

Latex 3000 Printer

Service Manual

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Edition 2

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1 Using this manual

- Purpose
- Chapters
- Readership

Purpose

This service manual provides the procedures and information necessary to troubleshoot mechanical faults and print-quality problems, perform diagnostic tests and calibrations, and service the HP Latex 3000 printer.

For information about using the printer, see the user's guide.

Chapters

1: Using this manual

This chapter.

2: Printer systems

Use this chapter as a reference for technical information about the subsystems, components, and how they work together.

Of particular importance are the diagrams included for each subsystem of the printer. They can be useful for both troubleshooting and disassembly.

3: Safety requirements

This is an industrial printer with high voltages, and it can be hazardous to service. This chapter explains how to service the printer safely.

4: Troubleshooting

This chapter explains how to respond to various kinds of printer problems that you may encounter.

5: Diagnostics

Use this chapter whenever you need to perform a diagnostic test, service utility, or service calibration. This chapter is meant to provide procedures and relevant information, not troubleshooting information, which is in the troubleshooting chapters.

The procedures are described in full, so that you know any relevant values for the test, as well as information about what the printer is actually doing during the test.

The goal of diagnostic tests is to locate the root cause of the problem and the corresponding system error code or message that will provide you with the logical steps to resolution.

Some diagnostic tests or calibrations must be performed after removing a component.

6: Service parts and diagrams

The purpose of this chapter is to detail all of the available service parts of the printer. This information is presented in tables, organized by subsystem, and includes the following:

- Official service part names
- Part numbers
- Illustrations of the service parts

Use this chapter whenever you need to order a service part.

7: Removal and installation

This chapter provides procedures for removing and installing service parts. Each service part has a removal procedure detailed in this chapter, and installation procedures and notes are included as needed.

Useful information such as access notes and screw types (head sizes) are provided to help you work efficiently.

Whenever you remove or replace a component, check the Service Calibration Matrix at the beginning of the chapter, which tells you the tests, utilities, and calibrations that must be performed after removing or replacing a component, and in what order.

8: Call Me @HP

Call Me @HP is a remote troubleshooting tool embedded in the Print Care software, by which customers can obtain support remotely without the need of a service visit. This chapter describes how to troubleshoot issues related to this tool.

9: Move the printer

The printer is large and, depending on the scenario, will require special care if you wish to move it. This chapter covers the four primary moving scenarios:

- Within the same site, over flat ground
- Within the same site, over ramps or stairs (the printer must be lifted)
- To a different site, with no possibility of freezing
- To a different site, with possibility of freezing, which can damage the tubes, causing ink leakages (the ink must be removed, as it is water-based and can freeze).

Readership

The primary readers of this service manual are HP service engineers, although secondary readership may include resellers. All procedures must be performed by HP service engineers, except those clearly marked otherwise.

2 Printer systems

- Electrical system: E-cabinet
- E-box
- Substrate path
- Impelling system
- Print to Paper Space (PPS)
- Ink system
- Carriage
- Service station: capping and drop detection
- Printhead cleaning system
- Drying
- Curing
- Vapor removal
- Subsystem block diagrams

Electrical system: E-cabinet

Functionality

The e-cabinet is the power distribution centre for the whole printer. It is an enclosure located on the right side of the printer where all the power electrical components are located.

The e-cabinet has 2 input AC power lines:

- The IPS power line (single phase)

NOTE: This line is optional; the printer can be configured with a single power cord.

- The main power line to power the rest of the machine (three phase or high current single phase); e-box, heaters, DC and AC power supplies.

NOTE: To power the printer, a 240 V single-phase or bi-phase high-current connection can be used. There is no support for powering the printer in single- or bi-phase at other nominal voltages. See the installation guide and site preparation guide for details and specifications.

The main power is switched on or off through the main switch SW-1, and the IPS power is switched on or off through ACB-9.

All the AC loads are single phase rated for 200–240 V AC. The main power line is separated inside the e-cabinet into three single-phase lines. The following power input configurations are supported:

- High line voltage: a 380–415 V line-to-line system (220–240 V line-to-neutral) separated into:

  L1-N, L2-N, L3-N

- Low line voltage: a 200–240 V line-to-line system separated into:

  L1-L2, L2-L3, L3-L1

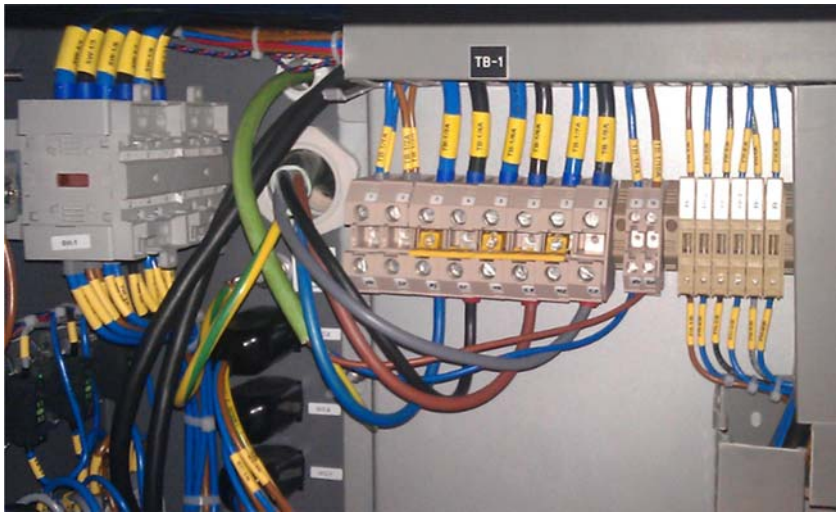
- High current single- or bi-phase at 240 V line-to-line separated into:

  L1-L2, L1-L2, L1-L2

The separation into three single-phase lines is done through the configuration cross-connectors in TB-1. For high line voltage mains a neutral is required, for low line voltage a neutral wire is not needed (and should never be installed).

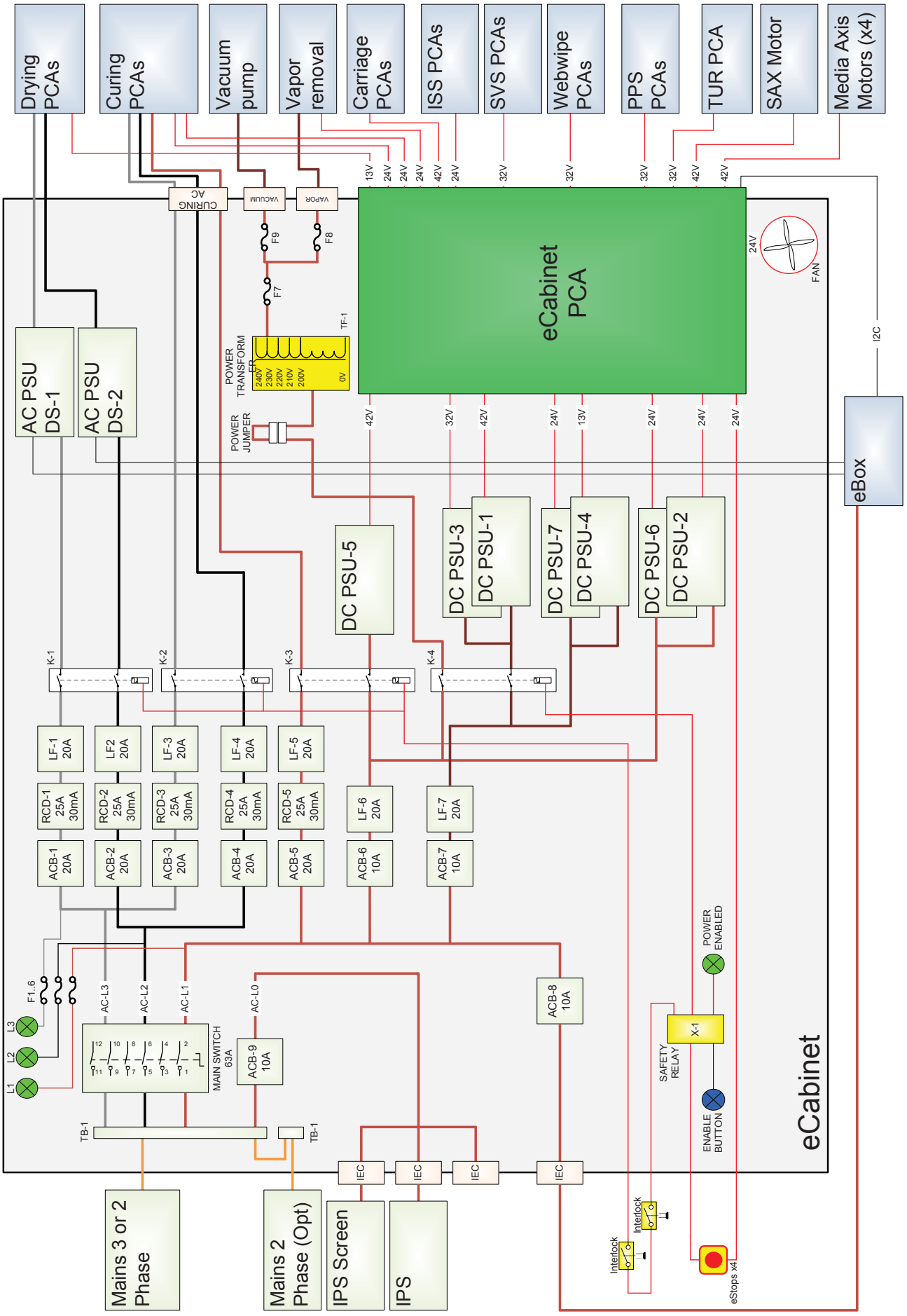
Through the TB-1 and the configuration cross-connectors, one of the phases of the main power can be connected to the single-phase input, so that the printer can be powered by a single power cord. See the installation guide and site preparation guide for details and specifications.

The picture below shows an example of the terminal block configured:



Simplified diagram and general electrical explanation

The following simplified block diagram shows an electrical overview of the e-cabinet components and the link with the external subsystems.


Drying PCAs
Curing PCAs
Vacuum pump
Vapor removal
Carriage PCAs
ISS PCAs
SVS PCAs
Webwipe PCAs
PPS PCAs
TUR PCA
SAX Motor
Media Axis Motors (x4)
eCabinet PCA
FAN
I2C
eBox
AC PSU DS-1
AC PSU DS-2
POWER TRANSFORMER
POWER JUMPER
DC PSU-5
DC PSU-3
DC PSU-1
DC PSU-7
DC PSU-4
DC PSU-6
DC PSU-2
K-1
K-2
K-3
K-4
LF-1 20A
LF2 20A
LF-3 20A
LF-4 20A
LF-5 20A
LF-6 20A
LF-7 20A
RCD-1 25A 30mA
RCD-2 25A 30mA
RCD-3 25A 30mA
RCD-4 25A 30mA
RCD-5 25A 30mA
ACB-1 20A
ACB-2 20A
ACB-3 20A
ACB-4 20A
ACB-5 20A
ACB-6 10A
ACB-7 10A
ACB-8 10A
ACB-9 10A
MAIN SWITCH 63A
SAFETY RELAY
POWER ENABLED
ENABLE BUTTON
Interlock
Interlock
eStops x4
IEC
IEC
IEC
IEC
TB-1
TB-1
Mains 3 or 2 Phase
Mains 2 Phase (Opt)
IPS Screen
IPS
eCabinet

The printer's loads are all single phase, therefore a three-phase line is not strictly required. However in many cases the mains line available for the required power level is a three-phase line.

Through the installation and configuration terminal blocks (TB-1), the e-cabinet splits the input line into three 200–240 V single-phase lines. There is a pilot light on each of these lines (L-1, L-2, and L-3) to provide visual feedback. The configuration is done by the installation cross-connectors; see the installation guide for further information on how to connect and configure the e-cabinet for each supported power system.

As a result of all the loads being single phase, the printer is an unbalanced three-phase load when connected to a three-phase power line. The average power consumption is distributed as evenly as possible among the three phases, but it will never be perfectly balanced.

Main switch and PC switch

Whether there is an independent single-phase line for the IPS or only the main power line, the main switch will not switch the IPS on or off; the IPS AC power is switched on or off through the PC ACB (ACB-9).

NOTE: Note that the IPS is a standard PC and should be turned off through the operating system, not by switching off the AC power.

AC protections: ACBs and RCDs (GFIs)

Through the AC protections, the three single-phase lines coming from TB-1 and through the main switch are further split into a total of 8 protected lines:

- 3 lines for the curing system, with ACB and RCD (GFI) protection on each line
- 2 lines for the drying system, with ACB and RCD (GFI) protection on each line
- 2 lines for the AC/DC PSUs and the power transformer, with ACB protection on each line
- 1 line for the e-box, with ACB protection

This separation of the AC lines allows us to identify better where a problem with the AC part comes from.

Safety circuit and contacts

There are 4 contacts that switch the AC power of several systems. They are controlled through the safety relay, see Safety relay activation and safety elements on page 19 for further information.

Power jumper and power transformer

The power autotransformer TF-1 is used to adapt the 200–240 V power input to a 230 V power output. The power jumper selects the appropriate contacts of the autotransformer and must be chosen depending on the mains nominal voltage (see the installation guide for more information). The transformer powers the vacuum and vapor removal pumps. Its output has 3 fuses for protection. On one of the lines there is a fuse for each pump to identify the problem better if one of the pumps fails, on the other line there is a common fuse of a higher value.

AC power supplies

There are two AC power supplies (DS-1 and DS-2) to power the IR lamps in the drying system (one for each lamp module). These power supplies convert the AC input voltage to a lower AC voltage controlled by the firmware and allow a fine control of the lamps output power and independence from the AC input variations.

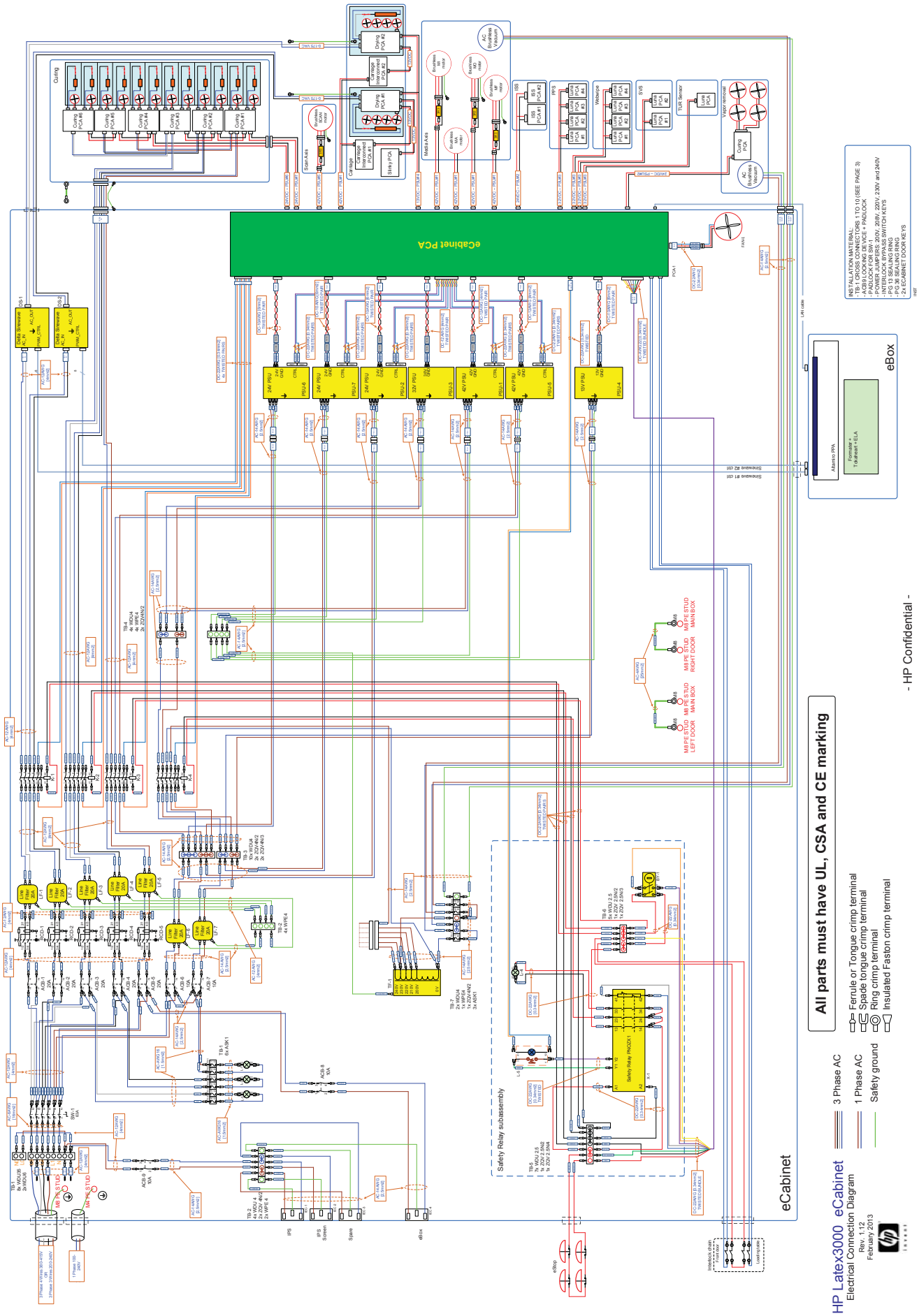
DC power and the e-cabinet PCA

There are 7 AC/DC power supplies that supply power to most of the electrical components of the machine (motors, valves, fans, solenoids, electronics.

The DC power coming out of the AC/DC power supplies is connected to the e-cabinet PCA which has a power input for each PSU. The e-cabinet PCA's main role is to distribute and monitor the DC power to the printer subsystems; it also provides power and monitors the safety circuit.

Detailed electrical diagram

The following is a complete wiring diagram of the e-cabinet.

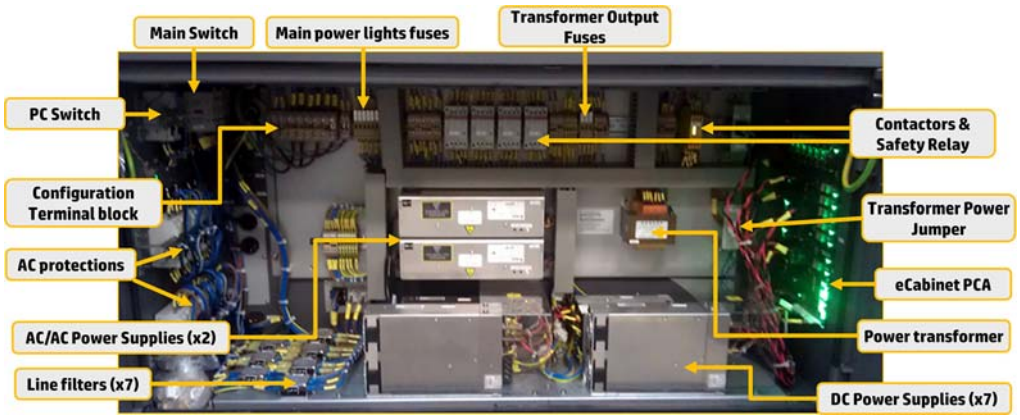

eCabinet PCA
eBox
eCabinet
Safety Relay subassembly
All parts must have UL, CSA and CE marking
- HP Confidential -
HP Latex3000 eCabinet
Electrical Connection Diagram
Rev. 1.12
February 2013
3 Phase AC
1 Phase AC
Safety ground
Ferrule or Tongue crimp terminal
Spade tongue crimp terminal
Ring crimp terminal
Insulated Faston crimp terminal

Internal Components

The interior of the e-cabinet contains the following components:

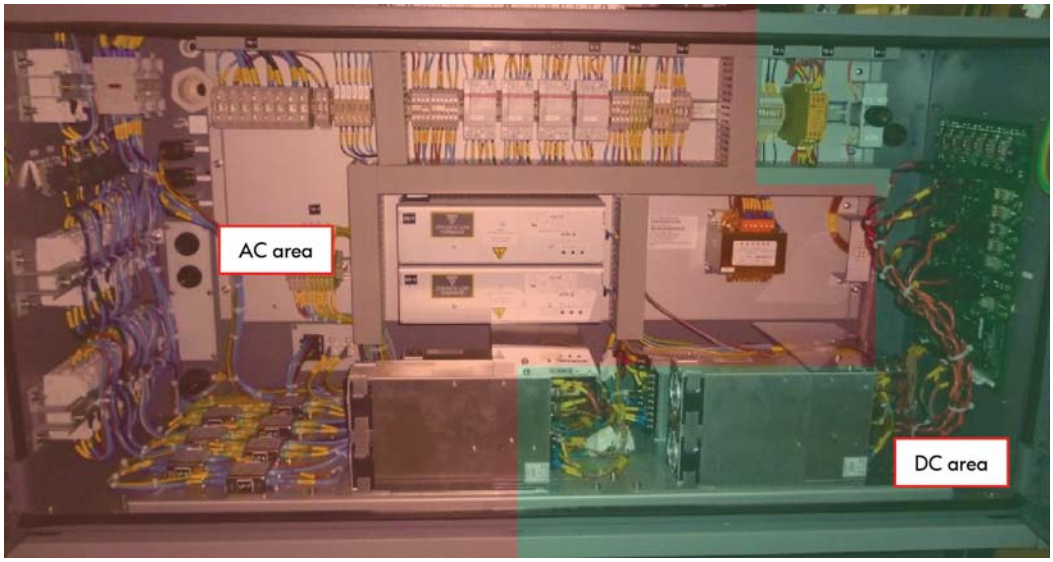
- Installation and configuration terminal block (TB-1)
- Main switch (SW-1)
- Automatic and residual circuit breakers (ACB-1 to ACB-9)
- 7 single-phase line filters (LF-1 to LF-7)
- Contactors (K-1 to K-4, activation through safety relay)
- Safety relay (X-1, controlled by the emergency stops and enable button)
- 7 AC/DC power supplies (PSU-1 to PSU-7)
- 2 AC/AC power converters (DS-1 to DS-2, power for the drying lamps)
- E-cabinet PCA
- 1 power transformer (TF-1, powers the vacuum fans)
- Fan (FAN-1)

General view

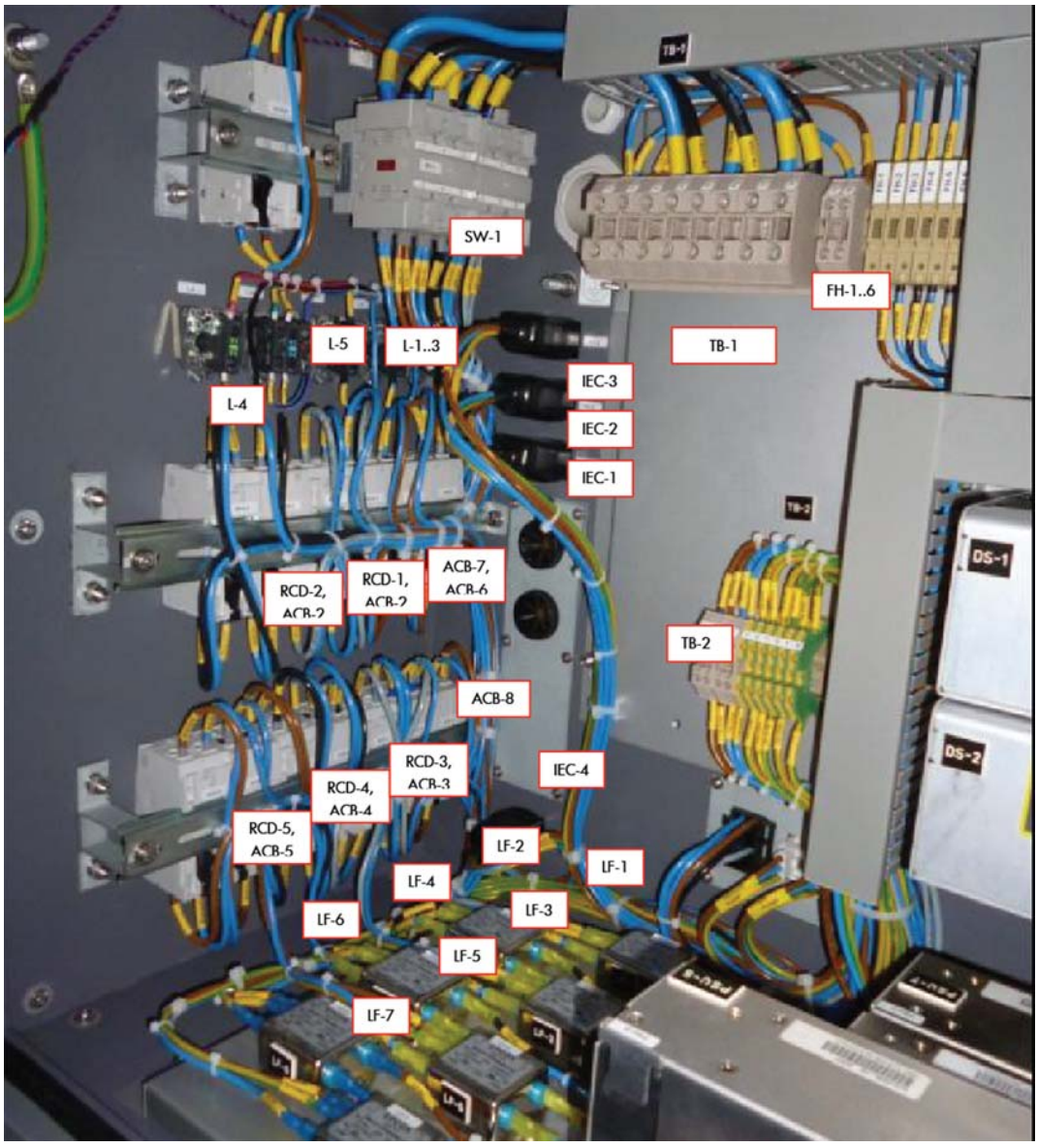


AC and DC areas

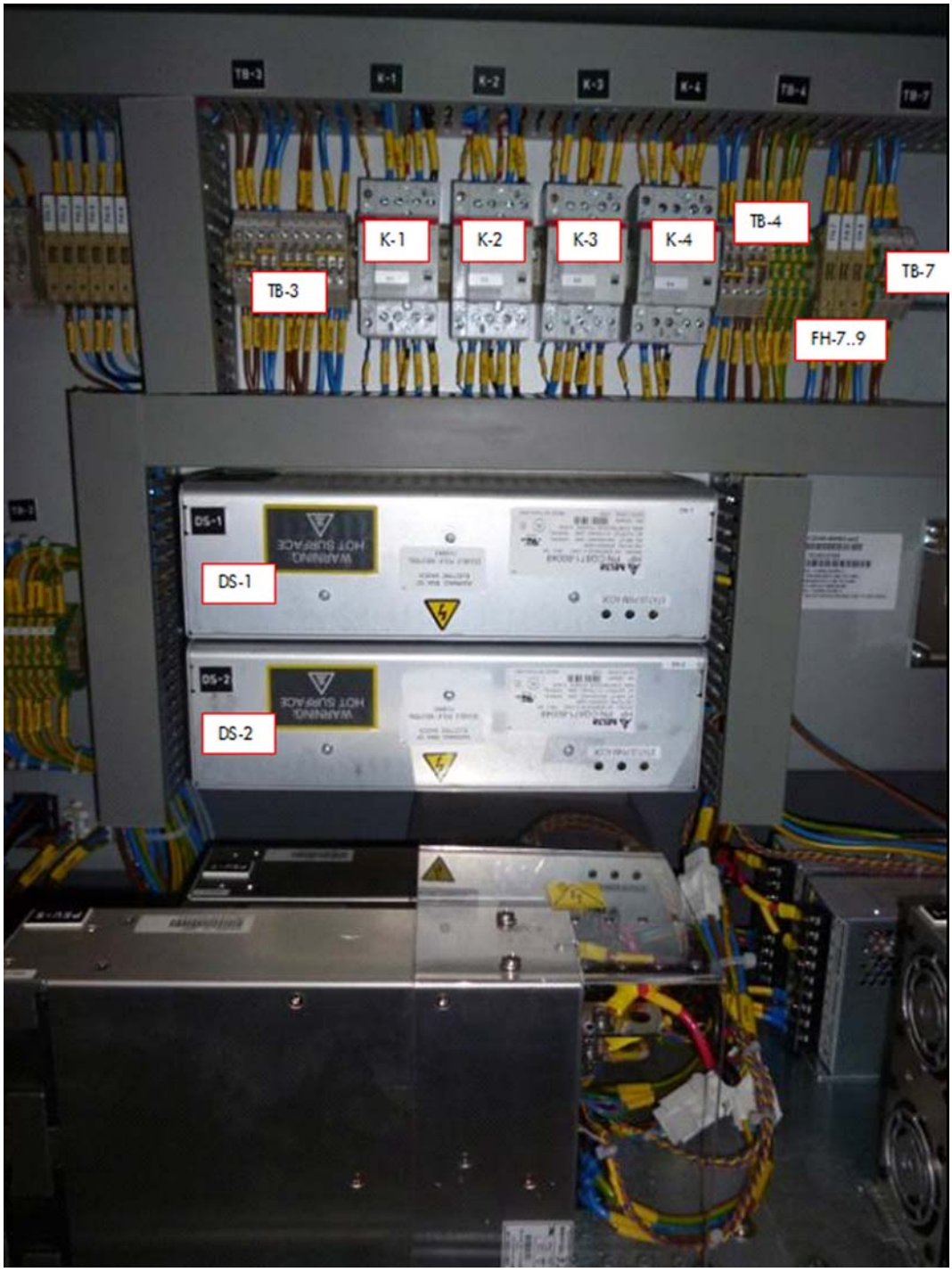
This is a general view of the AC and DC power spatial distribution. Inevitably, some AC and DC cables share a stretch of their routing, but in general they are as separated as possible.


AC area
DC area

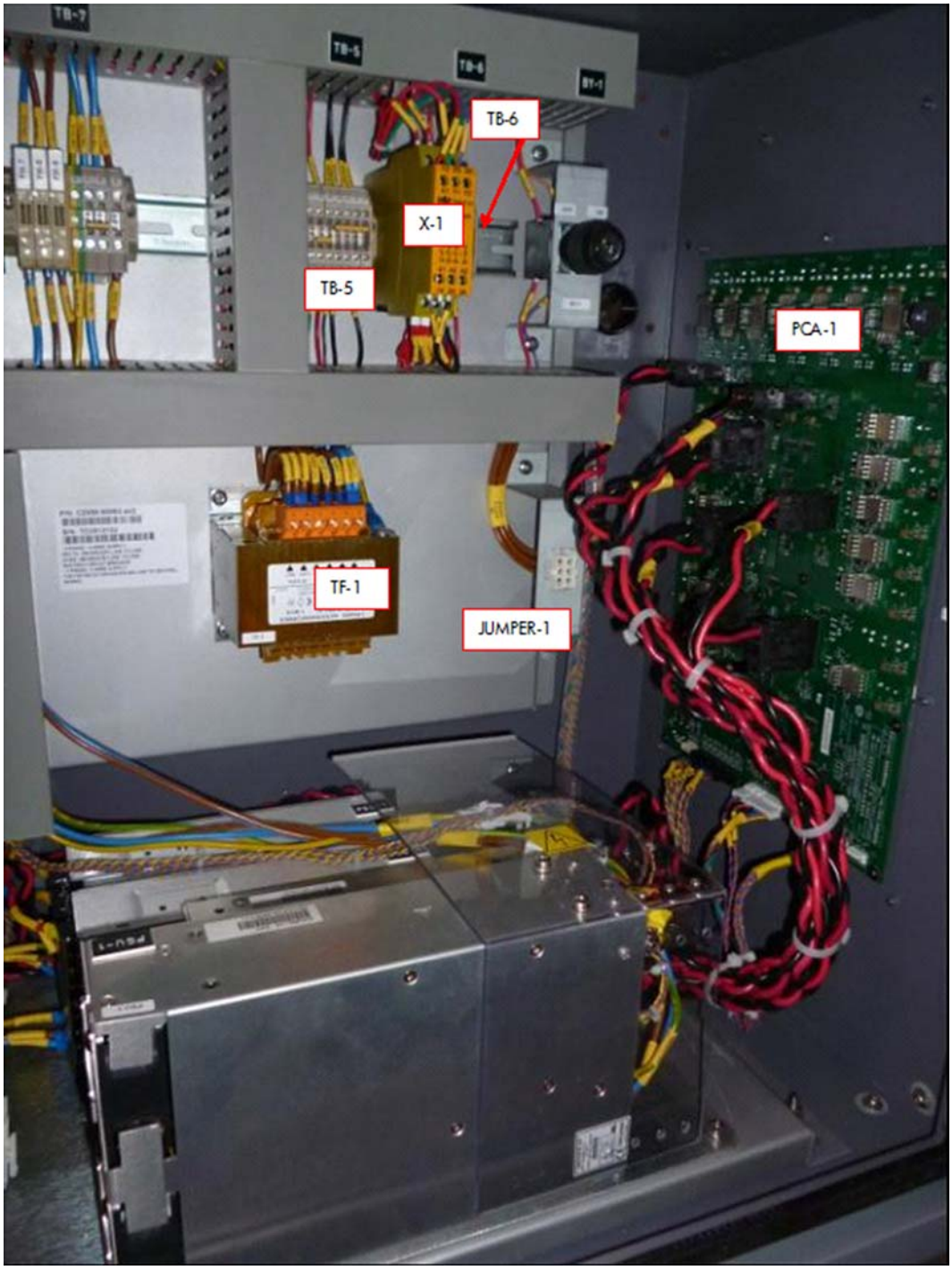
AC input


TB-1
SW-1
FH-1..6
L-5
L-1..3
TB-1
IEC-3
L-4
IEC-2
IEC-1
TB-2
DS-1
RCD-2, ACB-2
RCD-1, ACB-1
ACB-7, ACB-6
TB-2
ACB-8
DS-2
RCD-3, ACB-3
IEC-4
RCD-4, ACB-4
RCD-5, ACB-5
LF-2
LF-1
LF-4
LF-3
LF-6
LF-5
LF-7

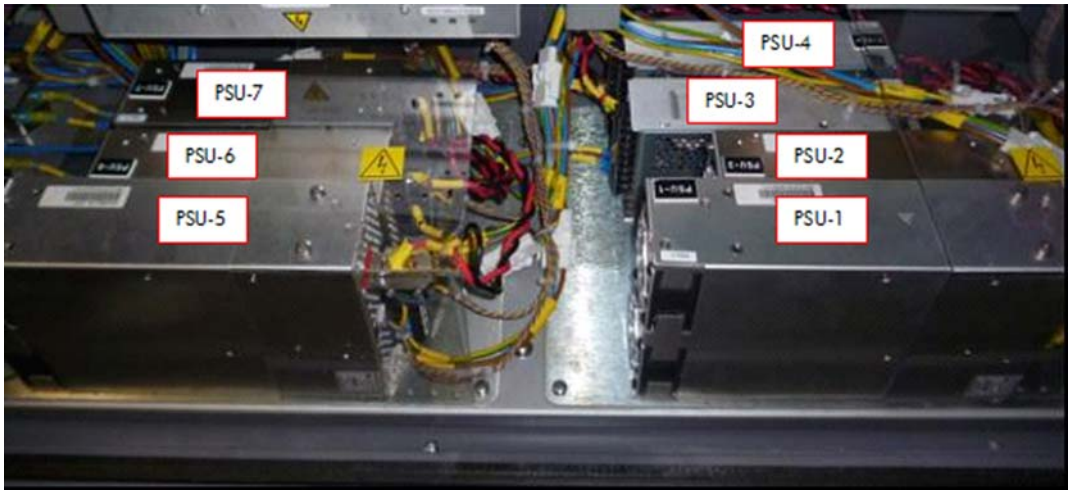
AC power supplies, contacts, and distribution blocks



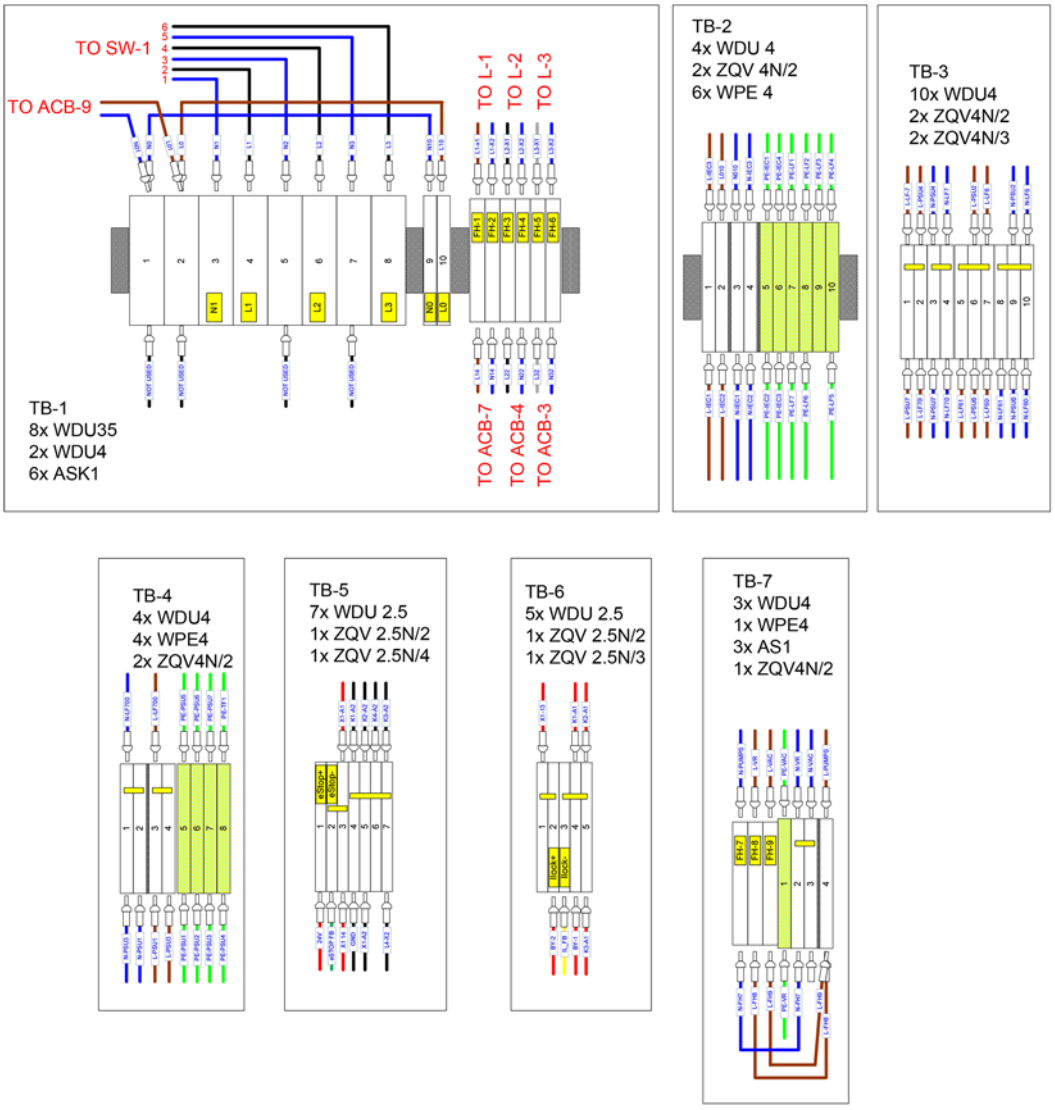
Safety circuit, power transformer, and PCA



DC power supplies

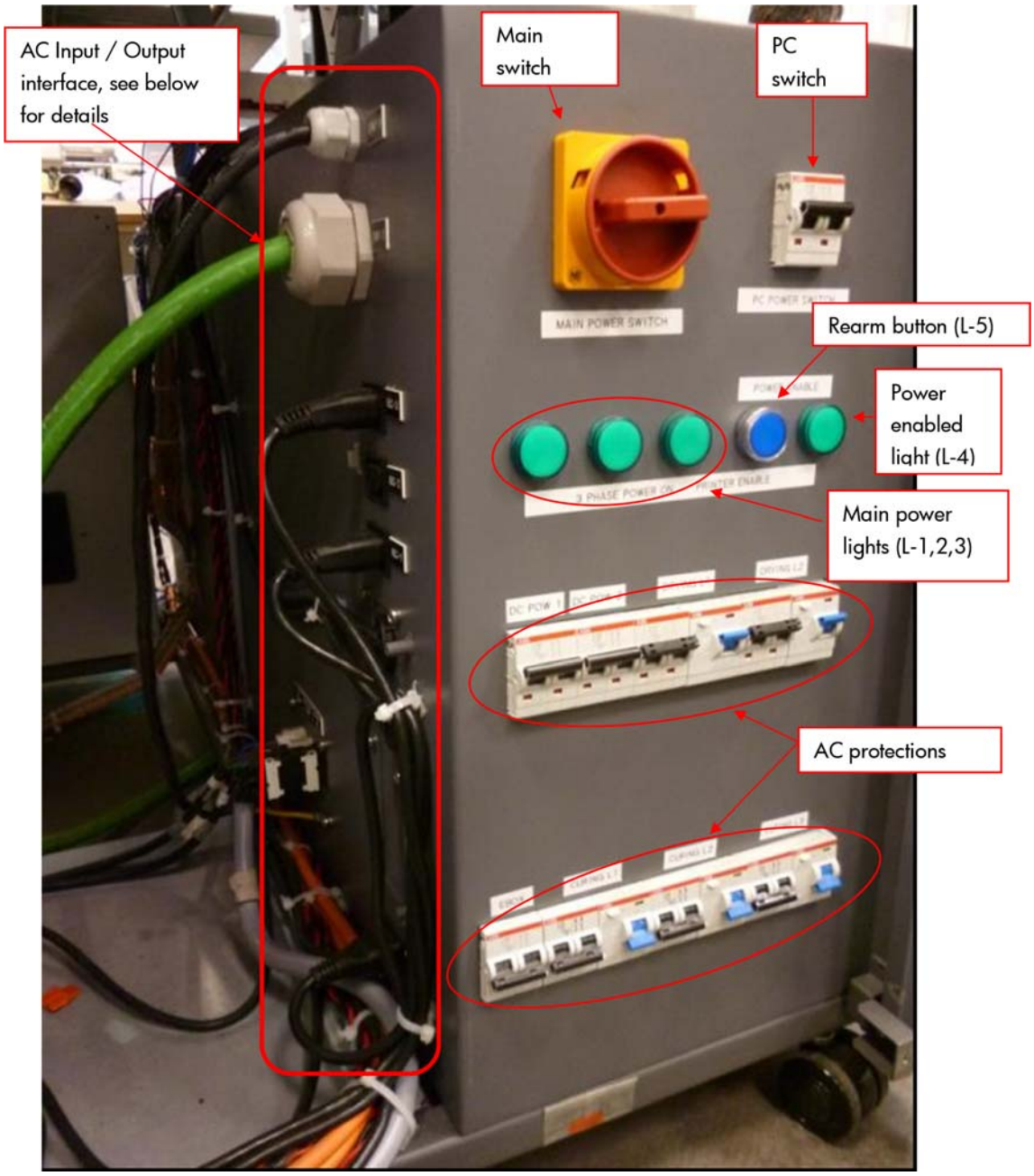


Terminal block cabling details



E-cabinet exterior and user interface

Figure 2-1 IPS PC side



The side nearest to the IPS PC provides the user interface and the AC in/out interface

Figure 2-2 AC protections detail

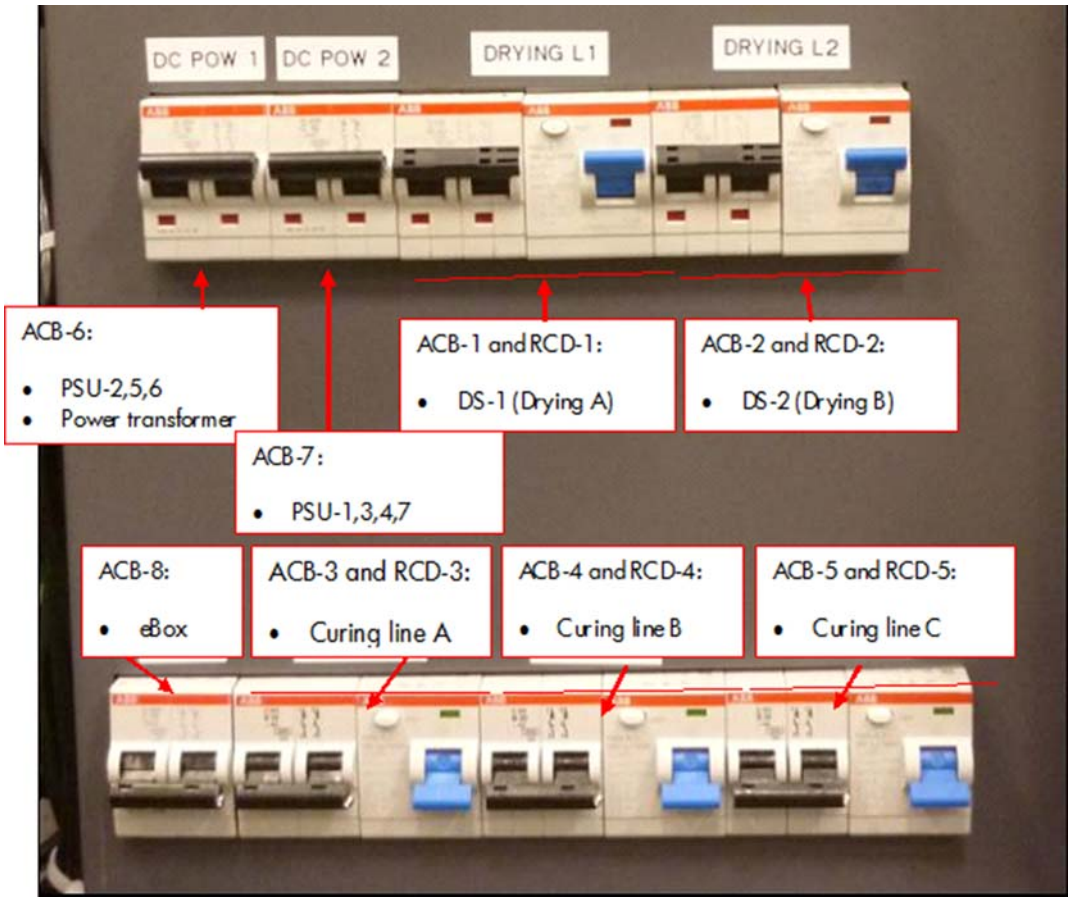


Figure 2-3 Rear details (AC I/O interface)

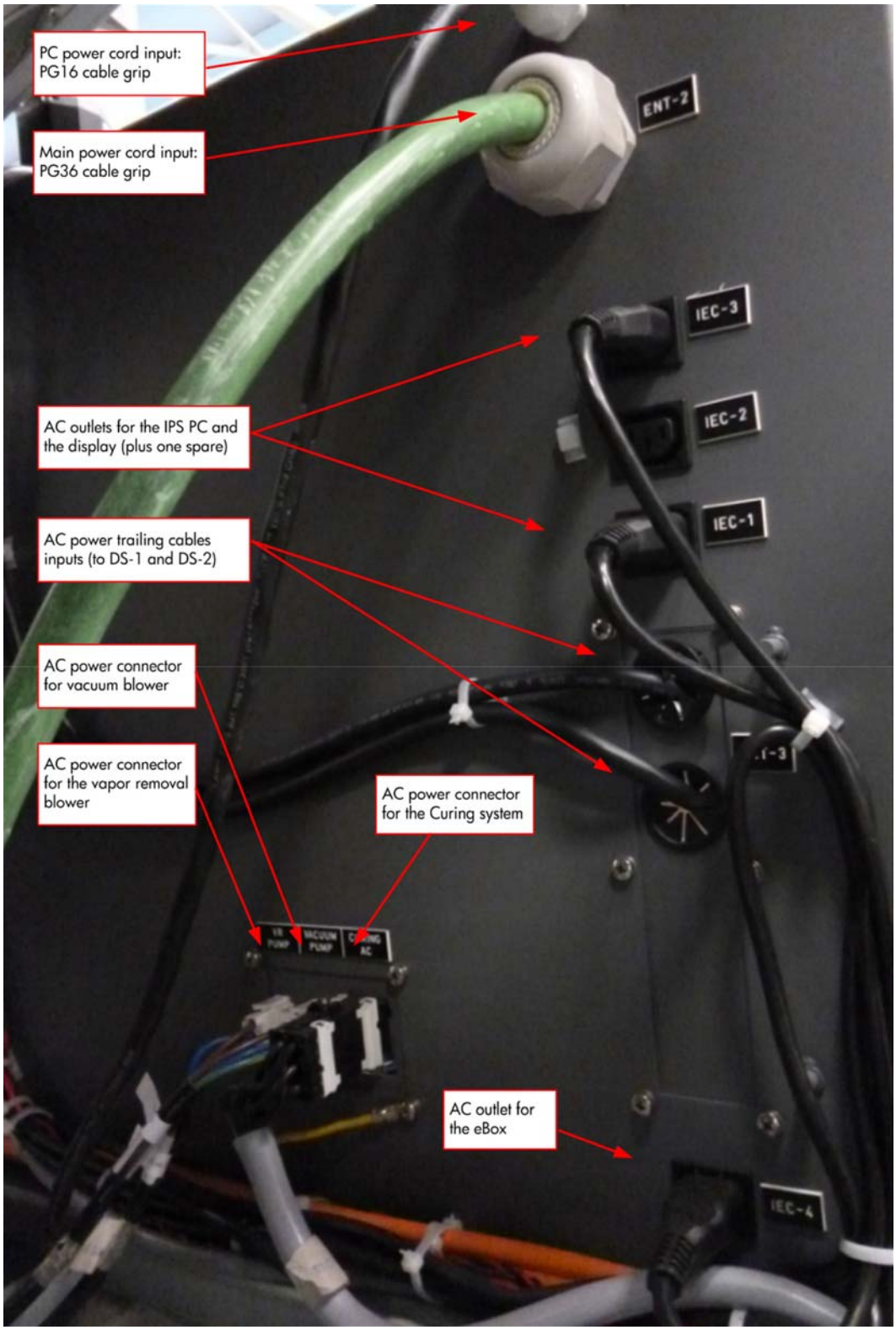
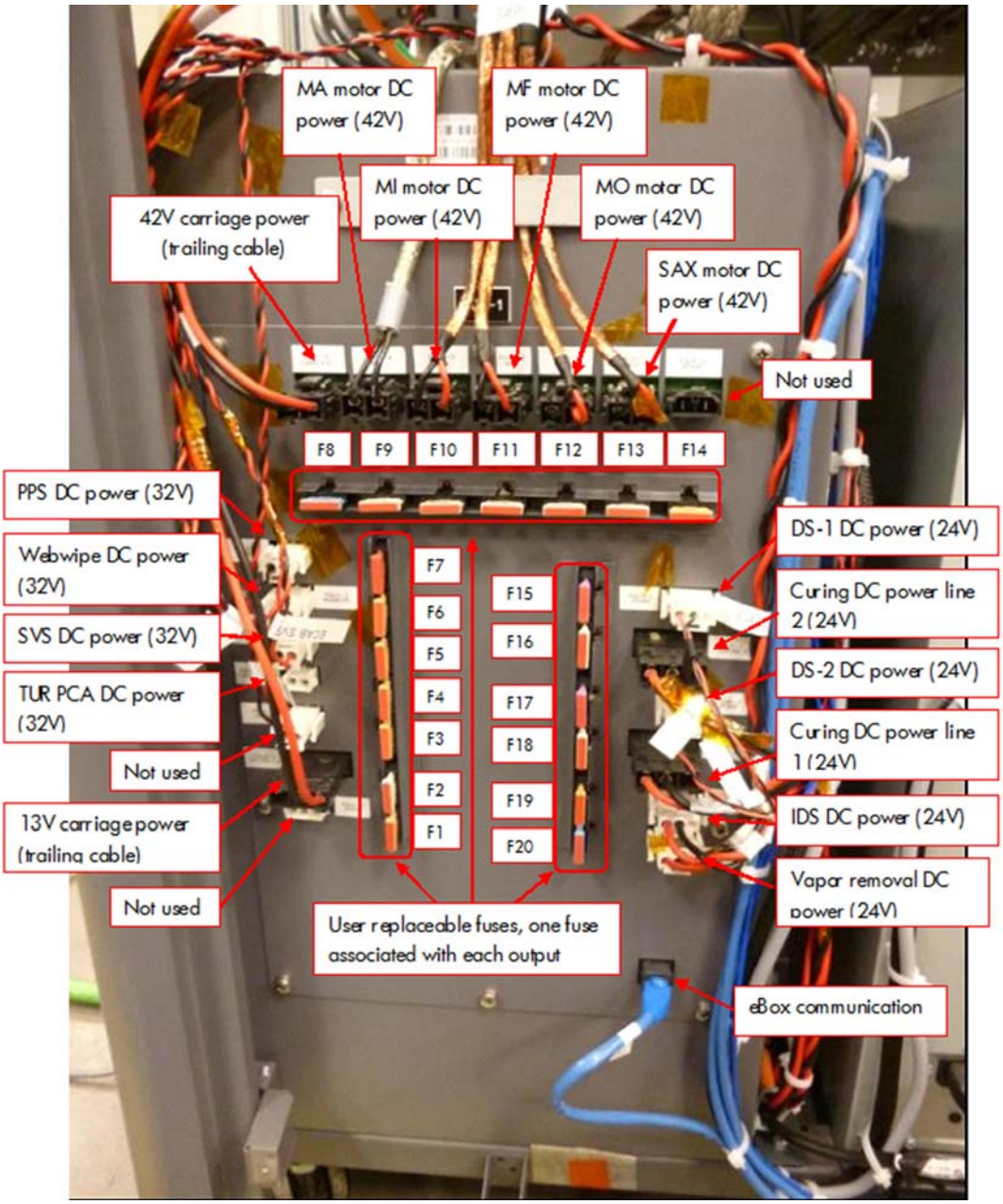


Figure 2-4 E-box side



The side nearest to the e-box is the DC power output and signals interface.

In case of a blown fuse, an alert will be shown by the Internal Print Server indicating which fuse needs to be replaced.

PSU configuration

There are seven AC/DC power supplies that supply power to most of the electrical components of the machine (motors, valves, fans, solenoids, electronics...).

These power supplies have various output voltages and are powered on/off in different moments. Here is a summary of the PSUs:

PSU#	Power	Voltage	Subsystems	ON/OFF status
1	1000W	42V	Substrate path motors	Safety relay control
			Printheads	

2	600W	24V	e-cabinet	Always ON
			ISM	
			Vapor removal fans	
3	300W	32V	Print to Paper Space (PPS)	Safety relay control
			Printhead cleaning system	
			Service station	
			Take-up reel PCA	
4	300W	13V	Carriage electronics: • Carriage interconnect PCAs • Drying PCAs • Fiber-optics PCA	Always ON
5	1000W	42V	Scan motor	Safety relay and safety interlocks control
6	600W	24V	Curing electronics (Curing PCAs# 4 to 6)	Always ON
7	600W	24V	Curing electronics (Curing PCAs# 1 to 3)	Always ON

Safety relay activation and safety elements

When the printer is turned on, the potentially dangerous systems (heaters and motors) are not powered up. To enable power to these systems there is a safety circuit controlled by a safety relay.

The systems whose power is controlled by the safety circuit are:

- Substrate axis motors
- Printhead PCAs
- Print to Paper Space (PPS)
- Printhead cleaning system
- Service station
- TUR PCA
- Scan-axis motor
- Drying AC power (lamps)
- Curing AC power (heaters)
- Vacuum pumps

In order to enable the safety relay, three conditions must be satisfied:

- None of the 4 emergency stop buttons must be pressed.
- The printer firmware must be active and must allow enabling the power (indicated by blinking the Enable button).
- The user must press the blue Enable button on the side of the e-cabinet.

The power-up sequence is as follows:

- The printer starts booting up by switching on the main switch or starting up the e-box through the Internal Print Server.
- Among other checks, while starting up the printer checks the status of the emergency stop buttons. If one or more buttons are pressed, it waits for the user to release them (a message is displayed by the Internal Print Server).
- When all the initial checks have been passed, the printer waits for the user to press the Enable button (the button blinks and the Internal Print Server displays a message).
- Once the Enable button has been pressed, the safety relay activates the power to all systems, and the printer continues its start-up sequence until it is ready to print.

Emergency stop

If one or more emergency stop buttons are pressed, the safety relay will deactivate and cut power to all the potentially dangerous systems. Once it has been deactivated, the safety relay can only be reactivated with user intervention, and the three conditions stated above must be satisfied again.

Safety interlocks

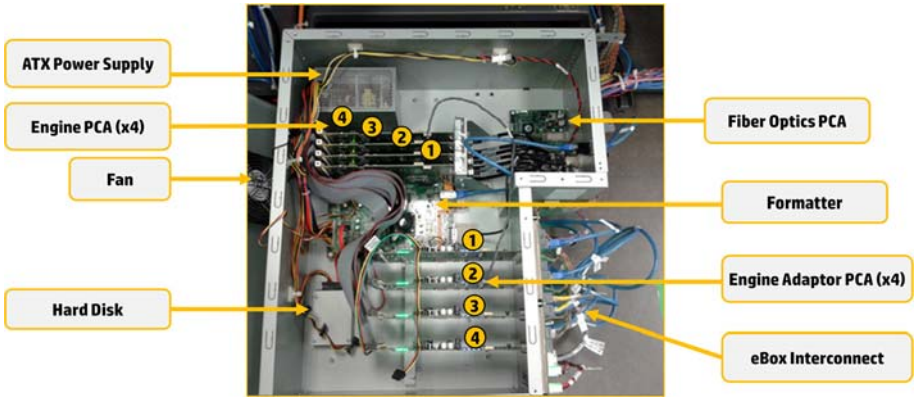
There are two safety interlock switches located one at the front door and the other at the loading table. Those switches control the power of the carriage motor and the heaters in the curing and drying systems. If either of those interlocks is activated by opening a door, the power to those systems will be cut off. However, the safety relay will not be deactivated, so when the door is closed the systems will be powered on again without further user intervention.

E-box

Functionality

The e-box is the main processing and control system in the printer. It is a metal enclosure located at the rear left of the printer where main electronics are located.

Components



The interior of the e-box contains the following components:

- **Formatter:** The formatter is the motherboard of the printer, similar to a PC motherboard. Its main functions are the processing (formatting) of printing data coming from the Internal Print Server and the coordination of printer subsystems. The formatter provides a SATA connector to the hard disk drive, PCI express connections to the four engine PCAs, and a network interface to the Internal Print Server PC.
- **Hard disk:** The hard disk holds most of the printer's data, including the firmware. However, key data such as product number, serial number, and calibration values are also replicated in an internal memory of the ISS PCA 1 in order to have redundancy protection. Therefore, if the hard disk drive fails, it can be replaced by a new one, and key data are automatically copied from the ISS PCA 1 to the new hard disk. Similarly, if the ISS PCA 1 breaks, it can be replaced by a new one, and key data are automatically copied from the hard disk to the ISS PCA 1.

  It is important to understand what this means in practical terms: the hard disk and IDS cannot be replaced simultaneously and can be replaced only by new ones. If hard disk or IDS are not new (e.g. they come from another printer), the appropriate service procedures must be followed, otherwise data may be inconsistent.
- **ATX power supply:** The power supply for the e-box is a standard ATX unit, similar to a PC ATX power supply.
- **E-box fan:** In order to prevent the e-box from overheating, there is a fan located on the lid of the enclosure, electrically connected to the formatter board.
- **Engine PCAs:** The engine boards control the real-time routines, namely:
  - Converting the image format to data compatible with the printheads
  - Sending the above information to the printheads at the correct speed
  - Running the real-time servo controls for the position and speed of the mechanical actuators
  - Communicating with other electronics boards that control delegated actuators and sensors

  There are four identical engine boards directly connected to the hard disk drive. The following functionality map summarizes each board controlling tasks:

Engine PCA 1

- Carriage motor
- Drying modules
- Spectrophotometer
- Line sensor
- Printhead cleaning motors
- Service station motors
- Cyan/black printheads
- Drop detection for cyan/black printheads

Engine PCA 2

- Curing modules
- PPS motors
- Ink Delivery System
- Vapor removal fans
- Light cyan/light magenta printheads
- Drop detection for light cyan/light magenta printheads
- Printhead priming for lower array of color printheads

Engine PCA 3

- Substrate path motors (substrate input, substrate output, substrate advance, substrate floor)
- Substrate advance sensor (also known as OMAS)
- E-cabinet PCA
- Printer sensors, such as pinchwheel lever, window sensor, take-up reel control
- Print zone vacuum
- Yellow/magenta printheads
- Drop detection for yellow/magenta printheads
- Printhead priming for upper array of color and optimizer printheads

Engine PCA 4

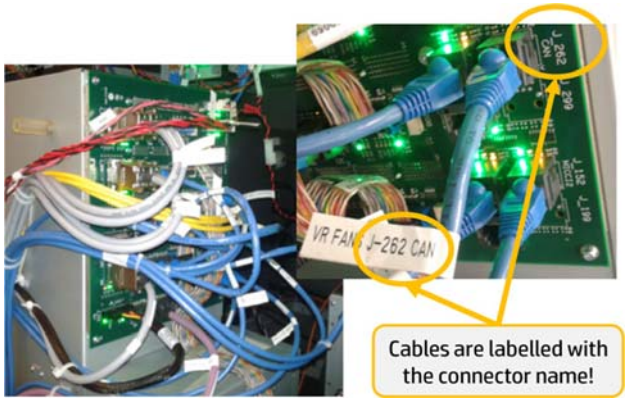
- Vapor removal vacuum
- Buzzer
- Take-up reel sensor power
- Optimizer printhead
- Drop detection for optimizer printhead

- **Engine adaptor PCAs:** The engine adaptor boards are responsible for:

- Converting the electrical signals coming from/going to the engine boards to suitable voltage levels required by the machine.
- Sourcing/controlling and measuring the logic power needed by the subsystems.
- Monitoring signals for enhanced machine diagnosis.

There are four identical engine adaptor PCAs connected to each of the engine boards via flat cables and to the e-box interconnect via board-to-board connections.

- **E-box interconnect PCA:** The e-box interconnect PCA centralizes the connectors for the cables going to all the subsystems (except the printheads). It also has LEDs that enable visual diagnosis without accessing the interior of the e-box enclosure.

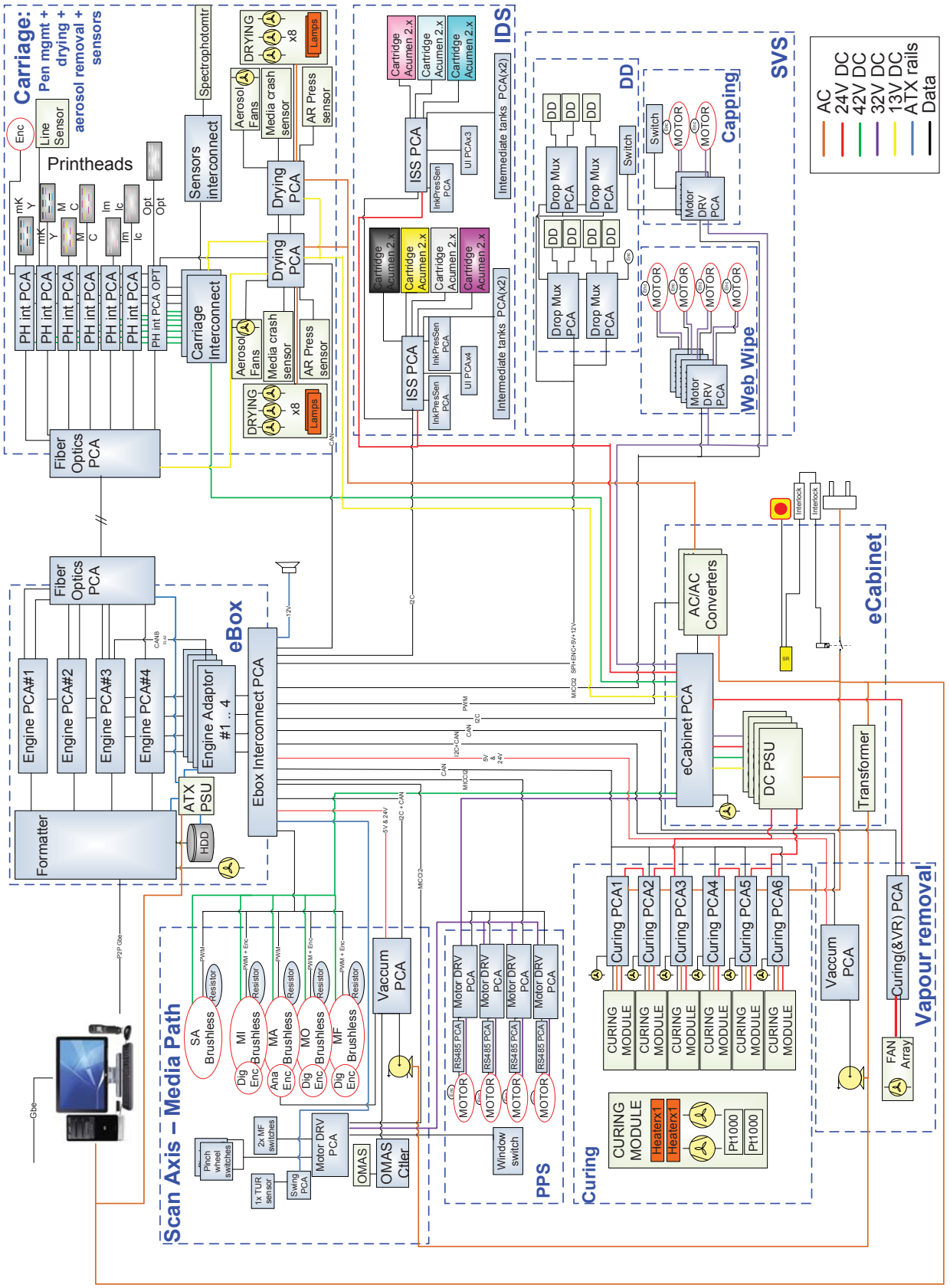


See Troubleshooting without system errors on page 265 for details about connections and diagnostic LED's.

- **Fiber-optics PCA:** The fiber-optics PCA multiplexes the image information generated by the four engine boards and sends it to the printheads through a single optical fiber.

General block diagram

The following diagram shows a general overview of the electronic interconnections between the printer subsystems. For detailed subsystem diagrams, see the end of this chapter.


Carriage:
Pen mgmt + drying + aerosol removal + sensors
Printheads
PH int PCA
PH int PCA OPT
Carriage Interconnect
Fiber Optics PCA
Sensors interconnect
Spectrophotomtr
Aerosol Fans
Media crash sensor
AR Press sensor
DRYING x8 Lamps
Drying PCA
IDS
Cartridge Acumen 2.x
ISS PCA
InkPresSen PCA
UI PCAx3
Intermediate tanks PCA(x2)
SVS
DD
Drop Mux PCA
Switch
Capping
Motor DRV PCA
MOTOR
Web Wipe
eBox
Engine PCA#1
Engine PCA#2
Engine PCA#3
Engine PCA#4
Engine Adaptor #1 .. 4
Ebox Interconnect PCA
ATX PSU
HDD
Formatter
eCabinet
AC/AC Converters
eCabinet PCA
DC PSU
Transformer
Interlock
Scan Axis – Media Path
SA Brushless
MI Brushless
MA Brushless
MO Brushless
MF Brushless
Dig Enc
Ana Enc
Resistor
Vaccum PCA
OMAS
OMAS Ctler
Pinch wheel switches
2x MF switches
1x TUR sensor
Swing PCA
PPS
Motor DRV PCA
RS485 PCA
Window switch
Curing
Curing PCA1
Curing PCA2
Curing PCA3
Curing PCA4
Curing PCA5
Curing PCA6
CURING MODULE
Heater1
Pt1000
Curing(&VR) PCA
FAN Array
Vapour removal
AC
24V DC
42V DC
32V DC
13V DC
ATX rails
Data

Substrate path

Functionality

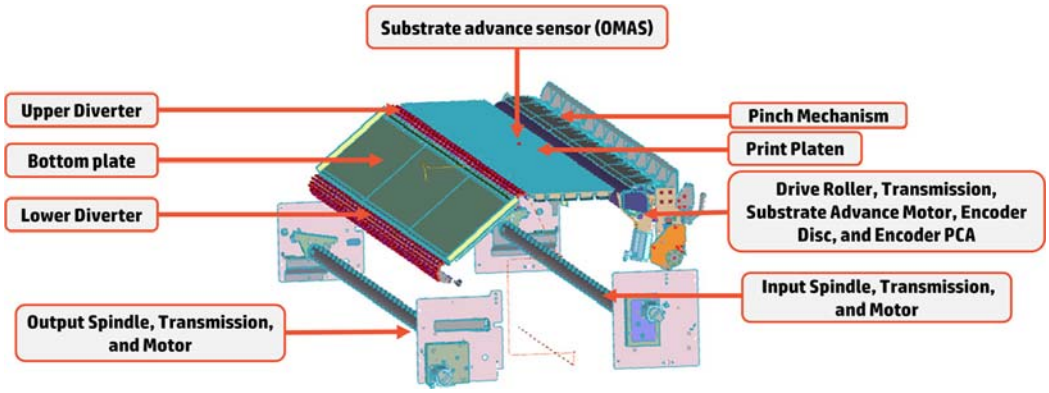
The substrate path includes all the elements responsible for providing a smooth and accurate motion of the substrate, and therefore ensuring a consistent and controlled substrate advance.

Components (roll-to-roll configuration)

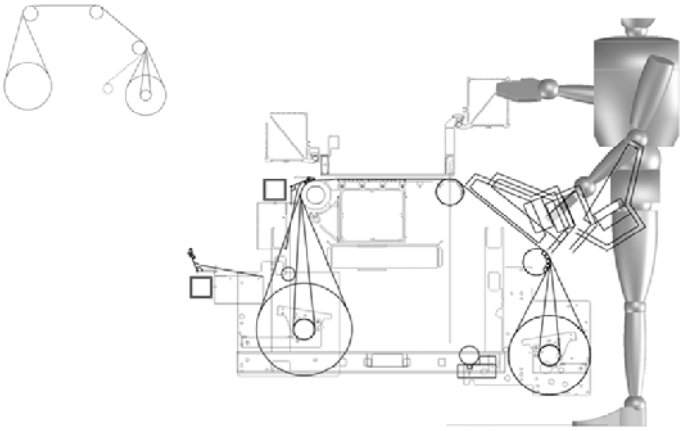
The components included in the substrate path are:

- Input spindle, transmission, and motor (rear)
- Drive roller, transmission, substrate advance motor, encoder disc, and encoder PCA
- Pinch mechanism
- Print platen and substrate advance sensor
- Diverters and bottom plate
- Output spindle, transmission, and motor (front)

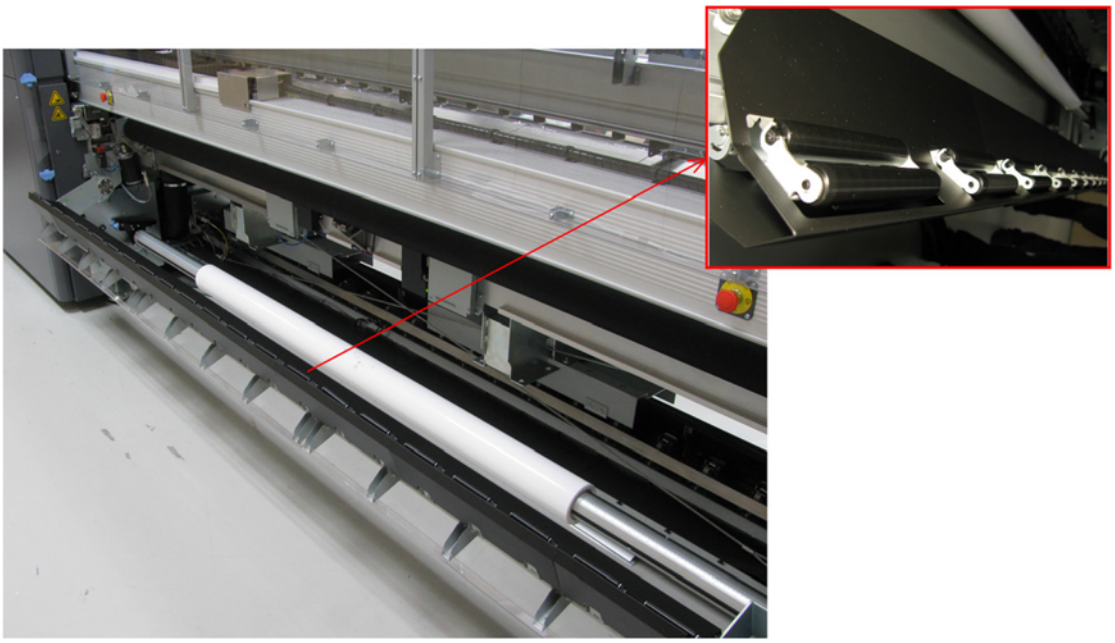
NOTE: Substrate input, output, and floor motors include a resistor in the electrical line used to dissipate energy during the braking process and ensure the integrity of the electrical components.



Theory of operation (roll-to-roll configuration)

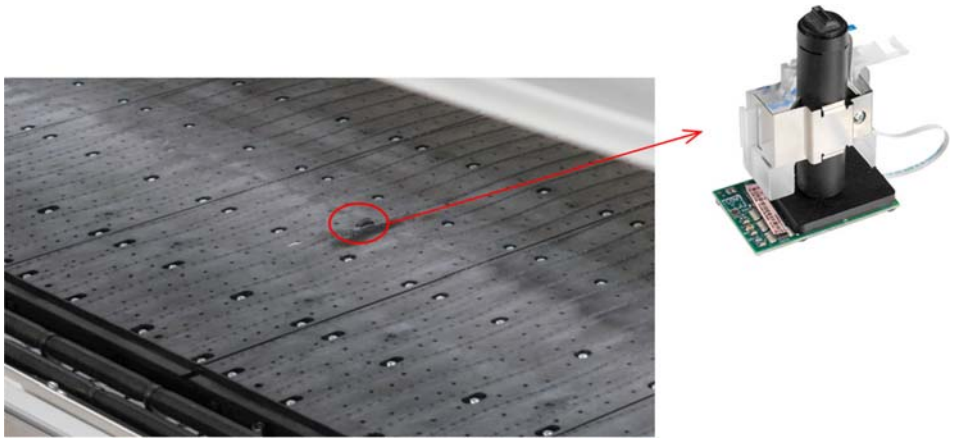


- The substrate roll is mounted on the rear spindle and is collected on the front spindle. Each of the spindles has its own transmission and motor.
- The substrate goes from the rear spindle over the drive roller, over the print platen, over the diverter, and onto the front spindle. The print platen is designed for minimal resistance against the substrate's advance, and includes suction holes for the vacuum.
- **Vacuum** is applied to keep the substrate flat on the print platen. There are different vacuum levels depending on the substrate used. The vacuum level is determined automatically during the loading of the substrate.
- The substrate is advanced by the motor of the **drive roller**. The drive roller system advances the substrate under control. The encoder disc and encoder PCA provide feedback on the substrate advance.
- There is a **pinch mechanism** to prevent the substrate from slipping against the drive roller. The pinch mechanism is composed of 22 covered pinch submodules, assembled along a beam also known as the loading table.



This beam is articulated to the side walls of the bottom structure and is manually actuated. The movement is assisted by a pair of torsion springs and two clamps fix the beam in the top position.

- The **substrate-advance sensor** is an optical sensor, located underneath the print platen. It takes pictures of the back of the substrate as it moves across the platen. These pictures evaluate the precision of the substrate movement. The evaluations result in a set of values that describe the substrate advance error and are used to make automatic precision adjustments while the substrate is being printed.



NOTE: The substrate-advance sensor cannot see the fibers on certain substrates, such as transparent substrate or very dark substrates. In these cases, the sensor is disabled automatically.

The image from the sensor is deformed under high temperature conditions and the relative distances measured are inexact, producing wrong substrate advances and print-quality problems such as banding or graininess.

The sensor's field of view is a rectangle of 5 × 1 mm aligned with the direction of substrate movement. The area of the picture used to perform image recognition on paper fibers is in the central 4 mm, so two identical fiducials are marked at the extremes of the field of view without impacting in the images used to recognize the substrate.

The glass on which the fiducials are printed has almost no thermal expansion and the fiducials keep their relative position.

By comparing the current fiducial distance with the initial one, the optics system thermal deformation is compensated.

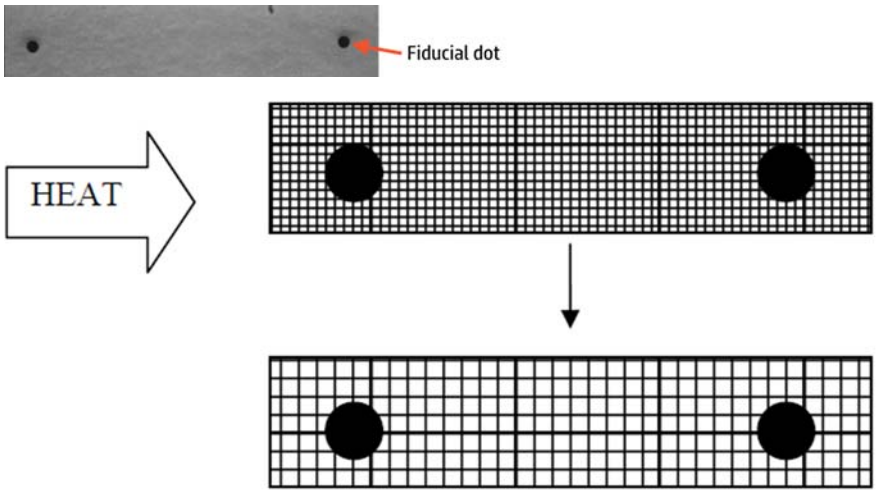


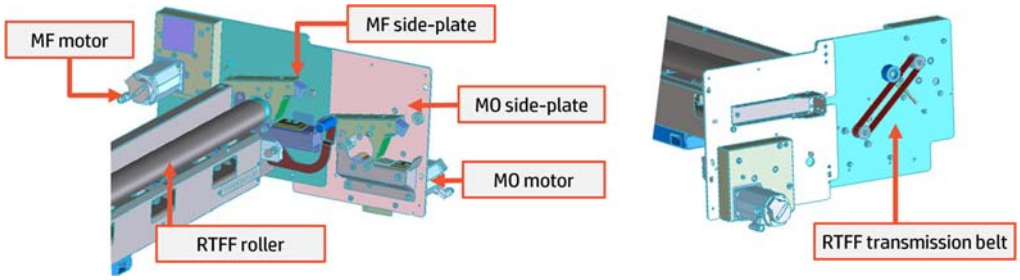
fig 1: thermal expansion effectively modifies the sensor measuring grid, but the fiducials keep their relative position on the image and allow measuring the magnification change

- There are 2 **diverters**: the upper and the lower diverter. The bottom plate is supported between both diverters. Diverters are composed of small plastic wheels that create a rolling surface effect. The diverters create an angle in the substrate path after the print zone. This bends the substrate and thus isolates possible wrinkles in the curing area from the print zone.



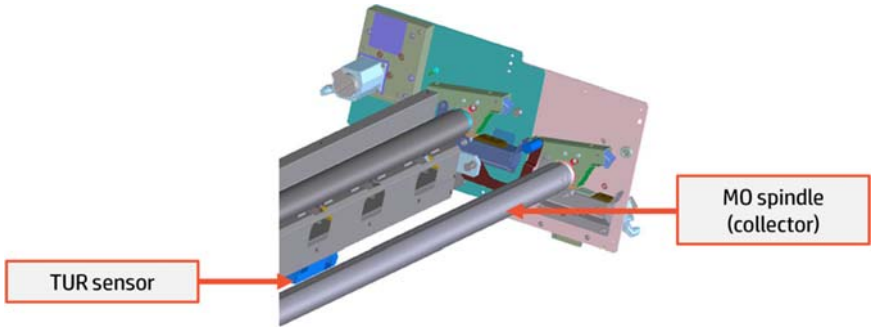
Roll-to-free-fall configurations

The roll-to-free-fall configuration allows the user to cut and collect the substrate as the printer prints dynamically. In this configuration, the substrate goes behind the roll-to-free-fall roller after passing the lower diverter (up to the diverter, the substrate path is exactly the same as in the roll-to-roll configuration). The roll-to-free-fall roller has its own pinch mechanism to keep the substrate under tension and to allow dynamic cutting.



The drive plate of the roll-to-free-fall system is located on the right side of the printer, besides the output side plate. The motor transmits the torque directly to the roll-to-free-fall roller via a transmission belt.

In addition to this, the output spindle can be used as a substrate collector. This is the roll-to-free-fall-to-collector configuration. There is a distance-detecting sensor that controls the output motor when the output spindle is working as a collector. It keeps the substrate loop within defined limits by means of an infrared measurement system.



The loop shaper is part of the substrate collection system and gives shape to the loop of substrate that hangs down from the substrate path. The length of the loop shaper can be changed by removing or adding sections in order to work with various substrate widths.

The roll-to-free-fall and roll-to-free-fall-to-collector configurations can be chosen in the Internal Print Server during the substrate loading process.

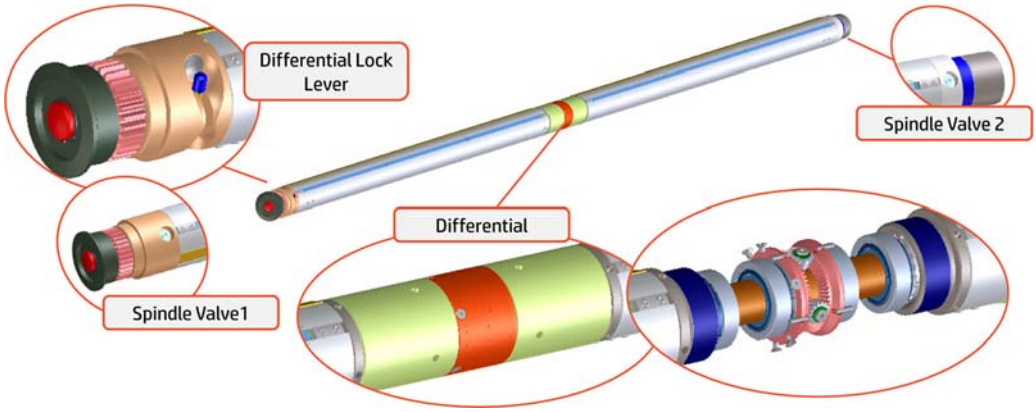
Dual roll

The use of dual-roll spindles enables the printer to print on two different rolls of substrate at the same time, significantly improving the productivity of the printer.

An integrated differential system is used to keep the same tension in both rolls of substrate mounted on the same spindle, regardless of the width or diameter of each roll.

However, for optimum results, it is recommended that both rolls have the same width and diameter.

To fix both cores to the spindle, two independent air cameras need to be pressurized via two air valves located at both ends of the spindle. For more information on dual-roll usage, see the user's guide.



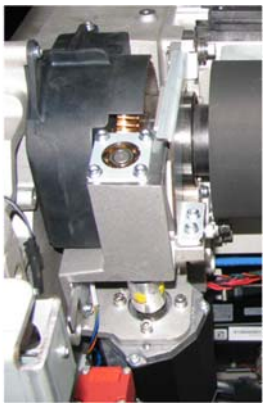
NOTE: Differential cannot be replaced independently!

NOTE: For Optimum IQ, the dual roll must be used in Roll to Roll Configuration Dual Roll in Roll to Free Fall configuration may not work (Output tensions cannot be compensated)

Subsystem power and control

Substrate path motors are brushless motors powered with 42 V coming directly from the dedicated connectors in the e-cabinet PCA.





There are also four dedicated data cables coming from the e-box interconnect PCA, one for each of the motors (Media Input, Media Output, Media Advance, Media Floor). Encoder cables go from the MI, MO and MF motors to the e-box interconnect PCA. The MA motor has a separate analog encoder disc and PCA to process the motor position. This analog encoder PCA is connected to the OMAS & VACUUM controller PCA.

See Figure 2-6 SAXmiMAmoMF block diagram on page 63.

The platen vacuum pump is powered with AC power coming from the e-cabinet PCA. Note that the AC power is not distributed through the e-cabinet PCA so the power cable comes from a connector in the e-cabinet back panel. The pump is controlled by the Vacuum PCA.

Power and data cables for the Vacuum Ctrl PCA come from the e-box interconnect PCA. The vaccum PCA and the OMAS PCA are connected with a power cable, and data cable and the Substrate Advance encoder signal. The OMAS sensor is connected to the OMAS PCA.

Note that although the OMAS & Vacuum PCA are 2 different boards, the service part is the same assembly.

See Figure 2-7 OMAS-Vacuum platen block diagram on page 64.

Impelling system

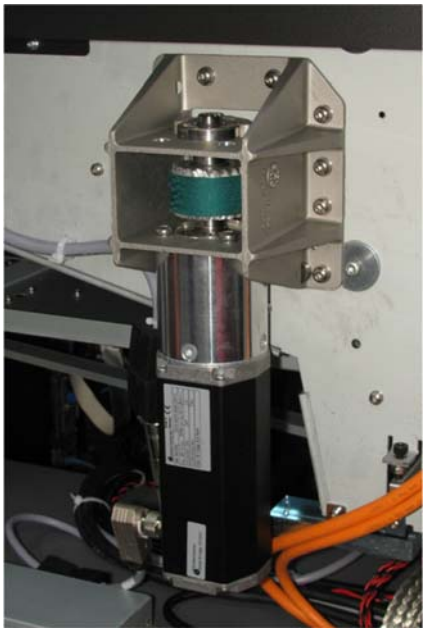
Functionality

The scan-axis impelling system is responsible for providing controlled motion to the carriage across the scan axis, for the purposes of printing and moving the printheads into a position where they can be serviced and maintained.

It also includes the delivery system, which is composed of the ink tubes and cables going through the chain to the carriage.

Components

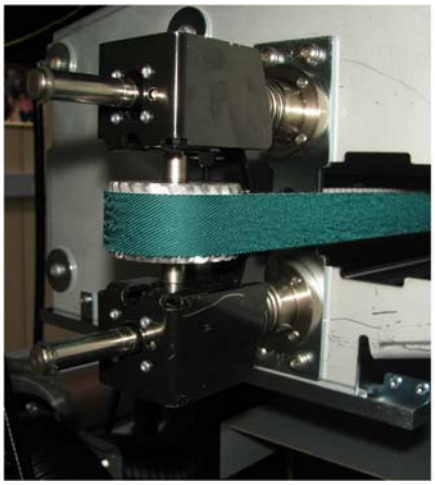
- The **scan-axis motor**, located on the right side of the printer, drives the belt that moves the carriage.

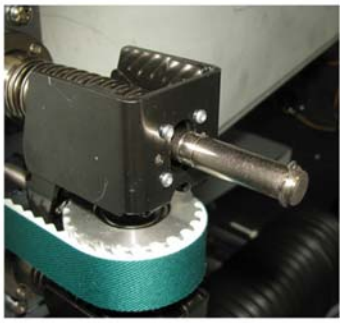


Like the substrate-path motors, the scan-axis motor includes a resistor in the electrical line used to dissipate energy during the braking process and ensure integrity of the electrical components.

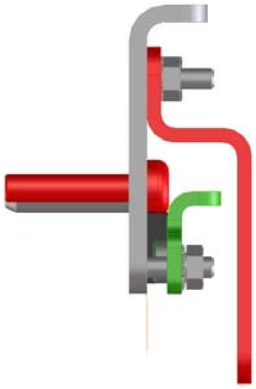
- The **scan-axis impelling belt** is connected to the carriage on both sides, and runs from the scan-axis motor to the scan-axis belt tensioner. The motor drives the belt, which in turn moves the carriage back and forth.

- The **scan-axis belt tensioner**, located on the left side of the printer, acts as a pulley for the scan-axis impelling belt opposite the motor. Two springs mounted between the pulley and scan-axis sideplate maintain tension on the belt. When the tensioner and belt length are correctly adjusted, two marks on the tensioner pins should be visible.

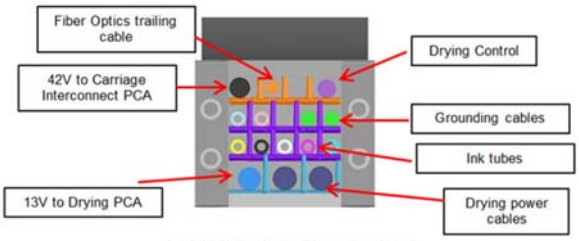




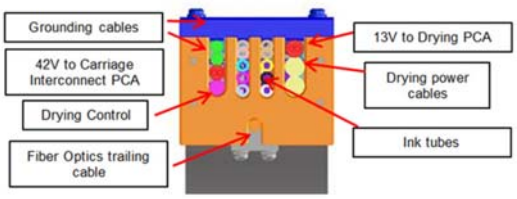
- The **scan-axis encoder strip** is a metal strip running the length of the scan axis. As the carriage is moved back and forth by the scan-axis impelling system, an encoder sensor mounted on the carriage reads the encoder to determine the speed and position of the carriage. This feedback is then used to control the scan-axis motor movements.



- The **carriage chain assembly** contains the 7 ink tubes and power and data cables that go to the carriage, including the fiber-optics cable to control the printheads. It is designed to allow a controlled bending ratio while the carriage moves back and forth and also protects the ink tubes and power/data lines housed inside. The following pictures show the cables/tubes distribution inside the chain and in the carriage clamp. Note that the fiber-optics cable is routed independently through the lower side of the clamp.



Cables/tubes distribution inside the chain



Cables/tubes distribution in the carriage clamp

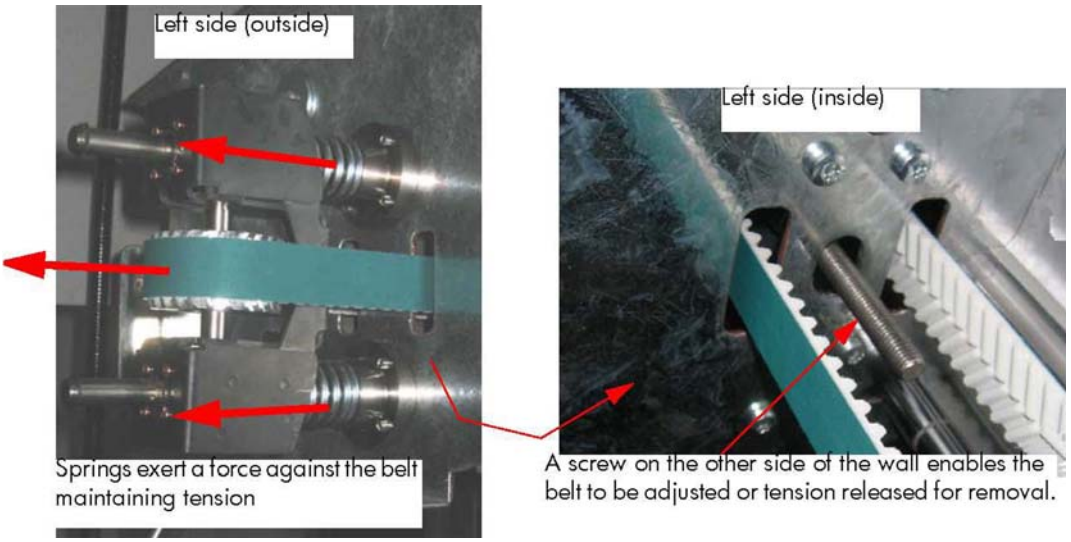
Theory of operation

Carriage movement

A belt is attached to each side of the carriage. The belt is driven by the scan-axis motor mounted on the right side of the printer. On the left side of the printer, the scan-axis belt tensioner acts as a pulley for the belt, using a simple spring mechanism to maintain tension on the belt.

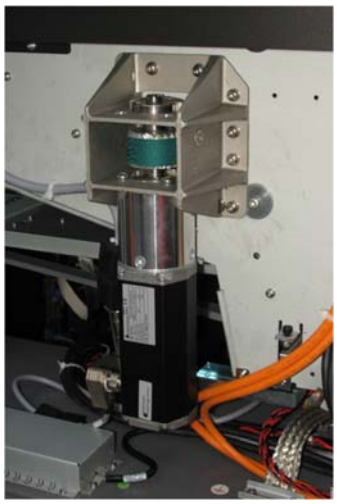
Belt tension

Force is applied to the belt by springs on the left side of the printer.



Subsystem power and control

The scan-axis motor is a brushless motor powered with 42 V coming directly from a dedicated connector in the e-cabinet PCA.



There is also a dedicated data cable coming from the e-box interconnect PCA. The scan axis encoder signal is connected to the printhead interconnect board 6, and then passes through other printhead boards until reaching the drying PCA. See Carriage on page 40 and Figure 2-6 SAXmiMAmoMF block diagram on page 63 for details.

Print to Paper Space (PPS)

Functionality

The scan-axis PPS system raises and lowers the complete top scan structure (including carriage, service station, and printhead cleaning system) in order to place it at different heights, keeping the correct alignment between the scan axis and the bottom structure before, during, and after these movements. When the scan structure is higher than the normal printing position, the PPS has to withstand its weight.

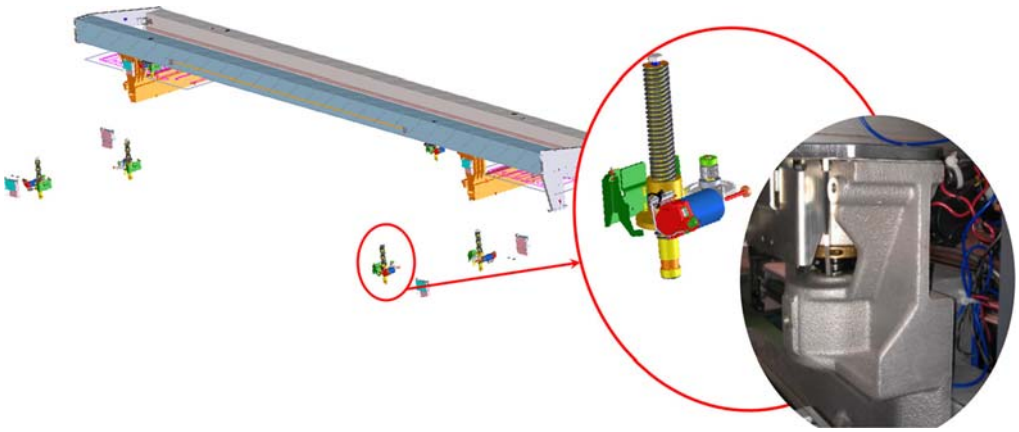
This changes the distance between the substrate path and the carriage assembly, allowing the user to load substrate and print on substrates of different thicknesses.

The PPS selectable positions are as follows:

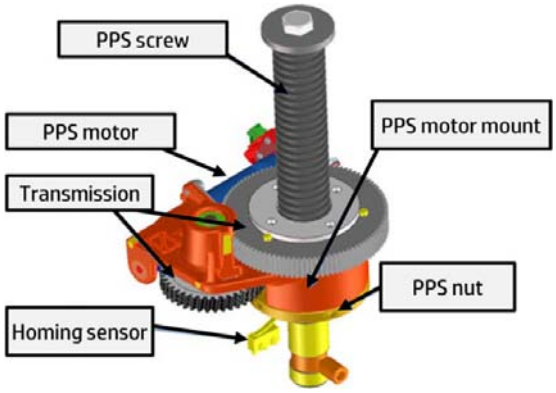
- **Normal printing position** is the nominal printing position and is calibrated and set at the manufacturing line at 2.3 mm (0.09 in). When the scan axis is in this position, the complete assembly is set onto the side walls.
- **Custom position** is used to print on the thicker substrate types. It is a customer-selectable setting.
- **Loading position** is the highest selectable position; it is used to load substrate. The default setting is 120 mm (4.7 in). This movement can be cancelled.

Components

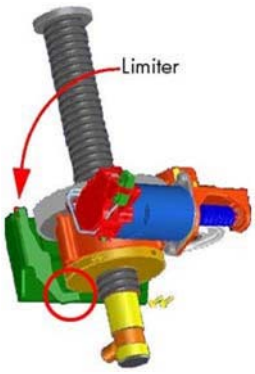
The PPS system is composed of four independent assemblies, which work together in order to raise and lower the scan axis of the printer.



- Each **motor and transmission assembly** is composed of the following parts:



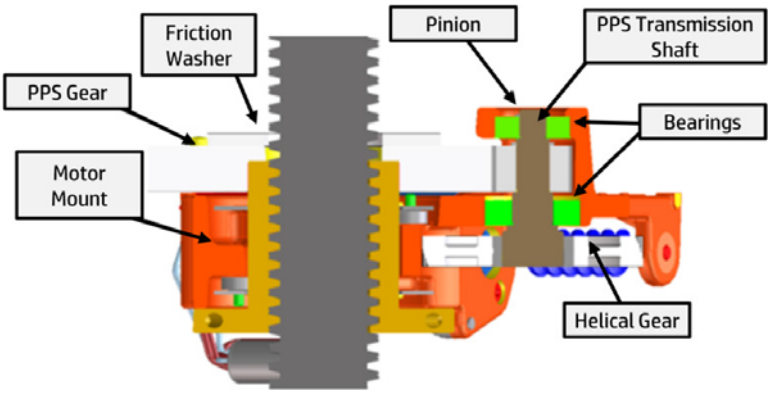
- The **PPS limiter** is a sheet metal part used as a mechanical limit to the PPS movement. If a problem appears regarding the PPS displacement, this part ensures that the system location will be inside a certain range, not allowing the PPS to move to an unsupported position. Thus, this part is attached to the bottom structure, and limits the lower movement of the PPS using the feature marked below, which interferes with the PPS motor mount before the system reaches an unsafe position.



- The **PPS home position switch** detects when its PPS unit has reached its lowest position, also known as the homing position. The switches are attached to the four side walls of the printer.

Theory of operation

The movement is transferred to the PPS nut; which, rotating around the PPS screw, raises and lowers the top structure of the machine. The transmission system of the PPS is formed by a helical gear, a pinion, and the PPS gear.



The homing of the system (homing sensors activated) is the movement that releases the system modules from the scan-axis structure load. It is made to allow the system to pass through all the backlash distance downwards.

When the PPS system raises the system from homing position, it travels through the backlash area without touching the top scan structure. It starts to move the module without load but with the backlash eliminated. Then there is a contact between each module and the PPS link plate (scan bottom area). This is the engage position, which represents the absolute zero for the motor encoder and fixes the zero of the Z map for every module.

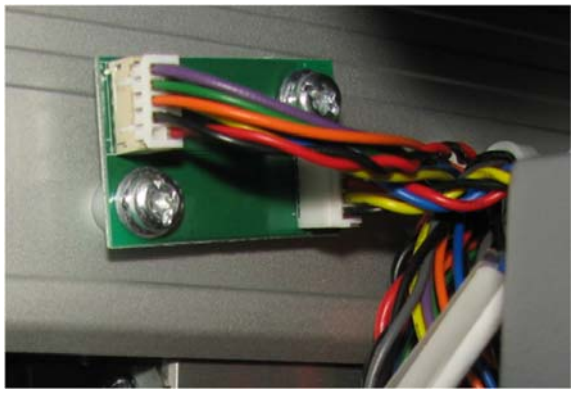
The engage position is the normal printing position. Upwards movements to the higher printing positions can be performed accurately. Downwards movements from custom or loading position to a lower printing position first need to do a system rehoming to align the system and to eliminate backslash uncertainties.

Subsystem power and control

Each PPS motor has its own Motor Drive PCA. The subsystem is powered with 32 V coming from the e-cabinet PCA.



The power cable coming from the e-cabinet PCA is then split into different branches to feed the four subassemblies. There is a data cable coming from the e-box Interconnect PCA to control the motors movement. This cable arrives to the first Motor Drive PCA and the rest of the PCAs are connected in series. Each motor encoder signal is sent to a Linear to Differential encoder PCA, all of them connected to its corresponding Motor Drive PCA. The aim of the linear to differential encoder PCA is to increase the encoder signal robustness and eliminate the electrical noise.



See Figure 2-6 SAXmiMAmoMF block diagram on page 63.

Ink system

Functionality

The Ink Supply Module (ISM) is located on the left side of the printer and delivers a continuous supply of ink to the printheads. It tracks and determines when an ink cartridge needs to be replaced. The system is designed to allow ink cartridge replacement while printing (hot swap).

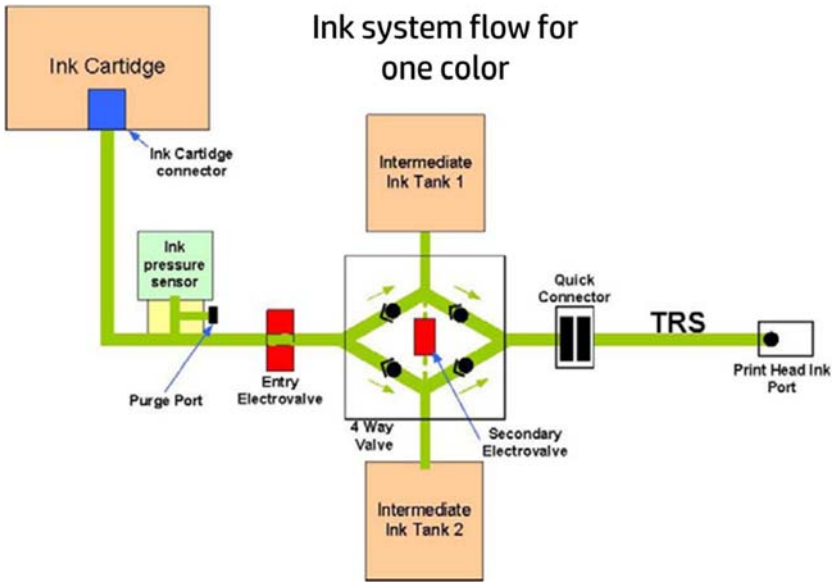
Components

- Ink cartridges
- Printheads
- **TRS**
- The fourteen **intermediate ink tanks** (two for each color), located at the front side of the ink system compartment.
- The **air circuit module**, located on the first tray from the top, provides the air pressure needed to pressurize the intermediate ink tanks and send ink to the printheads.
- The two **air pressure bottles** prevent cross-contamination of ink when a broken bag occurs inside an intermediate ink tank. Each bottle also works as a cushion device for the air pressurization system.
- The **ink circuit module**, located on the lower tray, manages the flow of ink using a complex set of valves.
- There are three **ink sensor boards**, each with three ink pressure sensors. Each board comes calibrated from the factory with unique values. New service parts require a service procedure to enter calibration values manually.
- The **ink cartridge connector set** connects the ink system to the ink cartridges. The ink connectors also read the acumen data from the cartridges, and can detect whether the connector is correctly inserted.
- There are two **ISS main boards** controllling the entire ink system.
- Two **ink leakage sensors**, located in the lower tray.

Theory of operation

Ink supply hot swap

The printer allows the user to change the ink cartridge while the printer is printing, as it is actually using the ink stored in the intermediate tanks.



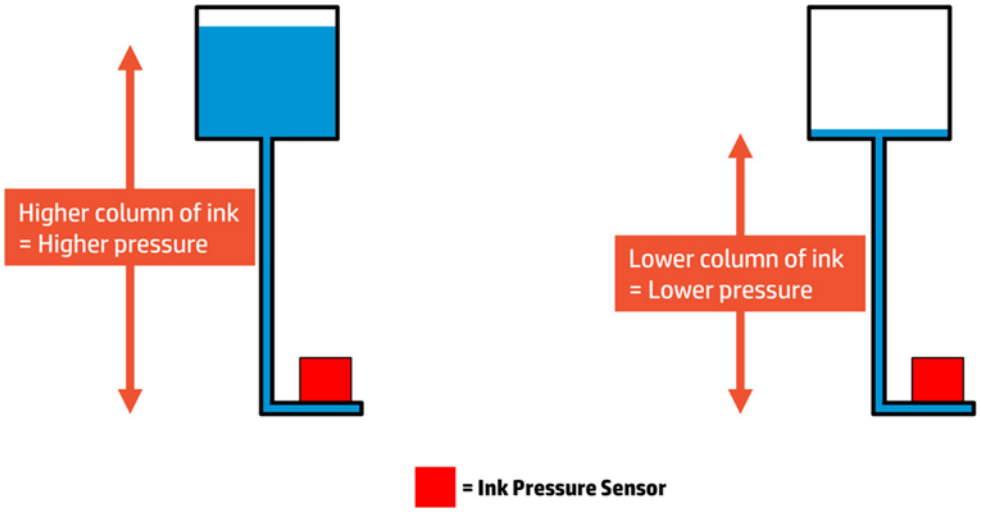
Intermediate tank set swap

While one of the intermediate tanks is refilling, the other intermediate tank is pressurized to provide the correct ink flow to the printheads.

Once the quantity of ink falls below a certain threshold, the printer calculates the amount of ink fired from the printheads and resupplies the intermediate tank with ink, while at the same time swapping the amount of pressurization supplying ink from the other set of intermediate tanks.

Low ink cartridge detection

The pressure sensor detects the pressure of the column of ink above. When the column is low (empty cartridge), the sensor triggers the empty condition. The pressure of a fluid mainly depends on the height of the column of fluid.



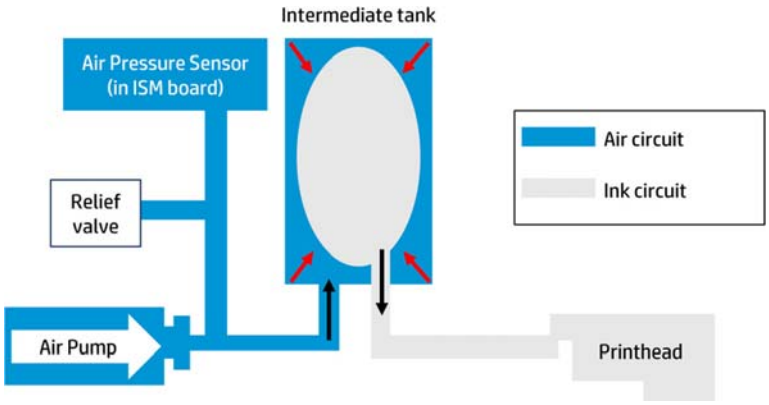
Control of ink to the intermediate tanks

Once the main electrovalves open, the ink falls into the intermediate tanks by gravity. When an intermediate tank is full, the ink flow stops, which generates a pressure difference that is detected by the pressure sensor.

Air system functionality: the intermediate tanks push the ink to the printheads

The system has two air pumps for each set of intermediate tanks (four in total). The air pressure is distributed using an air bottle (one for each tank set) with air tubes going out to the tanks.

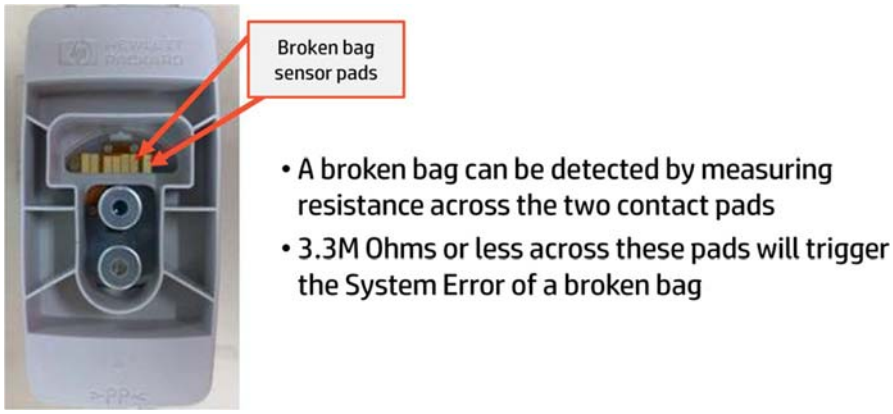
Each tank has a bag inside that holds the ink. In order to send the ink to the printheads, the air pumps push air into the enclosed space of the tanks around the bags to pressurize them and force ink out. While one tank sends ink to the printheads, the other is being refilled. In this way, continuous printing is possible while changing ink cartridges.



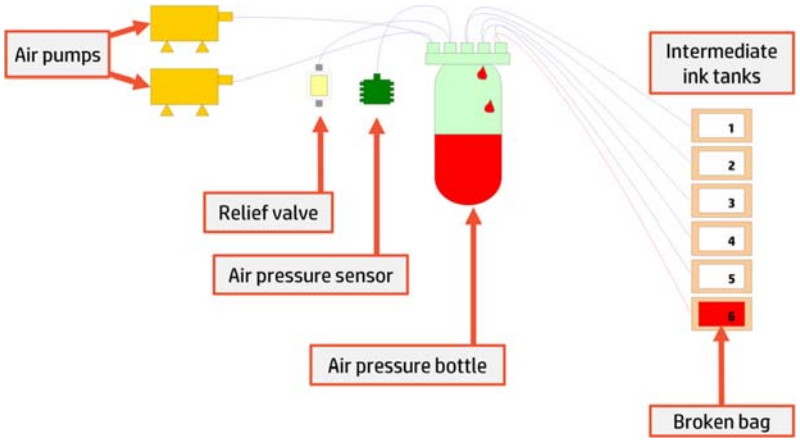
The air pressure is constantly monitored by an air pressure sensor located on the ISS PCAs. The system is able to depressurize with the relief valves located in the air system.

Intermediate tank broken bag detection

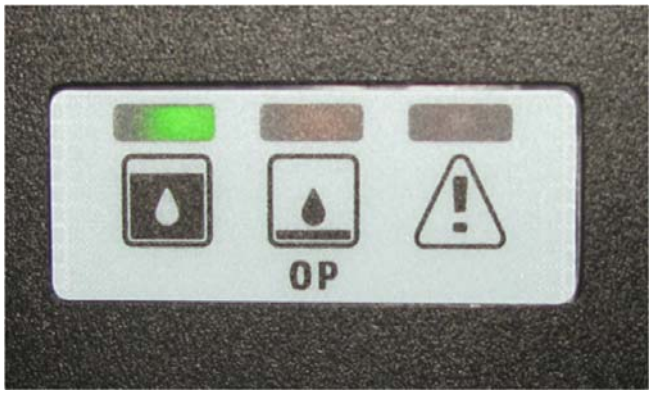
In the event of a broken bag in an intermediate ink tank, the ink system uses the air pressure bottle to prevent cross-contamination of inks.



When a broken bag is detected by the sensor located inside the intermediate ink tank, the relief valve opens to release the air pressure of the system. The ink goes at maximum flow and falls into the bottom of the bottle, preventing cross-contamination of colors.



Ink cartridge LED indicators



- **Red:** Connector connected to the cartridge, but communication problem with the Acumen. Cannot use the cartridge.
- **Yellow blinking:** Ink cartridge empty.
- **Green blinking:** Filling intermediate ink tank or reading Acumen. Do not disconnect!
- **Green:** Functioning correctly, no problem.
- **No LED:** Connector not connected.

Subsystem power and control

The ISM is powered with 24 V coming from the e-cabinet PCA. The power cables arrives at the ISM connection panel, from which the power cable is split into two branches going to the two different ISM PCA boards. The data cable comes from the e-box, interconnect PCA to the ISM connection panel, and then a LAN cable goes to the ISM PCA 1. From there, both PCAs are connected in series.

See Figure 2-9 ISM block diagram on page 66.

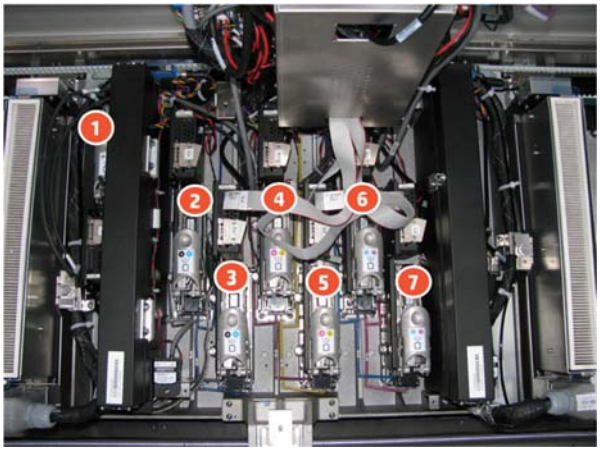
Carriage

Functionality

The carriage performs the actual printing on the substrate. It contains the printheads, together with the printhead control electronics, the printhead primer system, two arrays of aerosol fans, the SAX encoder, the line sensor, the spectrophotometer, and the crash sensor. The drying modules are also assembled at both sides of the carriage. For more details about the drying system, see Drying on page 52.

Components

The picture below shows a top view of the carriage with its components. Note how the printheads are numbered by the printer firmware. All related system errors use these numbers.



Theory of operation and component interconnection

Printheads

The printheads fire ink onto the substrate to perform the actual print. Each print is controlled by the dedicated carriage printhead interconnect PCA.

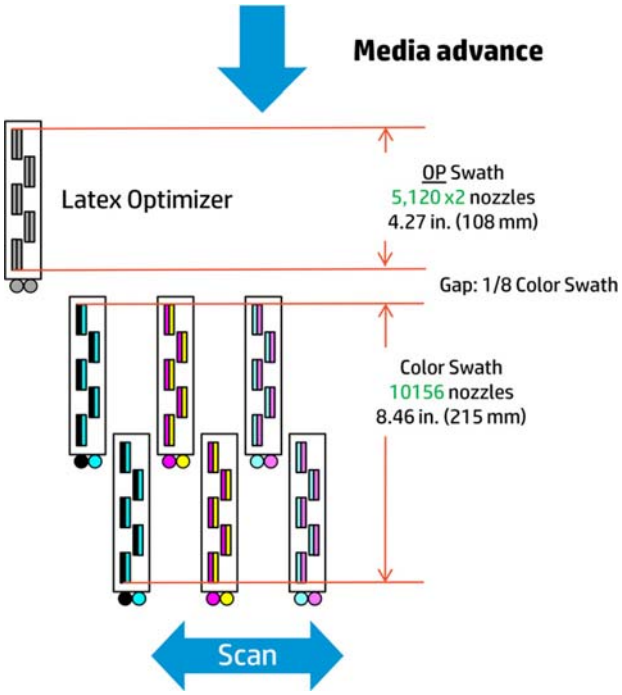
- Each printhead contains two colors.
- Each printhead prints a maximum swath width of 108 mm (4.25 in).
- The printheads have five dies, and each die has 2112 nozzles (10,560 total nozzles per printhead). The dies are divided into two arrays of nozzles (1056 nozzles per array, one for each color).





There are two arrays of color printheads, six printheads in total, two of each type (C/K, M/Y, lc/lm). There is a seventh printhead for the optimizer, which is fired before the colored inks, which has multiple benefits:

- It helps to achieve print-quality requirements at a high throughput.
- It allows lower temperature, which in turn allows increased substrate versatility.
- It helps to achieve color consistency when tiling.



Primer assembly

Each printhead houses a primer assembly that is responsible for squeezing ink out of the printhead nozzles to remove clogging and maintain printhead health.



Each primer assembly includes an air pump that pushes air into a bag inside the printhead regulator. When this bag is inflated, the ink channel is opened, the ink pressure received in the printhead pushes the ink out of printhead through the nozzles. This is called ‘priming’.

Carriage interconnect boards





There are two carriage interconnect boards located in the carriage tower. They receive 42 V from the e-cabinet and 12 V from the drying PCAs. They are responsible for:

- Distributing the required power to all the printhead interconnect boards (42 V).
- Powering the primer pumps (3V3 generated by the board). The upper carriage interconnect powers the primer pump for printheads 1, 2, 4, and 6. The lower one does so for printheads 3, 5, and 7.
- Powering the spectrophotometer shutter mechanism (12 V). Done by the upper carriage interconnect board.

Printhead interconnect boards



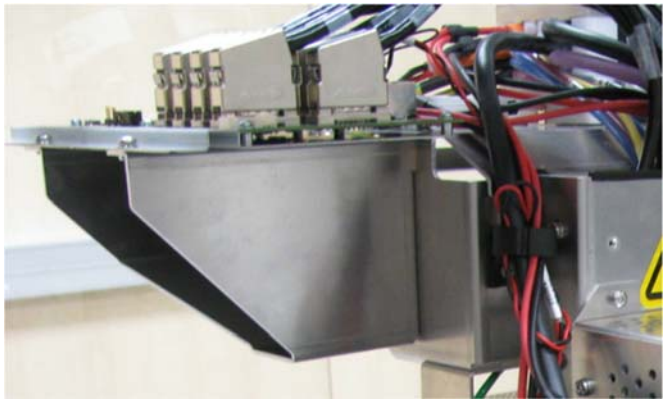
There are seven printhead interconnect boards, one for each printhead. Each one receives 42 V from the carriage interconnect boards. They are responsible for:

- Generating the required voltage for each printhead.
- Sending control and printing data to printheads.
- Processing the line sensor signal (printhead interconnect 3).
- Controlling the spectrophotometer sensor and shutter mechanism. This is done by printhead interconnects 3 and 5 respectively, through the upper carriage interconnect board.
- Controlling the printhead priming. Printhead interconnect 5 controls priming for printheads 1, 2, 4, 6; printhead interconnect 7 controls priming for printheads 3, 5, 7.
- The scan-axis encoder signal passes through printhead interconnect 6→4→2→1 and then goes to the drying PCAs.

The are two types of printhead interconnect PCA, one for the color printheads and a different one for the Optimizer printhead.

The crash sensor and aerosol system are controlled by the drying PCAs.

Carriage fiber-optics PCA



This PCA demultiplexes the printing data coming from the fiber-optics and sends the data to each printhead interconnect board.

It receives 12 V from the upper drying PCA and it is connected to the fiber-optics coming from the box through the dynamic chain.

Spectrophotometer



The spectrophotometer is used to perform color calibrations. There is a control board embedded within the spectrophotometer mechanism that cannot be replaced independently.

Line sensor



The line sensor is used to:

- Detect the edge of the substrate.
- Detect printed line positions in order to perform various calibrations:

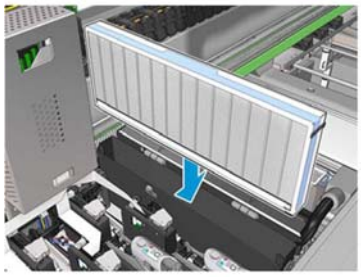
- Automatic printhead alignment
- Automatic substrate advance calibration
- Service station calibration

Carriage encoder

The carriage encoder set reads the scan-axis encoder strip to determine the position of the carriage on the scan axis. The scan-axis encoder signal passes through printhead interconnects 6→4→2→1 and then goes to the drying PCAs.

Aerosol fan assemblies and aerosol filters

There are two arrays of fans at both sides of the printheads. The fans and filters remove aerosol (ink particles) from the print path to maintain good print quality and component health. The aerosol system is controlled and powered by the drying PCAs.

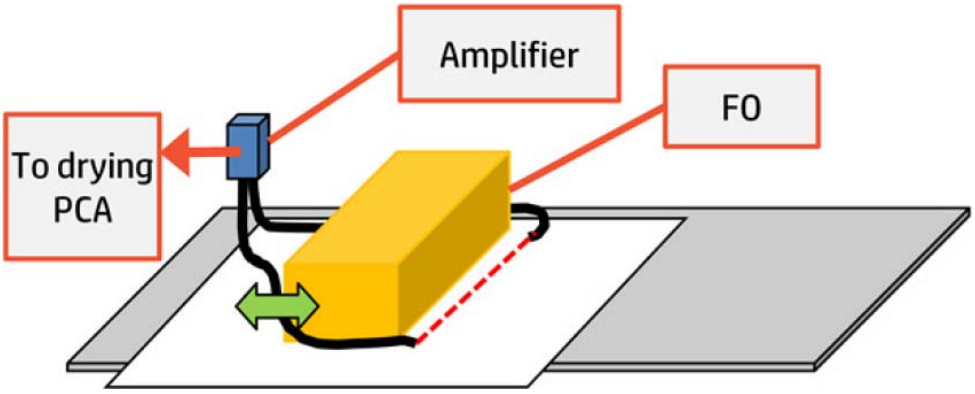


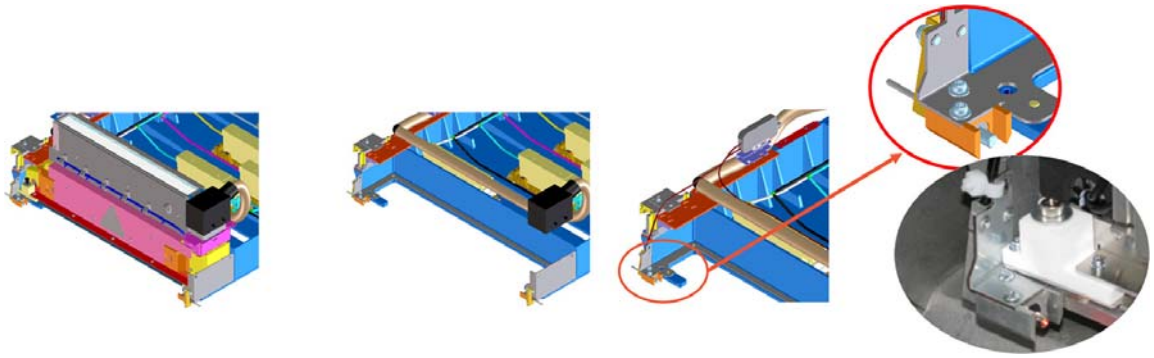


Crash sensor

Increase printer reliability and safety in the case of a print platen substrate crash. The working principle is as follows:

1. There are two fiber-optic light beams, one at each carriage side.
2. The sensor triggers an alarm signal if something obstructs the light beam.
3. On the alarm signal, the control electronics switch off the heater lamps and stop the carriage.





Carriage oiling foam retainers

The carriage oiling foams lubricate the rods and bushings that support the carriage. There are two foams located at the front and rear of the carriage.

Subsystem power and control

As the carriage is one of the main processing centers in the printer and contains the electronics for several subsystems, all the above explanations refer to the carriage electric and electronic interactions.

See the subsystem block diagrams for more details: Figure 2-10 Carriage print block diagram on page 67 and Figure 2-11 Carriage AR and crash sensor block diagram on page 68.

Service station: capping and drop detection

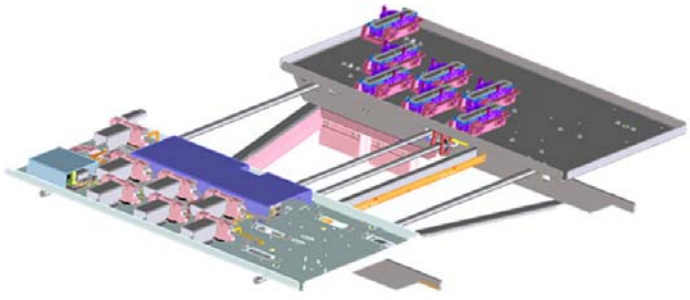
Functionality

The service station is an assembly located on the right side of the printer. It is composed of two independent platforms, the capping station platform and the drop detection platform. Each platform has its own motor and transmision and is operated independently.

Capping is the process of sealing the printheads while they are not in use, to keep the printhead's nozzles in good condition.

Drop detection identifies possibly blocked nozzles, allowing the printer to apply the appropriate algorithms to compensate and maintain print quality.

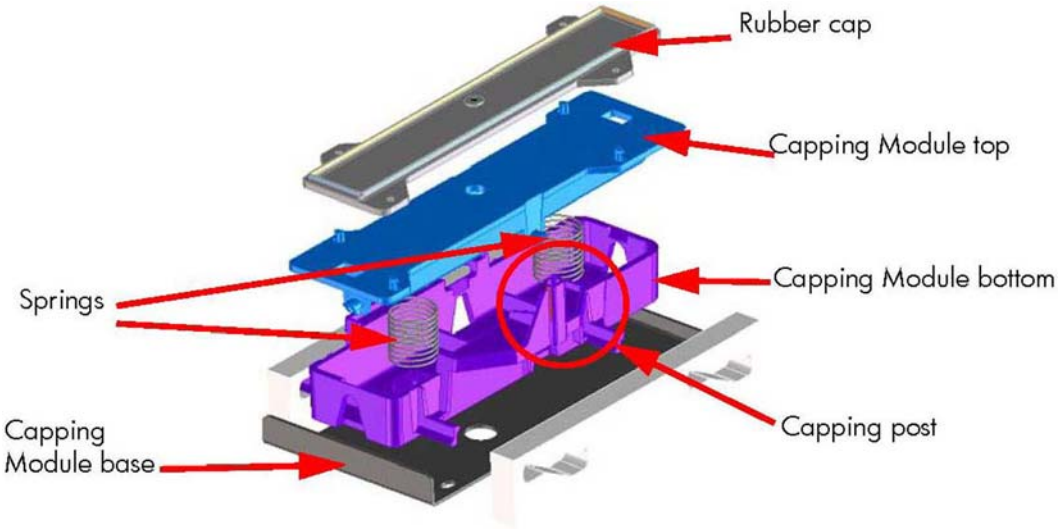
Components





Capping station platform

- The **capping station motor** is mounted on the rear side of the service station chassis and drives the screw that moves the capping station. It is controlled by an independent motor drive PCA.
- The **capping station screw assembly** is rotated by the capping station motor. The assembly includes a nut and pin system which is inserted into the platform.
- The **printhead capping module** is the mechanical part that seals the printheads.



Drop-detector platform

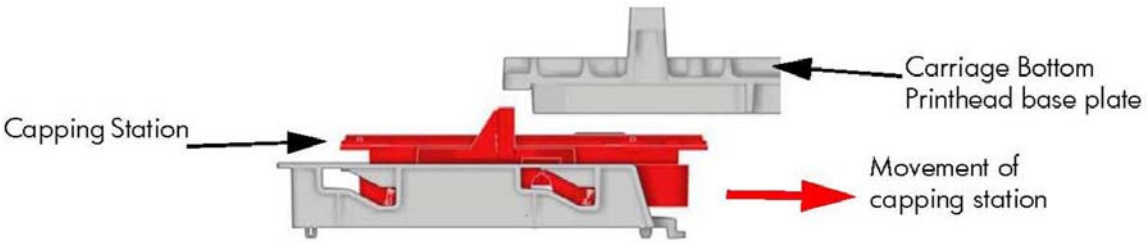
- The **drop-detector platform motor** is mounted on the rear side of the service station chassis and drives the screw that moves the drop-detector platform. It is controlled by an independent motor drive PCA.
- The **drop-detector platform screw assembly** rotates by the action of the capping station motor. The assembly includes a nut and pin system which is inserted into the platform.
- There is one **drop-detector sensor** for each printhead, each of which is connected to a Drop Detector PCA. Each Drop Detector PCA is directly connected to the e-box engine PCAs
- The **encoder strip and sensor** are used during drop detection to ensure that the drops of ink are fired in the correct place. The strip is located under the platform and from side to side of the drop-detector platform.

Theory of operation

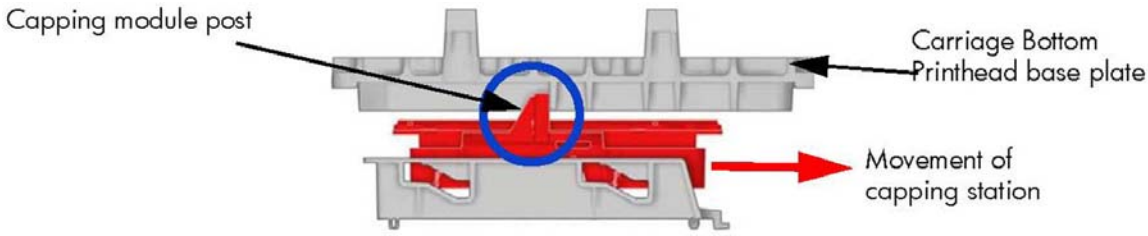
The capping procedure

The printheads must be sealed when they are not printing to prevent ink from drying and clogging the nozzles. The capping procedure is as follows:

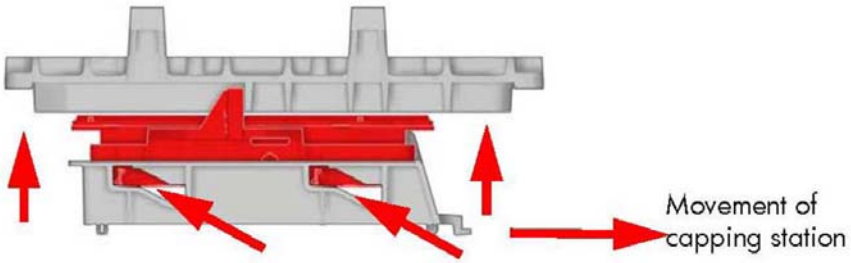
1. The printheads are capped by moving the capping station into position underneath the carriage.



2. The capping station moves until the capping module posts come into contact with the carriage bottom base plate, underneath the printheads.



3. The upper part of the capping station rises into position (shown in red below), pushing the rubber caps up to seal the printheads. The capping station is forced upwards, capping the printheads.



4. The service station continues to move, pushing the capping head up to seal the printheads.

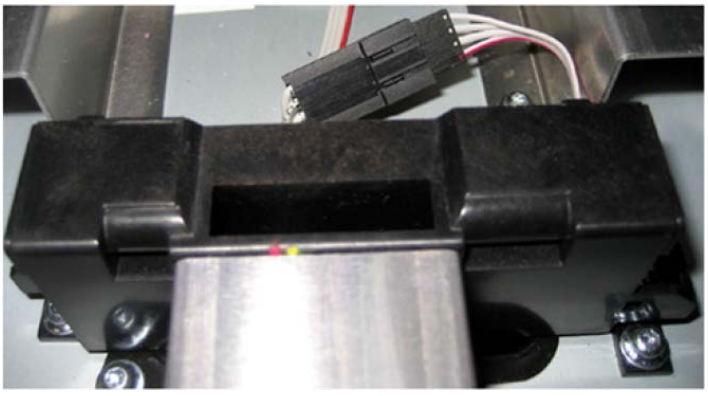
NOTE: While the printer is turned off and the printheads are in the capped position, it is not possible to move the carriage. To uncap the printheads manually, rotate the platform screw with a screwdriver; the screw can be accessed from the front of the service station.

NOTE: If the carriage is moved in capped position, the capping post may become damaged and the capping module will be unable to perform the capping procedure on the printhead. Print quality and printhead life will be impaired.

NOTE: To return the carriage to the capping position after work in diagnostic mode, reboot the printer in normal mode.

Drop detection procedure

The drop detection platform system contains seven drop-detector modules, one for each printhead. Each drop detector has a window with a sender LED on one side and a receiver on the other.

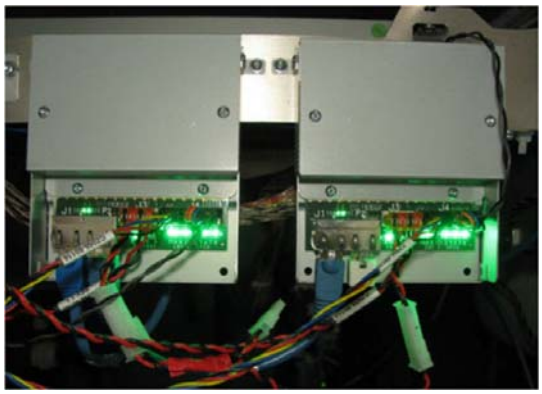


The printer sequentially fires drops of ink from each nozzle into the window, through the signal path. This generates a disturbance in the signal that detects whether the nozzle was fired correctly.

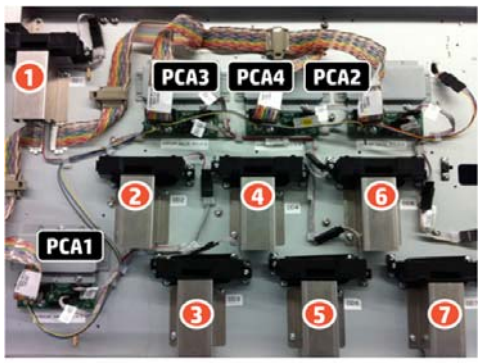
Any nozzles that did not fire correctly are then disabled, allowing the printer to compensate and maintain print quality by using the other nozzles. This is the error-hiding algorithm.

Subsystem power and control

The service station motors receive 32 V from the e-cabinet PCA. Each motor is controlled by a dedicated Motor Drive PCA. The data cable comes from the e-box, interconnect PCA to the capping station motor and from there, both PCAs are connected in series.



There are 4 drop-detector PCAs. Each one has a dedicated flat cable coming from the e-box interconnect PCA. Each PCA controls 2 drop-detector sensors, except the DD PCA 4, that controls only the drop detection for the optimizer printhead.



* PCA covers removed in the picture

The linear encoder signal goes from the DD PCA1 to the rest of the DD PCAs.

See Figure 2-12 SVS block diagram on page 69.

Printhead cleaning system

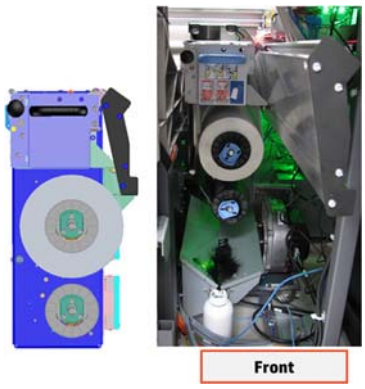
Functionality

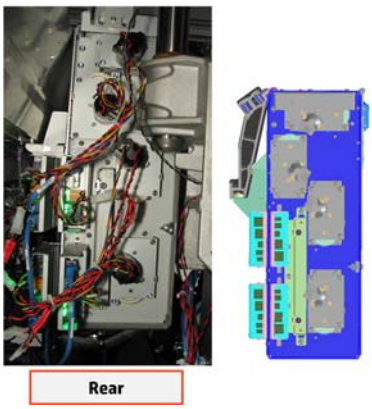
The printhead cleaning system is designed to clean the printheads and absorb ink during the priming and ink-spitting procedures. The subsystem absorbs ink and cleans the printheads with a cloth roll that is impregnated with non-volatile PEG liquid.

This roll is moved from an input (top roller) to an output collecting roller (bottom roller), while the cloth is impelled by the advance of the delivery system pressed with the pinch roll, in a similar way to the substrate path.

There is a rubber blade that moves up and down, lifting the cleaner roll to ensure that the printheads make proper contact with the cloth.

Components





- The **input roll** holds the new printhead cleaner roll before it is fed through the roll path. The input roll is powered by its own motor to maintain uniform tension, and its encoder helps to calculate the remaining amount of cloth on the roll.

  The cleaner roll cores are easily fastened into place and removed using the blue lock at the cap holder.

- The **output roll** receives the used printhead cleaner roll. The output roll is also powered by its own motor to maintain uniform tension, and its encoder helps to calculate the remaining amount of cloth on the input roll.

  The cleaner roll cores are easily fastened into place and removed using the blue lock at the cap holder.

- The printhead cleaner roll is moved through the roll path by the **drive roller**. The **pinchwheel** mechanism presses the roll against the drive roller to ensure good contact. The drive roller includes teeth that grip the roll to help pull it through the path. The drive roller is powered by the advance motor through a gearbox system.

  The pinchwheel mechanism must be opened and closed in order to load and unload a roll. It is important to ensure that the pinchwheels are correctly closed, otherwise the printer may report false substrate jams and/or printhead crashes.

- The **rubber wiper** moves up and down, lifting the cleaner roll to ensure that the printheads make proper contact with the cloth.

The up/down motion has two main positions. The engage position is the upper position calibrated for correct printhead cleaning operation, and the disengage position is the lower resting position of the rubber wiper.

- Each of the four motor systems has its own PCBoard to control its behavior and movement:
  - Advance motor and advance motor encoder
  - Input motor and input motor encoder
  - Output motor and output motor encoder
  - Engage motor and engage motor encoder

Theory of operation

Printhead wipe

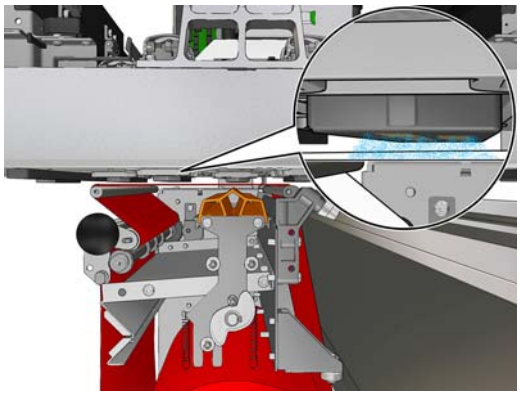
A printhead wipe is a printhead cleaning procedure in which the rubber wiper is set to the correct height, and the carriage passes over the printhead cleaner, from right to left, without stopping (but making contact and being cleaned).

This routine can be done before or after printing, and also while printing:

- If an image printing is larger than 152 cm (60 in), a dynamic wipe is performed every two swaths.
- If the image is smaller than that, a dynamic wipe is performed every four swaths.

When printing, this routine is performed every two swaths: that is, every time the carriage is over the cleaning assembly.

Spitting

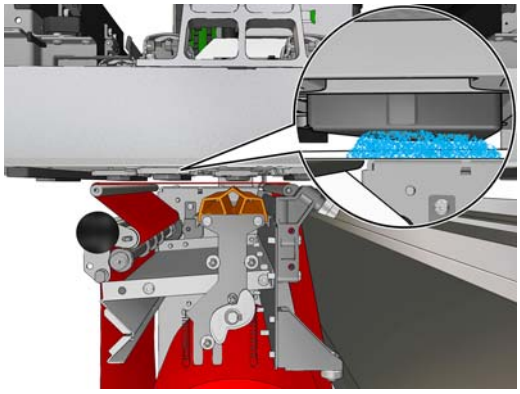


In order to ensure the good health of the nozzles, the carriage is moved over the printhead cleaning assembly, and the system performs a spitting operation in which all the nozzles spit a small amount of ink over the surface of the wiping cloth. There are two spitting modes:

One spit is performed:

- On the right, every time the carriage is over the cleaning assembly, after wiping.
- On the left, every time the carriage is over the left spitoon

Priming



Priming is performed in order to ensure good nozzle health and to prevent the nozzles from becoming blocked with dried ink. Ink floods out of the printhead onto the wiper cloth. This procedure can be performed by selecting the option in the Internal Print Server.

The priming procedure is also performed on new printheads once they are installed, or when a hard cleaning is launched from the Internal Print Server.

Subsystem power and control

The printhead cleaning roll subsystem is powered with 32 V coming from the e-cabinet PCA. There is a LAN data cable that comes from the e-box interconnect PCA to the first motor drive PCA and from there the four PCAs are connected in series.

See Figure 2-13 Printhead cleaning block diagram on page 70.

Drying

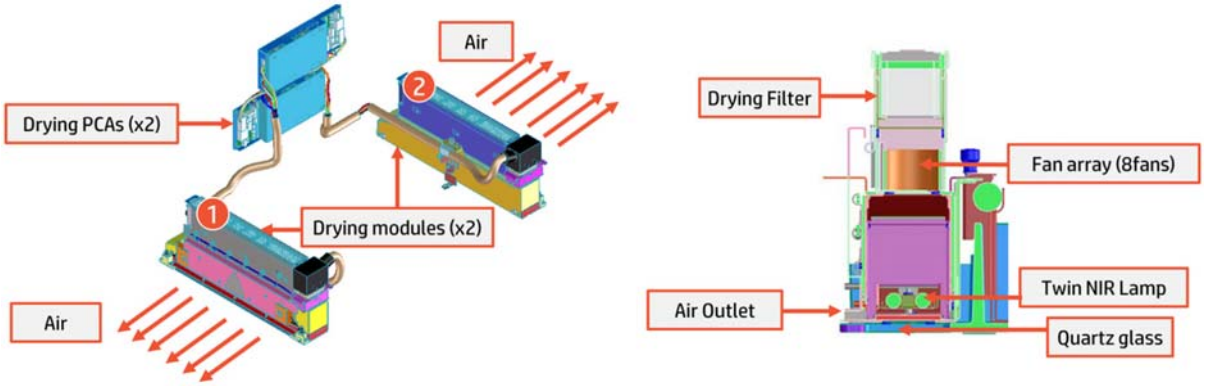
Functionality

The drying system provides controlled heat to the substrate while it is over the print zone, to evaporate water from the ink vehicle. Together with the latex optimizer, this heat helps in the dot fixing to prevent bleed and coalescence.

This heat is provided by means of two infrared lamps located on each side of the carriage.

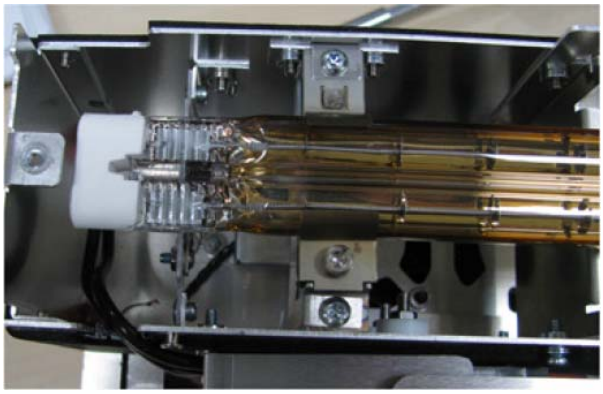
Components

The drying system is composed of two symmetrical modules, one on each side of the carriage.



Each drying module has the following components:

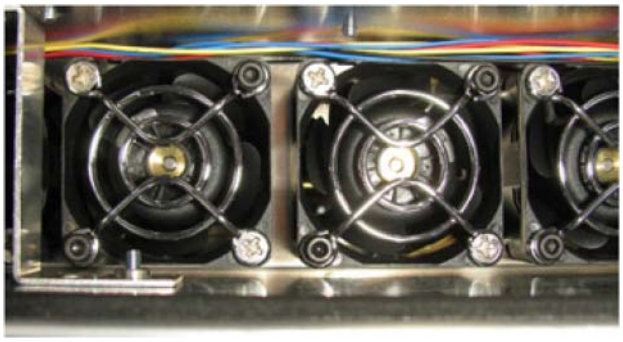
- 1 infrared lamp



- 1 filter



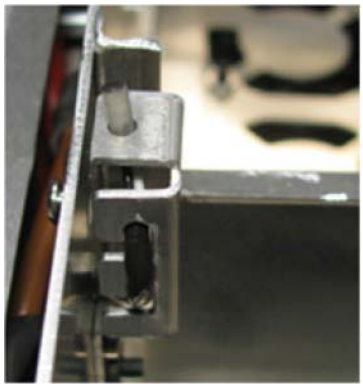
- 1 array of 8 fans



- 1 quartz glass



- 2 temperature sensors : one after the fans (to measure cold air) and other in the hot air outlet.



Each drying module is controlled though a dedicated drying PCA located at the carriage tower. Two AC power cables come from the e-cabinet AC converters to the drying PCAs (through the dynamic chain) to power each of the modules.

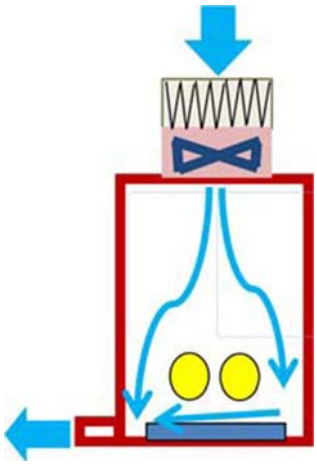
Theory of operation

The substrate over the print platen is irradiated by the infrared lamps, whose power level is regulated in open-loop mode. Each one of the modules is controlled independently and the PWM level can be set individually.

The two temperature sensors are used only for monitoring; there is no control of lamp operating temperature.

Each lamp is refrigerated by a set of eight fans, whose power control and diagnosis is common for the complete array. The fans are kept on in case of emergency shutdown or after the lamp switching off, to avoid module overheating. Apart from this, there is a safety thermostat to stop the lamp in case of temperature error or fan failure.

The quartz glass is transparent to lamp radiation and allows redirecting the fans airflow to be evacuated through the air outlet, following a direction parallel to the substrate. Besides, it helps to protect the lamp chamber from the aerosol generated in the print platen.



Subsystem power and control

All the power and data cables for the drying subsystem come from the e-box and e-cabinet through the dynamic chain. The drying lamps are powered with AC power coming from the AC/AC converters. 2AC cables, one from each module, connect the AC converters with the drying PCAs. The drying fans are power with 12V coming from the e-cabinet PCA. The cable is divided in 2 branches to power both drying PCAs.

The Control cable comes from the e-box Interconnect PCA to the Upper Drying PCA. From there, both Drying PCAs are connected in series.

From each Drying PCA a single harness containing the AC, DC and control cable connect with each of the modules.

See Figure 2-14 Carriage drying block diagram on page 71.

Curing

Functionality

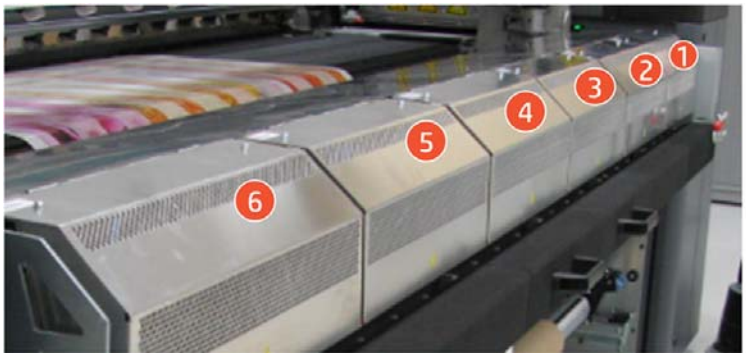
The curing system provides controlled heat and airflow to the ink and substrate after the print zone. This causes the latex particles to coalesce and form a continuous film on the substrate. Ink pigments are encapsulated inside this film.

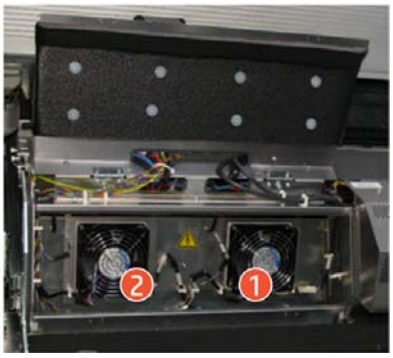
The complete module can be moved horizontally to allow substrate loading. Two latches fix the module in the printing position.

The lower beam can be also considered as part of the vapor removal system as it collects vapors coming from curing process that condense into a waste bottle located inside the ISM. For more details of the vapor removal system, see the vapor removal section.

Components

The curing system is composed of 6 base modules.



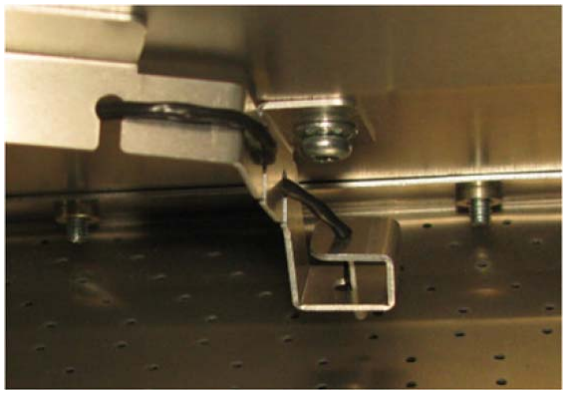


Each base module has the following components:

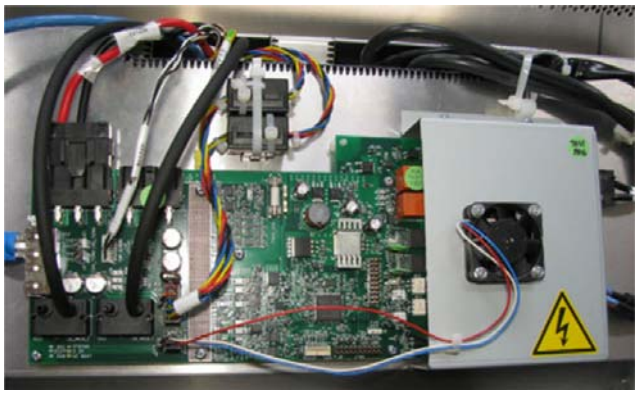
- 2 heater/fan assemblies



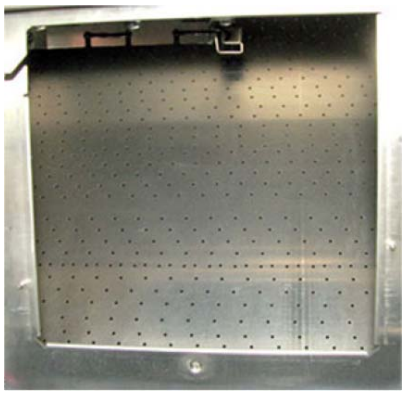
- 2 temperature sensors



- 1 curing PCA, with 2 pressure sensors



- 1 perforated plate



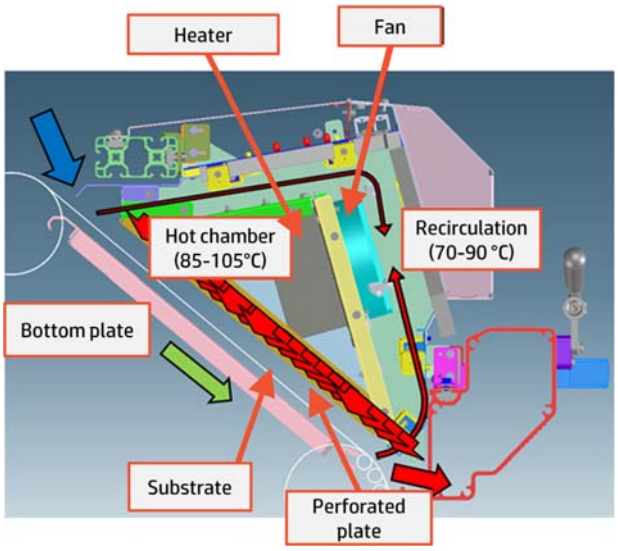
Each heater/fan assembly is controlled independently, so that the system has 12 functional chambers.

Theory of operation

The temperature of each of the 12 air chambers is controlled by means of a closed-loop system that adjusts the power provided to the heater to reach the target temperature. This hot air passes through the perforated plates located at the rear side of each base module and reaches the ink on the substrate to allow film formation.

The air is recirculated to reduce power consumption. However, a net airflow exists from the print zone to the lower beam to collect excess vapor. See the vapor removal section for more details.

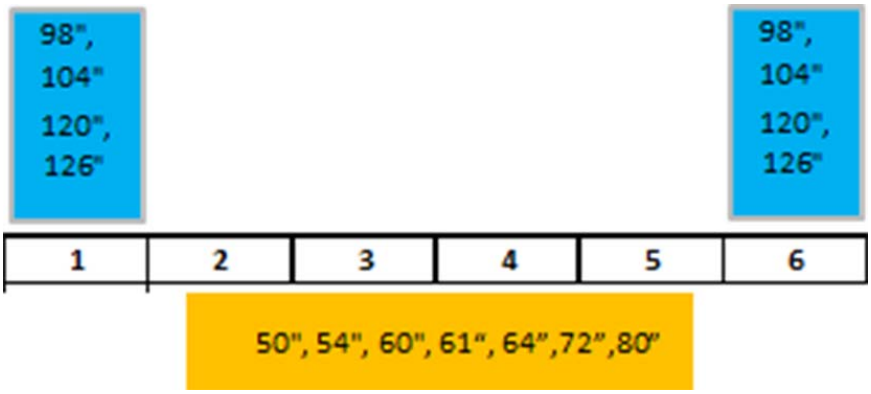
The following picture shows the cross section of a base module:



During the warm-up phase, extra power is applied to the heaters and the airflow is set to the minimum. During the cool-down phase, the heaters are turned off and the airflow is set to the maximum.

Each heater/fan module has a safety thermostat to avoid overheating. The thermostat opens at 110°C and its state is monitored by the PCA. Apart from the heater power and temperature monitoring, each fan has independent power control and diagnosis through the curing PCA. The air pressure is monitored inside each functional chamber to ensure that the system is working correctly.

The base modules turn on and off automatically, depending on the substrate width, to optimize power consumption by the system.



Subsystem power and control

Power and control per module

Two power cables are connected to each curing PCA (six PCAs in total):

- One AC cable to power the heaters (two heaters per module)
- One DC cable to power the fans (two fans per module)

Each resistor-fan assembly is connected to the PCA with two cables, the AC for the resistor and the DC for the fan.

One data cable arrives to each module to control it.

Two temperature sensors (one per chamber) are connected to each curing PCA.

Each curing PCA has a 24 V fan to keep it refrigerated.

Power and control for the whole subsystem

Power (DC and AC) and data cables enter and exit each curing PCA to connect all six in series.

The curing cable routing is as follows:

AC power

Three AC cables come from the e-cabinet back panel to the entrance connector of the subsystem. From there:

- One AC cable goes to Curing PCA 1. Curing PCAs 1 and 4 are connected in series.
- The second AC cable goes to Curing PCA 2. Curing PCAs 2 and 5 are connected in series.
- The third AC cable goes to Curing PCA 3. Curing PCAs 3 and 6 are connected in series.

DC power

Two DC cables come from the e-cabinet PCA to the entrance connector of the subsystem. From there:

- One DC cable goes to Curing PCA 1. Curing PCAs 1, 2, and 3 are connected in series.
- The other DC cable goes to Curing PCA 4. Curing PCA 4, 5, and 6 are connected in series.

Data

One LAN cable comes from the e-box interconnect to module 1. From there all the modules are connected in series.

See also Figure 2-16 Curing block diagram on page 73.

Vapor removal

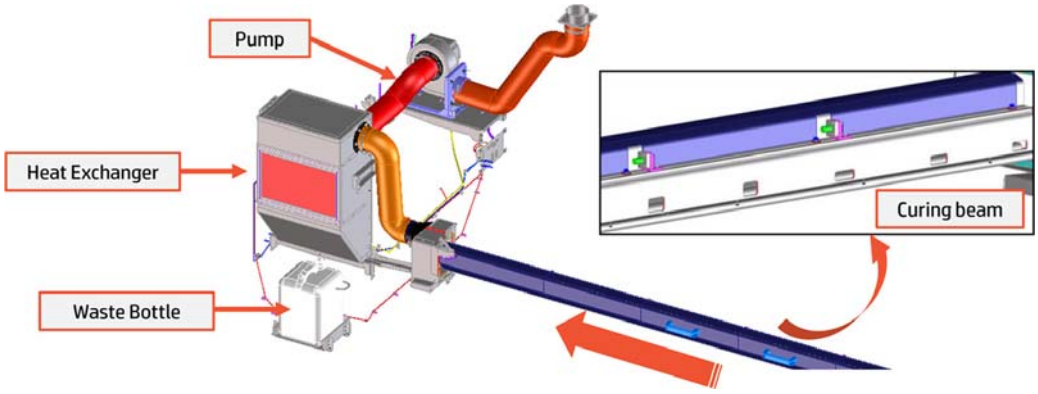
Functionality

The vapor removal system removes, condenses, and collects the low-volatile co-solvents (VOCs) evaporated during the curing process in a controlled way. This provides a comfortable working environment and prevents uncontrolled condensations on the printer elements, thus maintaining printer performance and reliability.

Components

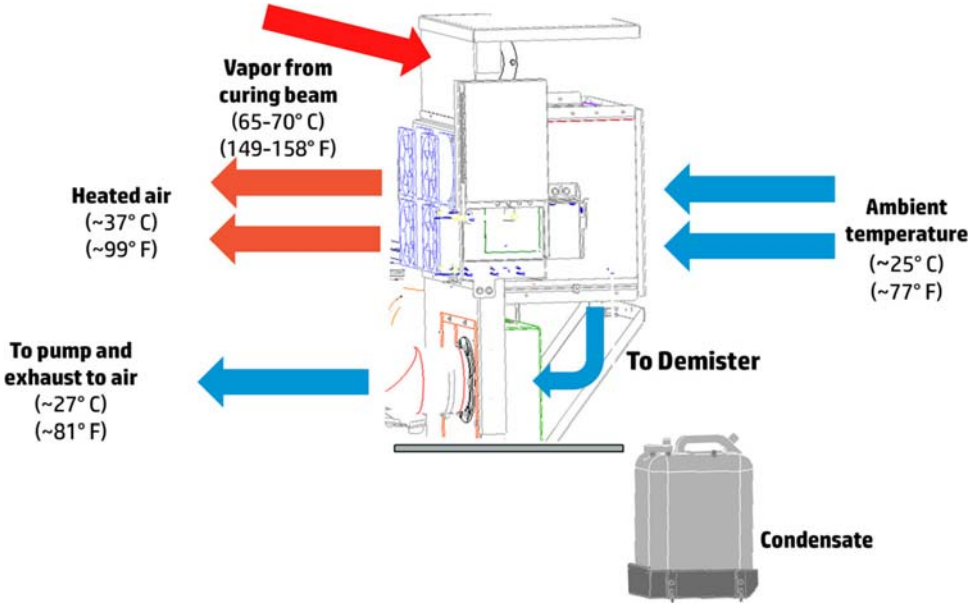
The system is composed of the following elements:

- Curing lower beam
- Heat exchanger
- Impaction filter (demister pad)
- Vacuum pump
- Waste bottle



Theory of operation

The curing beam is designed with a pattern of decreasing holes to extract the same airflow along the length of the beam. The vapor is driven through the interior of the curing lower beam by a vacuum pump located in the ISM. Some of the VOCs condense by wall contact along the beam, but mainly through a heat exchanger and demister pad located in the ISM. The condensates are driven to a 20 l container (waste bottle) through a drainage system.



The heat exchanger is composed of 4 fans that blow ambient air through the airflow coming from the curing beam. This lowers the temperature of the airflow and causes its condensation.

After the heat exchanger, there is a demister element to get rid of the high mass particles, which may still be airborne, by impaction. Those particles, together with the condensate formed in the plates of the exchanger, are drained into a bottle.

The exhaust air temperature should be similar to the ambient temperature to avoid any visible vapor formation leaving the control system.

The heat exchanger fans are controlled by a PCA similar to the curing PCA. The vacuum pump is supplied from the e-cabinet and controlled by a vacuum PCA, similar to the one controlling the print-zone vacuum.

Subsystem power and control

The vapor removal pump is powered with AC power coming from the e-cabinet PCA. Note that the AC power is not distributed through the e-cabinet PCA, so the power cable comes from a connector in the e-cabinet back panel. The pump is controlled by the vapor removal vacuum PCA, which is connected to the e-box interconnect with a data and a power cable.

There is a PCA to control the vapor removal fans, **identical to the curing PCA**. The 24V cable to power the fans goes from the e-cabinet PCA to the vapor removal PCA. The fans data cable goes from the e-box interconnect PCA to the vapor removal PCA.

Note that there is a connection panel in the ISM, so that all the e-box and e-cabinet cables arrive to this panel, and from there they are connected to the pump and the vapor removal PCA.

See Subsystem block diagrams on page 61.

Subsystem block diagrams

The following pages show the electrical and electronic subsystem block diagrams.

Figure 2-5 E-box block diagram

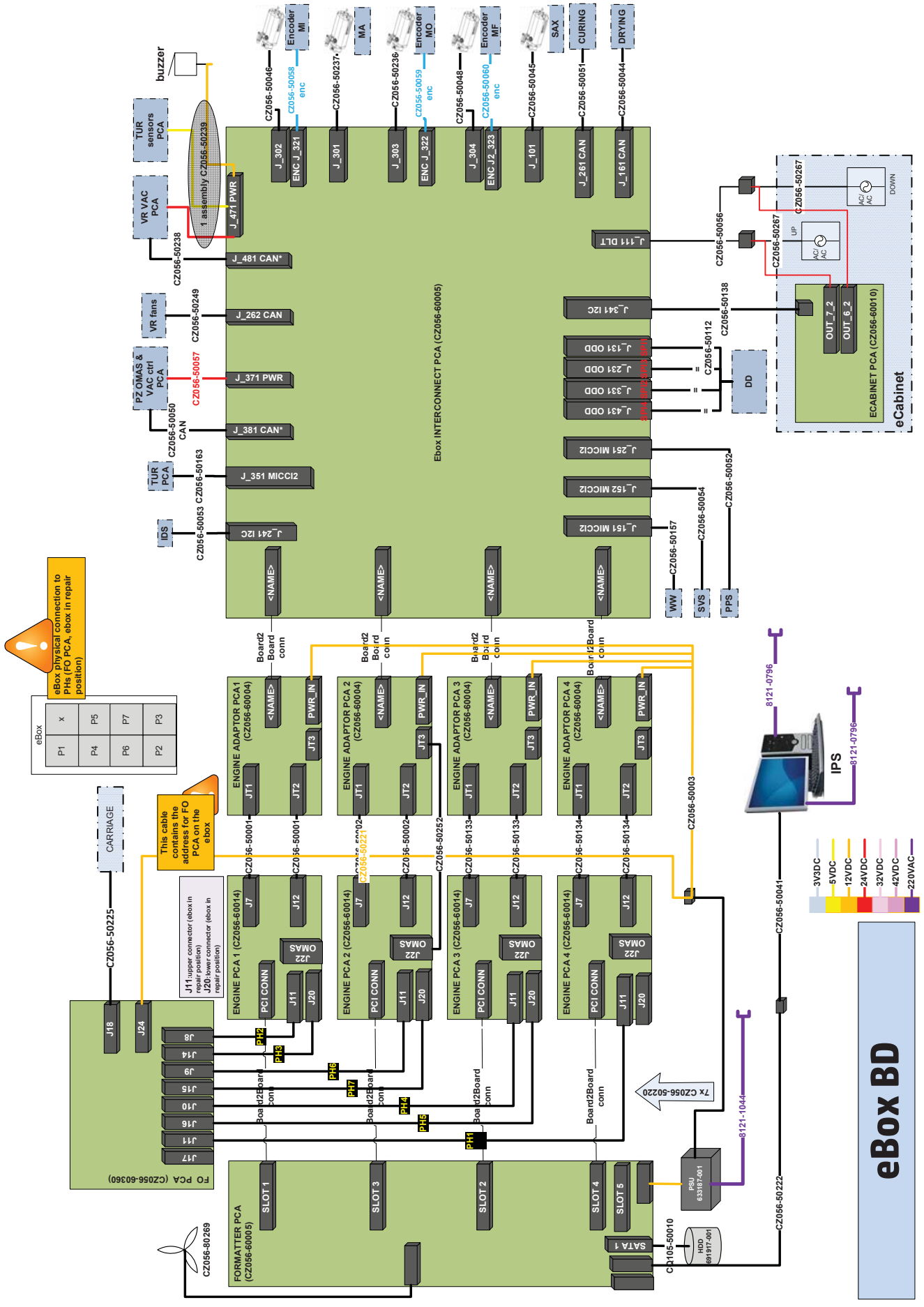


Figure 2-6 SAXmiMAmoMF block diagram

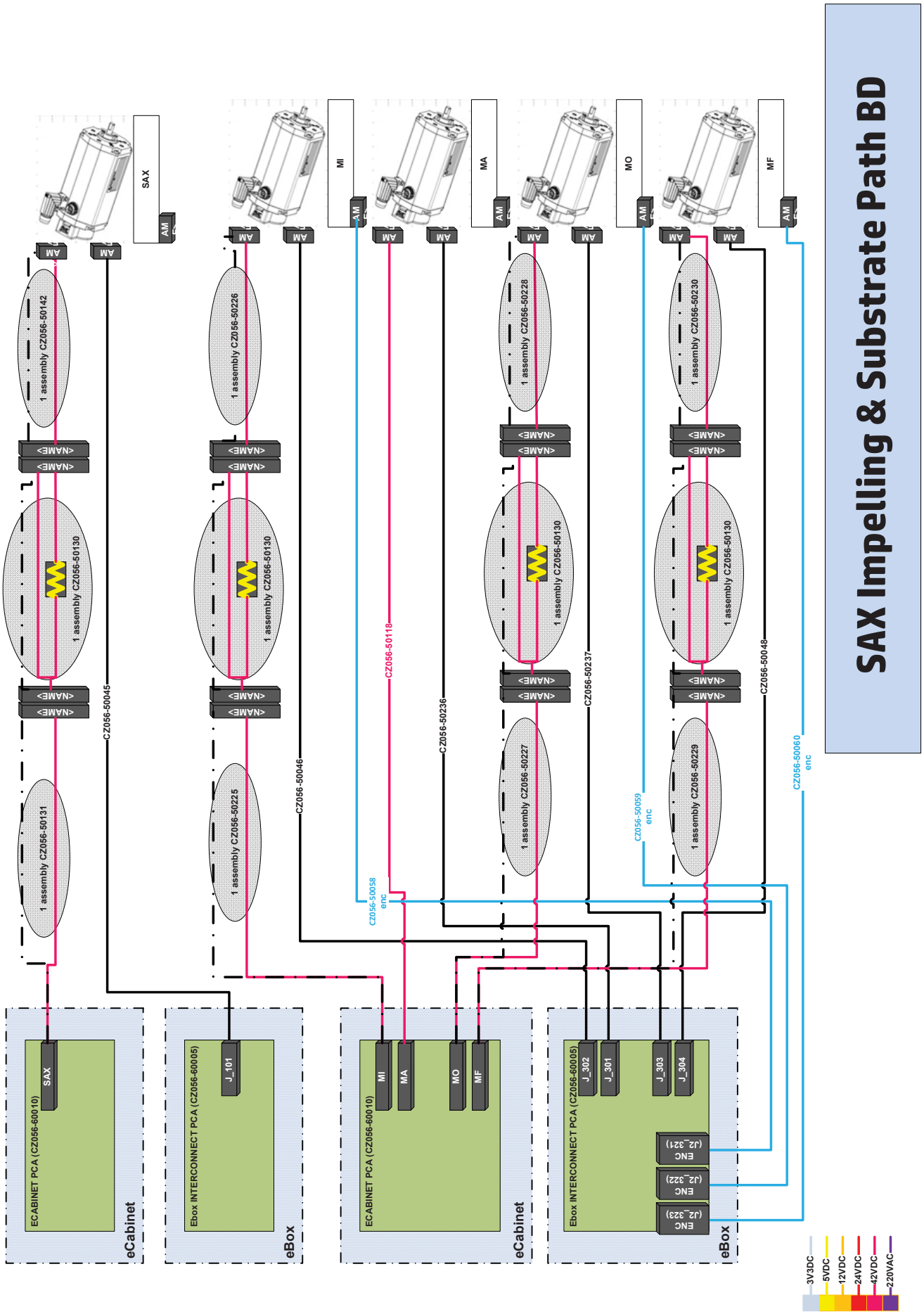
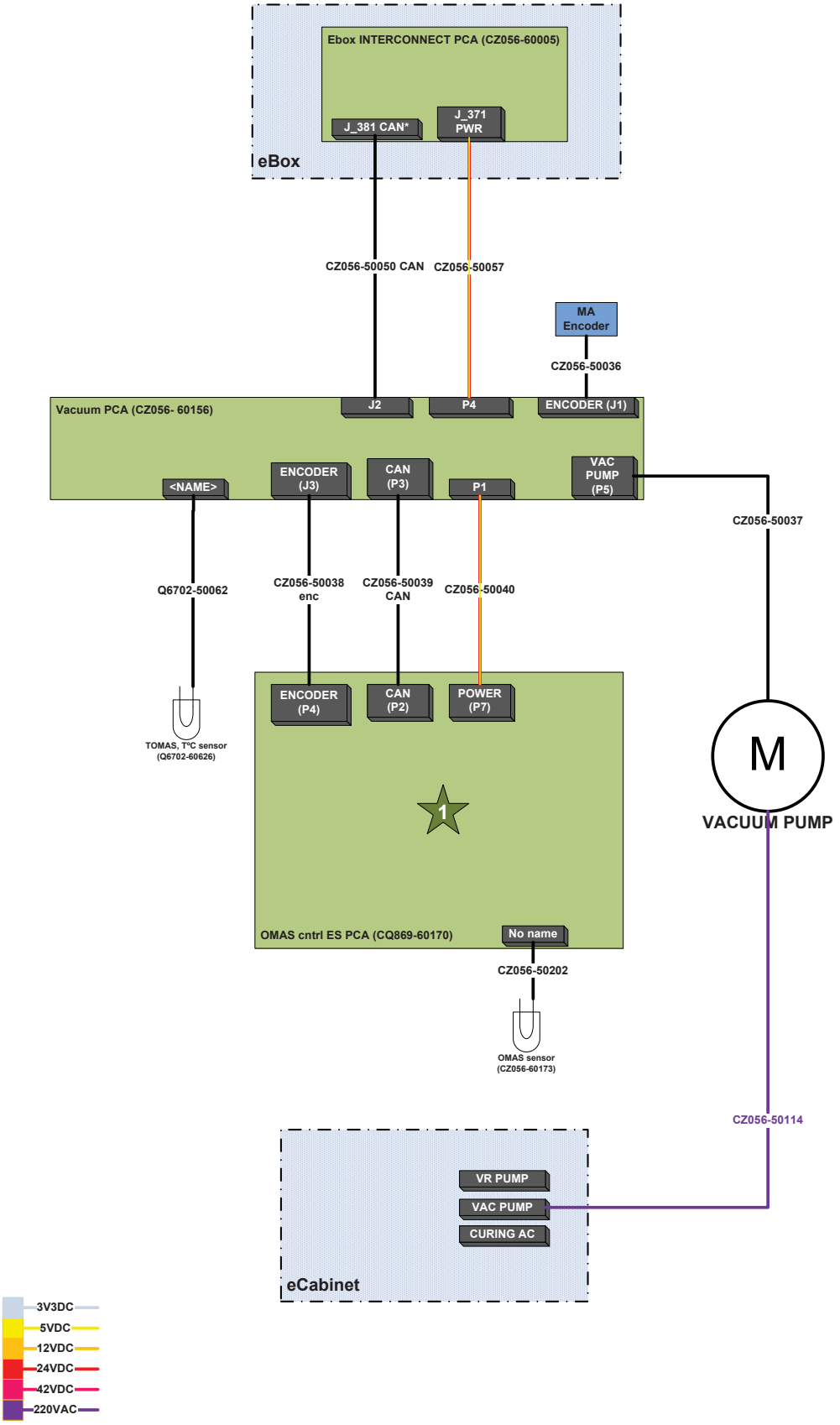


Figure 2-7 OMAS-Vacuum platen block diagram



OMAS &Platen Vacuum BD

Figure 2-8 PPS block diagram

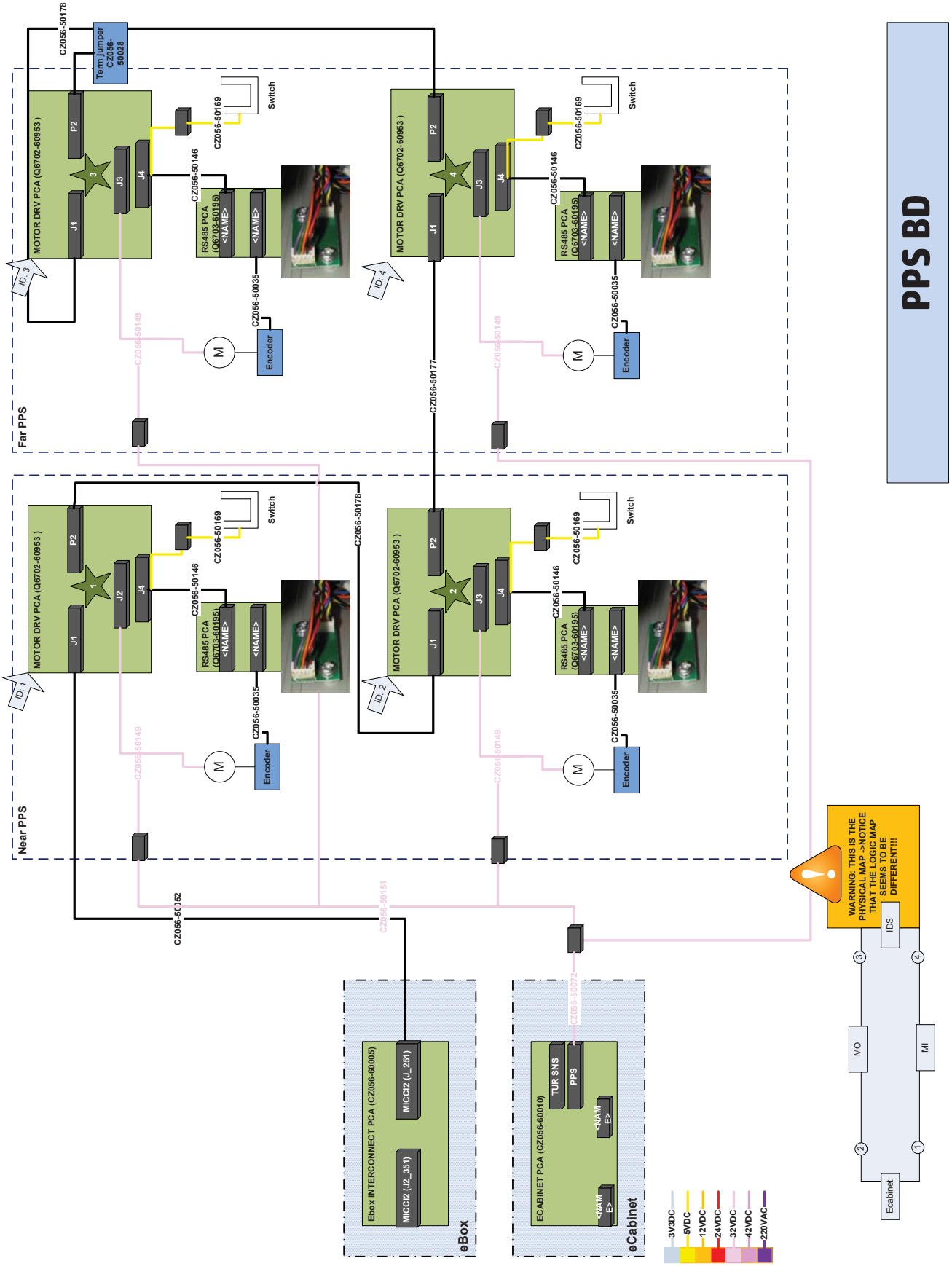


Figure 2-9 ISM block diagram

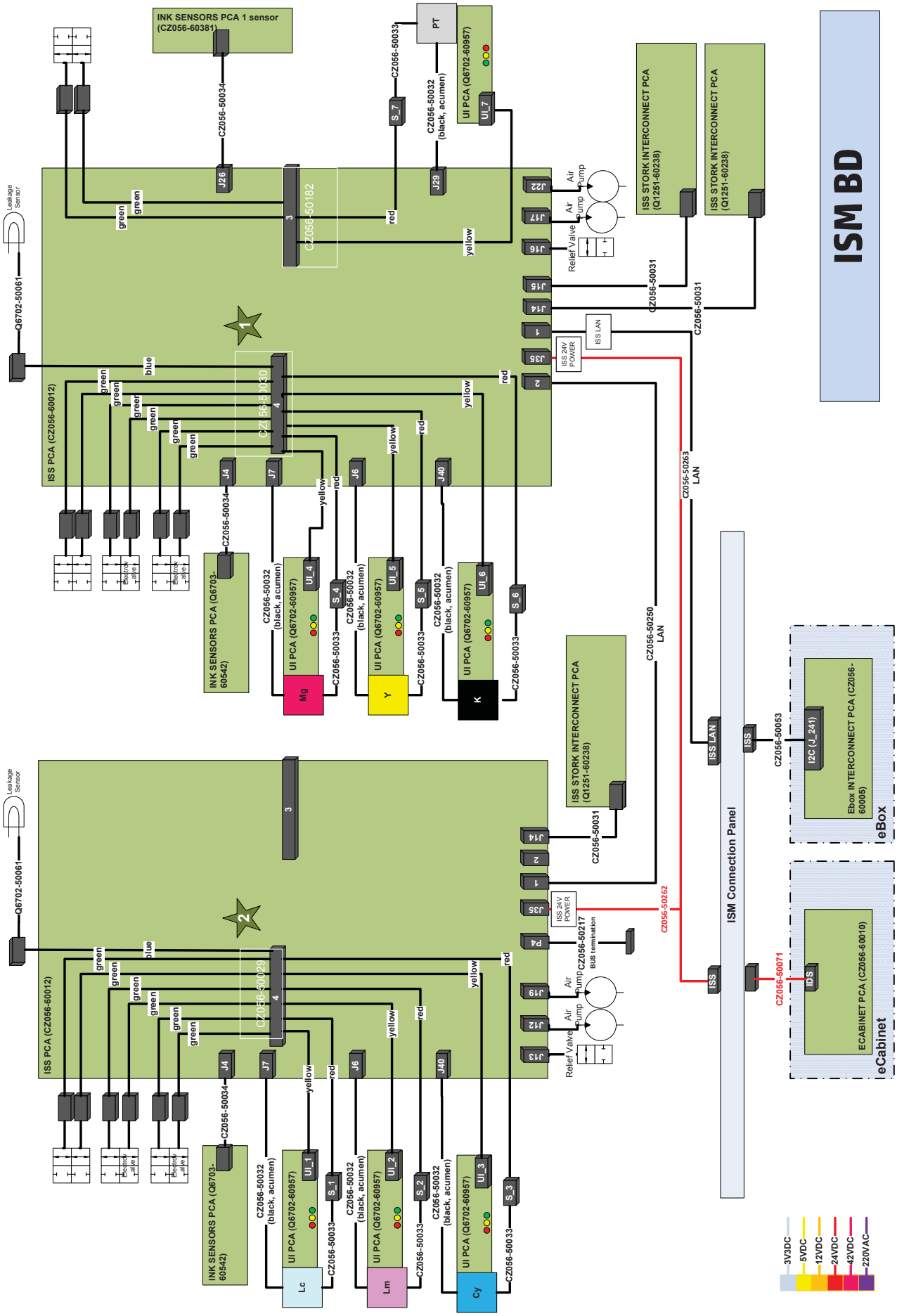


Figure 2-10 Carriage print block diagram

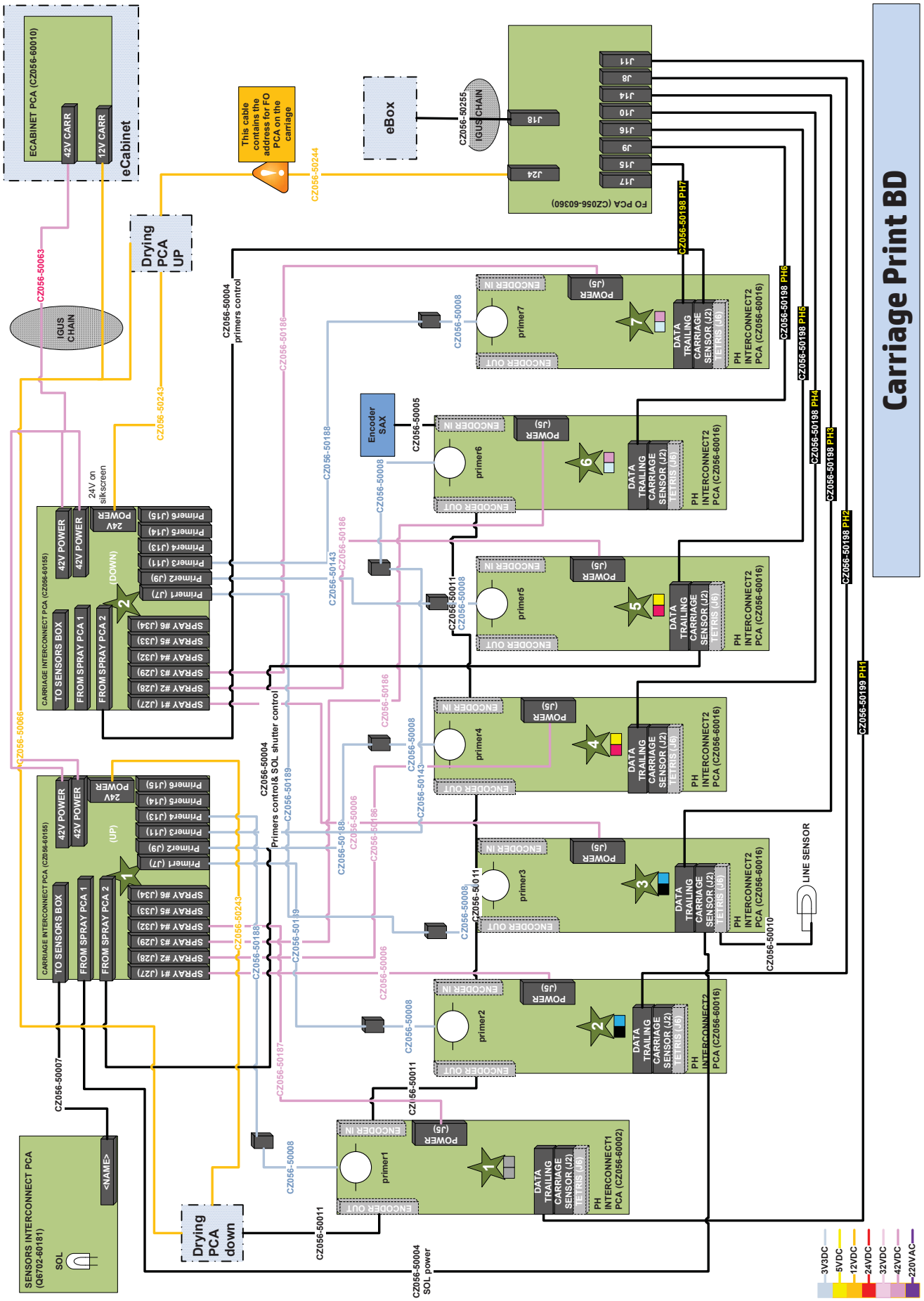
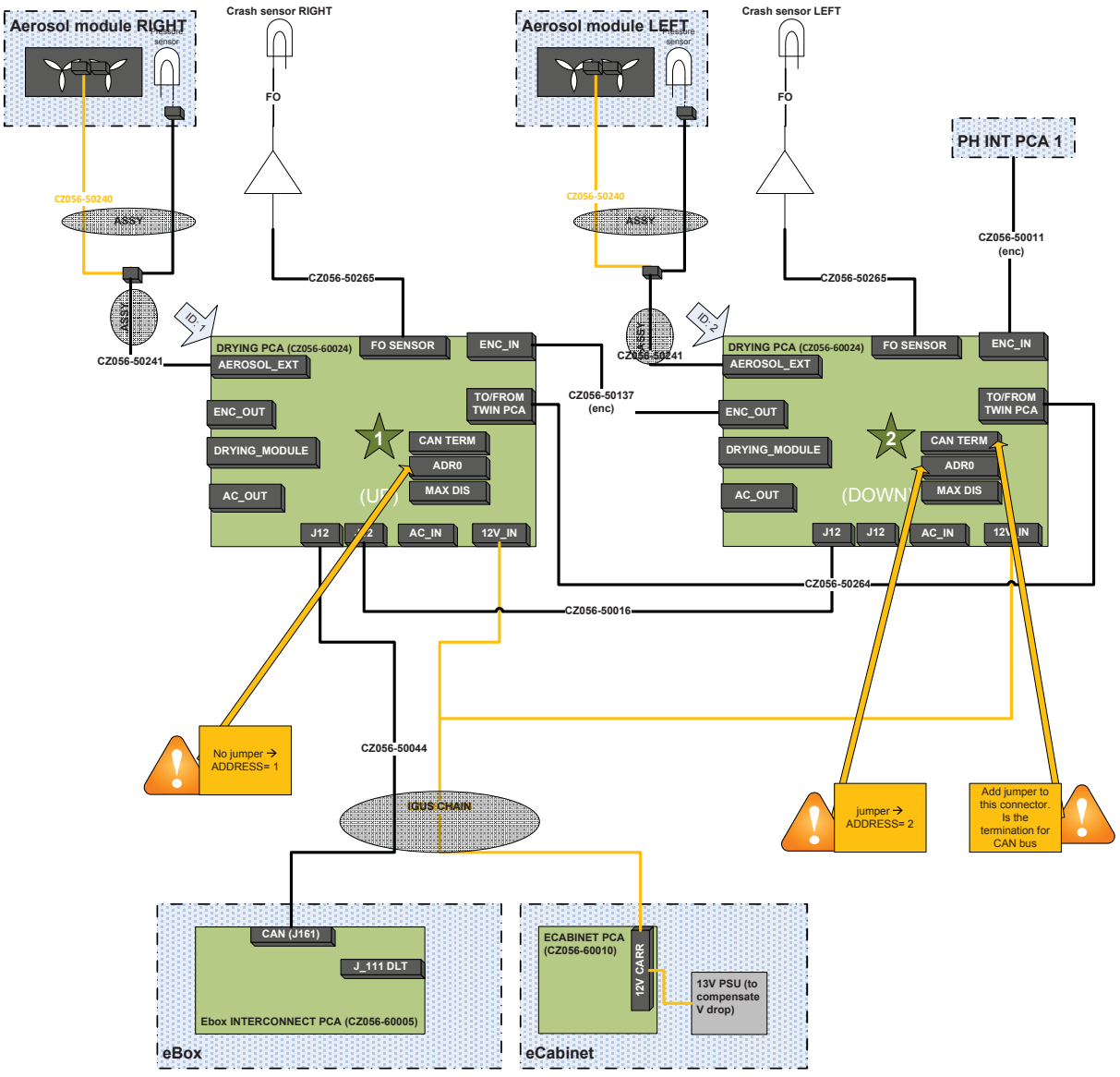


Figure 2-11 Carriage AR and crash sensor block diagram



	AR left	AR Right	CS left	CS Right	Dry left	Dry right	AC/AC PSU UP	AC/AC PSU DOWN
Drying PCA UP								
Drying PCA DOWN								

AR: Aerosol Removal
CS: Crash Sensor
Dry: Drying

Carriage AR + Crash Sensor BD

Figure 2-12 SVS block diagram

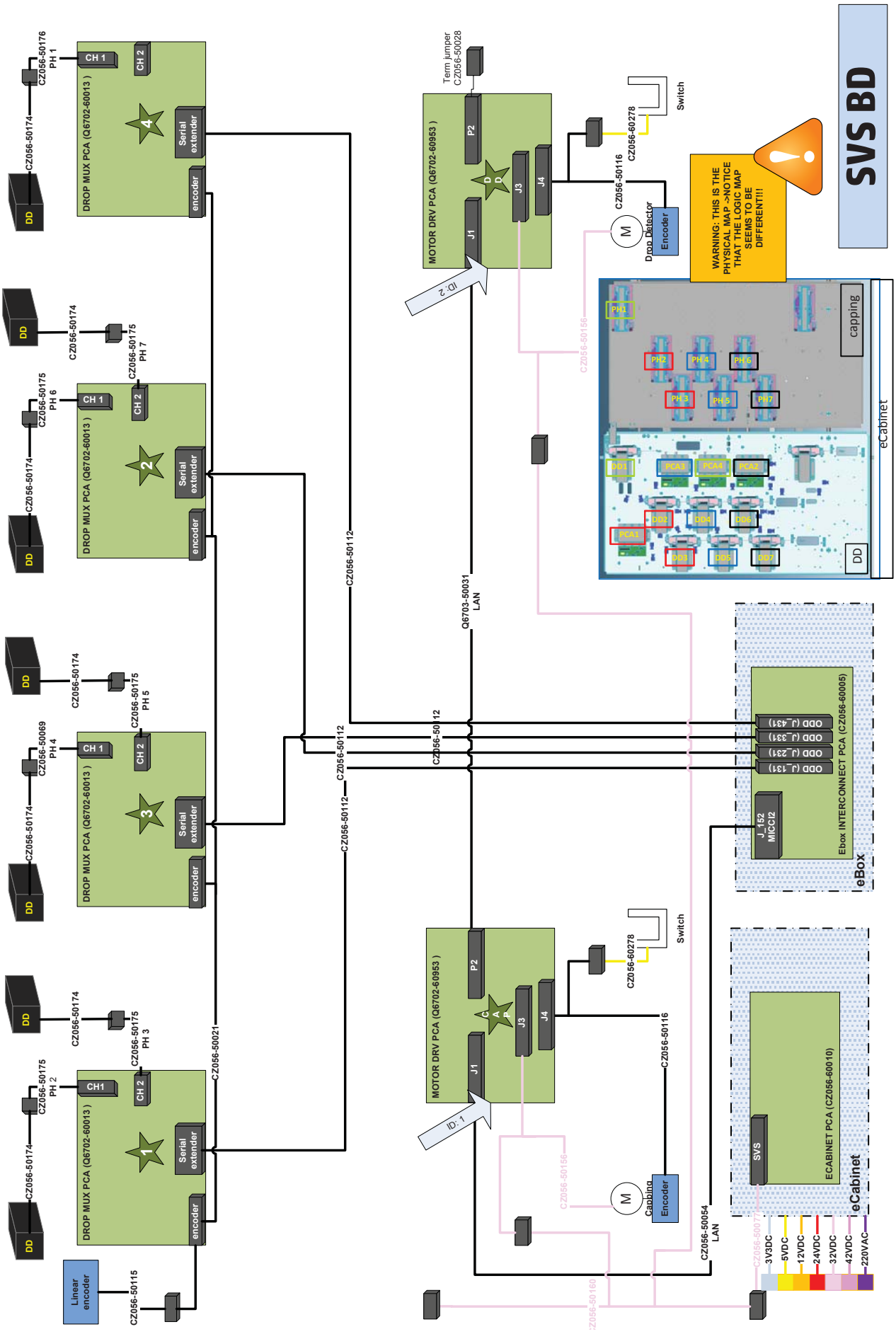


Figure 2-13 Printhead cleaning block diagram

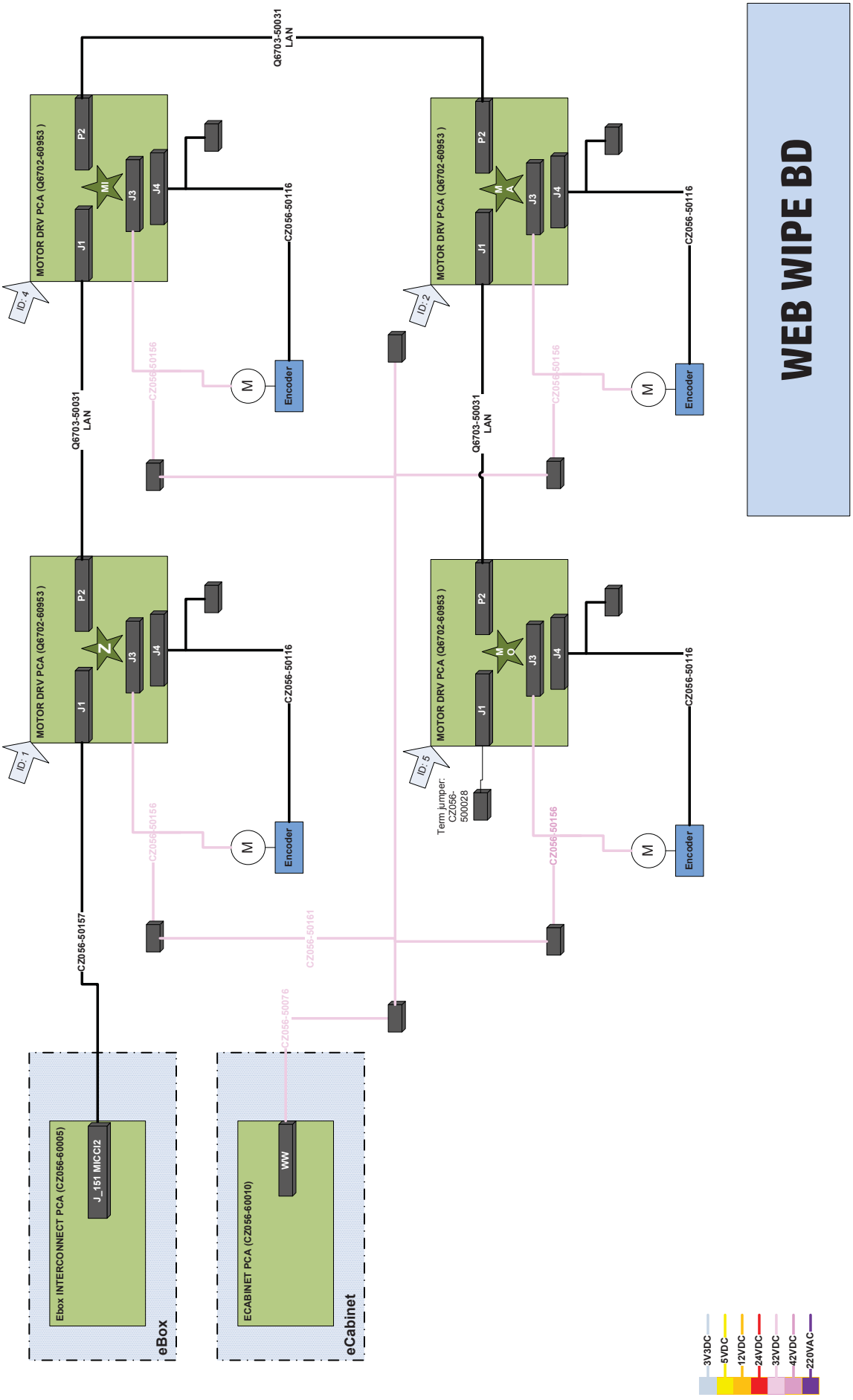


Figure 2-14 Carriage drying block diagram

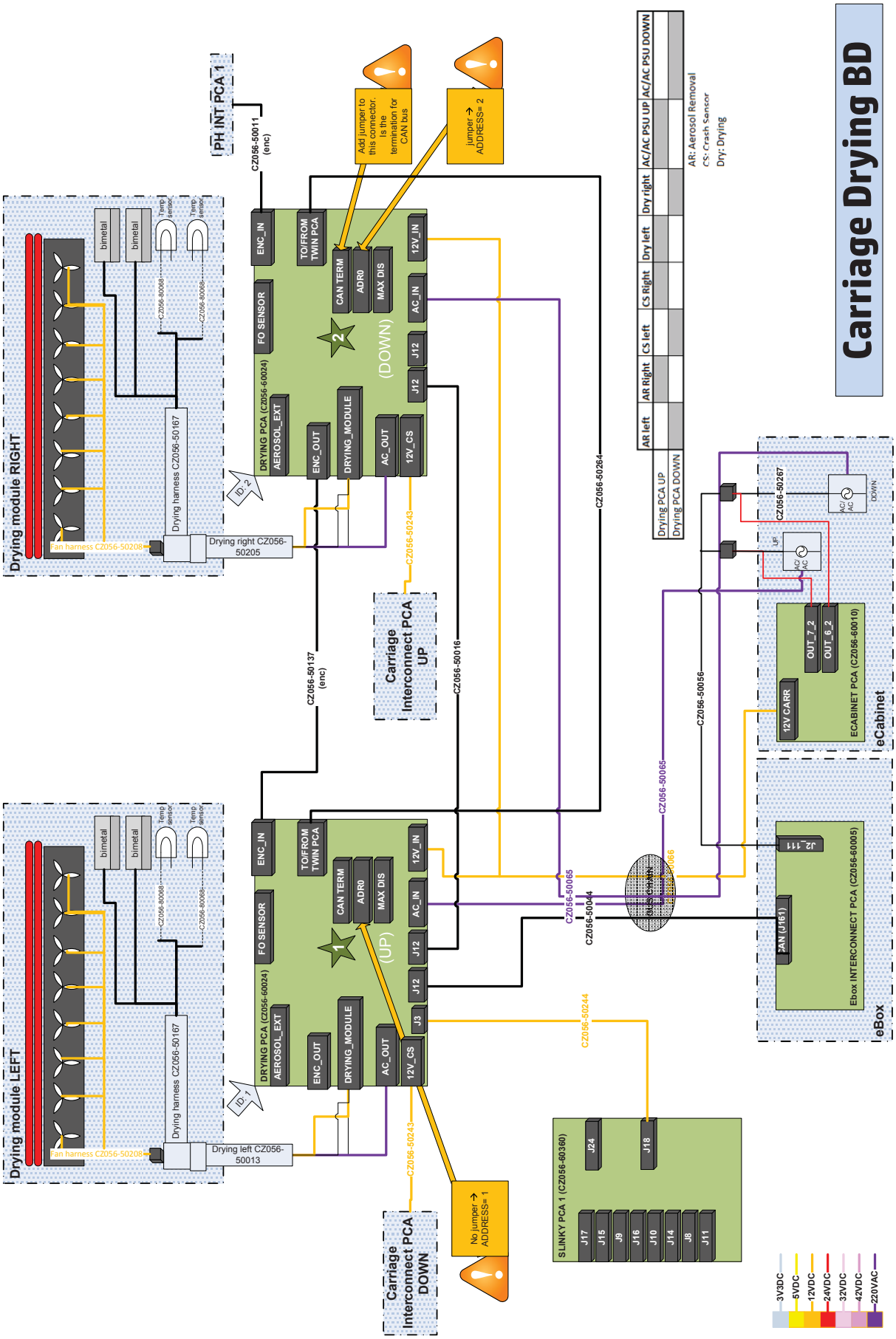


Figure 2-15 Curing module cabling

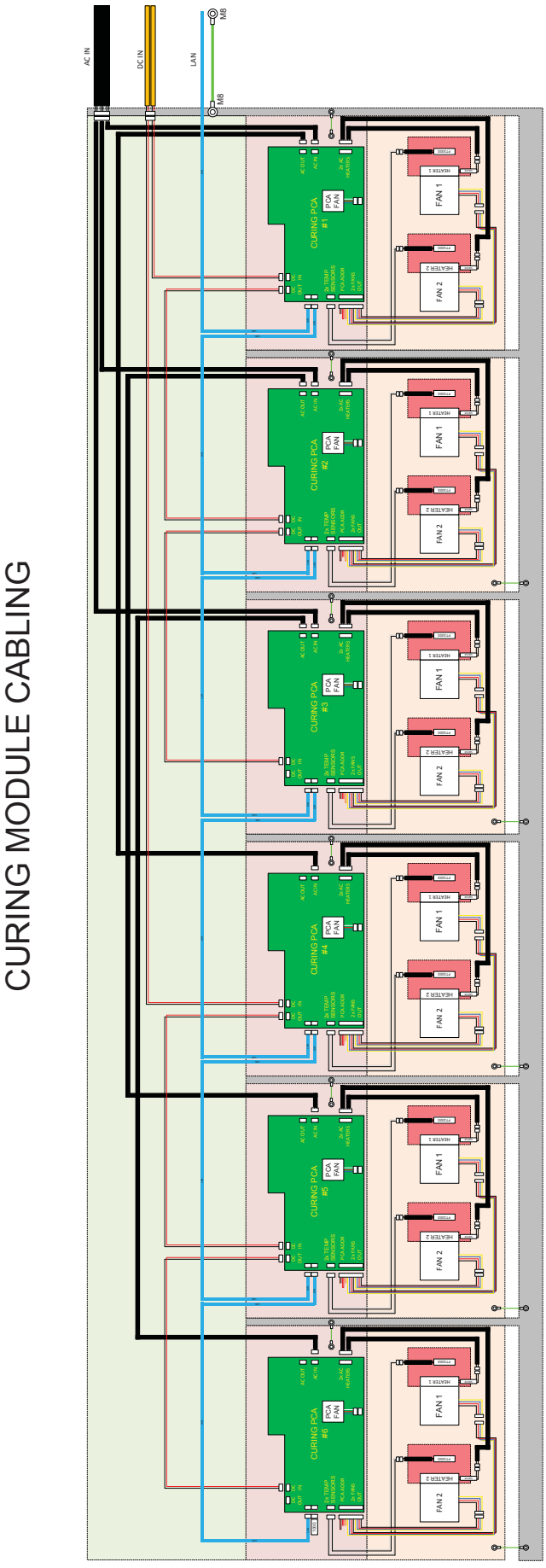


Figure 2-16 Curing block diagram

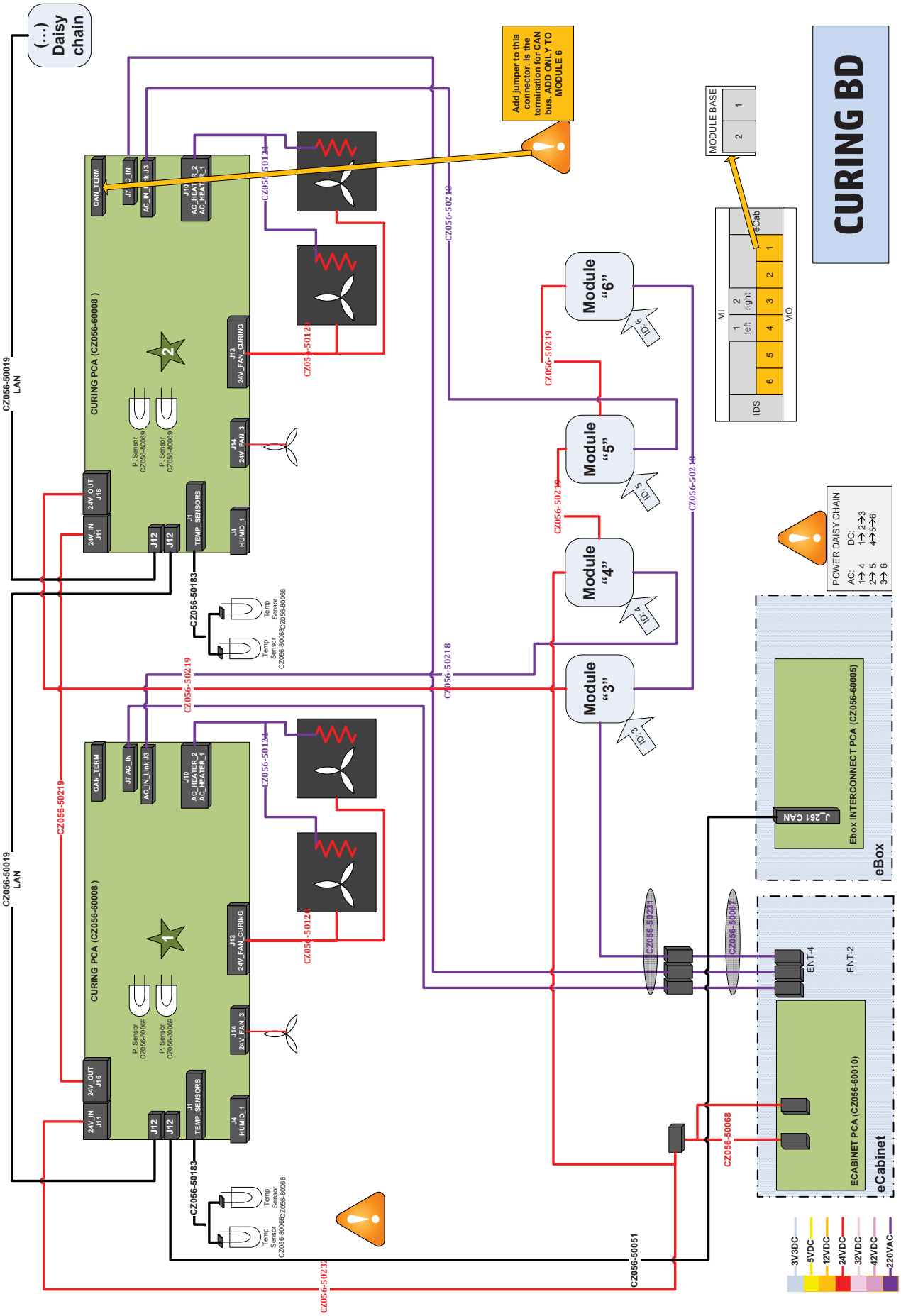


Figure 2-17 Vapor removal block diagram

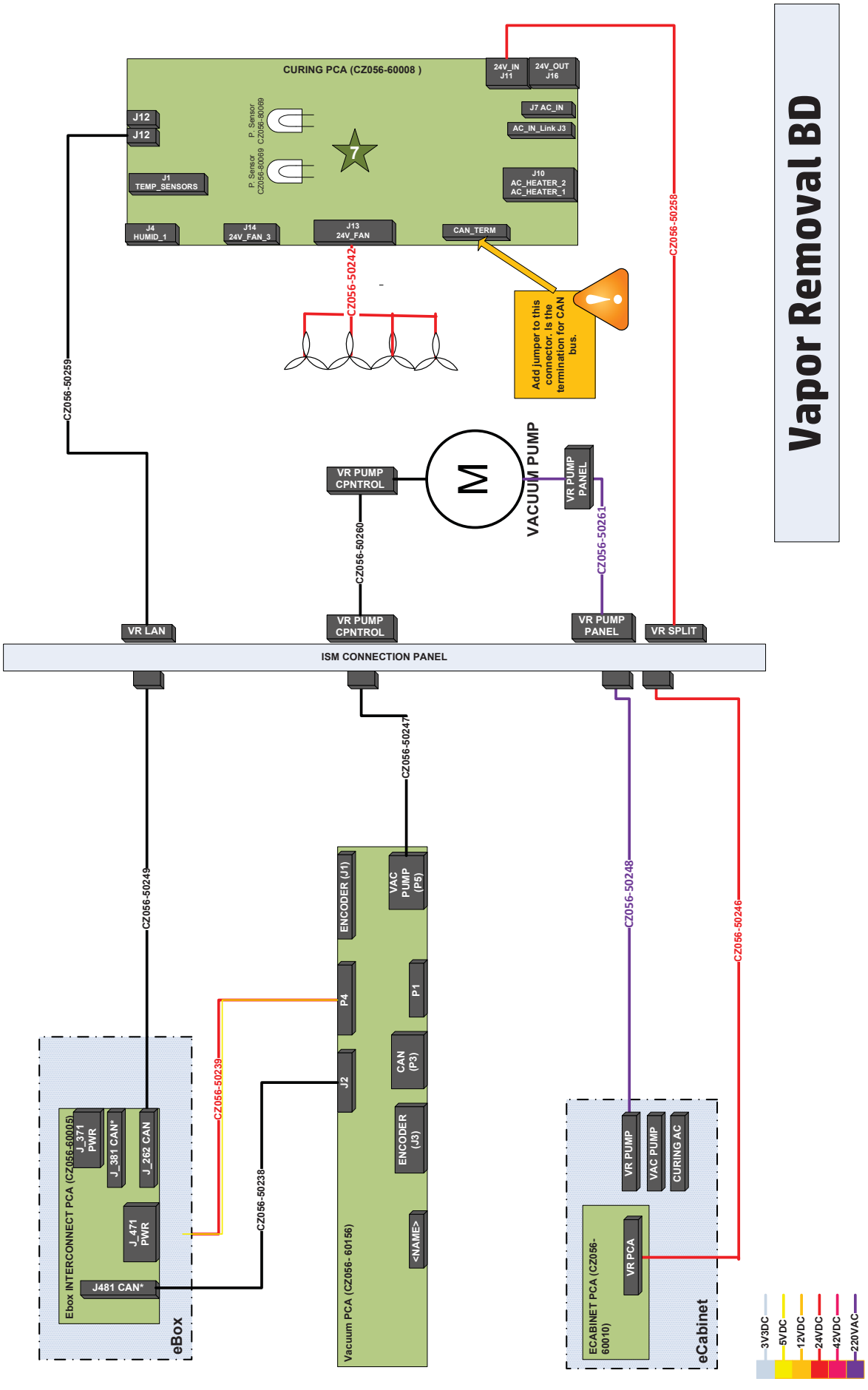
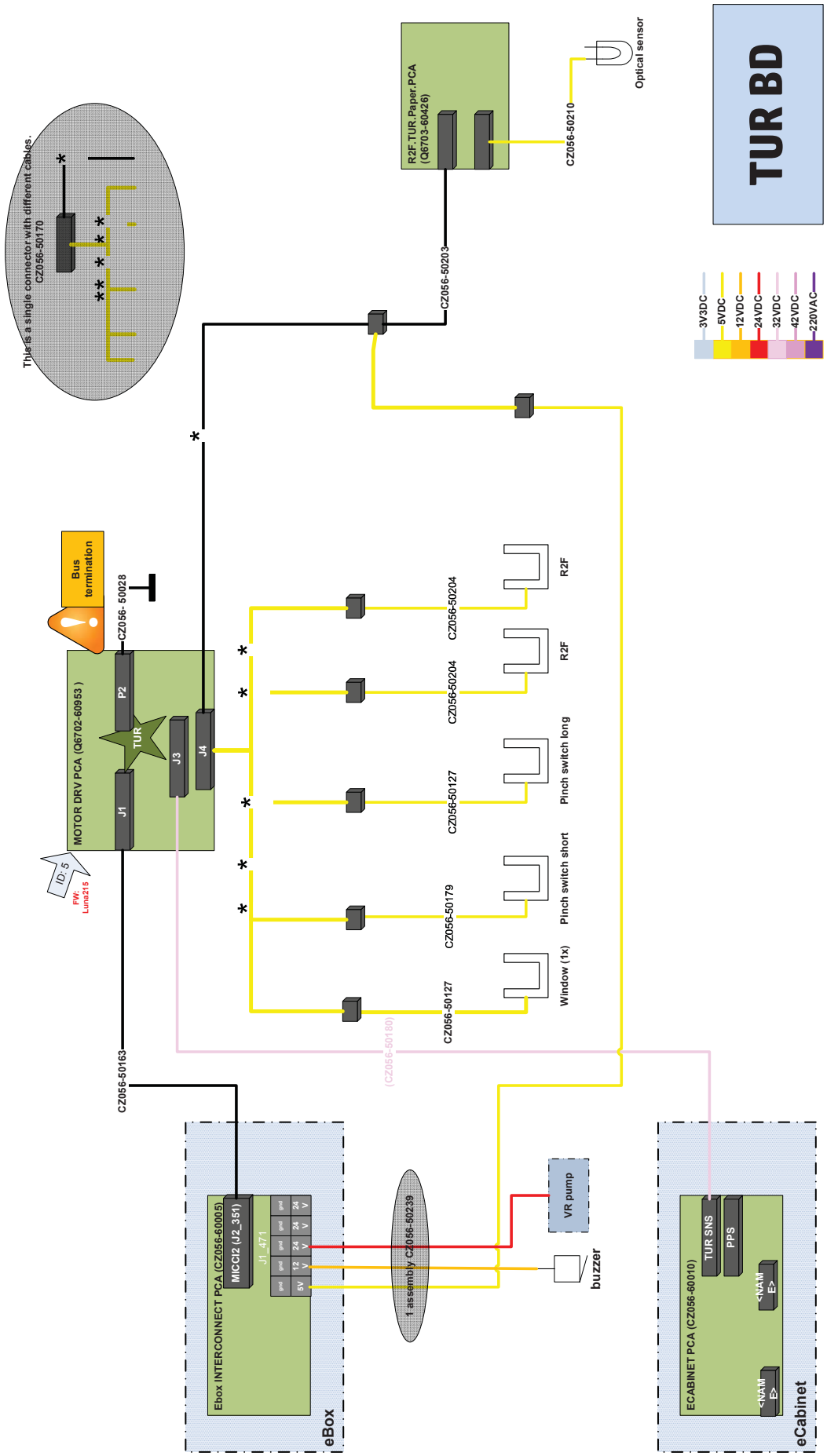


Figure 2-18 Take-up reel block diagram



3 Safety requirements

- Printer safety features
- Hazards
- Safety Check

Printer safety features

Any repair or maintenance operation, running diagnostics, or troubleshooting may require maintenance key, e-cabinet key, mains switch key, IPS switch key, and Torx screwdriver set.

