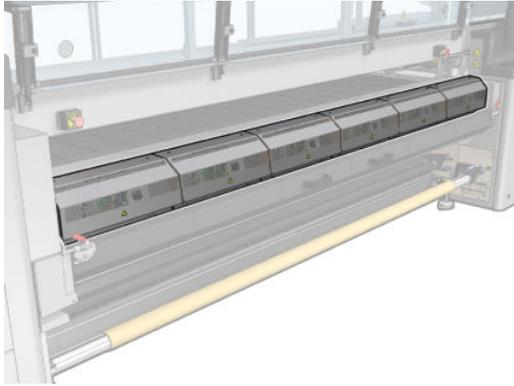
3. Raise the metal sheet in order to reach the interior of the module.
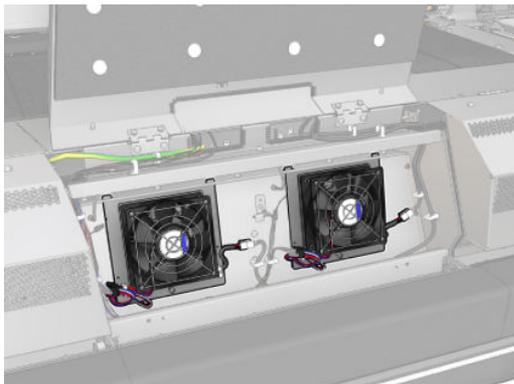
4.	Disconnect the two cables shown in the picture. You have to press the retention clip on each of the two connectors, and gently pull the cable. The black one is for the DC fans supply and the white one is for AC power to the curing heaters.
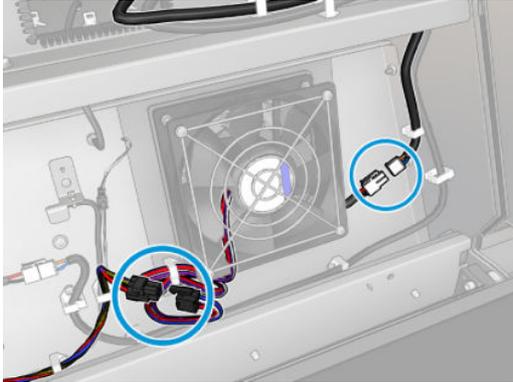
5.	Use a flat screwdriver to remove the screws of the fan-resistor module.
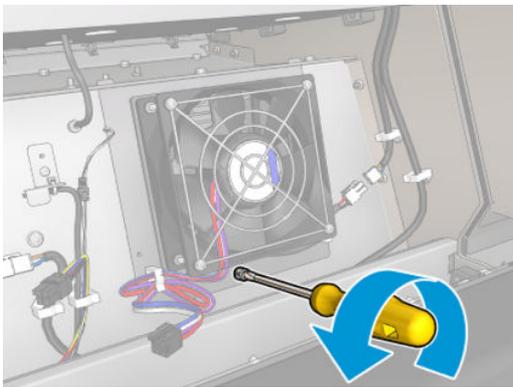
6. Remove the fan-resistor module.
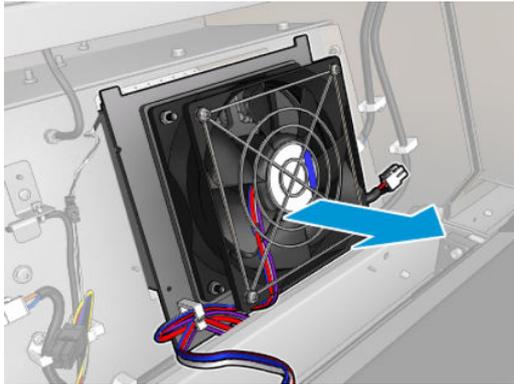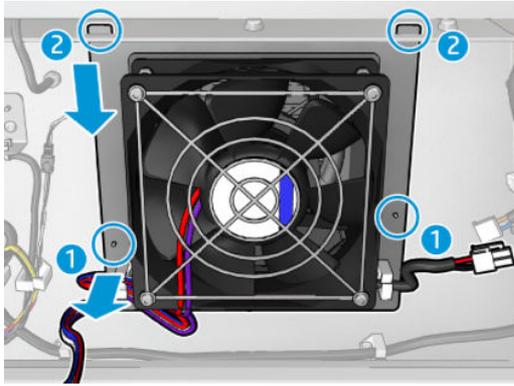
7. Put the new fan-resistor module into position.
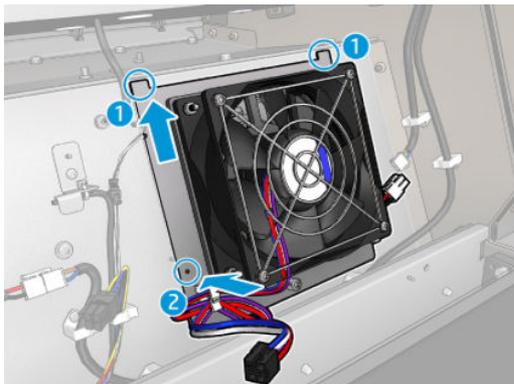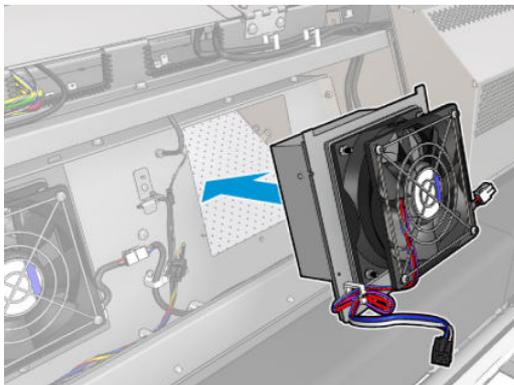
8. Screw in the screw and connect the two cables to each fan-resistor module.

9. Close the metal sheet and replace the screws to secure it.

Finish off after replacing a curing fan and resistor module

1. Close the front door.

2. Turn on the printer in the correct way for maintenance operations: see Turn the printer on on page 185.

Replace a service station cap

Risk of burns	Crush hazard	Risk of trapped fingers	Hazardous moving part	Light radiation hazard	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 (CZ056-67036), which is included in the HP Latex 3000 Series Standard Uptime Kit (D4J02A).

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 184.

Replace a service station cap

1. Unscrew and remove the cover as shown below, to access the capping station.
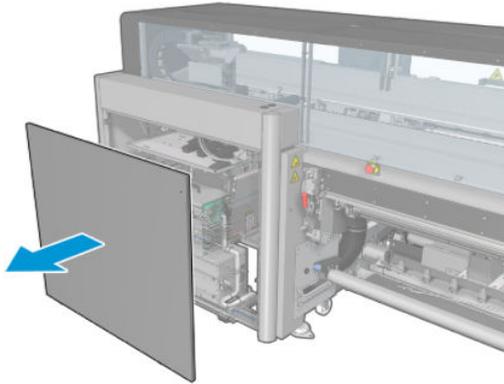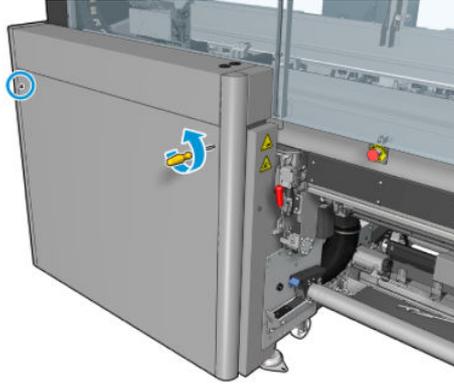
2. Remove the service station cap, using three movements as shown below.
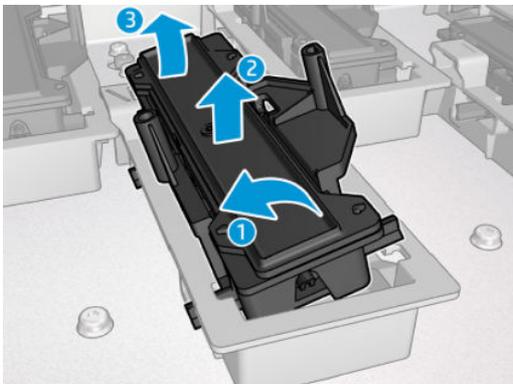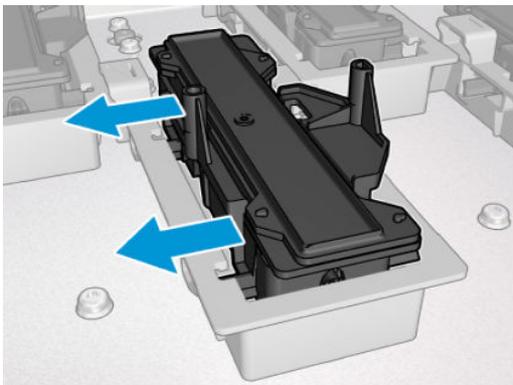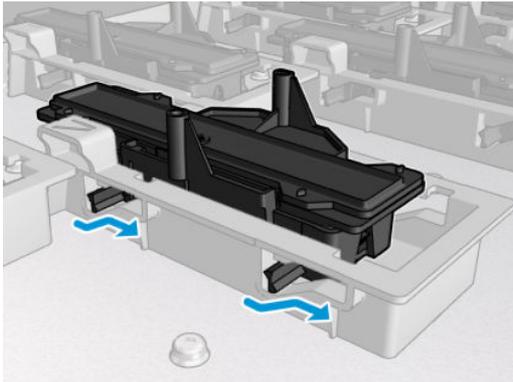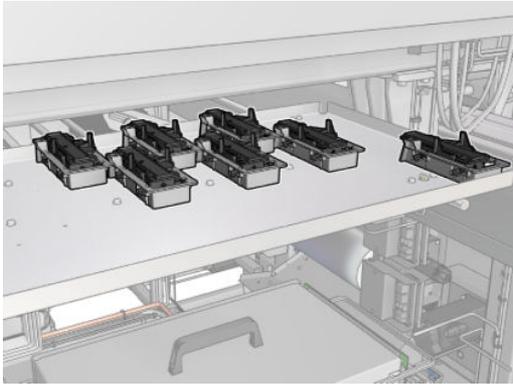
3. Remove the spring that holds the cap from below.
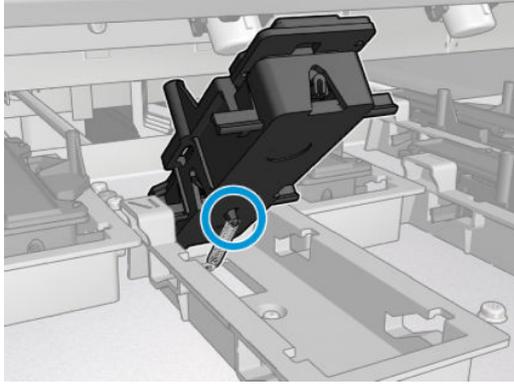
4. Attach the spring to the new service station cap and place it in position.

Finish off after replacing a service station cap

1. Put back the cover and screw it into place.

2. Turn on the printer in the correct way for maintenance operations: see Turn the printer on on page 185.

Replace an intermediate tank

Risk of burns	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.

Prepare to replace an intermediate tank

1. Ensure that you have the Intermediate Tank Kit (CZ056-67073), which is included in the HP Latex 3000 Series Standard Uptime Kit (D4J02A).

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 184.

Replace an intermediate tank

1. Unscrew the pointed screws and remove the cover to access the intermediate tanks.
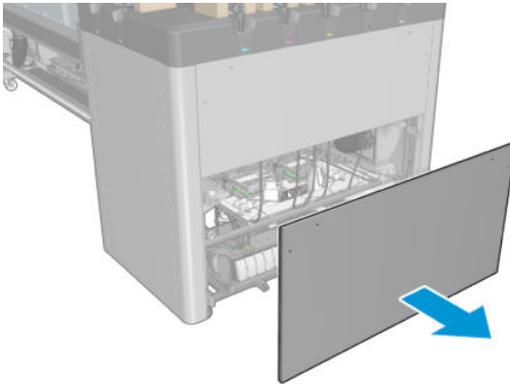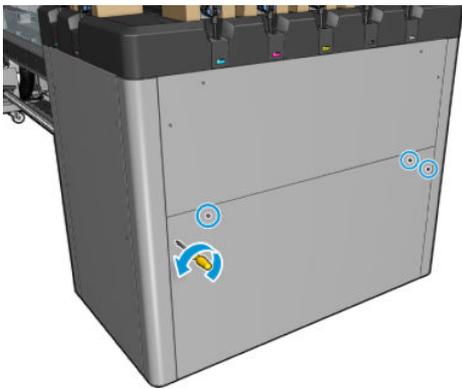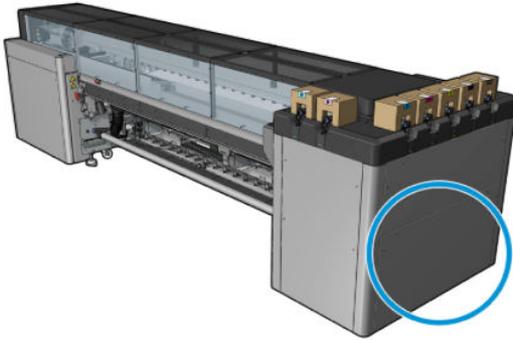
2. Remove the intermediate tank with the broken bag.
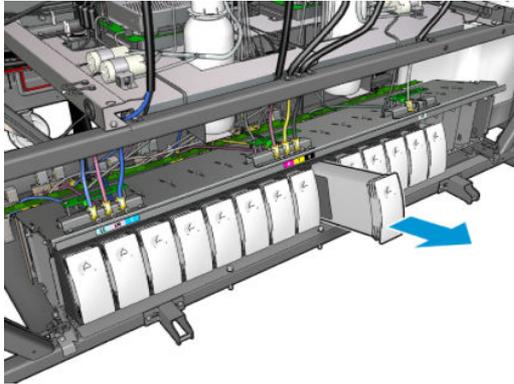
3. Put a piece of cloth in its place.

4. Unplug the air tube from each bottle shown below.
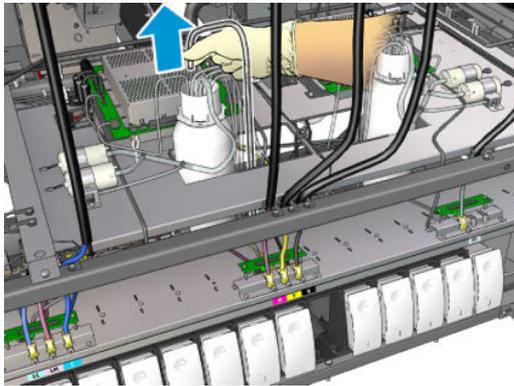
5. From the air tube, inject air (using the air pressure gun, for example) to clean the interior of the tube. The ink accumulated in the interior of the tube should be ejected onto the piece of cloth that you have put in place of the intermediate tank.

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 185.

2. Run a diagnostic test to refill the intermediate tank.

Replace an e-cabinet fuse

Risk of burns	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 (CZ056-67136), which is included in the HP Latex 3000 Series Standard Uptime Kit (D4J02A).

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 184.

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.
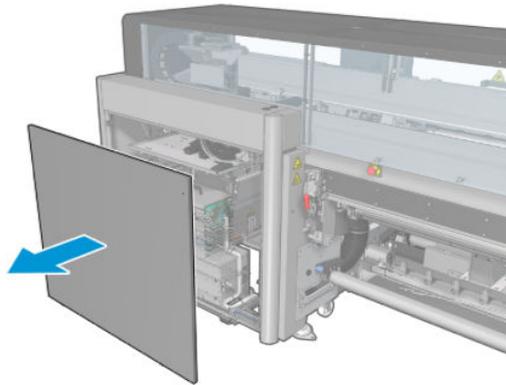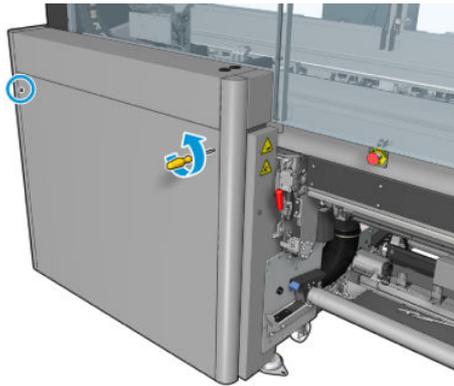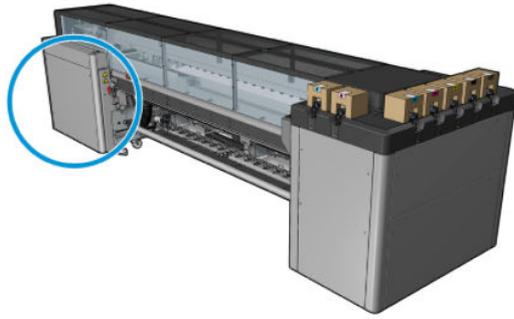
3. Locate the e-cabinet fuses.

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 185.

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.

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

For more safety information, see Safety precautions on page 2

Prepare to clean the printhead contacts

1. Ensure that you have the HP Latex 3x00 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 .

7. Open the service position window.

   NOTE: For easier service position window access, use the retractable step located directly in front of it, underneath the operator platform: simply release the lock pin and slide it out completely.

   IMPORTANT: Always lock the security pin before standing on the platform.
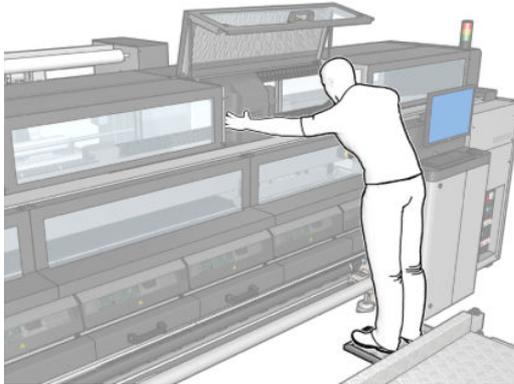
Clean the printhead contacts (in the carriage slot)

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.** This is especially important with the Optimizer printhead caps as there is a high risk of nozzle damage if they are used with the color printheads and vice-versa. The optimizer caps are labeled as shown below.

> 💡 **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 the brush provided in the HP Latex 3x00 Printer Cleaning Kit. A piece of paper or cloth can be used to collect the dirt.
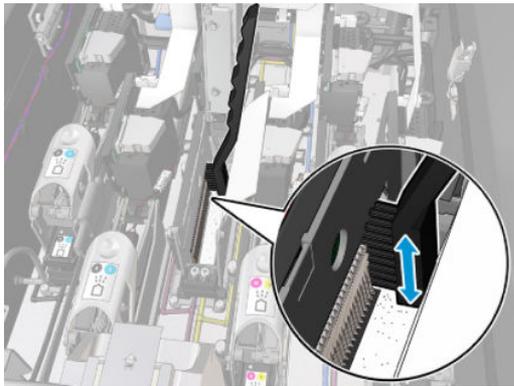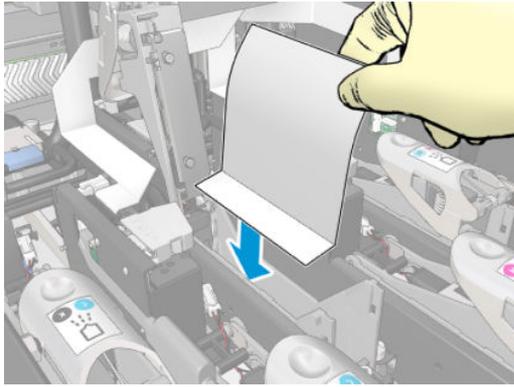
4. Remove the piece of paper or cloth to prevent the dirt from spreading.
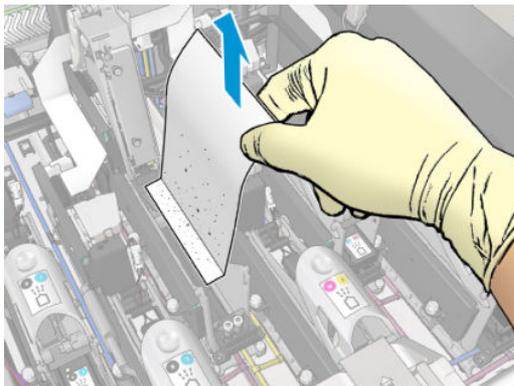
5. Use the pneumatic air gun to dislodge any remaining dirt.

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.
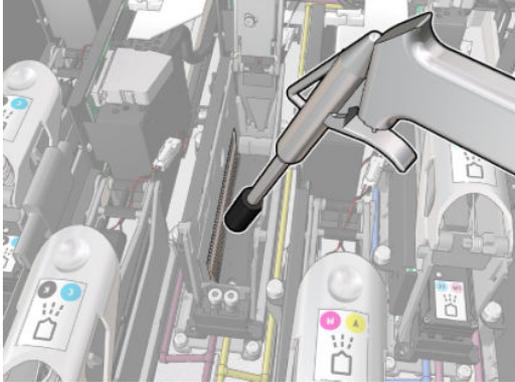
6. Illuminate the printhead slot again to check that the electrical connections are now clean and undamaged.

Clean the printhead contacts (on the printhead)

1. Take the printhead interconnect wiper provided in the HP Latex 3x00 Printer Cleaning Kit. Prepare the handle and one pre-moistened sponge in its pouch.

2. Take a sponge out of its pouch.
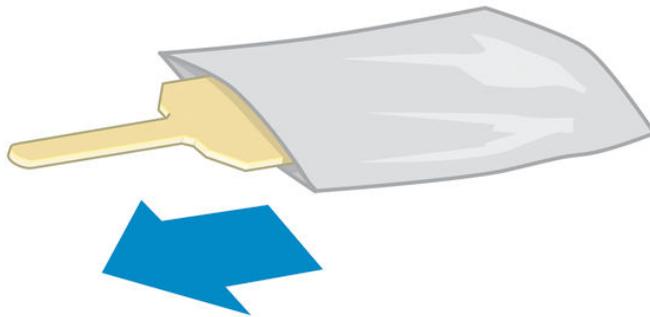
3. Open the handle.

4.   Load the sponge and close the handle as shown below.
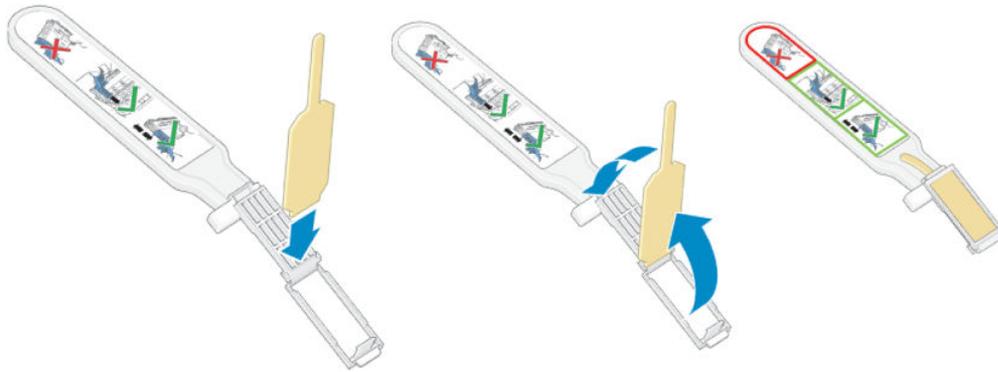
5.   Remove the printhead cap and locate the contacts.

6. Clean the contacts.
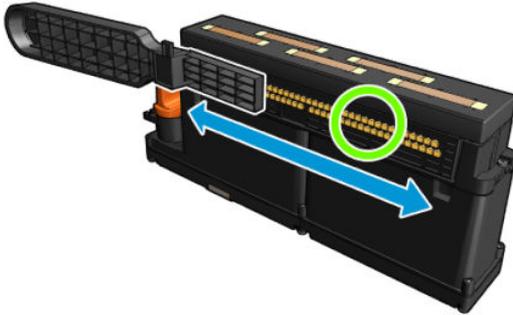
⚠ **CAUTION:** Do **not** use the printhead interconnect wiper to clean the nozzles!
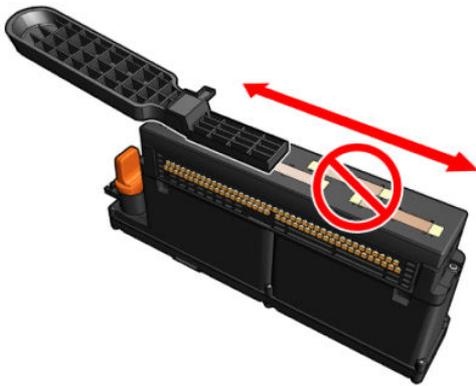
Finish off cleaning the printhead contacts

1. Wait until the contacts are dry.

2. Put back the printheads, each in the same slot from which it came.

3. Close the service position window.

4. Turn on the printer in the correct way for maintenance operations: see Turn the printer on on page 185.

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 (Q6702-67025), which is included in the HP Latex 3000 Series Standard Uptime Kit (D4J02A).

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.
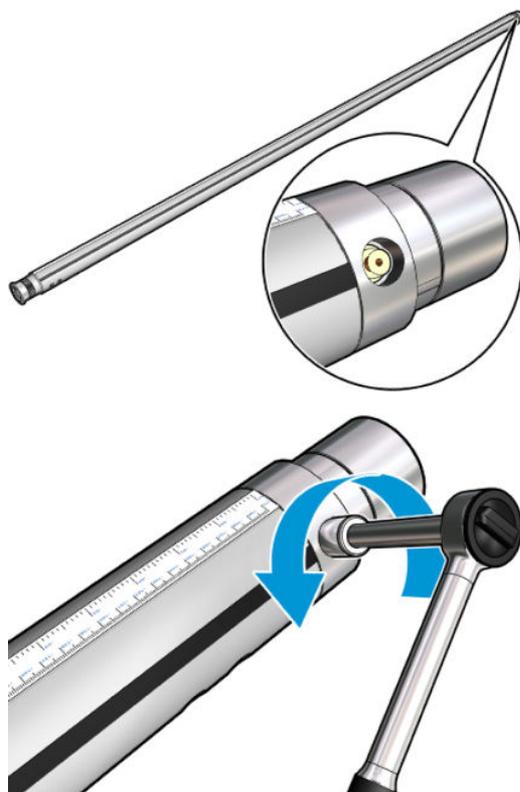
2. Insert the new valve and tighten it. The valve must be well seated in position and firm, but do not force it with the key.

Finish off replacing a spindle valve

▲ Test the new valve by inflating and deflating the spindle.

Clean the roll-to-free-fall roller and pinchwheels

Risk of burns	Crush hazard	Risk of trapped fingers

For more safety information, see

The roll-to-free-fall roller should be cleaned whenever it is visibly dirty (for instance, whenever ink has not cured properly when using the roller), or when you notice that substrate advance is no longer smooth and regular (for instance, if you notice that the roller often slips when trying to keep the substrate under tension).

Prepare to clean the roll-to-free-fall roller and pinchwheels

1. Check that the printer is not printing.

2. Unload the substrate.

3. Raise the pressure roller lever if it was previously lowered.

Clean the roll-to-free-fall roller

1. Clean the roller with a clean cloth dampened with water (for persistent dirt you may use isopropyl alcohol, but do not use petroleum-based cleaning liquids).

   📝 NOTE: If you are in an area (such as California) that regulates VOC cleaning and maintenance fluids, instead of isopropyl alcohol use a VOC-certified cleaner such as a properly diluted Simple Green All-Purpose Cleaner.
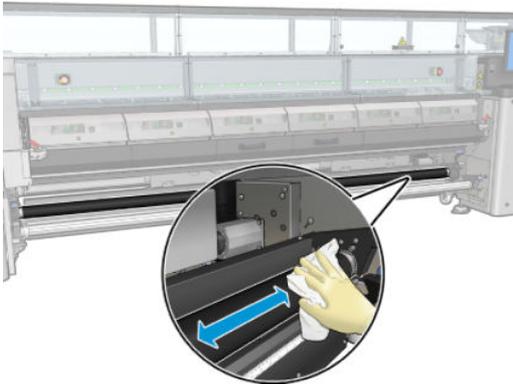
2. Turn the roller manually and keep cleaning to make sure the rubber surface of the roller is cleaned all around.

   ⚠ WARNING! Take care not to trap your finger when turning the roller.

3. Ensure that the cleaned parts are completely dry and the vapors have completely evaporated.

Clean the pinchwheels

1. Open the roller latches at both sides and move the roller to the front.

2.   Lower the pressure roller lever so that the pinchwheels are accessible.
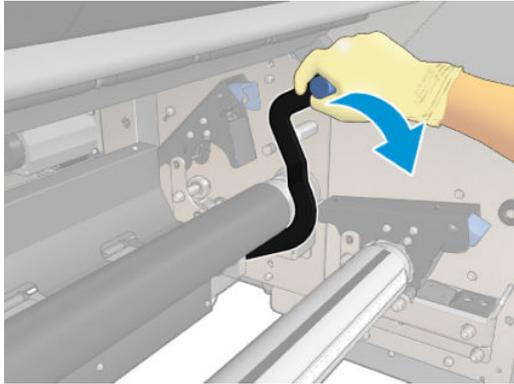
3.   Clean the pinchwheels carefully with a cloth dampened with water (for persistent dirt you may use isopropyl alcohol, but do not use petroleum-based cleaning liquids).

📝 NOTE: If you are in an area (such as California) that regulates VOC cleaning and maintenance fluids, instead of isopropyl alcohol use a VOC-certified cleaner such as a properly diluted Simple Green All-Purpose Cleaner.
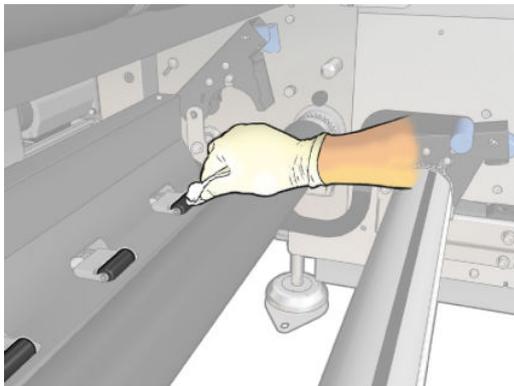
4.   Once the pinchwheels are clean, raise the pressure roller lever.

5.   Roll the roller backwards by pushing it (not by grabbing it).

⚠ WARNING!   Take special care when moving the roller backwards not to hit your fingers against the black substrate guide behind and under the roller.

6.   Once the roller is in position, close the latches at both sides.

7.   Ensure that the cleaned parts are completely dry and the vapors have completely evaporated.

Clean the carriage rails manually

Risk of burns	Crush hazard	Risk of trapped fingers	Hazardous moving part	Light radiation hazard	Electric shock hazard

For more safety information, see Safety precautions on page 2

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 (this takes about 2 minutes).

5. Turn off the printer in the correct way for maintenance operations: see Turn the printer off on page 184.


6. Open the front door.
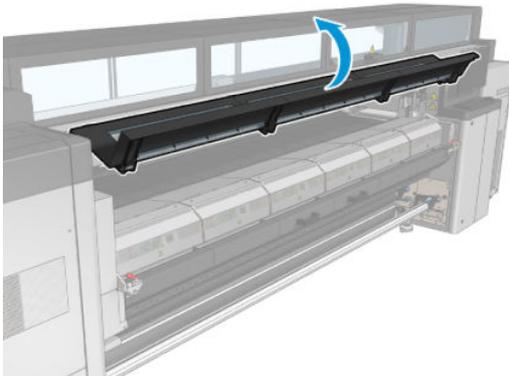
Clean the carriage rails manually

1. Standing at the front of the printer, clean the front rail using a lint-free cloth dampened with distilled water.
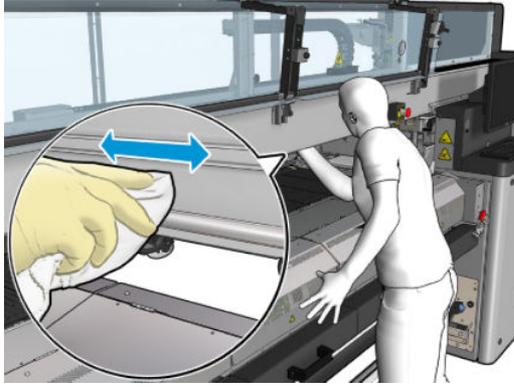
2. Close the front door.

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.
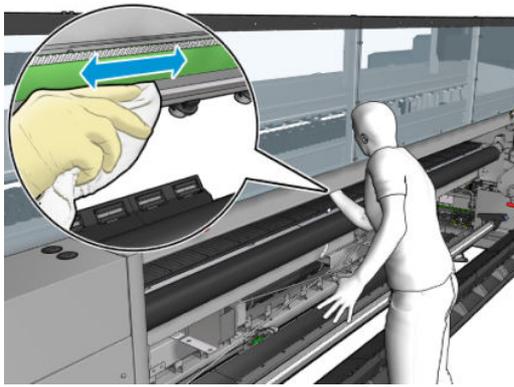
⚠ CAUTION: Be careful not to stain the encoder strip. Keep the cloth well away from the encoder housing.

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 Turn the printer on on page 185.

Pinch clamp replacement

Crush hazard	Risk of trapped fingers	Hazardous moving part	Risk of cutting fingers

For more safety information, see Safety precautions on page 2
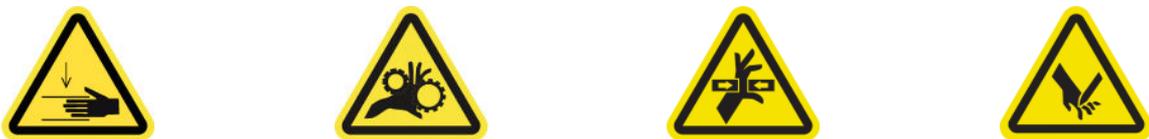
Removal

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.
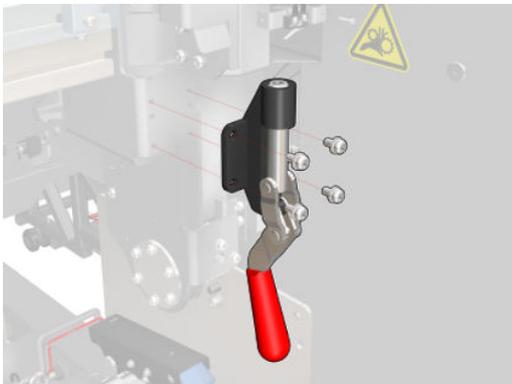
Installation

1. Install the new pinch clamp and attach it with the screws.

2. Perform the safety interlock diagnostic (51001).

Replace the rocker pads

Risk of trapped fingers

For more safety information, see Safety precautions on page 2

Removal (same for all four sides)

1. Unload all the spindles from both sides of the printer.

2. Open the latch.

3. Unscrew the 2 hexagonal cap screws with a wrench and remove the rocker pad.
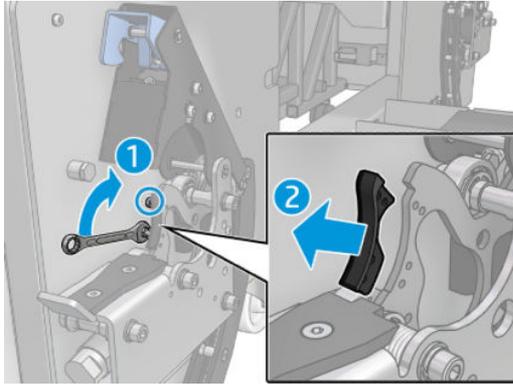
Installation

▲ Install the new rocker pad and replace the 2 screws.

Clean the scan axis encoder

Risk of burns	Crush hazard	Risk of trapped fingers	Hazardous moving part	Light radiation hazard	Electric shock hazard

For more safety information, see

NOTE: Perform this procedure only if the automatic cleaning procedure fails.

Prepare to clean the scan axis encoder

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 (this takes about 2 minutes).

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

6. Open the front door.
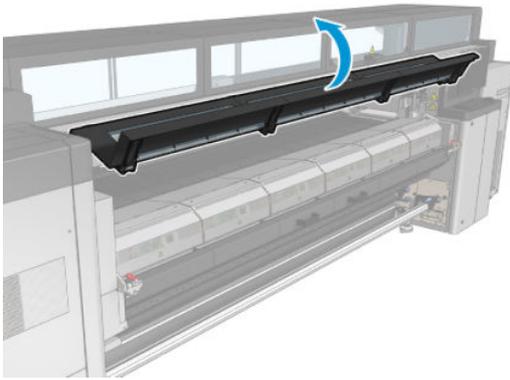
Clean the scan axis encoder

1. Go to the rear of the printer and open the loading table.

2. Standing at the rear of the printer, clean the scan axis encoder with a lint-free cloth dampened with distilled water. You can access the encoder from below, through the gap between the platen and the beam.
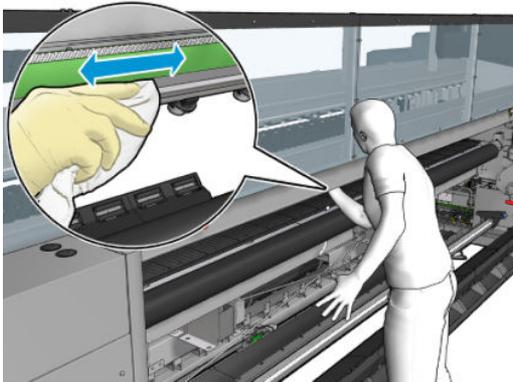
3. Ensure that the cleaned parts are completely dry and all water has completely evaporated.

4. Close the loading table.

Finish off cleaning the scan axis encoder

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 .

Replace the curing module side rubber

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 latches and pull the curing module out.