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

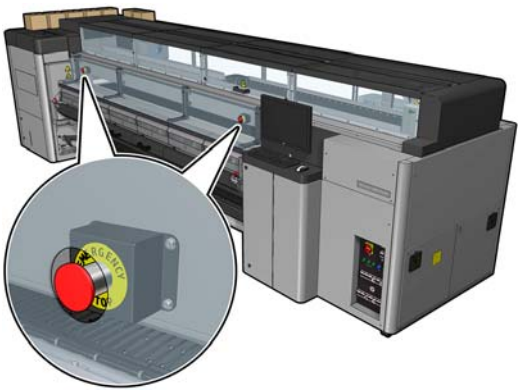
Label	Explanation
 Located on the e-cabinet; for service personnel only	**Electric shock hazard** Heating modules operate at hazardous voltage. Disconnect power source before servicing. Caution! Double pole. Neutral fusing. Refer servicing to qualified service personnel. In case of operation of the fuse, 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	Risk of burns. Do not touch the internal enclosures of the printer's drying and curing modules.
 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.

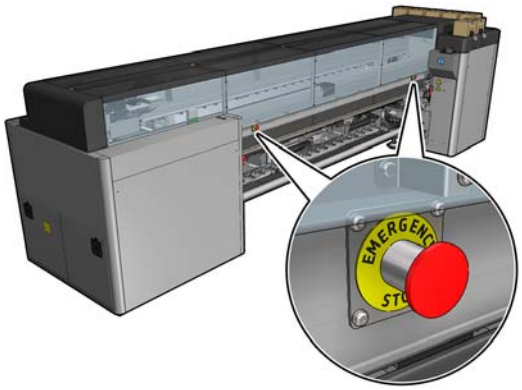
Label	Explanation
 Located on each side of the substrate path, close to the PPS gear	Risk of trapped fingers. Do not touch gears while moving. Danger that your hands may become trapped between gearwheels.
 Located internally on the substrate path and internally on the right cover; for maintenance/service personnel only	Hazardous moving part. Keep away from moving printhead carriage. When printing, the printhead carriage travels back and forth across the substrate.
	Risk of cutting your hands on sharp edges.
 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 the condensation collector bottle and the printhead cleaning roll carriage	You are recommended to wear gloves when handling ink cartridges, printhead cleaning cartridges, and the printhead cleaning container.
 Located at the rear, on the left cover	Sound level could exceed 70 dBA in some print modes. Hearing protection may be required.

Label	Explanation
 Located internally on heating modules and electrical cabinets; for maintenance/service personnel only	Electric shock hazard. Disconnect power before servicing. Heating modules and electrical cabinets operate at hazardous voltage.
 Located internally, close to vacuum fan blades; for maintenance/service personnel only	Hazardous moving parts. Keep away from moving fan blades.
	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 four emergency stop buttons distributed around the printer. If an emergency occurs, simply push one of the emergency stop buttons to stop all printing processes. A system error message is displayed, and the fans turn at maximum speed. Ensure that all emergency stop buttons are released before restarting the printer.





Hazards

Electrical shock hazard

Description

Internal circuits use hazardous voltage capable of causing death or serious personal injury. Turn off the printer using the branch circuit breakers located in the building's Power Distribution Unit (PDU) before servicing the printer. The printer must be connected to earth at mains outlets only.

Particular attention must be paid to the drying and curing subsystem, which uses hazardous voltages. Even when the drying and curing subsystem is not operating, there will still be parts of the electrical circuit with hazardous voltage levels.

Best practice

- Always perform the Safety Check before servicing the printer. See Safety Check on page 84
- Fuses blown after being replaced may indicate malfunctioning electrical circuits within the system. Have the system checked by qualified service personnel, and do not attempt to replace the fuse again.
- Ensure you have the appropriate test equipment for the voltage range to be measured and proper insulated leads before measuring the voltage at any test point.
- Be in a stable and reliable position for measuring any voltage safely.
- Avoid unintentional short-circuits with conductive parts surrounding the test points.
- Ensure the test leads do not slip out of your hands when measuring voltages, and be careful not to touch uninsulated parts accidentally.

Mechanical hazard

Description

- When the PPS is lowered, it can crush body parts if they are in the way.
- When the carriage moves, it can crush or cut body parts if they are in the way.
- Any moving printer components can potentially crush, cut, or seriously injure you.

Best practice

- Keep your clothing or body parts safe from moving parts of the printer.
- Avoid wearing loose clothing, jewelry like necklaces or bracelets, or any kind of hanging objects.

- If you have long hair, make sure that it is restrained.
- Take care that sleeves and gloves do not get caught in the mechanical parts of the printer.
- Always perform the Safety Check before servicing the printer. See Safety Check on page 84
- Stay clear of the printer when lowering the PPS.
- Stay clear of the print path when the carriage is moving.
- Be aware of the location of the emergency stop buttons.
- Also make sure that there are no tools obstructing the operation of the printer.
- Avoid standing close to the fans, which could cause injury and could also affect print quality (by obstructing the air flow).
- Do not touch gears or moving rolls during printing.
- Do not operate the printer with covers bypassed.

Scan-axis encoder strip hazard

Description

The scan-axis encoder strip is very sharp, and can easily cut your hands when you work near it.

Best practice

- Always perform the Safety Check before servicing the printer. See Safety Check on page 84
- Wear protective gloves if you must touch the scan-axis encoder strip.
- Do not wear loose clothing or jewelry.

Burn hazard (drying and curing)

Description

The drying and curing subsystems of the printer operate at high temperatures and can cause burns if touched.

Best practice

- Always perform the Safety Check before servicing the printer. See Safety Check on page 84
- Avoid direct contact with the drying and curing area of the printer.
- Be careful when you work near the print path.
- If you must work near the drying and curing modules, make sure that they have completely cooled down.

Lifting and handling

Description

Improper handling of heavy materials can lead to serious bodily injury.

Best practice

- When handling substrate rolls, care must be taken to avoid back strain and/or injury.
- Always use a forklift, pallet truck, or other handling equipment to lift substrates.
- Always wear personal protective equipment like boots and gloves.
- Follow any manpower instructions included in this service manual when you replace components. Many components, such as the drive roller or the cover, require at least two people for removal.

Fire Hazard

Description

Drying and curing subsystems operate at high temperatures.

Best practice

- Always perform the Safety Check before servicing the printer. See Safety Check on page 84.
- Use the power supply voltage specified on the nameplate.
- Connect the power cords to dedicated lines, each protected by a branch circuit breaker.
- Do not manipulate the heating modules, unless required for servicing parts.
- Do not insert objects through slots in the printer.
- Do not use aerosol products that contain flammable gases inside or around the printer. Do not operate the printer in an explosive atmosphere.
- Do not block or cover the openings of the printer.
- Follow any manpower instructions included in this service manual when you replace components. Many components, such as the drive roller or the cover, require at least two people for removal.
- Do not attempt to modify the drying or curing module, or the e-cabinet, unless required for servicing parts.
- Do not load substrates that cannot be used at an operating temperature above 125°C (257°F). Ensure that the operating temperature of the substrate recommended by the manufacturer is not exceeded. If this information is not available, ask the manufacturer.
- 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.
- 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.

Light radiation hazard

Description

Infrared (IR) radiation is emitted from the dryer module. 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.*

Best practice

- Always perform the Safety Check before servicing the printer. See Safety Check on page 84.
- You are recommended not to look directly at the lamps while they are on.
- Do not modify the dryer enclosure.
- After servicing parts, make sure to reassemble them properly.

Sound pressure level

Description

The sound pressure level could exceed 70 dBA in some print modes.

Best practice

- Always perform the Safety Check before servicing the printer. See Safety Check on page 84.
- Hearing protection may be required.

Ink handling

Your printer does not use solvent inks and does not have the traditional problems associated with them.

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

Safety Check

Description

The Safety Check must be performed before every service operation of the printer. From purging the printer to replacing a single component, this Safety Check must always be performed.

Procedure

NOTE: The protective earth conductor is marked with a symbol.



1. If you intend to remove any components of the drying and curing system, turn off the main power switch and disconnect the printer from the Power Distribution Unit (PDU).
2. Check that the protective bonding conductor (green-and-yellow grounding cable) is well attached to the e-cabinet doors.
3. Check that the protective earth conductor for single phase and three-phase (green-and-yellow grounding cable) is well attached to the back panel of the e-cabinet.
4. Check that the protective bonding conductor (green-and-yellow grounding cable) is well attached to the back panel of the e-cabinet.
5. Check that the protective bonding conductor (green-and-yellow grounding cable) is well attached to the single-phase input.
6. Check that the protective bonding conductor (green-and-yellow grounding cable) is well attached to printer structure.
7. Check that the protective bonding conductor (green-and-yellow grounding cable) is well attached to the drying system.
8. Check that the protective bonding conductor (green-and-yellow grounding cable) is well attached to the curing system.
9. Check that the protective bonding conductor (green-and-yellow grounding cable in the power cord) is well attached to the vacuum and vapour removal pumps.
10. Check that the protective bonding conductor (green-and-yellow grounding cable in the power cord) is well attached to the e-box.
11. Check that safety interlock is not in bypass position.
12. Check that all emergency stop buttons are released.
13. Check that all RCCBs (GFIs) trip properly, by pressing the Test button.
14. Check that all doors and windows remain closed and in their original position.
15. Check that all safety warning labels remain in their intended positions and add any required labels on new or removed parts.

4 Troubleshooting

- Troubleshooting with Print Care
- Print Care login and boot modes
- Troubleshooting system error codes
- Troubleshooting without system errors
- Print-quality troubleshooting
- How to extract and read the service plot
- Troubleshoot non-HP ink usage

Troubleshooting with Print Care

When there is a problem with the printer, a system error is displayed in the Internal Print Server. See the following sections for details about system error codes.

All the troubleshooting steps and corrective actions are described below. In many cases, a diagnostic test is needed to determine the failure mode, and these tests are performed with the Print Care software. See How to run a diagnostic test on page 341.

Print Care login and boot modes

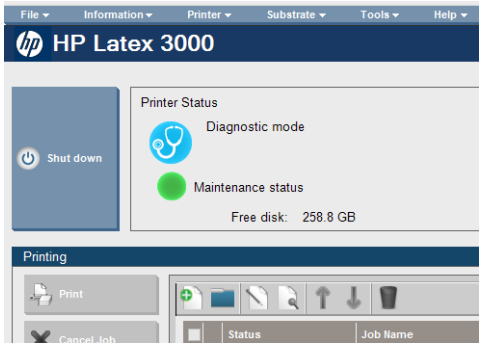
As someone authorized by HP to provide support for this printer, you can log into Print Care as 'ServiceEngineer' to gain access to the special tools, diagnostics, and calibrations provided to support, diagnose, and repair the printer. First use the Print Care Password Manager to generate a password: click **Generate** in the window below, then use the generated password.



NOTE: The password is case-sensitive.

The printer can be started in normal mode or diagnostic mode, from **Printer tools** > **Power options** > **Boot modes**. Normal mode starts the printer normally, but diagnostic mode starts only a minimal part of the printer engine for diagnostic purposes, so the diagnostics available can be different in each case. See Diagnostics on page 340.

When the printer is started in diagnostics mode, you should see the window below on the screen of the built-in computer.



In diagnostic mode you may be able to run tests with parts detached from the printer, or run one subsystem only and start the components required for this subsystem.

NOTE: To return the carriage to the capping position after working in diagnostic mode, you should restart the printer in normal mode.

Troubleshooting system error codes

- Useful information
- Understanding system error codes
- Resolve a system error code
- 01. E-box error codes
- 10. E-cabinet error codes
- 11. Pipeline error codes
- 15. Dryer error codes
- 16. Curing error codes
- 21. Capping-station error codes
- 22. Ink-delivery-system error codes
- 41. Substrate-path error codes
- 43. Substrate vacuum-system error codes
- 46. Printhead-primer error codes
- 47. Printhead-cleaning error codes
- 48. PPS error codes
- 49. Carriage aerosol-removal error codes
- 50. OMAS error codes
- 51. Printer-covers and safety-element error codes
- 52. Drop-detector error codes
- 55. Carriage line-sensor error codes
- 58. Carriage SOL error codes
- 61. Internal firmware error codes
- 79. Miscellaneous error codes
- 86. Scan-axis error codes

Useful information

When dealing with a system error, first obtain the following information:

- The model and serial number of the printer
- The firmware version that the printer is using (from the Internal Print Server: **Utilities** > **Statistics** > **Code rev.**)
- The complete error code
- The service configuration print
- The current configuration print
- The name and version of the software application that the customer is using

NOTE: When reporting the system error code, ensure that you supply the full error code and the firmware version.

Understanding system error codes

A system error code appears in the following format:

- XX.nn.mm:ff

The different parts of the code have the following meanings:

- **XX**: Subsystem in which the failure has been detected (see the subsystem error codes table below)
- **nn**: Service part in which the failure has been detected.
- **mm**: Service part index, if more than one such part is used: for example, it may be used to identify the ink cartridge (color and number).
- **ff**: Type of failure: voltage too low, temperature too high, communications error, time-out, and so on.

XX code	Subsystem
01	E-box
10	E-cabinet
11	Pipeline
15	Carriage drying system
16	Curing system
21	Capping station
22	Ink delivery system
30	Vapor removal system
41	Substrate path
43	Substrate vacuum system
46	Printhead primers
47	Printhead cleaning roll
48	PPS
49	Carriage aerosol removal
50	Substrate-advance sensor (OMAS)
51	Printer covers and safety elements
52	Drop-detector system
55	Carriage line sensor
58	Carriage color sensor
79	Internal firmware
86	Scan axis

Resolve a system error code

In this section “X” or “XY” means the index of the component, for instance for printhead position or curing modules.

01. E-box error codes

01.01.00:01

Internal Print Server message

Formatter CPU fan does not spin. Some printer components could be damaged by over-temperature. If problem persists, call support and shut down the printer

Description

The fan that cools down the heat sink of the CPU in the Formatter PCA does not spin.

Causes in order of importance

a. The fan is broken.

b. The wire of the fan is disconnected from the formatter PCA.

c. The fan is not powered (red wire).

d. The fan does not properly receive the PWM signal (yellow wire).

Corrective actions

1. Check for proper fan wire connection to Formatter PCA (CPUFAN1 connector).
2. Check, with multimeter, for supply voltage presence in pin 2 (5 V) on CPUFAN1 connector in Formatter PCA.
3. Check, with multimeter, for PWM signal presence in pin 3 (between 1 and 3 V) on CPUFAN1 connector in Formatter PCA.
4. If you find no other explanation, replace the fan.

Severity

Advisory (continuable)

01.02.01:02

Internal Print Server message

Engine PCA #01 start-up fail.

Description

Engine PCA #01 does not start-up properly (during power on) or there is an error during start-up.

Causes in order of importance

a. The engine PCA #01 is missing.

b. The engine PCA #01 is not correctly installed.

c. The contact with formatter PCA (BUS PCI express) fails.

d. The engine PCA #01 is damaged and is not performing properly.

Corrective actions

1. Check for PCA presence in proper slot.
2. Visual check for proper assembly of the PCA.
3. Run sub-system diagnostic.
4. Physical check (push) of the assembly of the PCA.
5. If the problem persists, replace the PCA. See Engine PCA on page 535.
6. If the problem still persists, call support.

Severity

SEVERE (non-continuable)

01.02.01:76

Internal Print Server message

Engine PCA #01 memory check fail.

Description

Check (through R/W commands) the data lines and address lines to detect physical tracks' errors.

Causes in order of importance

a. PCA tracks are damaged or broken.

b. Any component in the PCA is damaged or broken.

Corrective actions

1. Run subsystem diagnostic.
2. Check (through R/W commands) the data lines and address lines to detect physical tracks’ errors.
3. Replace the PCA. See Engine PCA on page 535.

Severity

SEVERE (non-continuable)

01.02.02:02

Internal Print Server message

Engine PCA #02 start-up fail.

Description

Engine PCA #02 does not start up properly (during power on), or there is an error during start-up.

Causes in order of importance

a. The engine PCA #02 is missing.

b. The engine PCA #02 is not correctly installed.

c. The contact with formatter PCA (BUS PCI express) fails.

d. The engine PCA #02 is damaged and does not perform properly.

Corrective actions

1. Check for PCA presence in proper slot.
2. Visual check for proper assembly of the PCA.
3. Physical check of the PCA assembly (push).
4. Run subsystem diagnostic.
5. If the problem persists, replace the PCA. See Engine PCA on page 535.
6. If the problem still persists, call support.

Severity

SEVERE (non-continuable)

01.02.02:76

Internal Print Server message

Engine PCA #02 memory check fail.

Description

Check (through R/W commands) the data lines and address lines to detect physical tracks' errors.

Causes in order of importance

a. PCA tracks are damaged or broken.

b. Any component in the PCA is damaged or broken.

Corrective actions

1. Run subsystem diagnostic.
2. Replace the PCA. See Engine PCA on page 535.

Severity

SEVERE (non-continuable)

01.02.03:02

Internal Print Server message

Engine PCA #03 start-up fail

Description

Engine PCA #03 does not start up properly (during power-on), or there is an error during start-up.

Causes in order of importance

a. The engine PCA #03 is missing.

b. The engine PCA #03 is not correctly installed.

c. The contact with formatter PCA (BUS PCI express) fails.

d. The engine PCA #03 is damaged and doesn't perform properly.

Corrective actions

1. Check for PCA presence in proper slot.
2. Visual check for proper assembly of the PCA.
3. Physical check of the PCA assembly (push).
4. Run subsystem diagnostic.
5. If the problem persists, replace the PCA. See Engine PCA on page 535.
6. If the problem still persists, call support.

Severity

SEVERE (non-continuable)

01.02.03:76

Internal Print Server message

Engine PCA #03 memory check fail.

Description

Check (through R/W commands) the data lines and address lines to detect physical tracks' errors.

Causes in order of importance

a. PCA tracks are damaged or broken.

b. Any component in the PCA is damaged or broken.

Corrective actions

1. Run subsystem diagnostic.
2. Replace the PCA. See Engine PCA on page 535.

Severity

SEVERE (non-continuable)

01.02.04:02

Internal Print Server message

Engine PCA #04 start-up fail.

Description

Engine PCA #04 does not start up properly (during power-on), or there is an error during start-up.

Causes in order of importance

a. The engine PCA #04 is missing.

b. The engine PCA #04 is not correctly installed.

c. The contact with formatter PCA (BUS PCI express) fails.

d. The engine PCA #04 is damaged and is not performing correctly.

Corrective actions

1. Check for PCA presence in proper slot.
2. Visual check for proper assembly of the PCA.
3. Physical check of the PCA assembly (push).
4. Run subsystem diagnostic.
5. If the problem persists, replace the PCA. See Engine PCA on page 535.
6. If the problem still persists, call support.

Severity

SEVERE (non-continuable)

01.02.04:76

Internal Print Server message

Engine PCA #04 memory check fail.

Description

Check (through R/W commands) the data lines and address lines to detect physical tracks' errors.

Causes in order of importance

a. PCA tracks are damaged or broken.

b. Any component in the PCA is damaged or broken.

Corrective actions

1. Run subsystem diagnostic.
2. Replace the PCA. See Engine PCA on page 535.

Severity

SEVERE (non-continuable)

01.06.01:04

Internal Print Server message

Engine adaptor PCA #01 to engine PCA communication fail.

Description

There is a communication error between the engine adaptor PCA #01 and the engine PCA #01.

Causes in order of importance

a. The flat cable between engine adaptor PCA and engine PCA is missing or not connected.

b. The connection of the flat cable fails (not connected properly).

c. The engine adaptor PCA supply cable is not connected (engine adaptor PCA not powered).

d. Any fuses of the engine adaptor PCA are blown.

Corrective actions

1. Visual check of the flat cable between the engine adaptor PCA and engine PCA (both ends).
2. Physical check of the flat cable (push both ends).
3. Visual check of the voltage LEDs on the engine adaptor PCA; if they do not illuminate, check the supply cable and PCA fuses.
4. If the problem persists, replace the engine adaptor PCA. See Engine adaptor PCA on page 539.
5. If the problem still persists, call support.

Severity

SEVERE (non-continuable)

01.06.01:09

Internal Print Server message

Engine adaptor PCA #01 to e-box interconnect PCA connection fail.

Description

There is an error in the assembly (connection) of the slot in the engine adaptor PCA #01 and e-box interconnect PCA.

Causes in order of importance

a. The engine adaptor PCA is not properly connected to the e-box interconnect PCA.

b. There is a pin broken in the e-box interconnect PCA connector.

c. The engine adaptor PCA is damaged.

d. The e-box interconnect PCA is damaged.

Corrective actions

1. Visual check of the connection between engine adaptor PCA and e-box interconnect PCA.
2. Physical check of the connection between engine adaptor PCA and e-box interconnect PCA.
3. Replace the engine adaptor PCA. See Engine adaptor PCA on page 539.
4. Replace the e-box interconnect PCA. See E-box interconnect PCA on page 541.
5. If the problem persists, call support.

Severity

SEVERE (non-continuable)

01.06.01:10

Internal Print Server message

Engine adaptor PCA #01 supply voltages out of range.

Description

The voltmeters in the engine adaptor PCA #01 sensed a voltage source (24V, 12V, 5V, or 3V3) out of its valid range.

Causes in order of importance

a. Any of the fuses of the engine adaptor PCA are blown.

b. The engine adaptor PCA is damaged or broken.

c. There is a short-circuit or an overcurrent consumption in at least one voltage source.

Corrective actions

1. Check the engine adaptor PCA fuses.
2. Check the overcurrent LEDs on the side of the engine adaptor PCA (it must be off).
3. Replace the engine adaptor PCA. See Engine adaptor PCA on page 539.
4. If the problem persists, call support.

Severity

SEVERE (non-continuable)

01.06.02:04

Internal Print Server message

Engine adaptor PCA #02 to engine PCA communication fail.

Description

There is a communication error between the engine adaptor PCA #02 and the engine PCA #02.

Causes in order of importance

a. The flat cable between engine adaptor PCA and engine PCA is missing or not connected.
b. The connection of the flat cable fails (not connected properly).
c. The engine adaptor PCA supply cable is not connected (engine adaptor PCA not powered).
d. Any fuses of the engine adaptor PCA are blown.

Corrective actions

1. Visual check of the flat cable between the engine adaptor PCA and engine PCA (both ends).
2. Physical check of the flat cable (push both ends).
3. Visual check of the voltage LEDs in engine adaptor PCA; if they do not illuminate, check the supply cable and PCA fuses.
4. If the problem persists, replace the engine adaptor PCA. See Engine adaptor PCA on page 539.
5. If the problem still persists, call support.

Severity

SEVERE (non-continuable)

01.06.02:09

Internal Print Server message

Engine adaptor PCA #02 to e-box interconnect PCA connection fail.

Description

There is an error in the assembly (connection) of the slot in the engine adaptor PCA #02 and e-box interconnect PCA.

Causes in order of importance

a. The engine adaptor PCA is not properly connected to the e-box interconnect PCA.

b. There is a pin broken in the e-box interconnect PCA connector.

c. The engine adaptor PCA is damaged.

d. The e-box interconnect PCA is damaged.

Corrective actions

1. Visual check of the connection between engine adaptor PCA and e-box interconnect PCA.
2. Physical check of the connection between engine adaptor PCA and e-box interconnect PCA.
3. Replace the engine adaptor PCA. See Engine adaptor PCA on page 539.
4. Replace the e-box interconnect PCA. See E-box interconnect PCA on page 541.

Severity

SEVERE (non-continuable)

01.06.02:10

Internal Print Server message

Engine adaptor PCA #02 supply voltages out of range.

Description

The voltmeters in the engine adaptor PCA #02 sensed a voltage source (24V, 12V, 5V, or 3V3) out of its valid range.

Causes in order of importance

a. Any of the fuses of the engine adaptor PCA are blown.

b. The engine adaptor PCA is damaged or broken.

c. There is a short-circuit or an overcurrent consumption in at least one voltage source.

Corrective actions

1. Check the engine adaptor PCA fuses.
2. Check the overcurrent LEDs on the side of the engine adaptor PCA (it must be off).
3. Replace the engine adaptor PCA. See Engine adaptor PCA on page 539.
4. If the problem persists, call support.

Severity

SEVERE (non-continuable)

01.06.03:04

Internal Print Server message

Engine adaptor PCA #03 to engine PCA communication fail.

Description

There is a communication error between the engine adaptor PCA #03 and engine PCA #03.

Causes in order of importance

a. The flat cable between the engine adaptor PCA and engine PCA is missing or not connected.

b. The connection of the flat cable fails (not connected properly).

c. The engine adaptor PCA supply cable is not connected (engine adaptor PCA not supplied).

d. Any fuses of the engine adaptor PCA are blown.

Corrective actions

1. Visual check of the flat cable between the engine adaptor PCA and engine PCA (both ends).
2. Physical check of the flat cable (push both ends).
3. Visual check of the voltage LEDs in the engine adaptor PCA; if they do not illuminate, check the supply cable and PCA fuses.
4. If problem persists, replace the engine adaptor PCA. See Engine adaptor PCA on page 539.
5. If the problem still persists, call support.

Severity

SEVERE (non-continuable)

01.06.03:09

Internal Print Server message

Engine adaptor PCA #03 to e-box interconnect PCA connection fail.

Description

There is an error in the assembly (connection) of the slot in the engine adaptor PCA #03 and the e-box interconnect PCA.

Causes in order of importance

a. The engine adaptor PCA is not properly connected to the e-box interconnect PCA.

b. There is a pin broken in the e-box interconnect PCA connector.

c. The engine adaptor PCA is damaged.

d. The e-box interconnect PCA is damaged.

Corrective actions

1. Visual check of the connection between engine adaptor PCA and e-box interconnect PCA.
2. Physical check of the connection between engine adaptor PCA and e-box interconnect PCA.
3. Replace the engine adaptor PCA. See Engine adaptor PCA on page 539.
4. Replace the e-box interconnect PCA. See E-box interconnect PCA on page 541.
5. If the problem persists, call support.

Severity

SEVERE (non-continuable)

01.06.03:10

Internal Print Server message

Engine adaptor #03 supply voltages are out of range.

Description

The voltmeters in the engine adaptor PCA #03 sensed a voltage source (24V, 12V, 5V, or 3V3) out of its valid range.

Causes in order of importance

a. Any of the fuses of the engine adaptor PCA are blown.

b. The engine adaptor PCA is damaged or broken.

c. There is a short-circuit or an overcurrent consumption in at least one voltage source.

Corrective actions

1. Check the engine adaptor PCA fuses.
2. Check the overcurrent LEDs on the side of engine adaptor PCA (it must be off).
3. Replace the engine adaptor PCA. See Engine adaptor PCA on page 539.
4. If the problem persists, call support.

Severity

SEVERE (non-continuable)

01.06.04:04

Internal Print Server message

Engine adaptor PCA #04 to engine PCA communication fail.

Description

There is a communication error between the engine adaptor PCA #04 and engine PCA #04.

Causes in order of importance

a. The flat cable between the engine adaptor PCA and engine PCA is missing or not connected.

b. The connection of the flat cable fails (not connected properly).

c. The engine adaptor PCA supply cable is not connected (engine adaptor PCA not powered).

d. Any fuses of the engine adaptor PCA are blown.

Corrective actions

1. Visual check of the flat cable between the engine adaptor PCA and engine PCA (both ends).
2. Physical check of the flat cable (push both ends).
3. Visual check of the voltage LEDs in the engine adaptor PCA; if they do not illuminate, then check the supply cable and PCA fuses.
4. If the problem persists, replace the engine adaptor PCA. See Engine adaptor PCA on page 539.
5. If the problem still persists, call support.

Severity

SEVERE (non-continuable)

01.06.04:09

Internal Print Server message

Engine adaptor PCA #04 to e-box interconnect PCA connection fail.

Description

ELA #04 to PPA connection fail: there is an error in the assembly (connection) of the slot in the engine adaptor PCA #04 and the e-box interconnect PCA.

Causes in order of importance

a. The engine adaptor PCA is not properly connected to the e-box interconnect PCA.

b. There is a pin broken in the e-box interconnect PCA connector.

c. The engine adaptor PCA PCA is damaged.

d. The e-box interconnect PCA is damaged.

Corrective actions

1. Visual check of the connection between engine adaptor PCA and e-box interconnect PCA.
2. Physical check of the connection between engine adaptor PCA and e-box interconnect PCA.
3. Replace the engine adaptor PCA. See Engine adaptor PCA on page 539.
4. Replace the e-box interconnect PCA. See E-box interconnect PCA on page 541.

Severity

SEVERE (non-continuable)

01.06.04:10

Internal Print Server message

Engine adaptor PCA #04 supply voltages are out of range.

Description

The voltmeters in the engine adaptor PCA #04 sensed a voltage source (24V, 12V, 5V, or 3V3) out of its valid range.

Causes in order of importance

a. Any of the fuses of the engine adaptor PCA are blown.
b. The engine adaptor PCA is damaged or broken.
c. There is a short-circuit or an overcurrent consumption in at least one voltage source.

Corrective actions

1. Check the engine adaptor PCA fuses.
2. Check the overcurrent LEDs on the side of the engine adaptor PCA (it must be off).
3. Replace the engine adaptor PCA. See Engine adaptor PCA on page 539.
4. If the problem persists call support.

Severity

SEVERE (non-continuable)

01.50.00:20

Internal Print Server message

E-box temp being high.

Description

The temperature measured inside the e-box enclosure is being suspiciously high.

Causes in order of importance

a. The e-box fan does not spin.

b. The e-box air filter is dirty and does not allow air-exchange with the outside atmosphere.

c. Ambient temperature around the printer is too high.

d. There is an outer element which increases the temperature of the e-box.

Corrective actions

None mandatory, only a warning.

Severity

Advisory (continuable)

01.50.00:21

Internal Print Server message

E-box temp too high.

Description

The temperature measured inside the e-box enclosure is above the upper limit allowable

Causes in order of importance

a. The e-box fan does not spin.

b. The e-box air filter is dirty and does not allow the air exchange with the outside atmosphere.

c. The ambient temperature around the printer is too high.

d. There is an outer element which increases the temperature of the e-box.

Corrective actions

1. Check for the proper ambient temperature near the printer and e-box.
2. Check for cleanliness of the air filter and replace it if applicable.
3. Check for the proper working of both fans (CPU fan and e-box fan).
4. If the problem persists, call support.

Severity

Advisory (continuable)

01.51.00:01

Internal Print Server message

E-box fan does not spin.

Description

The fan located in the e-box enclosure (door's cover) does not spin.

Causes in order of importance

a. The fan is broken.

b. The wire of the fan is disconnected from the formatter PCA.

c. The fan is not powered (red wire).

d. The fan does not properly receive the PWM signal (yellow wire).

Corrective actions

1. Check for proper fan wire connection to Formatter PCA (SYSFAN1 connector).
2. Check, with multimeter, for supply voltage presence in pin 2 (12V) on SYSFAN1 connector in Formatter PCA.
3. Check, with multimeter, for PWM signal presence in pin 3 (between 1V and 3V) on SYSFAN1 connector in Formatter PCA.
4. If there isn’t any of the above; replace the fan.

Severity

Advisory (continuable)

01.60.00:01

Internal Print Server message

Printer hard disk data crash.

Description

Files found in the hard disk are corrupted

Causes in order of importance

a. An unexpected shutdown of the printer corrupted the data on the hard disk.

b. The hard disk is broken or does not perform properly.

Corrective actions

1. Restart the printer.
2. Run diagnostics.

3. If the problem persists, replace the hard disk. See E-box hard disk drive on page 526.
4. If the problem still persists, call support.

Severity

Advisory (continuable)

01.60.00:03

Internal Print Server message

NVM check doesn't match. Call support.

Description

The printer has encountered an error while accessing/writing values to the NVM.

Causes in order of importance

a. Sporadic error
b. Firmware error
c. Hard disk data corrupted

Corrective actions

1. Turn off the printer, wait a few seconds, then turn it on again.
2. If the problem persists, reinstall the firmware.
3. If the problem persists, replace the printer's hard disk drive. See E-box hard disk drive on page 526.

Severity

SEVERE (non-continuable)

01.60.00:75

Internal Print Server message

No free space left in printer hard disk.

Description

There is no space left in the internal hard disk; for some reason the hard disk does not clean the temporal data.

Causes in order of importance

a. The hard disk does not perform properly.
b. Firmware error or bug.

Corrective actions

1. Run diagnostics.
2. If the problem persists, call support.

Severity

Advisory (continuable)

01.60.01:03

Internal Print Server message

NVM default values.

Description

The data written in the hard disk does not match with the data found in IDS (EE-PROM) or both are empty.

Causes in order of importance

Both hard disk and IDS replaced at the same time (and both memories were empty).

Corrective actions

Call support.

Severity

SEVERE (non-continuable)

01.60.02:03

Internal Print Server message

Part number mismatch.

Description

Part number of the hard disk does not match the proper part number required by the printer (wrong part).

Causes in order of importance

The printer was assembled with the wrong hard disk.

Corrective actions

Call support.

Severity

SEVERE (non-continuable)

01.60.03:03

Internal Print Server message

Serial number mismatch.

Description

The serial number of the hard disk is not correct.

Causes in order of importance

The printer was assembled with the wrong hard disk.

Corrective actions

Call support.

Severity

SEVERE (non-continuable)

10. E-cabinet error codes

10.01.01:01

Internal Print Server message

Contactor K1 does not switch state

Description

The contactor K-1 is closed when it should be open, or open when it should be closed.

Causes in order of importance

a. Contactor fault

b. Feedback cable fault (from K-1 contacts 33/34 to e-cabinet PCA contact connector)

c. E-cabinet PCA fault

Corrective actions

1. Restart the printer. If the problem does not repeat, it is probably a firmware glitch.
2. If the problem persists, check that the cable from the 33/34 contacts of K-1 to the e-cabinet PCA is not damaged. If it is damaged, replace the cable. This affects the other contactors as there is only one feedback cable for all of them.
3. If the problem persists, replace the K-1 contactor.
4. If the problem still persists, replace the e-cabinet PCA. See E-cabinet PCA on page 552.

Severity

SEVERE (non-continuable)

10.01.02:01

Internal Print Server message

Contactor K2 does not switch state

Description

The contactor K-2 is closed when it should be open, or open when it should be closed.

Causes in order of importance

a. Contactor fault

b. Feedback cable fault (from K-2 contacts 33/34 to e-cabinet PCA contact connector)

c. E-cabinet PCA fault

Corrective actions

1. Restart the printer. If the problem does not repeat, it is probably a firmware glitch.
2. If the problem persists, check that the cable from the 33/34 contacts of K-2 to the e-cabinet PCA is not damaged. If it is damaged, replace the cable. This affects the other contactors as there is only one feedback cable for all of them.
3. If the problem persists, replace the K-2 contactor.
4. If the problem still persists, replace the e-cabinet PCA. See E-cabinet PCA on page 552.

Severity

SEVERE (non-continuable)

10.01.03:01

Internal Print Server message

Contactor K3 does not switch state

Description

The contactor K-3 is closed when it should be open, or open when it should be closed.

Causes in order of importance

a. Contactor fault

b. Feedback cable fault (from K-3 contacts 33/34 to e-cabinet PCA contact connector)

c. E-cabinet PCA fault

Corrective actions

1. Restart the printer. If the problem does not repeat, it is probably a firmware glitch.
2. If the problem persists, check that the cable from the 33/34 contacts of K-3 to the e-cabinet PCA is not damaged. If it is damaged, replace the cable. This affects the other contactors as there is only one feedback cable for all of them.
3. If the problem persists, replace the K-3 contactor.
4. If the problem persists, replace the e-cabinet PCA. See E-cabinet PCA on page 552.

Severity

SEVERE (non-continuable)

10.01.04:01

Internal Print Server message

Contactor K4 does not switch state

Description

The contactor K-4 is closed when it should be open, or open when it should be closed.

Causes in order of importance

a. Contactor fault
b. Feedback cable fault (from K-4 contacts 33/34 to e-cabinet PCA contact connector)
c. E-cabinet PCA fault

Corrective actions

1. Restart the printer. If the problem does not repeat, it is probably a firmware glitch.
2. If the problem persists, check that the cable from the 33/34 contacts of K-4 to the e-cabinet PCA is not damaged. If it is damaged, replace the cable. This affects the other contactors as there is only one feedback cable for all of them.
3. If the problem persists, replace the K-4 contactor.
4. If the problem persists, replace the e-cabinet PCA. See E-cabinet PCA on page 552.

Severity

SEVERE (non-continuable)

10.02.00:01

Internal Print Server message

E-cabinet PCA malfunction. Run subsystem diagnostic. If the problem persists, call support representative.

Description

A malfunction on the e-cabinet PCA has been detected.

Causes in order of importance

SMT fuse blown, component failure

Corrective actions

1. Run subsystem diagnostic.
2. Replace the e-cabinet PCA. See E-cabinet PCA on page 552.
3. If the problem persists, call support.

Severity

SEVERE (non-continuable)

10.02.00:03

Internal Print Server message

E-cabinet PCA not supported version

Description

PCA wrong version

Causes in order of importance

a. Wrong version of the PCA installed
b. PCA malfunction

Corrective actions

1. Run subsystem diagnostic.
2. Replace the PCA with the appropriate revision. See E-cabinet PCA on page 552.
3. If the problem persists, call support.

Severity

SEVERE (non-continuable)

10.02.00:04

Internal Print Server message

E-cabinet to e-box communication failure

Description

I2C communication malfunction. The e-box cannot communicate with the e-cabinet.

Causes in order of importance

a. Communication cable not connected or misconnected

b. PSU-2 not working

c. PCA malfunction

Corrective actions

1. Run subsystem diagnostic.
2. Find the root cause and correct it.
3. If the problem persists, call support.

Severity

SEVERE (non-continuable)

10.02.00:11

Internal Print Server message

E-cabinet PCA 5V to ground voltage out of range

Description

E-cabinet PCA 5V to ground voltage is out of range.

Causes in order of importance

E-cabinet PCA malfunction

Corrective actions

1. Run subsystem diagnostic.
2. Replace the e-cabinet PCA. See E-cabinet PCA on page 552.
3. If the problem persists, call support.

Severity

SEVERE (non-continuable)

10.02.00:13

Internal Print Server message

E-cabinet PCA 8V to ground voltage out of range

Description

E-cabinet PCA 8V to ground voltage out of range.

Causes in order of importance

E-cabinet PCA malfunction

Corrective actions

1. Run subsystem diagnostic.
2. Replace the e-cabinet PCA. See E-cabinet PCA on page 552.
3. If the problem persists, call support.

Severity

SEVERE (non-continuable)

10.02.00:15

Internal Print Server message

E-cabinet PCA replaceable fuse blown

Description

The glass fuse on the inner face of the e-cabinet PCA (F24) has blown.

Causes in order of importance

a. Fuse blown
b. PCA fault

Corrective actions

1. Replace the fuse.
2. If the problem persists, check for short-circuits:
   a. Safety circuit (Safety Engine Adaptor PCA, contactors, e-stops, Interlocks, and all associated cabling).
   b. E-cabinet fan and cabling.
   c. Rearm button light and cabling.

Severity

SEVERE (non-continuable)

10.02.00:20

Internal Print Server message

E-cabinet temperature outside normal range

Description

The ambient temperature is too high in the e-cabinet.

Causes in order of importance

a. Room temperature too high

b. Fan failure

c. Ventilation grille filter clogged

d. Ventilation grille blocked by an external factor

Corrective actions

None mandatory, warning only.

Severity

Warning only—continuable

10.02.00:21

Internal Print Server message

E-cabinet temperature outside safe range

Description

Ambient temperature too high in the e-cabinet.

Causes in order of importance

a. Room temperature too high

b. Fan failure

c. Ventilation grille filter clogged

d. Ventilation grille blocked by an external factor

Corrective actions

1. Wait for cool-down.
2. Check the ventilation and room temperature.
3. Run subsystem diagnostic.
4. If the problem persists, call support.

Severity

SEVERE (non-continuable)

10.02.00:41

Internal Print Server message

E-cabinet PCA overcurrent

Description

The overcurrent protection for the actuators powered by the e-cabinet PCA has been triggered.

Causes in order of importance

a. Fault in a 24 V component external to the PCA

b. PCA fault

Corrective actions

1. Inspect the safety circuit: safety engine adaptor PCA, contactors, e-stops, interlocks, and all associated cabling.
2. Inspect e-cabinet fan and cabling.
3. Rearm button light and cabling.

Severity

SEVERE (non-continuable)

10.03.01:01

Internal Print Server message

E-cabinet PSU-1 no voltage or alarm signal asserted

Description

PSU-1 not supplying voltage, or alarm signal is activated.

Causes in order of importance

a. PSU-1 not receiving AC voltage

b. PSU-1 DC output cable disconnected

c. PSU-1 in fault mode (overcurrent, overvoltage, overtemperature)

d. PSU-1 end of life

e. PCA malfunction

Corrective actions

1. Check ACB-7.
2. Run subsystem diagnostic.
3. Reboot the printer.
4. Check that the PSU-1 feedback LED is lit.
5. If the LED is lit, check the DC output cable and the PCA.
6. If the PSU-1 is still not working replace the PSU-1. See E-cabinet PSUs 1 to 4 on page 555.
7. If the problem persists, call support.

Severity

SEVERE (non-continuable)

10.03.01:18

Internal Print Server message

E-cabinet PSU-1 voltage too high

Description

PSU–1 voltage too high.

Causes in order of importance

a. PSU-1 voltage too high
b. PCA malfunction

Corrective actions

1. Reboot the printer.
2. Run the subsystem diagnostic.
3. If the problem persists:
   a. Disconnect the DC output cable from the PCA.
   b. Measure the PSU-1 output voltage with a voltage meter.
   c. If lower than 42V +10%, it is likely a PCA malfunction.
   d. Otherwise adjust the PSU-1 output voltage through its adjustment potentiometer with the help of a voltage meter. Voltage must be within 42V +/- 5%.
   e. If the PSU-1 cannot be adjusted, replace the PSU. See E-cabinet PSUs 1 to 4 on page 555.

Severity

SEVERE (non-continuable)

10.03.01:19

Internal Print Server message

E-cabinet PSU-1 voltage too low

Description

PSU–1 voltage too low.

Causes in order of importance

a. PSU-1 voltage too low

b. PCA malfunction

Corrective actions

1. Reboot the printer.
2. Run the subsystem diagnostic.
3. If the problem persists:
   a. Disconnect the DC output cable from the PCA.
   b. Measure the PSU-1 output voltage with a voltage meter.
   c. If higher than 42V +10%, it is likely a PCA malfunction.
   d. Otherwise adjust the PSU-1 output voltage through its adjustment potentiometer with the help of a voltage meter. Voltage must be within 42V +/- 5%.
   e. If the PSU-1 cannot be adjusted, replace the PSU. See E-cabinet PSUs 1 to 4 on page 555.

Severity

SEVERE (non-continuable)

10.03.02:01

Internal Print Server message

E-cabinet PSU-2 no voltage or alarm signal asserted

Description

PSU-2 not supplying voltage, or alarm signal is activated.

Causes in order of importance

a. PSU-2 not receiving AC voltage

b. PSU-2 DC output cable disconnected

c. PSU-2 in fault mode (overcurrent, overvoltage, overtemperature)

d. PSU-2 end of life

e. PCA malfunction

Corrective actions

1. Check ACB-6.
2. Run subsystem diagnostic.
3. Reboot the printer.
4. Check that the PSU-2 feedback LED is lit.
5. If the LED is lit, check the DC output cable and the PCA.
6. If the PSU-2 is still not working replace the PSU-2. See E-cabinet PSUs 1 to 4 on page 555.
7. If the problem persists, call support.

Severity

SEVERE (non-continuable)

10.03.02:10

Description

PSU_2 ground to earth voltage out of range. Run subsystem diagnostic. If the problem persists, call support.

Causes in order of importance

The subsystem powered by this PSU may be not properly earthed.

Corrective actions

Check powered subsystem earthing.

Severity

Silent

10.03.02:18

Internal Print Server message

E-cabinet PSU-2 voltage too high

Description

PSU_2 voltage too high.

Causes in order of importance

a. PSU-2 voltage too high
b. PCA malfunction

Corrective actions

1. Reboot the printer.
2. Run the subsystem diagnostic.
3. If the problem persists:
   a. Disconnect the DC output cable from the PCA.
   b. Measure the PSU-2 output voltage with a voltage meter.
   c. If lower than 24V +10%, it is likely a PCA malfunction.
   d. Otherwise adjust the PSU-1 output voltage through its adjustment potentiometer with the help of a voltage meter. Voltage must be within 24V +/- 5%.
   e. If the PSU-2 cannot be adjusted, replace the PSU. See E-cabinet PSUs 1 to 4 on page 555.

Severity

SEVERE (non-continuable)

10.03.02:19

Internal Print Server message

E-cabinet PSU-2 voltage too low

Description

The PSU-2 voltage is too low.

Causes in order of importance

a. PSU-2 voltage too low
b. PCA malfunction

Corrective actions

1. Reboot the printer.
2. Run the subsystem diagnostic.
3. If the problem persists:
   a. Disconnect the DC output cable from the PCA.
   b. Measure the PSU-2 output voltage with a voltage meter.
   c. If higher than 24V +10%, it is likely a PCA malfunction.
   d. Otherwise adjust the PSU-2 output voltage through its adjustment potentiometer with the help of a voltage meter. Voltage must be within 24V +/- 5%.
   e. If the PSU-2 cannot be adjusted, replace the PSU. See E-cabinet PSUs 1 to 4 on page 555.

Severity

SEVERE (non-continuable)

10.03.03:01

Internal Print Server message

E-cabinet PSU-3 no voltage or alarm signal asserted

Description

PSU-3 not supplying voltage, or alarm signal is activated.

Causes in order of importance

a. PSU-3 not receiving AC voltage

b. PSU-3 DC output cable disconnected

c. PSU-3 in fault mode (overcurrent, overvoltage, overtemperature)

d. PSU-3 end of life

e. PCA malfunction

Corrective actions

1. Check ACB-7.
2. Run subsystem diagnostic.
3. Reboot the printer.
4. Check that the PSU-3 feedback LED is lit.
5. If the LED is lit, check the DC output cable and the PCA.
6. If the PSU-3 is still not working, replace the PSU-3. See E-cabinet PSUs 1 to 4 on page 555.
7. If the problem persists, call support.

Severity

SEVERE (non-continuable)

10.03.03:10

Description

PSU_3 ground to earth voltage out of range. Run subsystem diagnostic. If the problem persists, call support.

Causes in order of importance

The subsystem powered by this PSU may be not properly earthed.

Corrective actions

Check powered subsystem earthing.

Severity

Silent

10.03.03:18

Internal Print Server message

E-cabinet PSU-3 voltage too high

Description

The PSU-3 voltage is too high.

Causes in order of importance

a. PSU-3 voltage too high

b. PCA malfunction

Corrective actions

1. Reboot the printer.
2. Run the subsystem diagnostic.
3. If the problem persists:
   a. Disconnect the DC output cable from the PCA.
   b. Measure the PSU-3 output voltage with a voltage meter.
   c. If lower than 32V +10%, it is likely a PCA malfunction.
   d. Otherwise adjust the PSU-1 output voltage through its adjustment potentiometer with the help of a voltage meter. Voltage must be within 32V +/- 5%.
   e. If the PSU-3 cannot be adjusted, replace the PSU. See E-cabinet PSUs 1 to 4 on page 555.

Severity

SEVERE (non-continuable)

10.03.03:19

Internal Print Server message

E-cabinet PSU-3 voltage too low

Description

The PSU-3 voltage is too low.

Causes in order of importance

a. PSU-3 voltage too low

b. PCA malfunction

Corrective actions

1. Reboot the printer.
2. Run the subsystem diagnostic.
3. If the problem persists:
   a. Disconnect the DC output cable from the PCA.
   b. Measure the PSU-3 output voltage with a voltage meter.
   c. If higher than 32V +10%, it is likely a PCA malfunction.
   d. Otherwise adjust the PSU-3 output voltage through its adjustment potentiometer with the help of a voltage meter. Voltage must be within 32V +/- 5%.
   e. If the PSU-3 cannot be adjusted, replace the PSU. See E-cabinet PSUs 1 to 4 on page 555.

Severity

SEVERE (non-continuable)

10.03.04:01

Internal Print Server message

E-cabinet PSU-4 no voltage or alarm signal asserted

Description

The PSU-4 is not supplying voltage, or an alarm signal is activated.

Causes in order of importance

a. PSU-4 not receiving AC voltage

b. PSU-4 DC output cable disconnected

c. PSU-4 in fault mode (overcurrent, overvoltage, overtemperature)

d. PSU-4 end of life

e. PCA malfunction

Corrective actions

1. Check ACB-7.
2. Run subsystem diagnostic.
3. Reboot the printer.
4. Check that the PSU-4 feedback LED is lit.

5. If the LED is lit, check the DC output cable and the PCA.
6. If the PSU-4 is still not working replace the PSU-4. See E-cabinet PSUs 1 to 4 on page 555.
7. If the problem persists, call support.

Severity

SEVERE (non-continuable)

10.03.04:10

Description

PSU_4 ground to earth voltage out of range. Run subsystem diagnostic. If the problem persists, call support.

Causes in order of importance

The subsystem powered by this PSU may be not properly earthed.

Corrective actions

Check powered subsystem earthing.

Severity

Silent

10.03.04:18

Internal Print Server message

E-cabinet PSU-4 voltage too high

Description

The PSU-4 voltage is too high.

Causes in order of importance

a. PSU-4 voltage too high
b. PCA malfunction

Corrective actions

1. Reboot the printer.
2. Run the subsystem diagnostic.
3. If the problem persists:
   a. Disconnect the DC output cable from the PCA.
   b. Measure the PSU-4 output voltage with a voltage meter.

c. If lower than 13 V +10%, it is likely a PCA malfunction.

d. Otherwise adjust the PSU-1 output voltage through its adjustment potentiometer with the help of a voltage meter. Voltage must be within 13 V ±5%.

e. If the PSU-4 cannot be adjusted, replace the PSU. See E-cabinet PSUs 1 to 4 on page 555.

Severity

SEVERE (non-continuable)

10.03.04:19

Internal Print Server message

E-cabinet PSU-4 voltage too low

Description

The PSU-4 voltage is too low.

Causes in order of importance

a. PSU-4 voltage too low

b. PCA malfunction

Corrective actions

1. Reboot the printer.
2. Run the subsystem diagnostic.
3. If the problem persists:

   a. Disconnect the DC output cable from the PCA.

   b. Measure the PSU-4 output voltage with a voltage meter.

   c. If higher than 13V +10%, it is likely a PCA malfunction.

   d. Otherwise adjust the PSU-4 output voltage through its adjustment potentiometer with the help of a voltage meter. Voltage must be within 13V +/- 5%.

   e. If the PSU-4 cannot be adjusted, replace the PSU. See E-cabinet PSUs 1 to 4 on page 555.

Severity

SEVERE (non-continuable)

10.03.05:01

Internal Print Server message

E-cabinet PSU-5 no voltage or alarm signal asserted

Description

The PSU-5 is not supplying voltage, or an alarm signal is activated.

Causes in order of importance

a. PSU-5 not receiving AC voltage

b. PSU-5 DC output cable disconnected

c. PSU-5 in fault mode (overcurrent, overvoltage, overtemperature)

d. PSU-5 end of life

e. PCA malfunction

Corrective actions

1. Check ACB-6.
2. Run subsystem diagnostic.
3. Reboot the printer.
4. Check that the PSU-5 feedback LED is lit.
5. If the LED is lit, check the DC output cable and the PCA.
6. If the PSU-5 is still not working, replace the PSU-5. See E-cabinet PSUs 5 to 7 on page 563.
7. If the problem persists, call support.

Severity

SEVERE (non-continuable)

10.03.05:10

Description

PSU-5 ground to earth voltage out of range. Run subsystem diagnostic. If the problem persists, call support.

Causes in order of importance

The subsystem powered by this PSU may be not properly earthed.

NOTE: In the case of this PSU, this error may appear as scan-axis motor braking, but it doesn't mean that the scan-axis motor is faulty.

Corrective actions

Check powered subsystem earthing.

Severity

Silent

10.03.05:18

Internal Print Server message

E-cabinet PSU-5 voltage too high

Description

The PSU-5 voltage is too high.

Causes in order of importance

a. PSU-5 voltage too high

b. PCA malfunction

Corrective actions

1. Reboot the printer.
2. Run the subsystem diagnostic.
3. If the problem persists:
   a. Disconnect the DC output cable from the PCA.
   b. Measure the PSU-5 output voltage with a voltage meter.
   c. If lower than 42V +10%, it is likely a PCA malfunction.
   d. Otherwise adjust the PSU-5 output voltage through its adjustment potentiometer with the help of a voltage meter. Voltage must be within 42V +/- 5%.
   e. If the PSU-5 cannot be adjusted, replace the PSU. See E-cabinet PSUs 5 to 7 on page 563.

Severity

SEVERE (non-continuable)

10.03.05:19

Internal Print Server message

E-cabinet PSU-5 voltage too low

Description

The PSU-5 voltage is too low.

Causes in order of importance

a. PSU-5 voltage too low

b. PCA malfunction

Corrective actions

1. Reboot the printer.
2. Run the subsystem diagnostic.
3. If the problem persists:
   a. Disconnect the DC output cable from the PCA.
   b. Measure the PSU-5 output voltage with a voltage meter.
   c. If higher than 42V +10%, it is likely a PCA malfunction.
   d. Otherwise adjust the PSU-5 output voltage through its adjustment potentiometer with the help of a voltage meter. Voltage must be within 42V +/- 5%.
   e. If the PSU-5 cannot be adjusted, replace the PSU. See E-cabinet PSUs 5 to 7 on page 563.

Severity

SEVERE (non-continuable)

10.03.06:01

Internal Print Server message

E-cabinet PSU-6 no voltage or alarm signal asserted

Description

The PSU-6 is not supplying voltage, or an alarm signal is activated.

Causes in order of importance

a. PSU-6 not receiving AC voltage
b. PSU-6 DC output cable disconnected
c. PSU-6 in fault mode (overcurrent, overvoltage, overtemperature)
d. PSU-6 end of life
e. PCA malfunction

Corrective actions

1. Check ACB-6.
2. Run subsystem diagnostic.
3. Reboot the printer.
4. Check that the PSU-6 feedback LED is lit.
5. If the LED is lit, check the DC output cable and the PCA.
6. If the PSU-6 is still not working replace the PSU-6. See E-cabinet PSUs 5 to 7 on page 563.
7. If the problem persists, call support.

Severity

SEVERE (non-continuable)

10.03.06:10

Description

PSU_6 ground to earth voltage out of range. Run subsystem diagnostic. If the problem persists, call support.

Causes in order of importance

The subsystem powered by this PSU may be not properly earthed.

Corrective actions

Check powered subsystem earthing.

Severity

Silent

10.03.06:18

Internal Print Server message

E-cabinet PSU-6 voltage too high

Description

The PSU-6 voltage is too high.

Causes in order of importance

a. PSU-6 voltage too high

b. PCA malfunction

Corrective actions

1. Reboot the printer.
2. Run the subsystem diagnostic.
3. If the problem persists:
   a. Disconnect the DC output cable from the PCA.
   b. Measure the PSU-6 output voltage with a voltage meter.
   c. If lower than 24V +10%, it is likely a PCA malfunction.
   d. Otherwise adjust the PSU-6 output voltage through its adjustment potentiometer with the help of a voltage meter. Voltage must be within 24V +/- 5%.
   e. If the PSU-6 cannot be adjusted, replace the PSU. See E-cabinet PSUs 5 to 7 on page 563.

Severity

SEVERE (non-continuable)

10.03.06:19

Internal Print Server message

E-cabinet PSU-6 voltage too low

Description

The PSU-6 voltage is too low.

Causes in order of importance

a. PSU-6 voltage too low

b. PCA malfunction

Corrective actions

1. Reboot the printer.
2. Run the subsystem diagnostic.
3. If the problem persists:
   a. Disconnect the DC output cable from the PCA.
   b. Measure the PSU-6 output voltage with a voltage meter.
   c. If higher than 24V +10%, it is likely a PCA malfunction.
   d. Otherwise adjust the PSU-6 output voltage through its adjustment potentiometer with the help of a voltage meter. Voltage must be within 24V +/- 5%.
   e. If the PSU-6 cannot be adjusted, replace the PSU. See E-cabinet PSUs 5 to 7 on page 563.

Severity

SEVERE (non-continuable)

10.03.07:01

Internal Print Server message

E-cabinet PSU-7 no voltage or alarm signal asserted

Description

The PSU-7 is not supplying voltage, or an alarm signal is activated.

Causes in order of importance

a. PSU-7 not receiving AC voltage

b. PSU-7 DC output cable disconnected

c. PSU-7 in fault mode (overcurrent, overvoltage, overtemperature)

d. PSU-7 end of life

e. PCA malfunction

Corrective actions

1. Check ACB-7.
2. Run subsystem diagnostic.
3. Reboot the printer.
4. Check that the PSU-7 feedback LED is lit.
5. If the LED is lit, check the DC output cable and the PCA.
6. If the PSU-7 is still not working replace the PSU-7. See E-cabinet PSUs 5 to 7 on page 563.
7. If the problem persists, call support.

Severity

SEVERE (non-continuable)

10.03.07:10

Description

PSU-7 ground to earth voltage out of range. Run subsystem diagnostic. If the problem persists, call support.

Causes in order of importance

The subsystem powered by this PSU may be not properly earthed.

Corrective actions

Check powered subsystem earthing.

Severity

Silent

10.03.07:18

Internal Print Server message

E-cabinet PSU-7 voltage too high

Description

The PSU-7 voltage is too high.

Causes in order of importance

a. PSU-7 voltage too high

b. PCA malfunction

Corrective actions

1. Reboot the printer.
2. Run the subsystem diagnostic.
3. If the problem persists:
   a. Disconnect the DC output cable from the PCA.
   b. Measure the PSU-7 output voltage with a voltage meter.
   c. If lower than 24V +10%, it is likely a PCA malfunction.
   d. Otherwise adjust the PSU-7 output voltage through its adjustment potentiometer with the help of a voltage meter. Voltage must be within 24V +/- 5%.
   e. If the PSU-7 cannot be adjusted, replace the PSU. See E-cabinet PSUs 5 to 7 on page 563.

Severity

SEVERE (non-continuable)

10.03.07:19

Internal Print Server message

E-cabinet PSU-7 voltage too low

Description

The PSU-7 voltage is too low.

Causes in order of importance

a. PSU-7 voltage too low

b. PCA malfunction

Corrective actions

1. Reboot the printer.
2. Run the subsystem diagnostic.
3. If the problem persists:
   a. Disconnect the DC output cable from the PCA.
   b. Measure the PSU-7 output voltage with a voltage meter.

c. If higher than 24V +10%, it is likely a PCA malfunction.

d. Otherwise adjust the PSU-7 output voltage through its adjustment potentiometer with the help of a voltage meter. Voltage must be within 24V +/- 5%.

e. If the PSU-7 cannot be adjusted, replace the PSU. See E-cabinet PSUs 5 to 7 on page 563.

Severity

SEVERE (non-continuable)

10.04.11:15

Internal Print Server message

E-cabinet MO fuse blown

Description

The MO Motor 42V fuse has blown.

Causes in order of importance

MO Motor 42V fuse blown (F12)

Corrective actions

1. Run the subsystem diagnostic.
2. Shut down the machine (completely, main switch off).
3. Replace the fuse F12.
4. If the problem persists, call support.

Severity

Continuable (when in roll-to-floor mode this output is not used)

10.04.12:15

Internal Print Server message

E-cabinet MF fuse blown

Description

The MF Motor 42V fuse has blown.

Causes in order of importance

MF Motor 42V fuse blown (F11)

Corrective actions

1. Run the subsystem diagnostic.
2. Shut down the machine (completely, main switch off).
3. Replace the fuse F11.
4. If the problem persists, call support.

Severity

SEVERE (non-continuable)

10.04.13:15

Internal Print Server message

E-cabinet MI fuse blown

Description

The MI Motor 42V fuse has blown (F10).

Causes in order of importance

MI Motor 42V fuse blown (F10)

Corrective actions

1. Run the subsystem diagnostic.
2. Shut down the machine (completely, main switch off).
3. Replace the fuse F10.
4. If the problem persists, call support.

Severity

SEVERE (non-continuable)

10.04.14:15

Internal Print Server message

E-cabinet MA fuse blown

Description

The MA Motor 42V fuse has blown.

Causes in order of importance

MA Motor 42V fuse blown (F9)

Corrective actions

1. Run the subsystem diagnostic.
2. Shut down the machine (completely, main switch off).
3. Replace the fuse F9.
4. If the problem persists, call support.

Severity

SEVERE (non-continuable)

10.04.15:15

Internal Print Server message

E-cabinet 42V CARR fuse blown

Description

The carriage 42V CARR fuse has blown.

Causes in order of importance

Carriage 42V fuse blown (F8)

Corrective actions

1. Run the subsystem diagnostic.
2. Shut down the machine (completely, main switch off).
3. Replace the fuse F8.
4. If the problem persists, call support.

Severity

SEVERE (non-continuable)

10.04.21:15

Internal Print Server message

E-cabinet ISS fuse blown

Description

The ISS 24V fuse has blown.

Causes in order of importance

ISS 24V fuse blown (F19)

Corrective actions

1. Run the subsystem diagnostic.
2. Shut down the machine (completely, main switch off).
3. Replace the fuse F19.
4. If the problem persists, call support.

Severity

SEVERE (non-continuable)

10.04.22:15

Internal Print Server message

E-cabinet VAPOR fuse blown

Description

The vapor removal 24V fuse has blown.

Causes in order of importance

Vapor removal 24V fuse blown (F20)

Corrective actions

1. Run the subsystem diagnostic.
2. Shut down the machine (completely, main switch off).
3. Replace the fuse F20.
4. If the problem persists, call support.

Severity

SEVERE (non-continuable)

10.04.31:15

Internal Print Server message

E-cabinet PPS fuse blown

Description

The PPS 32V fuse has blown.

Causes in order of importance

PPS 32V fuse blown (F7)

Corrective actions

1. Run the subsystem diagnostic.
2. Shut down the machine (completely, main switch off).
3. Replace the fuse F7.
4. If the problem persists, call support.

Severity

SEVERE (non-continuable)

10.04.32:15

Internal Print Server message

E-cabinet WW fuse blown

Description

The printhead cleaning system 32V fuse has blown.

Causes in order of importance

Printhead cleaning system 32V fuse blown (F6)

Corrective actions

1. Run the subsystem diagnostic.
2. Shut down the machine (completely, main switch off).
3. Replace the fuse F6.
4. If the problem persists, call support.

Severity

SEVERE (non-continuable)

10.04.33:15

Internal Print Server message

E-cabinet SVS fuse blown

Description

The SVS 32V fuse has blown.

Causes in order of importance

SVS 32V fuse blown (F5)

Corrective actions

1. Run the subsystem diagnostic.
2. Shut down the machine (completely, main switch off).
3. Replace the fuse F5.
4. If the problem persists, call support.

Severity

SEVERE (non-continuable)

10.04.34:15

Internal Print Server message

E-cabinet TUR fuse blown

Description

The take-up reel PCA 32V fuse has blown.

Causes in order of importance

TUR PCA 32V fuse blown (F4)

Corrective actions

1. Run the subsystem diagnostic.
2. Shut down the machine (completely, main switch off).
3. Replace the fuse F4.
4. If the problem persists, call support.

Severity

SEVERE (non-continuable) (if the TUR is not in use this output is not needed)

10.04.35:15

Internal Print Server message

E-cabinet PSU-3-5 fuse blown

Description

The unused 32V fuse has blown.

Causes in order of importance

Unused 32V fuse blown (F3)

Corrective actions

1. Run the subsystem diagnostic.
2. Shut down the machine (completely, main switch off).
3. Replace the fuse F3.
4. If the problem persists, call support.

Severity

Continuable

10.04.41:15

Internal Print Server message

E-cabinet 12V CARR fuse blown

Description

The carriage 12V fuse has blown.

Causes in order of importance

Carriage 12V fuse blown (F2)

Corrective actions

1. Run the subsystem diagnostic.
2. Shut down the machine (completely, main switch off).
3. Replace the fuse F2.
4. If the problem persists, call support.

Severity

SEVERE (non-continuable)

10.04.42:15

Internal Print Server message

E-cabinet PSU-4-2 fuse blown

Description

The unused 12V fuse has blown.

Causes in order of importance

Unused 12V fuse blown (F1)

Corrective actions

1. Run the subsystem diagnostic.
2. Shut down the machine (completely, main switch off).
3. Replace the fuse F1.
4. If the problem persists, call support.

Severity

Continuable

10.04.51:15

Internal Print Server message

E-cabinet SAX fuse blown

Description

The SAX 42V fuse has blown.

Causes in order of importance

SAX 42V fuse blown (F13)

Corrective actions

1. Run the subsystem diagnostic.
2. Shut down the machine (completely, main switch off).
3. Replace the fuse F13.
4. If the problem persists, call support.

Severity

SEVERE (non-continuable)

10.04.52:15

Internal Print Server message

E-cabinet PSU-5-2 fuse blown

Description

The unused 42V fuse has blown.

Causes in order of importance

Unused 42V fuse blown (F14)

Corrective actions

1. Run the subsystem diagnostic.
2. Shut down the machine (completely, main switch off).
3. Replace the fuse F14.
4. If the problem persists, call support.

Severity

Continuable

10.04.61:15

Internal Print Server message

E-cabinet CURING-1 fuse blown

Description

The curing-1 24V fuse has blown.

Causes in order of importance

Curing-1 24V fuse blown (F18)

Corrective actions

1. Run the subsystem diagnostic.
2. Shut down the machine (completely, main switch off).
3. Replace the fuse F18.
4. If the problem persists, call support.

Severity

SEVERE (non-continuable)

10.04.62:15

Internal Print Server message

E-cabinet AC/AC converter 2 fuse blown. Run subsystem diagnostic. If problem persists, call your support representative.

Description

The DS-2 24V fuse has blown.

Causes in order of importance

DS-2 24V fuse blown (F17)

Corrective actions

1. Run the subsystem diagnostic.
2. Shut down the machine (completely, main switch off).
3. Replace the fuse F17.
4. If the problem persists, call support.

Severity

SEVERE (non-continuable)

10.04.71:15

Internal Print Server message

E-cabinet CURING-2 fuse blown

Description

The curing-2 24V fuse has blown.

Causes in order of importance

Curing-2 24V fuse blown (F16)

Corrective actions

1. Run the subsystem diagnostic.
2. Shut down the machine (completely, main switch off).
3. Replace the fuse F16.
4. If the problem persists, call support.

Severity

SEVERE (non-continuable)

10.04.72:15

Internal Print Server message

E-cabinet AC/AC converter 1 fuse blown. Run subsystem diagnostic. If problem persists, call your support representative.

Description

The DS-1 24V fuse has blown.

Causes in order of importance

DS-1 24V fuse blown (F15)

Corrective actions

1. Run the subsystem diagnostic.
2. Shut down the machine (completely, main switch off).
3. Replace the fuse F15.
4. If the problem persists, call support.

Severity

SEVERE (non-continuable)

10.05.11:40

Internal Print Server message

E-cabinet MO power output overload. Run subsystem diagnostic. If problem persists, call your support representative.

Description

The MO motor 42V switch is overloaded.

Causes in order of importance

MO motor 42V switch overload

Corrective actions

1. Reboot the printer.
2. Run the subsystem diagnostic.
3. If the problem persists, most likely there is a problem in the MO motor.

Severity

Continuable (when in roll-to-floor mode this output is not used)

10.05.12:40

Internal Print Server message

E-cabinet MF power output overload. Run subsystem diagnostic. If problem persists, call your support representative.

Description

The MF motor 42V switch is overloaded.

Causes in order of importance

MF motor 42V switch overload

Corrective actions

1. Reboot the printer.
2. Run the subsystem diagnostic.
3. If the problem persists, most likely there is a problem in the MF motor.

Severity

SEVERE (non-continuable)

10.05.13:40

Internal Print Server message

E-cabinet MI power output overload. Run subsystem diagnostic. If problem persists, call your support representative.

Description

The MI motor 42V switch is overloaded.

Causes in order of importance

MI motor 42V switch overload

Corrective actions

1. Reboot the printer.
2. Run the subsystem diagnostic.
3. If the problem persists, most likely there is a problem in the MI motor.

Severity

SEVERE (non-continuable)

10.05.14:40

Internal Print Server message

E-cabinet MA power output overload. Run subsystem diagnostic. If problem persists, call your support representative.

Description

The MA motor 42V switch is overloaded.

Causes in order of importance

MA motor 42V switch overload

Corrective actions

1. Reboot the printer.
2. Run the subsystem diagnostic.
3. If the problem persists, most likely there is a problem in the MA motor.

Severity

SEVERE (non-continuable)

10.05.15:40

Internal Print Server message

E-cabinet 42V CARR power output overload. Run subsystem diagnostic. If problem persists, call your support representative.

Description

The carriage 42V switch is overloaded.

Causes in order of importance

Carriage 42V switch overload

Corrective actions

1. Reboot the printer.
2. Run the subsystem diagnostic.
3. If the problem persists, most likely there is a problem in the Carriage.

Severity

SEVERE (non-continuable)

10.05.21:40

Internal Print Server message

E-cabinet ISS power output overload. Run subsystem diagnostic. If problem persists, call your support representative.

Description

The ISS 24V switch is overloaded.

Causes in order of importance

ISS 24V switch overload

Corrective actions

1. Reboot the printer.
2. Run the subsystem diagnostic.
3. If the problem persists, most likely there is a problem in the ISS.

Severity

SEVERE (non-continuable)

10.05.22:40

Internal Print Server message

E-cabinet VAPOR power output overload. Run subsystem diagnostic. If problem persists, call your support representative.

Description

The vapor removal 24V switch is overloaded.

Causes in order of importance

Vapor removal 24V switch overload

Corrective actions

1. Reboot the printer.
2. Run the subsystem diagnostic.
3. If the problem persists, most likely there is a problem in the Vapor removal.

Severity

SEVERE (non-continuable)

10.05.31:40

Internal Print Server message

E-cabinet PPS power output overload. Run subsystem diagnostic. If problem persists, call your support representative.

Description

The PPS 32V switch is overloaded.

Causes in order of importance

PPS 32V switch overload

Corrective actions

1. Reboot the printer.
2. Run the subsystem diagnostic.
3. If the problem persists, most likely there is a problem in the PPS.

Severity

Continuable

10.05.32:40

Internal Print Server message

E-cabinet WW power output overload. Run subsystem diagnostic. If problem persists, call your support representative.

Description

The printhead cleaning system 32V switch is overloaded.

Causes in order of importance

Printhead cleaning system 32V switch overload

Corrective actions

1. Reboot the printer.
2. Run the subsystem diagnostic.
3. If the problem persists, most likely there is a problem in the printhead cleaning system.

Severity

SEVERE (non-continuable)

10.05.33:40

Internal Print Server message

E-cabinet SVS power output overload. Run subsystem diagnostic. If problem persists, call your support representative.

Description

The SVS 32V switch is overloaded.

Causes in order of importance

SVS 32V switch overload

Corrective actions

1. Reboot the printer.
2. Run the subsystem diagnostic.
3. If the problem persists, most likely there is a problem in the SVS.

Severity

SEVERE (non-continuable)

10.05.34:40

Internal Print Server message

E-cabinet TUR power output overload. Run subsystem diagnostic. If problem persists, call your support representative.

Description

The take-up reel PCA 32V switch is overloaded.

Causes in order of importance

Take-up reel PCA 32V switch overload

Corrective actions

1. Reboot the printer.
2. Run the subsystem diagnostic.
3. If the problem persists, most likely there is a problem in the TUR sensor system.

Severity

Continuable (if the TUR is not in use this output is not needed)

10.04.35:40

Internal Print Server message

E-cabinet PSU-3-5 power output overload. Run subsystem diagnostic. If problem persists, call your support representative.

Description

Unused 32V switch is overloaded.

Causes in order of importance

Unused 32V switch overload

Corrective actions

No corrective actions as output is not used.

Severity

Continuable

10.05.41:40

Internal Print Server message

E-cabinet 12V CARR power output overload. Run subsystem diagnostics. If problem persists, call your support representative.

Description

The carriage 12V switch is overloaded.

Causes in order of importance

Carriage 12V switch overload

Corrective actions

1. Reboot the printer.
2. Run the subsystem diagnostic.
3. If the problem persists, most likely there is a problem in the Carriage.

Severity

SEVERE (non-continuable)

10.05.42:40

Internal Print Server message

E-cabinet PSU-4-2 power output overload. Run subsystem diagnostic. If problem persists, call your support representative.

Description

Unused 12V switch is overloaded.

Causes in order of importance

Unused 12V switch overload

Corrective actions

No corrective actions as output is not used.

Severity

Continuable

10.05.51:40

Internal Print Server message

E-cabinet SAX power output overload. Run subsystem diagnostic. If problem persists, call your support representative.

Description

The SAX 42V switch is overloaded.

Causes in order of importance

SAX 42V switch overload

Corrective actions

1. Reboot the printer.
2. Run the subsystem diagnostic.
3. If the problem persists, most likely there is a problem in the SAX motor.

Severity

SEVERE (non-continuable)

10.05.52:40

Internal Print Server message

E-cabinet PSU-5-2 power output overload. Run subsystem diagnostic. If problem persists, call your support representative.

Description

Unused 42V switch is overloaded.

Causes in order of importance

Unused 42V switch overload

Corrective actions

No corrective actions as output is not used.

Severity

Continuable

10.05.62:40

Internal Print Server message

E-cabinet DS-2 power output overload. Run subsystem diagnostic. If problem persists, call your support representative.

Description

The DS-2 24V switch is overloaded.

Causes in order of importance

DS-2 24V switch overload

Corrective actions

1. Reboot the printer.
2. Run the subsystem diagnostic.
3. If the problem persists, most likely there is a problem in the DS-2 AC converter.

Severity

SEVERE (non-continuable)

10.05.72:40

Internal Print Server message

E-cabinet DS-1 power output overload. Run subsystem diagnostic. If problem persists, call your support representative.

Description

The DS-1 24V switch is overloaded.

Causes in order of importance

DS-1 24V switch overload

Corrective actions

1. Reboot the printer.
2. Run the subsystem diagnostic.
3. If the problem persists, most likely there is a problem in the DS-1 AC converter.

Severity

SEVERE (non-continuable)

10.06.09:40

Internal Print Server message

One or more emergency stops are pressed. Run subsystem diagnostic. If problem persists, call your support representative.

Corrective actions

1. Ensure that no emergency stops are pressed.
2. Run safety diagnostics to check the emergency stops.
3. Run e-cabinet diagnostics and check the e-box interconnect PCA LEDs.

Severity

SEVERE (non-continuable)

10.07.07:40

Internal Print Server message

Interlock bypass activated. Run subsystem diagnostic. If problem persists, call your support representative.

Causes in order of importance

Safety bypass in the e-cabinet enabled

Corrective actions

Disable the bypass to operate the printer in normal mode. For the customer to use the printer normally, the bypass must be disabled.

Severity

SEVERE (non-continuable)

10.08.00:01

Internal Print Server message

E-cabinet fan not working

Description

Fan rotation feedback signal not detected

Causes in order of importance

Fan malfunction or not connected

Corrective actions

1. Check the fan cabling.
2. Replace the fan if necessary. See E-cabinet fan on page 571.
3. If the problem persists, call support.

Severity

Advisory

10.09.00:01

Internal Print Server message

Safety circuit powered by default

Description

The PCA detects power in the safety circuit when there should be no power.

Causes in order of importance

PCA malfunction

Corrective actions

1. Replace the PCA.
2. If the problem persists, call support.

Severity

SEVERE

10.10.0X:01 (X may be 1 or 2)

(10.10.01:01, 10.10.02:01)

Internal Print Server message

AC/AC converter 0X faulty signal detected. Reinitialize carriage to recover the system. If this doesn't work, run subsystem diagnostics, and if the problem is confirmed call your support representative.

Causes in order of importance

a. PSU malfunction
b. Printer input voltage problem (usually temporary)
c. Temperature too high
d. Current too high

Corrective actions

1. Run e-cabinet and drying subsystem diagnostics and check AC/AC LEDs and cabling.
2. Check whether the customer has power line problems at the site (usually this causes intermittent failures).
3. Check that environmental temperature and e-cabinet fan and filter are OK.
4. Check that there is no short-circuit in the AC/AC output.

Severity

Advisory

10.10.0X:40 (X may be 1 or 2)

(10.10.01:40, 10.10.02:40)

Internal Print Server message

AC/AC converter 0X current not zero. Reinitialize carriage to recover the system. If this doesn't work, run subsystem diagnostics, and if the problem is confirmed call your support representative.

Causes in order of importance

a. Control failure in drying module X, internal check failure
b. Error or problem with lamp X

Corrective actions

1. Run e-cabinet and drying subsystem diagnostics and drying lamps.
2. Follow troubleshooting instructions for the part identified by the diagnostics.

Severity

Advisory

10.10.0X:41 (X may be 1 or 2)

(10.10.01:41, 10.10.02:41)

Internal Print Server message

AC/AC converter 0X current too high detected. Reinitialize carriage to recover the system. If this doesn't work, run subsystem diagnostics, and if the problem is confirmed call your support representative.

Causes in order of importance

a. Drying PCA fuse burnt out
b. Drying PCA failure
c. Current leakage to ground

Corrective actions

1. Run e-cabinet and drying subsystem diagnostics and drying lamps.
2. Follow troubleshooting instructions for the part identified by the diagnostics.
3. Check connections to the lamp.

Severity

Advisory

10.10.0X:42 (X may be 1 or 2)

(10.10.01:42, 10.10.02:42)

Internal Print Server message

AC/AC converter 0X current too low detected. Reinitialize carriage to recover the system. If this doesn't work, run subsystem diagnostics, and if the problem is confirmed call your support representative.

Causes in order of importance

a. Lamp problem: open circuit, lamp blown
b. Drying PCA problem

Corrective actions

1. Run e-cabinet and drying subsystem diagnostics and drying lamps.
2. Follow troubleshooting instructions for the part identified by the diagnostics.

Severity

Advisory

10.10.0X:43 (X may be 1 or 2)

(10.10.01:43, 10.10.02:43)

Internal Print Server message

AC/AC converter 0X current sensor value zero or missing. Reinitialize carriage to recover the system. If this doesn't work, run subsystem diagnostics, and if the problem is confirmed call your support representative.

Causes in order of importance

a. Drying PCA problem
b. Cabling problem
c. Engine board adaptor problem

Corrective actions

1. Run e-cabinet, e-box, and drying subsystem diagnostics and drying lamps.
2. Follow troubleshooting instructions for the part identified by the diagnostics.

Severity

Advisory

10.10.0X:96 (X may be 1 or 2)

(10.10.01:96, 10.10.02:96)

Internal Print Server message

AC/AC converter 0X current check failed. Reinitialize carriage to recover the system. If this doesn't work, run subsystem diagnostics, and if the problem is confirmed call your support representative.

Causes in order of importance

Drying problem

Corrective actions

1. Run e-cabinet, e-box, and drying subsystem diagnostics and drying lamps.
2. Follow troubleshooting instructions for the part identified by the diagnostics.

Severity

Advisory

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11. Pipeline error codes

11.01.01:01

Internal Print Server message

FO PCA (e-box) malfunction. Reboot the printer and run printhead Control diagnostics. If problem is confirmed, call your support representative.

Causes in order of importance

a. Fiber-optic PCA in e-box doesn't work.
b. Fiber-optic PCA in e-box isn't powered.

Corrective actions

1. Check that PCA is in place.
2. Check PCA input voltage.

Severity

Advisory

11.01.01:04

Internal Print Server message

E-box fiber-optics PCA is not responding. Reboot the printer, and run Control link diagnostics. If problem is confirmed, call your support representative.

Causes in order of importance

a. Fiber-optic PCA in e-box does not work or it is not connected.

b. Check the cabling of Engine PCA to fiber-optics PCA.

Corrective actions

1. Check that the PCA is in place.
2. Check all the cabling.
3. Check LEDs.

Severity

Advisory

11.02.01:09

Internal Print Server message

FO Cable not connected. Reboot the printer and run Control link diagnostics. If problem is confirmed call your support representative.

Causes in order of importance

Connection problem

Corrective actions

1. Check if the connector is latched OK.
2. Check if the cable is not damaged.

Severity

Advisory

11.03.01:04

Internal Print Server message

Carriage fiber-optics PCA not responding. Reboot the printer and run Control link diagnostics. If problem is confirmed call your support representative.

Causes in order of importance

a. Fiber-optic PCA in carriage doesn't work or isn't connected

b. FO damage

Corrective actions

1. Check that the PCA is on place.
2. Check all the cabling.
3. Check LEDs.
4. Check fiber-optic cable.

Severity

Advisory

11.04.0X:09 (X may be in the range 1–7)

(11.04.01:09, 11.04.02:09, 11.04.03:09, 11.04.04:09, 11.04.05:09, 11.04.06:09, 11.04.07:09)

Internal Print Server message

Carriage fiber-optics PCA cable to printhead X interconnect not properly connected. Reboot the printer and run Control link diagnostics. If problem is confirmed call your support representative.

Causes in order of importance

a. FO PCA cable to printhead interconnect X is not connected/damaged/broken.

b. FO PCA is damaged or not working.

Corrective actions

1. Run Control link diagnostics test.
2. Check cabling and LEDs in fiber-optics PCA and printhead interconnect X.
3. Swap printhead interconnect PCA (same color)
4. If the problem accompanies the printhead interconnect PCA then replace it.
5. Otherwise replace cable.
6. If the problem remains, replace the fiber-optics PCA. See Fiber-optics PCA on page 466.

Severity

Advisory

11.05.0X:01 (X may be in the range 1–7)

(11.05.01:01, 11.05.02:01, 11.05.03:01, 11.05.04:01, 11.05.05:01, 11.05.06:01, 11.05.07:01)

Internal Print Server message

Printhead interconnect X malfunction. Restart the printer in diagnostic mode and run printhead control diagnostics. If problem is confirmed, call your support representative.

Causes in order of importance

Printhead interconnect X is not working/damaged/broken.

Corrective actions

1. Run control link diagnostics test.
2. Check cabling and LEDs in the fiber-optics PCA and printhead interconnect X.
3. Swap the printhead interconnect PCA with one of the same color.
4. If the problem accompanies the printhead interconnect PCA, then replace it. See Printhead interconnect color PCA on page 464 or Printhead interconnect optimizer PCA on page 462.

Severity

Advisory

11.05.0X:04 (X may be in the range 1–7)

(11.05.01:04, 11.05.02:04, 11.05.03:04, 11.05.04:04, 11.05.05:04, 11.05.06:04, 11.05.07:04)

Internal Print Server message

Printhead interconnect X not responding. Reboot the printer and run printhead control diagnostics. If problem is confirmed, call your support representative.

Causes in order of importance

Printhead interconnect X is not working/damaged/broken.

Corrective actions

1. Run control link diagnostics test.
2. Check cabling and LEDs in the fiber-optics PCA and printhead interconnect X.
3. Swap the printhead interconnect PCA with one of the same color.
4. If the problem accompanies the printhead interconnect PCA, then replace it. See Printhead interconnect color PCA on page 464 or Printhead interconnect optimizer PCA on page 462.

Severity

Advisory

NOTE: In some cases when a printhead is not accepted by the printer, try swapping the printhead with another one of the same color. If the problem remains in the same position, run the control link diagnostic. Otherwise proceed to replace the rejected printhead.

15. Dryer error codes

15.01.0X:01 (X may be 1 or 2)

(15.01.01:01, 15.01.02:01)

Internal Print Server message

Drying PCA 0X PCA issue. Reinitialize carriage to recover the system. If this doesn't work, run subsystem diagnostics, and if the problem is confirmed call your support representative.

Causes in order of importance

a. Drying PCA power problem

b. Drying PCA communications problem

c. Calibration jumper problem

d. Temperature sensor problem

e. HW/Watchdog supervisor disabled

f. Drying PCA failure

Corrective actions

1. Check connections.
2. Run drying and e-cabinet diagnostics.
3. Replace the drying PCA. See Drying PCA on page 522.

Severity

Advisory

15.01.0X:02 (X may be 1 or 2)

(15.01.01:02, 15.01.02:02)

Internal Print Server message

Drying PCA 0X hardware supervisor reset. Internal trigger couldn't be set automatically. Run subsystem diagnostic.

Causes in order of importance

a. Isolated problem

b. Drying PCA problem

Corrective actions

1. Check drying PCA connections.
2. Run drying PCA diagnostics.
3. Replace the drying PCA. See Drying PCA on page 522.

Severity

Advisory

15.01.0X:03 (X may be 1 or 2)

(15.01.01:03, 15.01.02:03)

Internal Print Server message

Drying PCA 0X firmware/hardware mismatch. Drier subsystem disabled. Reinstall/upgrade printer firmware, if the problem persists call your service representative.

Causes in order of importance

Hardware/software mismatch

Corrective actions

1. Update the firmware.
2. Replace the PCA. See Drying PCA on page 522.

Severity

Advisory

15.01.0X:05 (X may be 1 or 2)

(15.01.01:05, 15.01.02:05)

Internal Print Server message

Drying PCA 0X scan axis timeout expired. Reinitialize carriage to recover the system. If this doesn't work, run subsystem diagnostics, and if problem is confirmed call your support representative.

Description

The scan axis has been stopped with lamps on for a longer time than the safety threshold set by the firmware.

Causes in order of importance

a. Problems with scan-axis control
b. Problems with drying hardware or cabling

c. Intermittent DS1 or DS2 behavior or cabling problem

d. AC line power-quality problems

Corrective actions

1. Reinitialize the carriage, run the scan-axis friction test, and oil the carriage if necessary.
2. Run scan-axis diagnostics and check the encoder strip.
3. Check drying cables. Run drying subsystem diagnostics. Check the encoder cable to the drying PCA and replace failing parts.
4. Check DS-X cabling. Run e-cabinet diagnostics, and replace a failing power supply if necessary.
5. Ask the customer's power utility provider about recent changes.

Severity

Advisory

15.01.0X:09 (X may be 1 or 2)

(15.01.01:09, 15.01.02:09)

Internal Print Server message

Drying PCA 0X has lost scan axis encoder signal. Retry. If this doesn't work, run subsystem diagnostics, and if problem is confirmed call your support representative.

Description

A scan-axis problem has been detected with lamps on. The drying subsystem is disconnected for safety reasons.

Causes in order of importance

a. Scan-axis encoder problem

b. Drying safety monitor hardware problems

Corrective actions

1. Run scan-axis diagnostics.
2. Run drying diagnostics.

Severity

Advisory

15.01.0X:86 (X may be 1 or 2)

(15.01.01:86, 15.01.02:86)

Internal Print Server message

Drying PCA 0X Dryer PCA ID issue. Reinitialize carriage to recover the system. If this doesn't work, run subsystem diagnostics, and if the problem is confirmed call your support representative.

Causes in order of importance

The PCA is not providing the correct ID.

Corrective actions

1. Check connections.
2. Run drying diagnostics.
3. Replace the drying PCA. See Drying PCA on page 522.

Severity

Advisory

15.01.01:94

Internal Print Server message

Drying PCA 01 scan-axis timeout check failed. Reinitialize carriage to recover the system. If this doesn't work, run subsystem diagnostics, and if the problem is confirmed call your support representative.

Causes in order of importance

Hardware timeout check failed.

Corrective actions

1. Check that the AC/AC power supply works properly.
2. Replace the drying PCA. See Drying PCA on page 522.

Severity

Advisory

15.01.01:95

Internal Print Server message

Drying PCA 01 hardware supervisor check failed. Reinitialize carriage to recover the system. If this doesn't work, run subsystem diagnostics, and if the problem is confirmed call your support representative.

Causes in order of importance

Hardware timeout check failed.

Corrective actions

1. Check that the AC/AC power supply works properly.
2. Replace the drying PCA. See Drying PCA on page 522.

Severity

Advisory

15.01.02:94

Internal Print Server message

Drying PCA 02 scan-axis timeout check failed. Reinitialize carriage to recover the system. If this doesn't work, run subsystem diagnostics, and if the problem is confirmed call your support representative.

Causes in order of importance

Hardware timeout check failed.

Corrective actions

1. Check that the AC/AC power supply works properly.
2. Replace the drying PCA. See Drying PCA on page 522.

Severity

Advisory

15.01.02:95

Internal Print Server message

Drying PCA 02 hardware supervisor check failed. Reinitialize carriage to recover the system. If this doesn't work, run subsystem diagnostics, and if the problem is confirmed call your support representative.

Causes in order of importance

Hardware timeout check failed.

Corrective actions

1. Check that the AC/AC power supply works properly.
2. Replace the drying PCA. See Drying PCA on page 522.

Severity

Advisory

15.02.0X:01 (X may be 1 or 2)

(15.02.01:01, 15.02.02:01)

Internal Print Server message

Bi-metal dryer 0X in error state. Reinitialize carriage to recover the system. If this doesn't work, run subsystem diagnostics, and if the problem is confirmed call your support representative.

Causes in order of importance

a. Bi-metal not properly connected to PCA

b. Temperature too high in drying module

Corrective actions

1. Reconnect properly.
2. Check temperature module temperature.
3. Replace bi-metal.

Severity

Advisory

15.03.0X:01 (X may be 1 or 2)

(15.03.01:01, 15.03.02:01)

Internal Print Server message

Drying fan array 0X in error state. Reinitialize carriage to recover the system. If this doesn't work, run subsystem diagnostics, and if the problem is confirmed call your support representative.

Causes in order of importance

At least one fan is not spinning (blocked or broken).

Corrective actions

Search for the faulty fan and replace it.

Severity

Advisory

15.03.0X:42 (X may be 1 or 2)

(15.03.01:42, 15.03.02:42)

Internal Print Server message

Drying fan array 0X current value too low. Reinitialize carriage to recover the system. Replace affected part.

Causes in order of importance

a. At least one fan is not connected to the fan harness.

b. At least one fan is failing.

c. A fan fuse is blown.

d. There is an error in a pressure servo (incorrect PWM).

Corrective actions

1. Visually inspect the fan array harness.
2. Replace the fuse.
3. Reset or restart the system.

Severity

Advisory

15.06.0X:01 (X may be 1 or 2)

(15.06.01:01, 15.06.02:01)

Internal Print Server message

Drying PCA 0X lamps disabled. Reinitialize carriage to recover the system. If this doesn't work, run subsystem diagnostics, and if the problem is confirmed call your support representative.

Causes in order of importance

Safety issue or wrong working condition detected. Typically this error will never show up alone, it is consequence of another error condition.

Corrective actions

Run subsystem diagnostics to identify root cause.

Severity

Advisory

15.07.0X:01 (X may be 1 or 2)

(15.07.01:01, 15.07.02:01)

Internal Print Server message

Drying PCA 0X relay error. Reinitialize carriage to recover the system. If this doesn't work, run subsystem diagnostics, and if the problem is confirmed call your support representative.

Causes in order of importance

a. There is a drying PCA power problem.

b. One (or both) relays are in S.C. or GPIO is stuck in logical level 1.

c. Some cable into the AC circuit is not connected.

d. One (or both) is in O.C.

Corrective actions

1. Run subsystem diagnostics to confirm the problem.
2. Replace the drying PCA. See Drying PCA on page 522.
3. Replace the fuse.
4. Reconnect properly.

Severity

Advisory

15.07.01:93

Internal Print Server message

Drying PCA 01 relay check failed. Reinitialize carriage to recover the system. If this doesn't work, run subsystem diagnostics, and if the problem is confirmed call your support representative.

Causes in order of importance

Drying PCA relay failed

Corrective actions

Check with diagnostics and replace the PCA if necessary. See Drying PCA on page 522.

Severity

Advisory

15.07.02:93

Internal Print Server message

Drying PCA 02 relay check failed. Reinitialize carriage to recover the system. If this doesn't work, run subsystem diagnostics, and if the problem is confirmed call your support representative.

Causes in order of importance

Drying PCA relay failed

Corrective actions

Check with diagnostics and replace the PCA if necessary. See Drying PCA on page 522.

Severity

Advisory

15.08.01:15

Internal Print Server message

Drying PCA 01 fuse 1 burnt. Reinitialize carriage to recover the system. If this doesn't work, run subsystem diagnostics, and if the problem is confirmed call your support representative.

Causes in order of importance

Fuse burnt out.

Corrective actions

1. Run subsystem diagnostics to confirm the problem.
2. Replace the fuse.
3. Replace the drying PCA. See Drying PCA on page 522.

Severity

Advisory

15.08.02:15

Internal Print Server message

Drying PCA 02 fuse 1 burnt. Reinitialize carriage to recover the system. If this doesn't work, run subsystem diagnostics, and if the problem is confirmed call your support representative.

Causes in order of importance

Fuse burnt out.

Corrective actions

1. Run subsystem diagnostics to confirm the problem.
2. Replace the fuse.
3. Replace the drying PCA. See Drying PCA on page 522.

Severity

Advisory

15.08.03:15

Internal Print Server message

Drying PCA 01 fuse 2 burnt. Reinitialize carriage to recover the system. If this doesn't work, run subsystem diagnostics, and if the problem is confirmed call your support representative.

Causes in order of importance

Fuse burnt out.

Corrective actions

1. Run subsystem diagnostics to confirm the problem.
2. Replace the fuse.
3. Replace the drying PCA. See Drying PCA on page 522.

Severity

Advisory

15.08.04:15

Internal Print Server message

Drying PCA 02 fuse 2 burnt. Reinitialize carriage to recover the system. If this doesn't work, run subsystem diagnostics, and if the problem is confirmed call your support representative.

Causes in order of importance

Fuse burnt out.

Corrective actions

1. Run subsystem diagnostics to confirm the problem.
2. Replace the fuse.
3. Replace the drying PCA. See Drying PCA on page 522.

Severity

Advisory

15.09.01:01

Internal Print Server message

Drying PCA 01 substrate crash sensor 1. Reinitialize carriage to recover the system. If this doesn't work, run subsystem diagnostics, and if the problem is confirmed call your support representative.

Description

Crash sensor 1 is detecting an obstacle.

Causes in order of importance

a. Printhead crash against the substrate

b. Any obstacle in the carriage path

c. Dirty sensor

d. Faulty sensor

Corrective actions

1. Check that the carriage can move freely without obstacles.
2. Clean the sensor.
3. Replace the sensor.

Severity

Advisory

15.09.01:92

Internal Print Server message

Substrate crash sensor 01 check failed. Reinitialize carriage to recover the system. If this doesn't work, run subsystem diagnostics, and if the problem is confirmed call your support representative.

Causes in order of importance

a. Any obstacle in the carriage path

b. Dirty or misplaced sensor

c. Cabling problem

d. Drying PCA problem

Corrective actions

1. Check that the carriage can move freely without obstacles.
2. Check that nothing is blocking the crash sensor.
3. Reboot in diagnostic mode and run crash sensor and drying diagnostics.
4. Check cable and fiber-optic ends.

Severity

Advisory

15.09.02:01

Internal Print Server message

Drying PCA 02 substrate crash sensor 1. Reinitialize carriage to recover the system. If this doesn’t work, run subsystem diagnostics, and if the problem is confirmed call your support representative.

Description

Crash sensor 1 is detecting an obstacle.

Causes in order of importance

a. Printhead crash against the substrate

b. Any obstacle in the carriage path

c. Dirty sensor

d. Faulty sensor

Corrective actions

1. Check that the carriage can move freely without obstacles.
2. Clean the sensor.
3. Replace the sensor.

Severity

Advisory

15.09.02:92

Internal Print Server message

Substrate crash sensor 02 check failed. Reinitialize carriage to recover the system. If this doesn't work, run subsystem diagnostics, and if the problem is confirmed call your support representative.

Causes in order of importance

a. Any obstacle in the carriage path

b. Dirty or misplaced sensor

c. Cabling problem

d. Drying PCA problem

Corrective actions

1. Check that the carriage can move freely without obstacles.
2. Check that nothing is blocking the crash sensor.
3. Reboot in diagnostic mode and run crash sensor and drying diagnostics.
4. Check cable and fiber-optic ends.

Severity

Advisory

15.09.03:01

Internal Print Server message

Drying PCA 03 substrate crash sensor 2. Reinitialize carriage to recover the system. If this doesn't work, run subsystem diagnostics, and if the problem is confirmed call your support representative.

Description

Crash sensor 2 is detecting an obstacle.

Causes in order of importance

a. Printhead crash against the substrate
b. Any obstacle in the carriage path
c. Dirty sensor
d. Faulty sensor

Corrective actions

1. Check that the carriage can move freely without obstacles.
2. Clean the sensor.
3. Replace the sensor.

Severity

Advisory

15.09.04:01

Internal Print Server message

Drying PCA 04 substrate crash sensor 2. Reinitialize carriage to recover the system. If this doesn't work, run subsystem diagnostics, and if the problem is confirmed call your support representative.

Description

Crash sensor 2 is detecting an obstacle.

Causes in order of importance

a. Printhead crash against the substrate
b. Any obstacle in the carriage path

c. Dirty sensor

d. Faulty sensor

Corrective actions

1. Check that the carriage can move freely without obstacles.
2. Clean the sensor.
3. Replace the sensor.

Severity

Advisory

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16. Curing error codes

16.01.00:86

Internal Print Server message

Voltage configuration out of range. contact your support representative to reset installation parameters.

Causes in order of importance

Voltage configuration is not correctly set.

Corrective actions

Reconfigure the voltage.

Severity

Advisory

16.01.0X:01 (X may be 1 or 2)

(16.01.01:01, 16.01.02:01)

Internal Print Server message

Curing module X error state. Module disabled, substrate going under this module won't be cured. But if module is required to print, run subsystem diagnostic. If the problem persists, call support.

Causes in order of importance

a. The curing module reports a failure and cannot be used.

b. The curing PCA has failed.

c. There is a problem with the curing PCA connections.

Corrective actions

1. Check connections.
2. Run e-cabinet, e-box, and curing diagnostics.
3. Replace the curing PCA. See Curing and vapor removal PCA on page 490.

Severity

Advisory

16.01.0X:02 (X may be 1 or 2)

(16.01.01:02, 16.01.02:02)

Internal Print Server message

Curing module X temperature servo start failure. Retry, and if the problem persists call HP support and run diagnostic.

Causes in order of importance

a. Temperature sensor problem
b. Curing PCA failure

Corrective actions

1. Run curing diagnostics.
2. Check temperature sensor connections, and replace the sensor if necessary.
3. Replace the curing PCA. See Curing and vapor removal PCA on page 490.

Severity

Advisory

16.01.0X:03 (X may be 1 or 2)

(16.01.01:03, 16.01.02:03)

Internal Print Server message

Curing module X firmware and hardware mismatch. Module disabled, substrate going under this module won't be cured. But if module is required to print, reinstall/upgrade printer firmware. If problem persists, call support.

Causes in order of importance

Current firmware version and curing module hardware version mismatch.

Corrective actions

1. Update printer firmware.
2. Replace the curing PCA. See Curing and vapor removal PCA on page 490.

Severity

Advisory

16.01.0X:04 (X may be 1 or 2)

(16.01.01:04, 16.01.02:04)

Internal Print Server message

Curing module X generic comms error Module disabled, substrate going under this module won't be cured. But if module is required to print, run subsystem diagnostic. If the problem persists, call support.

Causes in order of importance

a. Printer cannot communicate with module
b. Cabling problem or curing PCA problem

Corrective actions

1. Check cabling.
2. Run e-cabinet and e-box diagnostics.
3. Replace the curing PCA. See Curing and vapor removal PCA on page 490.

Severity

Advisory

16.01.0X:05 (X may be 1 or 2)

(16.01.01:05, 16.01.02:05)

Internal Print Server message

Curing module X warm-up timeout module disabled, substrate going under this module won't be cured. But if module is required to print, run subsystem diagnostic. If problem persists, call support.

Causes in order of importance

a. Curing module cannot reach target temperature on time.
b. Curing bar is not properly closed and latched.
c. Curing module is not closed or has an internal failure (fan or resistor).

Corrective actions

1. Check that the module is properly closed and sealed.
2. Run subsystem diagnostics.
3. Replace fan/resistor module.

Severity

Advisory

16.01.0X:09 (X may be 1 or 2)

(16.01.01:09, 16.01.02:09)

Internal Print Server message

Curing module X: no PCA device detected. Module disabled, substrate going under this module won't be cured. But if module is required to print, run subsystem diagnostic. If problem persists, call support.

Description

The printer cannot detect the curing PCA.

Causes in order of importance

a. Curing PCA connection problem
b. Curing PCA malfunction

Corrective actions

1. Check connections.
2. Replace the curing PCA. See Curing and vapor removal PCA on page 490.

Severity

Advisory

16.01.0X:10 (X may be 1 or 2)

(16.01.01:10, 16.01.02:10)

Internal Print Server message

Curing module X AC power out of range. Module disabled, substrate going under this module won't be cured. But if module is required to print, run subsystem diagnostic. If problem persists, call support.

Description

AC power to the module has been cut.

Causes in order of importance

a. Safety interlocks or emergency stops have been activated. Usually, if this happens, you will have another system error pointing to the safety element activated.

b. ACB is down (then a couple of modules down).

c. There has been an AC power cut or AC input tension out of range.

d. A resistor has failed.

e. A current-sensor PCA has failed.

Corrective actions

1. Check that safety elements work properly.
2. Check that all ACBs are OK and in working position.
3. Check whether the customer has power cuts and input voltage problems.
4. Check resistor and replace if necessary.
5. Check PCA and replace if necessary. See Curing and vapor removal PCA on page 490.

Severity

Advisory

16.01.0X:41 (X may be in the range 1–6)

(16.01.01:41, 16.01.02:41, 16.01.03:41, 16.01.04:41, 16.01.05:41, 16.01.06:41)

Internal Print Server message

Curing module 0X overcurrent warning. contact your support representative to check input voltage configuration.

Causes in order of importance

a. Wrong configuration of AC input tension

b. AC input tension out of range

c. Resistor degradation

Corrective actions

1. Check AC input tension and reconfigure the printer's AC input configuration.
2. Check resistor and replace if necessary.

Severity

Advisory

16.02.0X:01 (X may be 1 or 2)

(16.02.01:01, 16.02.02:01)

Internal Print Server message

Curing module X PCA error. Module disabled, substrate going under this module won't be cured. But if module is required to print, reinstall/upgrade printer firmware. If problem persists, call support.

Causes in order of importance

a. Curing PCA internal error

b. Curing PCA malfunction

Corrective actions

1. Reinstall or update the printer's firmware.
2. Replace the curing PCA. See Curing and vapor removal PCA on page 490.

Severity

Advisory

16.02.0X:04 (X may be 1 or 2)

(16.02.01:04, 16.02.02:04)

Internal Print Server message

Curing module X comm error between curing PCA and e-box. Module disabled, substrate going under this module won't be cured. But, if module is required to print, run subsystem diagnostic. If problem persists, call support.

Causes in order of importance

a. Curing PCA connection problem

b. Curing PCA malfunction

Corrective actions

1. Check connections.
2. Replace the curing PCA. See Curing and vapor removal PCA on page 490.

Severity

Advisory

16.02.0X:10 (X may be 1 or 2)

(16.02.01:10, 16.02.02:10)

Internal Print Server message

Curing module X PCA DC supply error. Module disabled, substrate going under this module won't be cured. But, if module is required to print, run subsystem diagnostic. If problem persists, call support.

Causes in order of importance

a. DC power error

b. Curing PCA problem

c. Cabling problem

d. Curing PCA power supply error

Corrective actions

Replace any faulty part.

Severity

Advisory

16.02.0X:21 (X may be 1 or 2)

(16.02.01:21, 16.02.02:21)

Internal Print Server message

Curing module X PCA temp too high. Module disabled, substrate going under this module won't be cured. But, if module is required to print, run subsystem diagnostic. If problem persists, call support.

Causes in order of importance

a. Ambient temperature too high

b. Not enough airflow in module

c. Failure in temperature control

Corrective actions

1. Check the ambient temperature.
2. Check that the fans are working, and that the holes in the curing plate are not blocked.
3. Check the curing PCA.

Severity

Advisory

16.03.00:03

Internal Print Server message

Curing bottom plate model not set or wrongly set in firmware. Contact your support representative.

Causes in order of importance

Curing bottom plate model or revision is not properly set in the printer.

Corrective actions

Go to the diagnostic utilities in Print Care and run the set curing bottom plate diagnostic in order to set the right model and revision. See Table 5-23 Utilities on page 375.

Severity

Advisory

16.10.0X:20 (X may be in the range 1–6)

(16.10.01:20, 16.10.02:20, 16.10.03:20, 16.10.04:20, 16.10.05:20, 16.10.06:20)

Internal Print Server message

Curing module X temperature channel 1 out of range (recirculation). Module disabled, substrate going under this module won't be cured. But, if module is required to print, run subsystem diagnostic. If problem persists, call support.

Causes in order of importance

a. Ambient temperature too high

b. Not enough airflow in module

c. Failure in temperature control

Corrective actions

1. Check the ambient temperature.
2. Check that the fans are working, and that the holes in the curing plate are not blocked.
3. Check the curing PCA.

Severity

Advisory

16.11.0X:01 (X may be in the range 1–6)

(16.11.01:01, 16.11.02:01, 16.11.03:01, 16.11.04:01, 16.11.05:01, 16.11.06:01)

Internal Print Server message

Curing module X chamber 1 Temperature sensor failure Module disabled, substrate going under this module won't be cured. But if module is required to print, run subsystem diagnostic. If the problem persists, call support.

Causes in order of importance

Temperature sensor problem

Corrective actions

Replace the temperature sensor.

Severity

Advisory

16.13.0X:01 (X may be in the range 1–6)

(16.13.01:01, 16.13.02:01, 16.13.03:01, 16.13.04:01, 16.13.05:01, 16.13.06:01)

Internal Print Server message

Curing module X chamber 1 fan no spinning detected. Module disabled, substrate going under this module won't be cured. But if module is required to print, run subsystem diagnostic. If the problem persists, call support.

Causes in order of importance

The fan is not detected to be spinning. The problem could be the fan itself, the fan power, or the tachometer signal.

Corrective actions

1. Check the fan connections.
2. Replace the fan.

Severity

Advisory

16.14.0X:15 (X may be in the range 1–6)

(16.14.01:15, 16.14.02:15, 16.14.03:15, 16.14.04:15, 16.14.05:15, 16.14.06:15)

Internal Print Server message

Curing module X chamber 1 open circuit detected. Module disabled, substrate going under this module won't be cured. But, if module is required to print, run subsystem diagnostic. If problem persists, call support.

Causes in order of importance

a. Curing PCA fuse blown

b. Resistor failure

c. Resistor cabling error

d. Curing PCA failure (relay, triac, current sensor)

e. Curing PCA firmware bug

Corrective actions

1. Reinstall or update the firmware.
2. Check the curing PCA and replace it if necessary. See Curing and vapor removal PCA on page 490.
3. Check the resistor and replace it if necessary.

Severity

Advisory

16.15.0X:01 (X may be in the range 1–6)

(16.15.01:01, 16.15.02:01, 16.15.03:01, 16.15.04:01, 16.15.05:01, 16.15.06:01)

Internal Print Server message

Curing module X resistor 1 failure. Module disabled, substrate going under this module won't be cured. But, if module is required to print, run subsystem diagnostic. If problem persists, call support.

Causes in order of importance

a. Curing PCA firmware bug

b. Curing PCA failure (relay or triac)

Corrective actions

1. Reinstall or update the firmware.
2. Check the curing PCA and replace it if necessary. See Curing and vapor removal PCA on page 490.

Severity

Advisory

16.20.0X:20 (X may be in the range 1–6)

(16.20.01:20, 16.20.02:20, 16.20.03:20, 16.20.04:20, 16.20.05:20, 16.20.06:20)

Internal Print Server message

Curing module X temperature channel 2 out of range (recirculation). Module disabled, substrate going under this module won't be cured. But, if module is required to print, run subsystem diagnostic. If problem persists, call support.

Causes in order of importance

a. Ambient temperature too high

b. Not enough airflow in module

c. Failure in temperature control

Corrective actions

1. Check the ambient temperature.
2. Check that the fans are working, and that the holes in the curing plate are not blocked.
3. Check the curing PCA.

Severity

Advisory

16.21.0X:01 (X may be in the range 1–6)

(16.21.01:01, 16.21.02:01, 16.21.03:01, 16.21.04:01, 16.21.05:01, 16.21.06:01)

Internal Print Server message

Curing module X chamber 2 temperature sensor failure. Module disabled, substrate going under this module won't be cured. But, if module is required to print, run subsystem diagnostic. If problem persists, call support.

Causes in order of importance

a. Ambient temperature too high

b. Not enough airflow in module

c. Failure in temperature control

Corrective actions

Replace temperature sensor.

Severity

Advisory

16.23.0X:01 (X may be in the range 1–6)

(16.23.01:01, 16.23.02:01, 16.23.03:01, 16.23.04:01, 16.23.05:01, 16.23.06:01)

Internal Print Server message

Curing module X chamber 2 fan no spinning detected. Module disabled, substrate going under this module won't be cured. But, if module is required to print, run subsystem diagnostic. If problem persists, call support.

Causes in order of importance

The fan is not detected to be spinning. The problem could be the fan itself, the fan power, or the tachometer signal.

Corrective actions

1. Check the fan connections.
2. Replace the fan.

Severity

Advisory

16.24.0X:15 (X may be in the range 1–6)

(16.24.01:15, 16.24.02:15, 16.24.03:15, 16.24.04:15, 16.24.05:15, 16.24.06:15)

Internal Print Server message

Curing module X chamber 2 open circuit detected. Module disabled, substrate going under this module won't be cured. But, if module is required to print, run subsystem diagnostic. If problem persists, call support.

Causes in order of importance

a. Curing PCA fuse blown
b. Resistor failure
c. Resistor cabling error
d. Curing PCA failure (relay, triac, current sensor)
e. Curing PCA firmware bug

Corrective actions

1. Reinstall or update the firmware.
2. Check the curing PCA and replace it if necessary. See Curing and vapor removal PCA on page 490.
3. Check the resistor and replace it if necessary.

Severity

Advisory

16.25.0X:01 (X may be in the range 1–6)

(16.25.01:01, 16.25.02:01, 16.25.03:01, 16.25.04:01, 16.25.05:01, 16.25.06:01)

Internal Print Server message

Curing module X resistor 2 failure. Module disabled, substrate going under this module won't be cured. But, if module is required to print, run subsystem diagnostic. If problem persists, call support.

Causes in order of importance

a. Curing PCA firmware bug

b. Curing PCA failure (relay or triac)

Corrective actions

1. Reinstall or update the firmware.
2. Check the curing PCA and replace it if necessary. See Curing and vapor removal PCA on page 490.

Severity

Advisory

16.33.0X:01 (X may be in the range 1–6)

(16.33.01:01, 16.33.02:01, 16.33.03:01, 16.33.04:01, 16.33.05:01, 16.33.06:01)

Internal Print Server message

Curing module X PCA fan no spinning detected. Module disabled, substrate going under this module won't be cured. But, if module is required to print, run subsystem diagnostic. If problem persists, call support.

Causes in order of importance

The fan is not detected to be spinning. The problem could be the fan itself, the fan power, or the tachometer signal.

Corrective actions

1. Check the fan connections.
2. Replace the fan.

Severity

Advisory

16.33.0X:09 (X may be in the range 1–6)

(16.33.01:09, 16.33.02:09, 16.33.03:09, 16.33.04:09, 16.33.05:09, 16.33.06:09)

Internal Print Server message

Curing module X fan connector issue. Module disabled, substrate going under this module won't be cured. But, if module is required to print, run subsystem diagnostic. If problem persists, call support.

Causes in order of importance

a. Fan failure

b. PCA failure

Corrective actions

1. Check the fan connection.
2. Replace the fan.
3. Replace the PCA.

Severity

Advisory

16.91.0X:01 (X may be in the range 1–6)

(16.91.01:01, 16.91.02:01, 16.91.03:01, 16.91.04:01, 16.91.05:01, 16.91.06:01)

Internal Print Server message

Curing module X safety relay failure detected. Safety mechanism disabled, printer can't be operated. Reboot in diagnostic mode and run safety diagnostics. If problem persists, call support.

Causes in order of importance

Curing may be disabled by satety equipment.

Corrective actions

Run safety and e-cabinet diagnostics, and replace any faulty part.

Severity

SEVERE

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21. Capping-station error codes

21.01.00:08

Internal Print Server message

Capping station jam. Reinitialize carriage. If problem persists, call support and store Printhead in the orange caps.

Causes in order of importance

a. Shutter blocked

b. Friction too high

Corrective actions

1. Use a screwdriver to ensure that the shutter is not jammed against the structure.
2. Clean and grease worm and rod sliders.

Severity

Advisory

21.02.00:01

Internal Print Server message

Capping station position error. Reinitialize carriage. If problem persists, call support and store printhead in the orange caps.

Causes in order of importance

a. Shutter blocked
b. Friction too high
c. Problem with encoders or cables

Corrective actions

1. Use a screwdriver to check that the shutter is not jammed against the structure.
2. Clean and grease worm and rod sliders.

Severity

Advisory

21.02.00:02

Internal Print Server message

Capping station movement test fault. Reboot in diagnostic mode and run subsystem diagnostic. If problem persists, call support and store prinhead in the orange caps.

Causes in order of importance

a. Shutter blocked
b. Friction too high

Corrective actions

1. Use a screwdriver to check that the shutter is not jammed against the structure.
2. Clean and grease worm and rod sliders.

3. Run the backlash/elasticity diagnostic.
4. If the problem persists, replace the part.

Severity

SEVERE

21.02.00:91

Internal Print Server message

Capping bump switch not activated. Reinitialize carriage. If problem persists, run subsystem diagnostic call support and store printhead in the orange caps.

Causes in order of importance

End of movement switch fail

Corrective actions

1. Run capping bump switch test, check that the shuttle is closing the switch, and check that the switch status is reported properly.
2. If the switch works well but the shutter doesn't manage to close it, check that friction is not too high.
3. Otherwise check the switch connection or replace the switch.

Severity

Advisory

21.05.11:04

Internal Print Server message

Motor driver PCA comm failure. Reinitialize carriage. If problem persists, call support.

Causes in order of importance

a. Cabling problem
b. PCA failure

Corrective actions

1. Check all cables arriving at the PCA and from PCA to capping and drop detection shutter motors and sensors.
2. Replace the remote controller board.

Severity

SEVERE

22. Ink-delivery-system error codes

22.00.00:73

Internal Print Server message

Ink System set is not purged. Call your support representative.

Causes in order of importance

a. A purge has not been performed.

b. A purge has been performed but not completed.

c. A purge has been completed manually.

Corrective actions

a. If a purge has not been performed, complete a full purge of the ink system according to the installation guide (3 steps).

b. If a purge has been performed but not completed, complete the full purging process according to the installation guide (3 steps).

c. If a purge has been completed manually (by opening electrovalves or filling intermediate tanks), use diagnostic procedures; the system will not detect the ink system as purged.

Do not set the ink system as purged if you are not fully convinced that a correct and complete purge of the system as been performed.

Severity

SEVERE

22.01.02:06

Internal Print Server message

Tubes leakage detected. Run IDS diagnostic. If the problem persists, call your support representative.

Causes in order of importance

a. A genuine ink leakage

b. A false ink leakage

c. False ink leakage detection

Corrective actions

1. Check the bottom tray and the leak sensor. If there is ink present, find the source of the ink leak and fix it as appropriate. Check whether the body of an electrovalve has been in contact with ink. After fixing, clean the system and clear the ink leak error. See Table 5-10 Ink delivery system on page 362.
2. If there is water or condensation in the ink tray, clean the accumulated water, dry the tray and the sensor contacts if required. Remove any possible cause of the accumulation of water.
3. Check for possible short circuits in the ink leakage detection line, use the ink system leakage diagnostic to troubleshoot the problem, and replace the detection cable or ISS PCA if required. See ISS PCA on page 683.

Severity

Advisory

22.01.01:76

Internal Print Server message

IDS PCA 01 Backup NVM data corrupted.

Call your support representative.

Causes in order of importance

After writing the NVM backup into the ISS PCA, some data are found to be corrupted.

Corrective actions

1. Review ISS PCA connections.
2. Replace the ISS PCA. See ISS PCA on page 683.

Severity

SEVERE

22.02.XY:06 (X may be in the range 1–7, Y may be 1 or 2)

(22.02.11:06, 22.02.21:06, 22.02.31:06, 22.02.41:06, 22.02.51:06, 22.02.61:06, 22.02.71:06, 22.02.12:06, 22.02.22:06, 22.02.32:06, 22.02.42:06, 22.02.52:06, 22.02.62:06, 22.02.72:06)

Internal Print Server message

Intermediate tank ink broken bag XY.

Run IDS diagnostic. If the problem persists, call your support representative

Causes in order of importance

a. Ink in the air lines coming from the intermediate tank.

b. Ink on the interconnect PCA or intermediate tank connector.

c. Wet or dirty EE contacts.

Corrective actions

1. If (a) is true, replace the intermediate tank (see ISM intermediate tank on page 670) and run the "Intermediate tanks refill (by time)" diagnostic. Drain the air bottle and clean the air tubes.
2. If (b) or (c) are true, just clean the affected parts. Then run the "Intermediate tank broken bag recovery" diagnostic to check the error condition and clear the error flag.

Severity

SEVERE

22.02.XY:07 (X may be in the range 1–7, Y may be 1 or 2)

(22.02.11:07, 22.02.21:07, 22.02.31:07, 22.02.41:07, 22.02.51:07, 22.02.61:07, 22.02.71:07, 22.02.12:07, 22.02.22:07, 22.02.32:07, 22.02.42:07, 22.02.52:07, 22.02.62:07, 22.02.72:07)

Internal Print Server message

Intermediate tank end of life XY. Proceed with the intermediate tank maintenance procedure. If the problem persists, call your support representative.

Causes in order of importance

The intermediate tank has reached the end of its life and should be replaced to prevent any broken bag, replacing both at same time.

Corrective actions

Run the "Intermediate tank change" diagnostic to follow the process with automatic guidance.

Severity

Silent

22.04.0X:71 (X may be in the range 1–7)

(22.04.01:71, 22.04.02:71, 22.04.03:71, 22.04.04:71, 22.04.05:71, 22.04.06:71, 22.04.07:71)

Internal Print Server message

Color module flow start error X. Run IDS diagnostic. If the problem persists, call your support representative.

Causes in order of importance

a. Main electrovalve doesn't open.

b. Intermediate tank full (main electrovalve always open).

c. Ink channel blocked (supply connector needle).

Corrective actions

1. Check intermediate tank ink level, by checking its weight.
2. If is not full (~1 kg), the causes could be (a) or (c). Then execute the valve diagnostic, if it is not the valve then check the ink channel.
3. If it is full, then execute the valve diagnostic and replace the valve if necessary.
4. Clear the flag error by running the "No flow error recovery" diagnostic.

Severity

SEVERE

22.04.0X:72 (X may be in the range 1–7)

(22.04.01:72, 22.04.02:72, 22.04.03:72, 22.04.04:72, 22.04.05:72, 22.04.06:72, 22.04.07:72)

Internal Print Server message

Color module X flow stop error. Run IDS diagnostic. If the problem persists, call your support representative.

Causes in order of importance

a. Electrovalve not closed

b. Air bubble in the system

c. Sensor signal blocked

Corrective actions

1. Run the "Automatic electrovalves and ink pressure sensor check" diagnostic and identify whether the problem is the valve or the sensor.
2. Replace the faulty part, or repurge if the problem is a bubble.

Severity

SEVERE

22.05.0X:30 (X may be in the range 1–7)

(22.05.01:30, 22.05.02:30, 22.05.03:30, 22.05.04:30, 22.05.05:30, 22.05.06:30, 22.05.07:30)

Internal Print Server message

Ink pressure sensor X out of range. Run IDS diagnostic. If the problem persists, call your support representative.

Causes in order of importance

a. Ink pressure sensor not calibrated

b. Ink pressure sensor broken

c. Ink cartridge not in the right position or with a heavy object on it

Corrective actions

1. Check that the ink cartridge is in the right position with nothing on it.
2. Run the "Ink pressure sensor calibration" diagnostic.
3. Compare the values returned with the ink sensor board label values.
4. If the values are different, set label values, otherwise run the "Automatic electrovalves and ink pressure sensor check" diagnostic to stabilize pressure, and go back to step 1.
5. If this fails, change the ink sensor board and recalibrate it.

Severity

SEVERE

22.05.0X:83 (X may be in the range 1–7)

(22.05.01:83, 22.05.02:83, 22.05.03:83, 22.05.04:83, 22.05.05:83, 22.05.06:83, 22.05.07:83)

Internal Print Server message

Ink pressure sensor X not calibrated. Run IDS diagnostic. If the problem persists, call your support representative.

Causes in order of importance

a. Ink pressure sensor not calibrated

b. Ink pressure sensor broken

Corrective actions

1. Check that the ink cartridge is in the right position, with nothing on it.
2. Run the "Ink pressure sensor calibration" diagnostic.
3. Compare the values returned with the ink sensor board label values.
4. If the values are different, set label values, otherwise run the "Automatic electrovalves and ink pressure sensor check" diagnostic to stabilize pressure, and go back to step 1.
5. If this fails, change the ink sensor board and recalibrate it.

Severity

SEVERE

22.06.00:06

Internal Print Server message

General ink leakage. contact your support representative.

Causes in order of importance

a. A genuine ink leakage

b. A false ink leakage

c. False ink leakage detection

Corrective actions

1. Check the ink sump to identify leakage color.
2. Check the faulty ink line, paying attention to the ink pressure sensor, ink four-way valve, electrovalves, tubes, and fitting.
3. Replace the leaking part.
4. Clean the system.
5. Run the ink system leakage diagnostic, to check that it is fixed and clear the error.

Severity

SEVERE

22.07.0X.01 (X may be 1 or 2)

(22.07.01:01, 22.07.02:01)

Internal Print Server message

ISS PCA0X Adc Ads7828e not responding. Reboot the printer and run subsystem diagnostics. If the problem persists, call your support representative.

Causes in order of importance

Internal ISS PCA malfunction

Corrective actions

1. Check LED status lights.
2. Check ISS PCA connections.
3. Replace ISS PCA. See ISS PCA on page 683.

Severity

SEVERE

22.07.0X.04 (X may be 1 or 2)

(22.07.01:04, 22.07.02:04)

Internal Print Server message

ISS PCA0X GpioExpander not responding. Reboot the printer and run subsystem diagnostics. If the problem persists, call your support representative.

Corrective actions

1. Check the ISS PCA LEDs.
2. Check connections.
3. Replace the ISS PCA. See ISS PCA on page 683.

Severity

SEVERE

22.10.0X:30 (X may be 1 or 2)

(22.10.01:30, 22.10.02:30)

Internal Print Server message

APS air pressure out of range 0X. Run IDS diagnostic. If problem persists, call your support representative.

Causes in order of importance

Air pressure sensor valves have been detected as out of the expected measurement range. Expected pressure between −0.2 and 7 psi; for the system error to be triggered the condition must be repeated for 1 minute.

Corrective actions

1. Check the connections of the air tube to the air pressure sensor in the ISS board.
2. Disconnect the tubes and perform a visual inspection of the system, in case of doubt blow into the tube to ensure there is no blockage towards the relief valve.
3. Replace the ink system main board.

Severity

Advisory

22.10.01:31

Internal Print Server message

APS pressurize error 01. Run IDS diagnostic. If problem persists, call your support representative.

Description

The air system is unable to pressurize to the expected working pressure, which, depending on the actual working cycle, could be 5.2–5.6 psi (normal working pressure) or 3.6–4 psi (during refilling the non-refilled side is pressurized to prevent backwards refill).

Causes in order of importance

a. Air tube disconnected from the air system

b. Air pump failure (pump or ISS PCA failure)

c. Air pressure bottle leak

d. Air tube leak (tube damaged)

e. Air relief valve failure

f. Intermediate tank leak

g. Air sensor failure, leading to ISS main board failure

h. Intermediate tank supports failure

Corrective actions

1. Review all air tube connections and ensure that there is no disconnection (tubes from pumps and relief valve to tap, tubes from tap to intermediate tanks).
2. Perform the front and rear air pumps diagnostic procedures. See Table 5-10 Ink delivery system on page 362.
3. If the pumps do not work, check pump connections and verify pin integrity.
4. If connections are correct, connecting to another working port and start the pump.
5. If the pump works with another port, replace the ink system main board.
6. If the pump fails, replace the air pump. See ISM pump and relief valve on page 679.
7. Check that the pressure bottle cap is tight and there is no leakage.
8. Pressurize the system and check for any failed tube. Leave the pumps on test with diagnostic procedure , the pump will operate until 6 psi is reached.
9. Check relief valve is closed and air is not escaping from it when pressurizing. Swap the relief valve from the other side to verify that it is the relief valve that is failing. If the relief valve fails, replace it. See ISM pump and relief valve on page 679.
10. Swap all intermediate tanks and ensure that there is no leak. If a leak is detected, swap the intermediate tanks again one by one until the leak is discovered. Replace the intermediate tank as appropriate and force-fill intermediate tanks. See ISM intermediate tank on page 670.
11. Swap air pressure sensor tube connections to the PCA and display values if required. If the sensors do not have similar behavior, replace the ISS PCA. See ISS PCA on page 683.

12. Try to adjust tubes and check connections, clean if required.
13. If necessary, replace the ink circuit module. See ISM ink circuit module on page 675.

Severity

SEVERE

22.10.0X:32 (X may be 1 or 2)

(22.10.01:32, 22.10.02:32)

Internal Print Server message

APS air pump error 0X. Run IDS diagnostic. If the problem persists, call your support representative.

Description

The air system is unable to pressurize to the expected working pressure, which, depending on the actual working cycle, could be 5.2–5.6 psi (normal working pressure) or 3.6–4 psi (during refilling the non-refilled side is pressurized to prevent backwards refill).

Causes in order of importance

a. Air tube is disconnected on the air system
b. Air pump failure (pump or ISS PCA failure)
c. Air pressure bottle leak
d. Air tube leak (tube damaged)
e. Air relief valve
f. Intermediate tanks leak
g. Air sensor failure, leading to ISS main board failure
h. Intermediate tank supports failure

Corrective actions

1. Review all air tube connections and ensure that there is no disconnection (tubes from pumps and relief valve to tap, tubes from tap to intermediate tanks.
2. Perform the front and read air pump diagnostics procedures.
3. If the pumps do not work, check pump connections and verify pin integrity.
4. If connections are correct, connect to another working port and start the pump.
5. If the pump works with another port, replace the ink system main board.
6. If the pump fails, replace the air pump. See ISM pump and relief valve on page 679.
7. Check that the pressure bottle cap is tight and there is no leakage.
8. Pressurize the system and check for any failed tube. Leave the pumps on test with diagnostic procedure, the pump will operate until 6 psi is reached.

9. Check relief valve is closed and air is not escaping from it when pressurizing. Swap the relief valve from the other side to verify that it is the relief valve that is failing. If the relief valve fails, replace it.
10. Swap all intermediate tanks and ensure that there is no leak. If a leak is detected, swap the intermediate tanks again one by one until the leak is discovered. Replace the intermediate tank as appropriate and force-fill the intermediate tanks. See ISM intermediate tank on page 670.
11. Swap air pressure sensor tube connections to the PCA and display values if required. If the sensors do not have similar behavior, replace the ISS PCA. See ISS PCA on page 683.
12. Try to adjust tubes and check connections, clean if required. If they cannot be recovered, replace the ink circuit module. See ISM ink circuit module on page 675.

Severity

SEVERE

22.10.01:83

Internal Print Server message

APS calibration error 01. Run IDS diagnostic. If problem persists call your support representative

Causes in order of importance

a. Calibration cannot be stored or was corrupted
b. Calibration out of specification

Corrective actions

Run the calibration test from the IDS diagnostics menu. If the calibration fails, replace the APS or replace the IDS PCA.

Severity

SEVERE

22.10.01:86 and 22.10.01:87

Internal Print Server message

22.10.01:86: Close relief valve error 01. Run IDS diagnostic. If problem persists, call your support representative.

22.10.01:87: Open relief valve error 01. Run IDS diagnostic. If problem persists, call your support representative.

Description

The system is considered to be depressurized at 0.3 psi, and there is a timeout of 120 seconds to depressurize. The standard operating range is 5.2–5.6 psi (working pressure). Block flow pressure 3.6–4 psi (not printing but refilling, the selected side is pressurized to this level to ensure that refilling is done on the expected side). While printing, the unused side is pressurized to prevent backwards refilling.

Causes in order of importance

1. Relief valve does not open
2. Relief valve cable disconnected
3. Relief tubes blocked
4. Pressure sensor does not detect depressurizing.

Corrective actions

1. Check that the relief valve cable is correctly connected to the valve and to the ISS main board.
2. Open and close the relief valve several times to check that it works (you can do this with a finger).
3. Swap the relief valve connections to check whether the failure is the driver or the relief valve. If the cause is the valve, remove and replace it. See ISM pump and relief valve on page 679.
4. If the failure is the driver of the electrovalve, replace the ISS main board.
5. Disconnect the tubes and perform a visual inspection of the system. In case of doubt, disconnect the tube and blow into it to ensure that there is no blockage towards the relief valve.
6. If the relief system seems to be working correctly, replace the ISS main board.
7. Replace the air pump, relief valve, and tubes. See ISM pump and relief valve on page 679.

Severity

SEVERE

22.10.01:88

Internal Print Server message

APS pump switch off error 01. Run IDS diagnostic. If problem persists, call your support representative.

Causes in order of importance

a. APS switch failure
b. IDS PCA problem

Corrective actions

1. Replace the APS.
2. Replace the IDS PCA.

Severity

SEVERE

22.10.01:95

Internal Print Server message

Air pump driver error 01. Run IDS diagnostic. If problem persists, call your support representative.

Causes in order of importance

IDS PCA pump driver problem

Corrective actions

Replace the IDS PCA.

Severity

SEVERE

22.11.0X:01 (X may be 1 or 2)

(22.11.01:01, 22.11.02:01)

Internal Print Server message

APS open relief valve error 0X. Run IDS diagnostic. If the problem persists, call your support representative.

Causes in order of importance

a. The system is considered to be depressurized at 0.3 psi, and there is a timeout of 120 seconds to depressurize.

b. The standard operating range is 5.2–5.6 psi (working pressure).

c. Block flow pressure 3.6–4 psi (not printing but refilling, the selected side is pressurized to this level to ensure that refilling is done on the expected side), while printing the unused side is pressurized to prevent backwards refilling.

Corrective actions

1. Check that the relief valve cable is correctly connected to the valve and to the ISS Main Board.
2. Open and close the relief valve several times to check that it works (this can be done with a finger).
3. Swap the relief valve connections to check whether the failure is the driver or the relief valve. If the cause is the valve, remove and replace it.
4. If the failure is the actual driver of the electrovalve, replace the ISS main board.
5. Disconnect the tubes and perform a visual inspection of the system, in case of doubt disconnect the tube and blow into it to ensure that there is no blockage towards the relief valve.
6. If the relief system seems to be working correctly, replace the ISS main board.
7. Replace the air pump, relief valve, and tubes. See ISM pump and relief valve on page 679.

Severity

SEVERE

22.11.01:96

Internal Print Server message

Relief valve driver error 01. Run IDS diagnostic. If problem persists, call your support representative.

Causes in order of importance

The relief valve is not working properly.

Corrective actions

1. Use diagnostics to check the relief valves.
2. Replace the relief valve.
3. Replace the IDS PCA.

Severity

SEVERE

41. Substrate-path error codes

41.00.00:62

Internal Print Server message

END OF ROLL detected.

Causes in order of importance

a. End of roll
b. Spindle not inflated or core slipping
c. Elastic substrate loaded
d. Broken substrate

Corrective actions

You may have reached the end of the roll. If so, thread a new roll, inflate the spindles, and perform a substrate load. Otherwise, check that the spindles are inflated and perform a substrate load.

41.00.00:85

Internal Print Server message

Wrong substrate settings file. At least one setting is missing.

Causes in order of importance

Substrate properties missing

Corrective actions

Check for a missing parameter in the substrate properties file and update the OMES substrate package. If the problem persists, call your support representative.

41.00.01:62

Internal Print Server message

Possible END OF ROLL detected.

Causes in order of importance

a. End of roll

b. Spindle not inflated or core slipping

c. Too much substrate unwound on the input or output side

Corrective actions

You may have reached the end of the roll, or it may be detached from the core. If it has come to the end, thread a new roll, inflate the spindles, and perform a substrate load. Otherwise, check that the spindles are inflated and perform a substrate load.

41.01.00:01

Internal Print Server message

Electrical PCA failure detected.

Description

Substrate input motor internal fault.

Causes in order of importance

a. Connector problems

b. PSU problems

c. Driver problem

Corrective actions

1. Reload substrate to clear the error.
2. Run the input roller (MI) motor calibration/diagnostic test and follow the instructions provided in the test documentation.
3. If the problem persists, call your support representative.

41.01.00:01 and MOTOR'S FAULT LED OFF

Internal Print Server message

Input spindle motor internal fault.

Causes in order of importance

a. Connection problem

b. Motor problem

c. EE problem

Corrective actions

1. Reload the substrate to clear the error.
2. Reboot the printer.
3. Run the input roller (MI) motor calibration/diagnostic test and follow the instructions provided in the test documentation.

41.01.00:18

Internal Print Server message

The input spindle motor's driving voltage is too high.

Causes in order of importance

a. Temporary problem

b. Calibration problem

c. Motor problem

Corrective actions

1. Reload the substrate to clear the error.
2. Run the input roller (MI) motor calibration/diagnostic test and follow the instructions provided in the test documentation.

41.01.00:21

Internal Print Server message

Input spindle motor overpowered.

Causes in order of importance

a. Connection problem

b. Substrate jam

c. Transmission worn out

d. Main roller motor or encoder problem

e. EE driver failure

Corrective actions

1. Reload the substrate to clear the error.
2. Run the input roller (MI) motor calibration/diagnostic test and follow the instructions provided in the test documentation.

41.01.00:51

Internal Print Server message

Substrate loading table latch unexpectedly open.

Causes in order of importance

a. Latch open

b. Sensor failure (two sensors)

Action

1. Ensure that substrate loading table latches are closed on both sides.
2. Run the substrate path sensor check diagnostic to check which sensor has failed.
3. Replace the sensor.

41.01.00:60

Internal Print Server message

Input spindle motor spinning too fast.

Causes in order of importance

a. Encoder problem

b. Motor problem

Corrective actions

1. Reload the substrate to clear the error.
2. Run the input roller (MI) motor calibration/diagnostic test and follow the instructions provided in the test documentation.

41.01.00:61

Internal Print Server message

Input spindle not moving.

Causes in order of importance

a. Connection problem
b. Substrate jam
c. Spindle end cap worn out or blocked
d. Substrate input transmission problem
e. Substrate input motor
f. EE driver failure

Corrective actions

1. Reload the substrate to clear the error.
2. Run the input roller (MI) motor calibration/diagnostic test and follow the instructions provided in the test documentation.

41.02.00:01

Internal Print Server message

Electrical PCA failure detected.

Causes in order of importance

a. Connector problem
b. PSU problem
c. Driver problem

Corrective actions

1. Reload the substrate to clear the error and try to print.
2. Check whether the motor fault LED is off.
3. If it is off, call your service representative and replace the electronics.

41.02.00:01 and FAULT LED OFF

Internal Print Server message

Main roller motor internal fault.

Causes in order of importance

a. Connection problem

b. Motor problem

c. EE problem

Corrective actions

1. Reload the substrate to clear the error.
2. If the problem persists, reboot, retry substrate load, and check whether the motor fault LED is off.
3. Run the main roller (MA) motor diagnostic friction test.
4. If the motor is faulty, and after being restarted by firmware it remains faulty, then the motor electronics may be damaged.
5. If the roller has abnormally high friction, try cleaning and greasing the worm transmission and helical gear.

41.02.00:08

Internal Print Server message

Main roller substrate jam.

Causes in order of importance

Substrate blocking the substrate path

Corrective actions

1. Remove all substrate from the substrate path.
2. Reload the substrate.
3. Run the main roller motor diagnostics.

41.02.00:18

Internal Print Server message

Main roller motor's driving voltage is too high.

Causes in order of importance

a. Connection problem

b. Substrate jam

c. Transmission worn out

d. Main roller motor or encoder problem

e. EE driver failure

Corrective actions

1. Reload the substrate to clear the error.
2. If the problem persists, check whether the motor fault LED is off.
3. Run the main roller (MA) motor diagnostic friction test.
4. If the motor is faulty, and after being restarted by firmware it remains faulty, then the motor electronics may be damaged.
5. If the roller has abnormally high friction, try cleaning and greasing the worm transmission and helical gear.

41.02.00:21

Internal Print Server message

Main roller motor overpowered.

Causes in order of importance

a. Connection problem

b. Substrate jam

c. Transmission worn out

d. Main roller motor or encoder problem

e. EE driver failure

Corrective actions

1. Reload the substrate to clear the error.
2. If the problem persists, check whether the motor fault LED is off.
3. Run the main roller (MA) motor diagnostic friction test.
4. If the motor is faulty, and after being restarted by firmware it remains faulty, then the motor electronics may be damaged.
5. If the roller has abnormally high friction, try cleaning and greasing the worm transmission and helical gear.

41.02.00:60

Internal Print Server message

Main roller motor spinning too fast.

Causes in order of importance

a. Encoder problem

b. Motor problem

Corrective actions

1. Reload the substrate to clear the error.
2. If the problem persists, check whether the motor fault LED is off.
3. Run the main roller (MA) motor diagnostic friction test.
4. If the motor is faulty, and after being restarted by firmware it remains faulty, then the motor electronics may be damaged.
5. If the roller has abnormally high friction, try cleaning and greasing the worm transmission and helical gear.

41.02.00:61

Internal Print Server message

Problem moving drive roller. Run drive roller motor diagnostic. If problem persists, call your support representative.

Causes in order of importance

a. Connection problem

b. Substrate jam

c. Transmission worn out

d. Main roller motor or encoder problem

e. EE driver failure

Corrective actions

1. Reload the substrate to clear the error.
2. If the problem persists, check whether the motor fault LED is off.
3. Run the main roller (MA) motor diagnostic friction test.
4. If the motor is faulty, and after being restarted by firmware it remains faulty, then the motor electronics may be damaged.
5. If the roller has abnormally high friction, try cleaning and greasing the worm transmission and helical gear.

41.02.00:83

Internal Print Server message

Main roller's encoder is not calibrated.

Causes in order of importance

Calibration values missing

Corrective actions

1. Recalibrate the main roller encoder.
2. Replace the analog encoder, code wheel, and PCA, and recalibrate.

41.02.00:84

Internal Print Server message

Main roller encoder zero position could not be found.

Causes in order of importance

a. Encoder disk broken, dirty, or scratched

b. Connections or encoder PCA problem

Corrective actions

1. Run the main roller diagnostic test to check that the encoder does not read the zero.
2. Replace the analog encoder, code wheel, and PCA, and recalibrate.

41.02.00:85

Internal Print Server message

Main roller's encoder cannot be read.

Causes in order of importance

Connections or encoder PCA problem

Corrective actions

1. Run the main roller's encoder calibration.
2. Replace the analog encoder, code wheel, and PCA, and recalibrate.

41.04.00:01

Internal Print Server message

Electrical PCA failure detected.

Description

Substrate output motor internal fault

Causes in order of importance

a. Connector problem

b. PSU problem

c. Driver problem

Corrective actions

1. Reload the substrate to clear the error.
2. Run output roller (MO) motor calibration/diagnostic test and follow the instructions provided in the test documentation.

41.04.00:01 and MOTOR'S FAULT LED OFF

Internal Print Server message

Output spindle motor internal fault.

Corrective actions

1. Reload the substrate to clear the error.
2. Reboot the printer.
3. Run the output roller (MO) motor calibration/diagnostic test and follow the instructions provided in the test documentation.

41.04.00:18

Internal Print Server message

Output spindle motor's driving voltage is too high.

Causes in order of importance

a. Connection problem

b. Substrate jam

c. Transmission worn out

d. Main roller motor or encoder problem

e. EE driver failure

Action

1. Reload the substrate to clear the error.
2. Run the output roller (MO) motor calibration/diagnostic test and follow the instructions provided in the test documentation.

41.04.00:21

Internal Print Server message

Output spindle motor overpowered.

Causes in order of importance

a. Connection problem

b. Substrate jam

c. Transmission worn out

d. Main roller motor or encoder problem

e. EE driver failure

Corrective actions

1. Reload the substrate to clear the error.
2. Run the output roller (MO) motor calibration/diagnostic test and follow the instructions provided in the test documentation.

41.04.00:51

Internal Print Server message

Tension roller pinch bar unexpectedly raised.

Causes in order of importance

a. Pinch bar raised

b. Sensor failure

Corrective actions

1. Ensure that the pinch bar is lowered.
2. Run the substrate path sensor check diagnostic to check that the sensor works correctly.
3. Replace the sensor.

41.04.00:60

Internal Print Server message

Output spindle motor spinning too fast.

Causes in order of importance

a. Encoder problem

b. Motor problem

Corrective actions

1. Reload the substrate to clear the error.
2. Run the output roller (MO) motor calibration/diagnostic test and follow the instructions provided in the test documentation.

41.04.00:61

Internal Print Server message

Output spindle not moving.

Causes in order of importance

a. Connection problem

b. Substrate jam

c. Spindle end cap worn out or blocked

d. Substrate output transmission problem

e. Substrate output motor

f. EE driver failure

Action

1. Reload the substrate to clear the error.
2. Run the output roller (MO) motor calibration/diagnostic test and follow the instructions provided in the test documentation.

41.05.00:01

Internal Print Server message

Electrical PCA failure detected.

Description

Substrate-to-floor motor internal fault

Causes in order of importance

a. Connector problem

b. PSU problem

c. Driver problem

Corrective actions

1. Reload the substrate to clear the error.
2. Run the tension roller (MF) motor calibration/diagnostic test and follow the instructions provided in the test documentation.

41.05.00:01 and MOTOR'S FAULT LED OFF

Internal Print Server message

Tension roller motor internal fault.

Causes in order of importance

a. Connection problem

b. Motor problem

c. EE problem

Corrective actions

1. Reload the substrate to clear the error.
2. Reboot the printer.
3. Run the tension roller (MF) motor calibration/diagnostic test and follow the instructions provided in the test documentation.

41.05.00:18

Internal Print Server message

Tension roller motor's driving voltage is too high.

Causes in order of importance

a. Connection problem

b. Substrate jam

c. Transmission worn out

d. Main Roller motor or encoder problem

e. EE driver failure

Action

1. Reload the substrate to clear the error.
2. Run the tension roller (MF) motor calibration/diagnostic test and follow the instructions provided in the test documentation.

41.05.00:21

Internal Print Server message

Tension roller motor overpowered.

Causes in order of importance

a. Connection problem

b. Substrate jam

c. Transmission worn out

d. Main roller motor or encoder problem

e. EE driver failure

Corrective actions

1. Reload the substrate to clear the error.
2. Run the tension roller (MF) motor calibration/diagnostic test and follow the instructions provided in the test documentation.

41.05.00:60

Internal Print Server message

Tension roller motor spinning too fast.

Causes in order of importance

a. Encoder problem

b. Motor problem

Corrective actions

1. Reload the substrate to clear the error.
2. Run the tension roller (MF) motor calibration/diagnostic test and follow the instructions provided in the test documentation.

41.05.00:61

Internal Print Server message

Tension roller not moving.

Description

Substrate to floor not moving.

Causes in order of importance

a. Connection problem

b. Substrate jam

c. Spindle end cap worn out or blocked

d. Substrate tension roller transmission problem

e. Substrate tension roller motor

f. EE driver failure

Corrective actions

1. Reload the substrate to clear the error.
2. Run the tension roller (MF) motor calibration/diagnostic test and follow the instructions provided in the test documentation.

41.07.00:51

Internal Print Server message

Tension roller latch unexpectedly open.

Causes in order of importance

a. Latch opened

b. Sensor failure

Corrective actions

1. Ensure that the tension roller latches are closed on both sides.
2. Run the substrate path sensor check diagnostic to check that the sensor (on the capping station side) works correctly.
3. Replace the sensor.

41.10.01:08

Internal Print Server message

Possible take-up reel paper jam.

Causes in order of importance

a. Line of sight blocked

b. Sensor failure, misconnection

Action

1. Check that the take-up reel optical substrate sensor works correctly and that there is no object blocking its line of sight.
2. Run the substrate path sensor check diagnostic.
3. Replace the sensor.

43. Substrate vacuum-system error codes

43.01.00:01

Internal Print Server message

Vacuum blower not working in diagnostic test. Call support.

Causes in order of importance

Vacuum tachometer is not giving feedback signal.

Corrective actions

1. Run diagnostic.
2. Check connections.
3. Replace part.

Severity

Advisory

43.02.00:04

Internal Print Server message

No feedback from the vacuum PCA. Check that substrate behavior in the print zone is OK. Run diagnostic when the job finishes.

Causes in order of importance

a. Connections vacuum PCA failure

b. Power management

Corrective actions

1. Check connections.
2. Check e-box and e-cabinet.
3. Replace vacuum PCA.

Severity

Advisory

43.03.00:04

Internal Print Server message

No feedback from the vacuum pressure sensor. Check that substrate behavior in the print zone is OK. Run diagnostic when the job finishes.

Causes in order of importance

Connections pressure sensor vacuum PCA failure

Corrective actions

1. Check connections.
2. Check pressure sensor EE and air connections.
3. Replace the sensor.

Severity

Advisory

43.03.00:30

Internal Print Server message

Vacuum out of range. Run diagnostics. If the problem persists, call your service representative.

Causes in order of importance

a. Air path open

b. Pressure sensor inlet disconnected

c. Power problem

d. Pump problem

Corrective actions

1. Run diagnostic.
2. Check connections.
3. Check EE and air connections.

Severity

Silent

43.03.00:83

Internal Print Server message

Vacuum sensor calibration fail. Check that substrate behavior in the print zone is OK. Run diagnostic when the job finishes.

Causes in order of importance

a. Calibration process failure
b. Cabling
c. Sensor malfunction
d. Vacuum pump failure

Corrective actions

1. Repeat calibration process.
2. Check cabling and wiring.
3. Replace the sensor.
4. Replace the vacuum pump.

Severity

Advisory

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46. Printhead-primer error codes

46.00.0X:83 (X may be in the range 1–7)

(46.00.01:83, 46.00.01:83, 46.00.01:83, 46.00.01:83, 46.00.01:83, 46.00.01:83, 46.00.01:83)

Internal Print Server message

Primer X not calibrated. Run subsystem diagnostic. If the problem persists, call your support representative.

Causes in order of importance

No value or zero read from NVM

Corrective actions

Run primer calibration.

Severity

Advisory

46.01.0X:01 (X may be in the range 1–7)

(46.01.01:01, 46.01.02:01, 46.01.03:01, 46.01.04:01, 46.01.05:01, 46.01.06:01, 46.01.07:01)

Internal Print Server message

Primer X signal failure. Run subsystem diagnostic. If the problem persists, call your support representative.

Causes in order of importance

Current signal lost or current measure below reference threshold

Corrective actions

1. Check connections.
2. Check carriage interconnect PCA 1 or 2, depending on the primer position reported.
3. Check the primer pump.

Severity

Advisory

46.02.0X:06 (X may be in the range 1–7)

(46.02.01:06, 46.02.02:06, 46.02.03:06, 46.02.04:06, 46.02.05:06, 46.02.06:06, 46.02.07:06)

Internal Print Server message

Primer X leakage detected. Reset primer latch and/or check o-rings. If the problem persists, run the subsystem diagnostic.

Causes in order of importance

Current consumption measured below calibration value

Corrective actions

1. Check primers, looking for leaks.
2. Check latches and o-rings.
3. Run subsystem diagnostic.

Severity

Advisory

46.03.0X:04 (X may be 1 or 2)

(46.03.01:04, 46.03.02:04)

Internal Print Server message

Carriage interconnect X communication failure. Run subsystem diagnostic. If the problem persists, call your support representative.

Causes in order of importance

a. Cabling problem between carriage interconnect and primer

b. Primer problem

c. Carriage interconnect problem

Corrective actions

1. Try to execute primer subsystem diagnostics and follow their instructions.
2. If the printer cannot move the carriage, move it manually, and check the connections.

Severity

Advisory

47. Printhead-cleaning error codes

47.00.00:50

Internal Print Server message

Wiper engage height error. Run subsystem diagnostics. If the problem persists, call your support representative.

Causes in order of importance

a. The printer is detecting an error in the engage system.

b. The cleaning roll is not properly set.

c. Engage is not working properly.

d. The height is wrong.

Corrective actions

1. Check engage and roll.
2. Repeat calibration and run subsystem diagnostic.

Severity

Advisory

47.00.00:80

Internal Print Server message

Engage X calibration missing. Applying nominal values.

Causes in order of importance

Calibration has been lost.

Corrective actions

Recalibrate X position.

Severity

Silent

47.00.00:82

Internal Print Server message

Engage Z calibration missing. Default value applied to allow printing to continue. Call your support representative for more information.

Causes in order of importance

Calibration has been lost.

Corrective actions

Recalibrate Z position and run subsystem diagnostic.

Severity

Advisory

47.01.01:01

Internal Print Server message

Wiper engage motor servo shutdown. Check that your cleaning roll is not blocked. Run subsystem diagnostics. If the problem persists, call support.

Description

The printhead cleaning advance motor has failed to perform the wiper advance movement as expected. The advance motor is controlled in a closed loop by the main interconnect board. The motor receives the PWM signal from the main interconnect board. The internal motor encoder reads the encoder movement signals

and sends the signals to the linear-to-differential encoder PCA, then to the main interconnect board with an intermediate connection at the rear of the printhead cleaning module.

Causes in order of importance

a. Printhead cleaner pinch module is not correctly closed.

b. Printhead cleaner path blocked. The roller cannot move the roll.

c. Advance motor roller connections failure, motor power or encoder cables disconnected.

d. Advance roller mechanical failure

e. Advance motor failure

f. Main interconnect board failure

g. Printhead cleaning roll system mechanical failure

Corrective actions

1. Make sure the pinch mechanism is closed. Push in the black holder to ensure correct latching of the system. Repeat closing operation and restart the system.
2. Check the wiper path for obstructions. If there is an obstruction, re-do the wiper path and ensure there is no damage to the wiper or printhead cleaning roll parts.
3. Check the cable connections of the encoder and motor system.

   NOTE: Check the electrical diagram to ensure that all cables in the motor power and encoder path are correctly connected. See Subsystem block diagrams on page 61.
4. Check the rear side of the printhead cleaning roll and ensure that there is no obvious damage to the belt impelling system, such as a broken gear, broken belt, or motor out of position. Perform printhead cleaning roll advance system open loop and printhead cleaning roll advance system closed loop diagnostics to determine the possible problem.

   Depending on the results of the tests, replace the motor or mechanical parts as appropriate.
5. Replace the advance motor. See MA motor on page 811.
6. Replace the main interconnect board.
7. Replace the failing parts of the printhead cleaning roll.

Severity

Advisory

47.01.01:02

Internal Print Server message

Wiper engage motor initialization error. Run subsystem diagnostics. If the problem persists, call support.

Causes in order of importance

a. System initialization fails.

b. The printhead cleaning roll is not correctly installed.

c. Engage is jammed.

Corrective actions

Check the cleaning roll and run the subsystem diagnostic.

Severity

Advisory

47.01.02:01

Internal Print Server message

Wiper advance motor servo shutdown. Check that your cleaning roll is not blocked. Run subsystem diagnostics. If the problem persists, call support.

Description

The printhead cleaning advance motor has failed to perform the wiper advance movement as expected. The advance motor is controlled in a closed loop by the main interconnect board. The motor receives the PWM signal from the main interconnect board. The internal motor encoder reads the encoder movement signals and sends the signals to the linear-to-differential encoder PCA, then to the main interconnect board with an intermediate connection at the rear of the printhead cleaning module.

Causes in order of importance

a. Printhead cleaner pinch module is not correctly closed.

b. Printhead cleaner path blocked. The roller cannot move the roll.

c. Advance motor roller connections failure, motor power, or encoder cables disconnected

d. Advance roller mechanical failure

e. Main interconnect board failure

f. Printhead cleaning roll system mechanical failure

Corrective actions

1. Make sure the pinch mechanism is closed. Push in the black holder to ensure correct latching of the system. Repeat closing operation and restart the system.
2. Check the wiper path for obstructions. If there is an obstruction, re-do the wiper path and ensure that there is no damage to the wiper or printhead cleaning roll parts.
3. Check the cable connections of the encoder and motor system.

   NOTE: Check the electrical diagram to ensure that all cables in the motor power and encoder path are correctly connected. See Subsystem block diagrams on page 61.

4. Check the rear side of the printhead cleaning roll and ensure that there is no obvious damage to the belt impelling system, such as a broken gear, broken belt, or motor out of position.

5. Replace the advance motor. See MA motor on page 811.
6. Replace the main interconnect board.
7. Replace the failing parts of the printhead cleaning roll.

Severity

Advisory

47.01.02:02

Internal Print Server message

Wiper advance motor initialization error. Run subsystem diagnostics. If the problem persists, call your support representative.

Causes in order of importance

a. System initialization failure
b. The printhead cleaning roll is not correctly installed
c. The printhead cleaning advance motor is jammed

Corrective actions

Run subsystem diagnostic.

Severity

Advisory

47.01.04:01

Internal Print Server message

Wiper input motor servo shutdown. Check that your cleaning roll is not blocked. Run subsystem diagnostics. If the problem persists, call support.

Description

The printhead cleaning advance motor has failed to perform the wiper advance movement as expected. The advance motor is controlled in a closed loop by the main interconnect board. The motor receives the PWM signal from the main interconnect board. The internal motor encoder reads the encoder movement signals and sends the signals to the linear-to-differential encoder PCA, then to the main interconnect board with an intermediate connection at the rear of the printhead cleaning module.

Causes in order of importance

a. Printhead cleaner pinch module is not correctly closed.
b. Printhead cleaner path blocked. The roller cannot move the roll.
c. Advance motor roller connections failure, motor power, or encoder cables disconnected

d. Advance roller mechanical failure

e. Advance motor failure

f. Main interconnect board failure

g. Printhead cleaning roll system mechanical failure

Corrective actions

1. Make sure the pinch mechanism is closed. Push in the black holder to ensure correct latching of the system. Repeat closing operation and restart the system.
2. Check the wiper path for obstructions. If there is an obstruction, re-do the wiper path and ensure there is no damage to the wiper or printhead cleaning roll parts.
3. Check the cable connections of the encoder and motor system.

   NOTE: Check the electrical diagram to ensure that all cables in the motor power and encoder path are correctly connected. See Subsystem block diagrams on page 61.
4. Check the rear side of the printhead cleaning roll and ensure that there is no obvious damage to the belt impelling system, such as a broken gear, broken belt, or motor out of position. Perform printhead cleaning roll advance system open loop and printhead cleaning roll advance system closed loop to determine the possible problem.

   Depending on the results of the tests, replace the motor or mechanical parts as appropriate.
5. Replace the advance motor. See MA motor on page 811.
6. Replace the main interconnect board.
7. Replace the failing parts of the printhead cleaning roll.

Severity

Advisory

47.01.04:02

Internal Print Server message

Wiper input motor initialization error. Run subsystem diagnostics. If the problem persists, call your support representative

Causes in order of importance

a. System initialization failure

b. Printhead cleaning roll is not correctly installed

c. Input motor is jammed

Corrective actions

Run subsystem diagnostic.

Severity

Advisory

47.01.05:01

Internal Print Server message

Wiper output motor servo shutdown. Check that your cleaning roll is not blocked. Run subsystem diagnostics. If the problem persists, call support.

Description

The printhead cleaning advance motor has failed to perform the wiper advance movement as expected. The advance motor is controlled in a closed loop by the main interconnect board. The motor receives the PWM signal from the main interconnect board. The internal motor encoder reads the encoder movement signals and sends the signals to the linear-to-differential encoder PCA, then to the main interconnect board with an intermediate connection at the rear of the printhead cleaning module.

Causes in order of importance

a. Printhead cleaner pinch module is not correctly closed.

b. Printhead cleaner path blocked. The roller cannot move the roll.

c. Advance motor roller connections failure, motor power, or encoder cables disconnected

d. Advance roller mechanical failure

e. Advance motor failure

f. Main interconnect board failure

g. Printhead cleaning roll system mechanical failure

Corrective actions

1. Make sure the pinch mechanism is closed. Push in the black holder to ensure correct latching of the system. Repeat closing operation and restart the system.
2. Check the wiper path for obstructions. If there is an obstruction, re-do the wiper path and ensure there is no damage to the wiper or printhead cleaning roll parts.
3. Check the cable connections of the encoder and motor system.

   NOTE: Check the electrical diagram to ensure that all cables in the motor power and encoder path are correctly connected. See Subsystem block diagrams on page 61.

4. Check the rear of the printhead cleaning roll and ensure there is no obvious damage to the belt impelling system, such as a broken gear, broken belt, or motor out of position. Perform printhead cleaning roll advance system open loop and printhead cleaning roll advance system closed loop diagnostics to determine the possible problem. See Table 5-15 Printhead cleaning on page 368.

   Depending on the results of the tests, replace the motor or mechanical parts as appropriate.
5. Replace the advance motor. See MA motor on page 811.
6. Replace the main interconnect board.
7. Replace the failing parts of the printhead cleaning roll.

Severity

Advisory

47.01.05:02

Internal Print Server message

Wiper output motor initialization error. Run subsystem diagnostics. If the problem persists, call your support representative.

Causes in order of importance

a. System initialization failure

b. Printhead cleaning roll is not correctly installed

c. Output motor is jammed

Corrective actions

Run subsystem diagnostic.

Severity

Advisory

47.04.00:01

Internal Print Server message

End of printhead cleaning roll. Check that your cleaning roll is not blocked. If it is empty, replace it with a new one.

Causes in order of importance

a. Real end of roll

b. The cleaning roll has slipped over its axis and the printer detects that it is not moving correctly

Corrective actions

Run subsystem diagnostic.

Severity

Silent

47.05.11:04

Internal Print Server message

Wiper engage motor drive PCA communication failure. Run subsystem diagnostics. If the problem persists, call your support representative.

Causes in order of importance

a. Engage motor drive PCA wiring/cabling problem

b. Engage motor drive PCA malfunction

Corrective actions

1. Run subsystem diagnostic.
2. Check connections and replace the PCA if necessary.

Severity

SEVERE

47.05.12:04

Internal Print Server message

Wiper advance motor drive PCA communication failure. Run subsystem diagnostics. If the problem persists, call your support representative.

Causes in order of importance

a. Advance motor drive PCA wiring/cabling problem

b. Advance motor drive PCA malfunction

Corrective actions

1. Run subsystem diagnostic.
2. Check connections and replace the PCA if necessary.

Severity

SEVERE

47.05.14:04

Internal Print Server message

Wiper input motor drive PCA communication failure. Run subsystem diagnostics. If the problem persists, call your support representative.

Causes in order of importance

a. Input motor drive PCA wiring/cabling problem

b. Input motor drive PCA malfunction

Corrective actions

1. Run subsystem diagnostic.
2. Check connections and replace the PCA if necessary.

Severity

SEVERE

47.05.15:04

Internal Print Server message

Wiper output motor drive PCA communication failure. Run subsystem diagnostics. If the problem persists, call your support representative.

Causes in order of importance

a. Input motor drive PCA wiring/cabling problem

b. Input motor drive PCA malfunction

Corrective actions

1. Run subsystem diagnostic.
2. Check connections and replace the PCA if necessary.

Severity

SEVERE

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48. PPS error codes

48.00.00:01

Internal Print Server message

PPS misalignment. Run diagnostics to recover PPS subsystem. If the problem persists, call HP service.

Description

The relative movement of one of the PPS modules with respect to the other is incorrect, which means that there is danger of a misalignment of the complete system. With this system error the system is protecting itself to prevent any possible damage. This system error can also happen when the distance between the homing position and the engage position is more than 7 mm.

Causes in order of importance

a. A trapped obstruction has damaged the power transmission and has broken the mechanical power chain.

b. Moving down a homing sensor has been activated or the PPS switch has failed.

Corrective actions

1. Restart the printer.
2. Try to move the carriage beam to the normal position (from the Internal Print Server or Print Care). If it is still failing, reboot in diagnostic mode and perform the same operation from Print Care.
3. From the diagnostic mode, perform the switch diagnostic, testing the four different homing switches of the PPS.
4. If the carriage beam is misaligned, perform a manual alignment by removing the PPS motor and turning the PPS gear system until they are aligned.
5. Check that all the PPS supports are touching the scan axis.
6. Check whether any object is trapped between the scan axis and PPS support.

Severity

Advisory

48.01.0X:01 (X may be in the range 1–4)

(48.01.01:01, 48.01.02:01, 48.01.03:01, 48.01.04:01)

Internal Print Server message

Servo shutdown PPS X not usable, but printing enabled/disabled depending on PPS value. If the problem persists, call your service representative.

Description

The meaning of X is:

1 = front right motor

2 = rear right motor

3 = rear left motor (IDS side)

4 = front left motor (IDS side)

An error in the closed-loop control (servo control) of the PPS system has occurred. This error indicates that the PPS system is not moving as expected in closed-loop control. The servo-controlled movements consist of applying a specific PWM to a motor (a certain amount of energy) and receiving the feedback of an encoder about the actual movement of the motor after applying that specific PWM.

Therefore, if after applying a specific PWM the encoder does not register the expected number of encoder counts (movement), the system will produce this error. Also if the PWM values come out of a certain range of values for the movement (i.e too high PWM to obtain a movement), this error is produced.

Causes in order of importance

a. PWM signal not supplied to motor. PWM generator (driver) failure, motor failure, cable failure, or disconnected.

b. Encoder signals indicating the movement not registered. Encoder disconnected, encoder broken or failed, cable disconnected, or the electrical system receiving the encoder signal has failed.

c. PWM is too high due to a mechanical failure. Mechanical system jammed, mechanical system broken or loose.

d. PPS system fuse failure. Contact between mechanical system fuse and the motor module.

Corrective actions

1. Check the connection of PPS motor power cable and encoder cables.
2. Check that power is supplied to the encoder PCA (LED in the main interconnect).
3. With PPS in the high position, unscrew the X-Y bushing, and check that it can move smoothly through the column. The screwdriver needs to be long.
4. With the PPS in the low position, remove the bottom stopper to the PPS screw (may need to remove the left and right curing module).
5. Remove each PPS screw with a flat screwdriver and then grease the parts. Check that there are no obstructions.
6. If you find plastic or metal obstructions, you will have to remove the corresponding PPS motor assembly later to clean it too.
7. If the high friction error continues, swap the PPS screw from one to the other, and check whether the failure is following the PPS screw.
8. Check mechanical blocking status in the system fuse.

Severity

Advisory

48.01.0X:02 (X may be in the range 1–4)

(48.01.01:02, 48.01.02:02, 48.01.03:02, 48.01.04:02)

Internal Print Server message

Movement X test fault. Subsystem disabled, but printing may be possible. If not, run diagnostics. If the problem still persists, call HP service.

Description

The meaning of X is:

1 = front right PPS movement test fault

2 = rear right PPS movement test fault

3 = rear left PPS movement test fault

4 = front left PPS movement test fault

During start-up the printer produces an automatic check by making a small movement forwards and backwards to check the main system functionality (motor moves, encoder signals are received). This error is produced when this test fails.

As the movement is very small, this error usually represents a critical error such as cables disconnected, motor failure, or a PCA fault.

Causes in order of importance

a. Cable connection failure

b. Rotor of the motor blocked

c. Motor failure/encoder

d. Main interconnect board failure (for the right PPS systems)

e. Remote controller failure (for the left PPS systems)

Corrective actions

1. Check correct connection of PPS motor power cable and encoder cables.
2. Check that the motor is not blocked by anything.
3. Perform the PPS motor diagnostic test.
4. Check mechanical blocking status in the mechanical movement limiter.
5. Replace the PPS motor together with the encoder system and cabling.
6. Replace the main interconnect board or the remote controller board, depending on which part has failed.

Severity

Advisory

48.02.0X:40 (X may be in the range 1–4)

(48.02.01:40, 48.02.02:40, 48.02.03:40, 48.02.04:40)

Internal Print Server message

Servo X current out of range. Run diagnostics. If the problem still persists, call your service representative.

Description

The meaning of X is:

1 = front right PPS

2 = rear right PPS

3 = rear left PPS

4 = front left PPS

Causes in order of importance

a. Environmental conditions of PCA driver

b. Overworking conditions of driver in the PCA

c. Main interconnect board failure (for the right PPS systems).

d. Remote controller failure (for the left PPS systems)

Corrective actions

1. Perform carriage beam system recovery. If this is not possible, recover the system manually by removing the motor and aligning the PPS by hand.
2. Perform PPS motor diagnostic test.
3. Check correct connection of PPS motor power cable and encoder cables.
4. Perform move to load position and check the average and maximum points of PWM values for high constant values of friction. If the values are very high, grease the PPS system. If the system error persists, replace the PPS motor mount unit that fails.
5. Replace the main interconnect board or the remote controller board, depending on the failing side.
   - E-cabinet PPS control motors: main interconnect
   - IDS PPS controlled motors: remote controller board

Severity

Silent

48.05.3X:04

Internal Print Server message

Driver motor PCA X communication issue. Run diagnostics to recover the PPS subsystem. If the problem persists, call your service representative.

Causes in order of importance

a. Cabling/wiring problem
b. E-box problem
c. Driver motor PCA problem

Corrective actions

1. Check wiring.
2. Run the subsystem diagnostics for PPS and e-box. Replace the faulty part.

Severity

SEVERE

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49. Carriage aerosol-removal error codes

49.01.0X:01 (X may be 1 or 2)

(49.01.01:01, 49.01.02:01)

Internal Print Server message

X = 1 left, X=2 right bar aerosol removal fan fault detected. Run subsystem diagnostic to check them. If any fan doesn't work, call your support representative.

Description

The aerosol produced while printing may affect print quality. The aerosol can make other parts of the printer dirty, such as encoders or sensors, and create spontaneous failures. You should repair the problem as soon as possible.

Causes in order of importance

a. The carriage has two fan arrays with 5 fans to each array. The fans have a fault signal which is activated when the fan is powered but not rotating. Fans or arrays not connected will not display this error.

b. One of the fans burned or failed.

c. Carriage interconnect power fault (24 V)

d. Carriage interconnect driver fault

e. Data cable failure

f. Printhead interconnect

Corrective actions

1. Check whether the fans are rotating when they are activated. Perform diagnostics.
2. Replace the aerosol fans.
3. Ensure 24 V are reaching the carriage interconnect: see the 24 V LED.
4. Replace the carriage interconnect. See Carriage interconnect PCA on page 465.
5. Swap fan array connections and perform the fan array diagnostic test to check which fan has failed.
6. Swap over data cables to confirm a data cable failure, replace the failed data cable.
7. If there is a signal failure, swap over the printhead interconnects 2 and 3, then recheck and confirm the error, and replace the faulty printhead interconnect.

Severity

Advisory

49.02.01:02

Internal Print Server message

Left or right bar aerosol removal nozzle clog detected. Ensure that aerosol removal air inlet is clean.

Causes in order of importance

a. Nozzle/filter clogged

b. Pressure sensor clogged/failing or connections damaged

Corrective actions

1. Check and clean the inlet.
2. Check and/or replace the filter.
3. Check the pressure sensor and its connections.

Severity

Advisory

49.02.01:07

Internal Print Server message

Left or right bar aerosol removal filter almost full. Replace it with a new one as soon as possible.

Corrective actions

Run subsystem diagnostic.

Severity

Advisory

49.02.01:09

Internal Print Server message

Left or right bar aerosol removal filter not present. Check that the filter is in place. If the filter is already installed, run diagnostic.

Causes in order of importance

Having set high fan PWM pressure, the value is low.

Corrective actions

1. Check that the filter is present.
2. Check the box sealing.
3. Run subsystem diagnostic.

Severity

Advisory

49.02.02:02

Internal Print Server message

Left or right bar aerosol removal nozzle clog detected. Ensure that aerosol removal air inlet is clean.

Causes in order of importance

a. Nozzle/filter clogged

b. Pressure sensor clogged/failing or connections damaged

Corrective actions

1. Check and clean the inlet.
2. Check and/or replace the filter.
3. Check the pressure sensor and its connections.

Severity

Advisory

49.02.02:07

Internal Print Server message

Left or right bar aerosol removal filter almost full. Replace it with a new one as soon as possible.

Corrective actions

Run subsystem diagnostic.

Severity

Advisory

49.02.02:09

Internal Print Server message

Left or right bar aerosol removal filter not present. Check that the filter is in place. If the filter is already installed, run diagnostic.

Causes in order of importance

Having set high fan PWM pressure, the value is low.

Corrective actions

1. Check that the filter is present.
2. Check the box sealing.
3. Run subsystem diagnostic.

Severity

Advisory

49.03.01:09

Internal Print Server message

Left or right bar aerosol removal pressure sensor not connected. Run subsystem diagnostic to check them. If problem is confirmed call support.

Causes in order of importance

a. Pressure sensor tube is not connected.
b. Pressure sensor is not connected to Sinatra PCA.
c. Sinatra PCA is failing.

Corrective actions

1. Run subsystem diagnostic.
2. Check tube connection.
3. Check sensor cable.
4. Replace Sinatra PCA.

Severity

Advisory

49.03.01:31

Internal Print Server message

Left or right bar aerosol removal negative pressure detected. Run subsystem diagnostic.

Causes in order of importance

a. The pressure sensor tube is connected to the wrong side of the sensor.
b. The pressure sensor is failing.
c. The Sinatra PCA is failing.
d. The aerosol fan is installed in the reverse direction.

Corrective actions

1. Run subsystem diagnostic.
2. Check that the pressure sensor tube is in the right position.
3. Check that the pressure sensor is working.
4. The drying PCA is failing, run drying diagnostics before replacing it.
5. Check that the aerosol fans are correctly installed.

Severity

Advisory

49.03.01:32

Internal Print Server message

Left or right bar aerosol removal pressure value too high. Run subsystem diagnostic.

Causes in order of importance

The pressure value is out of the pressure sensor range of measurement.

Corrective actions

1. Run subsystem diagnostic.
2. Replace the pressure sensor.
3. Replace the Sinatra PCA.

Severity

Advisory

49.03.01:33

Internal Print Server message

Left or right bar aerosol removal pressure value too low. Run subsystem diagnostic.

Causes in order of importance

The most probable cause of this error is that the tube that connects the pressure sensor (Sensirion SDP1000-L05) to the aerosol removal box is disconnected or pinched.

The sensor is located near the **right** bar aerosol removal box, and the tube should be connected from the sensor inlet marked as **Lo** to the inlet at the bottom of the aerosol removal box:

- The tube should not be pinched.
- The tube should go up to the full length of the inlets at the sensor and the box.

If the tube is properly connected at both inlets, make sure that it is not pinched by any other element in the carriage.

If the pressure sensor reading is too low, the aerosol removal bar will work at full power (the module will be very noisy) and there may be small errors in dot placement that could produce grain.

Corrective actions

1. Run subsystem diagnostic.
2. Check that all tubes are properly connected and not pinched.
3. Check cable connections.
4. Replace the sensor.

Severity

Advisory

49.03.02:09

Internal Print Server message

Left or right bar aerosol removal pressure sensor not connected. Run subsystem diagnostic to check them. If problem is confirmed call support

Causes in order of importance

a. Pressure sensor tube is not connected.
b. Pressure sensor is not connected to Sinatra PCA.
c. Sinatra PCA is failing.

Corrective actions

1. Run subsystem diagnostic.
2. Check tube connection.
3. Check sensor cable.
4. Replace the Sinatra PCA.

Severity

Advisory

49.03.02:31

Internal Print Server message

Left or right bar aerosol removal negative pressure detected. Run subsystem diagnostic.

Causes in order of importance

a. The pressure sensor tube is connected to the wrong side of the sensor.

b. The pressure sensor is failing.

c. The Sinatra PCA is failing.

d. The aerosol fan is installed in the reverse direction.

Corrective actions

1. Run subsystem diagnostic.
2. Check that the pressure sensor tube is in the right position.
3. Check that the pressure sensor is working.
4. The drying PCA is failing, run drying diagnostics before replacing it.
5. Check that the aerosol fans are correctly installed.

Severity

Advisory

49.03.02:32

Internal Print Server message

Left or right bar aerosol removal pressure value too high. Run subsystem diagnostic.

Causes in order of importance

The pressure value is out of the pressure sensor range of measurement.

Corrective actions

1. Run subsystem diagnostic.
2. Replace the pressure sensor.
3. Replace the Sinatra PCA.

Severity

Advisory

49.03.02:33

Internal Print Server message

Left or right bar aerosol removal pressure value too low. Run subsystem diagnostic.

Causes in order of importance

The most probable cause of this error is that the tube that connects the pressure sensor (Sensirion SDP1000-L05) to the aerosol removal box is disconnected or pinched.

The sensor is located near the **right** bar aerosol removal box, and the tube should be connected from the sensor inlet marked as **Lo** to the inlet at the bottom of the aerosol removal box:

- The tube should not be pinched.
- The tube should go up to the full length of the inlets at the sensor and the box.

If the tube is properly connected at both inlets, make sure that it is not pinched by any other element in the carriage.

If the pressure sensor reading is too low, the aerosol removal bar will work at full power (the module will be very noisy) and there may be small errors in dot placement that could produce grain.

Corrective actions

1. Run subsystem diagnostic.
2. Check that all tubes are properly connected and not pinched.
3. Check cable connections.
4. Replace the sensor.

Severity

Advisory

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50. OMAS error codes

50.00.01:00

Internal Print Server message

OMAS is not tracking substrate.

Description

This error is triggered when the OMAS is disconnected as the result of a failed calibration or repeated navigation failures during a plot. The error is logged in a file.

Causes in order of importance

a. Substrate not navigable

b. OMAS window dirty

c. OMAS failure

Corrective actions

1. Check whether the substrate type is transparent or lacks sufficient features to be read by the OMAS. If this is the case, turn off the OMAS for that substrate type.
2. Clean the OMAS window. See the user's guide.
3. Replace the OMAS platen assembly. See OMAS platen assembly on page 806.

Severity

Silent

50.00.01:89

Internal Print Server message

Double-sided only, cannot find the registration line. Reload substrate. If error persists, run diagnostics.

Causes in order of importance

a. Substrate bubble
b. Dirty sensor
c. Faulty sensor

Corrective actions

1. Check that the substrate is navigable, properly loaded, and flat over the sensor.
2. Run the OMAS cleanliness diagnostic and clean it if necessary.
3. Replace the OMAS.

Severity

Advisory

50.01.01:00

Internal Print Server message

OMAS doesn't see fiducials.

Causes in order of importance

a. Substrate bubble
b. Dirty sensor
c. Faulty sensor

Corrective actions

1. Check that the substrate is navigable, properly loaded, and flat over the sensor.
2. Run the OMAS cleanliness diagnostic and clean it if necessary.
3. Replace the OMAS.

Severity

Silent

50.01.01:01

Internal Print Server message

OMAS opti-electronics error (cable or mini-PCA at sensor). OMAS disabled. But the printer can still print. Run diagnostics and/or call your support representative.

Description

Critical error detected on the OMAS controller board. This failure occurs only during the OMAS controller self-test (when the printer starts).

Causes in order of importance

a. Sporadic failure

b. Failure in OMAS controller

Corrective actions

1. Restart the printer. This may be sufficient in some cases.
2. If the error is persistent, you can continue printing by turning off the OMAS.
3. Check the OMAS controller board to make sure that everything is correctly connected and undamaged.
4. Replace the OMAS and vacuum control box.

Severity

Advisory

50.01.01:77

Internal Print Server message

OMAS window dirty. OMAS disabled, but the printer can still print. Run diagnostics and/or call support.

Causes in order of importance

a. OMAS is dirty.

b. OMAS is not properly connected.

c. OMAS is faulty.

d. OMAS PCA is faulty.

Corrective actions

1. Check and clean the OMAS window.
2. Run subsystem diagnostics.
3. Check connections.
4. Replace OMAS and/or OMAS PCA.

Severity

Advisory

50.03.01:01

Internal Print Server message

OMAS controller operational failure. Substrate advance closed loop lost. Run diagnostic and call support if the problem persists.

Description

The OMAS is disabled, and the printer tries to continue printing. The OMAS will be re-enabled at the next start-up.

Causes in order of importance

1. Sporadic failure
2. Internal firmware error in OMAS controller
3. OMAS controller failure

Corrective actions

1. Restart the printer. This may be sufficient in some cases.
2. If the error is persistent, it is possible to continue printing by turning off the OMAS. However, we recommend solving the system error to obtain the full range of printer features.
3. Replace the OMAS and vacuum control box.
4. Replace the OMAS cable. See OMAS and vacuum cables kit on page 801.

Severity

Advisory

50.03.01:03

Internal Print Server message

OMAS firmware version mismatch. OMAS disabled, but the printer can still print. Check that your firmware is up to date.

Description

The system automatically updates the internal firmware when a mismatch occurs; therefore this error is displayed only if the internal system has been corrupted and an update is not possible.

Causes in order of importance

Failure in OMAS controller

Corrective actions

Replace the OMAS and vacuum control box.

Severity

Advisory

50.07.01:04

Internal Print Server message

OMAS controller CAN communication error. Substrate advance closed loop lost. Run diagnostic, and call your support representative if the problem persists.

Description

Failure in communication with the OMAS controller board via CAN from the main interconnect board.

Causes in order of importance

a. OMAS controller power failure

b. CAN cable line failure

- From main interconnect board to OMAS controller (cable disconnected or failed)
- From upper engine PCA to main interconnect board

c. Vacuum controller PCA CAN line failure

d. OMAS controller failure

Corrective actions

1. Perform the power diagnostics procedure to supply 24 V power. Check power LEDs on the vacuum controller. If the LEDs are off, check power arrival in the power connector (GND, 5 V and 24 V).
2. If power does not arrive, check cable connections in the main interconnect board and ensure voltages are coming from the main interconnect board connector.
3. If power does not leave the main interconnect board, remove the main interconnect board cover and ensure all power LEDs are on.

4. If all the main interconnect board power LEDs are not on, check power arrival to the main interconnect board, check cable integrity and connectors.
5. If no problem with the cables or connectors is found, replace the main power supply. See E-box PSU on page 529.
6. If power arrives to the main interconnect board, replace the main interconnect board.
7. Check data cable connections.
8. Any LAN cable with the necessary length can be used to perform troubleshooting. Replace the cable and restart the printer. If the problem is the LAN cable, HP recommends that you replace it with the appropriate HP service part.
9. Disassemble the OMAS and vacuum PCA box and ensure all connections are correct.
10. Replace the OMAS and vacuum control box.

Severity

SEVERE

51. Printer-covers and safety-element error codes

51.01.00:92

Internal Print Server message

Main window is open. Close the windows to continue printing. If the problem persists, run diagnostic to identify problem.

Causes in order of importance

a. Main window is open or switch finger is missing or damaged.
b. Switch is not connected or wiring is damaged.
c. Switch is faulty.

Corrective actions

1. Check that, when the window is closed, the switch is mechanically activated.
2. Check the wiring and plugs.
3. Replace the switch.

Severity

Advisory

51.02.00:92

Internal Print Server message

Front cover is open. Close the front cover to continue printing. If the problem persists, run diagnostic to identify problem.

Causes in order of importance

a. Front cover is open or safety interlock finger is missing or damaged.

b. Safety interlock is not connected or wiring is damaged.

c. Safety interlock malfunction.

Corrective actions

1. Check that, when the front cover is closed, the switch is mechanically activated (run diagnostic).
2. Check wiring and plugs.
3. Replace the safety interlock.

Severity

Advisory

51.03.00:92

Internal Print Server message

Loading table is not closed. Close loading table to continue printing. If the problem persists, run diagnostic to identify problem.

Causes in order of importance

a. Loading table is open or safety interlock finger is missing or damaged.

b. Safety interlock is not connected or wiring is damaged.

c. Safety interlock malfunction.

Corrective actions

1. Check that, when the loading table is closed, the switch is mechanically activated (run diagnostic).
2. Check the wiring and plugs.
3. Replace the safety interlock.

Severity

Advisory

51.04.00:92

Internal Print Server message

Emergency stops and/or safety relay activated. Check that emergency stops are not activated. If the problem persists, run diagnostic to identify problem.

Causes in order of importance

a. Emergency stop is really activated.

b. Emergency stop is not connected or wiring is damaged.

c. Emergency stop is broken.

Corrective actions

1. Run diagnostic to check which emergency stop is raising the problem.
2. Check the wiring.
3. Replace the emergency stop.

Severity

Advisory

52. Drop-detector error codes

52.00.00:01

Internal Print Server message

Drop detector all-sensors problem. Run subsystem diagnostic. Call support if diagnostic fails or print quality is affected.

Causes in order of importance

a. Service-station interconnect board or cable failed.

b. Main interconnect board failed.

Corrective actions

1. Check the service-station interconnect board cable connections at both ends (service station and main interconnect board). Make sure that the cable is well connected and check cable integrity, replace parts if required.
2. Ensure that power (12 V and 5 V) is reaching the board (Power LEDs on). Check the LEDs in the drop-detector interconnect.
3. Replace the service-station interconnect board and cable.
4. Replace the main interconnect board after finding the root cause of the failure, such as drop detector or faulty cable.

Severity

Advisory

52.00.00:83

Internal Print Server message

Drop detector all-sensors problem. Run subsystem diagnostic. Call your support representative if the diagnostic fails or print quality is affected.

Causes in order of importance

Due to NVM change, because of a reset or hard disk replacement.

Corrective actions

Repeat the calibration.

Severity

Advisory

52.00.00:91

Internal Print Server message

Drop-detector bump switch not activated. Reboot in diagnostic mode and run subsystem diagnostic. If the problem persists, call your support representative and store printheads in their orange caps.

Causes in order of importance

a. Bump is detected but bump switch is not activated.

b. Drop-detector shutter friction is too high at some point, detecting a bump before reaching the bump switch.

c. Bump switch is broken or disconnected.

Corrective actions

1. Check that the drop-detector worm and sliders are clean and greased, and there is no high friction zone along its displacement.
2. If the drop-detector shutter reaches the switch but is not detected, check the cable and /or replace the bump switch.

Severity

SEVERE

52.01.0X:01 (X may be in the range 1–7)

(52.01.01:01, 52.01.02:01, 52.01.03:01, 52.01.04:01, 52.01.05:01, 52.01.06:01, 52.01.07:01)

Internal Print Server message

Drop-detector sensor 0X issue detected, sensor disabled. Run subsystem diagnostic. Call your support representative if diagnostic fails, or print quality is affected.

Description

The drop detectors' basic operation consists of receiving power to feed an LED transmitter and a receiver situated at both sides of the drop-detector window. In standby with no drops or interference in the drop detector window, the transmitter is permanently powered and the receiver receives a signal of medium range (total range from 0 to 255, medium range signal around 127). The system error is displayed when the drop detector is 0 in standby (12 V supplied to the drop detectors, but there is no drop detection activity).

Causes in order of importance

a. Drop detector disconnected

b. Drop detector failed

c. Service station interconnect board or cable failed

d. Main interconnect board failed

Corrective actions

1. Make sure that the drop detector is correctly connected to the service station interconnect board. Use diagnostics to check whether the drop detector is disconnected or faulty.
2. Swap the problematical drop detector connection with another drop detector to check whether the problem is with the actual drop detector. If so, replace the drop detector.
3. Check the service station interconnect board cable connections at both ends. Make sure the cable is well connected and check cable integrity, replace parts if required.
4. Ensure power (12 V and 5 V) arrives to the board (Power LEDs on). Check the LEDs in the drop detector interconnect.
5. Replace service station interconnect board and cable.
6. Replace the OMAS PCA.

Severity

Advisory

52.01.0X:83 (X may be in the range 1–7)

(52.01.01:83, 52.01.02:83, 52.01.03:83, 52.01.04:83, 52.01.05:83, 52.01.06:83, 52.01.07:83)

Internal Print Server message

Drop-detector sensor X not calibrated, sensor disabled. Run subsystem diagnostic. Call your support representative if diagnostic fails, or print quality is affected.

Description

The drop detector is unable to detect its exact position to perform the drop detection. When performing a drop detection, the printer performs a synchronization with the linear encoder and the tail encoder located in the service station motor in order to establish its position with respect to the drop detector windows before

performing the actual drop detection action. This error indicates that this synchronization cannot be achieved as the readings from the two encoders do not match according to the movements performed.

Causes in order of importance

a. Intermittent failure mostly seen when previously used printheads are installed
b. Drop detector linear encoder strip not correctly installed or connected
c. Drop detector linear encoder sensor dirty, disconnected, or failed
d. Incorrect calibration of drop detector system
e. Power not arriving to the service station PCA
f. Service station interconnect board or cable failure
g. Main interconnect board failure

Corrective actions

1. Check the functionality of the drop detector.
2. Check the linear encoder strip in the service station. Make sure that the encoder strip is correctly installed in the sensor and well placed in its holders at each end.
3. Check the linear encoder sensor connection. Perform the drop detector diagnostic test to check the linear encoder. If the test fails, replace the encoder system.
4. Perform a drop detector calibration.
5. Ensure power (12 V and 5 V) is reaching the service station interconnect board (power LEDs on).
6. If power is getting through (LEDs on), replace the service station interconnect board and cable.
7. If there is no power (LEDs off), replace the main interconnect board.
8. Check the cable connections of the service station system. If no failure is found, replace the service station interconnect board.
9. Replace the main interconnect board.
    a. Print the nozzle check by following the directions in the service menu.
    b. Cancel the drying time to save 10–15 minutes.
    c. If no failure is detected, there no need to go further, the drop detector is working correctly and the intermittent system error is due to the high usage of the printheads.

Severity

Advisory

52.02.00:83

Internal Print Server message

Calibration LS2K missing. Automatic substrate load and alignment disabled, only manual options available. Contact your support representative.

Causes in order of importance

a. Calibration value missing

b. Unable to perform calibration

Corrective actions

1. Repeat the calibration.
2. Replace the sensor.

Severity

Advisory

52.02.0X:11 (X may be in the range 1–4)

(52.02.01:11, 52.02.02:11, 52.02.03:11, 52.02.04:11)

Internal Print Server message

Drop-detector electronics X, 5 V power issue. Run subsystem diagnostic. Call support if the diagnostic fails, or print quality is affected.

Causes in order of importance

a. Cabling connector problem

b. Drop-detector PCA problem

c. PSU problem (check whether this error happens to all drop-detector sensors)

Corrective actions

1. Run the drop-detector diagnostics.
2. Check drop-detector PCA LEDs for troubleshooting. See Board name: Drop-detector PCA on page 305.
3. Replace the faulty part.

Severity

Advisory

52.02.0X:12 (X may be in the range 1–4)

(52.02.01:12, 52.02.02:12, 52.02.03:12, 52.02.04:12)

Internal Print Server message

Drop-detector electronics X, 12 V power issue. Run subsystem diagnostic. Call your support representative if the diagnostic fails, or print quality is affected.

Causes in order of importance

a. Cabling connector problem

b. Drop-detector PCA problem

c. PSU problem (check whether this error happens to all drop-detector sensors)

Corrective actions

1. Run the drop-detector diagnostics.
2. Check the drop-detector PCA LEDs for troubleshooting. See Board name: Drop-detector PCA on page 305.
3. Replace the faulty part.

Severity

Advisory

52.03.00:01

Internal Print Server message

Drop-detector encoder synchronization issue. Please run substsyem diagnostics. If problem persists, call your support representative.

Description

When performing drop detection, the printer performs synchronization with the linear encoder and the tail encoder located in the service-station motor in order to establish its position with respect to the drop-detector windows before performing the actual drop-detection action. This error indicates that this synchronization cannot be achieved as the readings from the two encoders do not match according to the movements performed.

Causes in order of importance in order of importance

a. Intermittent failure due to used printheads that are not in good condition

b. Drop-detector linear-encoder sensor dirty, disconnected, or failed

c. The drop detection tray cannot move smoothly due to excessive friction or a mechanical problem

d. Incorrect calibration of drop-detector system

e. Failure in the service station motor, motor drive PCA, DD MUX PCAs, or connecting cables

Corrective actions

1. Check the nozzle health of the printheads.
2. Check the linear encoder strip in the service station. Make sure that the encoder strip is clean, correctly installed in the sensor, and correctly placed in its holders at each end.
3. Check the linear encoder sensor connection. Perform the drop-detector diagnostic test to check the linear encoder. If the test fails, replace the encoder system.
4. Grease the worm with a recommended grease, and make sure bushings are not damaged.

5. Check the functionality of the drop detector:
    - Print the nozzle check.
    - Cancel the drying time to save 10–15 minutes.
    - If no failure is detected, there is no need to go further, the drop detector is working correctly, and the intermittent system error is due to the high usage of the printheads.
6. Perform a drop-detector calibration.
7. If there is no power (LEDs off), replace the e-box interconnect board. See E-box interconnect PCA on page 541.
8. Check the cable connections of the service-station system.

Severity

Advisory

52.04.00:02

Internal Print Server message

Drop-detector movement test fault. Run subsystem diagnostic. Call your support representative if the diagnostic fails, or print quality is affected.

Causes in order of importance

a. Shuttle blocked
b. Friction too high

Corrective actions

1. Use a screwdriver to ensure that the shuttle is not jammed against the structure.
2. Clean and oil the worm and rod sliders if necessary.
3. Run the backlash/elasticity diagnostic.
4. If the problem persists, replace the part.

Severity

Advisory

52.04.00:08

Internal Print Server message

Drop-detector station jam. Reboot and run subsystem diagnostic. Call your support representative if the diagnostic fails, or print quality is affected.

Causes in order of importance

a. Shuttle blocked

b. Friction too high

Corrective actions

1. Ensure with a screwdriver that the shuttle is not jammed against the structure.
2. Clean and oil the worm and rod sliders if necessary.
3. Run the backlash/elasticity diagnostic.
4. If the problem persists, replace the part.

Severity

SEVERE

52.05.12:04

Internal Print Server message

Motor driver PCA comm failure. Run subsystem diagnostic. If the problem persists, call your support representative.

Causes in order of importance

a. Service-station interconnect: main interconnect board cable disconnected, pin connection fault

b. Power not reaching the service station PCA (5 V pin 19 and 12 V pin 2, GND 20&1)

c. Service-station Interconnect fault

d. Main interconnect board failed

e. Engine PCI bBoard

f. Firmware error/corruption

Corrective actions

1. Check the cable connections from the service-station interconnect board to the main interconnect board. Check for cable or pin damage.
2. Check that power is reaching the service-station interconnect (12 V and 5 V) (Power LEDs on).
3. If there is power (LEDs on) and no other failure is found, replace the service-station interconnect board and cable.
4. If there is no power (LEDs off), replace the main interconnect board.
5. Replace the main interconnect board.
6. Replace the service-station interconnect.
7. Replace the engine PCI board. See Engine PCA on page 535.

8. Reinstall the firmware and perform drop-detector calibrations.
9. Replace the hard disk drive. See E-box hard disk drive on page 526.

Severity

Advisory

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55. Carriage line-sensor error codes

55.00.00:02

Internal Print Server message

Line sensor communication with EEPROM failure. Automatic substrate load and alignment disabled. Only manual options available. Contact your support representative.

Causes in order of importance

a. Line sensor disconnected
b. Line sensor failed
c. Sensor interconnect failed
d. Carriage interconnect failed

Corrective actions

1. Check line sensor connections in the sensor interconnect.
2. Perform the line sensor check. See Table 5-12 Carriage sensors on page 365.
3. Replace the line sensor. See Line sensor on page 428.
4. Replace the carriage sensor box.
5. Replace the carriage interconnect board. See Carriage interconnect PCA on page 465.

Severity

Advisory

55.01.00:83

Internal Print Server message

Calibration gain offset missing. Automatic substrate load and alignment disabled, only manual options available. Contact your support representative.

Causes in order of importance

a. Calibration value is missing.
b. Unable to do the calibration.

Corrective actions

1. Repeat calibration.
2. Check connections.
3. Replace line sensor.

Severity

Advisory

55.02.00:83

Internal Print Server message

Calibration LS2K missing. Automatic substrate load and alignment disabled. Only manual options available. Contact your support representative.

Causes in order of importance

a. Calibration value is missing.

b. Unable to do the calibration.

Corrective actions

Repeat the calibration.

Severity

Advisory

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58. Carriage SOL error codes

58.00.00:01

Internal Print Server message

CLC failure. Calibration wasn't completed successfully. Run subsystem diagnostics. If the problem persists, call your support representative.

Causes in order of importance

a. SOL shutter is jammed.

b. Sensor is dirty.

Corrective actions

Replace the sensor.

Severity

Advisory

58.00.00:02

Internal Print Server message

CLC measures not increasing value. Check that you have set the right substrate. Run subsystem diagnostics. If the problem persists, call your support representative.

Causes in order of importance

a. Job pattern is not printed correctly.

b. Sensor shutter is jammed.

c. Sensor has failed.

Corrective actions

1. Check the job pattern.
2. Check printhead nozzle health.
3. Check the sensor shutter.
4. Replace the sensor.

Severity

Advisory

58.00.00:75

Internal Print Server message

Error saving data on hard disk, out of memory. Calibration wasn't completed successfully. Run subsystem diagnostics. If the problem persists, call your support representative.

Causes in order of importance

a. Temporary problem

b. Permanent damage to the hard disk drive

Corrective actions

Run subsystem diagnostic.

Severity

Advisory

58.00.00:85

Internal Print Server message

CLC white substrate measure out of range. Check that you have set the right substrate. Run subsystem diagnostics. If the problem persists, call your support representative.

Causes in order of importance

If substrate and printed job are OK, the most probable cause is a sensor failure.

Corrective actions

Replace the SOL sensor.

Severity

Advisory

58.02.00:02

Internal Print Server message

SOL shutter door open/close check failure. SOL sensor unusable due to shutter door issue. Run subsystem diagnostics. If the problem persists, call your support representative.

Causes in order of importance

SOL sensor is open because of a substrate jam, or is failing.

Corrective actions

Run the SOL calibration diagnostic and open the cleaning roll door to check that the shutter is properly closed. If it is failing, replace it.

Severity

Advisory

58.03.00:04

Internal Print Server message

Color sensor communication error. Run subsystem diagnostics. If the problem persists, call your support representative.

Causes in order of importance

a. Cabling problem

b. Color sensor problem

Corrective actions

1. Check cabling, and replace it if necessary.
2. Run subsystem diagnostic.
3. Check the sensor, and replace it if necessary.

Severity

Advisory

58.03.00:84

Internal Print Server message

SOL calibration failure. Calibration wasn't completed successfully. Run subsystem diagnostics. If the problem persists, call your support representative.

Causes in order of importance

a. Calibration has failed.
b. The printheads have a lot of blocked nozzles and the pattern is not printed properly.
c. The sensor is faulty.

Corrective actions

1. Check printhead health.
2. Repeat the calibration and replace the sensor if the problem persists.
3. Run subsystem diagnostic.

Severity

Advisory

58.03.00:85

Internal Print Server message

SOL measure error (out of range measure). Calibration wasn't completed successfully. Run subsystem diagnostics. If the problem persists, call your support representative.

Causes in order of importance

a. Calibration has failed.
b. The printheads have a lot of blocked nozzles and the pattern is not printed properly.
c. The sensor is faulty.

Corrective actions

1. Run subsystem diagnostic.
2. Check printhead health.
3. Repeat the calibration and replace the sensor if the problem persists.

Severity

Advisory

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61. Internal firmware error codes

61.01.00:85

Internal Print Server message

No data received from IPS. Check that IPS and engine are up and running, and data cable is connected. If the problem persists, call your support representative.

Causes in order of importance

a. The data cable between the Internal Print Server and the printer engine is disconnected or damaged.
b. The printer or engine is not working.
c. The network is not correctly configured.

Corrective actions

1. Check that data cable and connections are OK.
2. Ensure that Internal Print Server and printer engine (lights and LEDs) are up and running.
3. Ensure that the printer configuration in the Internal Print Software is as recommended.

Severity

Advisory

61.02.00:01

Internal Print Server message

Unexpected printing interrupt. Job canceled. Check that you have the recommended IPS configuration and the right connection between IPS and printer engine, also run drying diagnostics. If the problem persists, call your support representative.

Causes in order of importance

The job is cancelled because the safety heater timeout has been triggered: the substrate is spending too much time in the print zone with high-powered lamps. Usually this is because a lack of system performance: the Internal Print Server is not providing data to the engine fast enough.

Corrective actions

1. Check that the Internal Print Server computer has the recommended configuration and no other third-party software installed.
2. Check the performance of the hard disk drive. If the problem persists, replace the hard disk drive. See E-box hard disk drive on page 526.
3. Run printhead control link and drying diagnostics.

Severity

Advisory

61.09.00:04

Internal Print Server message

Unexpected end of file. Job cancelled. Check that you have the recommended IPS configuration and the right connection between IPS and printer engine. Check that your file is OK. If the problem persists, call your support representative.

Causes in order of importance

a. Sporadic error
b. Job file corruption
c. Connection problem between IPS and printer engine
d. Very strange printer firmware or Internal Print Server software corruption

Corrective actions

1. Check that the Internal Print Server configuration is as recommended and there is no software running that could reduce performance.
2. Turn off the printer, wait 10 seconds, then restart the printer.
3. The job file may be corrupted or cropped, try to RIP it again.
4. Check the connection between Internal Print Server and printer engine.
5. Reinstall printer firmware and Internal Print Server sofware.

Severity

Advisory

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79. Miscellaneous error codes

79:03

Internal Print Server message

A critical error has occurred in the communication between the formatter board and one of the engine PCI boards.

Causes in order of importance

a. Sporadic error

b. PCI board connection failure

c. Faulty engine board

d. Faulty formatter board

Corrective actions

1. Turn off the printer, wait 10 seconds, then restart the printer.
2. Disconnect both PCI boards from the formatter and clean the PCI ports by blowing into them. Clean the PCI contacts in the engine boards and reconnect.
3. Replace the engine board. See Engine PCA on page 535.
4. Replace the formatter board.

Severity

SEVERE

79.04 or 79.X:04

Internal Print Server message

Generic firmware error

Causes in order of importance

a. An internal firmware error has occurred in the printer. If the error persists, retrieve the printer's error logs and escalate the problem to HP.

b. The 79.X:04 error is advisory, and does not require an immediate reboot. It reports that the firmware is functional and that the printer can still be used, but recommends restarting the printer when possible in order to ensure that this system error will not be displayed again.

c. A 79:04 system error is usually a consequence of an immediate printer shutdown following another system error.

Corrective actions

1. Switch the printer off and on.
2. If the error persists, check that the printer has the latest firmware version. If not, update the firmware to the latest version.
3. Perform the hard disk test from the e-box subsystem diagnostic.

4. If possible, extract the service plot and interpret the results.
5. If the error persists, replace the hard disk drive. See E-box hard disk drive on page 526.

Severity

SEVERE

79.04.00:00

Internal Print Server message

Generic system error. Reboot the printer. If the problem persists, call your support representative

Causes in order of importance

a. This system error code can also be displayed as 79:04 or 79.1:04 (generic firmware error).
b. An internal firmware error has occurred in the printer. If the error persists, retrieve the printer's error logs and escalate the problem to HP.
c. The 79.1:04 error is an advisory error, not forcing the customer to restart the printer immediately, reporting that the internal firmware is not critical and that the printer can still be used, but recommend restarting the printer when possible in order to ensure that this system error will not be displayed again.
d. A 79:04 system error is usually a consequence of an immediate printer shutdown following another system error.

Corrective actions

1. Switch the printer off and then on again.
2. If the error persists, check that the printer has the latest firmware version. If not, update the firmware to the latest version.
3. Perform the hard disk test from the e-box subsystem diagnostic.
4. If possible, extract the service plot and interpret the results.
5. If the error persists, replace the hard disk drive. See E-box hard disk drive on page 526.

Severity

SEVERE

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86. Scan-axis error codes

86.00.00:02

Internal Print Server message

Scan-axis length test failure. Check scan-axis path, clean encoder, run diagnostic. If the problem persists, call your support representative.

Description

The scan-axis length is not as expected.

Causes in order of importance

a. A high friction point, or something blocking the carriage path

b. Damage to the scan-axis encoder strip

Corrective actions

1. Check for possible obstructions in the carriage path (with the printer turned off, manually uncap the service station and move the carriage along the scan axis to search for possible high friction points. Look for objects or possible problems in the carriage path, the rods, bushings, and platen area.
2. Perform the service function test, which can help to diagnose any possible problem with friction problems in the gear axis.
3. Check for possible damage in the scan-axis encoder strip and replace if required. See Encoder strip on page 773.

Severity

Advisory

86.01.00:01

Internal Print Server message

Carriage movement failure. Make sure maintenance routines are up to date and then select **Reinitialize carriage** from the **Tools** menu. Perform the carriage-rail cleaning process; if the problem persists, call your support representative.

Causes in order of importance

a. Sporadic problem

b. Carriage movement jammed

c. Carriage movement friction too high

Corrective actions

1. Ensure that there is no obstacle in the carriage path.
2. Perform carriage rail maintenance to clean the rails and check friction.
3. Run the scan-axis diagnostics to check whether the problem comes from other part.
4. Reinitialize the carriage, if it continues failing.

Severity

Advisory

86.01.00:02

Internal Print Server message

Scan-axis direction test failure. Run diagnostic. If the problem persists, call your support representative.

Causes in order of importance

a. A high friction point or something blocking the carriage path

b. Damage to the scan-axis encoder strip

Corrective actions

1. Run subsystem diagnostic.
2. Check for possible obstructions in the carriage path (with the printer turned off, manually uncap the service station and move the carriage along the scan axis to search for possible high friction points. Look for objects or possible problems in the carriage path, the rods, bushings, and platen area.
3. Check for possible damage to the scan-axis encoder strip and replace it if necessary. See Encoder strip on page 773.

Severity

Advisory

86.03.01:92

Internal Print Server message

Scan stop triggered by rear safety sensor. Reinitialize carriage. If the problem persists, call your support representative.

Corrective actions

Run subsystem diagnostic.

Severity

Advisory

86.03.02:92

Internal Print Server message

Scan stop triggered by front safety sensor. Reinitialize carriage. If the problem persists, call your support representative.

Causes in order of importance

Safety element activated

Corrective actions

Run subsystem diagnostic.

Severity

Advisory

86.04.00:08

Internal Print Server message

Possible scan-axis jam detected. Check that servicing and substrate paths are completely clean and clear of obstacles and afterwards perform Reinitialize Carriage from IPS. If problem persists run subsystem diagnostics and call your service representative.

Causes in order of importance

a. Intermittent or sporadic problem

b. Obstacle in the carriage path

c. Carriage friction too high

d. Encoder strip damaged

e. Motor or motor PCA damaged

Corrective actions

1. Run the scan-axis diagnostics.
2. Ensure that the carriage path is free of obstacles.
3. Perform the scan-axis cleaning process.
4. Check the encoder strip and replace it if it is damaged. See Encoder strip on page 773.
5. Replace the motor.

Severity

Advisory

Troubleshooting without system errors

Troubleshooting using board LEDs

All the printer boards have diagnostic LEDs to help in the troubleshooting. Although some LED information is redundant and also known by the printer firmware, using the board LEDs can be very useful when trying to diagnose power or communication problems. The following sections review each board LED and provide information on:

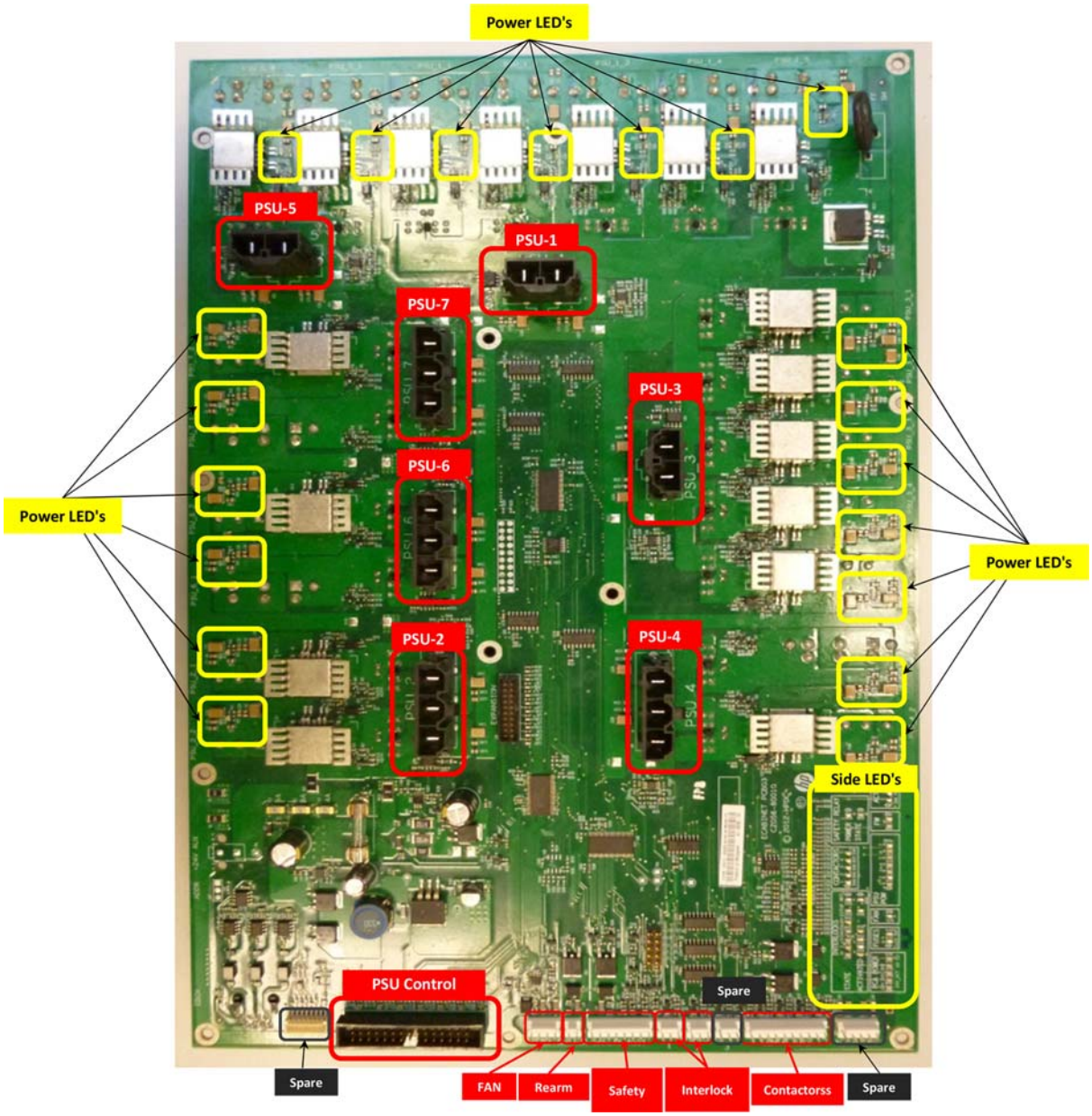
- Board physical connector: Boards serigraphy together with cables labelling should be enough to perform repais operations, but this information can be useful when providing remote support not being in front of the printer.
- Diagnostic LEDs' physical location and meaning:

For further information regarding electric and electronic interactions, see the subsystems' block diagrams.

Board name: E-cabinet PCA

Board picture pointing to connectors/LEDs—internal side

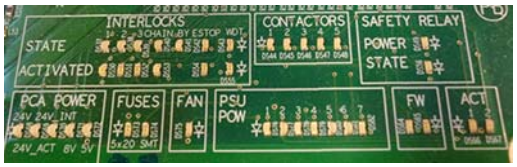
Internal side



Meaning of LEDs

Side LEDs

Most of the e-cabinet PCA LEDs are packed on the PCA side where they are most visible.



Interlocks

These LEDs give information about the safety interlocks, emergency stops, and watchdog timer.

STATE: refers to the current (real time) state

ACTIVATED: LEDs turn on whenever there is a condition. Only the firmware can turn them off.

	1 (front door interlock)	2 (loading table interlock)	3	BY (Interlock bypass)	ESTOP	WDT (Watchdog timer)
STATE	GREEN: Door closed	GREEN: Table closed	NOT USED	RED: Bypass ON	GREEN: emergency stops released	RED: Watchdog triggered
	OFF: Door open	OFF: Table open	NOT USED	OFF: Bypass OFF	OFF: 1 or more emergency stops pressed	OFF: Watchdog untrigg.
ACTIVATED	RED: Door has been opened	RED: Table has been opened	NOT USED		RED: 1 or more emergency stops have been pressed	RED: Watchdog triggered
	OFF: Reset state	OFF: Reset state	NOT USED		OFF: Reset state	OFF: Reset state

Safety relay

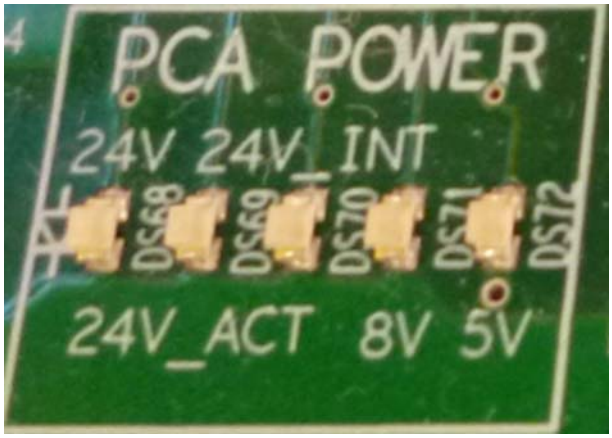
These LEDs give information about the safety relay (X1)



POWER	GREEN: Safety relay powered (all emergency stops released, and PCA supplying +24V)
	OFF: Safety relay not powered (1 or more emergency stops pressed, PCA not supplying +24V)
STATE	GREEN: Safety relay ON (lights after the enable button is pressed: power ON)
	OFF: Safety relay OFF (power OFF)

PCA power

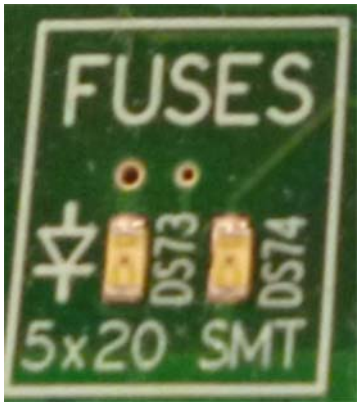
These LEDs give information on the PCA voltage status.



24V	24V_ACT	24V_ACT	8V	5V
GREEN: 24V Input power present (from PSU-2)	GREEN: 24V to external components OK	GREEN: 24V for internal PCA use OK	GREEN: 8V Regulator OK	GREEN: 5V Regulator OK
OFF: 24V not present (from PSU-2)	OFF: 24V to external components KO (fuse blown or overcurrent protection triggered)	OFF: 24V for internal PCA use KO (PCA malfunction, fuse blown or component broken)	OFF: 8V Regulator KO	OFF: 5V Regulator KO

Fuses

These LEDs give information on the status of the PCA fuses. There is a mistake on the silk screen: where it says 5×20 it should say SMT, and where it says SMT it should say 5×20.



DS73	DS74
RED: SMT fuse blown (Internal 24V PCA not present)	5x20 fuse F24 blown (24V to external components not present)
OFF: SMT fuse not blown	5x20 fuse F24 not blown

If the fuse is blown, there is no communication with the PCA.

Fan

Fan rotation feedback

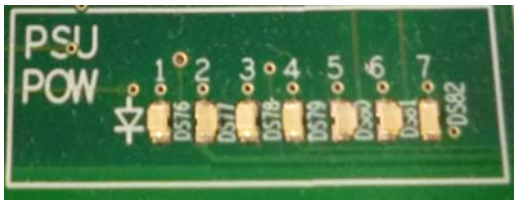


Fan (DS75)
GREEN: Fan rotation OK
OFF: Fan fault

If the fuse is blown, there is no communication with the PCA.

PSU power

These LEDs give information on the state of the DC power supplies.



1 (PSU-1)	2(PSU-2)	3(PSU-3)	4(PSU-4)	5(PSU-5)	6(PSU-6)	7(PSU-7)
GREEN: PSU ON						
OFF: PSU OFF						

Firmware

Firmware (e-box) controlled LEDs



DS64	DS65
Blinking GREEN: e-cabinet firmware alive	NOT USED
Static (OFF of GREEN): e-cabinet firmware not communicating	

ACT

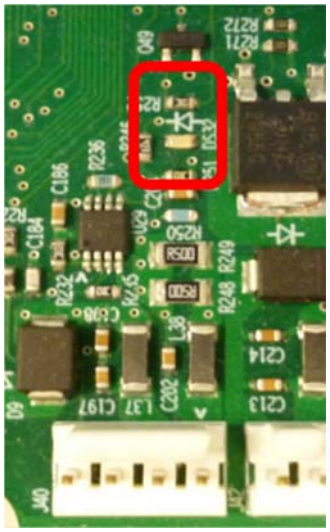
LEDs for external actuators power: NOT USED



1 (DS66)	2 (DS67)
NOT USED	NOT USED

Enable button feedback

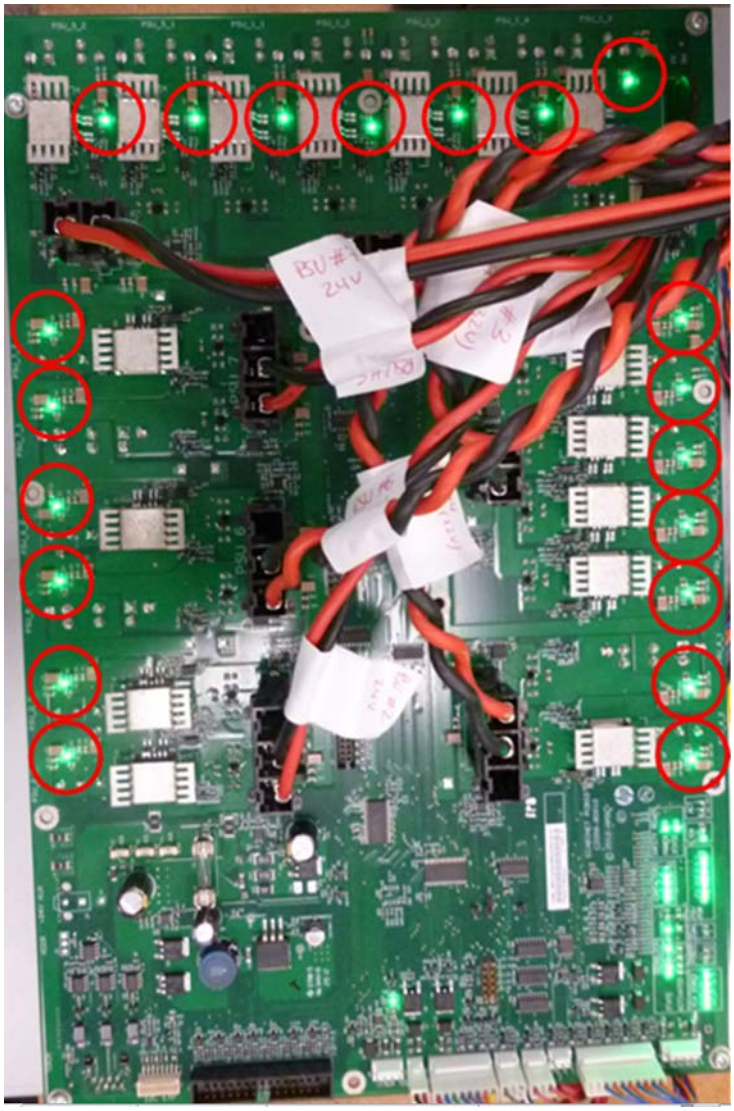
DS32 reflects the state of the enable/rearm button.



DS32
GREEN: Enable button lit
OFF: Enable button not lit

Power output state (internal side)

Each power output has a state LED next to the output connector.

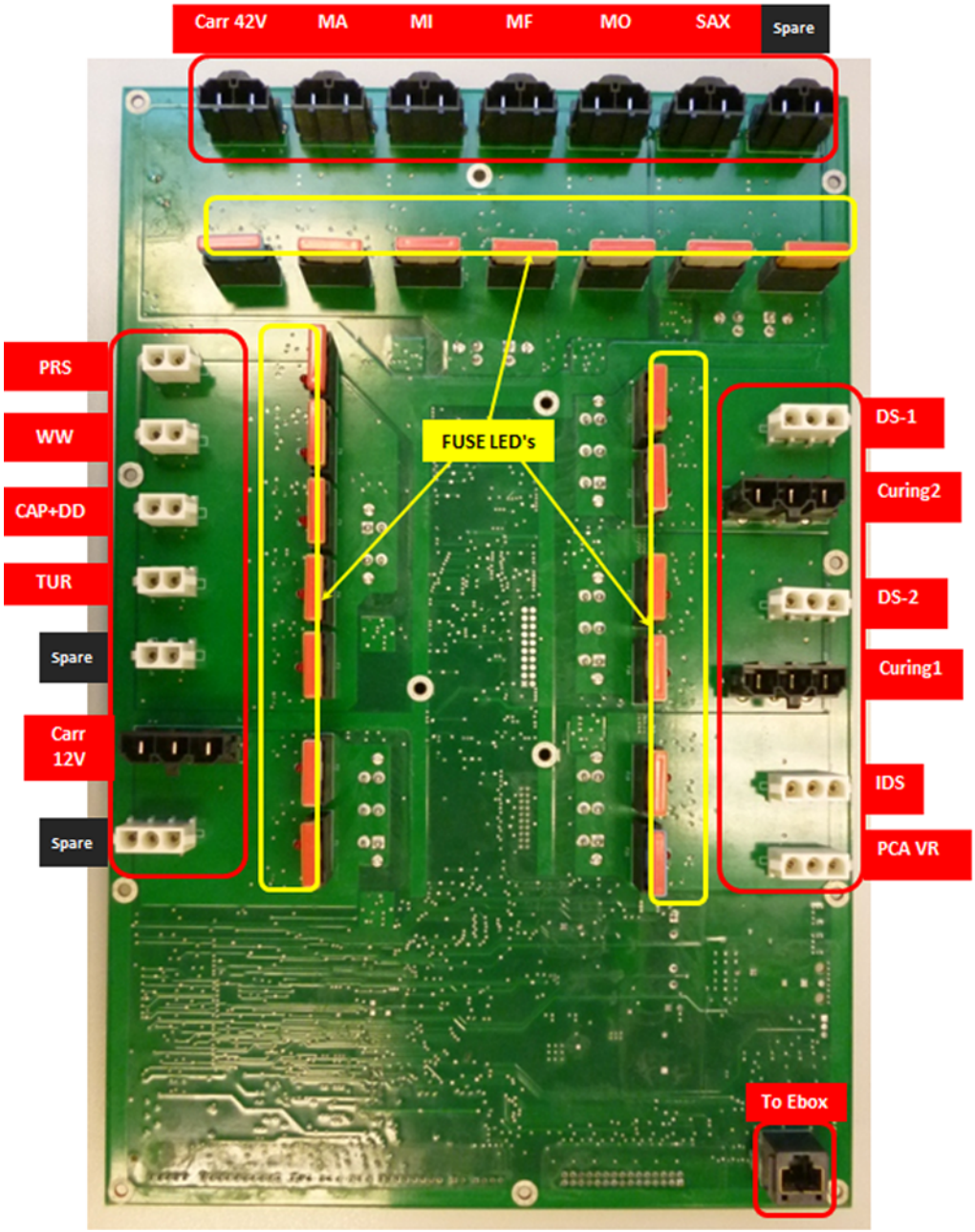


The meaning of these LEDs is:

Green	Output is on
Off	Output is off

Board picture pointing to connectors/LEDs—external side

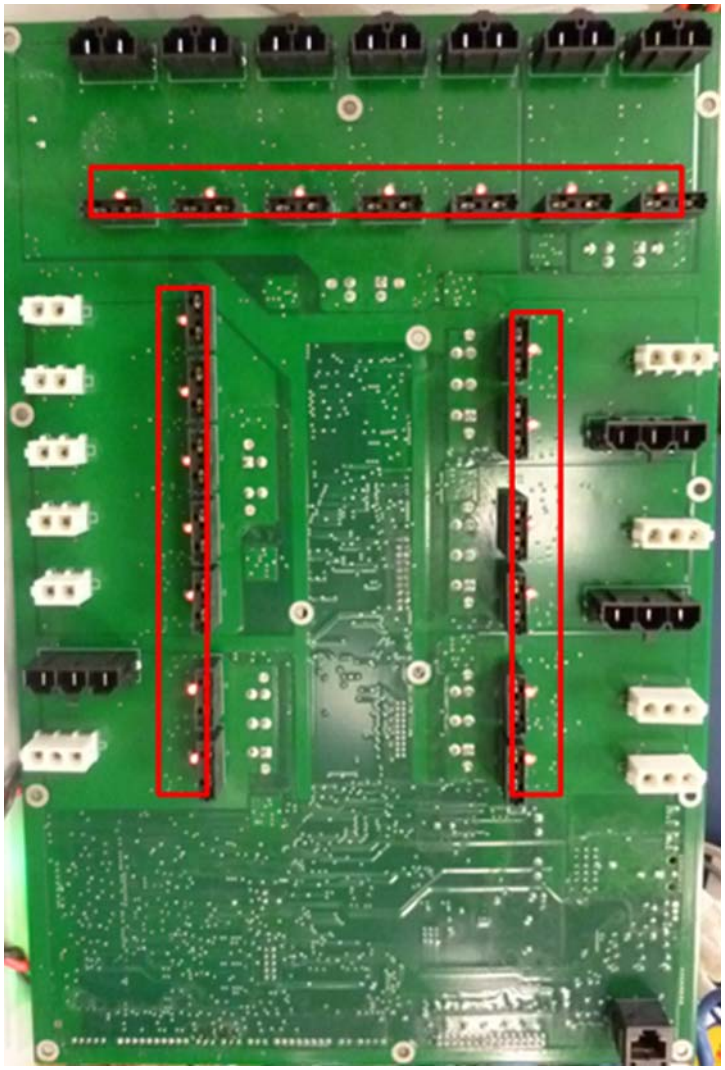
External side



Meaning of LEDs

Power output fuse feedback (external side)

Accessible on the external side, there is a fuse for each power output, associated with each fuse is a red LED.



The meaning of these LEDs is:

RED	Fuse blown or not present
OFF	Fuse OK

NOTE: For a LED to turn red indicating that the fuse is blown, there must be DC power present (the corresponding DC PSU must be ON); for PSUs 1, 3, 4, and 5 this means that the safety relay must be activated and the front door and loading table closed.

Other e-cabinet LEDs and important test points

Safety relay LEDS

The safety relay X-1 has 3 LEDs: Power, CH-1, and CH-2.



The meaning of these LEDs is as follows:

- POWER:
  - +24V present at the safety relay, for this LED to be ON the e-cabinet PCA must supply +24V (firmware activated) and the emergency stops must be all released.
- CH.1 and CH.2:
  - The safety relay has two redundant channels in series, each LED indicates the state of the channel, for the safety relay to activate both channels must be good.
  - These LEDs should be always be in the same state (lit when the safety relay is activated and unlit otherwise). If one is lit and the other unlit, the safety relay is faulty and should be replaced.

AC power supply DS-1 and DS-2 LEDs

The AC power supplies have three LEDs each: STATUS, PWM, and ACOK.



NOTE: These LEDs work only if there is control voltage present (+24VDC). This voltage is supplied through the e-cabinet PCA and must be activated by the firmware.

The meaning of each LED is:

- ACOK (green): lit when there is AC input voltage present at the power input is inside the required margins.
- PWM (green): lit when the firmware is providing an adequate control signal.
- STATUS (yellow): lit when there is any error condition.

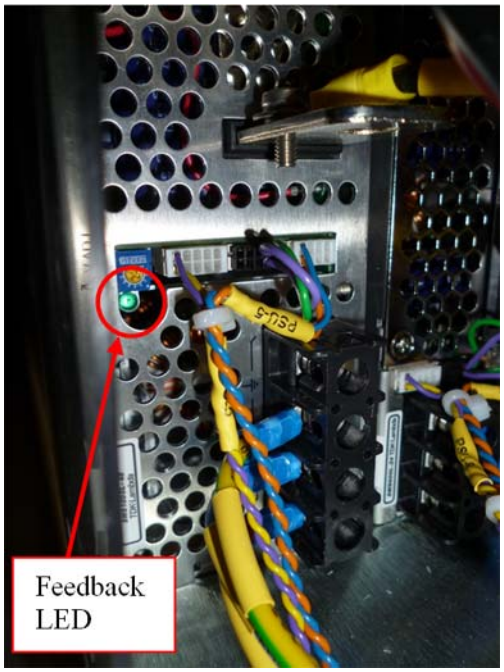
DC power supply LEDs

Each power supply has a green LED that lights when the PSU is working normally (has AC voltage and the DC voltage generated is good).

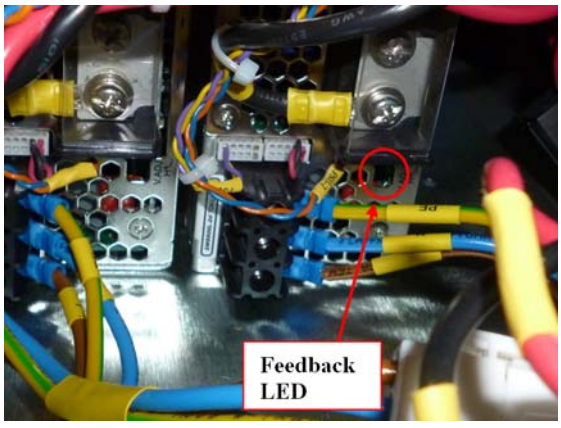
Even though the visibility of the LED on some of the PSUs is not very good, it's easy to tell whether it's lit or not.

There are seven DC PSUs in the e-cabinet from three different model families, here is the location of the feedback LED for each family:

- SWS1000L: PSU-1 and PSU-5



- SWS600L: PSU-2, PSU-6, and PSU-7

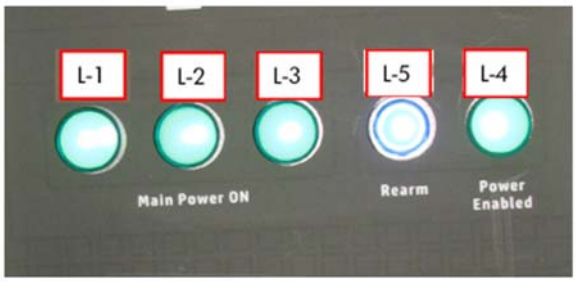


- SWS300A: PSU-3 and PSU-4



External lights

On the e-cabinet side where the user interface is, there are four lights and one illuminated pushbutton:



L-1, L-2, L-3 (main power lights)

These lights are lit when there is AC voltage present from the installing mains and the main switch (SW-1) is on.

Inside the e-cabinet there are two for each light:

- L-1 is protected by the fuses in FH-1 and FH-2
- L-2 is protected by the fuses in FH-3 and FH-4
- L-3 is protected by the fuses in FH-5 and FH-6

If all these lights are not lit when the main switch is on:

- It's most likely that one or more AC protections on the mains installation (external to the machine) are switched off, so there is no AC voltage present.
- It's possible that the installation cross-connectors on TB-1 are not installed, loose, or wrongly installed.

If only one or two of these lights are lit when the main switch is on:

- It's possible that one or two phases in the installation are failing.
- It's possible that one or more protective fuses are blown.

L-4 (printer-enabled light)

This light gives direct feedback on the state of the safety relay:

- Safety relay activated: L-4 lit
- Safety relay deactivated: L-4 unlit

L-5 (rearm button)

L-5 is a blue illuminated pushbutton (the rearm button):

- The button is used to activate the safety relay.
- The light is controlled by the firmware through the e-cabinet PCA to indicate to the user when the machine requires this activation.

AC protections

The AC protections are standard circuit breakers like the ones used in the electrical installation of any building.

- ACBs (automatic circuit breakers) protect against overcurrents, produced for example when a heater fails and its actual electrical resistance is much lower than the nominal value.
- RCDs (residual current devices) protect against ground leakages, produced for example when a heater fails and its wiring breaks and ends up in electrical contact with the machine structure.

The circuit breakers are off when their lever is down, and on when their lever is up. They are easily checked and actuated from the e-cabinet exterior.

Important test points

This section describes some particular points where measurements can be made with a multimeter to understand the state of the e-cabinet better.

⚠ **WARNING!** In most cases, these measures require operating the e-cabinet with its doors open. Take all necessary precautions to prevent electrical shocks. Always check that the grounding cable is correctly installed before powering up.

AC input voltages (power integrity check)

Verify the power configuration measuring the voltage between adjacent terminal blocks in TB1, all measured voltages must be inside the 200–240 V ±10% as per the chosen configuration.

Measure the voltage between terminals TB1-1 and TB1-2

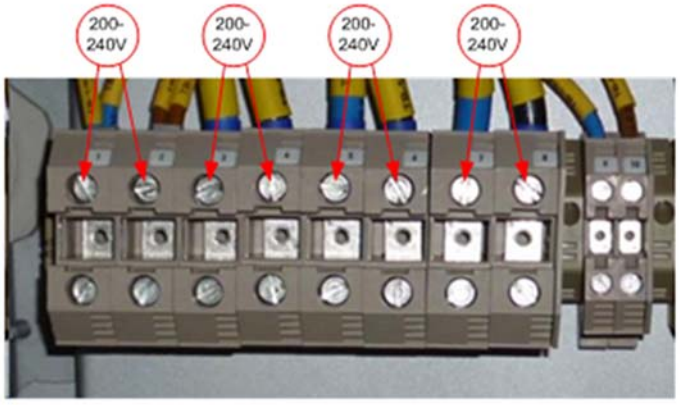
Measure the voltage between terminals TB1-3 and TB1-4

Measure the voltage between terminals TB1-5 and TB1-6

Measure the voltage between terminals TB1-7 and TB1-8

Configuration option	Nominal line to line voltage	Measured voltage
1 and 3	380V	220V
	400V	230V
	415V	240V

2 and 4	200V	200V
	208V	208V
	220V	220V
	240V	240V
5 and 6	240V	240V

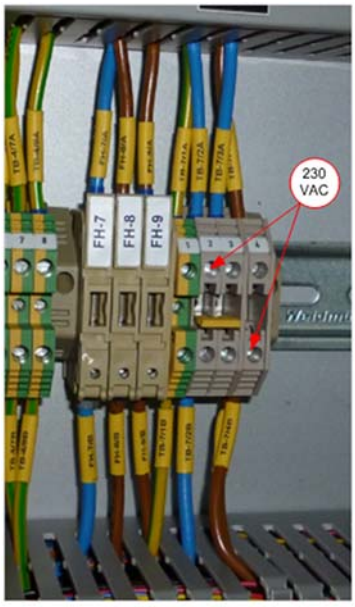


A lower-than-expected reading may indicate a loose screw on the electrical installation. Switch off the mains through the branch circuit breaker in the building PDU and check that all the input power cables and the configuration cross connectors are tightly screwed.

Power transformer AC output

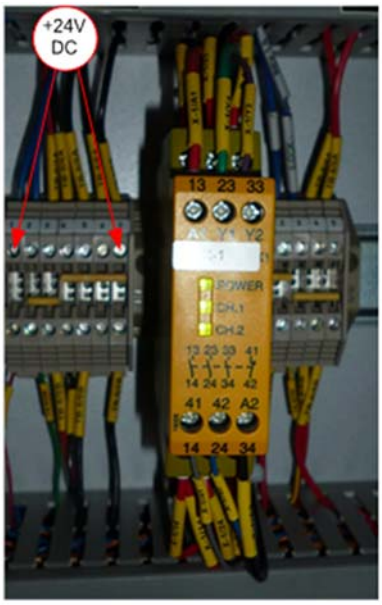
The AC output voltage from the power transformer TF-1 should always be 230 V ±10%.

This can be measured with an AC voltage meter between TB7-2 and TB7-4:



Safety circuit DC power

To verify that the e-cabinet PCA is supplying 24V to the safety circuit, measure the DC voltage between TB5-7 (-) and TB5-1 (+).

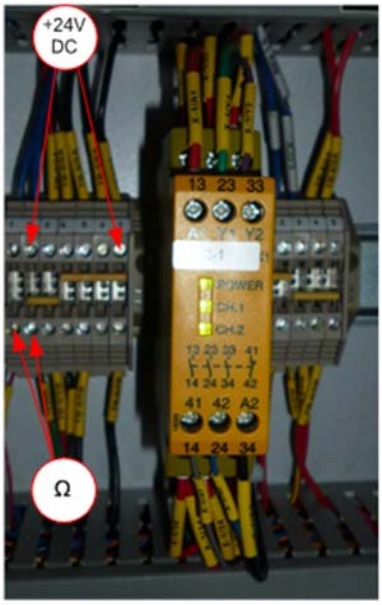


Emergency stop chain

To verify that the emergency stops are all released, measure the DC voltage between TB5-7 (-) and TB5-2 (+). Make sure to check that there is DC power on the safety circuit (see last paragraph).

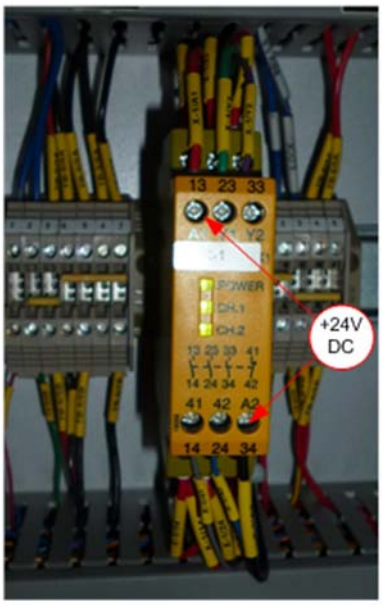
Alternatively, with the printer powered off, measure the impedance between TB5-1 and TB5-2:

- When all emergency stop are released the impedance has to be low (~0Ω)
- When one or more emergency stops are pressed the impedance has to be high



Safety relay DC power

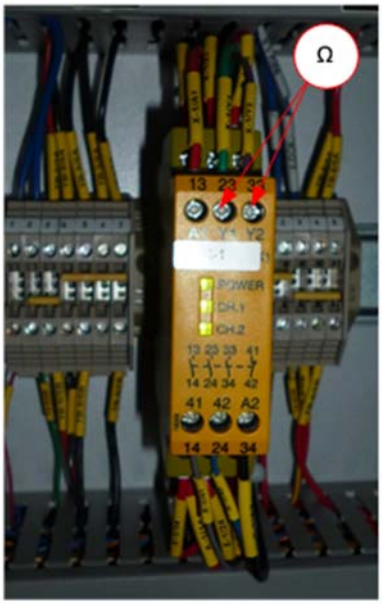
The DC power supply of the safety relay can be measured between terminals A1 and A2 of X1. Make sure that there is DC power to the safety circuit and that the emergency stops are all released.



Rearm button

To determine if the rearm button and its cabling are in order, measure the impedance (ohms) between X1-Y1 and X1-Y2 with the button pressed and the button released. This has to be done with the safety relay unpowered (press an emergency stop to make sure that the relay has no power).

- With the rearm button released, the measured impedance must be high (>1MΩ)
- With the rearm button pressed, the measured impedance must be low (~0Ω)



Contactor control

To test that the contactors are receiving the control voltage, measure the DC voltage between terminals A1 and A2:

- When the contactor has to be closed (activated) the voltage has to be +24VDC
- When the contactor has to be open (not activated) the voltage has to be 0VDC

Contactor K-4 is shown here as an example, the same applies to K-1,2,3:

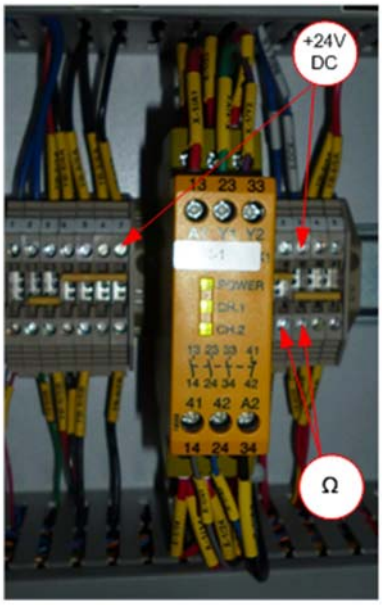


Interlock chain

To verify that the interlocks are all closed measure the DC voltage between TB5-7 (-) and TB6-3 (+). Make sure to check that there is DC power on the safety circuit and the safety relay is activated.

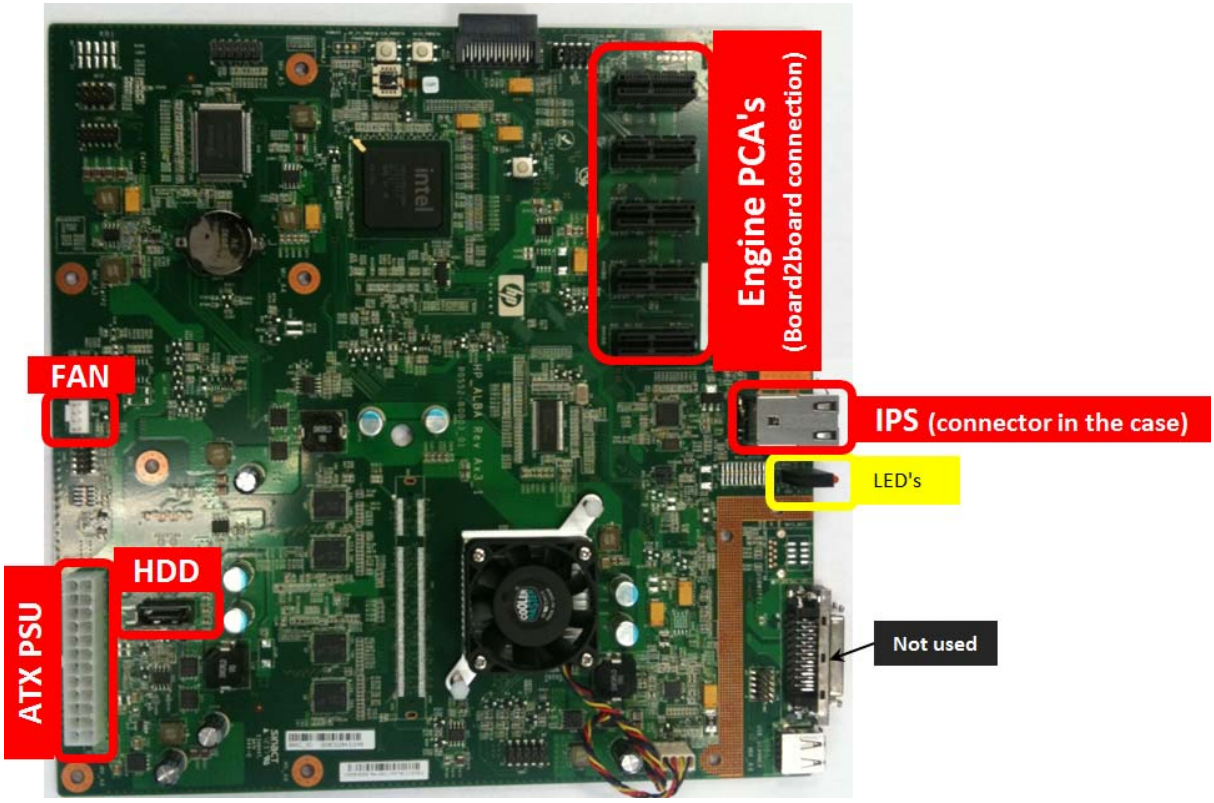
Alternatively, with the printer powered off, measure the impedance between TB6-2 and TB6-3:

- When all interlocks are closed the impedance has to be low (~0Ω).
- When one or more interlocks are open the impedance has to be high.



Board name: Formatter

Board picture pointing to connectors/LEDs

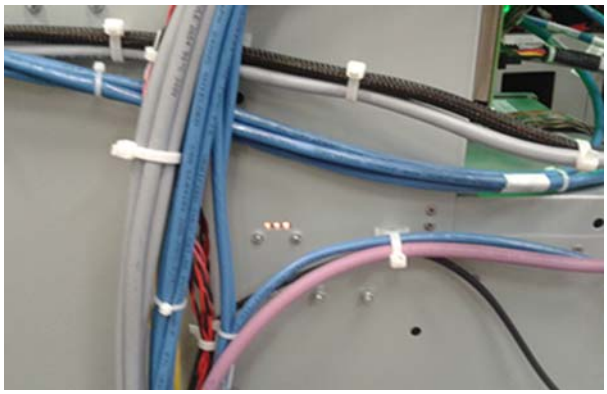


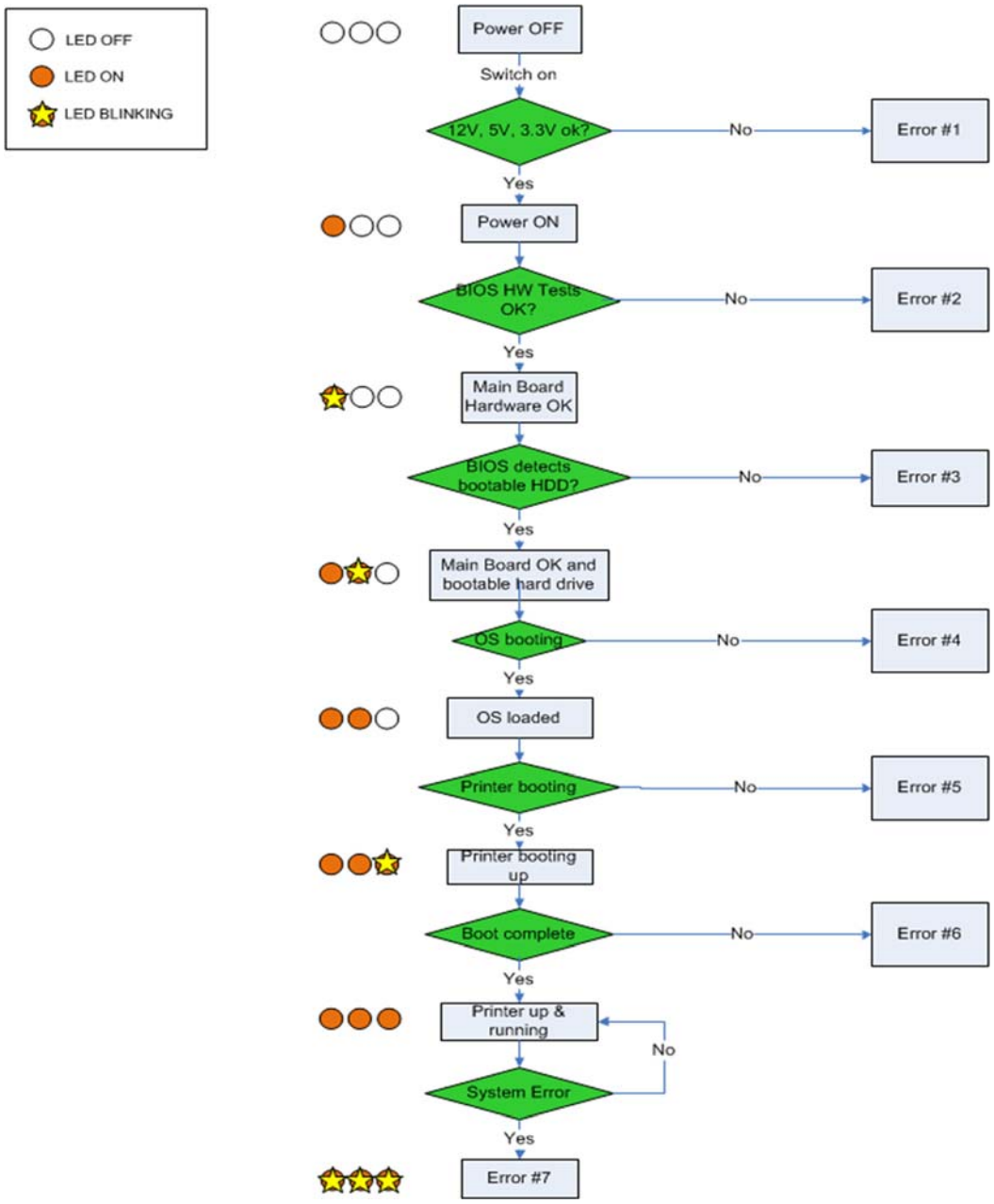
Meaning of LEDs










LED OFF
LED ON
LED BLINKING
Power OFF
Switch on
12V, 5V, 3.3V ok?
No
Error #1
Yes
Power ON
BIOS HW Tests OK?
No
Error #2
Yes
Main Board Hardware OK
BIOS detects bootable HDD?
No
Error #3
Yes
Main Board OK and bootable hard drive
OS booting
No
Error #4
Yes
OS loaded
Printer booting
No
Error #5
Yes
Printer booting up
Boot complete
No
Error #6
Yes
Printer up & running
No
System Error
Yes
Error #7

Error 1: No Power ○○○
Root cause: Board, power signal or eBox PSU are malfunctioning.
Actions:
Check power button cable
Check eBox power supply and replace if necessary
Replace main board

Error 2: Main board hardware failure ●○○
Root cause: Main board is malfunctioning
Actions:
Change main board

Error 3: Hard drive error ★○○
Root cause: Hard drive not connected or malfunctioning
Actions:
Check hard drive is properly connected (data and power cables)
Change hard drive

Error 4: Operating system not booting ●★○
Root cause: Hard drive data problem
Action: change hard drive.

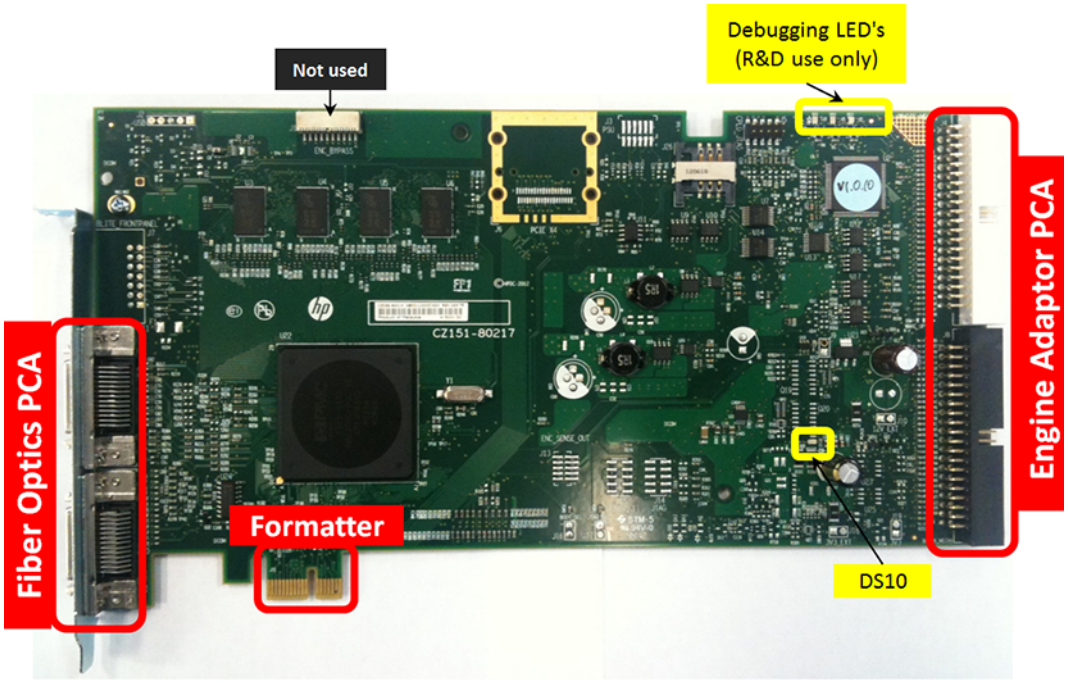
Error 5: Printer firmware not booting ●●○
Root cause: Hard drive data corruption
Action: change hard drive.

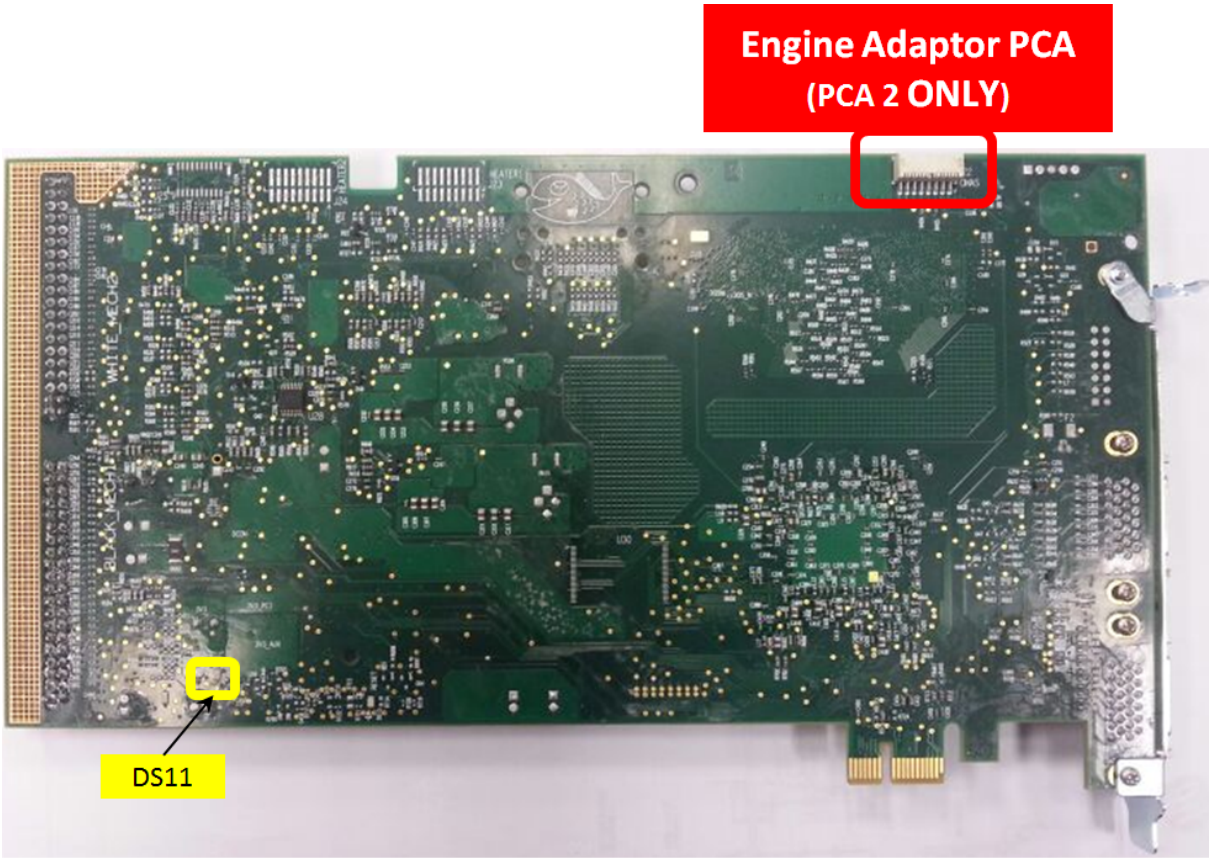
Error 6: Printer booting not complete ●●★
Root cause: printer is booting
Action: check for system errors in IPS

Error 7: System Error ★★★
Root cause: a system error has occurred
Action: check for system error code in IPS

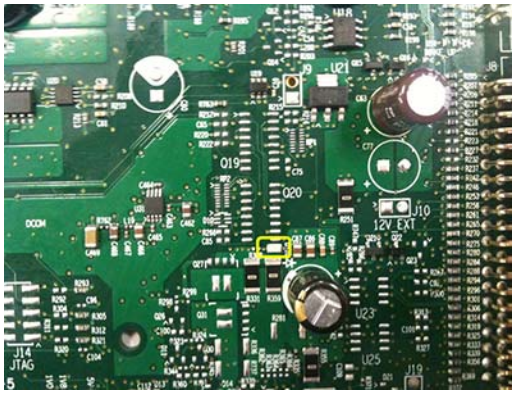
Board name: Engine PCA

Board picture pointing to connectors/LEDs

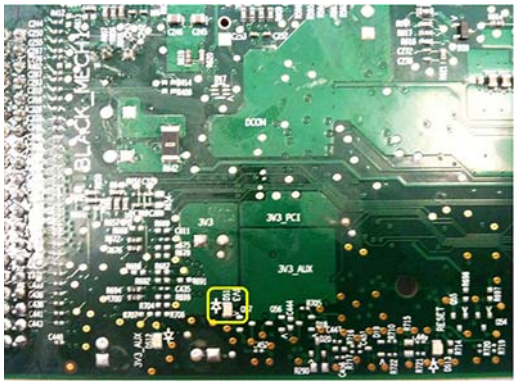




Meaning of LEDs

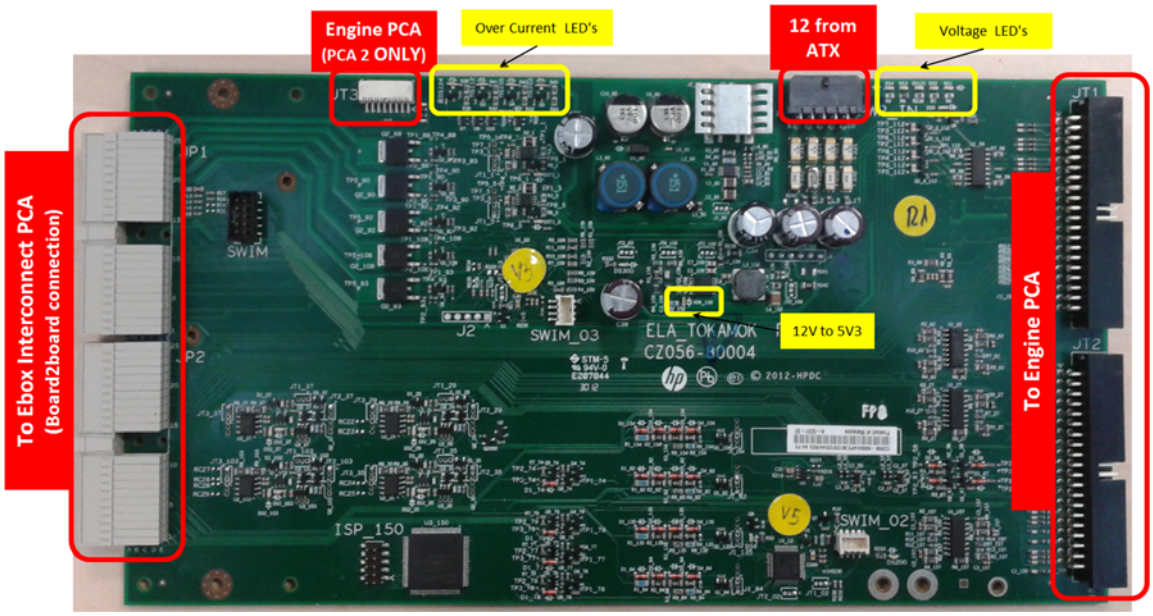


PCA Designator	Color	Description
DS10	Green	3V3_PCI presence
DS11	Green	3V3 presence
DS12		Not used



Board name: Engine adaptor PCA

Board picture pointing to connectors/LEDs



Meaning of LEDs

Voltage LEDs

Four green LED's (voltage supply)

One for each internal DC voltage

Light is proportional to voltage. For example, if the internal 24V drops to 14V, then the LED will still be on, but a little bit dim.

DS1: green when ELA receives 3V3

DS2: green when ELA receives 5V0

DS121: green when ELA generates 5V3

DS3: green when ELA receives 12V

DS4: green when ELA generates 24V



Overcurrent LEDs

Four LEDs, one for each DC output voltage, lit in case of overcurrent.

In normal states these LEDs should be off.



DSi24: ON when printer draws more than 1A from ELA 24V

DSi12: ON when printer draws more than 1A from ELA 12V

DSi05: ON when printer draws more than 1A from ELA 5V3

DSi03: ON when printer draws more than 1A from ELA 3V3

12V to 5V3

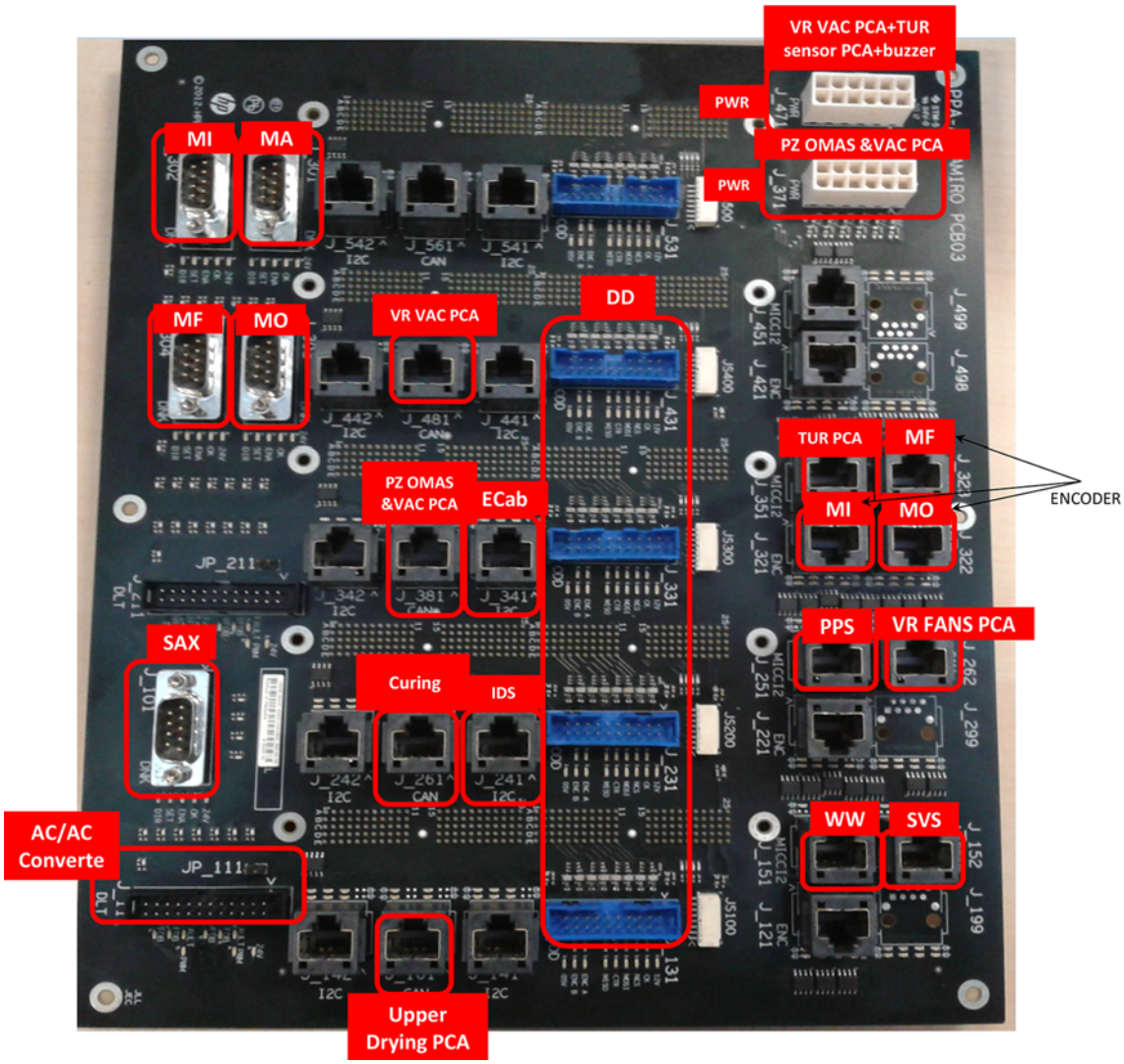


VOK **ON** (Green!!) when 5V3 **out of Regulation** due to **Failure**

OFF in normal situation

Board name: E-box interconnect PCA

Board picture pointing to connectors/LEDs



Meaning of LEDs

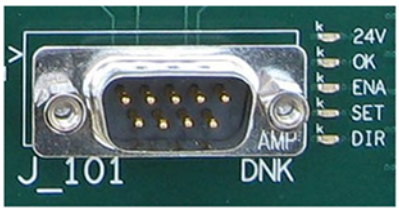
Zoom to LEDs and table with meaning

Each particular connector has a set of LEDs. The LED state (on/off) is directly related to the presence of voltage at the pins of the connectors, because they are simply connected to the connector (through an isolation resistor).

Colors meaning:

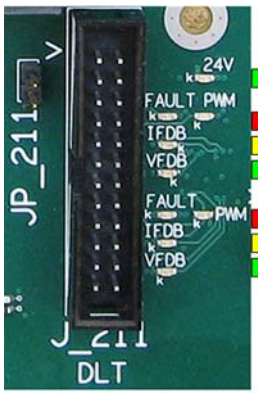
- Green: good news; presence of power supply voltages (or “OK” signals)
- Yellow: neutral news; for data, clock, interrupt, encoder phase signals
- Red: bad news; for failure signals (currently only from Delta Sinewave converters)

Brushless motors connector



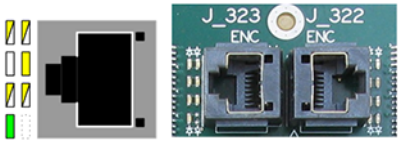
24V: green when ELA sends 24V (digital power) to motor
OK : green when motor is ready to run
ENA: green when ELA commands motor to run
SET: green proportional to Torque setpoint, from ELA to motor
DIR: yellow when ELA sets direction to CW

AC/AC converter connector



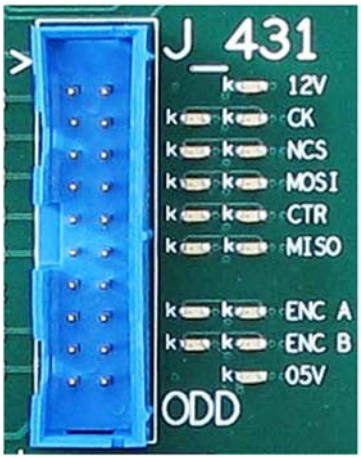
24V: green when ELA sends 24V
Fault: red when Sinewave1 detects problems
PWM: green when ELA commands Sinewave 1
Ifdb: yellow when Sinewave1 gives current (proportional)
Vfdb: green when Sinewave1 receives AC power (proportional)
Fault: red when Sinewave2 detects problems
PWM: green when ELA commands Sinewave 2
Ifdb: yellow when Sinewave2 gives current (proportional)
Vfdb: green when Sinewave2 receives AC power (proportional)

Optical encoder connector



05V: green when ELA sends 05V
yellow encoder position channel A
yellow encoder position not in index
yellow encoder position channel B

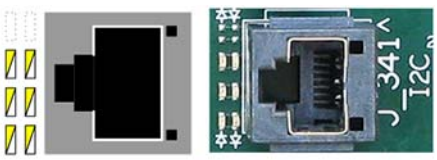
Optical drop-detector connector



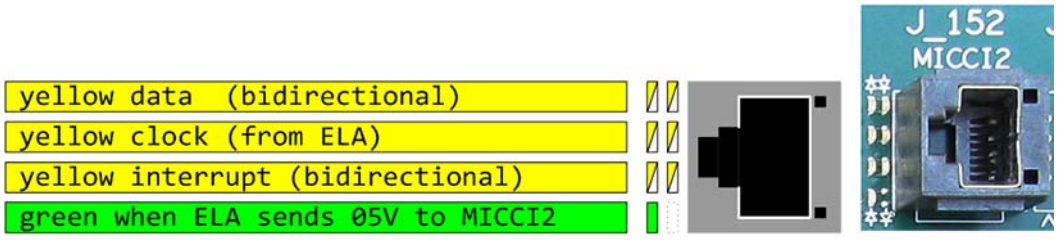
12V: green when ELA sends 12V to ODD
yellow when ODD disconnected
MISO: yellow when ODD sends data
ENCA: yellow when ODD send encoder position
ENCA: yellow when ODD send encoder position
05V: green when ELA sends 05V to ODD

I2C connector

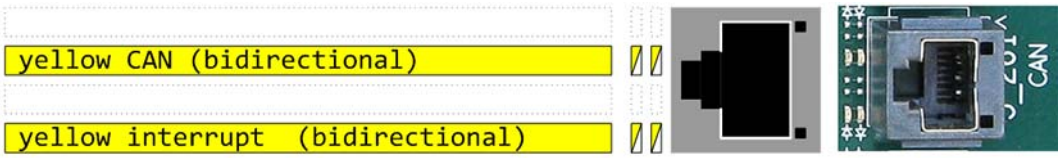
yellow clock (bidirectional)
yellow data (bidirectional)
yellow interrupt (bidirectional)



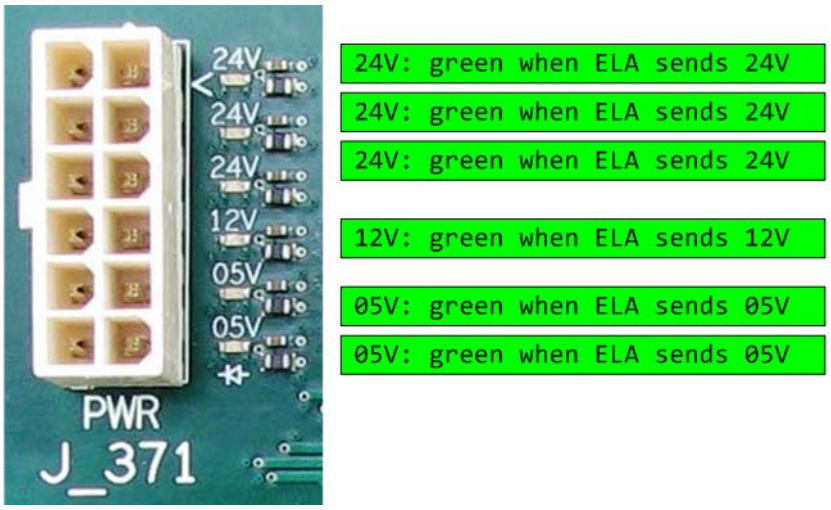
MICCI2 serial bus connector



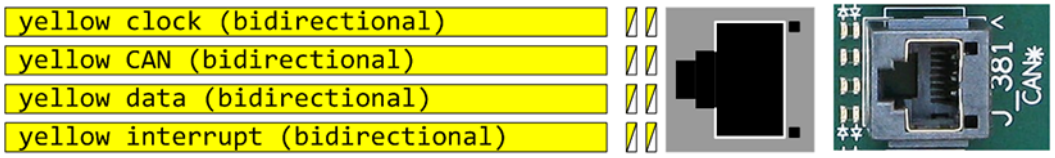
CAN connector



Power output connector

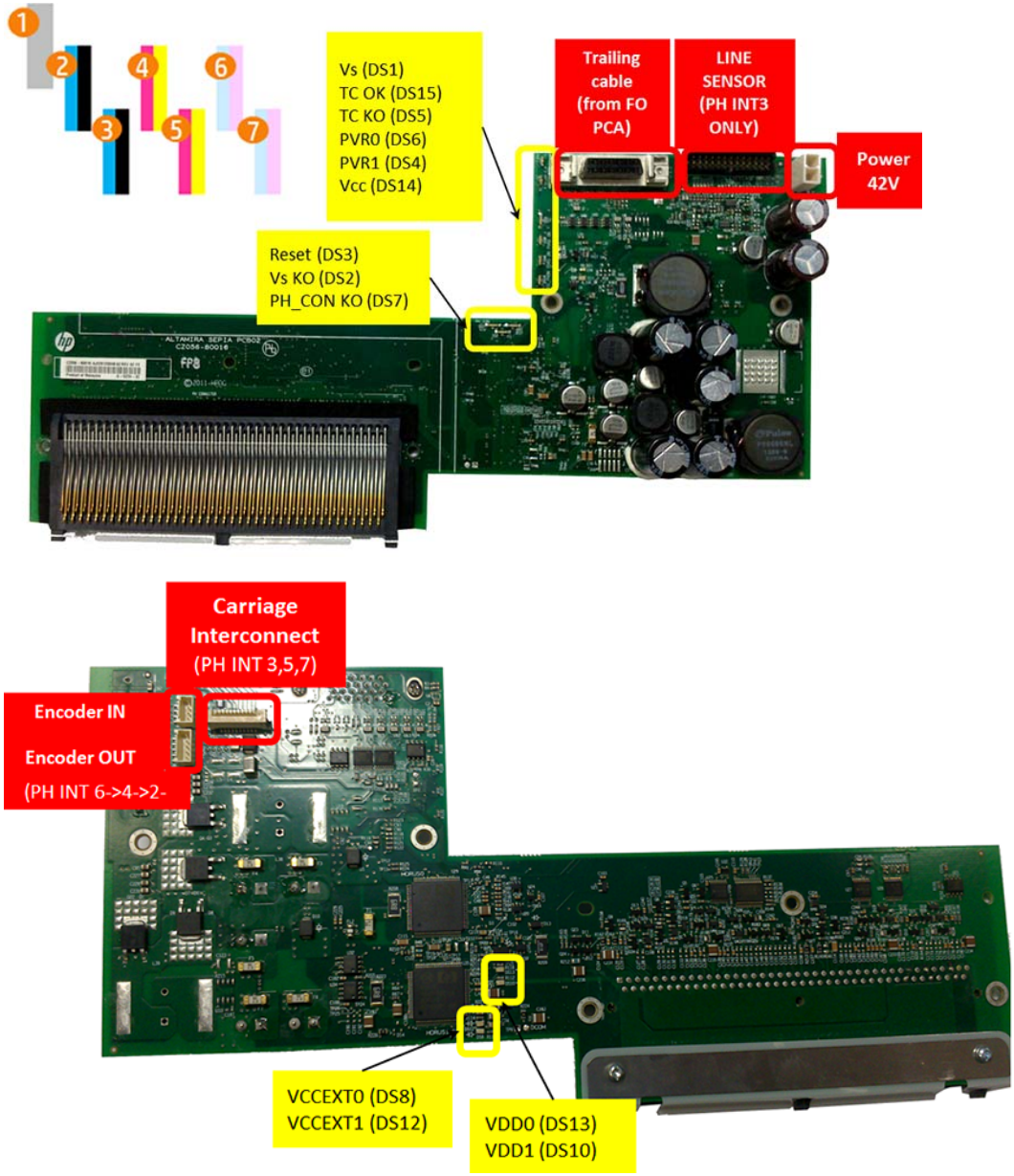


CAN+I2C (CAN*) connector

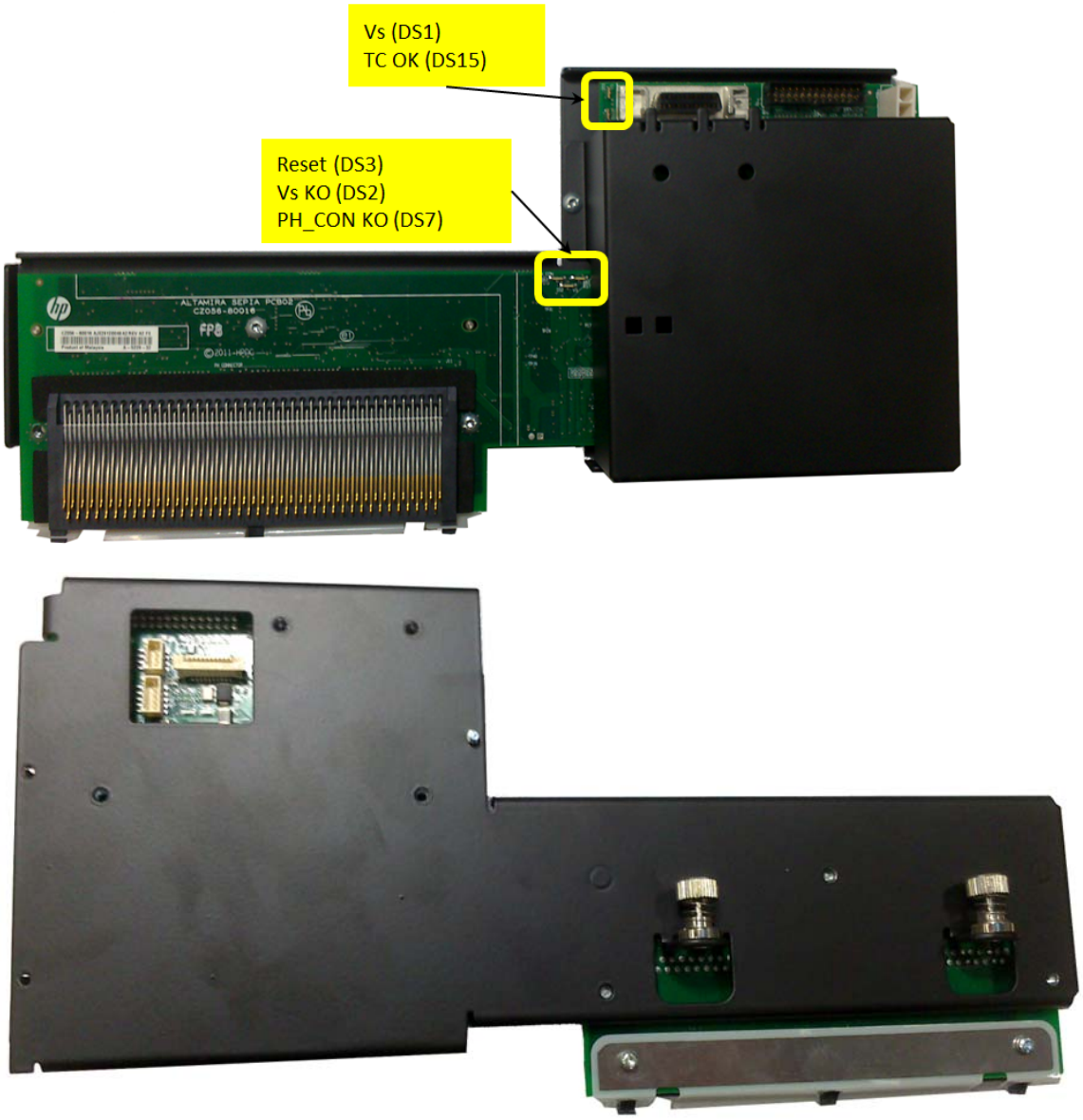


Board name: Printhead interconnect PCA

Board picture pointing to connectors/LEDs



Visible LEDs with covers



Meaning of LEDs

LED	Function	Color	Description
DS1	**Vs presence**	**Green**	**VS power supply ON**
DS2	**Vs_limits diagnosis**	**Red**	**Vs has been out of range. (>50.02 V or <37.36 V)**
DS3	**nReset Diagnosis**	**Red**	**If this LED blinks, Horus reset occurred**
DS4	PVR Horus1 presence	Green	PVR of Horus1 ON
DS5	Trailing Cable Diagnosis	Red	Trailing cable badly connected
DS6	PVR Horus0 presence	Green	PVR of Horus0 ON
DS7	**PH_CON Diagnosis**	**Red**	**Printhead is badly connected**
DS8	VccExt0 presence	Green	VccExt0 power supply ON
DS9	IVCC_Dig	Red	VCC_DIG current out of limits
DS10	Vdd1 presence	Green	Vdd1 power supply ON

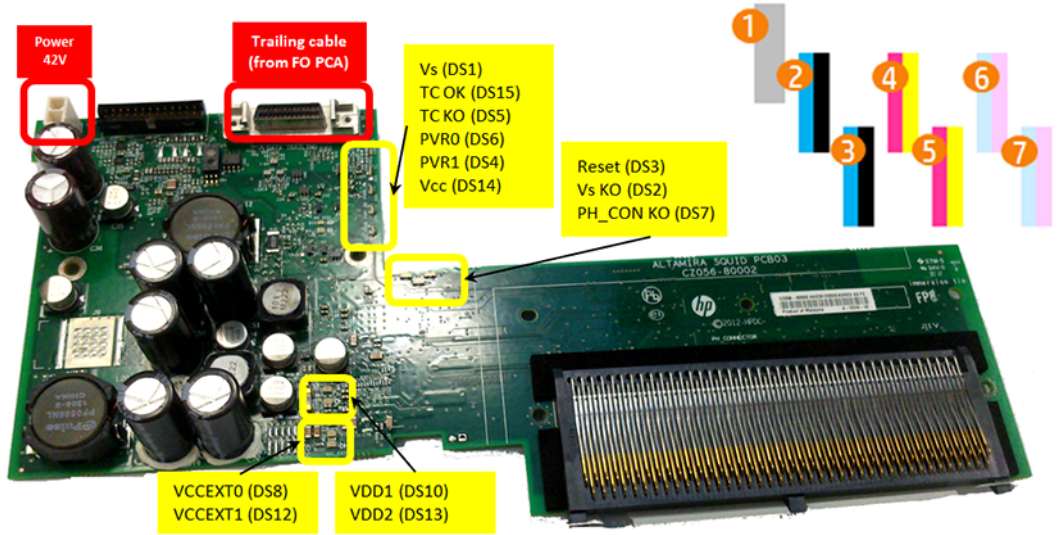
LED	Function	Color	Description
DS11	Board_location_OK indicator	Green	If LED ON, current board is being controlled by current FUSION
DS12	VccExt1 presence	Green	VccExt1 power supply ON
DS13	Vdd0 presence	Green	Vdd0 power supply ON
DS14	Vcc_Dig presence	Green	Vcc_Dig power supply ON
DS15	**Trailing Cable Diagnosis**	**Green**	**Trailing cable well connected**

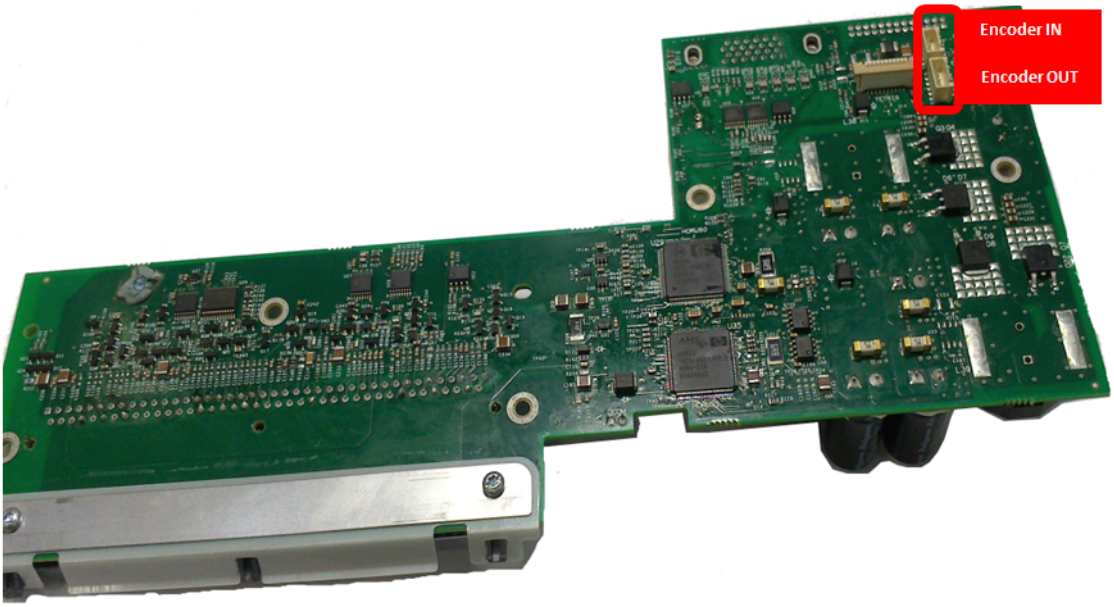
In the above table: bold font for the visible LEDs.

Normal operation: Green ON, reds OFF

Board name: Printhead interconnect optimizer PCA

Board illustrations indicating connectors/LEDs





Visible LEDs with covers



Meaning of LEDs

LED	Function	Color	Description
DS1	**Vs presence**	**Green**	**VS power supply ON**
DS2	**Vs_limits diagnosis**	**Red**	**Vs has been out of range. (>50.02 V or <37.36 V)**
DS3	**nReset Diagnosis**	**Red**	**If this LED blinks, Horus reset occurred**
DS4	PVR Horus1 presence	Green	PVR of Horus1 ON
DS5	Trailing Cable Diagnosis	Red	Trailing cable badly connected
DS6	PVR Horus0 presence	Green	PVR of Horus0 ON
DS7	**PH_CON Diagnosis**	**Red**	**Printhead is badly connected**
DS8	VccExt0 presence	Green	VccExt0 power supply ON

LED	Function	Color	Description
DS9	IVCC_Dig	Red	VCC_DIG current out of limits
DS10	Vdd1 presence	Green	Vdd1 power supply ON
DS11	Board_location_OK indicator	Green	If LED ON, current board is being controlled by current FUSION
DS12	VccExt1 presence	Green	VccExt1 power supply ON
DS13	Vdd0 presence	Green	Vdd0 power supply ON
DS14	Vcc_Dig presence	Green	Vcc_Dig power supply ON
DS15	**Trailing Cable Diagnosis**	**Green**	**Trailing cable well connected**

In the above table: bold font for the visible LEDs.

Normal Operation: Green ON, reds OFF

Board name: Carriage Interconnect PCA

Board illustrations indicating connectors/LEDs

Figure 4-1 Upper board

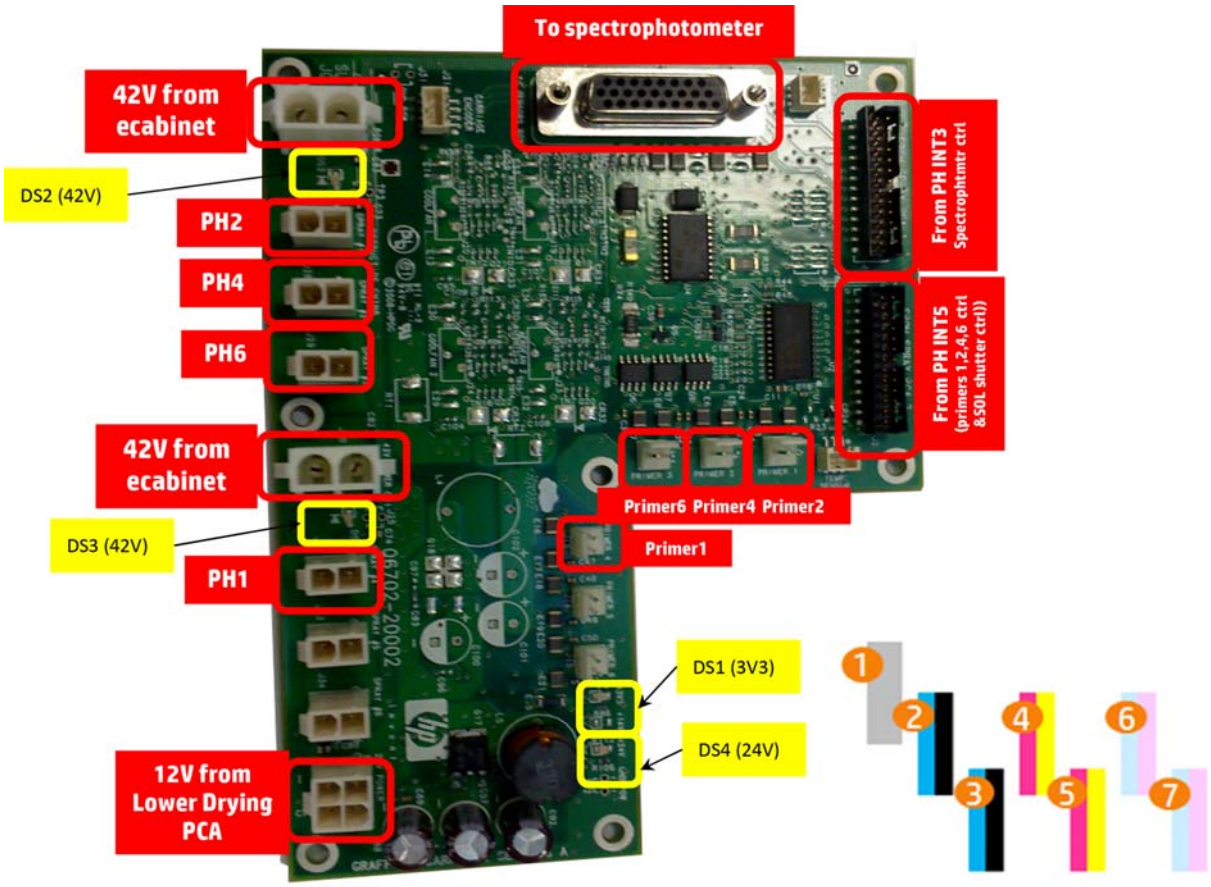
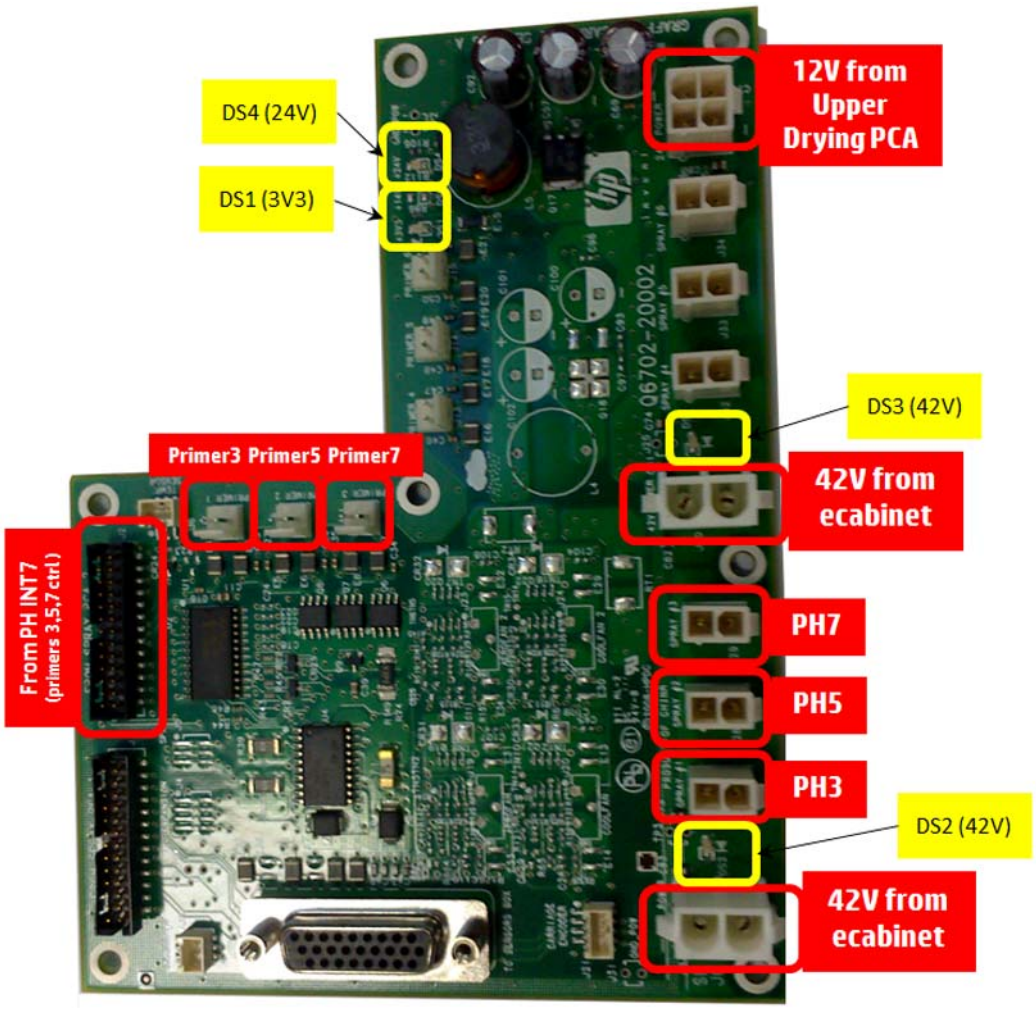


Figure 4-2 Lower board



NOTE: From the point of view of functionality, 42V and printhead could be exchanged, but the lengths of the cables are optimized to follow the connections above.

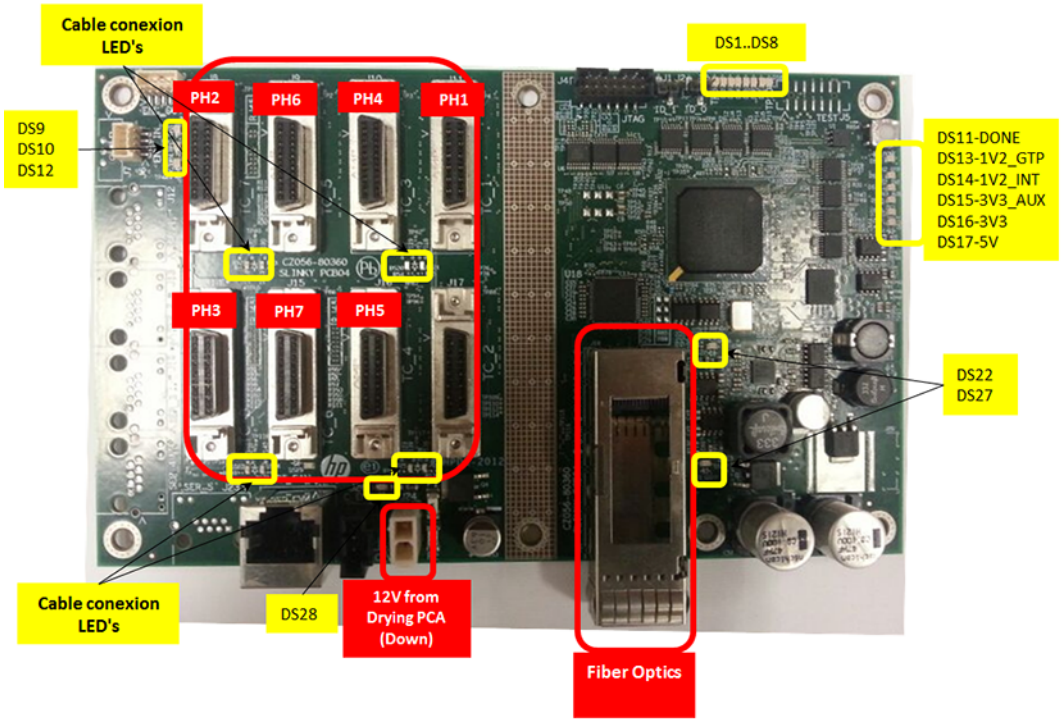
The power connectors for the primers cannot be exchanged.

Meaning of LEDs

LED	Function	Color	Description
DS1	3V3 presence	Green	3V3 power supply ON
DS2	42 V presence I	Green	42 V power supply ON
DS3	42 V presence II	Green	42 V power supply ON
DS4	12V presence	Green	12V power supply presence (although 24 V appears in silk screen)

Board name: Fiber-optics PCA

Board picture pointing to connectors/LEDs



Meaning of LEDs

Zoom to LEDs and table with meaning

LEDs DS1..DS8



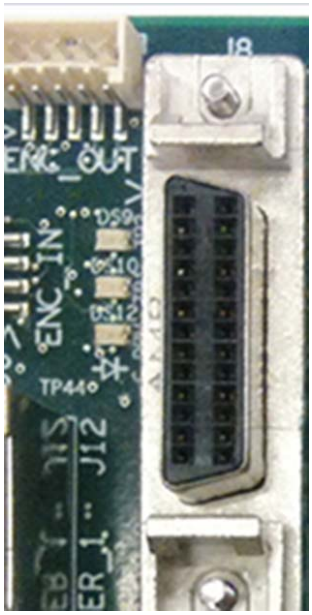
If the link is not up (DS12 is switched off), the meaning of the LEDs is the following:

PCA Designator	Purpose	Color	Description
		E-box side	
DS1	**LED7**	**Green**	**Indicates e-box code**
DS2	**LED6**	**Green**	**OFF**
DS3	LED5	Green	FO TX lane 3 detected
DS4	LED4	Green	FO TX lane 2 detected
DS5	LED3	Green	FO TX lane 1 detected
DS6	LED2	Green	FO TX lane 0 detected
DS7	LED1	Green	FO RX lane detected

DS8	LED0	Green	FO connector detected
		Carriage side	
DS1	**LED7**	**Green**	**OFF**
DS2	**LED6**	**Green**	**Indicates Carriage code**
DS3	LED5	Green	FO RX lane 3 detected
DS4	LED4	Green	FO RX lane 2 detected
DS5	LED3	Green	FO RX lane 1 detected
DS6	LED2	Green	FO RX lane 0 detected
DS7	LED1	Green	FO TX lane detected
DS8	LED0	Green	FO connector detected

On the other had, if the link is up (DS12 is swithed on), these LEDs have another meaning and indicate communication errors in the high speed link.

Voltage LEDs — LEDs DS9,DS10,DS12 and LEDs DS11, DS13, DS14, DS15, DS16

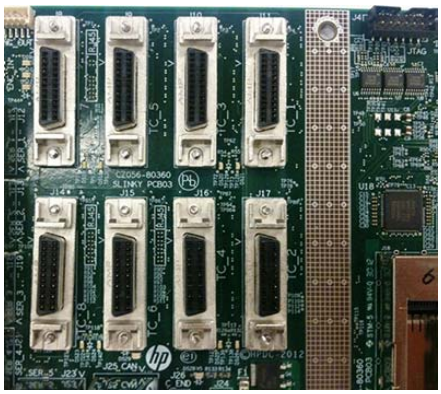




PCA designator	Purpose	Color	Description
DS9	ENC_CHA	Green	Blinking: Carriage is moving
DS10	ENC_CHB	Green	Blinking: Carriage is moving

DS11	DONE bit	Green	ON: FPGA is programmed
DS12	**LINK UP**	**Green**	**The fiber-optic link is up**
DS13	1V2_VCCT	Green	1.2V FPGA Transceivers
DS14	1V2_INT	Green	1.2V FPGA
DS15	3V3_AUX	Green	3V3 FPGA
DS16	3V3	Green	3V3 FPGA
DS17	5V	Green	5V Board

Cable connection LEDs — LEDs D18,DS19,DS20,DS21,DS23,DS24,DS25,DS26



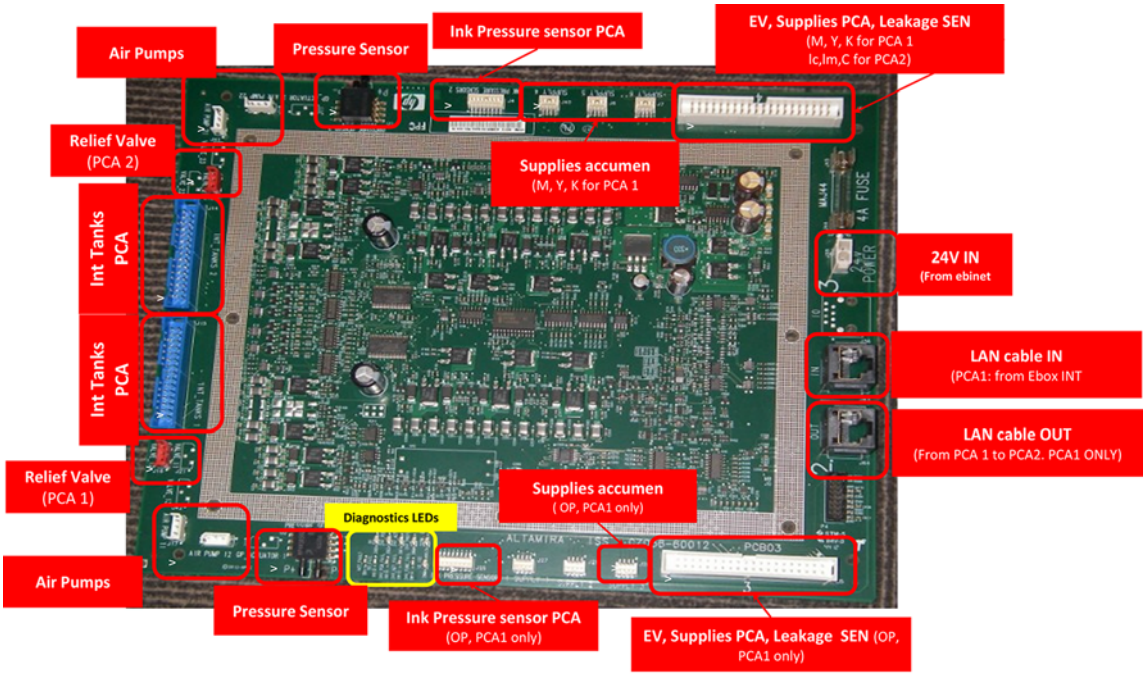
PCA Designator	Purpose	Color	Description
DS23	TC8	Red	ON: There's no cable connected to TC8 or it is pluggued incorrectly
DS18	TC7	Red	ON: There's no cable connected to TC7or it is pluggued incorrectly
DS24	TC6	Red	ON: There's no cable connected to TC6or it is pluggued incorrectly
DS19	TC5	Red	ON: There's no cable connected to TC5or it is pluggued incorrectly
DS25	TC4	Red	ON: There's no cable connected to TC4or it is pluggued incorrectly
DS20	TC3	Red	ON: There's no cable connected to TC3or it is pluggued incorrectly
DS26	TC2	Red	ON: There's no cable connected to TC2or it is pluggued incorrectly
DS21	TC1	Red	ON: There's no cable connected to TC1or it is pluggued incorrectly

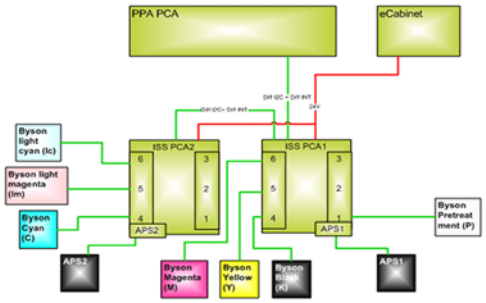
LEDs DS22, DS27, DS28

PCA Designator	Purpose	Color	Description
DS22	3V3_MAXIM	Green	3V3 Line Driver
DS27	3V3_QSFP	Green	3V3 FO
DS28	Vs	Green	Vin supply

Board name: ISS PCA

Board picture pointing to connectors/LEDs





Meaning of LEDs



GREEN LEDs

LEDs that should be always on when everything is OK

5V	5V generated internally from the 24V are OK
24V PCB	24V from the PCB are OK
24V ACT	24V to the actuators are OK (no fuse blown and no current monitor has detected overcurrent)
24V PREFUSE	24V from e-cabinet arrives to ISS
IO I2C	It blinks every 1.5 sec if communication with electronics is OK.

RED LEDs

LEDs that should be always off when everything is OK

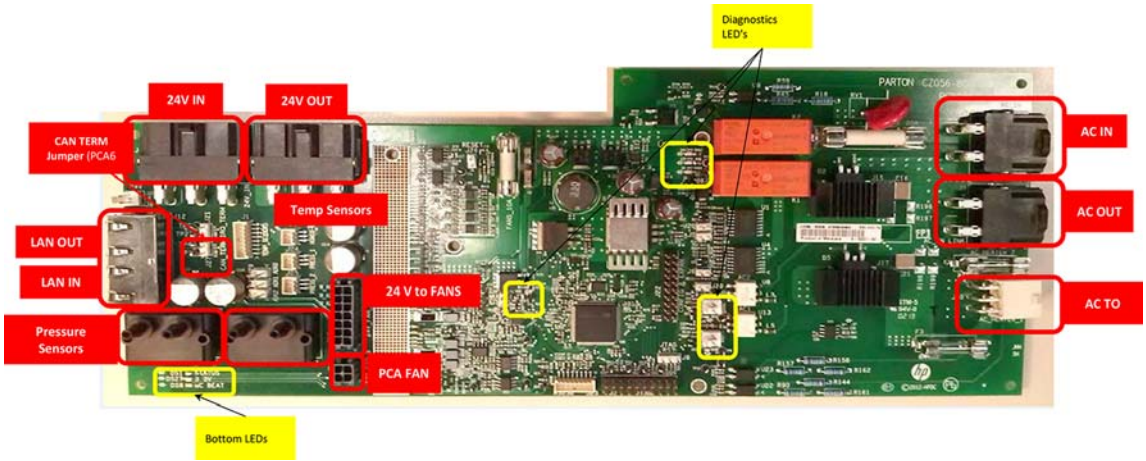
ACT FAULT	If LED is on, an actuator is failing.
5V FAIL	If LED is on, indicates that the internally generated 5V rail is off. Restart the printer, if the problem persists disconnect all bison connectors, if the problem persists, replace the ISS PCA (see ISS PCA on page 683), if not, the problem is in the Moby connector.
24V PCB FAIL	If LED on, the internal PCB fuse is blown. The ISS PCA needs to be replaced. See ISS PCA on page 683.
24V ACT FAIL	If LED is on, it indicates that the current monitor has detected an overcurrent.
24V FUSE FAIL	If LED on, some actuator/s create a short circuit and the replacable fuse is blown. In this case, actuator and fuse need to be replaced

LED off in ISS1 and on in ISS2 when everything is OK

Term ON	Termination of last ISS PCA is assembled (only for ISS 2)

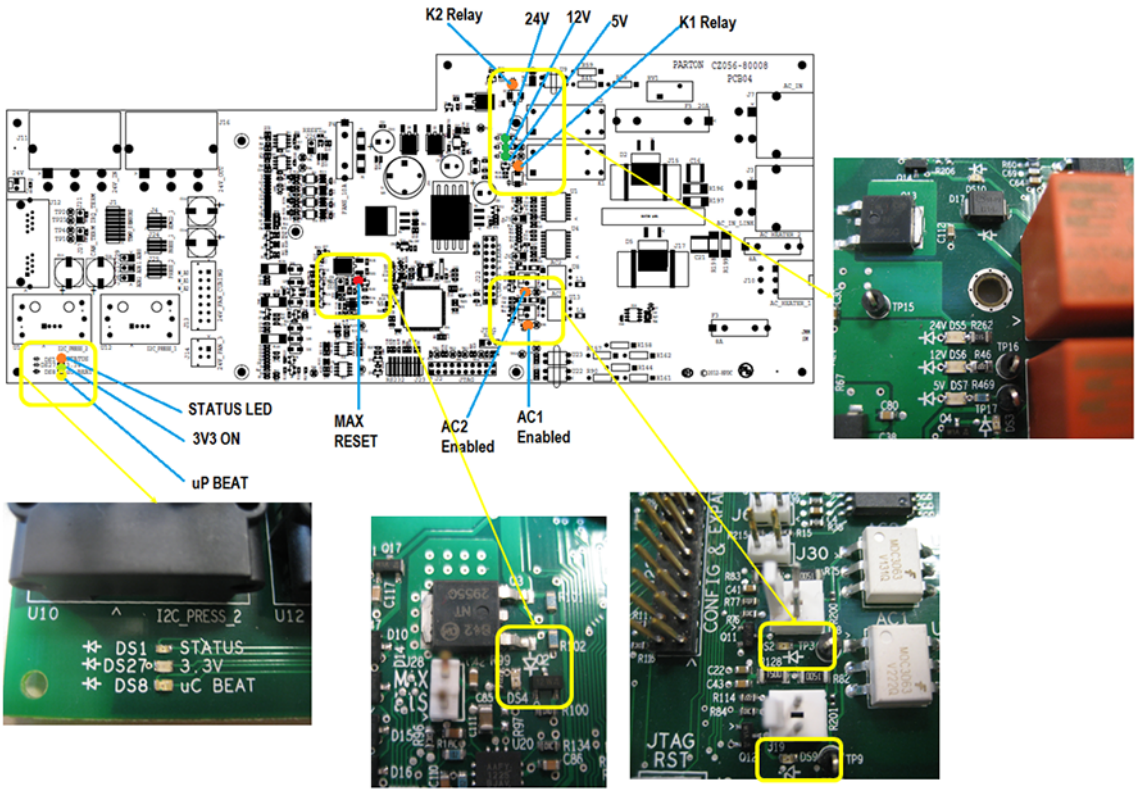
Board name: Curing PCA

Board picture pointing to connectors/LEDs



*** For connection between modules details, see the curing cabling block diagram.**

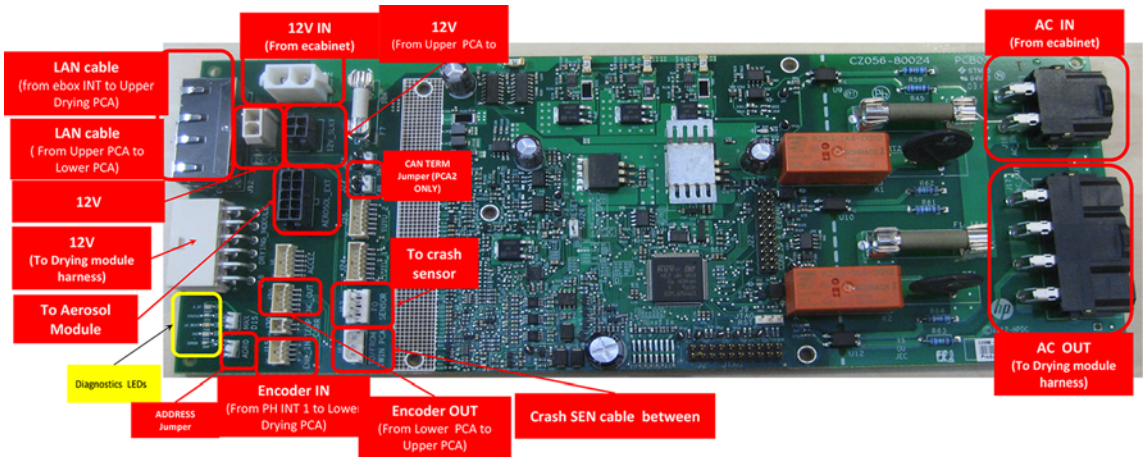
Meaning of LEDs



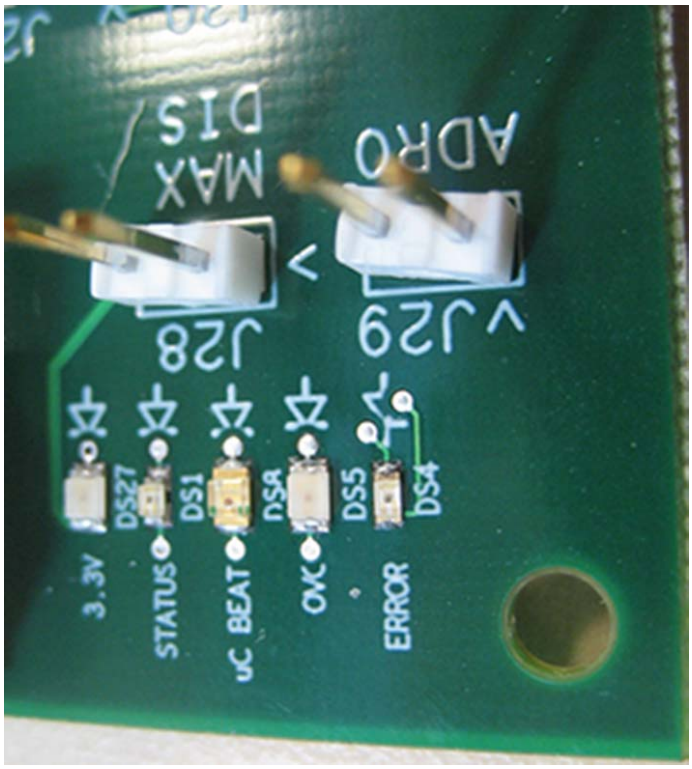
LED	Color	Meaning	Normal operation
DC voltages			
LED 24V (DS5)	Green	24 V present in the board	On
LED 12V (DS6)	Green	12 V generated in the board	On
LED 5V (DS7)	Green	5 V generated in the board	On
LED 3V3 (DS27)	Green	3.3 V generated in the board	On
Up signals			
Status LED (DS1)	Orange	On error, repeatedly flashes error codes	Off
uC beat (DS8)	Yellow	Indicates firmware activity	On, blinking
Control signals			
Max reset (DS4)	Red	On if events supervisor is in error state	Off
K1 relay (DS3)	Orange	On when the K1 relay is enabled	On when the module is activated and curing
K2 relay (DS10)	Orange	On when the K2 relay is enabled	On when the module is activated and curing
AC1 enabled (DS9)	Orange	On when the AC1 TRIAC is enabled	On when the module is activated and curing
Ac2 enabled (DS2)	Orange	On when the AC2 TRIAC is enabled	On when the module is activated and curing

Board name: Drying PCA

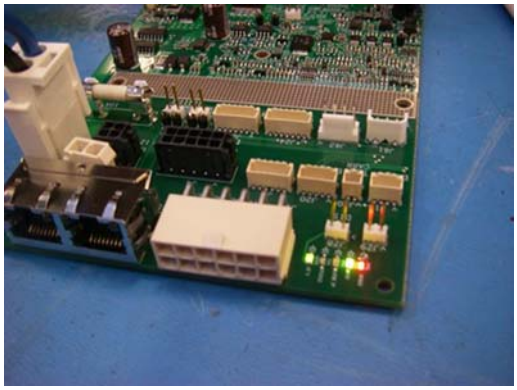
Board picture pointing to connectors/LEDs



Meaning of LEDs

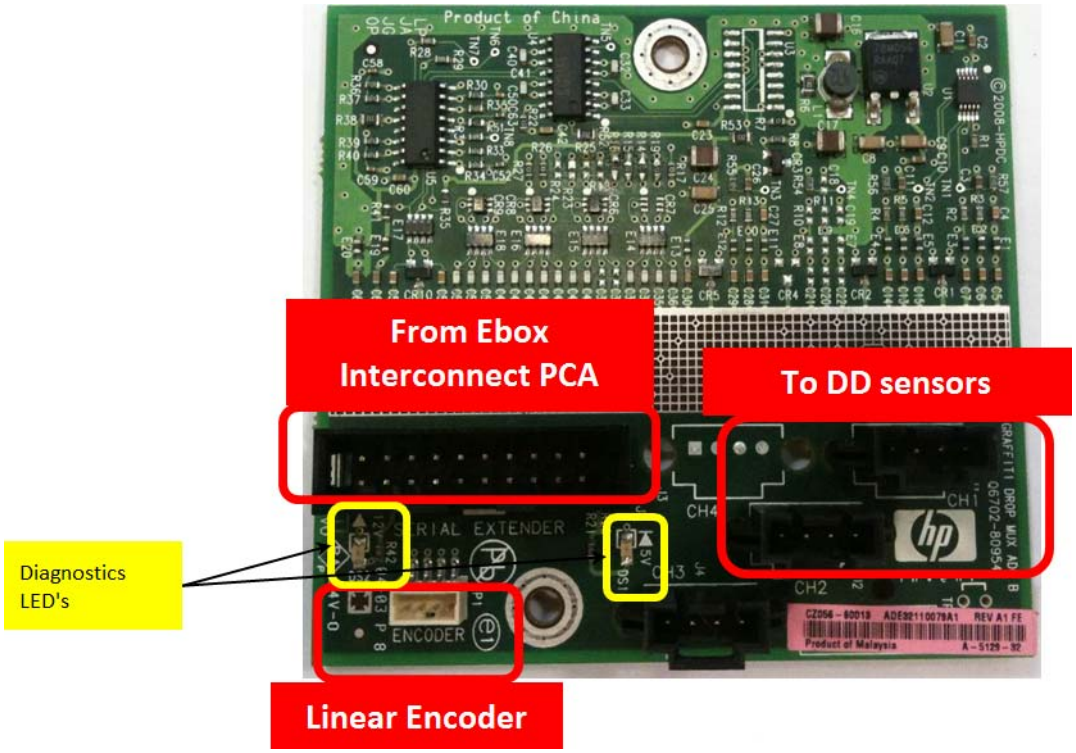


Name	Reference	Color	Normal state	Meaning	Error state
3.3V	DS27	Green	On	PCA powered	Off
Status	DS1	Orange	Off	Error code	Blinking
uC beat	DS8	Orange	Blinking	Code works	Off
OVC	DS5	Green	On	No OVC problem	Off
Error	DS4	Red	On	Power disabled	N/A



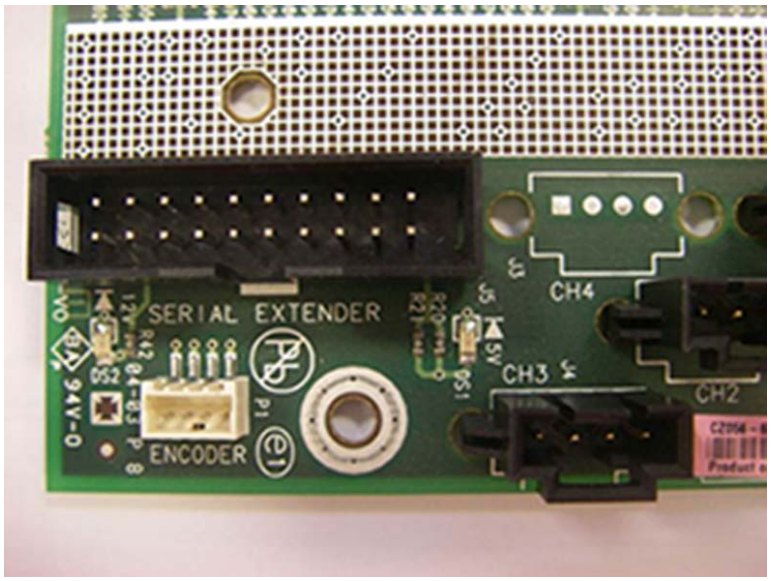
Board name: Drop-detector PCA

Board picture pointing to connectors/LEDs



* See Subsystem block diagrams on page 61 for connection details

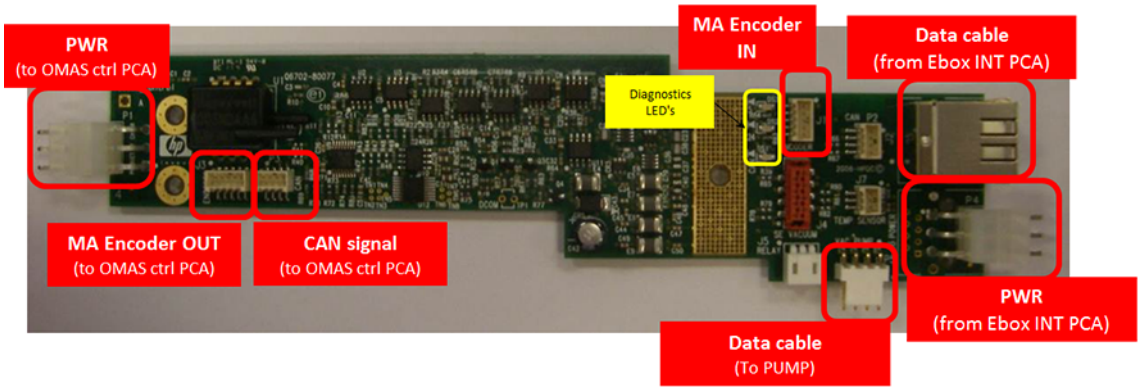
Meaning of LEDs



LED	Function	Color	Description
DS1	5V	Green	5V power supply ON
DS2	12V	Green	12V power supply ON

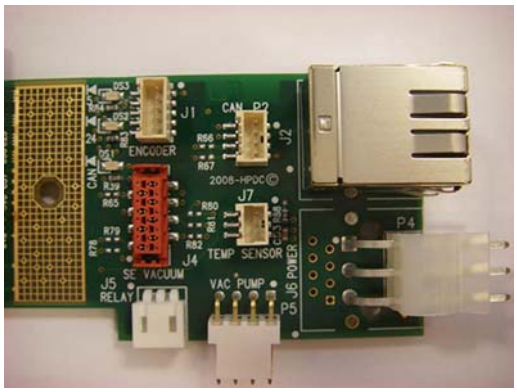
Board name: Vacuum control PCA

Board picture pointing to connectors/LEDs



*** For the Vapor removal VACUUM Ctrl PCA, only data & power cables from the e-box Int PCA and the Control cable for the pump are needed.**

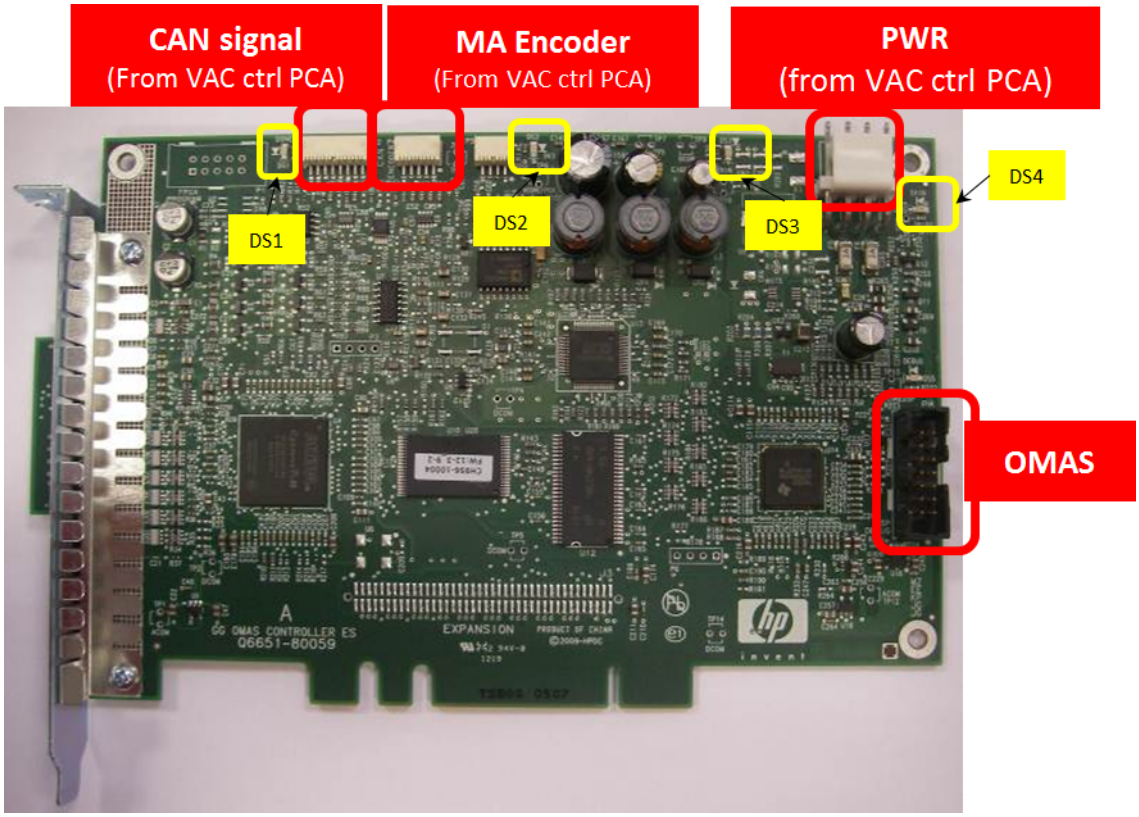
Meaning of LEDs



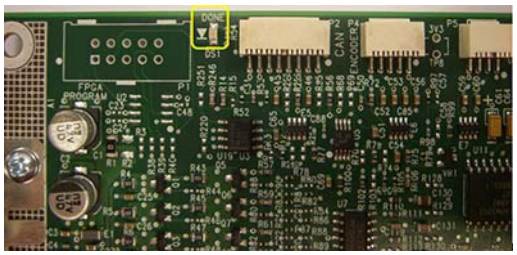
LED	Function	Color	Description
DS1	CAN Activity	Green	Shows CAN Bus activity
DS2	24V	Green	24V power supply ON
DS3	5V	Green	5V power supply ON

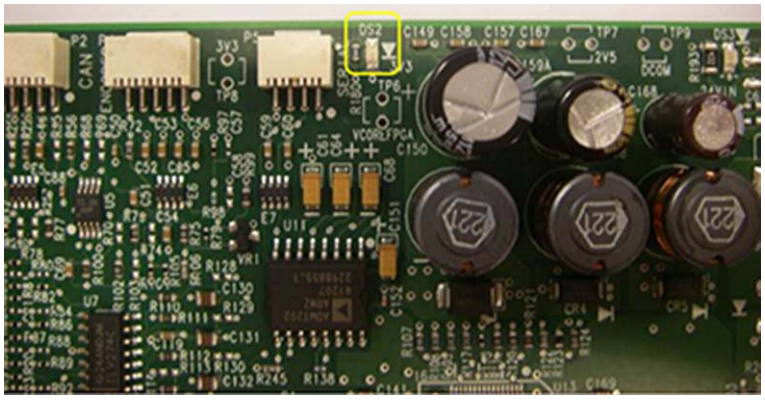
Board name: OMAS control PCA

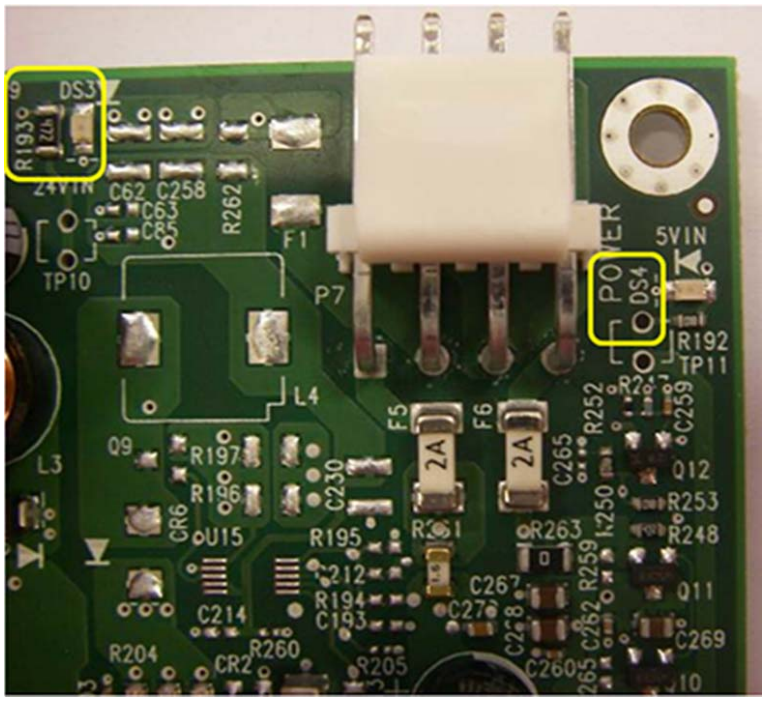
Board picture pointing to connectors/LEDs



Meaning of LEDs









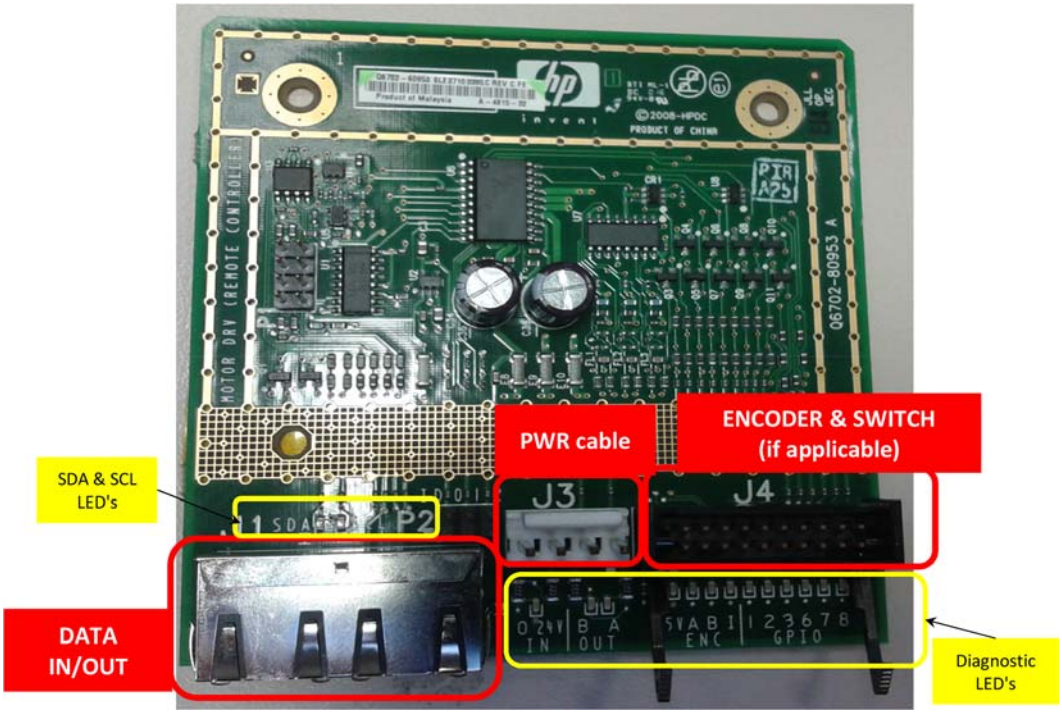
LED	Function	Color	Description

DS1	Done	Green	Shows the FPGA has been booted correctly
DS2	Internal 3V3	Green	3V3 Internal Power Supply ON
DS3	24V Input	Green	24V Power supply ON
DS4	5V Input	Green	5V Power supply ON

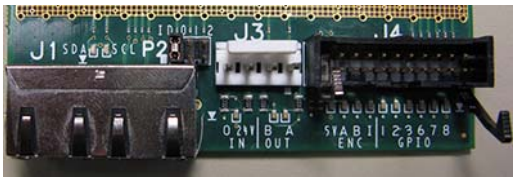
Board name: Motor drive PCA

Board picture pointing to connectors/LEDs

The motor drive PCA controls motors on different subsystems. See the corresponding block diagram for specific subsystem details.



Meaning of LEDs



LED	COLOR	Description
SDA & SCL	Green	Communication (blinking in normal operation)
24V IN	Green	24V arrive to the board (green in normal operaton)
OUT A/B	Green	Green if motor turning, depending on motor direction
5V	Green	5V ON (green in normal operation)

6 &7	Green	Indicates encoder activity
Rest	Green	Indicate switches operation (depends on printer subsystem)

Print-quality troubleshooting

Print-quality diagnostic tools and prints

The printer has a number of diagnostic tools and prints for operators, and some more for service engineers, which can be executed from the Internal Print Server or from the Print Care utility. These tools and prints are used to identify and resolve print-quality problems. If it is possible to identify the problem using a diagnostic print; as a matter of best practice, you should reprint the diagnostic print after taking action, until the problem is solved.

The tools and prints for operators are available and fully documented in the user's guide. In this service manual, we will **not** repeat all the information already available in the user's guide. Therefore it is important to have the user's guide available.

However, in some cases this chapter includes detailed explanations of what each tool is doing and why, which are important for a better understanding of the results.

The tools and prints for service engineers are fully explained in this chapter.

Tools and prints for operators

All are available from the Internal Print Server. See the user's guide for further information.

- Pre-ripped image for HP Permanent Gloss Self-Adhesive Vinyl: Nature Flowers
- Add New Substrate Wizard print
- Printhead check and clean
- Printhead status plot
- Drop detector diagnostic
- Printhead hard recovery
- Printhead automatic and manual alignment
- Printhead alignment check print for operators
- Substrate-advance sensor (OMAS) cleanliness check
- Substrate advance check and adjustment print for operators
- Color calibration

Internally, the printer also checks the status of the systems that maintain print quality. Although in most cases customers cannot act upon them, the error messages can help in understanding the causes of the defects.

- Drop-detector system errors
- OMAS system errors

Tools and prints for service engineers

- Service alignment check plot (from Print Care)
- Front printhead to rear printhead alignment check plot (from Print Care)
- Substrate-advance sensor pixel-size calibration (manual and automatic)
- Enable and disable the substrate-advance sensor
- Scan-axis encoder strip check (from Print Care)

How to maintain print quality

See the user's guide for details of basic steps to maintain good print quality. Here is a brief summary of when to use the various alignments and calibrations.

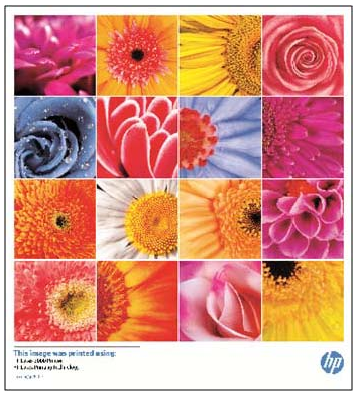
	Printhead replacement	New substrate created	New substrate imported	New substrate loaded	Print mode changed	Poor print quality
Automatic printhead alignment	Recommended	Not needed	Not needed	Not needed unless carriage beam has moved	Not needed	Recommended if relevant
Manual printhead alignment	• First alignment with all printheads replaced • When optimizer printhead is replaced • When substrate is not suitable for automatic alignment • If automatic alignment fails	Not needed	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	Not needed	Not needed	Recommended if relevant

Print-quality diagnostic tools and prints in detail

Pre-ripped image: Nature Flowers

Load a substrate, align the printheads, and print the HP test image shown below. See the installation guide for details.

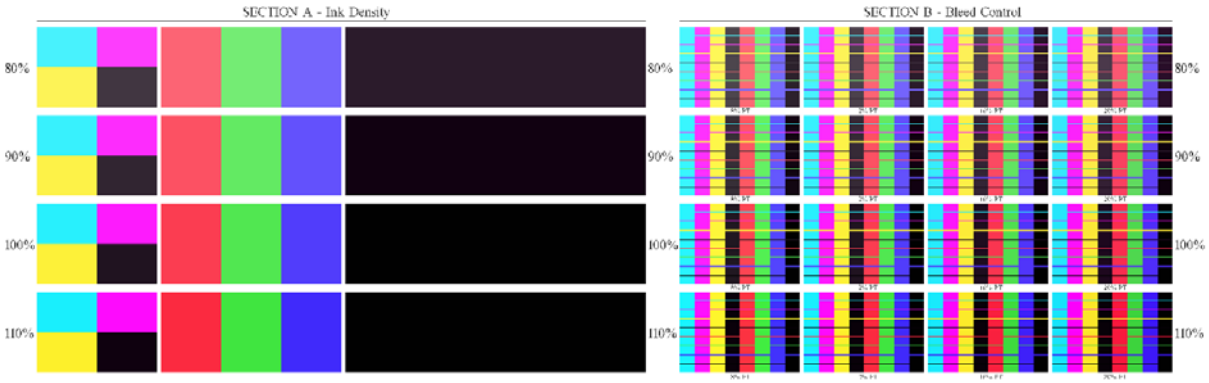
Figure 4-3 Nature Flowers



This image should be printed when the hardware installation is complete. It has been pre-ripped for HP Permanent Gloss Self-adhesive Vinyl and can be printed by adding it directly to the Internal Printer Server queue. Therefore, there is no interaction with the RIP. It is a useful image for detecting major deviations from normal printer performance.

Add New Substrate wizard print

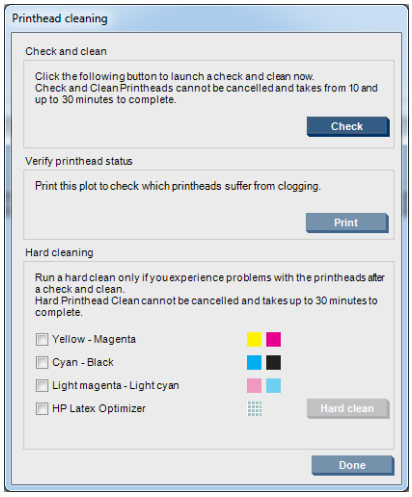
See the user's guide for more details of this image.



This image cannot be printed outside the wizard. However, if the print is not cured completely or you observe bleed or graininess defects attributable to the optimizer level, the wizard can be used to find a preset that works well with your substrate and compare it with the preset that is not working well.

Printhead check and clean

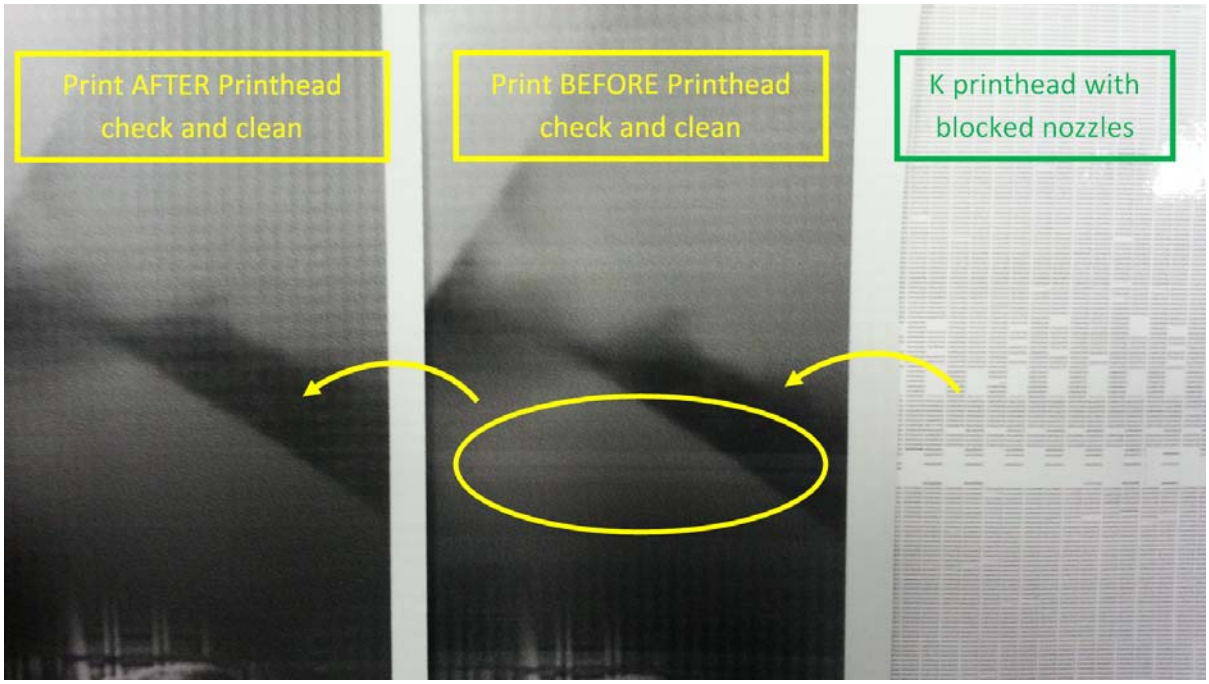
See the user's guide for more details of this process. To start the process, go to the Internal Print Server and select **Printer** > **Printhead cleaning** > **Check**.



Remember that this process **must** be performed daily to maintain the health of the printheads. It consists of the following steps, which are performed automatically:

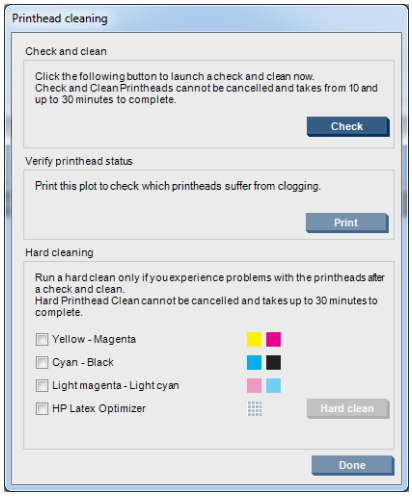
- Initial printhead servicing
- Drop detection
- Automatic recovery. If there are an excessive number of blocked nozzles in any of the printheads, the printer will automatically try to recover them with a more rigorous servicing process, which includes priming the affected printheads.
- Final drop detection and nozzle substitution. Nozzle health is checked again so that the printer can correct for the blocked nozzles that were not successfully serviced.

Depending on the number of printheads needing recovery, the total time of this process can go from 10 minutes (no recovery needed) to 45 minutes. The image below gives an example of its effectiveness.

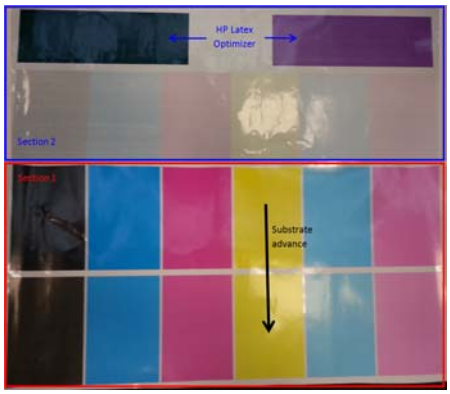


Printhead status plot

See the user's guide for more details of this plot. To print it, go to the Internal Print Server and select **Printer** > **Printhead cleaning** > **Print**.



The plot looks like this:



It has two sections:

- Section 1 includes mid-tone areas printed with a single ink using a 6-pass print mode with nozzle substitution.

NOTE: Early firmware releases do not print Section 1.

- Section 2 shows plainly which nozzles in each printhead are printing and not printing.

Drop-detector diagnostics

Execute the drop-detector diagnostics from the Print Care window. This provides detailed information about the blocked nozzles detected in each printhead.

NOTE: In early firmware releases the drop-detector diagnostics are not available.

Decision table

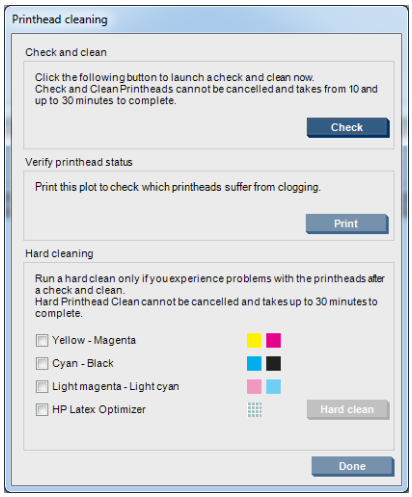
The following table summarizes the data that can be seen in each diagnostic, the possible causes, and the decisions.

Mid-tones (section 1)	Nozzle health (section 2)	Drop detector	Possible cause	Action
No banding	< 300 blocked (all colors)	< 300 blocked (all colors)	Other	Continue banding troubleshooting.

Mid-tones (section 1)	Nozzle health (section 2)	Drop detector	Possible cause	Action
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.

Printhead hard clean

See the user's guide for more details of this process. To start it, go to the Internal Print Server and select **Printer** > **Printhead cleaning** > **Hard clean**.

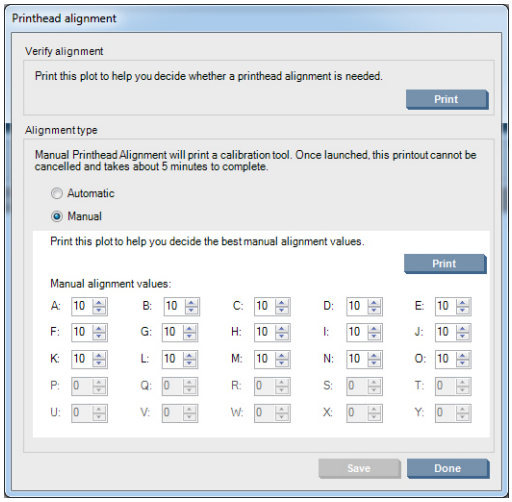


The **Hard clean** button starts a more rigorous cleaning process than the **Check** button does. It performs several hard priming routines, and then a final drop detection and nozzle substitution to correct for any nozzles that are still blocked.

TIP: If nozzles are severely blocked, it may be useful to perform a hard clean more than once.

Printhead alignment

See the user's guide for more details of this process. To start it, go to the Internal Print Server and select **Printer** > **Printhead alignment**.



Automatic alignment

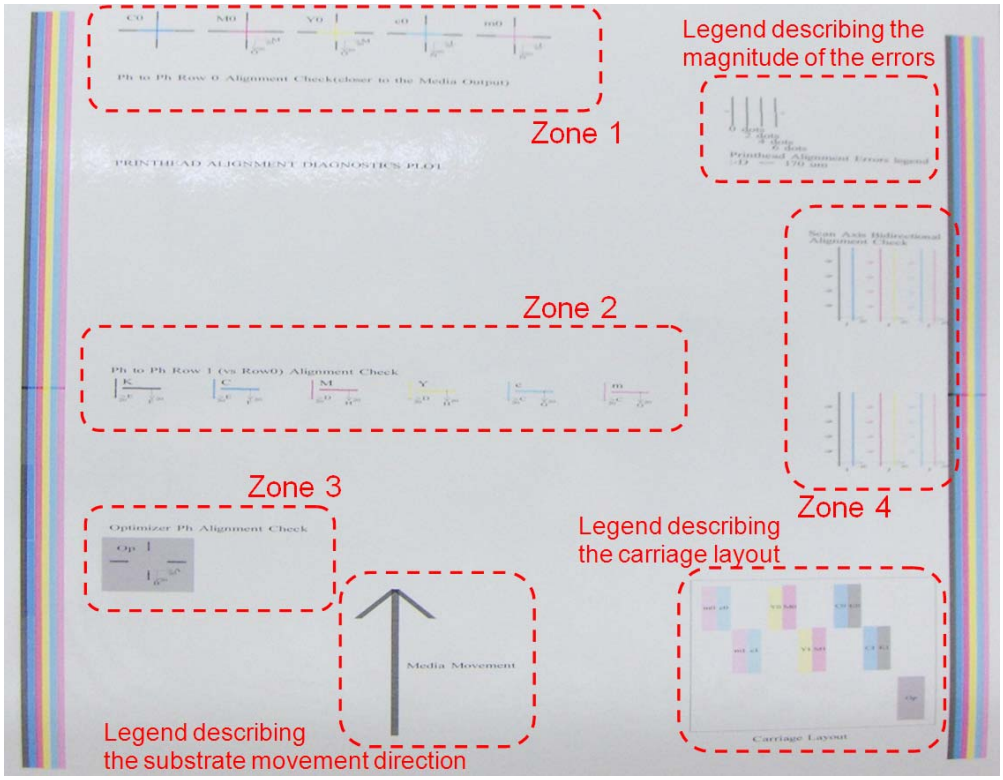
- Takes about 8 minutes and usually delivers optimal print quality
- Useful for smooth, high-quality substrates
- May fail if the printhead has blocked nozzles
- Cannot be used to align the optimizer printhead
- Fast and easy to use when a color printhead has been replaced

Manual alignment

- Provides good print quality when automatic alignment is not possible
- Useful for highly textured or non-white substrates
- Allows more control over the alignment process
- Can be used for all printheads, including the optimizer

Verify alignment

If you press the upper **Print** button to verify alignment, the following information is printed out:



To interpret this information, see the user's guide.

Substrate-advance sensor (OMAS) cleanliness check

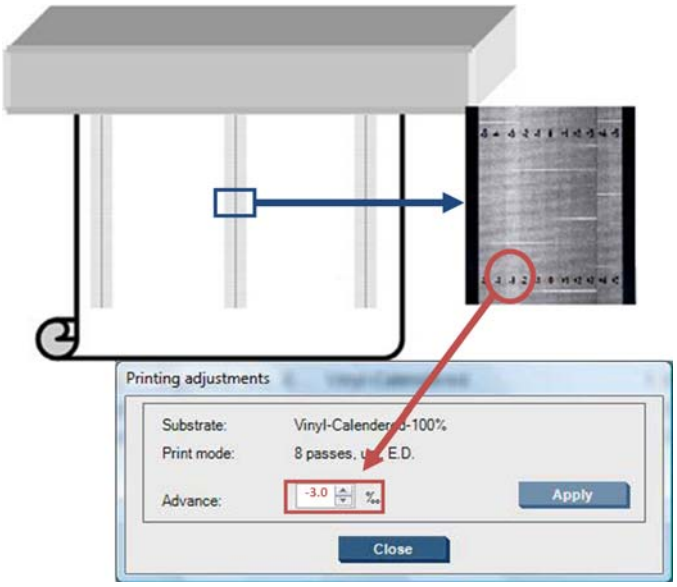
See Theory of operation (roll-to-roll configuration) on page 25 for background information about the substrate-advance sensor.

The substrate-advance sensor cleanliness check is executed from Print Care: select **Diagnostics** > **Substrate Advance Sensor**. It requires a sheet of plain paper.

If the sensor is dirty, follow the instructions in the Print Care maintenance wizard or in the user's guide. If the sensor is clean but the test fails, the sensor hardware could be faulty.

Substrate-advance adjustment

See the user's guide for more details of this process. To start it, go to the Internal Print Server and select **Printer** > **Advance calibration** > **Plot**.

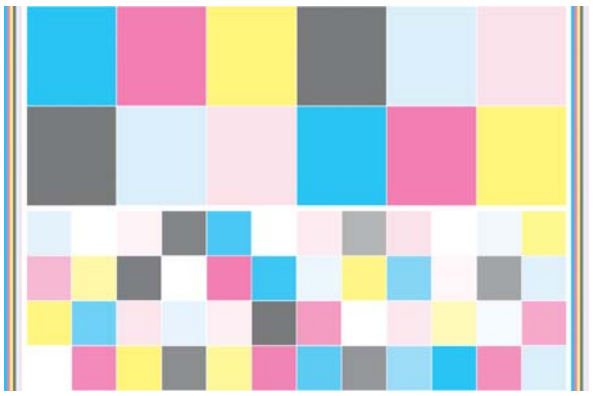


If compensation is needed, which is unlikely when the substrate-advance sensor is working correctly, the compensation must be entered while printing an image (this one or another one) in the printing adjustments dialog. In the Internal Print Server, select **Printing adjustments** in the left-hand menu, or **Printer** > **Printing adjustments**.

As shown in the picture, locate the lightest of the columns, enter its number as the substrate advance parameter and click **Apply**. If there are two equally light columns, enter the average. For example, if the lightest columns are -3 and -2, enter -2.5 in the dialog.

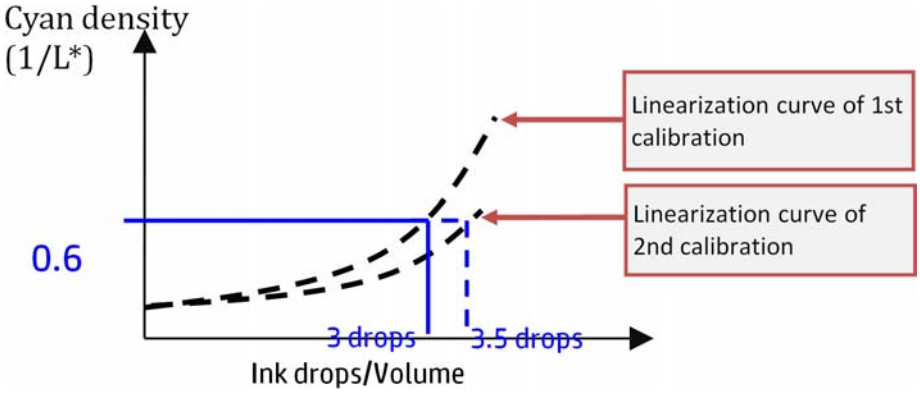
Color calibration

See the user's guide for more details of this process. To start it, go to the Internal Print Server and select **Substrate** > **Color calibration** > **Calibrate**. The printer prints the color calibration test chart:



The calibration includes both the ink restriction and linearization steps of the color workflow. The ink restriction and linearization vary with the drop weight of the printhead and other external conditions, such as the substrate type. To reach a specific color density, one printhead may require 3 drops while another one may require 3.5 drops (smaller drop weight).

Ink restriction values will be different for each calibration.



The user's guide contains detailed information on when to do color calibration. As a summary:

- Whenever you load a new substrate type that has not yet been calibrated.
- 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
- If a job will be repeated in the future, color calibrations should be run before the current batch of images and before each subsequent batch of the same images.

The calibration may fail and therefore be cancelled in the following circumstances:

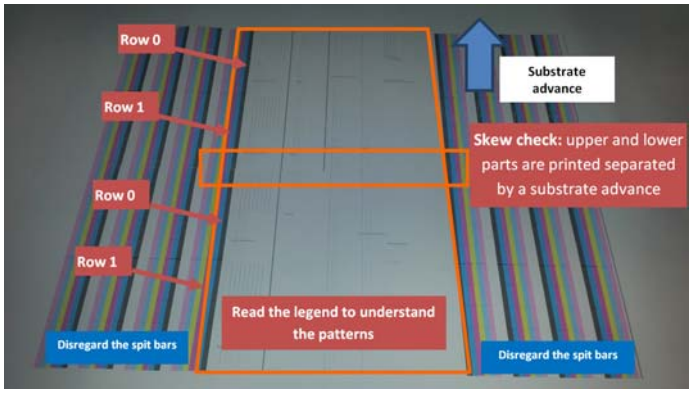
- The substrate is non-white, translucent or transparent, very glossy, or has a rough or punched surface.
- Some color patches are defective due to stains, wrinkles or bubbles, or general poor print quality such as banding.
- The carriage beam is not in the normal printing position. The distance between sensor and substrate is very important and must be properly controlled.
- The embedded spectrophotometer is faulty (replace it if necessary).

Print-quality diagnostic tools and prints in detail

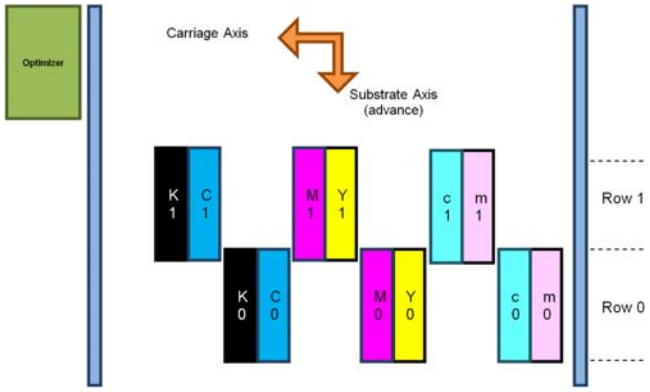
The following diagnostics must be executed from Print Care when logged in as 'Engineer' (see Print Care login and boot modes on page 86).

Service alignment check plot

The service alignment test plot is printed from Print Care diagnostics, in the Print Quality section.



For reference, here is the carriage layout (rotated 180° with respect to the image above).



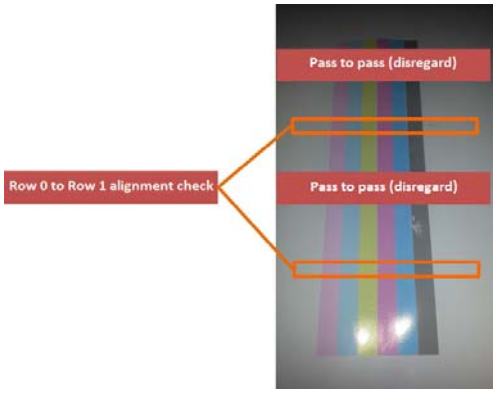
Compared with the customer's **Verify alignment** print, this one offers:

- Finer resolution (one-pixel lines)
- Printheads fired in one pass; total plot length is two passes
- No optimizer

The plot does *not* indicate in what way to correct the alignment; it is used to check finer problems, after which you should rerun the alignment to fix them. It can also be used to check for skew.

Front printhead to rear printhead alignment check plot

The front printhead (Row 0) to rear printhead (Row 1) alignment check plot is printed from Print Care diagnostics, in the Print Quality section.



The plot is a simple area fill intended to look only at the alignment between Row 0 and Row 1 in the substrate axis direction. The area should come out uniform, except perhaps in the pass-to-pass areas that should be disregarded. When the front printhead to rear printhead alignment is not correct, the first nozzle of the row 1 printhead is incorrectly set. Therefore, in the Row 0 to Row 1 alignment check areas you may find:

- A thin white line where you see a rectangle in the picture. In this case, decrease the corresponding F, G, or H correction of the manual alignment.
- A thin dark line where you see a rectangle in the picture. In this case, increase the corresponding F, G, or H correction of the manual alignment.

Substrate-advance sensor pixel-size calibration

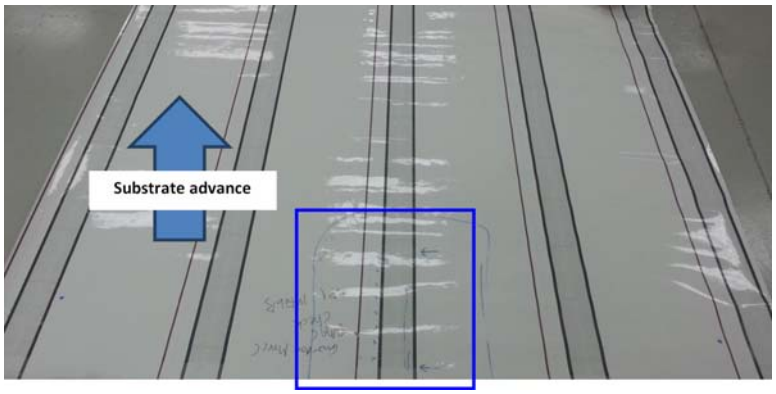
See Theory of operation (roll-to-roll configuration) on page 25 for background information about the substrate-advance sensor.

Substrate-advance sensor pixel-sixe calibration is executed from Print Care diagnostics, in the substrate-advance sensor section. It may be done automatically or manually; the automatic process is not available with early firmware releases.

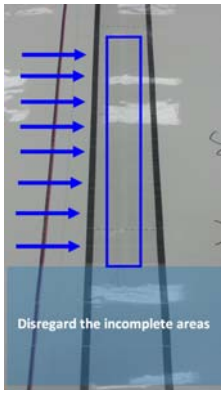
The first step of the manual calibration consists of printing a calibration plot, checking it visually, and introducing the correction values in the diagnostic test dialog box. The firmware uses these values to calculate the pixel size of the current sensor.

The second step consists of reprinting the same plot to check that the entered values have properly calibrated the sensor.

The plot is similar to the substrate-advance adjustment plot: see Substrate-advance adjustment on page 318. It should be printed on self-adhesive vinyl, preferably HP Permanent Gloss Self-adhesive Vinyl or a similar material. It consists of a series of interference patterns:



1. From the image, pick the last portion of the most central pattern, which is usually the one that is closest to the substrate-advance sensor.
2. In the pattern, disregard the incomplete areas and look at the last eight complete passes:



3. Locate the lightest column and, in the diagnostic test dialog boxes, enter the correction for each of the eight passes. If there are two equally light columns, for example +3 and +4, the dialog boxes have an option for entering both values: “3-4” instead of “3” or “4”.
4. The firmware uses these values to calculate the pixel size of the current sensor.

Enable or disable the substrate-advance sensor

A service engineer can disable and re-enable the substrate-advance sensor from Print Care diagnostics, in the substrate-advance sensor section. Select **Disable advance sensor** or **Enable advance sensor**.

Disabling the substrate-advance sensor can be useful to check whether the sensor is faulty and producing random advance errors. Follow these steps:

1. Print the substrate advance adjustment plot (see Substrate-advance adjustment on page 318).
2. Look at the last portion of the three most central patterns. The lightest column should be in approximately the same position in each case (±1). If this is not the case, the substrate roll is skewed and should be reloaded properly.
3. If there is no skew, focus on the most central pattern.
4. If the sensor is not working properly, random errors will appear as abrupt changes in the lightest of the columns.
5. Disable the substrate-advance sensor and reprint the plot. Now there should be a clear lightest column, possibly not at “0” but at least constant.

If you find a problem, clean the substrate-advance sensor and retry, before replacing it.

NOTE: Disabling the substrate-advance sensor is not permanent: after restarting the printer, the sensor will be enabled again.

Scan-axis encoder strip check

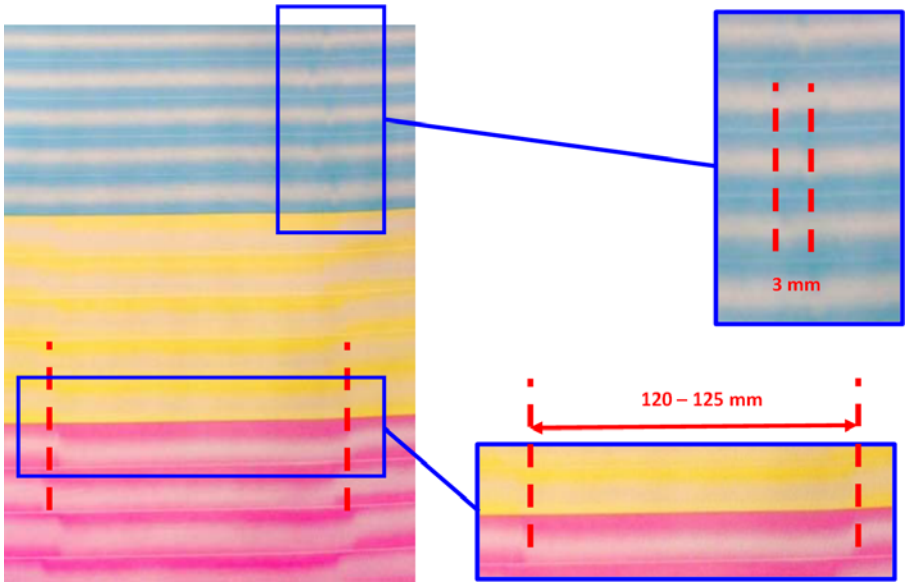
The scan-axis encoder strip check is printed from Print Care diagnostics, in the Print Quality section.



This plot shows the printhead-to-printhead registration along the scan axis. The error is revealed by means of an interference or vernier pattern that spans the whole scan axis of the printer. The plot can be printed only on substrates of maximum width (at least 125 inches) to ensure a complete check of the scan axis.

In general, the registration between colors should not show abrupt changes. A smooth variation along the scan axis is expected; the main cause is substrate expansion.

Abrupt changes signal serious problems with the scan-axis encoder strip.



In the cyan band, a faulty encoder strip causes glitches about 3 mm apart that correspond to the printhead arrays.

In the yellow and magenta band, the abrupt glitches measure about 120 to 125 mm apart.

Generally, you should always find both of these glitches when there is a problem with the encoder strip.

NOTE: If you recognize both of these patterns in the same plot, even slightly, replace the encoder strip (see Encoder strip on page 773). This problem should not be tolerated.

Further information about print-quality problems

See the user's guide for further information.

How to extract and read the service plot

The service plot and its structure

The service plot is an XML file containing information useful for printer maintenance and troubleshooting.

The file is divided into four different sections:

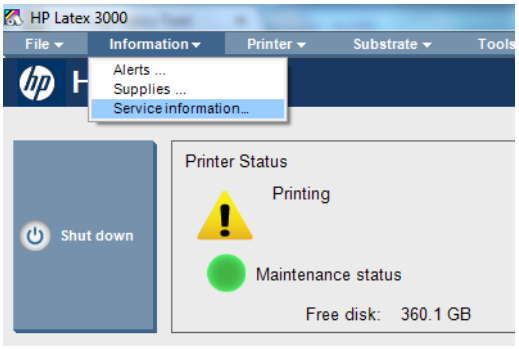
- **Current Substrate, Printhead, Ink System and Sensors Information:** This section lists the status of supplies, relevant sensors, and calibration values for servicing the machine.
- **Printer Usage Information:** This section lists the usage (consumption) of printheads, cartridges, and substrate. It also contains counters of usage for hardware elements that require preventive maintenance when the counter reaches a certain value.
- **Event Logs:** List of system errors, warnings, and printhead errors.
- **Substrate Settings and CLC:** Report of the substrate settings and calibration status.

See How to interpret the service plot on page 328 for a deeper understanding of each section of the service plot.

How to extract and view the service plot

1. **Prerequisites:** The machine must be in **Ready** status; if the machine is printing, the job may be cancelled. The service plot cannot be extracted with the machine booted in diagnostic mode.
2. **How to generate the service plot:**

   The service plot is generated through the IPS, by selecting **Information** > **Service information**.



   After some seconds needed to create the plot, a Web browser window pops up showing the service plot.

   A copy of this file is recorded in the following path of the built-in computer in XML format: **c:\Users***user* **\Desktop\Service Information**.

   NOTE: This XML file (service plot) is named automatically using the date of creation. For example, a plot created on the 20th of February 2013 might be named **2013-02-20T16_59_08_MasterXML.xml**. Check that the date is correct; if not, the date maintained in the printer is wrong and should be corrected.

3. **How to view the service plot:**

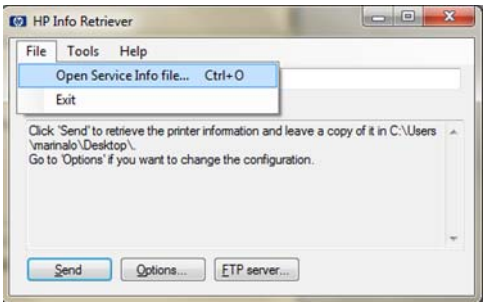
   You can view the service plot using the HPInforetriever software already installed in the built-in computer.

   a. Start the application by clicking on the **HPInfoRetriever** icon on the desktop:



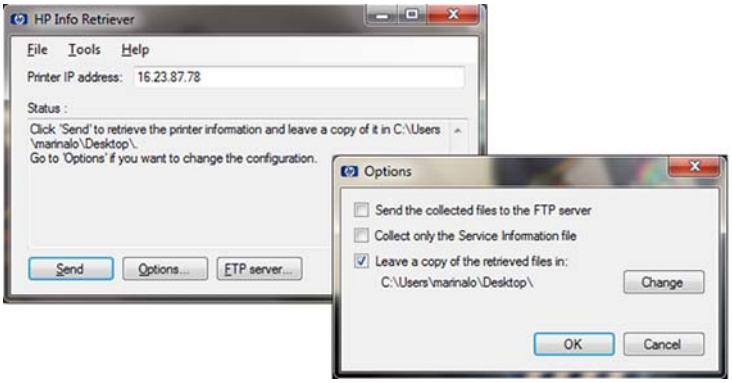
b. Open a service plot by selecting **File** > **Open Service Info**.

c. Browse the **Service Information** folder on the desktop, looking for the latest service plot (the one with the latest date in the name of the file).



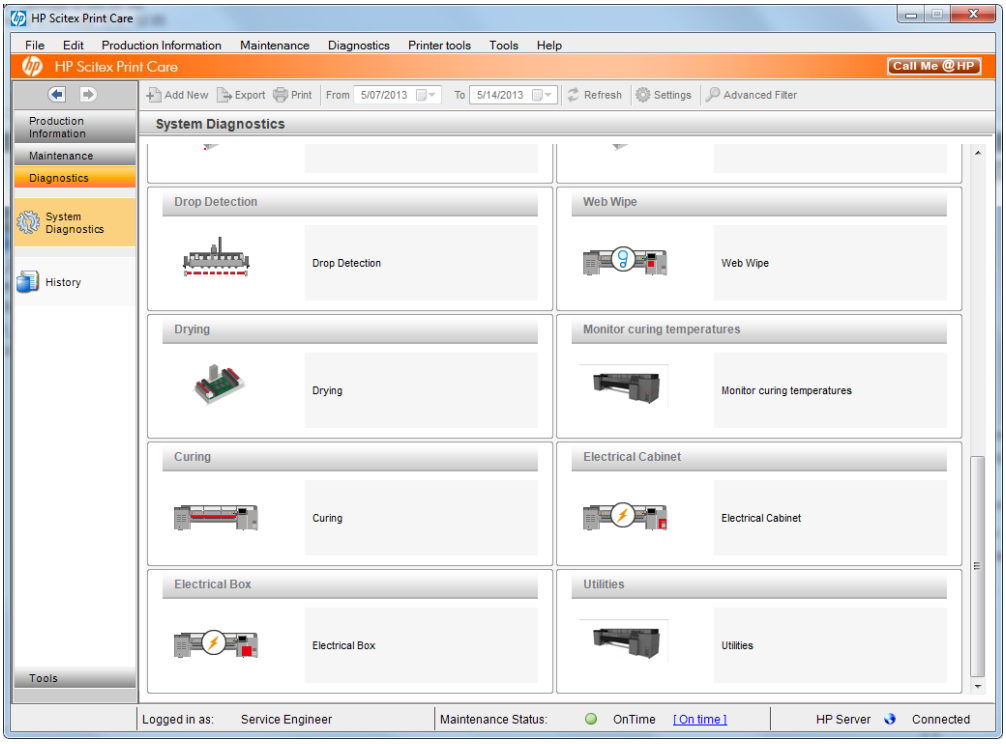
A Web browser opens, showing the service plot.

HP InfoRetriever also allows you to collect other information that may be required if HP support is needed.