2. Remove any remaining bits of foam from both sides.
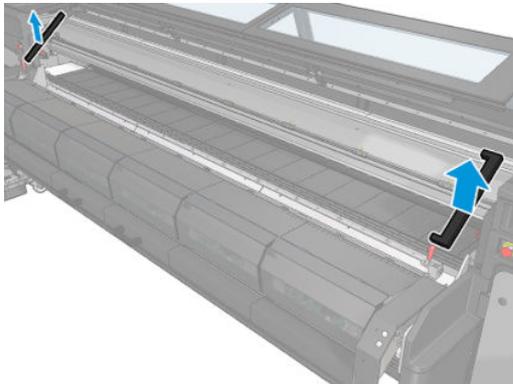
Installation

1. Insert new foams. Tape them in to insure they are well sealed between the curing module and front bottom plate to avoid any vapor condensation leakage.
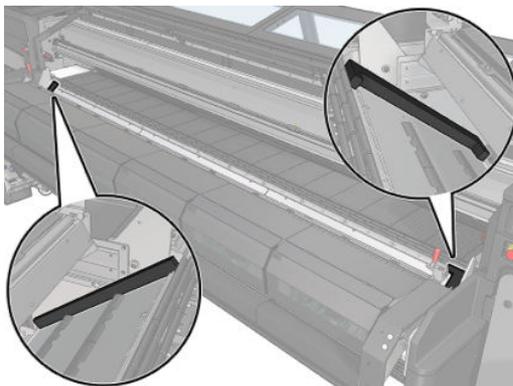
2. Push the curing module in and close the latches.

Clean the service station caps

Risk of burns	Crush hazard	Risk of trapped fingers	Hazardous moving part	Light radiation hazard	Electric shock hazard

For more safety information, see Safety precautions on page 2

Prepare to clean the service station caps

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 carriage to the service position.

4. Turn off the printer in the correct way for maintenance operations: see Turn the printer off on page 184.

## Clean the service station caps

1. Unscrew and remove the cover as shown below, to access the capping station.
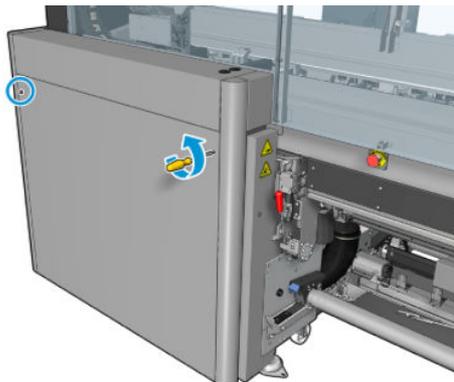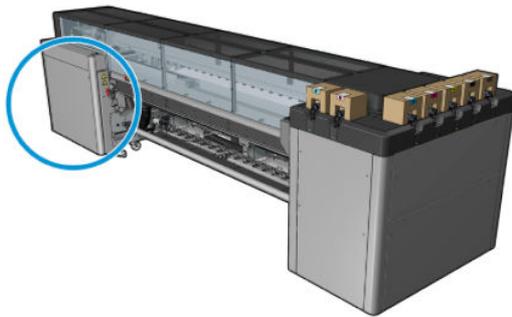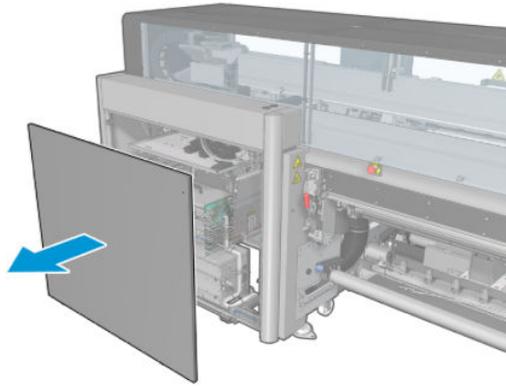
2. Clean the zone around the service station caps.
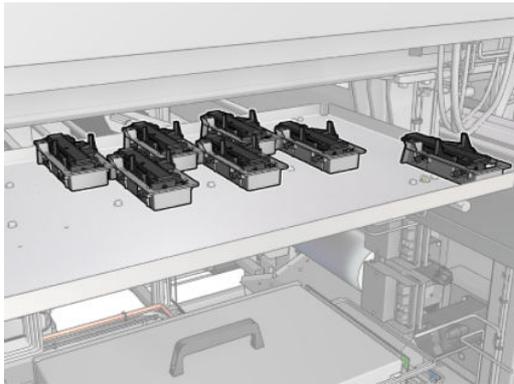
Finish off after cleaning a service station cap

1. Put back the cover and screw it into place.

2. Turn on the printer in the correct way for maintenance operations: see Turn the printer on on page 185.

Empty the printhead cleaning waste bottle

Risk of burns	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. Unlock and open the printhead cleaning roll door.
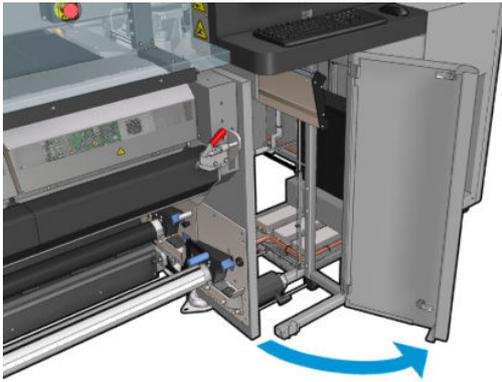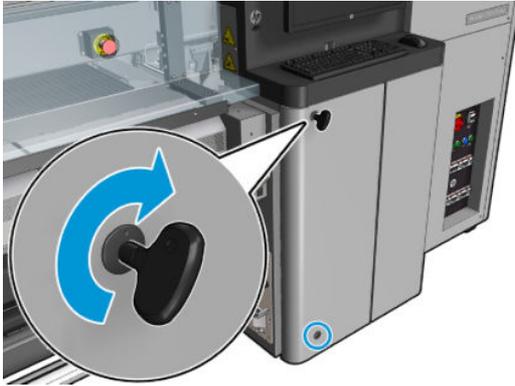
3. Remove two screws.
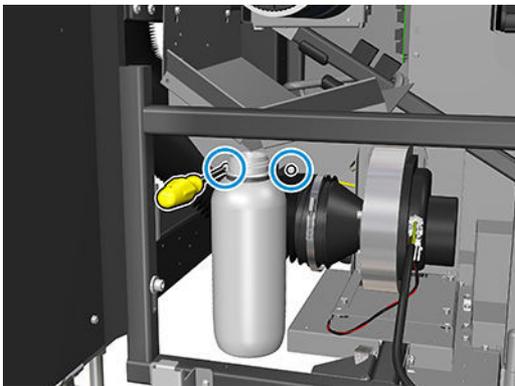
4. Remove the waste bottle.

☼ TIP: You are recommended to wear gloves for this operation.

5. Empty the bottle.

📝 NOTE: The bottle contains a mixture of ink additives and water. Dispose of this mixture according to local regulations. You can find the Material Safety Data Sheets (MSDS) for the ink at http://www.hp.com/go/msds.

Installation

1. Put the empty bottle back in place.

2. Take care that the mouth of the bottle is well positioned to receive the liquid falling from above.

3. Insert and tighten the screws that fix the position of the bottle.
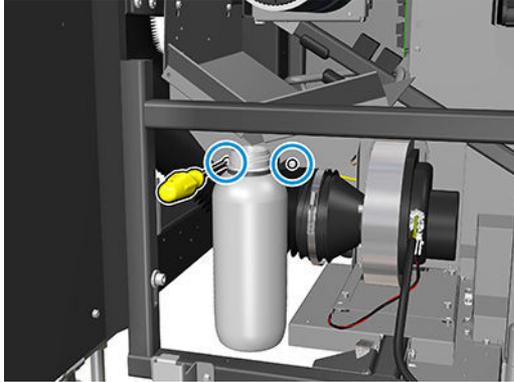
4. Close the printhead cleaning roll door.

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

Clean the perforated plate

Risk of burns	Crush hazard	Risk of trapped fingers	Hazardous moving part	Electric shock hazard
For more safety information, see Safety precautions on page 2				

The perforated plate is a drilled metallic sheet located in the curing assembly. Through its holes the curing fans blow hot air onto the substrate.

Prepare to clean the perforated plate

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 .

4. Wait for the curing modules to cool down (approx. 5 min).

5. Remove the spindle.

Pull out the curing assembly

1. Open the front door.
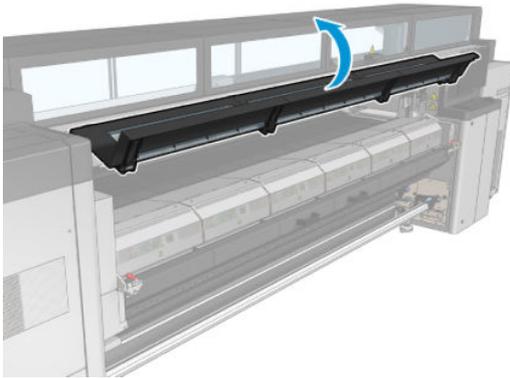
2. Open the curing module latches.
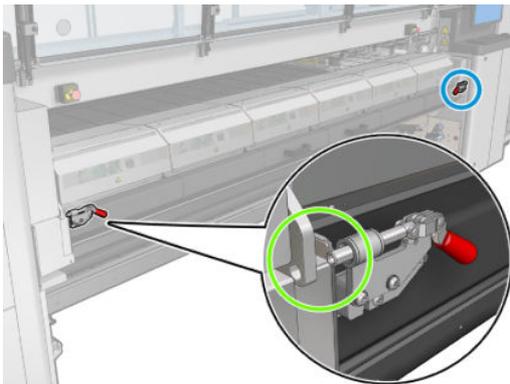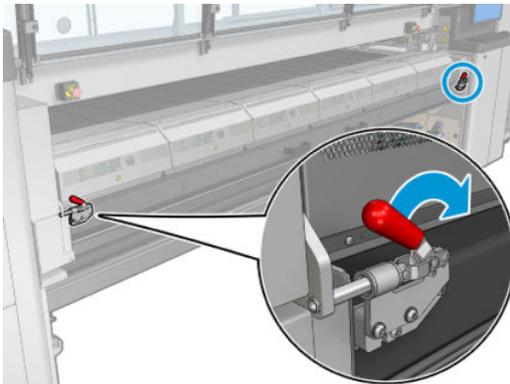
3. Pull out the curing assembly.
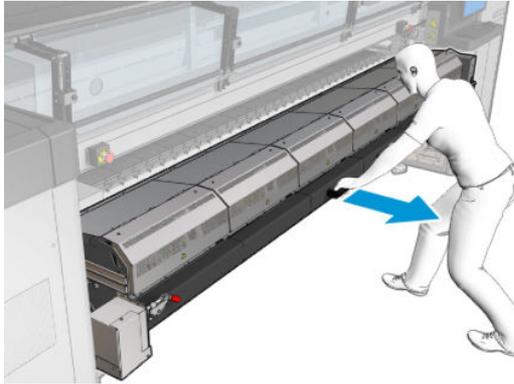
Clean the perforated plate

▲ Lying on the floor as shown in the picture, clean the perforated plate of the curing modules with a lint-free cloth dampened with distilled water.
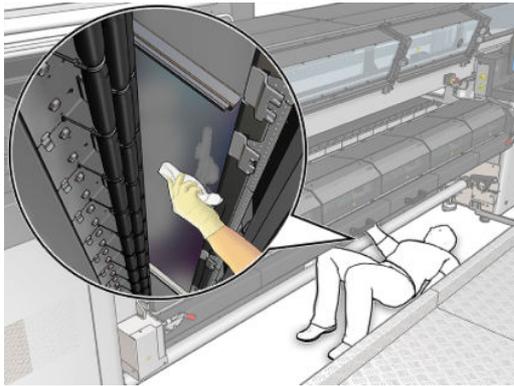
Finish off cleaning the perforated plate

1. Push the curing assembly back to its working position.

2. Close the curing latches.

3. Put the spindle back in position.

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

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

Ink collector 3 liter/daily maintenance

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

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

For more safety information, see Safety precautions on page 2

Introduction

The following maintenance procedures are required every 3 liters/daily:

- Clean the aerosol filters on page 196

- Wipe the protector on page 352

- Wipe the ribs of the ink collector modules on page 354

- Clean condensates from the output platen and output beams on page 203

Wipe the protector

The protector should be kept clean for optimal performance and reliability.

1. Ensure that the printer is not printing.

2. Unload the substrate.

3. Open the front door.
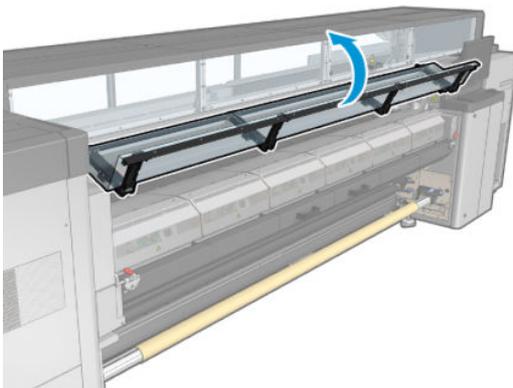
4. Open the curing module latches.
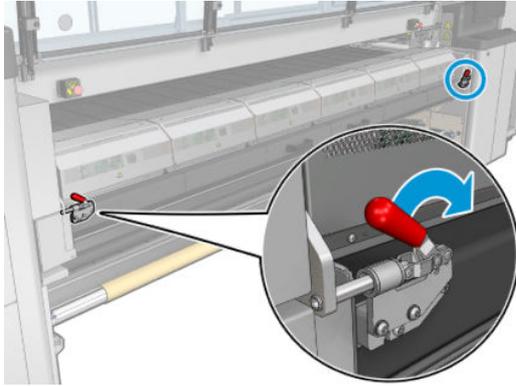
5. Open the curing module.
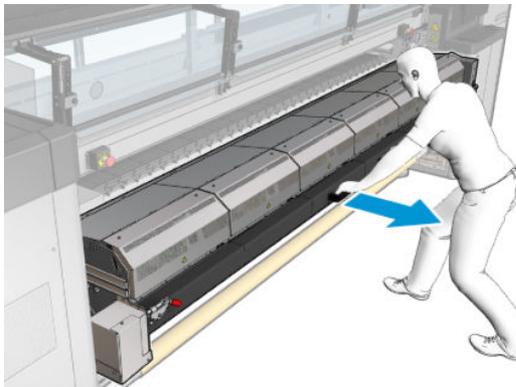
⚠ CAUTION: Wait for the curing modules to cool down.

6. Wipe both the visible part of the protector and the underneath with a lint-free cloth dampened with distilled water.

7. Close the curing module and latches.

Wipe the ribs of the ink collector modules

1. Wipe the ribs of the ink collector modules with a lint-free cloth dampened with distilled water.

2. Close the front door.

Ink collector: after uninstalling the ink collector kit maintenance

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

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

For more safety information, see Safety precautions on page 2

Introduction

The following maintenance procedures are required after uninstalling the ink collector kit:

- Clean the aerosol filters on page 196

- Wipe the protector on page 355

- Wipe the ink collector modules on page 355

- Clean the curing module and airlet plates on page 356

- Clean the print zone on page 192

- Clean the substrate-advance sensor on page 194

Wipe the protector

While you have the protector out of the printer, wipe all surfaces and check the ribs.

Wipe the ink collector modules

While you have the ink collector modules out of the printer, wipe all dirty surfaces. If necessary, replace the foams: see Replace the ink collector foams on page 359.

> **⚠ 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.

Clean the curing module and airlet plates

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

Risk of burns	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.

Curing lip

1. Open the front door.
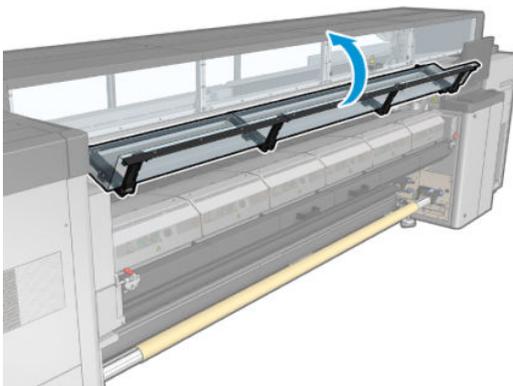
2. Open the curing module latches.
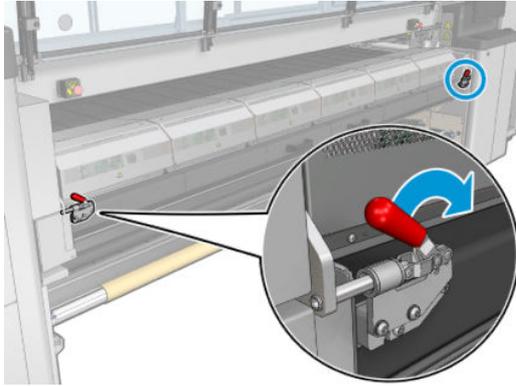
3. Open the curing module.
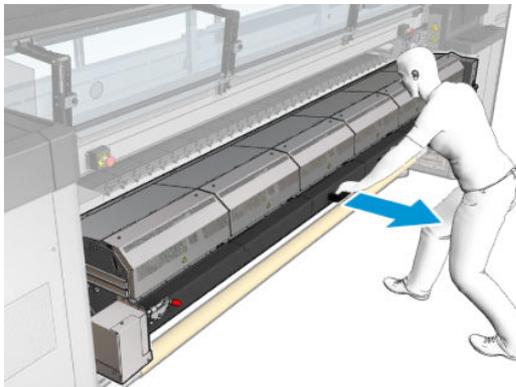
⚠ CAUTION: Wait for the curing modules to cool down.

4. Wipe the curing lip with a lint-free cloth dampened with isopropyl alcohol, and make sure that the platen is dry before printing.

📝 NOTE: If you are in an area (such as California) that regulates VOC cleaning and maintenance fluids, instead of isopropyl alcohol use a VOC-certified cleaner such as a properly diluted Simple Green All-Purpose Cleaner.
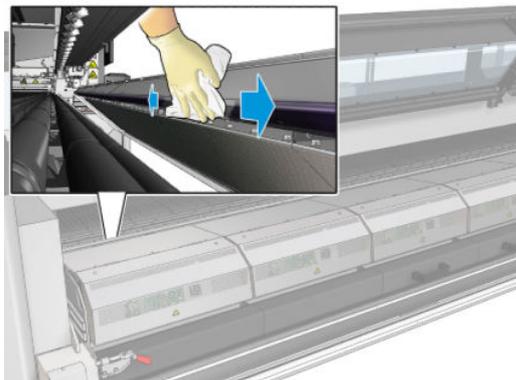
Bottom plate

▲ Wipe the bottom plate with a lint-free cloth dampened with distilled water, and make sure that the platen is dry before printing.
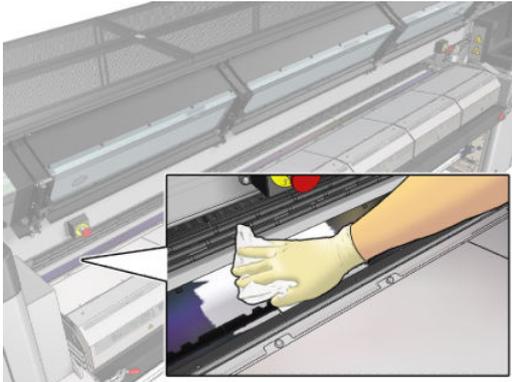
Diverter interwheels

1. Wipe the diverter interwheels with a lint-free cloth dampened with distilled water, and make sure that the platen is dry before printing.
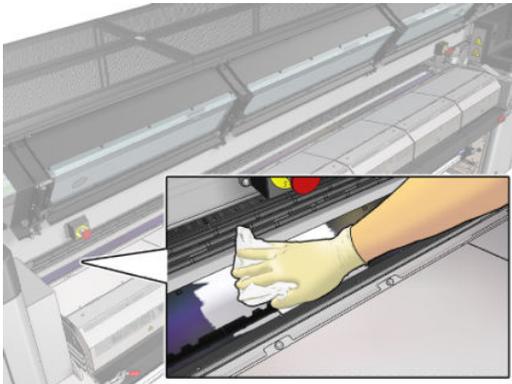
2. Close the curing module and the front door.