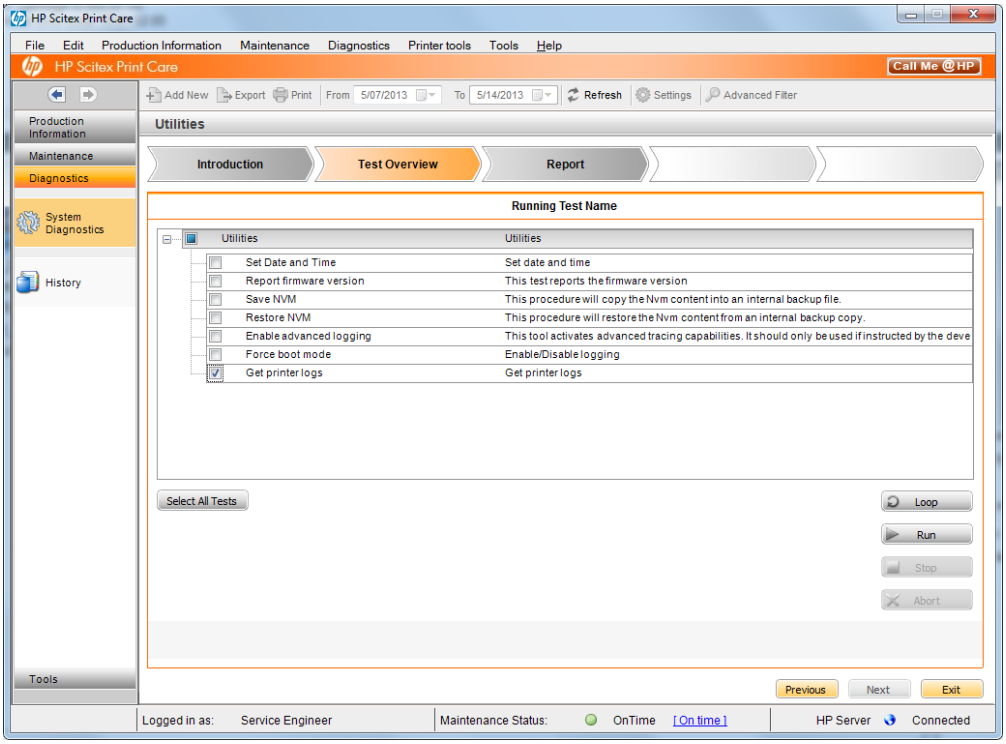


d. If extra information is required, log in as a service engineer and run Print Care.

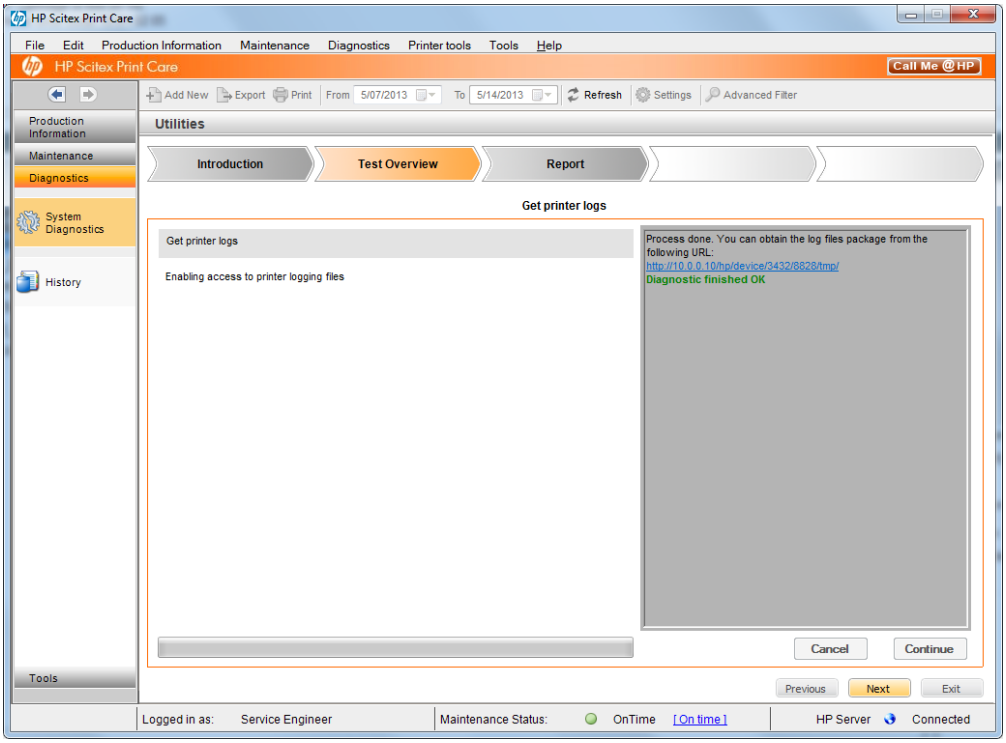
e. Select **Diagnostics** > **System Diagnostics** > **Utilities** as shown below.



f. Check the box **Get printer logs**.



g. A pane appears with a link to the folder in which the log files have been stored. Click the link, copy the specific file requested by HP and send it to the HP support team.



How to interpret the service plot

1 Current Substrate, Printhead, Ink System and Sensors Information

The first section of the service plot shows the overall printer status, followed by the printer configuration and loaded substrate information:

1 - Current Substrate, Printhead, Ink System and Sensors Information

Date:	May 13, 2013	Product Name:	HP Latex 3000	Serial Number:	SG2AD1F00105VH
Firmware version:	ALTAMIRA_00_23_00.1	Product number:	CZ056A	Service ID:	22288
Printer status:	LC cartridge is low on ink				

1.1 - Current Printer Configuration

Language:	English	Memory:	1.47 GB	Disk capacity:	320.0 GB

1.2 - Substrate Loaded Information

Substrate Path:	Roll	Substrate Loaded Status:	OK	Substrate Type Selected:	Consum
Substrate Width:	2585 mm / 101.8 inches	Substrate Length:	not available		

1.3, 1.4 Current printhead info

This section shows information about each printhead.

1.3 - Current Printhead Info (I)

	Warranty status	Status	Error ID Code	Product Number	Product Name	Serial Number	Warranty Date
1 -	See warranty note	OK	0	CR330A	HP881	HH011310500582549	2014-09-17
2 -	In warranty	OK	0	CR328A	HP881	0N006310500640133	2014-08-13
3 -	Out of warranty	OK	0	CR328A	HP881	0N050210500629852	2014-06-17
4 -	In warranty	OK	0	CR327A	HP881	TO049210500627212	2014-06-10
5 -	In warranty	OK	0	CR327A	HP881	TO011310500629603	2014-09-17
6 -	See warranty note	OK	0	CR329A	HP881	MY011310500629644	2014-09-17
7 -	See warranty note	OK	0	CR329A	HP881	MY050210500629798	2014-06-17

1.4 - Current Printhead Info (II)

	Used non-HP ink	Used expired ink	Ink Used	% warranty used (ml)	Usage Time	Scan Axis Shutdown
1 -	false	true	670 ml	1	16 h	0
2 -	false	false	11030 ml	18	73 h	0
3 -	false	false	21180 ml	35	81 h	0
4 -	false	false	4240 ml	7	19 h	0
5 -	false	false	4520 ml	7	21 h	0
6 -	false	true	3090 ml	5	21 h	0
7 -	false	true	10270 ml	17	69 h	0

- Warranty status: This field can be: **'In warranty'**, **'Out of warranty'**, or **'See warranty note'**. **'See warranty note'** indicates that non-HP ink has been used. See the limited warranty document or http://www.hp.com/go/learnaboutsupplies for more details.
- Status
- Error code ID

  0 WORKING (= OK in **Status** column)

  1 NO PRINTHEAD (= Missing in **Status** column)

  2 REPLACE

  3 RESEAT

  8 REMOVE

  16 REPLACEMENT INCOMPLETE

- Product number
- Product name
- Serial number
- Warranty date
- Used non-HP ink
- Used expired ink
- Ink used
- % warranty used (ml)
- Usage time
- Scan-axis shutdown

1.5, 1.6 Current cartridge info

This section shows information about each ink cartridge.

1.5 - Current Ink Cartridge Info (I)

	Status	Error ID Code	Product Name	Product Number	Serial Number	Install Date	Warranty Status
Latex Optimizer	OK	0	HP881	CR337A	1167476-13-3	2013-04-30	active
Matte black	OK	0	HP881	CR334A	764984-13-3	2013-04-30	active
Yellow	OK	0	HP881	CR333A	3296724-6-3	2013-04-30	active
Magenta	Low	8	HP881	CR332A	2789144-6-3	2013-04-09	active
Cyan	OK	0	HP881	CR331A	2870944-6-3	2013-04-30	active
Light magenta	OK	0	HP881	CR336A	736128-13-3	2013-04-30	active
Light cyan	OK	0	HP881	CR335A	700888-7-3	2013-04-09	active

1.6 - Current Ink Cartridge Info (II)

	Expiration Date	Manufacturer	Capacity	Level	Used non-HP Ink
Latex Optimizer	2014-04-04	HP	5000 ml	90 %	false
Matte black	2014-04-03	HP	5000 ml	55 %	false
Yellow	2014-02-18	HP	5000 ml	45 %	false
Magenta	2014-02-17	HP	5000 ml	15 %	false
Cyan	2014-02-17	HP	5000 ml	80 %	false
Light magenta	2014-04-03	HP	5000 ml	60 %	false
Light cyan	2014-02-20	HP	5000 ml	50 %	false

- **Error ID Code:** Reports the status of the cartridge. The Error ID given converts to the following status:

  0 = OK

  1 = NOT PRESENT

  2 = EMPTY

  4 = ERROR

  8 = LOW LEVEL

  128 = EXPIRED

  256 = WRONG_INSERTION_FAMILY

  512 = WRONG_INSERTION_MODEL

  1024 = WRONG_INSERTION_MISMATCH

  2048 = WRONG_INSERTION_SIZE

16 = RESEAT

32 = UNKNOWN

64 = VERY_LOW_LEVEL

4096 = NOT_TOTALLY_TESTED

8192 = PREPARING_SYSTEM

- **Install Date:** Shows when the cartridge was installed (check that the date is correctly set in the printer configuration).

1.7 Supply status, 1.8 ISS temperature sensor, and 1.9 Pressure sensor calibration values

1.7 - Supply Status

	Connected?	Main valve	Presure sensor level
Optimizer	YES	CLOSED	2222 mpsi
Black	YES	CLOSED	1927 mpsi
Yellow	YES	CLOSED	1883 mpsi
Magenta	YES	CLOSED	1990 mpsi
Cyan	YES	CLOSED	2085 mpsi
Light Magenta	YES	CLOSED	1988 mpsi
Light Cyan	YES	CLOSED	1902 mpsi

1.8 - ISS temperature sensor

External temperature:	28.21 C

1.9 - Pressure sensor calibration values

	Gain	Offset
Optimizer	258	490
Black	275	493
Yellow	269	514
Magenta	255	512
Cyan	274	492
Light Magenta	265	501
Light Cyan	274	508

Intermediate tank side in use: 1

1.10 Intermediate tank values, 1.11 Air pressure system, 1.12 PPS system, and 1.13 PPS homing switch status

1.10 - Intermediate tanks values

	Ink level (%)	Life cycles
Optimizer	94	9
Optimizer	90	9
Black	85	9
Black	100	9
Yellow	87	9
Yellow	100	9
Magenta	87	9
Magenta	100	9
Cyan	84	9
Cyan	100	9
Light Magenta	89	9
Light Magenta	100	9
Light Cyan	88	9
Light Cyan	100	9

1.11 - Air pressure system

	Pressure sensor value	Releave valve
Air pressure sensor 0	1 mpsi	CLOSED
Air pressure sensor 1	-1 mpsi	CLOSED

1.12 - PPS system

Current status:	HOMING	Current height position:	4294883411 EU

1.13 - PPS HOMING switch status

Front left:	OPEN	Rear left:	OPEN	Front right:	OPEN	Rear right:	OPEN

In this section you can see the status of various hardware elements: the intermediate tanks, the air pressure system, PPS status, and PPS homing switches.

PPS Status can be any of the following: HOMING, LOW, HIGH, HIGH_PRINT, MEDIA_LOAD, UNKNOWN, HALT. If the PPS is in an unknown position and needs to be recovered, see Table 5-9 Scan beam on page 362.

See Print to Paper Space (PPS) on page 34 for information that will help you to understand what values should be expected for every element.

1.14 Vacuum system, 1.15 Voltage configuration, and 1.16 Sensor system

1.14 - Vacuum system

Vacuum level:	-0.457381	Blower PWM:	

1.15 - Three phase system voltage configuration

Voltage:

1.16 - Sensor system

Top Window sensor:	0	Safety interlock 1:	0	Safety interlock 2:	0

The three-phase system voltage configuration shows the voltage configuration that has been set during installation (which must match site specifications). The possible values are: 200, 208, 220, 380, 400, and 415 V.

1.17 Substrate advance calibration values

1.17 - Substrate advance calibration values							
Slope:	-0.002742	User slope correction:	0.0	Substrate settings slope:	0	First swath factor:	0
Amplitude 1:	107.0	Phase 1:	1.10548	Frequency 1:	1.0		
Amplitude 2:	16.0	Phase 2:	3.42058	Frequency 2:	2.0		
Amplitude 3:	0.0	Phase 3:	0.0	Frequency 3:	0.0		
Last calibration done:		Date:	--	Result:		Code:	
Last calibration check done:		Date:	--	Result:	NA	Code:	

If all the values are zero, substrate-advance calibration has not been done.

1.18 Analog encoder calibration, 1.19 Motor type configuration, and 1.20 Printhead cleaner roll

1.18 - Analog encoder calibration			
	Gain	Digital gain	Digital offset
Channel A	2.0	3.0	-2.0
Channel B	2.0	2.0	4.0

1.19 - Motor Type configuration
Media Input/ Media Output Type:

1.20 - Printhead cleaner roll			
Status:	OK	Level:	88 %
High calibration:	10928 EU	X Calibration:	0 EU

This information is shown if escalation is needed.

2 Printer usage information

These sections contain information about usage of printer supplies and substrate.

2 - Printer Usage Information

Date:	May 13, 2013	Product Name:	HP Latex 3000	Serial Number:	SG2AD1F00105VH		
Firmware version:	ALTAMIRA_00_23_00.1	Product number:	CZ056A	Service ID:	22288		
Printer status:	LC cartridge is low on ink						

2.1 - Printer Usage							
Total printed substrate:	27919.97 m² / 300527.8 ft²	DR = 99.86 m² / 1074.9 ft²	RTF = 54.39 m² / 585.4 ft²	TUR = 0.00 m² / 0.0 ft²	Gutter = 0.00 m² / 0.0 ft²		
Total number of prints:	2540						
Total ink used:	Cyan = 11920.0	Magenta = 70900.0	Yellow = 60300.0	Light cyan = 54380.0	Light magenta = 58260.0	Matte black = 43770.0	Latex Optimizer = 45640.0

- **Total printed substrate** reports the printed substrate surface as well as the subtotal for each configuration: dual-roll, roll-to-free-fall, and take-up reel.
- **Total Ink used** is the total volume of ink used for each color, in liters.

2.2 Usage per printhead slot and 2.3 Usage per cartridge slot

2.2 - Usage per Printhead Slot				
	Color	Product Number	Printheads Used	Total Insertions
Slot 1	Latex Optimizer-Latex Optimizer	CR330A	3	12
Slot 2	Matte black-Cyan	CR328A	4	15
Slot 3	Matte black-Cyan	CR328A	3	40
Slot 4	Magenta-Yellow	CR327A	5	1
Slot 5	Magenta-Yellow	CR327A	3	14
Slot 6	Light cyan-Light magenta	CR329A	3	14
Slot 7	Light cyan-Light magenta	CR329A	4	1

2.3 - Usage per Cartridge Slot			
	Product Number	HP Ink Usage	Usage
1 - Latex Optimizer	CR337A	11931.39 cc	8 Cartridges / 11920 cc
2 - Matte black	CR334A	70917.98 cc	17 Cartridges / 70900 cc
3 - Yellow	CR333A	60308.53 cc	13 Cartridges / 60300 cc
4 - Magenta	CR332A	54380.56 cc	13 Cartridges / 54380 cc
5 - Cyan	CR331A	58283.4 cc	14 Cartridges / 58260 cc
6 - Light magenta	CR336A	43770.17 cc	10 Cartridges / 43770 cc
7 - Light cyan	CR335A	45658.5 cc	13 Cartridges / 45640 cc

- **Printheads Used** is the number of different printheads (with different serial numbers) used by the printer.
- **Total Insertions** is the number of times the current printhead has been inserted.

2.4 Substrate per substrate type

This section reports the usage of each substrate type.

2.4 - Substrate per Substrate Type					
Missing Paper	0.02 m² / 0.2 ft²	Missing Paper	3.42 m² / 36.9 ft²	Missing Paper	2.98 m² / 32.1 ft²
Missing Paper	2.98 m² / 32.1 ft²	Missing Paper	20.90 m² / 225.0 ft²	Missing Paper	71.37 m² / 768.2 ft²
Missing Paper	4.35 m² / 46.8 ft²	Missing Paper	2.29 m² / 24.7 ft²	Missing Paper	2.25 m² / 24.2 ft²
Missing Paper	2.25 m² / 24.2 ft²	Missing Paper	6.13 m² / 66.0 ft²	Missing Paper	2.98 m² / 32.1 ft²
Missing Paper	5.82 m² / 62.6 ft²	Missing Paper	2.83 m² / 30.5 ft²	Missing Paper	1.41 m² / 15.1 ft²
Missing Paper	140.56 m² / 1513.0 ft²	Missing Paper	59.50 m² / 640.4 ft²	Missing Paper	18.65 m² / 200.7 ft²
Generic self-adhesive vinyl	714.72 m² / 7693.1 ft²	Missing Paper	57.08 m² / 614.4 ft²	HP Dur Frntlt Scrim Bannr	9.22 m² / 99.2 ft²
Missing Paper	49.65 m² / 534.4 ft²	HP Heavy Textile Banner	0.00 m² / 0.0 ft²	Generic textile	17.45 m² / 187.8 ft²
HP Satin Canvas	2.31 m² / 24.8 ft²	Missing Paper	4.64 m² / 50.0 ft²	Generic paper	292.53 m² / 3148.7 ft²
Missing Paper	11.30 m² / 121.7 ft²	Missing Paper	69.13 m² / 744.1 ft²	Generic PVC banner	518.81 m² / 5584.5 ft²
Missing Paper	65.66 m² / 706.7 ft²	HP Blue Bck Billbrd Paper	4.16 m² / 44.8 ft²	Missing Paper	2.76 m² / 29.7 ft²
Missing Paper	5.09 m² / 54.8 ft²	Missing Paper	11.93 m² / 128.4 ft²	Missing Paper	1.16 m² / 12.4 ft²
Generic coated paper	8.78 m² / 94.5 ft²	Missing Paper	4.21 m² / 45.3 ft²	banner luis	43.22 m² / 465.2 ft²
paper luis	36.37 m² / 391.5 ft²	Fredrix Art Canvas 901	15.43 m² / 166.1 ft²	uncalibred selfadhesive	5.38 m² / 57.9 ft²
uncalibred pvcbanner	3.73 m² / 40.2 ft²	Natura Test	5.71 m² / 61.5 ft²	Clone Jacint	202.49 m² / 2179.6 ft²
Consum	1885.98 m² / 20300.5 ft²	clone Carmen	11.29 m² / 121.5 ft²	Custom Frontlit Print Quality	9.19 m² / 98.9 ft²
cloned pvc banner	19.31 m² / 207.9 ft²	Generic self adhesive vinyl clon	21.52 m² / 231.7 ft²	HP Durable Banner CLON	3.58 m² / 38.5 ft²
HP Permanent Gloss Adh CLON	15.37 m² / 165.5 ft²	Generic PP & PE synthetics	9.88 m² / 106.4 ft²	Plots Carmen	7.41 m² / 79.8 ft²
HP PVC-free Wall Paper	11.75 m² / 126.4 ft²	HP PVC-free Wall Paper (PS)	59.14 m² / 636.6 ft²	HP Everyday Matt Polyp	16.76 m² / 180.5 ft²
GENCLON	5.82 m² / 62.7 ft²	Self-adhesive Vinyl Copiado	38.79 m² / 417.5 ft²	Intellicoat luis	35.50 m² / 382.1 ft²
cloned generic PP & PE synthetics	21.56 m² / 232.0 ft²	PP dani	29.97 m² / 322.6 ft²	Blueback MKTG Samples	18.31 m² / 197.1 ft²
Alex - Custom Frontlit PVC Banner	107.66 m² / 1158.9 ft²				

2.5 Component usage

This section gives a list of various hardware counters.

2.5 - Component Usage					
Printing time (h)	503	Power on time (h)	2964	Belt usage (#cycles)	196524
Usage oil reservoir (m)	618042	Usage slider rodes (m)	618042	Encoder strip ink (millilitres)	0
SAX motor # cycles	196524	SAX motor usage (m)	1514042	Tube ISS # cycles	196424
Carriage # cycles	196524	Line sensor since last exchange (millilitres)	0	Line sensor working time (h)	6
Spectrophotometer usage (centiliter)	0	Spectrophotometer working time (h)	0	# open/close of spectro. door	0
Aerosol FAN usage (h)	0	Ink deposit level (cc)	0	Drop detection	33
CAP station usage (#cycles)	1535	CAP station usage (joules)	0	PH cleaner roll # engage cycles	193035
PH cleaner roll adv. (m)	558	# OMAS nav. success	1059	# OMAS nav. fail	211
OMAS usage (m. media length)	11340	Heater resistance usage since last cleaning (cc)	0	Heater deflector usage since last cleaning (cc)	0
Usage of heaters temp sensors (millilitres)	0	Curing resistance usage since last cleaning (cc)	0	Curing deflector usage since last cleaning (cc)	0
Heating resistance usage (h)	0	Curing resistance usage (h)	103	Vacuum FAN usage (h)	590
MI motor (input) usage (m)	8203	MO motor (output) usage (m)	8203	Media driver usage (m)	25592
PPS # cycles	24572	PPS usage (km)	1842173	# cartridges insertion 1	98
# cartridges insertion 2	110	# cartridges insertion 3	17297568	# cartridges insertion 4	105
# cartridges insertion 5	103	# cartridges insertion 6	96	# cartridges insertion 7	91
# PH insertion 1	50	# PH insertion 2	61	# PH insertion 3	34
# PH insertion 4	38	# PH insertion 5	41	# PH insertion 6	49
# PH insertion 7	27				

2.6 Job accounting

This section shows the print mode selectors used for the print jobs (number of passes, number of colors, ink density).

2.6 - Job Accounting					
Date	Job name	Optimized for	Image quality	Max detail	Extra Passes
2013-05-06 12:33:27	pelills	Images	Normal	Off	false
2013-05-06 10:30:29	pelills	Images	Normal	Off	false
2013-05-06 10:01:43	Ducati_A1~6	Images	Normal	Off	false
2013-05-06 05:43:34	plot_consum_ponderat_2	Images	Normal	Off	false
2013-05-06 05:21:36	plot_consum_ponderat_2	Images	Normal	Off	false
2013-05-06 04:29:45	plot_consum_ponderat_2	Images	Normal	Off	false
2013-05-06 02:36:34	plot_consum_ponderat_2	Images	Normal	Off	false
2013-05-06 01:50:22	plot_consum_ponderat_2	Images	Normal	Off	false
2013-05-06 00:59:24	plot_consum_ponderat_2	Images	Normal	Off	false
2013-05-05 23:21:54	plot_consum_ponderat_2	Images	Normal	Off	false

3 Event logs

3.1 System errors and 3.2 System warnings

System errors are classified depending on the severity:

- Severe: Process stopper, requiring a restart of the printer
- System Warning/silent: Informative

The error codes are documented in Troubleshooting system error codes on page 87. Every event specifies the system error, the substrate usage at the time the system error appeared (total quantity of substrate at the moment of the error), and the date when it happened. These elements let us know the frequency with which the customer is experiencing problems.

3.1 - System Errors

Event #	Severity	Error Code	F/W Version	Substrate Usage	Line	Da
1	severe	79:04	LATEST	0.000000	/ae/nightly_altamira/patum/baobab/TARGETS/wrl43-atom-opt/elektra/hal/lowlevel/MemoryAsic/src/MemoryAsicCommon.cpp:327	2019-07-
2	severe	79:04	LATEST	0.000000	/ae/nightly_altamira/patum/baobab/TARGETS/wrl43-atom-opt/elektra/hal/lowlevel/MemoryAsic/src/MemoryAsicCommon.cpp:327	2019-07-
3	severe	79:04	LATEST	0.000000	/ae/nightly_altamira/patum/baobab/TARGETS/wrl43-atom-opt/elektra/hal/lowlevel/MemoryAsic/src/MemoryAsicCommon.cpp:327	2019-07-
4	severe	79:04	LATEST	0.000000	/ae/nightly_altamira/patum/baobab/TARGETS/wrl43-atom-opt/elektra/hal/lowlevel/MemoryAsic/src/MemoryAsicCommon.cpp:327	2019-07-
5	severe	79:04	LATEST	0.000000	/ae/nightly_altamira/foundation/baobab/TARGETS/wrl43-atom-opt/fsm/src/fsm.cpp:1080	2019-07-
6	severe	79:04	LATEST		/ae/nightly_altamira/foundation/baobab/TARGETS/wrl43-atom-opt/CDS/components/Cds/Atlas/CdsAtlas.cpp:838	2019-07-
7	severe	79:04	LATEST		/ae/nightly_altamira/patum/baobab/TARGETS/wrl43-atom-opt/elektra/hal/lowlevel/MemoryAsic/src/MemoryAsicCommon.cpp:327	2019-07-
8	severe	79:04	LATEST		/ae/nightly_altamira/patum/baobab/TARGETS/wrl43-atom-opt/elektra/hal/lowlevel/MemoryAsic/src/MemoryAsicCommon.cpp:327	2019-07-
9	severe	79:04	LATEST		/ae/nightly_altamira/foundation/baobab/TARGETS/wrl43-atom-opt/CDS/components/Cds/Atlas/CdsAtlas.cpp:838	2019-07-
10	severe	01.2:10	ALTABETA_00_00_95.2		/ae/ALTABETA_00_00_95/patum/baobab/TARGETS/wrl43-atom-opt/elektra/hal/nvm/NvmEeprom/NvmEeprom.cpp:1385	2019-07-
11	severe	06:10	ALTABETA_00_00_95.2		/ae/ALTABETA_00_00_95/patum/baobab/TARGETS/wrl43-atom-opt/elektra/hal/nvm/NvmEeprom/NvmEeprom.cpp:1385	2019-07-
12	severe	79:04	ALTAMIRA_00_23_00.1	27919.968750	/ae/ALTAMIRA_00_23_00/patum/baobab/TARGETS/wrl43-atom-opt/elektra/ws/be/BackEndPipeline/Fusion/BlockEncoder.cpp:179	2013-05-
13	severe	79:04	ALTAMIRA_00_23_00.1	27870.380859	/ae/ALTAMIRA_00_23_00/patum/baobab/TARGETS/wrl43-atom-opt/elektra/ws/be/BackEndPipeline/Fusion/BlockEncoder.cpp:179	2013-05-
14	severe	79:04	ALTAMIRA_00_23_00.1	27507.402344	/ae/ALTAMIRA_00_23_00/patum/baobab/TARGETS/wrl43-atom-opt/elektra/ws/be/BackEndPipeline/Fusion/BlockEncoder.cpp:179	2013-05-
15	severe	79:04	ALTAMIRA_00_23_00.1	27507.402344	/ae/ALTAMIRA_00_23_00/patum/baobab/TARGETS/wrl43-atom-opt/elektra/ws/be/BackEndPipeline/Fusion/BlockEncoder.cpp:179	2013-05-
16	severe	unknown	LATEST	27501.925781	/ae/nightly_altamira/patum/baobab/TARGETS/arm-threadx-opt/elektra/hal/lowlevel/I2CBus/Horus/I2CBusHorus.cpp:633	2013-05-
17	severe	unknown	LATEST	27230.726562	/ae/nightly_altamira/patum/baobab/TARGETS/arm-threadx-opt/elektra/hal/lowlevel/I2CBus/Horus/I2CBusHorus.cpp:633	2013-05-
18	severe	79:04	LATEST	27012.671875	/ae/nightly_altamira/foundation/baobab/TARGETS/arm-threadx-opt/MetaGod/space/rpc/src/SpaceRpcElektra.cpp:325	2013-05-
19	severe	79:04	LATEST	26992.601562	/ae/nightly_altamira/patum/baobab/TARGETS/wrl43-atom-opt/elektra/ws/be/BackEndPipeline/Fusion/BlockEncoder.cpp:179	2013-05-
20	severe	unknown	LATEST	26663.724609	/ae/nightly_altamira/patum/baobab/TARGETS/arm-threadx-opt/elektra/hal/lowlevel/I2CBus/Horus/I2CBusHorus.cpp:633	2013-05-

3.2 - System Warnings

Event #	Severity	Error Code	F/W Version	Substrate Usage	Line	Da
1	advisory	49.01.01.01:01	ALTAMIRACF_00_10_00.1	0.000000	/ae/ALTAMIRACF_00_10_00/patum/baobab/TARGETS/wrl43-atom-opt/elektra/media/AerosolController/BaobabRemote/AerosolControllerBaobabRemote.cpp:649	2019-10-
2	advisory	49.01.02.01:01	ALTAMIRACF_00_10_00.1	0.000000	/ae/ALTAMIRACF_00_10_00/patum/baobab/TARGETS/wrl43-atom-opt/elektra/media/AerosolController/BaobabRemote/AerosolControllerBaobabRemote.cpp:649	2019-10-
3	advisory	47.00.00.80:12.5	ALTAMIRACF_00_10_00.1	0.000000	/ae/ALTAMIRACF_00_10_00/patum/baobab/TARGETS/wrl43-atom-opt/elektra/ws/servicing/Wiper/MiMaMo/ViperMiMaMo.cpp:2025	2019-10-
4	advisory	49.01.01.01:01	ALTAMIRACF_00_10_00.1	0.000000	/ae/ALTAMIRACF_00_10_00/patum/baobab/TARGETS/wrl43-atom-opt/elektra/media/AerosolController/BaobabRemote/AerosolControllerBaobabRemote.cpp:649	2019-10-
5	advisory	49.01.02.01:01	ALTAMIRACF_00_10_00.1	0.000000	/ae/ALTAMIRACF_00_10_00/patum/baobab/TARGETS/wrl43-atom-opt/elektra/media/AerosolController/BaobabRemote/AerosolControllerBaobabRemote.cpp:649	2019-10-
6	advisory	47.00.00.80:12.5	ALTAMIRACF_00_10_00.1	0.000000	/ae/ALTAMIRACF_00_10_00/patum/baobab/TARGETS/wrl43-atom-opt/elektra/ws/servicing/Wiper/MiMaMo/ViperMiMaMo.cpp:2025	2019-10-
7	advisory	61:09	LATEST	0.000000	/ae/nightly_altamira/lopes/baobab/TARGETS/wrl43-atom-opt/red/pdl/src/pcl3gui/guiutils/guiUtils.c:399	2019-07-
8	silent	unknown	LATEST	0.000000	/ae/nightly_altamira/patum/baobab/TARGETS/wrl43-atom-opt/elektra/media/DryingManager/Baobab/DryingManagerBaobab.cpp:743	2019-07-
9	silent	unknown	LATEST	0.000000	/ae/nightly_altamira/patum/baobab/TARGETS/wrl43-atom-opt/elektra/media/DryingManager/Baobab/DryingManagerBaobab.cpp:736	2019-07-
10	silent	unknown	LATEST	0.000000	/ae/nightly_altamira/patum/baobab/TARGETS/wrl43-atom-opt/elektra/media/DryingManager/Baobab/DryingManagerBaobab.cpp:743	2019-07-
11	silent	unknown	LATEST	0.000000	/ae/nightly_altamira/patum/baobab/TARGETS/wrl43-atom-opt/elektra/media/DryingManager/Baobab/DryingManagerBaobab.cpp:736	2019-07-
12	silent	unknown	LATEST	0.000000	/ae/nightly_altamira/patum/baobab/TARGETS/wrl43-atom-opt/elektra/media/DryingManager/Baobab/DryingManagerBaobab.cpp:743	2019-07-
13	silent	unknown	LATEST	0.000000	/ae/nightly_altamira/patum/baobab/TARGETS/wrl43-atom-opt/elektra/media/DryingManager/Baobab/DryingManagerBaobab.cpp:736	2019-07-
14	silent	unknown	LATEST	0.000000	/ae/nightly_altamira/patum/baobab/TARGETS/wrl43-atom-opt/elektra/media/DryingManager/Baobab/DryingManagerBaobab.cpp:743	2019-07-
15	silent	unknown	LATEST	0.000000	/ae/nightly_altamira/patum/baobab/TARGETS/wrl43-atom-opt/elektra/media/DryingManager/Baobab/DryingManagerBaobab.cpp:736	2019-07-
16	silent	unknown	LATEST	0.000000	/ae/nightly_altamira/patum/baobab/TARGETS/wrl43-atom-opt/elektra/media/DryingManager/Baobab/DryingManagerBaobab.cpp:743	2019-07-
17	silent	unknown	LATEST	0.000000	/ae/nightly_altamira/patum/baobab/TARGETS/wrl43-atom-opt/elektra/media/DryingManager/Baobab/DryingManagerBaobab.cpp:736	2019-07-

3.3 Printhead error log

3.3 - Printhead Error Log

Printheads name	Serial Number	Status	Usage time	% warranty used (ml)	Max Recovery Level	Error Code
1 -	0N006310500640133	0	86 h	21	2	262144
	Unknown	1	0 h	0	2	512
	0N049210500627173	0	9 h	41	2	262144
	0N006310500636892	0	1 h	0	2	0
	0N049210500627175	0	1 h	12	2	0
	0N050210500629842	0	21 h	12	2	0
2 -	0N050210500629852	0	94 h	38	2	262144
	0N005310500646842	0	0 h	0	2	0
	Unknown	1	0 h	0	2	512
	0N043210500610890	0	2 h	15	2	0
	0N050210500629828	0	21 h	16	2	0
3 -	TO016310500655312	0	13 h	2	2	0
	TO049210500627212	0	19 h	8	2	0
	TO006310500646771	0	54 h	14	2	0
	Unknown	1	0 h	0	2	512
	TO050210500629895	0	8 h	20	2	262144
	TO044210500610924	0	2 h	13	2	0
	TO044210500609187	0	21 h	39	2	262144
4 -	TO011310500629603	0	34 h	10	2	0
	Unknown	1	0 h	0	1	512
	TO005310500646862	0	59 h	14	2	0
	TO044210500607367	0	12 h	55	2	262144
	TO044210500610942	0	2 h	15	2	0
	TO044210500610148	0	21 h	40	2	262144
5 -	MY011310500629644	0	34 h	6	2	524288
	Unknown	4	0 h	0	2	1024
	MY050210500629817	0	59 h	32	2	262144
	MY043210500610932	0	2 h	8	2	0
	MY043210500610903	0	21 h	6	2	0
6 -	MY016310500655317	0	0 h	0	2	0
	Unknown	1	82 h	0	2	512
	MY050210500629798	0	82 h	19	2	524288
	MY049210500627211	0	12 h	19	2	0
	MY050210500629765	0	2 h	5	2	0
	MY043210500610934	0	21 h	41	2	262144
7 -	HH011310500582549	0	29 h	1	2	524288
	HH050210500629954	0	65 h	9	2	0
	Unknown	1	0 h	0	2	512
	HH050210500629955	0	2 h	2	2	0
	HH050210500629964	0	21 h	0	2	0

The **Error Code** is a decimal number that must be converted into binary code in order to use the attached error table conversion (see below). You can use the Windows calculator to convert the number from decimal into binary.

The following table explains the meaning of the different bits (0 or 1). When the value of the error code is reported as 0, it means that the printhead is working correctly:

Bit	Meaning	Bit	Meaning
1st	FAILS_LOGICAL_V	11th	BAD_ACUMEN_ACCESS
2nd	FAILS_CONTINUITY	12th	WRONG_MODEL
3rd	SHUTDOWN	13th	MISMATCH
4th	FAILS_VPP	14th	CSDATA_NOT_RESPONDING
5th	TEMP_EXTREMELY_HIGH	15th	CSDATA_TRANSMIT_ERROR
6th	TEMP_EXTREMELY_LOW	16th	FAILS_ENERGY_CALIBRATION
7th	TEMP_TOO_HIGH	17th	EMPTY_DUMMY
8th	TEMP_TOO_LOW	18th	FULL_DUMMY
9th	BAD_ACUMEN_INFO	19th	END_OF_LIFE/Out of Warranty
10th	NO_PEN	20th	EXPIRED

- Example 1: Error code 4099 (decimal) is 1000000000011 (binary). Using the table above, the error code means “FAILS_LOGICAL_V”, “FAILS_CONTINUITY” and “MISMATCH”.
- Example 2: Error code 532512 (decimal) is 1000001000000100000 (binary). Using the table above, this errors tells us: TEMP_EXTREMELY_LOW, CSDATA_NOT_RESPONDING and EXPIRED (used expired ink). The connection between the printer and the printhead does not seem to work.

Here you can see a more detailed table:

Status code (dec)	Status code (hex)	Status name	User deported status	Description on printer HW	Test	Comments/tradeoffs
1	0x0	WORKING	OK	The pen is working properly	All	
1	0x1	FAILS_LOGICAL_V	REPLACE	The pen can have Vcc in short	Pen Vcc switch on	
2	0x2	FAILS_CONTINUITY	RESEAT		Pen Id programming and Pen continuity	Could be caused by a bad insertion, so better to reseat rather than rejecting the PH
4	0x4	SHUTDOWN	-	Not used	NA	NA
8	0x8	FAILS_VPP	REPLACE	Suspected Vpp in short	Vpp turn on Vpp Leackage test	
16	0x10	TEMP_EXTREMELY_HIGH	REPLACE	The temperature of the pen is beyond normal margins.	Thermal runtime tests	REPLACE as could be caused by inkshort
32	0x20	TEMP_EXTREMELY_LOW	RESEAT	The temperature of the pen is under normal margins	Thermal runtime tests	RESEAT as this could be caused by bad Vpp continuity
64	0x40	TEMP_TOO_HIGH	REPLACE	The temperature of the pen is beyond normal margins.	Thermal runtime tests	REPLACE as could be caused by inkshort
128	0x80	TEMP_TOO_LOW	RESEAT	The temperature of the pen is under normal margins	Thermal runtime tests	RESEAT as this could be caused by bad Vpp continuity
256	0x100	BAD_ACCUMEN_INFO	REPLACE	The temperature of the pen is beyond normal margins.	Acumen info check	Repalce, PH manufacturing has a problem
512	0x200	NO PEN	MISSING	There is no pen	Pen presence	
1024	0x400	BAD ACUMEN ACCESS	RESEAT OR TEST SEPARATELY	Acumen cannot be accessed	Acumen read	This could be due to bad acumen continuity or a short. In the event of short, we don't know which PH is failing
2048	0x800	WRONG MODEL	REPLACE	The model inserted is not the required in the slot	Acumen info check	Mechanical lockouts should prevent this. So the error is redundant
4096	0x1000	MISMATCH	REPLACE	The color is not the required in the slot	Acumen info check	NOTE: Inf the mechanical lockouts fail, we will not be able to notice
8192	0x2000	CSADTA NOT RESPONDING	RESEAT	The CSDATA communication fails	Pen ID programming	Could be caused by bad insertion
16384	0x4000	CSDATA TRANSMIT ERROR	RESEAT	The CSDATA communication is erroneous	Every pen communication	Could be caused by poor contact
32768	0x8000	FAILS ENERGY CALIBRATION	RESEAT OK in purging, REMOVE otherwise		ECC cal Acumen read, if we have acumen in setup printhead	Can be due to bad contact. In purge this is requested. Default is to have acumen as dummy, so we will not be able to detect.
65536	0x10000	EMPTY DUMMY		The energy cal has filed		
131072	0x20000	FULL DUMMY	REMOVE		Acumen raed, if we have acumen in setup prinhead	In purge this is requested. Default is to have acumen as dummy, so we will not be able to detect.
262144	0x40000	END OF LIFE	WARNING	PH has warranty expired	NA	NA
524288	0x80000	EXPIRED	WARNING	PH has used expired or non-hp	NA	NA

Diagnostic log

This section shows which tests or calibrations have been run. For each test, there are two entries: 1) starting time and 2) brief result after ending the test/calibration (pass, fail or cancelled). In the event the printer is stopped during the test, through emergency stop or energy cutoff, the result is not logged.

- Starting time
- A brief result after ending the test/calibration (pass, fail, or cancelled)

NOTE: If the printer is stopped during the test, by emergency stop or power cutoff, the result is not logged.

4 Substrate settings and CLC

4.1 Loaded substrate

Lists the settings of the loaded substrate.

4.1 - Loaded Substrate

Status:	ready	Ink collector:	no	Media input:	single
Media output:	roll	Substrate collector:	off	Ink limits:	C=, M=, Y=, K=, Ic=, Im=
Vacuum Applied	0	MI_Tension_Applied	0	MO_Tension_Applied	0
Curing_Temp	0	Adv_Factor_Applied	0		

- **Substrate input:** may be 'inwards' or 'outwards'
- **Substrate output:** may be 'inwards' or 'outwards', plus the settings established by the user for this specific substrate

4.2 Substrate-specific calibrations

4.2 - Substrate-specific Calibrations

Substrate Name	Substrate ID	Color Status	Color Date
Generic paper	200100	OK	2013-05-09
Generic backlit polyester film	301100	Recommended	N.A.
Intellicoat luis	77A6A3D98FEC89C23AEF09E548E04C41	Recommended	N.A.
cloned generic PP & PE synthetics	A9B524824924AFF1541E49B467AA348C	Recommended	N.A.
HP Durable Banner CLON	7A6F9D259BBF3220DF35D6DE25ACBC01	Recommended	N.A.
HP Satin Canvas	350206	Recommended	N.A.
Clone Jacint	E8753F3A18E093939BD06A1AB111FE2B	Recommended	N.A.
Generic self-adhesive vinyl	150100	OK	2013-04-26
HP Light Textile Display Banner	350201	Recommended	N.A.
Natura Test	37A0F37C296F71088BAAD895AD6A8121	Recommended	N.A.
HP Heavy Textile Banner	350200	Recommended	N.A.
HP PVC-free Wallpaper CLON	31DEE451A4D80516661EFE9CB1369299	Recommended	N.A.
Generic backlit PP & PE synthetics	251100	Recommended	N.A.
Generic PVC banner	100100	OK	2013-04-23
Generic backlit paper	201100	Recommended	N.A.
nn	A971EA3EA681AB8DDB081EA2BF36D6FC	Recommended	N.A.
Yupo Dani	18A07A5C37D1A017D060DA90D44056BB	Recommended	N.A.
uncalibred selfadhesive	5BEAF5F637D6DC7EF8264FDAF393A5E1	Recommended	N.A.
HP Permanent Gloss Adh CLON	D56920A2CE16CC9A0DEE1F71210BD243	Recommended	N.A.
clone Carmen	0891EF9C2C20C717E08EB428A4703AD8	Recommended	N.A.
cloned pvc banner	ABF57BD42AA667F5E3D128861A47FA36	Recommended	N.A.
HP DuPont Tyvek Banner	250207	Recommended	N.A.
HP Everyday Adhesive Matte Polypropylene, 3 in-Core	250206	Recommended	N.A.
HP Everyday Matte Polypropylene,3 in-Core	250205	Recommended	N.A.
Alex - Custom Frontlit PVC Banner	0AEE0C2DD47BE8EBC350619A0949747F	Recommended	N.A.
HP Heavyweight Coated Paper, 3 in-Core	200209	Recommended	N.A.

The **Substrate Name** with its corresponding **Substrate ID** (which appears in the XML of the job sent from the RIP to the IPS) and the color calibration information (**Color Status:** done, default) and the date of the last color calibration done. If the date is set to 1970, no color calibration has been done for this substrate.

Looking at this list, you can identify the parent of a custom-made substrate. A custom substrate has its parent indicated afterwards between parentheses.

Troubleshoot non-HP ink usage

Warranty statement

Printer

This is an extract of the printer warranty statement related to the use of non-HP inks:

“For HP printer products, the use of a refilled or non-original HP consumable product (ink, printhead, ink cartridge, or maintenance kit) does not affect either HP’s Limited Warranty or any HP support contract. However, if printer failure or damage is attributable to the use of a non-HP or refilled ink cartridge or an expired ink cartridge, HP's authorized representative will charge its standard time and materials charges to service the printer for the particular failure or damage.”

See the *Hewlett-Packard Limited Warranty Statement* document for more information.

Ink cartridges and printheads

This is an extract of the warranty statement for HP ink cartridges and customer-replaceable printheads:

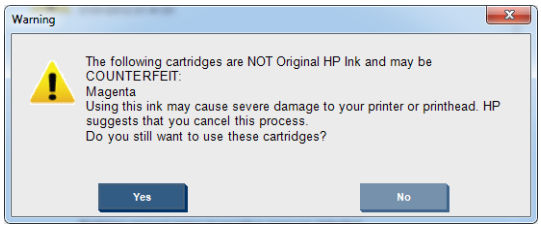
“This warranty does not cover HP ink cartridges or customer-replaceable printheads that have been refilled, remanufactured, refurbished, misused, or tampered with. If failure or damage to ink cartridges or customer-replaceable printheads is attributable to the use of a non-HP, expired, or refilled ink cartridge, or to their use with a non-designated HP or unauthorized OEM printing device, HP is not responsible for the cost of replacement or refund of the purchase price.”

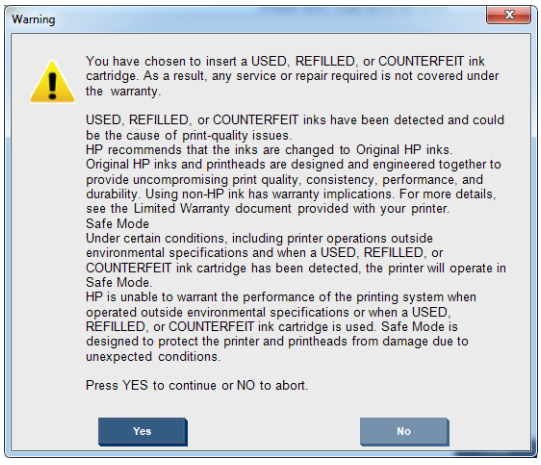
You can find more information about how the use of non-HP inks affects the warranties of ink cartridges and printheads at http://www.hp.com/go/learnaboutsupplies.

Ink cartridges

Ink cartridge non-HP ink alerts

When non-HP ink usage is detected while replacing an ink cartridge, the customer is alerted about the implications in performance and warranty. These alerts must be acknowledged twice for the printer to continue working.

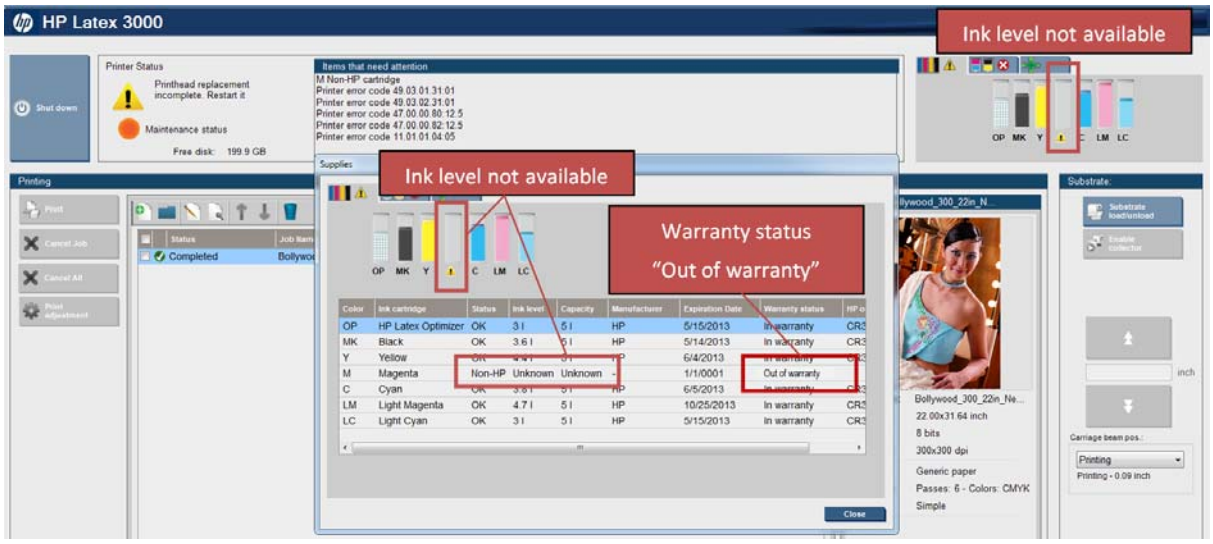




Troubleshooting usage of non-HP ink cartridges

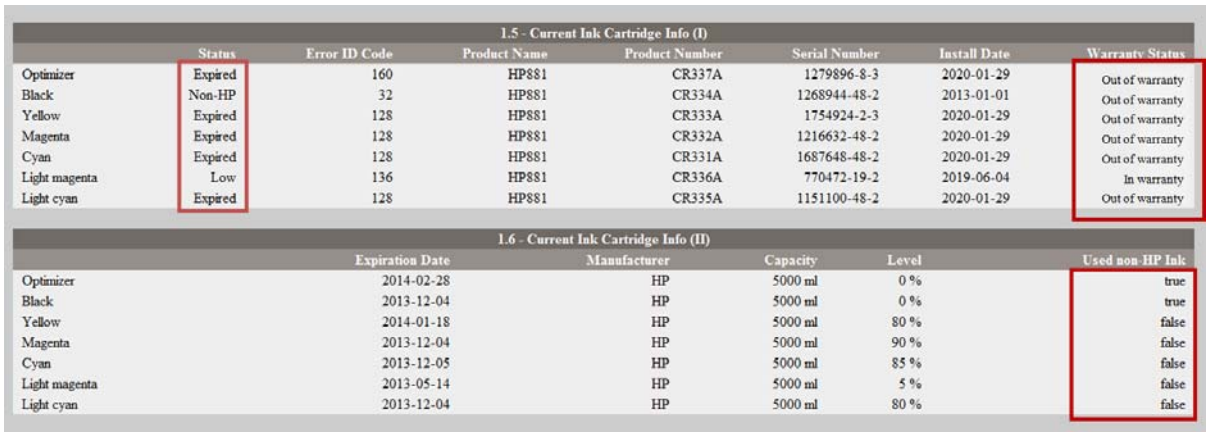
Internal Print Server

The Internal Print Server shows clearly in the supplies information when non-HP ink usage is detected.



Service plot

Similar information can be found in the service plot.



1.5 - Current Ink Cartridge Info (I)

	Status	Error ID Code	Product Name	Product Number	Serial Number	Install Date	Warranty Status
Optimizer	Expired	160	HP881	CR337A	1279896-8-3	2020-01-29	Out of warranty
Black	Non-HP	32	HP881	CR334A	1268944-48-2	2013-01-01	Out of warranty
Yellow	Expired	128	HP881	CR333A	1754924-2-3	2020-01-29	Out of warranty
Magenta	Expired	128	HP881	CR332A	1216632-48-2	2020-01-29	Out of warranty
Cyan	Expired	128	HP881	CR331A	1687648-48-2	2020-01-29	Out of warranty
Light magenta	Low	136	HP881	CR336A	770472-19-2	2019-06-04	In warranty
Light cyan	Expired	128	HP881	CR335A	1151100-48-2	2020-01-29	Out of warranty

1.6 - Current Ink Cartridge Info (II)

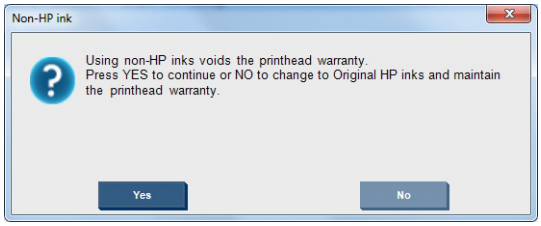
	Expiration Date	Manufacturer	Capacity	Level	Used non-HP Ink
Optimizer	2014-02-28	HP	5000 ml	0 %	true
Black	2013-12-04	HP	5000 ml	0 %	true
Yellow	2014-01-18	HP	5000 ml	80 %	false
Magenta	2013-12-04	HP	5000 ml	90 %	false
Cyan	2013-12-05	HP	5000 ml	85 %	false
Light magenta	2013-05-14	HP	5000 ml	5 %	false
Light cyan	2013-12-04	HP	5000 ml	80 %	false

Printheads

Printhead non-HP ink alerts

When non-HP ink usage is detected and the customer acknowledges the warnings, the installed printheads in question are automatically marked as used with non-HP ink.

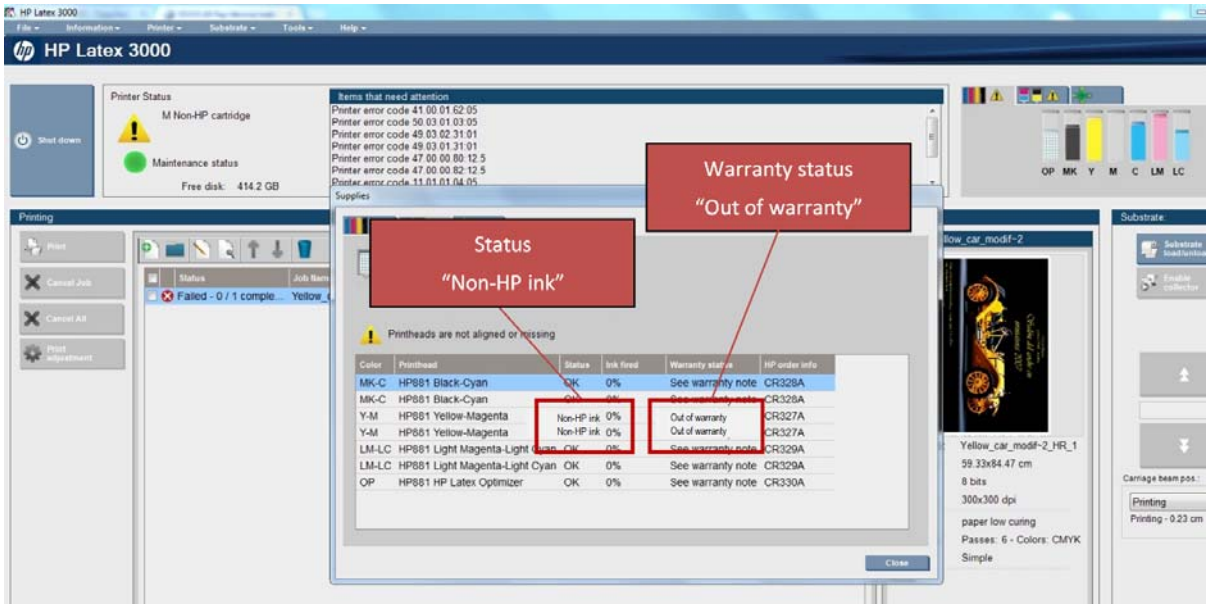
When a new printhead is installed, the customer is once again alerted about the performance and warranty implications, and the customer must acknowledge such alerts.



Troubleshooting usage of non-HP inks in printheads

Internal Print Server

The Internal Print Server shows clearly in the supplies information when non-HP ink usage is detected.



Service plot

Similar information can be found in the service plot.

1.3 - Current Printhead Info (I)

	Warranty status	Status	Error ID Code	Product Number	Product Name	Serial Number	Warranty Date
1 -	Out of warranty	OK	0	CR330A	HP881	HH034210500595082	2014-02-25
2 -	Out of warranty	OK	0	CR328A	HP881	0N034210500594942	2014-02-25
3 -	Out of warranty	OK	0	CR328A	HP881	0N034210500594896	2014-02-25
4 -	Out of warranty	OK	0	CR327A	HP881	TO034210500589448	2014-02-25
5 -	Out of warranty	OK	0	CR327A	HP881	TO034210500590982	2014-02-25
6 -	Out of warranty	OK	0	CR329A	HP881	MY034210500586506	2014-02-25
7 -	Out of warranty	OK	0	CR329A	HP881	MY034210500581666	2014-02-25

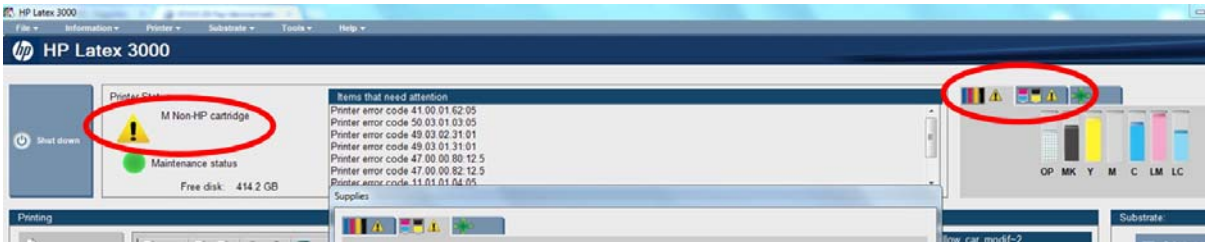
1.4 - Current Printhead Info (II)

	Used non-HP ink	Used expired ink	Ink Used	% warranty used (ml)	Usage Time	Scan Axis Shutdown
1 -	true	true	20 ml	0	0 h	0
2 -	true	true	80 ml	0	0 h	0
3 -	true	true	90 ml	0	0 h	0
4 -	true	true	130 ml	0	0 h	0
5 -	true	true	140 ml	0	0 h	0
6 -	true	true	130 ml	0	0 h	0
7 -	true	true	130 ml	0	0 h	0

Safe mode

When using non-HP inks, the printer operates in safe mode to protect itself and its printheads from failures. In safe mode:

- Drying lamps are turned off.
- A warning icon is displayed by the Internal Print Server.



Returning to HP inks

There are two ways to resume using non-HP inks:

- Install HP original cartridges and wait until 9 liters of HP ink have gone through the affected tubes of the ink delivery system to the printheads.
- Flush the non-HP ink, reset the printer flags, and install HP original cartridges.

Install HP original cartridges and wait for 9 liters

During the time it takes to use these 9 liters, the warranty is not recovered.

- Any new printhead installed will automatically lose its warranty.
- The lost-warranty terms still apply.

When the 9 liters have gone through the affected tubes of the ink delivery system:

- Any printheads that have been used with non-HP ink do not recover their warranties.
- Any new printhead installed after this point maintains its warranty.
- All other warranties are recovered.

Flush the non-HP ink

This procedure must be performed by a service engineer. HP engineers or authorized support partners will make their standard travel and labor charges for this procedure.

1. Flush the non-HP ink; see 3. ISM flush and clean a single ink system line on page 915.
2. Reset the printer flags. Contact the LFP Customer Assurance team for instructions.
3. Install HP original cartridges.

When this process has been completed:

- Any printheads that have been used with non-HP ink do not recover their warranties.
- Any new printhead installed after this point maintains its warranty.
- All other warranties are recovered.

5 Diagnostics

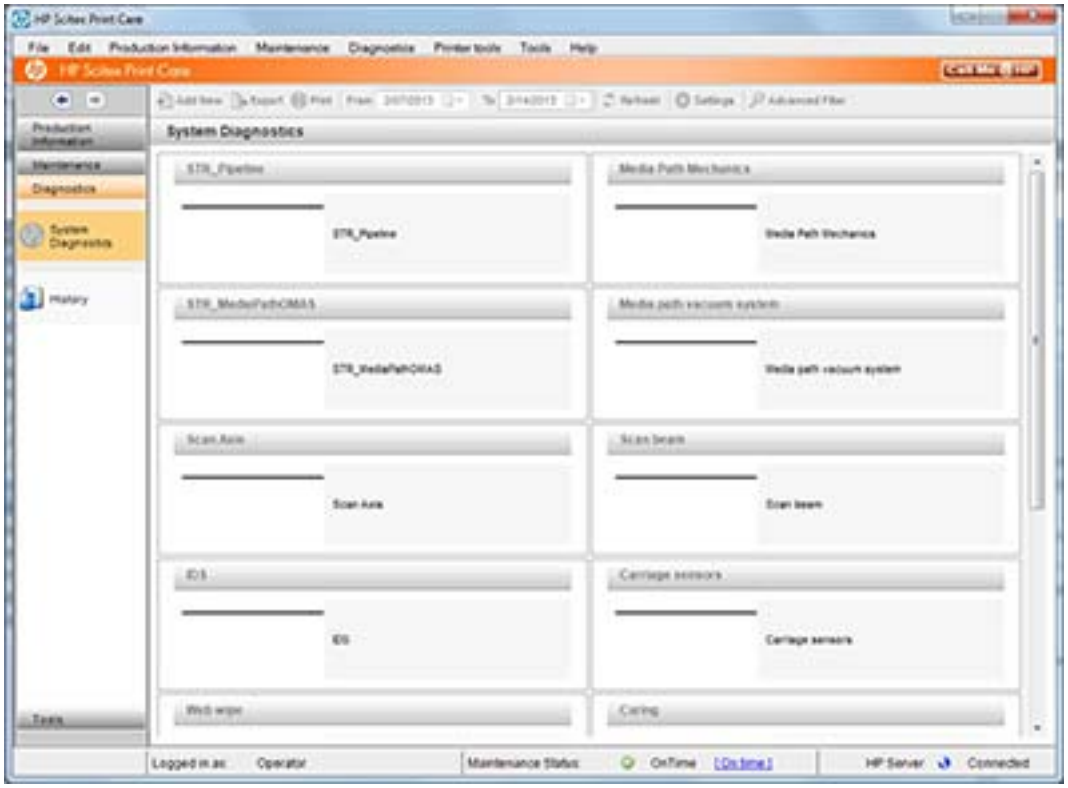
General diagnostics

NOTE: Some diagnostic tests or calibrations must be performed after removing a component. Read carefully the instructions given by Print Care.

NOTE: To return the carriage to the capping position after work in diagnostic mode, restart the printer in normal mode.

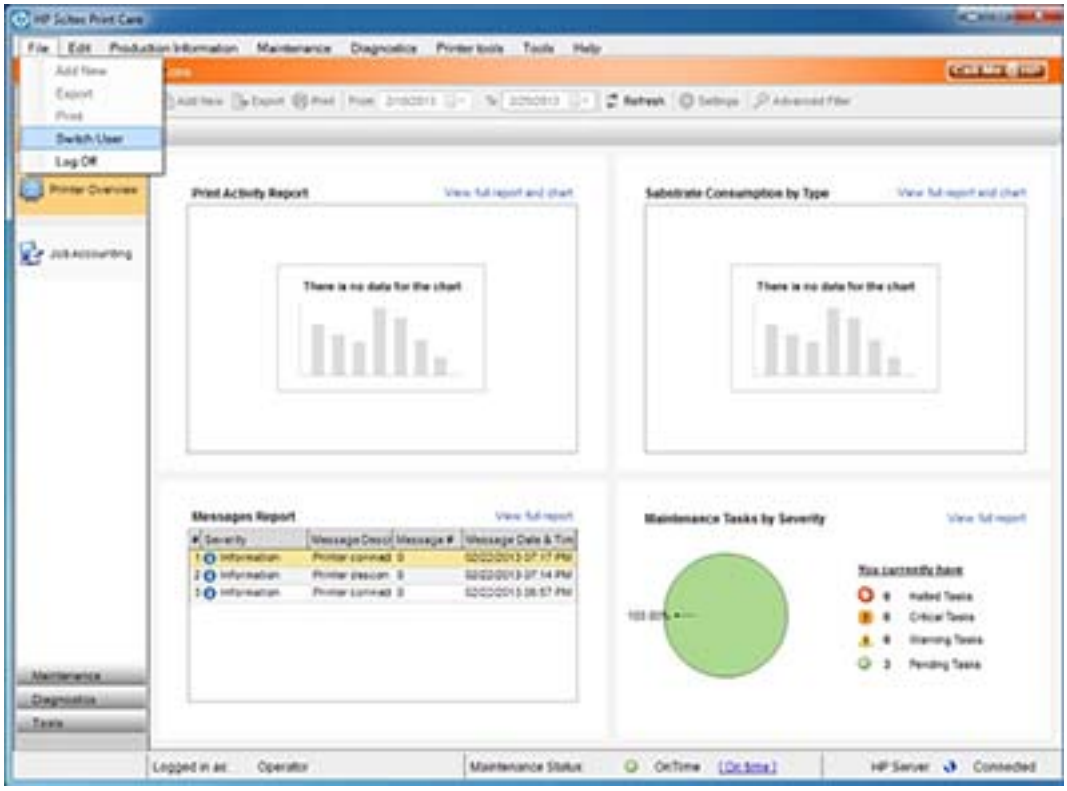
How to run a diagnostic test

Diagnostic tests are accessible through the **Diagnostics** tab in Print Care and organized by subsystems. Diagnostic availability can change depending on the role logged in Print Care and printer boot mode. For example, logged in as Operator, the user has access to tests that can be useful not only for self-diagnosis, but also to guide the operator when receiving remote support.



NOTE: The Operator account cannot select individual tests and subsystem tests are executed sequentially.

If the user account is changed to Service, the full set of tests is available for the current boot mode and individual tests can be selected. To change the user account, go to **File** > **Switch User**.



Accessing diagnostic test menus

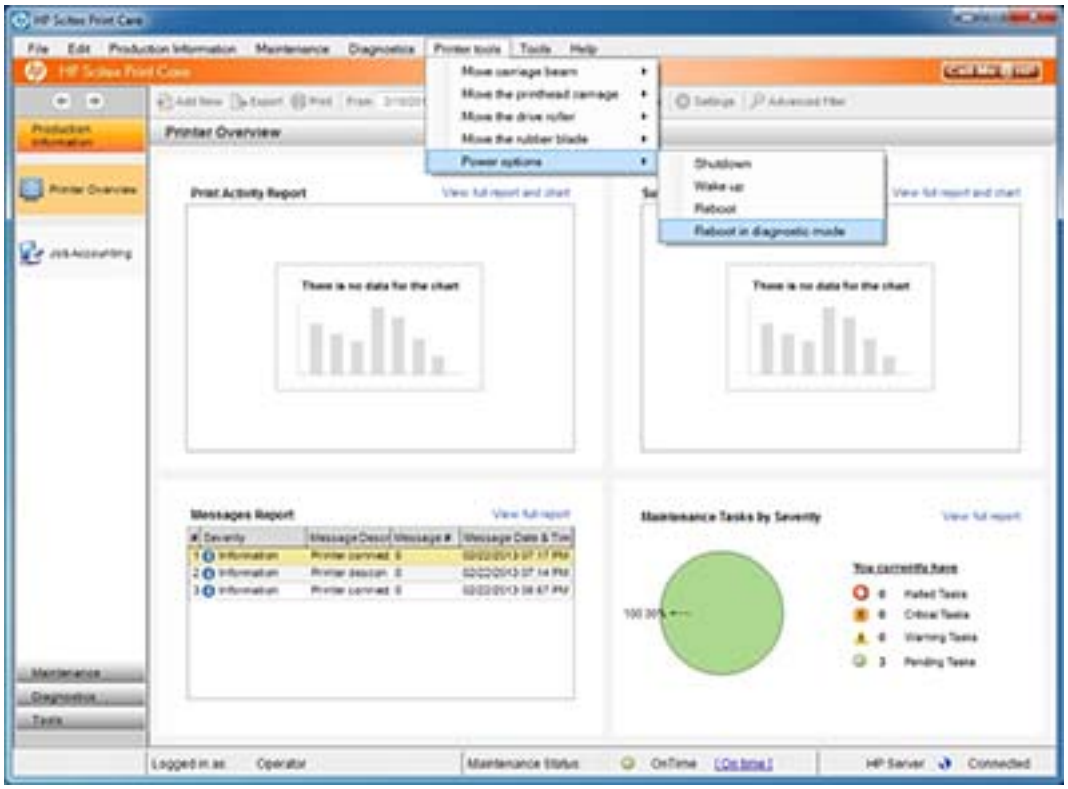
1. **Log in**

   - The user account is ‘ServiceEngineer’.
   - The password is generated by the Print Care Password Manager.



2. If the printer can boot in normal mode and if the diagnostic test allows it, the test can be executed without booting up in diagnostic mode. However, for certain tests, or in the event the printer is not able to boot up in normal mode, it is necessary to boot the printer in diagnostic mode.

   To boot the printer in diagnostic mode, go to **Printer tools > Power options > Reboot in diagnostic mode**.



NOTE: There is no password to boot in diagnostic mode, as the operator is allowed to do it.

Boot mode permissions

Table 5-1 Boot mode availability by user type

		Boot modes	
		Normal When the printer is able to boot normally	**Diagnostic** When the printer is unable to boot normally, or for specific cases in which the diagnostic works better if the printer is not fully booted
User accounts	**<< None >> (i.e. Operator)** - Not selectable: the whole list is executed for each subsystem. - Only diagnostics that do not require engineer intervention (such as opening the e-cabinet, and so on).	Partial list of diagnostics for each subsystem	Partial list of diagnostics for each subsystem
	Engineer Selectable	Full list of diagnostics, if feasible (for some diagnostics it may not be feasible)	Full list of diagnostics, if feasible (for some diagnostics it may not be feasible).

Phone support

The customer can be guided to perform nearly all diagnostic tests, utilities, and calibrations.

However, there are some procedures that the customer should not perform:

- Save Factory Defaults
- Restore Factory Defaults
- Reset Maintenance Kit Usage
- Reset Life Counters

Diagnostic availability can change depending on Print Care login and boot mode.

The following table lists the diagnostics and their availability.

Subsystem	Test name	Available to users	Available in boot modes
Safety interlocks			
	Safety interlocks	Operator or engineer	Normal
	Safety circuit	Operator or engineer	Diagnostic
Print quality			
	Service alignment check plot	Engineer	Normal
	Front printhead to rear printhead alignment check plot	Engineer	Normal
	Scan-axis encoder-strip check plot	Engineer	Normal
Printhead control link			
	E-box fiber-optics PCA	Operator or engineer	Normal or diagnostic
	Optical link	Operator or engineer	Normal or diagnostic
	Carriage fiber-optics PCA	Operator or engineer	Normal or diagnostic
	Printhead insertion	Engineer	Normal or diagnostic
	Printhead interconnect connectivity	Operator or engineer	Normal
	Printhead electrical status	Operator or engineer	Normal
	FO PCAs version check	Engineer	Diagnostic
Substrate path mechanics			
	Substrate path sensors	Operator or engineer	Normal or diagnostic
	Motors check	Operator or engineer	Normal or diagnostic
	Main roller motor test	Engineer	Normal or diagnostic
	Motor calibration	Engineer	Normal or diagnostic
	Encoder calibration	Engineer	Normal or diagnostic
	Drive roller calibration	Operator or engineer	Normal or diagnostic
	Drive roller check	Operator or engineer	Normal or diagnostic
Substrate-advance sensor			
	Show sensor status	Operator or engineer	Normal or diagnostic

Subsystem	Test name	Available to users	Available in boot modes
	Cleanliness check	Operator or engineer	Normal or diagnostic
	Disable substrate-advance sensor	Engineer	Normal or diagnostic
	Enable substrate-advance sensor	Engineer	Normal or diagnostic
	Substrate-advance sensor calibration	Engineer	Normal or diagnostic
	Substrate-advance encoder check	Operator or engineer	Normal or diagnostic
Substrate path vacuum system			
	Vacuum system diagnostic	Operator or engineer	Normal or diagnostic
	Vacuum sensor defaults	Engineer	Normal or diagnostic
	Reset vacuum pump usage	Engineer	Normal or diagnostic
Scan axis			
	Motor direction test	Operator or engineer	Normal or diagnostic
	Move carriage to repair position	Engineer	Normal or diagnostic
	Scan-axis analysis	Operator or engineer	Normal or diagnostic
Scan beam			
	Scan beam switch status	Operator or engineer	Normal or diagnostic
	Scan beam movement	Operator or engineer	Normal or diagnostic
	Scan beam motor check	Engineer	Normal or diagnostic
Ink Delivery System			
	Check actuator presence	Operator or engineer	Normal or diagnostic
	Inter-valves	Engineer	Diagnostic
	Actual ink pressure	Engineer	Diagnostic
	Set internal tank as empty	Engineer	Diagnostic
	Automatic electrovalves and ink pressure sensor check	Engineer	Diagnostic
	ISS electronics	Operator or engineer	Normal or diagnostic
	Air pressure system	Engineer	Normal or diagnostic
	Ink supply connector	Engineer	Normal or diagnostic
	IT broken bag recovery	Engineer	Diagnostic
	Ink system leakage	Engineer	Diagnostic
	Electrovalves	Engineer	Diagnostic
	Intermediate tank change	Engineer	Diagnostic
	Ink cartridge LEDs	Operator or engineer	Diagnostic
	Calibrate pressure sensor	Engineer	Diagnostic
	Ink pressure at printhead	Engineer	Diagnostic
	No flow error recovery	Engineer	Diagnostic
	Entry valves	Engineer	Diagnostic
	Air pumps	Engineer	Diagnostic

Subsystem	Test name	Available to users	Available in boot modes
	Relief valves	Engineer	Diagnostic
	Air pressure sensor	Engineer	Diagnostic
	Intermediate tanks refill	Engineer	Diagnostic
	Intermediate tanks refill (by time)	Engineer	Diagnostic
	Int tanks life cycles	Operator or engineer	Normal or diagnostic
	Int tanks ink amount	Operator or engineer	Normal or diagnostic
	Ink supplies check	Operator or engineer	Normal or diagnostic
Carriage aerosol			
	Aerosol fan calibration	Operator or engineer	Normal or diagnostic
	EE check	Operator or engineer	Normal or diagnostic
	Pressure check	Operator or engineer	Normal or diagnostic
	Show calibration values	Engineer	Normal or diagnostic
Carriage sensors			
	Color sensor check	Operator or engineer	Normal or diagnostic
	Line sensor check	Operator or engineer	Normal or diagnostic
	Line sensor reset counters	Engineer	Normal or diagnostic
	Line sensor calibration	Engineer	Normal
	Lstok calibration	Engineer	Normal
Printhead primers			
	Primer pumps calibration	Operator or engineer	Normal or diagnostic
Capping/drop detection			
	Capping/drop-detector calibration	Engineer	Normal or diagnostic
	Reset capping/drop-detector calibration	Engineer	Normal or diagnostic
	Capping/drop-detector XY calibration	Engineer	Normal or diagnostic
	Drop-detector calibration	Engineer	Normal or diagnostic
	Check drop-detector electronics	Operator or engineer	Normal or diagnostic
	Force drop detection	Operator or engineer	Normal or diagnostic
	Check capping/drop-detector mechanics	Operator or engineer	Normal or diagnostic
	Display capping/drop-detection calibration values	Operator or engineer	Normal or diagnostic
	Display printing nozzle health database content	Operator or engineer	Normal or diagnostic
	Reset printing nozzle health database content	Operator or engineer	Normal or diagnostic
Printhead cleaning roll			
	Motor direction tests	Operator or engineer	Normal or diagnostic
	Visual motor movement check	Operator or engineer	Normal or diagnostic
	Manual motor movement check	Operator or engineer	Normal or diagnostic
	Printhead cleaning Z calibration check	Operator or engineer	Normal or diagnostic

Subsystem	Test name	Available to users	Available in boot modes
	Set wiper Z calibration	Engineer	Normal or diagnostic
Drying			
	Subsystem functional check in module 1 (left)	Operator or engineer	Normal or diagnostic
	Subsystem functional check in module 2 (right)	Operator or engineer	Normal or diagnostic
	Relays check in drying PCA 1 (up)	Operator or engineer	Normal or diagnostic
	Relays check in drying PCA 2 (down)	Operator or engineer	Normal or diagnostic
	Null current check in AC/AC converter 1 (up)	Operator or engineer	Normal or diagnostic
	Null current check in AC/AC converter 2 (down)	Operator or engineer	Normal or diagnostic
	Scan-axis no-movement timeout in drying PCA 1 (up)	Operator or engineer	Normal or diagnostic
	Scan-axis no-movement timeout in drying PCA 2 (down)	Operator or engineer	Normal or diagnostic
	Drying PCA functional check #1 (up)	Engineer	Normal or diagnostic
	Drying PCA functional check #2 (down)	Engineer	Normal or diagnostic
Monitor curing temperatures			
	Monitor curing temperatures	Operator or engineer	Normal
Curing			
	Status of the curing modules	Operator or engineer	Normal or diagnostic
	Monitor one curing module	Engineer	Normal or diagnostic
E-cabinet			
	Fan	Operator or engineer	Normal or diagnostic
	Temperature	Operator or engineer	Normal or diagnostic
	Safety interlocks	Operator or engineer	Normal
	Safety circuit	Operator or engineer	Diagnostic
	Watchdog	Engineer	Normal or diagnostic
	Power supplies	Operator or engineer	Normal or diagnostic
	Activate/deactivate outputs	Engineer	Normal or diagnostic
	All outputs state change	Operator or engineer	Normal or diagnostic
	E-cabinet state	Engineer	Normal or diagnostic
E-box			
	Engine PCAs	Operator or engineer	Normal or diagnostic
	Engine adaptor communication	Operator or engineer	Normal or diagnostic
	Engine adaptor slot	Operator or engineer	Normal or diagnostic
Printer installation and purge			
	Purge supply OP	Engineer	Diagnostic
	Purge supply K	Engineer	Diagnostic
	Purge supply Y	Engineer	Diagnostic

Subsystem	Test name	Available to users	Available in boot modes
	Purge supply M	Engineer	Diagnostic
	Purge supply C	Engineer	Diagnostic
	Purge supply LM	Engineer	Diagnostic
	Purge supply LC	Engineer	Diagnostic
	Filling intermediate tanks	Engineer	Diagnostic
	Ink filling tubes	Engineer	Diagnostic
	Set supply consumed ink	Engineer	Diagnostic
	Force normal boot	Engineer	Diagnostic
	Set ISM as purged	Engineer	Diagnostic
	Set TRS as purged	Engineer	Diagnostic
	Set input voltage	Engineer	Diagnostic
Utilities			
	Set date and time	Engineer	Normal or diagnostic
	Report version	Engineer	Normal or diagnostic
	Save NVM	Engineer	Normal or diagnostic
	Restore NVM	Engineer	Normal or diagnostic
	Enable advanced logging	Engineer	Normal or diagnostic
	Force boot mode	Engineer	Normal or diagnostic
	Get printer logs	Engineer	Normal or diagnostic
	Set IP address	Engineer	Normal or diagnostic
	Set curing bottom plate	Engineer	Normal or diagnostic
Reshipment			
	Manage auxiliary air pump	Engineer	Diagnostic
	Entry valves	Engineer	Diagnostic
	Set all int. tanks as new	Engineer	Diagnostic
	Set ISM as not purged	Engineer	Diagnostic
	Set TRS as not purged	Engineer	Diagnostic
	Move carriage	Engineer	Diagnostic
Carriage rails cleanliness			
	Friction analysis	Operator or engineer	Normal or diagnostic
	Cleaning	Operator or engineer	Normal or diagnostic

NOTE: If you get a severe error when restarting the printer, the diagnostics in normal mode may not work. In this case, you are recommended to start the printer in diagnostics mode to fix the problem.

NOTE: While printing, only diagnostics for monitoring curing temperature can be executed; and you are recommended to start the diagnostic before sending the job.

Service tests, diagnostics, and calibrations

Table 5-2 Safety interlocks

Test	**Safety interlocks (51001)**
Description	This test activates the safety circuit and checks that the safety relay and interlocks work properly
Pass criteria	See that state change if you open/close the safety interlocks
Fail criteria	If you can't see changes in status after open close front door and loading table.

Test	**Safety interlocks (51002)**
Description	This test activates the safety circuit and checks that the safety relay, contactors, e-stops and interlocks work properly.
Pass criteria	See that the state change if you open/close the safety interlocksand check or if the safety relay or etops are activated.
Fail criteria	
	Doing this procedure you can determine if the safety locks, safety relay and estops are working properly prior their replacement.

Table 5-3 Print quality

see Print-quality troubleshooting on page 311.

Table 5-4 Printhead control link

Test	**E-box fiber-optics PCA (11001)**

Description	This diagnostic check the E-Box electronics needed for the processing of printing data and the transfer of this data to the printheads via the fiber-optics cable.
	Test steps:
	• Formatter test
	• Engine board test
	• E-box fiber-optics PCA connectivity test
	  ◦ It accesses the e-box fiber-optics PCA internal registers
	• Engine board to fiber-optics PCA connectivity test
	  ◦ It checks if all the cables going from the engine board to the fiber-optics PCA not only are connected but they are also plugged in the correct connector.
	• FO module in the e-box side
	  ◦ It checks the fiber-optic connector is plugged, it reads the internal registers in the fiber-optics module and verifies the data is reaching the fiber-optics module.
	In summary, this test checks the formatter, the engine boards, the cables between the engine boards and the e-box fiber-optics PCA, the e-box fiber-optics PCA and the e-box fiber-optics transceiver. Regarding the e-box fiber-optics PCA, it checks everything except the high speed lane coming from the carriage side.

Pass criteria	All EE before fiber-optic connection works fine
Fail criteria	This diagnostic points to the failure connection except for the power.

Table 5-4 Printhead control link (continued)

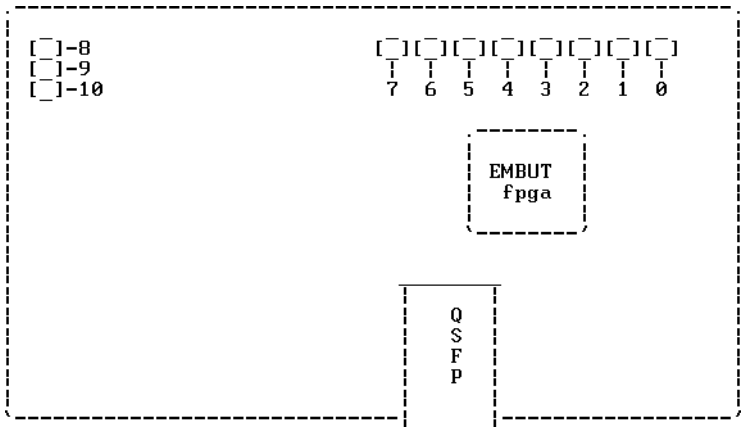
Test	**Optical link (11002)**

Description	This diagnostic checks the optical fiber cable connection to the fiber-optics PCA. It will verify that the cable is properly plugged and functioning correctly.
	
	Test steps:
	
	• Carriage fiber-optics PCA connectivity Test
	  ◦ It accesses to the Carriage fiber-optics PCA internal registers
	• If the above check fails, then the diagnostic test requires user intervention in order to check the status of some LEDs in the e-box side and in the carriage side.
	  ◦ E-box side:
	  • If LED0 is OFF → Plug the fiber-optics module in the e-box Side
	  • If LED2 is OFF → Change e-box fiber-optics PCA
	  • If LED3 is OFF → Change e-box fiber-optics PCA
	  • If LED4 is OFF → Change e-box fiber-optics PCA
	  • If LED5 is OFF → Change e-box fiber-optics PCA
	  • If LED7 is OFF → Plug or change the ID cable
	  • If LED10 is OFF → This LED is ON when the link is up
	  ◦ Carriage side:
	  • If LED0 is OFF → Plug the fiber-optics module in the e-box Side
	  • If LED1 is OFF → Change Carriage fiber-optics PCA
	  • If LED2 is OFF → Change fiber-optics
	  • If LED3 is OFF → Change fiber-optics
	  • If LED4 is OFF → Change fiber-optics
	  • If LED5 is OFF → Change fiber-optics
	  • If LED6 is OFF → Plug or change the ID cable
	  • If LED10 is OFF → This LED is ON when the link is up
	  • If LED1 in the Carriage is ON and LED1 in the e-box is OFF, then the fiber-optics needs to be changed.
	• Fiber-optics PCA link layer errors

Table 5-4 Printhead control link (continued)

- It checks that the fiber-optic connection has no breaks and works perfectly

A sketch of the LED distribution is shown below:



Pass criteria FO OK

Fail criteria FO damage, broken or not connected

1. Check fiber-optics LEDs in fiber-optics PCA (e-box or carriage)
2. Replaced part broken or malfunctional

Test **Carriage fiber-optics PCA (11003)**

Description This diagnostic test checks the link to the Fiber-optics PCA in the carriage and its connections to the Printhead Interconnect boards. Success means that the optical fiber link is up and running and each connector in the fiber-optics PCA has a properly inserted cable connector.

Test steps:

- Carriage fiber-optics PCA to printhead board connectivity test
  - It checks if all the cables going from the Carriage fiber-optics PCA to the printhead board are plugged.
- Initialize the Horus interface
  - If it fails, then the user needs to run a diagnostic test and the user needs to check the status of one LED.
- Printhead connectivity test
  - It checks if the printhead is well connected in the printhead pocket.

In case the printhead boards are not connected in the right Carriage fiber-optics PCA interface, the user will notice printing errors. In that case, the user needs to check that all the cables going from the Carriage fiber-optics PCA to the printhead board are plugged in the correct interface.

Pass criteria Successful connection to the printhead

Fail criteria See description

Test **Printhead insertion (11007)**

Description This diagnostic test checks the printhead insertion mechanism. You should use it only if insertion problems have repeatedly been observed in a particular printhead slot. The test will move the carriage to the access position. There you can select any specific slot to check, remove, or insert any printhead, and check that it is properly detected.

Test steps:

- Slinky board to printhead board connectivity test

Table 5-4 Printhead control link (continued)

- It checks if all the cables going from the Slinky board to the printhead board are plugged.

- Initialize the Horus interface
  - If it fails, then the user needs to run the Trailing Cable Connectivity test and the user needs to check the status of LED DS15.
- printhead connectivity test
  - It checks if the printhead is well connected in the printhead pocket. If it fails, then the user needs to run a diagnostic test and the user needs to check the status of LED DS7.

In case the printhead boards are not connected in the right Slinky interface, the user will notice printing errors. In that case, the user needs to check that all the cables going from the Slinky board to the printhead board are plugged in the correct interface.

Pass/fail criteria See description

Test **Fiber-optics PCA version check (11005)**

Description This diagnostic test checks the versions of the fiber-optic PCAs in case you have a hardware/firmware mismatch.

Pass/fail criteria This test is purely informative and has no pass or fail criteria.

Test **Printhead interconnect connectivity (11004)**

Description This diagnostic test checks the data lines from the optical fiber PCA to the printhead interconnect boards. If these data lines are OK, the two green LEDs on each printhead interconnect board are turned on.

Pass/fail criteria This test lights up the DS1 and DS15 LEDs of each printhead interconnect PCA. If one of them is not lit, replace the printhead interconnect PCA and/or the cable to the fiber-optics PCA.

Test **Printheads electrical status (11006)**

Description This test displays the electrical state of the printheads. It should be executed when the printer is idle.

Pass criteria If the test returns **#OK**, there is no problem.

Table 5-4 Printhead control link (continued)

Fail criteria	• **#Not inserted**: The printhead is not inserted. • **#Fails continuity**: Electrical continuity failure. Communication between printhead and interconnect board is not working properly. Clean the printhead and the board electrical pads and re-insert the printhead. If the problem persists, swap the printhead with one of the same color in the adjacent slot. If the error moves with the printhead, replace the printhead. If the error persists in the same slot, there may be a physical problem in the interconnection. Make sure that the black metal back support of the printhead interconnect board is correctly mounted and screws are tight, and call your support representative if the problem persists in the same slot. • **#Voltage failure**: This error may have been caused by a short circuit in the printhead electrical pad or the printhead board. Remove the printhead and inspect the electrical pads, making sure they are clean and nothing is creating a short circuit. Also, inspect the printhead board electrical contacts and make sure they are not bent or damaged. You can swap the printhead with another one of the same color. If the problem persists in the same slot, please call your support representative, as the printhead board may have to be replaced. If the error follows the printhead, replace the printhead. • **#CSDATA not responding**: The printhead is not responding to communication attempts from the printhead interconnect board. The printhead may not be correctly inserted, or the electrical pads may be dirty or damaged. Clean the printhead electrical pads and the printhead board contacts and re-insert the printhead. Make sure it is correctly inserted. If the problem persists, swap the printhead with one of the same color in the adjacent slot. If the error moves with the printhead, replace the printhead. If the error persists in the same slot, there may be an electrical problem. To discard a transient electrical perturbation, shut down the printer, restart it a minute later, and do a printhead replacement again. If the same problem occurs, the printhead interconnect board may be faulty. Contact your support representative. • **#Temperature extremely high**: The printhead temperature is extremely high. Make sure the printing operating conditions are OK, and reseat the printhead. A likely cause of this error is that printhead nozzles are blocked and ink cannot be fired. Try recovering the printheads by manual cleaning or by hard cleaning through the Internal Print Server. If the error does not disappear, replace the printhead. • **#Temperature too high**: The printhead temperature is too high. Make sure the printing operating conditions are OK, and reseat the printhead. A likely cause of this error is that printhead nozzles are blocked and ink cannot be fired. Try recovering the printheads by hard cleaning through the Internal Print Server. If the error does not disappear, replace the printhead. • **#Temperature extremely low**: The printhead temperature is extremely low. The operating temperature could not be reached. The most likely cause is printhead damage in its resistors due to a substrate crash. Replace the printhead. • **#Temperature too low**: The printhead temperature is too low. The operating temperature could not be reached. The most likely cause is printhead damage in its resistors due to a substrate crash or smear. Replace the printhead. • **#Bad acumen information**: The information encoded in the printhead is incorrect. If it is a genuine HP printhead, return it to HP. • **#Bad acumen access**: The printhead's internal data cannot be accessed. The printhead may not be correctly inserted, or the electrical pads may be dirty or damaged. Clean the printhead electrical pads and the printhead board contacts, and retry the printhead replacement process. If the problem persists, try another printhead of the same color. If the problem still persists in the same slot, there may be an interconnection problem. Make sure that the black metal back support of the printhead interconnect board is correctly mounted and screws are tight. • **#Wrong model**: The printhead is not the correct model to be used in this printer. • **#Mismatch**: Wrong printhead internal data. The printhead is not the correct model to be used in this printer. • **#Energy calibration failure**: This can either be a printhead problem or a printhead interconnect PCA problem. Remove the printhead and retry the printhead insertion process. If the problem persists, replace the printhead. If the problem still persists, the printhead interconnect board may need to be replaced. Contact your support representative.

Table 5-5 Substrate path mechanics

Test	**Substrate path sensors (41001)**

Table 5-5 Substrate path mechanics (continued)

Description	This test allows you to check that the following sensors are working properly: Spindles latches, substrate to floor pinch wheels system, TUR sensor.
Pass criteria	If all of them works properly by checking that open/close them you are able to see changes in screen status
Fail criteria	Check the connections and replace those don't work

Test	**Motors test (41002)**
Description	Check motor movement through PWM and reading encoders.
Pass criteria	If diagnostic is able to read movement
Fail criteria	If movement is not detected ▲ In case of failure, run e-box and e-cabinet diagnostics before replacing parts.

Test	**Main roller motor test (41003)**
Description	Check how roller moves and its friction
Pass criteria	Automatically provided.

Test	**Motors calibration (41004)**
Description	It does a series of movements to ensure that substrate movement accuracy is OK, this test perform a statistical analysis so it takes some time to be completed
Pass criteria	Automatically provided.
Fail criteria	The test takes 8 minutes per motor. You can select MI, MO, and MF in order to calibrate servos and diagnose motors; in addition, you can boot the printer in diagnostic mode and run this test with the motor detached, in case you are not sure whether the problem comes from motor or gearbox.

Test	**Encoder calibration (41005)**
Description	Calibrate the analog encoder, which calibrates all gain chain in the EE.
Pass criteria	The diagnostic itself provides feedback about whether calibration was successful or not.

Test	**Drive roller calibration (41006)**
Description	Calibrate substrate advance, slope, and roller eccentricity.
Pass criteria	When the calibration is successful, feedback is provided by the diagnostic.
Note:	Beware that not all substrate types are suitable for this calibration. Use preferably self-adhesive vinyls of around 78 in width, such as Avery MPI3000 and HP Permanent Gloss Self Adhesive, or papers such as HP Photorealistic. Do not use any backlit, PP, PE/PET, or PVC substrates. Before proceeding, make sure that the substrate is correctly loaded and aligned. The calibration takes about 25 minutes and the substrate will be advanced about 8 meters. Check that there is enough substrate on the input roll before proceeding. Press **Continue** to proceed or **Cancel** to exit.

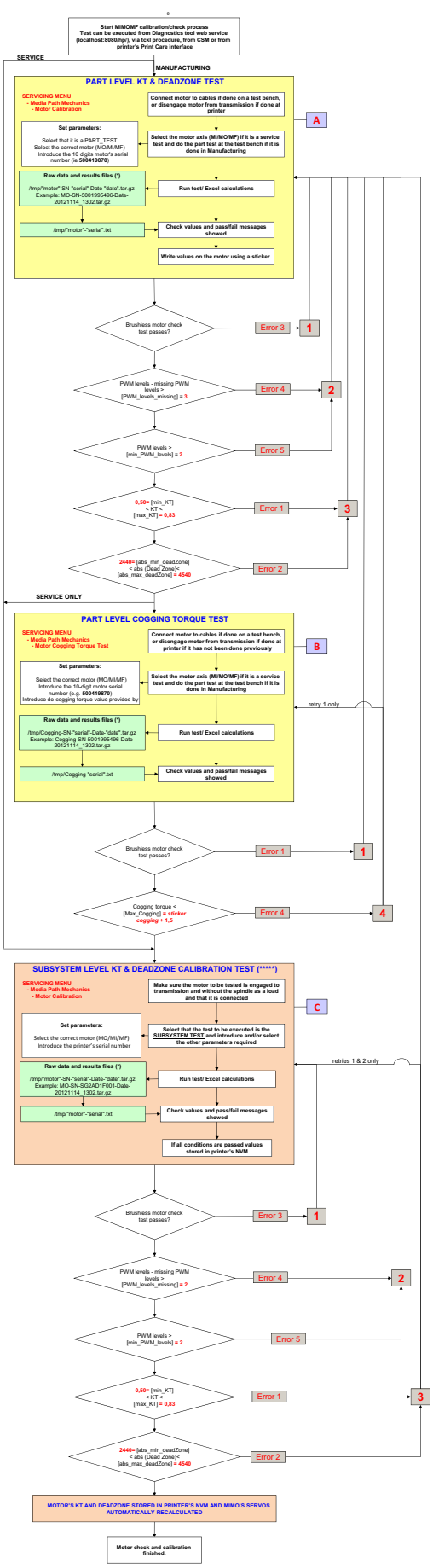
Test	**Drive roller check (41007)**
Description	Check that calibration is OK.
Pass criteria	Automatically provided

Table 5-5 Substrate path mechanics (continued)

Fail criteria	Automatically provided

The substrate path troubleshooting workflows integrated with the diagnostics are shown in the following flowcharts.

MIMOMF Motors Calibration/Check Flowchart









1

Retry 1: Check encoder signal is being read by electronics

- Check the motor is not braked and the cables are properly connected
- Check ELA is receiving encoder feedback and that encoder is receiving voltage
- Enable ELA to receibe encoder signal and repeat test

Retry 2: Motor windings, motor electronics, or motor EE may be damaged

- Run a part test with another motor to check that the problem is a faulty motor

Retry 3: Possible encoder cable or encoder cable connector failure

- Replace encoder cable and/or check both motor and board connectors are not damaged

Retry 4: ELA board might be failing

- Replace ELA and check that now all works by repeating the test

2

Retry 1: Test conditions may have been introduced incorrectly

- Check if the test has been executed with less than 2 PWM levels (ERROR 5)
- Repeat test ensuring the parameters and the axis selected are correct
- Spindle may be engaged to transmission

Retry 2: Motor windings, motor electronics, or motor EE may be damaged

- Run a part test with another motor to check that the problem is a faulty motor

Retry 3: Possible encoder cable or encoder cable connector failure

- Replace encoder cable and/or check both motor and board connectors are not damaged

Retry 4: ELA board migt be failing

- Replace ELA and check that now all works by repeating the test

3

Retry 1: Test Conditions may have been introduced incorrectly

- Check if the motor is properly connected
- Repeat test ensuring the parameters and the axis selected are correct
- Spindle may be engaged to transmission

Retry 2 (SUBSYSTEM): ELA board may not be working properly

- Connect the motor to another ELA and repeat the test
- Replace ELA if faulty

Retry 3 (SUBSYSTEM): Possible transmission failure or wrong transmission usage

- Run part test of the concerned motor with its ELA
- Replace transmission if faulty

Retry 2 (PART) / Retry 4 (SUBSYSTEM): Motor or motor's EE may be damaged

- Replace motor or do not use the motor on a printer

4

Retry 1: Test conditions may have been introduced incorrectly

- Check if the motor is properly connected
- Check that no pinion is attached to the motor (see figures above)

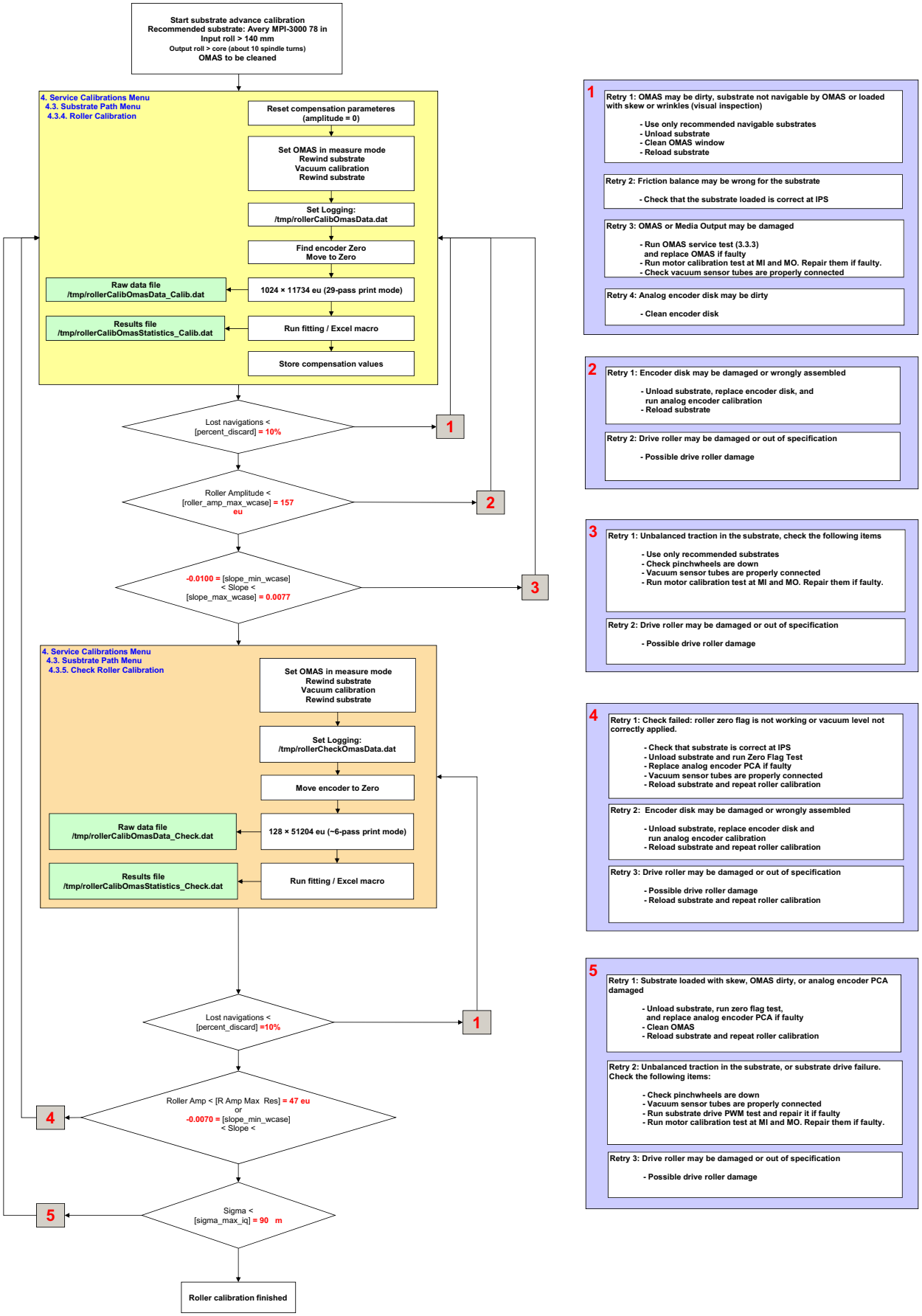
Retry 2: Motor or electronics may be damaged

- Run motor calibration part test

Retry 3 : Possible failure of the motor magnets

- Do not use the motor in a printer
- Replace motor

Substrate Advance Calibration Flowchart



As a summary, the table below shows which calibrations are required after a component replacement:

Calibration name	What it does	When to run calibration
Analog encoder calibration	Calibrates electronic analog offset and gain of the encoder PCA	Encoder disc and PCA replacement
MI-MO-MF calibration	Calibrates the main characteristics of the motors	• MI-MO-MF replacement • Substrate-advance problems
OMAS calibration	Corrects OMAS pixel-to-microns size and nominal fiducials distance	OMAS replacement
Drive roller calibration	Corrects drive roller eccentricity	• Drive roller replacement • Encoder disc and PCA replacement, **after** analog encoder calibration • Substrate-advance problems
Drive roller calibration check (available to customers)	Checks OMAS readings against encoder readings, applying current calibration values to verify that drive roller eccentricity is corrected, and fine-tuning the roller's slope factor.	• MA motor replacement • **After** OMAS calibration • **After** drive roller calibration • Substrate-advance problems

If the substrate-advance sensor (OMAS) is replaced, the calibration order is:

1. OMAS calibration
2. Drive roller calibration

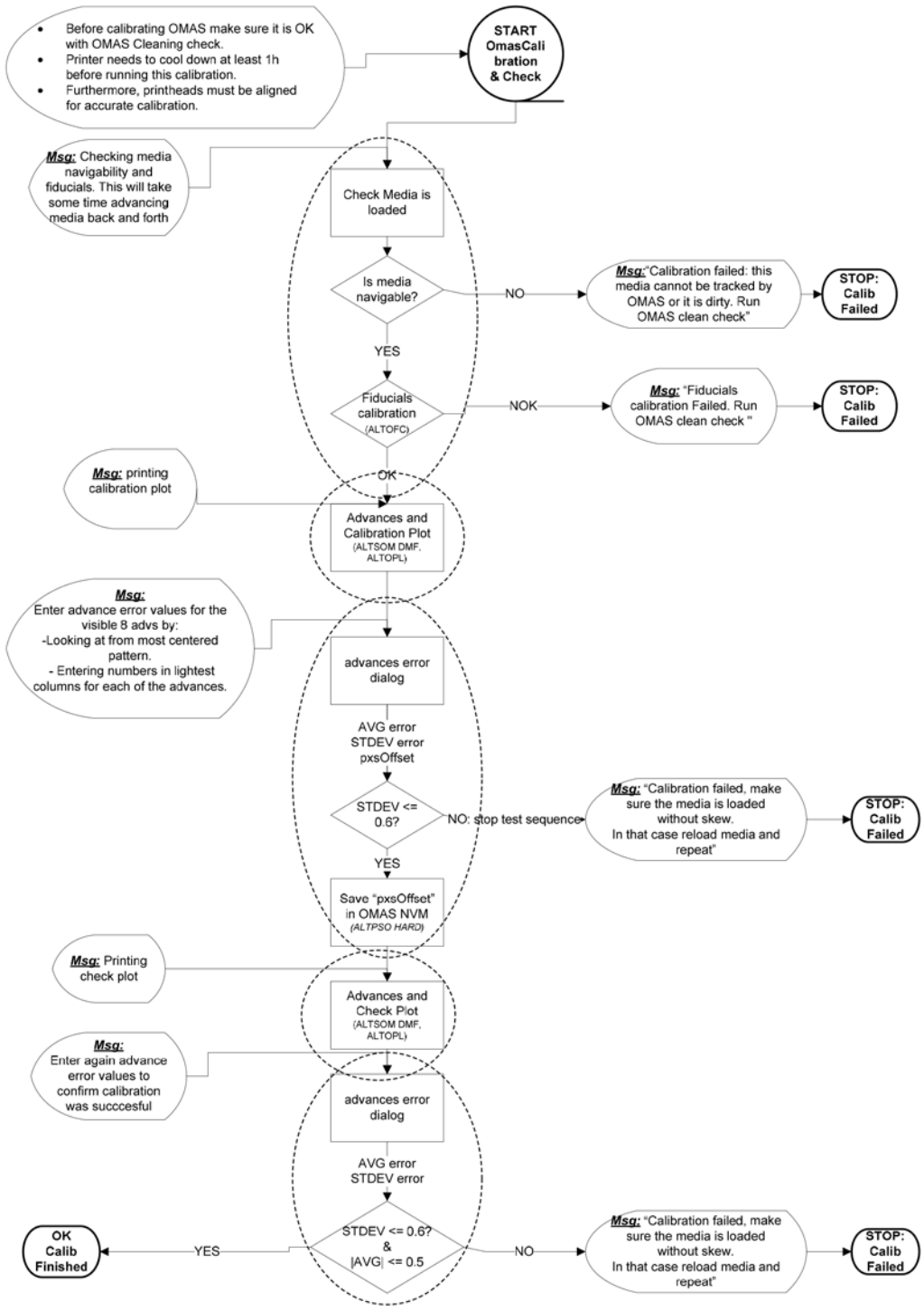
Table 5-6 Substrate-advance sensor (OMAS)

Test	**Show sensor status (50005)**
Description	This test shows the substrate-advance sensor (OMAS) status: enabled or disabled. If enabled, it is being used to monitor the substrate advance.
Pass criteria	None.
Test	**Cleanliness check (50003)**
Description	This test checks whether the substrate-advance sensor optics are clean or not. If not, clean the sensor window.
Pass criteria	The sensor window is clean.
Test	**Disable advance sensor (50002)**
Description	This test disables the substrate-advance sensor for diagnostic purposes. The purpose of this utility is to enable or disable the substrate-advance sensor, to be able to measure and troubleshoot the influence of the sensor on print-quality problems. Sometimes, disabling the sensor is recommended for best print quality.
Pass criteria	None, it just tells you whether the action was done or not.
Test	**Enable advance sensor (50001)**
Description	This test enables the substrate-advance sensor for diagnostic purposes. The purpose of this utility is to enable or disable the substrate-advance sensor, to be able to measure and troubleshoot the influence of the sensor on print-quality problems. Sometimes, disabling the sensor is recommended for best print quality.
Pass criteria	None, it just tells you whether the action was done or not.

Table 5-6 Substrate-advance sensor (OMAS) (continued)

Test	**Encoder check (50006)**
Description	This test checks the substrate-advance encoder and provides feedback about how it is performing.
Pass criteria	Provided by diagnostic.
Test	**Sensor calibration (50004)**
Description	This test enables the subtrate-advance sensor for diagnostic purposes. The calibration prints interference patterns that should be visually inspected.
Instructions	• Run this calibration only after replacing the substrate-advance sensor. • Before calibrating the sensor, use the cleanliness check and clean it if necessary. • Printheads must be aligned for accurate calibration. • If the printer has been printing, allow it to cool down for at least an hour before running this calibration. • Not all substrate types are suitable for this calibration. Preferably use self-adhesive vinyls of around 78 in width, such as Avery MPI3000 and HP Permanent Gloss Self-Adhesive, or papers like HP Photorealistic. Do not use any backlit, PP, PE/PET, or PVC substrates. Ensure that the substrate is correctly loaded and aligned, and that you have at least 5 meters of substrate available for the calibration. Follow the instructions on the screen. The calibration takes about 30 minutes.
Pass/fail criteria	Provided in Print Care depending on test results.

Figure 5-1 Substrate-advance calibration workflow



Test	**Substrate-advance-encoder check (50006)**
Description	This test checks that the substrate-advance servo gets a correct feedback signal.

Table 5-7 4.2.6. Substrate path vacuum

Test	**Vacuum system diagnostic (43001)**

Table 5-7 4.2.6. Substrate path vacuum (continued)

Description	This diagnostic checks whether the platen vacuum system is working as expected. It checks pressure without vacuum and with maximum vacuum is within expected range. Make sure there is no substrate loaded or covering the platen during this test, otherwise its result will not be reliable.
Pass criteria	Value within margins will return a passed test.
Fail criteria	1. If the test fails, check that the vacuum pump is powered and spinning. 2. Check that the vacuum sensor is properly connected and working. 3. Reset calibration.
Test	**Vacuum sensor defaults (43002)**
Description	This test restores a default factory calibration, in the event that caused by another failed calibration is not possible or/and it is missing.
Pass criteria	None.
Fail criteria	None. This test will set default factory calibration values.
Test	**Reset vacuum pump usage (43003)**
Description	This diagnostic simply resets the vacuum pump life counter. It should be used **only** when the vacuum pump is replaced.
Pass criteria	None
Fail criteria	None This test should be executed only when the vacuum pump is replaced.

Table 5-8 Scan axis

Test	**Move carriage to service position (86006)**
Description	This test uncaps the carriage and moves it to the repair position. After that printer will be shut down and you will be asked to turn off the main switch to work within a safe mode. This test will help you to move the carriage to the replace position and shut down the printer automatically, remember that if this operation will take long time, it is recommended to remove the printhead and put them in the orange caps.
Test	**Scan-axis analysis (86002)**
Description	This test performs a series of movements at different speeds and saves values in a log for escalations. It also returns the measured scan-axis length. Use the data extraction procedure to save the data from the printer.
Test	**Carriage motor direction test (86006)**
Description	This test will cause a small movement to ensure that all electronics, motor driver, motor, and encoder loop function properly.
Pass criteria	Movement detected.
Fail criteria	No movement detected.

Table 5-9 Scan beam

Test	**Scan beam switch status (48001)**
Description	This test allows you to check the status of the four PPS columns homing sensors (open or closed). If you are in the printer position all of them should be closed, but in substrate loading position all of them should be open.
Pass criteria	None 1. If the status is not right, check the switch position and wiring. 2. If everything is OK, but status remains wrong, replace the wrong ones.

Test	**Scan beam movement (48002)**
Description	This diagnostic allows you to move the carriage beam to any defined position.
Pass criteria	Final position achieved. This diagnostic could be used to spread the grease after maintenance and also to check that movement is smooth.

Test	**Scan beam motor check (48003)**
Description	This test is defined to be performed with the motor detached from its housing in the column, so that you can find out whether the problem is due to the mechanical gears/column or the motor/electrical/control part. **CAUTION:** This test requires that the scan-beam motor is not mounted on the printer, otherwise the printer may be damaged.
Pass criteria	Movement is done well.

Table 5-10 Ink delivery system

Test	**ISS electronics (22001)**
Description	IDS Electronic Test Procedure. Start firmware components associated with electronic parts (GpioManagers, AdcManagers, Dimmer, Nvm). Main PCAs revision number check. Nvm access test.
Pass criteria	Feedback about the test result is provided in the Print Care window.

Test	**Air pressure system (22002)**
Description	Air pressure system test. Engage the Air Pressure Systems (APS0 and APS1) to get a pressure over 5600 mPsi. **NOTE:** Before this test can be performed a complete intermediate tank refill is required in order to ensure exact air volumes, therefore a minimum of 1.6 l of ink is required in the ink supplies.
Pass criteria	Pressure for all systems reaches more than 5600 mPsi.
Fail criteria	The test fails if some of the APS does not get this pressure.

Test	**Ink supply connector (22009)**
Description	Select a supply to check the connector. The test guides you to unplug the connector and test that it has been disconnected. It then guides you to plug in the connector and test that it is connected. The test does not check the acumen connection with the ink supplies.

Test	**IT broken bag recovery (22016)**

Table 5-10 Ink delivery system (continued)

Description	Recover from a broken bag in an intermediate tank. The test checks (by reading the sensor) whether there is really a broken bag in the intermediate tanks. If not, it clears this error on NVM. Also mark as empty the IT installed in this position. So, If there is a real broken bag, you have to clean the contacts and ink from the air tube, then install a brand new and empty IT and later on run this diagnostic again.
Pass criteria	Automatically provided
Test	**Ink system leakage (22017)**
Description	Recover from ink system leakage. The test checks (by reading the sensor) whether there is really a system ink leakage. If not, it clears this error on NVM.
Pass criteria	If you have an ink leakage, fix it and clean the sensor, then run this test until no leakage is detected. If a false positive is given, replace the sensor.
Test	**Electrovalves (22010)**
Description	You can select which valve to test, and the amount of time before the test begins. When the test begins the selected valve will be opened and closed several times. You have to listen to the valve on this action and tell the test when to finish.
Pass criteria	You can hear the valves operating.
Fail criteria	You cannot hear the valves operating.
Test	**Intermediate tank change (22018)**
Description	Intermediate tank change. This test will guide you in replacing an intermediate tank by a new one. First the ink is passed from intermediate old tanks group X1 to the intermediate old tanks group X2. The old group X1 is then extracted and the new group X1 is inserted. The ink is transferred from X2 old to X1 new. Then the X2 old are retired and the X2 inserted. Where X is the IT color and 1 or 2 are the color index.
Pass criteria	Given by the test itself
Test	**Ink cartridge LEDs (22004)**
Description	Ink supply LEDs test. This test lets you select one supply LED, and that will start to blink. After executing it, tested LED light will remain off until you reboot the printer.
Pass criteria	LED for selected line turns on.
Fail criteria	LED for selected line does not turn on.
Test	**Calibrate pressure sensor (22019)**
Description	This procedure displays and introduces calibration values for the three ink pressure sensors boards. The Ink Pressure Sensor Calibration is used any time the Ink Pressure Sensors are replaced, in order to enter the proper calibration values into the system. These calibration values are included with the service part (label).
Pass criteria	The Print Care screen reports whether the change of values was successful.
Test	**Ink pressure at printhead (22020)**
Description	Ink pressure sensor at printhead. This test applies ink pressure and guides the user to insert a syringe on the printhead position. The ink must refill the syringe to an estimated value according to the pressure applied.
Pass criteria	If you get the expected ink volume in the syringe.
Test	**No flow error recovery (22021)**

Table 5-10 Ink delivery system (continued)

Description	The procedure recovers the system condition of no start flow error, which is performed after a system error has been displayed and solved. Select the color you want to perform the no flow error recovery, or all colors can be recovered. This test also clears the NVM values of a previous flow start error.
Test	**Entry valves (22022)**
Description	Electro valves management. This procedure opens and closes the front entry electrovalves for any of the colors (refill valves).
Test	**Inter-valves (22023)**
Description	Inter-valves management. With this test the user can change the status of the intermediate valves (valves that connect among Intermediate tanks).
Test	**Air pumps (22011)**
Description	Air pumps management. This test switches on/off the air pump manually for troubleshooting purposes. After executing this test, as the circuit could keep some pressure, we recommend to execute the relief valves test to release any pressure.
Test	**Relief valves (22012)**
Description	Relief valves management. This procedure opens the relief valves releasing the pressure from the APS.
Test	**Air pressure sensor (22013)**
Description	Actual air pressure. This test shows the actual air pressure sensor value (APS1 and APS2) in mPsi units.
Test	**Actual ink pressure (22014)**
Description	Actual ink pressure. This test shows the actual ink pressure sensor value in mPsi for every color.
Test	**Intermediate tanks refill (22024)**
Description	This test allows a refill of the intermediate tanks with ink level monitoring. To perform this test it is required the system operates appropriately and to have at least 1.6 liters of ink in all the supplies. The Intermediate tanks refill diagnostic utility is to fill the intermediate ink tanks in case they must be transported. In this way, the risk of a broken bag is reduced. Also this procedure has to be used to fill a brand new IT after a broken bag problem
Test	**Intermediate tanks refill by time (22025)**
Description	This procedure forces a refill of the intermediate tanks and sets them as full. The refill is time based. Use this procedure in case the standard operation of refilling the intermediate tanks fails. The procedure can be used to fix any other defect of the system where the intermediate tanks are emptied (electrical failures, leakages, etc). The refill time is fixed to 15 minutes per side.
Test	**Ink tanks life cycles (22005)**
Description	This procedure displays the number of life cycles (full refill) of the intermediate tanks.
Test	**Ink tanks ink amount (22006)**
Description	This procedure shows in percentage (%) terms the amount of ink in the intermediate tanks.

Table 5-10 Ink delivery system (continued)

Test	**Ink supplies check (22007)**
Description	This test shows the actual supply information and performs validation checks.

Table 5-11 Carriage aerosol

Test	**Aerosol fan calibration (49001)**
Description	This test checks that the fans spin and no faulty signal is returned.
Pass/fail criteria	Feedback provided by the test itself as well as by the noise produced by the fans.

Test	**Pressure sensor check (49003)**
Description	This is a test of the pressure sensor.
Fail criteria	Pressure negative or too high. With the fan stopped for some seconds, check that the pressure value is close to zero, otherwise it is an error: • The pressure sensor is faulty • The fans are faulty (they are spinning when they should not). • The Sinatra PCA is faulty.

Test	**Pressure sensor calibration (49004)**
Description	This test shows pressure sensor calibration values. Automatic pressure calibration must be done first.

Table 5-12 Carriage sensors

Test	**Color sensor check (58001)**
Description	This diagnostic performs a self-calibration of the spectrophotometer. The shutter is opened, and then a measurement in a dark zone of the printer is taken. Finally, the internal white calibration tile is measured.
Fail criteria	Provided automatically. • If two readings are similar it could be that the shutter remains open/closed all the time, so repeat the test, observing whether light from the sensor is visible all the time. • If the black point fails, it could be that there is a piece of substrate over the calibration position. • If the white calibration fails, maybe the sensor is dirty and needs to be replaced.

Test	**Line sensor check (55001)**
Description	The test checks correct internal operation and communication with the line sensor located in the sensor box of the printer. The printer enables the red LED with different current levels and performs a couple of reads to check internal operation.
Pass criteria	Gain within a range of values. • This test requires a substrate load. • It will activate vacuum, cap station, substrate advance, scan axis. **NOTE:** Ensure the reading is taken over white substrate.

Table 5-12 Carriage sensors (continued)

Test	**Line sensor reset counters (55002)**
Description	Deletes usage counters for line sensor, number of cycles, and working hours. **NOTE:** This diagnostic should be run only when a line sensor is replaced.
Test	**Line sensor calibration (58002)**
Description	The line sensor calibration should be performed mainly after replacing a line sensor or a sensor box. It is done in two steps: 1. Calibration of the sensor, by measuring the white of a substrate and a dark area. During this first part, you can see that the printer is places the line sensor at the top of the substrate, taking measurements (measuring the white area), and then it places the sensor at the top of the printhead cleaning roller, performing other measurements (measuring a dark area). A white substrate must be loaded: the substrate cannot contain color, not even light gray. 2. Calibration of the position of the line sensor versus the black printhead. During this second step, the printer will print 21 small squares, and will scan them back. To perform the calibration correctly, load the substrate towards the right of the printer: the edge of the substrate should be positioned within 4 cm (2 in) of the right-hand side. **TIP:** Check that the black printhead is in very good condition, most importantly the first die of the black printhead.
Test	**LsToK calibration (55004)**
Description	This line sensor to black calibration should be performed mainly after replacing a line sensor or a sensor box. It calibrates the position of the line sensor with respect to the black printhead. During the second step, the printer prints 21 small squares, and scans them back. To perform the calibration correctly, load the substrate towards the right of the printer: the edge of the substrate should be positioned within 4 cm (2 in) of the right-hand side. **TIP:** Check that the black printhead is in very good condition, most importantly the first die of the black printhead.
Pass criteria	Value within a range of values.

Table 5-13 Printhead primers

Test	**Primer pump calibration (46002)**
Description	This diagnostic calibrates all primers based on empty prime. **IMPORTANT:** You must open all the printhead primer latches whenever required, otherwise you will create a big puddle of ink on the print platen. This calibration is recommended to be done after replacing a primer, NVM restore or issue or primer leak system error reported.
Pass criteria	Provided by the diagnostic itself.

Table 5-14 Drop detector/capping station

Test	**Capping/drop-detector calibration (52003)**
Description	Measures gears-backlash and bump deformation and saves values for reference.
Fail criteria	This test will fail if a bump is broken or if there is very high friction.

Table 5-14 Drop detector/capping station (continued)

	If the test fails, do a visual inspection of the bump and clean the gear.
Test	**Reset cap/drop-detector calibration (52004)**
Description	Set the backlash and elasticity of the service station to default values. This should be done for specific system errors, in case the printer is not able to boot for a system error pointing to the service station. After this test, it is important to redo the capping/drop-detector calibration.
Test	**Capping/drop-detector XY calibration (52006)**
Description	This test calibrates the XY position of capping and drop-detector shuttle, for the printer to perform the drop detection and the capping procedures appropriately with respect to the carriage. It is recommended to perform this action after interventions in the carriage or the capping/drop-detector station that change their relative positions.
Fail criteria	V shape is not recognized. Ensure this appendix is clean and line sensor works properly.
Test	**Drop-detector calibration (52005)**
Description	This test calibrates the drop-detector system. Perform this test whenever one or more drop detectors are replaced or when the service station interconnect PCA is replaced. **CAUTION:** All printheads must be in good health. If one of the printheads does not having enough nozzles working, the calibration will fail, or will finish. To check that most of the nozzles are good enough for this calibration, print the printhead alignment. If all the calibration parameters are within limits the printer will finish and display an OK message, otherwise it will display a fail message. In case of failure perform a new hard cleaning procedure and redo the calibration. If the calibration still fails, check the printhead that has failed (print printhead alignment) and replace the printhead if necessary. If all the printheads are in good condition, replace the drop-detector sensors, then redo the calibration. The nozzle-check plot is a better option for this purpose, but it may not be available to the operator.
Fail criteria	If the final value received from the calibration is out of specification, it will be rejected and reported as failed. Ensure printheads have good nozzle health.
Test	**Check DD electronics (52001)**
Description	Performs an electrical check of the drop-detection sensors.
Test	**Force drop detection (52002)**
Description	Executes a single drop detection for all the printhead dies.
Test	**Display capping/drop-detection calibration values (52009)**
Description	Displays stored calibration values for capping and drop detection.
Test	**Display printing nozzle health database content (52010)**
Description	Displays the current content of the printing nozzle health database.
Test	**Reset printing nozzle health database content (52011)**

Table 5-14 Drop detector/capping station (continued)

Description	Resets the content of the printing nozzle health database.

Table 5-15 Printhead cleaning

Test	**Wiper motor direction test (47004)**
Description	Moves the selected cleaning roll axis, making a large enough movement to be seen. This diagnostic initializes correctly, it operates in open loop and will always report OK. Recommended sequence is: Engage, MI, MA, and MO. Look the roll and axis movement to detect any slippage.
Pass criteria	Movement detected.
Fail criteria	Movement not detected.

Test	**Wiper visual motor movement check (47002)**
Description	This test is similar to the previous one, but seeking a movement large enough to be seen by a human observer. If the previous test is passed, but you are unable to see movement in this one, perhaps there is a jam, or friction is too high and the motor is unable to move the axis.
Pass criteria	Movement detected.

Test	**Wiper manual motor movement check (47003)**
Description	1. Select the axis to be observed. 2. Press the **Start** button. 3. Move the axis manually. 4. Press the **Stop** button. 5. The encoder should detect movement.
Pass criteria	Delta in encoder counts reported, showing that the closed-loop feedback works.
Fail criteria	The encoder does not detect movement.

Test	**Printhead cleaning Z calibration check (47005)**
Description	This test perform the actions to show you the Z axis calibration. To execute the full process, see Height and tilt check and calibration test on page 755.

Test	**Set wiper Z calibration (47006)**
Description	Execute this test in order to set or change the current calibration, if needed after running the printhead cleaning Z calibration check.

Table 5-16 Drying

Test	**Subsystem functional check in module 1 (left) (15010)**
Description	This test checks that the drying subsystem is working properly, by applying test power and checking that the current provided to the lamps is within the expected range. If not, it tries to diagnose the problem. It can also suggest visual inspection and replacement.

Table 5-16 Drying (continued)

Test	**Subsystem functional check in module 2 (right) (15110)**
Description	This test checks that the drying subsystem is working properly, by applying test power and checking that the current provided to the lamps is within the expected range. If not, it tries to diagnose the problem. It can also suggest visual inspection and replacement.
Test	**Relays check in drying PCA 1 (up) (15008)**
Description	This test checks that AC relays in the Sinatra PCA can be opened and closed.
Test	**Relays check in drying PCA 2 (down) (15108)**
Description	This test checks that AC relays in the Sinatra PCA can be opened and closed.
Test	**Null current check in AC/AC converter 1 (up) (15009)**
Description	This test checks whether the printer can set zero power by setting zero output using sinewave control only (without using the relays in the drying PCA).
Test	**Null current check in AC/AC converter 2 (down) (15109)**
Description	This test checks whether the printer can set zero power by setting zero output using sinewave control only (without using the relays in the drying PCA).
Test	**Scan-axis no-movement timeout in drying PCA 1 (up) (15003)**
Description	This text checks that the drying PCA no-movement timeout when applying power is working properly.
Test	**Scan-axis no-movement timeout in drying PCA 2 (down) (15103)**
Description	This text checks that the drying PCA no-movement timeout when applying power is working properly.
Test	**Hardware supervisor check in drying PCA 1 (up) (15005)**
Description	This test checks several hardware blocks in the drying PCA.
Test	**Hardware supervisor check in drying PCA 2 (down) (15105)**
Description	This test checks several hardware blocks in the drying PCA.
Test	**Drying PCA functional check #1 (up) (15011)**
Description	This test checks several hardware components inside the drying PCA or connected to it.
Test	**Drying PCA functional check #2 (down) (15111)**
Description	This test checks several hardware components inside the drying PCA or connected to it.

Table 5-17 Monitor curing temperatures

Test	**Monitor curing temperatures (16001)**
Description	This diagnostic displays the internal temperatures of the curing modules. This test is useful to see internal chamber curing module temperatures and check whether they are uniform. Also consider that modules without substrate under them are not powered.

Table 5-18 Curing

Test	**Status of the curing modules (16002)**
Description	Displays the status of the curing modules, safety interlocks status, substrate presence under each module and temperature of each chamber (internal). Also with this diagnostic you can apply power to heaters and fans (only the ones with substrate under them, reproducing printing conditions). Options available are: • Heater enabled + fans at 40% • Heater disabled + fans at 40% • Heater disabled + fans at 50% • Heater disabled + fans at 75% • Heater disabled + fans at 90% • Heater and fans disabled. This diagnostic has enabled all software monitors, so you can reproduce and isolate system errors reported by the customer for troubleshooting purposes. Recommended to be executed when the customer reports curing problems, then you can check whether all modules have the same behavior.
Test	**Monitor one curing module (16003)**
Description	Monitor all the internal parameters monitored in the curing PCA in one single module. Also with this diagnostic you can apply power to heaters and fans (only the ones with substrate under them, reproducing printing conditions). Options available are: • Heater enabled + fans at 40% • Heater disabled + fans at 40% • Heater disabled + fans at 50% • Heater disabled + fans at 75% • Heater disabled + fans at 90% • Heater and fans disabled. This diagnostic has enabled all software monitors, so you can reproduce and isolate system errors reported by the customer. Recommended to be executed when the customer reports curing errors, to identify the module and root cause of the problem.

Table 5-19 E-box

Test	**Engine PCAs presence and positioning (01005)**

Table 5-19 E-box (continued)

Description	This test looks (for each slot of the PCI express) if there is an engine PCA attached to it. In the formatter PCA there are five PCI express slots. In slots 1 to 4 must be assembled one engine PCA each, and slot 5 must be free. Any other configuration than this is wrong.
Test steps	Launch the diagnostic.
Pass/fail criteria	If the slots corresponding to PCAs 1 to 4 reply properly and slot #5 does not reply; the test result is PASS. Otherwise the test result is FAIL.
Possible causes for test failure	• At least one of the engine PCAs is missing or assembled in slot 5. • The contacts of the PCI express bus in any slot are dirty (formatter or engine PCA). • Engine PCA is broken. • Formatter PCA is broken.

Test	**Engine PCAs start-up (01006)**
Description	This test looks for errors during the start-up of the four engine PCAs, and checks that the PCA startup is OK.
Test steps	1. Launch the test: `NESSCTengineConnectivity` (check for proper connectivity of the ASIC fusion) 2. Launch the test: `NESSMCtokamakMemoryCheck` (check for the memory)
Pass/fail criteria	The test result is FAIL if: • There is a problem with the communication of the formatter PCA with any of the engine PCAs. • There is a short-circuit or open circuit in the tracks (involving the fusion) in any engine PCA. • The PCA does not start up properly. Otherwise the test result is PASS.
Possible causes for test failure	Engine PCA is broken.

Test	**Connectivity between ELA and engine PCAs (01007)**
Description	This test verifies that each of the engine PCAs is properly connected to its corresponding engine adaptor PCA. The engine PCA tries to communicate with the microcontroller of the engine adaptor PCA.
Test steps	Launch the diagnostic.
Pass/fail criteria	If there is a problem with the communication (missing reply, unexpected reply) between each the engine PCA and its corresponding engine adaptor PCA, the test result is FAIL.
Possible causes for test failure	• Any engine PCA is broken. • Any engine adaptor PCA is broken. • The flat cable between engine PCA and engine adaptor PCA is missing. • Flat cables are wrongly connected (PCAs mismatch). • Flat cables are improperly assembled (not completely inserted).

Test	**Engine adaptor PCAs voltage supplies check (01009)**
Description	This test read the voltage outputs of each of the voltage sources in engine adaptor PCA. The voltages must be within a range **(±15% needs to be defined thresholds)** to declare the test passed.
Test steps	Launch the diagnostic. (Read the ADC channels in the microcontroller STM8_U3.)

Table 5-19 E-box (continued)

Pass/fail criteria	If any of the voltmeters (24V, 12V, 5V3, 5V 3V3) integrated into the engine adaptors PCA reads a voltage out of the valid range the test result is FAIL.
Possible causes for test failure	• Any engine PCA is broken • There is a problem with the supply of the engine PCA (cable or ATX power supply). • There is a shortcircuit or overload in the loads connected to the e-box interconnect PCA.
Test	**Engine adaptor PCA to PPA connectivity (01007)**
Description	This test checks for the proper connection of the engine adaptor PCAs to the e-box interconnect PCA. It can detect which one(s) (if they exist) of the four engine adaptor PCAs are not connected to the e-box interconnect PCA. The engine adaptor PCA sends a signal that travels through the e-box interconnect PCA and returns to the engine adaptor PCA.
Test steps	Launch the diagnostics. (V monitor TCL; PNP monitor TCL)
Pass/fail criteria	If any of the four engine adaptors PCA does not read back one or more of the signals sent through the e-box interconnect PCA, this test result is FAIL.
Possible causes for test failure	• Any engine adaptor PCA is not properly assembled. • Any engine PCA is broken. • A pin from the e-box interconnect PCA slots is broken (J1, J2, J3, J4).

Table 5-20 E-cabinet

Test	**Check e-cabinet e-box communication (10006)**
Description	This test will determine if there is communication between the e-box and the e-cabinet PCA.
Pass criteria	The e-cabinet PCA responds to a communication command.
Fail criteria	The e-cabinet PCA does not respond to a communication command
Action(s)	Possible causes for a test failure: • Communication cable disconnected or damaged • PSU-2 not working (e-cabinet PCA not powered) • E-cabinet PCA malfunction • E-box malfunction
Test	**Check that the fan works (10001)**
Description	This test determines if the rotation signal of the fan is detected.
Pass criteria	The rotation signal of the fan is detected.
Fail criteria	The rotation signal of the fan is not detected.
Action(s)	Possible causes for a test failure: • Fan not connected to the e-cabinet PCA • Fan blocked or malfunctioning • E-cabinet PCA malfunction

Table 5-20 E-cabinet (continued)

Test	**Power supplies (10004)**
Description	This test will start up all the DC power supplies, and measure their output voltages and read their status signals (if available). During this test the firmware will ask the user to press the rearm button.
Pass criteria	All the power supplies output voltages inside range and no alarm signal is detected.
Fail criteria	One or more PSUs not supplying the adequate voltage or an alarm signal detected.
Action(s)	Possible causes for a test failure: • PSU end of life (internal fan not working or otherwise) • PSU protection activated (be sure to leave some time for the PSU to cool down and do an OFF/ON cycle with the main switch before repeating) • PSU cabling: AC, DC, or control cables not connected or damaged • PSU output voltage-sensing jumper missing • E-cabinet PCA malfunction
Test	**Temperature (10010)**
Description	This test reads the internal temperature of the e-cabinet.
Pass criteria	Temperature inside range.
Fail criteria	Temperature outside range.
Action(s)	Possible causes for a test failure: • Insufficient ventilation: ◦ Fan not working ◦ Ventilation grille blocked by an external item (a box, a table...) ◦ Air filters clogged with dust • Room temperature above machine specifications • E-cabinet PCA malfunction
Test	**Activate/deactivate one of the power outputs of the PCA (10007)**
Description	This test activates the DC PSUs and the selected outputs of the e-cabinet PCA. During this test the firmware will ask the user to press the rearm button.
Pass criteria	All outputs can be activated.
Fail criteria	One or more outputs cannot be activated.
Action(s)	Possible causes for a test failure: • The system powered by the failing output has a problem; check that system for short-circuits • E-cabinet PCA malfunction
Test	**Automatic activation/deactivation of ALL of the power outputs of the PCA (10009)**
Description	This test activates the DC PSUs and the activates all the outputs of the e-cabinet PCA. It also tests the state of the fuses.
Pass criteria	All outputs can be activated.

Table 5-20 E-cabinet (continued)

Fail criteria	One or more outputs cannot be activated.
Action(s)	Possible causes for a test failure: • The system powered by the failing output has a problem; check that system for short-circuits • The output fuse on the failing output is blown • E-cabinet PCA malfunction
Test	**E-cabinet state (10005)**
Description	This test shows the state of all the analog and digital sensors on the e-cabinet PCA (voltages, currents, temperature, switch states, and so on).
Test	**Check watchdog timer (10008)**
Description	This test checks that the watchdog timer on the e-cabinet PCA works.
Pass criteria	Watchdog timer works
Fail criteria	Watchdog timer fails
Action(s)	Causes for a test fail: • E-cabinet PCA malfunction

Table 5-21 Printer installation and purge

Test	**Purge supply (per color) (22500, 22501, 22502, 22503, 22504, 22505, 22506)**
Description	**NOTE:** More information about purging the system is available in the installation guide. Purge supply. Purge ink main service diagnostic (1/3). This test checks the supply, opens the main electro-valve and checks that the ink pressure is correct. Test failure usually indicates that the manual refill of the first tube segment is incorrect (air in tubes).
Test	**Filling intermediate tanks (22507)**
Description	Purge Intermediate Tanks. Purge ink main service diagnostic (2/3). This test performs several steps to refill the new empty intermediate tanks.
Test	**Ink filling tubes (22508)**
Description	Purge Tubes. Purge ink main service diagnostic (3/3). This operation leads the ink from the intermediate tanks to the carriage. To avoid the air to damage any head, temporary setup printheads will be plugged at the end of each tube, inserted to the needle where the final printheads will seat afterwards.
Test	**Set supply consumed ink (22509)**
Description	This test allows you to subtract ink consumed by the ink cartridge during the installation process, in order to count the ink actually used in printing.
Test	**Force normal boot (22511)**
Description	The execution of this test forces the printer to start in normal mode at the next restart.

Table 5-21 Printer installation and purge (continued)

Test	**Set input voltage**
Description	This test allows you to set in the printer the input AC voltage measured in the installation process.
Test	**Set ISM as purged**
Description	This test sets the ISM as purged (filled with ink).
Test	**Set TRS as purged**
Description	This test sets the TRS as purged (filled with ink).

Table 5-22 Printer reshipment preparation

Test	**Manage auxiliary air pump (22600)**
Description	This test allows you to control the auxiliary air pump that can be used to empty the ink lines.
Test	**Entry valves (22601)**
Description	Entry-valves management. With this test you can change the status of the intermediate valves (valves that interconnect the Intermediate tanks).
Test	**Set all intermediate tanks as new (22602)**
Description	This test sets intermediate tanks installed as new, allowing them to be reused them when the printer is reisntalled.
Test	**Set ISM as not purged (22603)**
Description	This test sets the ISM as not purged (empty), so that the next time the printer is powered up it will ask to be filled with ink.
Test	**Set TSR as not purged (22604)**
Description	This test sets the TRS as not purged (empty), so that the next time the printer is powered up it will be ask to be filled with ink.
Test	**Move carriage (22605)**
Description	This test moves the carriage to the service position, allowing you to insert the syringes into the ink lines to empty them.

Table 5-23 Utilities

Test	**Get printer logs (99009)**
Description	This utility displays a URL that takes you where the Printer.log file is stored.
Test	**Set IP address (99010)**
Description	This utility guides you to change the IP addresses of the computer and printer.

Table 5-23 Utilities (continued)

Test	**Set date and time (99001)**
Description	This utility changes the actual date and time of the internal electronics system in the printer, this date and time are different from the data displayed by the IPS PC of the printer. A correct setup of the time and date in the printer is especially important when saving and tracking the error logs used for escalations. Performing this utility is recommended when installing the printer in order to align the time with the local time.
Test	**Report version (99002)**
Description	This utility will show the actual version of the test utilities package installed in the printer. As the package can be updated independently of the firmware, this test helps the user to keep track of the actual version installed in the printer.
Test	**Save NVM (99003)**
Description	This utility creates a backup copy of all the NVM values of the printer (including calibration values, part numbers, and so on) in the tmp directory of the hard drive of the printer (where the printer.log is stored).
Test	**Restore NVM (99004)**
Description	This utility recovers a previous copy of all the NVM values of the printer (including calibration values, part numbers, and so on).
Test	**Enable logging (99007)**
Description	This utility sets the printer to create the printer.log file in the tmp directory of the printer. The file will include all necessary information to use and provide in case of escalation. In addition to the standard logs reporting, the test sets additional log information (extended logs) for selected subsystems within the printer. If the problem is localized in one of those subsystems, select the appropriate one. Otherwise just select at random one of the subsystems displayed, which will be enough to gather the standard set of logs reporting.
Test	**Force boot mode (99006)**
Description	This utility sets the printer to start always in diagnostic mode. This is useful if you intend to perform multiple tests in diagnostic mode.
Test	**Set curing bottom plate (99011)**
Description	This utility allows you to set in the printer firmware which curing bottom plate is assembled in the printer. After setting the right value, it displays the value to confirm that the change has been done. To check which curing bottom plate you have, see Curing bottom plate assembly on page 477.

Table 5-24 Carriage rail cleanliness

Test	**Friction analysis (86003)**
Description	This maintenance script moves the carriage along the scan axis, reading and displaying friction values and limit thresholds. It recommends a cleaning process if needed.
Test	**Cleaning (86004)**

Table 5-24 Carriage rail cleanliness (continued)

Description	Follow the instructions of this script to clean the carriage rails. You need to use the tools recommended for regular maintenance. The script enables heavy users to run this maintenance routine whenever needed.

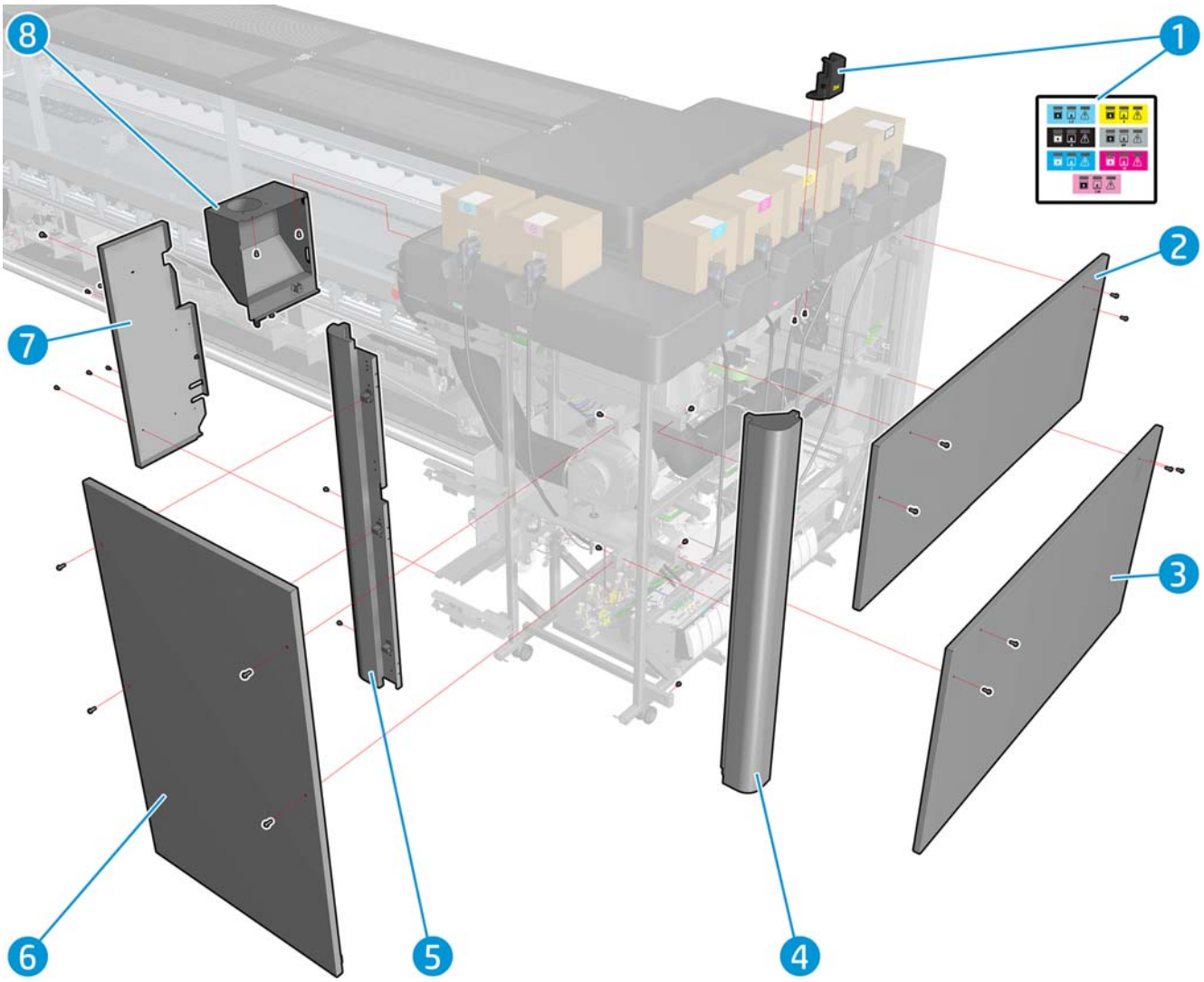
6 Service parts and diagrams

- Rear left covers
- Front left covers
- Front right covers
- Rear right covers
- Center covers
- Covers (structure)
- Vapor removal (1)
- Vapor removal (2)
- Drying
- Aerosol
- E-cabinet general
- E-cabinet left (1)
- E-cabinet left (2)
- E-cabinet center
- E-cabinet right
- E-box
- Printhead cleaning system (1)
- Printhead cleaning system (2)
- Tube Routing System (TRS)
- Print to Paper Space (PPS)
- Ink system module (1)
- Ink system module (2)
- Ink system module (3)
- Impelling
- Service station
- Substrate path (1)
- Substrate path (2)

- Substrate path (3)
- Substrate path (4)
- Substrate path (5)
- Substrate path (6)
- Substrate path (7)
- Substrate path (8)
- Curing (1)
- Curing (2)
- Carriage (1)
- Carriage (2)
- Human-machine interface
- Miscellaneous parts

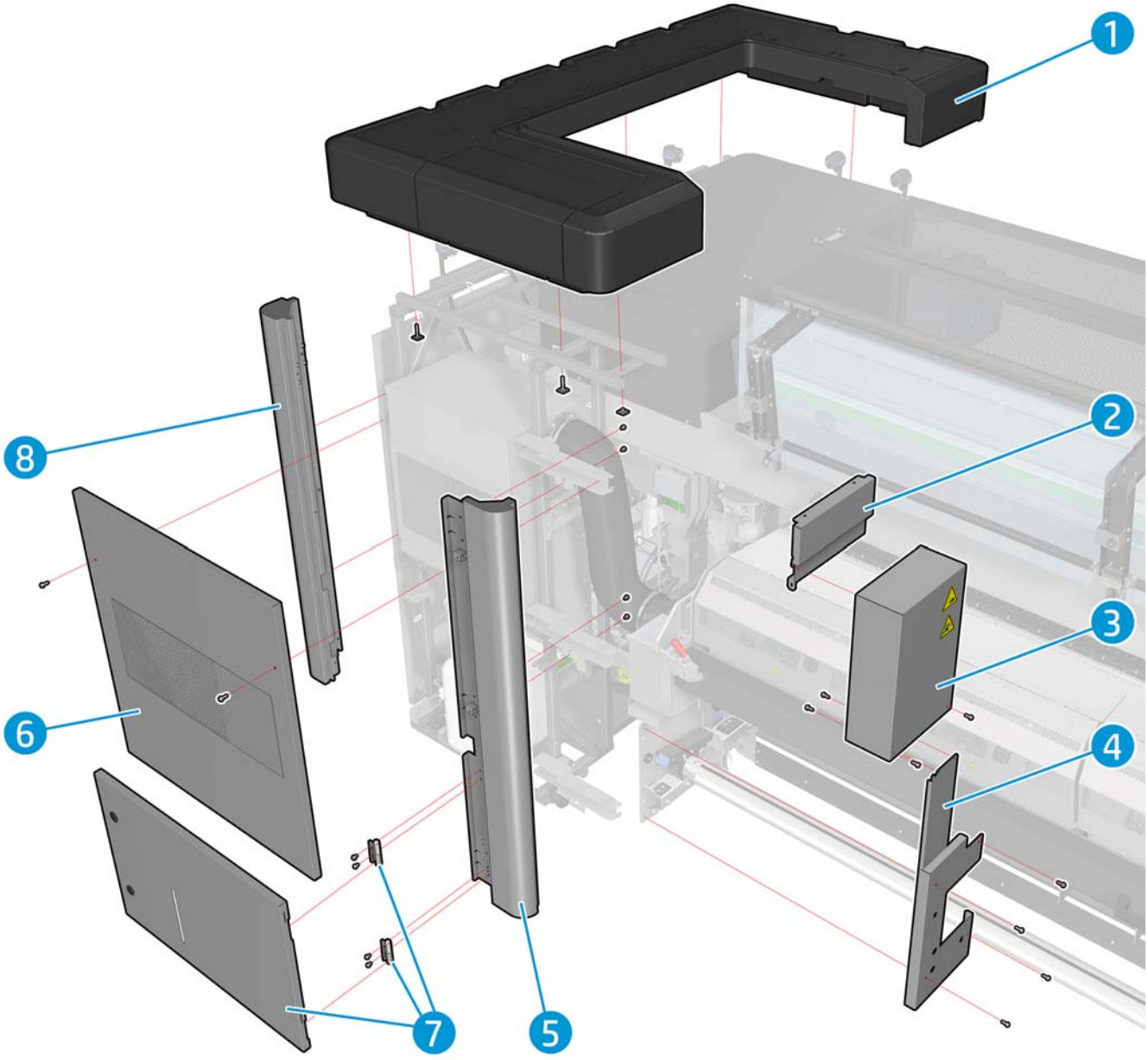
Rear left covers

	Part number	Description
1	CZ056-67344	Top left cover clamp and labels on page 633
2	CZ056-67349	Top left panel assembly on page 637
3	CZ056-67348	Bottom left panel assembly on page 636
4	CZ056-67345	Left corner assembly on page 634
5	CZ056-67351	Rear left internal corner assembly on page 638
6	CZ056-67347	Rear left panel assembly on page 636
7	CZ056-67339	Rear left pillar on page 629
8	CZ056-67352	Rear left internal cover on page 639



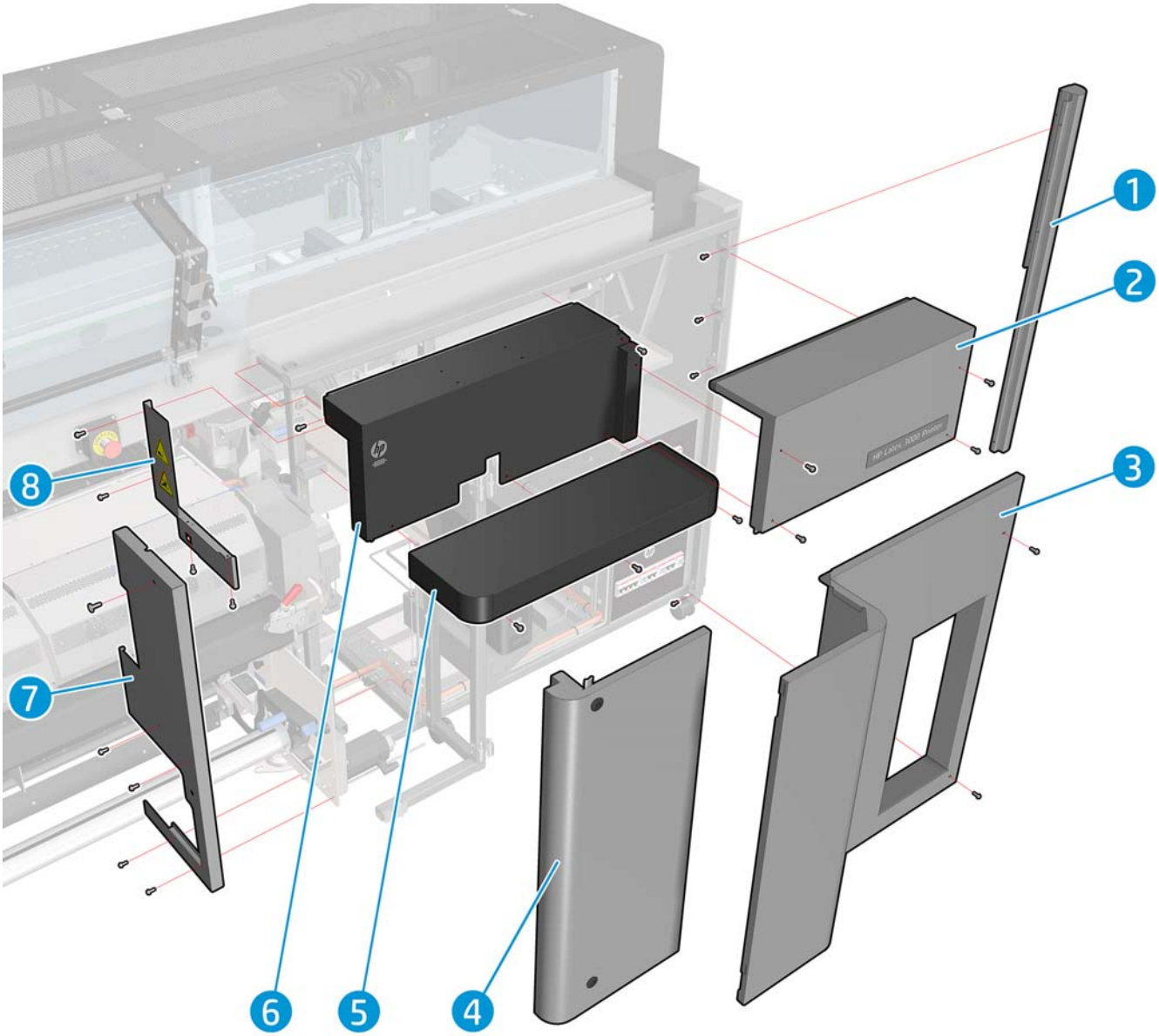
Front left covers

	Part number	Description
1	CZ056-67343	Top left cover on page 631
2	CZ056-67342	Front left internal cover on page 631
3	CZ056-67341	Front top left pillar on page 630
4	CZ056-67340	Front left pillar on page 630
5	CZ056-67350	Front left internal corner assembly on page 638
6	CZ056-67346	Front left panel assembly on page 635
7	CZ056-67397	Front left panel door on page 653
8	CZ056-67345	Left corner assembly on page 634



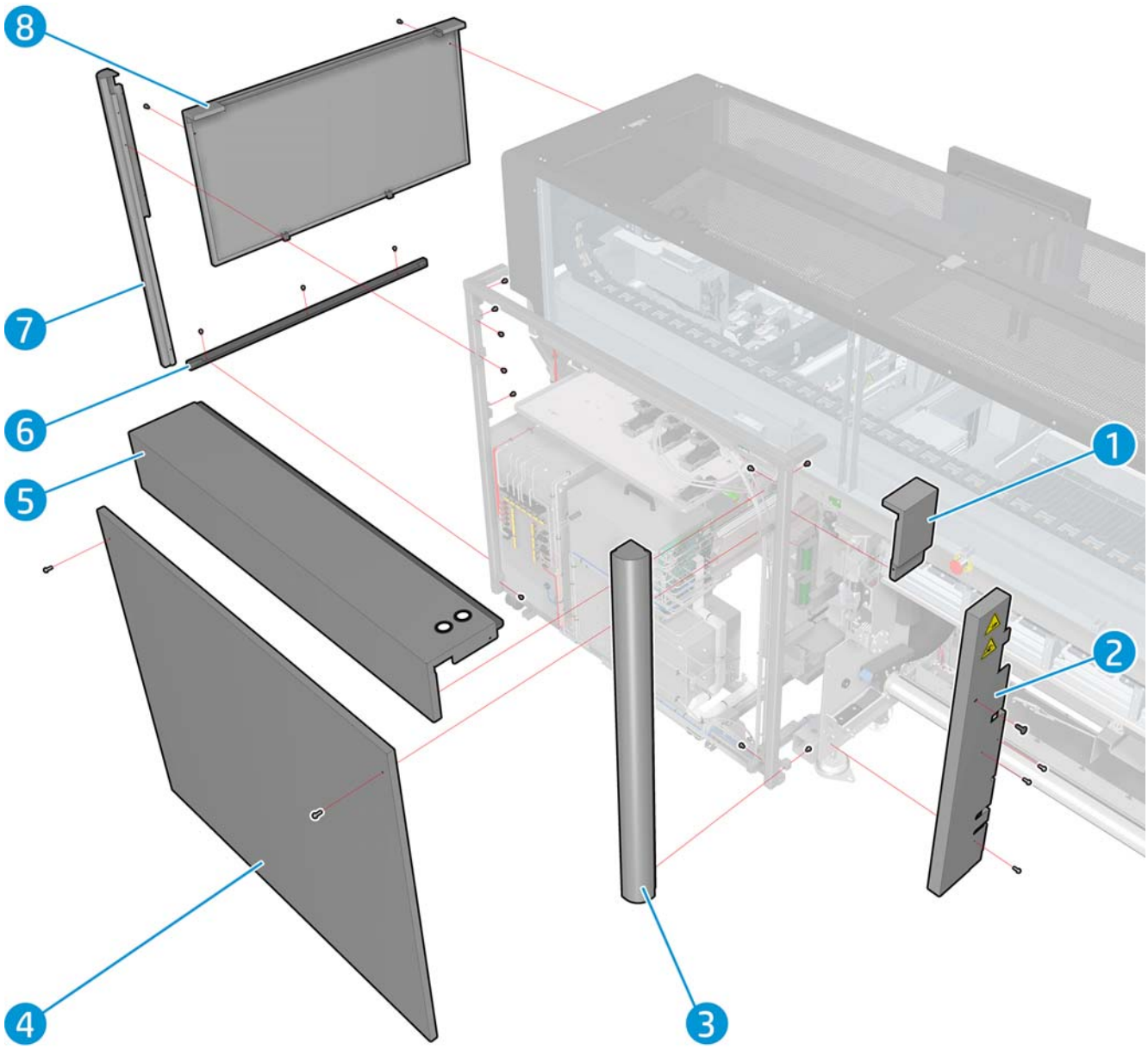
Front right covers

	Part number	Description
1	CZ056-67330	Front right corner assembly on page 622
2	CZ056-67327	Front top right cover on page 619
3	CZ056-67331	Front right panel assembly on page 623
4	CZ056-67336	Printhead cleaning door assembly on page 627
5	CZ056-67329	Keyboard shelf assembly on page 621
6	CZ056-67325	Front right cover on page 616
7	CZ056-67338	Front right pillar on page 628
8	CZ056-67416	Front lower right cover on page 615



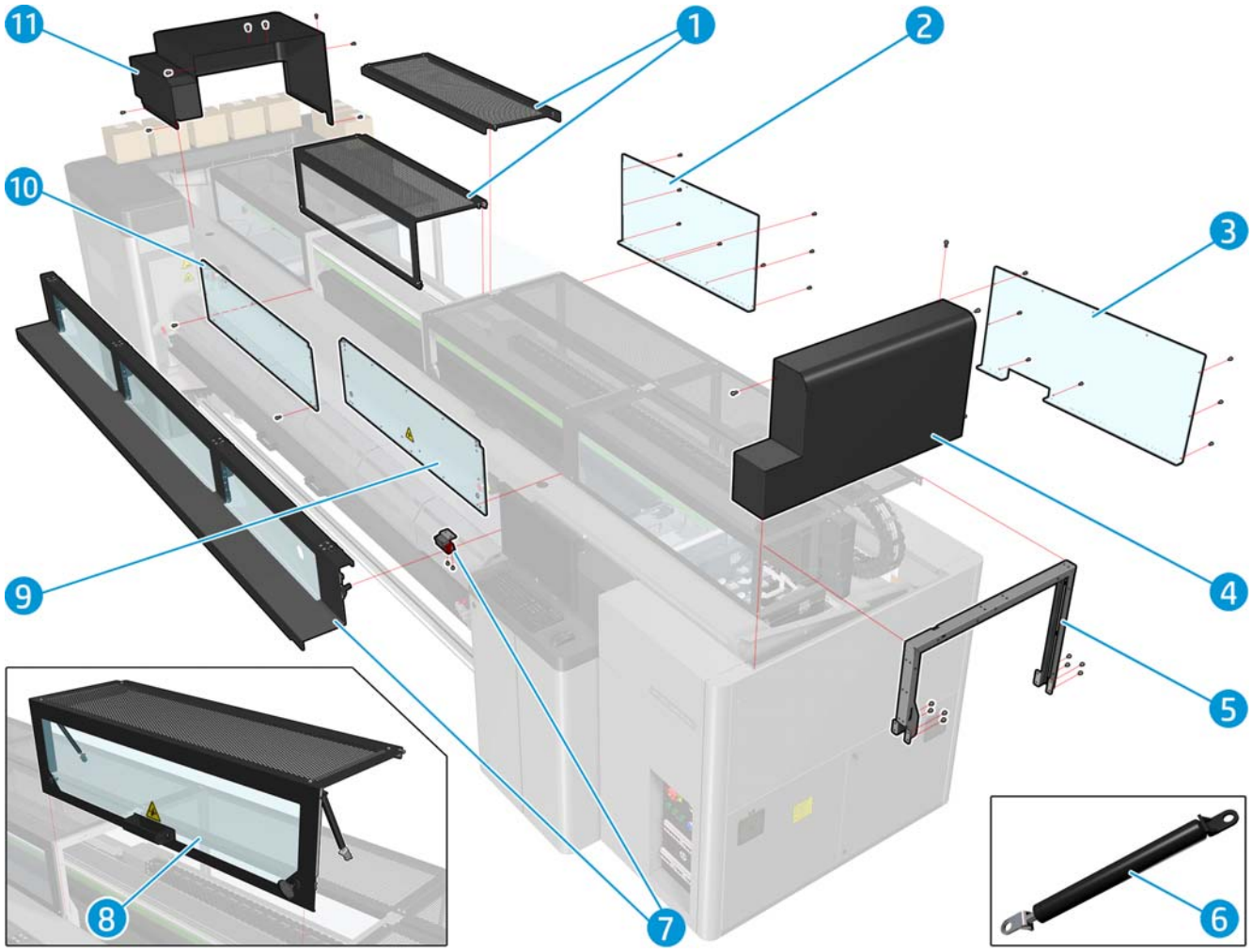
Rear right covers

	Part number	Description
1	CZ056-67328	Rear right internal cover on page 620
2	CZ056-67337	Rear right pillar on page 627
3	CZ056-67335	Rear right internal corner assembly on page 626
4	CZ056-67332	Rear right panel assembly on page 624
5	CZ056-67326	Rear top right cover on page 618
6	CZ056-67324	Bottom right cover on page 614
7	CZ056-67334	Rear right corner assembly on page 625
8	CZ056-67333	Right panel assembly on page 624



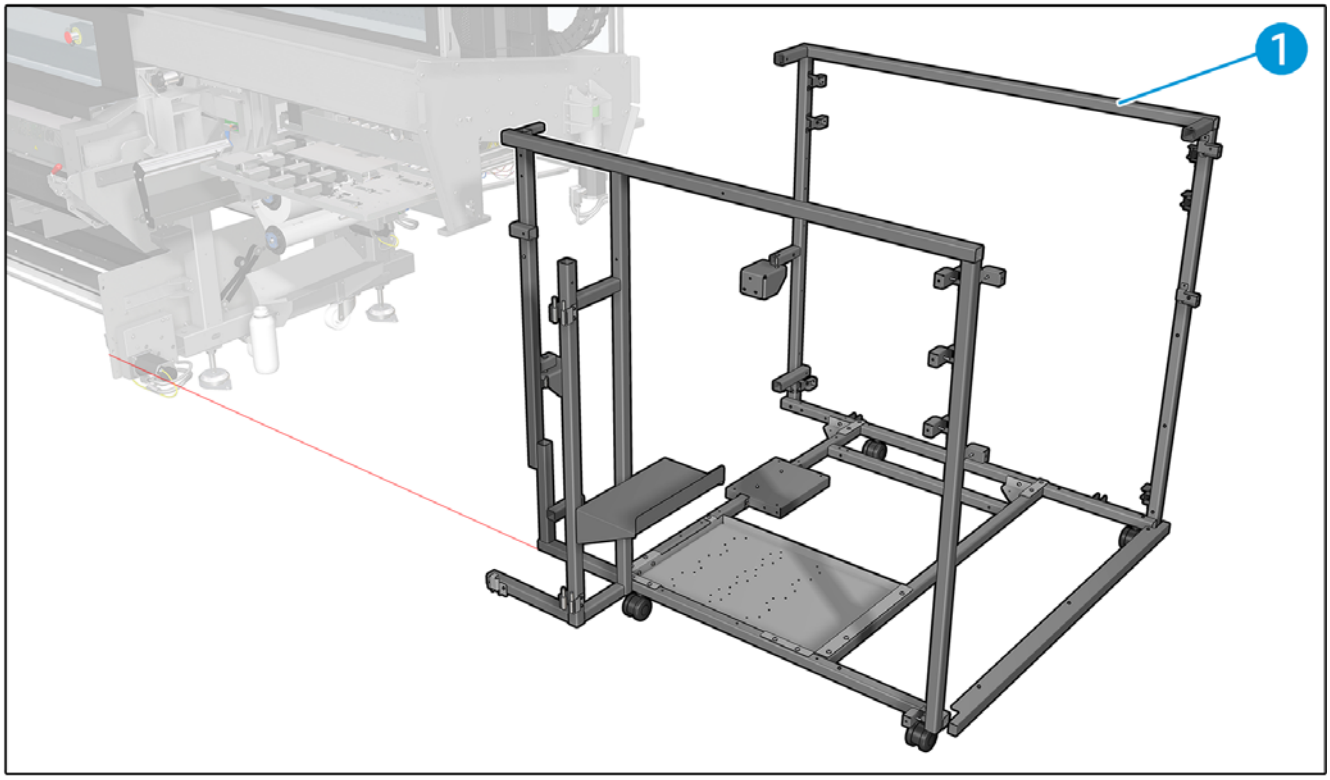
Center covers

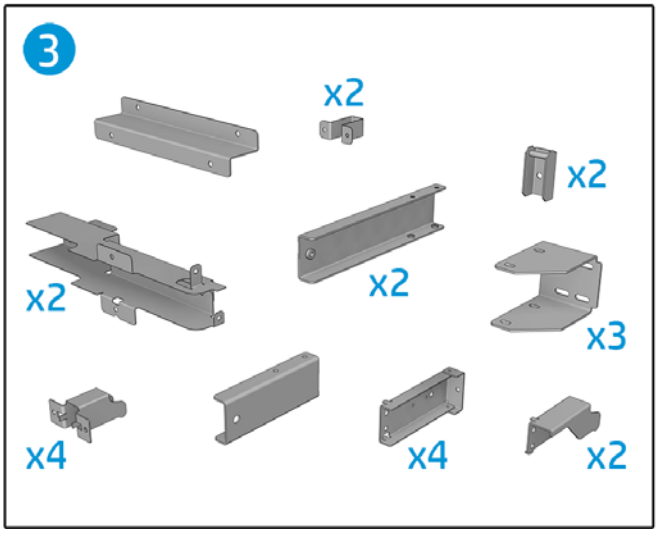
	Part number	Description
1	CZ056-67355	Front top center cover on page 644 and Rear top center cover on page 644
2	CZ056-67359	Rear PC sheet on page 648
3	CZ056-67360	Rear center-right PC sheet cover on page 649
4	CZ056-67353	Center right cover on page 643
5	CZ056-67356	Arch center cover on page 645
6	CZ056-67361	Window gas spring on page 650
7	CZ056-67363	Front door on page 652
8	CZ056-67364	Center window on page 653
9	CZ056-67358	Window PC sheet on page 647
10	CZ056-67357	Front PC sheet on page 646
11	CZ056-67354	Center left cover on page 641

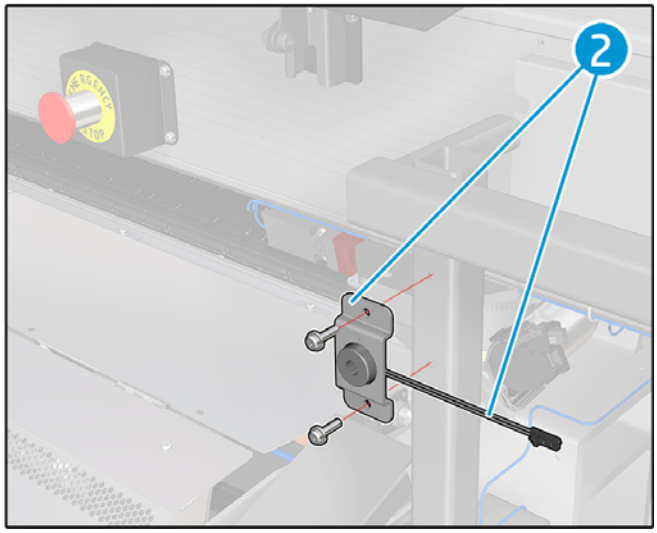


Covers (structure)

	Part number	Description
1	CZ056-67362	Right structure on page 651
2	CZ056-67323	Buzzer and cable on page 614
3	CZ056-67365	Cover supports on page 654, includes a set of covers supports, door hinges, and the Internal Print Server computer support

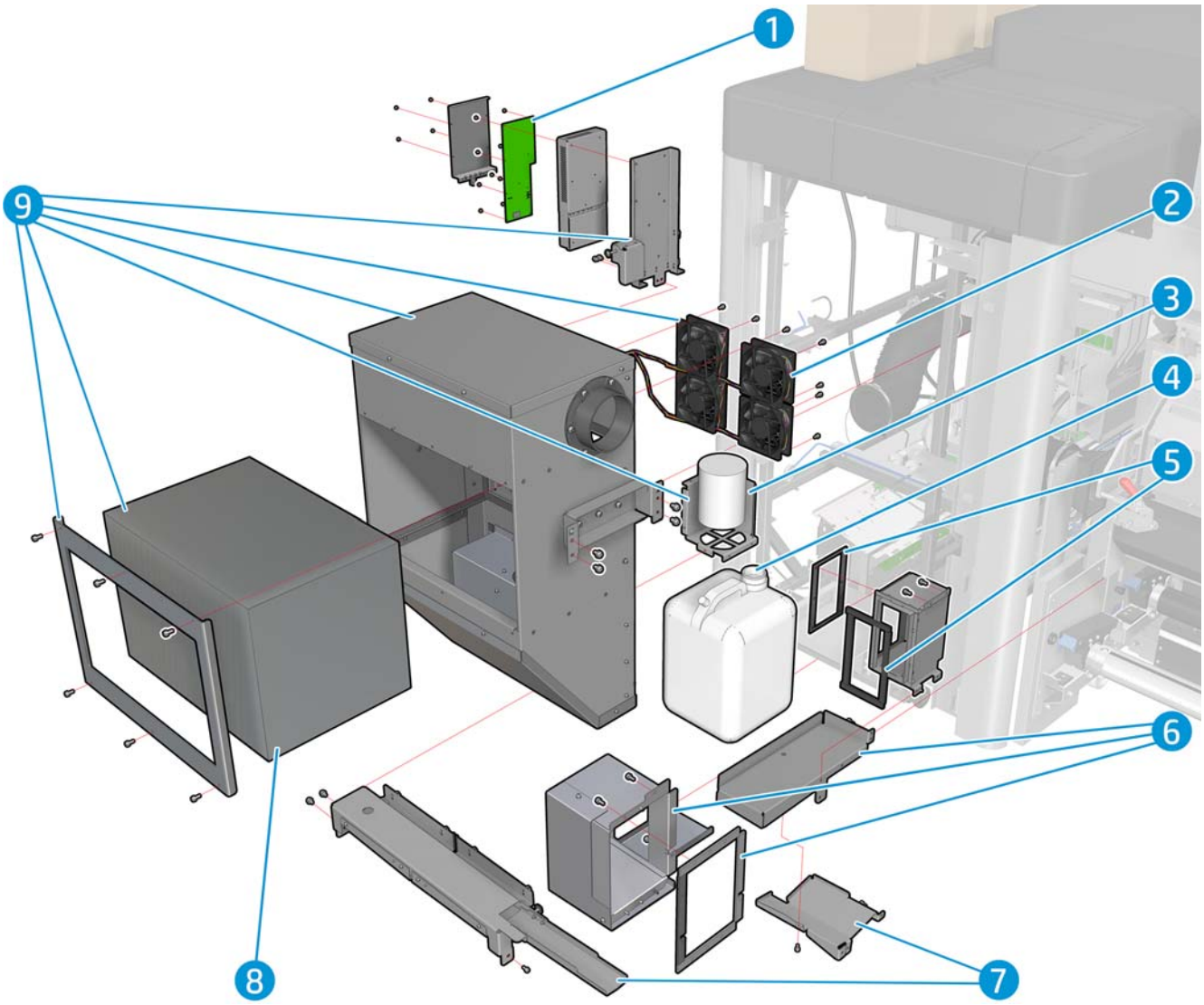






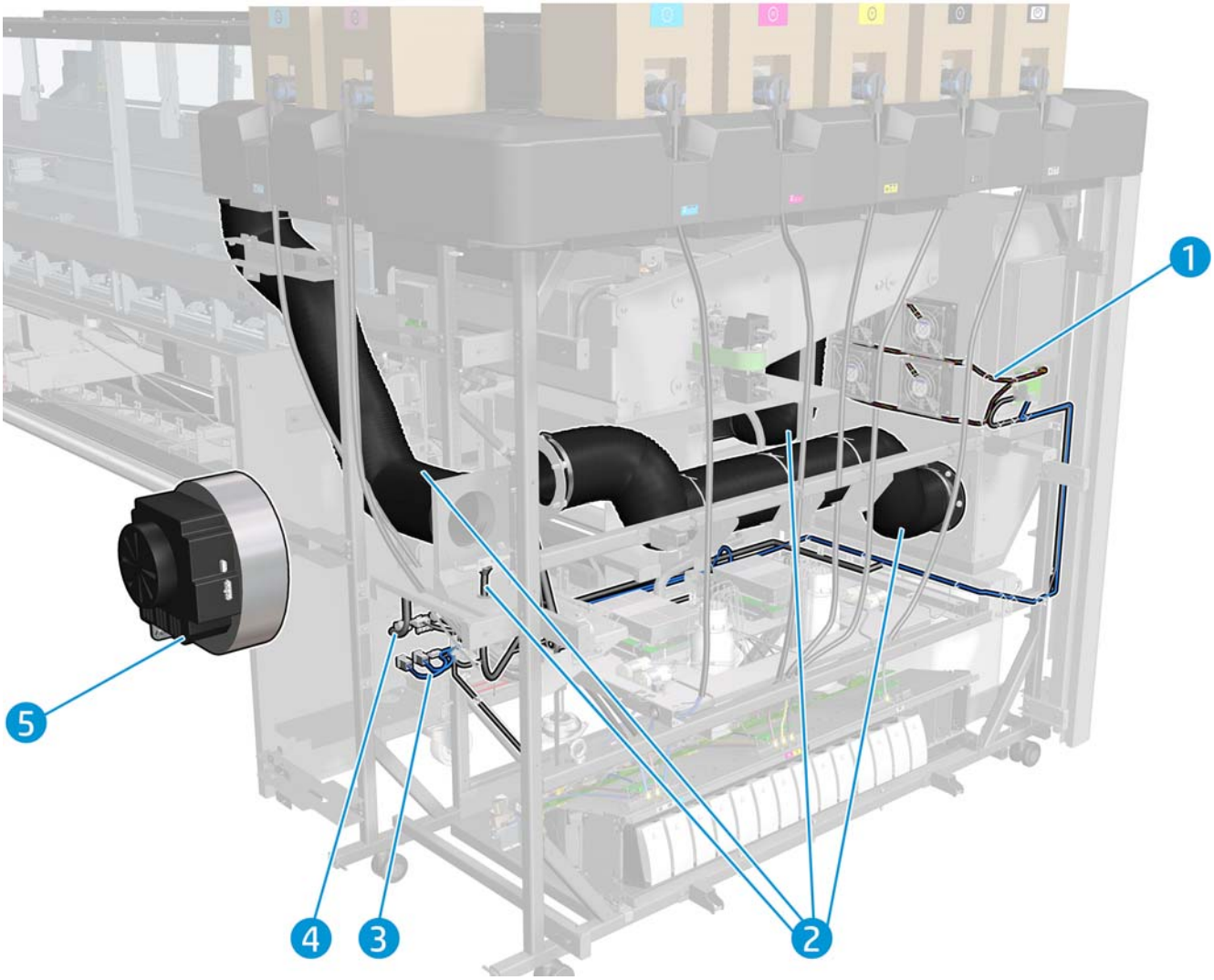
Vapor removal (1)

	Part number	Description
1	CZ056-67384	Curing and vapor removal PCA on page 902
2	CZ056-67379	Vapor removal fan on page 889, one unit
3	CZ056-67380	Vapor removal impactor on page 890
4	CZ056-67382	Vapor removal condensation collector bottle on page 894
5	CZ056-67403	Vapor removal sealing kit
6	CZ056-67383	Vapor removal curing box on page 896
7	CZ056-67377	Vapor removal drainage on page 882, includes two intermediate collectors, one end collector, one main holder, and one waste bottle container
8	CZ056-67378	Vapor removal crossflow exchanger on page 887
9	CZ056-67381	Vapor removal exchanger box on page 891



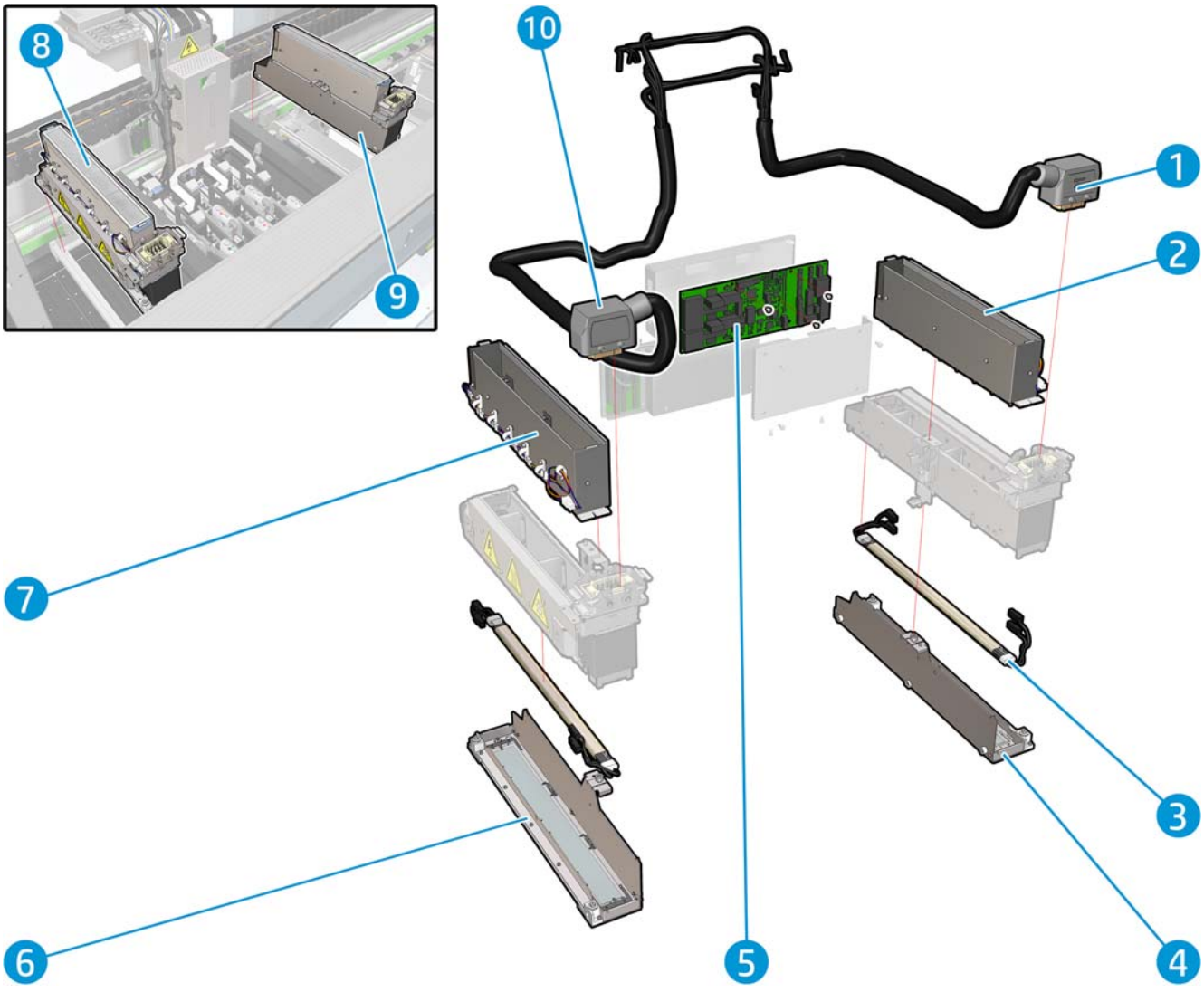
Vapor removal (2)

	Part number	Description
1	CZ056-67284	Vapor removal fans power cable kit on page 898, includes vapor removal fans cable (CZ056-50242), vapor removal pump power cable (CZ056-50246), vapor removal fans PCA data cable (CZ056-50249), vapor removal cable power 24 V split to curing PCA (CZ056-50258), and vapor removal cable LAN split to curing PCA (CZ056-50259)
2	CZ056-67376	Vapor removal pipes on page 874, includes one set of vapor removal pipes (4 different units)
3	CZ056-67282	Vapor removal pump cable kit on page 897, includes vapor removal cable data split to blower (CZ056-50260), vapor removal cable power 230 V split to blower (CZ056-50261), vapor removal pump control cable (CZ056-50247), e-box interconnect PCA to vapor removal vacuum power cable (CZ056-50239), e-box interconnect PCA to vapor removal vacuum LAN cable (CZ056-50238), and vapor removal fans power cable (CZ056-50248)
4	CZ056-67109	Vacuum pump cable kit on page 799
5	CZ056-67105	Vacuum pump on page 892, includes one unit of centrifugal blower 230 V AC



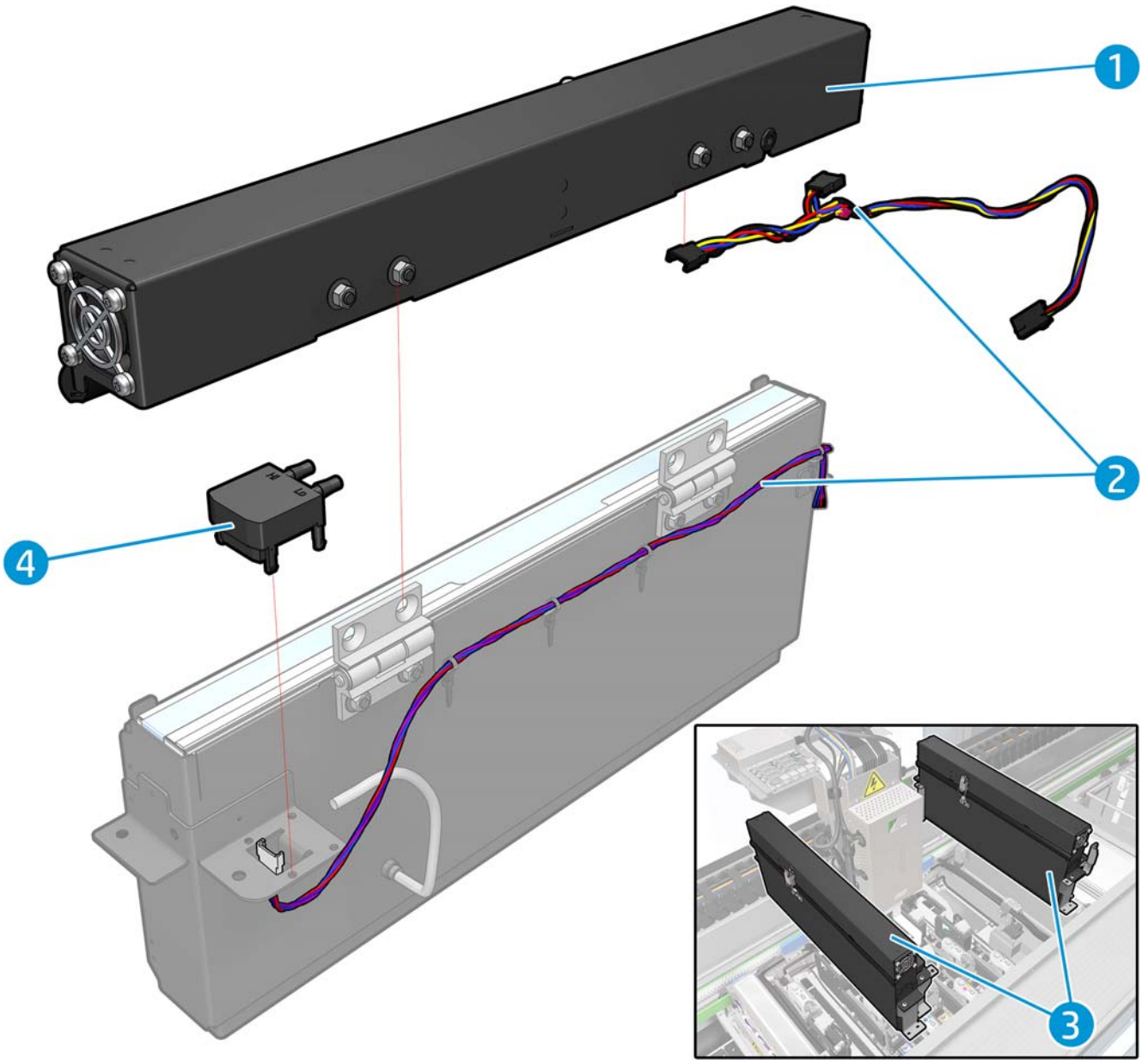
Drying

	Part number	Description
1	CZ056-67026	Drying cable right (CZ056-50205) on page 515
2	CZ056-67023	Drying fan case right
3	CZ056-67322	Drying NIR lamp on page 496
4	CZ056-67252	Drying quartz glass on page 511 (right)
5	CZ056-67204	Drying PCA on page 522
6	CZ056-67253	Drying quartz glass on page 511 (left)
7	CZ056-67024	Drying fan case left
8	CZ056-67029	Drying module on page 518 (left)
9	CZ056-67028	Drying module on page 518 (right)
10	CZ056-67027	Drying cable left (CZ056-50013) on page 517
	CZ056-67030	Drying AC/AC converter control cable on page 521, includes CZ056-50056
	CZ056-67251	Drying temperature sensor kit on page 505



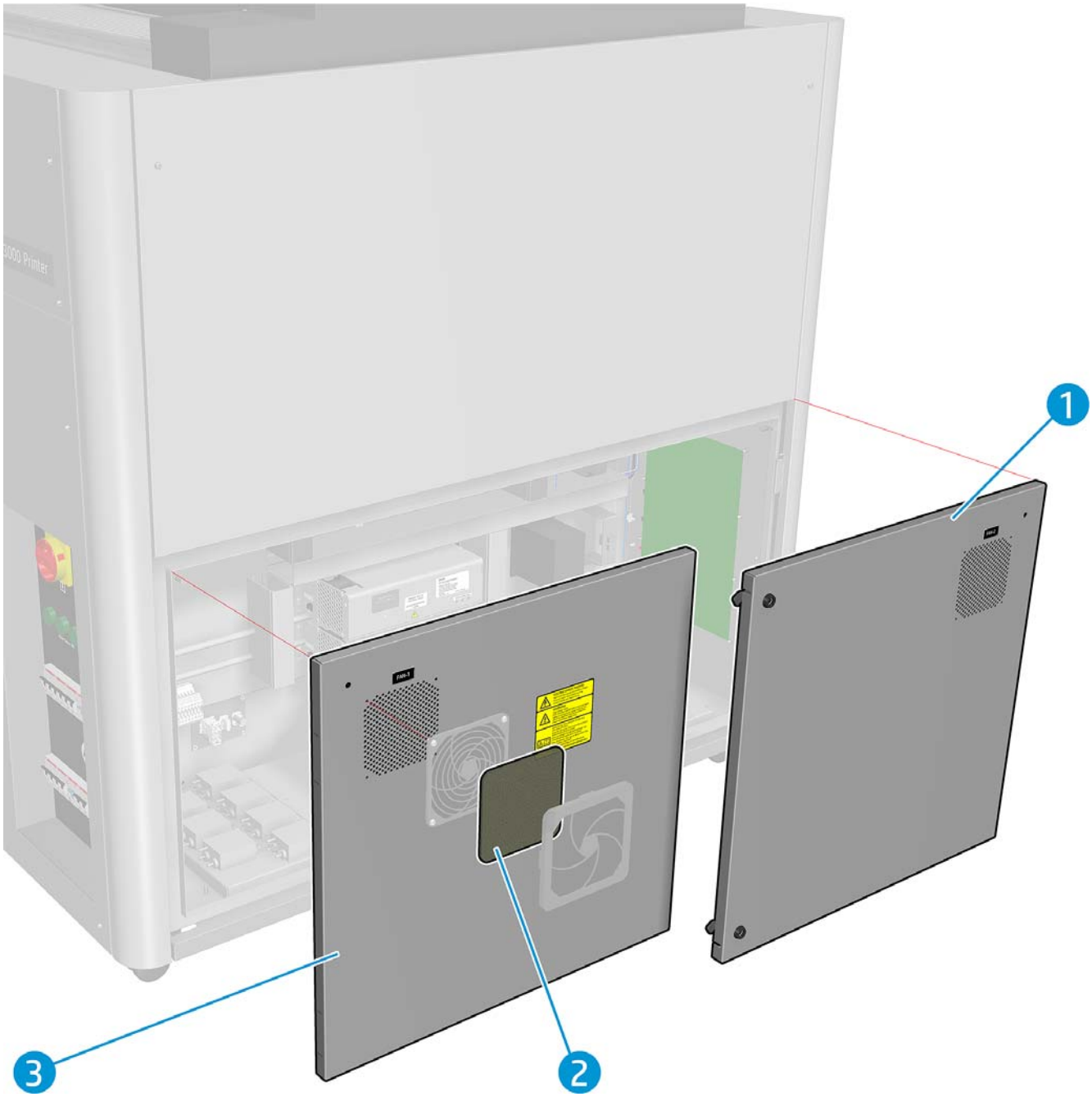
Aerosol

	Part number	Description
1	CZ056-67246	Aerosol top case assembly on page 421, includes aerosol lid assembly and aerosol harness cable (CZ056-50240)
2	CZ056-67005	Aerosol cables kit on page 423, includes CZ056-50240 and CZ056-50241
3	CZ056-67004	Aerosol box assembly on page 423
4	CZ056-67003	Aerosol pressure sensor on page 424



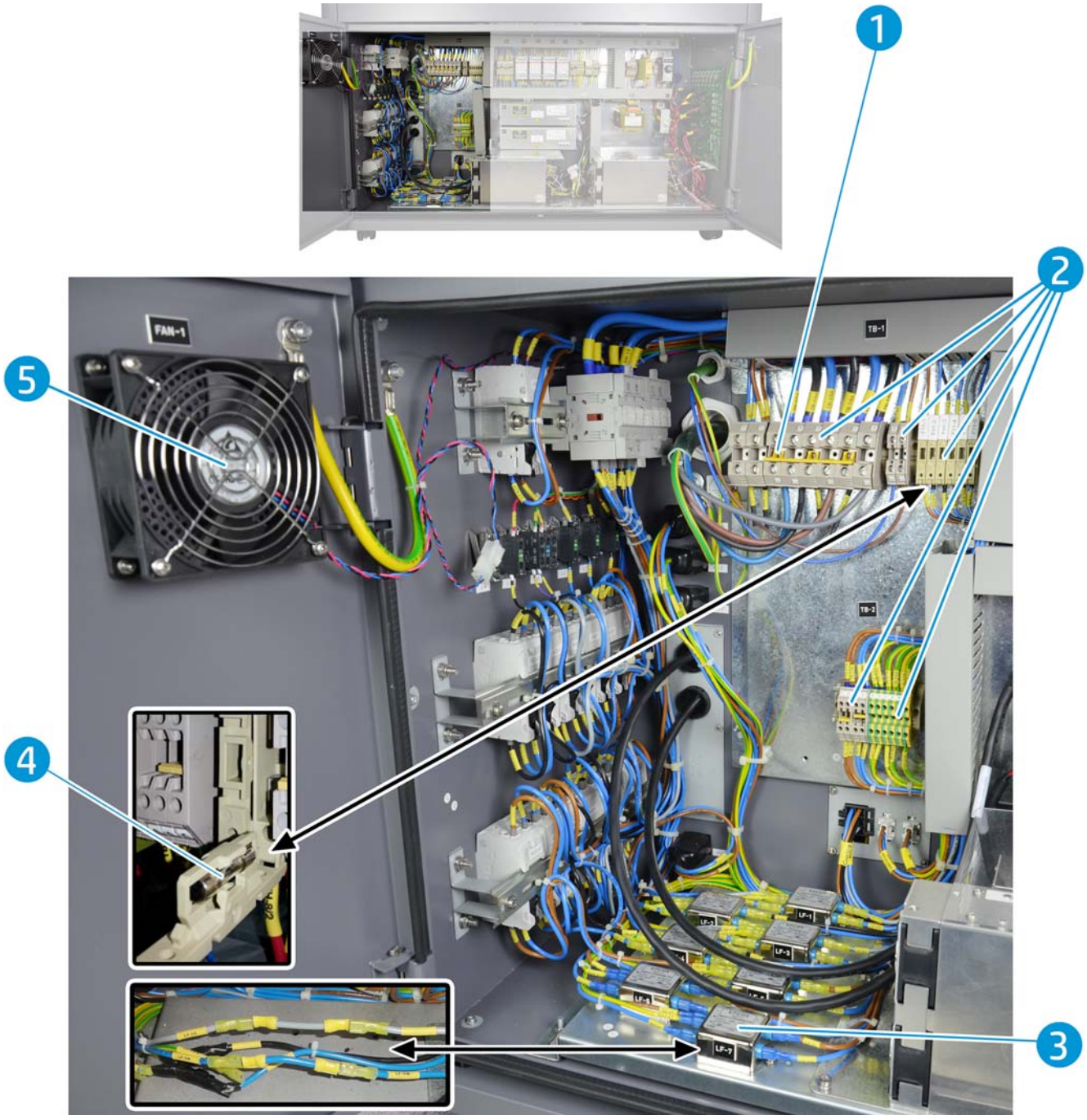
E-cabinet general

	Part number	Description
1	CZ056-67394	E-cabinet right door assembly on page 585
2	CZ056-67137	E-cabinet fan filter on page 581
3	CZ056-67393	E-cabinet left door assembly on page 584



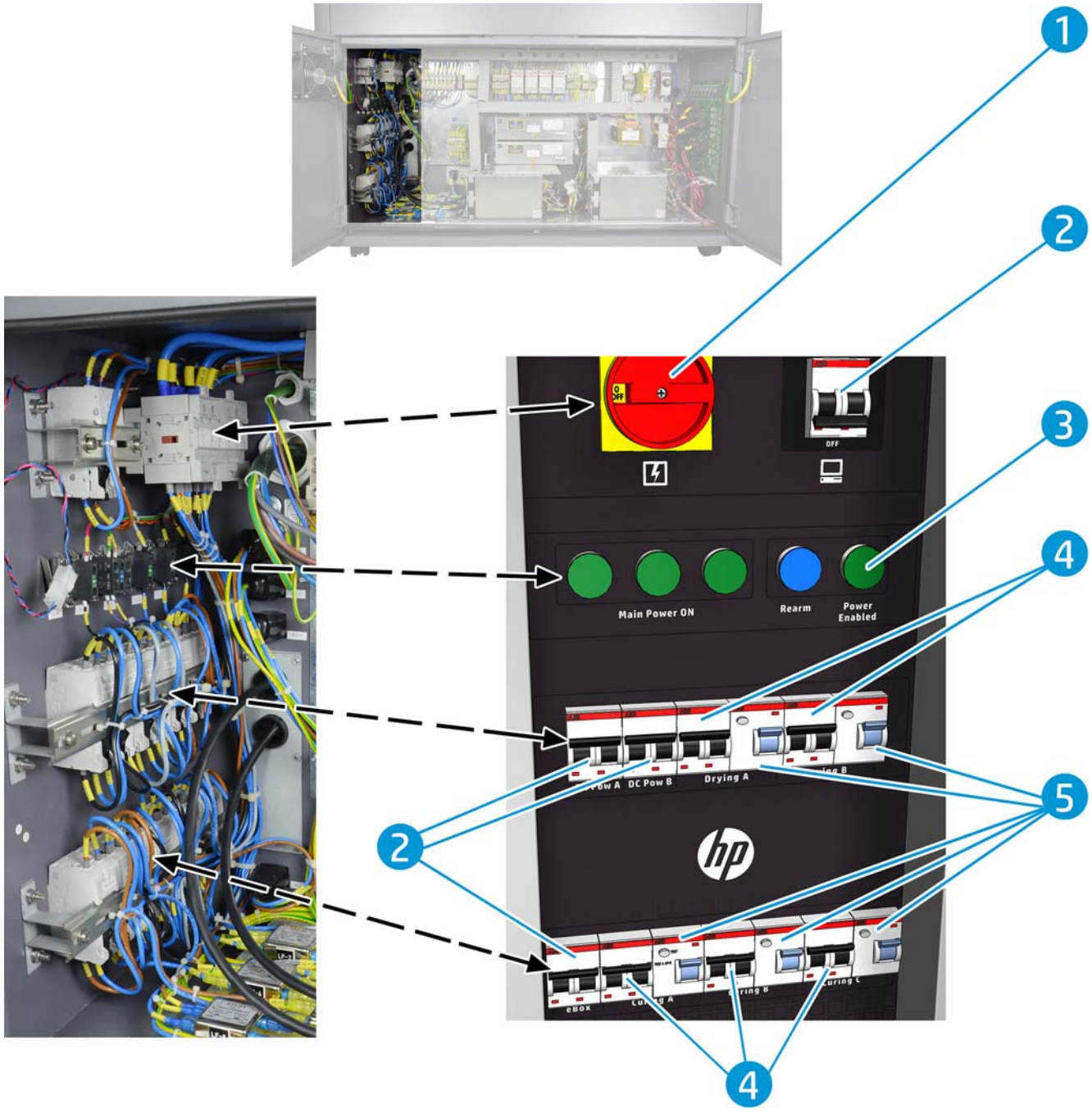
E-cabinet left (1)

	Part number	Description
1	CZ056-67134	E-cabinet installation kit
2	CZ056-67132	E-cabinet terminal block kit on page 575
3	CZ056-67425	E-cabinet line filter bypass cables on page 547, includes line filter bypass cable (CZ056-50275)
4	CZ056-67135	E-cabinet fuses kit on page 577
5	CZ056-67128	E-cabinet fan on page 571



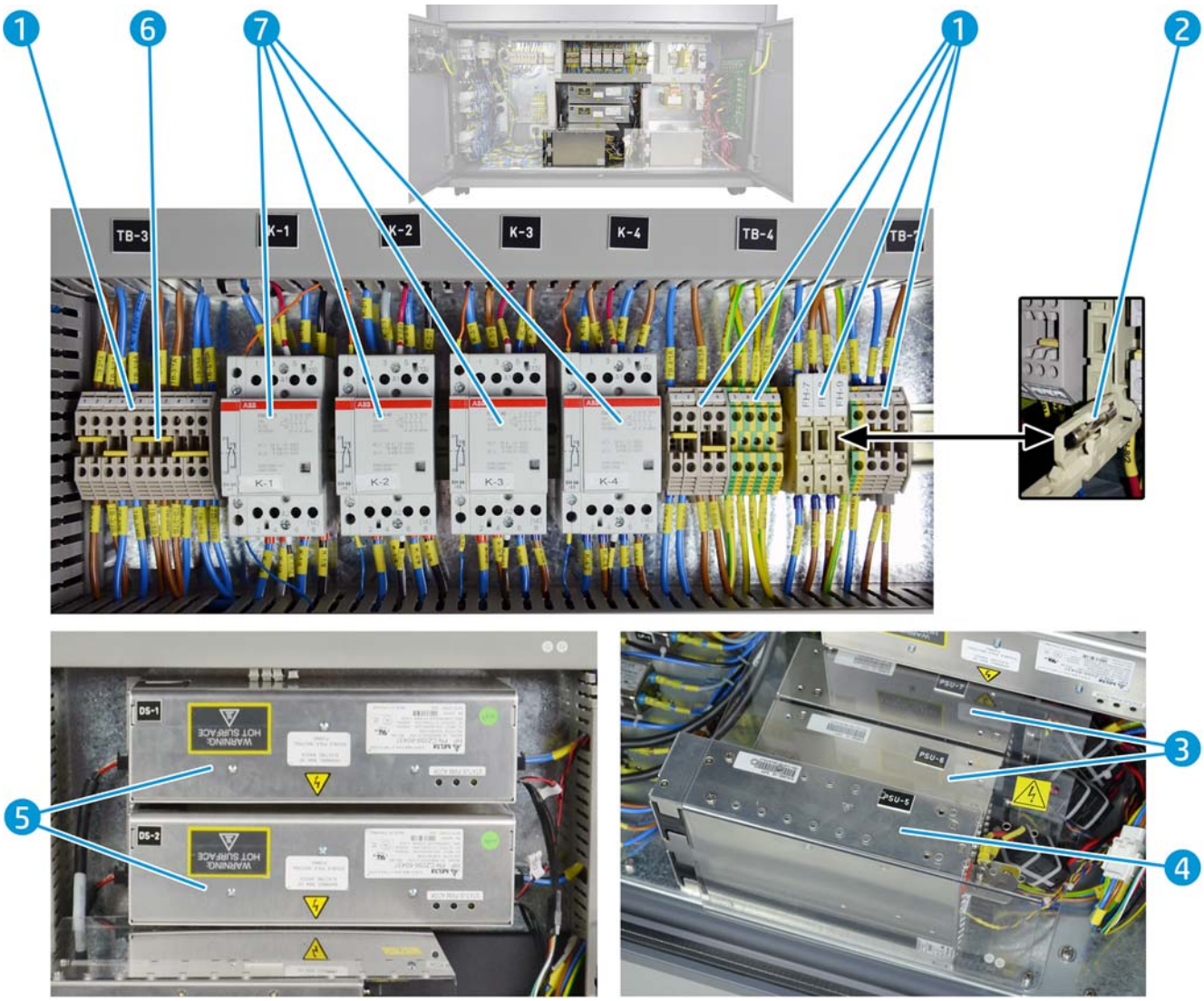
E-cabinet left (2)

	Part number	Description
1	CZ056-67115	E-cabinet main switch kit on page 545
2	CZ056-67119	E-cabinet ACB 10A 2-phase on page 551
3	CZ056-67131	E-cabinet lamps kit on page 572
4	CZ056-67117	E-cabinet ACB 20A 2-phase on page 550
5	CZ056-67404	E-cabinet RCD 25A 30mA 1-phase on page 552



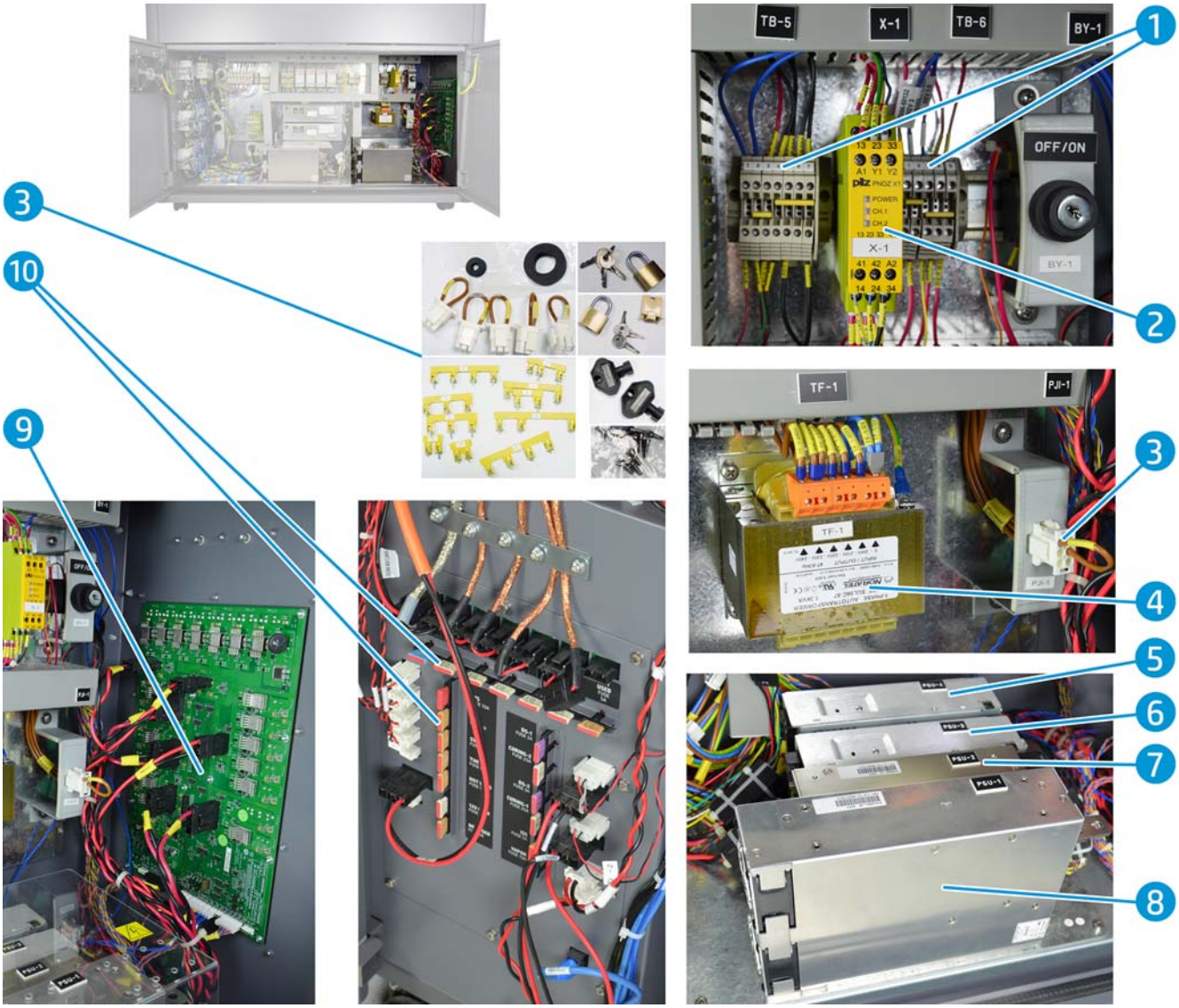
E-cabinet center

	Part number	Description
1	CZ056-67132	E-cabinet terminal block kit on page 575
2	CZ056-67135	E-cabinet fuses kit on page 577
3	CZ056-67125	E-cabinet 24V PSU (E-cabinet PSUs 5 to 7 on page 563)
4	CZ056-67124	E-cabinet 48V PSU (E-cabinet PSUs 5 to 7 on page 563)
5	CZ056-67127	E-cabinet AC/AC converter on page 569
6	CZ056-67133	E-cabinet X-way cross-connector kit on page 577
7	CZ056-67122	E-cabinet modular contactor kit on page 555



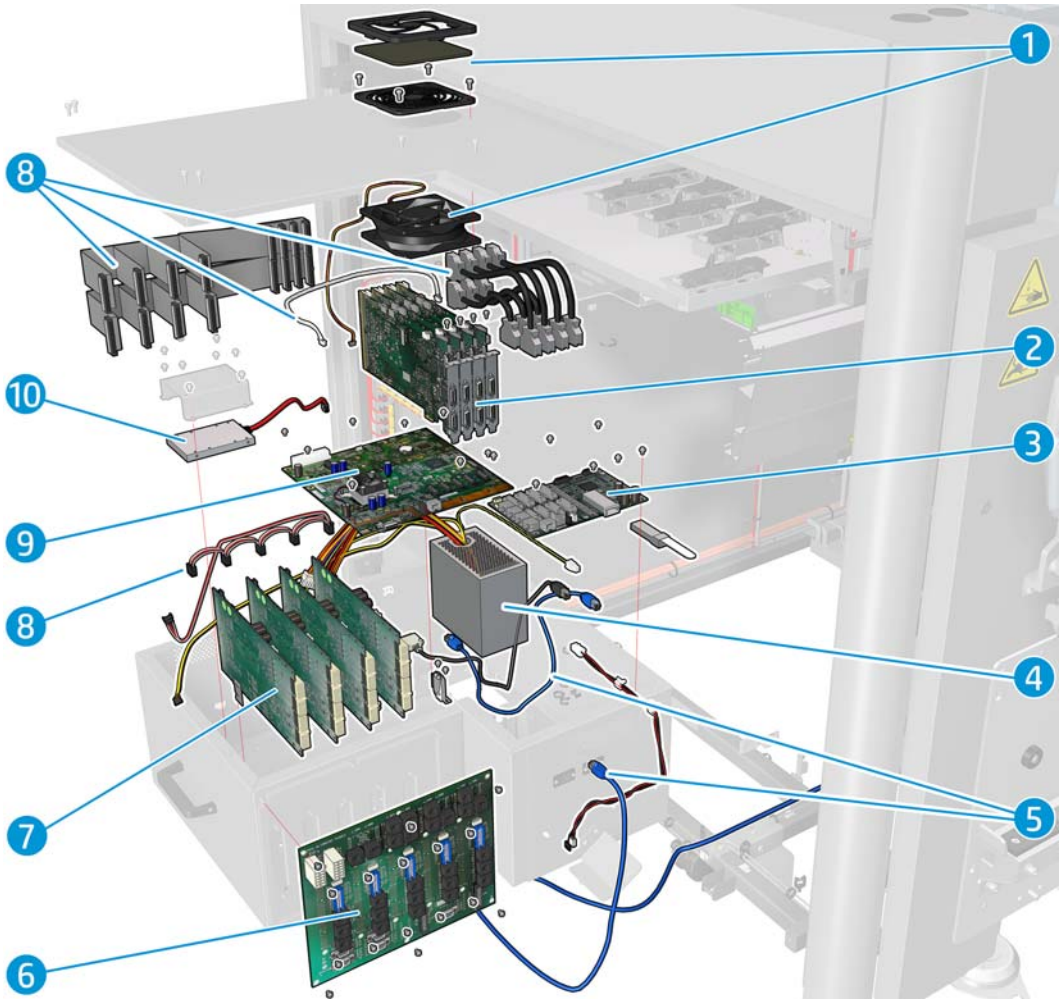
E-cabinet right

	Part number	Description
1	CZ056-67132	E-cabinet terminal block kit on page 575
2	CZ056-67129	E-cabinet safety relay on page 571
3	CZ056-67134	E-cabinet installation kit
4	CZ056-67138	E-cabinet transformer on page 583
5	CZ056-67126	E-cabinet 12V PSU (E-cabinet PSUs 1 to 4 on page 555)
6	CZ056-67123	E-cabinet 36V PSU (E-cabinet PSUs 1 to 4 on page 555)
7	CZ056-67125	E-cabinet 24V PSU (E-cabinet PSUs 1 to 4 on page 555)
8	CZ056-67124	E-cabinet 48V PSU (E-cabinet PSUs 1 to 4 on page 555)
9	CZ056-67202	E-cabinet PCA on page 552
10	CZ056-67136	E-cabinet PCA fuses kit on page 579



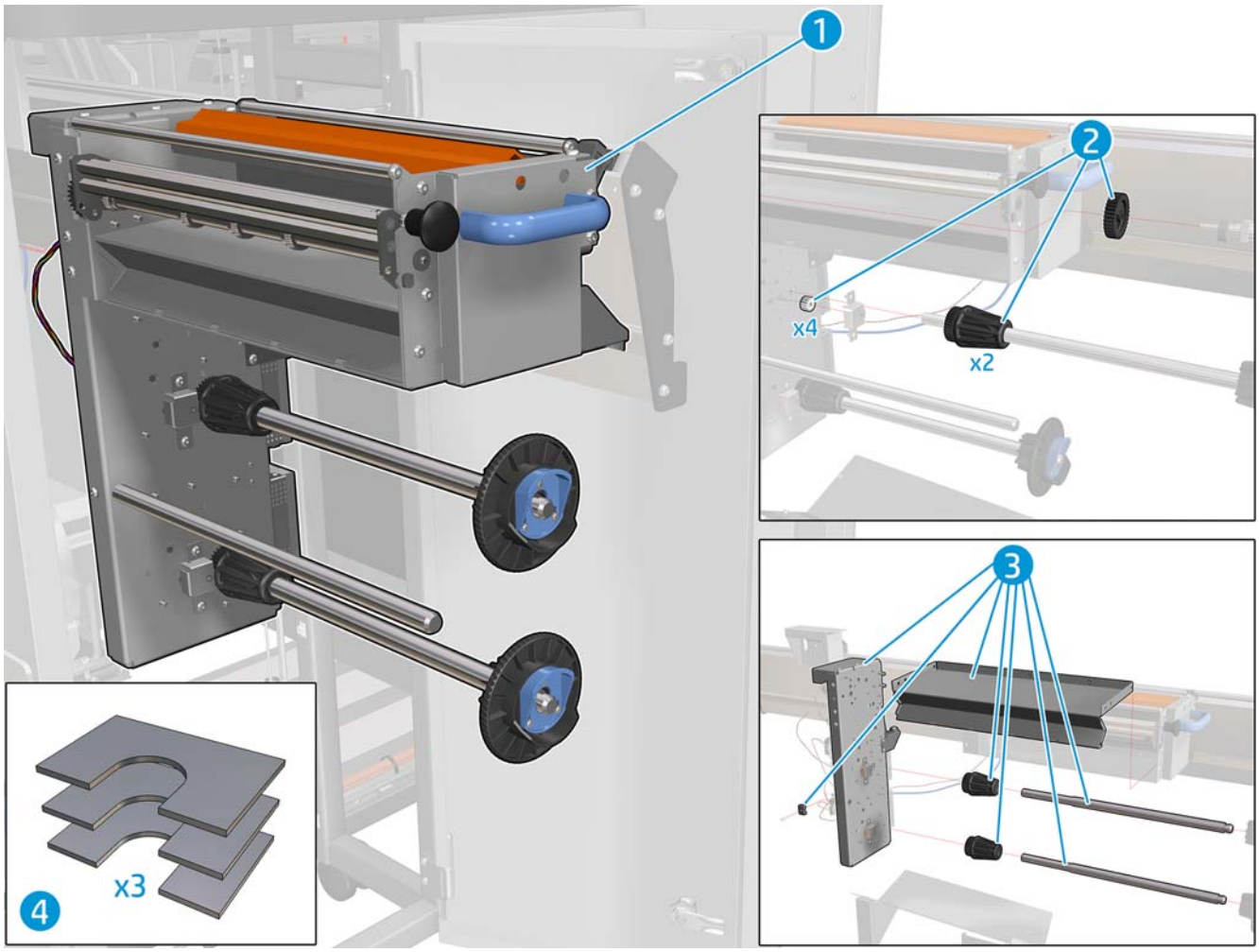
E-box

	Part number	Description
1	CZ056-67386	E-box fan and filter on page 532
2	CZ056-67187	Engine PCA on page 535
3	CZ056-67389	Fiber-optics PCA on page 543
4	CZ056-67085	E-box PSU on page 529
5	CZ056-67266	E-box LAN cable to IPS (CZ056-500041 and CZ056-50222) on page 534, includes the IPS to e-box LAN cable (CZ056-50041) and the LAN to IPS cable (CZ056-50222)
6	CZ056-67189	E-box interconnect PCA on page 541
7	CZ056-67188	Engine adaptor PCA on page 539
8	CZ056-67083	E-box cable kit on page 524, includes engine PCA1 to engine adaptor PCA1 data cable (CZ056-50001) (×2), engine PCA2 to engine adaptor PCA2 data cable (CZ056-50002) (×2), engine PCA3 to engine adaptor PCA3 data cable (CZ056-50133) (×2), engine PCA4 to engine adaptor PCA4 data cable (CZ056-50134) (×2), engine adaptor PCA power cable (CZ056-50003), ATX to fiber-optics PCA power cable (CZ056-50221), CAN B bus cable (CZ056-50252), engine PCA to fiber-optics PCA long cable (CZ056-50220), and e-box interconnect PCA to e-cabinet PCA cable (CZ056-50138)
9	CZ056-67186	Formatter PCA on page 537
10	CZ056-67084	E-box hard disk drive on page 526



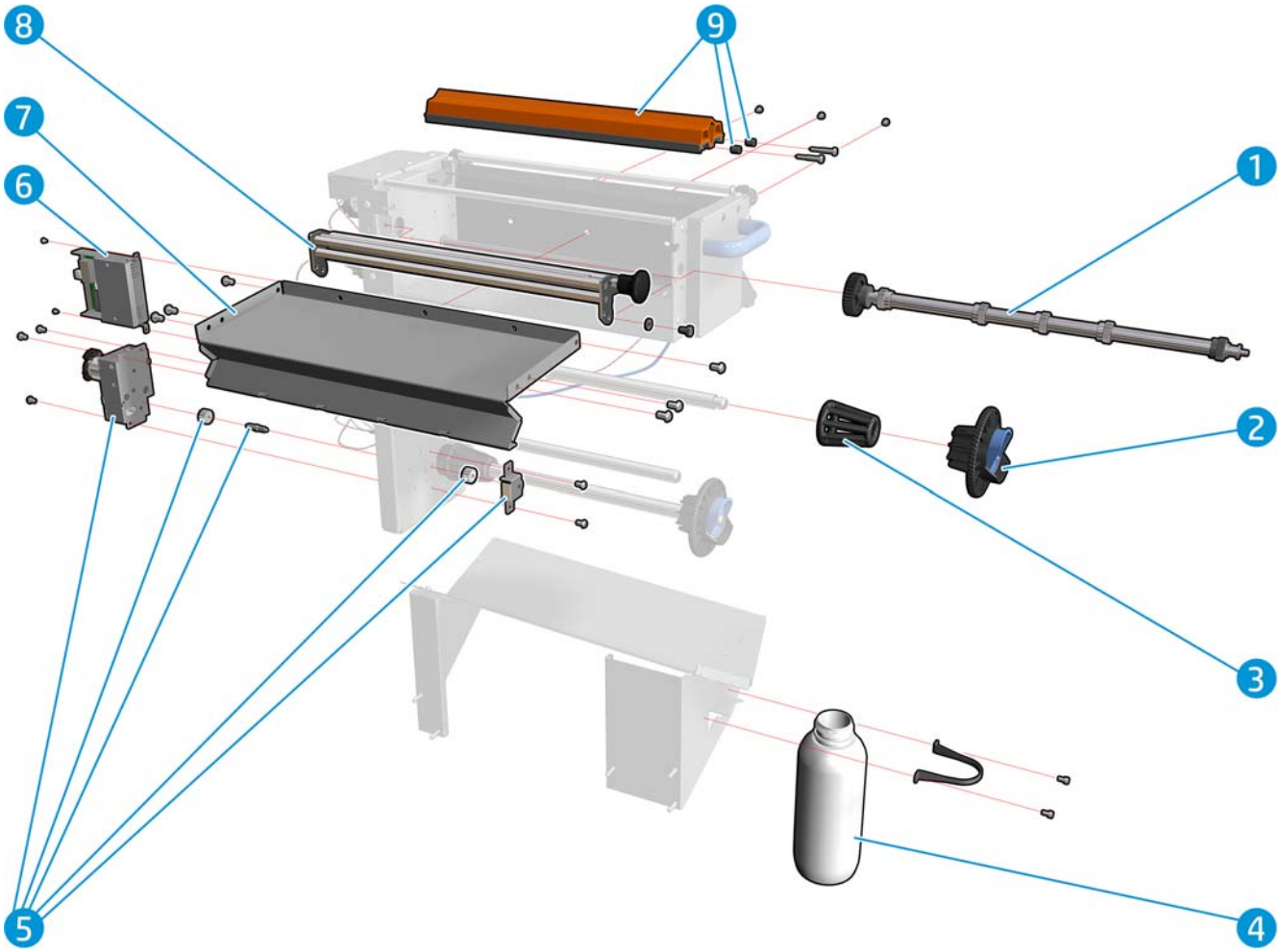
Printhead cleaning system (1)

	Part number	Description
1	CZ056-67052	Printhead cleaning module on page 750, includes shims (to be used only if previous repair failed)
2	CZ056-67236	Printhead cleaning gear kit on page 749, includes gear (×4), web-drive gear, and roll transmission hub (gear and rubber) (×2)
3	CZ056-67235	Printhead cleaning roll axis with structure on page 738, includes the structure baseplate, an output diverter, and two units of both roll axis and transmission hub assembly
4	CZ056-67051	Printhead cleaning shims calibration on page 754, includes 3 units



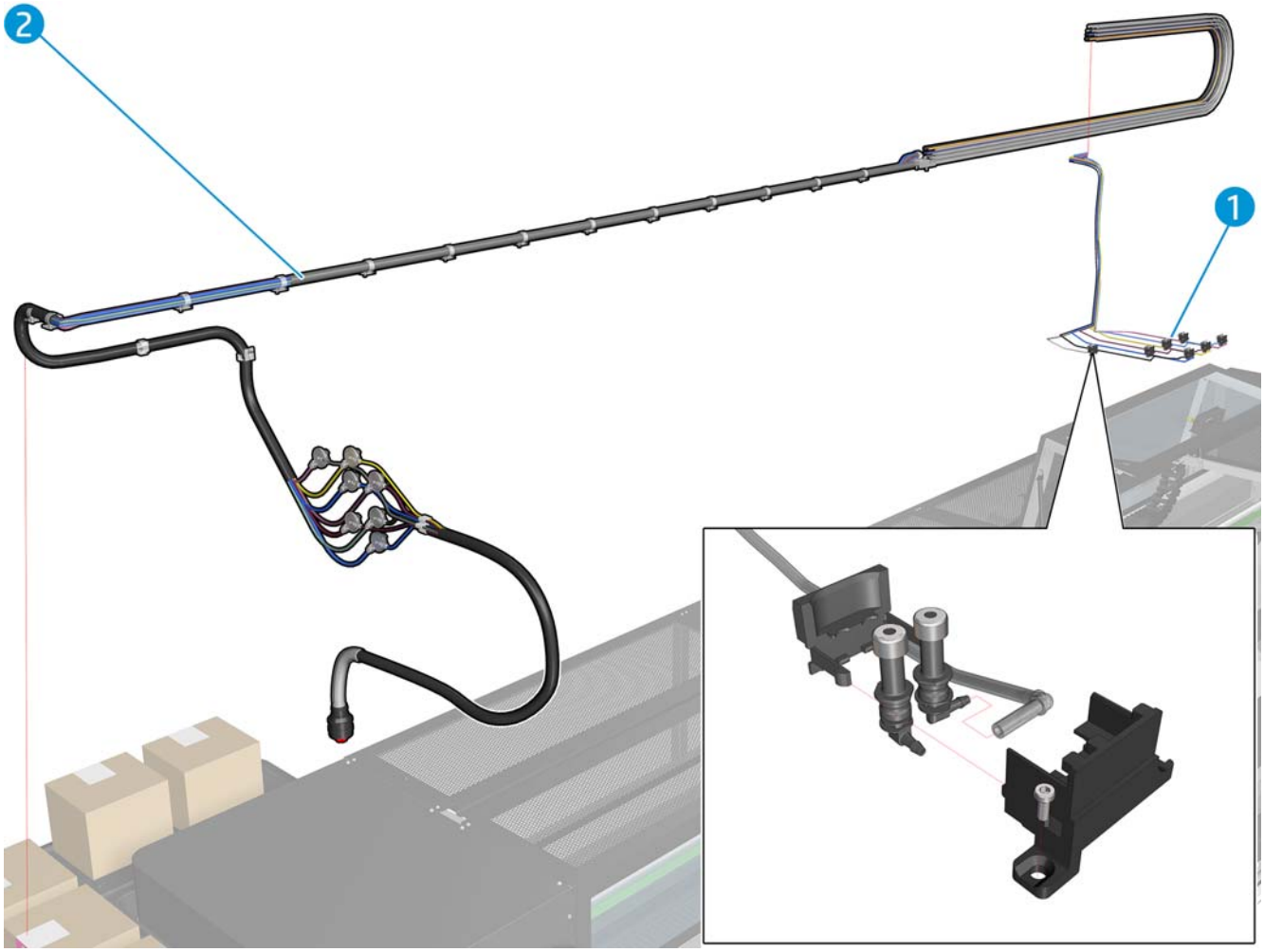
Printhead cleaning system (2)

	Part number	Description
1	CZ056-67048	Printhead cleaning drive roller on page 746
2	CZ056-67050	Printhead cleaning roll free hub (×2)
3	CZ056-67049	Printhead cleaning rubber hub on page 739 (×2)
4	Q6702-60685	Printhead cleaning waste bottle
5	CZ056-67045	Printhead cleaning transmission box on page 735, includes transmission box and gearbox inversor assemblies
6	CZ056-67190	Motor drive PCA on page 752, includes one motor drive PCA assembly and a micci2 termination (CZ056-50028)
7	CZ056-67234	Printhead cleaning central cage top cover on page 747
8	CZ056-67047	Printhead cleaning roll pinch assembly on page 740
9	CZ056-67046	Printhead cleaning blade assembly on page 742
	CZ056-67313	Printhead cleaning cables kit on page 767, includes capping power in T extensor cable (CZ056-50156) (×4), printhead cleaning power in T cable (CZ056-50161), data cable between motor drive PCAs (Q6703-50031) (×3), e-box to printhead cleaning cable (CZ056-50157), e-cabinet to printhead cleaning power cable (CZ056-50076), motor encoder cable (CZ056-50116) (×4), and micci2 termination (CZ056-50028)



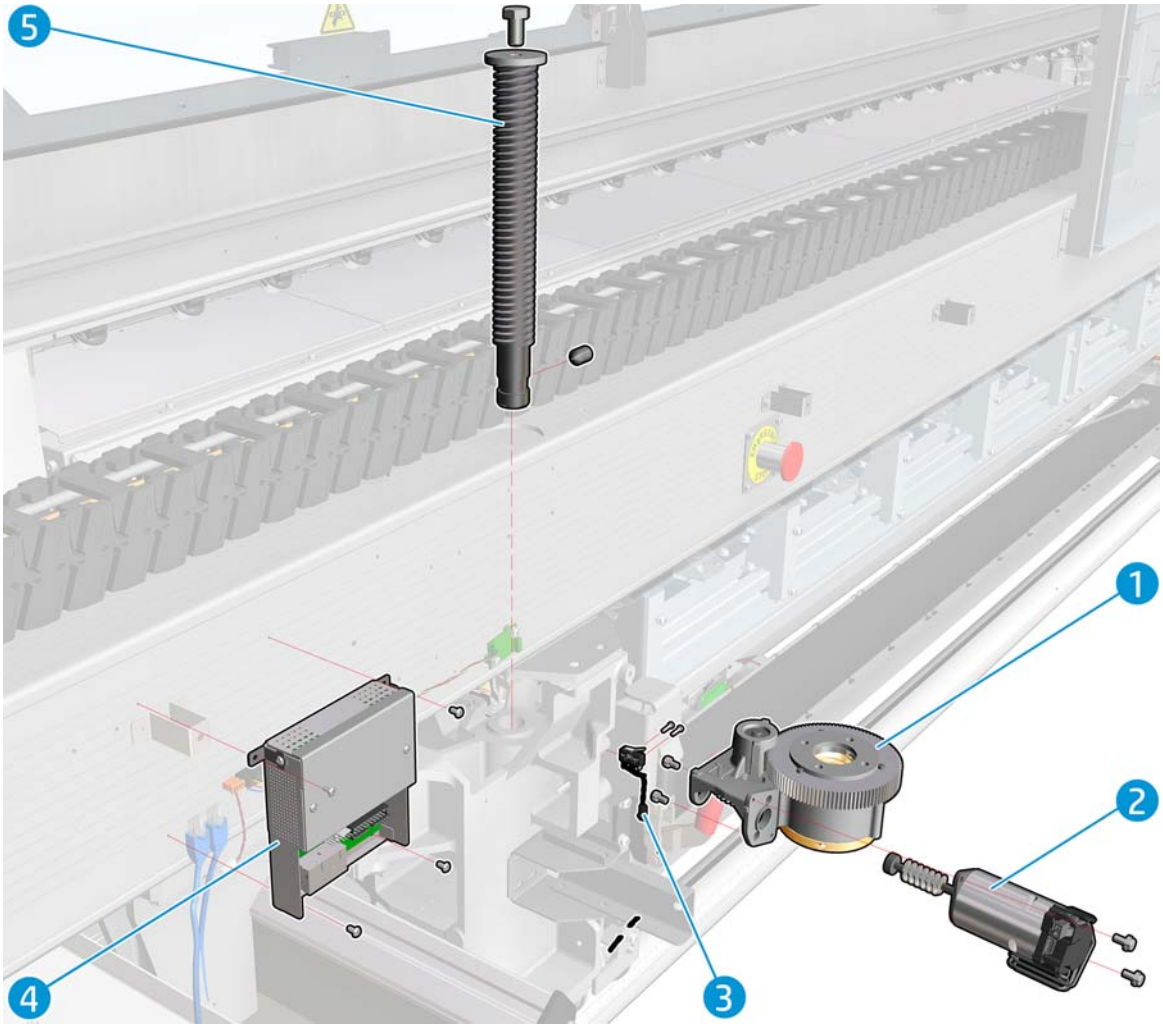
Tube Routing System (TRS)

	Part number	Description
1	CZ056-67298	TRS FI tower assembly on page 869, includes FI tower assemblies (×8), FI holders (×8), and FI covers (×8)
2	CZ056-67315	TRS barnacle kit on page 873, includes barnacle assembly, sleeve, anti-rotation sleeve, TRS ink tube segments, tube cutter and fitting connectors; removal and installation of this service part also requires the materials included in the following kits: tubes repair kit (CZ056-67320), flush kit (Q6702-60679), and purge kit (CZ056-67218)



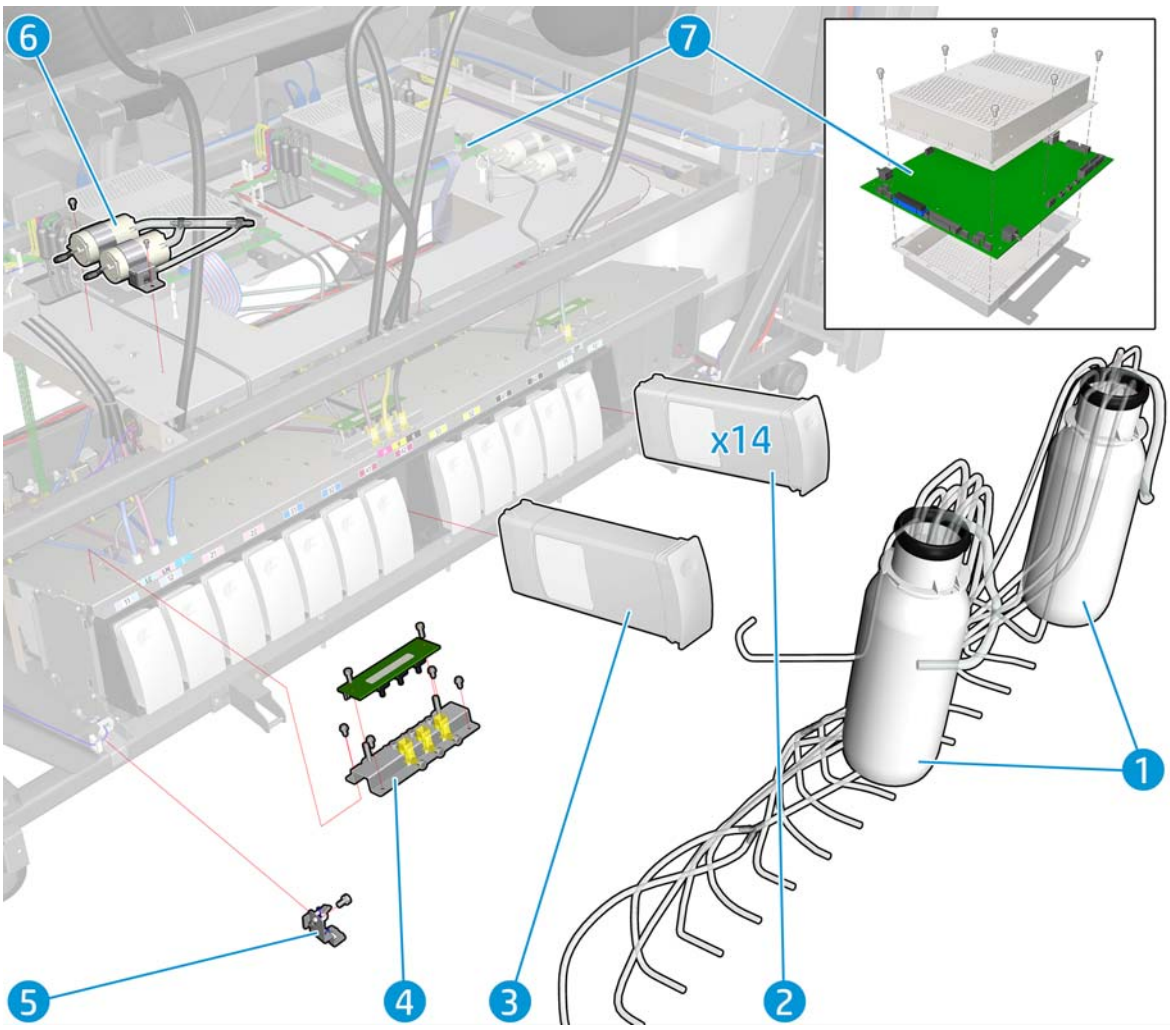
Print to Paper Space (PPS)

	Part number	Description
1	CZ056-67063	PPS front right and rear left assembly on page 717
	CZ056-67064	PPS front left and rear right assembly on page 716
2	Q6702-60487	PPS motor assembly on page 719
3	CZ056-67065	Mechanical switch on page 718
4	CZ056-67190	Motor drive PCA on page 722, includes one motor drive PCA assembly and a micci2 termination (CZ056-50028)
5	CZ056-67066	PPS screw assembly on page 721
	CZ056-67068	PPS cables kit on page 724, includes e-cabinet to PPS power cable (CZ056-50072), PPS power in T cable (CZ056-50151), short PPS data bridge cable (CZ056-50178) (×2), long PPS data bridge cable (CZ056-50177), take-up-reel Luna to PPS cable (CZ056-50052), and micci2 termination (CZ056-50028)
	CZ056-67069	PPS motor cable kit on page 732, includes motor drive PCA to PPS motor cable (CZ056-50035), motor drive PCA to differential encoder PCA cable (CZ056-50146), differential encoder PCA (Q6703-60195), PPS power in T extensor cable (CZ056-50149), mechanical switch—short cable (CZ056-50169), and differential encoder PCA to encoder cable (CZ056-50046)
	CZ056-67398	XY guide assembly on page 726, includes vertical XY guide assembly, vertical Y guide assembly, XY column guide (×2), pan top, machine grease and oil kit, and taptite screws (×6)



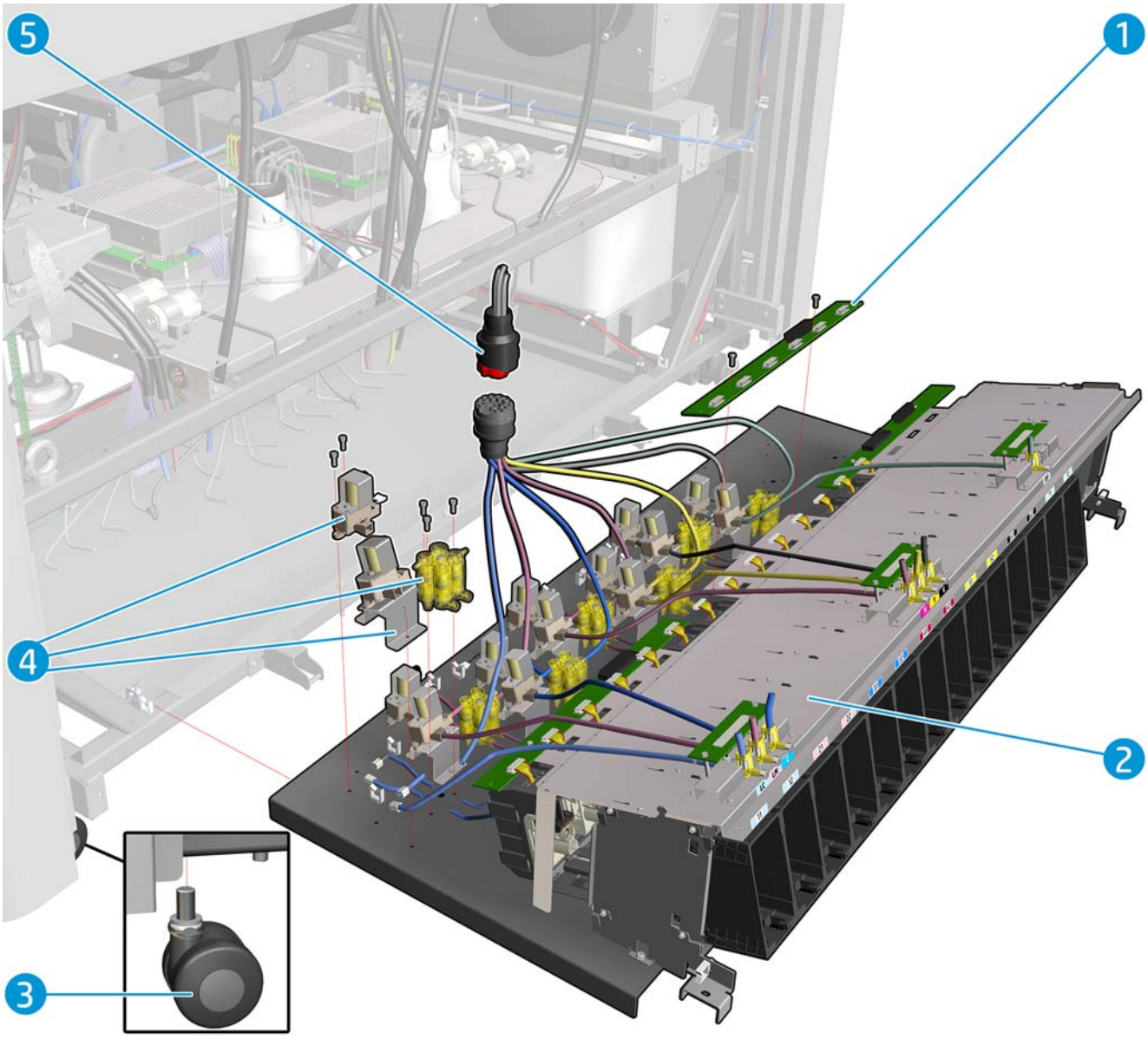
Ink system module (1)

	Part number	Description
1	CZ056-67077	ISM air circuit on page 672, includes air bottle assemblies (×2), air bottle ties (×2), and air tube segments and fittings
2	CZ056-67074	ISM intermediate tank set on page 672 (14 units)
3	CZ056-67073	ISM intermediate tank on page 670
4	CZ056-67370	ISM ink pressure sensor mount assembly on page 665; removal and installation of this service part also requires the following kits: tubes repair kit (CZ056-67320), flush kit (Q6702-60679), and purge kit (CZ056-67218)
5	CZ056-67385	ISM ink leakage detector on page 686
6	CZ056-67079	ISM pump and relief valve on page 679, includes air tube segments, air pump supports (×2), air pump assemblies (×2), relief valve assembly, fittings, tapping screws (×4)
7	CZ056-67198	ISS PCA on page 683
	CZ056-67075	ISM cables kit on page 681, includes ISS daisy chain cable (CZ056-50250), ISS termination cable (CZ056-50217), ISM actuators cable 3 (CZ056-50182), IDS I2C data cable (CZ056-50053), 24V IDS cable (CZ056-50071), intermediate tanks cable (CZ056-50031), ISM actuators light cable (CZ056-50030), ISM actuators cable (CZ056-50029), ISM LAN cable split to air tray PCA (CZ056-50263), and ISM power cable split to air tray PCA (CZ056-50262)
	CZ056-67070	ISM pressure sensor assembly on page 659



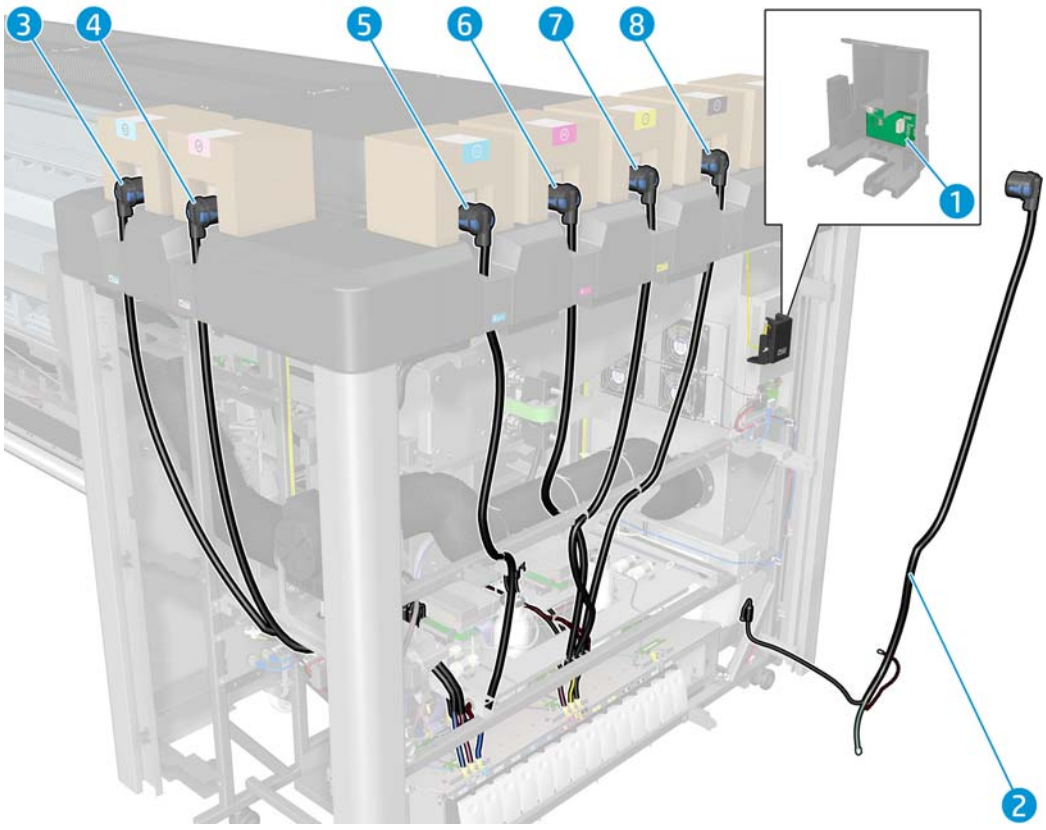
Ink system module (2)

	Part number	Description
1	CZ056-67369	ISS intermediate tanks interconnect PCA on page 686
2	CZ056-67078	ISM ink circuit module on page 675; removal and installation of this service part also requires the following kits: tubes repair kit (CZ056-67320), flush kit (Q6702-60679), and purge kit (CZ056-67218)
3	CZ056-67307	ISM wheel on page 669
4	CZ056-67072	ISM repair kit on page 666, includes electro-valves bridge, ink electro-valve (×2), 4-way electro-valve assembly, ink tube segments, fittings (×4), a tube cutter, gloves (medium/large), and purge cleaning cloth (×2); removal and installation of this service part also requires the following kits: flush kit (Q6702-60679) and purge kit (CZ056-67218)
5	CZ056-67308	ISM quick connector M&F assembly on page 669; removal and installation of this service part also requires the following kits: tubes repair kit (CZ056-67320), flush kit (Q6702-60679), and purge kit (CZ056-67218)



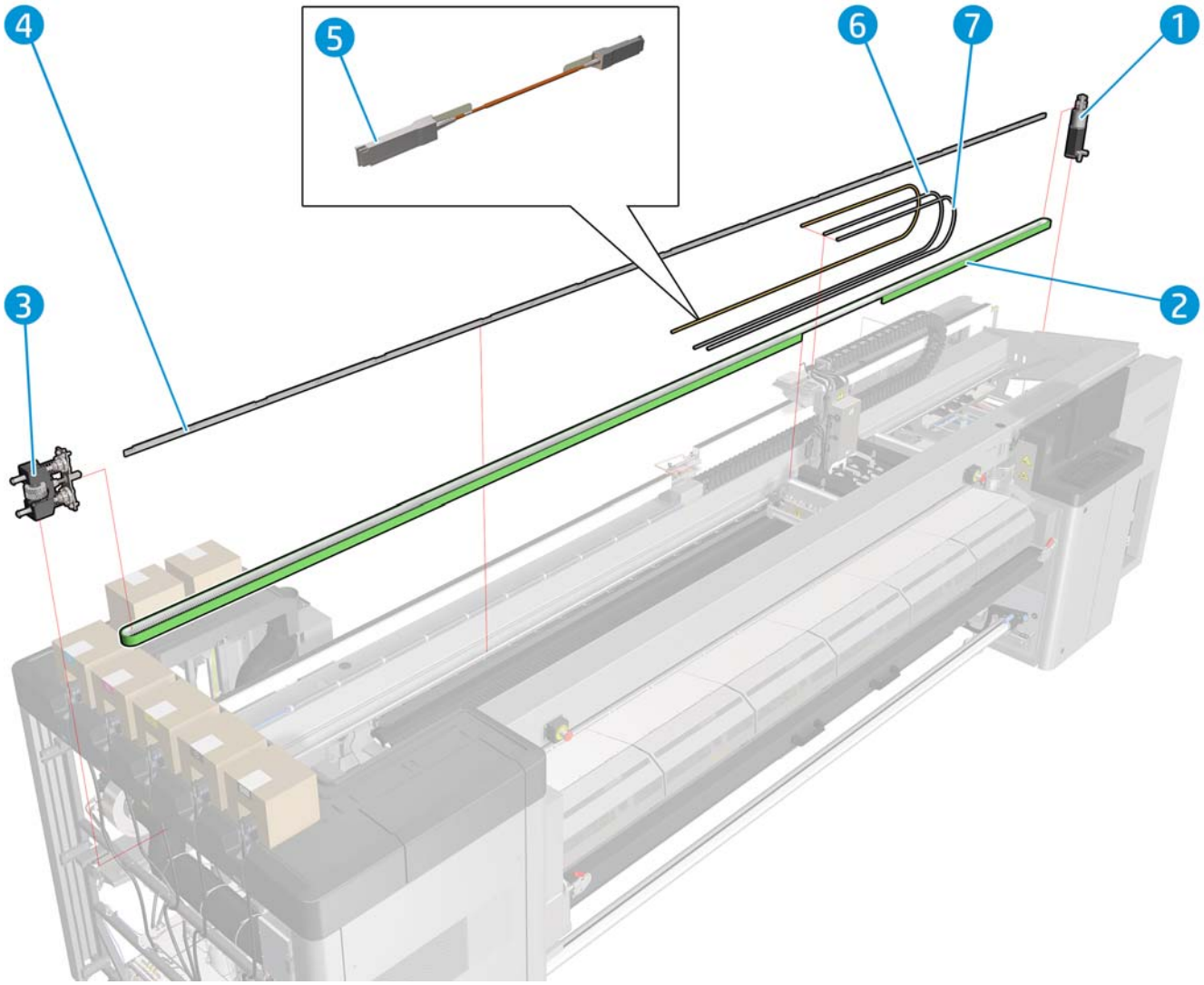
Ink system module (3)

	Part number	Description
1	CZ056-67387	Ink cartridges PCA on page 684; removal and installation of this service part also requires the following kits: tubes repair kit (CZ056-67320), flush kit (Q6702-60679), and purge kit (CZ056-67218)
2	CZ056-67305	ISM OP cartridge connector with tube (ISM cartridge connector with tube (K, Y, C, M, LC, LM, or PT ink) on page 660); removal and installation of this service part also requires the following kits: tubes repair kit (CZ056-67320), flush kit (Q6702-60679), and purge kit (CZ056-67218)
3	CZ056-67303	ISM LC cartridge connector with tube (ISM cartridge connector with tube (K, Y, C, M, LC, LM, or PT ink) on page 660); removal and installation of this service part also requires the following kits: tubes repair kit (CZ056-67320), flush kit (Q6702-60679), and purge kit (CZ056-67218)
4	CZ056-67304	ISM LM cartridge connector with tube (ISM cartridge connector with tube (K, Y, C, M, LC, LM, or PT ink) on page 660); removal and installation of this service part also requires the following kits: tubes repair kit (CZ056-67320), flush kit (Q6702-60679), and purge kit (CZ056-67218)
5	CZ056-67301	ISM C cartridge connector with tube (ISM cartridge connector with tube (K, Y, C, M, LC, LM, or PT ink) on page 660); removal and installation of this service part also requires the following kits: tubes repair kit (CZ056-67320), flush kit (Q6702-60679), and purge kit (CZ056-67218)
6	CZ056-67302	ISM M cartridge connector with tube (ISM cartridge connector with tube (K, Y, C, M, LC, LM, or PT ink) on page 660); removal and installation of this service part also requires the following kits: tubes repair kit (CZ056-67320), flush kit (Q6702-60679), and purge kit (CZ056-67218)
7	CZ056-67300	ISM Y cartridge connector with tube (ISM cartridge connector with tube (K, Y, C, M, LC, LM, or PT ink) on page 660); removal and installation of this service part also requires the following kits: tubes repair kit (CZ056-67320), flush kit (Q6702-60679), and purge kit (CZ056-67218)
8	CZ056-67299	ISM K cartridge connector with tube (ISM cartridge connector with tube (K, Y, C, M, LC, LM, or PT ink) on page 660); removal and installation of this service part also requires the following kits: tubes repair kit (CZ056-67320), flush kit (Q6702-60679), and purge kit (CZ056-67218)



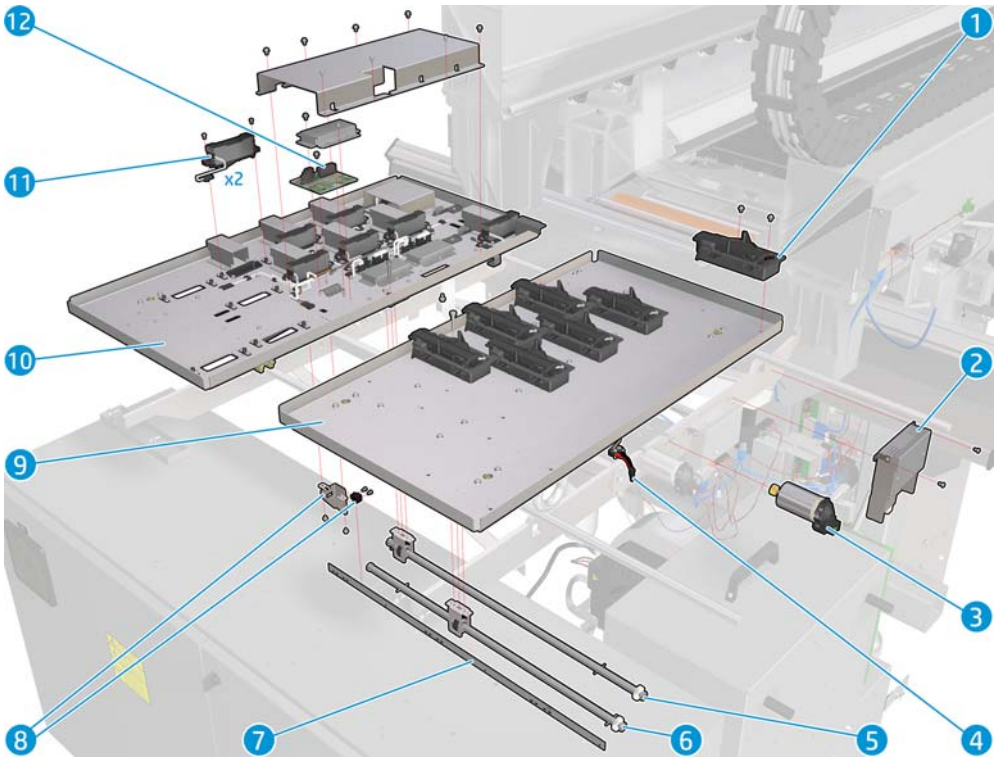
Impelling

	Part number	Description
1	CZ056-67154	Impelling motor on page 593
2	CZ056-67159	Impelling carriage belt assembly on page 599
3	CZ056-67160	Impelling tensioner assembly on page 601
4	CZ056-67157	Impelling encoder strip on page 596
5	CZ056-67366	Impelling fiber-optics trailing cable (CZ056-50255) on page 592
6	CZ056-67149	Impelling PE cable (CZ056-50150) on page 591
7	CZ056-67150	Impelling drying data cable (CZ056-50044) on page 592
	CZ056-67145	Impelling drying AC cable (CZ056-50065) on page 589
	CZ056-67146	Impelling 42 V power cable (CZ056-50063) on page 590
	CZ056-67148	Impelling 12 V power cable (CZ056-50066) on page 590
	CZ056-67368	SAX motor data cable (CZ056-50045) on page 603
	CZ056-67367	SAX motor power cables kit on page 602, includes CZ056-50130, CZ056-50131, and CZ056-50142



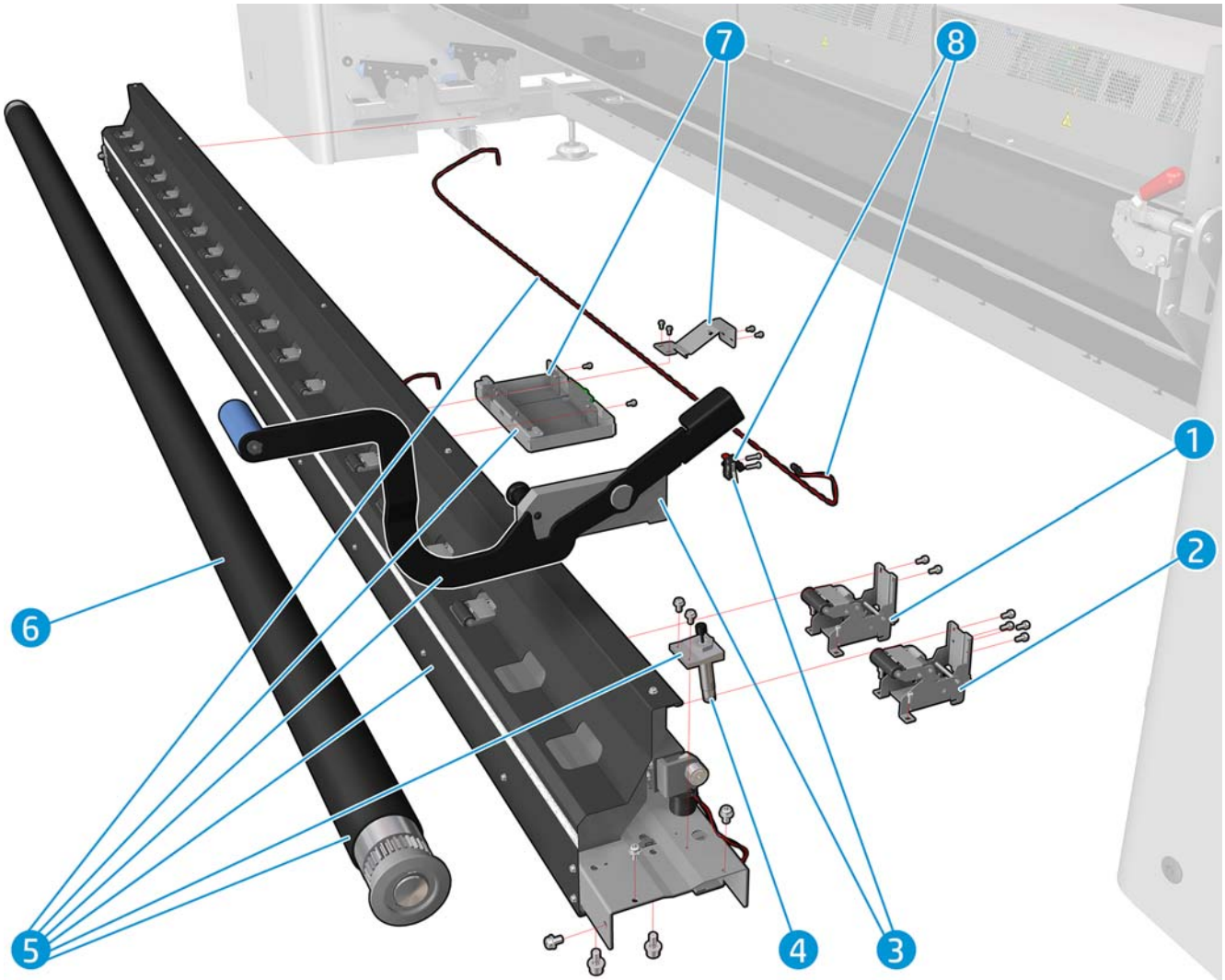
Service station

	Part number	Description
1	CZ056-67036	Caps kit on page 776, includes seven capping assemblies
2	CZ056-67190	Motor drive PCA on page 788, includes one motor drive PCA assembly and a micci2 termination (CZ056-50028)
3	CZ056-67031	Motor kit on page 770
4	CZ056-67033	Switch on page 771
5	CZ056-67039	Drop-detector transmission assembly on page 782
6	CZ056-67038	Capping transmission assembly on page 781
7	CZ056-67035	Encoder strip on page 773
8	CZ056-67034	Encoder sensor and support on page 774
9	CZ056-67040	Capping module on page 782
10	CZ056-67041	Drop-detector module on page 783
11	CZ056-67037	Drop-detector kit on page 779, includes two drop-detector assemblies
12	CZ056-67388	Drop-detector Mux PCA on page 784
	CZ056-67043	Drop-detector cable kit on page 790, includes drop-detector short extensor cable (CZ056-50175), Drop-detector extensor cable (CZ056-50069), Drop-detector long extensor cable (CZ056-50176), Drop-detector Mux PCA cable (CZ056-50112) and Drop-detector daisy chain cable (CZ056-50021)
	CZ056-67312	Cable kit on page 792, includes capping power in T extensor cable (CZ056-50156) (x2), capping power in T cable (CZ056-50160), data cable between motor drive PCAs (Q6703-50031), micci2 termination (CZ056-50028), printer capping station motor drive PCA cable (CZ056-50054), service station power cable (CZ056-50077), and motor encoder cable (CZ056-50116)
	CZ056-67423	Service station retainers



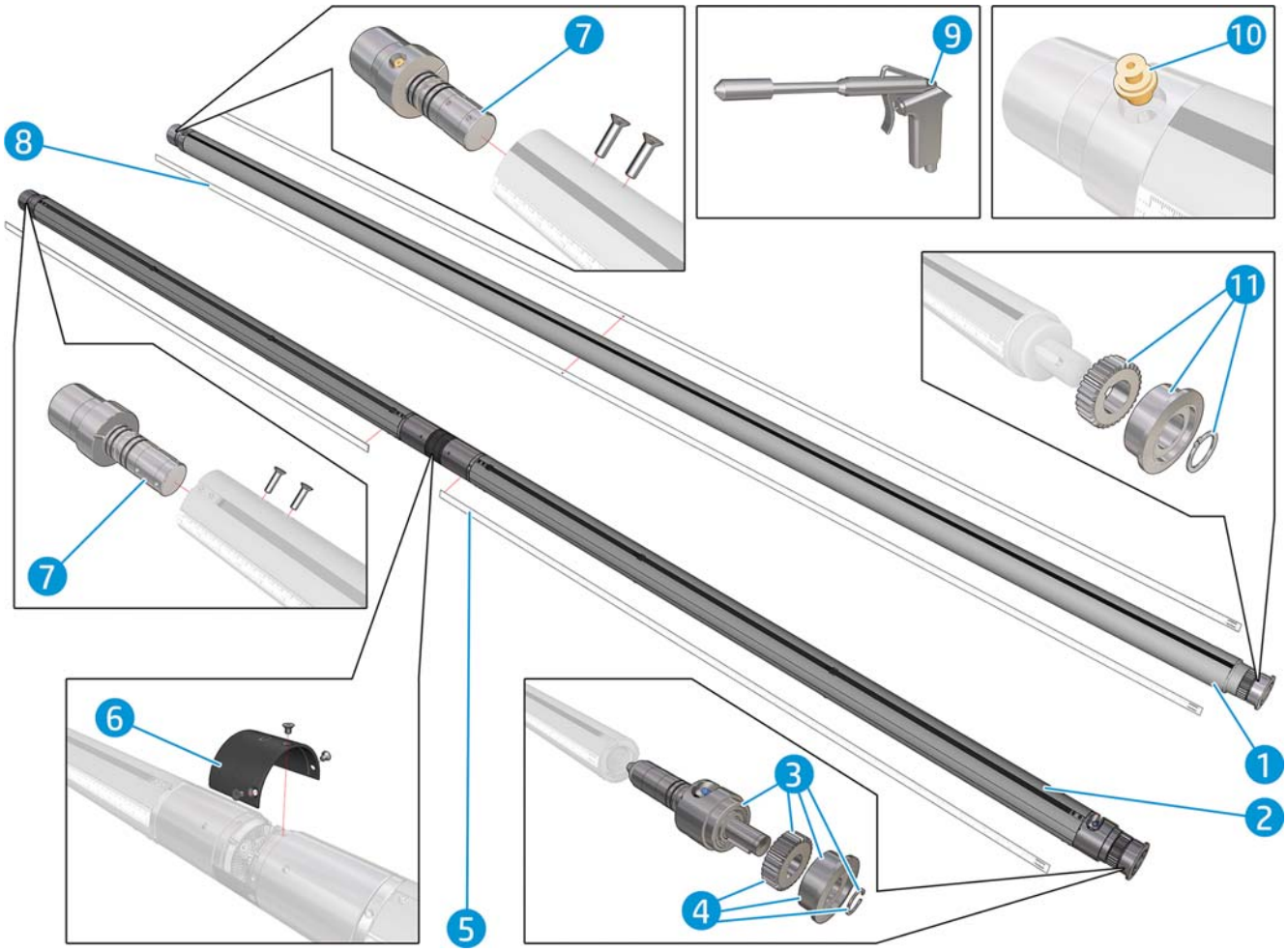
Substrate path (1)

	Part number	Description
1	CZ056-67178	R2FF pinch hinge inner on page 855
2	CZ056-67176	R2FF pinch hinge outer on page 849
3	CZ056-67173	R2FF pinch lever kit on page 848
4	CZ056-67174	R2FF damper on page 849
5	CZ056-67172	R2FF pinch mechanical assembly on page 846
6	CZ056-67180	R2FF roller on page 860
7	CZ056-67224	R2FF take-up-reel assembly on page 858, includes the take-up reel assembly with its support, RJ45 jumper (CZ056-50028), e-box to take-up reel PCA cable (CZ056-50163), take-up reel power cable (CZ056-50180), take-up reel sensor in T cable (CZ056-50170), take-up reel sensor single cable (CZ056-50203), and take-up reel long sensor cable (CZ056-50210)
8	CZ056-67175	R2FF switch cable on page 849, includes R2FF switch cable assembly
	CZ056-67190	Motor drive PCA on page 859



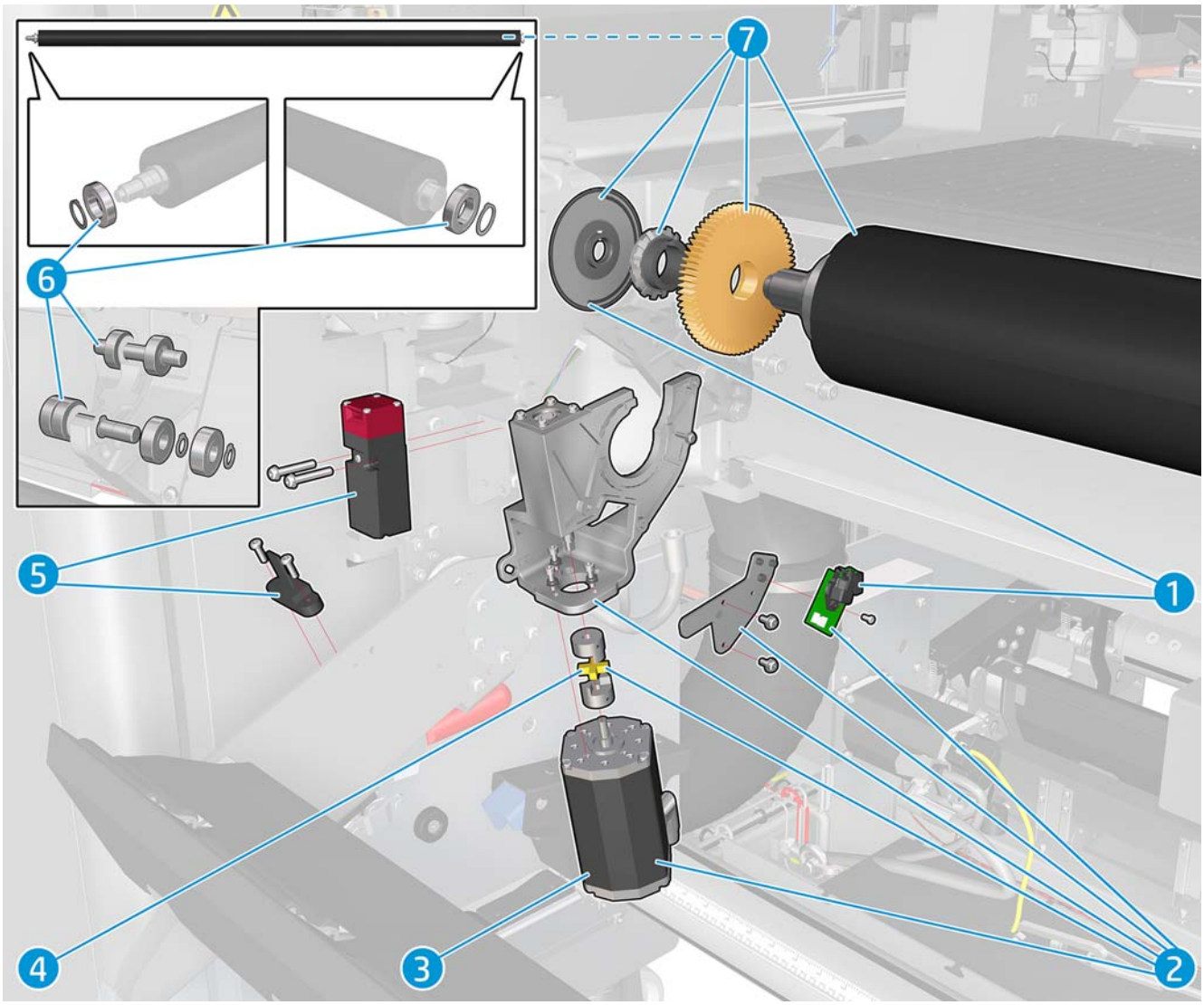
Substrate path (2)

	Part number	Description
1	CZ056-67237	Single-roll spindle
2	CZ056-67240	Dual-roll spindle
3	CZ056-67242	Dual-roll gear and end-cap with lock
4	CZ056-67241	Dual-roll gear and end-cap
5	CZ056-67243	Dual-roll spindle rulers
6	CZ056-67244	Dual-roll spindle differential cover
7	CZ056-67238	Spindle end-cap left
8	CZ056-67239	Single-roll spindle ruler
9	Q6702-60464	Pneumatic gun
10	Q6702-67025	Spindle air valve on page 867
11	Q6702-60462	Spindle gear and end-cap set



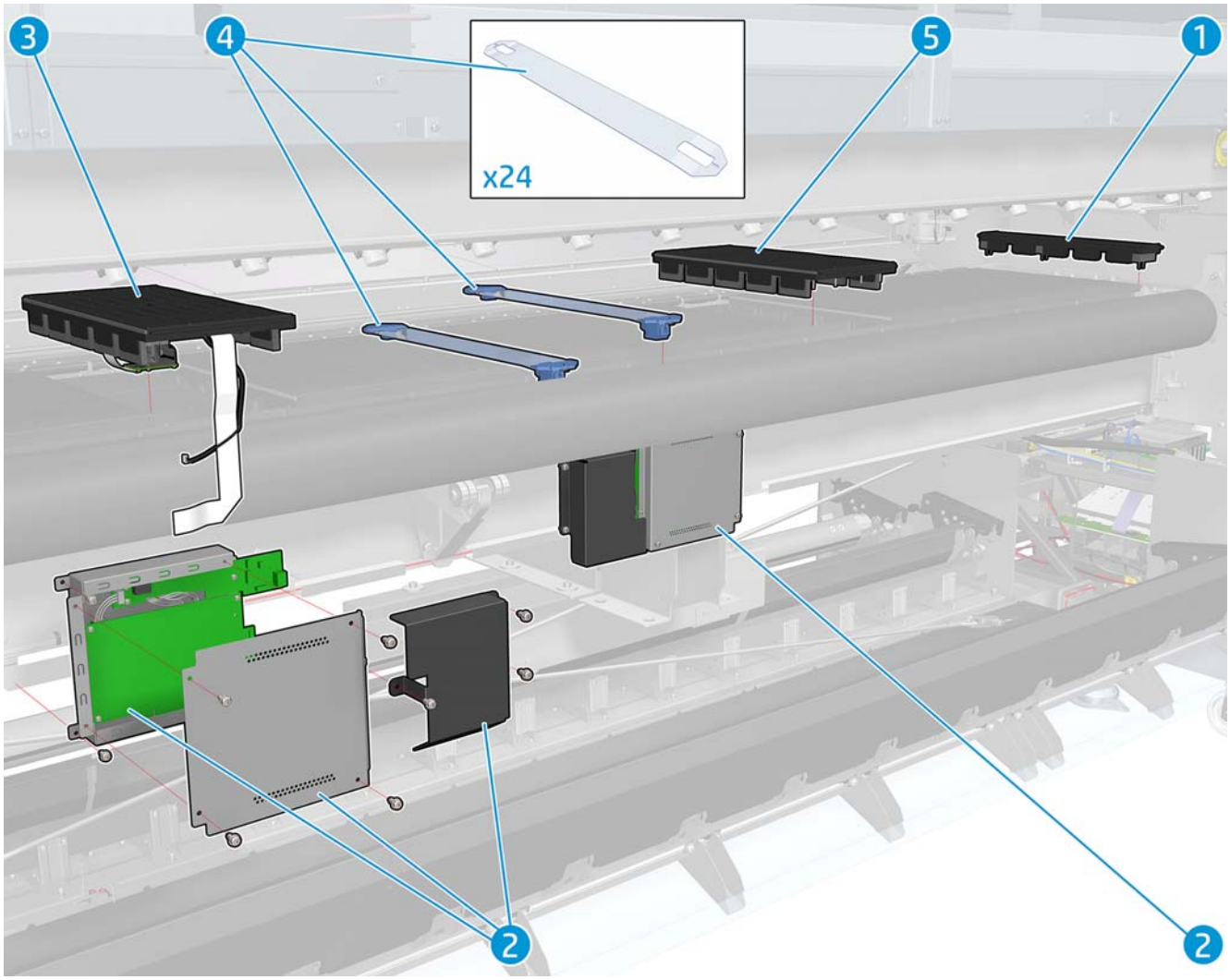
Substrate path (3)

	Part number	Description
1	CZ056-67374	Drive roller encoder disc and PCA on page 814
2	CZ056-67228	Substrate drive roller transmission assembly on page 817
3	CZ056-67269	MA motor on page 811
4	Q6702-60478	Drive roller motor coupling on page 818
5	CZ056-67405	Interlock on page 865, includes one interlock switch and a set of interlock cables
6	Q6702-60477	Drive roller support bearings on page 820, includes both the end and the central drive roller support bearings
	CZ056-67271	MA power cable (CZ056-50118) on page 813
	CZ056-67094	MA motor encoder cable (CZ056-50036) on page 813
	CZ056-67270	MA data cable (CZ056-50236) on page 813



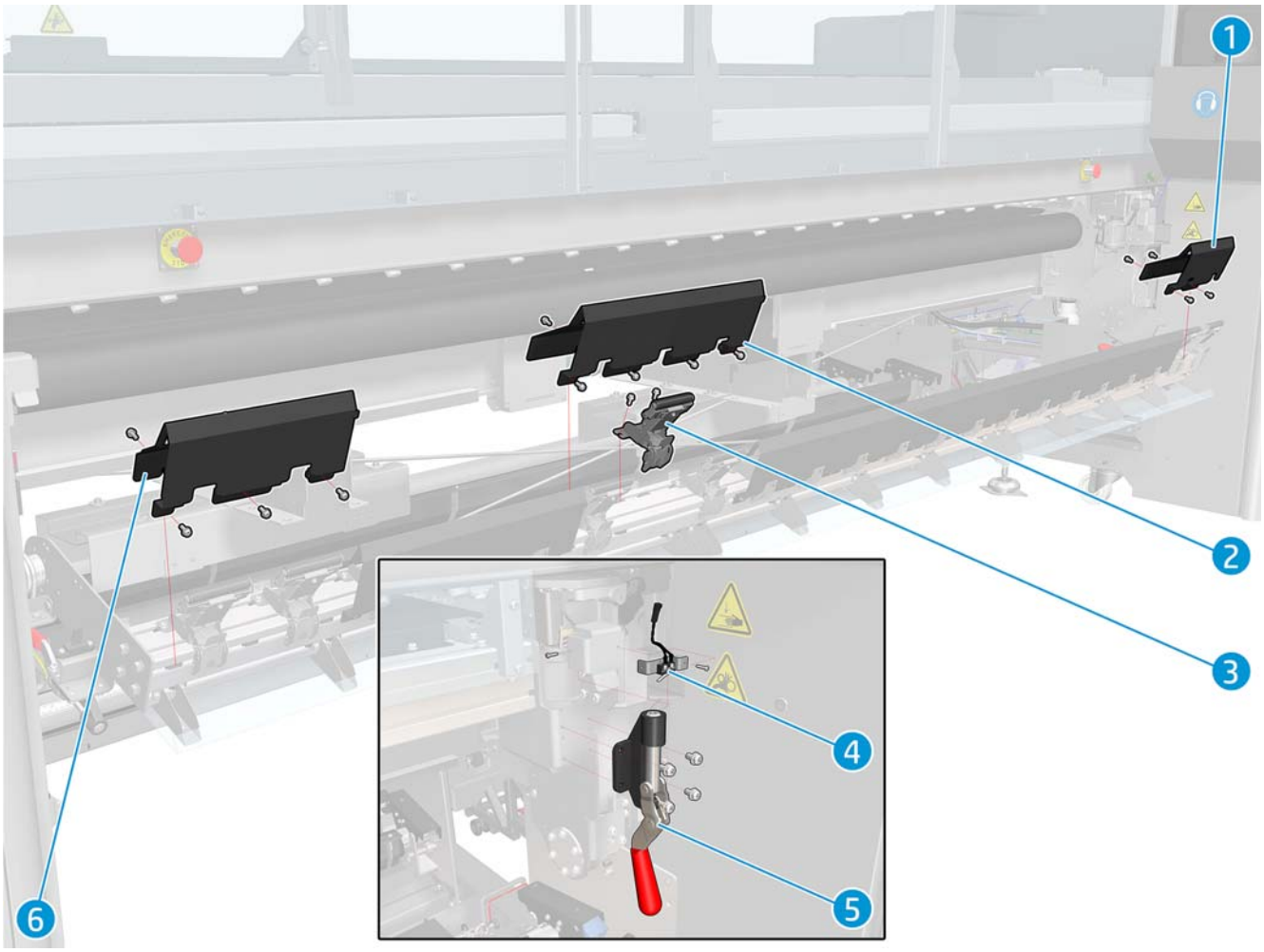
Substrate path (4)

	Part number	Description
1	CZ056-67185	Platen extra assembly on page 810
2	CZ056-67321	OMAS controller PCA and vacuum control PCA on page 803
3	CZ056-67111	OMAS platen assembly on page 806
4	F0D27A	HP Latex 3000 Edge Holder Kit, includes 4 substrate edge holder assemblies and 24 substrate edge holder strips
5	CZ056-67184	Platen assembly on page 808
	CZ056-67316	OMAS and vacuum cables kit on page 801, includes vacuum supply PCA cable (CZ056-50057), vacuum pump control cable (CZ056-50050), vacuum control to OMAS encoder cable (CZ056-50038), vacuum control to OMAS CAN cable (CZ056-50039), vacuum control to OMAS power cable (CZ056-50040), and OMAS controller to sensor cable (CZ056-50202)



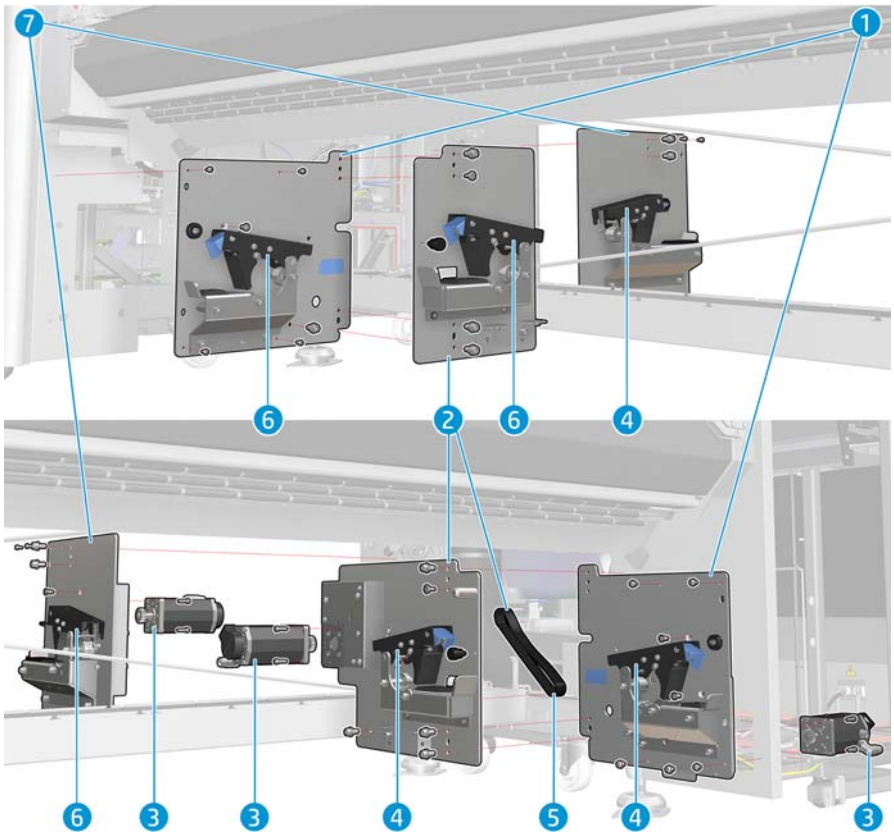
Substrate path (5)

	Part number	Description
1	CZ056-67231	Pinch front cover right on page 867
2	CZ056-67230	Pinch front cover on page 866
3	CZ056-67097	Pinch assembly on page 864
4	CZ056-67318	Pinch switch assembly on page 865, includes one pinch sensor cable (CZ056-50127) and one mechanical switch—short cable (CZ056-50169)
5	CZ056-67098	Pinch clamp on page 865
6	CZ056-67232	Pinch front cover left on page 867



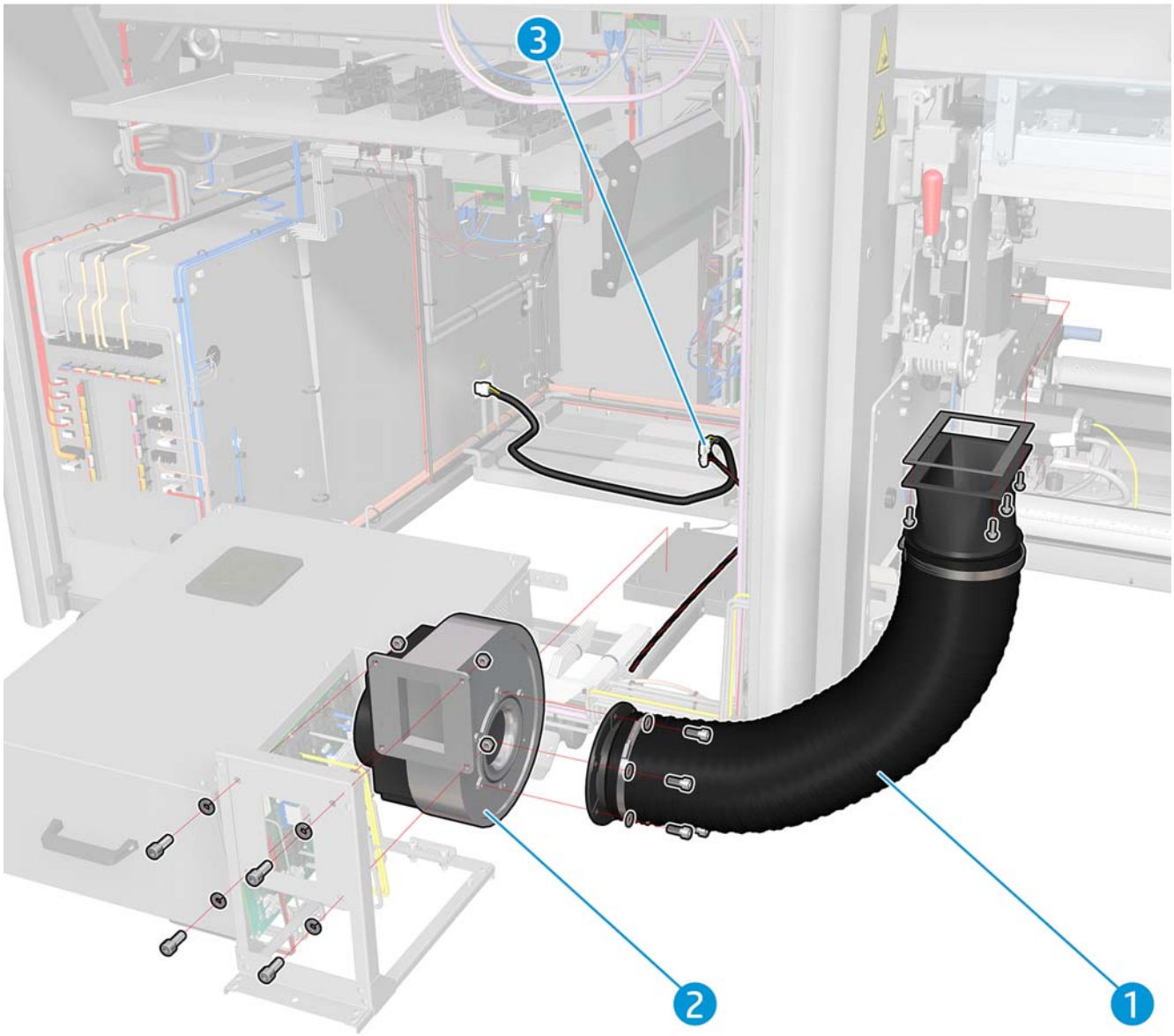
Substrate path (6)

	Part number	Description
1	CZ056-67415	MO support spindle plate (MO left support spindle plate on page 838, MO right support spindle plate on page 841)
2	CZ056-67177	R2FF side plates on page 851
3	CZ056-67272	MI motor on page 822, MO motor on page 824, or MF motor on page 825
4	Q6702-60469	Spindle latch type B on page 834
5	Q6703-67058	Roll-to-floor timing belt on page 856
6	Q6702-60468	Spindle latch type A on page 829
7	CZ056-67414	MI support spindle plate (MI left support spindle plate on page 827, MI right support spindle plate on page 828)
	CZ056-67281	MF encoder cable (CZ056-50060) on page 846
	CZ056-67280	MF data cable (CZ056-50048) on page 846
	CZ056-67279	MF power cable kit (CZ056-50229, CZ056-50130, CZ056-50230) on page 845
	CZ056-67278	MO encoder cable (CZ056-50059) on page 837
	CZ056-67277	MO data cable (CZ056-50237) on page 837
	CZ056-67276	MO power cable kit (CZ056-50227, CZ056-50130, CZ056-50228) on page 837
	CZ056-67275	MI encoder cable (CZ056-50058) on page 826
	CZ056-67274	MI data cable (CZ056-50046) on page 826
	CZ056-67273	MI power cable kit (CZ056-50225, CZ056-50130, CZ056-50226) on page 826



Substrate path (7)

	Part number	Description
1	CZ056-67107	Vacuum pipe on page 797
2	CZ056-67105	Vacuum pump on page 795
3	CZ056-67109	Vacuum pump cable kit on page 799, includes vacuum control PCA to vacuum pump cable (CZ056-50037) and vacuum pump power cable (CZ056-50114)



Substrate path (8)

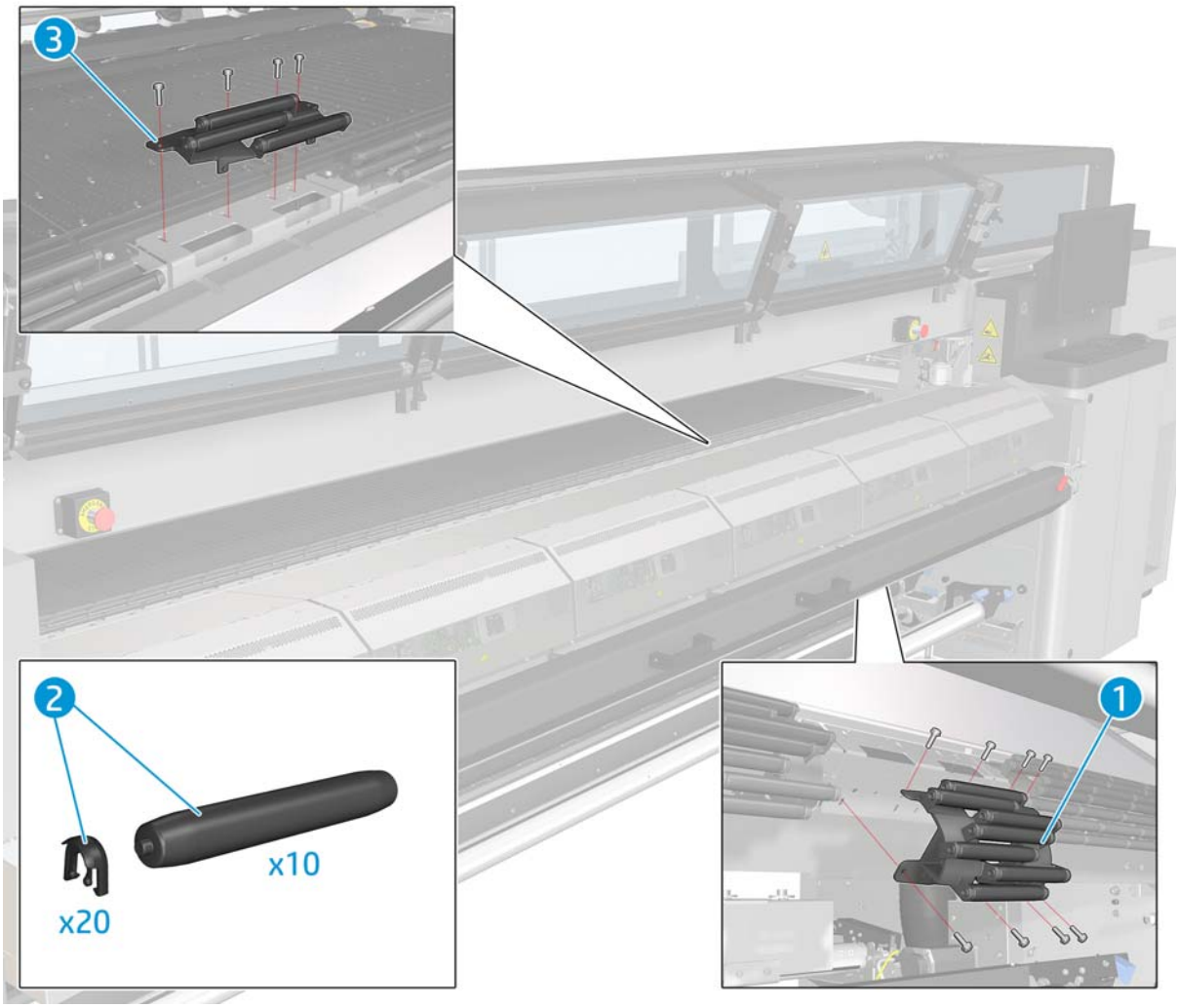
Design 1

	Part number	Description
1	CZ056-67401	Diverter bottom module on page 862
2	CZ056-67183	Diverter wheel on page 863

Because of the necessary removal of both the entire bottom diverter structure and the bottom plate assembly, the diverter top module for design 1 does not include its corresponding service part. Therefore, you must follow the upgrade instructions for both the diverter and the bottom module assemblies. If you have an affected top diverter module that belongs to design 1, see the diverter and bottom plate upgrade kit.

Design 2

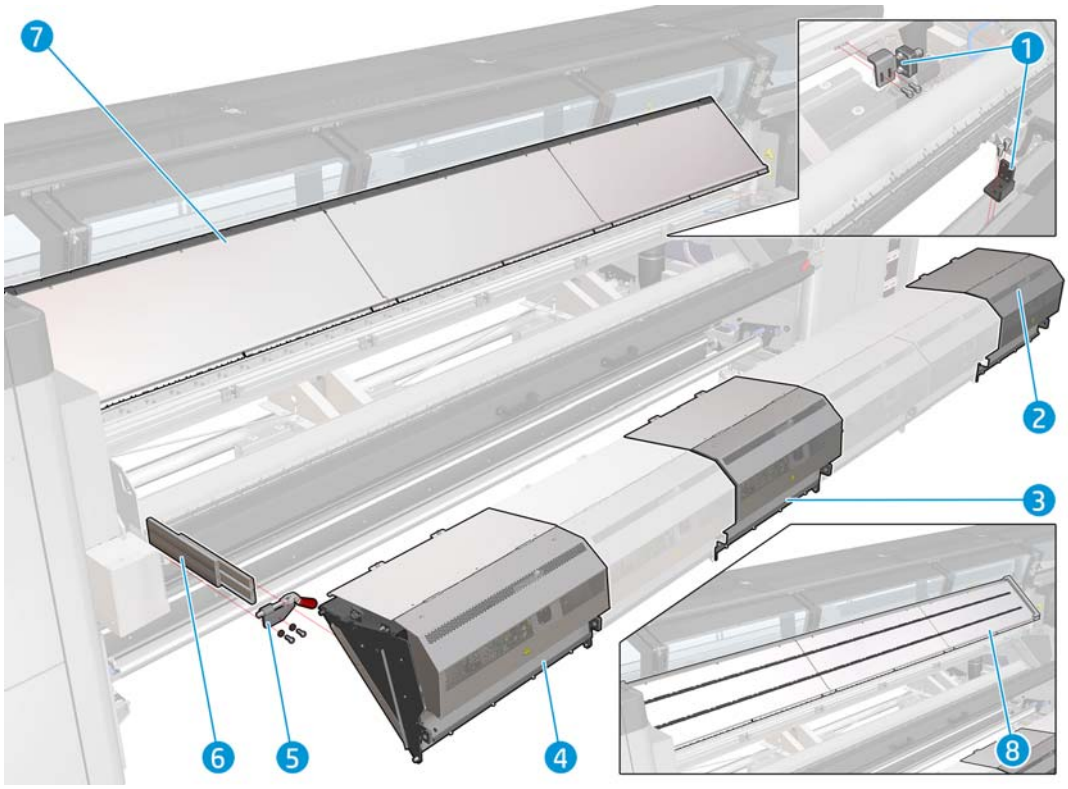
	Part number	Description
1	CZ056-67428	Diverter bottom module on page 862
3	CZ056-67429	Diverter top module on page 861



Curing (1)

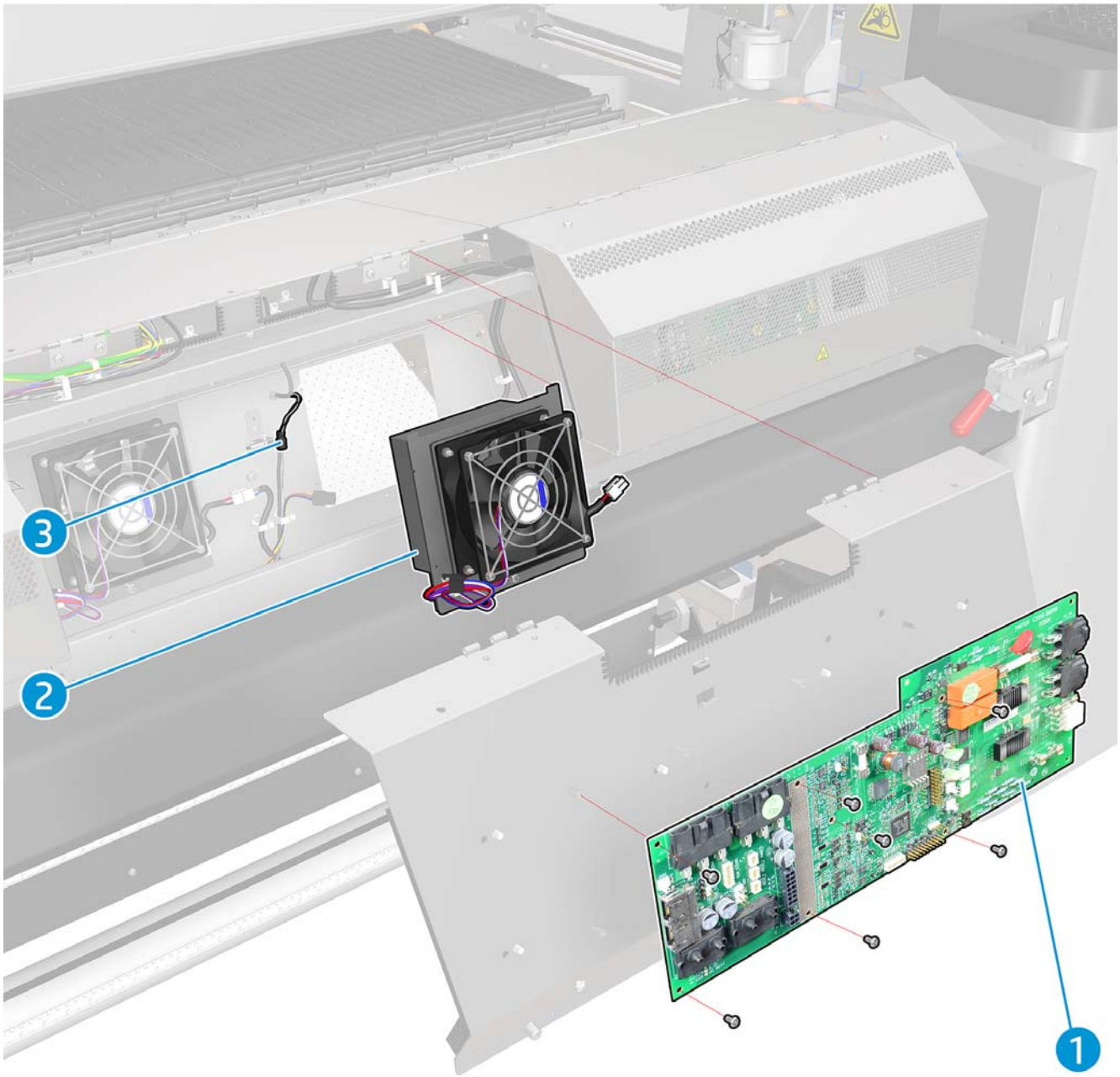
	Part number	Description
1	CZ056-67061	Curing bracket pin support kit on page 476
2	CZ056-67057	Curing right module on page 472
3	CZ056-67058	Curing general module on page 474
4	CZ056-67056	Curing left module on page 475
5	CZ056-67059	Curing latch on page 476
6	CZ056-67060	Curing linear guide kit on page 476
7	–	Curing bottom plate (design 1) *
8	CZ056-67427	Curing bottom plate with ribs (design 2) (Curing bottom plate assembly on page 477)
	CZ056-67314	Curing cables kit on page 479, includes data cable from curing PCA to curing PCA (CZ056-50019) (×5), curing data cable (CZ056-50051), fan cable (CZ056-50120), DC curing module to curing module (CZ056-50219), heater cable (CZ056-50121), AC curing module to curing module (CZ056-50218), ground strip (CZ056-50124), short ground strip (CZ056-50213), and curing ground (CZ056-50125)
	CZ056-67256	Curing power input DC cables kit on page 487, includes e-cabinet to air connector cable (CZ056-50232) and air connector to curing PCA cable (CZ056-50068)
	CZ056-67259	Curing power input AC cables kit on page 488, includes air connector to curing PCA cable (CZ056-50067) and e-cabinet to air connector cable (CZ056-50231)

* Because of the necessary removal of the entire bottom plate assembly, it does not include its corresponding service part in design 1. Therefore, you must follow the upgrade instructions for both the diverter and the bottom module assemblies. If you have an affected curing bottom plate assembly that belongs to design 1, see the diverter and bottom plate upgrade kit.



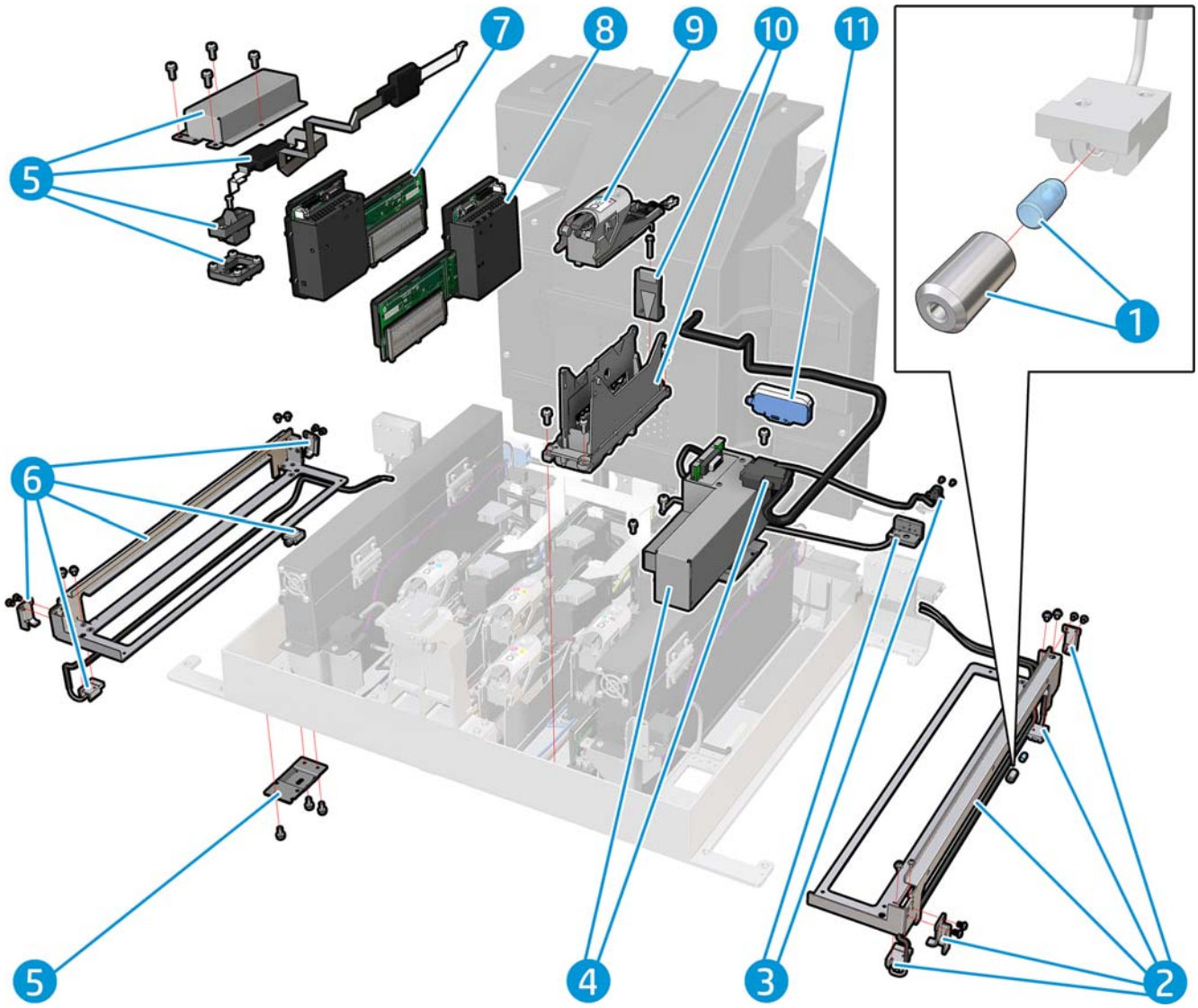
Curing (2)

	Part number	Description
1	CZ056-67384	Curing and vapor removal PCA on page 490
2	CZ056-67054	Curing heater and fan module on page 468
3	CZ056-67055	Curing temperature sensor kit on page 471



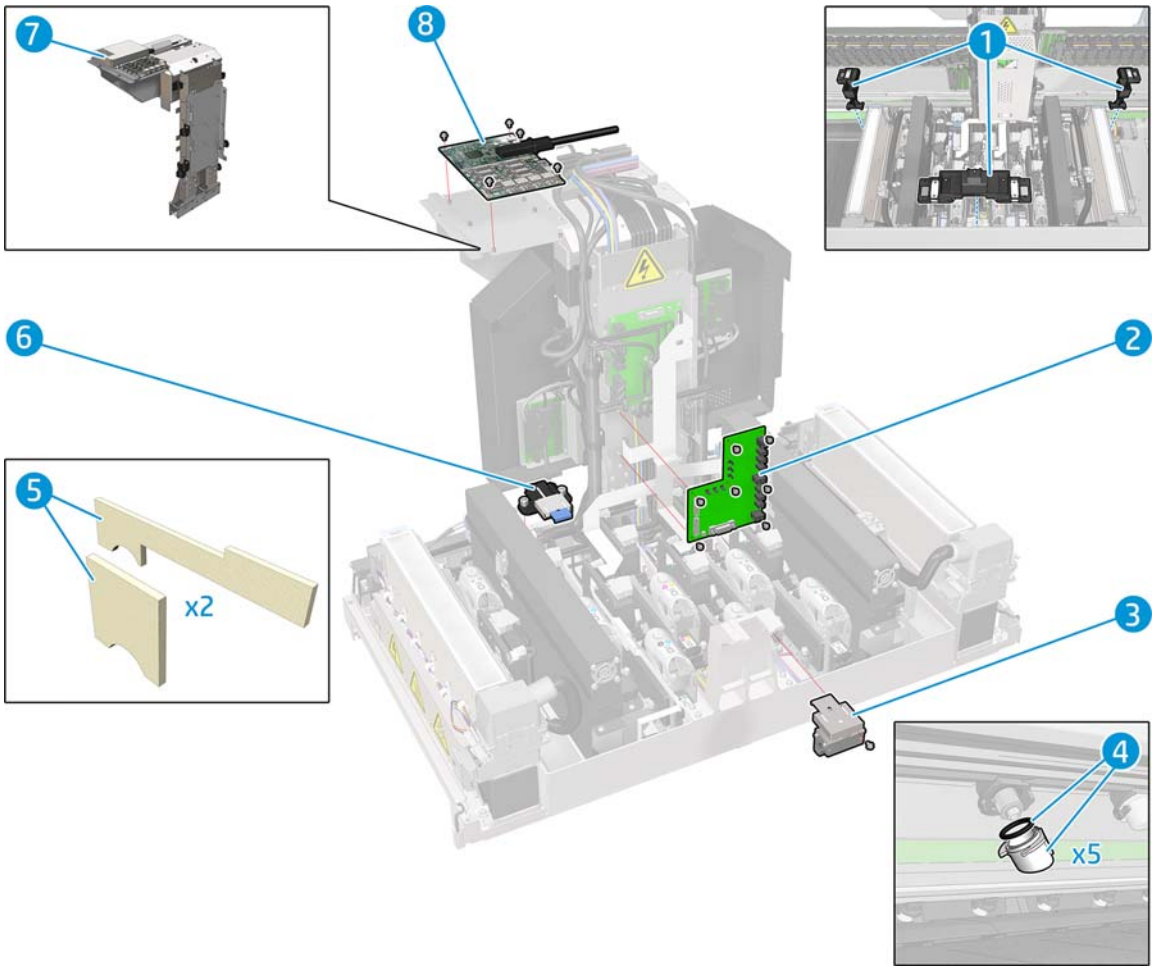
Carriage (1)

	Part number	Description
1	CZ056-67407	Crash sensor lenses on page 440
2	CZ056-67408	Crash sensor right assembly on page 441
3	CZ056-67010	Carriage encoder assembly on page 435
4	CZ056-67007	Spectrophotometer sensor on page 430
5	CZ056-67006	Line sensor on page 428
6	CZ056-67409	Crash sensor left assembly on page 442
7	CZ056-67371	Printhead interconnect optimizer PCA on page 462
8	CZ056-67372	Printhead interconnect color PCA on page 464
9	CZ056-67396	Primer and latch on page 432
10	CZ056-67011	Printhead pocket on page 436
11	CZ056-67406	Crash sensor amplifier and cable on page 438, includes one carriage crash sensor amplifier and one fiber-optic to drying PCA cable (CZ056-50265)



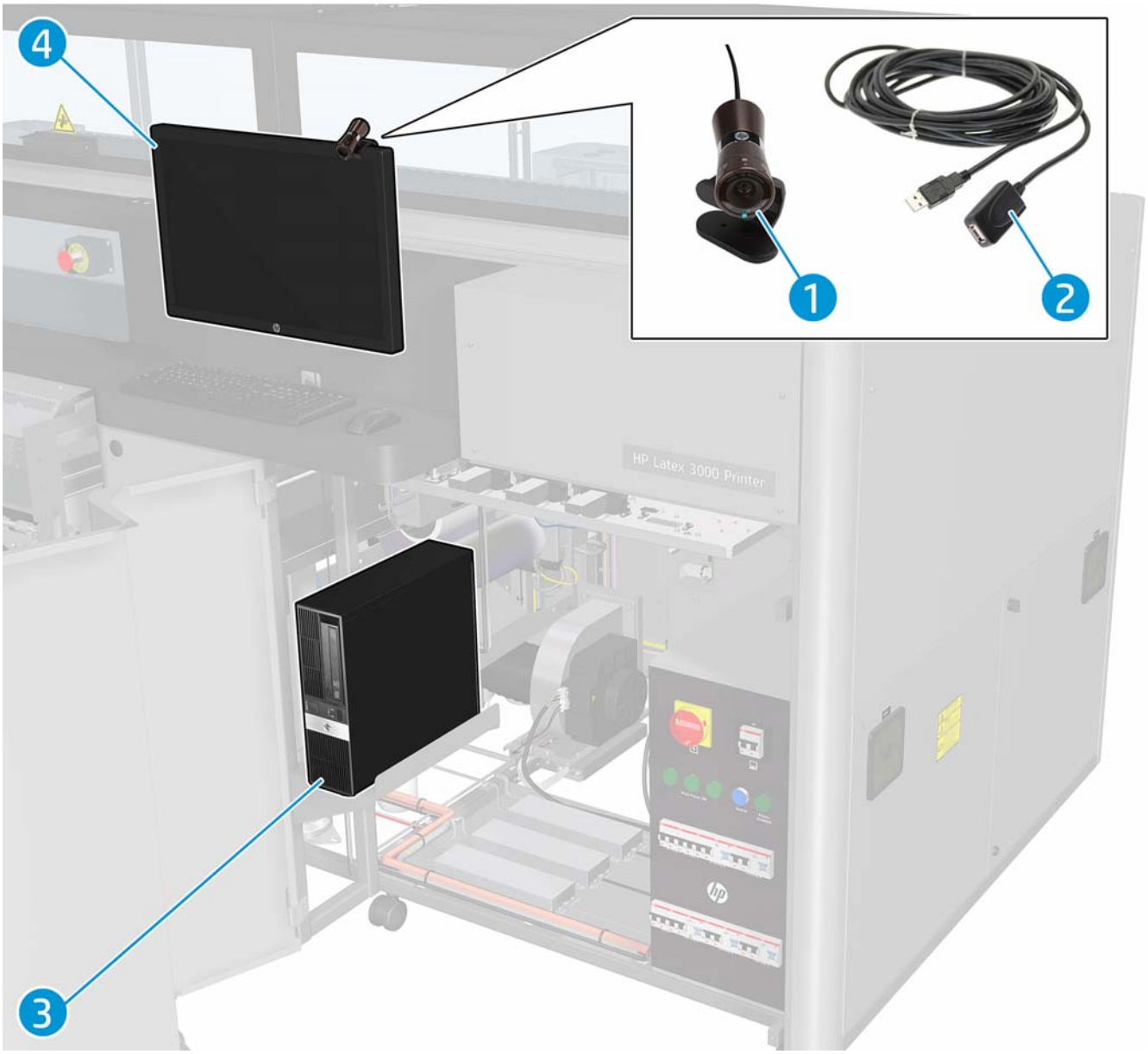
Carriage (2)

	Part number	Description
1	CZ056-67410	Carriage Rail Cleaning Tool (CRCT)
2	CZ056-67373	Carriage interconnect PCA on page 465
3	CZ056-67018	Carriage bushing kit on page 451
4	CZ056-67413	Oil cups
5	CZ056-67311	Carriage oiling felts kit and carriage oiling foams kit on page 453
6	CZ056-67295	Carriage rear oiler assembly on page 447
7	CZ056-67019	Carriage tower on page 461; removal and installation of this service part also requires the materials included in the following kits: tubes repair kit (CZ056-67320), flush kit (Q6702-60679), and purge kit (CZ056-67218)
8	CZ056-67389	Fiber-optics PCA on page 466
	CZ056-67015	Carriage cables kit on page 443, includes carriage to printhead interconnect PCA power cable (CZ056-50006) (×2), carriage to printhead interconnect PCA short power cable (CZ056-50186) (×4), carriage to printhead interconnect PCA long power cable (CZ056-50187), sensor box cable (CZ056-50007), carriage to printhead interconnect PCA data cable (CZ056-50004) (×3), spray to spray cable (CZ056-50011) (×4), carriage encoder cable (CZ056-50005), drying to fiber-optics PCA (Slinky) power cable (CZ056-50244), drying PCA to carriage sensor power cable (CZ056-50243), line sensor cable (CZ056-50010), printhead to fiber-optics PCA data cable (CZ056-50198), LAN cable between drying PCAs (CZ056-50016), curing encoder daisy-chain cable (CZ056-50137), and drying PCA to drying PCA fiber-optic cable (CZ056-50264)



Human-machine interface

	Part number	Description
1	Q6703-67100	Webcam (H2W19AA#ABB) on page 587
2	Q6703-67101	Webcam USB extension cable (8121-1202) on page 588
3	CZ056-67163	Internal Print Server computer (A3L24PA#AB4) on page 586
4	CZ056-67164	Internal Print Server monitor (C9V75AA#AB4) on page 587



Miscellaneous parts

	Part number	Description
	CZ056-67395	PCA fuses kit

7 Removal and installation

- Required tools
- Aerosol removal
- Carriage
- Curing
- Drying
- E-box
- E-cabinet
- Human-Machine Interface
- Impelling
- Industrial design covers
- Ink system module
- Internal Print Server computer installation and setup
- Print to Paper Space (PPS)
- Printhead cleaning system
- Service station: capping and drop detector
- Substrate path
- Tube Routing System (TRS)
- Vapor removal

Required tools

The following tools are required to perform the procedures described in this chapter.

Required tool	Comments	Industrial design covers	Print to Paper Space (PPS)	Printhead cleaning system	Service station	Scan axis – impelling	Tube Routing System (TRS) and Ink System Module (ISM)	Drying and aerosol removal	Carriage	Curing	Electrical system (e-box and e-cabinet)	Vapor removal	Substrate path
Flat-end screwdriver with a tip wider than 4 mm but no wider than 5 mm.	Used for both the e-cabinet small potientometer adjustment and plastic tabs removal					X	X				X		
L-shaped wrench		X	X		X					X			X
Long screwdriver	Used mainly to reach some difficult screws		X										
Tweezers	Used for some carriage cable connector replacements								X				
Pliers	Used for removing pins												X
Loctite	Used to remove the PPS screw		X										
Silicone (use DOW CORNING 732 MULTI-PURPOSE SEALANT or equivalent)	Mainly used for air isolations			X						X		X	X
Aluminum tape	Mainly used for air isolations											X	
Markers for both metal and plastic surfaces	Mainly used to label either cables or ink tubes. Also used to locate the screws along the pinch beam.					X	X		X			X	X
Plastic-headed hammer	Mainly used for the Igus chain trailing cables, either ink tubes or the substrate-path side plate replacements					X	X						X
Jack	Mainly used for the roll-to-free-fall pinch mechanical assembly replacement												X
Flush kit (Q6702-60679) (includes a tube cutter)	Mainly used for ink system procedures **NOTE:** These can also be used for other procedures, such as drop detector cleaning procedures or carriage procedures that need to flush, cut, and purge the ink tubes.						X		X				
Purge kit (CZ056-67218) (includes protective gloves)							X		X				
Tubes repair kit (CZ056-67320) (includes purge cleaning cloth)							X		X				
Coat							X		X			X	
Multimeter set to measure DC voltage	Mainly used for electrical system replacement and check procedures.										X		
Smart Phillips screwdriver to adjust a trimmer (small potentiometer)											X		
The standard set of tools (Torx screwdriver, flanges, Allen keys, hex keys, etc.)	For general usage	X											

Aerosol removal

Aerosol top case assembly

Prepare to replace the aerosol fans module

1. Ensure that you have the Aerosol Fan Module (CZ056-67246), which is included in the 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 repair position. See How to run a diagnostic test on page 341.
5. Turn off the printer in the correct way for maintenance operations.

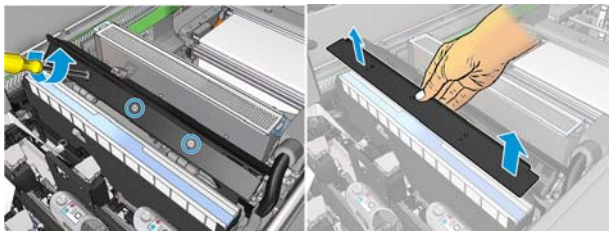


6. Stand on the folding steps and open the service position window.



Replace the aerosol fan module

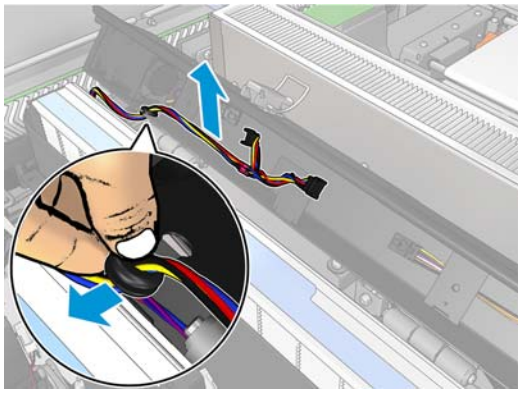
1. Open the aerosol fan cover, as if you were going to replace the filters.
2. Remove the three screws that attach the cover, and remove the cover.



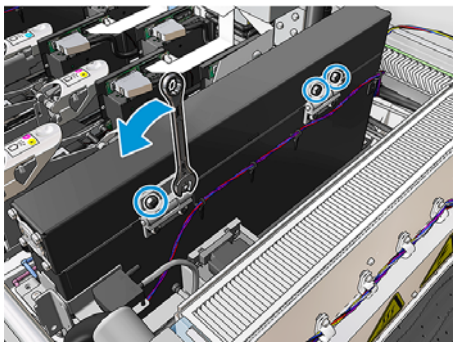


3. Disconnect the two aerosol fan cable connectors.

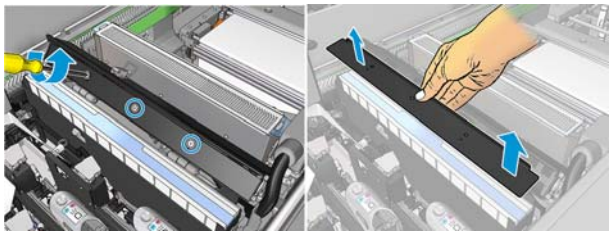
4. Remove the main cable harness from the cover slot.



5. Close the cover and remove the nuts from the hinges. You must hold the nuts to prevent them from falling and get lost inside the carriage.



6. Remove the aerosol fan module and insert the new one.
7. Put the hinges back in place, put back the nuts and tighten them.
8. Open the new aerosol fan cover.
9. Remove the three screws that attach the new fan cover, and remove the cover.



10. Connect the two aerosol fan cable connectors.
11. Route the main cable harness and insert the grommet in the cover slot. Make sure the cables are not tight inside the cover.
12. Install the aerosol fan cover and attach the three screws.
13. 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.



3. Run a diagnostic test to check that the aerosol fans are working correctly.
4. Dispose of the old aerosol module fans.

Aerosol box assembly

Removal

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.
3. Stand on the folding steps and open the service position window.



4. Remove all printheads from the carriage and store them in their caps.
5. Disconnect the aerosol cable from the aerosol harness cable.
6. Remove the aerosol removal module.
7. Remove the pointed T-20 screws from the aerosol module supports.

NOTE: When removing the T-20 screws from the rear support, be careful with the holder amplifier and its support, which are also attached to the carriage through these screws.

Installation

1. Install the new aerosol removal module from the repair kit.
2. Screw back the supports and reconnect both aerosol removal cables.

Aerosol cables kit

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.

3. Stand on the folding steps and open the service position window.



4. Remove all printheads from the carriage and store them in their caps.

Aerosol harness (CZ056-50240)

1. Disconnect the aerosol cable from the aerosol harness cable.
2. Open the aerosol fan cover, as if you were going to replace the filters.
3. Remove the three screws that attach the cover using a hex key M5, and remove the cover.
4. Disconnect the two aerosol fan cable connectors and the pressure sensor connector.
5. Remove the aerosol harness from the cover slot.
6. Reconnect and reroute the new aerosol harness.

⚠ **CAUTION:** When reconnecting the aerosol module cables, ensure that they are properly connected to the corresponding drying PCA; see Drying PCA on page 522.

Aerosol cable (CZ056-50241)

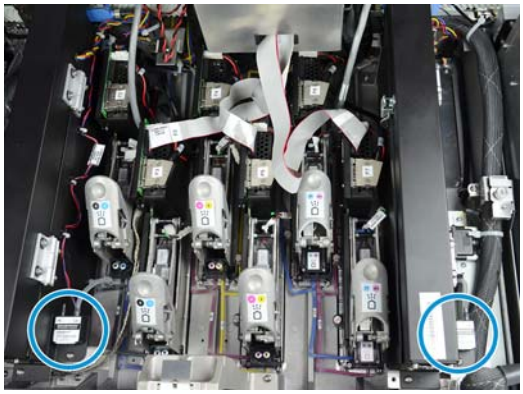
1. Disconnect the aerosol cable from the aerosol module and unroute it.
2. Disconnect the aerosol cable from the drying PCA (AEROSOL_EXT connector).
3. Reroute the aerosol cable and connect it back to both aerosol harness cable and drying PCA (AEROSOL_EXT connector).

⚠ **CAUTION:** When reconnecting the aerosol module cables, ensure that they are properly connected to the corresponding drying PCA. See Drying PCA on page 522.

Aerosol pressure sensor

Removal

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.



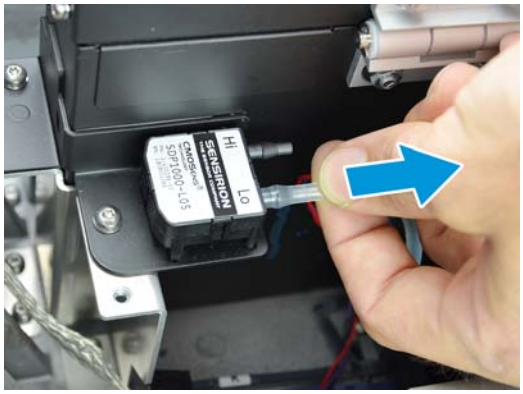
2. Turn off the printer and the power-enable switch.
3. Stand on the folding steps and open the service position window.



4. Remove all printheads from the carriage and store them in their caps
5. Disconnect the aerosol harness from the pressure sensor.



6. Remove the tube connected to the pressure sensor.

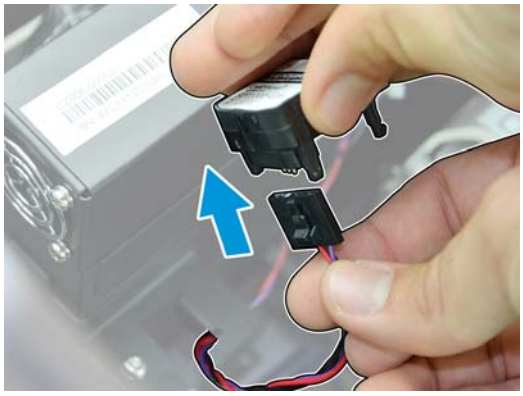


7. Remove the pressure sensor from the aerosol removal module.



Installation

1. Connect the new pressure sensor to the aerosol harness, then put the pressure sensor into place.





NOTE: The pressure sensor connector has no latch, so it is important to ensure that it is correctly connected.

2. Connect the tube to the **Lo** port of the pressure sensor.

CAUTION: When reconnecting any aerosol module cable, ensure that it is properly connected to the corresponding drying PCA. See Drying PCA on page 522.



Carriage

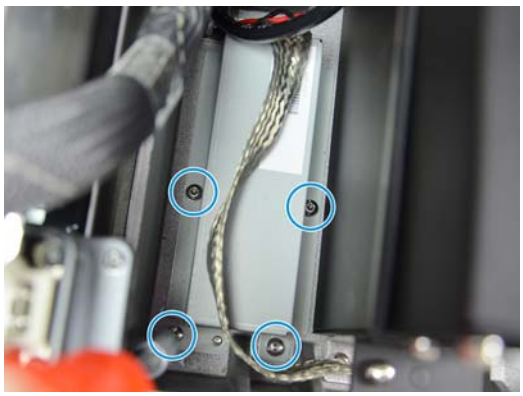
Line sensor

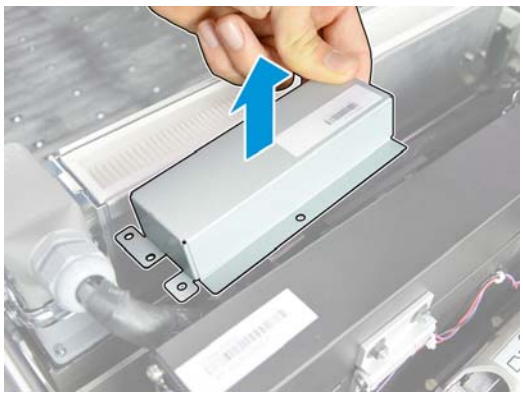
Removal

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.
3. Stand on the folding steps and open the service position window.

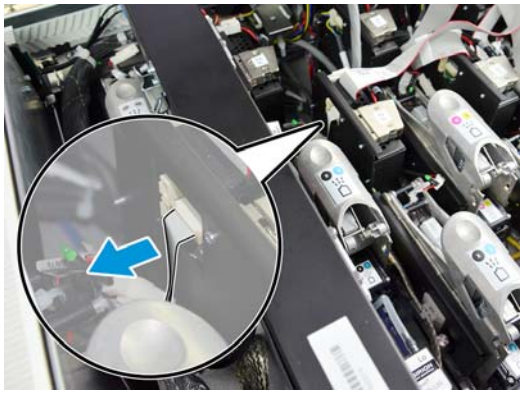


4. Remove all printheads from the carriage and store them in their caps.
5. Remove the four T-20 screws and the line sensor cover.

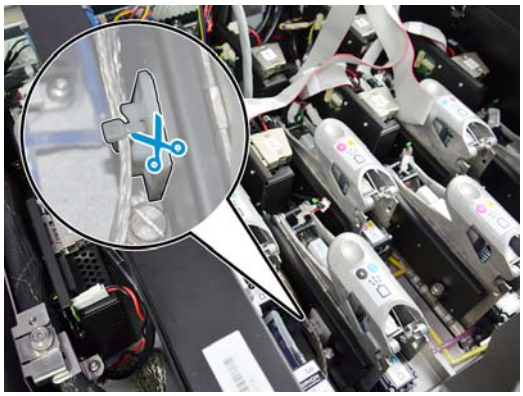




6. Disconnect the line sensor cable.



7. Cut the flanges and remove them from the wrap tie holder. Unroute the cable.



8. Remove the T-10 screw that secures the line sensor.



9. Remove the line sensor.





Installation

1. Place the new part into position.
2. Route the line sensor cable and tighten the cable to the tie-wrap holder, located at the printhead interconnect color PCA3 cover (PH3). Connect the line sensor cable to the printhead interconnect color PCA3 (PH3).

NOTE: The line sensor cable (CZ056-50010) is not easy to route because it has a rigid part followed by a ferrite and a thin white strip. In addition, you are recommended to be careful when routing the cable because of the printhead latches. Also be careful when connecting the cable strip so that it is well oriented: the connectors side must be up when placing it into the printhead interconnect color PCA3 (PH3).

3. Perform the following reset procedures:
   - Line sensor calibration (see Table 5-12 Carriage sensors on page 365)
   - Line sensor to black
   - Line sensor field of view

Spectrophotometer sensor

Removal

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Move the carriage beam to the substrate load position.
3. Turn off the printer and the power-enable switch.

4. Stand on the folding steps and open the service position window.



5. Remove all printheads from the carriage and store them in their caps.

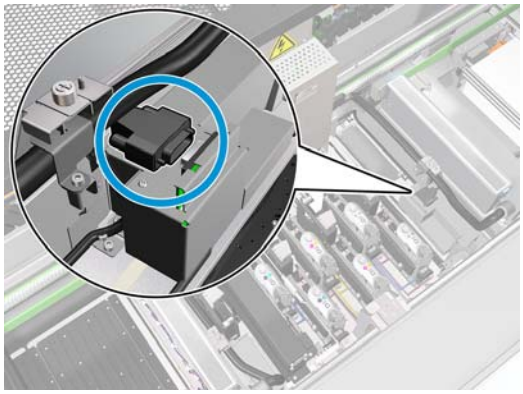
6. Remove the right aerosol removal assembly. See Aerosol removal on page 421.

NOTE: If the aerosol removal assembly is not removed before replacing the spectrophotometer sensor, it is possible to break either the aerosol removal pressure sensor or the air fitting from its cover (and consequently to have air pressure problems at the right aerosol removal).

7. Remove the five pointed screws and the carriage-tower cover.

8. Disconnect the sensor box cable (CZ056-50007) from the carriage interconnect PCA UP (TO SENSORS BOX connector). See Board name: Carriage Interconnect PCA on page 296.

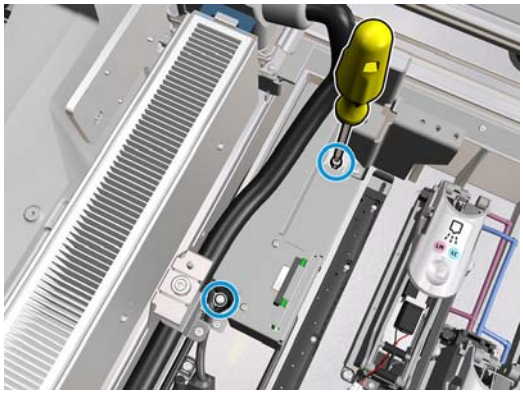
NOTE: The cable is rigid, so it is important not to twist it too much, and not to force its connectors. Be careful also not to pinch the cable with any latch since it is routed between them.



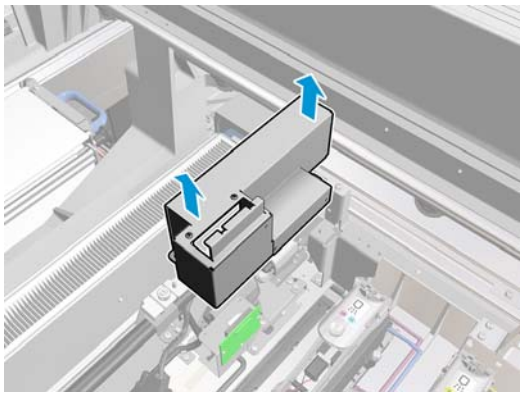
9. Remove the two T-10 screws from the spectophotometer sensor cover. Remove the two T-20 screws that hold the cover to the base plate, and remove the cover.

10. Remove the two T-20 screws that hold the spectrophotometer sensor PCA to the baseplate.

11. Remove the two T-20 screws that hold the spectrophotometer sensor to the baseplate.



12. Remove the spectrophotometer sensor assembly.



Installation

1. Screw back the spectrophotometer sensor to the baseplate.
2. Screw back the two T-20 screws that hold the spectrophotometer sensor PCA to the baseplate.
3. Screw back the two T-20 screws that hold the spectrophotometer sensor cover to the baseplate and screw back the two T-10 screws.
4. Route and connect the sensor box cable (CZ056-50007) to the carriage interconnect PCA UP (TO SENSORS BOX connector). See Board name: Carriage Interconnect PCA on page 296.

NOTE: Be careful when replacing the spectophotometer sensor assembly and its PCA that the cables that connect the two are not excessively tight.

5. Screw back the carriage-tower cover.
6. Perform the reset procedure calibrate spectrophotometer sensor. See How to run a diagnostic test on page 341.

Primer and latch

Prepare to replace a primer

1. Ensure that you have the Primer and Latch Kit (CZ056-67396), which is included in the Standard Uptime Kit (D4J02A).
2. Ensure that the printer is not printing.
3. Move the carriage to the repair position. See How to run a diagnostic test on page 341.

4. Turn off the printer in the correct way for maintenance operations.

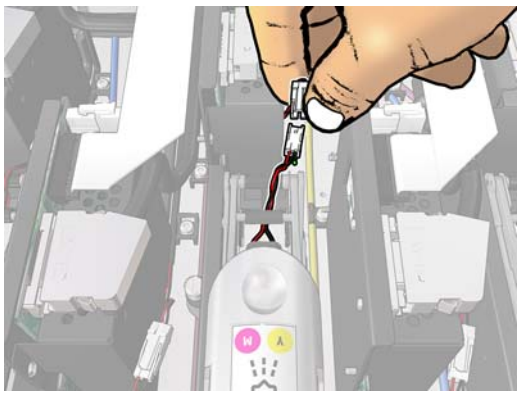


5. Stand on the folding steps and open the service position window.



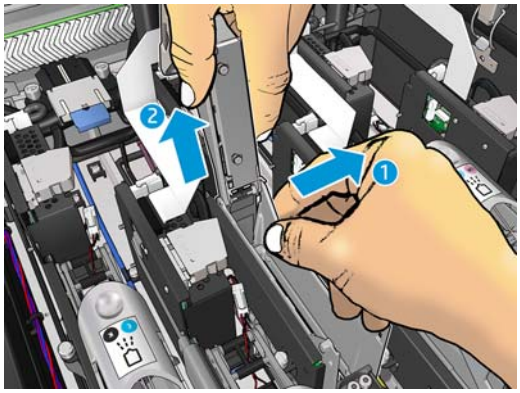
Replace a primer

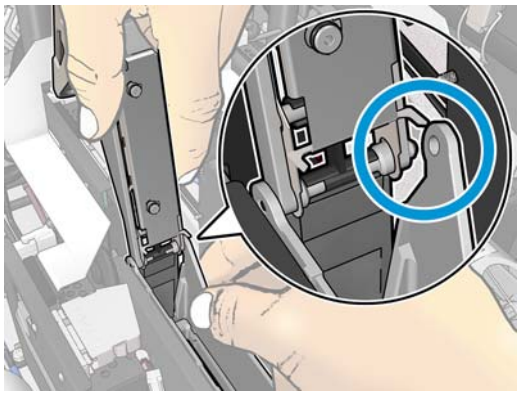
1. Disconnect the primer cable. You have to disconnect a white connector that you can find at the back of the printhead.

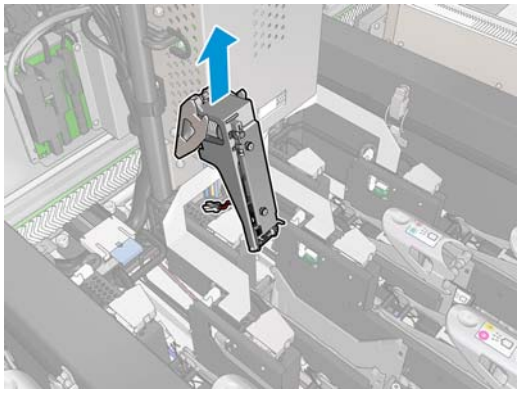


2. Open the latch. It is not usually necessary to remove the printhead.

3. Remove the latch of the printhead whose primer is to be replaced. To remove it, you have to push open the printhead pocket wall to the right while pulling the latch up.







4. Stick the corresponding printhead color label on the latch. Be careful with the orientation.
5. Install the new latch with primer.
6. Replace the printhead, if it was removed, and close the latch.

Finish off replacing a primer

1. Close the service position window.
2. Turn on the printer in the correct way for maintenance operations.



3. Perform the primer pumps calibration procedure. See How to run a diagnostic test on page 341.
4. Dispose of the old primer.

Carriage encoder assembly

Removal

1. Move the carriage to the normal position.
2. Turn off the printer and the power-enable switch.
3. Stand on the folding steps and open the service position window.



4. Remove the three hand-removable nuts that secure the encoder protector, and remove the encoder protector.

CAUTION: The encoder strip is very sharp. Be careful not to cut yourself. If feasible, wear protective gloves.

5. Close the service position window.
6. Turn on the printer and the power-enable switch.
7. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
8. Turn off the printer and the power-enable switch.
9. Open the service position window.
10. Remove all printheads from the carriage and store them in their caps.
11. Remove the rear windows in order to access the whole rear of the encoder. See Impelling encoder strip on page 596.
12. Disconnect the carriage encoder sensor cable (ENCODER IN) from the printhead interconnect PCA of primer 6.
13. Unroute the encoder cable from any clips or plastic ties until it reaches the sensor.
14. Remove the T-10 screw that secures the carriage encoder set.
15. Slide the sensor so that its support remains out of the pins until it reaches the gap.

CAUTION: Be careful not to touch the encoder strip when moving the encoder sensor assembly.

CAUTION: The encoder strip is very sharp. Be careful not to cut yourself. If feasible, wear protective gloves.

16. Move it straight down through the gap to free it from the encoder strip. If there is not enough free space, you can try to turn the encoder assembly slightly.

CAUTION: Be careful not to touch the encoder strip when moving the encoder sensor assembly.

17. Remove the entire assembly.

CAUTION: Be careful not to touch the encoder strip when moving the encoder sensor assembly.

Installation

1. Replace the encoder assembly.

CAUTION: Be careful not to touch the encoder strip when moving the encoder sensor assembly.

CAUTION: The encoder strip is very sharp. Be careful not to cut yourself. If feasible, wear protective gloves.

2. Ensure that the assembly is correctly placed, with the encoder strip in the encoder sensor gap.

NOTE: Be careful, when rerouting the encoder sensor cable, to route it safely away from the belt. If feasible, use flanges to fix it to the carriage.

3. Close the service position window.
4. Turn on the printer and the power-enable switch.
5. Move the carriage to the normal position.
6. Turn off the printer and the power-enable switch.
7. Open the service position window.
8. Reinstall the encoder protector.
9. Reinstall the rear windows.
10. Close the service position window.
11. Turn on the printer and the power-enable switch.

Printhead pocket

Removal

1. Move the carriage to the service position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.

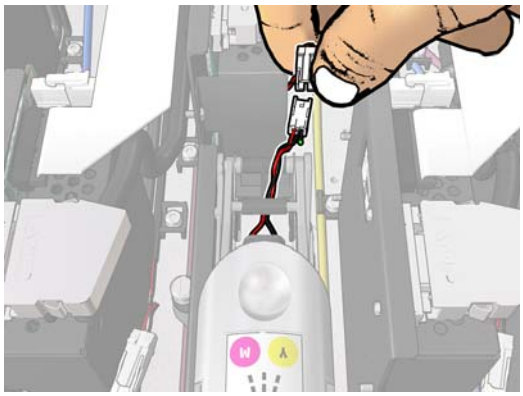
3. Stand on the folding steps and open the service position window.



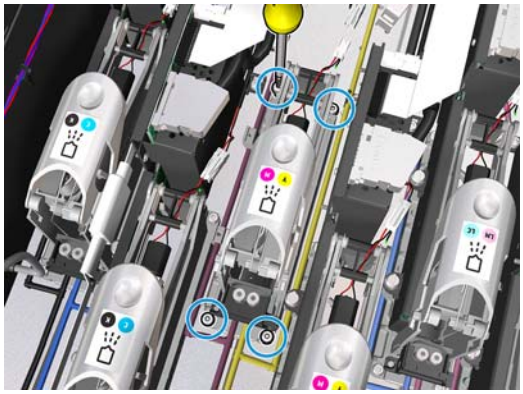
4. Remove all printheads from the carriage and store them in their caps.
5. Remove eight screws: five at the front and three more on the top of the carriage-tower cover.

NOTE: These are all ferromagnetic screws.

6. Remove the carriage-tower cover by turning it enough to pull it up.
7. Disconnect the primer cable from the printhead interconnect PCA.



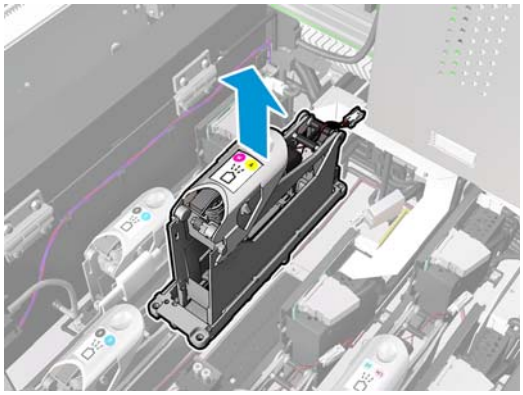
8. **Primers 2 and 4:** Remove the four T-20 screws that secure the printhead pocket.



Other primers: Remove the T-10 screws that secure the printhead pocket.



9. Remove the printhead pocket from the carriage.



Installation

1. Insert the new printhead pocket and screw its base to the carriage.
2. If you replaced more than one primer assembly, make sure that you connect the primer cable to the right connection. See Primer and latch on page 432.
3. Force a priming to ensure that the new primer assembly works.

Crash sensor amplifier and cable

This service part includes one carriage crash sensor amplifier and its fiber-optic cable (CZ056-50265) to the drying PCA.

Removal

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.
3. Stand on the folding steps and open the service position window.



4. Remove all printheads from the carriage and store them in their caps.
5. Remove the five pointed screws and remove the carriage-tower cover.
6. Remove the rear window panel in order to have free access to both sides of the carriage and reach the two amplifiers.
7. Disconnect the crash sensor cables from the corresponding drying PCA (PCA UP or DOWN).
8. Unroute the fiber-optic cables (CZ056-50265) from this drying PCA to its crash sensor amplifier. See Subsystem block diagrams on page 61.
9. Disconnect both fiber-optic cables from the amplifier.
10. Loosen the two aerosol removal T-20 screws that hold the crash sensor amplifier's support.
11. Remove the amplifier.
12. Remove the two pointed T-20 screws from the front and rear of the carriage.
13. Replace the crash sensor.

Installation

1. Install the new amplifier (if it does not come screwed to the support, reuse the old one).
2. Route the two new fiber-optic cables from the amplifier to their drying PCA (fiber-optic sensor connector) and connect them correctly.

NOTE: Check which fiber-optic cable connects to which drying PCA: see Drying PCA on page 522.

CAUTION: When connecting the fiber-optic cables to the amplifier, follow this procedure. Pull out the amplifier's plastic cover to open it, and pull down the tab located on its corner. Ensure that both fiber-optic cables reach the top end when inserting them into amplifier IN and OUT connector holes. Push back the amplifier's plastic cover to close it.

3. Screw the amplifier to the carriage. If the amplifier does not come with its metal sheet support, reuse the old support.
4. After re-installing the amplifier, re-install everything else.
5. Turn on the printer and check that the amplifier display value is 2000.

The crash sensor amplifier service part comes with its configuration already set. You are recommended to follow these steps to ensure that the amplifier configuration is correctly set:

1. Press one of the two arrows for 3 seconds, so that the green number in the display will start blinking. Set the switching threshold to 1000 by using the arrows.



2. Enter the amplifier menu and set the following adjustments (highlighted in green):

Configuration	Level I	Level II	Adjustment options
L--d Switching mode			L on, d on
rESP Response time			Stnd, FASt, Lon9, H.9h, SuPr
dELY Time delay setting			oFF, oFdY, ondY, SHot, onoF, onSh
EPrt Expert menu/ detailed settings	oFSt Set display value to zero		oFF, on
	d.SP Display settings		d.9, bAr, Pct
	Eco Energy-saving mode		oFF, on
	turn Reverse display		oFF, on
	HYS Hysteresis setting		P 1
	InPt External input configuration		rtch, tESt, SYnc
Bus versions	coPy Copy mode		no, YES
Bus versions	Atch Master Teach-in		no, YES
	ASc ASC setting		oFF, on
	SPor Power setting of the sender LED		1111, 111, 11
	Locl Keylock		no, YES ⇨ L 2
rSEt Reset			no, YES

3. Block the device by pressing both arrow keys at the same time for 2 seconds.



Crash sensor lenses

Removal

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.

3. Stand on the folding steps and open the service position window.



4. Remove all printheads from the carriage and store them in their caps.

NOTE: The crash sensor lenses are located at bottom front and back corners, at either left or right of the carriage.

5. Unscrew and remove the lenses.

TIP: If it is difficult to reach the lens, the corresponding drying lamp can be removed before this step. See Drying NIR lamp on page 496.

TIP: If it is difficult to reach the bottom rear corner of the carriage (in order to unscrew the lens), it can be done from the rear by first removing the rear window panel.

CAUTION: It is important not to remove the aluminum lens support while it still holds the fiber-optic cable. Otherwise the fiber-optic cable could suffer too much torque, and break.

Crash sensor right assembly

Removal

1. Move the scan axis to the load position.
2. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
3. Turn off the printer and the power-enable switch.
4. Stand on the folding steps and open the service position window.



5. Remove all printheads from the carriage and store them in their caps.
6. Remove the rear window panel in order to have free access to both sides of the carriage and reach the two amplifiers.

7. Remove the right drying lamp. See Drying NIR lamp on page 496.
8. Disconnect both fiber-optic cables from the right amplifier.
9. Carefully unroute the fiber-optic cables until you reach the crash sensor right assembly support.

CAUTION: It is important not to twist or pinch the fiber-optic cables excessively while manipulating them. Otherwise the cables could break during routing or unrouting.

10. Remove the four T-20 screws that hold the crash sensor right assembly support to the carriage base.

NOTE: They are located at the bottom of the base.

Installation

1. Replace the crash sensor right assembly with the new one.
2. Route the fiber-optic cables from the crash sensor right assembly to the right amplifier.

CAUTION: It is important not to twist or pinch the fiber-optic cables excessively while manipulating them. Otherwise the cables could break during routing or unrouting.

3. Connect the fiber-optic cables to the right amplifier.

CAUTION: When connecting the fiber-optic cables to the amplifier, follow this procedure. Pull out the amplifier's plastic cover to open it, and pull down the tab located on its corner. Ensure that both fiber-optic cables reach the top end when inserting them into amplifier IN and OUT connector holes. Push back the amplifier's plastic cover to close it.

4. Install the right drying module. See Drying module on page 518.

Crash sensor left assembly

Removal

1. Move the scan axis to the load position.
2. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
3. Turn off the printer and the power-enable switch.
4. Stand on the folding steps and open the service position window.



5. Remove all printheads from the carriage and store them in their caps.
6. Remove the rear window panel in order to have free access to both sides of the carriage and reach the two amplifiers.
7. Remove the left drying lamp. See Drying NIR lamp on page 496.

8. Disconnect both fiber-optic cables from the left amplifier.
9. Carefully unroute the fiber-optic cables until you reach the crash sensor left assembly support.

CAUTION: It is important not to twist or pinch the fiber-optic cables excessively while manipulating them. Otherwise the cables could break during routing or unrouting.

10. Remove the four T-20 screws that hold the crash sensor left assembly support to the carriage base.

NOTE: They are located at the bottom of the base.

Installation

1. Replace the crash sensor left assembly with the new one.
2. Route the fiber-optic cables from the crash sensor left assembly to the left amplifier.

CAUTION: It is important not to twist or pinch the fiber-optic cables excessively while manipulating them. Otherwise the cables could break during routing or unrouting.

3. Connect the fiber-optic cables to the left amplifier.

CAUTION: When connecting the fiber-optic cables to the amplifier, follow this procedure. Pull out the amplifier's plastic cover to open it, and pull down the tab located on its corner. Ensure that both fiber-optic cables reach the top end when inserting them into amplifier IN and OUT connector holes. Push back the amplifier's plastic cover to close it.

4. Install the left drying module. See Drying module on page 518.

Carriage cables kit

Removal

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.
3. Stand on the folding steps and open the service position window.



4. Remove all printheads from the carriage and store them in their caps.
5. Remove eight screws: five at the front and three more on the top of the carriage-tower cover.

NOTE: These are all ferromagnetic screws.

6. Remove the carriage-tower cover by turning it enough to pull it up.
7. Disconnect and replace the cables as follows.

Carriage to printhead interconnect PCA power cable (×2) (CZ056-50006)

1. Remove the six T-20 screws from the carriage interconnect PCA cover, so that you can reach both carriage interconnect PCAs.
2. Disconnect the carriage to printhead interconnect PCA's power cable from both the carriage interconnect PCA (SPRAY#1 (J27) connector) and the printhead interconnect PCA (POWER (J5) connector).
3. Unroute the cable (cut the flanges if necessary).
4. Replace the cable with the new one, route it, and connect it.

Carriage to printhead interconnect PCA short power cable (×4) (CZ056-50186)

1. Disconnect the carriage to printhead interconnect PCA's short power cable from both the carriage interconnect PCA (SPRAY#2 (J28) or SPRAY#3 (J29) connectors) and the printhead interconnect PCA (POWER (J5) connector).
2. Unroute the cable (cut the flanges if necessary).
3. Replace the cable with the new one, route it, and connect it.

Carriage to printhead interconnect PCA long power cable (×2) (CZ056-50187)

1. Remove the six T-20 screws from the carriage interconnect PCA cover, so that you can reach both carriage interconnect PCAs.
2. Disconnect the carriage to printhead interconnect PCA's long power cable from both the carriage interconnect PCA (SPRAY#4 (J32) connector) and the printhead interconnect PCA (POWER (J5) connector).
3. Unroute the cable (cut the flanges if necessary).
4. Replace the cable with the new one, route it, and connect it.

Sensor box cable (CZ056-50007)

1. Remove the six T-20 screws from the carriage interconnect PCA cover, so you can reach both carriage interconnect PCAs.
2. Disconnect the sensor box cable from both the carriage interconnect PCA 1 (TO SENSORS BOX connector) and the sensor interconnect PCA (<NAME> connector).

   NOTE: The cable is rigid, so it is important not to twist it too much, and not to force its connectors.

3. Unroute the cable (cut the flanges if necessary).
4. Replace the cable with the new one, route it, and connect it.

Carriage to printhead interconnect PCA data cable (×3) (CZ056-50004)

1. Remove the six T-20 screws from the carriage interconnect PCA cover, so you can reach both carriage interconnect PCAs.
2. Disconnect the carriage to printhead interconnect PCA's data cable from both the carriage interconnect PCA (FROM SPRAY PCA 1 or FROM SPRAY PCA 2 connectors) and the printhead interconnect PCA 3, 5, or 7 (CARRIAGE SENSOR (J2) connector).
3. Unroute the cable (cut the flanges if necessary).
4. Replace the cable with the new one, route it, and connect it.

Spray-to-spray cable (×3?) (CZ056-50011)

1. Disconnect the spray-to-spray cable at both ends.

NOTE: This cable chain is routed as follows; see also Subsystem block diagrams on page 61.

- Drying PCA 2 (ENC_IN connector) > printhead interconnect PCA 1 (ENCODER OUT connector)
- Printhead interconnect PCA 1 (ENCODER IN connector) > printhead interconnect 2 (ENCODER OUT connector)
- Printhead interconnect PCA 2 (ENCODER IN connector) > printhead interconnect 4 (ENCODER OUT connector)
- Printhead interconnect PCA 4 (ENCODER IN connector) > printhead interconnect 6 (ENCODER OUT connector)

2. Unroute the cable (cut the flanges if necessary).
3. Replace the cable with the new one, route it, and connect it.

Carriage encoder cable (CZ056-50005)

1. Disconnect the carriage encoder cable from both the printhead interconnect PCA 6 (ENCODER IN connector) and the encoder SAX.
2. Unroute the cable (cut the flanges if necessary).

TIP: The cable is thin and tiny, so you may need to use tweezers.

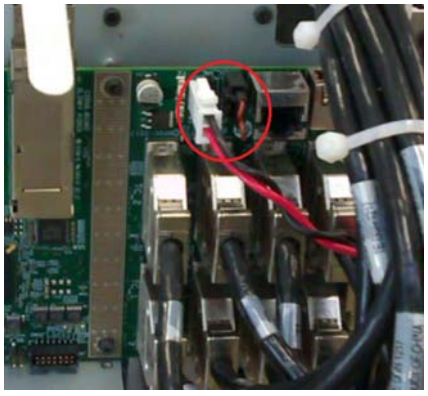
3. Replace the cable with the new one, route it, and connect it.

NOTE: Be careful when connecting back the cable. Although its connector is pokayoke, as it is so tiny it can be forced to enter the wrong way round. The correct position is shown below.

Drying to fiber-optics PCA power cable (CZ056-50244)

1. Disconnect the drying to fiber-optics PCA's power cable from both the drying PCA UP (J3 out power connector) and the fiber-optics PCA (J24 is the in power connector and J26 is the jumper).

NOTE: It is important to ensure that both fiber-optic connectors (shown below) are correctly connected to the fiber-optics PCA. Otherwise, the printer will return an error.



2. Unroute the cable (cut the flanges if necessary).
3. Replace the cable with the new one, route it, and connect it.

Drying PCA to carriage-sensors power cable (CZ056-50243)

1. Disconnect the drying PCA to carriage sensors' power cable from both the drying PCA (12V_CS connector) and its corresponding carriage interconnect PCA (24V POWER connector).
2. Unroute the cable (cut the flanges if necessary).
3. Replace the cable with the new one, route it, and connect it.

Line sensor cable (CZ056-50010)

1. Disconnect the line sensor cable from both the printhead interconnect PCA 3 (TETRIS (J6) connector) and the line sensor.
2. Unroute the cable (cut the flanges if necessary).
3. Replace the cable with the new one, route it, and connect it.

TIP: The line sensor cable is not easy to route because it has a rigid part followed by a ferrite and a thin white strip. Be careful when routing the cable because of the printhead latches. Also take care when connecting the cable strip that it is well oriented: the connectors side must be up when placing it into the printhead interconnect color PCA3 (PH3).

Printhead to fiber-optics PCA data cable (CZ056-50198)

NOTE: This cable can replace both CZ056-50198 and CZ056-50199 cables.

1. Disconnect the printhead to fiber-optics PCA data cable from both the printhead interconnect PCA (DATA TRAILING connector) and its connector on the fiber-optics PCA

   (JXX connector, where XX = 11, 8, 14, 10, 16, 9, and 15; for printhead interconnects PCA 1 to 7). See also Subsystem block diagrams on page 61.
2. Cut and unroute the cable (cut the flanges if necessary).
3. Replace the cable with the new one, routing it along the outer side of the FI tower, through either the left or the right side flanges, and reconnect the data cable.

LAN cable between drying PCAs (CZ056-50016)

1. Disconnect the LAN cable between drying PCAs from both drying PCAs (J12 connector). See Subsystem block diagrams on page 61.
2. Unroute the cable (cut the flanges if necessary).
3. Replace the cable with the new one, route it, and connect it.

Curing encoder daisy chain cable (CZ056-50137)

1. Disconnect the curing encoder daisy chain cable from both drying PCAs (ENC_IN connector for drying PCA UP and ENC_OUT connector for drying PCA DOWN). See Subsystem block diagrams on page 61.
2. Unroute the cable (cut the flanges if necessary).
3. Replace the cable with the new one, route it, and connect it.

NOTE: Be careful when connecting the curing encoder daisy chain cable not to mismatch both ends. The end connector of the cable with 5 pins is connected to the drying PCA UP (ENC_IN connector), while the other cable end, with 4 pins on its connector, is connected to the drying PCA DOWN (ENC_OUT connector).

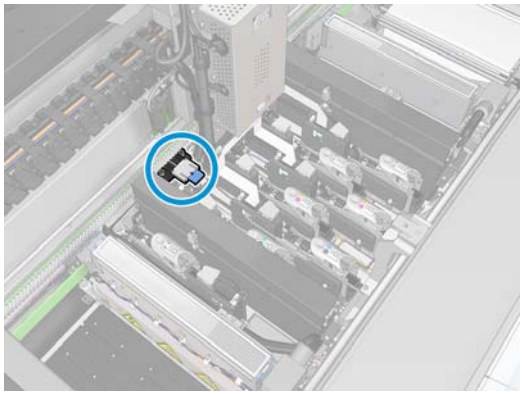
Drying PCA to drying PCA fiber-optic cable (CZ056-50264)

1. Disconnect the drying PCA to drying PCA fiber-optic cable from both drying PCAs (TO/FROM TWIN PCA connectors).
2. Unroute the cable (cut the flanges if necessary).
3. Replace the cable with the new one, route it, and connect it.

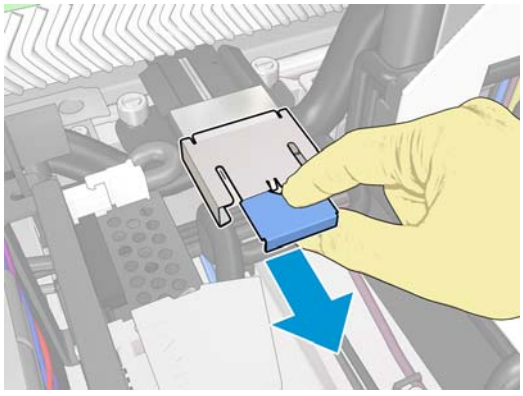
Carriage rear oiler assembly

Rear oiler foam removal

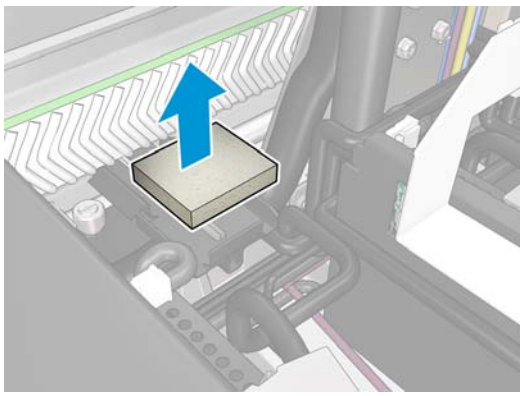
1. Locate the rear oiler foam in the carriage.



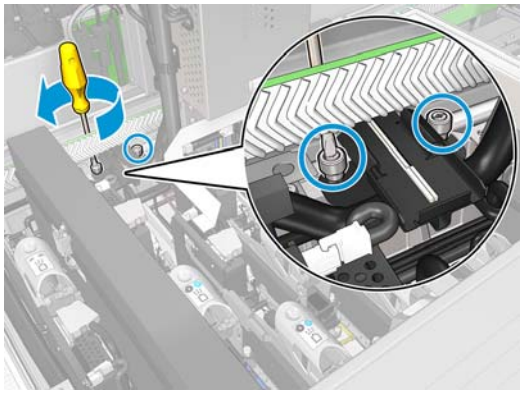
2. Slide off the cover of the rear oiler foam.

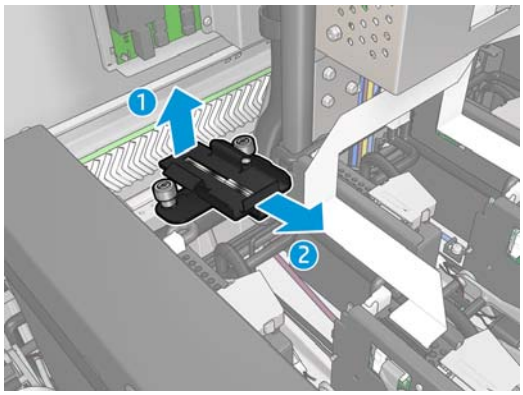


3. Remove the old foam.

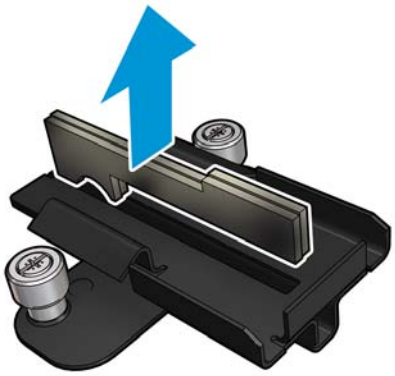


4. Remove the two screws that attach the black oiler holder to the carriage, and pull the holder out of the carriage



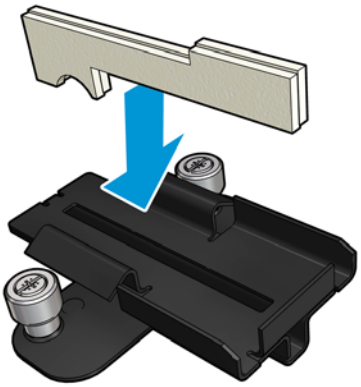


5. Remove the used wicks.



Rear oiler foam installation

1. Insert the new wicks.

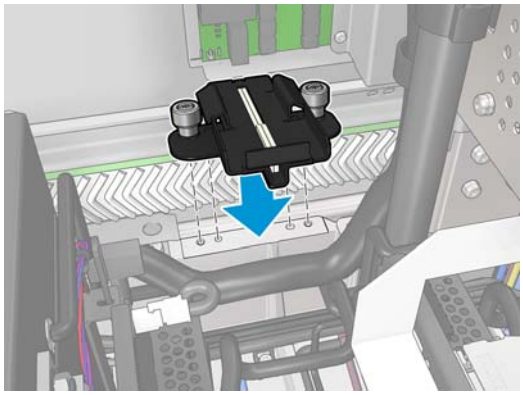


Check that the wicks are inserted correctly.

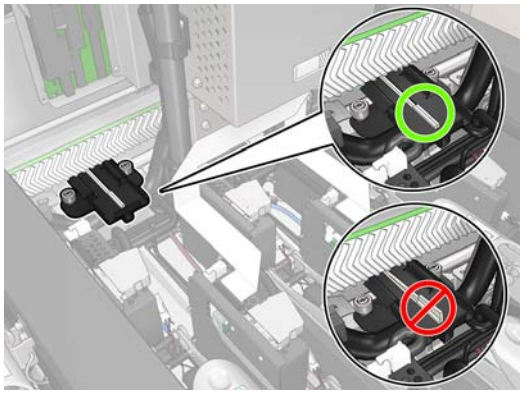




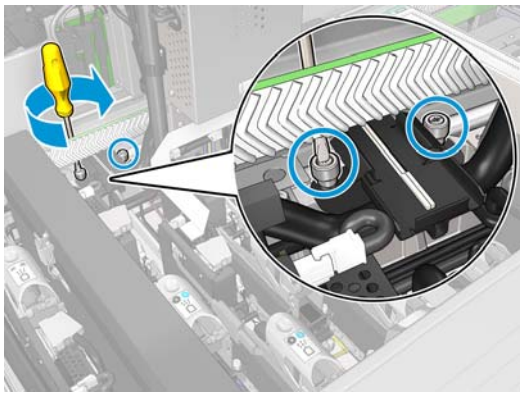
2. Put the black oiler holder back into position. The holder has two pins to locate it properly.



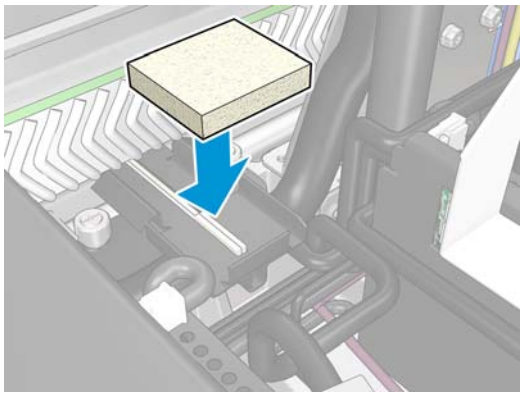
3. Check again that the new wicks are inserted correctly.



4. Tighten the screws.



5. Insert the new foam.



6. Slide in the cover.
7. Close the service position window.
8. Ensure that all windows, covers, and doors are closed and remain in their original position.
9. Move the carriage back to the normal position.
10. Turn on the printer in the correct way for maintenance operations.

11. Ensure that all windows, covers, and doors are closed and remain in their original position.
12. Move the carriage beam back to its working position (this takes about 2 minutes).



Carriage bushing kit

Removal

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.
3. Stand on the folding steps and open the service position window.



4. Remove all printheads from the carriage and store them in their caps.

Rear left bushing assembly

1. Remove the ISM assembly.
2. Remove the impelling carriage belt. See Impelling carriage belt assembly on page 599.
3. Remove the three T-25 screws and the Igus end cover.
4. Remove the four T-30 screws that secure the carriage Igus chain.
5. Disconnect and unroute the trailing cables from the carriage printhead interconnect to the chain assembly.
6. Remove the left side plate of the scan axis.
7. Slide out the carriage assembly.

NOTE: The carriage assembly is heavy.

NOTE: Do not try to save time by just sliding the bushing out from the carriage, as you could damage the rear right bushing.

8. Place the carriage on a table.
9. Remove the rear left bushing assembly T-10 screws from the carriage.
10. Slide out the rear left bushing assembly and replace it with the new one.

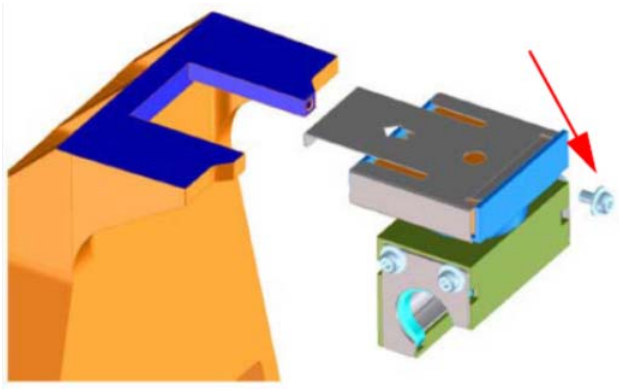
Front bushing assembly

1. Remove the ISM assembly.
2. Remove the impelling carriage belt. See Impelling carriage belt assembly on page 599.
3. Remove the four T-30 screws that secure the Igus chain.
4. Disconnect and unroute the trailing cables from the carriage printhead interconnect to the chain assembly.
5. Remove the left side plate of the scan axis.
6. Slide out the carriage assembly.

NOTE: The carriage assembly is heavy.

NOTE: Do not try to save time by just sliding the bushing out from the carriage, as you could damage the rear right bushing.

7. Place the carriage on a table.
8. Remove the screw indicated below.



9. Remove the front bushing assembly.

Rear right bushing assembly

1. Remove the ISM assembly.
2. Remove the impelling carriage belt. See Impelling carriage belt assembly on page 599.
3. Remove the four T-30 screws that secure the carriage Igus chain.
4. Disconnect and unroute the trailing cables from the carriage printhead interconnect to the chain assembly.
5. Remove the left side plate of the scan axis.
6. Slide out the carriage assembly.

NOTE: The carriage assembly is heavy.

NOTE: Do not try to save time by just sliding the bushing out from the carriage, as you could damage the rear right bushing.

7. Place the carriage on a table.

8. Remove the rear right bushing assembly T-10 screws from the carriage.
9. Slide out the rear right bushing assembly and replace it with the new one.

Carriage oiling felts kit and carriage oiling foams kit

NOTE: Oiling felts and oiler wicks are the same service parts.

Front oiler foam removal

1. Ensure that you have the Oiler Foams Kit included in the HP Latex 3000 Printer Cleaning Kit, provided with your printer.
2. Take the replacement oiler foams and wicks from the kit.



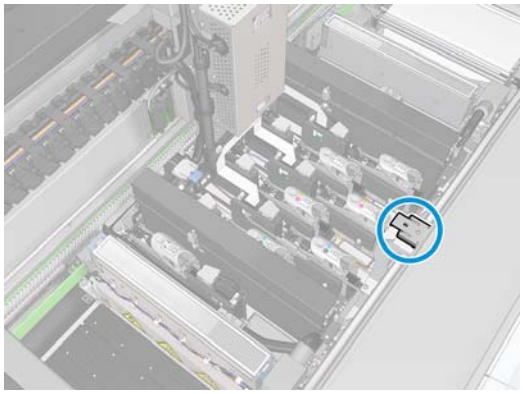
3. Ensure that the printer is not printing.
4. You are recommended to wear gloves.
5. Ensure that all windows, covers, and doors are closed and remain in their original position.
6. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
7. Turn off the printer in the correct way for maintenance operations.



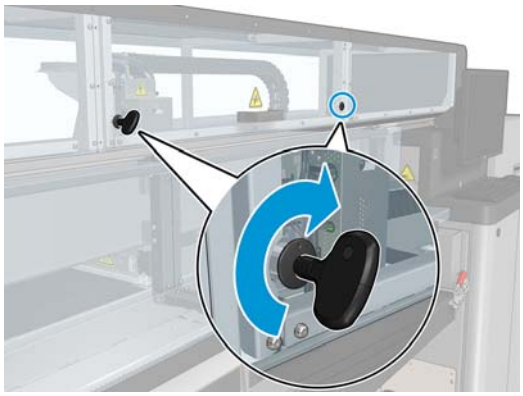
8. Stand on the folding steps and open the service position window.



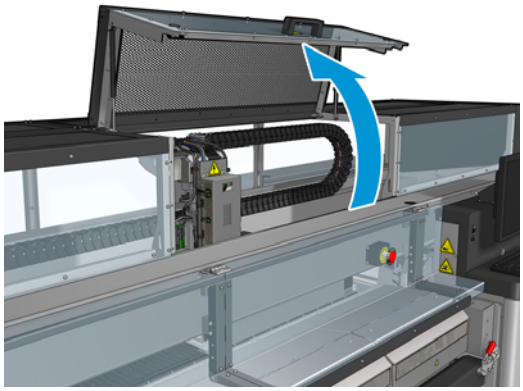
9. Locate the front oiler foam in the carriage.



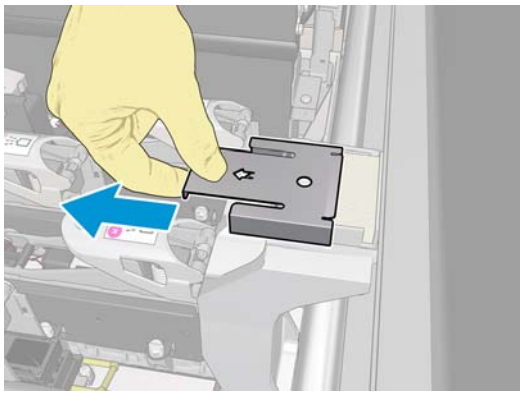
10. Unlock the window.



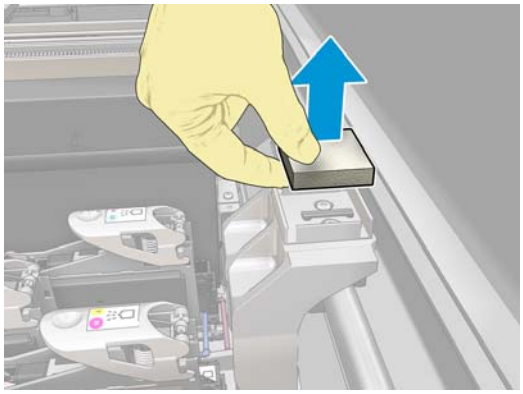
11. Open the window.



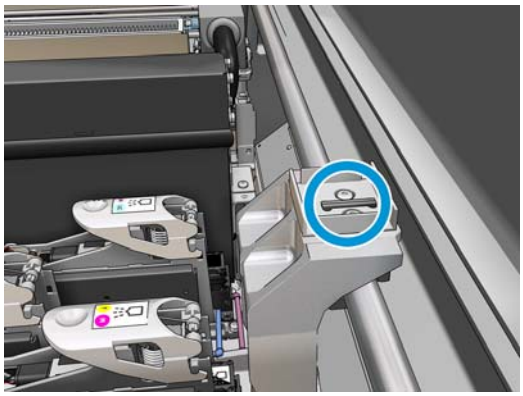
12. Slide off the cover of the front oiler foam.

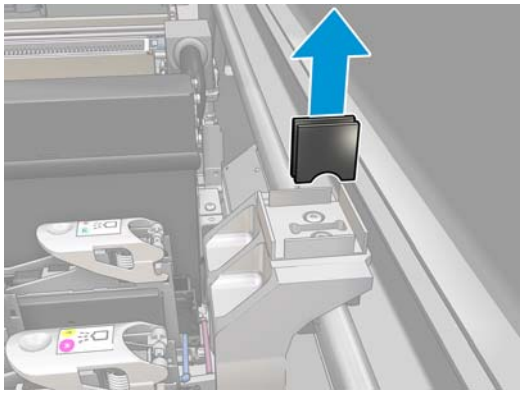


13. Remove the old foam.



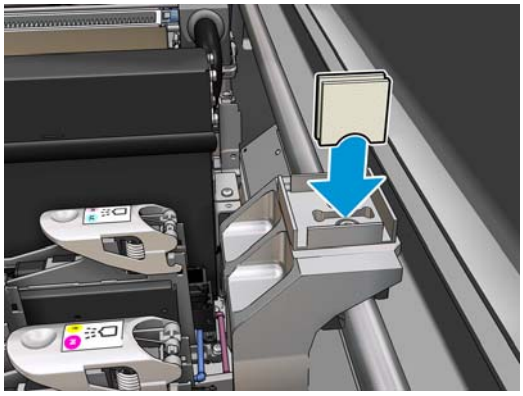
14. Remove the old wicks.



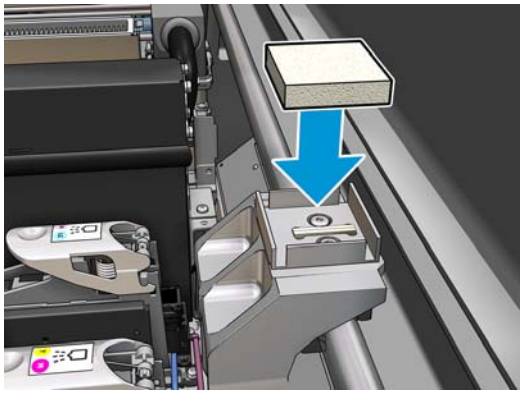


Front oiler foam installation

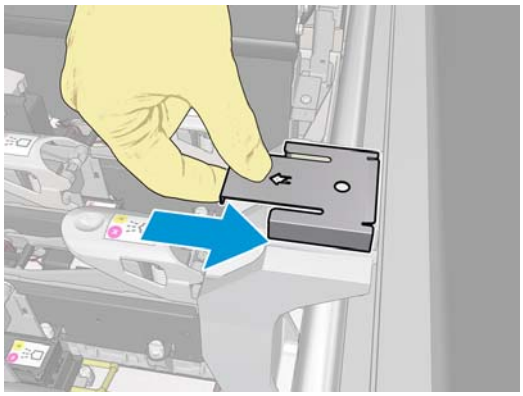
1. Insert the new wicks.



2. Insert the new foam.

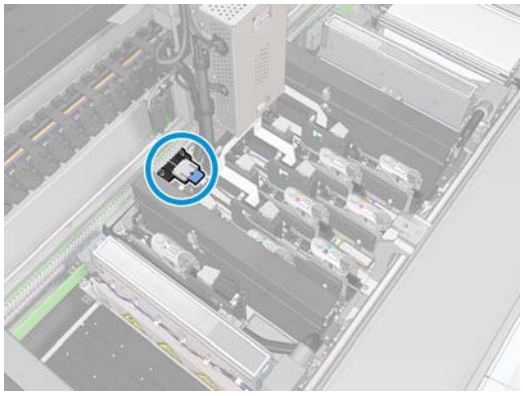


3. Put back the cover.

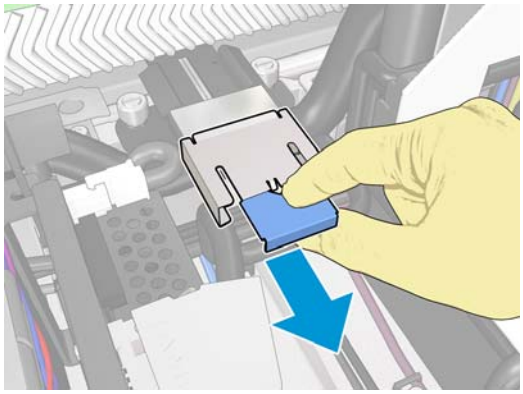


Rear oiler foam removal

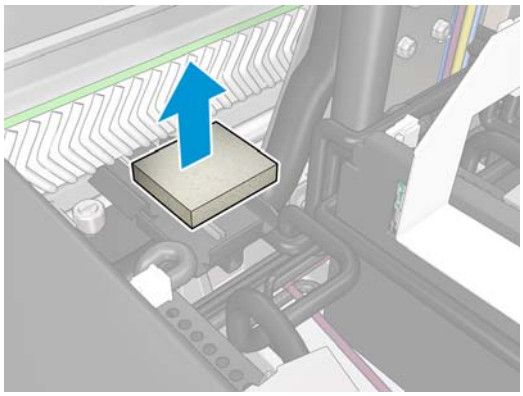
1. Locate the rear oiler foam in the carriage.



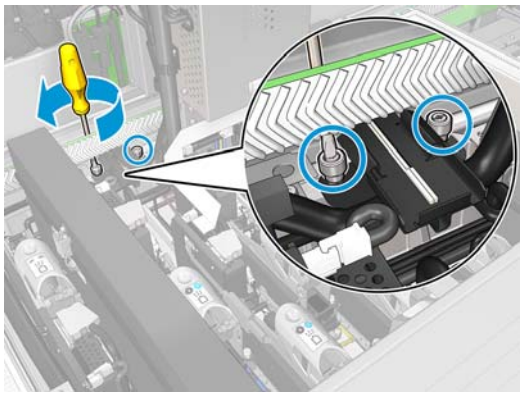
2. Slide off the cover of the rear oiler foam.

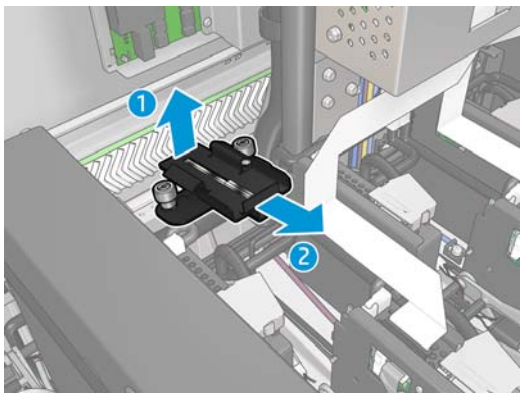


3. Remove the old foam.

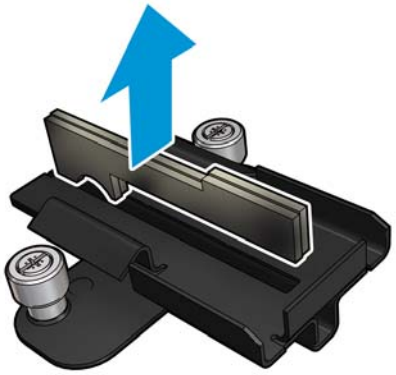


4. Remove the two screws that attach the black oiler holder to the carriage, and pull the holder out of the carriage



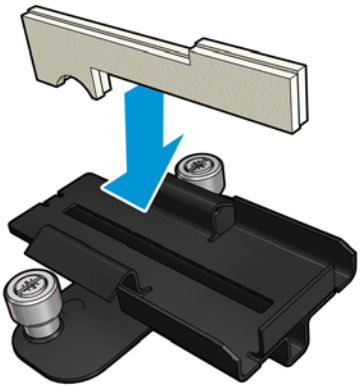


5. Remove the used wicks.



Rear oiler foam installation

1. Insert the new wicks.

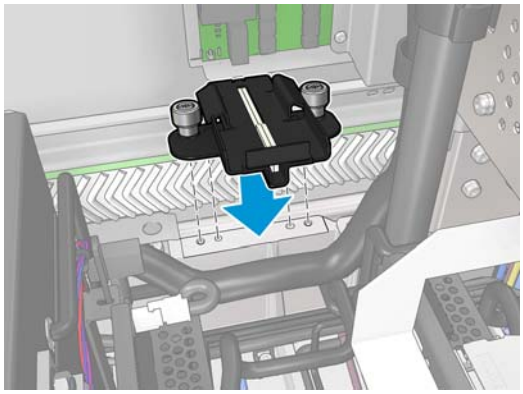


Check that the wicks are inserted correctly.

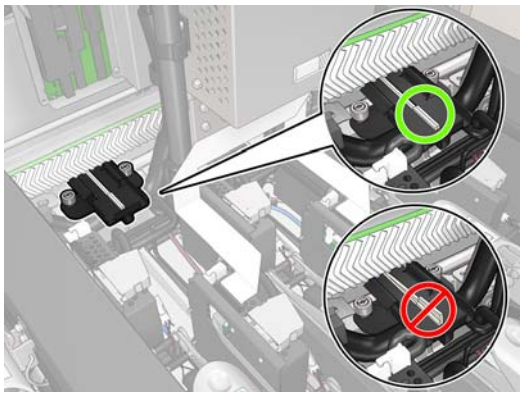




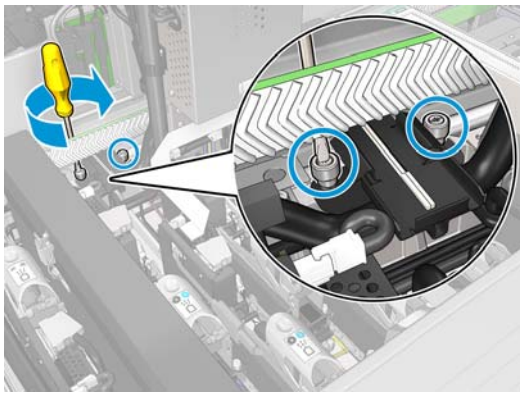
2. Put the black oiler holder back into position. The holder has two pins to locate it properly.



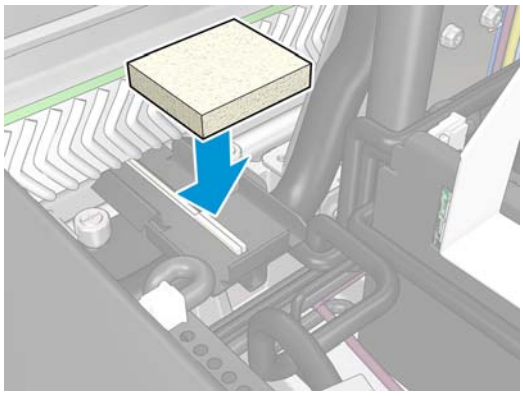
3. Check again that the new wicks are inserted correctly.



4. Tighten the screws.



5. Insert the new foam.



6. Slide in the cover.
7. Close the service position window.
8. Ensure that all windows, covers, and doors are closed and remain in their original position.
9. Move the carriage back to the normal position.

Clean the carriage rails

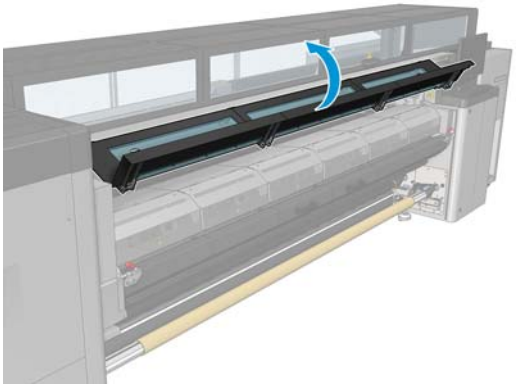
1. Ensure that all windows, covers, and doors are closed and remain in their original position.
2. Turn on the printer in the correct way for maintenance operations.



3. Move the carriage beam to its highest position (this takes about 2 minutes).
4. Turn off the printer in the correct way for maintenance operations.

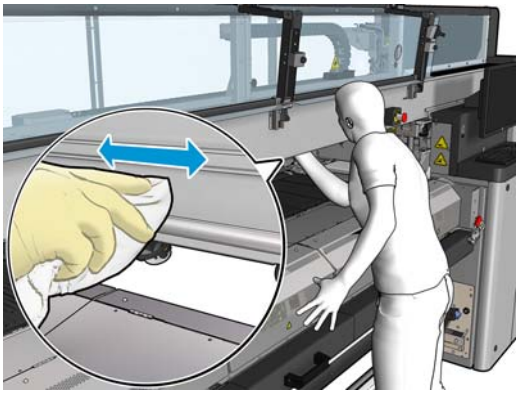


5. Open the front door.

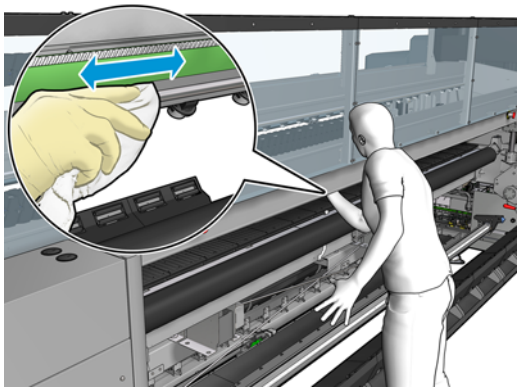


6. Standing at the front of the printer, clean the front rail using a lint-free cloth dampened with isopropyl alcohol.

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. Close the front door.
8. Go to the rear of the printer and open the loading table.
9. 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.

10. Ensure that the cleaned parts are completely dry and all vapor has completely evaporated.
11. Close the loading table.
12. Turn on the printer in the correct way for maintenance operations.
13. Ensure that all windows, covers, and doors are closed and remain in their original position.
14. Move the carriage beam back to its working position (this takes about 2 minutes).



Carriage tower

Removal

1. Remove the carriage assembly from the printer.
2. Remove eight screws: five at the front and three more on the top of the carriage-tower cover.

NOTE: These are all ferromagnetic screws.

3. Remove the carriage-tower cover by turning it enough to pull it up.
4. Disconnect all the cables that come through the Igus chain. See Subsystem block diagrams on page 61.
5. Remove the two drying PCAs (see Drying PCA on page 522) and the fiber-optics PCA (see Fiber-optics PCA on page 466).

NOTE: When removing the fiber-optic cable, be careful not to pinch or twist it excessively. Otherwise it can easily break.

6. Remove both carriage interconnect PCAs. See Carriage interconnect PCA on page 465

NOTE: It is important to label all the cables or keep them properly identified; so that, when they are reconnected, there will not be any cable mismatched or connected to the wrong connector or PCA. See Subsystem block diagrams on page 61.

7. Hold the ink tubes routed through the carriage tower to the Igus chain while removing the twenty T-20 screws that hold together the tower sheets, so that you can open the carriage tower and reach the ink tubes and cables routed through it.
8. Remove the twelve T-20 screws that hold the support plate and the carriage tower to the carriage baseplate.
9. Remove the twelve T-20 screws that hold the support plate and the carriage tower to the carriage baseplate, and replace the tower and support plate with the new one while you carefully route the ink tubes through the carriage tower.

Installation

1. Screw back the support plate to the carriage baseplate.

NOTE: If the new carriage tower does not come with all the cable plastic ties, reuse them from the old carriage tower assembly.

2. Carefully reroute the ink tubes and cables through the tower assembly. See Subsystem block diagrams on page 61.
3. Screw back the tower sheet, so that the ink tubes and the cables are held vertically through the carriage tower.
4. Install the two drying PCAs and the fiber-optics PCA and reconnect all the corresponding cables. See Subsystem block diagrams on page 61.
5. Screw back both carriage interconnect PCAs and reconnect all the carriage cables. See Subsystem block diagrams on page 61.
6. Screw back the cable cover sheet.
7. Install the carriage assembly into the printer.
8. Remove all printheads from their caps and install them into their pockets in the carriage.
9. Carefully unroute the ink tubes and cables from the tower assembly.
10. Remove the twelve T-20 screws that hold the support plate and the carriage tower to the carriage baseplate.
11. Close the front door.

Printhead interconnect optimizer PCA

Removal

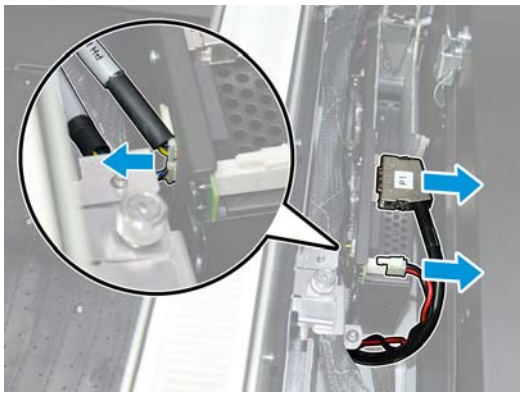
1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.

3. Stand on the folding steps and open the service position window.



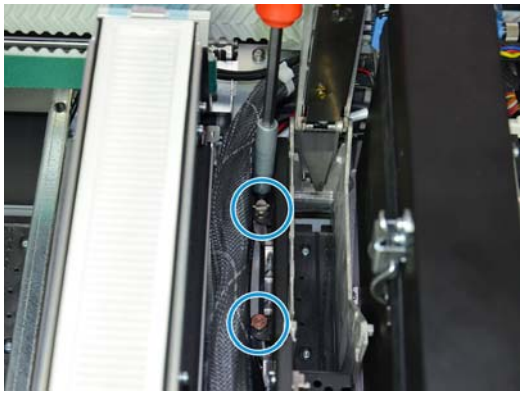
4. Remove all printheads from the carriage and store them in their caps.

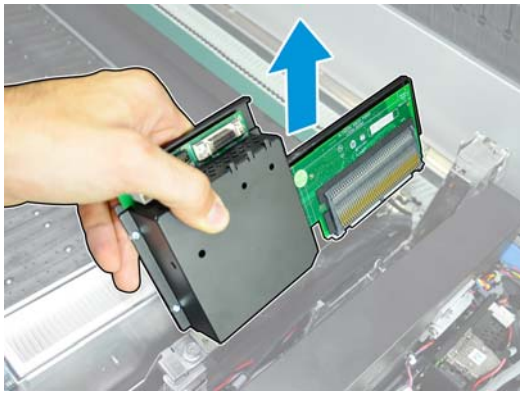
5. Disconnect the data trailing cable, the power cable from the printhead interconnect optimizer PCA and the two spray-to-spray cables (one connects to the drying PCA DOWN and the other connects to the printhead interconnect color PCA 2).