Ink collector 40 liter maintenance

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

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

For more safety information, see Safety precautions on page 2

Introduction

The following maintenance procedures are required every 40 liters:

- Replace the ink collector foams on page 359

- Clean the curing module and airlet plates on page 356

- Clean condensates from the output platen and output beams on page 203

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.
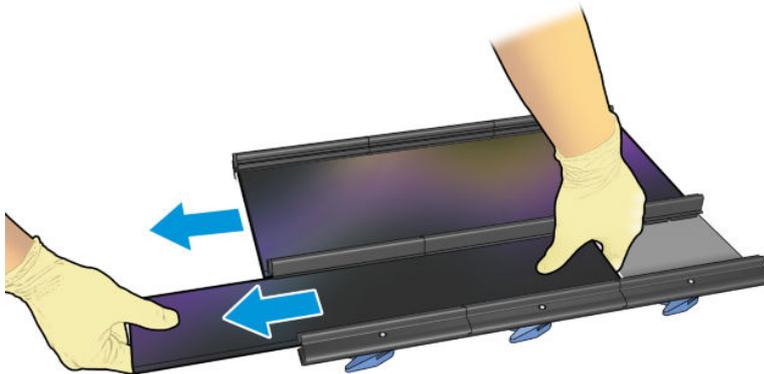
📝 **NOTE:** Consult your local authorities to determine the correct manner in which to dispose of them.

2. Slide in the new foams.

    ⚠ 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.

Ink collector 500 liter maintenance

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

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

For more safety information, see Safety precautions on page 2

Introduction

The following maintenance procedures are required every 500 liters:

- Clean the curing fan grid and internal foam on page 361
- Clean the curing module and airlet plates on page 356
- Replace a curing fan and resistor module on page 318
- Replace protector and textile substrate edge holder on page 364

Clean the curing fan grid and internal foam

Risk of burns	Crush hazard	Risk of trapped fingers	Hazardous moving part	Light radiation hazard	Electric shock hazard	Moving fan blades

For more safety information, see Safety precautions on page 2

Prepare to replace the curing fan grid and internal foam

1. Ensure that you have the Curing Heater and Fan Module Kit (CZ056-67054), which is included in the HP Latex 3000 Series Standard Uptime Kit (D4J02A).

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 184.

4. Wait for the curing modules to cool down.

Clean the curing fan grid

1. Open the window.
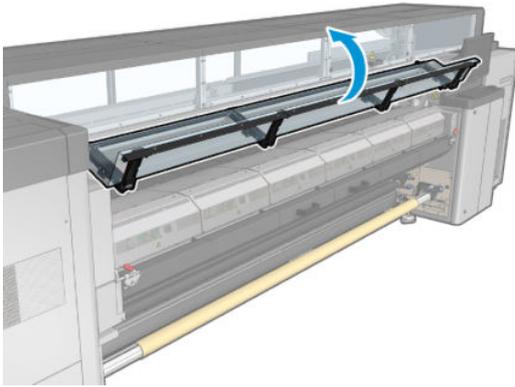
2. Use a flat screwdriver to remove the screws of the curing module.
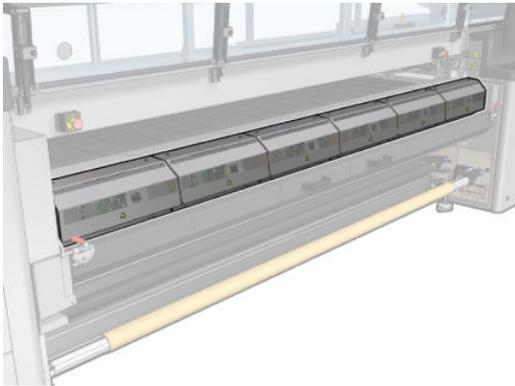
3. Raise the metal sheet in order to reach the interior of the module.
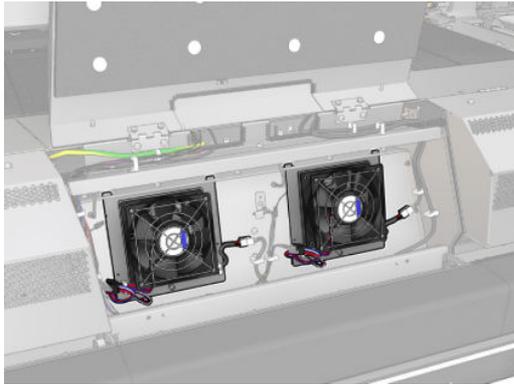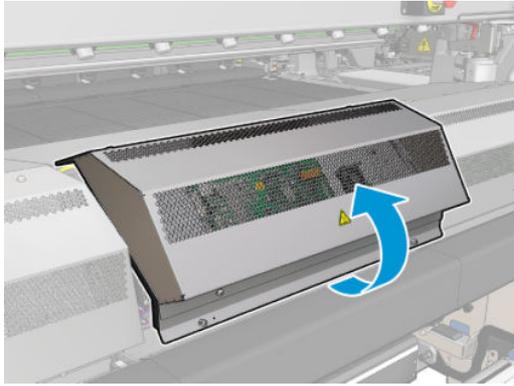
4. Remove the grid from the fan.
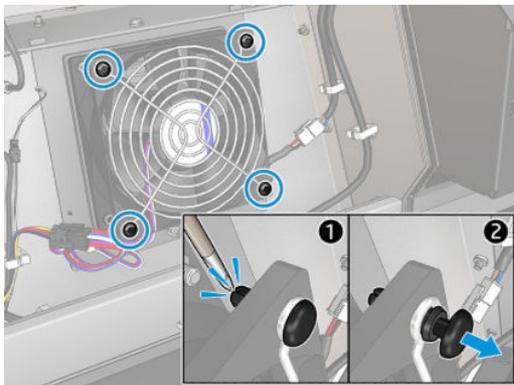
5. Clean the dirt with a brush or with the air supply gun.
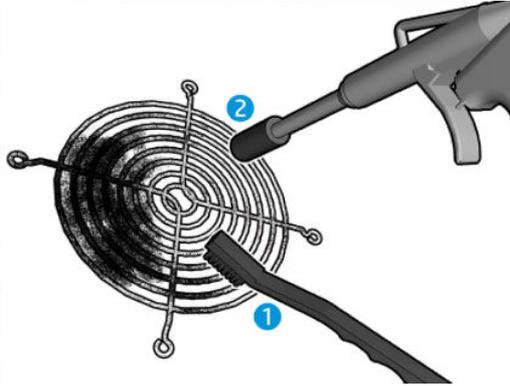
6. Place the grid back into place and fix it with the four screws.

7. Clean the foams from the inner face of the metal sheet module cover.

8. Close the metal sheet and replace the four screws to secure it.

Finish off after cleaning the curing fan grid and internal foams

1. Close the front door.

2. Turn on the printer in the correct way for maintenance operations: see .

Replace protector and textile substrate edge holder

After using 500 liters with the ink collector, you need to replace the protector and the edge holders if they are damaged.

10 Troubleshoot jumbo unit issues

General advice

This section offers guidelines on how to troubleshoot the following system error conditions as well as some other jumbo-unit-specific issues which do not trigger printer system errors.

The input and output jumbo units are equipped with limit switch sensors to detect if a tension roller has reached the top and bottom ends of the track. If it has, the printer automatically stops, and reports a system error.

For safety reasons, the jumbo input and output units automatically disable if, and only if, it was a top limit switch that triggered the error. This avoids any unwanted substrate tension buildup which can occur only when the tension bar reaches the top of its track. The jumbo units remain enabled if the error was triggered by a bottom limit switch.

The printer also reports system errors when it detects other conditions, including, but not limited to: excessive web tension preventing its main roller from moving, or emergency stop button(s) pressed.

IMPORTANT: In some cases contact with HP Service will be required.

The printer has stopped and reports system error 41.00.00.:68 or 41.00.00:69 – Check tension bar

IMPORTANT: If the printer has reported this error and any of the jumbo units continue to unwind or rewind substrate, stop the respective jumbo unit(s) immediately, by either disabling, powering off, setting to zero-speed manual mode, or pressing an emergency stop button.

NOTE: This error is only displayed in automatic mode. The unit stops if it appears

This issue is generally caused by one of three main reasons:

- An end of roll or torn substrate condition

- Incorrect settings in the jumbo input and/or output control panel(s)

- A faulty component or subsystem

To troubleshoot:

1. Identify which limit switch(es) triggered the error (input top switch, input bottom switch, output top switch or output bottom switch).

2. Identify whether or not the error was caused by an end of roll, or a torn substrate:

a.   Such a condition typically looks like loose substrate on the floor, having detached from the input core, or torn at some point along the substrate web. This results in the input or output tension bar(s) reaching the floor and triggering their respective bottom switches.

b.   In some cases however, if the input roll reaches its end and the substrate fails to self-detach from the core, you may find that the input tension bar has reached the top of its track, and triggered the input top switch.

3.   If the error was caused by an end of roll or torn substrate condition; simply follow the standard unload and load procedures to thread the substrate through the system again. See Load a roll into the Jumbo Roll Solution on page 60 and Unload a roll from the Jumbo Roll Solution on page 95.

📝 IMPORTANT: If the error was triggered by a top limit switch, its respective jumbo unit will be disabled to prevent unwanted substrate tension buildup. In this case, use the internal print server arrow buttons to move the substrate until the affected limit switch is released. Be careful to move the substrate in the direction that releases the limit switch, and not the opposite.

4.   If the error was not caused by an end of roll or torn substrate, it was likely caused by incorrect control panel settings in the offending jumbo unit. Follow these steps to troubleshoot this scenario:

a.   Use the internal print server arrow buttons to move the substrate until the affected limit switch is released.

📝 IMPORTANT: Be careful to move the substrate in the direction that releases the limit switch, and not the opposite.

b.   Inspect the substrate web. If the web remains free of any major damage, wrinkles, or baggy regions; simply continue with the next step. If not, perform a full unload procedure and reload the substrate.

c.   Verify the control panel settings in the offending jumbo unit(s):

i.   Verify the respective counterweight bar has been properly loaded.

ii.   Make sure the un/rewinder spin direction matches the direction of its respective roll (printed side in or out).

iii.   Make sure the un/rewinder is set to automatic mode.

iv.   Make sure the jumbo unit is powered ON.

d.   If necessary, re-enable the offending jumbo unit and verify it operates properly; that is, verify that it successfully raises its respective tension bar until it reaches a stable position about halfway along its track.

e.   In the Internal Print Server, press the **Load/Unload Substrate** button and press **Finish**.

f.   The printer is now ready to print.

5.   If the steps above fail to resolve the issue, HP support contact may be required.

The printer has stopped and reports system error 41.02.00.62 – Problem moving main roller

This issue error is reported whenever the printer signals the main roller to move but for some reason it does not. The general reasons that can cause this issue to occur are:

- A substrate jam has occurred

- The substrate web is under excessive tension

- There is a problem with the main roller actuator system

To troubleshoot:

1. Identify the cause of the system error from the 3 options listed above.

2. If the error was caused by a substrate jam:

   a. Press an emergency stop button as quickly as possible to minimize damage to the printheads.

   b. Wait about 10 minutes for the printer to cool down.

   c. 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. Check the curing zone in particular. Make sure that nothing remains in the printer's substrate path. If you are unable to remove all the obstructions, call your service representative (see HP Customer Care Centers on page 418).

   d. Use Print Care to start the printer in service mode.

   e. Use the print care diagnostic menu to raise the carriage beam, and check underneath for any pieces of substrate.

   f. Use the same menu to lower the carriage beams to its normal position.

   g. Before restarting the printer, check that all circuit breakers are on, and all emergency stop buttons are released.

   h. Use Print Care to restart the printer in normal mode.

   i. Reload the substrate.

3. If the error was caused by excessive tension in the substrate web:

   IMPORTANT: To avoid any sudden release; apply extra caution when troubleshooting a tension buildup in the substrate web.

   a. If any of the jumbo unit tension bars have become jammed mechanically, and without triggering its respective limit switch, press an emergency stop button immediately.

   b. If not, the issue was likely caused by insufficient weight on one of the jumbo unit counterweight bars. Adjust the counterweight according to substrate type, and reload the substrate in the printer's internal print server.

4. If the issue persists, and you believe there is a problem with the main roller actuator system, call HP support.

The substrate has jammed in the jumbo input and/or output unit(s) without triggering a printer system error

IMPORTANT: Press an emergency stop button immediately.

This is a rare issue that can occur when a jumbo unit tension bar becomes mechanically jammed while the respective unit is taking up substrate from the system and the printer is idle. Since the printer is idle, and the

tension bar limit switches are not reached due to the jam, the system cannot detect the condition, and as such, puts the system at risk of mechanical damage.

An example is if foreign objects were left in the area beneath the jumbo output unit counterweight bar while the printer was idle, and the jumbo output unit was left unsupervised to wind up substrate in manual mode. The foreign objects beneath the counterweight bar could jam the tension bar, preventing it from reaching its top limit switch, which could result in the jumbo output unit applying excessive tension to the substrate.

To troubleshoot:

1. Inspect the substrate web for tension buildup.

    IMPORTANT: To avoid any sudden release; apply extra caution when troubleshooting a tension buildup in the substrate web.

2. Carefully relieve the tension build up. Depending on the scenario, it may be necessary to cut the substrate; use the internal print server arrows or the jumbo units in manual mode to do so.

3. Inspect the system for damage, and perform any diagnostics/calibrations necessary. If you believe the system may have been damaged, contact HP support, if not, reload the substrate and resume.

One or more safety chucks is jammed in the jumbo input and/or output unit(s)

The jumbo unit unwinder and rewinder modules are equipped with safety chucks which offer a safe way to load and unload spindles, with built-in quick release functionality. Their quick release functionality consists of a sliding handwheel or collar, a set of alignment marks on the handwheel and a release button.

It is important to take into account that spindles are rated to particular maximum loads, based on the width of the substrate loaded.

If it is difficult or impossible to operate a chuck, this could be caused by:

- The safety chuck alignment marks are out of alignment locally (i.e. the mark on the rotating collar of a chuck does not line up with the mark on the same chuck's body)

- The safety chuck alignment marks are out of alignment globally (i.e. the mark on the rotating collar of a chuck does not line up with the mark on the rotating collar of the chuck on the opposite end of the spindle while a spindle is loaded)

- Release button not pressed in all the way

- Excessive spindle load

To troubleshoot:

1. Make sure the two red marks on the chuck's collar and body are in alignment, and that you are fully pressing the release button.

2. In some rare cases, if a spindle has been improperly loaded or handled, you may find it impossible to simultaneously open the two chucks supporting it. You may find that aligning the red marks on one chuck produces a misalignment on the marks of the opposing chuck. The following guidelines can help recover from such a situation:

a. In a normal situation, once a spindle has been properly loaded, the alignment marks on each of the safety chuck's rotating collars will align with each other and move together with the rotation of the spindle.

b. However, it is technically possible to load a spindle such that the marks on each collar end up at 90 or even 180 degrees to each other. This can be caused by reasons such as uneven spindle lowered onto the chucks causing one end to rest, rotate, and thus shut before the other.

c. To recover from such a situation:

> **IMPORTANT:** Before carrying out the following steps, provide means to secure the weight of the spindle and any substrate that may be loaded onto it in case it falls during the process. One way to do so is to set up the lifting equipment as if to unload the spindle, but leave the lifting slings with some slack.

  i. Rotate the spindle until the alignment marks line up on the chuck adjacent to the motor.

  ii. Visualize which direction, and by how much you would need to rotate the spindle to get the marks on the opposing chuck to line up. The rotation amount should either be 90 or 180 degrees, and could be clockwise or counterclockwise depending on the situation.

  iii. Open the aligned chuck.

  iv. Carefully lift and rotate the free end of the spindle as needed, until the marks on the opposing chuck line up.

  > **IMPORTANT:** Only lift the free end of the spindle by the minimum amount required to be able to rotate it. Lifting too much may make the spindle slip out of the opposing chuck and fall, or even cause mechanical damage to the chuck.

  v. Lower the free end back onto its chuck.

  vi. You should now be able to operate the safety chucks normally.

3. If the alignment marks are lined up and the chucks are still jammed, it is likely that the spindle in the chuck is carrying a load heavier than its maximum permissible load. Excess load on the spindle may cause it to bend which in turn may cause the safety chuck to become jammed. If this is the case, simply relieve the spindle of any excess load (e.g. remove layers of substrate from the roll) until the chucks can be operated normally.

The output roll shows too much telescoping

Jumbo input and output units are designed to admit input rolls with up to ±100 mm (3.94 in) of telescoping and still produce an output roll with near zero telescoping. To do this, each unit is equipped with a steering system. Each steering system consists of a substrate edge tracking sensor, and a linear motion system, configured to independently displace each of the input and output rolls laterally, both to feed the substrate straight into the printer, and to wind the output roll free of any significant telescoping.

In some cases, the system may produce an output roll with too much telescoping, generally caused by:

● An input roll presenting inadmissible telescoping: more than ±100 mm (3.94 in)

● The substrate having physically exited one or more of the input and/or output steering sensor's brackets

- The loading procedure was not followed correctly (skipped steps, or wrong settings in the jumbo unit control panel(s)

- One or more of the jumbo unit steering modules has malfunctioned or failed

To troubleshoot:

1. Stop printing.

2. Inspect the input and output steering sensors. Check the substrate edge relative to the sensor bracket.

   a. If the substrate edge has exited the bracket; simply put it back in. Once the substrate is back in you may continue printing normally, or reload the substrate if preferred.

   b. If the substrate edge is within both sensor brackets, continue reading for further instructions.

3. Verify the loading procedure steps were followed correctly:

   a. Verify the jumbo units' counterweight bars were properly loaded.

   b. Make sure the unwinder and rewinder spin directions match the direction of their respective rolls (printed side in or out).

   c. Make sure the unwinder and rewinder were set to automatic mode.

   d. Make sure the steering modules were configured correctly (were homed before threading the substrate, that their sensor position was adjusted properly, and that they were set to automatic).

   e. Make sure the jumbo units were powered ON.

   f. If any step in the loading procedure was not followed correctly, it may have caused the issue. It is recommended to repeat the loading procedure, and resume printing.

   g. If the loading procedure was followed correctly, and the cause of the issue remains unclear, keep reading for further instructions.