6. Remove the two M3 pointed screws with a flat screwdriver and remove the printhead interconnect optimizer PCA assembly from the carriage.

NOTE: This PCA is located between the drying and the aerosol removal left modules, and it is screwed to the Primer 1. See Subsystem block diagrams on page 61.





Printhead interconnect color PCA

Removal

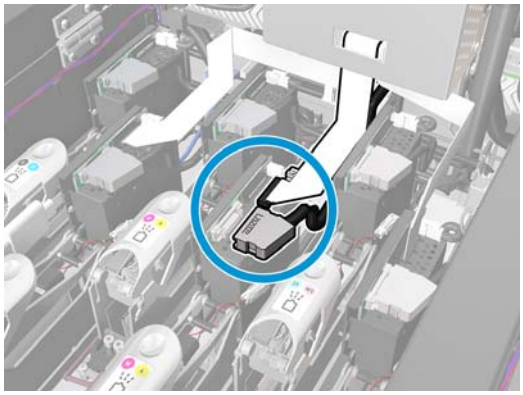
1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.
3. Stand on the folding steps and open the service position window.



4. Remove all printheads from the carriage and store them in their caps.

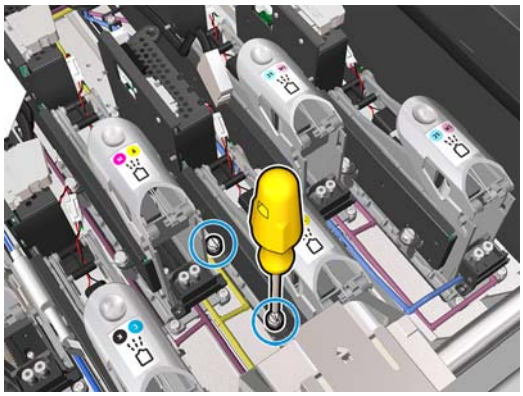
5. Disconnect both the data trailing cable and the power cable from the printhead interconnect color PCA.

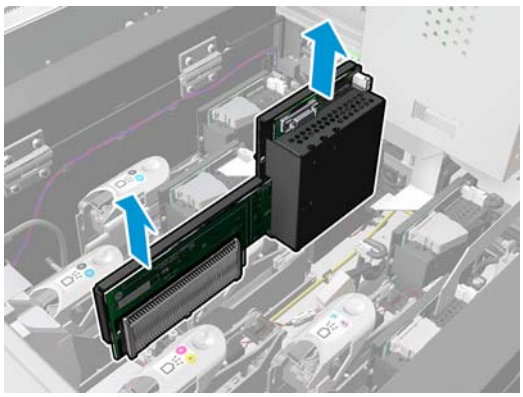
NOTE: Depending on the printhead interconnect color PCA, it may also be necessary to disconnect the line sensor cable (CZ056-50010, connected to PH3), the spray-to-spray cables (CZ056-50011, connected to PH1, PH2, PH4, and PH6), or the carriage encoder cable (CZ056-50005, connected to PH6).



6. Remove the two M3 pointed screws with a flat screwdriver and remove the printhead interconnect color PCA assembly from the carriage.

NOTE: These PCAs are located at the carriage base, between both aerosol removal modules, and they are screwed to Primers 2 to 7. See Subsystem block diagrams on page 61.





Carriage interconnect PCA

Removal

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.

3. Stand on the folding steps and open the service position window.



4. Remove all printheads from the carriage and store them in their caps.
5. Remove eight screws: five at the front and three more on the top of the carriage-tower cover.

NOTE: These are all ferromagnetic screws.

6. Remove the carriage-tower cover by turning it enough to pull it up.
7. Disconnect the carriage interconnect PCA cables from the PCA.

NOTE: It is important to label all the cables or keep them properly identified; so that, when they are reconnected, there will not be any cable mismatched or connected to the wrong connector or PCA. See Subsystem block diagrams on page 61.

NOTE: The following table shows the equivalences between the carriage interconnect PCA locations and their ID.

	Carriage interconnect	
ID	1	2
Carriage tower location	UP / LEFT	DOWN / RIGHT

8. Remove the seven T-10 screws from the carriage interconnect PCA.

Installation

1. When installing the new carriage Interconnect PCAs, perform the removal steps in reverse to position the carriage interconnect PCA and reconnect its cables.
2. Perform the primer pumps calibration procedure. See How to run a diagnostic test on page 341.

Fiber-optics PCA

Removal

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.

3. Stand on the folding steps and open the service position window.



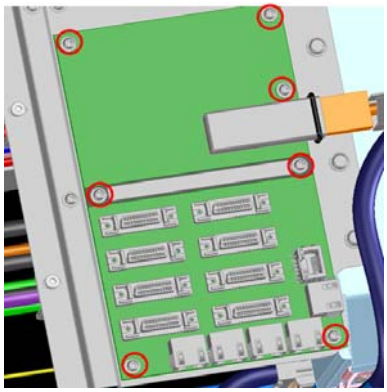
4. Remove all printheads from the carriage and store them in their caps.
5. Remove eight screws: five at the front and three more on the top of the carriage-tower cover.

NOTE: These are all ferromagnetic screws.

6. Remove the carriage-tower cover by turning it enough to pull it up.
7. Disconnect the data and power cables from the fiber-optics PCA.

CAUTION: Do not remove the fiber-optic cable from the fiber-optics PCA (which could break the cable).

8. Remove the seven T-10 screws that hold the fiber-optics PCA.



9. Remove the fiber-optics PCA, while simultaneously disconnecting the fiber-optics PCA from the fiber-optic cable connector by sliding the PCA connector out of the cable's connector.

CAUTION: Do not remove the fiber-optic cable from the fiber-optics PCA (which could break the cable).

Curing

Curing heater and fan module

Prepare to replace a curing fan and resistor module

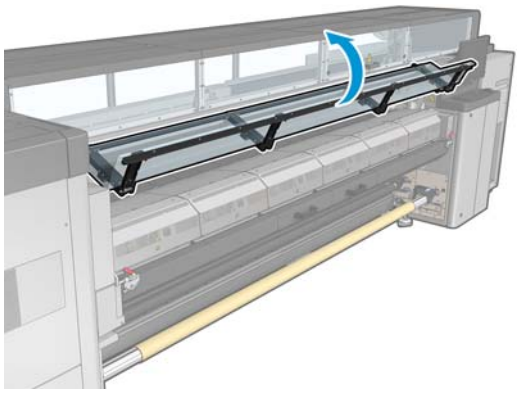
1. Ensure that you have the Curing Heater and Fan Module Kit (CZ056-67054), which is included in the Standard Uptime Kit (D4J02A).
2. Ensure that the printer is not printing.
3. Turn off the printer in the correct way for maintenance operations.



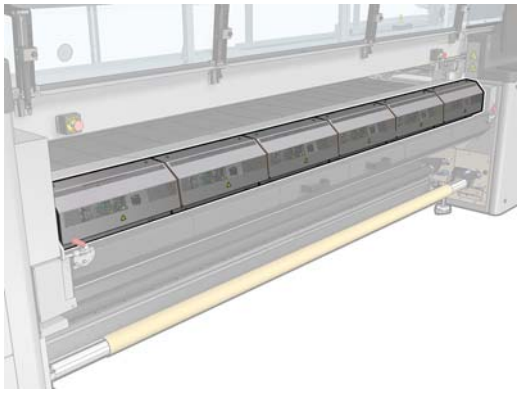
4. Wait for the curing modules to cool down.

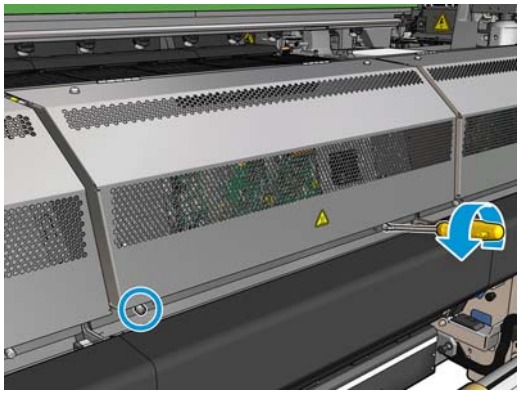
Replace a curing fan and resistor module

1. Open the front door.

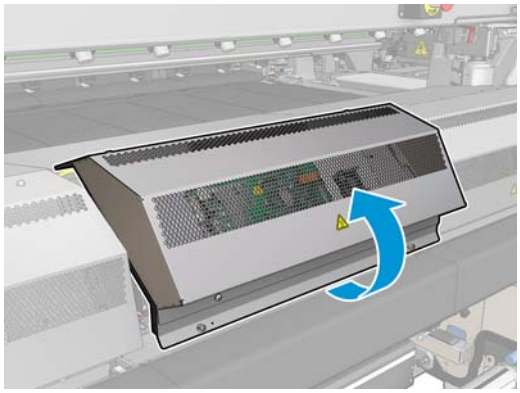


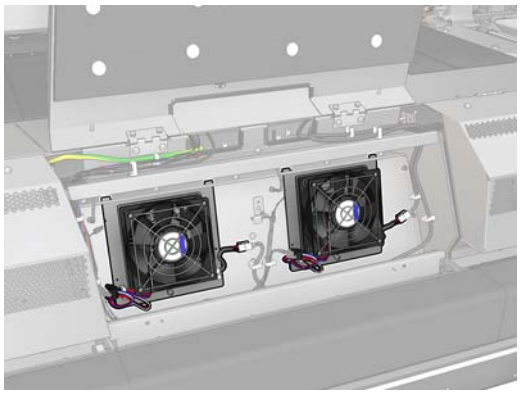
2. Use a flat screwdriver to remove the screws of the curing module.



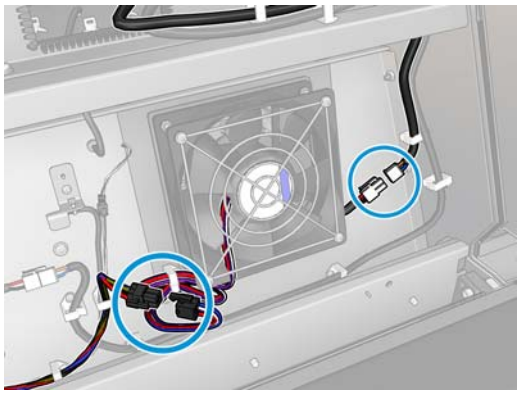


3. Raise the metal sheet in order to reach the interior of the module.

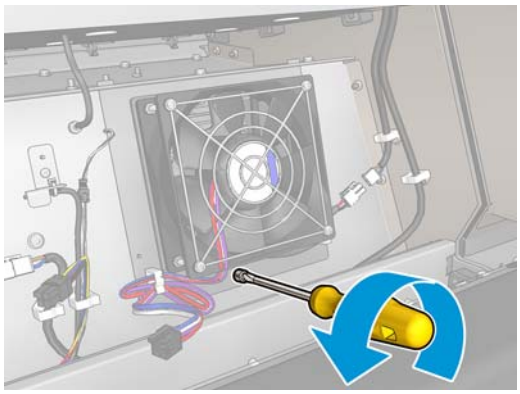




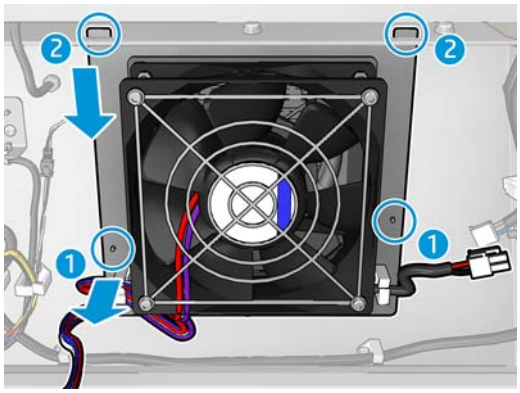
4. Disconnect the two cables shown in the picture. You have to press the retention clip on each of the two connectors, and gently pull the cable. The black one is for the DC fans supply and the white one is for AC power to the curing heaters.

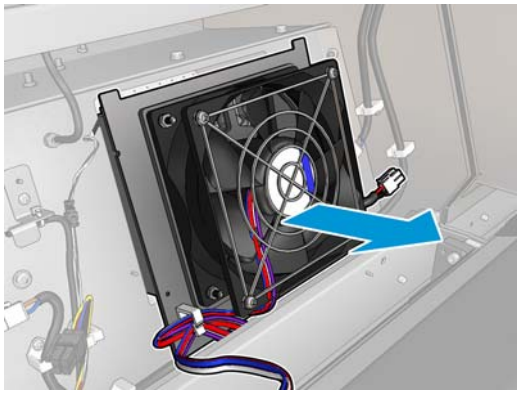


5. Use a flat screwdriver to remove the screws of the fan-resistor module.

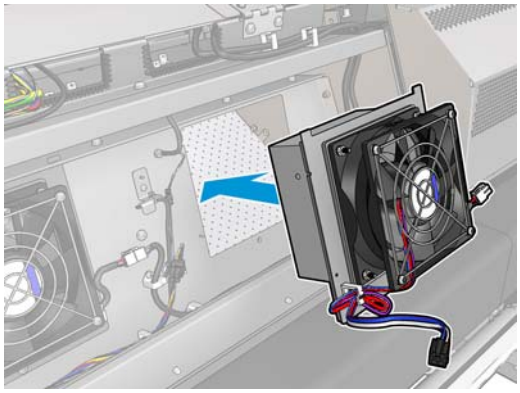


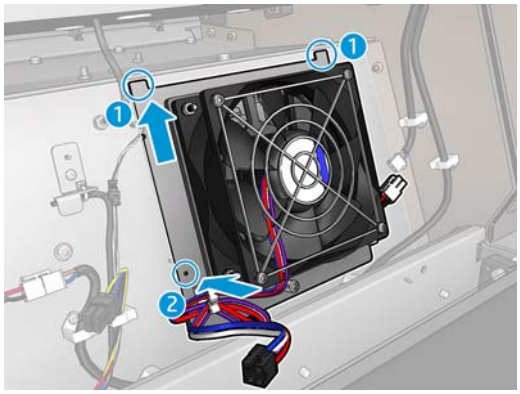
6. Remove the fan-resistor module.





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.

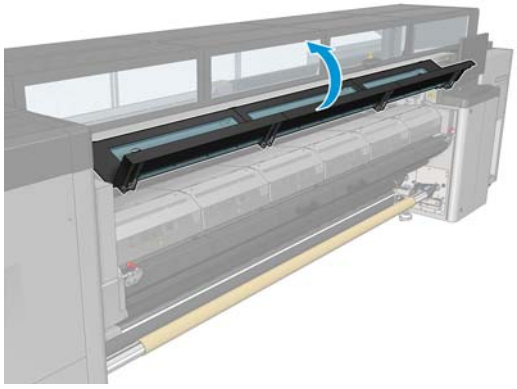


Curing temperature sensor kit

Removal

1. Turn off the printer and the power-enable switch.

2. Open the front door.



3. Remove the four pointed T-20 screws and open the curing PCA cover.
4. Disconnect the temperature sensor cable from the curing PCA.
5. Remove the pointed screws using a flat screwdriver and pull out the curing service inner cover.
6. Remove the curing fan heater assembly from both curing chambers.
7. Unroute the temperature sensor cable from its supports to the curing PCA, looping through both covers by the left cables' routing.
8. Disconnect the temperature sensor from the curing PCA.

Installation

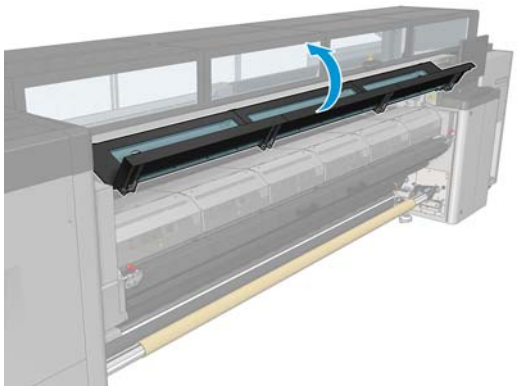
1. Be careful when replacing the temperature sensor: it is important to leave the sensor free on air, but also to route the temperature sensor cable correctly, looping along the temperature sensor support.
2. Check the status of the curing modules. See Table 5-18 Curing on page 370.

NOTE: You can check all the curing modules, or one particular module.

Curing right module

Removing the curing module assembly

1. Turn off the printer and the power-enable switch.
2. Open the front door.



3. Pull the curing module to the service position.
4. For the right module, remove the two T-25 screws and open the cable covers.

5. For the right module, remove the four T-20 screws and the curing PCA cover. Disconnect the LAN cable from the curing PCA at LAN connector (J12).
6. Disconnect all the cable air connections on module 1 and unroute for module 1 those cables that keep on routing to module 2.
7. Cut the flanges that hold the routing curing cables along the cable bundler cover, and unroute those cables.
8. Remove the four pointed T-20 screws and the vapor removal mobile collector.
9. Remove the six pointed screws and the vapor removal motion curing box.
10. Push back the curing module to the carpet position and close both clamps.

NOTE: It is recommended to screw back both the cable cover and the curing PCA cover before removing the curing module assembly, in order to make the removal of the curing module easier to handle.

11. Carefully open the curing module assembly and remove the three screws that hold the left upper curing slide support to the sideplate.
12. Move the curing module assembly back to the carpet position and remove the two remaining screws from the left upper curing slide support.
13. Loosen the right upper curing slide support (T-20 screws).
14. Slide a flange through the left upper curing slide support and the left curing side plate and tighten it in order to disable linear guide movement.
15. Repeat the same operation to tighten the right linear guide with a flange.

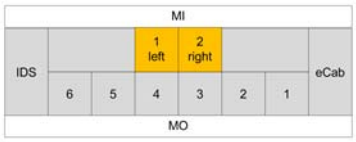
NOTE: The following operations require at least two people. Holding and removing the curing module assembly must be done with caution, as it is too large and heavy for one person.

16. Open both clamps and hold the curing module assembly on both sides, by holding the upper beam and the clamp.
17. Pull the curing module slightly to the left in order to free the right side from the T-20 screws.
18. Carefully slide the module out, holding it by the clamp and the upper position on both sides.
19. Leave the curing module assembly on a flat surface.

Removing the curing right module

1. Remove the three HEX screws, and the six screws that hold the lower beam to the right curing external sideplate.
2. Remove the right curing external sideplate from the curing module assembly.
3. For the right module, remove the two T-25 screws and open their cable covers.
4. For the right module, remove the four T-20 screws and the curing PCA cover.
5. Disconnect and unroute all the cables routed along the right curing module (the cables that go from the right module to the central top right module 2) in order to be able to remove the module separately.

6. The following picture shows the criteria that must be followed when removing the curing modules (from right to left):



7. For the right module, remove the ground short.
8. Remove the right module by pulling it to the right.

IMPORTANT: Do not touch or remove the pins from their location when replacing any module, in order not to modify the calibration along the guides during the replacement procedure.

Installation

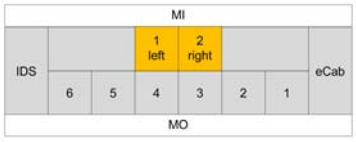
1. To install back the side plate it is important to close the vapor removal guide properly with silicone in order not to have any air leakage.
2. Check the status of the curing modules. See Table 5-18 Curing on page 370.

NOTE: You can check all the curing modules, or one particular module.

Curing general module

Removal

1. Turn off the printer and the power-enable switch.
2. Remove the curing module assembly.
3. Remove the three HEX screws, and the six screws that hold the lower beam to the right curing external sideplate.
4. Remove the right curing external sideplate from the curing module assembly.
5. For each module, from the right to the required module, remove the two T-25 screws and open their cable covers.
6. For each module, from the right to the required module, remove the four T-20 screws and the curing PCA cover.
7. Disconnect and unroute all the cables routed along the curing modules in order to be able to remove the modules separately.
8. The following picture shows the criteria that must be followed when removing the curing modules, from right to left:



9. For each module, from the right to the required module, remove the ground short cable.

10. Remove the right module by pulling it to the right.
11. Remove the subsequent modules by sliding them to the right.

IMPORTANT: Do not touch or remove the pins from their location when replacing any module, in order not to modify the calibration along the guides during the replacement procedure.

Installation

1. When reinstalling the side plate, it is important to close the vapor removal guide properly with silicone in order not to have any air leakage.

TIP: It is strongly recommended to use Dow Corning 732 Multi-Purpose Sealant.

2. Check the status of the curing modules. See Table 5-18 Curing on page 370.

NOTE: You can check all the curing modules, or one particular module.

Curing left module

Removal

1. Turn off the printer and the power-enable switch.
2. Remove the curing module assembly.
3. Remove the three HEX screws, and the six screws that hold the lower beam from both the right curing external sideplate.
4. Remove the right curing external sideplate from the curing module assembly.
5. For all the modules, going from right to left, remove the two T-25 screws and open their cable covers.
6. For all the modules, going from right to left, remove the four T-20 screws and the curing PCA cover.
7. Disconnect and unroute all the cables routed along the curing modules (which means removing the entire cable routing) in order to be able to remove all the modules separately.
8. The following picture shows the criteria that must be followed when removing the curing modules, from right to left:



9. For all modules, remove the ground short cable.
10. Remove the right module by pulling it to the right.
11. Remove the subsequent modules by sliding them to the right.

IMPORTANT: Do not touch or remove the pins from their location when replacing any module, in order not to modify the calibration along the guides during the replacement procedure.

Installation

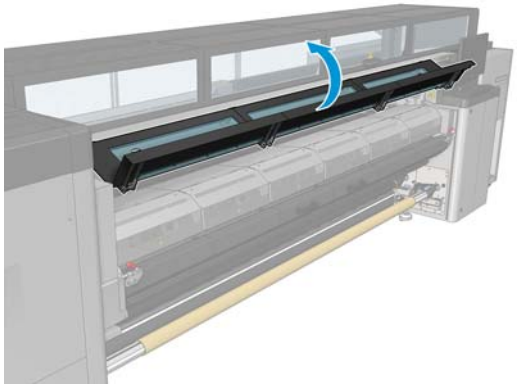
1. When reinstalling the side plate, it is important to close the vapor removal guide properly with silicone in order not to have any air leakage.
2. Check the status of the curing modules. See Table 5-18 Curing on page 370.

NOTE: You can check all the curing modules, or one particular module.

Curing latch

Removal

1. Turn off the printer and the power-enable switch.
2. Open the front door.



3. Open both curing latches.
4. Pull the curing module to the service position.
5. Remove the two pointed T-20 screws and replace the latch.

Curing linear guide kit

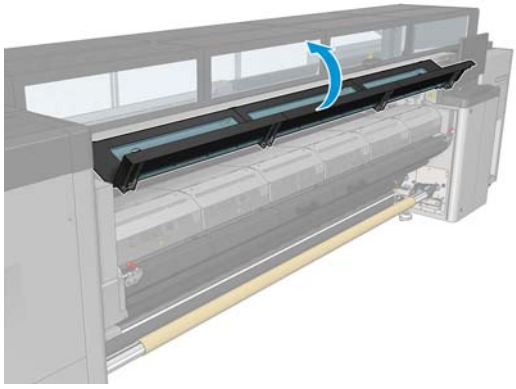
Removal

1. Turn off the printer and the power-enable switch.
2. Remove the curing module assembly.
3. Remove the screws that hold the linear guide to the external sideplate and the curing slide support.
4. Replace the linear guide.

Curing bracket pin support kit

1. Turn off the printer and the power-enable switch.

2. Open the front door.



Removing an upper pin

1. Remove the two T-25 screws and open the cable covers of the module you are working on.
2. Remove the pin support screws with an HEX key.

IMPORTANT: Do not touch or remove the modules when replacing any pin support, in order not to modify the calibration along the guides during the replacement procedure.

IMPORTANT: Do not remove more than one pin at a time, in order not to affect the calibration along the curing beams.

Removing a lower pin

1. Remove the pointed screws using a flat screwdriver in order open the curing service Inner cover and reach the lower pins of the module you are working on.
2. Remove the pin support screws with an HEX key.

IMPORTANT: Do not touch or remove the modules when replacing any pin support, in order not to modify the calibration along the guides during the replacement procedure.

IMPORTANT: Do not remove more than one pin at a time, in order not to affect the calibration along the curing beams.

Installation

1. When reinstalling the side plate, it is important to close the vapor removal guide properly with silicone in order not to have any air leakage.

TIP: It is strongly recommended to use Dow Corning 732 Multi-Purpose Sealant.

2. Check the status of the curing modules. See Table 5-18 Curing on page 370.

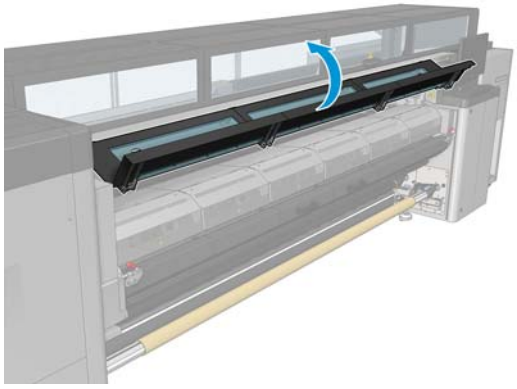
NOTE: You can check all the curing modules, or one particular module.

Curing bottom plate assembly

Removal part 1

1. Turn off the printer and the power-enable switch.

2. Open the front door.



3. Open both curing latches.
4. Pull the curing module to the substrate load position and remove any substrate.
5. Push the curing module assembly back to the closed position and remove the flat Phillips M6 screw from each dolly (left and right).
6. Perform the following steps, depending on the curing bottom plate design. There are two different designs for the curing bottom plate assembly:
   - Design 1, used in printers manufactured before November 2013
   - Design 2, used in printers manufactured after November 2013 (the exact manufacturing date and the serial number of the first printer using design 2 will be included in a service newsletter, around November 2013)

Removal part 2 (design 1)

The curing bottom plate's design 1 does **not** include any row of plastic ribs on its assembly.

1. Remove the curing module assembly. See Curing left module on page 475 and Curing right module on page 472.
2. Remove the Torx M3 screws that fix the bottom plates to the upper and lower diverter modules.
3. Remove the bottom plate assembly.

NOTE: When removing the bottom plate, you are recommended to remove the three panels from the ISM side to the e-cabinet side (from left to right). When installing, follow the reverse order, from right to left, from the e-cabinet side to the ISM side.

Removal part 2 (design 2)

The curing bottom plate's design 2 includes two rows of plastic ribs on its assembly.

1. Remove the curing module assembly. See Curing left module on page 475 and Curing right module on page 472.
2. Remove the Torx M3 screws that fix the bottom plates to the upper and lower diverters.
3. Remove the bottom plate assembly.

NOTE: When removing the bottom plate, you are recommended to remove the three panels from the ISM side to the e-cabinet side (from left to right). When installing, follow the reverse order, from right to left, from the e-cabinet side to the ISM side.

NOTE: To replace any rib of the curing bottom plate assembly, it is necessary to remove the entire curing bottom plate, so that the screws hidden backwards, that attach the ribs to the curing bottom plate, are accessible.

Installation (design 2)

1. Perform the opposite procedure to install the curing bottom plate assembly.

CAUTION: Ensure that both Torx M6 screws are replaced at the ends of the curing linear guides; otherwise, the guide lines can break easily.

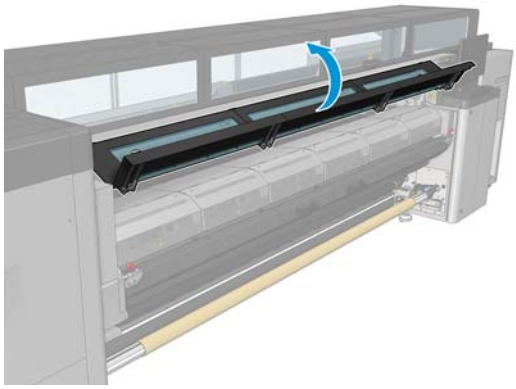
2. If there has been a curing bottom plate upgrade from design 1 to design 2, perform the set curing bottom plate diagnostic so that the printer is aware of the change. See Table 5-23 Utilities on page 375.

Curing cables kit

Curing data cable (CZ056-50051)

Removal

1. Turn off the printer and the power-enable switch.
2. Remove the rear right panel. See Rear right panel assembly on page 624.
3. Remove the front right panel. See Front right panel assembly on page 623.
4. Open the printhead cleaning system door.
5. Open the front door.



6. Open both curing module assembly latches.
7. Pull the curing module to the service position.
8. Remove the two T-25 screws and, for module 1, open the cable cover.
9. Disconnect the cable at both ends (the e-box connector and the air connector).
10. Unroute the cable.
11. If necessary, pull out the printhead cleaning system.

Installation

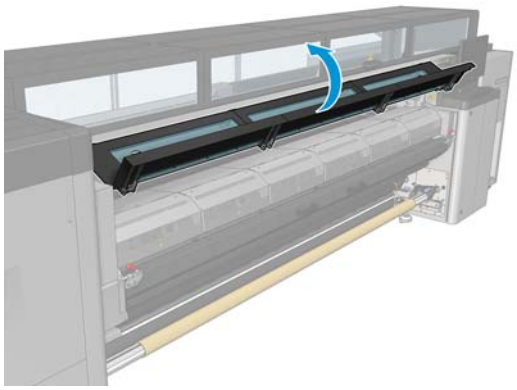
1. Remember to leave free loops when rerouting the cable. It is important to leave enough for the curing module to move freely and route the cable along the bundle cover shape, but also not to exceed this free loop, otherwise it could become hooked, or tighten, or break.
2. Check the status of the curing modules. See Table 5-18 Curing on page 370.

NOTE: You can check all the curing modules, or one particular module.

Data cable from curing PCA to curing PCA (CZ056-50019) (×5)

Removal

1. Turn off the printer and the power-enable switch.
2. Open the front door.



3. Open both curing module assembly latches.
4. Pull the curing module to the service position.
5. Remove the two T-25 screws and open the cable covers of the required modules and the ones between them. See Subsystem block diagrams on page 61.
6. Remove the four T-20 screws and open the curing PCA covers of both modules whose data cables are connected to the curing PCA. See Subsystem block diagrams on page 61.
7. Disconnect both ends of the data cable from the curing PCAs.
8. Unroute the curing data cable.

Installation

1. Remember to leave free loops when routing back again.
2. When replacing module 6, ensure that there is a jumper at the CAN TERM connection to re-mark the end of the daisy chain (if there is no jumper, take it from the old PCA).
3. Check the status of the curing modules. See Table 5-18 Curing on page 370.

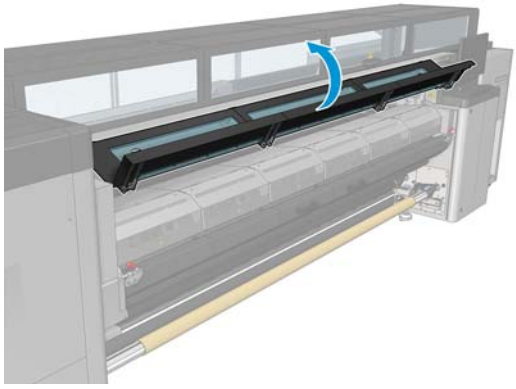
NOTE: You can check all the curing modules, or one particular module.

DC curing module to curing module (CZ056-50219)

Removal

1. Turn off the printer and the power-enable switch.

2. Open the front door.



3. Open both curing module assembly latches.
4. Pull the curing module to the service position.
5. Remove the two T-25 screws and open the cable cover of the required modules and the ones between them. See Subsystem block diagrams on page 61.
6. Remove the four T-20 screws and open the curing PCA covers of both modules where the DC cable is connected to the curing PCA. See Subsystem block diagrams on page 61.
7. Disconnect both ends of the DC cable from the curing PCAs.
8. Unroute the curing DC cable.

Installation

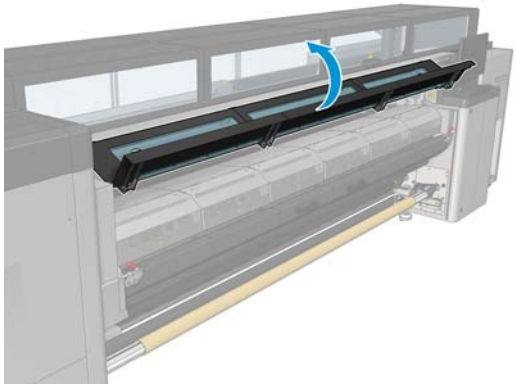
1. Remember to leave free loops when rerouting the cable.
2. Check the status of the curing modules. See Table 5-18 Curing on page 370.

NOTE: You can check all the curing modules, or one particular module.

AC curing module to curing module (CZ056-50218)

Removal

1. Turn off the printer and the power-enable switch.
2. Open the front door.



3. Open both curing module assembly latches.
4. Pull the curing module to the service position.

5. Remove the two T-25 screws and open the cable cover of the required modules and the ones between them. See Subsystem block diagrams on page 61.
6. Remove the four T-20 screws and open the curing PCA cover of both modules where the AC cable is connected to the curing PCA. See Subsystem block diagrams on page 61.
7. For those two modules, remove the pointed screws using a flat screwdriver and remove the curing service inner cover.
8. Disconnect the AC cable ends (the air connector and the curing PCA's connector). If necessary, remove the pointed T-20 screws that hold the AC safety cover sheet, disconnect the curing PCA fan, and, while sliding the cover sheet along the AC cables, disconnect it from the curing PCA.
9. Unroute the AC cable through the modules.

Installation

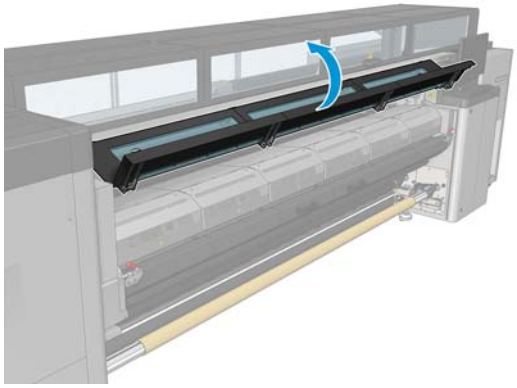
1. Remember to leave free loops when rerouting the cable.
2. Do not forget to reconnect the curing PCA fan.
3. Check the status of the curing modules. See Table 5-18 Curing on page 370.

NOTE: You can check all the curing modules, or one particular module.

Fan cable (CZ056-50120)

Removal

1. Turn off the printer and the power-enable switch.
2. Open the front door.



3. Open both curing module assembly latches.
4. Pull the curing module to the service position.
5. Remove the two T-25 screws and open the cable cover.
6. Remove the four T-20 screws and open the curing PCA cover.
7. Remove the pointed screws using a flat screwdriver and open the curing service inner cover to reach the heaters.
8. Disconnect the curing PCA's fan cable connector.
9. Unroute the fan cable through the cover left hole until it reaches both heaters, and disconnect them.

Installation

1. Reroute the fan cable through the left curing inner cover hole to reach the curing PCA.

NOTE: Remember to leave free loops in the cable.

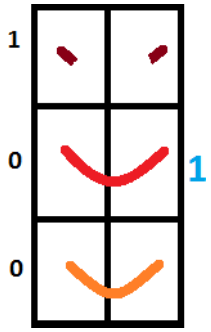
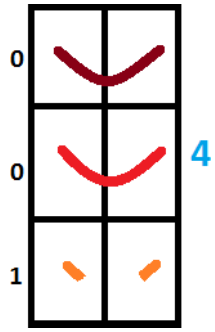
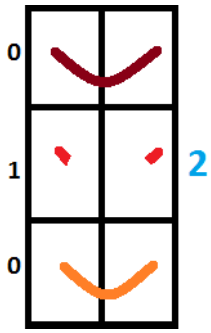
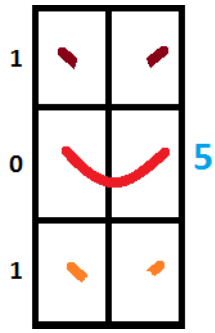
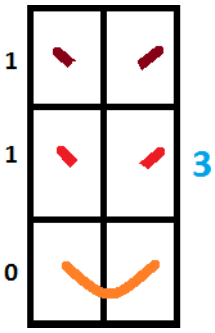
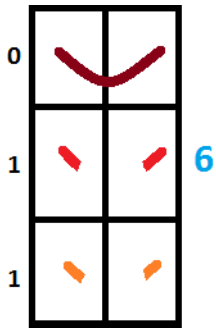
2. Connect the fan cable to both fans and screw back the curing inner cover.
3. Cut the jumpers following the corresponding addresses (see Subsystem block diagrams on page 61), and connect the fan cable to the curing PCA connector.

When cutting the cable jumpers to give the address, follow these criteria on the connector:

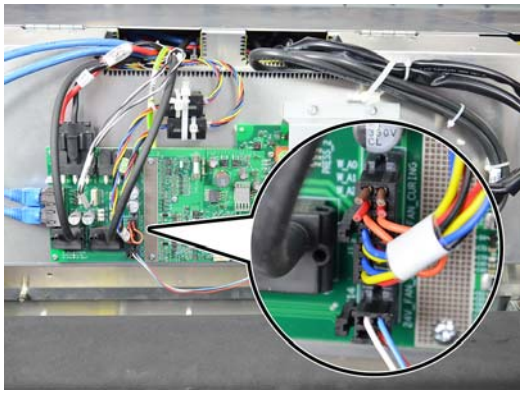
3 ADDR2	2 ADDR1	1 ADDR0 LSB

Where **cable = 0; no cable = 1.**

The following table shows the schemes for each address module: how the jumper cables should be cut in order to get the different module addresses:

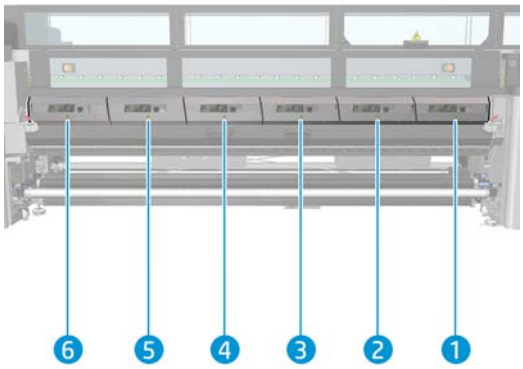
Module	Address	Jumper cables	Module	Address	Jumper cables
1	(0,0,1)		4	(1,0,0)	
2	(0,1,0)		5	(1,0,1)	
3	(0,1,1)		6	(1,1,0)	

The following illustration shows the jumper cables cut for module 3:



CAUTION: Ensure that the jumper cables are cut near to the connector. Otherwise they may touch the cover and short-circuit.

The curing modules are arranged as follows:



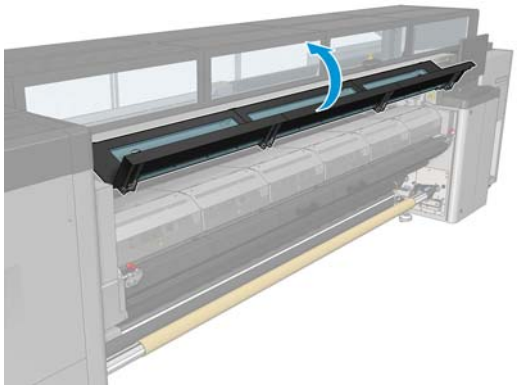
4. Check the status of the curing modules. See Table 5-18 Curing on page 370.

NOTE: You can check all the curing modules, or one particular module.

Heater cable (CZ056-50121)

Removal

1. Turn off the printer and the power-enable switch.
2. Open the front door.



3. Open both curing module assembly latches.
4. Pull the curing module to the service position.

5. Remove the two T-25 screws and open the cable cover.
6. Remove the four T-20 screws and open the curing PCA cover.
7. Remove the pointed screws using a flat screwdriver and open the curing service inner cover.
8. Disconnect the curing PCA. If necessary, remove the pointed T-20 screws that hold the AC safety cover sheet, disconnect the curing PCA fan, and, while sliding the cover sheet along the AC heater cables, disconnect it from the curing PCA.
9. Unroute the heater cable through the cover right hole until it reaches both heaters, and disconnect them.

Installation

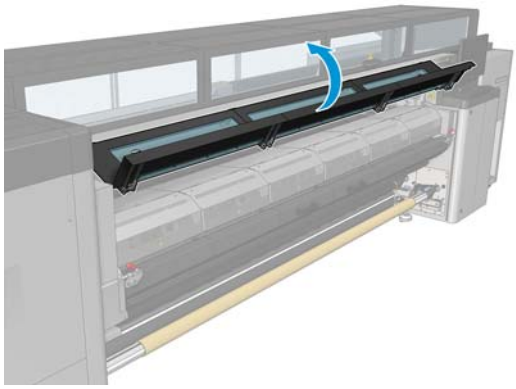
1. Remember to leave free loops when rerouting the cable.
2. If you previously disconnected the curing PCA fan, do not forget to reconnect it.
3. Check the status of the curing modules. See Table 5-18 Curing on page 370.

NOTE: You can check all the curing modules, or one particular module.

Ground strip (CZ056-50124)

Removal

1. Turn off the printer and the power-enable switch.
2. Open the front door.



3. Open both curing module assembly latches.
4. Pull the curing module to the service position.
5. Remove the two T-25 screws and open the cable cover of the required module and the next one in order to reach the upper pin screws.
6. Remove the four T-20 screws and open the curing PCA cover to reach the required ground strip.
7. Remove the curing PCA (see Curing and vapor removal PCA on page 490).
8. Remove the pointed screw from the upper pin and unroute the curing ground strip.

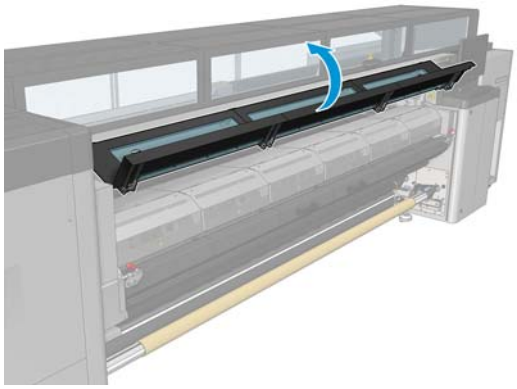
Installation

- Remember to leave free loops when rerouting the cable.

Curing ground (CZ056-50125)

Removal

1. Turn off the printer and the power-enable switch.
2. Open the printhead cleaning system door.
3. Open the front door.



4. Open both curing module assembly latches.
5. Pull the curing module to the service position.
6. Remove both T-25 screws and open the cable cover of module 1.
7. Remove the pointed screws from the right structure and the curing external sideplate in order to disconnect both ends of the curing ground cable.
8. Unroute the curing ground cable.

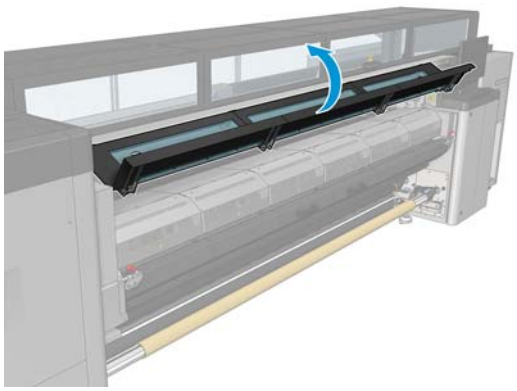
Installation

- ▲ Remember to leave free loops when rerouting the cable.

Short ground strip (CZ056-50213)

Removal

1. Turn off the printer and the power-enable switch.
2. Open the front door.



3. Open both curing module assembly latches.
4. Pull the curing module to the service position.

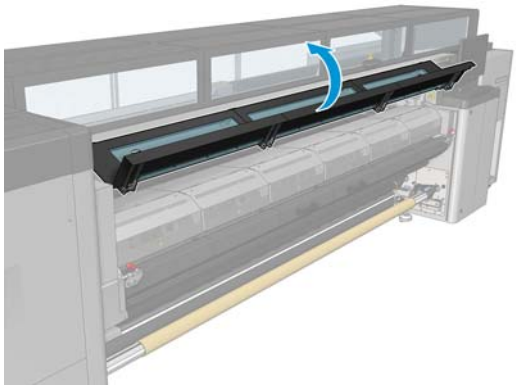
5. Remove the four T-20 screws and open the curing PCA cover of the required module and the next one in order to reach the lower pin screws.
6. Remove both ground strip cable end screws.

Curing power input DC cables kit

E-cabinet to air connector cable (CZ056-50232)

Removal

1. Turn off the printer and the power-enable switch.
2. Remove the rear right panel. See Rear right panel assembly on page 624.
3. Remove the front right panel. See Front right panel assembly on page 623.
4. Open the printhead cleaning system door.
5. Open the front door.



6. Open both curing module assembly latches.
7. Pull the curing module to the service position.
8. Remove two T-25 screws and open the module 1 cable cover.
9. Disconnect both ends of the cable (the e-cabinet connector and the air connector).
10. Unroute the cable. If needed, pull out the e-box carefully.

Installation

1. Remember to leave free loops when rerouting the cable.
2. Check the status of the curing modules. See Table 5-18 Curing on page 370.

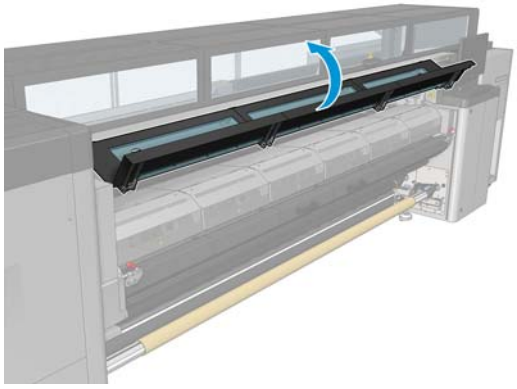
NOTE: You can check all the curing modules, or one particular module.

Air connector to curing PCA cable (CZ056-50068)

Removal

1. Turn off the printer and the power-enable switch.

2. Open the front door.



3. Open both curing module assembly latches.
4. Pull the curing module to the service position.
5. Remove the T-25 and T-20 screws and, from module 1 to module 4, open the cable cover and the curing PCA cover.
6. Disconnect both cable ends (the air connector and both modules 1 and 4 curing PCA connectors).
7. Unroute the cable through modules 1 to 4.

Installation

1. Remember to leave free loops when rerouting the cable.
2. Check the status of the curing modules. See Table 5-18 Curing on page 370.

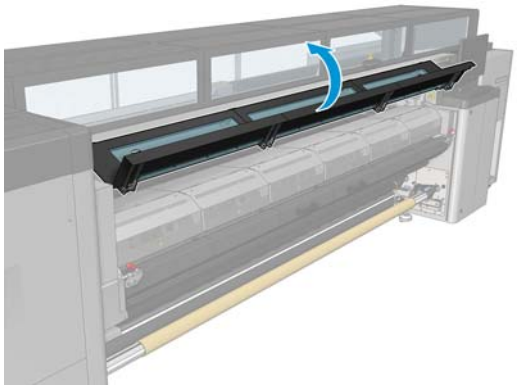
NOTE: You can check all the curing modules, or one particular module.

Curing power input AC cables kit

E-cabinet to air connector cable (CZ056-50231)

Removal

1. Turn off the printer and the power-enable switch.
2. Pull out the right front panel.
3. Open the printhead cleaning system door.
4. Open the front door.



5. Open both curing module assembly latches.
6. Pull the curing module to the service position.
7. Remove the two T-25 screws and open the module 1 cable cover.
8. Disconnect both ends of the cable (the e-cabinet connector and the air connector).
9. Unroute the cable.

Installation

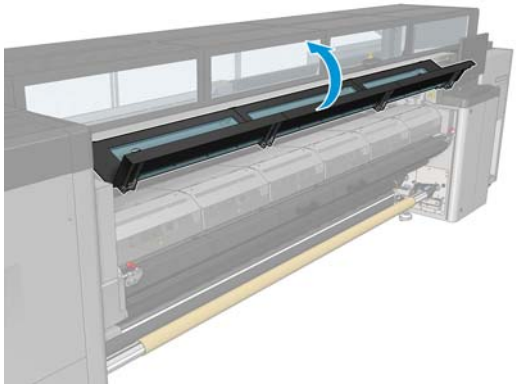
1. Remember to leave free loops when rerouting the cable.
2. Check the status of the curing modules. See Table 5-18 Curing on page 370.

NOTE: You can check all the curing modules, or one particular module.

Air connector to curing PCA cable (CZ056-50067)

Removal

1. Turn off the printer and the power-enable switch.
2. Open the front door.



3. Open both curing module assembly latches.
4. Pull the curing module to the service position.
5. Remove the four T-20 screws and, from module 1 to module 5, open both the cable cover and the curing PCA cover.
6. Remove the pointed screws using a flat screwdriver and open the curing service inner cover.
7. For modules 1, 3 and 5, remove the pointed T-20 screws that hold the AC safety cover sheet, and, when sliding the cover along the AC cables, disconnect both cable ends (the air connector and the curing PCA connector).
8. Unroute the cable through modules 1 to 5.

Installation

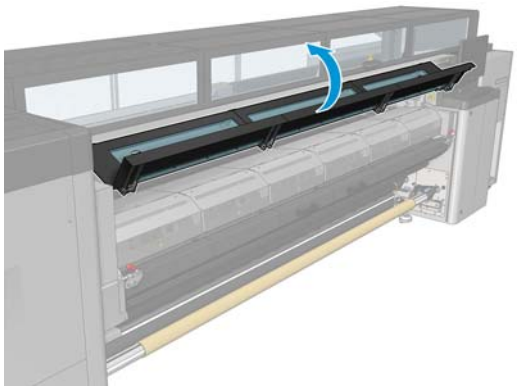
1. Remember to leave free loops when rerouting the cable.
2. Check the status of the curing modules. See Table 5-18 Curing on page 370.

NOTE: You can check all the curing modules, or one particular module.

Curing and vapor removal PCA

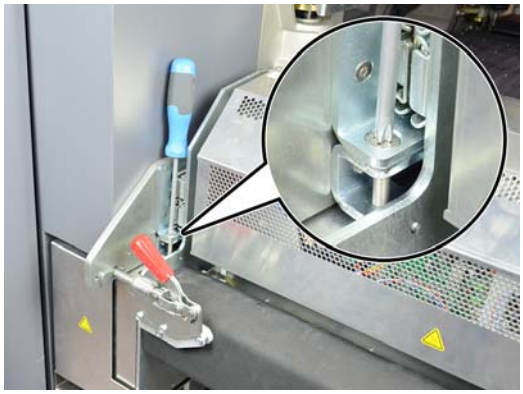
Removal

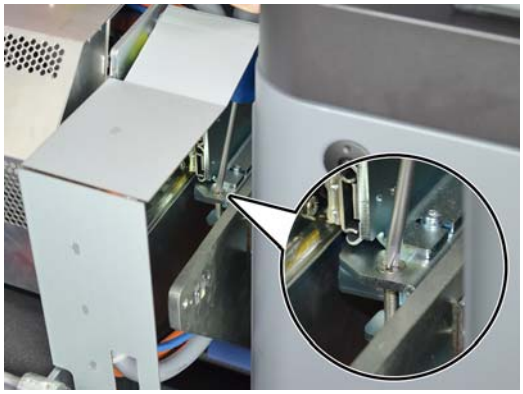
1. Turn off the printer and the power-enable switch.
2. Open the front door.

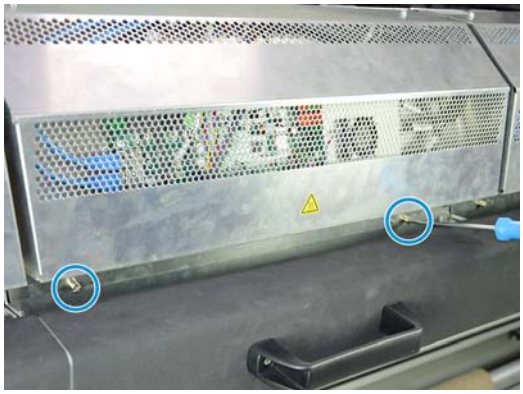


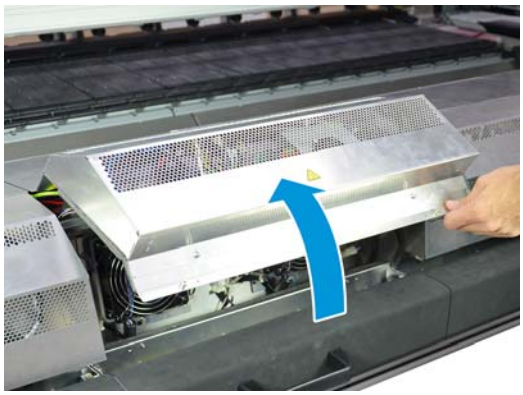
3. Open both curing module assembly latches.
4. Pull the curing module to the service position.

5. Remove the four T-20 screws and open the curing PCA cover.

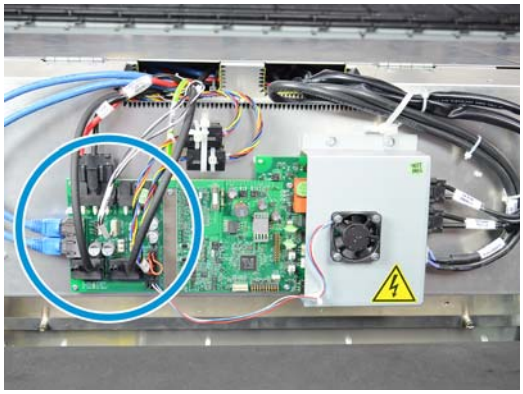






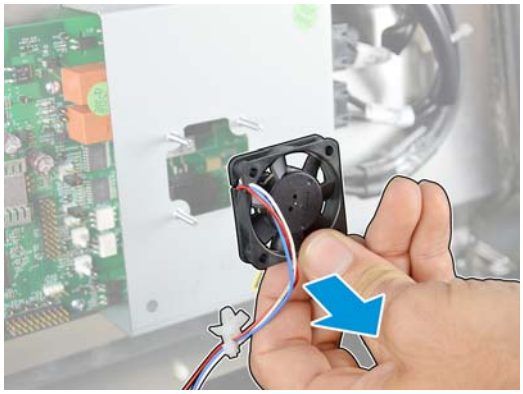


6. Disconnect all the cables located at the left side of the PCA, including the PCA fan cable.



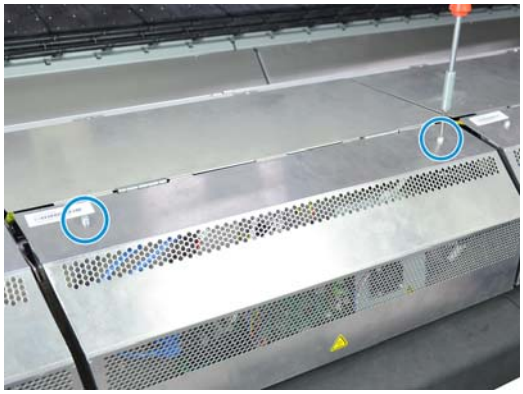
7. Remove the four pointed nuts that hold the PCA fan, and remove the PCA fan.





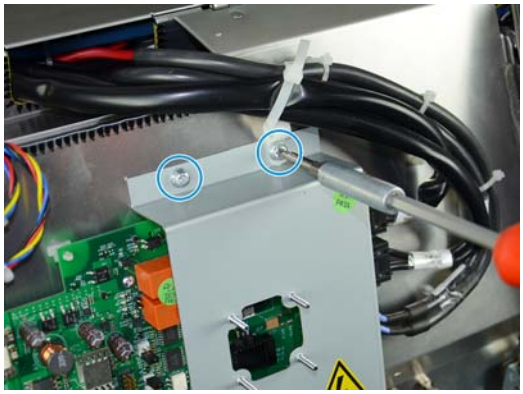
8. Remove the pointed screws using a flat screwdriver and open the curing service inner cover.

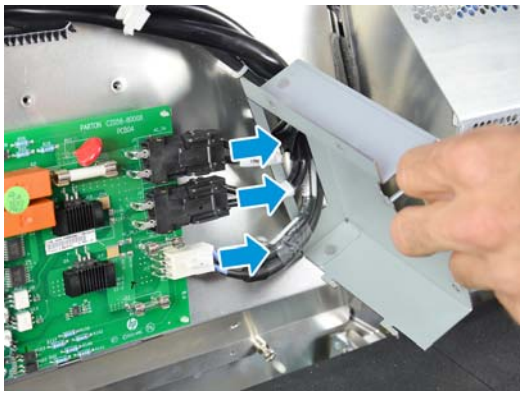




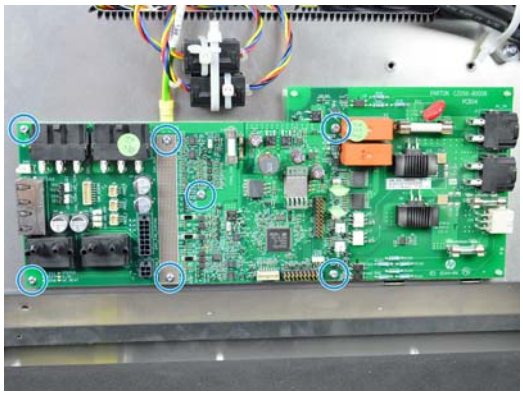


9. Remove the pointed T-20 screws that hold the AC safety cover sheet, and, while sliding the cover along the AC cables, disconnect those cables from the curing PCA.

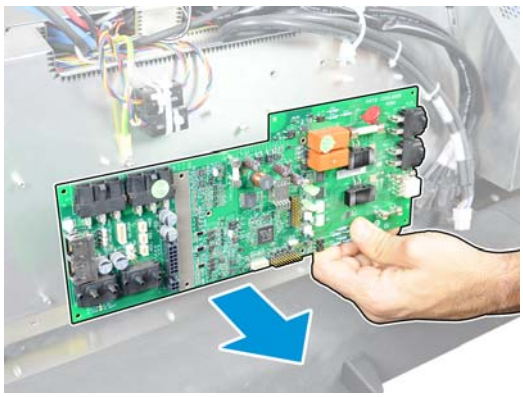




10. Remove the T-8 pointed screws.



11. Remove the curing PCA.



Installation

1. Install the new curing PCA and secure it with screws.
2. Reconnect the AC cables, sliding them through the AC safety cover sheet.
3. Screw the curing PCA fan to the AC safety cover sheet.
4. Install the AC safety cover sheet.
5. Connect all the left cables to the curing PCA, including the PCA fan cable.



6. Install the curing PCA cover.
7. Check the status of the curing modules. See Table 5-18 Curing on page 370.

NOTE: You can check all the curing modules, or one particular module.

Drying

Drying NIR lamp

Prepare to replace the drying lamps

1. Ensure that you have the Drying Filter Lamps Kit (CZ056-67322), which is included in the Printer Maintenance Kit (CZ056-67391) and in the Standard Uptime Kit (D4J02A).
2. Ensure that the printer is not printing.
3. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
4. Turn off the printer in the correct way for maintenance operations.



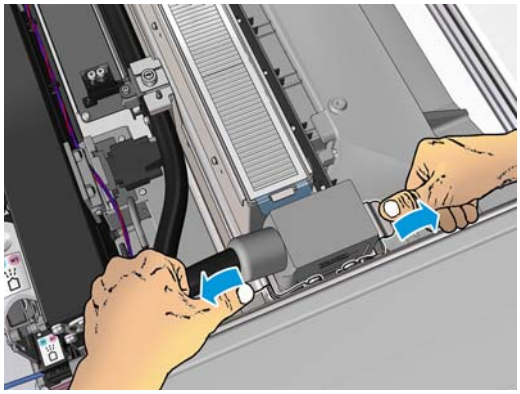
5. Stand on the folding steps and open the service position window.

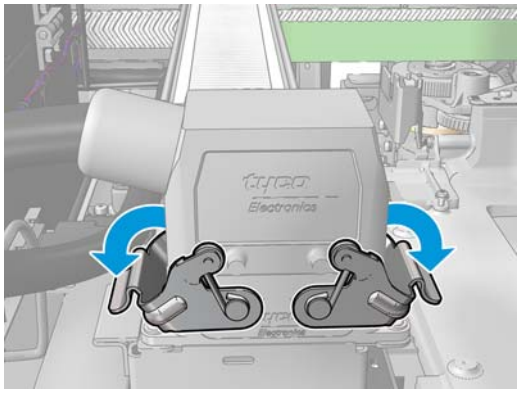


6. Perform the following processes for both drying modules (left and right).

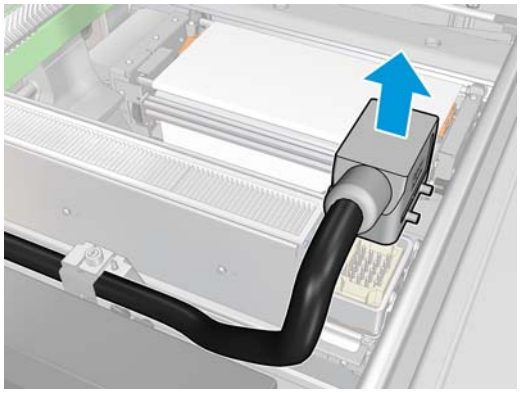
Remove the drying module

1. Remove the electrical connector latch.

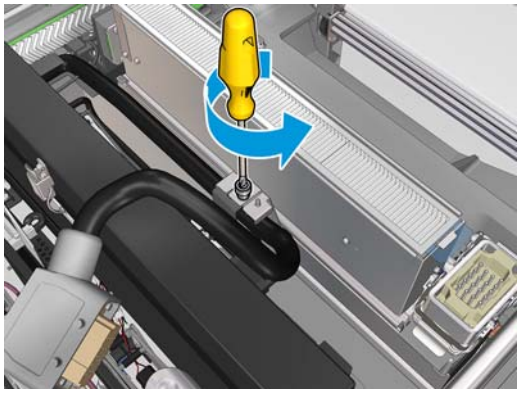


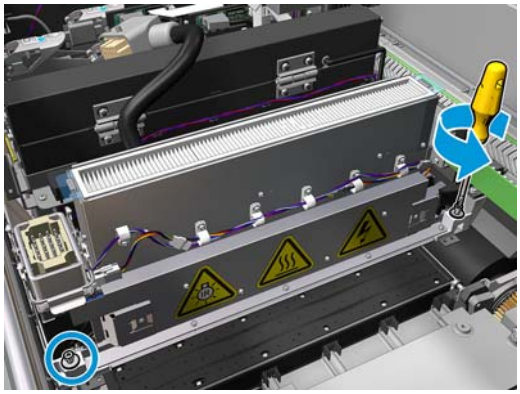


2. Unplug the connector.

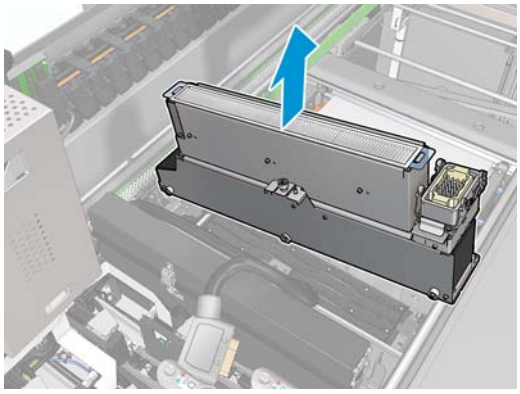


3. Unscrew the three screws shown below in order to remove the drying module (the left module is shown).





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.

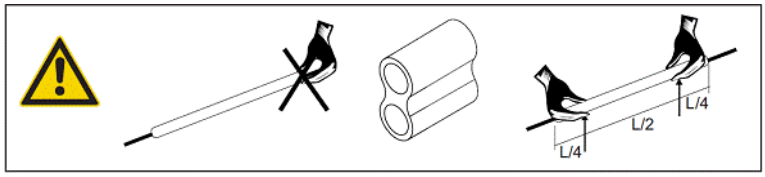
CAUTION: The safety and functional reliability of the IR heating device are guaranteed only in the event of use of original accessories and spare parts from Heraeus Noblelight.

⚠ **WARNING!** After an emitter break, a dangerous voltage may be exposed to contact by the heating spiral.

Transport and handling

Transport the IR emitter, in the packaging provided, to the place of installation. If the IR emitter must be transported without its packaging, wear linen gloves.

⚠ **CAUTION:** 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.

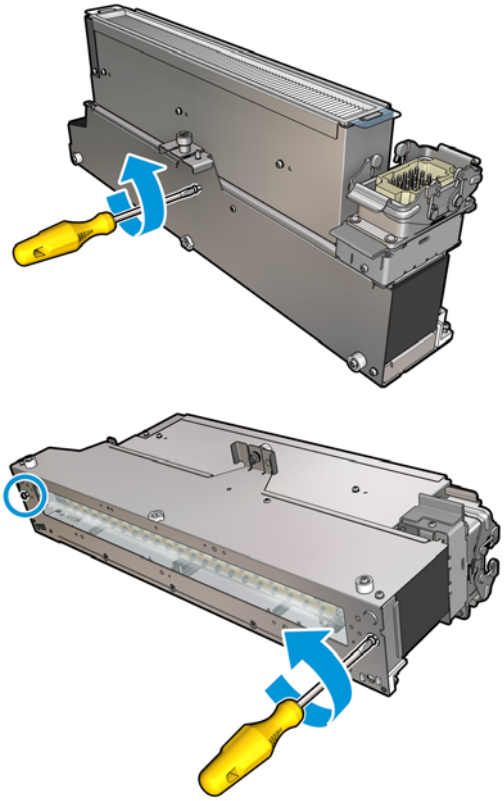
CAUTION: Pulling the connection cable must not cause any tension on the flat base. Bending radius of connection cable: > 30 mm.

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.

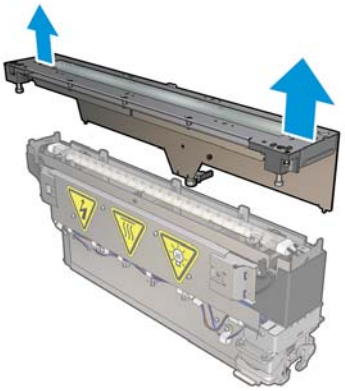
CAUTION: The reflector side must not be cleaned.

Replace the drying lamps

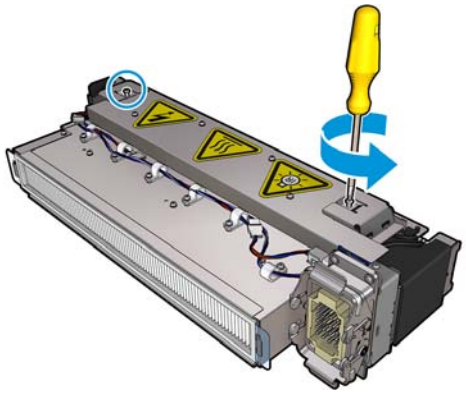
1. To separate the drying glass and air outlet from the rest of the module, remove the three screws shown below.



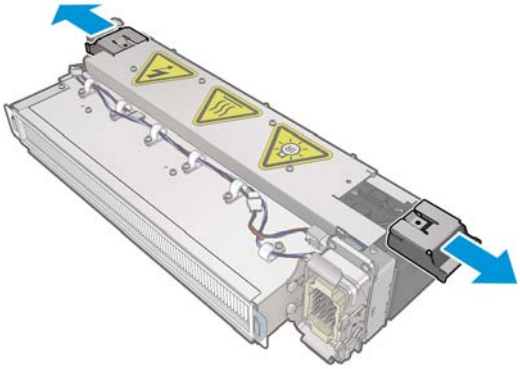
2. Take out the drying lamps section of the drying module and place it upside down.



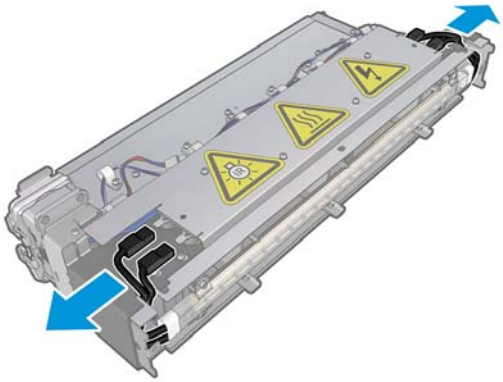
3. Remove the two screws shown below.



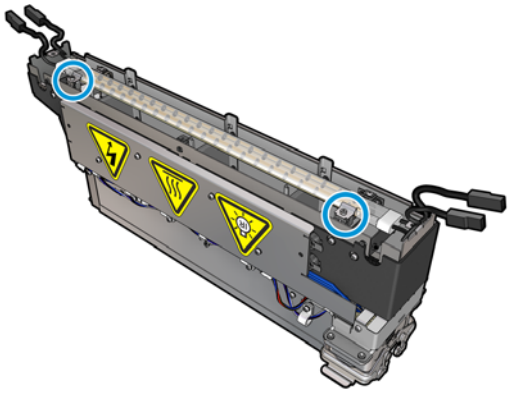
4. Pull out the two clamps.



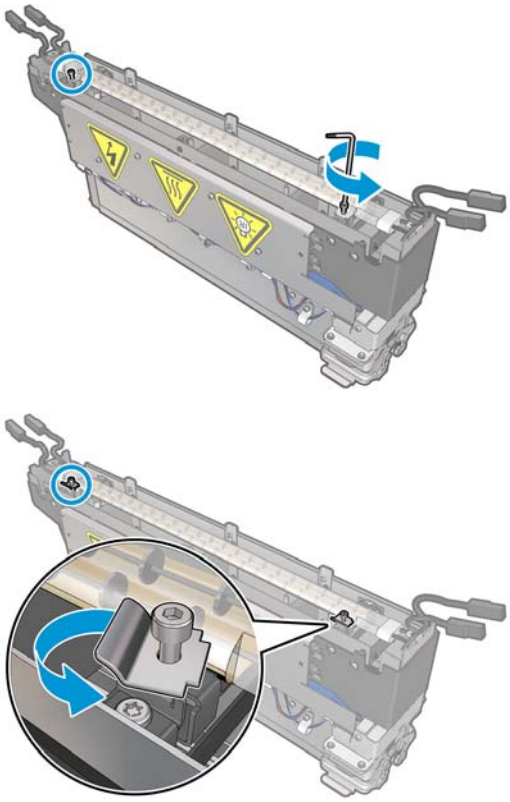
5. Disconnect the four dryer lamp cables.



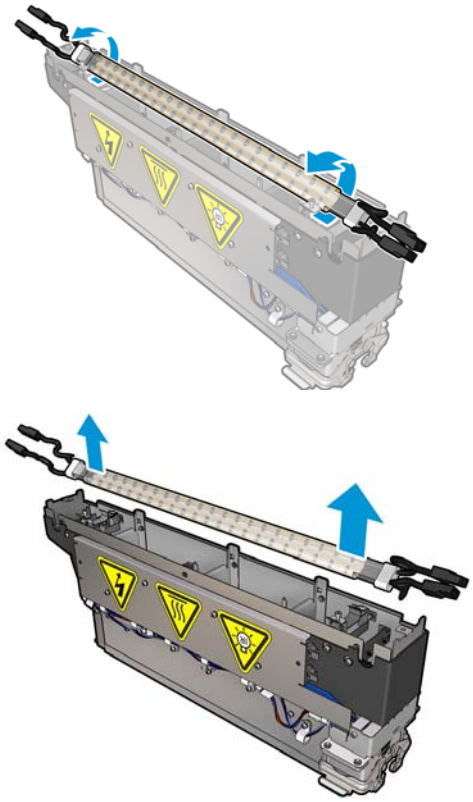
6. Locate the lamp latches.



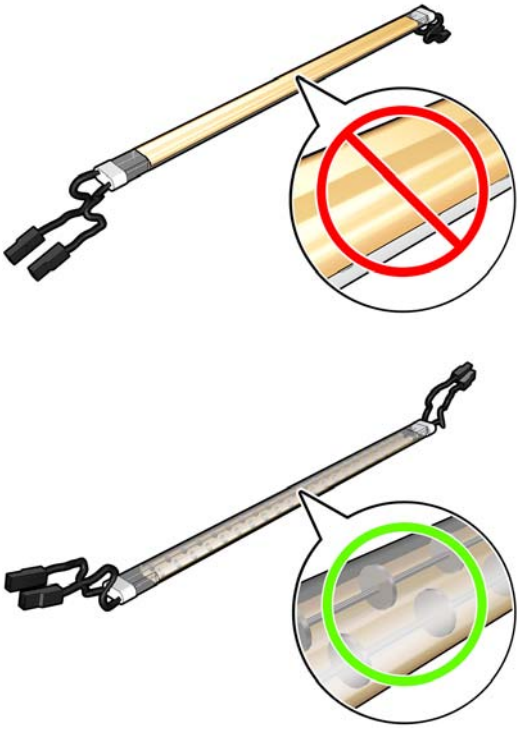
7. Release the screws that secure the lamp latches, and rotate the latches 90° to set the lamp free.



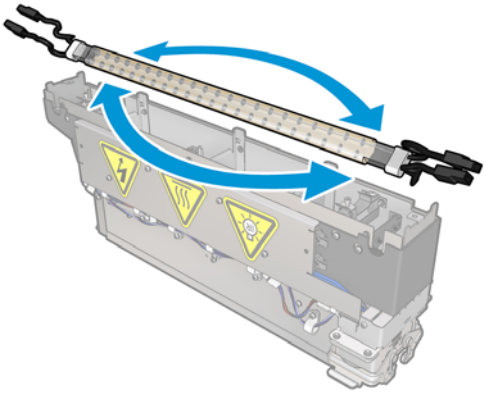
8. Rotate and pull out the old lamp.



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.



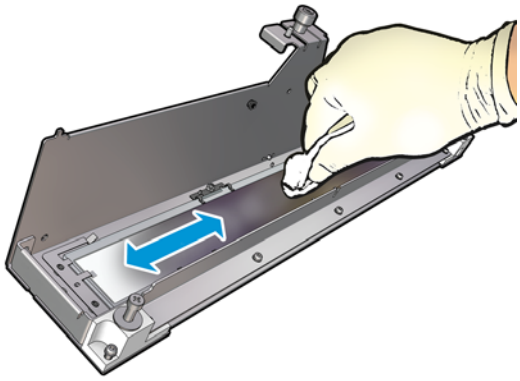
10. Rotate the latches back to the normal position and insert the screws.
11. Connect the cables of the new lamps. There is no mandatory orientation of the cables (top or bottom).
12. Add and screw in both clamps.

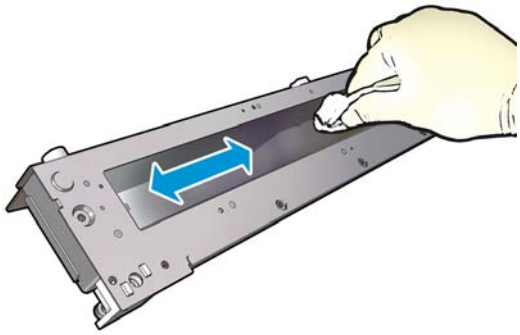
Clean the drying quartz glass and the air outlet

1. Take the drying quartz glass and air outlet, which you have already removed.

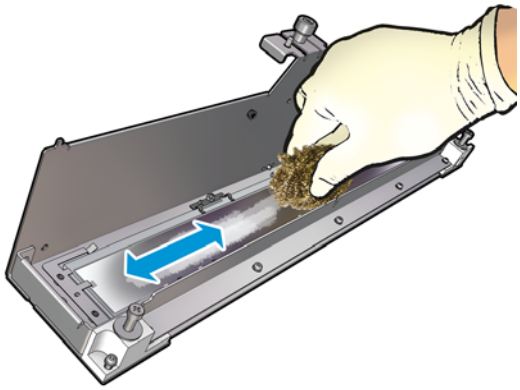
2. Moisten both sides of the glass with a lint-free cloth dampened with isopropyl alcohol.

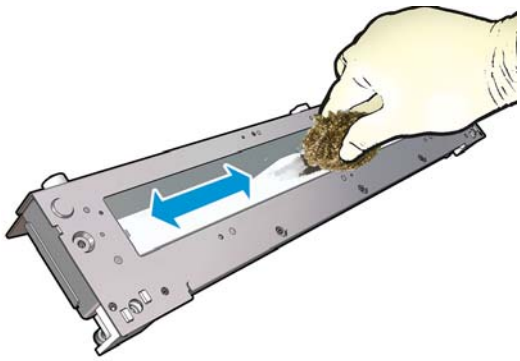
NOTE: If you are in California, instead of isopropyl alcohol use a VOC-certified cleaner such as a properly diluted Simple Green All-Purpose Cleaner.





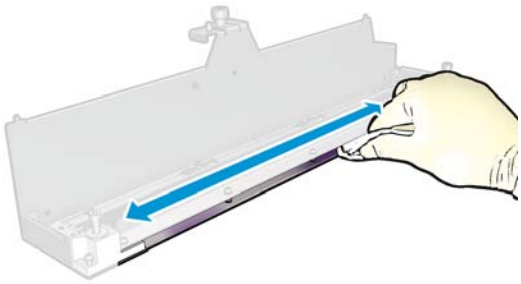
3. Scrub both sides of the glass with the steel scourer.





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.

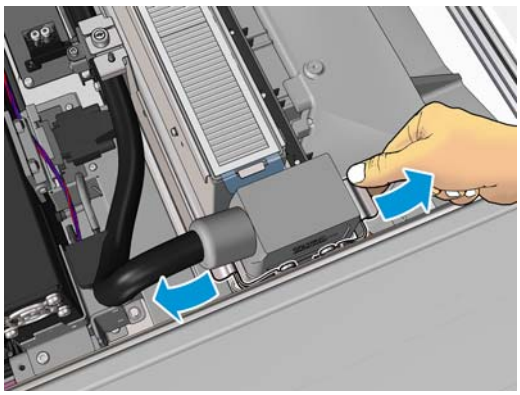


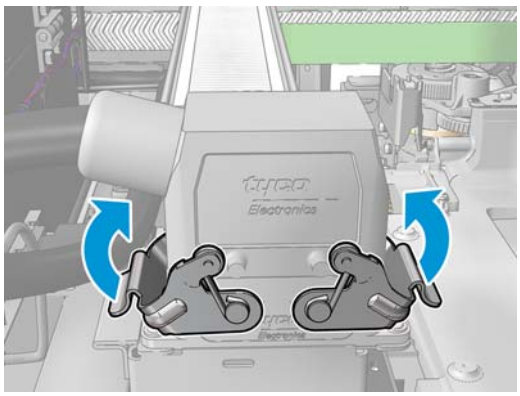
Reassemble the drying module

1. Reassemble the drying lamps with the drying quartz and air outlet.
2. Insert the three screws.

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.



3. Dispose of the old lamps according to local regulations.

Drying temperature sensor kit

Removal

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.
3. Stand on the folding steps and open the service position window.



4. Remove all printheads from the carriage and store them in their caps.
5. Remove the drying module (see Drying module on page 518).

Upper temperature sensor removal

1. Remove the drying filter,
2. Remove the drying fan case. See Drying fan array on page 506.
3. Remove the pointed T-8 screws on both sides of the connector box.
4. Separate the connector box enough to disconnect the two T-8 screws securing the upper temperature sensor support.
5. Disconnect the temperature sensor cable.
6. Unroute the temperature sensor cable from its support to its connector.

Upper temperature sensor installation

1. Connect the new temperature sensor cable, route it back and place the sensor on its support.
2. Once the temperature sensor is in position, tighten the two screws that secure the support to the top cover.

NOTE: Ensure that the temperature sensor has been correctly placed on its support and does not touch any surface, in order not to give false temperature readings.

Lower temperature sensor removal

1. Remove the pointed T-8 screws on both sides of the connector box.
2. Separate the connector box enough to disconnect the temperature sensor cable.
3. Remove the drying quartz glass in order to reach the lower lamp module (see Drying quartz glass on page 511).
4. Unscrew both pointed T-8 screws and remove the cable cover.
5. Remove the drying NIR lamp (see Drying NIR lamp on page 496).
6. Remove the six T-10 screws that hold the dryer cosmetic cover.
7. Unscrew the T-8 screws that hold the temperature sensor support, and remove it.
8. Unroute the temperature sensor cable from its support to its connector, through the cover.

Lower temperature sensor installation

1. Connect the new temperature sensor cable, route it, and place the sensor on its support.
2. Once the temperature sensor is located in its position, tighten the two screws that secure the support to the top cover.
3. Tighten the two T-8 screws on both sides of the connector box.

NOTE: Ensure that the temperature sensor has been correctly placed on its support and does not touch any surface, in order not to give false temperature readings.

4. Tighten the four T-10 screws that hold the dryer cosmetic cover.
5. Place the lamp in position.
6. Place the cable covers in position.
7. Assemble the drying quartz glass.

Drying fan array

Prepare to replace the drying fan array

1. Ensure that you have the necessary Drying Fan Array Kit: for the left drying module (CZ056-67024) or the right drying module (CZ056-67023). Both kits are included in the Standard Uptime Kit (D4J02A).
2. Ensure that the printer is not printing.
3. Move the carriage to the repair position. See How to run a diagnostic test on page 341.

4. Turn off the printer in the correct way for maintenance operations.



5. Stand on the folding steps and open the service position window.



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.

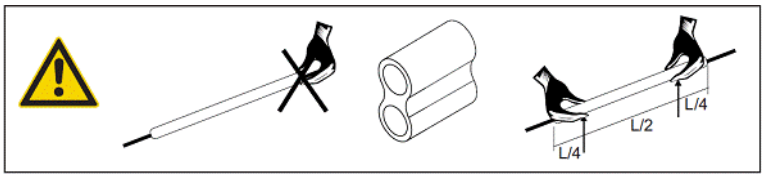
CAUTION: The safety and functional reliability of the IR heating device are guaranteed only in the event of use of original accessories and spare parts from Heraeus Noblelight.

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. If the IR emitter must be transported without its packaging, wear linen gloves.

CAUTION: 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.

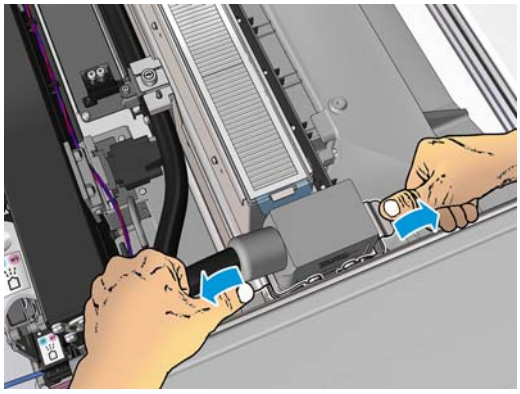
CAUTION: Pulling the connection cable must not cause any tension on the flat base. Bending radius of connection cable: > 30 mm.

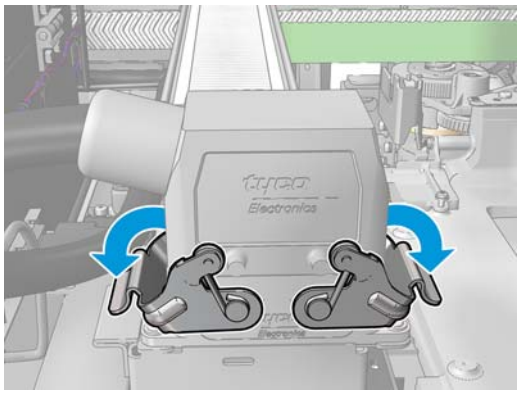
After installation, the quartz glass tube of the IR emitter must be cleaned of any soiling or perspiration. For this purpose, use the cleaning cloth included in our delivery, or a clean linen cloth (without textile finishing agents) soaked in methylated spirit, to remove any impurities and soiling or fingerprints from the surface.

⚠ **CAUTION:** The reflector side must not be cleaned.

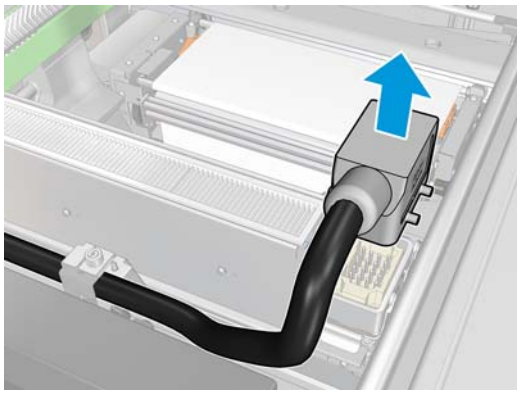
Remove the drying module

1. Remove the electrical connector latch.

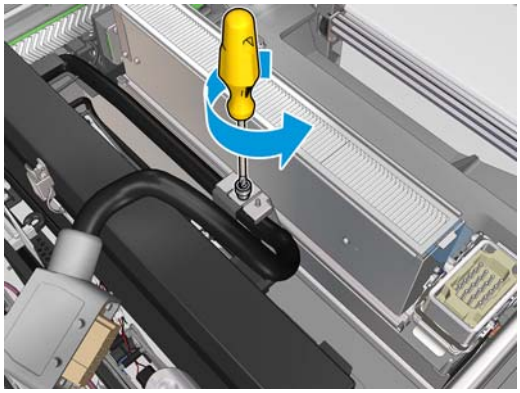


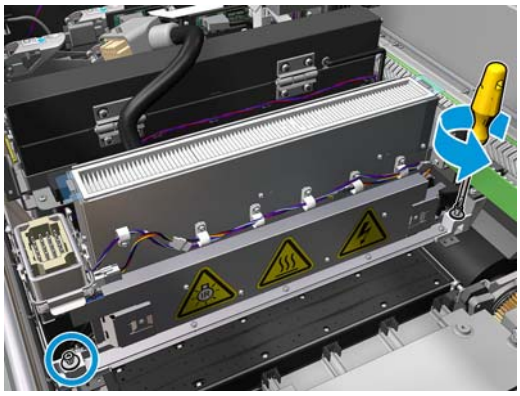


2. Unplug the connector.

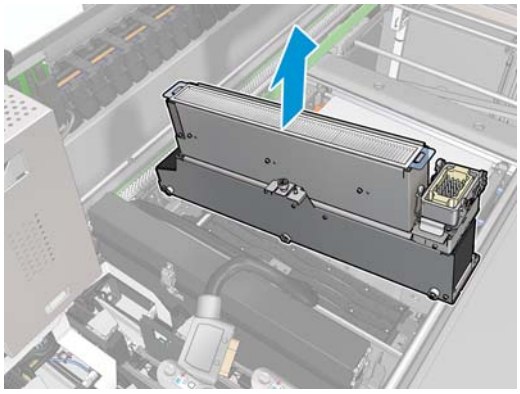


3. Unscrew the three screws shown below in order to remove the drying module (the left module is shown).





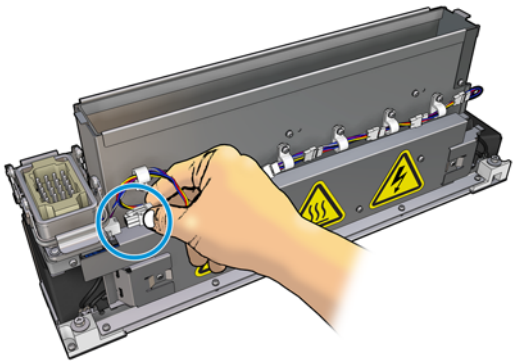
4. Pull the drying module carefully out of the carriage and lay it gently on a table.



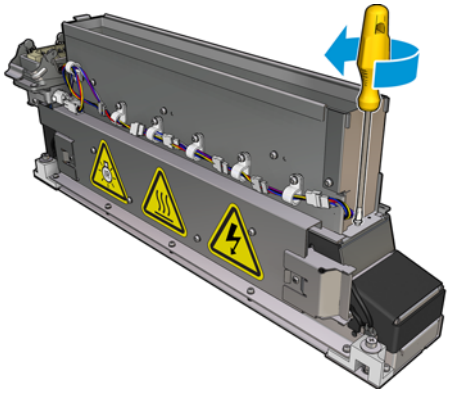
Replace the drying fans array

1. Remove the drying filter.

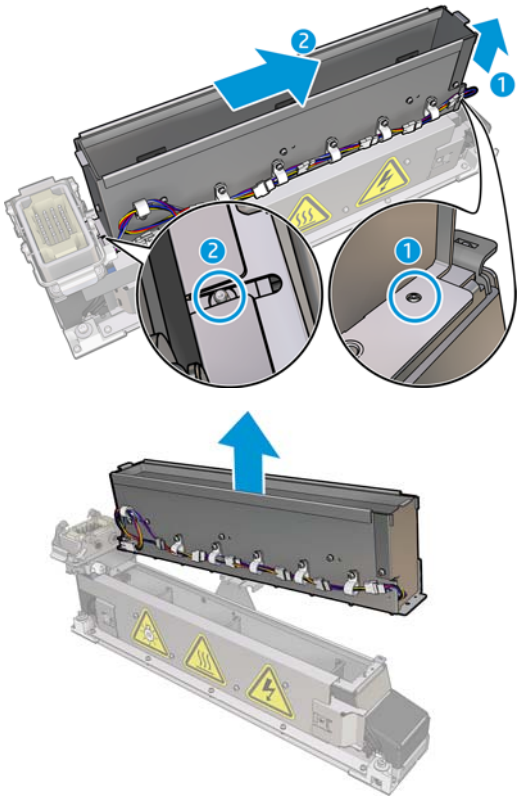
2. Disconnect the drying fans array connector.



3. Remove the screw attaching the drying fans array to the drying module.



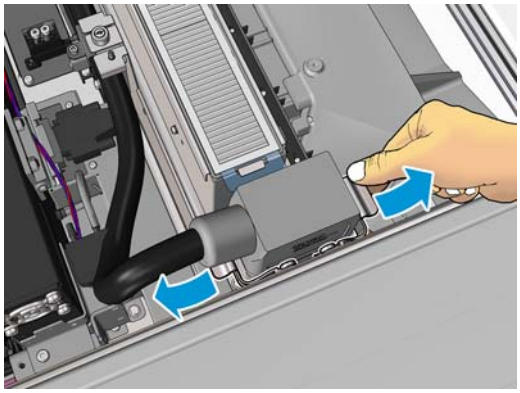
4. Remove the drying fans array and place the new array. There are two pins on each side of the drying module to ensure that it is placed in the correct position.

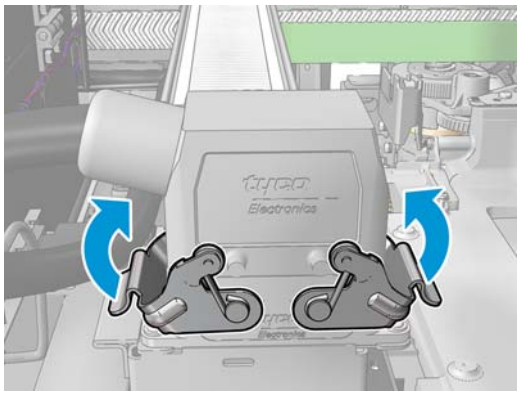


5. Put back the screw that you removed earlier.
6. Reconnect the drying fans array connector.
7. Reinstall the drying filter.

Reinstall the drying module

1. 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 fan 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.



3. Dispose of the old drying fan array according to local regulations.

Drying quartz glass

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 Standard Uptime Kit (D4J02A).
2. Ensure that the printer is not printing.

3. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
4. Turn off the printer in the correct way for maintenance operations

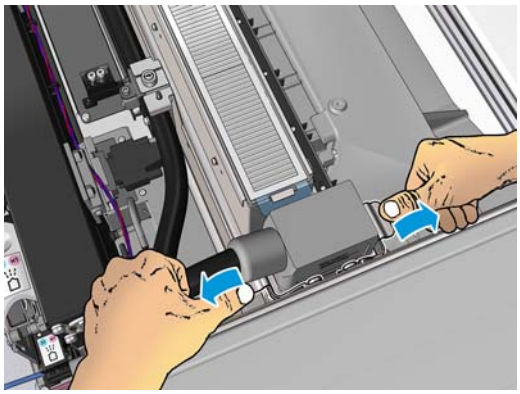


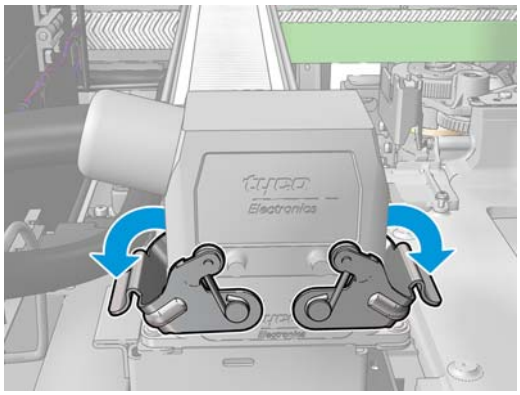
5. Stand on the folding steps and open the service position window.



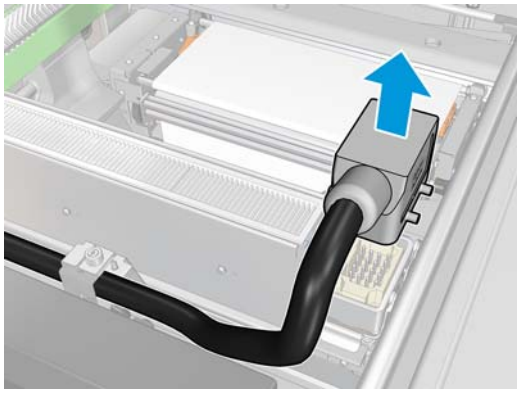
Remove the drying module

1. Remove the electrical connector latch.

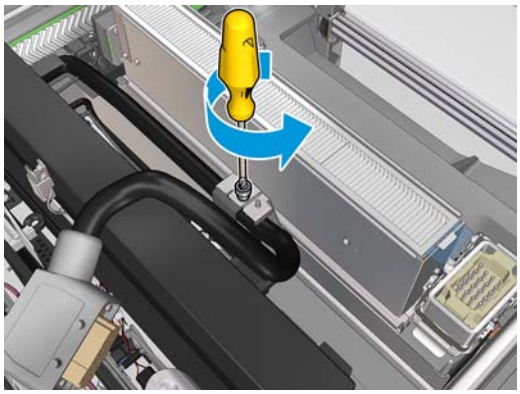


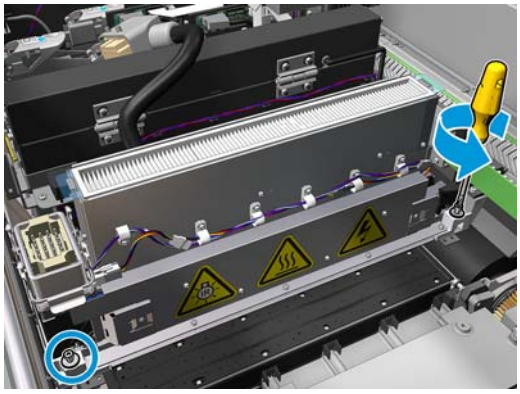


2. Unplug the connector.

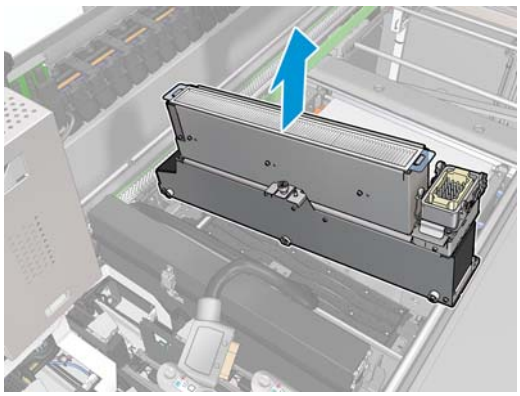


3. Unscrew the three screws shown below in order to remove the drying module (the left module is shown).



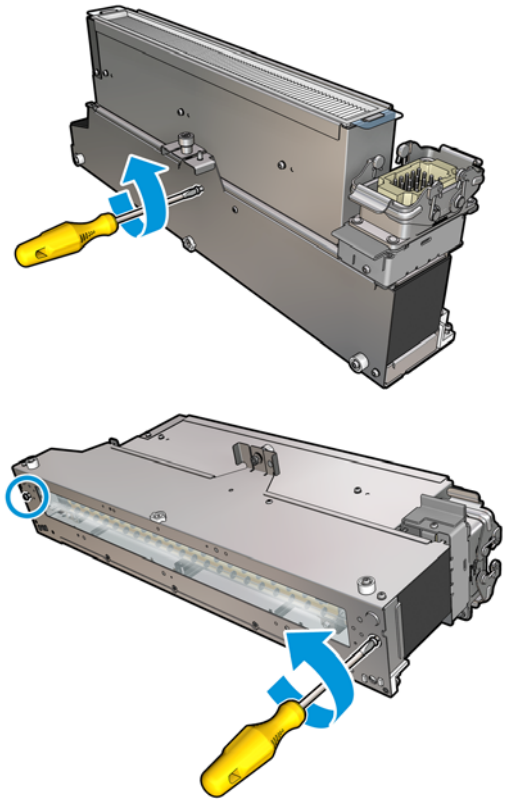


4. Pull the drying module carefully out of the carriage and lay it gently on a table.



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.

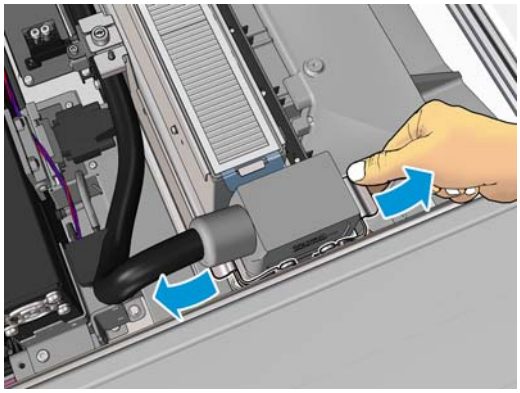


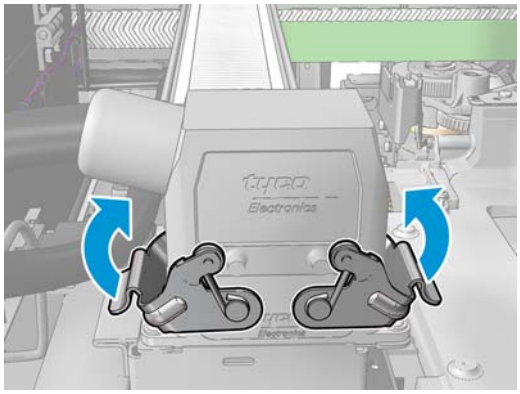
2. Assemble the drying lamps section and the new drying glass and air outlet.
3. Insert the three screws.

Reinstall the drying module

1. 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 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.



3. Dispose of the old quartz glass according to local regulations.

Drying cable right (CZ056-50205)

Removal

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.

3. Stand on the folding steps and open the service position window.



4. Remove all printheads from the carriage and store them in their caps.
5. Remove the drying module (see Drying module on page 518)
6. Disconnect the drying cable right assembly from the drying connector box.
7. Remove eight screws: five at the front and three more on the top of the carriage-tower cover.

NOTE: These are all ferromagnetic screws.

8. Remove the carriage-tower cover by turning it enough to pull it up.
9. Disconnect the drying cable right assembly from the following drying PCA DOWN connectors. See the drying PCA criteria (Drying PCA on page 522) in order to see the connections between the drying cables and the drying PCAs.
10. The following table shows the drying cable connections to the drying PCA connectors:

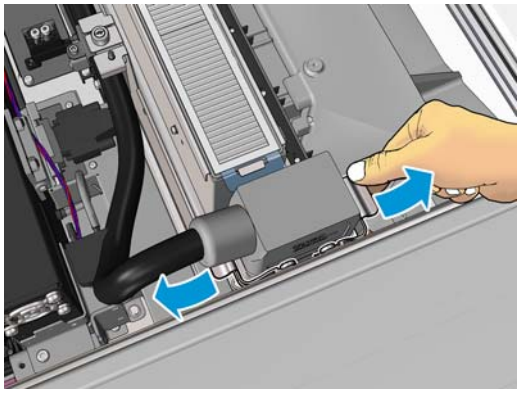
PCA Connector	Drying Assembly Cable
AC_OUT	220V AC cable
DRYING_MODULE	12V DC cable Sensor cable (x2)

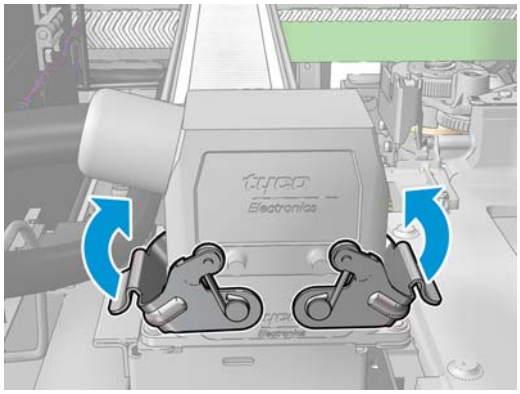
11. Unroute the drying cable. Be careful while unrouting not to tighten or twist the crash sensor optical fiber cables (they could break). Cut the flanges if necessary.

Installation

1. Route the new drying cable.

2. Reconnect the electrical connector and close the latches.





Drying cable left (CZ056-50013)

Removal

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.
3. Stand on the folding steps and open the service position window.



4. Remove all printheads from the carriage and store them in their caps.
5. Remove the drying module (see Drying module on page 518).
6. Disconnect the drying cable left assembly from the drying connector box.
7. Remove eight screws: five at the front and three more on the top of the carriage-tower cover.

NOTE: These are all ferromagnetic screws.

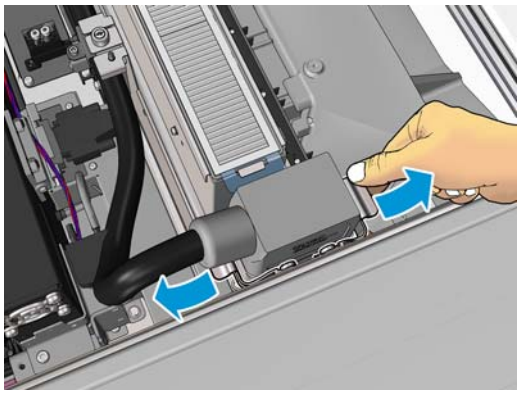
8. Remove the carriage-tower cover by turning it enough to pull it up.
9. Disconnect the drying cable left assembly from the following drying PCA UP connectors. See the drying PCA references (Drying PCA on page 522) in order to see the connections between the drying cables and the drying PCAs.
10. The following table shows the drying cable connections to the drying PCA connectors:

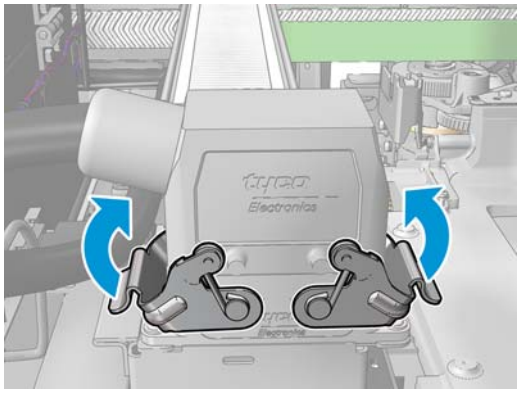
PCA Connector	Drying Assembly Cable
AC_OUT	220V AC cable
DRYING_MODULE	12V DC cable Sensor cable (x2)

11. Unroute the drying cable. Be careful while unrouting not to tighten or twist the crash sensor optical fiber cables (they could break). Cut the flanges if necessary.

Installation

1. Route the new drying cable.
2. Reconnect the electrical connector and close the latches.

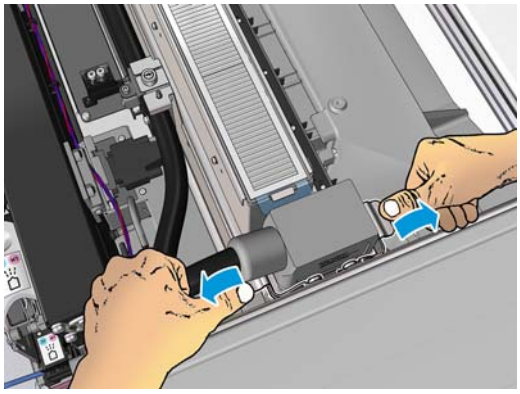


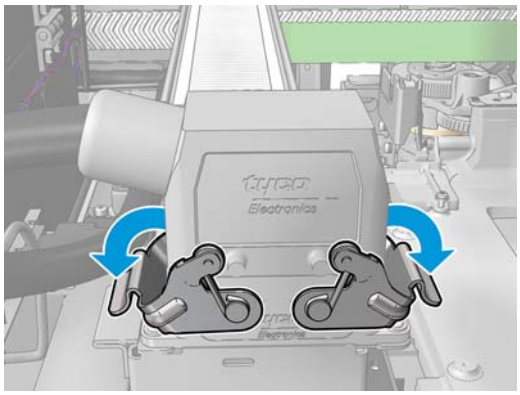


Drying module

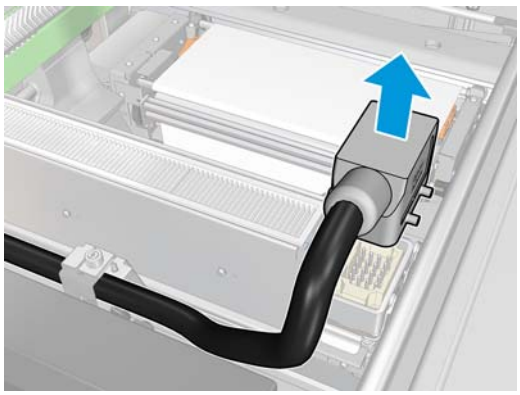
Removal

1. Remove the electrical connector latch.

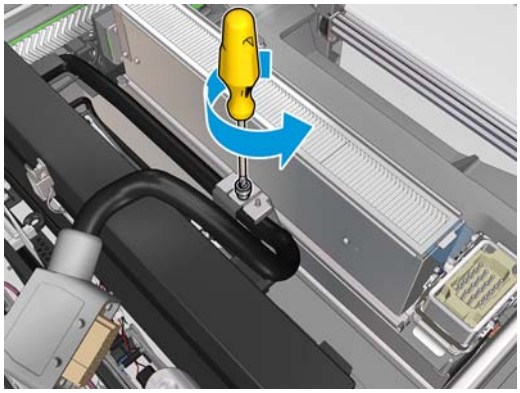


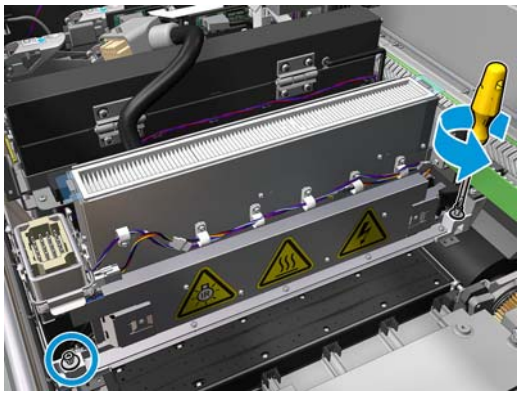


2. Unplug the connector.

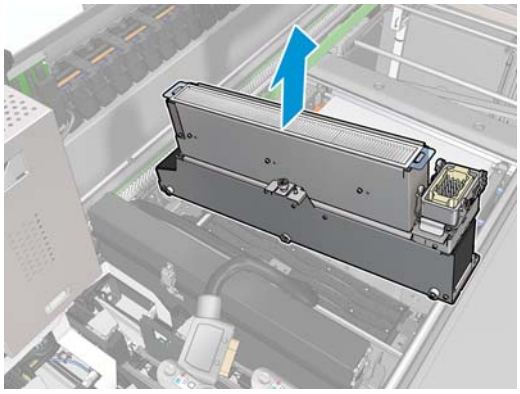


3. Unscrew the three screws shown below in order to remove the drying module (the left module is shown).





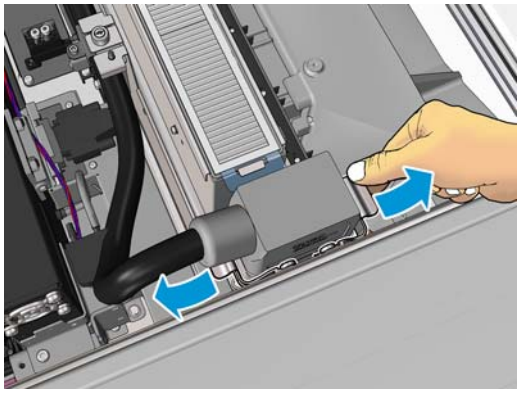
4. Pull the drying module carefully out of the carriage and lay it gently on a table.

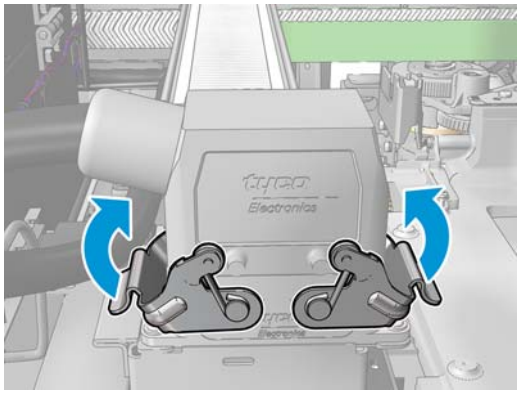


Installation

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.





Drying AC/AC converter control cable

Removal

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.
3. Turn off the branch circuit breakers, or disconnect the power cord(s) from the mains.
4. Stand on the folding steps and open the service position window.



5. Remove all printheads from the carriage and store them in their caps.
6. Remove the rear right panel. See Rear right panel assembly on page 624.
7. Remove eight screws: five at the front and three more on the top of the carriage-tower cover.

NOTE: These are all ferromagnetic screws.

8. Remove the carriage-tower cover by turning it enough to pull it up.
9. Disconnect the drying AC/AC converter control cable from the e-cabinet connectors and the e-box interconnect PCA (J2_111 connector).
10. Unroute the cable.

Drying PCA

Removing the drying PCA UP

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.
3. Stand on the folding steps and open the service position window.

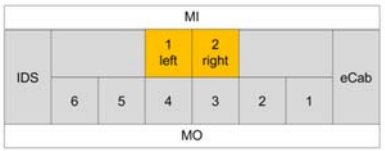


4. Remove all printheads from the carriage and store them in their caps.
5. Remove eight screws: five at the front and three more on the top of the carriage-tower cover.

NOTE: These are all ferromagnetic screws.

6. Remove the carriage-tower cover by turning it enough to pull it up.
7. The following tables show the drying PCA references, connections, and addresses:

	AR L	AR R	CS L	CS R	DRY L	DRY R	SW UP	SW DOWN
Sinatra UP		x		x	x		x	
Sinatra DOWN	x		x			x		x



Drying PCA criteria:

Drying PCA ID	Location referred to printer	Location referred to carriage tower
1	LEFT	UP
2	RIGHT	DOWN

Drying PCA jumper connections:

Drying PCA jumper connectors	Jumper connections	
	No jumper	Jumper
ADR0 (to set the drying PCA ID)	Drying PCA UP	Drying PCA DOWN
CAN TERM (end can bus)	Drying PCA UP	Drying PCA DOWN

8. Disconnect all the cables connected to the drying PCA UP. See Subsystem block diagrams on page 61.
9. Loosen without removing the two screws that hold each metal-sheet carriage-tower rear cover to the carriage tower.
10. Remove the carriage-tower rear covers.
11. Remove the four T-10 screws that hold the drying PCA UP cover to its support.
12. Remove the T-8 screws that hold the drying PCA to its cover.

Removing the drying PCA DOWN

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.
3. Stand on the folding steps and open the service position window.



4. Remove all printheads from the carriage and store them in their caps.
5. See the tables above with the drying PCA references, connections, and addresses.
6. Remove eight screws: five at the front and three more on the top of the carriage-tower cover.

NOTE: These are all ferromagnetic screws.

7. Remove the carriage-tower cover by turning it enough to pull it up.
8. Disconnect all the cables connected to the drying PCA DOWN. See Subsystem block diagrams on page 61.
9. Loosen without removing the two screws that hold each metal-sheet carriage-tower rear cover to the carriage tower.
10. Remove the carriage-tower rear covers.
11. Remove the four T-10 screws that hold the drying PCA DOWN cover to its support.
12. Remove the T-8 screws that hold the drying PCA to its cover.

Installation

1. When installing the new drying PCAs, it is important to check whether it is necessary to reuse the following jumpers in order to set the PCA end can bus and ID address correctly.
2. Perform the removal steps in reverse to position the drying PCA and reconnect its cables.
3. Perform the primer pumps calibration procedure. See How to run a diagnostic test on page 341.

E-box

E-box cable kit

Removal

1. Turn off the printer and the power-enable switch.
2. Remove the rear right panel. See Rear right panel assembly on page 624.
3. Remove the two T-20 screws from the e-box support and pull it out carefully.
4. To open the e-box, remove the nine T-20 screws and remove the e-box cover.

NOTE: If you need to replace the e-box interconnect PCA to e-cabinet PCA cable (CZ056-50138), it is not necessary to pull out and open the e-box.

5. Disconnect and replace the cables as described below.

Engine PCA 1 to engine adaptor PCA 1 data cable (×2) (CZ056-50001)

1. Disconnect the engine PCA 1 to engine adaptor PCA 1 data cables at both ends. See Subsystem block diagrams on page 61.
2. Unroute the cables.
3. Replace the cables with the new ones, route them, and reconnect them.

NOTE: Be careful to connect each PCA connector to its corresponding connector. The table shows the connections between the engine PCA and the engine adaptor PCA.

	Engine PCA	Engine adaptor PCA
Connector	J7	JT1
	J12	JT2

Engine PCA 2 to engine adaptor PCA 2 data cable (×2) (CZ056-50002)

1. Disconnect the engine PCA 2 to engine adaptor PCA 2 data cables at both ends. See Subsystem block diagrams on page 61.
2. Unroute the cables.
3. Replace the cables with the new ones, route them, and reconnect them.

NOTE: Be careful to connect each PCA connector to its corresponding connector. The table shows the connections between the engine PCA and the engine adaptor PCA.

	Engine PCA	Engine adaptor PCA
Connector	J7	JT1
	J12	JT2

Engine PCA 3 to engine adaptor PCA 3 data cable (×2) (CZ056-50133)

1. Disconnect the engine PCA 3 to engine adaptor PCA 3 data cables at both ends. See Subsystem block diagrams on page 61.
2. Unroute the cables.

3. Replace the cables with the new ones, route them, and reconnect them.

NOTE: Be careful to connect each PCA connector to its corresponding connector. The table shows the connections between the engine PCA and the engine adaptor PCA.

	Engine PCA	Engine adaptor PCA
Connector	J7	JT1
	J12	JT2

Engine PCA 4 to engine adaptor PCA 4 data cable (×2) (CZ056-50134)

1. Disconnect the engine PCA 4 to engine adaptor PCA 4 data cables at both ends. See Subsystem block diagrams on page 61.
2. Unroute the cables.
3. Replace the cables with the new ones, route them, and reconnect them.

NOTE: Be careful to connect each PCA connector to its corresponding connector. The table shows the connections between the engine PCA and the engine adaptor PCA.

	Engine PCA	Engine adaptor PCA
Connector	J7	JT1
	J12	JT2

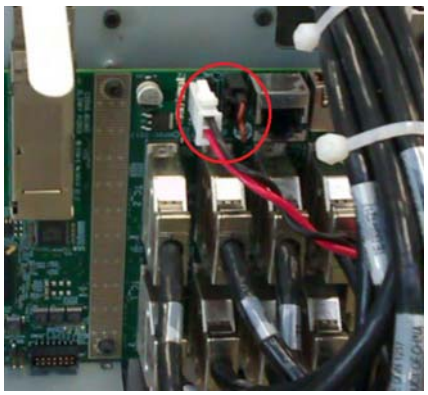
Engine adaptor PCA power cable (CZ056-50003)

1. Disconnect the engine adaptor PCA power cable from the air connector and the engine adaptor PCAs (PCA 1 to PCA 4) (PWR_IN connectors). See Subsystem block diagrams on page 61.
2. Unroute the cable. Cut the flanges if necessary.
3. Replace the cable with the new one, route it, and reconnect it.

ATX to fiber-optics PCA power cable (CZ056-50221)

1. Disconnect the ATX to fiber-optics PCA power cable from the air connector and the fiber-optics PCA (J24 connector). See Subsystem block diagrams on page 61.

NOTE: It is important to ensure that both fiber-optics connectors (shown below) are correctly connected to the fiber-optics PCA. Otherwise, the printer will return an error.



2. Unroute the cable.
3. Replace the cable with the new one, route it, and reconnect it.

CAN B bus cable (CZ056-50252)

1. Disconnect the CAN B bus cable from the engine PCA 2 (J22 OMAS connector) and the engine adaptor PCA 2 (JT3 connector). See Subsystem block diagrams on page 61.
2. Unroute the cable. Cut the flanges if necessary.
3. Replace the cable with the new one, route it, and reconnect it.

Engine PCA to fiber-optics PCA long cable (CZ056-50220)

1. Disconnect the engine PCA to fiber-optics PCA data cable at both ends. See Subsystem block diagrams on page 61.
2. Unroute the cable.
3. Replace the cable with the new one, route it, and reconnect it.

NOTE: The table shows the connections between the engine PCA and the fiber-optics PCA.

	Engine PCA X	Fiber-optics
PCA 1	J11	J8
	J20	J14
PCA 2	J11	J9
	J20	J15
PCA 3	J11	J10
	J20	J16
PCA 4	J11	J11

NOTE: The J20 connector is the one located closer to the formatter PCA.

E-box interconnect PCA to e-cabinet PCA cable (CZ056-50138)

1. Disconnect the e-box interconnect PCA to e-cabinet PCA cable at both ends. See Subsystem block diagrams on page 61.

NOTE: The e-box interconnect PCA to e-cabinet PCA cable is connected to the e-cabinet PCA RJ45 connector and to the e-box interconnect PCA J_341 I2C connector.

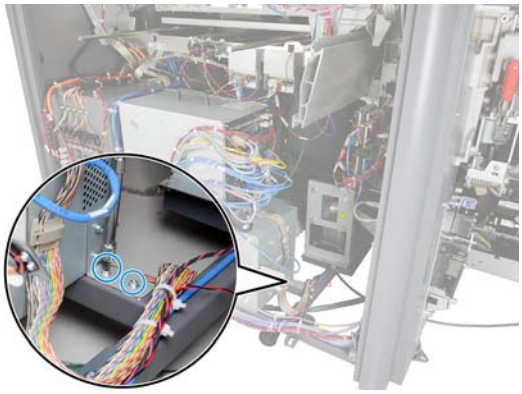
2. Unroute the cable. Cut the flanges if necessary. Make sure to leave the free loops needed to allow the e-box assembly spinning movement.
3. Replace the cable with the new one, route it, and reconnect it. Replace any flanges that were cut while unrouting.

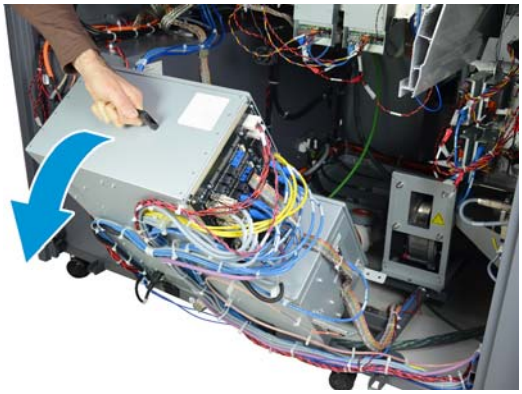
E-box hard disk drive

Removal

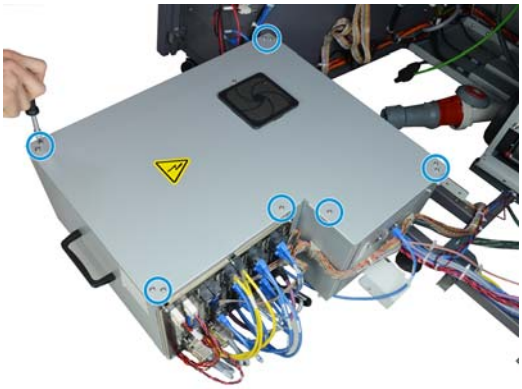
1. Turn off the printer and the power-enable switch.
2. Remove the rear right panel. See Rear right panel assembly on page 624.

3. Remove the two T-20 screws from the e-box support and pull it out carefully.



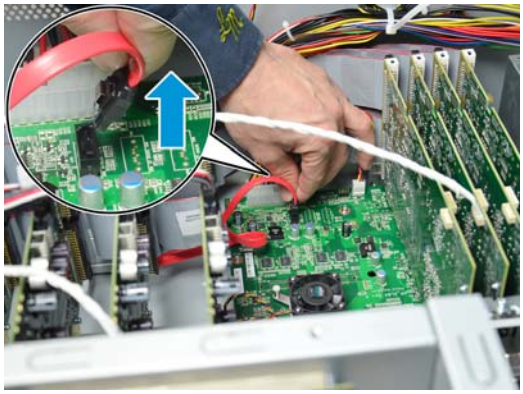


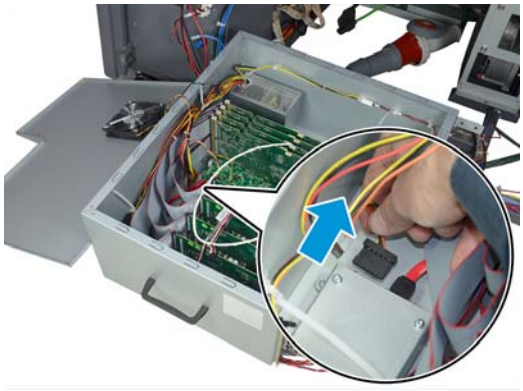
4. Remove the nine T-20 screws and remove the e-box cover.



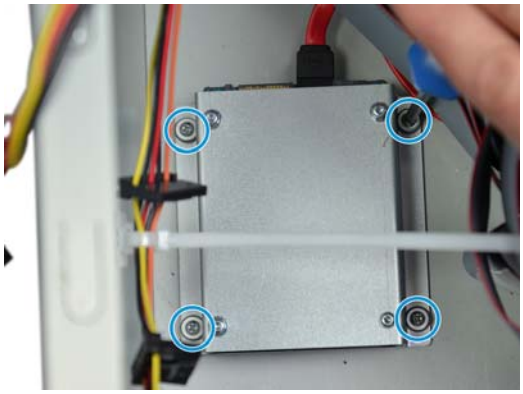


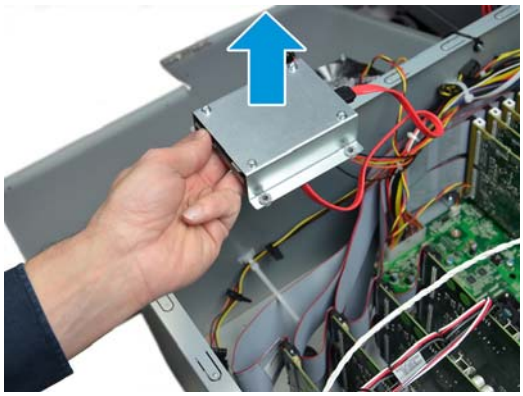
5. Disconnect the hard disk data cable from the formatter PCA (SATA 1 connector).



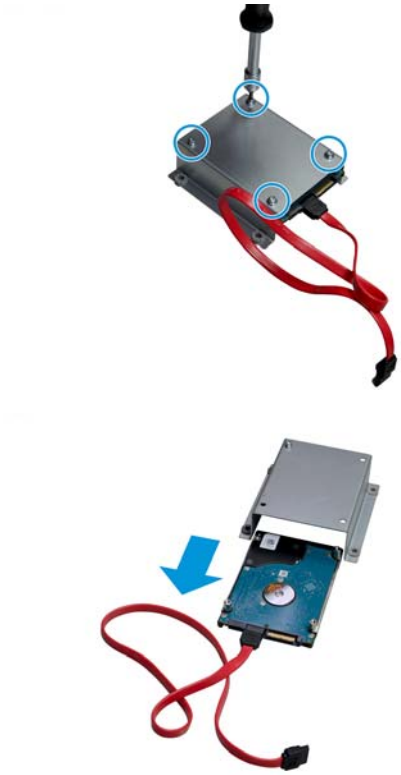


6. Remove the four screws that hold the hard disk drive sheet cover.





7. Remove the four T-10 screws and remove the hard disk drive from its sheet cover.



Installation

1. Insert the new hard disk drive.
2. Reconnect the hard disk data cable to the formatter PCA (SATA 1 connector).

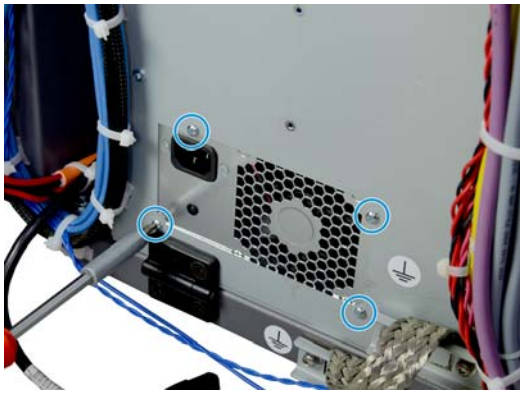
E-box PSU

Removal

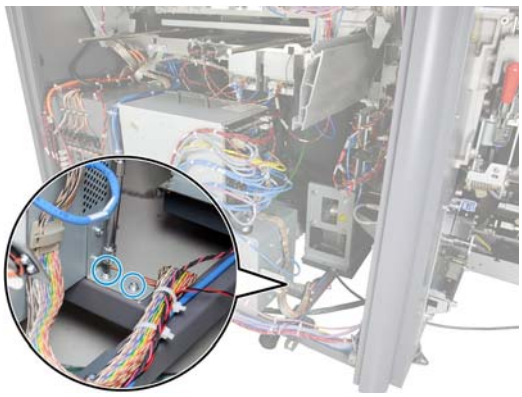
1. Turn off the printer and the power-enable switch.
2. Remove the rear right panel. See Rear right panel assembly on page 624.
3. Disconnect the power cord from the e-box.

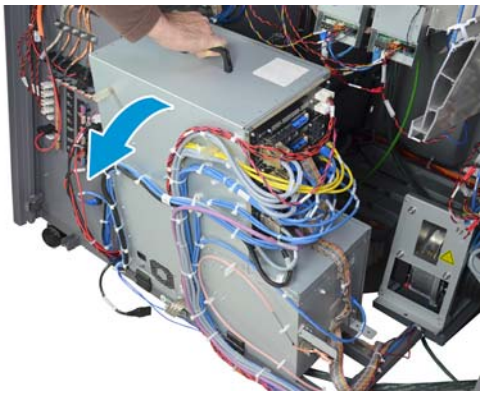


4. Loosen the four crossed screws that hold the PSU (do not remove them, so that the PSU will not be freed inside the e-box while pulling it out).

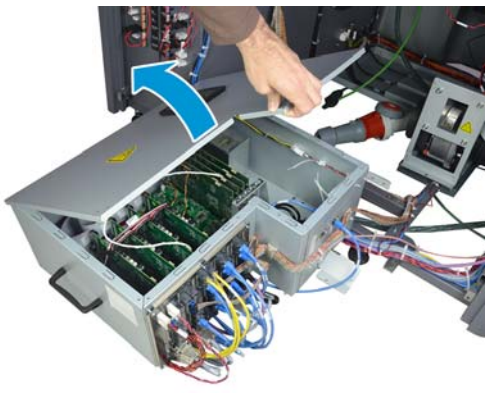


5. Remove the two T-20 screws from the e-box support and pull it out carefully.

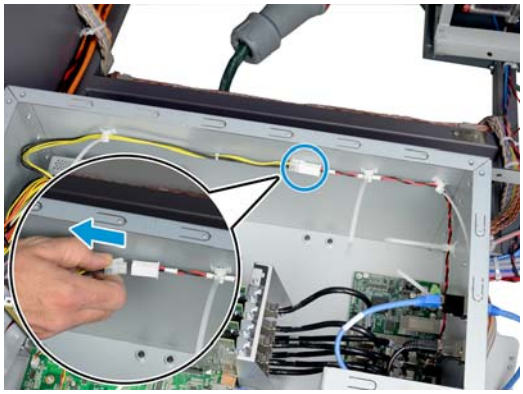


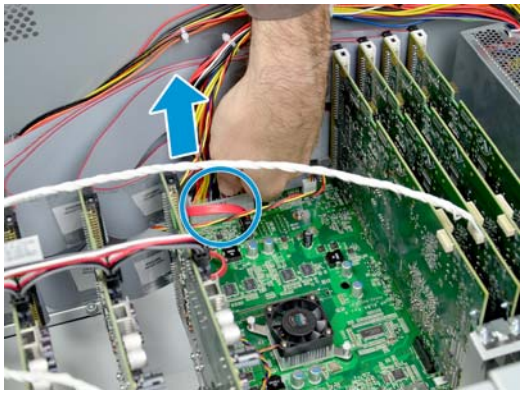


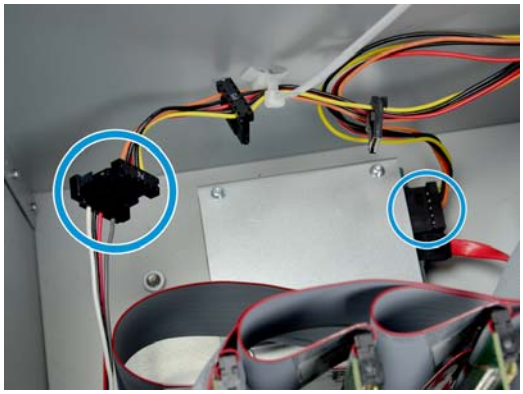
6. Remove the nine T-20 screws and remove the e-box cover.

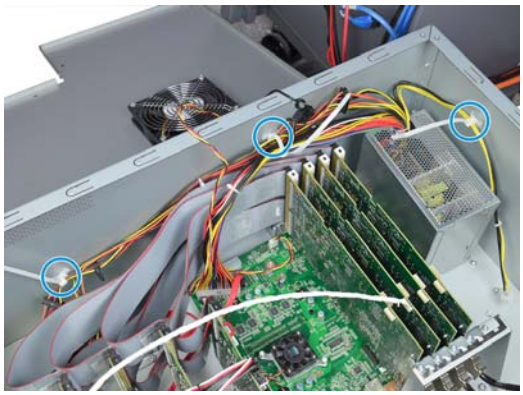


7. Disconnect both the PSU cables from the formatter PCA and the air connector.

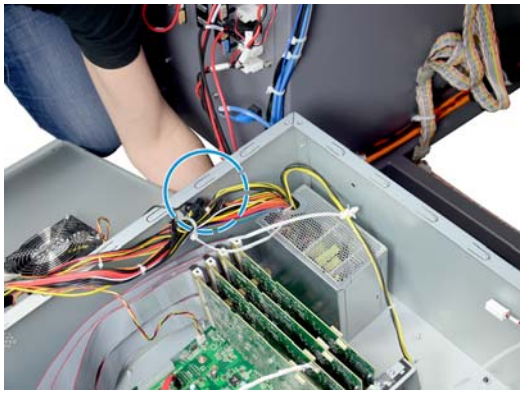




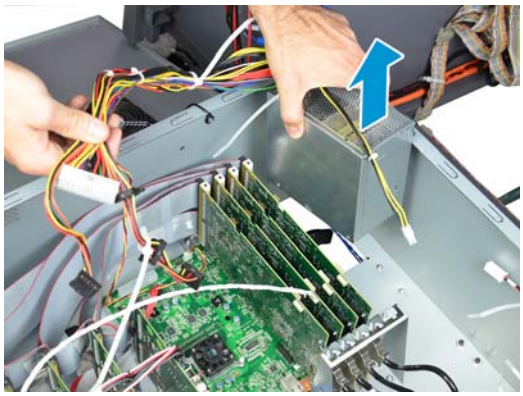




8. Remove the four loosened screws that hold the PSU (they are located outside the e-box).



9. Remove the PSU.



Installation

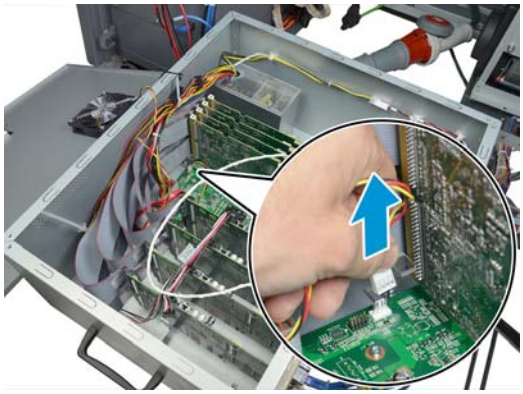
1. Insert the new PSU.
2. Screw the PSU to the e-box.
3. Reconnect the PSU to the formatter PCA and the air connector.
4. Screw the e-box cover and push it back to its vertical position.
5. Reconnect the power cord to the PSU connector.

E-box fan and filter

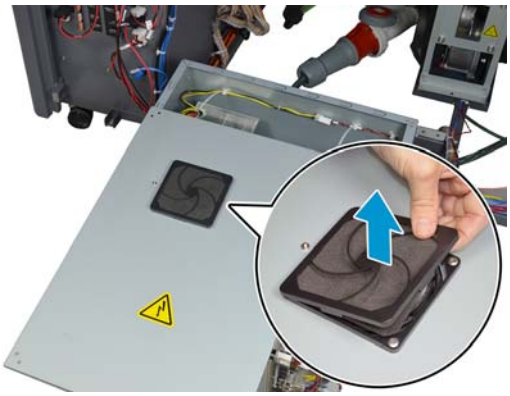
Removal

1. Turn off the printer and the power-enable switch.
2. Remove the rear right panel. See Rear right panel assembly on page 624.
3. Remove the two T-20 screws from the e-box support and pull it out carefully.
4. Remove the nine T-20 screws and remove the e-box cover.

5. Disconnect the fan cable from the formatter PCA.



6. Remove the fan filter.



7. Remove the four crossed screws that hold the fan.

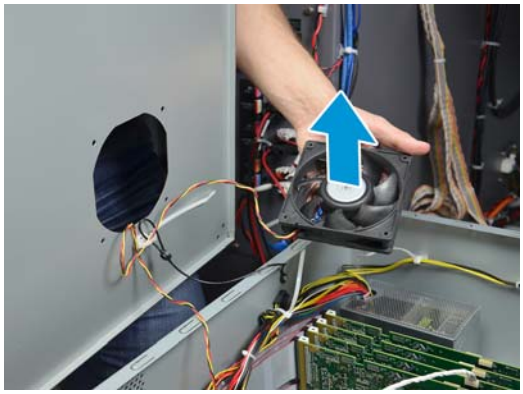


8. Remove the screw that holds the coated lanyard.





9. Remove the fan.



Installation

1. Insert and connect the new fan.
2. Screw back the e-box cover.
3. Remove the plastic cover and replace the filter.

E-box LAN cable to IPS (CZ056-500041 and CZ056-50222)

This service part contains two cables: the IPS to e-box LAN cable (CZ056-50041) and the LAN to IPS cable (CZ056-50222).

Removal

1. Turn off the printer and the power-enable switch.
2. Remove the rear right panel. See Rear right panel assembly on page 624.
3. Remove the two T-20 screws from the e-box support and pull it out carefully.
4. Remove the nine T-20 screws and remove the e-box cover.
5. Disconnect the IPS to e-box LAN cable from the formatter PCA and the e-box LAN connector.
6. Disconnect the LAN to IPS cable from the IPS and the air connector.
7. Unroute both cables. These cables are routed from the e-box to the IPS, along the bottom frame.

Installation

1. Replace and route both cables, so that there is enough free looped cable to allow the e-box spinning movement. Do not leave too much cable, or it could interfere with other components that could tighten or twist it.
2. Connect the air connectors.
3. Reconnect the e-box and the IPS.

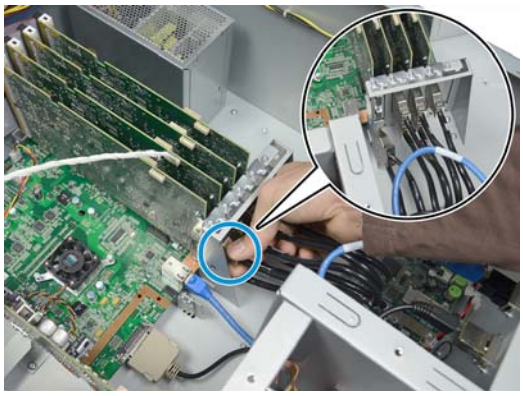
Engine PCA

Removal

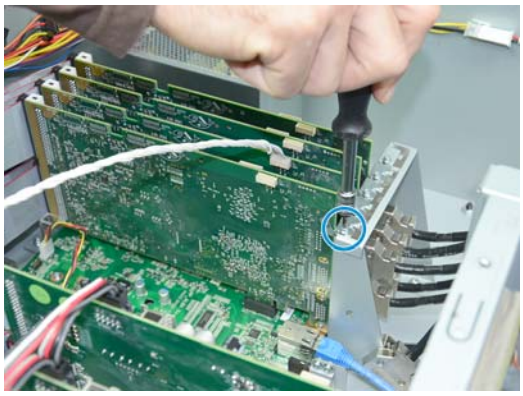
1. Turn off the printer and the power-enable switch.
2. Remove the rear right panel. See Rear right panel assembly on page 624.
3. Remove the two T-20 screws from the e-box support and pull it out carefully.
4. Remove the nine T-20 screws and remove the e-box cover.

5. Disconnect the engine PCA from all cables that you can reach. See Subsystem block diagrams on page 61.

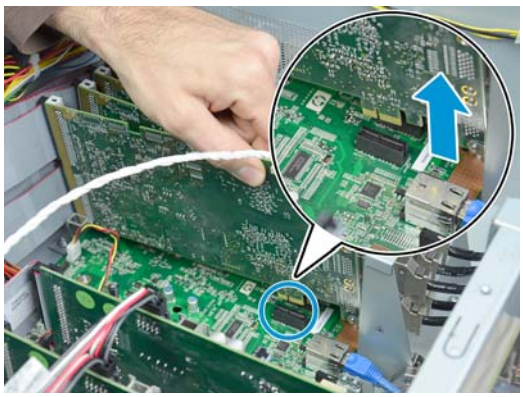




6. Remove the T-10 screw that holds the engine PCA.



7. Remove the engine PCA.



8. Disconnect any remaining cables.



Installation

1. Insert the new engine PCA. Ensure that it is well placed between its plastic supports, so that it is correctly connected to the formatter PCA. Otherwise the printer will will return an error.
2. Reconnect the the engine PCA cables.

NOTE: Be careful to connect each PCA connector to its corresponding connector. The following tables show how the connections match. See Subsystem block diagrams on page 61.

Between the engine PCA and the engine adaptor PCA (eight cables):

	Engine PCA X	Engine adaptor PCA X
Connector	J7	JT1
	J12	JT2

Between the engine PCA and the fiber-optics PCA (seven cables):

	Engine PCA X	Fiber-optics
PCA 1	J11	J8
	J20	J14
PCA 2	J11	J9
	J20	J15
PCA 3	J11	J10
	J20	J16
PCA 4	J11	J11

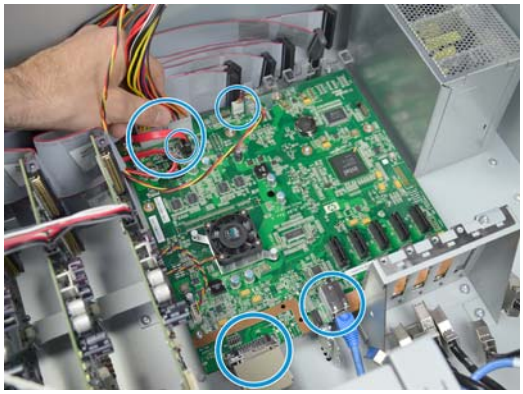
NOTE: The J20 connector is the one located closer to the formatter PCA.

Formatter PCA

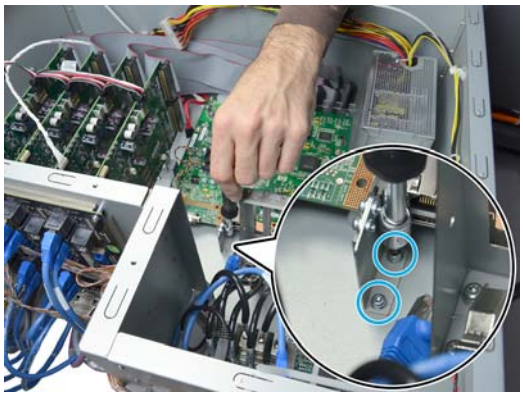
Removal

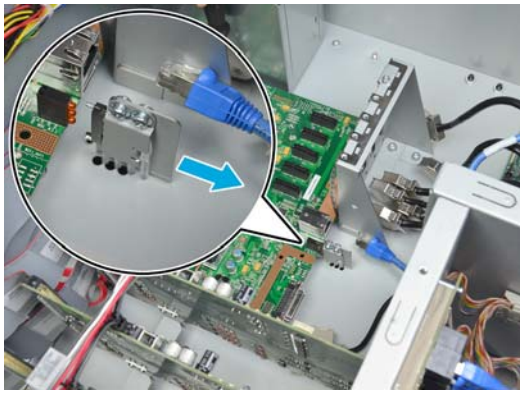
1. Remove the four engine PCAs. See Engine PCA on page 535.

2. Disconnect all cables from the formatter PCA connectors.



3. Remove the two pointed T10 screws and carefully remove the light pipe.

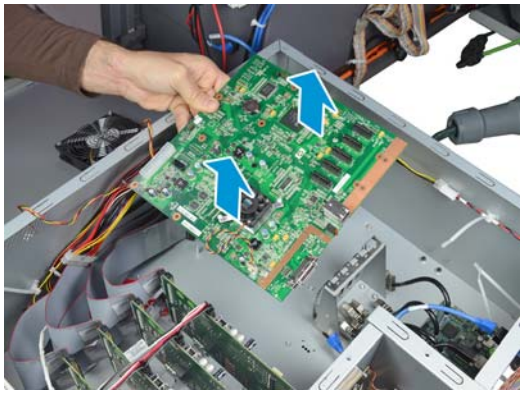




4. Remove the nine T-10 screws that hold the formatter PCA.



5. Remove the formatter PCA.



Installation

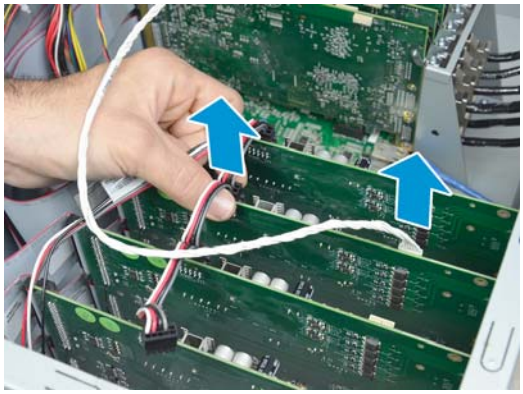
1. Insert the new formatter PCA.
2. Connect the cables to the formatter PCA.
3. Reinstall the light pipe.
4. Reinstall and reconnect the four engine PCAs.

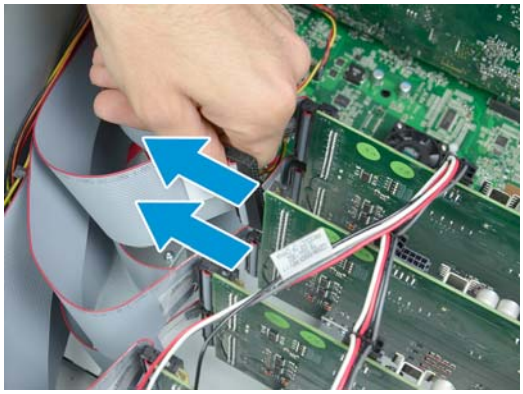
Engine adaptor PCA

Removal

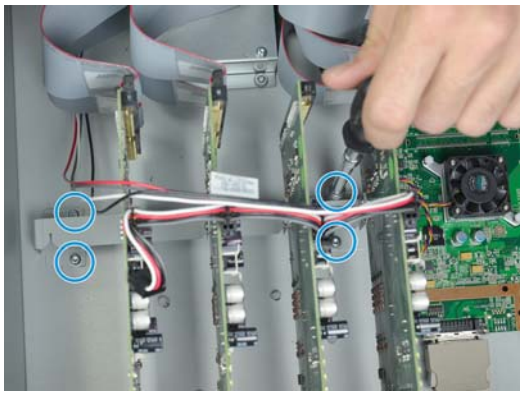
1. Turn off the printer and the power-enable switch.
2. Remove the rear right panel. See Rear right panel assembly on page 624.
3. Remove the two T-20 screws from the e-box support and pull it out carefully.
4. Remove the nine T-20 screws and remove the e-box cover.

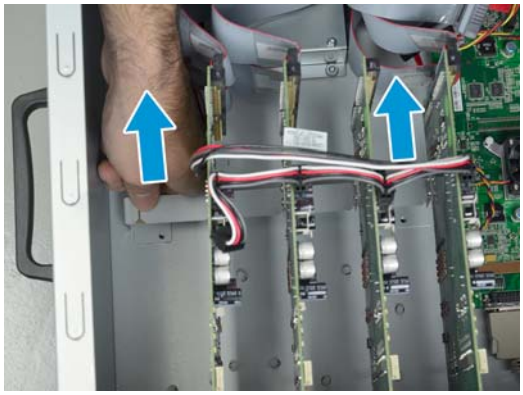
5. Disconnect the engine adaptor PCA from all cables. See Subsystem block diagrams on page 61.



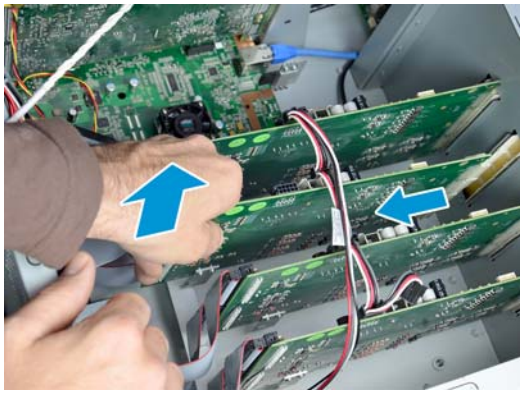


6. Remove the four T-20 screws from the support that holds the four engine adaptor PCAs and pull it slightly out. The four engine adaptor PCAs remain connected to the e-box interconnect PCA.





7. Carefully remove the engine adaptor PCA.



Installation

1. Insert the new engine adaptor PCA, making sure to connect it properly to the e-box interconnect PCA.

NOTE: Be careful while reconnecting the engine adaptor PCAs to the e-box interconnect PCA. It can be hard to connect both PCAs correctly, and the connector pins are delicate: they can easily break.

2. Locate the engine adaptor PCA's metal sheet support and push it slightly to match it with the four engine adaptor PCA supports.
3. Screw back the four screws that hold the metal sheet support, ensuring that the four PCAs are properly connected to the e-box interconnect PCA.
4. Reconnect the engine adaptor PCA cables.

NOTE: Be careful to connect each PCA connector to its corresponding connector. The table below shows the connections between the engine PCA and the engine adaptor PCA. See Subsystem block diagrams on page 61.

	Engine PCA	Engine adaptor PCA
Connector	J7	JT1
	J12	JT2

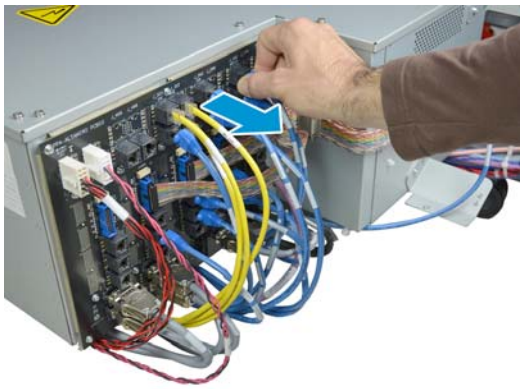
E-box interconnect PCA

Removal

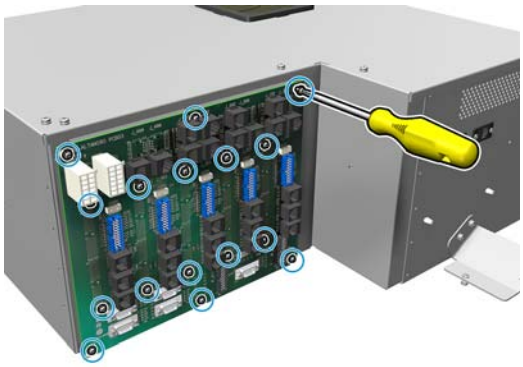
1. Remove the four engine adaptor PCAs. See Engine adaptor PCA on page 539.

2. Disconnect all cables from the e-box interconnect PCA.

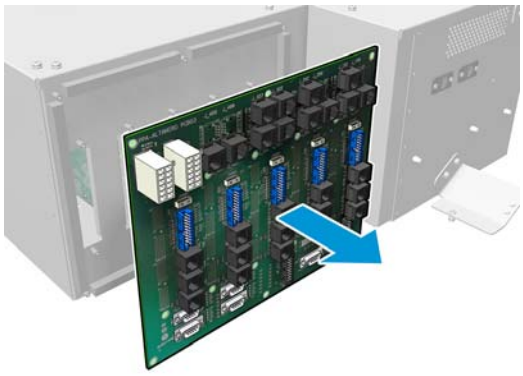
NOTE: You are strongly recommended to ensure that all cables are labeled, to avoid confusion when replacing the e-box interconnect PCA and reconnecting all the cables.



3. Remove the six T-10 screws.



4. Remove the e-box interconnect PCA.



Installation

1. Insert the new e-box interconnect PCA.
2. Screw the e-box interconnect PCA into position.
3. Reinstall and reconnect the four engine PCAs.

4. Reinstall the engine adaptor PCAs.

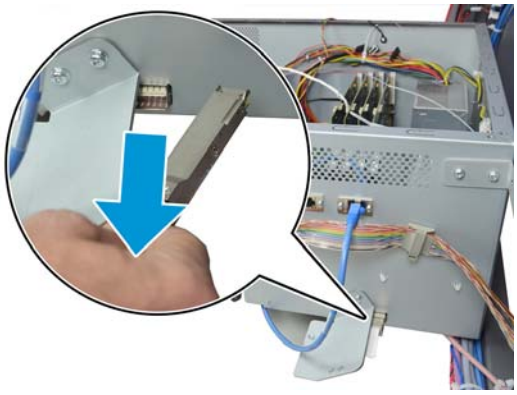
NOTE: Be careful while reconnecting the engine adaptor PCAs to the e-box interconnect PCA. It can be hard to connect both PCAs correctly, and the connector pins are delicate: they can easily break.

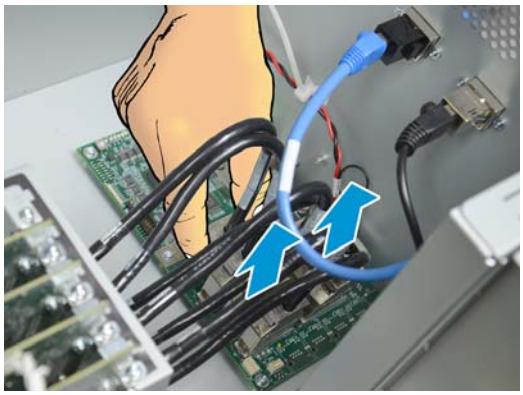
5. Reconnect all the cables to the e-box interconnect PCA, taking care to connect each cable to the corresponding e-box interconnect PCA connector. See Subsystem block diagrams on page 61.

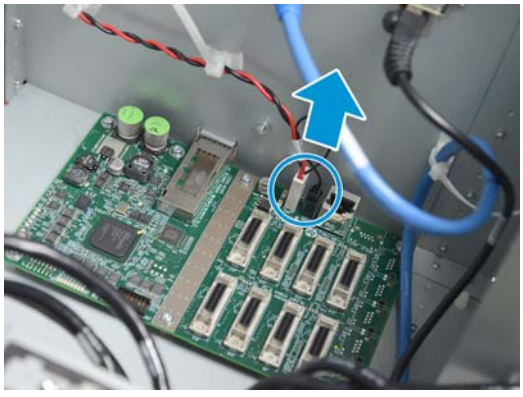
Fiber-optics PCA

Removal

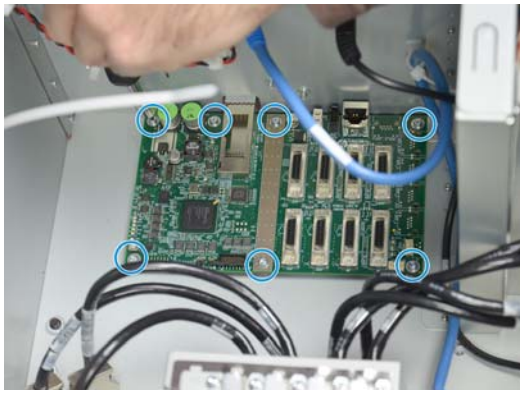
1. Turn off the printer and the power-enable switch.
2. Remove the rear right panel. See Rear right panel assembly on page 624.
3. Remove the two T-20 screws from the e-box support and pull it out carefully.
4. Remove the nine T-20 screws and the e-box cover.
5. Disconnect all cables from the fiber-optics PCA. See Subsystem block diagrams on page 61.



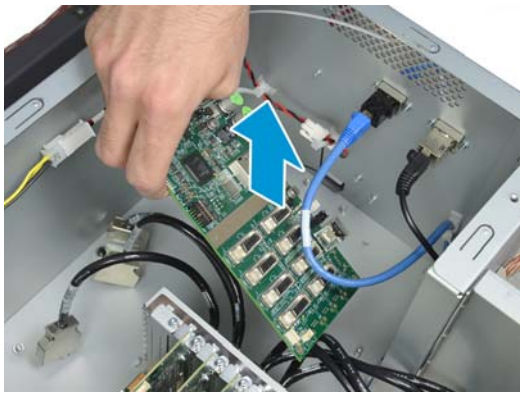




6. Remove the seven T-10 screws that attach the fiber-optics PCA.



7. Remove the PCA.



E-cabinet

E-cabinet main switch kit

Removal

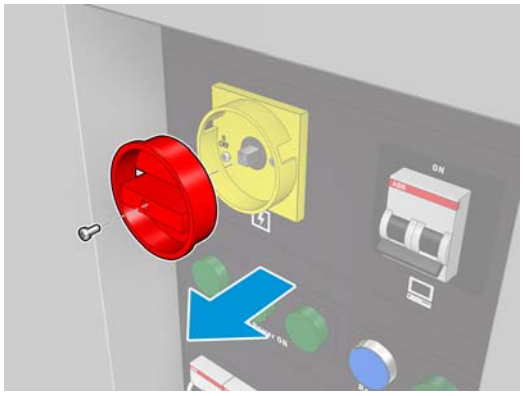
1. Turn off the printer and its built-in computer, then turn off the main switch and the computer's power switch.
2. Disconnect the printer from all its power cords.

CAUTION: Before opening the e-cabinet, turn off the printer by using the branch circuit breakers located in the building's power distribution unit or by disconnecting the power cord(s) from the mains. Always check that the grounding cable is correctly installed before powering up and take all necessary precautions to prevent electrical shocks.

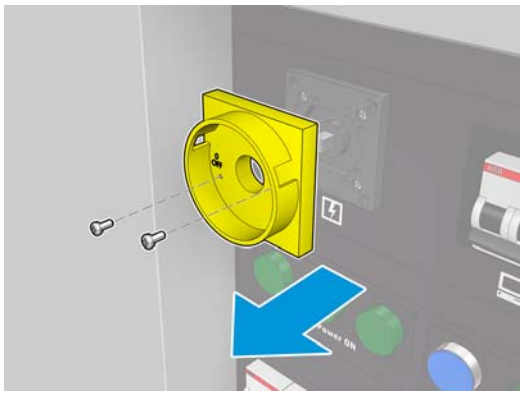
CAUTION: If there is a dedicated single-phase line for the built-in computer, the circuit breakers associated with this line must also be switched off.

3. Open the e-cabinet doors.
4. Remove the crossed screw that holds together the lockable actuator part (in red) and the fixed actuator part (in yellow). Remove the lockable part and save it.

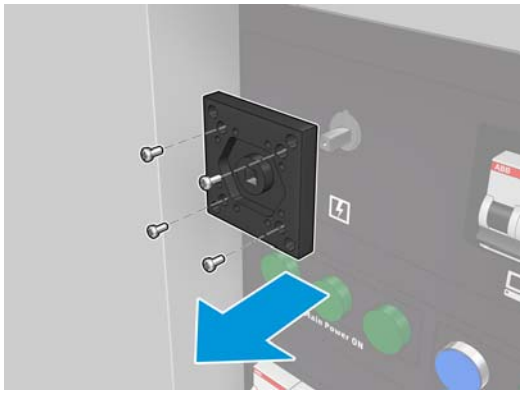
NOTE: It is necessary to turn the lockable part to the OFF position before removing or installing the lockable actuator part. Otherwise it will not match correctly.



5. Remove the two crossed screws and the fixed actuator part, so that you can reach the screws that hold together the outer and the inner main switch 6-pole 63 A body parts.

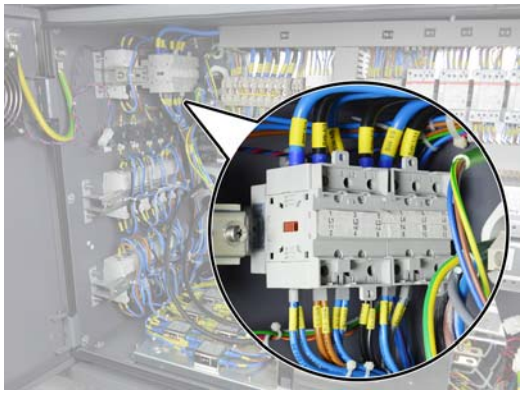


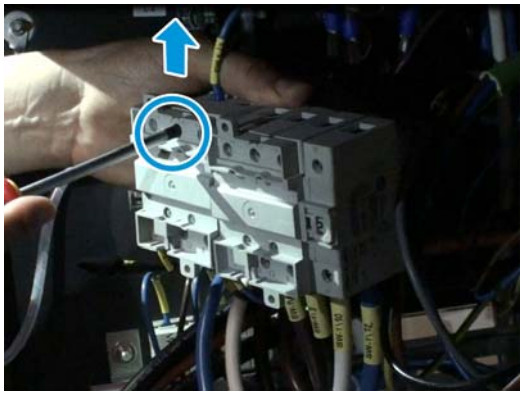
6. Remove the four crossed screws and separate the two main switch 6-pole 63 A body parts.



7. Disconnect the main switch 6-pole 63 A body from all its cables.







8. Remove the main switch 6-pole 63 A body.



Installation

1. Install the new main switch 6-pole 63 A body and reconnect its cables.

CAUTION: Ensure that the cables are correctly connected.

2. Remove the four crossed screws and separate the two main switch 6-pole 63 A body parts.
3. Place the inner and outer main switch 6-pole 63 A body parts on the e-cabinet left cover and screw them together.
4. Remove the crossed screw that holds together the lockable actuator part (in red) and the fixed actuator part (in yellow). Separate both actuator parts and save the lockable part.

NOTE: It is necessary to turn the lockable part to the OFF position before removing or installing the lockable actuator part. Otherwise it will not match correctly.

5. Screw back the two crossed screws and install the fixed actuator part to the main switch 6-pole 63 A body.
6. Install the lockable actuator part to the fixed actuator part.

NOTE: It is necessary to turn the lockable part to the OFF position before removing or installing the lockable actuator part. Otherwise it will not match correctly.

7. Close the e-cabinet doors.
8. Reconnect the printer power cords and turn on the printer.

E-cabinet line filter bypass cables

Whenever any line filter needs to be replaced, you are strongly recommended to replace all the line filters by their corresponding line filter bypass cables, as described below.

Removal

1. Turn off the printer and the power-enable switch.
2. Disconnect the printer from all its power cords.

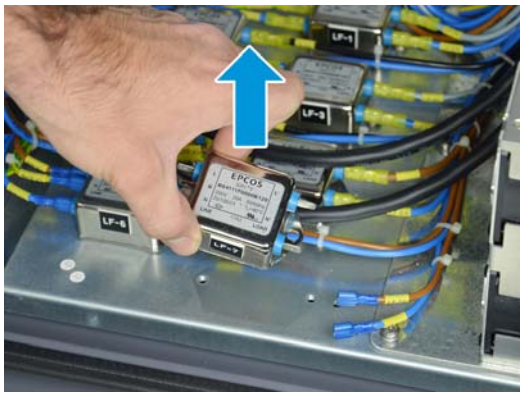
CAUTION: Before opening the e-cabinet, turn off the printer by using the branch circuit breakers located in the building's power distribution unit or by disconnecting the power cord(s) from the mains. Always check that the grounding cable is correctly installed before powering up and take all necessary precautions to prevent electrical shocks.

CAUTION: If there is a dedicated single-phase line for the built-in computer, the circuit breakers associated with this line must also be switched off.

3. Open the e-cabinet doors.
4. Disconnect all cables from the line filter.



5. Remove the line filter.

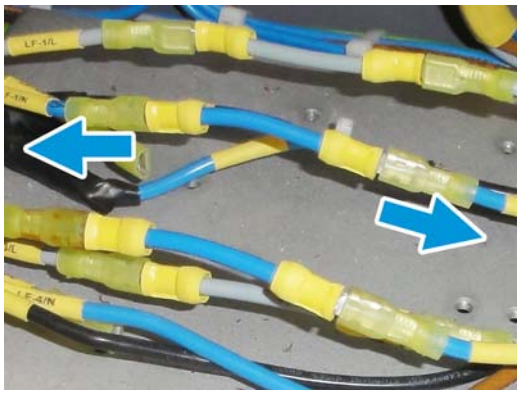


6. Repeat until all the line filters are removed, and follow the installation steps to replace them with their corresponding bypass cables.

Installation

1. For each line filter, follow the connection table shown below to replace it with its corresponding bypass cable. Connect the bypass cable at both ends.

TIP: Notice that all bypass cables have the same colors as the cables to which they connect.



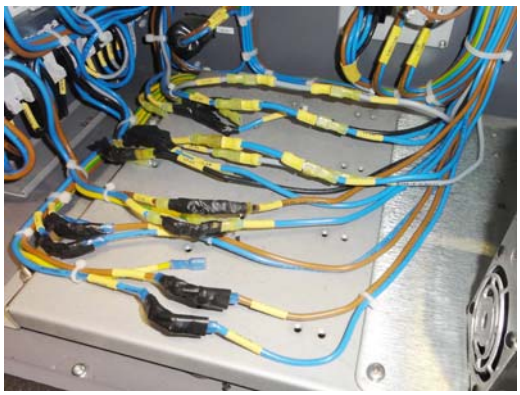
2. Always check that the grounding cables are correctly installed before powering up. Ensure that they are fixed to the e-cabinet bottom plate, and take all necessary precautions to prevent electrical shocks.

3. Close the e-cabinet doors.

4. Reconnect the printer power cords and turn on the printer.

Table 7-1 Line filter bypass cable connections

Left cable	Bypass cable	RIght cable
LF-1/L	Gray	LF-1/L
LF-1/N	Blue	LF-1/N
LF-1/PE	–	Not connected
LF-2/L	Black	LF-2/L
LF-2/N	Blue	LF-2/N
LF-2/PE	–	Not connected
LF-3/L	Gray	LF-1/L
LF-3/N	Blue	LF-1/N
LF-3/PE	–	Not connected
LF-4/L	Black	LF-1/L
LF-4/N	Blue	LF-1/N
LF-4/PE	–	Not connected
LF-5/L	Brown	LF-5/L
LF-5/N	Blue	LF-5/N
LF-5/PE	–	Not connected
LF-6/L	Brown	LF-6/L
LF-6/N	Blue	LF-6/N
LF-6/PE	–	Not connected
LF-7/L	Brown	LF-7/L
LF-7/N	Blue	LF-7/N
LF-7/PE	–	Not connected



E-cabinet ACB 20A 2-phase

Removal

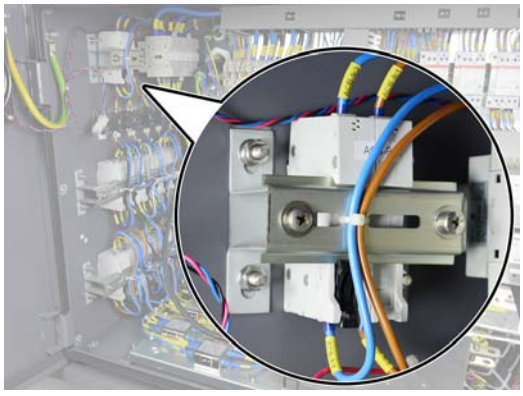
1. Turn off the printer and its built-in computer, then turn off the main switch and the computer power switch.
2. Disconnect the printer from all its power cords.

CAUTION: Before opening the e-cabinet, turn off the printer by using the branch circuit breakers located in the building's power distribution unit or by disconnecting the power cord(s) from the mains. Always check that the grounding cable is correctly installed before powering up and take all necessary precautions to prevent electrical shocks.

CAUTION: If there is a dedicated single-phase line for the built-in computer, the circuit breakers associated with this line must also be switched off.

3. Open the e-cabinet doors.
4. Remove the two screws that attach the AC protection DIN rail to the e-cabinet supports and separate the e-cabinet ACB 20A 2-phase switch block sufficiently to free the e-cabinet ACB 20A 2-phase switch that needs to be replaced.





5. Disconnect all cables from the e-cabinet ACB 20A 2-phase switch and remove the switch.

NOTE: You may need to unroute some cables to some extent and cut some flanges.

Installation

1. Install the new e-cabinet ACB 20A 2-phase switch and reconnect its cables.

NOTE: Make sure that all cables are correctly routed and attached as they were originally, to keep the e-cabinet tidy.

2. Screw back the AC protection DIN rail to its supports.

3. Close the e-cabinet doors.
4. Reconnect the printer power cords and turn on the printer.

E-cabinet ACB 10A 2-phase

Removal

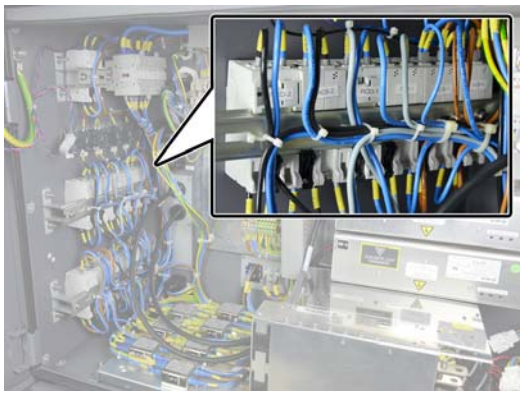
1. Turn off the printer and its built-in computer, then turn off the main switch and the computer power switch.
2. Disconnect the printer from all its power cords.

CAUTION: Before opening the e-cabinet, turn off the printer by using the branch circuit breakers located in the building's power distribution unit or by disconnecting the power cord(s) from the mains. Always check that the grounding cable is correctly installed before powering up and take all necessary precautions to prevent electrical shocks.

CAUTION: If there is a dedicated single-phase line for the built-in computer, the circuit breakers associated with this line must also be switched off.

3. Open the e-cabinet doors.
4. Remove the two screws that attach the AC protection DIN rail to the e-cabinet supports and separate the e-cabinet ACB 10A 2-phase switch block sufficiently to free the e-cabinet ACB 10A 2-phase switch that needs to be replaced.





5. Disconnect all cables from the e-cabinet ACB 10A 2-phase switch and remove the switch.

NOTE: You may need to unroute some cables to some extent and cut some flanges.

Installation

1. Install the new e-cabinet ACB 10A 2-phase switch and reconnect its cables.

   NOTE: Make sure that all cables are correctly routed and attached as they were originally, to keep the e-cabinet tidy.

2. Screw back the AC protection DIN rail to its supports.
3. Close the e-cabinet doors.
4. Reconnect the printer power cords and turn on the printer.

E-cabinet RCD 25A 30mA 1-phase

Removal

1. Turn off the printer and its built-in computer, then turn off the main switch and the computer power switch.
2. Disconnect the printer from all its power cords.

   CAUTION: Before opening the e-cabinet, turn off the printer by using the branch circuit breakers located in the building's power distribution unit or by disconnecting the power cord(s) from the mains. Always check that the grounding cable is correctly installed before powering up and take all necessary precautions to prevent electrical shocks.

   CAUTION: If there is a dedicated single-phase line for the built-in computer, the circuit breakers associated with this line must also be switched off.

3. Open the e-cabinet doors.
4. Remove the two screws that attach the AC protection DIN rail to the e-cabinet supports and separate the e-cabinet RCD 25A 30mA 1-phase switch block sufficiently to free the e-cabinet RCD 25A 30mA 1-phase switch that needs to be replaced.
5. Disconnect all cables from the e-cabinet RCD 25A 30mA 1-phase switch and remove the switch.

   NOTE: You may need to unroute some cables to some extent and cut some flanges.

Installation

1. Install the new e-cabinet RCD 25A 30mA 1-phase switch and reconnect its cables.

   NOTE: Make sure that all cables are correctly routed and attached as they were originally, to keep the e-cabinet tidy.

2. Screw back the AC protection DIN rail to its supports.
3. Close the e-cabinet doors.
4. Reconnect the printer power cords and turn on the printer.

E-cabinet PCA

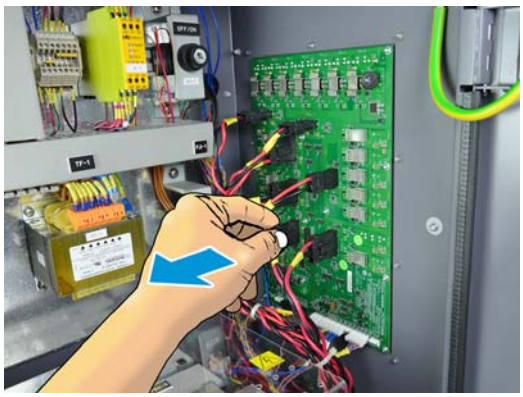
Removal

1. Turn off the printer and its built-in computer, then turn off the main switch and the computer power switch.
2. Open the e-cabinet doors.
3. Remove the rear right panel. See Rear right panel assembly on page 624.

4. Disconnect all cables from inside the e-cabinet PCA.

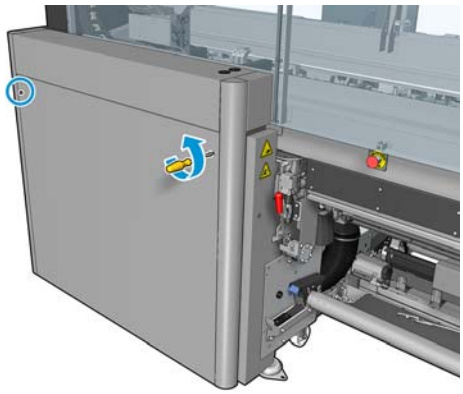
TIP: Before disconnecting any cable, ensure that it is labeled, to avoid any mismatch when reconnecting the cables to the e-cabinet PCA.

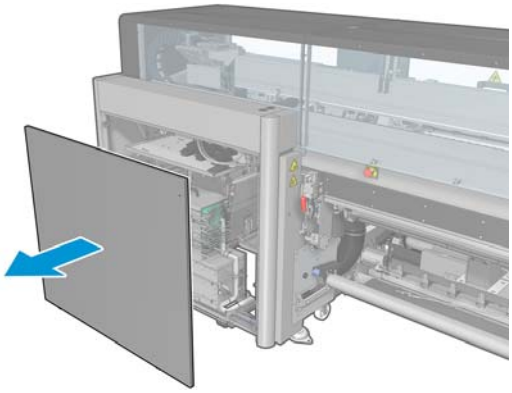


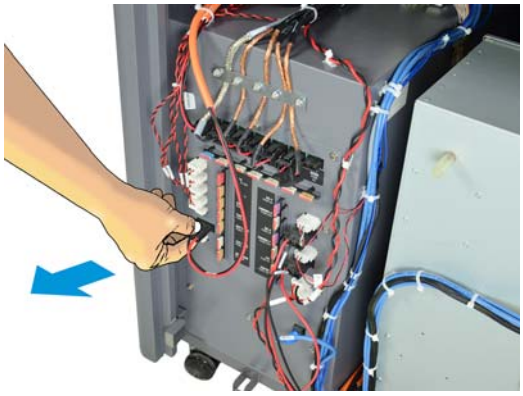


5. Disconnect all cables from outside the e-cabinet PCA.

TIP: Before disconnecting any cable, ensure that it is labeled, to avoid any mismatch when reconnecting the cables to the e-cabinet PCA.







6. Remove the ten crossed screws and remove the e-cabinet PCA lid.
7. Remove the thirteen T10 screws that hold the e-cabinet PCA to its lid, and remove the e-cabinet PCA.

Installation

1. Install the new e-cabinet PCA.
2. Screw back the e-cabinet PCA lid to the e-cabinet.
3. Reconnect all cables to the e-cabinet PCA, both inside and outside the e-cabinet.
4. Close the e-cabinet doors.

E-cabinet modular contactor kit

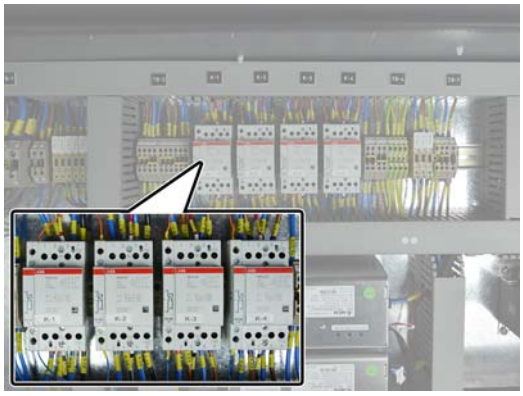
Removal

1. Turn off the printer and its built-in computer, then turn off the main switch and the computer power switch.
2. Disconnect the printer from all its power cords.

CAUTION: Before opening the e-cabinet, turn off the printer by using the branch circuit breakers located in the building's power distribution unit or by disconnecting the power cord(s) from the mains. Always check that the grounding cable is correctly installed before powering up and take all necessary precautions to prevent electrical shocks.

CAUTION: If there is a dedicated single-phase line for the built-in computer, the circuit breakers associated with this line must also be switched off.

3. Open the e-cabinet doors.
4. Disconnect all cables from the e-cabinet modular contactor.



5. Remove the e-cabinet modular contactor fixed to the DIN rail.

TIP: To remove the contactor easily, use a flat screwdriver to pull the plastic tab.

Installation

1. Install the new e-cabinet modular contactor and reconnect its cables.
2. Close the e-cabinet doors.
3. Reconnect the printer power cords and turn on the printer.

E-cabinet PSUs 1 to 4

Removal

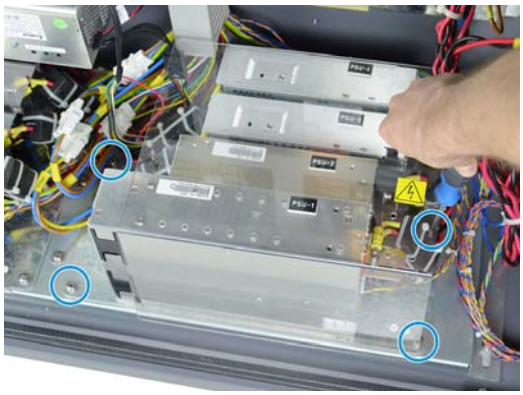
1. Turn off the printer and its built-in computer, then turn off the main switch and the computer power switch.
2. Open the e-cabinet doors.

The following table describes which ID number corresponds to each PSU, their default voltages from the vendor, the default printer voltage adjustment, and where the PSU is located.

PSU	Voltage	Default printer adjustment	E-cabinet bottom plate
1	48 V	42 V	Right

PSU	Voltage	Default printer adjustment	E-cabinet bottom plate
2	24 V	24 V (no adjustment)	Right
3	36 V	32 V	Right
4	12 V	13 V	Right
5	48 V	42 V	Left
6	24 V	24 V (no adjustment)	Left
7	24 V	24 V (no adjustment)	Left

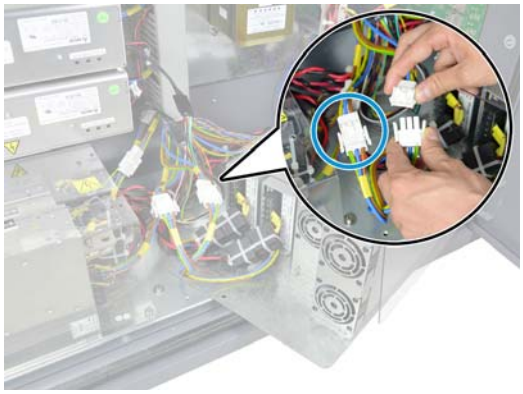
3. Remove the four pointed screws to remove the tray in which the defective PSU is located (the right-hand tray for PSUs 1 to 4; see Subsystem block diagrams on page 61).

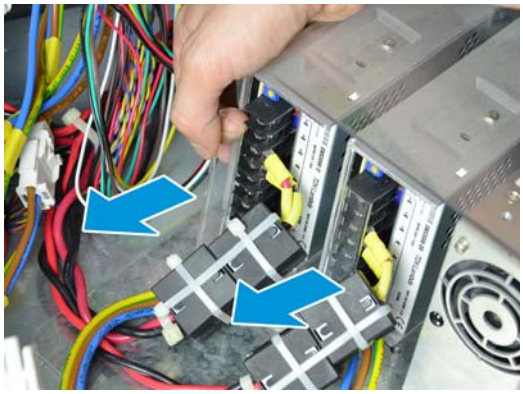


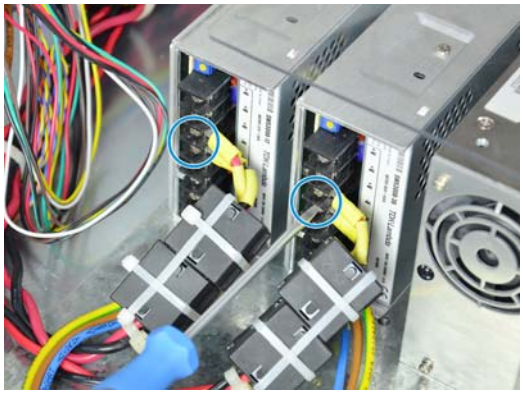
4. Extract the tray a little, so that it is easier to disconnect the cables.



5. Disconnect the cables from the left-hand side of all the PSUs located on the same tray.



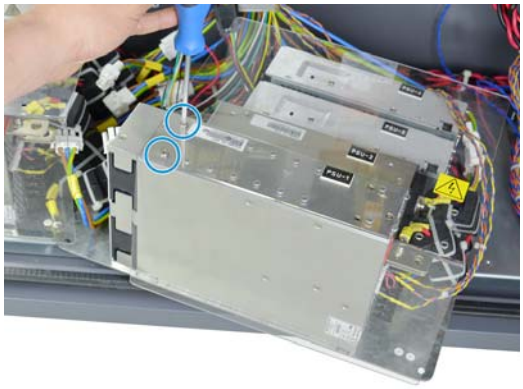


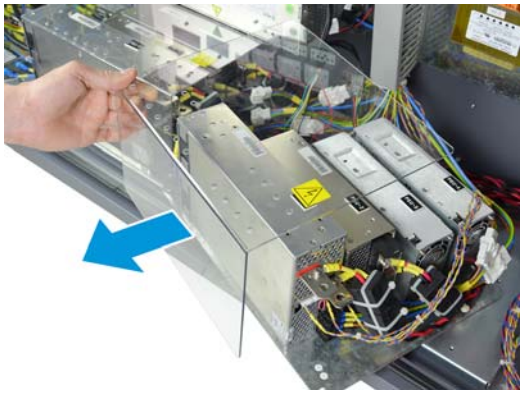


6. Rotate the tray a little to the left.

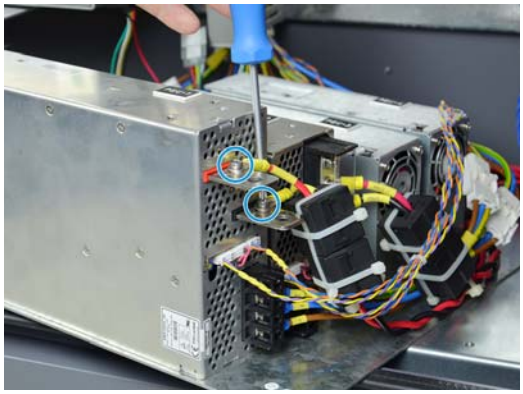


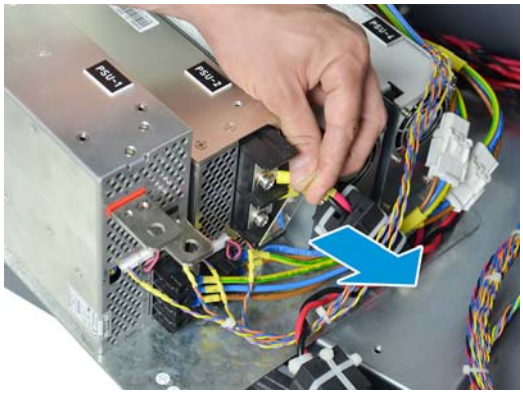
7. Unscrew and remove the transparent cover.

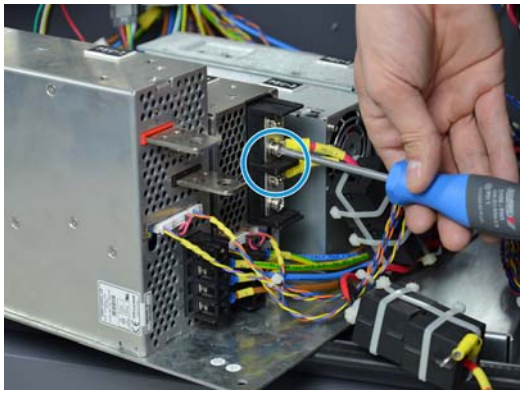




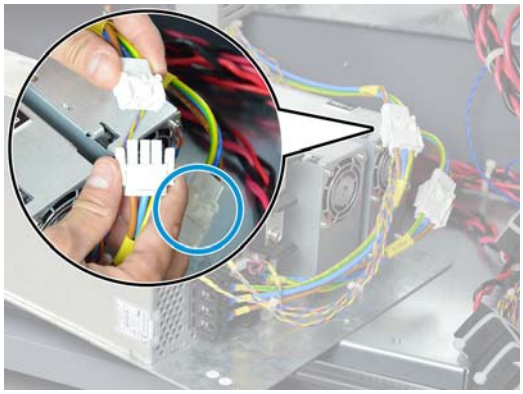
8. Disconnect the cables from the right-hand side of all the PSUs located on the same tray.







9. Continue disconnecting cables.

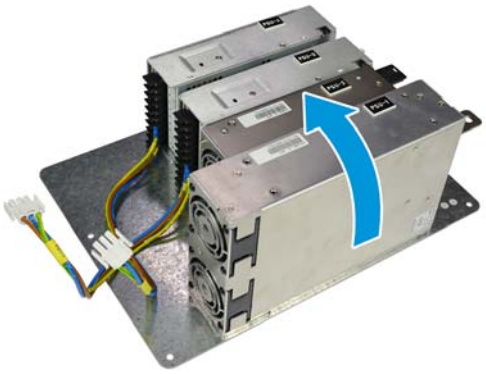




10. Remove the whole tray from the printer.



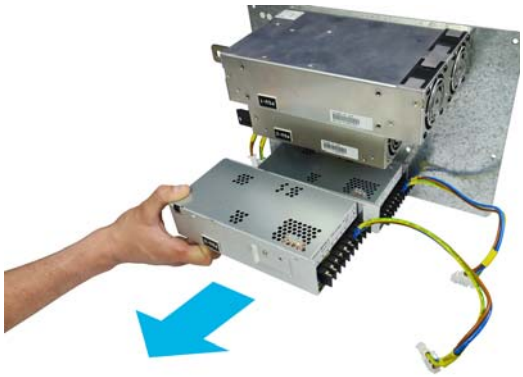
11. Rotate the tray so that you can access the screws underneath it.



12. Remove the four pointed screws that attach the PSU (the illustration is for PSU 3).

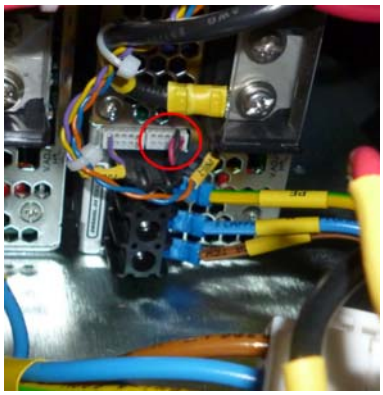


13. Remove the PSU (the illustration is for PSU 3).



Installation

1. Insert the new PSU.
2. If replacing PSU 1 or 2, ensure that the new PSU comes with the remote sense jumper already connected to it (PSU 3 and 4 do not need any jumper). If it is missing, use the remote sense jumper from its corresponding old PSU. The following image shows where the PSU remote sense jumper is located.



3. Ensure that the PSU voltage is correct. If not, perform the PSU adjusted voltage checking procedure (see PSU adjusted voltage checking procedure on page 562).
4. Close the e-cabinet doors.
5. Reconnect and turn on the printer.

PSU adjusted voltage checking procedure

Some of the power supplies are adjusted to a voltage that is not the factory default from the vendor. The voltage is adjusted during the manufacture of the e-cabinet and before a service part is sent. However, it is highly recommended for both the user and the printer's security always to check the voltage adjustment before installing a new PSU.

The following table describes which ID number corresponds to each PSU, their default voltages from the vendor, the default printer voltage adjustment, and where the PSU is located.

PSU	Voltage	Default printer adjustment	E-cabinet bottom plate
1	48 V	42 V	Right
2	24 V	24 V (no adjustment)	Right
3	36 V	32 V	Right
4	12 V	13 V	Right
5	48 V	42 V	Left
6	24 V	24 V (no adjustment)	Left
7	24 V	24 V (no adjustment)	Left

⚠ **CAUTION:** To adjusting the PSUs while mounted, you must open the doors of the e-cabinet. Before opening the e-cabinet, turn off the branch circuit breakers located in the building's power distribution unit, or disconnect the power cord(s) from the mains. Always check that the grounding cable is correctly installed before powering up and take all necessary precautions to prevent electrical shocks.

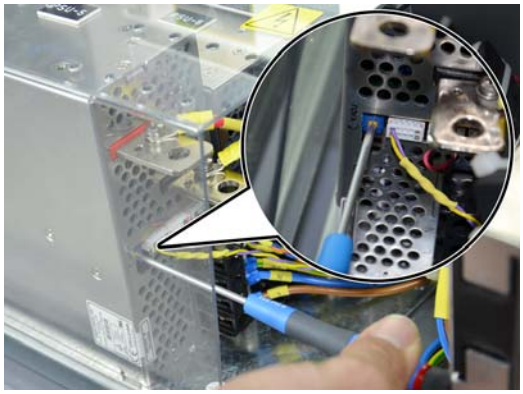
CAUTION: If there is a dedicated single-phase line for the computer, the circuit breakers associated with this line must also be switched off.

Procedure

The equipment needed for this adjustment is a multimeter set to measure DC voltage, and a small Phillips screwdriver to adjust a trimmer (small potentiometer).

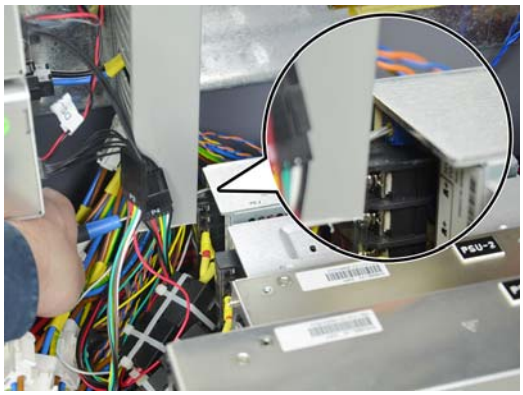
1. Make sure that the PSU is correctly installed.
2. Remove the transparent covers over the PSUs if necessary.
3. Disconnect the DC cable of the PSU from the e-cabinet PCA.
4. Power up the e-cabinet, by turning on the power distribution unit circuit breakers.
5. For PSUs 1, 3, and 5 the safety circuit needs to be activated.
6. Using a multimeter set to measure DC voltage, measure the DC voltage out of the PSU at the DC connector that connects to the e-cabinet PCA (black wire is 0 V, red wire is +V).

7. Carefully turn the adjustment potentiometer until the output voltage is correct for that PSU. The location of the potentiometer depends on the PSU model. For PSU1 and PSU 5:



For PSU3 and PSU4:





8. Power down the e-cabinet and reconnect the DC cable to the e-cabinet PCA.

CAUTION: To adjust the PSUs while mounted, you must open the doors of the e-cabinet. Before opening the e-cabinet, turn off the branch circuit breakers located in the building's power distribution unit, or disconnect the power cord(s) from the mains. Always check that the grounding cable is correctly installed before powering up, and take all necessary precautions to prevent electrical shocks.

CAUTION: If there is a dedicated single-phase line for the computer, the circuit breakers associated with this line must also be switched off.

E-cabinet PSUs 5 to 7

Removal

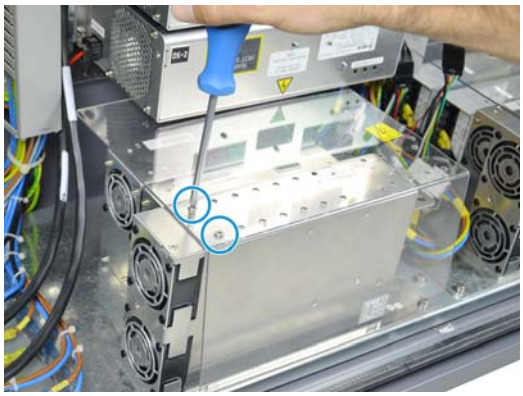
1. Turn off the printer and its built-in computer, then turn off the main switch and the computer power switch.

2. Open the e-cabinet doors.

   The following table describes which ID number corresponds to each PSU, their default voltages from the vendor, the default printer voltage adjustment, and where the PSU is located.

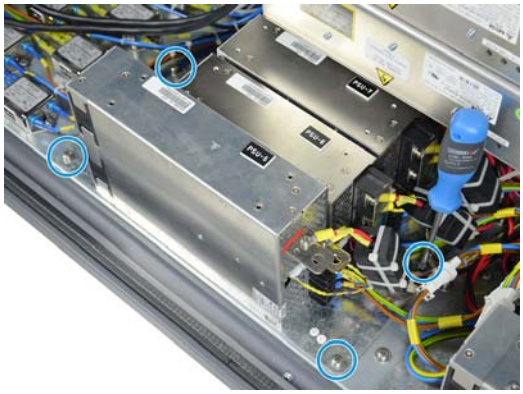
PSU	Voltage	Default printer adjustment	E-cabinet bottom plate
1	48 V	42 V	Right
2	24 V	24 V (no adjustment)	Right
3	36 V	32 V	Right
4	12 V	13 V	Right
5	48 V	42 V	Left
6	24 V	24 V (no adjustment)	Left
7	24 V	24 V (no adjustment)	Left

3. Unscrew and remove the transparent cover.





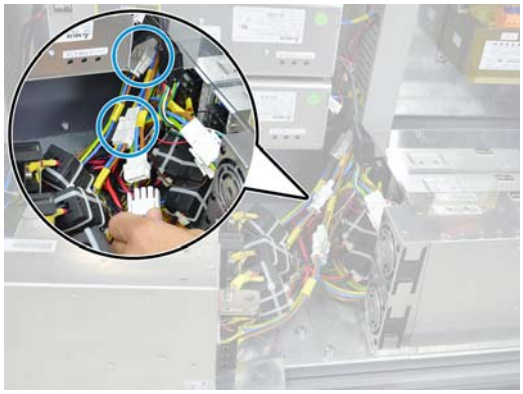
4. Remove the four pointed screws to remove the tray in which the defective PSU is located (the left-hand tray for PSUs 5 to 7; see Subsystem block diagrams on page 61).

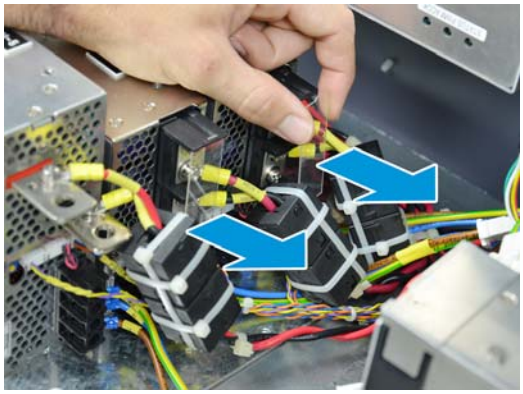


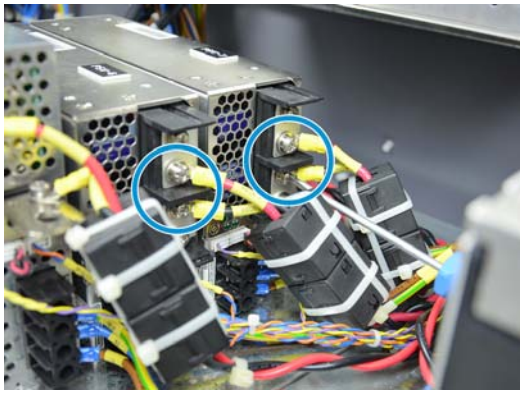
5. Extract the tray a little, so that it is easier to disconnect the cables.



6. Disconnect the cables from all the PSUs located on the same tray.





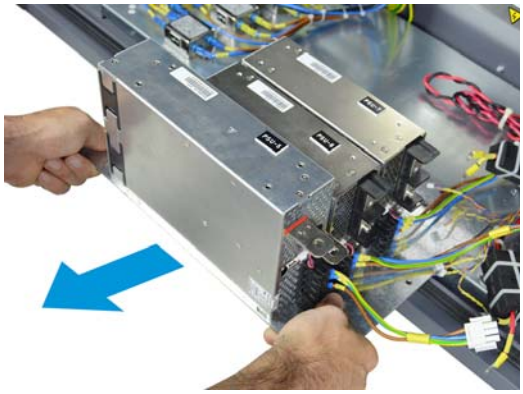


7. Continue disconnecting cables.

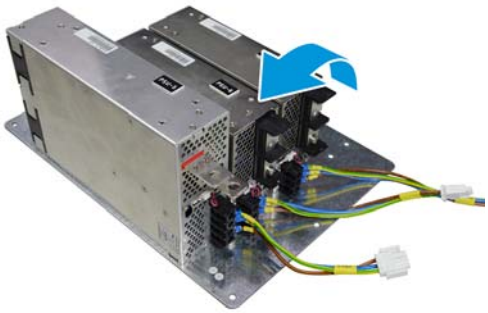




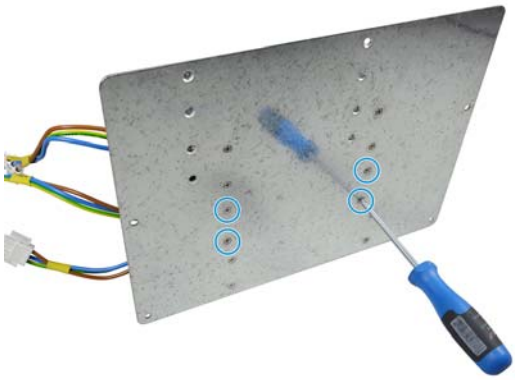
8. Remove the whole tray from the printer.



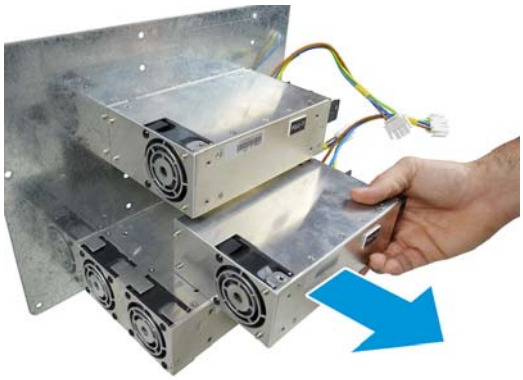
9. Rotate the tray so that you can access the screws underneath it.



10. Remove the four pointed screws that attach the PSU (the illustration is for PSU 6).

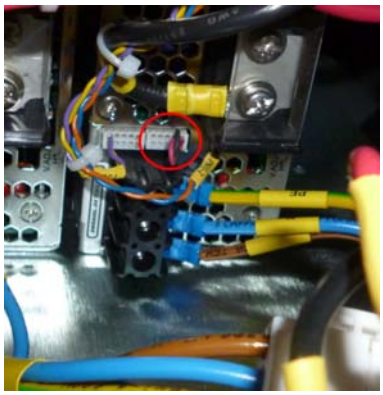


11. Remove the PSU (the illustration is for PSU 6).



Installation

1. Insert the new PSU.
2. Ensure that the new PSU comes with the remote sense jumper already connected to it. If it is missing, use the remote sense jumper from the old PSU. The following image shows where the PSU remote sense jumper is located.



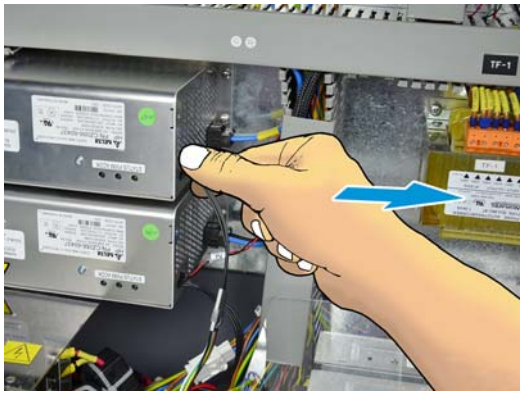
3. Ensure that the PSU voltage is correct. If not, perform the PSU adjusted voltage checking procedure (see PSU adjusted voltage checking procedure on page 562).
4. Close the e-cabinet doors.
5. Reconnect and turn on the printer.

E-cabinet AC/AC converter

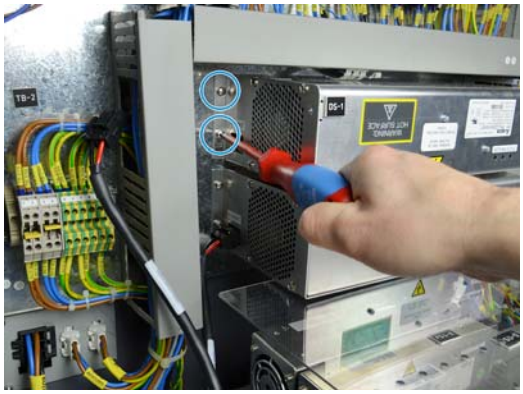
Removal

1. Turn off the printer and its built-in computer, then turn off the main switch and the computer power switch.
2. Open the e-cabinet doors.
3. Disconnect the e-cabinet AC/AC converter from all its cables.



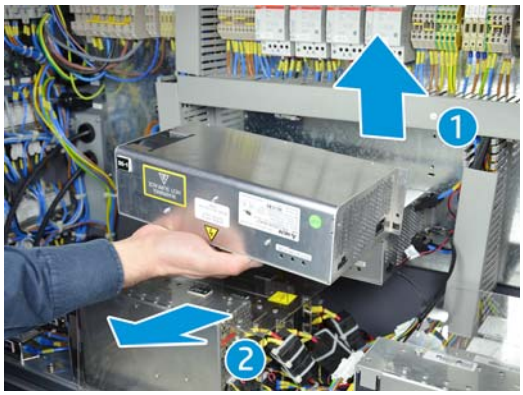


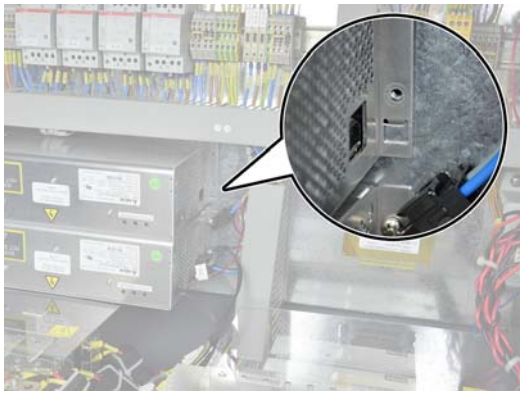
4. Unscrew the four pointed screws.





5. Lift up the e-cabinet AC/AC converter slightly before pulling it out, to free it from the small attachments at the rear.





Installation

1. Insert the new e-cabinet AC/AC converter.
2. Reconnect all cables to the converter.

   NOTE: When connecting the cables, ensure that they are not mismatched. All cables are labeled.

3. Close the e-cabinet doors.
4. Reconnect and turn on the printer.

E-cabinet fan

Removal

1. Turn off the printer and its built-in computer, then turn off the main switch and the computer power switch.
2. Open the e-cabinet doors.
3. Disconnect the fan cable from its air connector.
4. Remove the four crossed screws that hold the fan and remove the fan.

Installation

1. Insert the new fan and attach with the four screws.
2. Reconnect the fan cable.
3. Close the e-cabinet doors.
4. Remove the plastic cover and replace the filter with the new one.
5. Reconnect and turn on the printer.

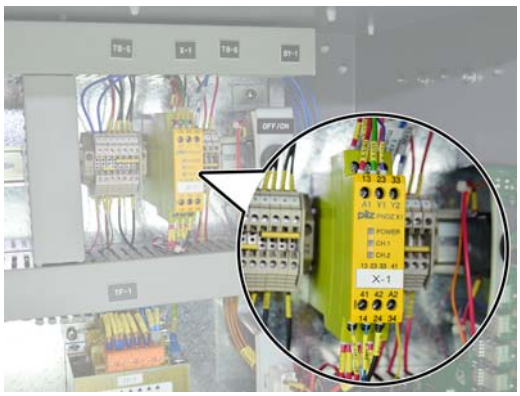
E-cabinet safety relay

Removal

1. Turn off the printer and its built-in computer, then turn off the main switch and the computer power switch.
2. Open the e-cabinet doors.

3. Disconnect the e-cabinet safety relay from all cables.





4. Remove the e-cabinet safety relay fixed to the DIN rail.

TIP: You are recommended to use a flat screwdriver to pull the plastic tab, so that the part can be easily removed from the DIN rail.

Installation

1. Insert the new safety relay.
2. Reconnect all cables to the safety relay.
3. Close the e-cabinet doors.
4. Reconnect and turn on the printer.

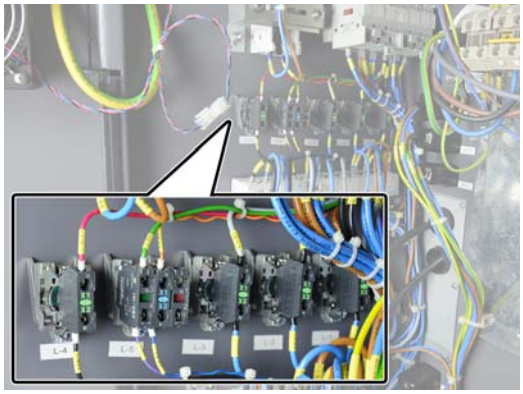
E-cabinet lamps kit

Removal

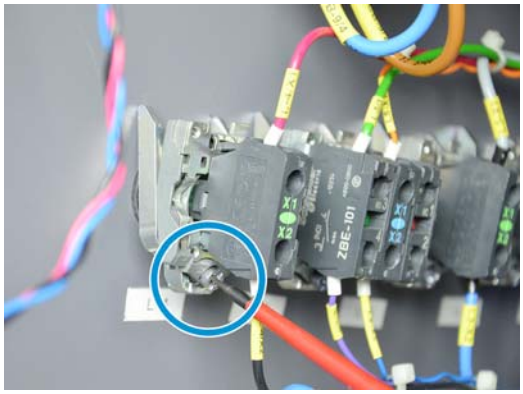
1. Turn off the printer and its built-in computer, then turn off the main switch and the computer power switch.

2. Open the e-cabinet and locate the lamp that has to be replaced.

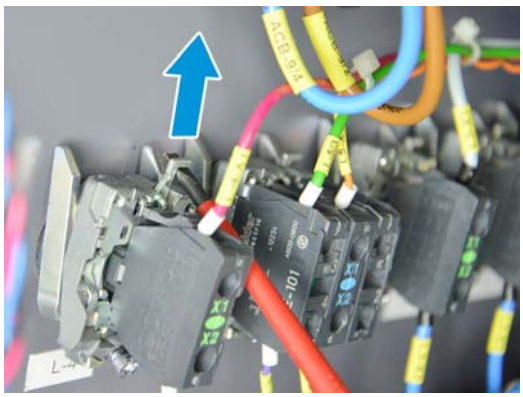




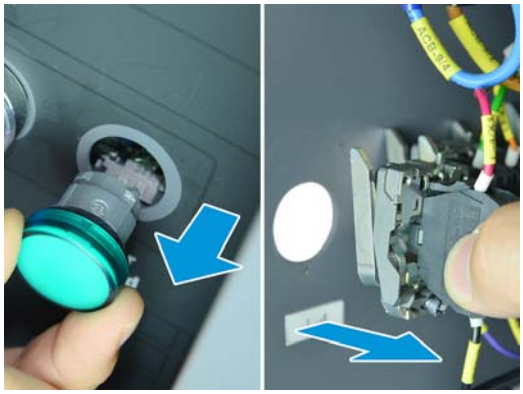
3. Using a flat-head or Phillips screwdriver, release the screw that fixes the lamp to the box.

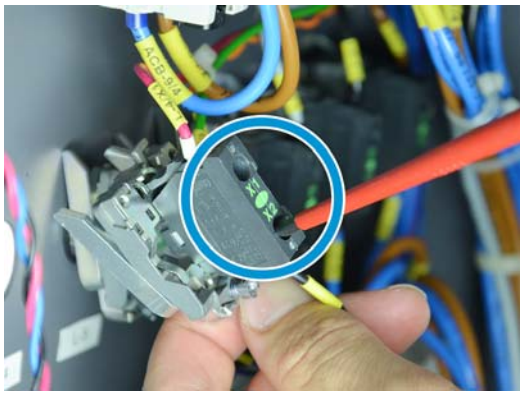


4. Using the screwdriver, pull up the L-shaped lever gently to detach the main body from the lens cap. Be careful not to damage any cable.

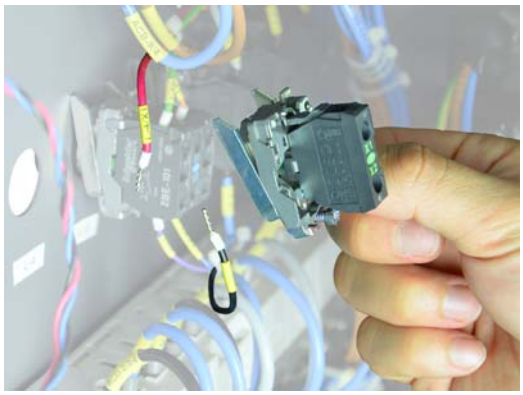


5. Remove the lens cap from the exterior of the e-cabinet and disconnect the power cables from the main body, unscrewing the terminals X1 and X2.





6. Disconnect both e-cabinet lamp cables.



Installation

1. Connect the power cables to the replacement main body. Ensure that the cables are not loose, by pulling them after screwing in the terminals.
2. Insert the lens cap from the exterior of the e-cabinet and attach it to the main body. There is no need to actuate the lever, which is on a spring.

NOTE: The lens cap can be inserted in only one position.

3. Fix the lamp body to the panel using the fixing screw. Ensure that it is correctly attached, by trying to rotate the body (it should not move).
4. Reconnect and turn on the printer.

E-cabinet terminal block kit

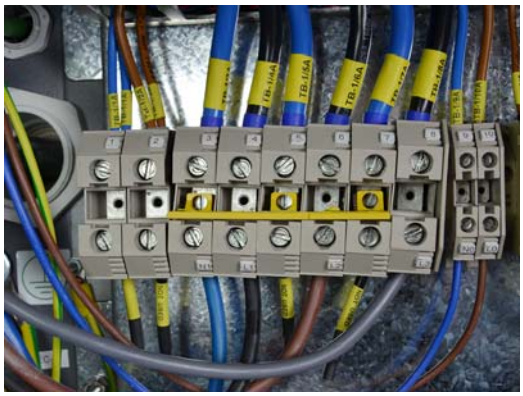
Removal

1. Turn off the printer and its built-in computer, then turn off the main switch and the computer power switch.
2. Open the e-cabinet doors.
3. Locate the e-cabinet terminal block that you want to remove, and follow the appropriate steps below.

Removing the TB-1 assembly

1. Disconnect the e-cabinet terminal block from all cables.





2. Unscrew the e-cabinet installation cross-connector from the e-cabinet terminal block assembly TB-1.
3. Remove the e-cabinet terminal block fixed to the DIN rail.

TIP: You are recommended to use a flat screwdriver to pull the plastic tab, so that the part can be easily removed from the DIN rail.

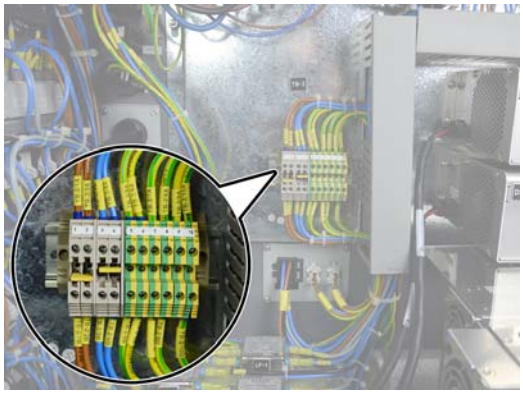
Installing the TB-1 assembly

1. Insert the new e-cabinet terminal block TB-1.
2. Reconnect all cables to the e-cabinet terminal block.
3. Screw back the e-cabinet power jumper to the e-cabinet terminal block assembly TB-1. See Subsystem block diagrams on page 61.

Removing the TB-2 to TB-7 assemblies

1. Disconnect the e-cabinet terminal block from all cables.





2. Remove the e-cabinet installation X-way cross-connector from the e-cabinet terminal block assembly.

TIP: You are recommended to use a flat screwdriver to pull out the cross-connector, so that the part can be easily removed from the e-cabinet terminal block assembly.

3. Remove the e-cabinet terminal block fixed to the DIN rail.

Installing the TB-2 to TB-7 assemblies

1. Insert the new e-cabinet terminal block.
2. Reconnect all cables to the e-cabinet terminal block.
3. Reinsert the e-cabinet X way cross-connector into the e-cabinet terminal block assembly, ensuring that it is correctly connected to the e-cabinet terminal block assembly. See Subsystem block diagrams on page 61.

CAUTION: It is important to connect the e-cabinet X-way cross-connector correctly. The correct positions are either the upper or the lower holes. The center holes are not for this kind of cross-connector.

Completing the installation

1. Close the e-cabinet doors.
2. Reconnect and turn on the printer.

E-cabinet X-way cross-connector kit

Removal

1. Turn off the printer and its built-in computer, then turn off the main switch and the computer power switch.
2. Open the e-cabinet doors.
3. Remove the e-cabinet installation X-way cross-connector from the e-cabinet terminal block assembly.

TIP: You are recommended to use a flat screwdriver to pull out the cross-connector, so that the part can be easily removed from the e-cabinet terminal block assembly.

Installation

1. Reinsert the e-cabinet X way cross-connector into the e-cabinet terminal block assembly, ensuring that it is correctly connected to the e-cabinet terminal block assembly. See Subsystem block diagrams on page 61.

CAUTION: It is important to connect the e-cabinet X-way cross-connector correctly. The correct positions are either the upper or the lower holes. The center holes are not for this kind of cross-connector.

2. Close the e-cabinet doors.
3. Reconnect and turn on the printer.

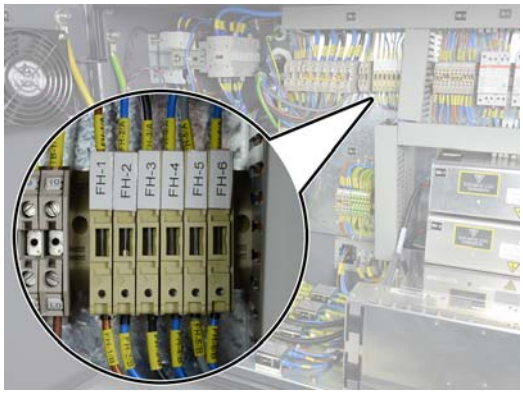
E-cabinet fuses kit

Removal

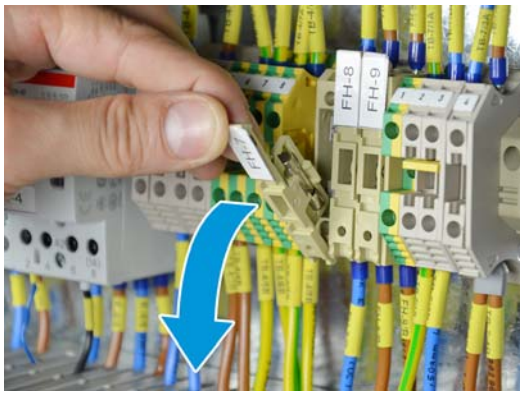
1. Turn off the printer and its built-in computer, then turn off the main switch and the computer power switch.
2. Open the e-cabinet doors.

3. For fuses FH-1 to FH-9, locate the appropriate e-cabinet fuse to be replaced.

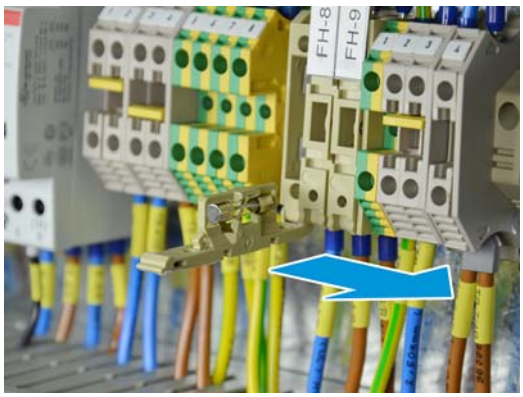




4. Open the e-cabinet fuse holder by pulling out its plastic tab from the top, so that the fuse slot rotates, exposing the e-cabinet fuse.



5. Remove the fuse.



Installation

1. Insert the new fuse and close its holder.
2. Close the e-cabinet doors.
3. Reconnect and turn on the printer.

E-cabinet PCA fuses kit

⚠ **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

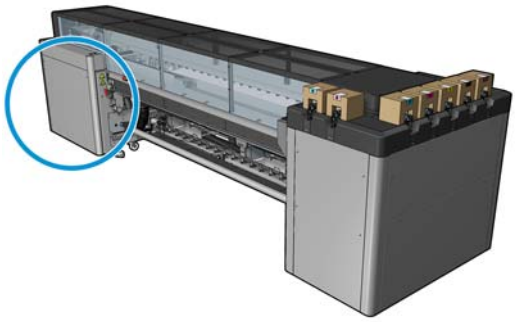
1. Ensure that you have the E-cabinet PCA Fuses Kit (CZ056-67136), which is included in the Standard Uptime Kit (D4J02A).
2. Check the Print Care error message log to find out which fuse needs to be replaced.
3. Turn off the printer in the correct way for maintenance operations.



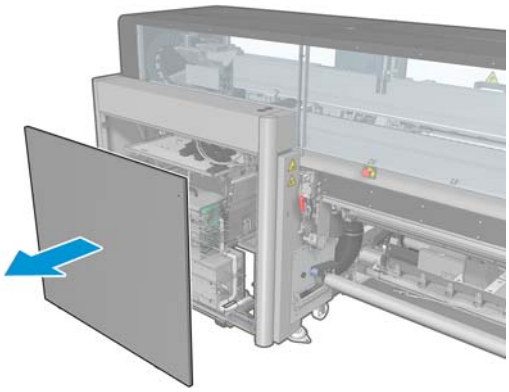
Replace an e-cabinet fuse

1. Ensure that the printer is not printing.
2. Turn off the printer and the power-enable switch.

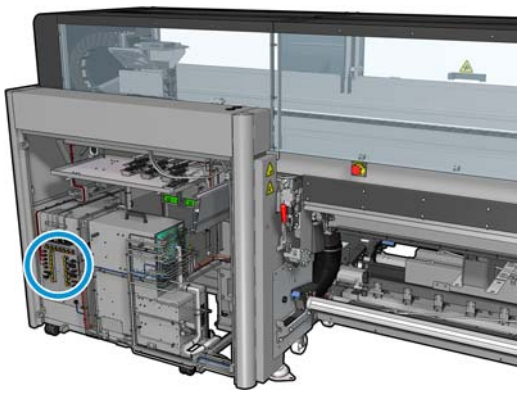
3. Remove the screws shown below, then remove the rear right cover.



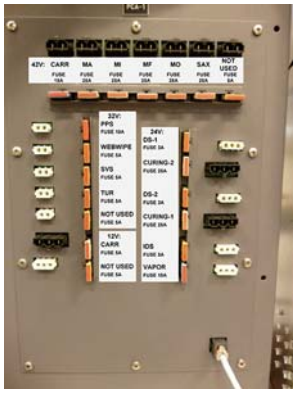




4. Locate the e-cabinet fuses.



5. Locate the failing fuse identified by the Print Care error message logs.



6. Pull out the fuse and insert a new one. Ensure that the new fuse matches the old one in size, rating, and color.

7. 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.

8. Dispose of the old fuse.

9. Put back the rear right cover and screw it into place.

10. Turn on the printer in the correct way for maintenance operations.



E-cabinet fan filter

Prepare to replace the e-cabinet fan filters

1. E-cabinet fan filters are provided with your printer in the HP Latex 3000 Printer Cleaning Kit: the necessary sets of two filters are provided; only one set is needed for this operation.



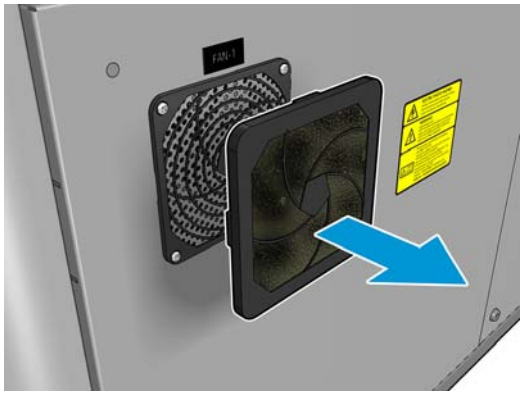
2. Ensure that the printer is not printing.

3. Locate the fan filters on the printer.

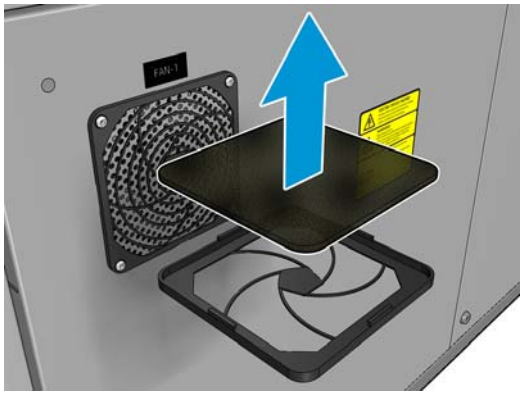


Replace the e-cabinet fan filters

1. Pull off the plastic fan filter cover.

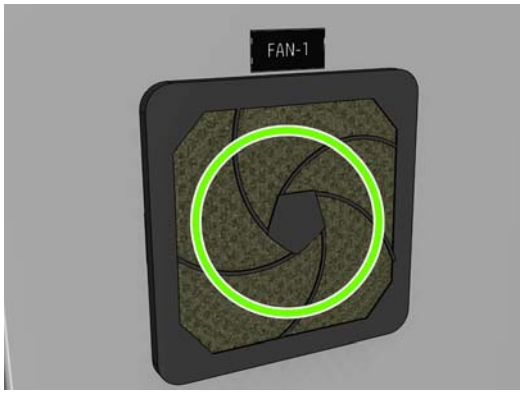


2. For each fan, change the fan filter for the new one provided. Be careful to locate it correctly: it must cover the fan's square surface.



3. Put back the fan cover.





E-cabinet transformer

Before replacing the transformer, check the corresponding fuses. Replace them if necessary, and check the printer again. If the fuses are all OK, proceed with the steps below.

Removal

1. Turn off the printer and its built-in computer, then turn off the main switch and the computer power switch.
2. Open the e-cabinet doors.

3. Disconnect all cables from the transformer.





4. Remove the four pointed screws that hold the e-cabinet transformer and remove the transformer.

Installation

1. Insert the new transformer and attach it with the four screws.
2. Reconnect all cables to the transformer.

> **NOTE:** When connecting the cables, ensure that they are not mismatched. All cables are labeled.

3. Close the e-cabinet doors.
4. Reconnect and turn on the printer.

E-cabinet left door assembly

Removal

1. Turn off the printer and its built-in computer, then turn off the main switch and the computer power switch.
2. Open the e-cabinet doors.
3. Remove the e-cabinet fan filter.
4. Remove the e-cabinet fan.
5. Remove the pointed screw and disconnect the grounding cable from the e-cabinet left door assembly.
6. Remove the four pointed screws from the e-cabinet left door hinges and remove the e-cabinet left door assembly.

Installation

1. Install the new e-cabinet left door assembly and attach it with the four screws.
2. Screw back the grounding cable to the e-cabinet left door assembly.
3. Reconnect the e-cabinet fan cable.
4. Reinstall the e-cabinet fan filter.
5. Close the e-cabinet doors.
6. Reconnect and turn on the printer.

E-cabinet right door assembly

Removal

1. Turn off the printer and its built-in computer, then turn off the main switch and the computer power switch.
2. Open the e-cabinet doors.
3. Remove the e-cabinet fan filter.
4. Remove the e-cabinet fan.
5. Remove the pointed screw and disconnect the grounding cable from the e-cabinet right door assembly.
6. Remove the four pointed screws from the e-cabinet right door hinges and remove the e-cabinet right door assembly.

Installation

1. Install the new e-cabinet right door assembly and attach it with the four screws.
2. Screw back the grounding cable to the e-cabinet right door assembly.
3. Reconnect the e-cabinet fan cable.
4. Reinstall the e-cabinet fan filter.
5. Close the e-cabinet doors.
6. Reconnect and turn on the printer.

Human-Machine Interface

In case of any need to reinstall the Internal Print Server software, read the Internal Print Server installation and setup instructions.

To reinstall or solve any other software setup problems, follow the post-installation steps.

If there is a problem that can be solved only by physical removal and reinstallation of either the Internal Print Server computer or its hard disk drive, follow the instructions in the Internal Print Server service manual and its removal and installation instructions.

The following sections describe how to remove and install these printer components:

- Internal Print Server computer (A3L24PA#AB4)
- Internal Print Server monitor (C9V75AA#AB4)
- Webcam (H2W19AA#ABB)
- Webcam USB extension cable (8121-1202)

Internal Print Server computer (A3L24PA#AB4)

Removal

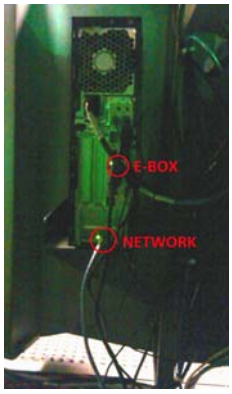
1. Turn off the printer and its built-in computer, then turn off the main switch and the computer power switch.
2. Open the printhead cleaning door.
3. Disconnect the computer from all its cables.
4. Remove the computer from the printer.

Installation

1. Install the new computer so that the HP logo is located vertically.



2. Connect all the cables.



IMPORTANT: Take care to connect both LAN cables to the correct sockets. With the computer positioned as shown above, the e-box LAN cable must connect to the upper connector and the network LAN cable must connect to the lower one. If they are misconnected, the printer will not work.

3. Follow the Internal Print Server installation and setup instructions to install all the needed software and configure the computer.

TIP: If you have problems, you can also consult the Internal Print Server service manual.

4. The computer usually comes without the Print Care software installed. See Print Care installation on page 705.

Internal Print Server monitor (C9V75AA#AB4)

Removal

1. Turn off the printer and its built-in computer, then turn off the main switch and the computer power switch.
2. Disconnect the Internal Print Server monitor from its cables.
3. Hold the monitor and remove the two T-20 screws that hold it to the metal sheet base support.
4. Remove the monitor.

Installation

1. Screw the new monitor to its metal sheet base support.
2. Reconnect all of its cables.

TIP: If you have problems, you can consult the Internal Print Server monitor service manual.

Webcam (H2W19AA#ABB)

Removal

1. Turn off the printer and the power-enable switch.
2. Look for the webcam on top of the Internal Print Server monitor.
3. Open the printhead cleaning door.
4. Disconnect and unroute the webcam cable from its air connector.
5. Remove the webcam from the top of the Internal Print Server monitor.

Installation

1. Put the new webcam in place of the old one.
2. Route and reconnect the webcam cable.

TIP: If you have problems, you can consult the webcam service manual.

Webcam USB extension cable (8121-1202)

Removal

1. Turn off the printer and the power-enable switch.
2. Look for the webcam on top of the Internal Print Server monitor.
3. Open the printhead cleaning door.
4. Disconnect and unroute the webcam USB extension cable from its air connector and from the computer.
5. Remove the webcam USB extension cable.

Installation

- Route and connect the new webcam USB extension cable.

TIP: If you have problems, you can consult the webcam USB extension cable service manual.

Impelling

Impelling drying AC cable (CZ056-50065)

Removal

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.
3. Open the carriage service position window.
4. Remove all printheads from the carriage and store them in their caps.
5. Open the right cover door.
6. Open the e-cabinet doors.

CAUTION: Before opening the e-cabinet turn off the printer using branch circuit breakers located in the building's power distribution unit or disconnecting the power cord(s) from the mains. Always check that the grounding cable is correctly installed before powering up and take all necessary precautions to prevent electrical shocks.

7. Remove the five pointed screws and remove the carriage-tower cover.
8. Disconnect the AC power cables from both the e-Cabinet AC/AC converter and its corresponding drying PCA.

   The following table gives the cable connections between the AC source and the drying PCA (AC_IN connector).

Drying PCA	AC source
1 (LEFT)	UP
2 (RIGHT)	DOWN

   See also Drying PCA on page 522.
9. Unroute the AC cables through the printer structure.
10. Remove the three T-25 screws and the cover Igus end.

TIP: It may be easier to access the Igus chain if you remove the rear window panels.

11. Unroute the AC cables through the Igus chain. See Impelling Igus chain ink tubes and cables on page 604.

Installation

1. Reroute the AC power cables through the AM structure.
2. Reroute through the Igus chain; remember to leave a free loop on both ends of the chain. See Impelling Igus chain ink tubes and cables on page 604.
3. Screw back the cover Igus end.
4. Connect the AC power cables to the AC sources and the Drying PCA.

Impelling 42 V power cable (CZ056-50063)

Removal

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.
3. Open the carriage service position window.
4. Remove all printheads from the carriage and store them in their caps.
5. Remove the rear right panel. See Rear right panel assembly on page 624.
6. Disconnect the 42 V power cables from the e-cabinet PCA (located at the right cover of the e-cabinet).
7. Remove the five pointed screws and remove the carriage-tower cover.
8. Disconnect the 42 V power cables from drying PCAs 1 and 2 (there are two 42 V power connectors for each carriage interconnect PCA).
9. Unroute from the e-cabinet PCA to the end of the Igus chain.
10. Remove the three T-25 screws and the cover Igus end.

TIP: It may be easier to access the Igus chain if you remove the rear window panels.

11. Unroute the 42 V power cables through the Igus chain. See Impelling Igus chain ink tubes and cables on page 604.
12. Unroute from the Igus chain to carriage interconnect PCAs 1 and 2.

Installation

1. Reroute from the e-cabinet PCA to the Igus chain. Remember to leave a free loop at the end of the Igus chain.
2. Connect to the e-cabinet PCA (42 V CARR connector).
3. Reroute through the Igus chain; remember to leave a free loop on both ends of the chain.
4. Screw back the cover Igus end.
5. Route back the 42 V power cables through the Igus chain. See Impelling Igus chain ink tubes and cables on page 604.
6. Reroute both cables from the carriage interconnect to the e-cabinet PCAs.
7. Connect to both carriage interconnect PCAs.

Impelling 12 V power cable (CZ056-50066)

Removal

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.
3. Open the carriage service position window.
4. Remove all printheads from the carriage and store them in their caps.
5. Remove the rear right panel. See Rear right panel assembly on page 624.

6. Disconnect the 12 V power cables from the e-cabinet PCA (12 V CARR connector).
7. Remove the five pointed screws and remove the carriage-tower cover.
8. Disconnect the 12 V power cables from drying PCAs 1 and 2 (12V_IN connector).
9. Unroute from the e-cabinet PCA to the end of the Igus chain. See Impelling Igus chain ink tubes and cables on page 604.
10. Remove the three T-25 screws and the cover Igus end.

TIP: It may be easier to access the Igus chain if you remove the rear window panels.

11. Unroute the 12 V power cables through the Igus chain. See Impelling Igus chain ink tubes and cables on page 604.
12. Unroute from the Igus chain to drying PCAs 1 and 2.

Installation

1. Reroute from the e-cabinet PCA to the Igus chain. Remember to leave a free loop at the end of the Igus chain.
2. Connect to the e-cabinet PCA (12V CARR connector).
3. Reroute through the Igus chain; remember to leave a free loop on both ends of the chain.
4. Screw back with the three T25 screws the cover Igus end to the beam.
5. Route back the 12 V power cables through the Igus chain. See Impelling Igus chain ink tubes and cables on page 604.
6. Reroute both cables from the carriage interconnect to the e-cabinet PCAs.
7. Connect to both carriage interconnect PCAs.

Impelling PE cable (CZ056-50150)

Removal

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.
3. Open the carriage service position window.
4. Remove all printheads from the carriage and store them in their caps.
5. Remove the five pointed screws and remove the carriage-tower cover.
6. Remove the T-20 screw and disconnect the PE cable from the top carriage column.
7. Remove the T-20 screw and disconnect the PE cable from the printer structure.
8. Remove the three T-25 screws and the cover Igus end.
9. Unroute the PE cable through the Igus chain. See Impelling Igus chain ink tubes and cables on page 604.
10. Unroute from the Igus chain to drying PCAs 1 and 2.

Impelling drying data cable (CZ056-50044)

Removal

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.
3. Open the carriage service position window.
4. Remove all printheads from the carriage and store them in their caps.
5. Remove the rear right panel. See Rear right panel assembly on page 624.
6. Disconnect the drying data cable from the e-box interconnect PCA (CAN (J161) connector).
7. Remove the five pointed screws and remove the carriage-tower cover.
8. Disconnect the drying data cable from the Drying PCA 1 (J12 connector).
9. Unroute from the e-cabinet PCA to the end of the Igus chain.
10. Remove the three T-25 screws and the cover Igus end.
11. Unroute the cable through the Igus chain. See Impelling Igus chain ink tubes and cables on page 604.
12. Unroute the data cable from the Igus chain to drying PCA 1.

Installation

1. Route the cable from the Igus chain to the drying PCA UP.
2. Route the data cable through the Igus chain. See Impelling Igus chain ink tubes and cables on page 604.
3. Screw the cover Igus end to the beam with the three T-25 screws.
4. Route the data cable from the e-cabinet PCA to the Igus chain end.
5. Connect the data cable to the drying PCA UP (J12 connector).
6. Connect the data cable to the e-box interconnect PCA (CAN (J161) connector).

Impelling fiber-optics trailing cable (CZ056-50255)

Removal

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.
3. Open the carriage service position window.
4. Remove all printheads from the carriage and store them in their caps.
5. Remove the right back panel.
6. Free the routed fiber-optic cable loops from supports and flanges. Be careful not to break the cable.

NOTE: See Impelling Igus chain ink tubes and cables on page 604 before proceeding with the following steps. The fiber-optics cable has a specific procedure for its connect and disconnect to fiber-optics PCA procedure.

7. Disconnect the fiber-optic cable from the e-box fiber-optics PCA (J18 connector).

8. Disconnect the fiber-optic cable from the carriage fiber-optics PCA (J18 connector).
9. Unroute from the e-cabinet PCA to the end of the Igus chain. Be careful not to break the cable.
10. Remove the three T-25 screws and the cover Igus end.
11. Unroute the fiber-optic cable through the Igus chain. Be careful not to break the cable.
12. Unroute from the Igus chain to the carriage fiber-optics PCA.

Installation

NOTE: See Impelling Igus chain ink tubes and cables on page 604 before proceeding with the following steps. The fiber-optics cable has a specific procedure for its connect and disconnect to fiber-optics PCA procedure.

1. Route the fiber-optic cable from Igus chain to the carriage fiber-optics PCA.
2. Route the fiber-optic cable through the Igus chain (see Impelling Igus chain ink tubes and cables on page 604). Be careful not to break the cable.
3. Screw the cover Igus end to the beam with the three T25 screws.
4. Route from the e-box fiber-optics PCA to the Igus chain end. Be careful not to break the cable.
5. Connect the fiber-optic cable to the carriage fiber-optics PCA (J18 connector).
6. Connect the fiber-optic cable to the e-box fiber-optics PCA (J18 connector).
7. Route the fiber-optic cable (leaving the needed free loops) from its supports and flanges. Be careful not to break the cable.

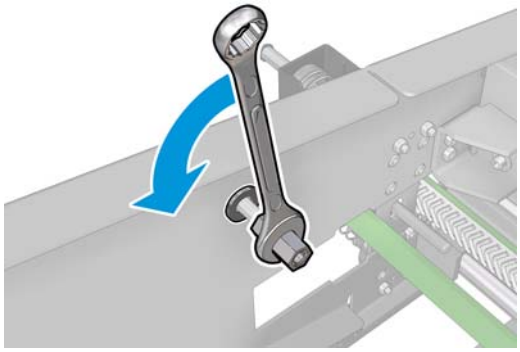
Impelling motor

Removal

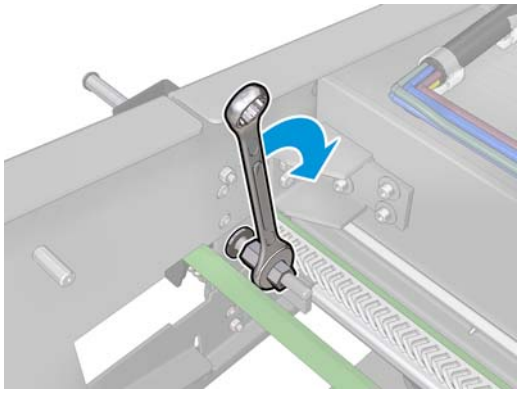
1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.
3. Open the carriage service position window.
4. Remove all printheads from the carriage and store them in their caps.
5. Remove the left side top panel.
6. Remove the left side bottom panel.

NOTE: You can also remove the ink system compartment for completely free access. See Ink system compartment on page 687.

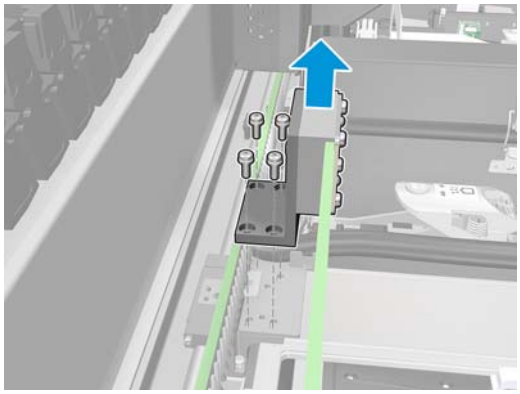
7. Remove the tension nut and washer from the holder.



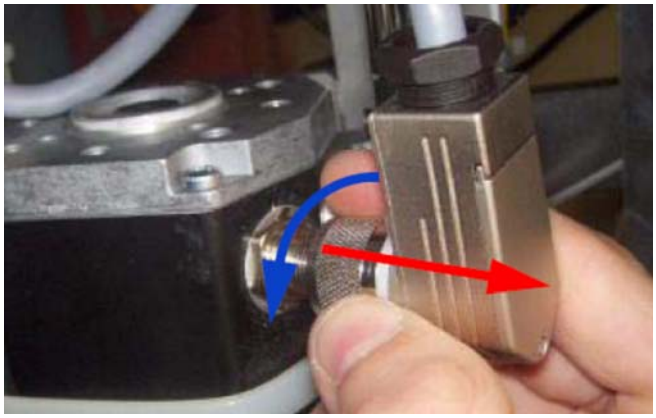
8. Screw the tension nut and washer onto the scan-axis belt tensioner to loosen the tension. Continue until you have completely released the tension in the belt.



9. Remove one of the belt clamps to release the tension completely by removing the four T-20 screws.



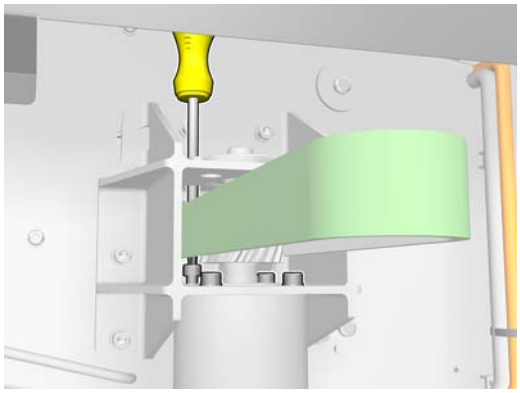
10. Unscrew the data cable connector and remove it.



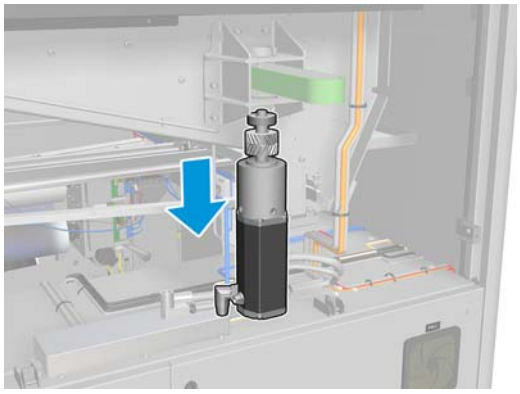
11. Unscrew the power cable connector and remove it.



12. Remove the four A5 screws that secure the scan-axis motor. Access them from above.



13. Remove the motor straight down.



NOTE: There are two types of scan-axis motor: one with two connectors and one with three (of the three connectors, one is always unused). Both of them can be swapped and have exactly the same function (the printer will detect the correct type of motor). There is a slight difference between the motors: the two-connector one will have a tendency, when positioning the carriage to a specific point, to move the carriage slightly around the point until it finds the right position, while the other one (three connectors) does not have this behavior of oscillating around the target position. There is no difference in throughput between the two motors, they are fully interchangeable.

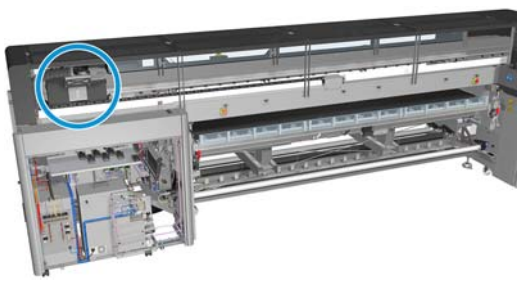
Impelling encoder strip

Removal

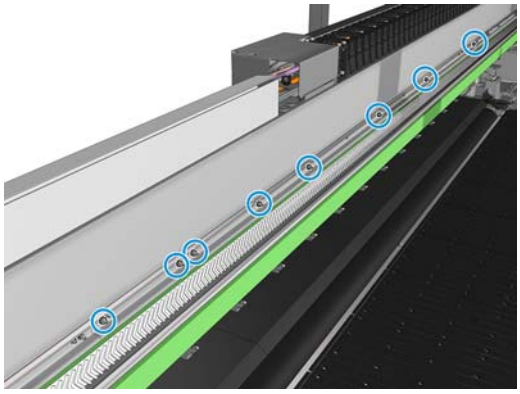
1. Place the scan beam in the high position to get more room in which to work. In the Internal Print Server, select **Substrate** > **Carriage beam** > **Move to load position**.
2. Turn off the printer and the power-enable switch.
3. Remove the rear right panel. See Rear right panel assembly on page 624.
4. Remove the right panel. See Right panel assembly on page 624.
5. Remove the rear left panel. See Rear left panel assembly on page 636.
6. Remove the front right panel. See Front right panel assembly on page 623.
7. Remove the printheads and store them in their protective caps.
8. Manually uncap the service station.
9. Remove the carriage encoder assembly. See Carriage encoder assembly on page 435.

NOTE: You do not need to disconnect the sensor cable in the carriage, although you are recommended to remove it and save it in a secure place. Remove the sensor from the encoder strip so that you can remove the encoder strip.

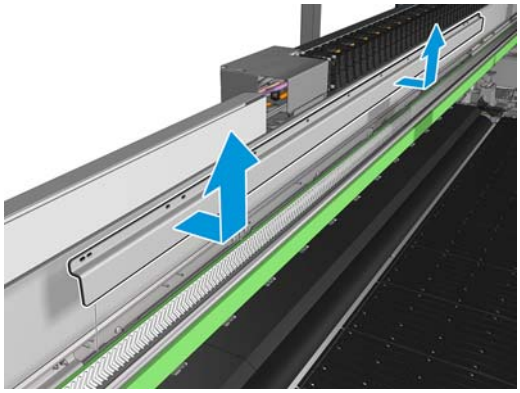
10. Move the carriage to the far right of the printer. The illustration shows the view from the rear.

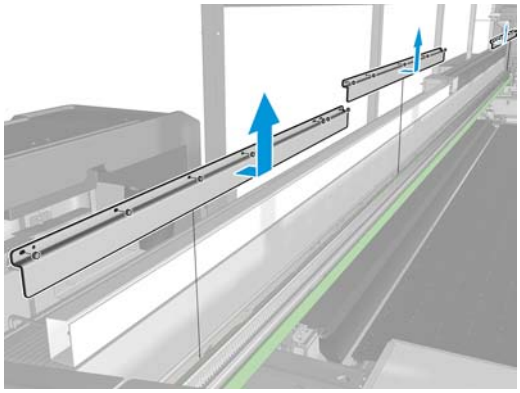


11. Remove the scan-axis encoder protector sheet.
12. Note the location of the MH3 nuts for the encoder protectors removed for the carriage encoder set.



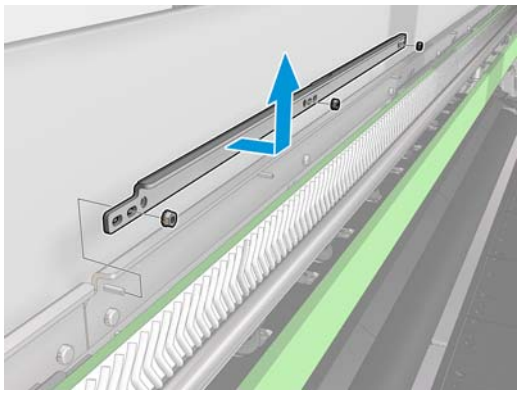
13. Remove the remaining three encoder protectors (22 hand-removable nuts) as with the carriage encoder set.





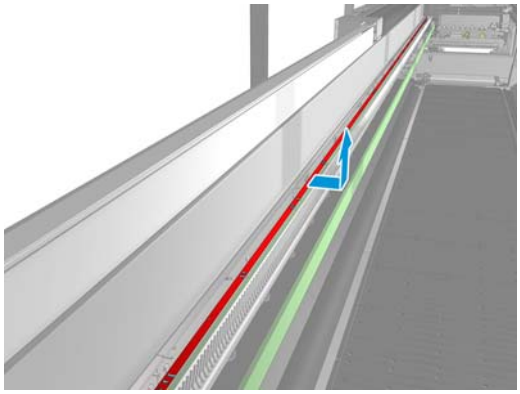
14. Remove the three hand-removable nuts that secure each encoder protector sheet and foams.

NOTE: All the protector sheets, as shown above, are small and have three nuts.



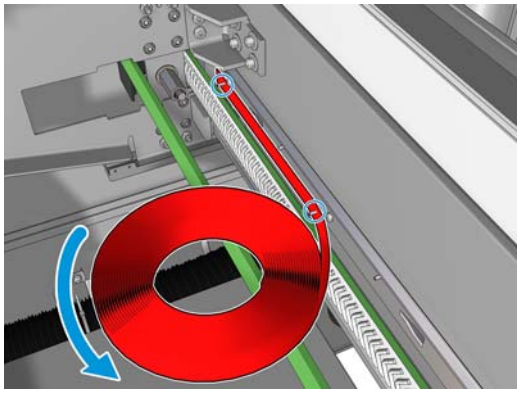
15. Remove the encoder strip from the pins and carefully remove the encoder strip from the printer.

CAUTION: The encoder strip is very sharp. Use protective gloves to avoid cutting yourself.



Installation

1. When you reinstall the encoder strip, start on the right side, place the carriage in the UNCAP on the left side.
2. The encoder strip service part comes as a roll. Place it on the pins one at a time, without unrolling the encoder strip all at once. Secure the encoder strip with the nuts as you go from left to right (without securing the protector, and without applying any pressure, to avoid the encoder falling). The illustration shows the view from the rear.



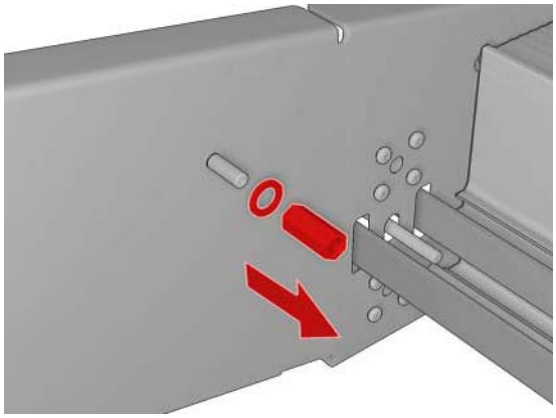
3. Pass the encoder under the encoder reader while the carriage is on the left side.

4. Make sure the strip is secure on each pin. It must be positioned precisely.
5. Make sure the foams are correctly placed between the encoder strip and protector sheet.
6. Remove the nuts and install the protector sheets one at a time.
7. Reinstall the carriage encoder assembly. See Carriage encoder assembly on page 435.

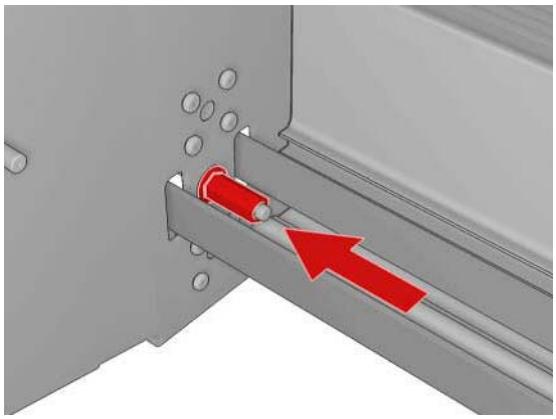
Impelling carriage belt assembly

Removal

1. Turn off the printer and the power-enable switch.
2. Remove the ink system compartment. See Ink system compartment on page 687.
3. Remove the tension nut and washer from the holder.

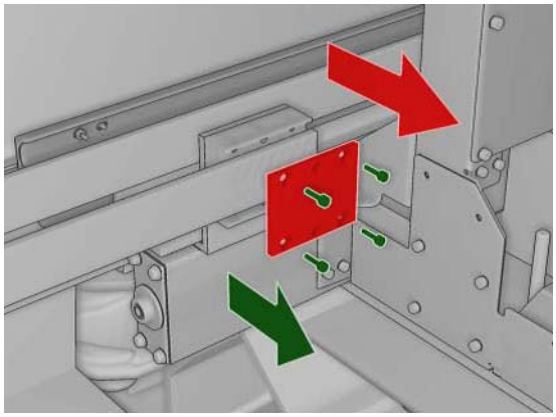


4. Screw the tension nut and washer onto the scan-axis belt tensioner to reduce the tension. Continue until you have completely released the tension in the belt.



5. Use a marker to make a mark on the belt where it meets the edge of the clamp.

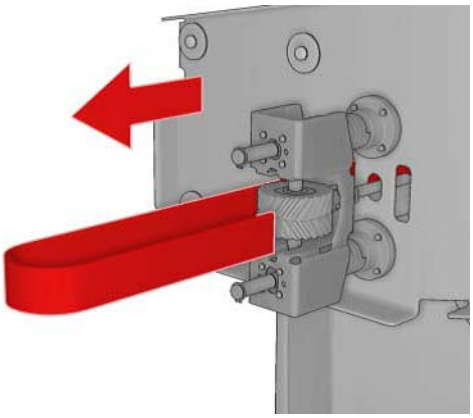
6. Remove the four T-20 screws that secure both belt clamps, and remove the clamps.



NOTE: The four screws and second belt clamp are not shown in the graphic.

NOTE: If the carriage is in the capping position, access the right clamp from the top cover window.

7. Remove the scan-axis impelling belt.



Installation

1. Put the new belt side by side with the old belt.
2. Transfer the mark you made from the old belt to the new belt. If there is too much extra belt, you can cut it with a hacksaw (metal-cutting saw).
3. Route the new belt through the side plates and around the scan-axis belt tensioner and scan-axis motor, so that the belt is ready to be attached to the carriage.
4. Use a belt clamp to secure the side of the belt that was even with the old belt to the carriage.
5. Pull on the loose end of the belt to bring the belt into position. Make sure the belt engages the motor and tensioner correctly at each end.
6. Line up the belt clamp with the mark you made on the new belt, and secure it with the screws.
7. Remove the tensioner nut from the scan-axis belt tensioner to set the tension.
8. Check the tensioning limit marks on the central screw of the scan-axis belt tensioner. This will indicate if the belt must be lengthened or shortened by adjusting the clamp secured to the carriage.

9. If the tension is out of limits, use the tension nut to release the tension on the scan-axis belt tensioner, and then adjust the belt inside the clamp to make it longer or shorter.

NOTE: One tooth of the belt = 4 mm of adjustment on the belt tensioner.

10. Repeat this process until the tension is correct.

11. Remove the tension nut and washer and return them to the holder.

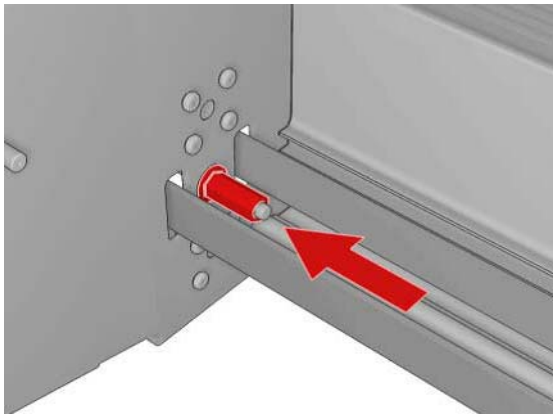
Impelling tensioner assembly

Removal

1. Turn off the printer and the power-enable switch.

2. Remove the ink system compartment. See Ink system compartment on page 687.

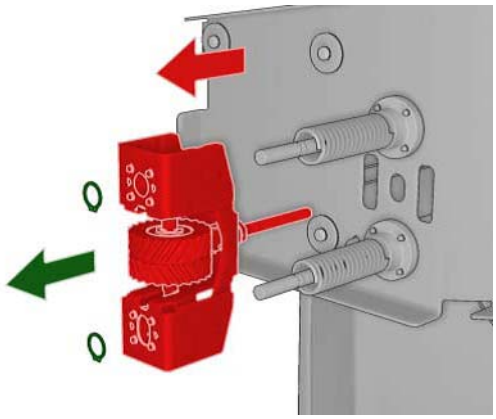
3. Screw the tension nut and washer onto the scan-axis belt tensioner to loosen the tension. Continue until you have completely released the tension in the belt.



4. Use a marker to make a mark on the belt where it meets the edge of the clamp.

5. Remove the four T-20 screws that secure the belt clamp, and remove the clamp. You need to remove only the clamp.

6. Remove the two circlips that secure the scan-axis belt tensioner, and remove the tensioner.



Installation

▲ When reinstalling the left belt with the carriage, line up the belt clamp with the mark that you made when removing it, and secure it with screws.

NOTE: Adjust the belt when you replace the scan-axis belt tensioner. See the installation procedure.

SAX motor power cables kit

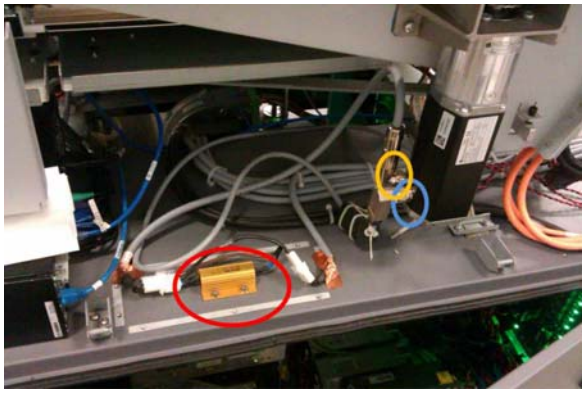
NOTE: This service part assembly includes the following part numbers: CZ056-50130, CZ056-50131 and CZ056-50142.

Removal

1. Turn off the printer and the power-enable switch.
2. Remove the rear right panel. See Rear right panel assembly on page 624.
3. Remove the right panel. See Right panel assembly on page 624.
4. Remove the eight pointed MH4 screws and the breaking resistor enclosure.



5. Disconnect the SAX motor power cable from the breaking resistor and the SAX motor.

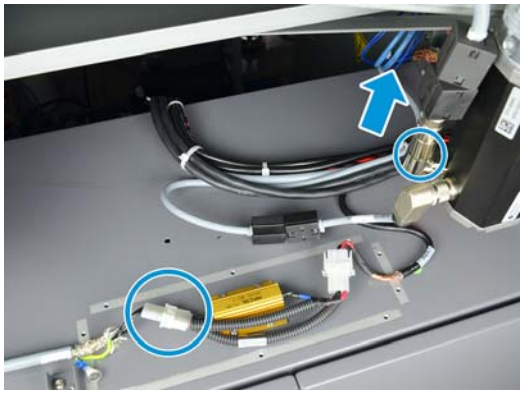


NOTE: In the picture above, the power connector is circled in yellow, the uncovered breaking resistor is circled in red, and the SAX motor data cable connector is circled in blue.

NOTE: It is important to cover all the breaking resistor correctly, since in case it breaks it can injure its surrounding parts.

NOTE: Do not disconnect the cables by pulling them because you may break the connector. Hold the connector of the cable when removing it.

6. Disconnect the power cable from both the e-cabinet (SAX connector) and the breaking resistor.



7. Unroute both power cables. Cut the flanges if necessary.

Installation

1. Replace the cables. While rerouting the cables, replace the cut flanges.

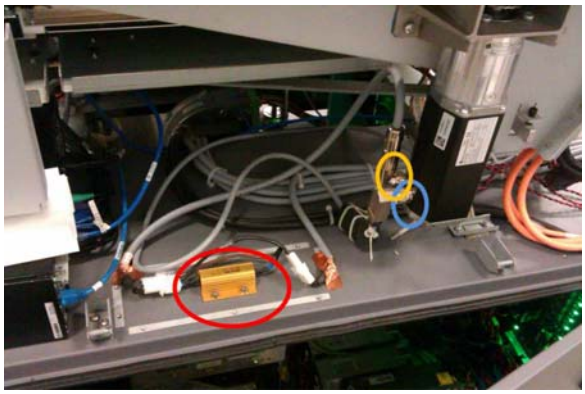
NOTE: Be careful to leave enough free loop (at least a 15 cm loop), so that the carriage beam will be able to reach the substrate load position.

2. Route both power cables.
3. Connect back the power cable to both the e-cabinet (SAX connector) and the breaking resistor.
4. Connect the SAX motor power cable to both the breaking resistor and the SAX motor.
5. Screw back the breaking resistor enclosure with its eight pointed MH4 screws.

SAX motor data cable (CZ056-50045)

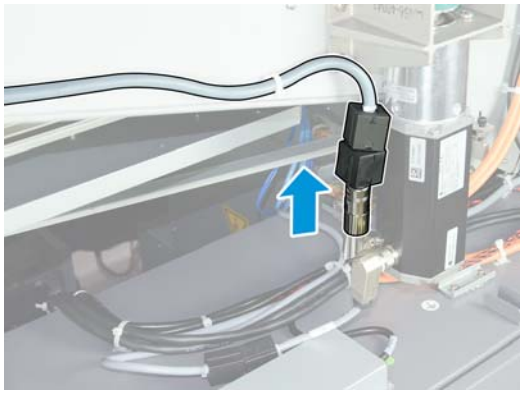
Removal

1. Turn off the printer and the power-enable switch.
2. Remove the rear right panel. See Rear right panel assembly on page 624.
3. Remove the right panel. See Right panel assembly on page 624.
4. Disconnect the data cable from the SAX motor.



NOTE: In the picture above, the power connector is circled in yellow, the uncovered breaking resistor is circled in red, and the SAX motor data cable connector is circled in blue.

5. Disconnect the SAX motor power cable from the e-box interconnect PCA (J_101 connector).



6. Cut the flanges and unroute the data cable. If necessary, carefully pull the e-box out (take care not to break the fiber-optic cable loop).

Installation

1. Replace the SAX motor data cable and the cut flanges.

NOTE: Be careful to leave enough free loop (at least a 15 cm loop), so that the carriage beam will be able to reach the substrate load position.

2. Put back the flanges after routing back the data cable. If needed, carefully pull out the e-box (take care of the fiber-optic cable loop in order not to break it).

3. Connect back to the e-box interconnect PCA (J_101 connector) the SAX motor data cable.

NOTE: Be careful when connecting the data cable. Place it orthogonally, ensuring that the pins will match correctly, and then screw it to connect the cable to the motor.

NOTE: Do not disconnect the cables by pulling them because you may break the connector. Hold the connector of the cable when removing it.

4. Reconnect the data cable to the SAX motor.

Impelling Igus chain ink tubes and cables

The list below indicates the steps to follow for a general replacement of the Igus chain ink tubes and cables:

- Impelling Igus chain removal
  - Impelling fiber-optic cable removal
  - Impelling trailing cables and ink tubes removal
- Impelling Igus chain installation
  - Impelling trailing cables and ink tubes installation
  - Impelling fiber-optic cable installation

The following table indicates the impelling Igus chain content and the terminal for each part.

Service part	Part number	Qty	Igus chain		Ref.
			From	To	
Ink tubes	—	7	Quick connector	Carriage	A
Impelling PE cable	CZ056-50150	2	Scan-axis beam	Carriage tower	B

Service part	Part number	Qty	Igus chain		Ref.
			From	To	
Impelling drying data cable	CZ056-50044	1	E-box interconnect PCA	Drying PCA UP	C
Impelling drying AC cable	CZ056-50065	2	E-cabinet	Drying PCA DOWN	D
Impelling 12V power cable	CZ056-50066	1	E-cabinet PCA	Drying PCAs (UP & DOWN)	E
Impelling 42V power cable	CZ056-50063	1	E-cabinet PCA	Carriage interconnect PCAs (UP & DOWN)	F
Impelling fiber-optic trailing cable	CZ056-50255	1	Fiber-optics PCA (e-box)	Fiber-optics PCA (carriage)	G

See the figures below for the impelling Igus chain cables and ink tubes routing:

Figure 7-1 Igus chain carriage end section

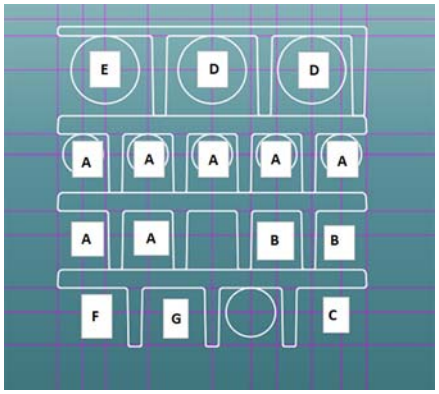
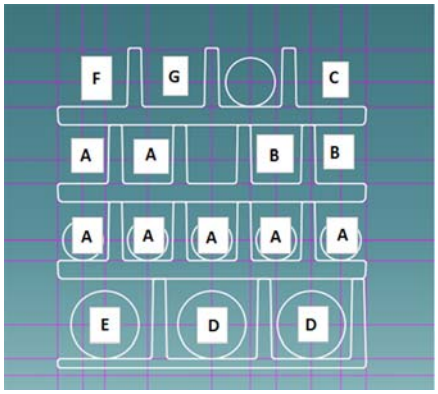


Figure 7-2 Igus chain scan-axis end section



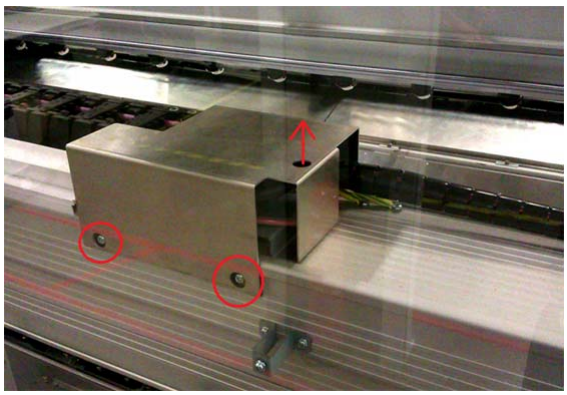
See the photograph below with the impelling Igus chain cables and ink tubes clamp routing (carriage end section shown).



Impelling Igus chain removal

Perform the following steps before following the specific procedure, depending on which part has to be replaced:

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.
3. Open the carriage service position window.
4. Remove all printheads from the carriage and store them in their caps.
5. Remove the five pointed screws and remove the carriage-tower cover.
6. From the center covers, remove the rear center cover PC sheets, so you can reach the entire Igus chain routing. See Rear center-right PC sheet cover on page 649.
7. Remove the three pointed screws and remove the scan-axis cables and tubes Igus chain end protector cover.



8. Disconnect both cable ends and unroute it up to both ends of the Igus chain.

CAUTION: If the fiber-optic cable is being replaced, it is strongly recommended that you read the replacement instructions before proceeding with its removal and installation, and follow steps described in the correct order.

NOTE: Unroute the trailing cables all the way to the base of the carriage chain assembly by pulling out the trailing cables and tubes from the cable protectors from the top of the rear scan-axis beam.

CAUTION: Be careful when routing or unrouting the fiber-optic cable not to twist or tighten it excessively.

9. Perform the specific replacement procedure, described below, depending on which part has to be replaced:

Service part	Part number	Qty	Specific procedure
Ink tubes	—	7	Impelling trailing cables and ink tubes removal
Impelling PE cable	CZ056-50150	2	
Impelling drying data cable	CZ056-50044	1	
Impelling drying AC cable	CZ056-50065	2	
Impelling 12V power cable	CZ056-50066	1	
Impelling 42V power cable	CZ056-50063	1	
Impelling fiber-optic trailing cable	CZ056-50255	1	Impelling fiber-optic cable removal

NOTE: For this procedure it is strongly recommended to follow steps described in the correct order, so that the fiber-optic cable does not break.

Impelling fiber-optic cable removal

1. Disconnect all cables from the fiber-optics PCA, except for the fiber-optic cable connector.
2. Remove the pointed screws and disconnect the fiber-optics PCA from the fiber-optic cable connector by sliding it out when removing it.
3. Once the fiber-optics PCA is removed and disconnected from the fiber-optic cable connector, remove the two screws and the fiber-optic clamp.
4. Remove the four T-20 screws and remove the upper closing sheet, under the carriage top sheet.
5. Unroute the fiber-optic cable from the fiber-optics duct and slide the fiber-optic cable through the carriage top sheet hole.

TIP: The fiber-optic cable can be unrouted without releasing the Igus chain. In this case, it is important to follow these recommendations, to reduce the risk of breaking the fiber-optic cable:

- Move the carriage to completely to the left.
- Disconnect the fiber-optic cable from the fiber-optics PCA.
- Start to unroute the fiber-optic cable from the carriage along the Igus chain until the Igus chain starts to turn.
- Carefully loosen the fiber-optic cable in a secure routing together with the Igus chain and move the carriage to the repair position.
- Unroute the fiber-optic cable Igus from the rest of the Igus chain.

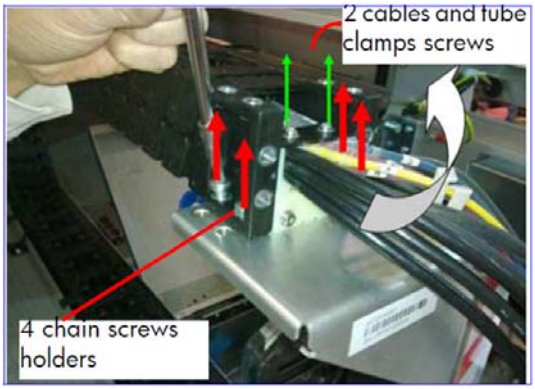
Impelling trailing cables and ink tubes removal

1. Perform the **Impelling fiber-optic cable removal** procedure, so that the cover clamp is free from the fiber-optic cable and the Igus chain can be removed without breaking or excessively tightening the fiber-optic cable.
2. For each ink tube line, flush the TRS ink line from the carriage to the barnacle panel and cut the thin tube (about 5 cm from the elbow fitting).

NOTE: Before flushing and cutting the ink tube line, ensure that it is correctly labeled on both sides of the cut.

3. Remove the two T-20 screws and remove the cables and tubes cover clamp.

4. Remove the four screws and remove the cables and tubes clamp from the Igus chain end, and release the chain from the carriage tower and the scan axis self support (at both ends of the carriage chain).



5. Remove the tubes and cable clamps (at both ends of the carriage chain).

6. Label on both sides and flush each of the ink tubes before cutting them on the carriage top, so that the Igus chain can be released. It is strongly recommended to cut the thinner tube, at least 2 cm away from the elbow fitting.

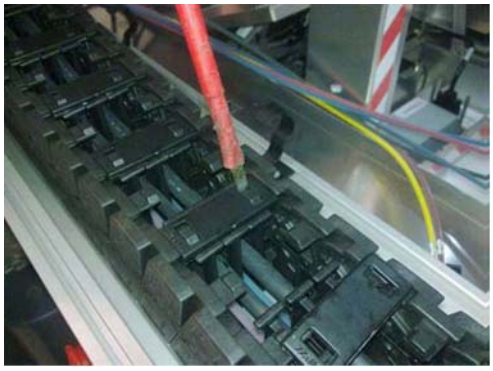
7. Remove the four screws that fix the Igus chain end to the carriage top sheet and carefully release the Igus chain on top of the scan-axis beam.

8. Once the chain is completely released, place it on top of the scan-axis beam.

9. Remove the carriage chain links by inserting a flat screwdriver deep into the slot and turning it.

NOTE: Ensure the head of the screwdriver is between 4 and 5 mm wide, otherwise it cannot be inserted correctly and can damage the carriage link when turning.

WARNING! Never use a broken link in the chain as it could fall during printer operation and cause severe damage to the printer.



10. Once all links are removed, unroute the trailing cable from the chain and remove the cable from the cable protector to release it completely from the printer.



The intermediate separators will need to be moved in order to make space to remove the cable.

Impelling Igus chain installation

Before performing the Impelling Igus chain installation ensure that the impelling trailing cable is correctly routed and the Igus chain is ready to be installed.

Perform the **Impelling trailing cables and ink tubes installation** procedure.

1. Before inserting a new trailing cable, mark it with the same distances as the one that was removed.

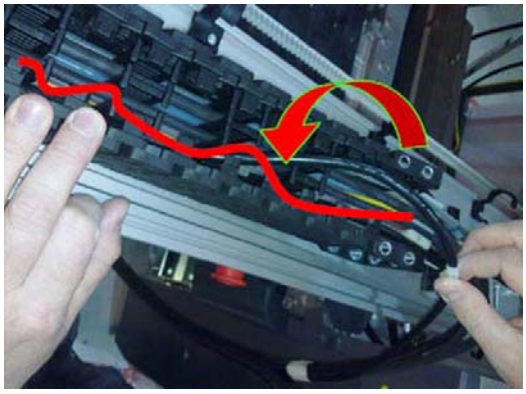
   Use the connector that goes on the printhead interconnect side as reference (angled connector).

   The following table indicates the length of each trailing cable at the carriage end and its reference to measure it, starting from the carriage clamp:

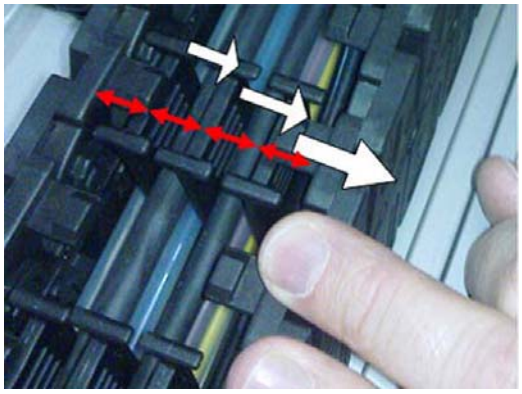
Service part	Part number	Qty	Length (mm)	Length measurement
Ink tubes	—	7	120	From Igus chain to end of connector
Impelling PE cable	CZ056-50150	2	120	From Igus chain to end of connector
Impelling drying data cable	CZ056-50044	1	660	From Igus chain to end of connector
Impelling drying AC cable	CZ056-50065	2	660	From Igus chain to end of connector
Impelling 12V power cable	CZ056-50066	1	-	The split of the cable starts at the exit of the Igus chain
Impelling 42V power cable	CZ056-50063	1	-	The split of the cable starts 90 mm away from the exit of the Igus chain
Impelling fiber-optic trailing cable	CZ056-50255	1	120	From Igus chain to beginning of connector

NOTE: If the new replacement service part is longer than the part removed, put the excess cable into a loop shape at the end of the printer routing.

2. Route the new cable into the chain, use the marks as reference for cable location.



3. Place all cables back in the approximately correct positions using the cable and tube marks.
4. Ensure all separators are put back in a central position.

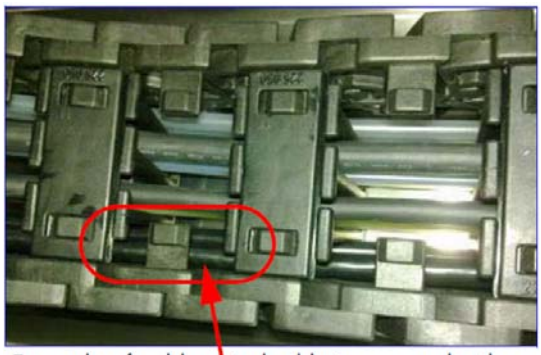


5. Put the chain links back by putting one side into position and gently hitting the other side until the complete link latches. Use a plastic-head hammer to prevent link damage.



⚠ **WARNING!** Never use a broken link in the chain as it could fail during printer operation and cause severe damage to the printer.

6. Perform a double check to ensure all of the cables are back in position, pull slightly first from one end and then the other to ensure there are no tubes or cables crossed or pinched by the chain links.



Example of cables pinched between each other.

CAUTION: Ensure no cables or tubes are crossed when placing them in the clamp holder.

7. Put back the tubes and cables.
8. Match both ink tube sides with their corresponding fitting and purge each of the ink tubes.
9. Once the ink tube lines are installed, purge the tube routing system all the way.
10. Perform the impelling fiber-optic cable installation procedure.
11. Reroute and reconnect all the cables.
12. Close the carriage-tower cover and the carriage electronics cover.
13. Separate the different routed cables.
14. Put the cables routed to the ink system module together using flanges or tape.



15. Put the cables routed along the scan axis to the ink system module back into the cable protector. Ensure that the cables are neither pinched nor bent all the way.

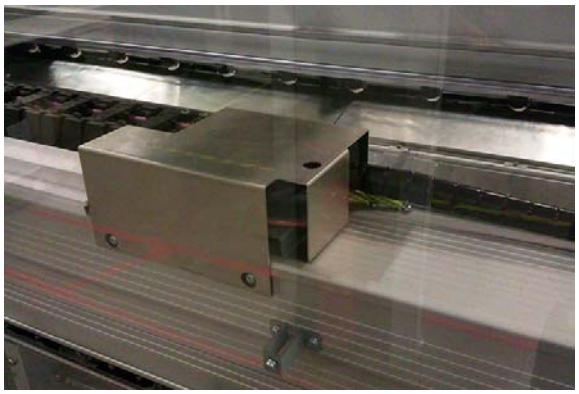


16. Close all latches to fix the cable protector in position. Perform the same action with the ink tubes protector.



17. Reroute at the back of both the e-box and the e-cabinet. Place into the scan-axis cable duct protector and put all the cable ties back.

NOTE: Be careful routing the cables to the e-box (since it includes the fiber-optic cable it is important not to break it by twisting or tightening it).



18. Adjust the routing loop at the scan-axis Igus chain end and ensure that the cables are neither pinched nor bent.

19. Leave the appropiate cable loop for the carriage beam scan-axis movement (a minimum of 15 cm loop).

20. Ensure that the cables are neither pinched nor bent all the way.
21. Reconnect all cables to both the e-box and the e-cabinet assemblies.

Once the impelling Igus chain is fixed to the scan axis beam (and all the trailing cables and the ink tubes are connected to their corresponding printer assemblies) perform fiber-optic cable installation so that all the trailing cables can be correctly installed and connected to the carriage.

Perform the **Impelling fiber-optic cable installation** procedure

Impelling fiber-optic cable installation

1. Reroute the fiber-optic cable through the fiber-optics duct and slide it through the carriage top sheet hole, so that it is correctly located on the carriage top sheet.
2. Screw the four T-20 screws and fix the upper closing sheet under the carriage top sheet.
3. Using its two screws, fix the fiber-optic clamp to the carriage tubes and cables clamp, which holds the fiber-optic cable.
4. Slide the fiber-optics PCA to its location and connect it to the fiber-optic cable connector.
5. Screw back the fiber-optics PCA to the carriage top sheet.

After performing the installation steps described above, perform the **Impelling Igus Chain installation** procedure below and re-connect both the trailing cables and the ink tubes to the carriage assembly

Impelling Igus chain installation

1. Reroute and reconnect all cables to the fiber-optics PCA.
2. Ensure that all the Igus chain trailing cables and the ink tubes are correctly connected to their corresponding ends.
3. Ensure that all the ink tubes have been correctly purged all the way and check that the quick connector has been plugged into the ink system module.
4. Reinstall all the rear center cover PC sheets.
5. Screw back the five pointed screws and fix the tower cover to the carriage.

Industrial design covers

Buzzer and cable

Removal

1. Turn off the printer and the power-enable switch.
2. Open the printhead cleaning door.
3. Locate the buzzer under the right front cover.
4. Disconnect the buzzer from its air connector.
5. Remove the right front cover.
6. Remove the two pointed screws that attach the buzzer to the right front structure and replace it with the new one.

Bottom right cover

Removal

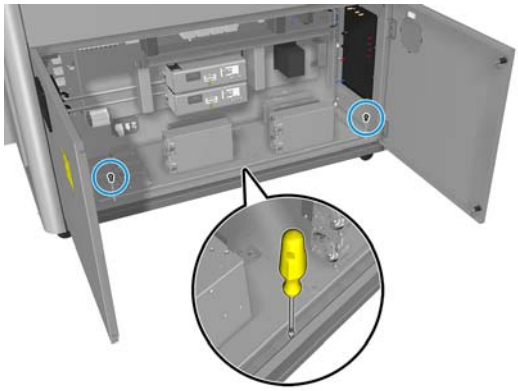
1. Turn off the printer and the power-enable switch.
2. Locate the bottom right side cover, below the e-cabinet.
3. Disconnect the printer from all of its power cords.

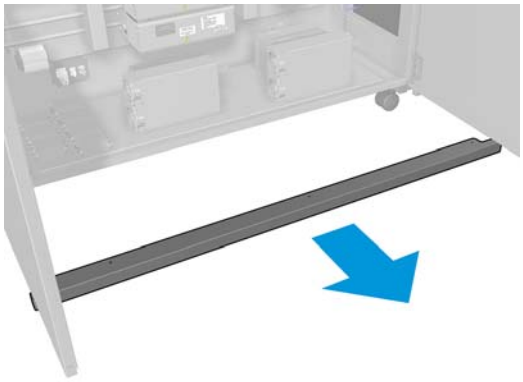
   CAUTION: Before opening the e-cabinet, turn off the printer using the branch circuit breakers located in the building's power distribution unit, or by disconnecting the power cord(s) from the mains. Always check that the grounding cable is correctly installed before powering up and take all necessary precautions to prevent electrical shocks.

   CAUTION: If there is a dedicated single-phase line for the computer, the circuit breakers associated with this line must also be switched off.

4. Open the e-cabinet doors.

5. Remove the three T-20 screws that attach the bottom right side cover and remove the cover.



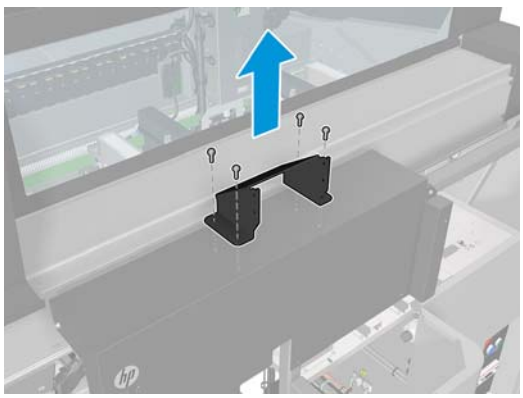


6. Slide out the bottom right side cover.

Front lower right cover

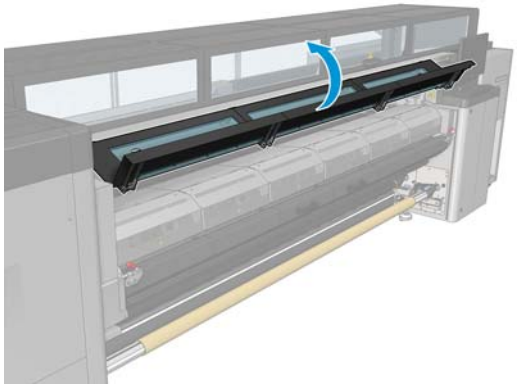
Removal

1. Turn off the printer and the power-enable switch.
2. Locate the front right cover.
3. Disconnect the Internal Print Server monitor from its cables and remove it.
4. Remove the four pointed T-20 screws.

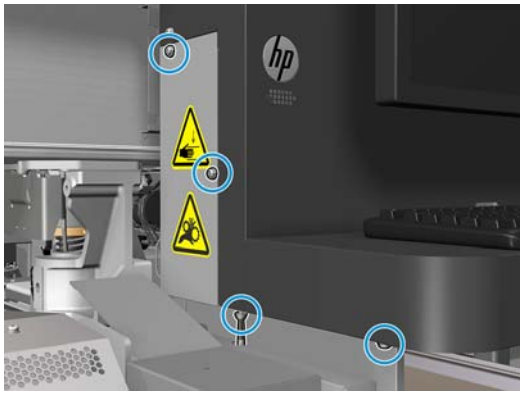


5. Remove the Internal Print Server monitor metal sheet base support from the front right cover. Save it in a secure place.
6. Remove the keyboard shelf assembly. See Keyboard shelf assembly on page 621.

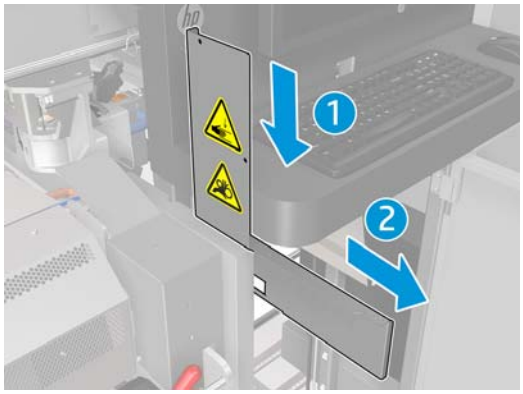
7. Remove the front top right cover.
8. Open the front door, so that it is easier to reach the hidden screws in the front lower right cover.



9. Open the front right panel assembly, so that it is easier to reach the hidden screws.
10. Remove the four pointed T-20 screws that attach the front lower right cover.



11. Slide down and remove the front lower right cover.

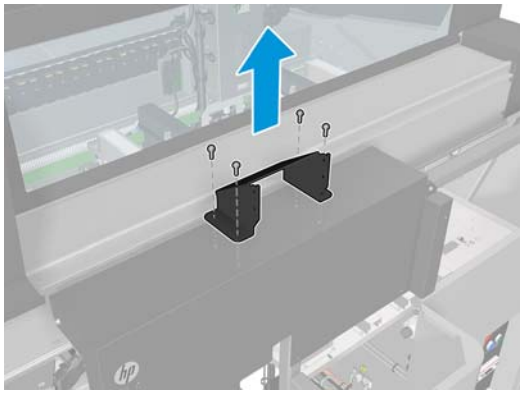


Front right cover

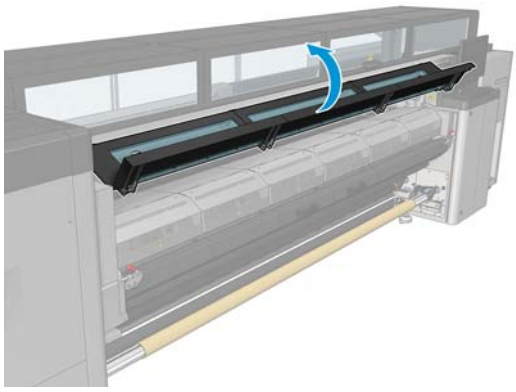
Removal

1. Turn off the printer and the power-enable switch.
2. Locate the front right cover.
3. Disconnect the Internal Print Server monitor from its cables and remove it.

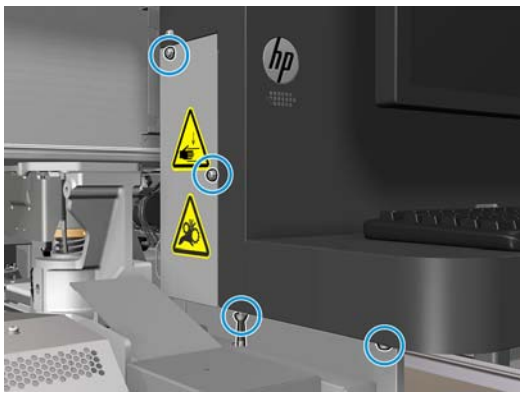
4. Remove the four pointed T-20 screws.



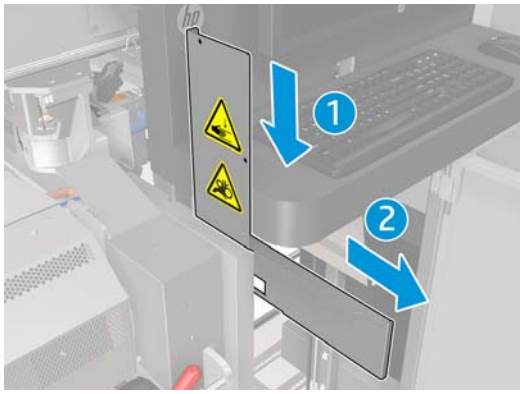
5. Remove the Internal Print Server monitor metal sheet base support from the front right cover. Save it in a secure place.
6. Remove the keyboard shelf assembly. See Keyboard shelf assembly on page 621.
7. Remove the front top right cover.
8. Open the front door, so that it is easier to reach the hidden screws in the front lower right cover.



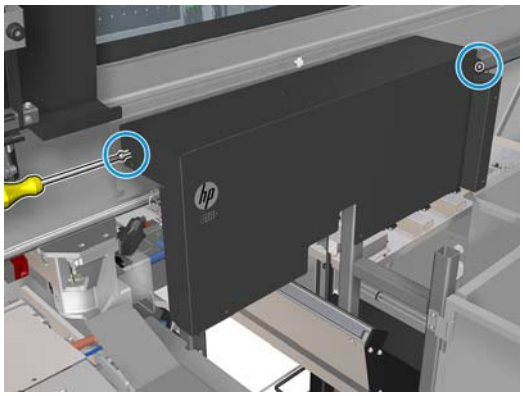
9. Open the front right panel assembly, so that it is easier to reach the hidden screws.
10. Remove the four pointed T-20 screws that attach the front lower right cover.



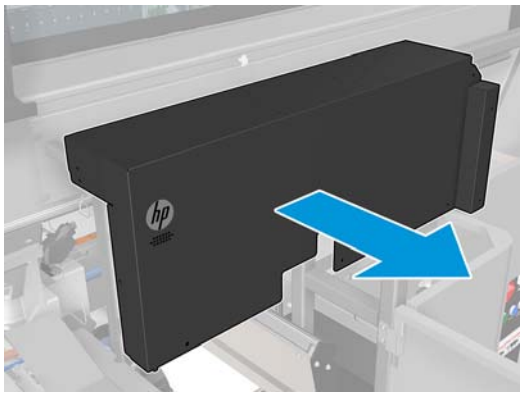
11. Slide down and remove the front lower right cover.



12. Remove the two pointed T-20 screws that attach the front right cover.



13. Remove the front right cover.

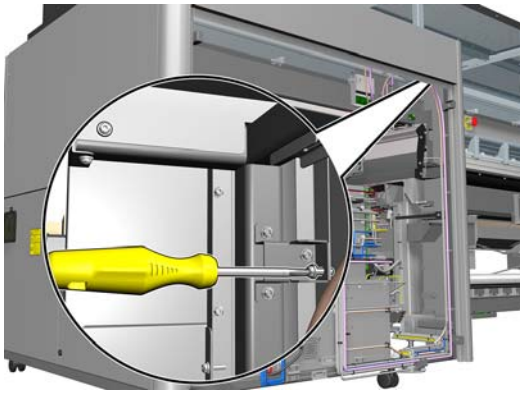


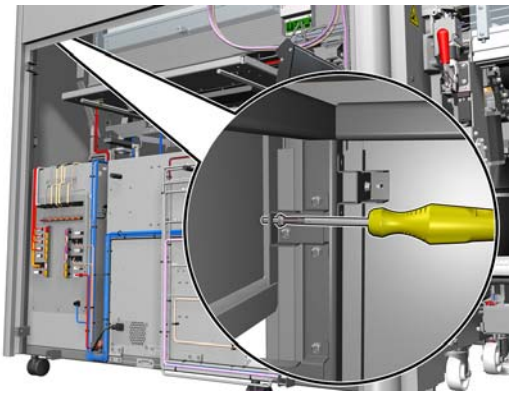
Rear top right cover

Removal

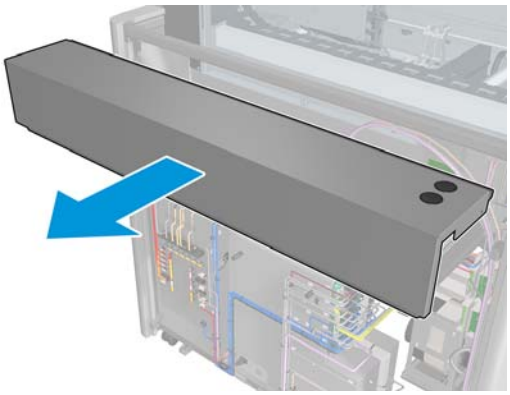
1. Turn off the printer and the power-enable switch.
2. Locate the rear top right cover.
3. Remove the rear right panel. See Rear right panel assembly on page 624.
4. Disconnect and unroute all cables routed along the cover (cut the flanges if necessary to free the cables).

5. Locate the supports that hold the rear top right cover from the inner side and remove the two T-20 screws shown below.





6. Remove the rear top right cover.



Front top right cover

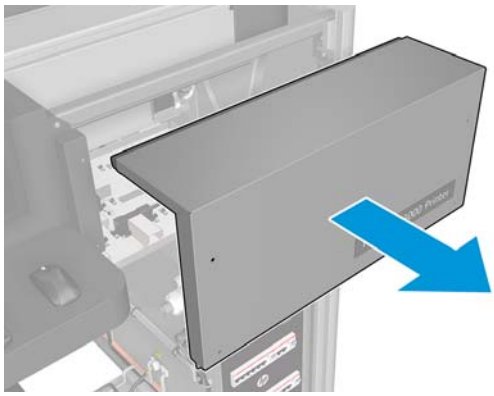
Removal

1. Turn off the printer and the power-enable switch.
2. Locate the front top right cover.
3. Open the front right panel assembly.

4. Remove the three T-20 screws that attach the front top right cover.



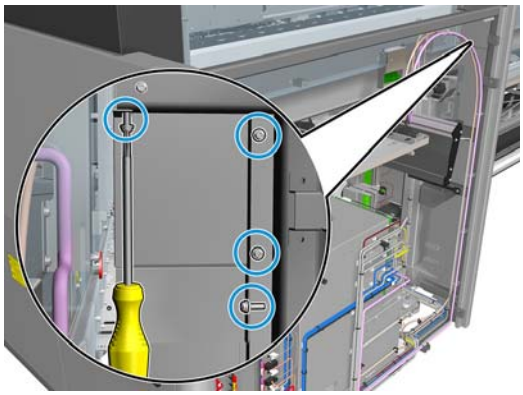
5. Remove the front top right cover.



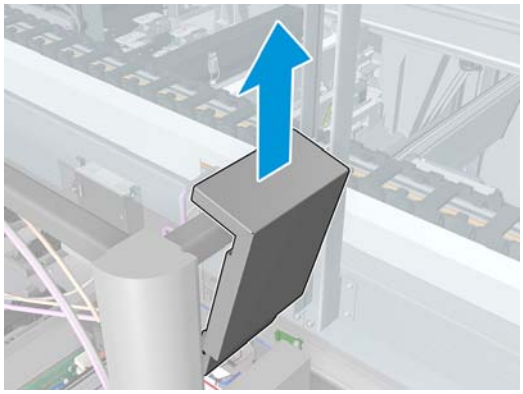
Rear right internal cover

Removal

1. Turn off the printer and the power-enable switch.
2. Locate the rear right internal cover.
3. Remove the rear right panel, so that you can reach the screws that attach the rear right internal cover. See Rear right panel assembly on page 624.
4. Remove the four pointed T-20 screws that attach the rear right internal cover.



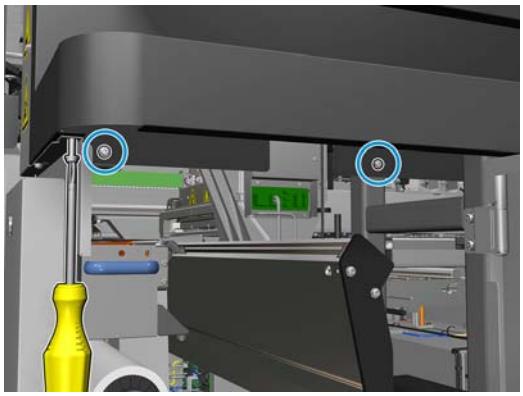
5. Remove the rear right internal cover.



Keyboard shelf assembly

Removal

1. Turn off the printer and the power-enable switch.
2. Locate the keyboard shelf assembly.
3. Open the printhead cleaning door (see Printhead cleaning door assembly on page 627) and the front right panel assembly (see Front right panel assembly on page 623), so that you can reach the hidden screws attaching the keyboard shelf assembly.
4. Disconnect and remove the keyboard from the printer. Save it in a secure place.
5. Remove the five pointed T-20 screws that attach the keyboard shelf assembly.





6. Remove the keyboard shelf assembly.



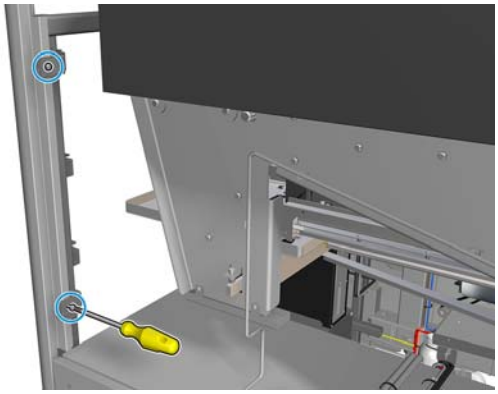
Front right corner assembly

Removal

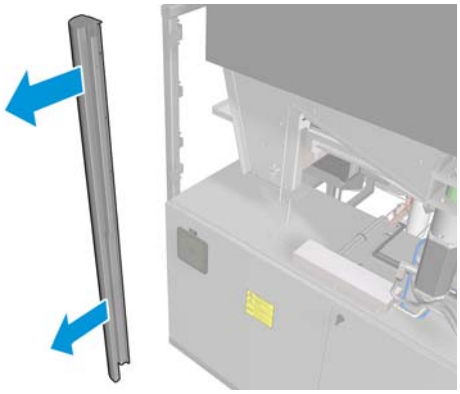
1. Turn off the printer and the power-enable switch.
2. Locate the front right corner assembly.
3. Open the front right panel assembly. See Front right panel assembly on page 623.
4. Remove the right panel. See Right panel assembly on page 624.
5. Remove the front top right cover.
6. Remove the five pointed T-20 screws that attach the front right corner assembly.

TIP: Alternatively, you can remove the door by removing the hinge supports from the right structure (two screws for each hinge support).





7. Remove the front right corner assembly.



Front right panel assembly

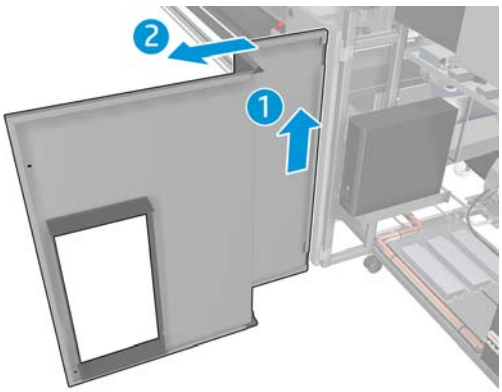
Removal

1. Turn off the printer and the power-enable switch.
2. Locate the front right panel assembly.
3. Remove the two pointed T-20 screws that attach the front right panel assembly.



4. Remove the keyboard shelf assemby. See Keyboard shelf assembly on page 621.
5. Open the front right panel assembly, slide it out from its hinges, and remove it.

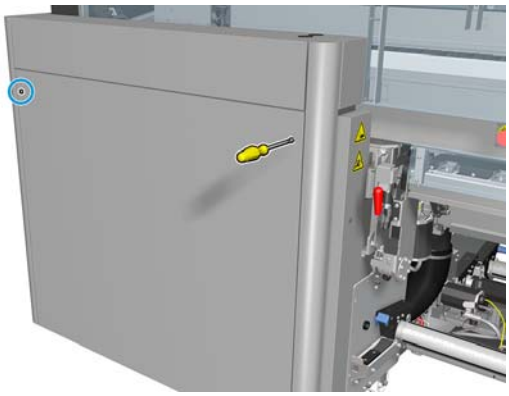
TIP: Alternatively, you can remove the door by removing the hinge supports from the right structure (two screws for each hinge support).



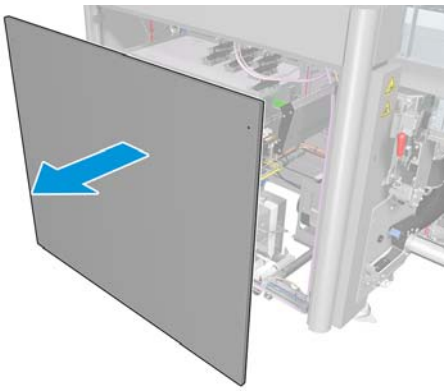
Rear right panel assembly

Removal

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.



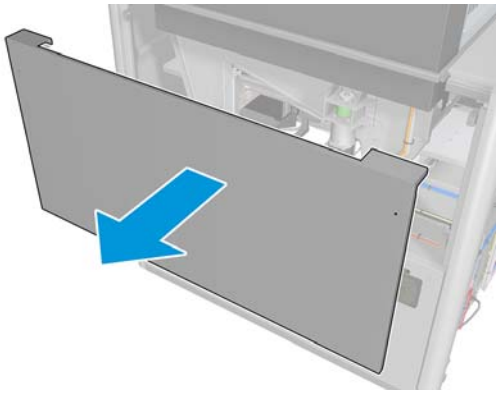
Right panel assembly

Removal

1. Turn off the printer and the power-enable switch.
2. Locate the right panel assembly.
3. Remove the two pointed T-20 screws that attach the right panel assembly.



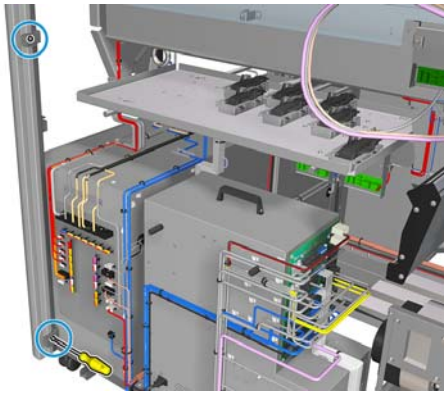
4. Remove the right panel assembly.

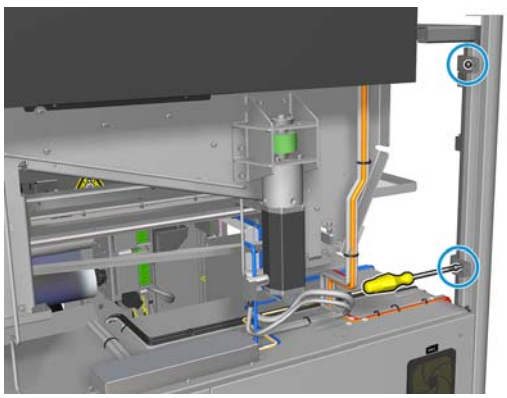


Rear right corner assembly

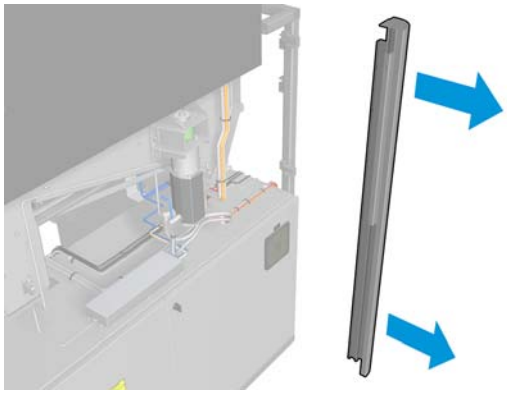
Removal

1. Turn off the printer and the power-enable switch.
2. Locate the rear right corner assembly.
3. Remove the rear right panel. See Rear right panel assembly on page 624.
4. Remove the right panel assembly. See Right panel assembly on page 624.
5. Remove the four pointed T-20 screws that attach the rear right corner assembly.





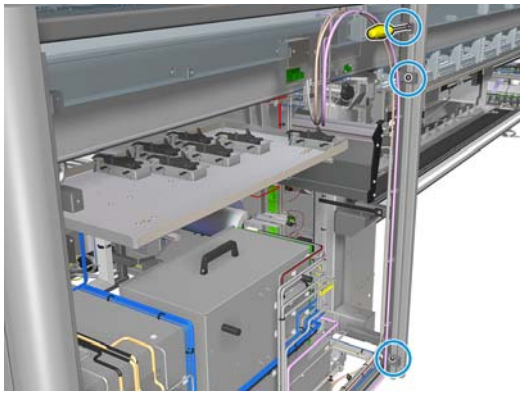
6. Remove the rear right corner assembly.

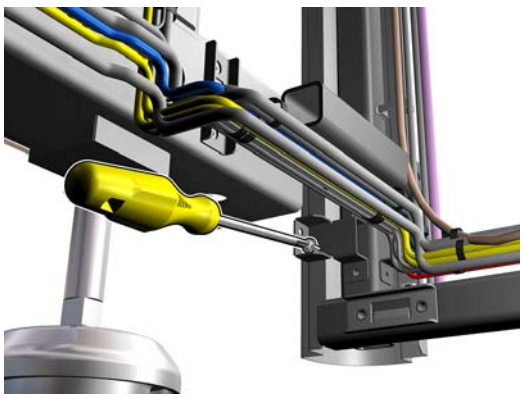


Rear right internal corner assembly

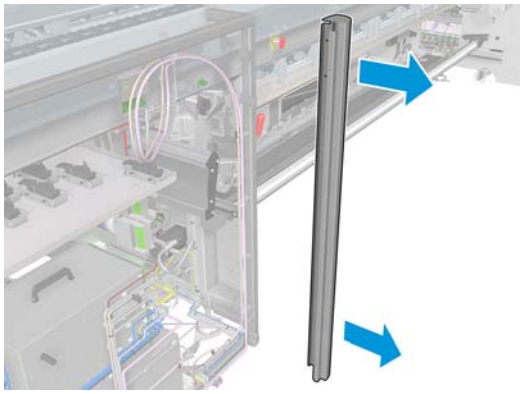
Removal

1. Turn off the printer and the power-enable switch.
2. Locate the rear right internal corner assembly.
3. Remove the rear right panel. See Rear right panel assembly on page 624.
4. Remove the rear right internal cover.
5. Remove the four pointed T-20 screws that attach the rear right internal corner assembly.





6. Remove the rear right internal corner assembly.

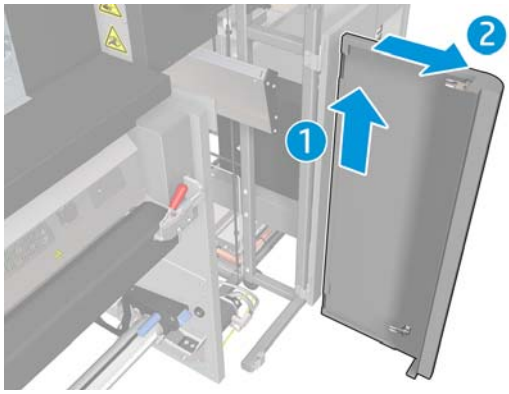


Printhead cleaning door assembly

Removal

1. Turn off the printer and the power-enable switch.
2. Locate the printhead cleaning door assembly.
3. Remove the keyboard shelf assembly. See Keyboard shelf assembly on page 621.
4. Unlock and open the printhead cleaning door assembly.
5. Slide out from its hinges and remove the printhead cleaning door assembly.

TIP: Alternatively, you can remove the door by removing the hinge supports from the right structure (two screws for each hinge support).



Rear right pillar

Removal

1. Turn off the printer and the power-enable switch.
2. Locate the rear right pillar.
3. Keep the loading table closed.

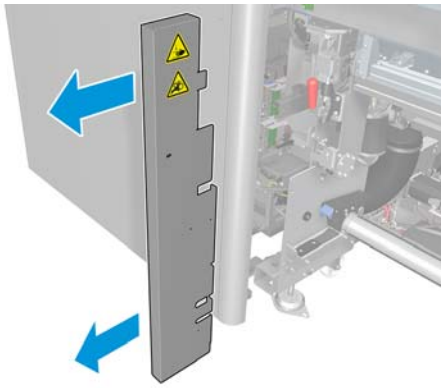
4. Remove the four pointed screws that attach the rear right pillar.



5. Remove the rear right internal corner assembly (see Rear right internal corner assembly on page 626), so that you can remove the rear right pillar.

TIP: It is also possible to remove the rear right pillar if you separate the right structure sufficiently from the main body structure. See Right structure on page 651.

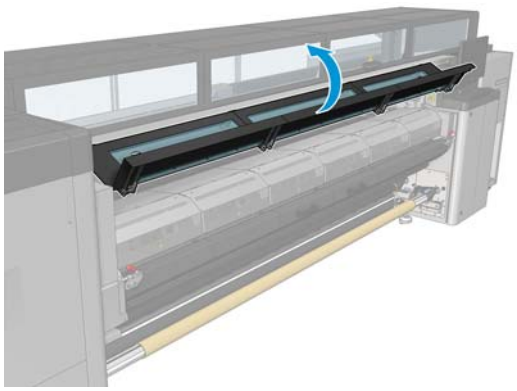
6. Remove the rear right pillar.



Front right pillar

Removal

1. Turn off the printer and the power-enable switch.
2. Locate the front right pillar.
3. Open the front door.



4. Open the curing module assembly to the service position.

5. Open the printhead cleaning door.
6. Remove the front right pillar upper screw.

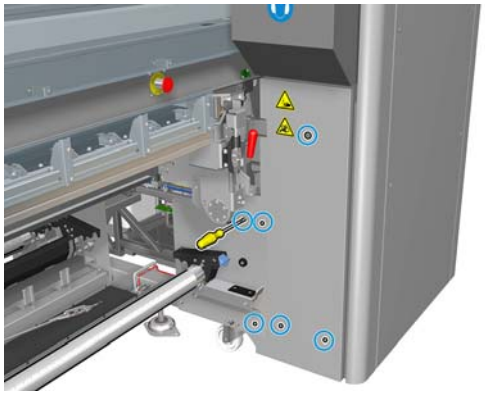
TIP: The screw may be easiest to remove with an L-shaped key.

7. Close the curing module assembly.
8. Remove the four pointed screws that attach the front right pillar.
9. Remove the front right pillar.

Rear left pillar

Removal

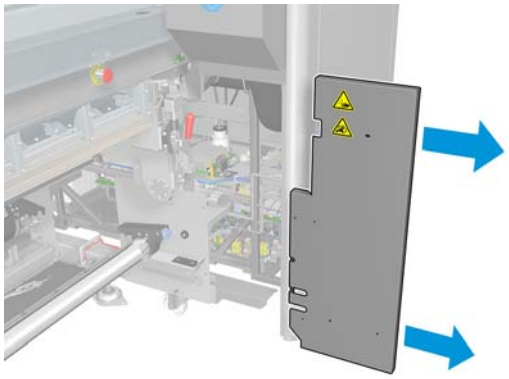
1. Turn off the printer and the power-enable switch.
2. Locate the rear left pillar.
3. Keep the loading table closed.
4. Remove the six pointed screws that attach the rear left pillar.



5. Remove the rear left internal corner assembly (see Rear left internal corner assembly on page 638), so that you can remove the rear left pillar.

TIP: It is also possible to remove the rear left pillar if you separate the ink system compartment sufficiently from the main body structure. See Ink system compartment on page 687.

6. Remove the rear left pillar.



Front left pillar

Removal

1. Turn off the printer and the power-enable switch.
2. Locate the front left pillar.
3. Remove the four pointed screws that attach the front left pillar.
4. Remove the front left internal corner assembly (see Front left internal corner assembly on page 638), so that you can remove the front left pillar.

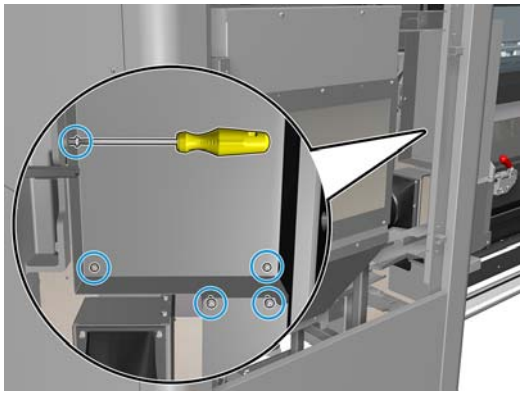
TIP: It is also possible to remove the front left pillar if you separate the ink system compartment sufficiently from the main body structure. See Ink system compartment on page 687.

5. Remove the front left pillar.

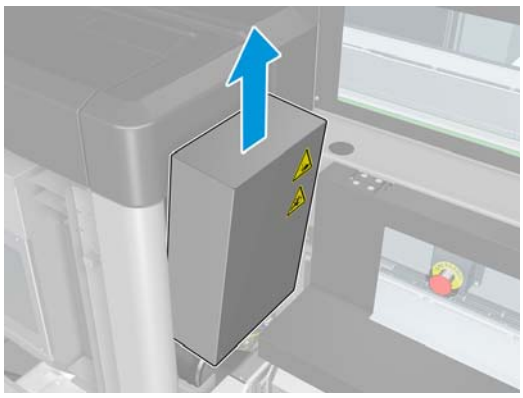
Front top left pillar

Removal

1. Turn off the printer and the power-enable switch.
2. Locate the front top left pillar.
3. Remove the front left panel.
4. Remove the six pointed screws that attach the front top left pillar.



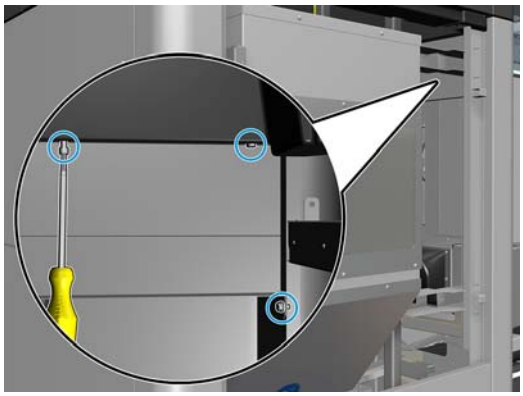
5. Remove the front top left pillar.



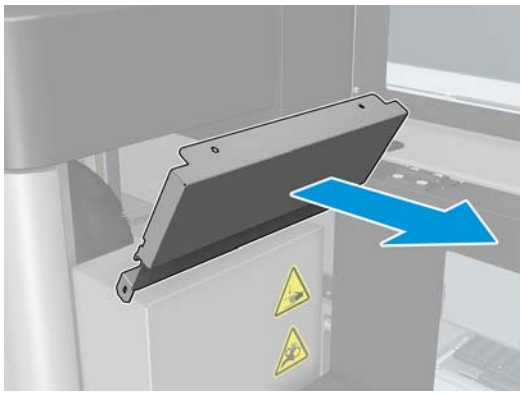
Front left internal cover

Removal

1. Turn off the printer and the power-enable switch.
2. Locate the front left internal cover.
3. Remove the front left panel. See Front left panel assembly on page 635.
4. Remove the three pointed screws that attach the front left internal cover.



5. Remove the front left internal cover.

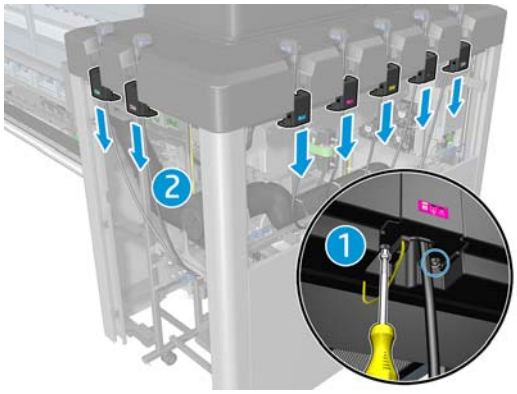


Top left cover

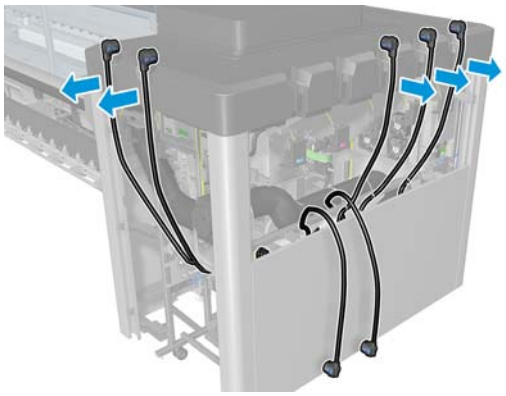
Removal

1. Turn off the printer and the power-enable switch.
2. Locate the top left cover.

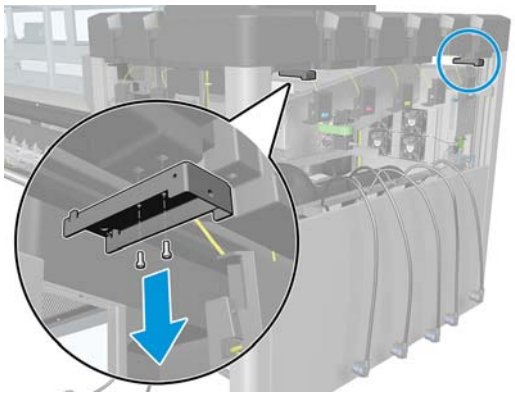
3. Remove all the top left cover clamps.



4. Disconnect all the ISM cartridge connectors from their cartridges.

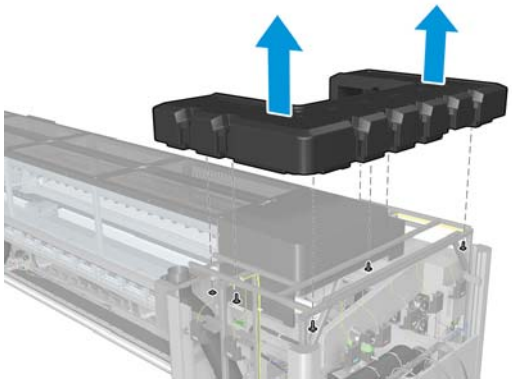


5. Remove all the cartridges from the printer and save them in a secure place.
6. Remove the four pointed screws that attach the top left cover to the metal sheet supports.



7. Remove the two screws that match the top left cover with the rear left internal cover, and the two screws that hold it to the front left internal cover.
8. Remove the two screws that match the top left cover with the top left cover slot plug.
9. Remove the top left cover slot plug.

10. Remove the seven screws that hold the top left cover to the ISM structure top frame, and remove the cover.



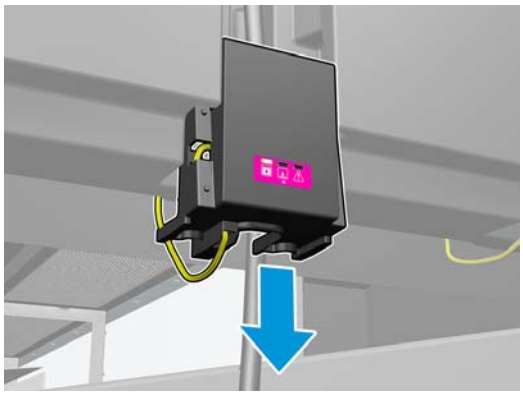
Top left cover clamp and labels

Removal

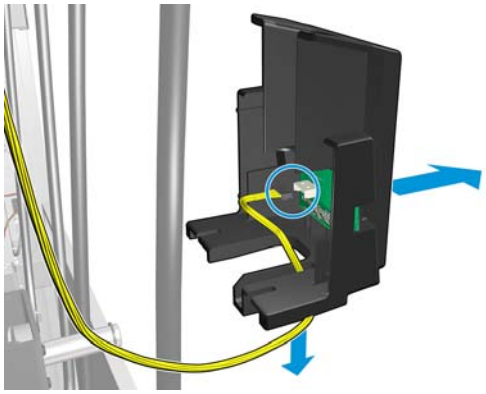
1. Turn off the printer and the power-enable switch.
2. Locate the top left cover clamp and labels.
3. Remove the top left panel assembly. See Top left panel assembly on page 637.
4. Remove the rear left panel. See Rear left panel assembly on page 636.
5. Remove the two pointed screws that attach the top left cover clamp and labels.



6. Carefully slide down the top left cover clamp and labels.



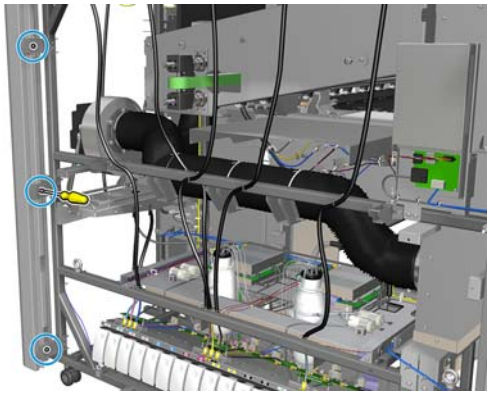
7. Disconnect and remove the top left cover clamp and labels.

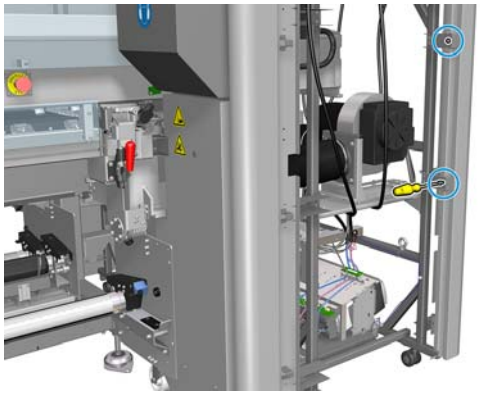


Left corner assembly

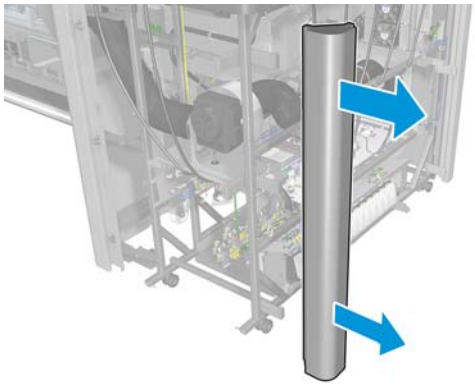
Removal

1. Turn off the printer and the power-enable switch.
2. Locate the left corner assembly.
3. Remove the top left panel assembly. See Top left panel assembly on page 637.
4. Remove the bottom left panel assembly. See Bottom left panel assembly on page 636.
5. Remove the front left panel assembly. See Front left panel assembly on page 635.
6. Remove the rear left panel assembly. See Rear left panel assembly on page 636.
7. Remove the five pointed screws that attach each left corner assembly.





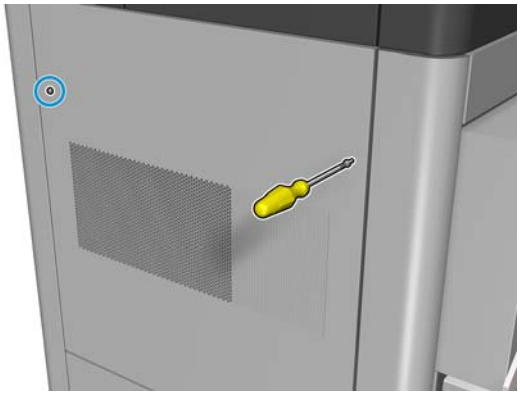
8. Remove the two left corner assemblies.



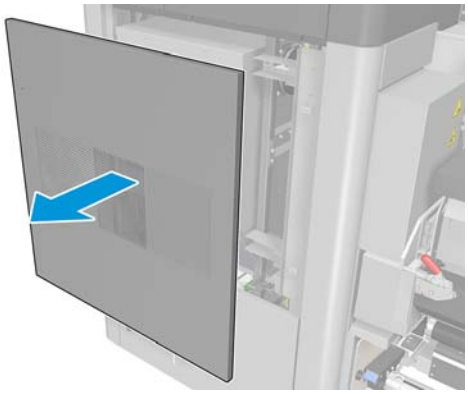
Front left panel assembly

Removal

1. Turn off the printer and the power-enable switch.
2. Locate the front left panel assembly.
3. Remove the two pointed screws that attach the front left panel assembly.



4. Remove the front left panel assembly.



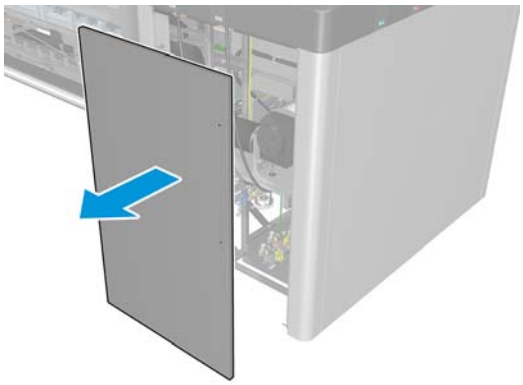
Rear left panel assembly

Removal

1. Turn off the printer and the power-enable switch.
2. Locate the rear left panel assembly.
3. Remove the four pointed screws that attach the rear left panel assembly.



4. Remove the rear left panel assembly.



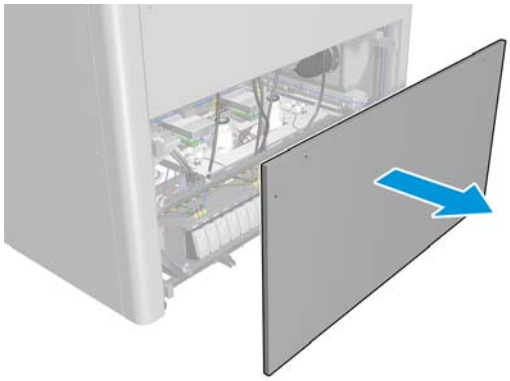
Bottom left panel assembly

Removal

1. Turn off the printer and the power-enable switch.
2. Locate the bottom left panel assembly.
3. Remove the four pointed screws that attach the bottom left panel assembly.



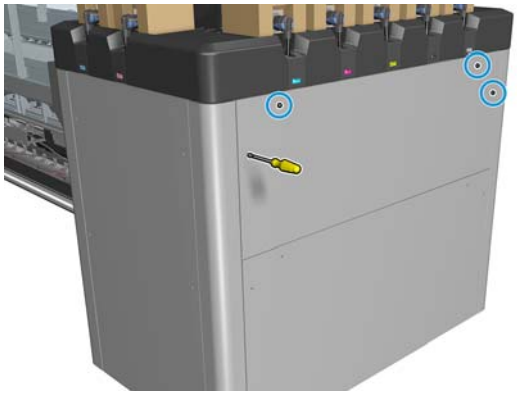
4. Remove the bottom left panel assembly.



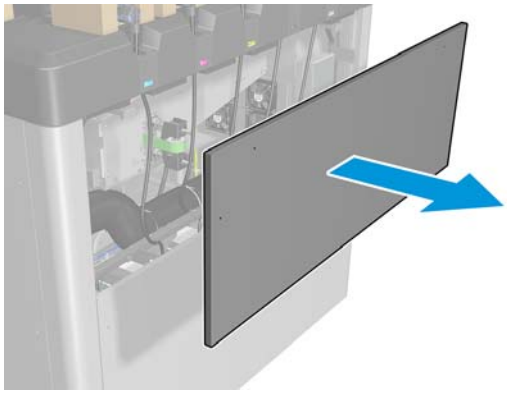
Top left panel assembly

Removal

1. Turn off the printer and the power-enable switch.
2. Locate the top left panel assembly.
3. Remove the four pointed screws that attach the top left panel assembly.



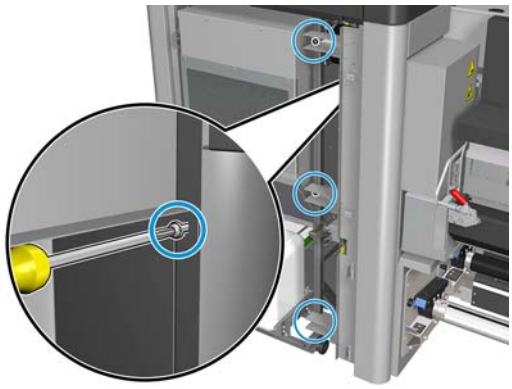
4. Remove the top left panel assembly.



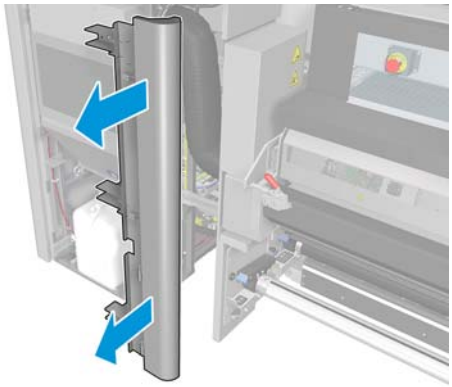
Front left internal corner assembly

Removal

1. Turn off the printer and the power-enable switch.
2. Locate the front left internal corner assembly.
3. Remove the front left panel assembly. See Front left panel assembly on page 635.
4. Remove the rear left panel assembly. See Rear left panel assembly on page 636.
5. Remove the front left panel door. See Front left panel door on page 653.
6. Remove the pointed screws that attach the front left internal corner supports, and the pointed screw that attaches the front left internal cover to the left internal corner assembly.



7. Remove the front left internal corner assembly.

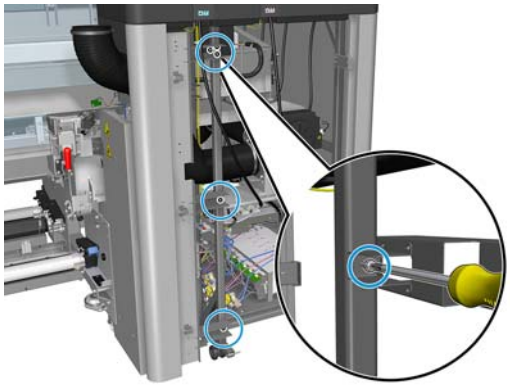


Rear left internal corner assembly

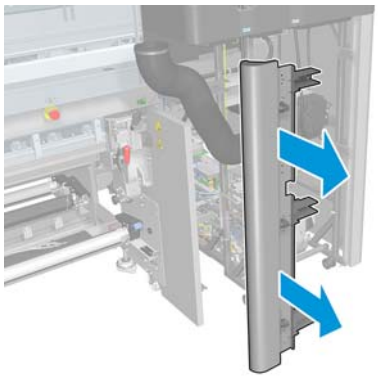
Removal

1. Turn off the printer and the power-enable switch.
2. Locate the rear left internal corner assembly.
3. Remove the rear left panel assembly. See Rear left panel assembly on page 636.
4. Remove the rear left internal cover. See Rear left internal cover on page 639.

5. Remove the nine pointed screws that attach the rear left internal corner assembly's supports to the ink system compartment structure (three screws on each support).



6. Remove the rear left internal corner assembly.



Rear left internal cover

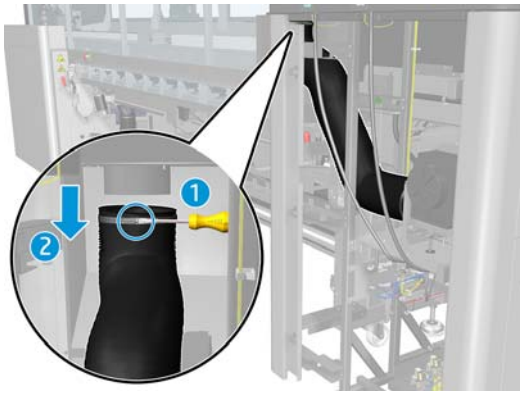
Removal

1. Turn off the printer and the power-enable switch.
2. Locate the rear left internal cover.
3. Remove the rear left panel. See Rear left panel assembly on page 636.

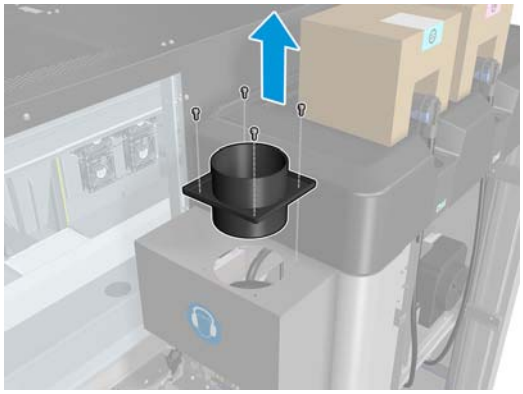
4. Loosen the flange and remove the vapor removal air-to-blower pipe from the vapor removal exhaust.

CAUTION: All vapor removal parts may contain liquid; therefore, before removing any vapor removal part, either cover all the surfaces that could get wet, or remove all delicate parts that could be damaged by liquid (such as the electronic and electrical parts).

TIP: Once the pipe is free, you are recommended to lift the higher end of the pipe slightly before starting to remove it, so that most of the liquid it contains can run into the waste bottle.

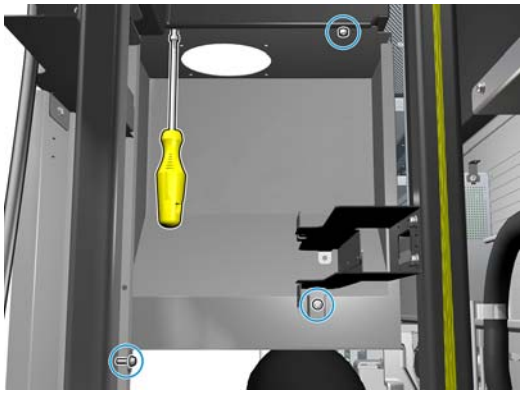


5. Remove the four pointed screws that attach the vapor removal exhaust to the rear left internal cover, and remove the vapor removal exhaust.

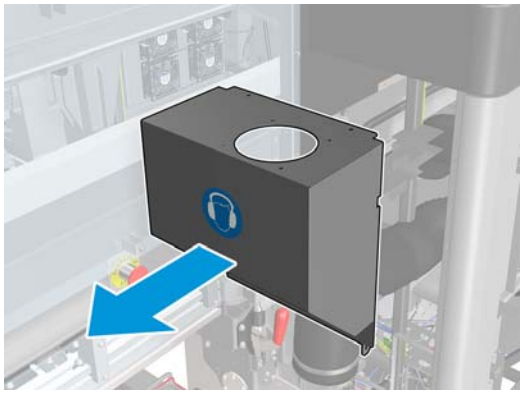


6. Remove the four pointed screws that attach the rear left internal cover.

TIP: It may be easier to remove the rear left internal cover with its supports attached and separate it from its metal sheet supports once it has been removed.



7. Remove the rear left internal cover.



Installation

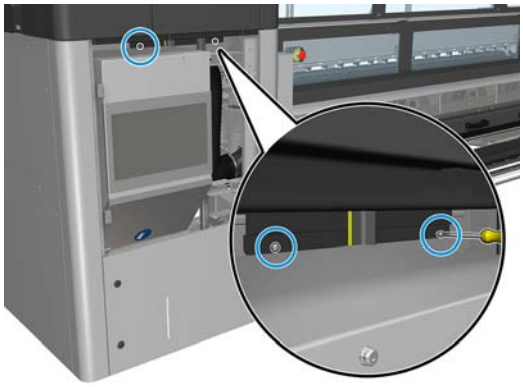
1. Install the vapor removal exhaust.
2. Install the vapor removal air-to-blower pipe.
3. Put back all the covers.

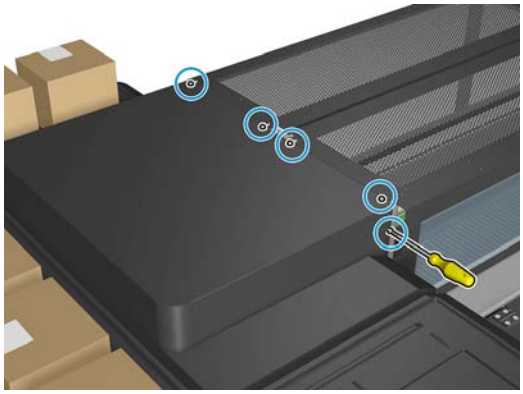
Center left cover

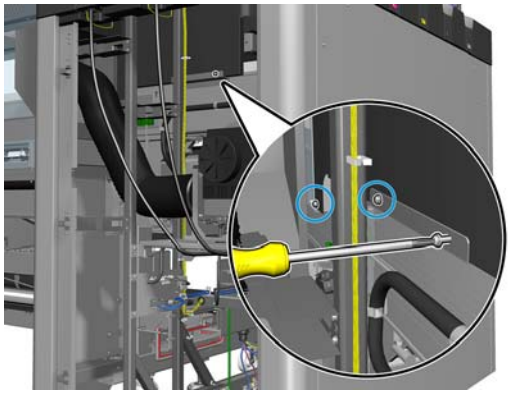
Removal

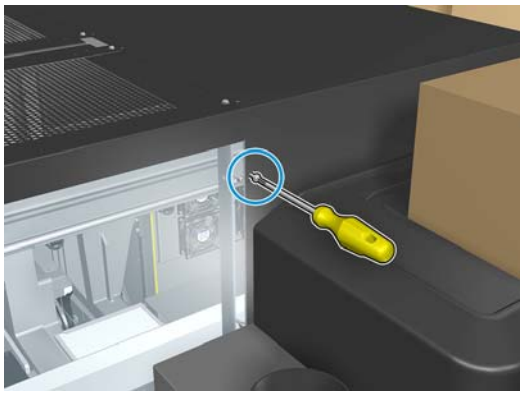
1. Turn off the printer and the power-enable switch.
2. Locate the center left cover.
3. Remove the front left panel. See Front left panel assembly on page 635.
4. Remove the rear left panel. See Rear left panel assembly on page 636.
5. Remove the ink system compartment, so that it is easier to reach the center left cover screws. See Ink system compartment on page 687.

6. Remove the eleven screws that hold the center left cover to the scan axis and to the arch center cover.

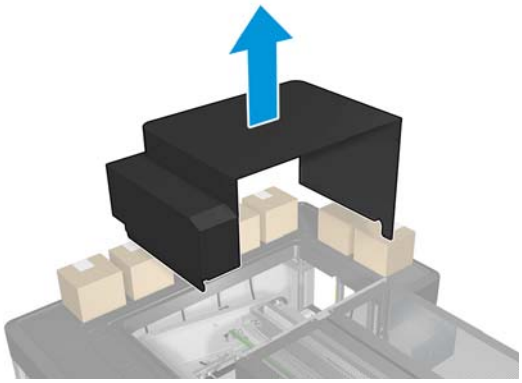








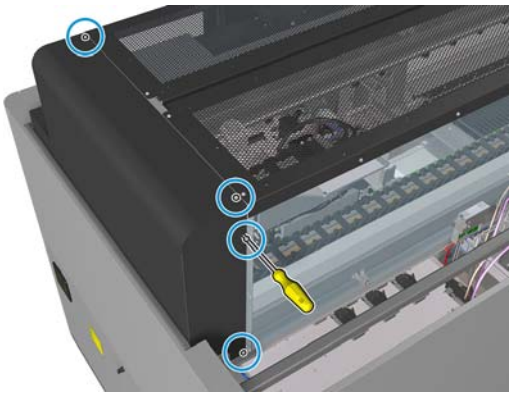
7. Remove the center left cover.

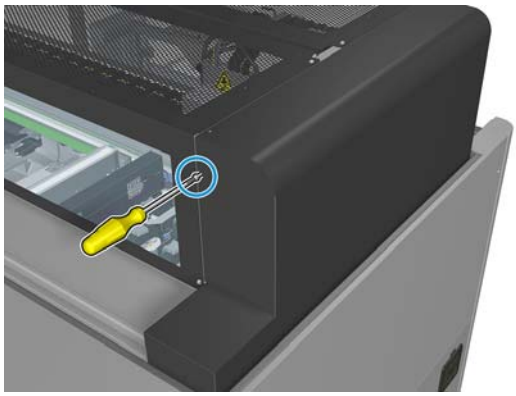


Center right cover

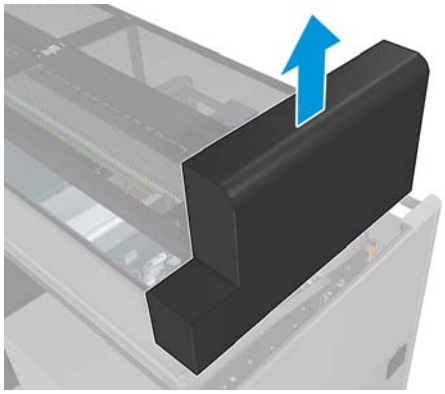
Removal

1. Turn off the printer and the power-enable switch.
2. Locate the center right cover.
3. Remove the right back panel and the right side panel, so that you can reach all the six screws that hold the center right cover.
4. Remove the six screws that attach the center right cover to the arch center cover.





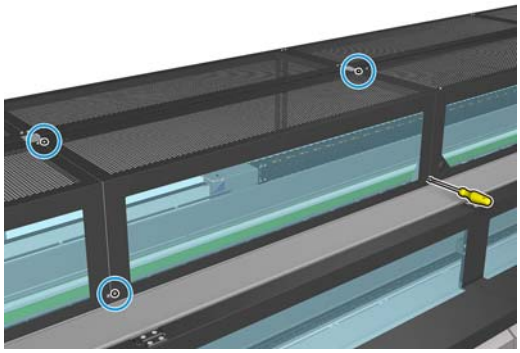
5. Remove the center right cover.

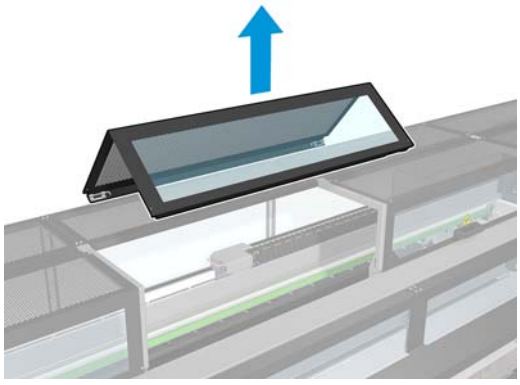


Front top center cover

Removal

1. Turn off the printer and the power-enable switch.
2. Locate the front top center cover.
3. Remove the two pointed screws that attach the front top center cover to the arch center covers.
4. Carefully open the front PC cover, pull out the latches, and remove the front top center cover with the new one.



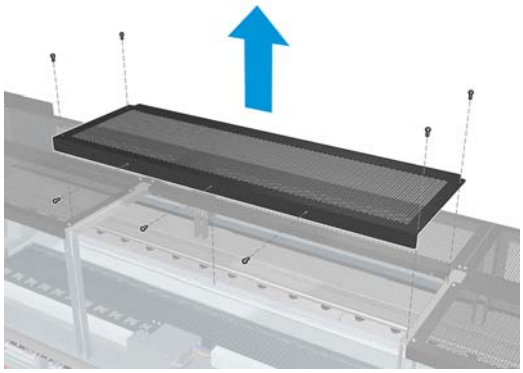


Rear top center cover

Removal

1. Turn off the printer and the power-enable switch.
2. Locate the rear top center cover.

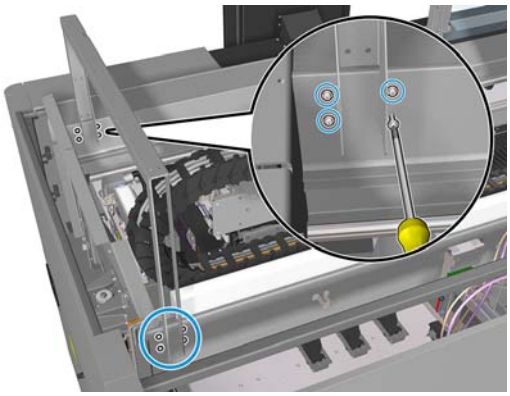
3. Remove the seven pointed screws that hold the rear top center cover.
4. Remove the rear top center cover.



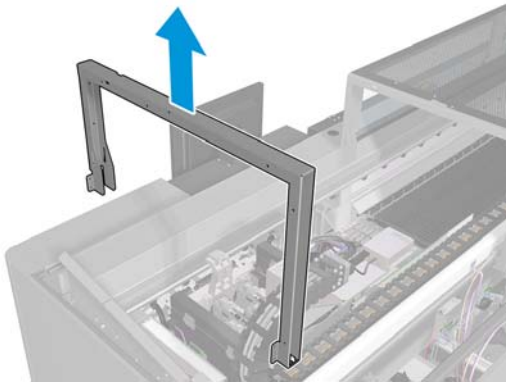
Arch center cover

Removal

1. Turn off the printer and the power-enable switch.
2. Locate the arch center cover.
3. Remove the top center covers and the rear PC sheets to reach the arch center cover.
4. Remove the eight pointed screws (four on each side) that attach the arch center cover to the printer's scan-axis structure.



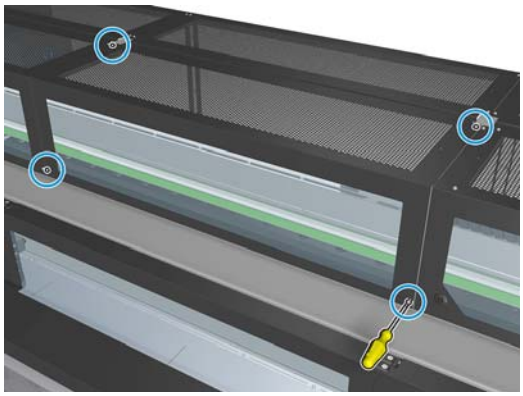
5. Remove the arch center cover.



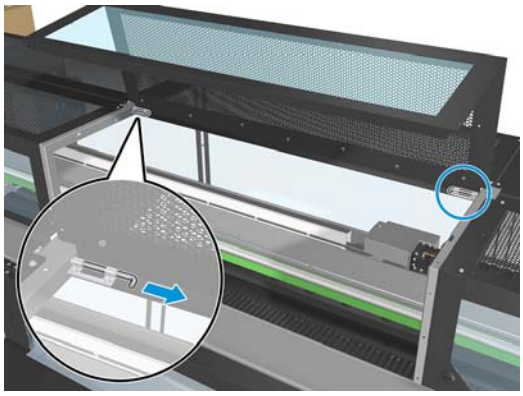
Front PC sheet

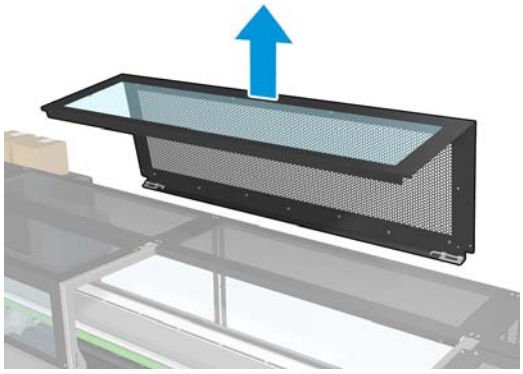
Removal

1. Turn off the printer and the power-enable switch.
2. Locate the front PC sheet.
3. Remove the four pointed screws that attach the front PC cover to the arch center covers.

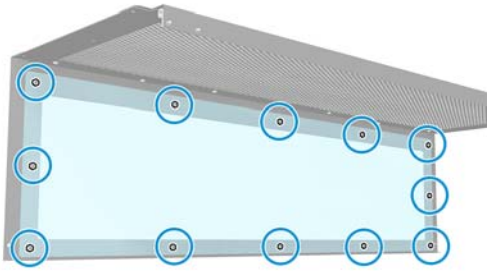


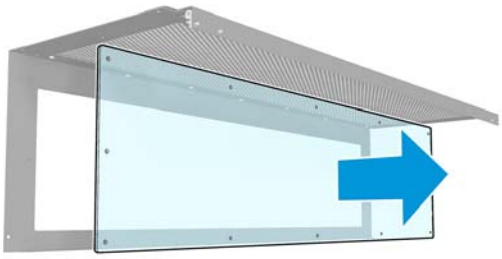
4. Carefully open the front PC cover, pull out the latches, and remove the front PC cover.





5. Remove the pointed screws and the front PC sheet.

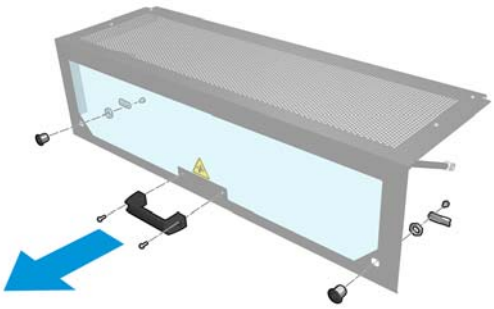




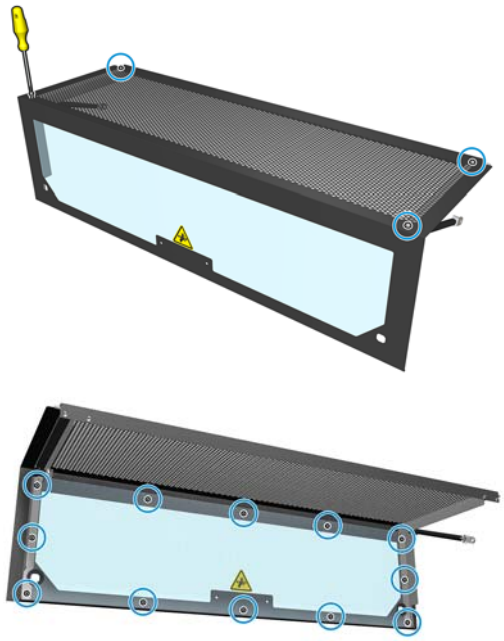
Window PC sheet

Removal

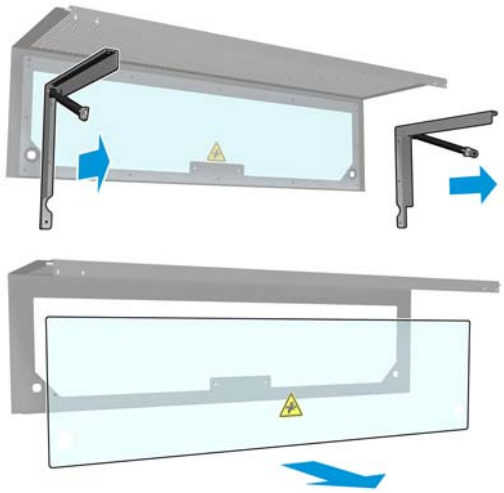
1. Turn off the printer and the power-enable switch.
2. Locate the window PC sheet.
3. Remove the center window.
4. Remove the handle and the two key latches from the window PC sheet.



5. Remove the pointed screws.



6. Remove the window PC sheet.

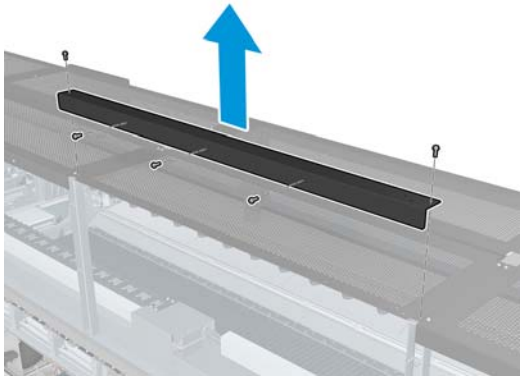


Rear PC sheet

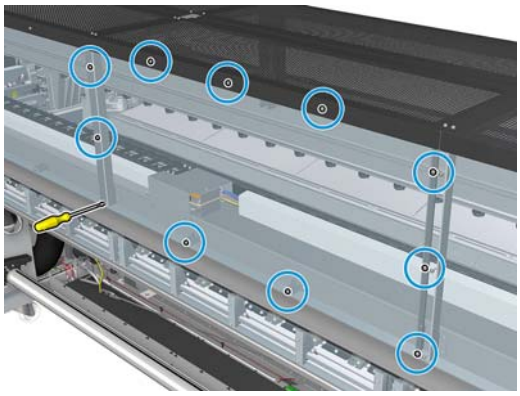
Removal

1. Turn off the printer and the power-enable switch.
2. Locate the rear PC sheet.

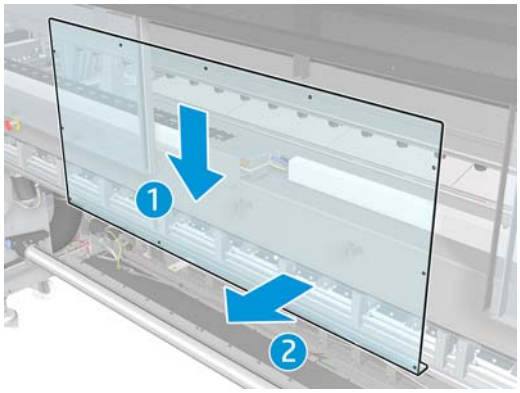
3. Remove the screws that hold the rear PC sheet to the top center cover band.



4. While holding the rear PC sheet, remove the pointed screws that attach it.



5. Remove the rear PC sheet, moving it down and then out.

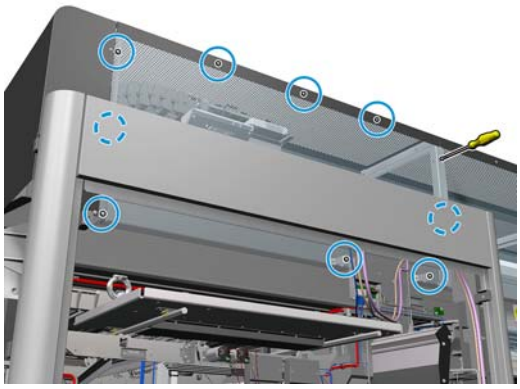


Rear center-right PC sheet cover

Removal

1. Turn off the printer and the power-enable switch.
2. Locate the rear center-right PC sheet cover.
3. Remove the rear right panel. See Rear right panel assembly on page 624.

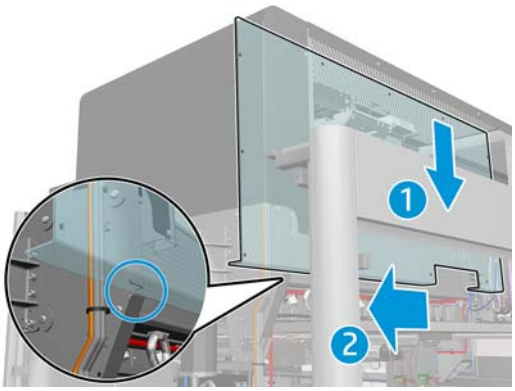
4. While holding the rear center-right PC sheet cover, remove the pointed screws that attach it.



5. Remove the rear center-right PC sheet cover.

TIP: There is a gap through which the sheet can slide. Move it down and then to the left.

CAUTION: When sliding the sheet cover, be careful not to pinch or tighten any cable.



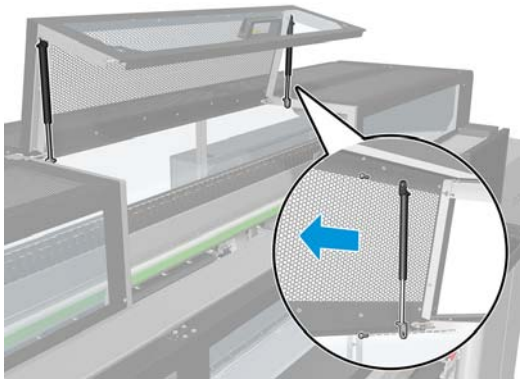
Window gas spring

Removal

1. Turn off the printer and the power-enable switch.
2. Locate the window gas spring.
3. Open the center window.

4. Remove the two screws that hold the window gas spring to the center window and the arch center cover.

CAUTION: Be careful with the washers when removing the gas springs.



5. Remove the window gas spring.

Right structure

Removal

1. Turn off the printer and the power-enable switch.
2. Locate the right structure.
3. Open the printhead cleaning door.
4. Remove the rear right panel. See Rear right panel assembly on page 624.
5. Remove all the right structure panels, so that you have free access to all the routed cables.
6. Disconnect and unroute all the cables routed from the right structure to the center and left printer structure and assemblies, so that the right structure is free from cables that route to the scan axis.
7. Remove the vacuum pipe.
8. Disconnect and unroute all the cables connected to the e-box or the e-cabinet that are routed out of the right structure (that is, those that are routed to the scan axis, the substrate path, and the ink system module assemblies). See Subsystem block diagrams on page 61.

TIP: You are strongly recommended to unroute from the right structure to the rest of the printer, so that the right structure remains free from routed cables.

CAUTION: Be careful when unrouting the e-box cables not to twist or tighten the fiber-optic cable excessively.

9. Locate and remove the two pins that hold together the right structure and the scan-axis structure.
10. Remove the right structure from the printer.

TIP: When removing the right structure, you can move the printhead cleaning module guide to avoid interference with the right structure.

CAUTION: Be careful when removing the right structure from the printer, because it is very heavy.

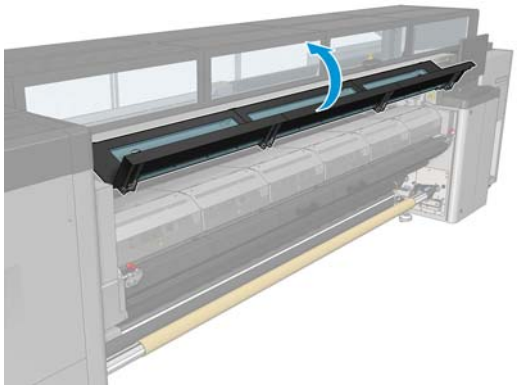
Installation

1. Remove all the right structure remaining assemblies and parts, such as the e-cabinet, the e-box, and the vacuum pump, and attach them to the new right structure.
2. Put the right structure into the printer and attach it with the two pins.
3. Reinstall the vacuum pipe.
4. Reroute all the cables in an orderly manner to the various right structure assemblies and parts. See Subsystem block diagrams on page 61.
5. Reinstall all the covers and close the printhead cleaning door.

Front door

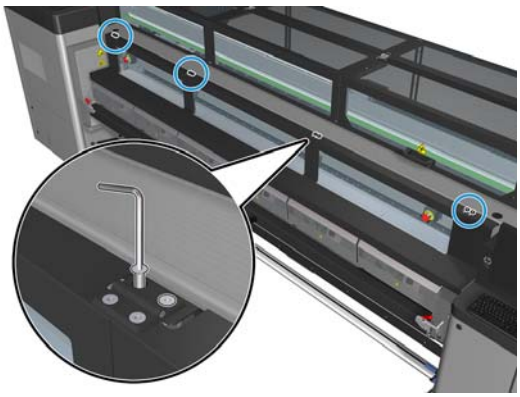
Removal

1. Turn off the printer and the power-enable switch.
2. Open the front door.

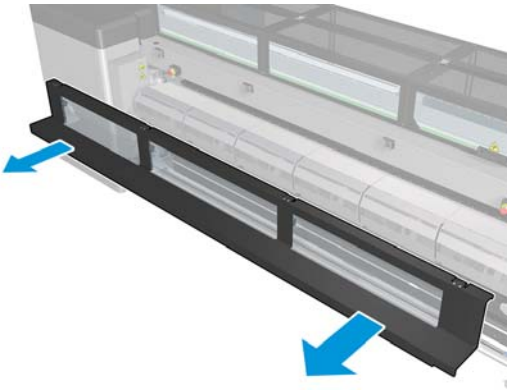


3. Remove the gas springs from the front door.
4. Hold the front door while removing the two pointed screws from each hinge.

CAUTION: The front door is large and heavy. At least two people are recommended for this operation.



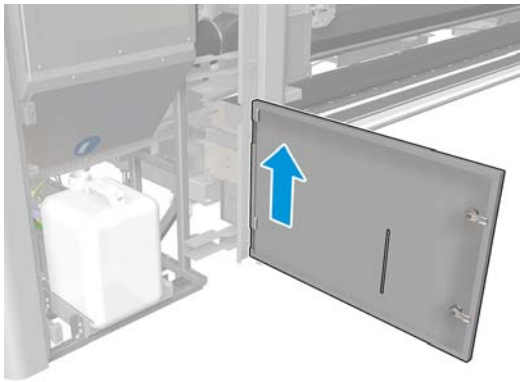
5. Remove the front door.



Front left panel door

Removal

1. Turn off the printer and the power-enable switch.
2. Remove the front left panel.
3. Open the front left panel door and slide it up to remove it from its hinges.



4. Remove the front left panel door.

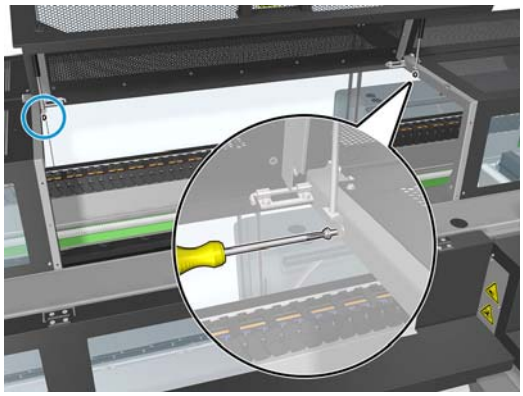
Center window

Removal

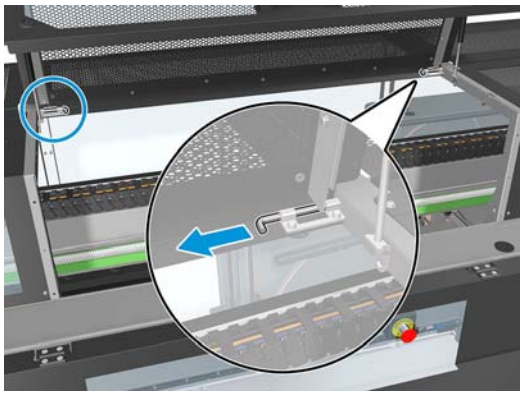
1. Turn off the printer and the power-enable switch.
2. Locate the center window.
3. Open the center window key latches and open the window.

4. Remove the two screws that hold the window gas spring to both arch center covers.

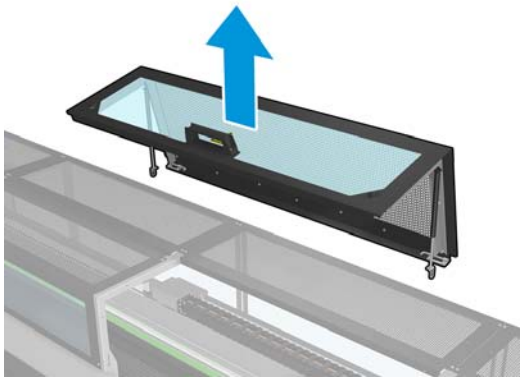
CAUTION: Be careful with the window gas spring washers when removing them.



5. Pull out the two center window hinges while holding the center window.



6. Remove the center window.



Cover supports

Removal

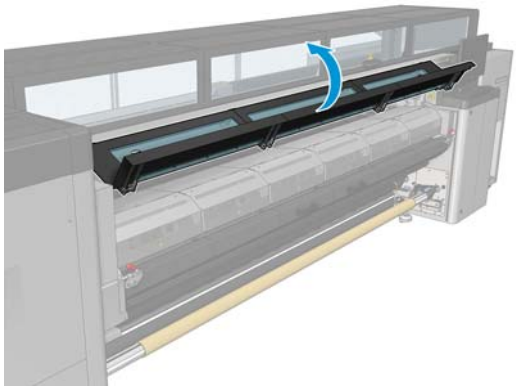
1. Turn off the printer and the power-enable switch.
2. Locate the cover support that you want to remove.
3. Remove panels as needed to reach the cover support and free it from all the panels to which it is attached. See Service parts and diagrams on page 378.

4. Remove the screws that hold the cover support.
5. Remove the cover support.

Interlock

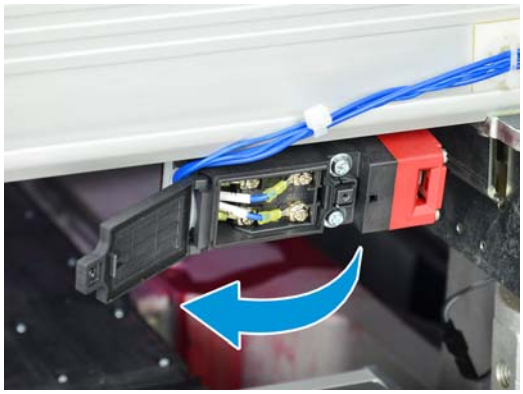
Removal

1. Turn off the printer and the power-enable switch.
2. Open the front door.



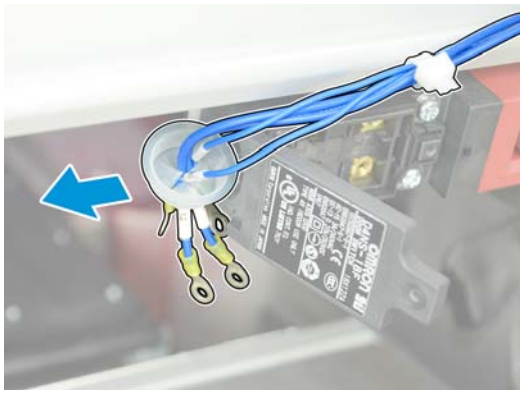
3. Remove the crossed screw and the interlock connector cover.





4. Disconnect the cables from the interlock.





5. Remove the screws that attach each part of the interlock.



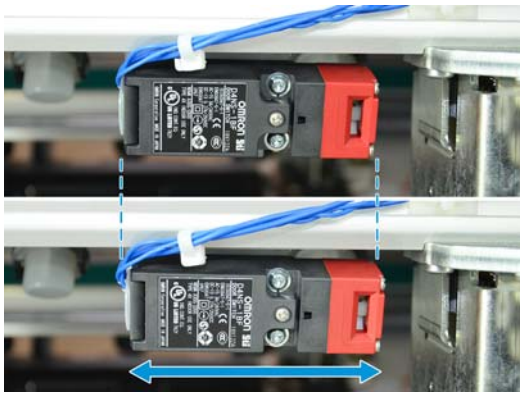
6. Remove the interlock.



Installation

1. Screw the interlock connector to the printer front beam structure.
2. Remove the crossed screw and the interlock connector cover.
3. Reconnect the cables to the interlock connector.
4. Screw the interlock jumper to the front door rib.
5. Carefully move the front door to the closed position, without closing it completely, and ensure that the interlock connector perfectly matches the interlock jumper, so that it will not bend or break the interlock pins. Adjust its position if necessary.

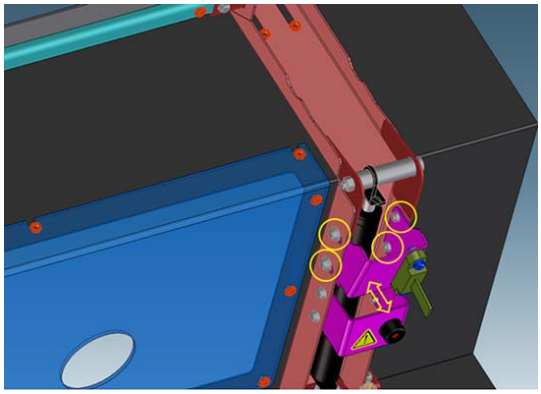
   The illustration below shows the clearance that allows you to put the interlock connector in the best position to match the corresponding jumper.



CAUTION: Take care to follow the procedure as described, to avoid bending or breaking the interlock pins when closing the front door.

6. The interlock finger can be adjusted to ensure the proper activation of the interlock when the door is closed. The activation of the interlock can be heard when closing the door. If you hear no sound, or if there is a marginal activation (the interlock is activated only when pushing down on the right side of the front door), you may consider adjusting the position of the interlock finger.

   Loosen the four screws attaching the support part for the interlock finger so that it can move freely. Adjust its position and check that it activates the interlock properly when closing the door. It can be easily done through the front door window (only in the new design).



7. Once the position has been adjusted, tighten the screws.
8. Ensure that the interlock finger can go into the interlock opening without crashing against the interlock body.
9. Open the front door and tighten the interlock connector screws.

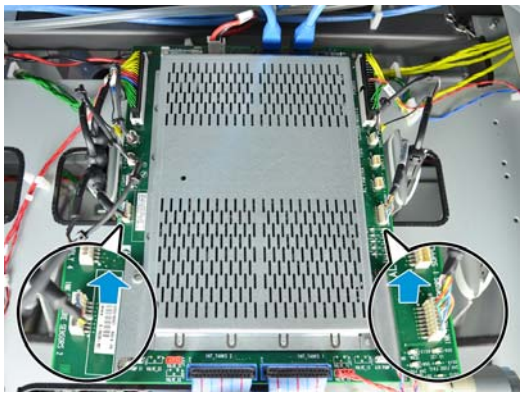
10. Perform the check interlocks procedure.
11. Perform the safety circuit procedure.

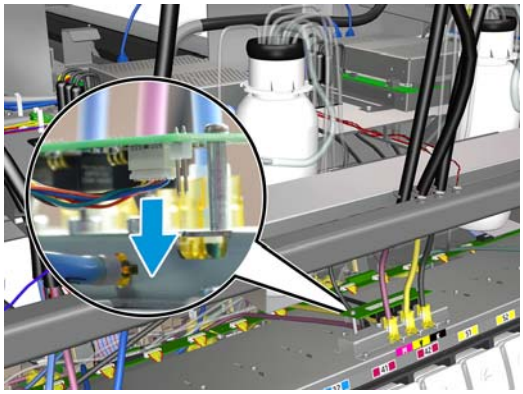
Ink system module

ISM pressure sensor assembly

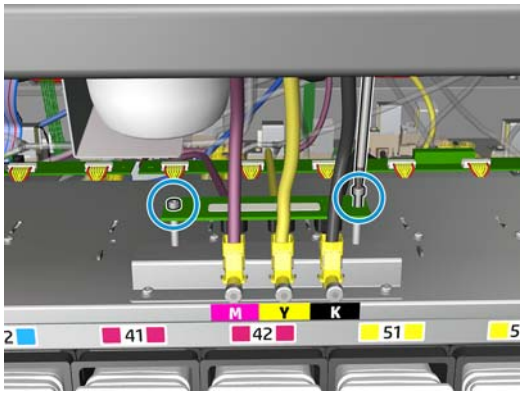
Removal

1. Remove the top left panel. See Top left panel assembly on page 637.
2. Remove the bottom left panel. See Bottom left panel assembly on page 636.
3. Turn off the printer and the power-enable switch (so the ink circuit will not be pressurized).
4. Disconnect the ink sensors cable (CZ056-50034) from the ink-sensor PCA and the ISM PCA (J4 or J26 connector).

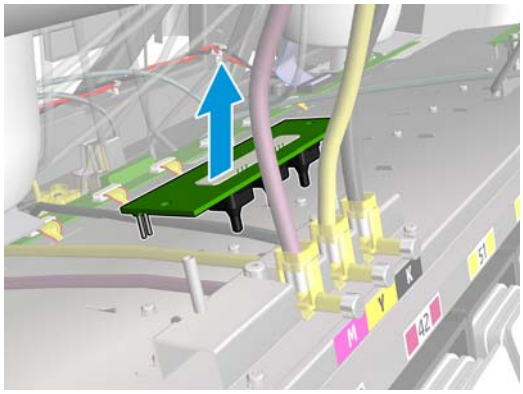




5. Remove two T-10 screws that secure the ink-sensor PCA to the metal support part.



6. Disconnect the ink-sensor PCA from the ink-cartridge connectors.



NOTE: The ink-sensor boards should be matched. Make sure that each board is replaced where it was originally installed.

Installation

1. Make a note of the new pressure sensor PCA values, as they are needed for the pressure sensor calibration.
2. Replace the pressure sensor with the new service part.
3. Connect the ink sensors cable to the pressure sensor.
4. Connect the ink cartridge connector.
5. Calibrate the ink pressure sensor.

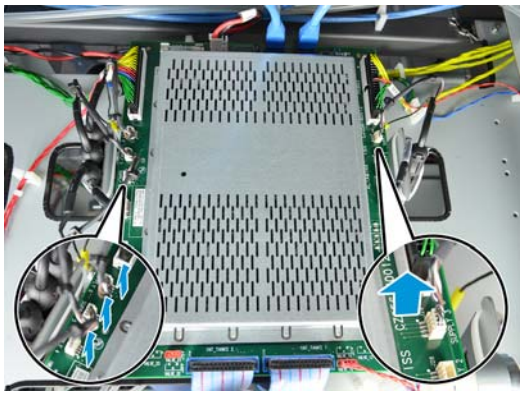
When reconnecting the ink tubes to the pressure sensor board, ensure that both pressure values in all ink lines connected to that pressure sensor board are near to a maximum of 10% error (compared to the initial pressures). If any ink pressure value is lower than 10% from the initial value, purge the air from the ink line.

ISM cartridge connector with tube (K, Y, C, M, LC, LM, or PT ink)

Removal

1. Turn off the printer and the power-enable switch (so the ink circuit will not be pressurized).
2. Open the front left panel door.
3. Remove the rear left panel. See Rear left panel assembly on page 636.
4. Remove the bottom left panel. See Bottom left panel assembly on page 636.
5. Flush the affected line.

6. Disconnect the appropriate Acumen cable (the cables that exit from the bottom of the cable protector) from its corresponding ISS PCA; it can be either A or B, depending on each Acumen cable. See Subsystem block diagrams on page 61.



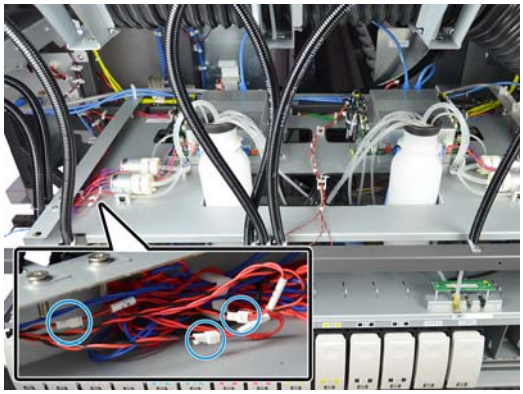
Label: Moby Acumen, JX connector, where X = 7, 6, or 40 for PCA A, and X = 7, 6, 40, or 29 for PCA B

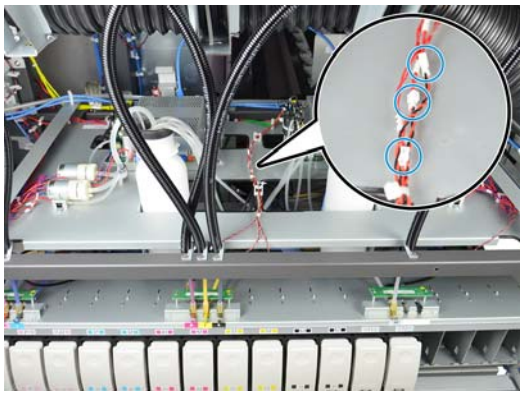
Route: Ink Cartridge Connector to ISS PCA

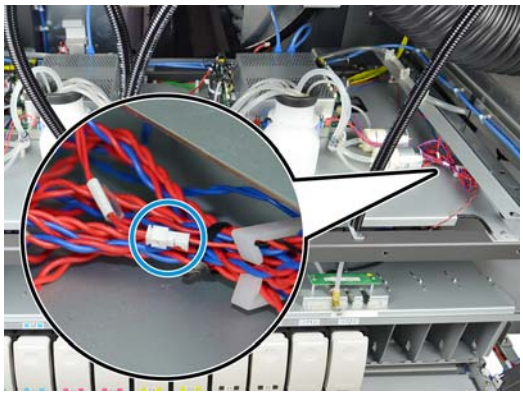
IMPORTANT: Keep track of the connector placement, because it is possible to mismatch connections between ink supplies.

7. Disconnect the appropriate switch cable from its corresponding air connector (the red and black cables that exit from the bottom of the cable protector).

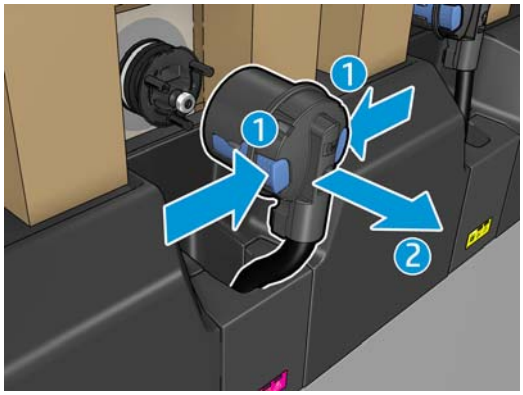
   The air connector red cables are labeled. See Subsystem block diagrams on page 61.





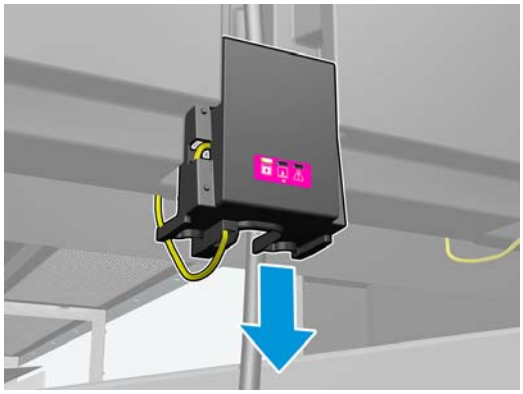


8. Disconnect the ink cartridge connector from the ink cartridge.

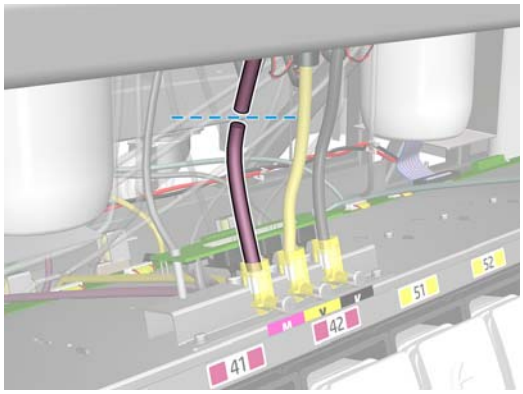


9. Remove the top cover clamp.



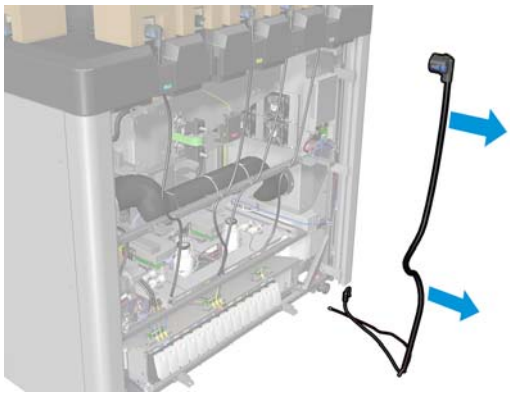


10. Use the tube cutter to cut the ink connector tube about 10 to 20 cm above the first fitting.



NOTE: Use a rag to avoid spilling ink. Before you remove the ink cartridge connector, let all the ink run out.

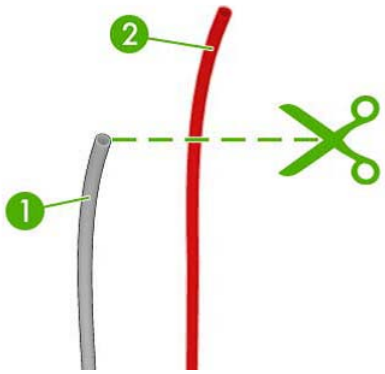
11. Pull the ink cartridge connector set out of the printer.



Installation

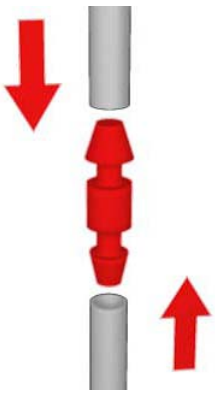
The ink cartridge connector set comes with a tube equal to the full length of the original tube installed on the machine, and a connector fitting to connect the new tube to the old tube. Find the connector fitting before starting the installation.

1. Put the new ink cartridge connector set side by side with the old set.
2. Cut the new tube so that it is the same length as the old tube, using the specific cutter provided in the ISM repair kit.



3. Install the new ink cartridge connector set, and join the lower tube to the upper tube using the connector fitting. Make sure that the upper and lower tubes are pushed completely onto the connector.

CAUTION: As you insert them, make sure that you use a pushing motion, and not a twisting motion, as this can damage the tubes.

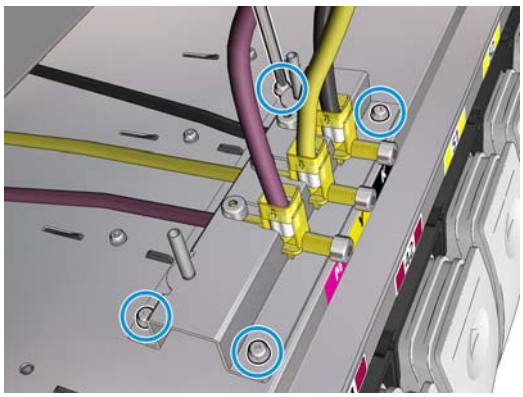


4. Connect the Acumen data cable and switch cable, taking care not to mismatch them.
5. Purge the tubes.
6. Perform the following reset procedures:
   - Purge supply OP for optimizer ink.
   - Purge supply K for black ink.
   - Purge supply Y for yellow ink.
   - Purge supply M for magenta ink.
   - Purge supply C for cyan ink.
   - Purge supply LM for light magenta ink.
   - Purge supply LC for light cyan ink.

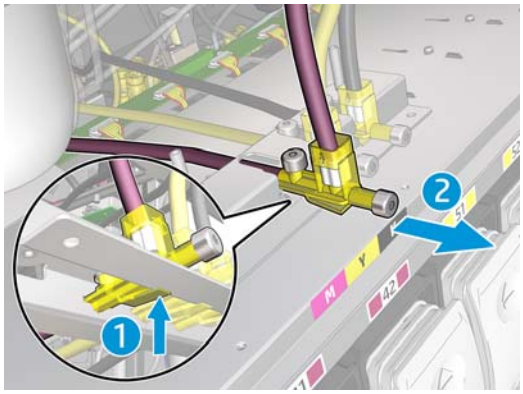
ISM ink pressure sensor mount assembly

Removal

1. Turn off the printer and the power-enable switch.
2. Remove the ISM pressure sensor assembly.
3. Remove the four T-10 screws that secure the metal support part to the printer, and pull out the assembly.



4. Press on a latch that secures the ink pressure sensor mount to the metal support part, and slide out the ink pressure sensor mount.



5. For the tube going to the cartridge, flush the tube, cut it as close as possible to the ink pressure sensor mount, and reconnect this tube to the new ink pressure sensor mount (without screwing it).
6. For the tube going to the main electrovalve, follow the same procedure as explained for the electrovalve replacement (ISM repair kit).

Installation

1. Replace the ink pressure sensor mount with the new one and connect back the ink tubes.
2. Open the ink cartridge and, using a syringe, remove 40 ml of ink from the cartridge.
3. Place the empty waste bags onto the connectors.
4. Place a piece of cloth under the purging port to avoid ink spills.
5. Inject 40 ml of ink into the purging port. The ink will flow into two paths, up to the empty bag and down the tubes, passing the four-way valve.
6. After 40 ml, check that the ink has reached the waste bag (if not, inject more ink), then quickly disconnect the waste bag, to continue introducing the remaining ink from the syringe while the syringe

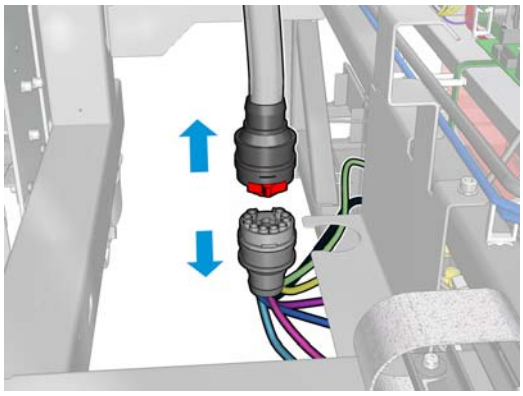
is still in place and while still maintaining a slight positive pressure on the syringe. This generates additional pressure pushing the ink down the tubes and will ensure that the column of ink from the purging port to the supply is completely full.

⚠ **CAUTION:** Never hit the syringe with the hand using a hammer motion, this will damage the ink pressure sensor board.

ISM repair kit

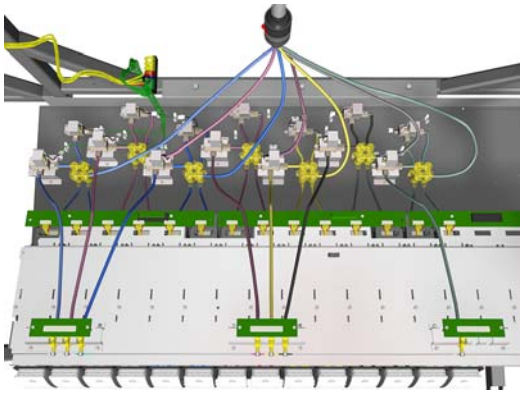
Removal

1. Turn off the printer and the power-enable switch (so the ink circuit will not be pressurized).
2. Open the front left panel door.
3. Remove the rear left panel. See Rear left panel assembly on page 636.
4. Remove the bottom left panel. See Bottom left panel assembly on page 636.
5. Remove the ink cartridge and intermediate tanks.
6. Disconnect the quick connector before starting the ink valves assembly replacement.

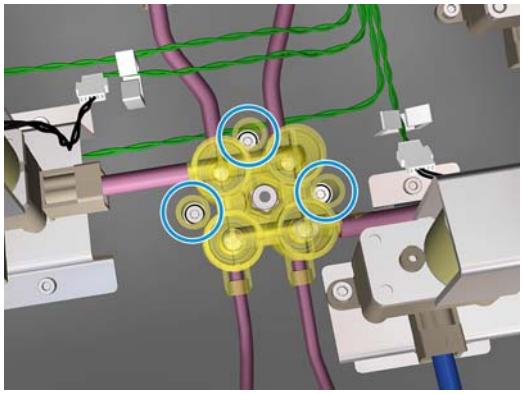


7. Flush the affected line.

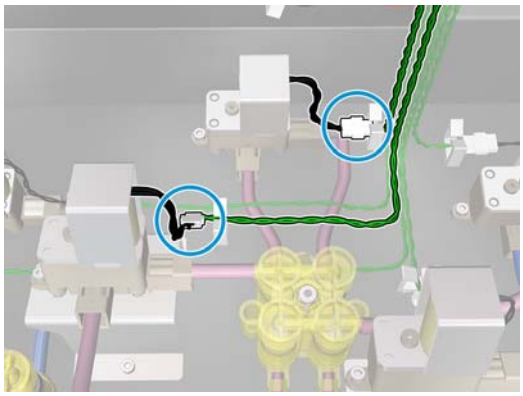
   Shown below are the seven different ink tube lines routed from the ink pressure sensors to the quick connector, through both the two electrovalves and the four-way valve.



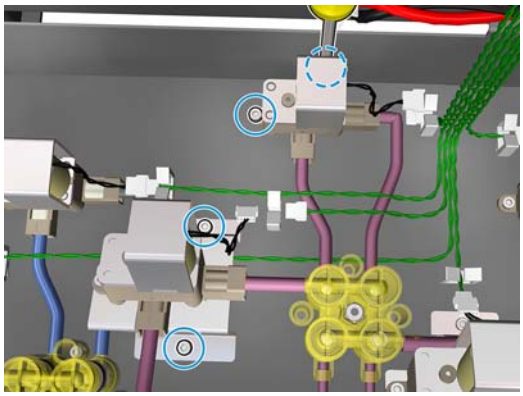
8. Remove three T-10 screws that secure the four-way valve.



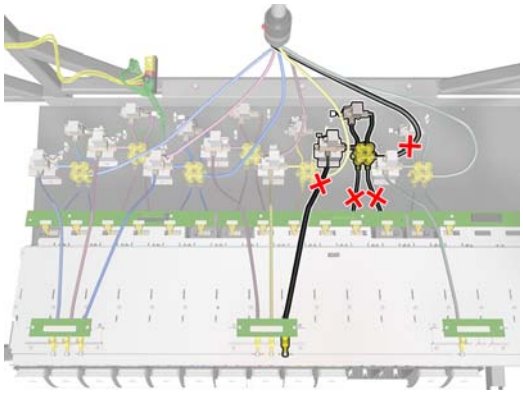
9. Disconnect the electrovalves.



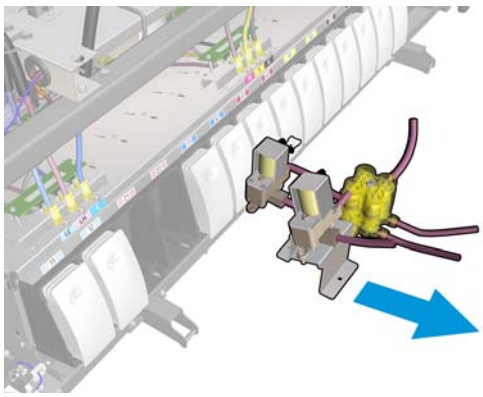
10. Remove the four T-10 screws that hold the two electrovalves (two for each electrovalve).



11. Cut the two indicated tubes at least 10 cm away from the four-way valve and the two indicated tubes 3–4 cm away from the electrovalves.



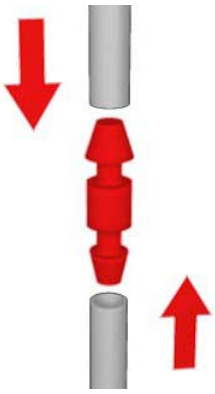
12. Remove the four-way valve and the electrovalves.



Installation

1. Join the tubes from the new valves assembly to the existing tubes using the connector fittings. Make sure that the tubes are pushed completely onto the connector.

⚠ **CAUTION:** When installing the tubes, never twist the tubes, this will damage them. Always push/slide the tubes until they are completely installed onto the fitting.