4. Verify the steering modules are functioning correctly:

   a. Test both steering sensors to make sure they are functioning correctly:

      i. Set each steering module to manual mode.

      ii. Gently slide the substrate edge out of each steering sensor bracket.

      iii. Using a loose piece of substrate; carefully and slowly slide it in and out of the sensor's field of view, and verify the sensor's LED array tracks the position of the substrate edge correctly.

      iv. When finished, slide the loaded substrate back into the sensor bracket.

   b. Try moving both steering modules in manual mode, using their respective control panels.

   c. If you find a steering module has failed, or is malfunctioning, please contact HP Support.

   d. If you find both steering modules are functioning properly, keep reading for further instructions.

5. If the instructions above failed to resolve the issue, it is very likely that the loaded input roll presented an inadmissible amount of telescoping: more than ±100 mm (3.94 in). Load a new roll, and monitor the system performance. If the issue persists for input rolls not presenting more than ±100 mm (3.94 in) of telescoping; please contact HP Support.

There are wrinkles in the substrate

Occasionally wrinkles may appear in the substrate. Wrinkles can be caused for a variety of reasons. Some of the reasons specifically relating to the use of the jumbo roll units include:

- Out-of-range substrate tension

- Pre-existing substrate damage

- Poor loading procedure execution (substrate damage, wrong counterweight bar loading, incorrect steering modules setup, etc.)

If this issue occurs, simply repeat the loading process taking into consideration the causes listed above. If the issue persists the wrinkles may be originating from an internal printer issue, and not related to the jumbo roll units; please refer to There are wrinkles and ink smears on the substrate on page 376.

11 Troubleshoot substrate issues

Loading issues

The substrate cannot be loaded successfully

- A substrate cannot be loaded unless all printer subsystems (e.g. 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 418).

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.
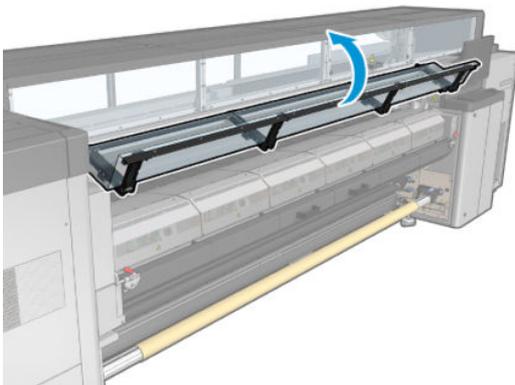
4. Remove all substrate and pieces of substrate from the printing zone and from any other parts of the printer into which they may have fallen. Check the curing zone in particular. Make sure that nothing remains on the substrate path. If you are unable to remove all obstructions, call your service representative (see HP Customer Care Centers on page 418).

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: one valve for the single-roll spindle.

- 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 select **Substrate Load/Unload**, then select the printer configuration and press **Load**.

6. Select the correct substrate in the Internal Print Server.

7. Press 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 376.

💡 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 376), 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 and increase vacuum and tensions step by step (i to iv), following the table below.

	Generic Vinyl	Generic Cast Vinyl	PVC Banner	Coated Paper & Wallpaper	Offset Paper	PET film	PP PE film and banner	Canvas	Generic Textile	Vinyl Flooring	Decolaminates	Synthetic Leather
recommended	20 80 / 80	10 40 / 30	15 60 / 60	15 60 / 65	30 60 / 65	15 60 / 50	15 60 / 50	15 60 / 50	0 50 / 40	10 50 / 81 50	25 15 / 49 15	15 30 / 60 30
i	20 80 / 85	10 50 / 40	15 60 / 65	15 65 / 70	30 65 / 70	15 65 / 60	15 65 / 55	15 65 / 55	5 50 / 45	- - / -	- - / -	- - / -
ii	25 80 / 85	15 60 / 55	15 65 / 70	20 65 / 70	30 70 / 75	15 70 / 65	15 70 / 60	15 70 / 60	10 60 / 50	- - / -	- - / -	- - / -
iii	25 90 / 95	20 75 / 80	25 70 / 75	25 70 / 75	30 80 / 80	25 70 / 75	25 70 / 70	25 70 / 70	15 65 / 60	- - / -	- - / -	- - / -
iv	25 100 / 100	25 80 / 85	30 75 / 80	30 75 / 80	35 85 / 85	30 75 / 80	30 75 / 80	30 75 / 80	25 70 / 75	- - / -	- - / -	- - / -
v	30 100 / 100	30 100 / 100	35 85 / 85	35 85 / 85	- - / -	35 85 / 85	35 85 / 85	35 85 / 85	35 85 / 85	- - / -	- - / -	- - / -

Vacuum curing temperature — Input Tension — Output 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 and curing temperatures 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.

- Wrong alignment of the center support split spindles .

- **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.

    TIP: If you notice that you are suffering wrinkles on the platen and that the substrate between the input spindle and the main roller has lost all tension at one side, try printing in the roll-to-floor configuration, and using the substrate collector if required. If you still see some problems, try to increase tension by following the recommendations below.

    TIP: When suffering from wrinkles and extreme skew with a self-adhesive vinyl, calendered materials are typically more sensitiive to temperature. Try to use a thicker core to reduce the effects of the spindle's rubber traction grooves, and increase tension as recommended below, using configuration iii, iv, or v in the table.

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. If you are using the roll-to-free-fall configuration, check that the knob is released to ensure substrate tension.

   When printing in the roll-to-free-fall configuration and you see diagonal smears of ink, the substrate may have been badly loaded; or the tension roller may be causing wrinkles in the substrate. In the latter case, you can try using the tension roller knob to reduce the pressure that the roller exerts on the substrate, as shown below:
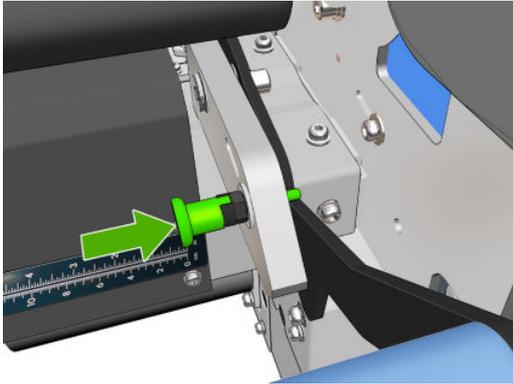
   To restore the tension roller pressure to normal, pull the knob and turn it as shown below.
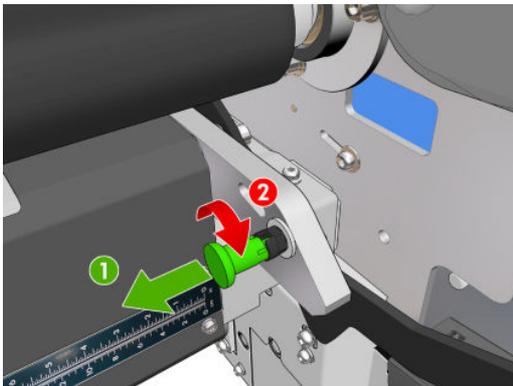
5. Reload the substrate and try to minimize skew while loading. Check that you are loading the substrate using the correct procedure.

6. 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.
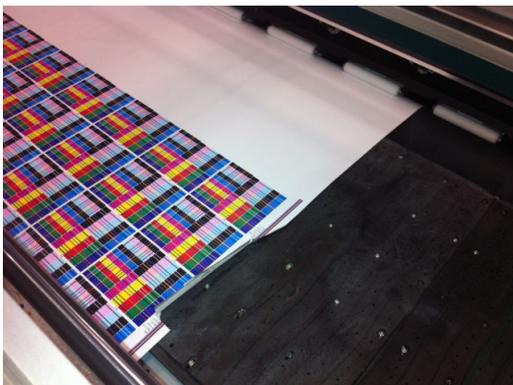
7. Try reducing the drying power and curing temperature.

8. Start with the recommended configuration and increase vacuum and tensions step by step (i to iv), following the table below.

	Generic Vinyl	Generic Cast Vinyl	PVC Banner	Coated Paper & Wallpaper	Offset Paper	PET film	PP PE film and banner	Canvas	Generic Textile	Vinyl Flooring	Decolaminates	Synthetic Leather
recommended	20 80 / 80	10 40 / 30	15 60 / 60	15 60 / 65	30 60 / 65	15 60 / 50	15 60 / 50	15 60 / 50	0 50 / 40	10 50 / 81 50	25 15 / 49 15	15 30 / 60 30
i	20 80 / 85	10 50 / 40	15 60 / 65	15 65 / 70	30 65 / 70	15 65 / 60	15 65 / 55	15 65 / 55	5 50 / 45	- - / -	- - / -	- - / -
ii	25 80 / 85	15 60 / 55	15 65 / 70	20 65 / 70	30 70 / 75	15 70 / 65	15 70 / 60	15 70 / 60	10 60 / 50	- - / -	- - / -	- - / -
iii	25 90 / 95	20 75 / 80	25 70 / 75	25 70 / 75	30 80 / 80	25 70 / 75	25 70 / 70	25 70 / 70	15 65 / 60	- - / -	- - / -	- - / -
iv	25 100 / 100	25 80 / 85	30 75 / 80	30 75 / 80	35 85 / 85	30 75 / 80	30 75 / 80	30 75 / 80	25 70 / 75	- - / -	- - / -	- - / -
v	30 100 / 100	30 100 / 100	35 85 / 85	35 85 / 85	- - / -	35 85 / 85	35 85 / 85	35 85 / 85	35 85 / 85	- - / -	- - / -	- - / -

Vacuum curing temperature	Input Tension
	Output 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.

9. Try reducing the curing temperature and ink quantity, and raise the curing airflow to help in reducing the substrate's thermal contraction.

10. Consider changing the printer configuration. Use the roll-to-free-fall configuration as it is least prone to wrinkles.

11. If you cannot get rid of the wrinkles, 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 .

There are ink marks on the substrate

This problem can occur if any component in contact with the substrate is dirty. Check the pinchwheels, diverters, print platen, curing module plates, 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. Increase vacuum and tensions step by step (i to v) following the table below, until you find settings that work.

	Generic Vinyl	Generic Cast Vinyl	PVC Banner	Coated Paper & Wallpaper	Offset Paper	PET film	PP PE film and banner	Canvas	Generic Textile	Vinyl Flooring	Decolaminates	Synthetic Leather
recommended	20 80 / 80	10 40 / 30	15 60 / 60	15 60 / 65	30 60 / 65	15 60 / 50	15 60 / 50	15 60 / 50	0 50 / 40	10 50 / 81 50	25 15 / 49 15	15 30 / 60 30
i	20 80 / 85	10 50 / 40	15 60 / 65	15 65 / 70	30 65 / 70	15 65 / 60	15 65 / 55	15 65 / 55	5 50 / 45	- - / -	- - / -	- - / -
ii	25 80 / 85	15 60 / 55	15 65 / 70	20 65 / 70	30 70 / 75	15 70 / 65	15 70 / 60	15 70 / 60	10 60 / 50	- - / -	- - / -	- - / -
iii	25 90 / 95	20 75 / 80	25 70 / 75	25 70 / 75	30 80 / 80	25 70 / 75	25 70 / 70	25 70 / 70	15 65 / 60	- - / -	- - / -	- - / -
iv	25 100 / 100	25 80 / 85	30 75 / 80	30 75 / 80	35 85 / 85	30 75 / 80	30 75 / 80	30 75 / 80	25 70 / 75	- - / -	- - / -	- - / -
v	30 100 / 100	30 100 / 100	35 85 / 85	35 85 / 85	- - / -	35 85 / 85	35 85 / 85	35 85 / 85	35 85 / 85	- - / -	- - / -	- - / -

| Vacuum curing temperature | Input Tension |
| | Output 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 high curing temperature or substrate tensions.

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. Try to reduce curing temperature and ink quantity if possible, and raise the curing airflow to help in reducing the substrate deformation.

5. Reduce tensions and modify vacuum settings, following the table below step by step (a to c), until you find settings that work.

	Generic Vinyl	Generic Cast Vinyl	PVC Banner	Coated Paper & Wallpaper	Offset Paper	PET film	PP PE film and banner	Canvas	Generic Textile	Vinyl Flooring	Decolaminates	Synthetic Leather
c	5 50 / 35	- - / -	5 40 / 30	- / -	15 50 / 45	5 40 / 30	5 40 / 30	5 40 / 30	0 35 / 30	- - / -	- - / -	- - / -
b	10 60 / 50	- - / -	10 50 / 40	50 / 45	20 60 / 50	10 50 / 40	10 50 / 40	10 50 / 40	0 40 / 30	- - / -	- - / -	- - / -
a	15 70 / 60	5 40 / 30	10 60 / 50	60 / 55	25 60 / 60	10 60 / 50	10 60 / 50	10 60 / 50	0 45 / 35	- - / -	- - / -	- - / -
recommended	20 80 / 80	10 40 / 30	15 60 / 60	60 / 65	30 60 / 65	15 60 / 50	15 60 / 50	15 60 / 50	0 50 / 40	10 50 / 81 50	25 15 / 49 15	15 30 / 60 30

Legend:
Vacuum curing temperature	Input Tension
	Output 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 409.

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 compensation) 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 (19.7 in).

    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 (19.7 in).

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).

Collector issues

The collector stops winding

The collector has a safety timer that will stop rewinding substrate if it is not fully collected after 30 seconds, and will stop unwinding substrate after 5 seconds if the substrate loop is not detected by the collector sensor. If you have a lot of substrate to be collected lying on the floor, you will have to restart the collector by clicking the corresponding icon.

- If the collector keeps stopping, and collector movement causes the substrate to be tight between pressure roller and collector when winding, there could be an object blocking the collector sensor path, or the winding direction may not have been selected correctly when restarting the collector.

- If the collector keeps stopping, and collector movement makes substrate loops accumulate on the ground when unwinding, it is possible that the winding direction has not been selected correctly when restarting the collector, or that the collector sensor or electronics are broken and should be replaced.

The collector occasionally fails to work correctly

The collector may fail to work correctly if its optical sensor is dirty or blocked by some obstacle.

The collector winds in the wrong direction

1. Check that the winding direction is set correctly in the Internal Print Server.

2. Check that there is no obstacle blocking the collector's optical sensor.

The substrate is detached or winds around the collector in the wrong direction

Here are some possible explanations.

- The winding direction has been set wrongly.

- The collector has been loaded wrongly.

There is skew or telescoping on the collector

This may happen if the substrate was not properly aligned when attaching it to the collector core. You are recommended to follow the loading instructions; in particular, align the substrate well.

☼ TIP: If you have a lot of substrate lying on the ground after printing in roll-to-free-fall mode, and you want to attach it to the core, you are recommended to choose a core that is the same width as the substrate, so that a good length of substrate can be aligned around the core before you attach it.

If you cannot resolve the problem satisfactorily, you are recommended to use the roll-to-roll configuration instead, which has better winding performance.

The substrate has jammed on the collector

Here are some possible explanations.

- Too much substrate on the collector. The maximum diameter of the output roll is 300 mm (11.8 in) for the recommended outwards winding, or 200 mm (7.9 in) for inwards winding.

- The substrate is misaligned.

- The tension bar is the wrong length.

12 Troubleshoot print-quality issues

General advice

The HP Latex 3800 Jumbo Roll Solution 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. To decide whether a defect is considered acceptable, as a rule of thumb, the table below shows the appropriate viewing distances.

Print mode	m²/h	ft²/h	To view output at...	
4 pass (outdoor)	98	1050		> 3 m (9.84 ft)
6 pass (indoor)	77	828		1–3 m (3.28–9.84 ft)
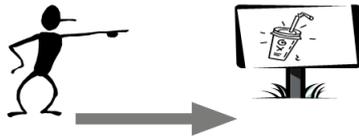
You are recommended to review the acceptability of a defect according to this table before proceeding to diagnose it to make sure the selected print mode is the most appropriate for the purpose of the job. Increasing the number of passes to 8 or more enables higher ink quantities if needed and/or the use of difficult printing materials thanks to the longer drying and curing times. Print modes with more passes are more resistant to banding. In general, follow these recommendations:

- Avoid touching the substrate while printing is in progress.

- Judge the print quality after the print has completely emerged from the printer. In some cases, defects seen while printing disappear after the image is completely cured.

- Check that the environmental conditions (room temperature and humidity) are in the recommended range. See Environmental specifications on page 423.

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 372.

- 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 Jumbo Roll Solution on page 60.

- 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 99.

- Make sure it has also been performed in the current conditions, especially considering substrate batch and printheads. See Color calibration on page 167.

Image quality inspection plot

The Image Quality Inspection Tool is designed to provide a guided troubleshooting process for users facing banding issues, especially horizontal banding. The tool consists of two parts: an image to print, and a guide for the troubleshooting process.

The image consists of 12 solid area fills of 7.62 cm x 22.86 cm (3 x 9 in). The six rectangles in the top row are printed by a single ink each, and the six rectangles in the bottom row are secondary or tertiary colors printed using more than one ink. Note that colors in this image may differ from the ones expected. This is a desired behavior, since this image is not used to verify color accuracy.

This plot can be printed from the **Internal Print Server** in the **Printer** menu.

When facing banding issues, print the Image Quality Inspection Plot from the **Printer** menu: go to **Printer** > **IQ Inspection** > **Add New Job**. This will add a job to the print queue. To print it, edit the details of the job to select the substrate and print mode you want to check. Once the plot has printed, start the troubleshooting process. See the **Image Quality Troubleshooting Process** image at the end of this section for a summary diagram of the troubleshooting process.

1. Determine if the banding in the image is caused by aeroworms. Aeroworms are thin bands with higher density than the surrounding area that appear randomly and are not continuous across the substrate.

    To correct this kind of non-uniformity:

    *   Increase the number of passes

    *   Reduce the ink density

- Check the carriage beam position

- Check the aerosol filters

2. If the banding is not caused by aeroworms, continue with the following procedure:

   a. Horizontal banding

      i. Banding present in all colors:

         ▲ Check the Substrate-Advance Compensation and calibrate if necessary. (**Printer menu** > **Advance calibration** ...)

      ii. Banding in one or more colors of the top row:

         a. Execute a check and clean routine, print the printhead status plot and check the number of blocked nozzles.

         b. If the number of blocked nozzles is roughly greater than 300 in any printhead, perform a hard cleaning routine, selecting the colors affected.

         c. After executing the cleaning routines, reprint the printhead status plot, the image quality troubleshooting plot, and check the current state of the printheads (expect to see less nozzles clogged) and of the banding. If banding is still visible, increase the number of passes.

         d. If none of the above work, replace the printhead that caused the banding (the one with most nozzles clogged).

         e. If the problem persists after replacing the printhead, consider it may be a substrate compatibility issue.

      iii. Banding in one or more colors of any row:

         a. Execute printhead alignment and recheck uniformity with the Image Quality Troubleshooting Plot.

         b. Execute check and clean, print the Printhead Status Plot, and check the number of blocked nozzles. If the number of blocked nozzles is greater than 300 in any printhead, perform a hard cleaning routine, selecting the colors affected.

         c. Check the Substrate-Advance Compensation and calibrate if necessary.

         d. Change the type of mask and/or increase the number of passes.

         e. Reduce the ink density.

         f. If the problem persists after all the corrective actions, consider it may be a substrate compatibility issue.

   b. Vertical Banding

      i. Wide bands:

         a. Execute printhead alignment.

         b. Check carriage beam position.

         c. Decrease curing temperature to reduce deformation.

> **d.** Change from 4 to 6 colors to reduce grain.
>
> **e.** Check substrate settings (vacuum and tension).
>
> **ii.** Microbanding (vertical high-frequency lines, less than 2mm (0.08 in) wide):
>
> ▲ Print the Printhead Alignment Plot to see the printhead responsible, and replace it.

3. After finishing the troubleshooting process, delete the image quality inspection job from the queue, and keep the files on the disk.

📝 **NOTE:** For more information on print quality troubleshooting, see the Advanced print-quality troubleshooting on page 391.

Image Quality Troubleshooting Process
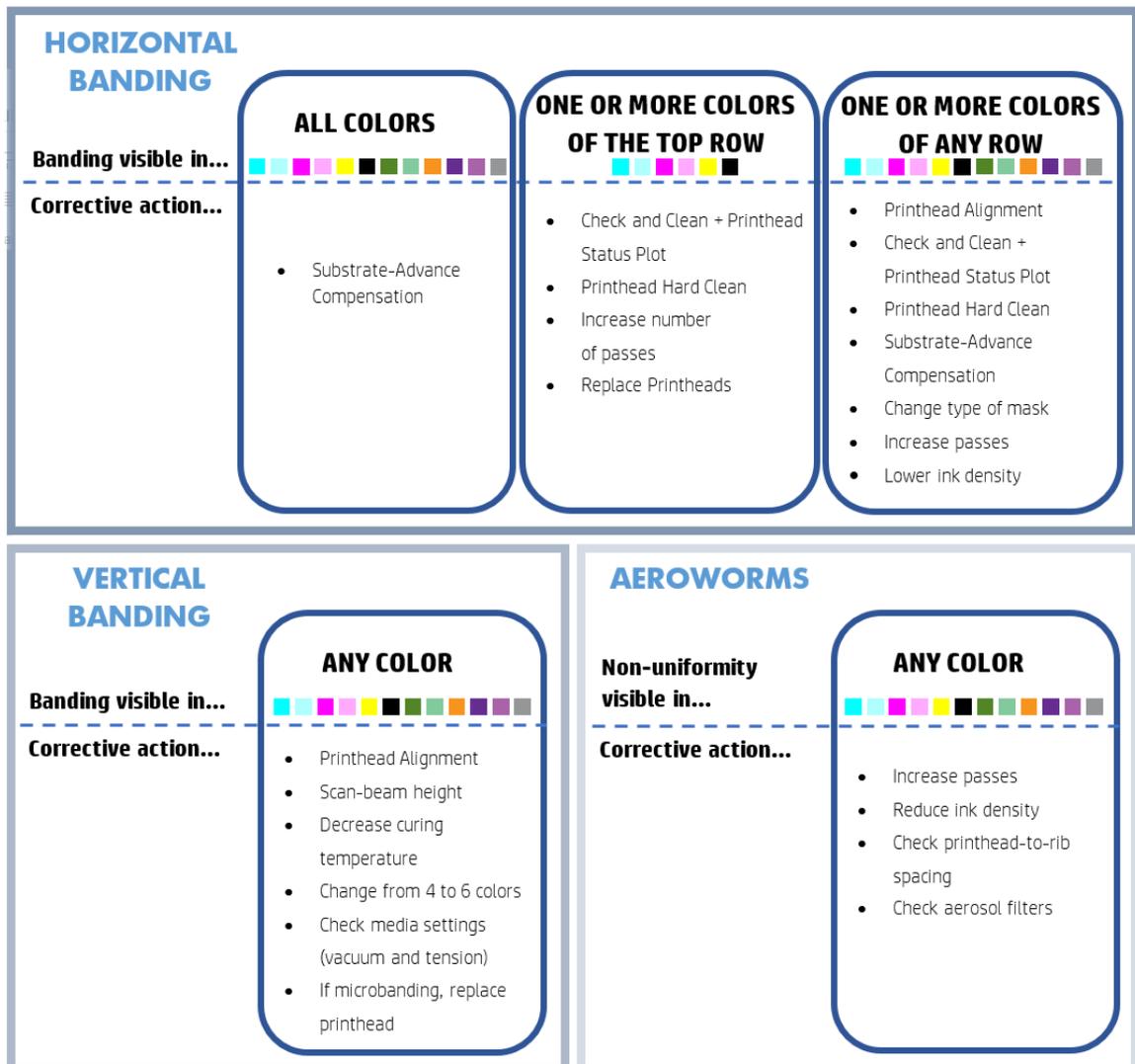
After finishing the troubleshooting process, delete the image quality inspection job, and keep the files on disk.

Basic and advanced troubleshooting

The print-quality troubleshooting process is divided here, for convenience, into two levels: basic and advanced.

- Basic troubleshooting will help to resolve the majority of the typical print-quality issues related to banding, graininess, and printhead alignment.

- Advanced troubleshooting helps to resolve the above issues when the basic steps did not work, but it also covers other possible print-quality defects, diagnosis, and resolution.

Basic print-quality troubleshooting

1. Identify the defect. This basic procedure applies to the following defects:

   - Horizontal banding

   - Graininess

   - Color misalignment

     – Blurred lines, edges, and text, horizontally and vertically

     – Halo of a different color around color lines and at the edges of color areas or text

     – Ink bleeding or wicking or different gloss at the edges of color areas

2. Perform the actions described in the following table.

Defect	Image quality inspection plot procedure	Substrate-advance sensor check	Printhead alignment	Possible causes (for reference only)
Banding	X			• Blocked nozzles • Substrate advance accuracy • Intra-color alignment
Isolated bands (usually of different texture or grain)		X		• Substrate-advance accuracy and navigability
Graininess		X	X	• Substrate advance accuracy • Color alignment
Blurry edges or text lines, horizontally		X	X	• Substrate advance accuracy • Color alignment
Blurry edges or text lines, vertically			X	• Color alignment
Color halo on objects (e.g., magenta shows up under a blue line)			X	• Color alignment
Ink bleeding, wicking, or different gloss at the edges of color areas			X	• Optimizer alignment

Printhead check and clean

See Check and clean the printheads on page 146. The check and clean process will check the printheads, recover the ones with blocked nozzles, and replace the nozzles that are not recovered with healthy ones for printing.

Substrate-advance sensor check

Run the OMAS Diagnostic Test from the HP Print Care window.

NOTE: OMAS stands for Optical Media Advance Sensor, usually known as the substrate-advance sensor in this guide.

The test will tell you whether the substrate-advance sensor is working correctly or not (either dirty or damaged).

If the substrate-advance sensor is dirty, clean the sensor. See Clean the substrate-advance sensor on page 194.

Even if the sensor is working correctly, the substrate may not be navigable, meaning that the substrate-advance sensor cannot see it properly (as in the case of transparent substrates or substrates with very smooth back side). In this case, the substrate-advance sensor disables itself automatically. You are then recommended to adjust the substrate-advance compensation: see Substrate-advance compensation on page 169.

For best results, cleaning the substrate-advance sensor is included in the printer's weekly maintenance.

Printhead alignment

Perform a manual printhead alignment. See Alignment procedure on page 160.

The result of the alignment can be verified with the printhead alignment diagnostics plot. See Printhead alignment diagnostics plot on page 163.

Advanced print-quality troubleshooting

If the basic print-quality troubleshooting does not solve the problem, here are some further procedures that you can try.

One of the most important parts of print-quality troubleshooting is to ensure that the printheads are healthy. See Printhead health troubleshooting on page 412.

Print-quality artifacts troubleshooting

Horizontal banding

Horizontal banding means that your print suffers from added horizontal lines or bands, in a regular pattern. They can look different depending on the cause.

Thin dark lines

These are thin dark lines across the entire image with certain frequency, more easily seen in solid area fills. There are two likely causes:

- **Printhead alignment.** This is a clear contributor to banding. If printheads are not correctly aligned, the misplaced dots could correlate directly with the severity of the banding, by putting more ink in the same place and thus creating darker lines.

To check printhead alignment, print the printhead alignment diagnostics plot (see Printhead alignment diagnostics plot on page 163). As a general rule, the biggest contributors to thin-dark-line banding caused by printhead alignment are (in this order):

- Intra-color alignment (alignment between the two printheads of the same color)

- Inter-color alignment (alignment between different colors)

Here are some tips for solving this problem:

- If the printhead alignment was done with a different substrate of different thickness, probably a new printhead alignment is needed.

- Fine-tune the alignment by identifiying the offenders in the printhead alignment diagnostics plot. See Alignment procedure on page 160.

- **Substrate advance.** Before trying to adjust any parameter, make the following checks:

  - Check that no substrate-advance factor was set earlier that could prevent the substrate-advance sensor from working correctly.

  - Run the diagnostics to check that that the substrate-advance sensor is not dirty.

If the substrate advance is not well adjusted, particularly if it is under-advancing, a dark line can appear between passes.

A clear symptom of this is when the dark lines appear across all colors, because the cause is common to all of them. To confirm it, in the Internal Print Server, select **Printer** > **Advance Calibration** to check the substrate advance. See Substrate-advance test print on page 171.

You can usually correct this problem by adjusting the substrate advance compensation (see Substrate-advance compensation on page 169). However, you are recommended to run the OMAS Diagnostic Tests from the Print Care window as soon as the substrate is unloaded, to avoid having the same problem with other substrates. See Clean the substrate-advance sensor on page 194.

If the problem persists, try adjusting tension and vacuum settings according to the table below, step by step (a to c), until you find settings that work.

	Generic Vinyl	Generic Cast Vinyl	PVC Banner	Coated Paper & Wallpaper	Offset Paper	PET film	PP PE film and banner	Canvas	Generic Textile	Vinyl Flooring	Decolaminates	Synthetic Leather
c	5 50 / 35	- - / -	5 40 / 30	- / -	15 50 / 45	5 40 / 30	5 40 / 30	5 40 / 30	0 35 / 30	- - / -	- - / -	- - / -
b	10 60 / 50	- - / -	10 50 / 40	50 / 45	20 60 / 50	10 50 / 40	10 50 / 40	10 50 / 40	0 40 / 30	- - / -	- - / -	- - / -
a	15 70 / 60	5 40 / 30	10 60 / 50	60 / 55	25 60 / 60	10 60 / 50	10 60 / 50	10 60 / 50	0 45 / 35	- - / -	- - / -	- - / -
recommended	20 80 / 80	10 40 / 30	15 60 / 60	60 / 65	30 60 / 65	15 60 / 50	15 60 / 50	15 60 / 50	0 50 / 40	10 50 / 81 50	25 15 / 49 15	15 30 / 60 30

Vacuum curing temperature   Input Tension   Output Tension

Thin white lines

These are thin white/light lines across the entire image at regular intervals, more easily seen in solid area fills.

There are three likely causes:

● **Nozzle clogging.** A printhead nozzle can be sealed temporarily, by some fibers or dirt in the ink bore. Then not all the ink is fired and a lighter horizontal band appears. Sometimes a bigger drop with all the accumulated ink appears at the end of this light thin line, meaning that the bore is clear then. See Printhead health troubleshooting on page 412.

● **Printhead alignment.** This is a clear contributor to banding. If printheads are not correctly aligned, the misplaced dots could correlate directly with the severity of the banding, by leaving lighter bands where the ink should have been placed.

To check printhead alignment, print the printhead alignment diagnostics plot (see Printhead alignment diagnostics plot on page 163). As a general rule, the biggest contributors to thin-white-line banding caused by printhead alignment are (in this order):

– Intra-color alignment (alignment between the two printheads of the same color)

– Inter-color alignment (alignment between different colors)

Here are some tips for solving this problem:

– If the printhead alignment was done with a different substrate of different thickness, probably a new printhead alignment is needed.

– Fine-tune the alignment by identifiying the offenders in the printhead alignment diagnostics plot. See Alignment procedure on page 160.

● **Substrate advance.** Before trying to adjust any parameter, make the following checks:

– Check that no substrate-advance factor was set earlier that could prevent the substrate-advance sensor from working correctly.

– Run the diagnostics to check that that the substrate-advance sensor is not dirty.

If the substrate advance is not well adjusted, particularly if it is over-advancing, a white line can appear between passes.

A clear symptom of this is when the white lines appear across all colors, because the cause is common to all of them. To confirm it, in the Internal Print Server, select **Printer** > **Advance Calibration** to check the substrate advance. See Substrate-advance test print on page 171.

You can usually correct this problem by adjusting the substrate advance compensation (see Substrate-advance compensation on page 169). However, you are recommended to run the OMAS Diagnostic Tests from the Print Care window as soon as the substrate is unloaded, to avoid having the same problem with other substrates. See Clean the substrate–advance sensor on page 194.

If the problem persists, try adjusting tension and vacuum settings according to the table below, step by step (a to c), until you find settings that work.

	Generic Vinyl	Generic Cast Vinyl	PVC Banner	Coated Paper & Wallpaper	Offset Paper	PET film	PP PE film and banner	Canvas	Generic Textile	Vinyl Flooring	Decolaminates	Synthetic Leather
c	5 50 35	- - -	5 40 30	- -	15 50 45	5 40 30	5 40 30	5 40 30	0 35 30	- - -	- - -	- - -
b	10 60 50	- - -	10 50 40	50 45	20 60 50	10 50 40	10 50 40	10 50 40	0 40 30	- - -	- - -	- - -
a	15 70 60	5 40 30	10 60 50	60 55	25 60 60	10 60 50	10 60 50	10 60 50	0 45 35	- - -	- - -	- - -
recommended	20 80 80	10 40 30	15 60 60	60 65	30 60 65	15 60 50	15 60 50	15 60 50	0 50 40	10 50 81 50	25 15 49 15	15 30 60 30

Vacuum curing temperature	Input Tension
	Output Tension

Bands of light and dark zones

These are periodic horizontal bands formed of a lighter band and a consecutive darker band. This pattern is mostly seen in solid color area fills (such as light purple or gray).
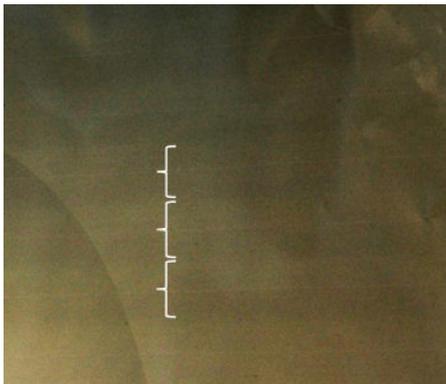
There are three likely causes:

- **Coalescence.** This is due to an excessive amount of ink, and the ink being misplaced as it is deposited on the substrate, generating bands with more ink than other alternate bands. It can also be caused by firing too much ink in a short time. Coalescence is most likely to be seen in areas of high ink density.

  Here are some tips for solving this problem:

- Use lower ink density.

- Increase the number of passes.

- Change the type of mask (Large mask / Uniformity).

- **Printhead alignment.** This is a clear contributor to banding. If printheads are not correctly aligned, the misplaced dots could correlate directly to the severity of the banding.

    To check printhead alignment, print the printhead alignment diagnostics plot (see Printhead alignment diagnostics plot on page 163). As a general rule, the biggest contributors to light-and-dark banding caused by printhead alignment are (in this order):

    - Bidirectional alignment

    - Intra-color alignment (alignment between the two printheads of the same color)

    - Inter-color alignment (alignment between different colors)

    Here are some tips for solving this problem:

    - If the printhead alignment was done with a different substrate of different thickness, probably a new printhead alignment is needed.

    - Fine-tune the alignment by identifying the offenders in the printhead alignment diagnostics plot. See Alignment procedure on page 160.

- **Substrate advance.** Before trying to adjust any parameter, make the following checks:

    - Check that no substrate-advance factor was set earlier that could prevent the substrate-advance sensor from working correctly.

    - Run the diagnostics to check that that the substrate-advance sensor is not dirty.

    When the substrate advance is incorrect, some light and dark horizontal bands can appear from the misplacement of the ink.

    To confirm it, in the Internal Print Server, select **Printer** > **Advance Calibration** to check the substrate advance. See Substrate-advance test print on page 171.

    You can usually correct this problem by adjusting the substrate advance compensation (see Substrate-advance compensation on page 169). However, you are recommended to run the OMAS Diagnostic Tests from the Print Care window as soon as the substrate is unloaded, to avoid having the same problem with other substrates. See Clean the substrate-advance sensor on page 194.

    If the problem persists, try adjusting tension and vacuum settings according to the table below, step by step (a to c), until you find settings that work.

	Generic Vinyl	Generic Cast Vinyl	PVC Banner	Coated Paper & Wallpaper	Offset Paper	PET film	PP PE film and banner	Canvas	Generic Textile	Vinyl Flooring	Decolaminates	Synthetic Leather
c	5 50 / 35	- - / -	5 40 / 30	- / -	15 50 / 45	5 40 / 30	5 40 / 30	5 40 / 30	0 35 / 30	- - / -	- - / -	- - / -
b	10 60 / 50	- - / -	10 50 / 40	50 / 45	20 60 / 50	10 50 / 40	10 50 / 40	10 50 / 40	0 40 / 30	- - / -	- - / -	- - / -
a	15 70 / 60	5 40 / 30	10 60 / 50	60 / 55	25 60 / 60	10 60 / 50	10 60 / 50	10 60 / 50	0 45 / 35	- - / -	- - / -	- - / -
recommended	20 80 / 80	10 40 / 30	15 60 / 60	60 / 65	30 60 / 65	15 60 / 50	15 60 / 50	15 60 / 50	0 50 / 40	10 50 / 81 50	25 15 / 49 15	15 30 / 60 30

| Vacuum curing temperature | Input Tension |
| | Output Tension |

Gloss banding

This appears in dark, high-density areas as horizontal gloss or matte bands about 1 cm wide. It can happen when the curing system settings are not correct for the substrate.

If the bands are more apparent when tilting the print or changing your viewing position, then it is likely to be gloss banding.

To solve the problem, check your curing settings (airflow, curing temperature). You could also try using a different print mode.

Aeroworms

Aeroworms consist of thin bands with higher density than the surrounding area. They are about 6 cm long and have a horizontal tendency, but they tend to curve like worms. They are not continuous across the substrate, and seem to appear at random.

When the ink is being fired, there are airflow turbulences under the carriage that can affect the positioning of the drops. Therefore, some waves of ink can be formed and deposited on the substrate to create this effect.

Here are some tips for solving this problem:

- Increase the number of passes.

- Reduce the ink density.

- Check the printhead-to-ribs spacing in the Internal Print Server. If it is higher than normal, try reducing it.

- Check that the aerosol filters are not saturated or broken (see Replace the aerosol filters on page 148).

Vertical banding

Vertical banding means that your print suffers from added vertical lines or bands, in a regular pattern.

Microbanding

This consists of vertical lines less than 2 mm (0.08 in) wide, of very high frequency, that appear in some area fills. Often they are hardly visible.

Microbanding is probably caused by a faulty printhead. Print the printhead alignment diagnostics plot (see Printhead alignment diagnostics plot on page 163) to find which printhead is responsible, and replace the printhead.

Wide bands 2 cm apart

If the bands are about 2 cm (0.8 in) apart, it means that the substrate is well controlled in the print zone and is in contact with all the ribs in the platen as intended. However, if the suction is too high, a difference in grain can be seen, and bands appear 2 cm (0.8 in) apart.

Here are some tips for solving this problem:

- Align the printheads.

- Check the scan-beam height in the Internal Print Server. If it is higher than normal, try lowering it.

- Decrease the curing temperature to reduce deformation.

- Change from 4 to 6 colors to reduce grain.

- Decrease vacuum and tension settings according to the table below, step by step (a to c), until you find settings that work.

	Generic Vinyl	Generic Cast Vinyl	PVC Banner	Coated Paper & Wallpaper	Offset Paper	PET film	PP PE film and banner	Canvas	Generic Textile	Vinyl Flooring	Decolaminates	Synthetic Leather
c	5 50 / 35	- - / -	5 40 / 30	- / -	15 50 / 45	5 40 / 30	5 40 / 30	5 40 / 30	0 35 / 30	- - / -	- - / -	- - / -
b	10 60 / 50	- - / -	10 50 / 40	50 / 45	20 60 / 50	10 50 / 40	10 50 / 40	10 50 / 40	0 40 / 30	- - / -	- - / -	- - / -
a	15 70 / 60	5 40 / 30	10 60 / 50	60 / 55	25 60 / 60	10 60 / 50	10 60 / 50	10 60 / 50	0 45 / 35	- - / -	- - / -	- - / -
recommended	20 80 / 80	10 40 / 30	15 60 / 60	60 / 65	30 60 / 65	15 60 / 50	15 60 / 50	15 60 / 50	0 50 / 40	10 50 / 81 50	25 15 / 49 15	15 30 / 60 30

Vacuum curing temperature	Input Tension
	Output Tension

Wide bands at least 4 cm (1.57 in) apart

A small amount of vertical banding (like waves) can be seen, with a frequency from about 4 cm (1.6 in) to 10 cm (3.9 in), when printing large area fills of the same color.

The substrate is not in contact with all the ribs in the platen, which means that it is not fully controlled, so wide wrinkles appear on the print zone. As the height of the printhead above the substrate varies, there are local differences in grain that can be seen as lighter or darker wide bands (see picture). To solve this, it is important to improve substrate control in this zone and reduce the wrinkles.

Wide bands vertical banding

Here are some tips for solving this problem:

- Check the scan-beam height in the Internal Print Server. If it is higher than normal, try lowering it.

- Align the printheads.

- Decrease the curing temperature to reduce deformation.

- Change from 4 to 6 colors to reduce grain.

- Increase vacuum and tension settings according to the table below, step by step (i to iv), until you find settings that work (by improving control in the print zone).

	Generic Vinyl	Generic Cast Vinyl	PVC Banner	Coated Paper & Wallpaper	Offset Paper	PET film	PP PE film and banner	Canvas	Generic Textile	Vinyl Flooring	Decolaminates	Synthetic Leather
recommended	20 80 / 80	10 40 / 30	15 60 / 60	15 60 / 65	30 60 / 65	15 60 / 50	15 60 / 50	15 60 / 50	0 50 / 40	10 50 / 81 50	25 15 / 49 15	15 30 / 60 30
i	20 80 / 85	10 50 / 40	15 60 / 65	15 65 / 70	30 65 / 70	15 65 / 60	15 65 / 55	15 65 / 55	5 50 / 45	- - / -	- - / -	- - / -
ii	25 80 / 85	15 60 / 55	15 65 / 70	20 65 / 70	30 70 / 75	15 70 / 65	15 70 / 60	15 70 / 60	10 60 / 50	- - / -	- - / -	- - / -
iii	25 90 / 95	20 75 / 80	25 70 / 75	25 70 / 75	30 80 / 80	25 70 / 75	25 70 / 70	25 70 / 70	15 65 / 60	- - / -	- - / -	- - / -
iv	25 100 / 100	25 80 / 85	30 75 / 80	30 75 / 80	35 85 / 85	30 75 / 80	30 75 / 80	30 75 / 80	25 70 / 75	- - / -	- - / -	- - / -
v	30 100 / 100	30 100 / 100	35 85 / 85	35 85 / 85	- - / -	35 85 / 85	35 85 / 85	35 85 / 85	35 85 / 85	- - / -	- - / -	- - / -

Vacuum curing temperature	Input Tension
	Output Tension

Color misalignment

Colors appear misaligned. Typically, lines and text are most affected by this issue.

It can happen in both axes: the substrate axis and the scan axis.
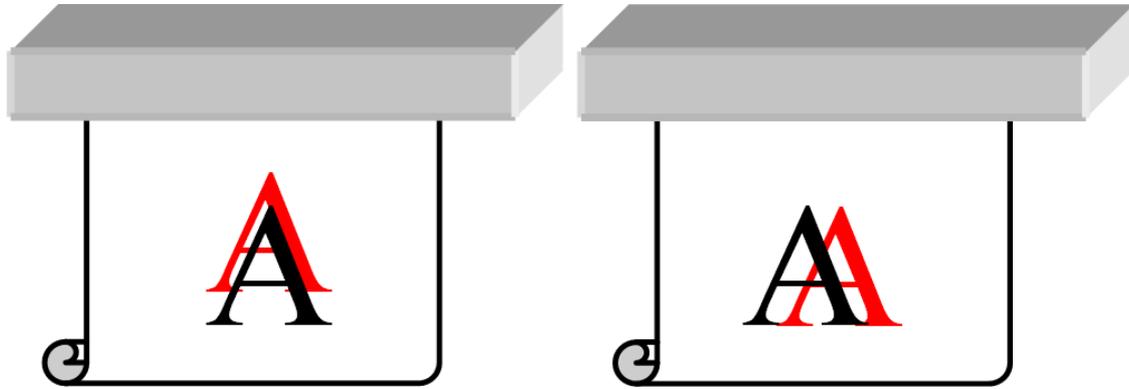
Color misalignment is most likely to be caused by printhead misalignment. To check printhead alignment, print the printhead alignment diagnostics plot (see Printhead alignment diagnostics plot on page 163).

Bleed, halo, wicking

Sometimes a small color migration may be observed at the border between different colors (bleed). It may also happen at the border between a color and blank substrate (no ink), reducing the sharpness of the shape. On some substrates, a gloss halo can be observed at the border between colors.
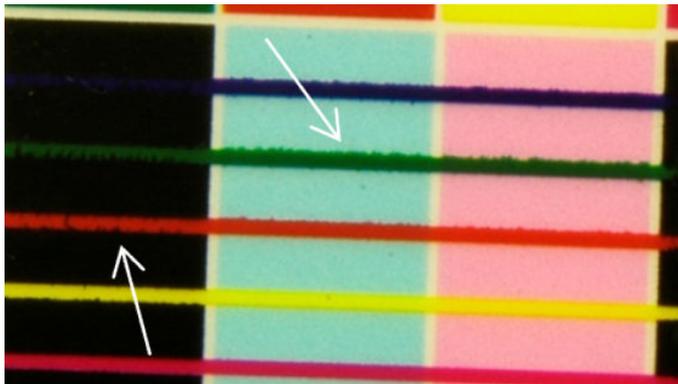
There are three likely causes:

- **Optimizer misalignment:** There may be misalignment between the optimizer printhead and the other printheads. To check the printhead alignment, print the printhead alignment diagnostics plot (see Printhead alignment diagnostics plot on page 163). If necessary, perform a manual alignment, then reprint the printhead alignment diagnostics plot.

   If the problem is in the substrate axis direction, it may also be caused by incorrect substrate advance. See Substrate-advance test print on page 171 and Substrate-advance compensation on page 169.

- **Optimizer level**, which may be too low for this substrate and ink density. Other associated defects may also appear, such as coalescence or grain in the area fills due to low wetting of the ink on the substrate. You can correct this problem by increasing the optimizer percentage in the substrate preset.

- **Drying power**, which may be too low for this substrate and ink density. Other associated defects may also appear, such as coalescence or grain in the area fills due to low wetting of the ink on the substrate. You can correct this problem by increasing the drying power leading/trailing percentages in the substrate preset.

Low gloss, haze

On glossy substrates, the print may have lower gloss than expected, which is probably due to the optimizer level. To investigate and correct this problem, try increasing and decreasing the optimizer percentage in the substrate preset.

Color accuracy

Ideally, the colors that you see on the screen should match the colors in the print. In practice, you may find that the colors are not sufficiently accurate. There are three possible 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 167).

- **ICC profile.** If you are using the wrong 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 mode, and substrate that you are using.

- **Ink density**, which 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.

Local color variations

In some cases, at the edges of area fills, a small number of ink drops may be missing or slightly darker, producing a local color variation.
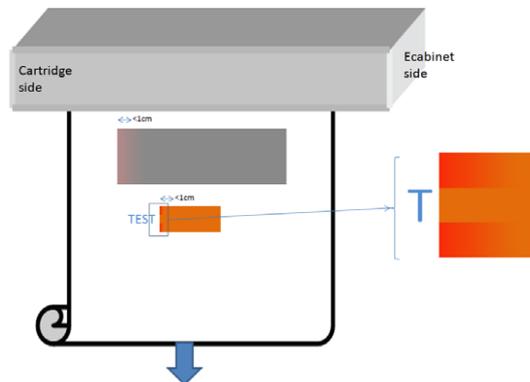
These defects are due to the printheads travelling from side to side without printing.

- In each pass, the first 1 or 2 drops of a color are missing or smaller.

- In each pass, the first 1 or 2 drops of a color are darker because they are more concentrated with pigment.

To resolve these defects, add color bars at each side of the image, to make sure nozzles are refreshed before printing each pass. If possible, you could also rotate the image to avoid situations such as shown in the example.

Color variations when tiling

When tiling, it is important that all tiles have the same length and that the colors of the mating edges match. This section focuses on color variations; for recommendations about length consistency, see How to achieve better consistency between jobs of the same length on page 382.

To achieve better color consistency it is recommended to optimize tiling performance via the IPS (**Substrate** > **Tiling optimization**). See Optimize for tiling on page 100.

Also check step <u>5</u> of <u>Edit a substrate preset on page 105</u>.
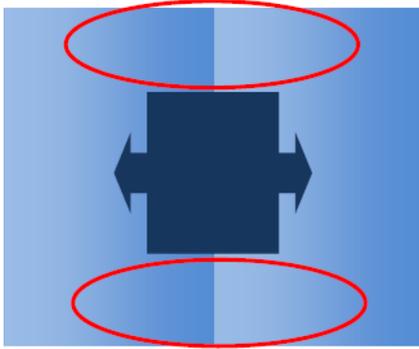
Possible causes

- **Uniform variations from tile to tile.** When color changes uniformly it must be within the color consistency specification; see <u>Color consistency on page 44</u> for more details. Usually grays are much more sensitive: differences of much less than 2 dE 2000 may be visible, although other colors would not show a difference.

- **Small color variation left to right.** The tile itself looks uniform, but when putting it beside the adjacent tile the differences become visible.

- **Local color variations.** See <u>Local color variations on page 401</u>. Sometimes these defects become visible only when printing tiles, showing in one of the tiles but not in the adjacent. They are also more visible when printing grays.

Possible solutions

- Try to ensure uniform printing of all tiles, and all tiles printed in the same run.

- Rotate every other tile, to compensate for left to right differences.

- Adding color bars at both sides of the image helps overall, especially when there are local color variations.

Edge roughness, text quality

The edges of objects may appear rough or blurred; this is especially noticeable in text.

There are five possible causes:

- **Bleed:** see Bleed, halo, wicking on page 400.

- **Printhead alignment.** As each ink is deposited by two printheads of the same color, it is important that the two printheads are correctly aligned. When a color is formed by a combination of inks, which is often the case, it is also important that printheads of different colors are correctly aligned.

  To check printhead alignment, print the printhead alignment diagnostics plot (see Printhead alignment diagnostics plot on page 163), and fine-tune the alignment by identifiying the offenders in the plot.

- **Substrate advance.** Before trying to adjust any parameter, make the following checks:

  - Check that no substrate-advance factor was set earlier that could prevent the substrate-advance sensor from working correctly.

  - Run the diagnostics to check that that the substrate-advance sensor is not dirty.

  If the substrate advance is incorrectly adjusted, particularly if it is under-advancing, a dark line can appear between passes. When the problem of line roughness or text quality applies to all colors and appears in the substrate axis direction, it is likely to be related to incorrect substrate advance. Another clue that could point to substrate advance as a cause is to observe that the defect is not constant, appearing and disappearing along the print in the substrate axis.

  To confirm it, go to the Internal Print Server and select **Printer** > **Advance Calibration** to check the substrate advance. See Substrate-advance test print on page 171.

  To correct the substrate advance, see Substrate-advance compensation on page 169. In most cases, this will solve the problem. However, you are recommended to run the OMAS Diagnostic Tests from the Print Care window as soon as the substrate is unloaded, to avoid having the same problem with other substrates. See Clean the substrate-advance sensor on page 194.

  If the problem persists, try adjusting tension and vacuum settings according to the table below, step by step (a to c), until you find settings that work.

	Generic Vinyl	Generic Cast Vinyl	PVC Banner	Coated Paper & Wallpaper	Offset Paper	PET film	PP PE film and banner	Canvas	Generic Textile	Vinyl Flooring	Decolaminates	Synthetic Leather
c	5 50 / 35	- - / -	5 40 / 30	- / -	15 50 / 45	5 40 / 30	5 40 / 30	5 40 / 30	0 35 / 30	- - / -	- - / -	- - / -
b	10 60 / 50	- - / -	10 50 / 40	50 / 45	20 60 / 50	10 50 / 40	10 50 / 40	10 50 / 40	0 40 / 30	- - / -	- - / -	- - / -
a	15 70 / 60	5 40 / 30	10 60 / 50	60 / 55	25 60 / 60	10 60 / 50	10 60 / 50	10 60 / 50	0 45 / 35	- - / -	- - / -	- - / -
recommended	20 80 / 80	10 40 / 30	15 60 / 60	60 / 65	30 60 / 65	15 60 / 50	15 60 / 50	15 60 / 50	0 50 / 40	10 50 / 81 50	25 15 / 49 15	15 30 / 60 30

Vacuum curing temperature — Input Tension / Output Tension

- **Printhead-to-ribs spacing.** Check the printhead-to-ribs spacing in the Internal Print Server. If it is higher than normal, try reducing it.

- **Vacuum.** In some thin substrates, if the vacuum is too high, the substrate follows the shape of the platen ribs, modifying the printhead-to-substrate spacing and causing vertical line roughness. In this case, as the substrate advances, vertical lines get wider after each pass, while horizontal lines are not affected.

To correct this problem, try adjusting tension and vacuum settings according to the table below, step by step (a to c), until you find settings that work.

	Generic Vinyl	Generic Cast Vinyl	PVC Banner	Coated Paper & Wallpaper	Offset Paper	PET film	PP PE film and banner	Canvas	Generic Textile	Vinyl Flooring	Decolaminates	Synthetic Leather
c	5 50 / 35	- - / -	5 40 / 30	- / -	15 50 / 45	5 40 / 30	5 40 / 30	5 40 / 30	0 35 / 30	- - / -	- - / -	- - / -
b	10 60 / 50	- - / -	10 50 / 40	50 / 45	20 60 / 50	10 50 / 40	10 50 / 40	10 50 / 40	0 40 / 30	- - / -	- - / -	- - / -
a	15 70 / 60	5 40 / 30	10 60 / 50	60 / 55	25 60 / 60	10 60 / 50	10 60 / 50	10 60 / 50	0 45 / 35	- - / -	- - / -	- - / -
recommended	20 80 / 80	10 40 / 30	15 60 / 60	60 / 65	30 60 / 65	15 60 / 50	15 60 / 50	15 60 / 50	0 50 / 40	10 50 / 81 50	25 15 / 49 15	15 30 / 60 30

Vacuum curing temperature — Input Tension / Output Tension

Graininess

The print shows a higher level of grain than expected, either throughout the print or in some specific areas. The example below shows more grain in the lower half than in the upper half.
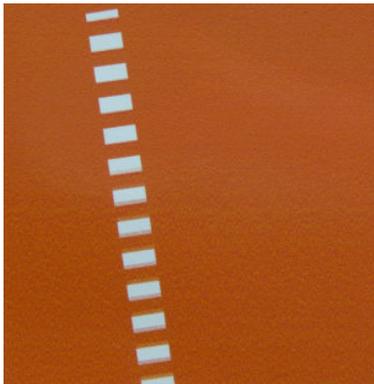
This can occur for various different reasons.

- **Coalescence.** Some substrates, in some particular conditions, can produce a type of grain due to wetting issues. For example, in high humidity or low temperature environments, the ink may not dry fast enough in fast print modes, producing a grainy effect on the print. The example below shows worse coalescence on the right-hand side.
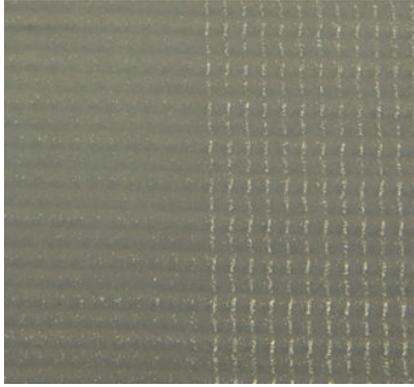
It is difficult to decide whether this kind of problem is due to wetting or to dot placement error (described below). The type of grain could be a clue: in the case of wetting issues, dots tend to aggregate into bigger dots, with empty spaces in between. A magnifying glass can be useful to examine the print in more detail.

Here are some tips for solving this problem:

- Increase the optimizer level.

- Increase the drying power.

- Increase the number of passes.

- Change from 6 to 4 colors (less ink on the substrate).

● **Printhead alignment.** This is a clear contributor to grain. If printheads are not correctly aligned, the misplaced dots could correlate directly with the severity of the graininess.

To check printhead alignment, print the printhead alignment diagnostics plot (see Printhead alignment diagnostics plot on page 163). As a general rule, the biggest contributors to grain caused by printhead alignment are (in this order):

- Bidirectional alignment

- Intra-color alignment (alignment between the two printheads of the same color)

- Inter-color alignment (alignment between different colors)

Here are some tips for solving this problem:

- If the printhead alignment was done with a different substrate of different thickness, probably a new printhead alignment is needed.

- Fine-tune the alignment by identifiying the offenders in the printhead alignment diagnostics plot. See Alignment procedure on page 160.

● **Substrate advance.** Before trying to adjust any parameter, make the following checks:

- Check that no substrate-advance factor was set earlier that could prevent the substrate-advance sensor from working correctly.

- Run the diagnostics to check that that the substrate-advance sensor is not dirty.

Grain in a print can be increased by incorrect substrate advance, due to mispositioning of the dots.

To check the substrate advance, go to the Internal Print Server and select **Printer** > **Advance Calibration**. See Substrate-advance test print on page 171.

To correct the substrate advance, see . In most cases, this will solve the problem. However, you are recommended to run the OMAS Diagnostic Tests from the Print Care window as soon as the substrate is unloaded, to avoid having the same problem with other substrates. See .

If the problem persists, try adjusting tension and vacuum settings according to the table below, step by step (a to c), until you find settings that work.

	Generic Vinyl	Generic Cast Vinyl	PVC Banner	Coated Paper & Wallpaper	Offset Paper	PET film	PP PE film and banner	Canvas	Generic Textile	Vinyl Flooring	Decolaminates	Synthetic Leather
c	5 50 / 35	- - / -	5 40 / 30	- / -	15 50 / 45	5 40 / 30	5 40 / 30	5 40 / 30	0 35 / 30	- - / -	- - / -	- - / -
b	10 60 / 50	- - / -	10 50 / 40	50 / 45	20 60 / 50	10 50 / 40	10 50 / 40	10 50 / 40	0 40 / 30	- - / -	- - / -	- - / -
a	15 70 / 60	5 40 / 30	10 60 / 50	60 / 55	25 60 / 60	10 60 / 50	10 60 / 50	10 60 / 50	0 45 / 35	- - / -	- - / -	- - / -
recommended	20 80 / 80	10 40 / 30	15 60 / 60	60 / 65	30 60 / 65	15 60 / 50	15 60 / 50	15 60 / 50	0 50 / 40	10 50 / 81 50	25 15 / 49 15	15 30 / 60 30

Vacuum curing temperature — Input Tension / Output Tension

- **Substrate wrinkles.** If you see patches of high grain in some local areas of the print, this could be caused by wrinkles in the substrate. See .

- **Color usage.** In general, 4-color printing produces more grain than 6-color printing.

Physical deformation marks

You may occasionally see physical deformation of the substrate. This issue is not a mispositioning of the dots, but a physical deformation of the substrate that usually occurs after the dots have been printed. There are various kinds of deformation that may occur:

- **Diverter horizontal marks:** Deformations of the substrate in the shape of straight lines, about 6 cm (2.36 in) long, towards the printed side of the substrate. They are separated about 2 cm (0.79 in) vertically and 1 cm (0.39 in) horizontally.

- **Diverter vertical marks:** These physical marks have the appearance of a braid. They consist of small wrinkles just below the curing module, forming a vertical line of small deformations.

Both kinds of deformations can be the result of an excessive curing temperature. See .

Poor curing

When the heat applied to the printed substrate is not enough for the quantity of ink laid down, the print may appear wet or with some gloss marks. The heat needed to cure is directly dependent to the combination of: ink density, time under the curing module (printmode), curing temperature, airflow, and drying power. These are the defects you may see:

- **Perforated plate gloss marks:** The print suffers from an added matte pattern over the areas with more ink density. You can see small circles scattered over the picture with different levels of gloss.

- **Wet print:** The ink comes out of the curing module not perfectly dry, and in severe cases the ink can be smudged by touching it.

Here are some tips for solving both problems:

- Increase the curing temperature.

- Increase the curing airflow.

- Increase the curing temperature and airflow.

- Decrease the ink density.

- Reduce throughput.

- Repeat the Add New Substrate procedure in case you had wrong settings in the substrate preset.

13 Troubleshoot ink cartridge and printhead issues

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 135.

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 409).

4. If the problem still persists, call your service representative (see HP Customer Care Centers on page 418).

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 409).

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 418).

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 135). 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 139 and Insert a printhead on page 143, bearing in mind the special tips for the optimizer printhead.

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, exchange the printhead with the printhead of the same color in the other row.

4. If the problem persists, check the printhead contacts for dirt or aerosol and clean them if necessary. See Clean the printhead contacts on page 330.

5. Find more troubleshooting information in the following sections, Problem due to overheating on page 409 and Problem due to the primer system on page 410.

6. If the problem persists, insert a new printhead.

7. If no printhead works in that slot, call your service representative (see HP Customer Care Centers on page 418).

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 146).

● 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 **46.02.0Y: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.
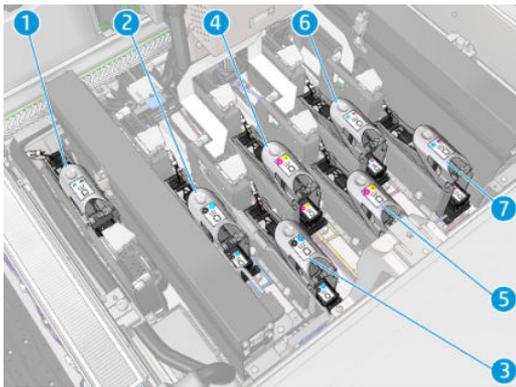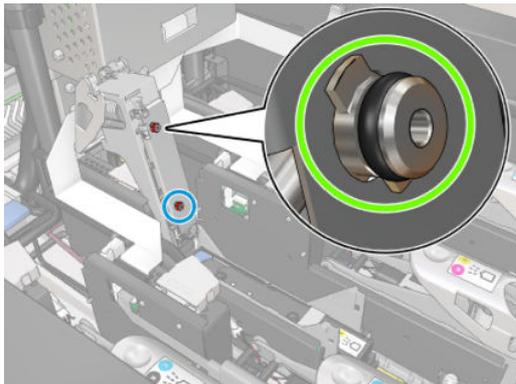

You are recommended to:

- 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.
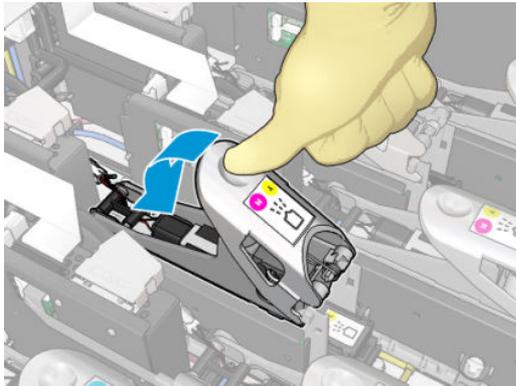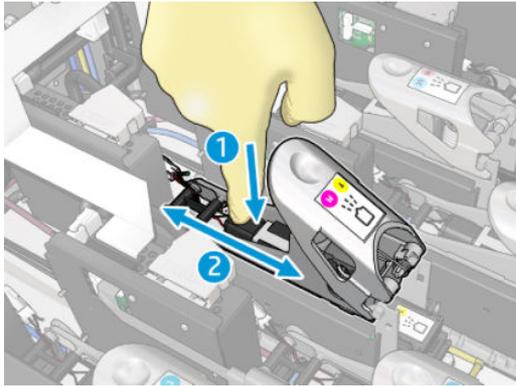
- Check that the O-rings in the primer ports are not broken or damaged. Replace the primer if any O-ring is missing or dented.

- Replace the primer. See Replace a primer on page 280.

- Grease the printhead primers. See Grease the printhead primers on page 272.

If none of these actions resolve the problem, call your service representative.

If you see the message **46.01.0Y:01 – Primer 0Y signal fail**, 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 on page 280. 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, select **Printer** > **Printhead cleaning** and press the **Print** button.
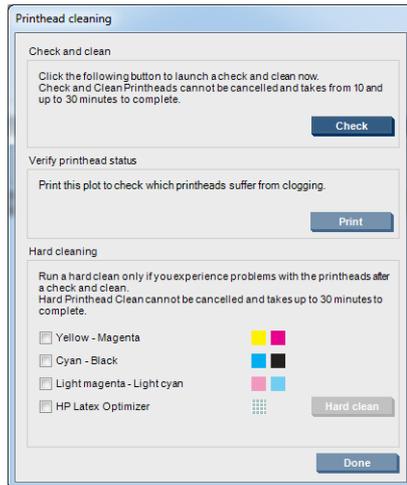
The following image is printed.
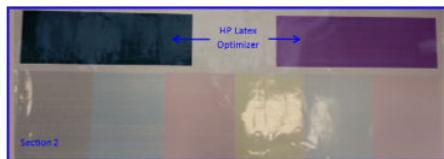
▲ The image below shows plainly which nozzles in each printhead are printing and not printing.

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 (sectiion 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.
	> 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, select **Printer** > **Printhead cleaning**, select the printhead(s) to clean and press the **Hard clean** button.
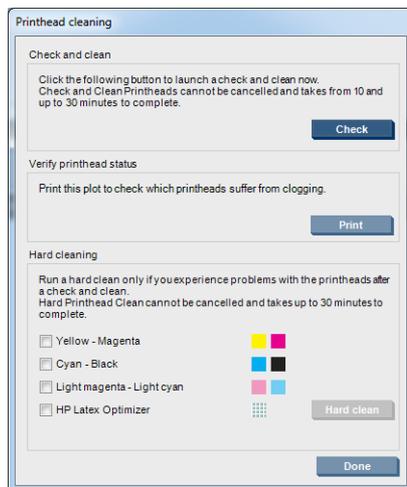
Sometimes, when the printhead is quite damaged, running the hard-clean routine twice helps to recover its performance.

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. Exchange the printhead with the printhead of the same color in the other row.

5. Assume that the printhead is faulty, and try another one.

6. If no printhead works in that slot, call your service representative.

Printhead cleaning roll errors

You should not touch the printhead cleaner 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 147.

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.

14 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 418).

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 418).

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 and curing modules are 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 146).

- 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 376.

  – 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 385.

- 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 418).

15 When you need help

HP Support is available from the IPS Help Menu. There are two options to contact support:

- **Help** > **HP Remote Support**: use this option to launch the HP Customer support portal, there are two options:

  - Chat: the fastest way to contact HP remote support agents.

  - Create a case: submit and manage support cases for your printer.

- **Help** > **Remote Control**: use this option to allow HP support to take control of your Computer. 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, select **Tools** > **Preferences** > **Remote assistance**, and ensure that the Enable Remote Assistance checkbox is ticked.
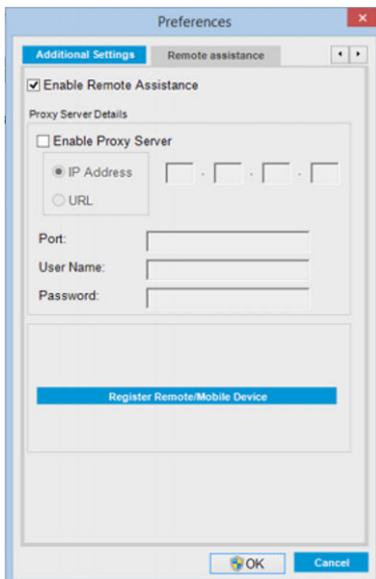
HP Proactive Support

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 selecting **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 418). 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/LatexCareCenters.

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 424

  - 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 select **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, select **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 (select **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. Alternatively, from Internet Explorer you can send the page directly: select **File** > **Send** > **Page by E-mail**.

16 Printer specifications

Functional specifications

Table 16-1 Ink supplies

Printheads	Cyan and black, light magenta and light cyan, yellow and magenta, HP Latex Optimizer
Ink cartridges	Cyan, magenta, yellow, black, light cyan, light magenta, HP Latex Optimizer

Table 16-2 Substrate sizes

	Minimum	HP Latex 3800 Printer only
Roll width	635 mm (25 in)	1.2-3.2 m (48-126 in)
Roll diameter	80 mm (3.15 in) (core diameter)	1200 mm (47.2 in)
Roll weight		up to 1Tn**

Table 16-3 Max weight VS substrate width recommendations

	Width = 1.2–2.5 m (48–98 in)		Width = 2.5–3.2 m (98–126 in)	
	Shaft 3"	Shaft 6"	Shaft 3"	Shaft 6"
max load [Tn]	0.6	1.0	0.3	0.6

Table 16-4 Passes, resolutions, and speeds

		Resolution (ppi)		Printing speed (m²/h)	Printing speed (ft²/h)
Passes	Ink density	Rendering	Printing	3.2 m roll	3.2 m roll
1	≤ 40%	300 × 300	600 × 1200	315	3391
2	≤ 60%	300 × 300	600 × 1200	180	1938
3	≤ 80%	300 × 300	600 × 1200	120	1292

Table 16-4 Passes, resolutions, and speeds (continued)

Passes	Ink density	Resolution (ppi) Rendering	Resolution (ppi) Printing	Printing speed (m²/h) 3.2 m roll	Printing speed (ft²/h) 3.2 m roll
4	≤ 100%	300 × 300	600 × 1200	98	1055
6	≤ 150%	600 × 600	600 × 1200	77	829
8	≤ 170%	600 × 600	600 × 1200	59	635
10	≤ 300%	600 × 600	600 × 1200	44	474
14	≤ 300%	600 × 600	600 × 1200	35	377
18	131–300%	600 × 600	600 × 1200	27	291
18	≤ 130%	600 × 600	1200 × 1200	22	237

Table 16-5 Standard print modes

Print mode name	Viewing distance	Print mode	Printing speed (m²/h)	Printing speed (ft²/h)
High-saturation backlit	1–3 m (3.28 to 9.84 ft)	18p 6c 230%	27	290
Backlit and textile	1–3 m (3.28 to 9.84 ft)	14p 6c 200%	35	375
Textile and canvas	1–3 m (3.28 to 9.84 ft)	10p 6c 170%	44	470
Canvas and wall covering	1–3 m (3.28 to 9.84 ft)	8p 6c 120%	60	630
Indoor high-quality	1–3 m (3.28 to 9.84 ft)	6p 6c 100%	77	830
Outdoor plus	3–5 m (9.84 to 16.4 ft)	4p 6c 90%	98	1050
Outdoor	3–5 m (9.84 to 16.4 ft)	3p 6c 80%	120	1290
Billboard	> 5 m (16.4 ft)	2p 4c 70%	180	1950

NOTE: Printing speed is measured using rolls 3.2 m (126 in) wide.

Physical specifications

Table 16-6 Printer physical specifications

	HP Latex 3800 with jumbo input unit	HP Latex 3800 with jumbo input and output units
Weight	3970 kg (8752 lb)	6100 kg (13448 lb)
Width	6 m (236 in)	6 m (236 in)
Depth	5.86 m (231 in)	9.3 m (366 in)
Height	1.87 m (74 in)	1.87 m (74 in)

Memory specifications

Table 16-7 Memory specifications for the Internal Print Server computer

Memory (DRAM) supplied	8 GB
Hard disk	500 GB
SSD	500 GB

Power specifications

The drying and curing components are powered with a three-phase line that requires a power distribution unit (PDU).

Table 16-8 Power specifications for drying and curing components

	Printer	Jumbo input/output unit	Jumbo input and output units
Mains power, input rated current			
3-phase (line-to-line voltage)	200-240 V AC (±10%), 50/60Hz , 56 A max	400 V AC (±10%), 50/60Hz, 6 A max	400 V AC (±10%), 50/60Hz, 12 A max
3-phase (line-to-line voltage)	380-415 V AC (±10%), 50/60Hz, 35 A max	-	-

📝 NOTE: If your facilities do not provide the required AC 400VAC line-to-line voltage, additional transformer equipment may be needed.

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.

Table 16-9 Air supply specifications

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

Table 16-10 Printer 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 (50°F/h) or less
Operating for standard printing	15 to 30°C (59 to 86°F)	20 to 70% relative humidity	10°C/h (50°F/h) or less
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 (50°F/h) or less
Not operating, in transport or storage, no ink in tubes *	−25 to 55°C (−13 to 131°F)	90% relative humidity at 55°C (131°F)	10°C/h (50°F/h) or less

* If the printer is going to be kept at a temperature of less than 5°C (41°F), 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

Printer / Jumbo Roll Solution acoustic specifications. Maximum sound levels at bystander position according to ISO 11202.

Table 16-11 Printer acoustic specifications

Idle sound pressure level	< 60 dB (A)
Operating sound pressure level	< 67 dB (A)
	< 75 db (A) during cool-down

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 418.

Table A-1 Text messages

Message	Recommendation
{Color} cartridge has expired	You are advised to replace the ink cartridge. See Remove an ink cartridge on page 135.
{Color} cartridge is altered	You are advised to replace the ink cartridge. See Remove an ink cartridge on page 135.
{Color} cartridge is low on ink	Be ready to replace the ink cartridge soon.
{Color} cartridge is missing	Install the correct ink cartridge. See Insert an ink cartridge on page 136.
{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 135.
{Color} printhead is missing	Install the correct printhead. See Insert a printhead on page 143.
{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 409.
Checking file system	After a dirty power off, the printer performs a file system check, which will take some minutes.
Checking printer NOTE: This error is only displayed in automatic mode. The unit stops if it appears	The printer is completing checks and cool-down cycle after finishing a job.

Message	Recommendation
Clean drop detector spittoon	You are advised to clean the ink deposits. See Clean the drop-detector ink deposits on page 238.
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 416.
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 418.
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 160.
Printhead replacement incomplete	The printhead replacement process was unsuccessful. See The Internal Print Server recommends replacing or reseating a printhead on page 409.

Message	Recommendation
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 139.
Replace {color} cartridge	Replace the ink cartridge. See The Internal Print Server recommends replacing or reseating an ink cartridge on page 408.
Replace {color} printhead	Replace the printhead. See The Internal Print Server recommends replacing or reseating a printhead on page 409.
Replace aerosol filter	You are advised to replace both aerosol filters. See Replace the aerosol filters on page 148.
Reseat {color} cartridge	Reseat the ink cartridge. See The Internal Print Server recommends replacing or reseating an ink cartridge on page 408.
Reseat {color} printhead	Reseat the printhead. See The Internal Print Server recommends replacing or reseating a printhead on page 409.
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 372.
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 373.
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.
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.

Table A-2 Numerical error codes

Error code	Recommendation
10:01:05:02	Check jumbo units input or output 37Kx contactors, they may have stuck during rearm. To release them, press the contactor button.
10.04.XX:YY	Problem with e-cabinet fuses. You may need to run a subsystem diagnostic to confirm that fuse replacement is required.
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.
10.06.09.41	The emergency stops and/or safety relay have been activated. Check that the emergency stops are not activated in the printer or in the jumbo input and output units. If the problem persists, run a diagnostic to identify the issue.
41.00.00.68	Check the jumbo roll input tension bar. Thread the substrate in or use the engine to move it. The input tension bar should be height centered.
41.00.00.69	Check the jumbo roll output tension bar. Thread the substrate in or use the engine to move it. The output tension bar should be height centered.

Error code	Recommendation
41.02.00.62	Problem moving main roller. Check that there is no jam and that the input and output tension bars have not reached their mechanical limits; either reload substrate or return the tension bars to their correct positions if applicable (you may use the jumbo input and output units in manual mode or the printer Internal Print Server arrow buttons). If needed, run substrate path mechanics diagnostics if problem persists.
51.01.00:92	The main window is open. Close the window to continue printing. If the problem persists, run a diagnostic to identify the issue.
51.02.00:92	The front cover is open. Close the front cover to continue printing. If the problem persists, run a diagnostic to identify the issue.
51.03.00:92	The loading table is not closed. Close the loading table to continue printing. If the problem persists, run a diagnostic to identify the issue.
51.04.00:92	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.
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 the carriage rails and replace the oiler foams on page 207).
86.04.XX:08	Possible scan-axis jam detected. Check that servicing and substrate paths are completely clean and clear of obstacles, then perform **Reinitialize carriage** from the Internal Print Server. If the problem persists, run subsystem diagnostics and call your service representative.

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.

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.

Curing

Curing is needed to coalesce the latex, creating a polymeric film which acts as a protective layer, while at the same time removing the remaining co-solvents from the print. Curing is vital to ensure the durability of the printed images.

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 cleaner 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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