2. Before ending the installing procedure and reconnecting the quick connector, make sure to purge the ink line that has been replaced.

ISM wheel

Removal

1. Remove the ink system compartment. See Ink system compartment on page 687.
2. Use a jack to raise the ink system compartment so that you have enough free space to remove the ISM wheel.

Removal

1. Install the new ISM wheel.
2. Lower the ink system compartment and remove the jack from the printer.
3. Reinstall the ink system compartment.

ISM quick connector M&F assembly

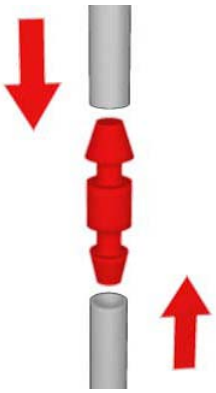
Removal

1. Turn off the printer and the power-enable switch (so the ink circuit will not be pressurized).
2. Open the front left panel door.
3. Remove the rear left panel. See Rear left panel assembly on page 636.
4. Remove the bottom left panel. See Bottom left panel assembly on page 636.
5. Disconnect the quick connector in order to separate both the ISM and the TRS assemblies.
6. For quick connector male and female valves, label each ink line further enough—it is recommended to label them at least 20 cm away from the quick connector valve—that they will be correctly identified when cutting the ink tubes and replacing both quick connector valves.

IMPORTANT: Do not mismatch the ink tube positions on the quick connector. Otherwise the printer will not work properly because ink circuits could be mismatched between the ISM and the TRS assemblies. You are strongly recommended to label the matching female and male quick connector tubes, so there will be no confusion while replacing them.

7. For each ink line, flush the ink tube approximately 15 cm and cut at least 10 cm away from the quick connector valve, before the ink tube label.
8. Connect the tube to the new quick connector ink tube using the proper fitting from the tube repair kit.

CAUTION: When installing the tubes, never twist the tubes, this will damage them. Always push/slide the tubes until they are completely installed onto the fitting.



9. Purge the line until ink reaches the quick connector on both the female and the male quick connector valves using the purge kit.

10. After repeating the above three steps for each ink line on both female and male quick connector valves, reconnect the quick connector.

ISM intermediate tank

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 Standard Uptime Kit (D4J02A).

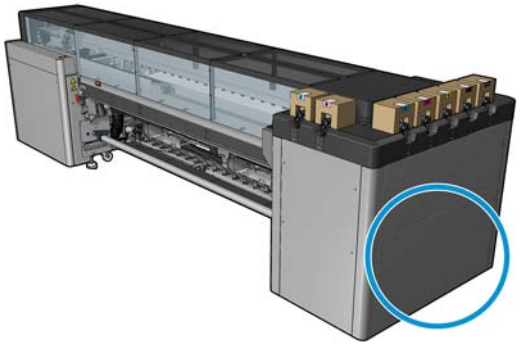
2. Ensure that the printer is not printing.

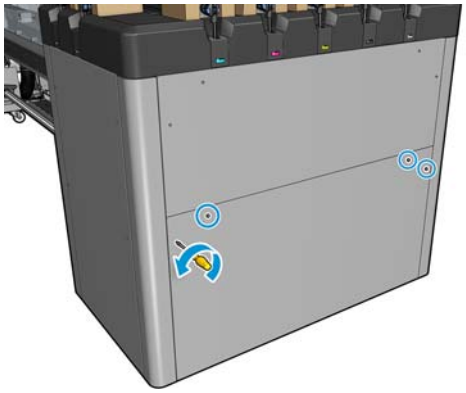
3. Turn off the printer in the correct way for maintenance operations.

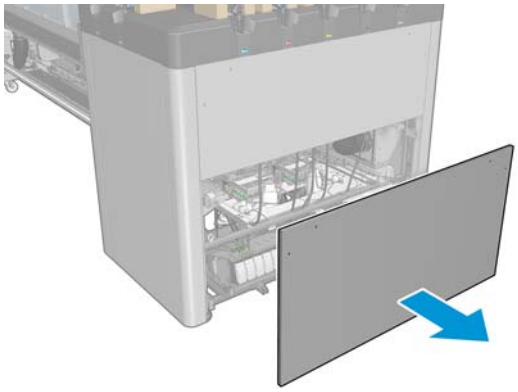


Replace an intermediate tank

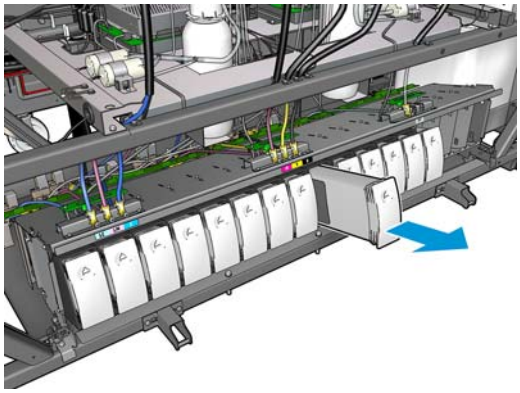
1. Unscrew the pointed screws and remove the cover to access the intermediate tanks.



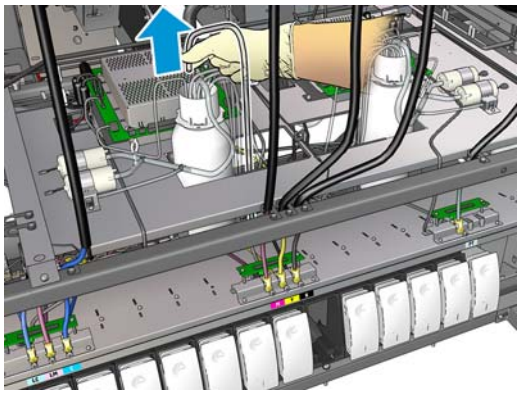




2. Remove the intermediate tank with the broken bag.



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.



2. Run a diagnostic test to refill the intermediate tank.

ISM intermediate tank set

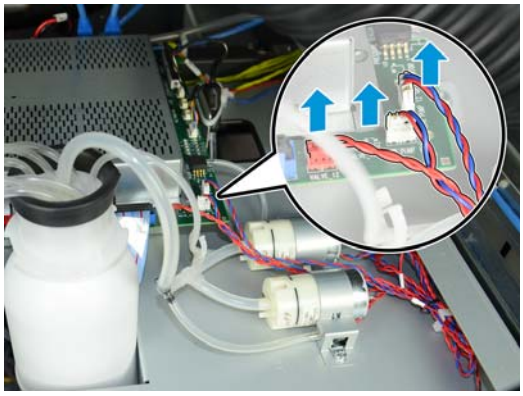
In order to replace an intermediate tank set (which means the 14 intermediate tanks), use the Intermediate Tank Change process in Diagnostic mode (see Table 5-10 Ink delivery system on page 362). The intermediate ink tanks should be changed according to service needs and preventive maintenance. After replacing the intermediate tanks (see ISM intermediate tank on page 670), perform the reset procedure (for all tanks) or use the individual reset procedures applicable to the replaced tanks.

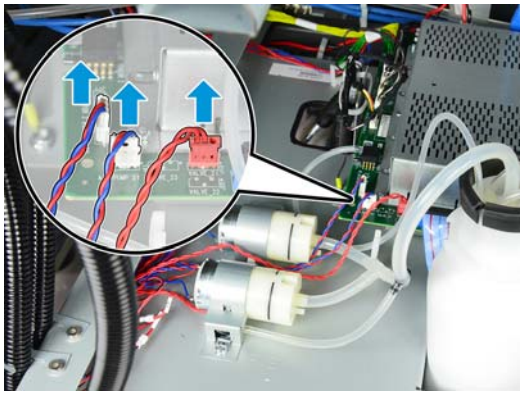
ISM air circuit

Removal

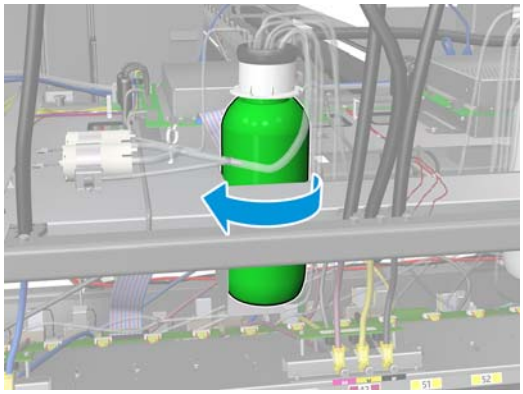
Before proceeding, you are recommended to look at the air pump lifecycle in order to decide whether you need to change only one or all air circuits.

1. Turn off the printer and the power-enable switch.
2. Open the front left panel door.
3. Remove the rear left panel. See Rear left panel assembly on page 636.
4. Remove the bottom left panel. See Bottom left panel assembly on page 636.
5. Disconnect the two air pump cables and the relief valve cable from the corresponding ISS PCA (J17, J22, and J21 connectors for ISS PCA A, and J19, J41, and J13 connectors for ISS PCA B).

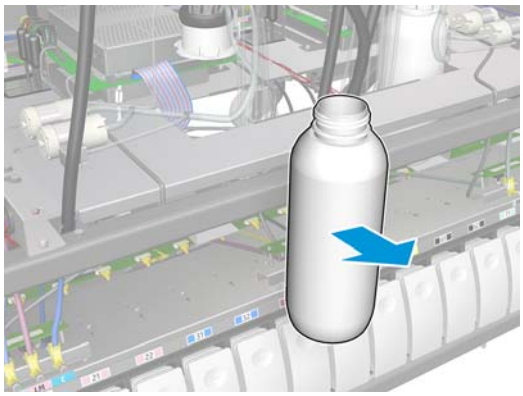




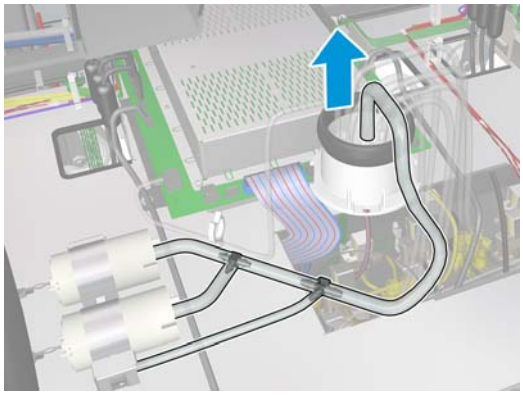
6. Unscrew the bottle from the bottle cap by turning the bottle. Do not try to turn the cap.

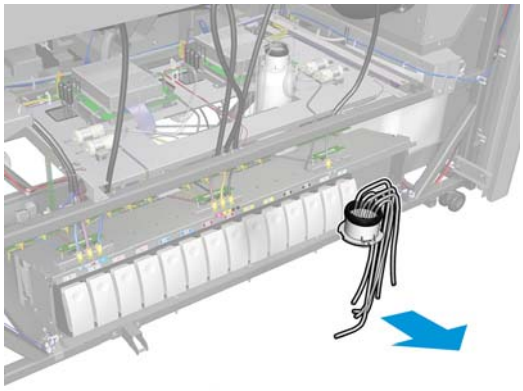


7. Remove the bottle.

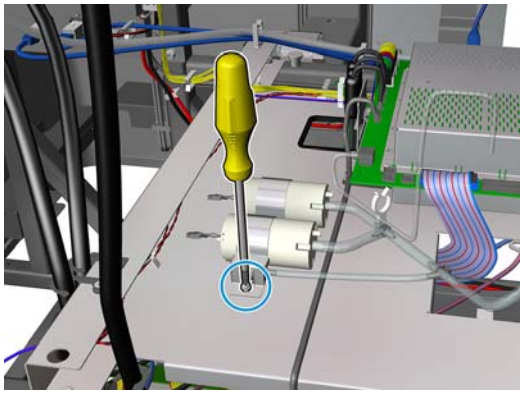


8. Remove the cap of the bottle. The new part comes with a cap, six tubes for the air going to the intermediate tank, and the fittings. Cut each of the air tubes halfway between the intermediate tank and the bottle cap.

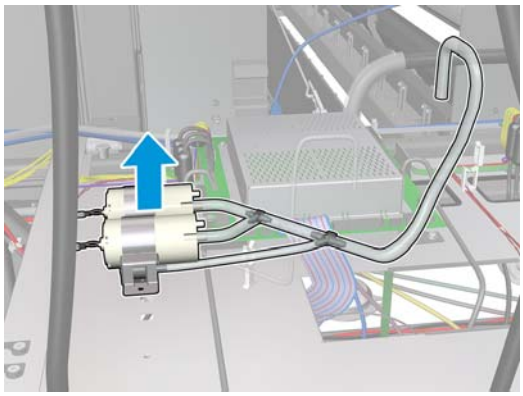




9. Remove the T-10 screw that secures the air pump, and remove the pump. Repeat for all the air pumps.



10. Remove the pumps and all the air tubes connected to the pumps.



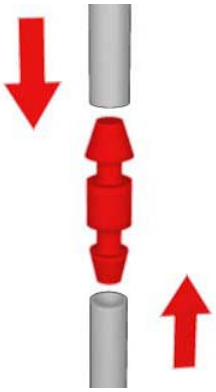
Installation

1. Install the air pumps, and connect the air pump and relief valve cables.
2. Install the bottle and its cap.
3. Connect the air tube to the bottle cap. Cut each of the air tubes halfway between the intermediate tank and the bottle cap.



4. Use the six fittings to reconnect the six air tubes coming from the bottle cap to the six tubes going to the intermediate tanks.

CAUTION: When installing the tubes, never twist the tubes, this will damage them. Always push/slide the tubes until they are completely installed onto the fitting.

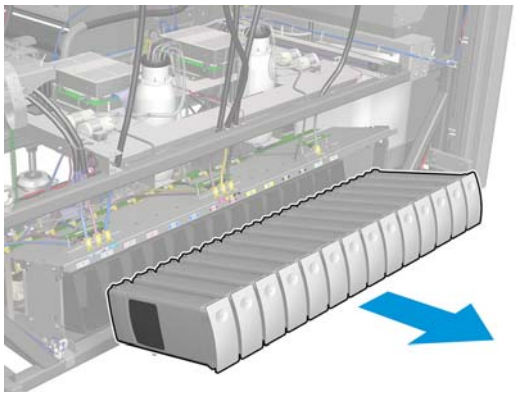


5. Perform the air pressure system diagnostic test to check that it works correctly.

ISM ink circuit module

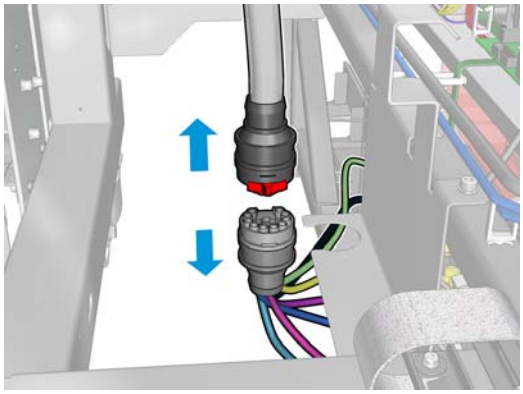
Removal

1. Turn off the printer and the power-enable switch.
2. Open the front left panel door.
3. Remove the rear left panel. See Rear left panel assembly on page 636.
4. Remove the bottom left panel. See Bottom left panel assembly on page 636.
5. Disconnect all the cables from the ink circuit module assembly and unroute them, so that the ink tray is free from cables: mostly, the e-valves and four-way valve cables that connect to both ISS PCAs (A and B).
6. Disconnect all seven ink cartridge connectors.
7. Carefully remove all of the 14 intermediate ink tanks.



CAUTION: Store the intermediate ink tanks vertically. Failure to store them vertically can cause a broken bag.

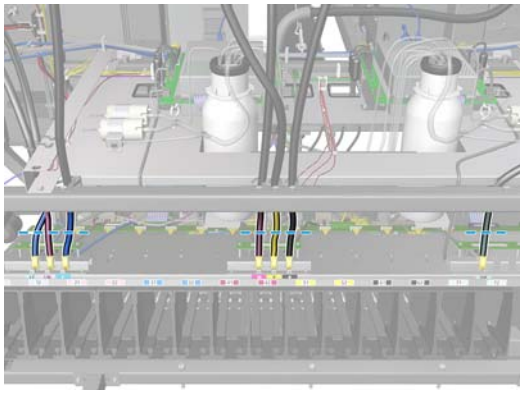
8. Release and disconnect the quick connector. Use a cloth to prevent ink spits or leaks when disconnecting.



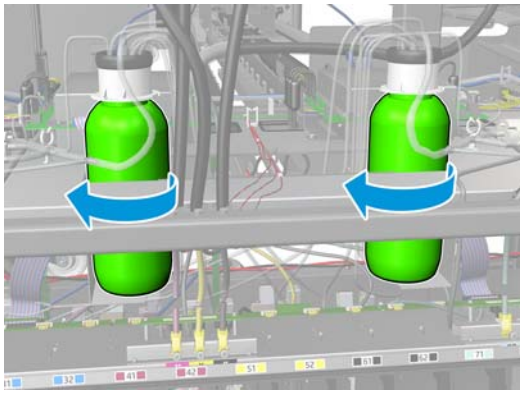
9. Flush all the ink circuit module lines.

10. For all the colors, disconnect the tubes from the ink pressure sensor mount by using the tube cutter to cut off the end of the tube (at least 1 cm from the end). When the new part is installed, the end of the tube will be OK for reconnecting.

NOTE: The cartridge connector ink tubes will have been already disconnected, so ink may run out of the ink tubes when cutting the ink tubes from the pressure sensor.

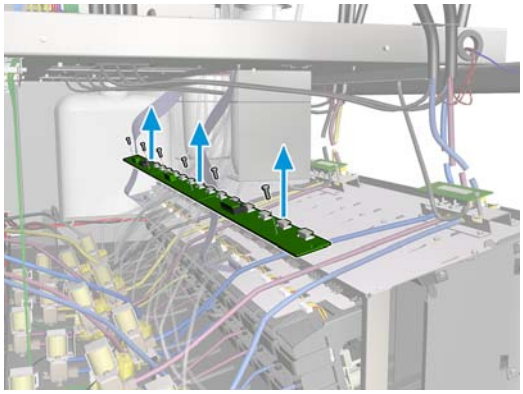


11. Unscrew the bottles from the bottle caps by turning the bottles. Do not try to turn the caps.



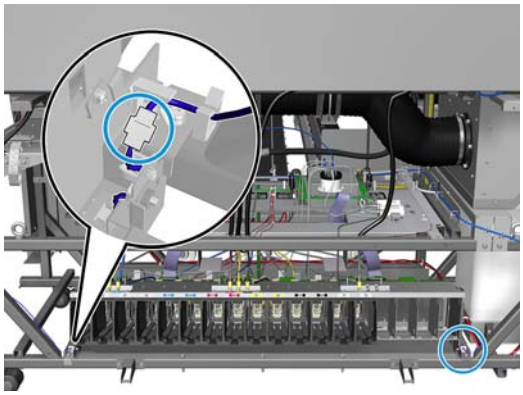
TIP: When removing the ink circuit module assembly, you are recommended to remove the air tubes with their bottle caps from the printer and then reuse the bottle caps for the installation, as it is easier to cut and install the air tubes out of the Ink System Module assembly.

12. Remove the ISM pressure assembly (see ISM pressure sensor assembly on page 659) and save it in a secure place: you will need it later.

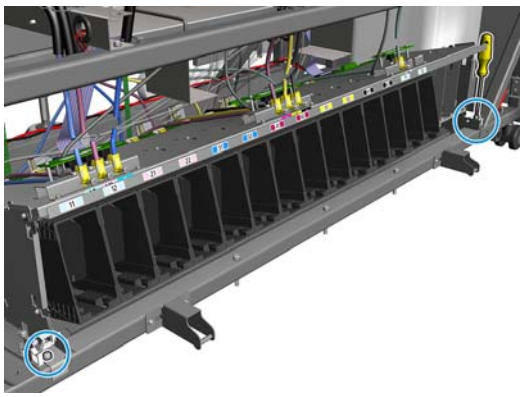


13. Unroute the air tube cables so that the ink circuit module can be removed from the Ink System Module.

14. Disconnect the ink leakage detector cable and unroute it enough to free the ink circuit module assembly.



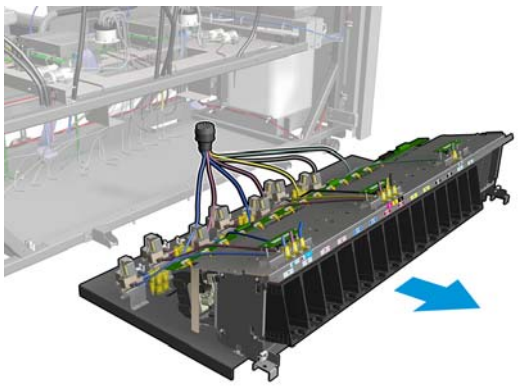
15. Remove the two T-20 screws that secure the ink circuit module.



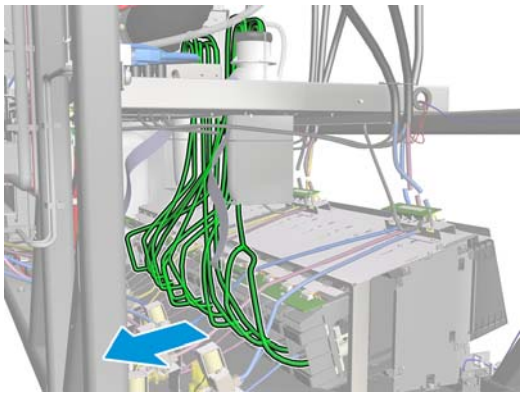
16. Remove the quick connector from its panel support and carefully hold it while removing the ISM ink circuit tray from the ISM assembly.

17. Remove the ink circuit module.

TIP: You will need at least two people.



18. Disconnect the air tubes from the intermediate ink tanks housing.



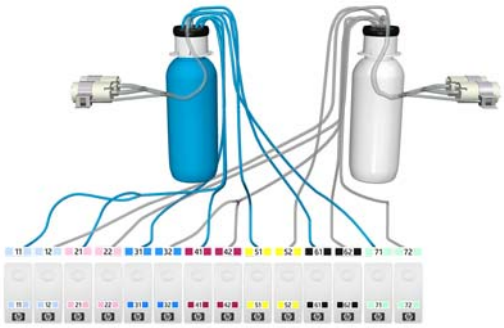
Installation

1. Place the quick connector on its panel support.
2. Screw the ISM ink circuit tray to the ISM structure.
3. Route back and connect the ink leakage detector cable.
4. Route back and connect all the cables from both ISS PCAs (A and B) to their correct places.
5. For each color, install the tube coming from the ink cartridge connector to the ink pressure mount assembly.

CAUTION: When connecting the tubes, use a pushing motion, do not twist the tubes into place as this can cause damage to the tubes, subsequently causing air leaks.

If an ink pressure board is already installed, remove it, as it does not have ink pressure calibration values. Put back the previous ink pressure sensor PCAs, making sure you do not mismatch them.

6. When you reconnect the air tubes, use this illustration as a guide to see which tubes should be connected to which bottles.



7. Place each intermediate ink tank into its housing.
8. Reconnect each cartridge connector to its cartridge.
9. Screw the ISM ink circuit tray to the ISM structure.
10. Purge the tubes.
11. Connect the quick connector to the TRS assembly.
12. Calibrate the ink pressure sensor.

NOTE: You are recommended to take note of the new pressure sensor PCA values, as they are needed for the pressure sensor calibration.

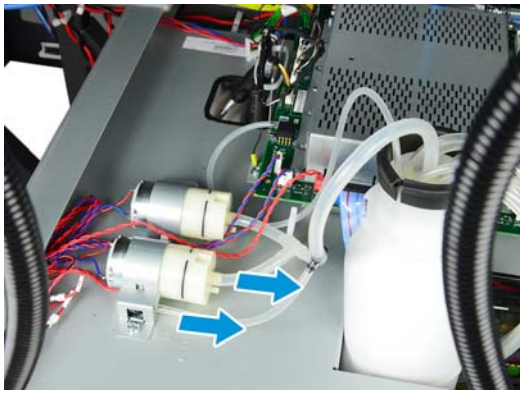
13. When reconnecting the ink tubes to the pressure sensor board, ensure that both pressure values in all ink lines connected to that pressure sensor board are within a maximum of 10% error (compared to the initial pressures). If any ink pressure value is further than 10% from the initial value, purge the air from the ink line using the purge kit.
14. Perform the air pressure system diagnostic test to check that it works correctly.
15. Perform the following reset procedures:
    - Purge supply OP for optimizer ink.
    - Purge supply K for black ink.
    - Purge supply Y for yellow ink.
    - Purge supply M for magenta ink.
    - Purge supply C for cyan ink.
    - Purge supply LM for light magenta ink.
    - Purge supply LC for light cyan ink.

ISM pump and relief valve

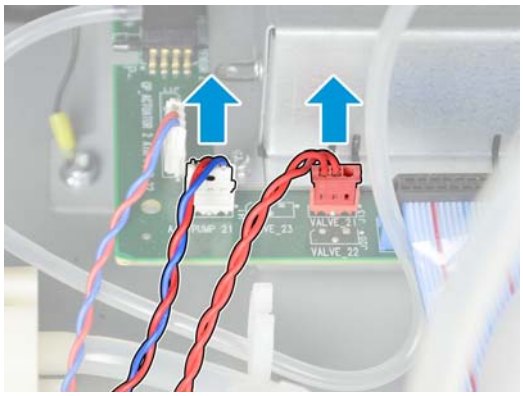
Removal

1. Turn off the printer and the power-enable switch.
2. Open the front left panel door.
3. Remove the rear left panel. See Rear left panel assembly on page 636.
4. Remove the left panel.

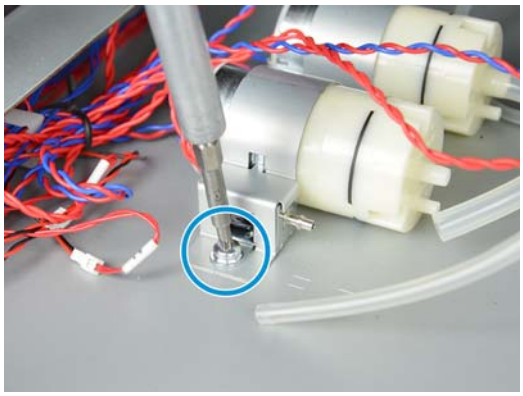
5. Disconnect the two air tubes.



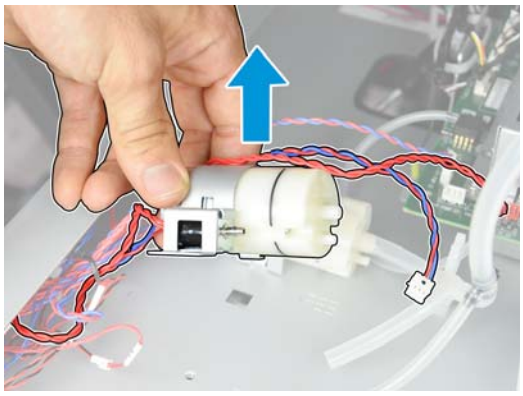
6. Disconnect the pump cable and the relief valve cable.



7. Remove the T-10 screw that secures the ink system pressurization pump and relief valve.



8. Remove the pump.



Installation

▲ Perform the air pressure system diagnostic test to verify that it works correctly.

ISM cables kit

Removal

1. Turn off the printer and the power-enable switch.
2. Open the front left panel door.
3. Remove the rear left panel. See Rear left panel assembly on page 636.
4. Remove the bottom left panel. See Bottom left panel assembly on page 636.
5. Disconnect the cables as described for each cable below.

24V IDS cable (CZ056-50071)

1. Remove the rear right panel. See Rear right panel assembly on page 624.
2. Disconnect the 24V IDS cable from the e-cabinet (IDS connector) and the ISS air connector (located at the quick connector panel support).
3. Unroute the cable.

NOTE: You are strongly recommended to follow the original cable routing.

IDS 12C data cable (CZ056-50053)

1. Remove the rear right panel. See Rear right panel assembly on page 624.
2. Disconnect the IDS 12C cable from the e-box (I2C (J_241) connector) and the ISS air connector (located at the quick connector panel support).
3. Unroute the cable.

NOTE: You are strongly recommended to follow the original cable routing.

ISM power cable split to air tray PCA (CZ056-50262)

1. Disconnect the ISM power cable split to air tray PCA from the ISS air connector (located at the quick connector panel support) and both ISS PCAs (J35 connector for both A and B PCAs).
2. Unroute the cable.

NOTE: You are strongly recommended to follow the original cable routing.

ISM LAN cable split to air tray PCA (CZ056-50263)

1. Disconnect the ISM LAN cable split to air tray PCA from the ISS air connector (located at the quick connector panel support) and ISS PCA A (connector 1).
2. Unroute the cable.

NOTE: You are strongly recommended to follow the original cable routing.

ISM daisy chain cable (CZ056-50250)

1. Disconnect the ISM daisy chain cable from both ISS PCAs (two connectors for PCA A and one connector for PCA B).
2. Unroute the cable.

NOTE: You are strongly recommended to follow the original cable routing.

ISS termination cable (CZ056-50217)

- Disconnect the ISS termination cable from the ISS PCA B (P4 connector).

NOTE: You are strongly recommended to follow the original cable routing.

Intermediate tanks cable (CZ056-50031)

1. Disconnect the intermediate tanks cable from the ISS intermediate tanks interconnect PCA and the ISS PCA: either A (J14 connector) or B (J14 or J15 connector).
2. Unroute the cable.

NOTE: You are strongly recommended to follow the original cable routing.

ISM actuators cable lite (CZ056-50030)

1. Disconnect the intermediate tanks cable from the ISS PCA A (connector 4).
2. Disconnect the ISM actuators cable lite from the electrovalves (green cables), the leakage detector sensor (blue cables), the UI PCA (UI_X connector, where X=4 to 6, yellow cables), and the switch cable air connector (S_X connector, where X=4 to 6, red cables).
3. Unroute the cable.

NOTE: You are strongly recommended to follow the original cable routing.

ISM actuators cable 3 (CZ056-50182)

1. Disconnect the intermediate tanks cable from the ISS PCA A (connector 3).
2. Disconnect the ISM actuators cable 3 from the electrovalves (green cables), the UI PCA (UI_7 connector, yellow cable), and the switch cable air connector (S_7 connector, red cable).
3. Unroute the cable.

NOTE: You are strongly recommended to follow the original cable routing.

ISM actuators cable (CZ056-50029)

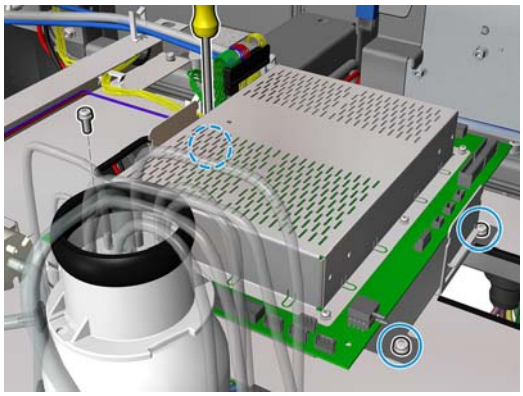
1. Disconnect the intermediate tanks cable from the ISS PCA B (connector 4).
2. Disconnect the ISM actuators cable from the electrovalves (green cables), the leakage detector sensor (blue cables), the UI PCA (UI_X connector, where X=1 to 3, yellow cables), and the switch cable air connector (S_X connector, where X=1 to 3, red cables).
3. Unroute the cable.

NOTE: You are strongly recommended to follow the original cable routing.

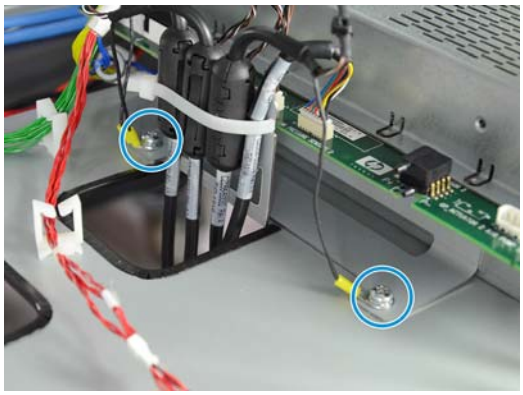
ISS PCA

Removal

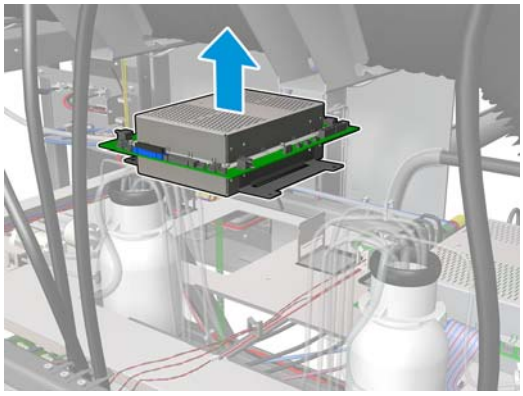
1. Turn off the printer and the power-enable switch.
2. Open the front left panel door.
3. Remove the rear left panel. See Rear left panel assembly on page 636.
4. Remove the bottom left panel. See Bottom left panel assembly on page 636.
5. Disconnect all electrical cables and air tubes connected to the ISS PCA that needs to be replaced. For a complete diagram, see Subsystem block diagrams on page 61.
6. Remove the four T-20 screws that secure the cover of the ISS PCA.



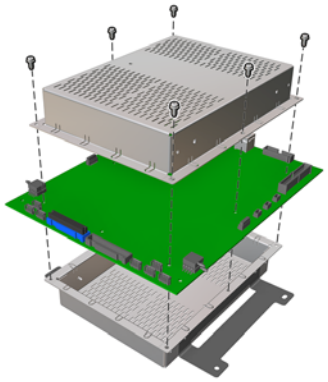
NOTE: Three ground cables are connected to two of the four T-20 screws that hold the ISS PCA.



7. Remove the PCA assembly.



8. Remove the six T-10 screws that secure the top and the bottom covers, and remove the covers, so that the ISS PCA can be removed.



Installation

1. Screw back the ISS PCA top and bottom covers with the six T-10 screws.
2. Screw back the ISS PCA with the four T-20 screws, remembering to reconnect the three ground cables to the correct two T-20 screws.

> ⚠ **CAUTION:** It is important to reconnect the three ground cables to avoid a short circuit.

3. Connect all cables and air tubes connected to the replaced ISS PCA. See Subsystem block diagrams on page 61.

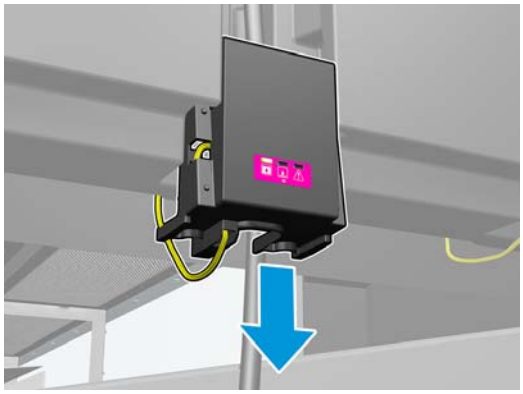
Ink cartridges PCA

Removal

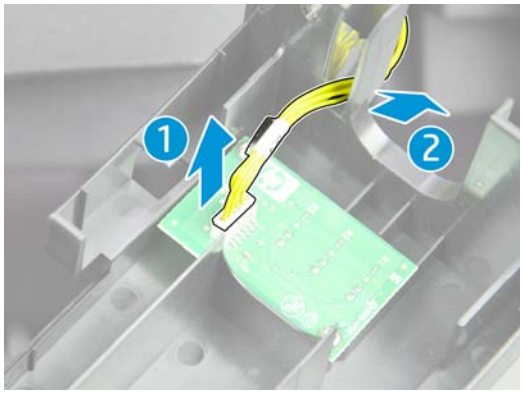
1. Turn off the printer and the power-enable switch.
2. Remove either the top left or the rear left panel.

3. Unscrew and remove the top cover clamp.





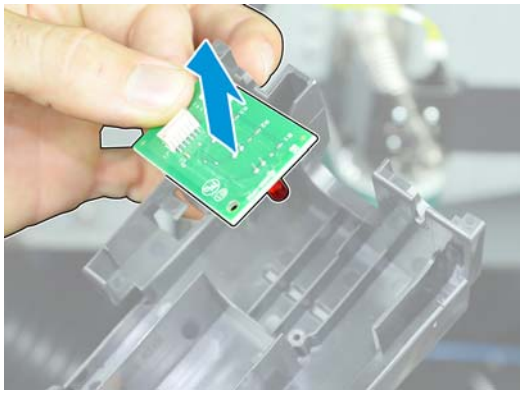
4. Disconnect the ink system LED interface board cable.



5. Disconnect the ink cartridge connector from the ink cartridge.
6. Remove the two T-10 screws that secure the ink cartridges PCA.



7. Remove the ink cartridges PCA.



Installation

▲ After installation, perform the ink cartridge LEDs diagnostic test to check that the new service part works correctly.

ISS intermediate tanks interconnect PCA

Removal

1. Turn off the printer and the power-enable switch.
2. Remove the rear left panel. See Rear left panel assembly on page 636.
3. Remove the bottom left panel. See Bottom left panel assembly on page 636.
4. Disconnect the intermediate tanks cable.
5. Remove the two T-10 screws that secure the ISS intermediate tanks interconnect PCA and remove the PCA.

Installation

▲ Insert the new PCA, taking care not to tighten any ink tube or break the ink tube circuit.

ISM ink leakage detector

Removal

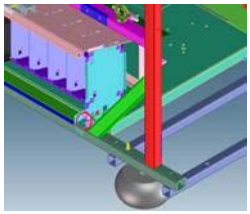
1. Turn off the printer and the power-enable switch.
2. Remove the bottom left panel. See Bottom left panel assembly on page 636.
3. Clean the ink leakage detector surface and ensure there are no ink tube leakages.

   If necessary, use the tube repair kit to fix the ink leak.
4. Disconnect the ink leakage detector from its air connector and unroute its cable. The ink leakage detectors are located on each side of the ink circuit module.
5. Remove the T-20 screw that holds the ink leakage support and remove it.
6. Remove the ink linkage detector.

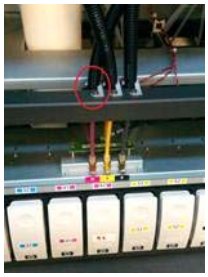
If an ink leakage is detected

1. Disconnect the ink leakage sensor cables on both sides and unroute enough of them to free the ink tray.

2. Remove the T-15 screw on each side.



3. Remove the screws that hold the clamps to the structure, and free the seven clamps from the ink cartridge connector tubes.



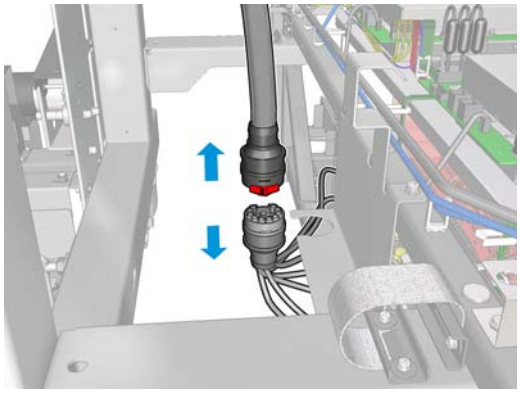
4. Rotate the ink tray so that the outer side is raised about 5 to 7 cm. Keep the ink tray raised in that position by using an object to wedge it.
5. Clean the ink leakage using the cleaning kit.
6. Remove the wedge and reverse all the preceding steps.

Ink system compartment

The ink system compartment must be removed in order to service some components of the scan axis.

Removal

1. Turn off the printer and the power-enable switch.
2. Remove the rear left panel. See Rear left panel assembly on page 636.
3. Open the front left panel door.
4. Disconnect the quick connector.

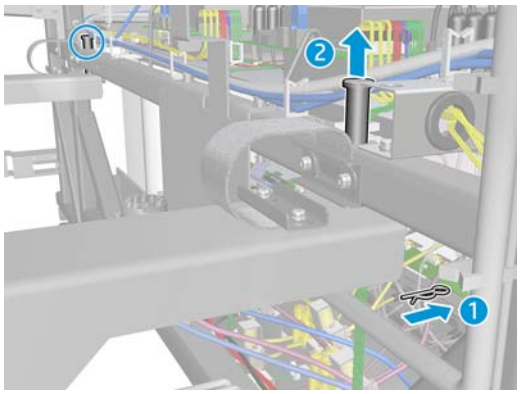


5. Disconnect the vapor removal exchanger box to curing pipe from the curing assembly. See Vapor removal exchanger box to curing pipe on page 877.

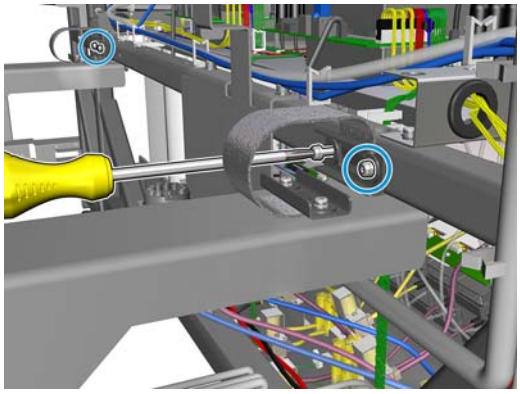


6. Disconnect the power and data cables attaching the ISM to the printer from their air connectors, located at the quick connector panel support.

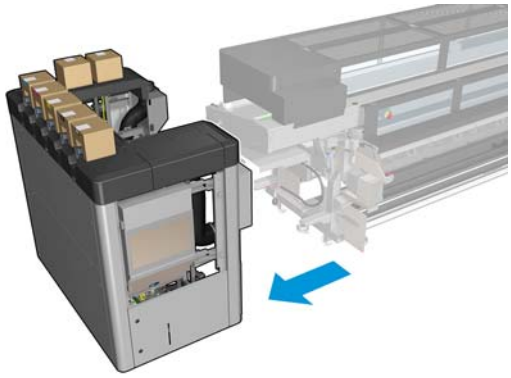
7. Remove the two pins that secure the ink system compartment.



8. Remove the four TXYZ screws that secure the ink system compartment to the frame.



9. Roll the ink system compartment away from the printer (it has wheels).



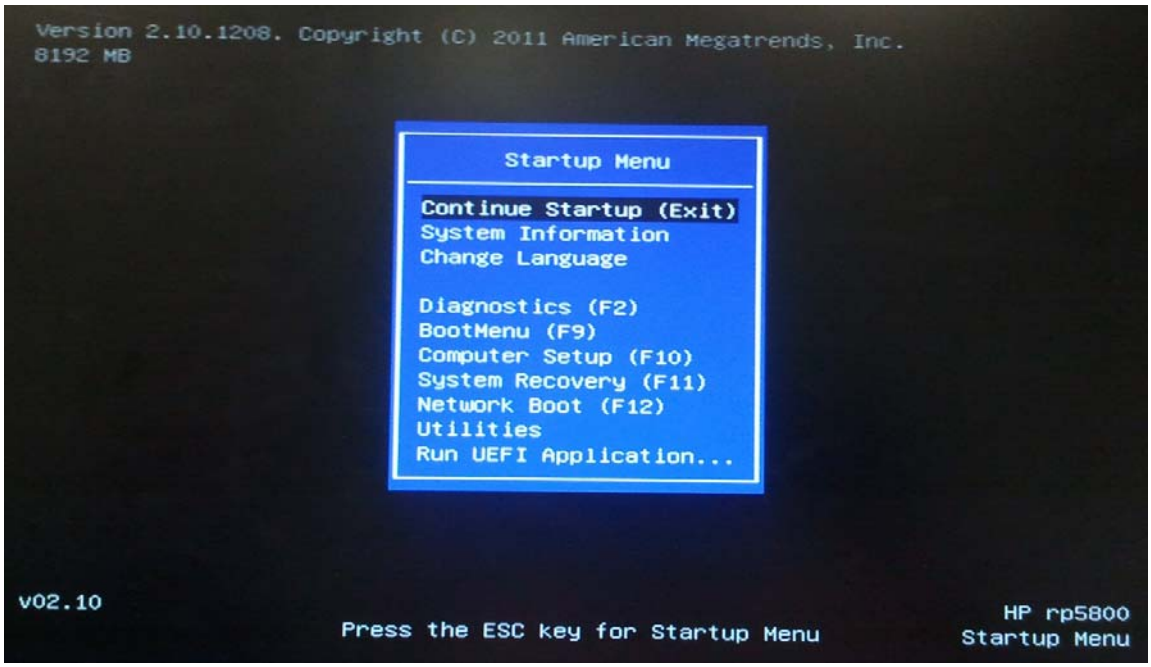
Internal Print Server computer installation and setup

The following sections describe how to install and configure these components:

- Computer BIOS settings
- Windows 7 operating system
- Loading ripped files as sample prints for printer setup and troubleshooting
- The Internal Print Server software
- Call Me @HP and Camera software
- Symantec antivirus software

BIOS configuration

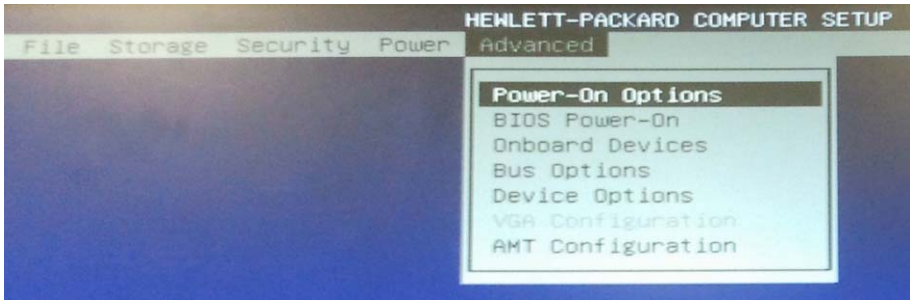
1. When starting the computer, press the Esc button repeatedly until the BIOS setup window appears.



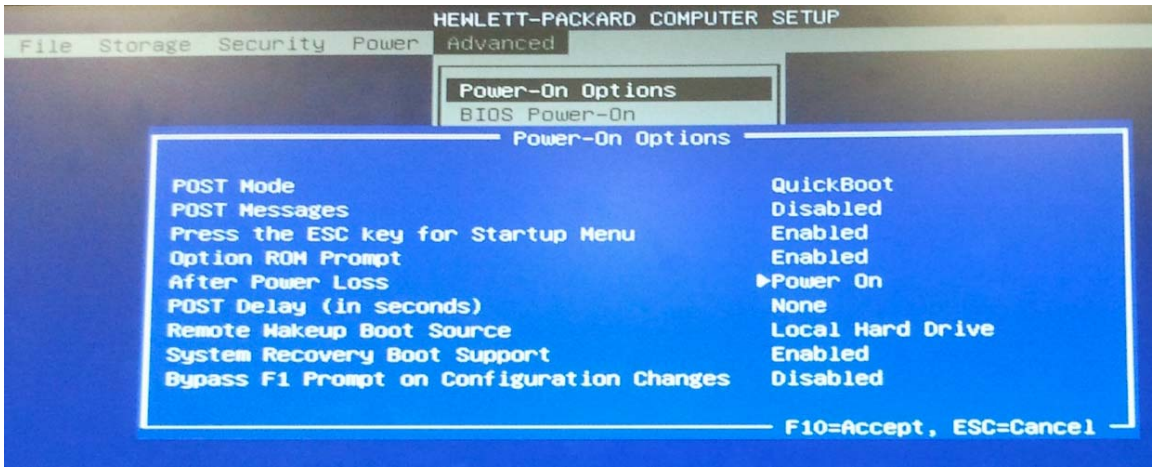
2. Press F10 to enter Computer Setup.



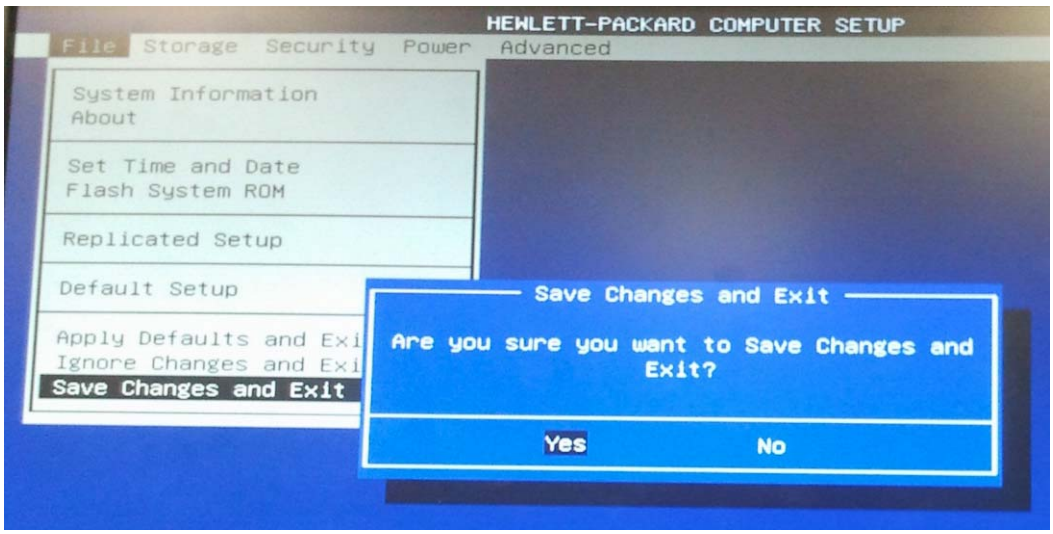
3. Select **Power-On Options** from the **Advanced** tab.



4. Set the **After Power Loss** option to **Power On**.



5. Save changes and exit.



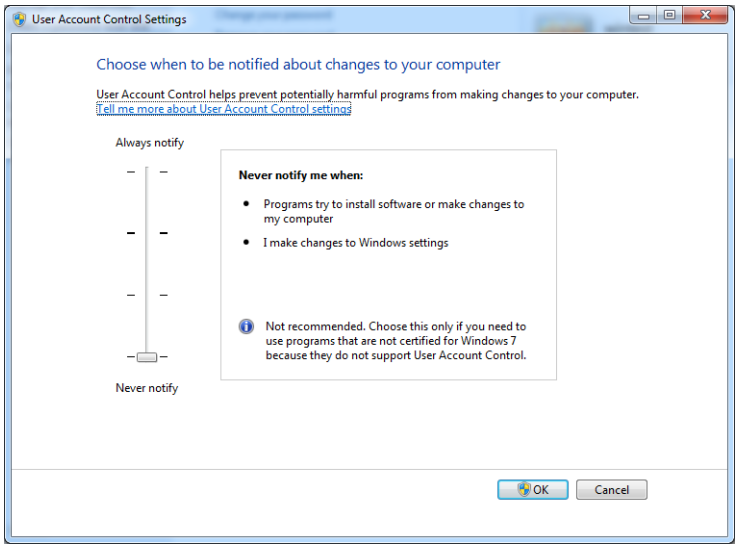
Operating system configuration

During the operating system installation, when prompted:

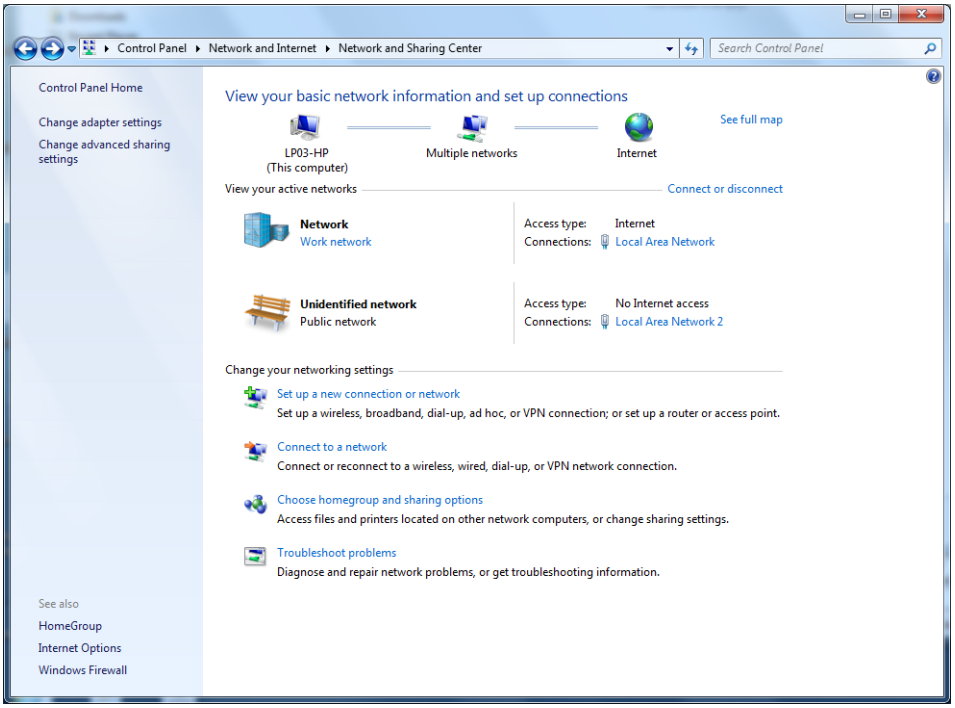
1. Create a user account with the username **hplatex** and no password. The customer should set a password, but should not change the username.
2. Give the computer the hostname **hplatex-IPS**. If the customer has more than one HP Latex printer, use hostnames **hplatex-IPS00**, **hplatex-IPS01**, and so on.

Configuring Microsoft Windows 7 Enterprise

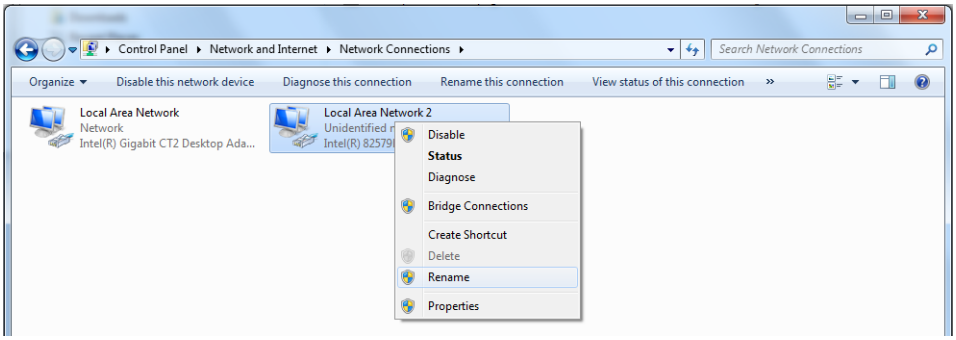
1. Log in with the **hplatex** username.
2. Go to **Control Panel** > **User Accounts and Family Safety** > **User Accounts** > **Change User Account Control settings**, and move the slider to **Never notify**, which disables User Access Control.



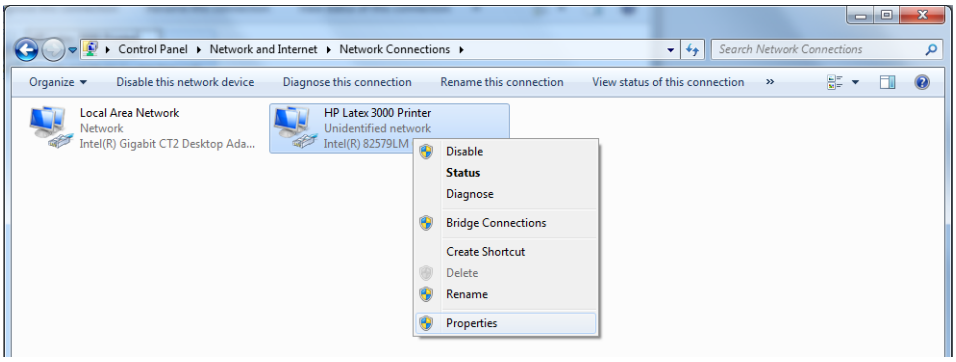
3. Configure the LAN cards as follows:
   a. Go to the **Control Panel** > **Network and Internet** > **Network and Sharing Center** > **Change adapter settings**.



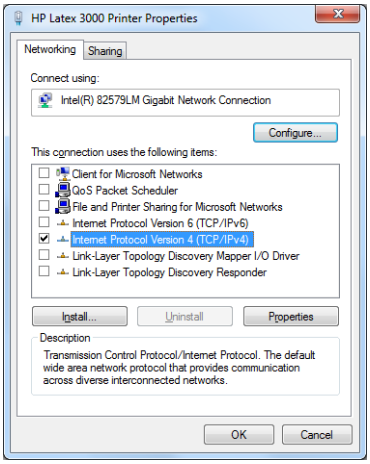
b. Right-click **Intel® 82579LM Gigabit Network Connection** and click **Rename**. Set the name of the connection to **HP Latex 3000 Printer**.



c. Right-click the **HP Latex 3000 Printer** icon and click **Properties**.

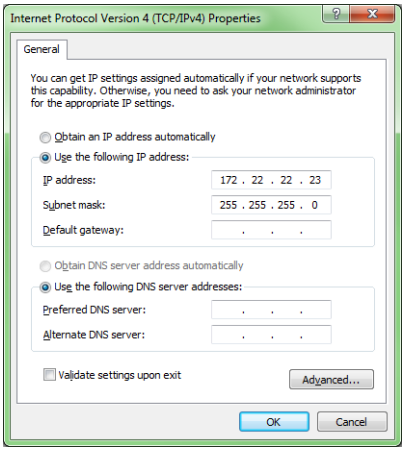


d. Uncheck all boxes except **Internet Protocol Version 4 (TCP/IPv4)**.



e. Click the **Properties** button for Internet Protocol Version 4 (TCP/IPv4).

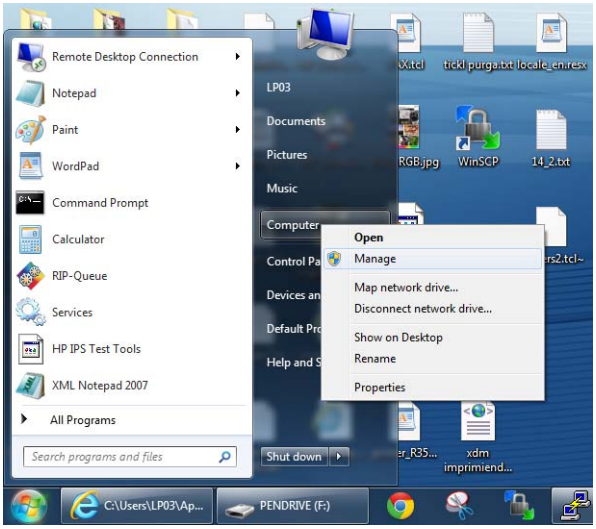
f. Set the static IP address to 172.22.22.23 for the computer (172.22.22.22 is used for the printer), and set the subnet mask to 255.255.255.0.



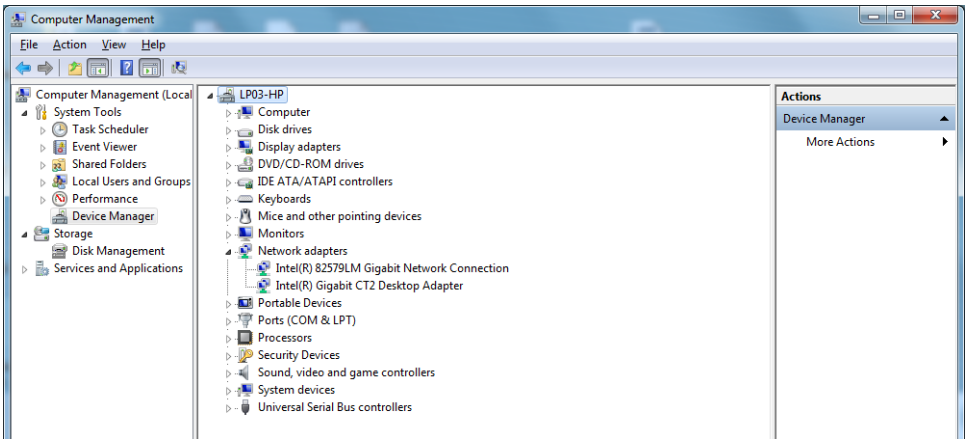
g. Click **OK** to accept the changes.

h. In some cases LAN cards may not be correctly configured for high speed. Check that these values are correct and, if not, change them.

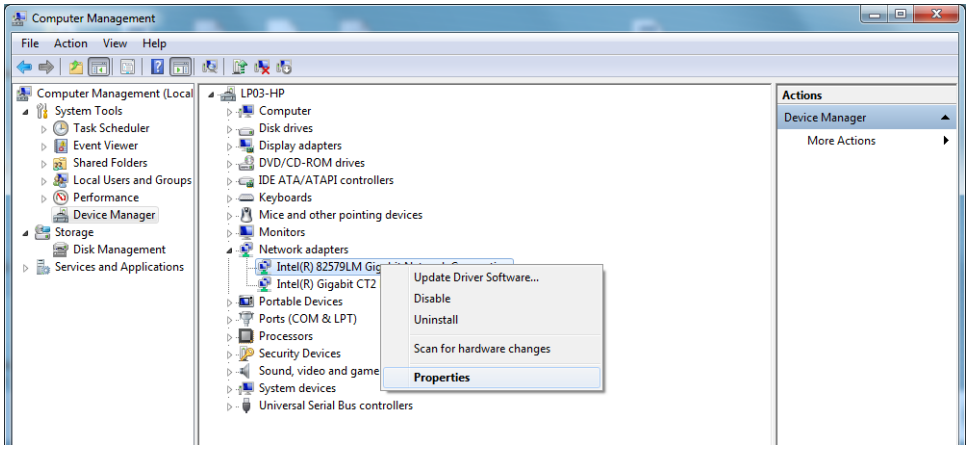
- Go to the start menu, right-click **Computer** and select **Manage**.



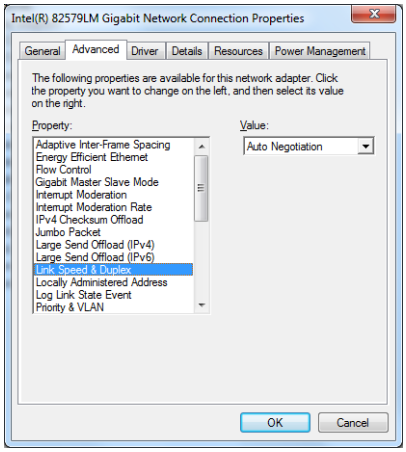
- Select **Device Manager** in the left column and open the **Network adapters** subsection.



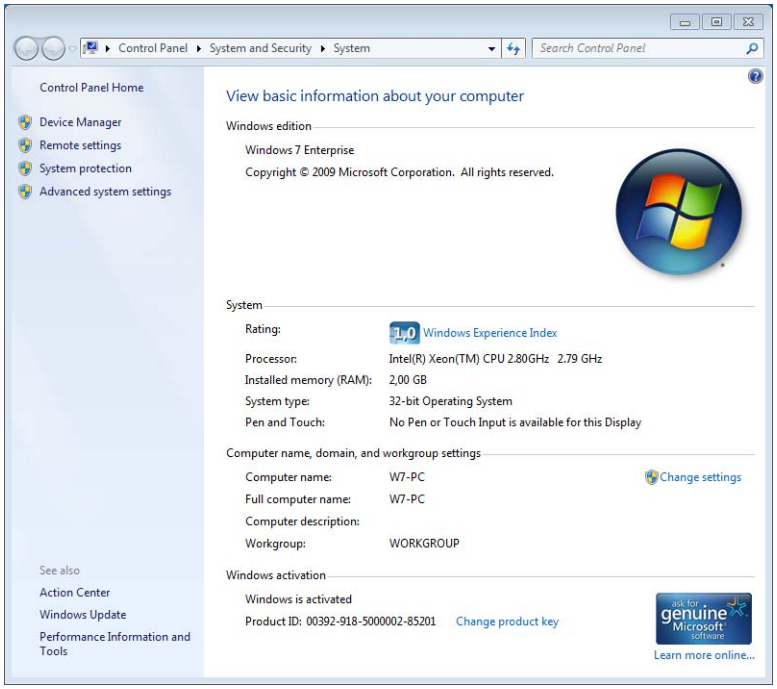
- Right-click each network adapter and select **Properties**.



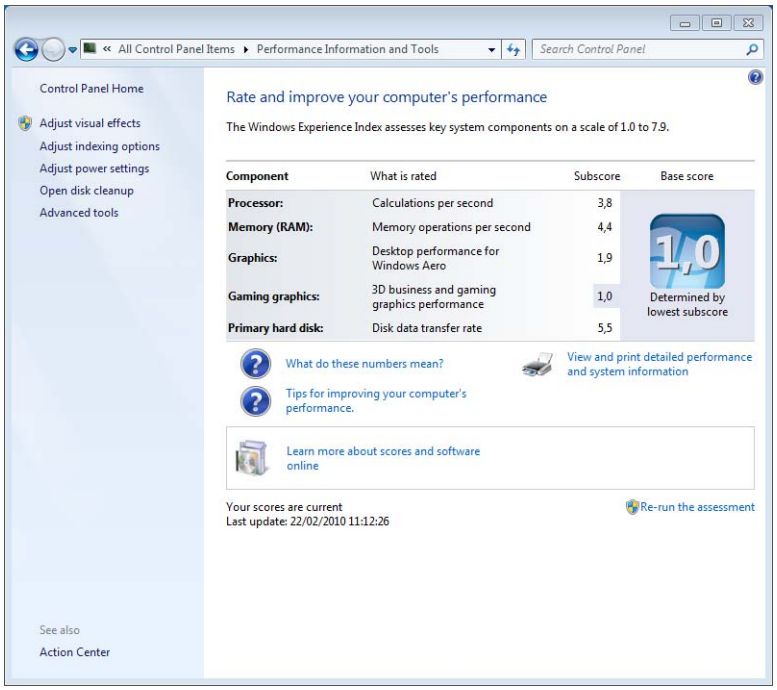
- From the **Advanced** tab, select the **Link Speed & Duplex** property (called **Speed & Duplex** in some cases). Ensure that the value is set to **Auto Negotiation**.



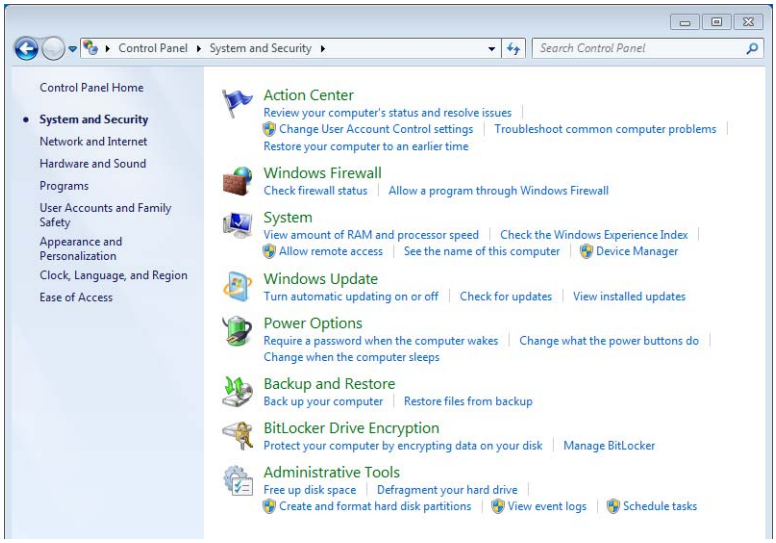
4. To update the computer's performance rating, right-click **Computer**, then click **Properties**, then **Windows Experience Index**.



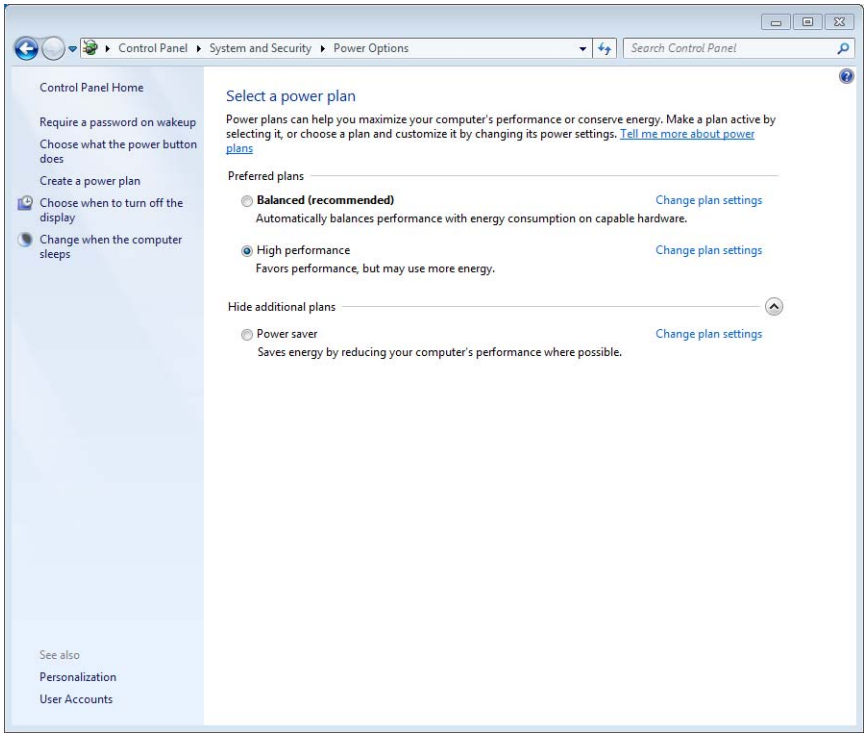
You should see something like this:



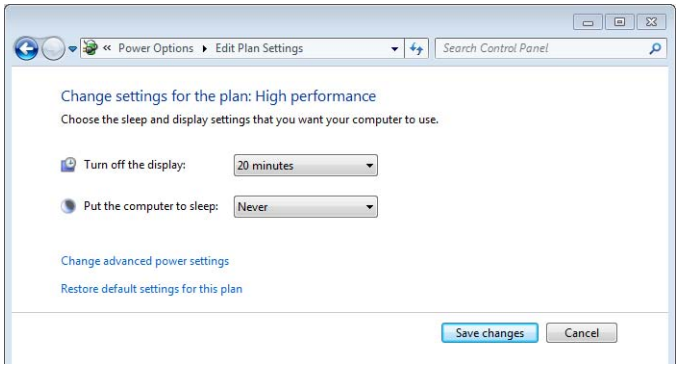
5. Go to **Control Panel** > **System and Security** > **Power Options**.



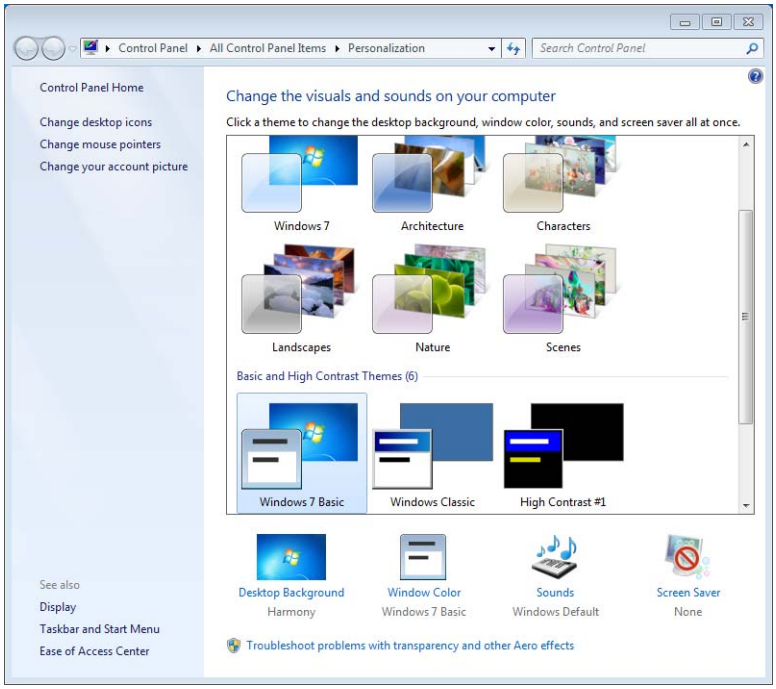
6. Select **High performance** and **Change plan settings**.



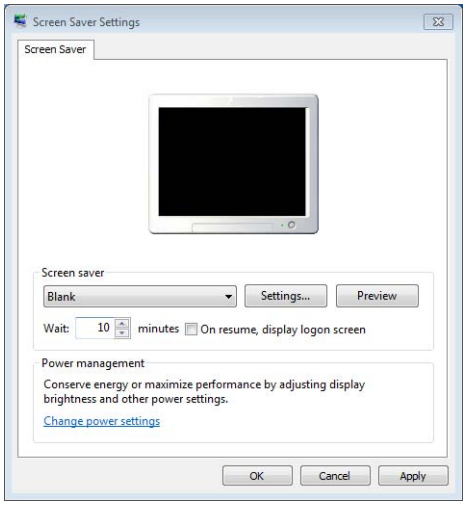
7. Disable sleep mode by setting **Put the computer to sleep** to **Never**.



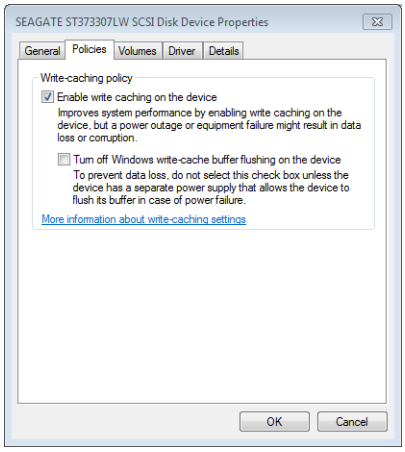
8. Right-click on the desktop, then select **Personalize** > **Screen Saver**.



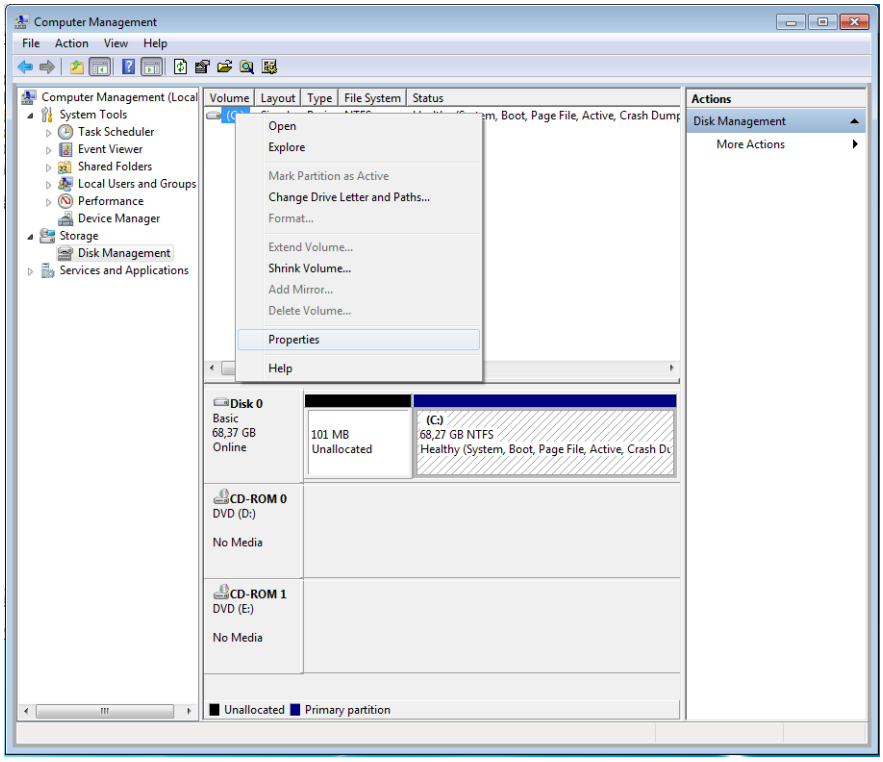
9. Set the screen saver to **Blank** to avoid potential performance problems.



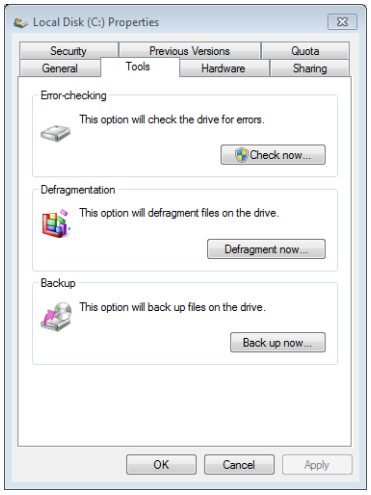
10. From the start menu, right-click **Computer**, then click **Manage** > **Device Manager** > **Disk drives**. Select the hard disk drive, then **Properties** > **Policies**, and check the box **Enable write caching on the device**.



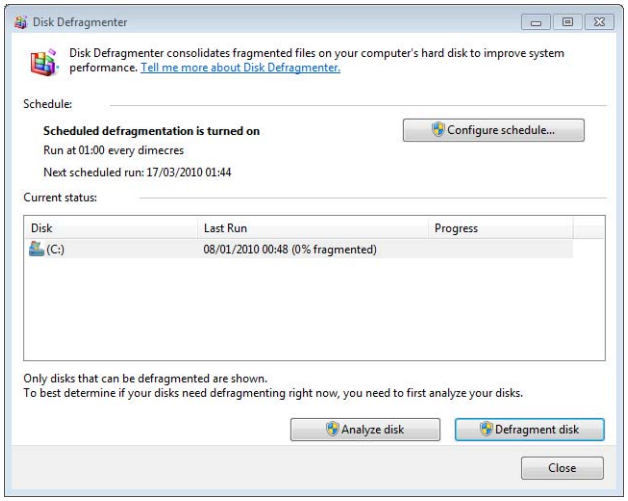
11. From the start menu, right-click **Computer**, then click **Manage** > **Disk Management**. Right-click **C:**, then click **Properties**.



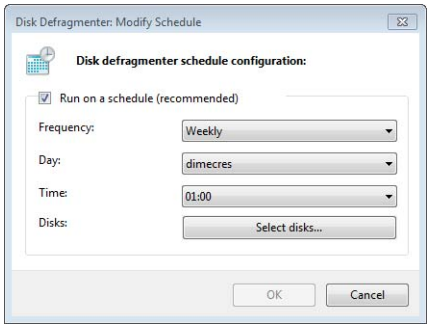
12. On the **Tools** tab, press the **Defragment now** button.



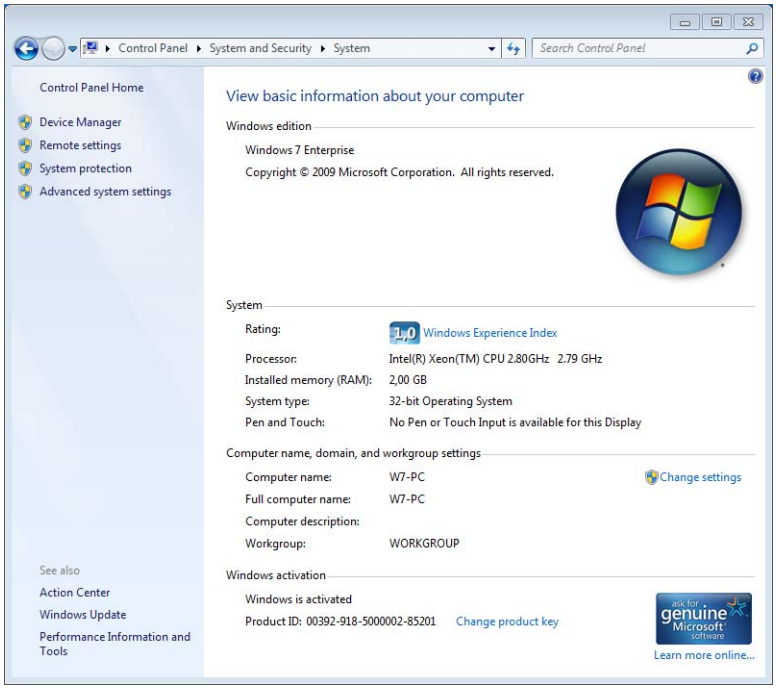
13. Press the **Configure schedule** button.



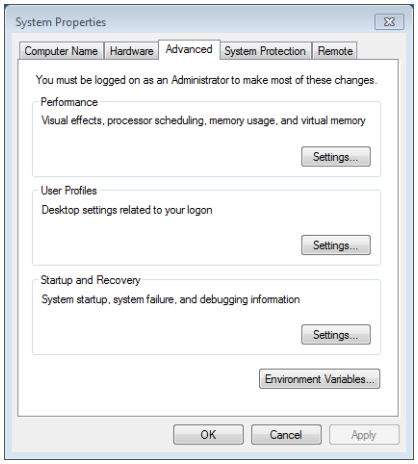
14. Set the disk defragmenter to run weekly.



15. From the start menu, click **Control Panel** > **System and Security** > **System** > **Advanced system settings**.

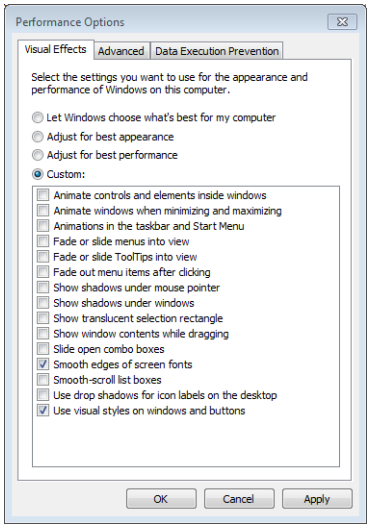


16. On the **Advanced** tab, press the **Settings** button in the Performance section.

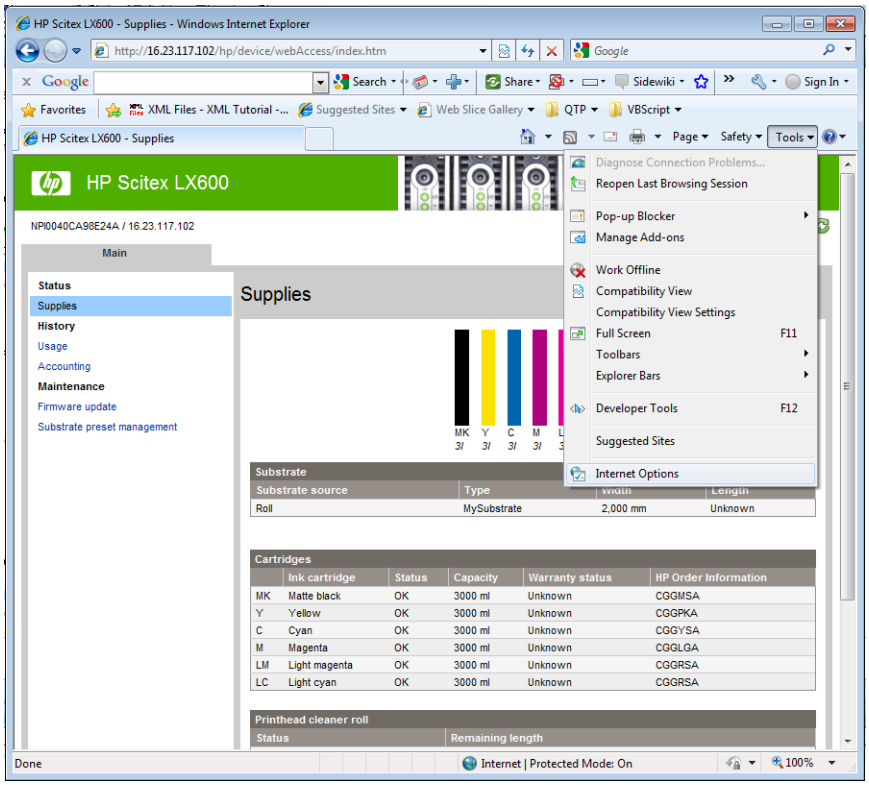


17. On the **Visual Effects** tab, select **Custom**, then check the following boxes and uncheck the others:

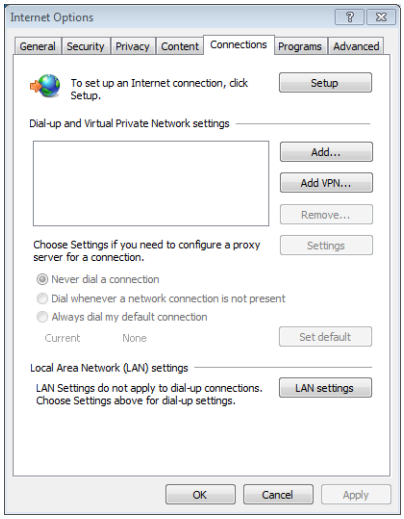
- Enable Desktop composition
- Enable transparent glass
- Smooth edges of screen fonts
- Use visual styles on windows and buttons



18. In Internet Explorer, select **Internet Options** from the **Tools** menu.

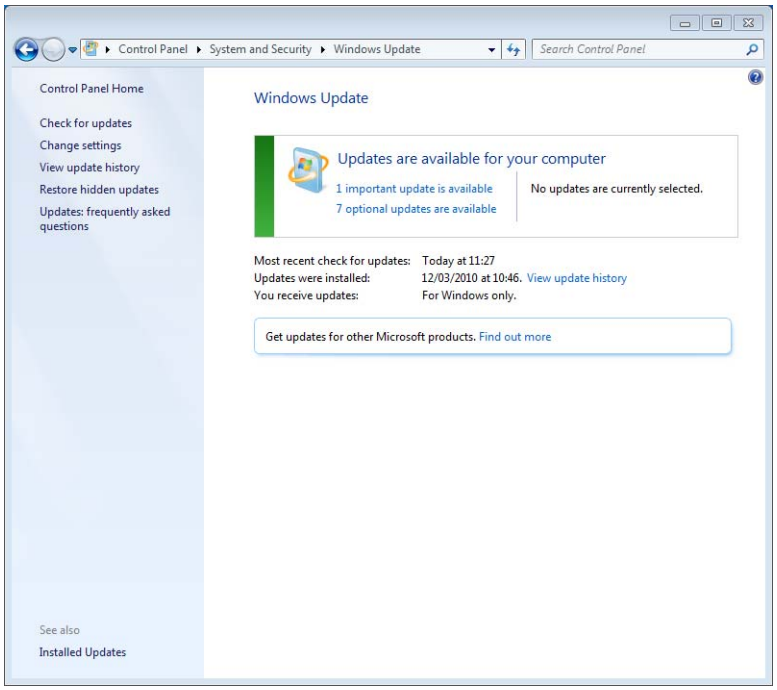


19. On the **Connections** tab, press the **LAN settings** button. Then check the box **By-pass proxy server for local addresses**, if needed.

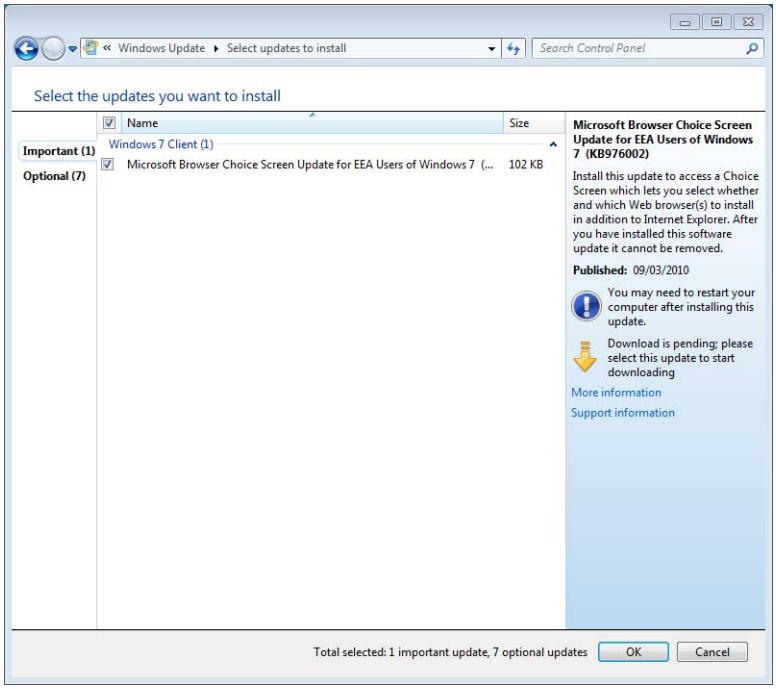


20. Ensure that the computer is connected to the Internet, and has access to http://windowsupdate.microsoft.com/.

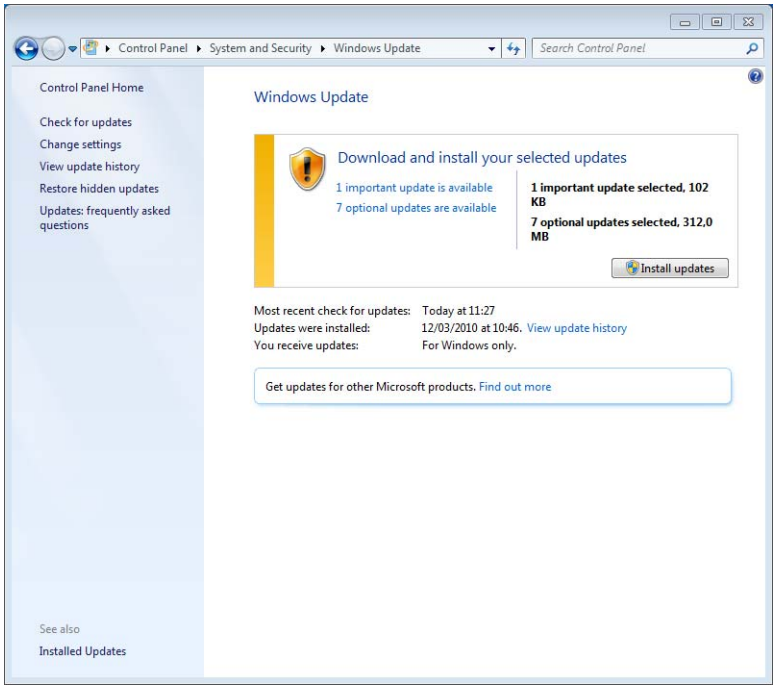
21. From the start menu, select **All programs** > **Windows update** > **Check for updates**.



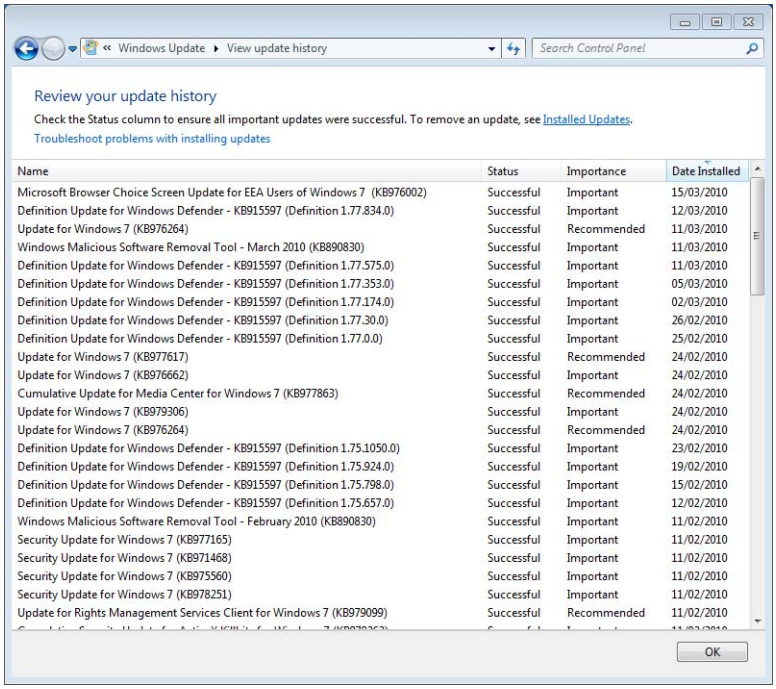
22. Click the important updates, and ensure that they are all checked. Click **OK**.



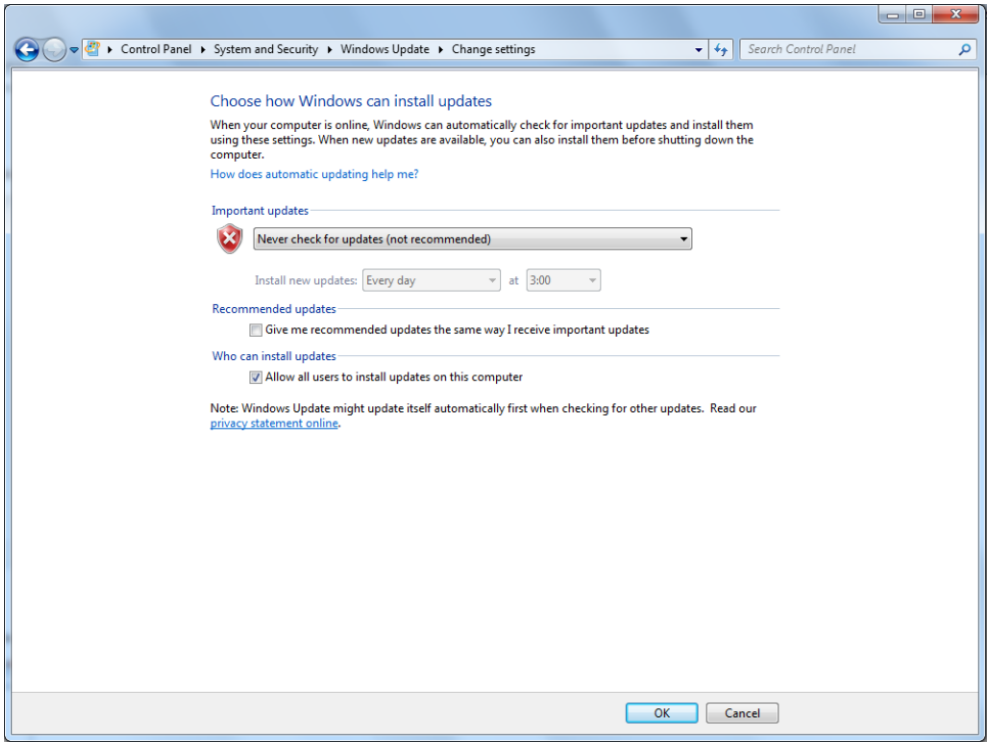
23. Press the **Install updates** button. Some updates may require you to restart the computer.



24. Click **View update history** to check that everything was installed successfully. Then click **OK**.



25. On the Windows Update main page, change the setting to **Never check for updates**.

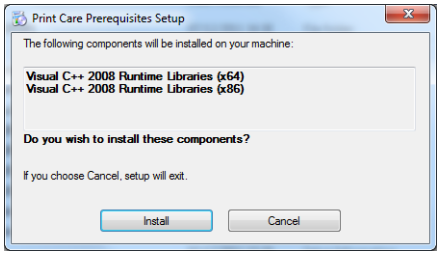


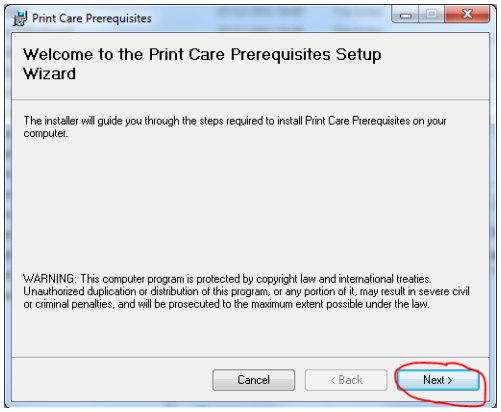
Print Care installation

1. Insert the Print Care disc.
2. Run **PrintCareSetup.exe**.

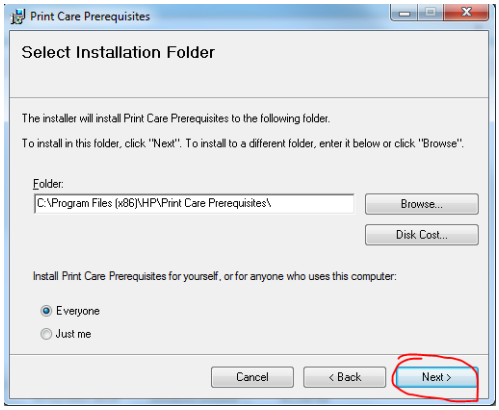
3. Print Care installs some prerequisites. Follow the instructions on the screen.

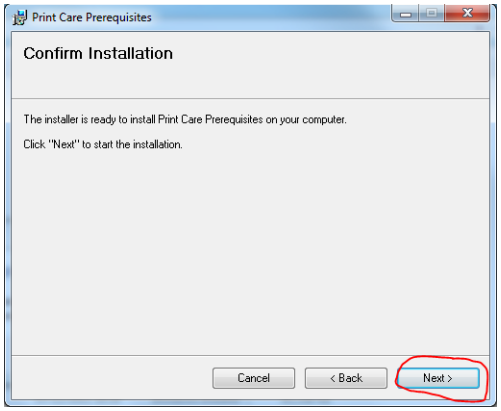


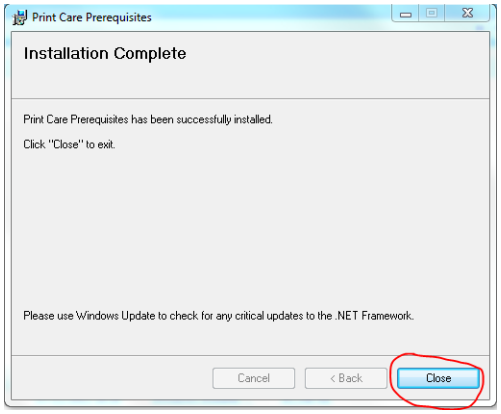




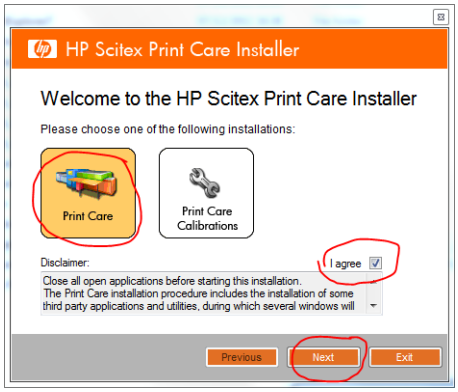
4. Continue following the instructions on the screen.



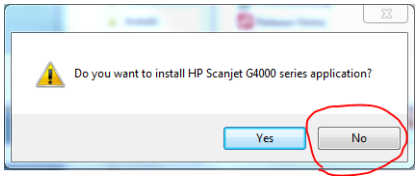




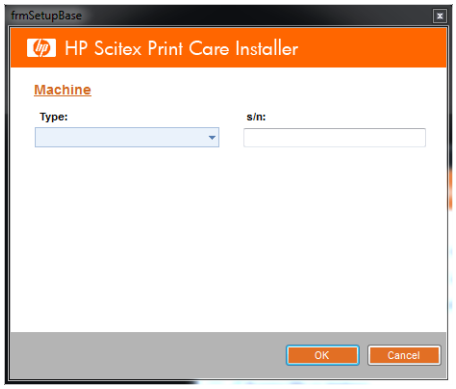
5. It is now time to install Print Care. Select **Print Care** (not **Print Care Calibrations**), check the **I agree** box, then press **Next**.



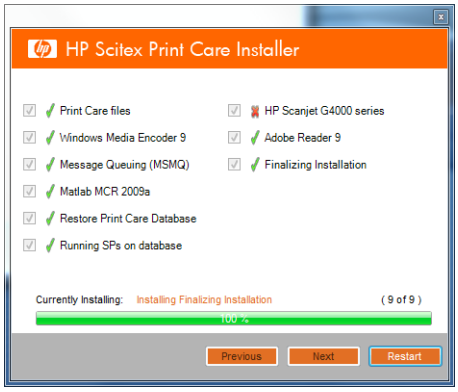
6. Do not install the HP Scanjet G4000 series application.



7. Set **Latex3000** as the machine type, and enter the printer's serial number.



8. The installation proceeds automatically. Restart the computer when prompted.



9. When Print Care has been installed, run **PrintCareUpdate.exe** to update the software to the latest version. You may need to restart the computer after updating.

Ripped files

Copy the following ripped files from the disc to the following locations on the computer's hard disk:

- C:\Users\hplatex\Documents\HP IPS\Test Plot\ripped Photorealistic
- C:\Users\hplatex\Documents\HP IPS\Test Plot\ripped SAV Gloss

Internal Print Server installation

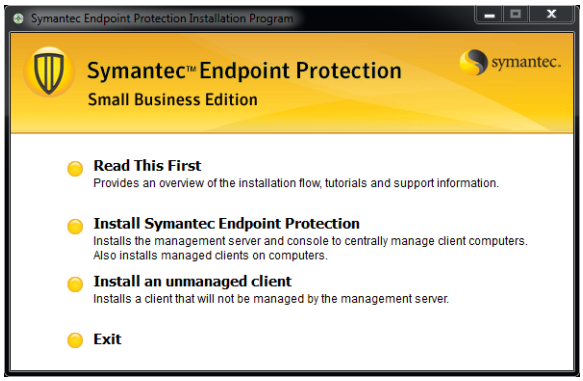
1. Log on to the computer with the username `hplatex`.
2. Download the ***.msi** and **setup.exe** files and copy them to the computer's desktop.
3. Run the **setup.exe** file and click the **Next** buttons until the message `IPS was installed successfully` appears.
4. When the Internal Print Server has been successfully installed, you can delete the ***.msi** and **setup.exe** files from the desktop.

Proxy Service installation

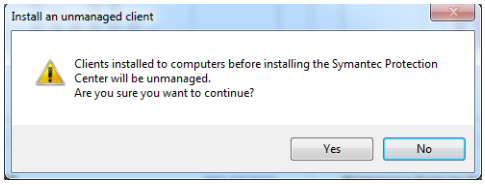
1. Log on to the computer with the username `hplatex`.
2. Download the **ProxyService.msi** and **setup.exe** files and copy them to the computer's desktop.
3. Run the **setup.exe** file and click the **Next** buttons until the message `ProxyService has been installed successfully` appears.
4. When the proxy has been successfully installed, you can delete the **ProxyService.msi** and **setup.exe** files from the desktop.

Symantec antivirus installation

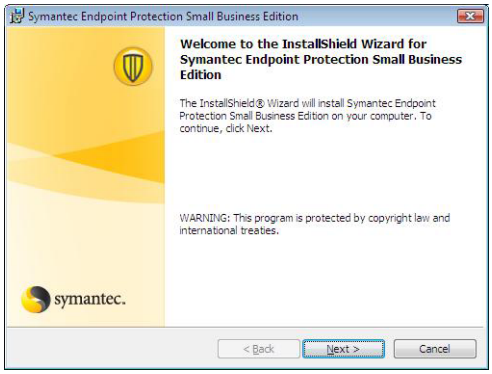
1. Log on to the computer with the username `hplatex`.
2. Insert the Symantec Endpoint Protection Small Business Edition DVD.
3. The **setup.exe** file is run automatically. When the following window appears, select **Install an unmanaged client**.



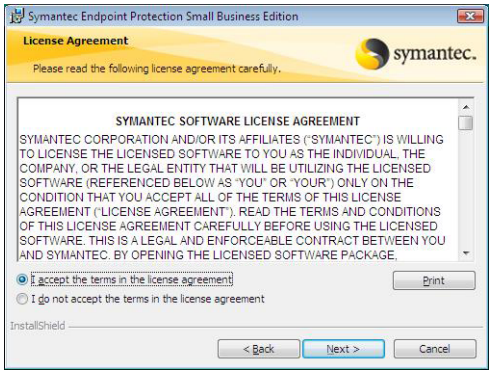
4. In the following window, press the **Yes** button to perform standalone installation.



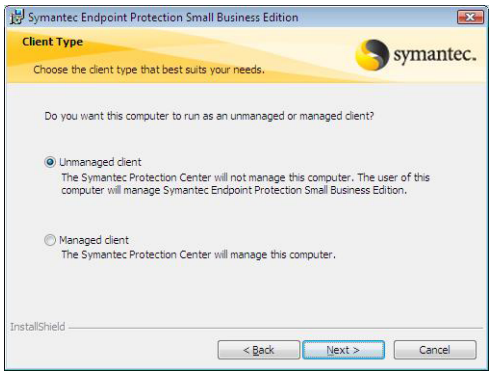
5. Press **Next** to continue.



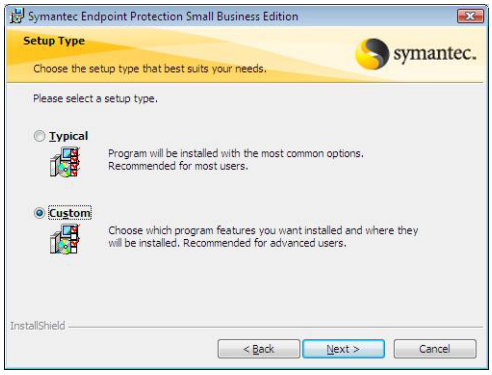
6. Accept the license agreement, and press **Next** to continue.



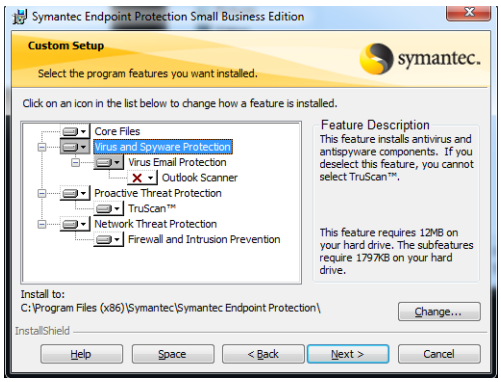
7. Select **Unmanaged client**, and press **Next** to continue.



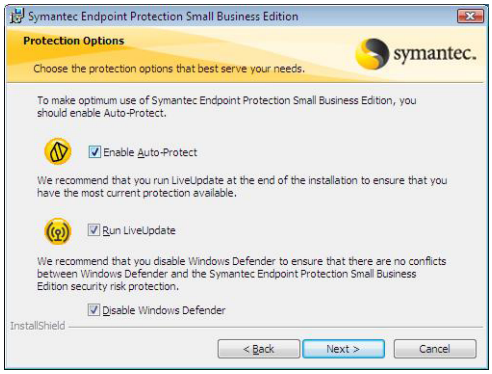
8. Uncheck **Custom**, and press **Next** to continue.



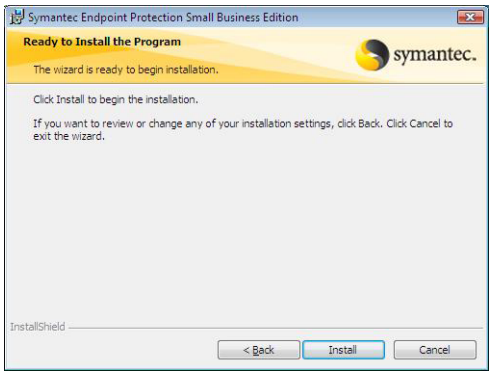
9. Select **Virus Email Protection**, and press **Next** to continue.



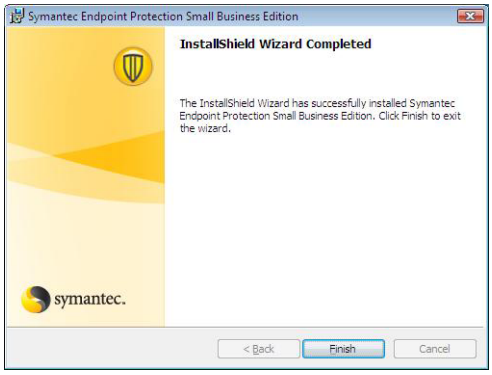
10. Ensure that all three boxes are checked, and press **Next** to continue.



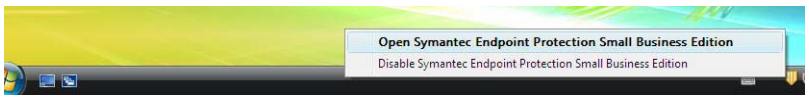
11. Press **Install** to install the software.



12. Press **Finish** to finish the installation.



13. When the software has been installed, right-click the golden shield icon near the right-hand end of the taskbar, and click **Open Symantec Endpoint Protection Small Business Edition**.



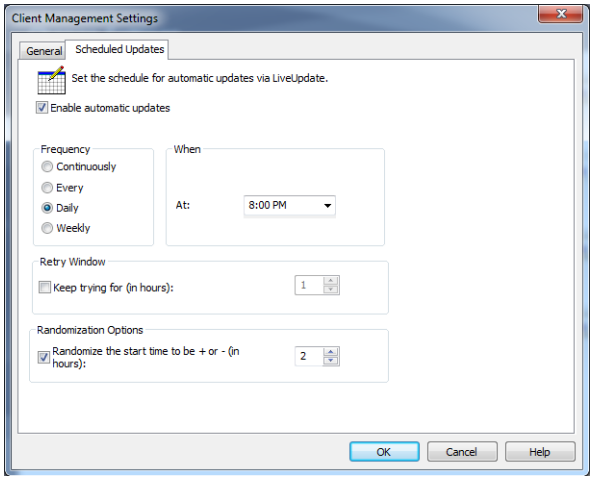
14. Click **LiveUpdate** on the left side of the window, and follow the instructions on the screen to update the software.



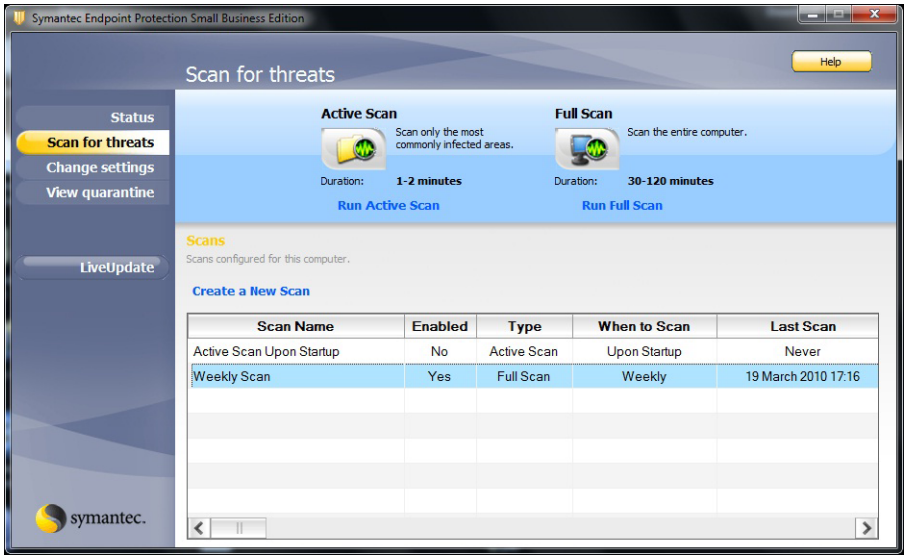
15. When the software update has finished, click **Change settings** on the left, then press the **Configure Settings** button on the Client Management row.



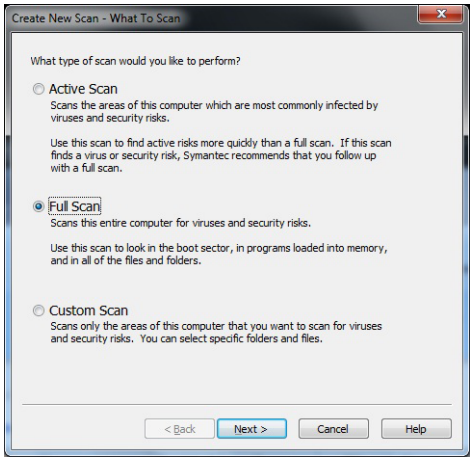
16. In the **Scheduled Updates** tab, enable automatic daily updates, then press **OK**.



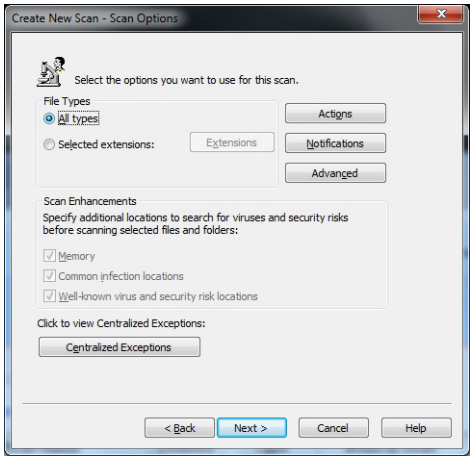
17. Click **Scan for threats** on the left, then **Create a New Scan**.



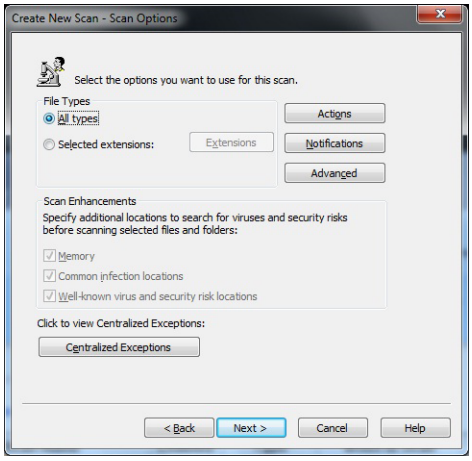
18. Select **Full Scan**, and press **Next** to continue.



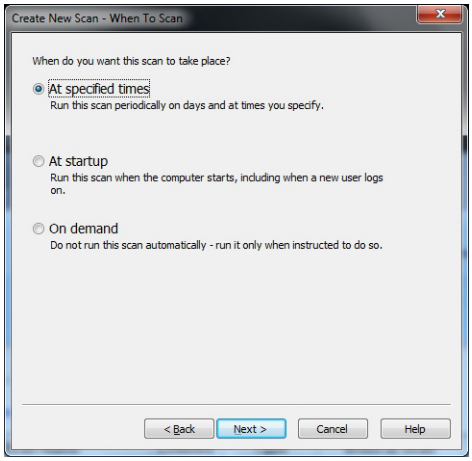
19. Select **All types**, and press **Next** to continue.



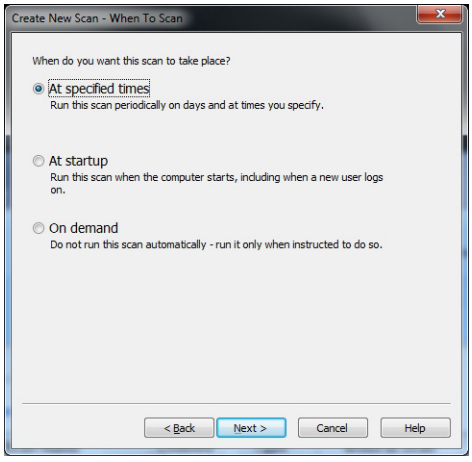
20. Select **At specified times**, and press **Next** to continue.



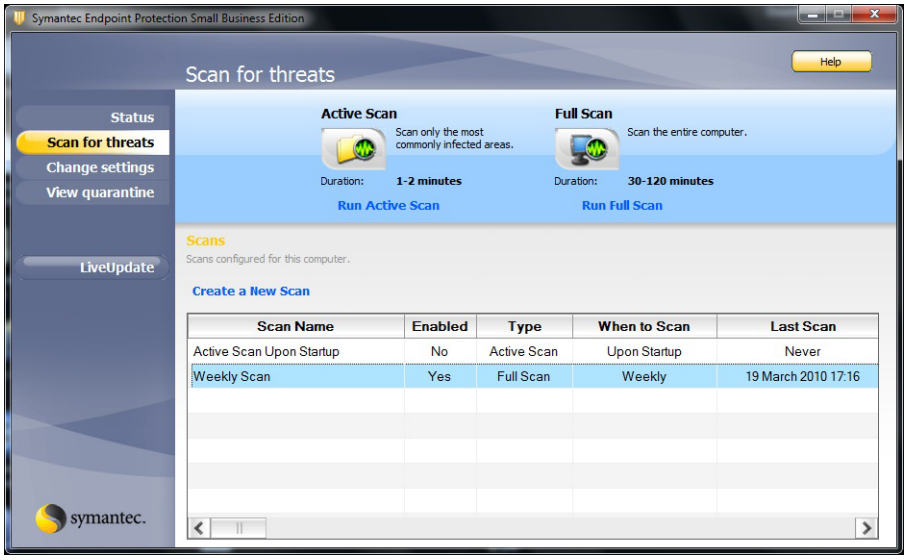
21. Select **Weekly**, and press **Next** to continue.



22. Enter `Weekly Scan` in the scan name field, and `Full Scan for the entire IPS PC` in the scan description field, ensure that the **Enable the scan** box is checked, then press **Finish**.

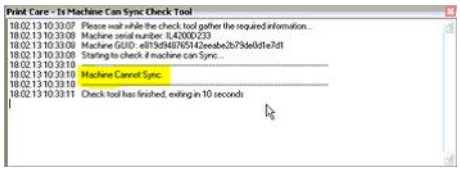


23. Check that the Weekly Scan is shown as enabled in the **Scan for threats** window.



After installation

Ensure that the printer is connected to the Internet, and run the IsMachineCanSync program.



If it says that `The Machine Cannot Sync`, send the file **C:\Temp \HPScitex.Updater.IsMachineCanSync.txt** to GBU CA to resolve the problem.

If there is an IP address conflict between the customer's network and the Internal-Print-Server-to-printer network, unzip **ipchangetool.zip** and run **IpChangeTool.exe**, following the instructions on the screen to change the IP addresses.

Print to Paper Space (PPS)

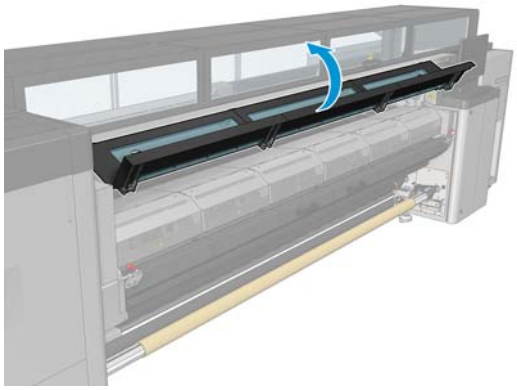
PPS front left and rear right assembly

Removal

1. From the Internal Print Server, navigate to **Carriage beam position** > **Move to home position** to lower the carriage beam all the way. If you cannot start the printer in the normal way due to failure, use diagnostic mode.
2. Turn off the printer and the power-enable switch.

PPS front left assembly removal

1. Remove the front left panel. See Front left panel assembly on page 635.
2. For easier access to all the PPS parts, remove the front left pillar top cover.
3. Open the front door.



4. Pull the curing module to the service position.
5. Remove the PPS motor assembly and save it. See PPS motor assembly on page 719.
6. Remove the PPS screw assembly. See PPS screw assembly on page 721.
7. Remove the PPS motor mount assembly. See PPS motor mount assembly on page 717.

PPS rear right assembly removal

1. Remove the rear right panel. See Rear right panel assembly on page 624.
2. Remove the rear PC sheet so that it is easier to access the PPS assembly.
3. Open the pinch.
4. Remove the PPS motor assembly and save it. See PPS motor assembly on page 719.
5. Remove the PPS screw assembly. See PPS screw assembly on page 721.
6. Remove the PPS motor mount assembly. See PPS motor mount assembly on page 717.

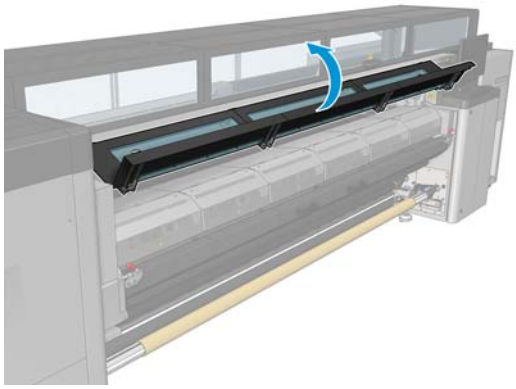
PPS front right and rear left assembly

Removal

1. From the Internal Print Server, navigate to **Carriage beam position** > **Move to home position** to lower the carriage beam all the way. If you cannot start the printer in the normal way due to failure, use diagnostic mode.
2. Turn off the printer and the power-enable switch.

PPS front right assembly removal

1. Open the printhead cleaning door.
2. For easier access to all the PPS parts, open the door on the right.
3. Open the front door.



4. Pull the curing module to the service position.
5. Remove the PPS motor assembly and save it. See PPS motor assembly on page 719.
6. Remove the PPS screw assembly. See PPS screw assembly on page 721.
7. Remove the PPS motor mount assembly. See PPS motor mount assembly on page 717.

PPS rear left assembly removal

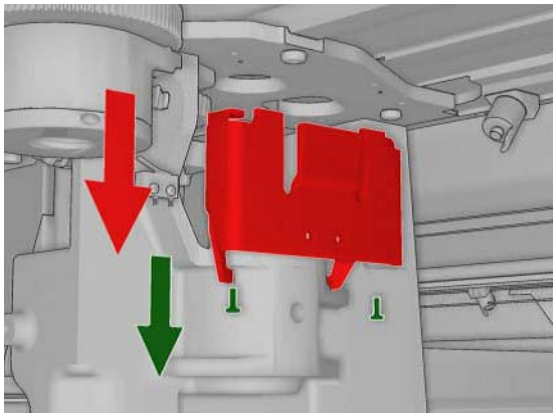
1. Remove the rear left panel. See Rear left panel assembly on page 636.
2. Remove the rear PC sheet so that it is easier to access the PPS assembly.
3. Open the pinch.
4. Remove the PPS motor assembly and save it. See PPS motor assembly on page 719.
5. Remove the PPS screw assembly. See PPS screw assembly on page 721.
6. Remove the PPS motor mount assembly. See PPS motor mount assembly on page 717.

PPS motor mount assembly

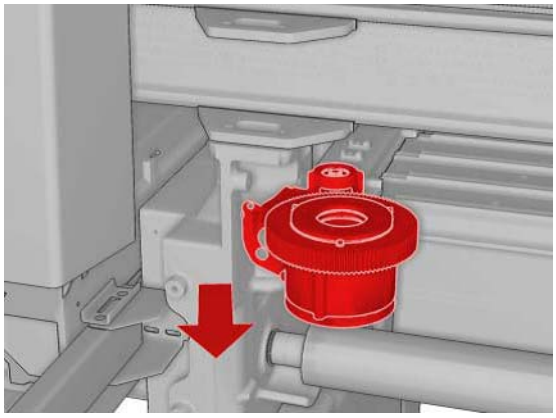
Removal

1. From the Internal Print Server, navigate to **Carriage beam position** > **Move to home position** to lower the carriage beam all the way. If you cannot start the printer in the normal way due to failure, use diagnostic mode.
2. Turn off the printer and the power-enable switch.

3. Remove the PPS motor assembly. See PPS motor assembly on page 719.
4. Remove the PPS screw assembly. See PPS screw assembly on page 721.
5. Remove the necessary curing module if you are removing a front PPS motor mount assembly.
6. Remove the two T-20 screws that secure the holder.



7. Remove the PPS motor mount assembly.



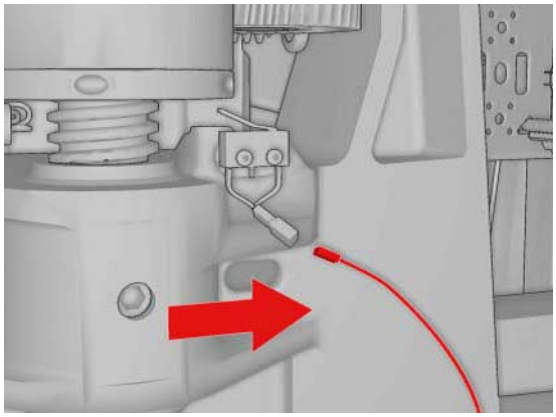
NOTE: When you put back the nut, it may have a bit of play.

Mechanical switch

Removal

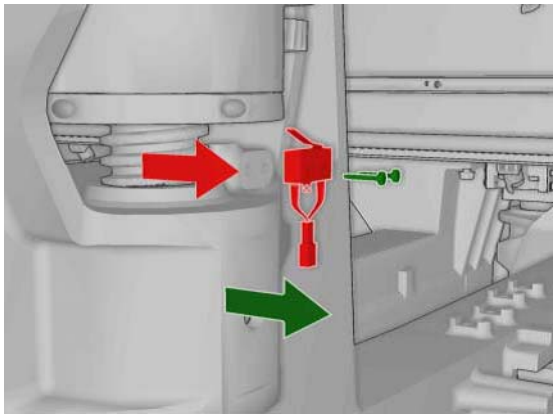
1. Move the scan axis to the substrate load position to raise the carriage beam all the way. If you cannot start the printer in the normal way due to failure, use diagnostic mode.
2. Turn off the printer and the power-enable switch.

3. Disconnect the PPS switch cable.





4. Remove the two taptite screws that secure the PPS low switch, and remove the switch.



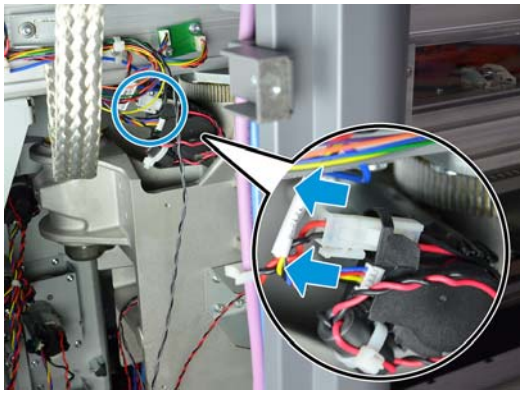
PPS motor assembly

The PPS motor assembly service part comes with a new differential encoder PCA, which is positioned differently for each PPS motor assembly, but is always secured with two TXYZ screws. To locate the differential encoder PCA, you can always follow the encoder cable from the motor.

Removal

1. From the Internal Print Server, navigate to **Carriage beam position** > **Move to home position** to lower the carriage beam all the way. If you cannot start the printer in the normal way due to failure, use diagnostic mode.
2. Turn off the printer and the power-enable switch.
3. Disconnect the power cable from the motor (motor drive PCA to motor).

4. Disconnect the cable that connects the motor drive PCA to the differential encoder PCA.
5. Disconnect the cable that connects the motor drive PCA to the PPS motor.



NOTE: You can leave the cables connected to the motor drive PCA.

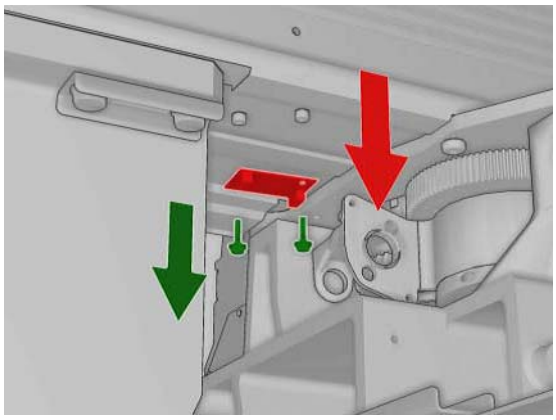
6. Remove the two T-20 screws that secure the PPS motor, and remove the motor.



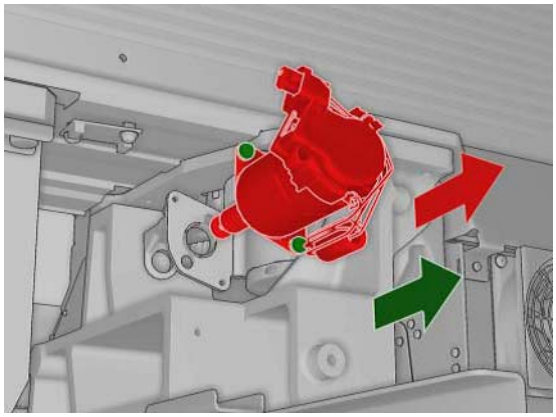
Installation

Install the new motor and check that it works. If not:

1. Remove the two T-20 screws that secure the differential encoder PCA.



2. Remove the two T-20 screws that secure the PPS motor, and remove the motor.



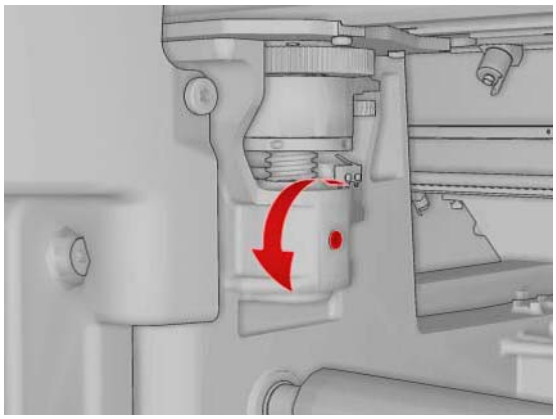
3. Install the new differential encoder PCA that comes with the service part.

PPS screw assembly

Removal

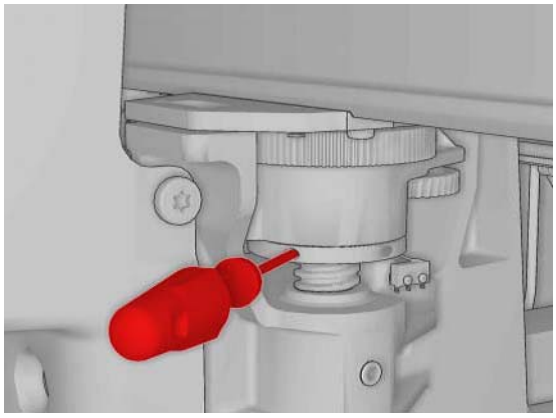
1. From the Internal Print Server, navigate to **Carriage beam position** > **Move to home position** to lower the carriage beam all the way. If you cannot start the printer in the normal way due to failure, use diagnostic mode.
2. Turn off the printer and the power-enable switch.
3. Remove the PPS motor assembly.
4. Loosen the A6 locking screw about two full revolutions.

NOTE: Access the screw through the hole in the mount and use an L-shaped key.



5. Position the lower part of the motor mount so that you can insert the screwdriver.

6. Insert the screwdriver. This will prevent the mount from moving; so that, when you turn the PPS screw, it will come out.



7. Remove the pipe 17 bolt (in green) that secures the PPS screw.
8. Remove the PPS screw, fixing the green screw to the screwdriver with Loctite.

Motor drive PCA

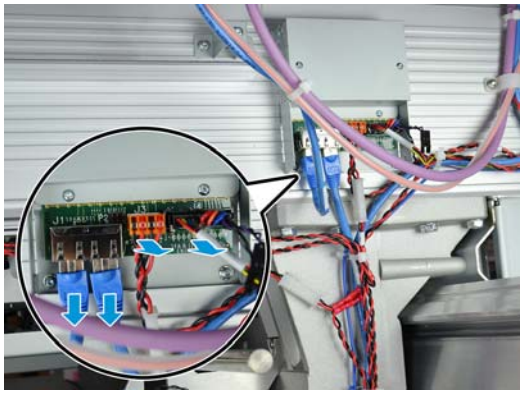
If you need to look at any of the four motor drive PCA ID addresses, see Subsystem block diagrams on page 61.

Removal

1. From the Internal Print Server, navigate to **Carriage beam position** > **Move to home position** to lower the carriage beam all the way. If you cannot start the printer in the normal way due to failure, use diagnostic mode.
2. Turn off the printer and the power-enable switch.
3. Remove the appropriate trim.
4. Follow the instructions in the table below to reach a particular motor drive PCA.

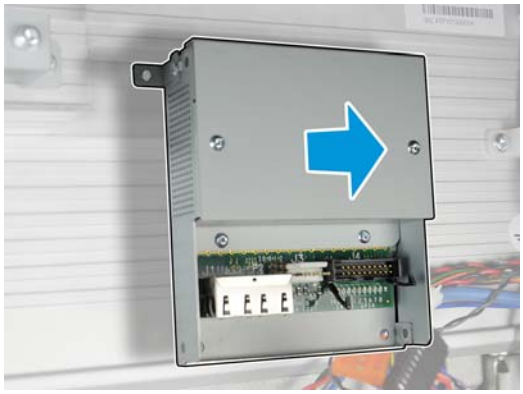
Motor drive PCA ID	Physical location	Panel to remove
1	Rear right	Remove the rear right panel (Rear right panel assembly on page 624).
2	Front right	Open the right cover door. For easier access, you can also open the printhead cleaning door.
3	Front left	Remove the front left panel (Front left panel assembly on page 635). For easier access, you can also remove the front left pillar top cover.
4	Rear left	Remove the rear left panel (Rear left panel assembly on page 636).

5. Disconnect all cables from the motor drive PCA.



6. Remove the two T-8 screws from the supports that hold the motor drive PCA, and remove the PCA.





Installation

1. Insert the new motor drive PCA.
2. Reconnect all cables to the new PCA.
3. One of the motor drive PCAs has only one LAN connection. Make sure to connect it to the right connector when you install the new service part.
4. Ensure that there is an RJ45 jumper (CZ056-50028) connected to the data-out connector (P2) on the last daisy-chain PCA, so that the daisy-chain end is correctly set (if necessary, reuse the RJ45 jumper).
   a. LAN data cable (J1)
   b. LAN data cable (P2)

c. 24 V power cable (J3)

   Route: Main interconnect board to remote controller board

d. PPS motor power cable (J3)

   Route: Motor drive PCA to PPS motor

e. Encoder and switch cable (J4)

   Route: Encoder and switch to motor drive PCA

5. If the ending daisy chain motor drive PCA has been replaced, ensure that there is an RJ45 jumper (CZ056-50028) connected to the P2 connector.
6. Ensure that there is no jumper connected to the P1 connector.

PPS cables kit

Removal

1. From the Internal Print Server, navigate to **Carriage beam position** > **Move to home position** to lower the carriage beam all the way. If you cannot start the printer in the normal way due to failure, use diagnostic mode.
2. Turn off the printer and the power-enable switch.
3. Remove the central cover.
4. Remove top right cover.
5. Remove the rear right panel. See Rear right panel assembly on page 624.
6. Remove the PPS column cap from the top of the scan beam face.

E-cabinet to PPS power cable (CZ056-50072)

1. Remove the rear right panel. See Rear right panel assembly on page 624.
2. Disconnect the e-cabinet to PPS power cable from the e-cabinet PCA.
3. Disconnect the e-cabinet to PPS power cable from the air connector.
4. Unroute the cable from the air connector to the e-cabinet.

PPS power in T cable (CZ056-50151)

1. Remove the rear right panel. See Rear right panel assembly on page 624.
2. Disconnect the air connectors: the one that connects to the e-cabinet to PPS power cable, and the four that connect to each PPS power cable.
3. Unroute the cable from each PPS power cable connector to the e-cabinet to PPS power cable connector.

Short PPS data bridge cable (×2) (CZ056-50178)

1. Access motor drive PCAs 1 and 2, or 3 and 4.
2. Disconnect the short PPS data bridge cable from both motor drive PCAs (P2 connector for PCAs 1 and 4, J1 connector for PCAs 2 and 3).
3. Unroute the short PPS data bridge cable through the printer structure.

Long PPS data bridge cable (CZ056-50177)

1. Access motor drive PCAs 2 and 4.
2. Disconnect the long PPS data bridge cable from both motor drive PCAs (P2 connector for PCA 2, J1 connector for PCA 4).
3. Remove rear sheets as needed to reach the entire cable routing.
4. Unroute the long PPS data bridge cable through the printer structure and beams.

TUR Luna to PPS cable (CZ056-50052)

1. Remove the rear right panel. See Rear right panel assembly on page 624.
2. Open the right cover door. For easier access, you can also open the printhead cleaning system door.
3. Disconnect the e-box interconnect PCA (MICCI2 (J_251) connector).
4. Disconnect the motor drive PCA 1 (J1 connector).
5. Unroute the cable from each PPS power cable connector to the e-cabinet to PPS power cable connector.

NOTE: When rerouting the cable, be careful to leave enough free (looped) so that the PPS can reach the substrate load position.

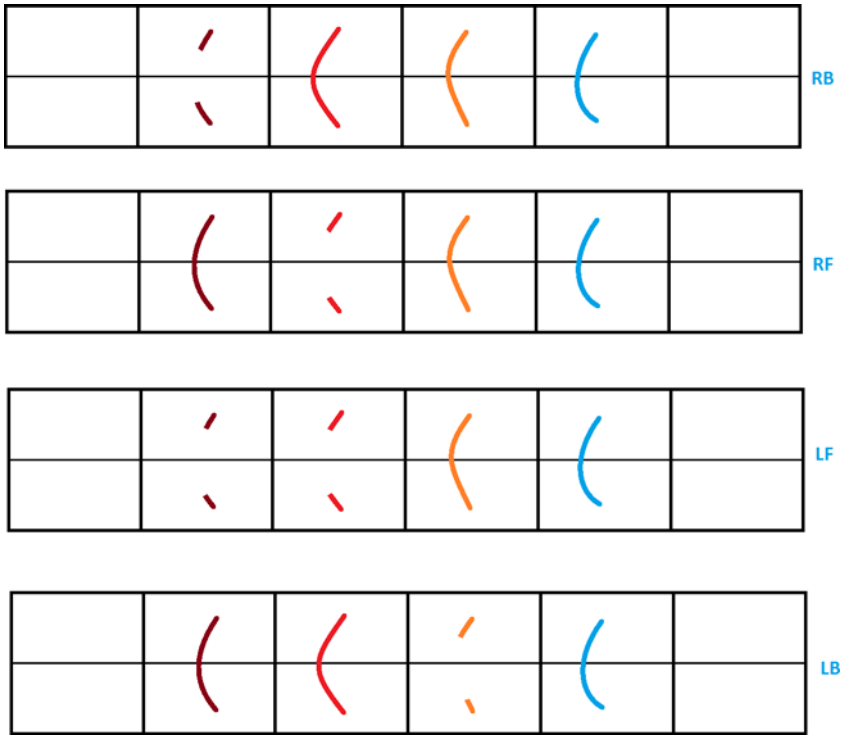
Differential encoder PCA to encoder cable (CZ056-50035)

1. Access the motor drive PCA.
2. Disconnect the the differential encoder PCA to encoder cable from the differential encoder PCA and the motor assembly.
3. Unroute the cable.

Differential encoder PCA to motor drive PCA cable (CZ056-50146)

1. Access the motor drive PCA.
2. Disconnect the the differential encoder PCA to motor drive PCA cable from the motor drive PCA (J4 connector) and the differential encoder PCA.
3. Unroute the cable.

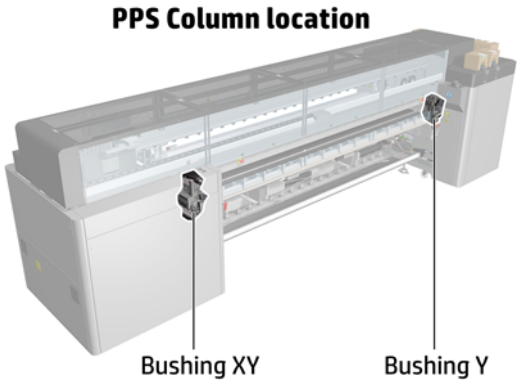
NOTE: When replacing the differential encoder PCA to motor drive PCA cable, it is important to cut the jumper cables of the motor drive PCA connector following the described jumper addresses (see the illustration below):



XY guide assembly

The parts referred to here are not service parts; but, in case of failure, the replacement procedure is documented, and the parts can be obtained through an official request sent to the HP support team, with a detailed explanation of the problem faced by the customer.

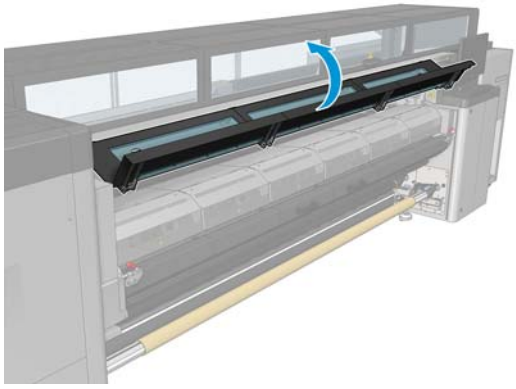
The procedure described here is for replacing the main guidance of the PPS system, the PPS column, and the bushing XY and Y.



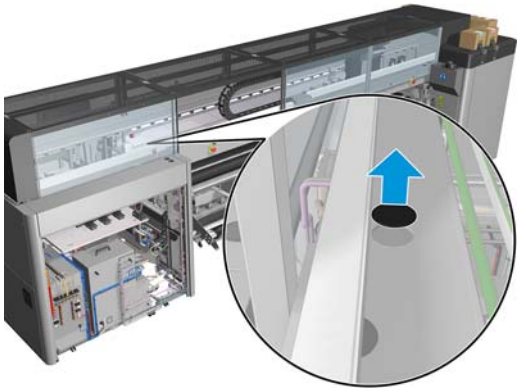
PPS column and XY bushing removal

1. Move the scan axis to the load position.
2. Turn off the printer and the power-enable switch.

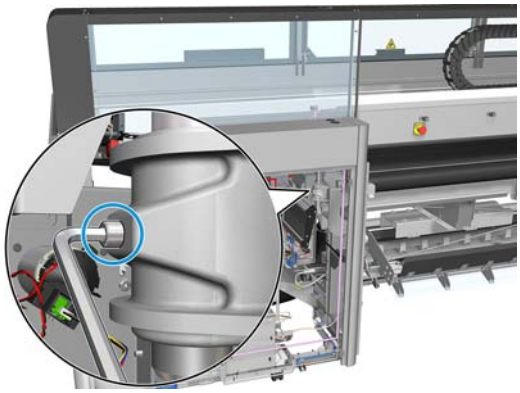
3. Open the front door.



4. Remove the central cover.
5. Remove the top right cover.
6. Remove the rear top right panel.
7. Remove the rear right panel. See Rear right panel assembly on page 624.
8. Remove the PPS column cap from the top of the scan beam face.

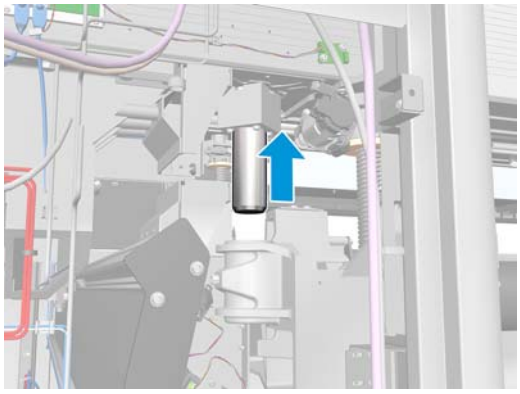


9. Using a 6 mm Allen key, loosen the locking screw a few turns.



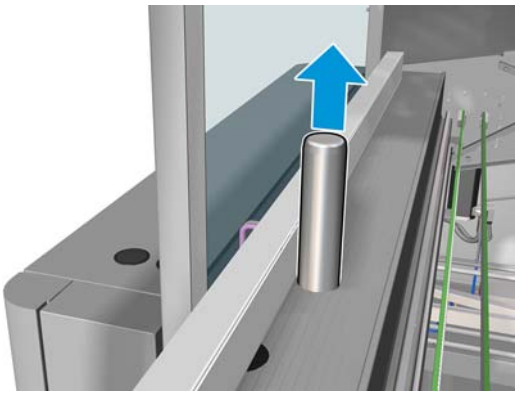
NOTE: Some Loctite has probably been added to the top screw and washer of the PPS screw in order to be able to change the PPS screw with the SAX in the lower position.

10. Push the PPS column upwards, until it is accessible from the top.

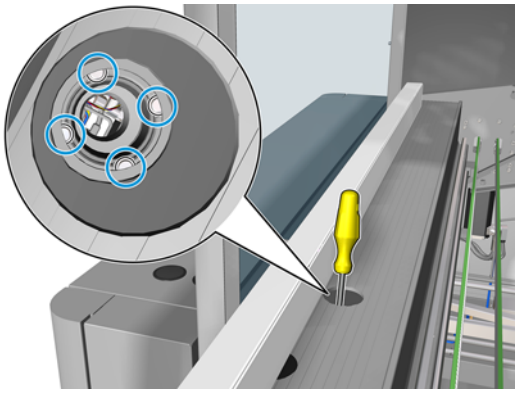


NOTE: If the PPS column is blocked against the bushing, the bushing can be removed by using a steel bar and a nylon hammer. Put the steel bar in vertical position in contact with the bottom face of the column and knock carefully with the hammer. Repeat until the column has been released from the top part of the scan beam.

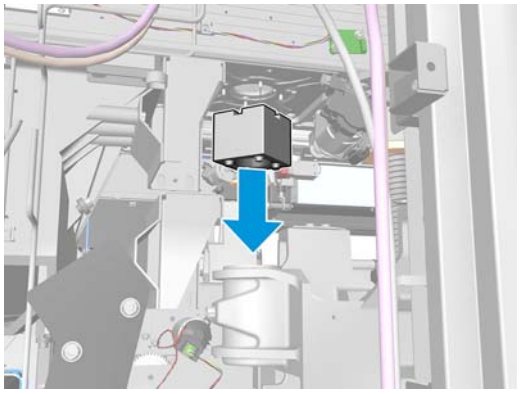
11. Remove the PPS column.



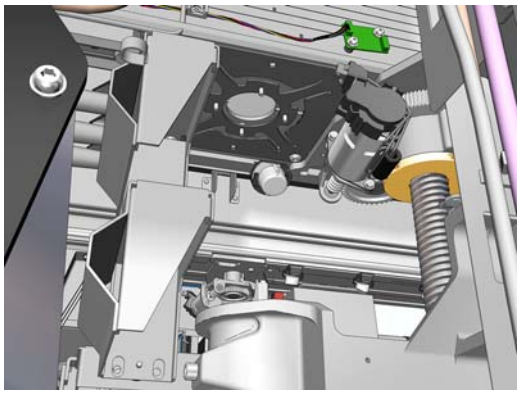
12. From inside the scan beam, remove four T-20 screws from the bushing XY, which can be accessed with a long screwdriver.



13. Remove the XY bushing.



The underside without the bushing looks like this:

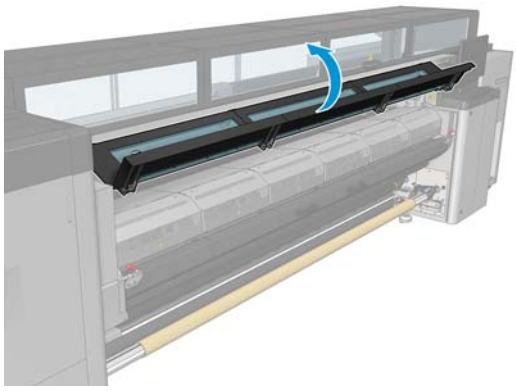


Installation

- When installing a new PPS column, use grease to lubricate the surface.

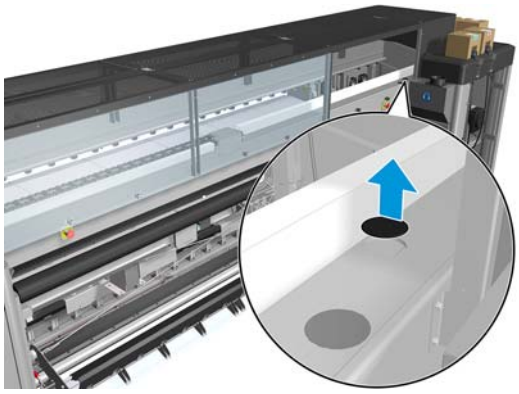
PPS column and Y bushing removal

1. Move the scan axis to the load position.
2. Turn off the printer and the power-enable switch.
3. Open the front door.

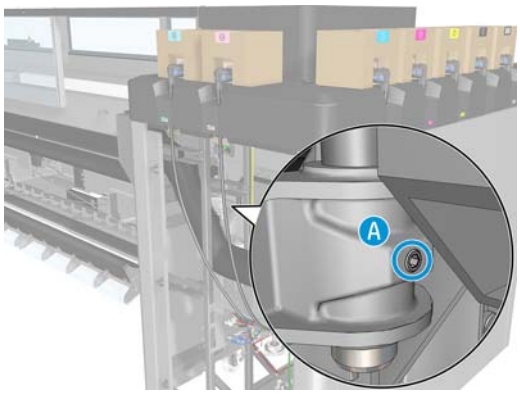


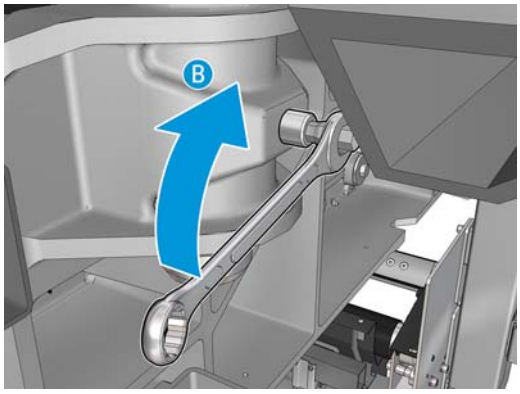
4. Remove the central cover.
5. Remove the top left cover.
6. Remove the rear left panel. See Rear left panel assembly on page 636.

7. Remove the PPS column cap from the top of the scan beam face.

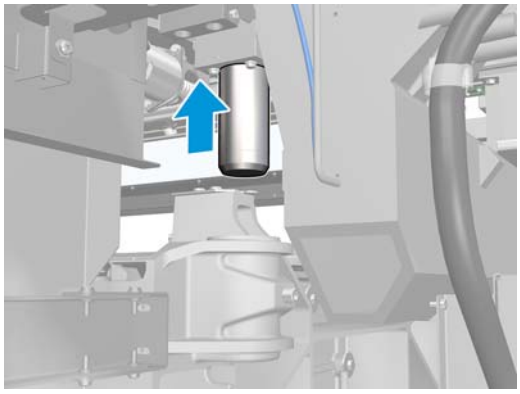


8. Using a 6 mm Allen key and a spanner or adjustable spanner (shown here), loosen the locking screw (A) a few turns (B).



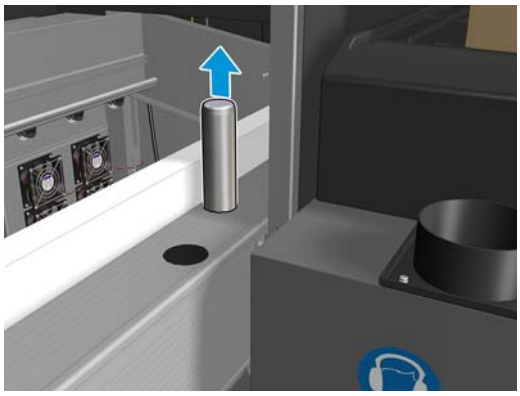


9. Push the PPS column upwards, until it is accessible from the top.

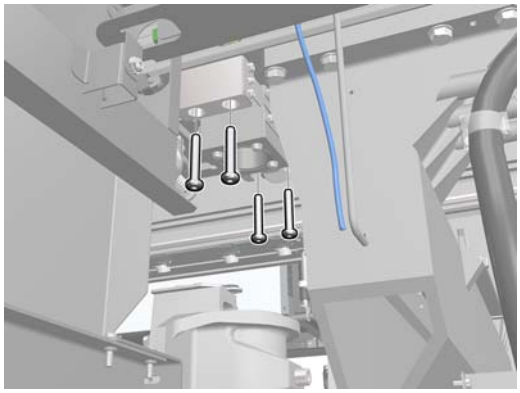


NOTE: If the PPS column is blocked against the bushing, the bushing can be removed by using a steel bar and a plastic-headed hammer. Put the steel bar in vertical position in contact with the bottom face of the column and knock carefully with the hammer. Repeat until the column has been released from the top part of the scan beam.

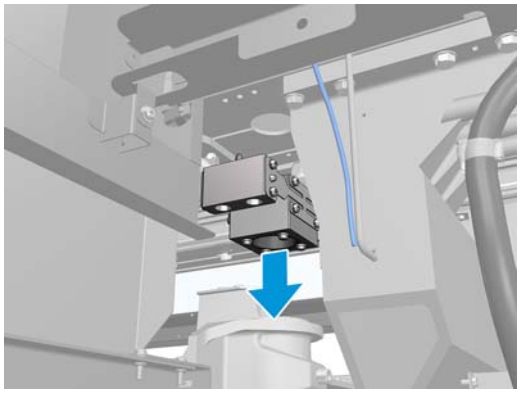
10. Remove the PPS column.



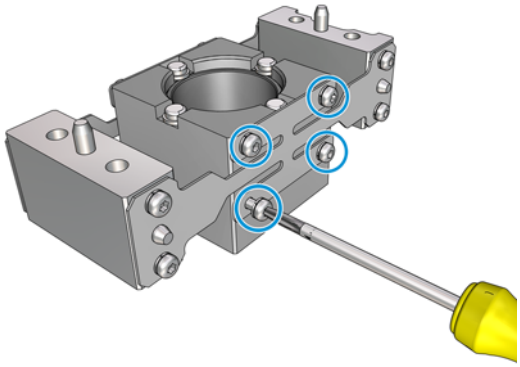
11. From inside the scan beam, remove four T-20 screws from the bushing Y, which can be accessed with an L-shaped wrench.



12. Remove the Y bushing.

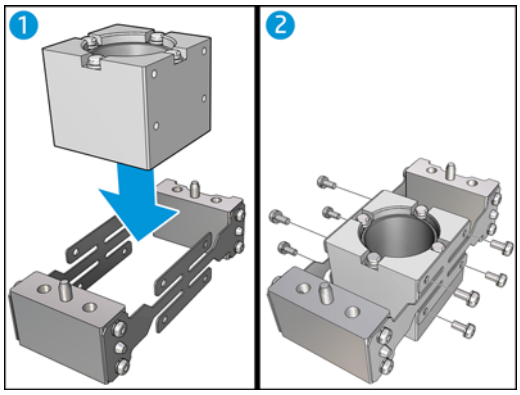


13. Remove eight taptite screws from both sides of the bushing Y holder, and remove the bushing holder.



Installation

1. Install the bushing holder on to the new replacement Y bushing using eight taptite screws.



2. When installing the new Y bushing, use the location pins on the underside of the scan beam to position the part correctly in place.

PPS motor cable kit

Removal

1. Move the scan axis to the load position.
2. Turn off the printer and the power-enable switch.
3. Remove the central cover.

4. Remove the top right cover.
5. Remove the rear right panel. See Rear right panel assembly on page 624.
6. Remove the PPS column cap from the top of the scan beam face.

Motor drive PCA to PPS motor cable (CZ056-50035)

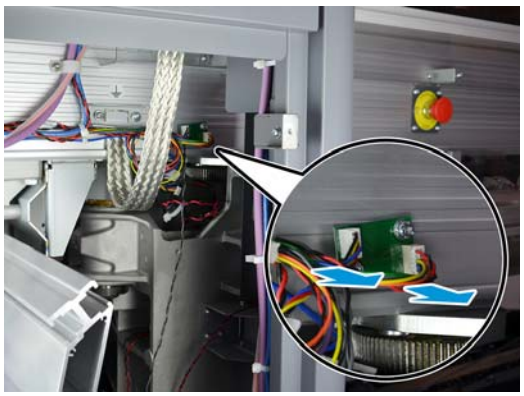
1. Remove panels so that you can reach the differential encoder PCA and the encoder.
2. Disconnect the motor drive PCA to PPS motor cable from the encoder and the differential encoder PCA.
3. Unroute the cable.

Motor drive PCA to differential encoder PCA cable (CZ056-50146)

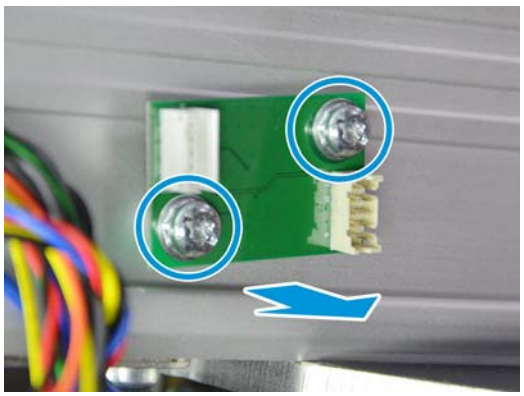
1. Remove panels so that you can reach the motor drive PCA and the differential encoder PCA.
2. Disconnect the motor drive PCA (J4 connector) and the differential encoder PCA.
3. Unroute the cable.

Differential encoder PCA (Q6703-60195)

1. Remove panels so that you can reach the differential encoder PCA.
2. Disconnect all cables from the differential encoder PCA.



3. Remove the two T-20 screws that attach the PCA, and remove the PCA.



PPS power in T extensor cable (CZ056-50149)

1. Remove panels so that you can reach the motor drive PCA, the PPS motor, and the air connector cable.
2. Disconnect the air connector, the motor drive PCA (J3 connector), and the PPS motor.
3. Unroute the cable.

CAUTION: When rerouting the cable, be careful to leave enough free that the carriage beam can reach the substrate load position. Otherwise the printer may break the cables, and therefore shut down.

Mechanical switch—short cable (CZ056-50169)

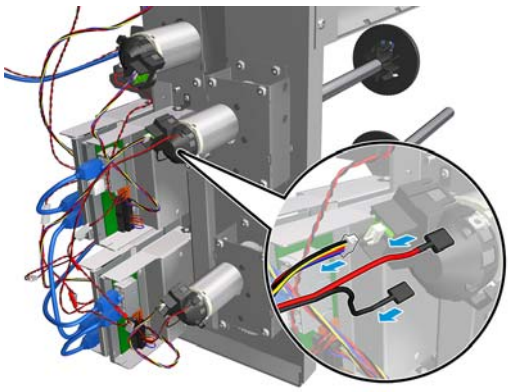
1. Remove panels so that you can reach the motor drive PCA and the mechanical switch.
2. Disconnect the air connector and the motor drive PCA (J4 connector).
3. Unroute the cable.

Printhead cleaning system

Printhead cleaning transmission box

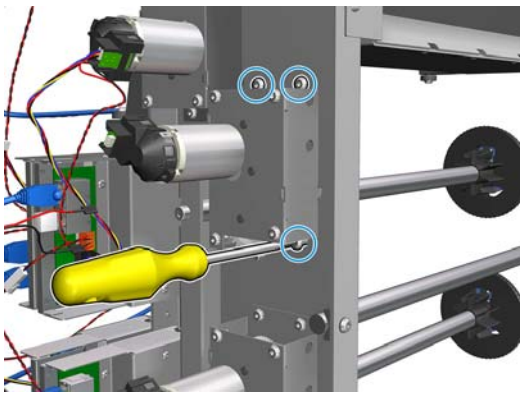
Removal

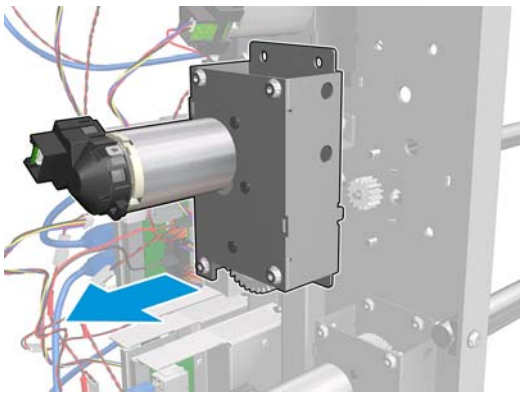
1. From the Internal Print Server, navigate to **Carriage beam position** > **Move to home position** to lower the carriage beam all the way. If you cannot start the printer in the normal way due to failure, use diagnostic mode.
2. Turn off the printer and the power-enable switch.
3. Remove the printhead cleaning module assembly. See Printhead cleaning module on page 750.
4. Disconnect the DC motor from both power and encoder cables.



5. Remove the T-25 screws that secure the gearbox base.

NOTE: If you are changing the MA transmission box, you will first need to unscrew and remove the end stop contact support in order to be able to remove the MA gearbox base screws.





Gearbox inversor removal

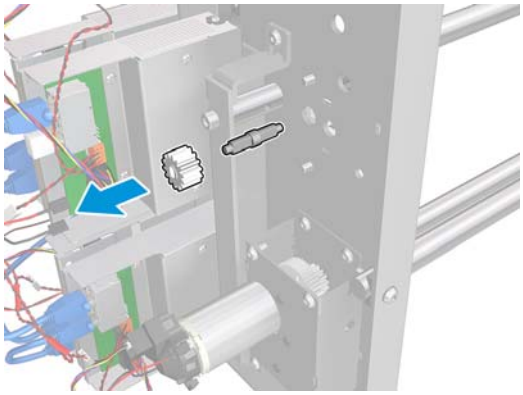
The gearbox inversor includes the transmission box exit gear.

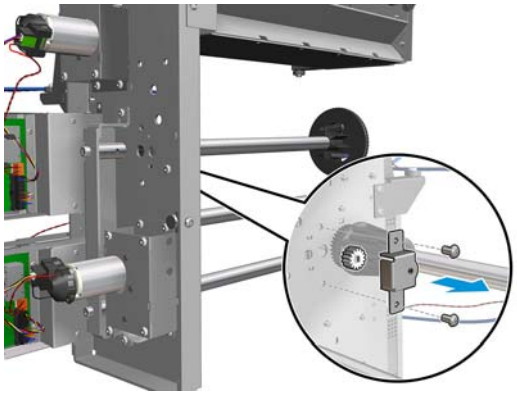
1. Take out the roll-free hub and remove the roll from the printhead cleaning assembly.

NOTE: To remove the MA gearbox inversor, you must first remove the central cage assembly.

NOTE: The MZ transmission does not have a gearbox inversor, so you need only to remove the exit gear from the transmission box.

2. Unscrew the gearbox inversor support and remove the gearbox inversor.



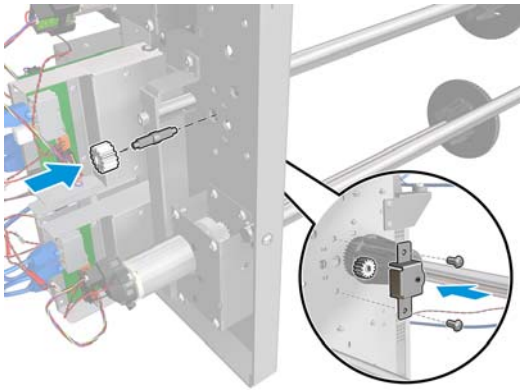


Installation

1. Install the gearbox inversor with its two gears on each side of the structure baseplate. Screw the gearbox inversor support to the baseplate.

NOTE: To install the MA gearbox inversor you must remove and then reinstalll the central cage assembly.

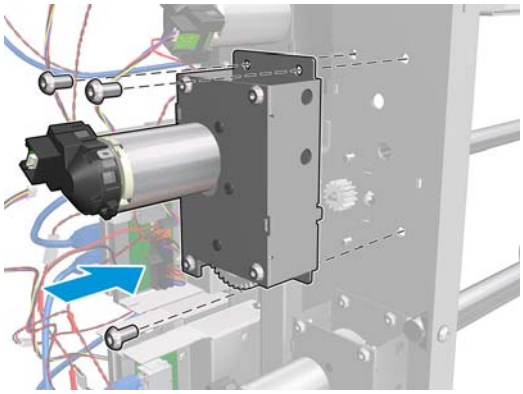
NOTE: The MZ transmission does not have a gearbox inversor, so you need only add an exit gear to the transmission box (it can be taken from the gearbox inversor assembly).



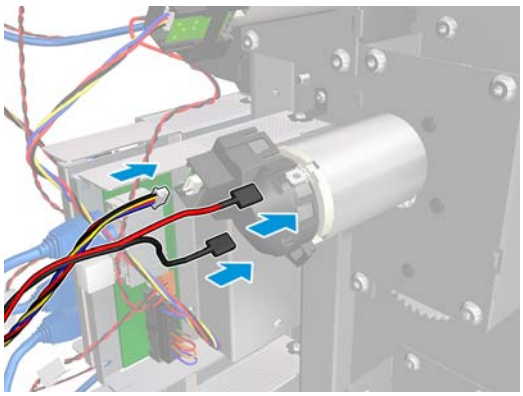
2. Put the roll into the printhead cleaning assembly and insert the roll-free hub to fix input and output rolls.

3. Fit the exit gear with the transmission box and screw its gearbox base to the baseplate.

NOTE: When changing the MA transmission box you will need to screw the end stop contact support after replacing the MA transmission box.



4. Connect the power and encoder cables to the transmission box.

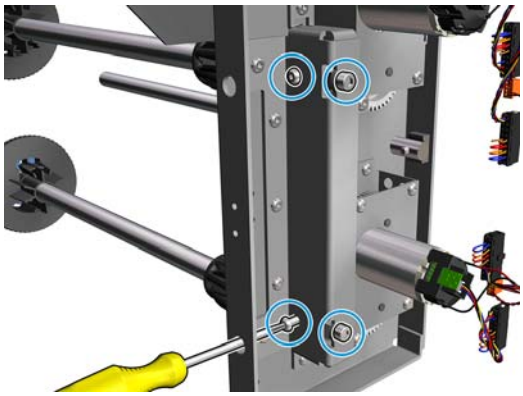


5. Insert the printhead cleaning module assembly into the printer.

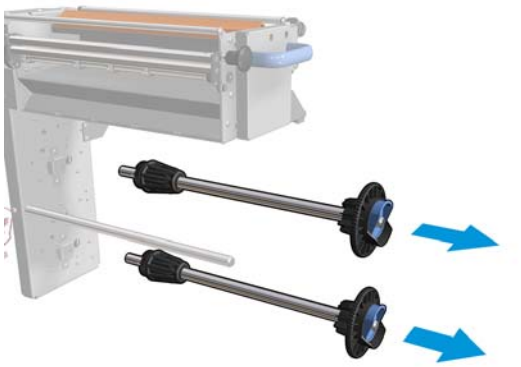
Printhead cleaning roll axis with structure

Removal

1. From the Internal Print Server, navigate to **Carriage beam position** > **Move to home position** to lower the carriage beam all the way. If you cannot start the printer in the normal way due to failure, use diagnostic mode.
2. Turn off the printer and the power-enable switch.
3. Remove the printhead cleaning roll assembly/
4. Remove the four printhead cleaning transmission boxes/
5. Disconnect all the encoder and power cables from the PCAs. Remove the four PCAs from the printhead cleaning base plate.
6. Remove the T-25 screws that hold the base plate to both the central cage base and the T-30 screws that hold the base plate to the slide-mount upper support.



7. Remove the roll-axis structure.



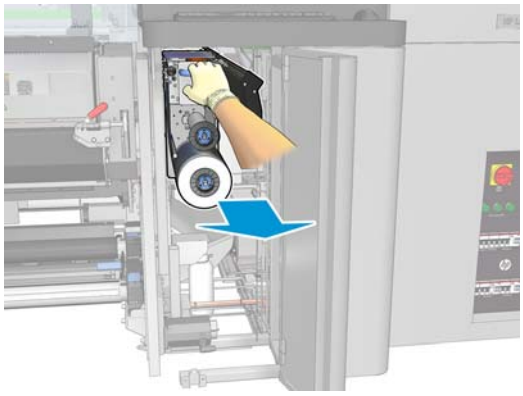
Installation

- After installation, perform the printhead cleaner height calibration and check.

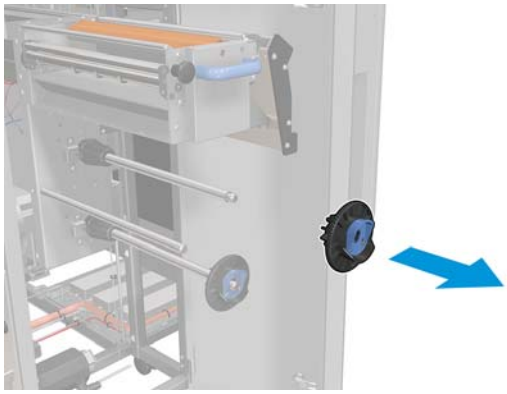
Printhead cleaning rubber hub

Removal

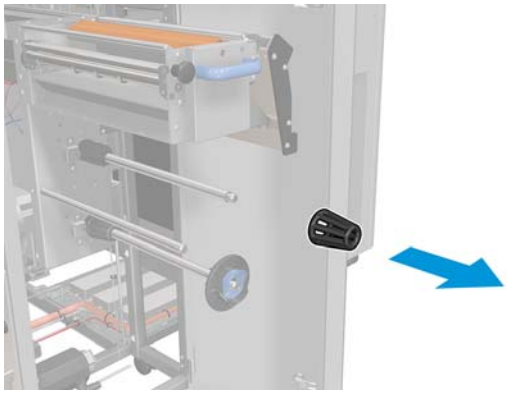
1. From the Internal Print Server, navigate to **Carriage beam position** > **Move to home position** to lower the carriage beam all the way. If you cannot start the printer in the normal way due to failure, use diagnostic mode.
2. Turn off the printer and the power-enable switch.
3. Pull out the printhead cleaning module.



4. Remove the printhead cleaning roll-free hub.



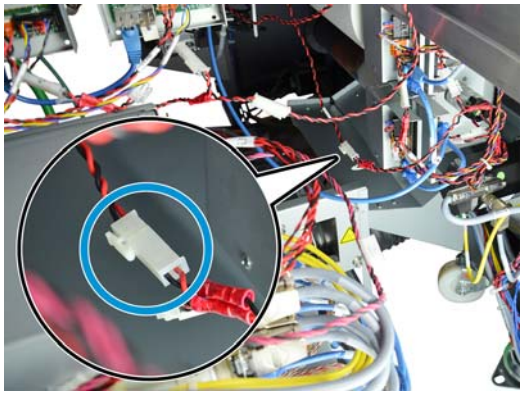
5. Remove the rubber from the roll transmission hub.

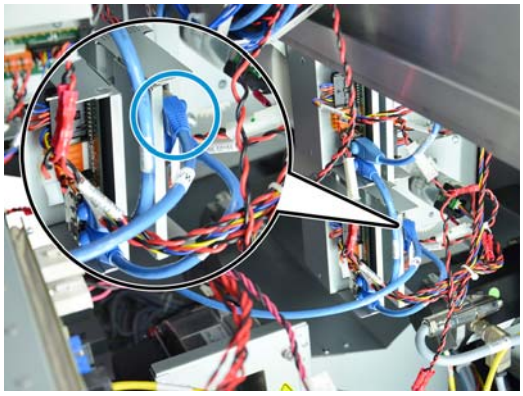


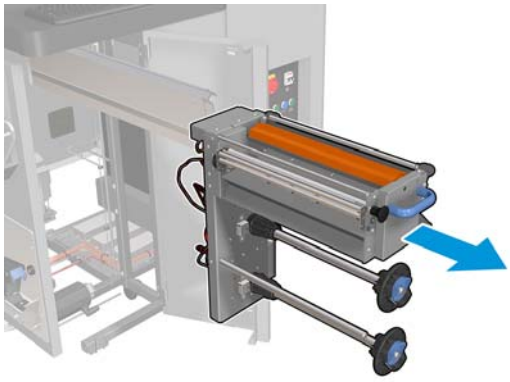
Printhead cleaning roll pinch assembly

Removal

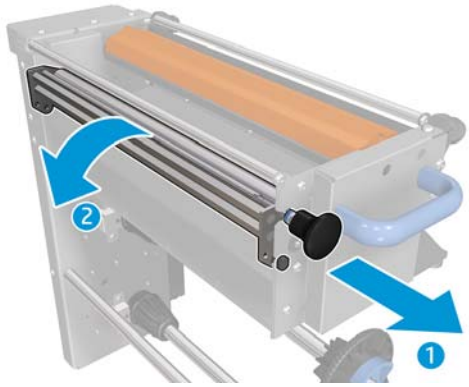
1. From the Internal Print Server, navigate to **Carriage beam position** > **Move to home position** to lower the carriage beam all the way. If you cannot start the printer in the normal way due to failure, use diagnostic mode.
2. Turn off the printer and the power-enable switch.
3. Remove the printhead cleaning module, disconnecting the cables as you remove it.





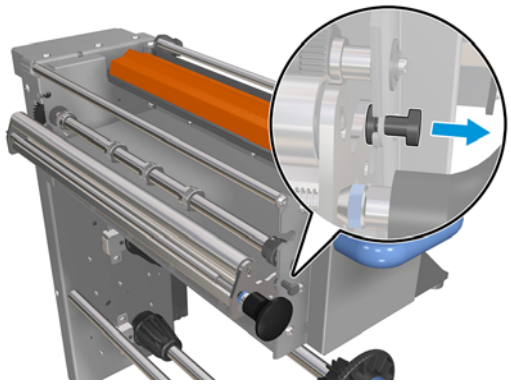


4. Pull the black knob to open the pinch assembly.

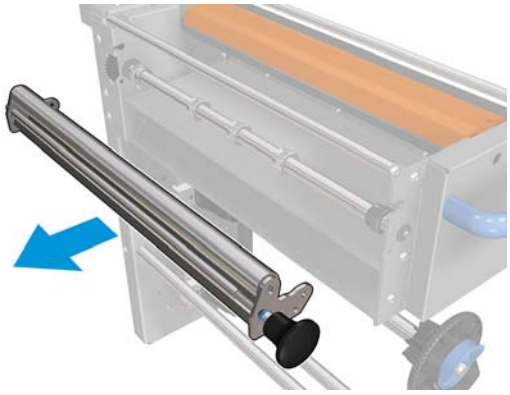


5. Unscrew the hinge from the printhead cleaning roll pinch.

NOTE: Be careful not to lose the pinch hinge spacer when removing the hinge from the printhead cleaning roll pinch.

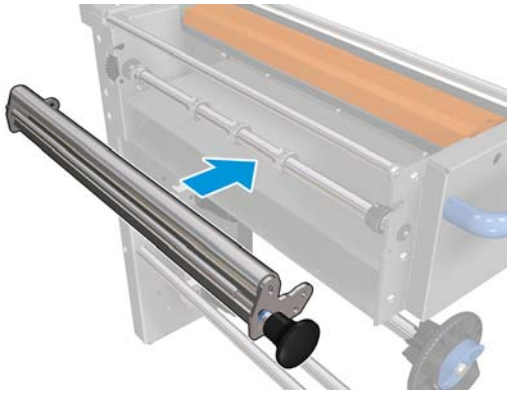


6. Remove the printhead cleaning roll pinch assembly.

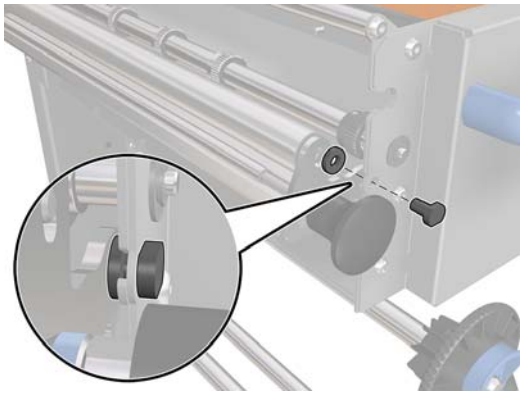


Installation

1. Insert the new printhead cleaning roll pinch assembly.



2. Add the pinch hinge spacer between the pinch assembly and the printhead cleaning assembly, and screw in the pinch hinge.

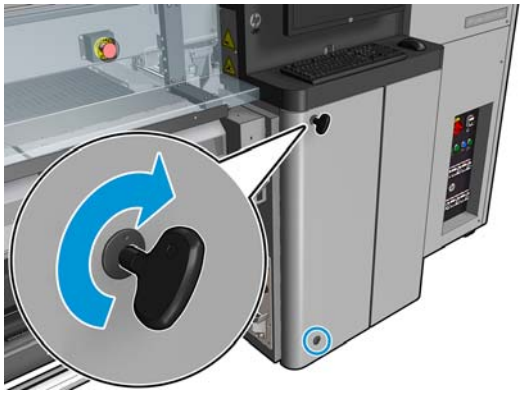


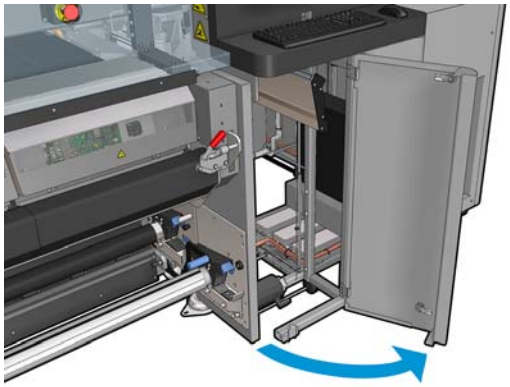
Printhead cleaning blade assembly

Prepare to replace the rubber blade

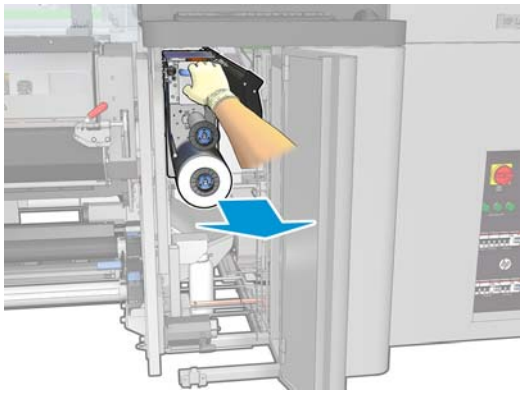
1. Ensure that you have the Printhead Cleaning Roll Rubber Blade Kit (CZ056-67046), which is included in the Printer Maintenance Kit (CZ056-67391) but can also be purchased separately.
2. Ensure that the printer is not printing.

3. Unlock and open the printhead cleaning roll door.





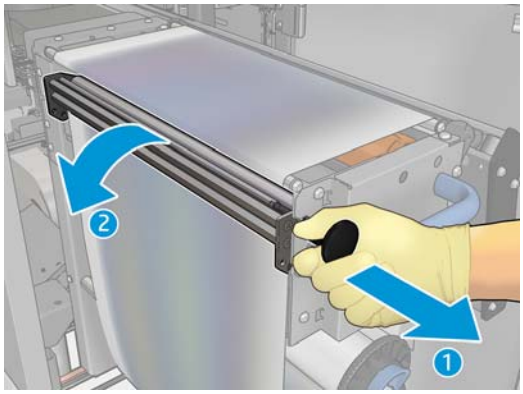
4. Pull out the printhead cleaning roll carriage.



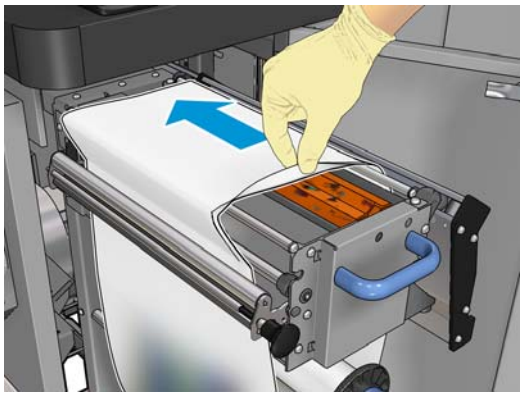


5. Put on gloves to protect your hands.

6. Open the pinchwheel (pull out and rotate the black plastic knob).

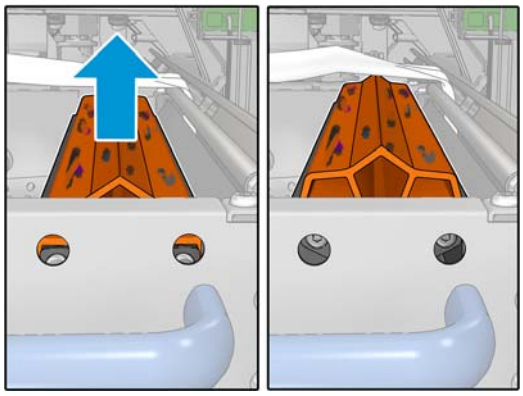


7. Move the printhead cleaning material aside in order to uncover the rubber blade.

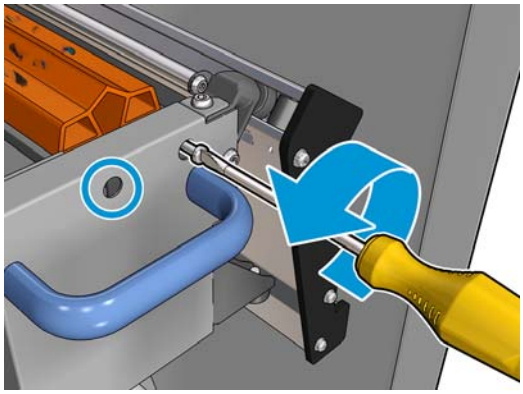


Replace the rubber blade

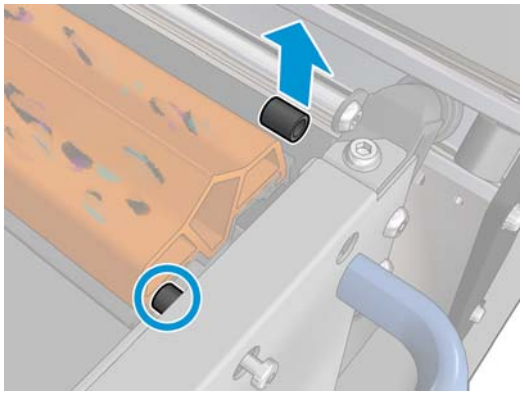
1. Move the rubber blade to the replacement position.



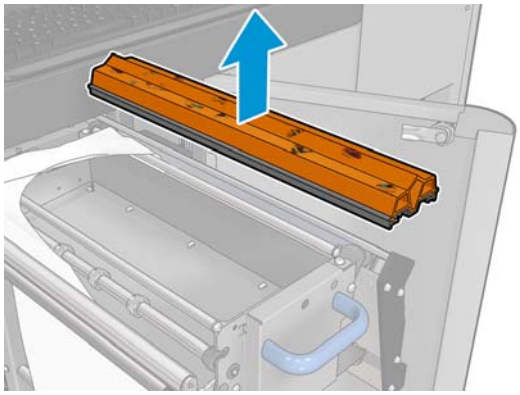
2. Use a flat screwdriver to remove the two screws shown below. While you unscrew them, you must hold the two spacers shown on the right (otherwise, they will fall and might get lost).



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.

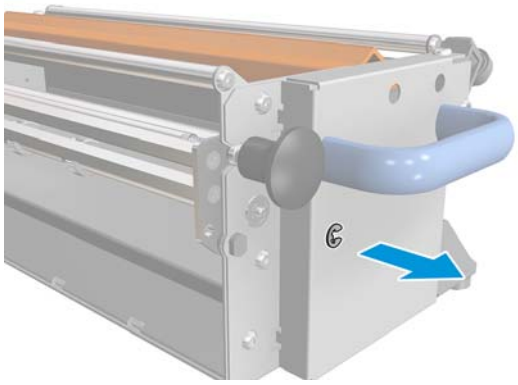
Finish off after replacing the rubber blade

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.
4. Perform the printhead cleaner height calibration and check.

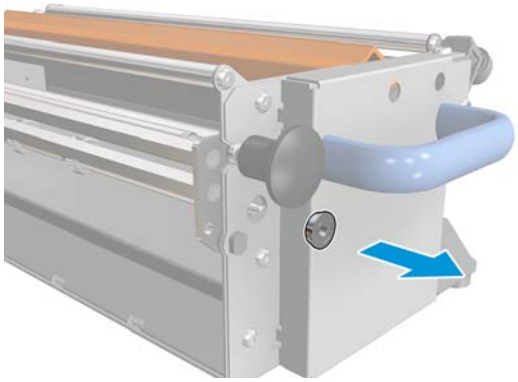
Printhead cleaning drive roller

Removal

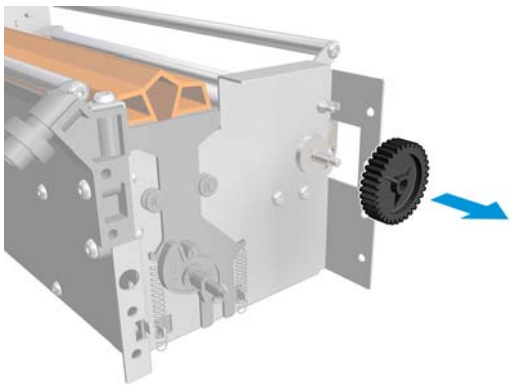
1. From the Internal Print Server, navigate to **Carriage beam position** > **Move to home position** to lower the carriage beam all the way. If you cannot start the printer in the normal way due to failure, use diagnostic mode.
2. Turn off the printer and the power-enable switch.
3. Remove the central cage assembly from the base plate structure.
4. Remove the c-clip from the driver roller.



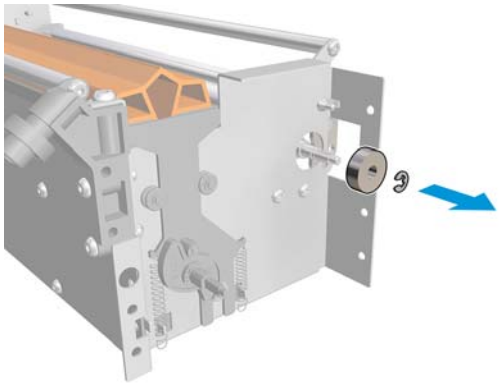
5. Remove the driver roller bearing.



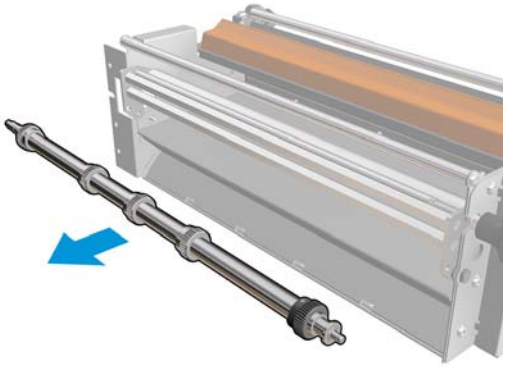
6. Remove the web-drive gear from the driver roller.



7. Remove the c-clip from the drive roller and the bearing that it holds.



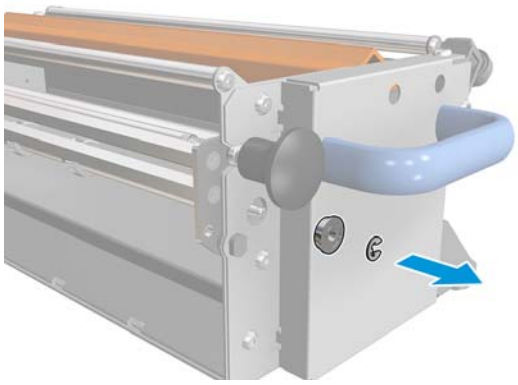
8. Remove the drive roller.



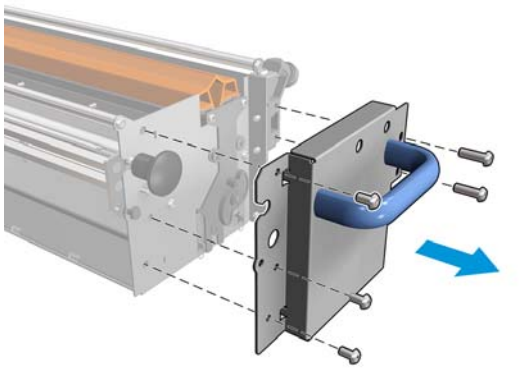
Printhead cleaning central cage top cover

Removal

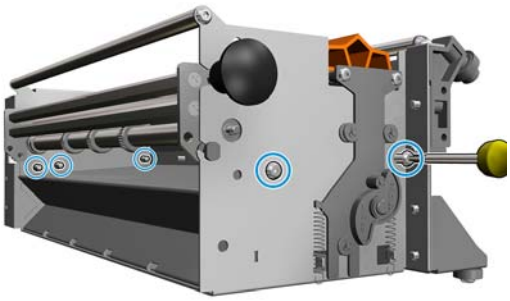
1. From the Internal Print Server, navigate to **Carriage beam position** > **Move to home position** to lower the carriage beam all the way. If you cannot start the printer in the normal way due to failure, use diagnostic mode.
2. Turn off the printer and the power-enable switch.
3. Remove the printhead cleaning module from the guide. See Printhead cleaning module on page 750.
4. Remove the central cage assembly from the base plate structure.
5. Remove the drive roller's c-clip and bearing.



6. Remove the two T-30 and the two T-25 screws from the handle cover base and remove it.



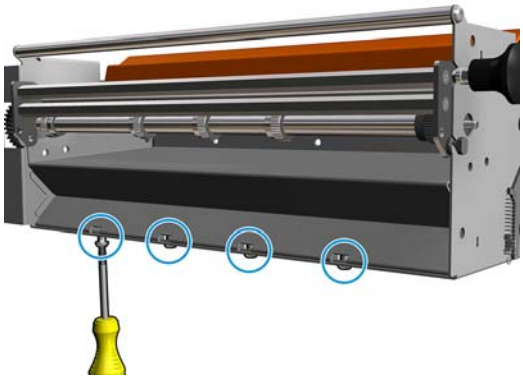
7. Remove the six T-25 screws from the central cage base (three screws on each side).



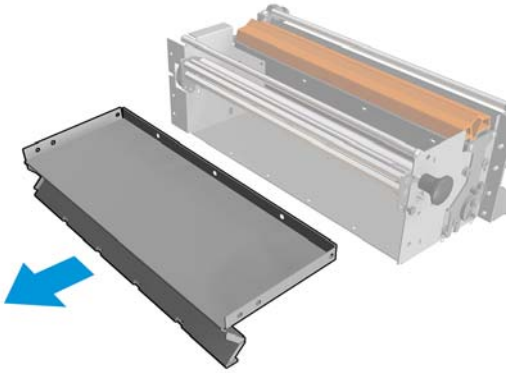
8. Remove the three T-25 screws from the rear cover.



9. Remove the four T-25 screws from the central cage base.

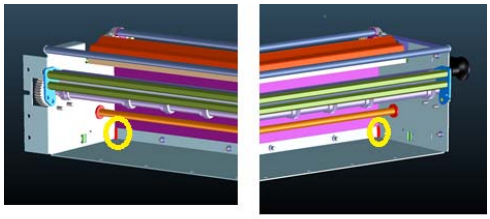


10. Remove the central cage.



Installation

1. Before installing the central cage top cover, ensure that the pointed corners are correctly sealed with silicone to prevent small ink leaks.





NOTE: If it is necessary to seal a corner, do not apply too much sealant, as it will overflow to the back of the central cage (wipe clean the overflow). You are strongly recommended to let it dry for about 15 minutes before continuing the installation. Otherwise, it may escape and stain other parts of the cage.

2. Insert the new central cage and screw it to the central cage base on both sides and at the bottom, and also to the rear cover.

3. Screw the central cage cover to the base plate structure and install it into the guide.

Printhead cleaning gear kit

1. From the Internal Print Server, navigate to **Carriage beam position** > **Move to home position** to lower the carriage beam all the way. If you cannot start the printer in the normal way due to failure, use diagnostic mode.

2. Turn off the printer and the power-enable switch.

Gear replacement

1. Remove either the transmission box or the gear inversor.
2. Replace the broken gear with the new one.

NOTE: When installing the new gear, make sure that the gear is correctly installed onto the shaft. First align both flat surfaces and then push until it is completely inserted. You will have to use significant force. Make sure that both vertical surfaces are aligned as much as possible.

3. Reinstall the transmission box or the gear inversor that you removed earlier.

Web-drive gear replacement

1. Remove the central cage from the structure baseplate.
2. Remove the web-drive gear from the drive roller.

NOTE: When installing the new gear, make sure that the gear is correctly installed onto the shaft. First align both flat surfaces and then push until it is completely inserted. You will have to use significant force. Make sure that both vertical surfaces are aligned as much as possible.

3. Reinstall the central cage cover and screw it to the structure baseplate.

Roll transmission hub (gear and rubber) replacement

1. Remove the central cage from the structure baseplate.
2. Remove the roll-free hub.
3. Remove the roll transmission hub from the drive roll.

NOTE: When removing the roll transmission hub, check that the bushings do not need to be replaced. If they are worn or broken, replace them with two new bushings.

4. Place the new roll transmission hub on the drive roll-free hub and install the assembly on the structure baseplate.

NOTE: When installing either new bushings or hub gears, make sure they are correctly installed onto the drive roller shaft. First align both hub or bushing with drive roller surfaces, and then push until they are completely inserted. You will have to use significant force. Make sure that both vertical surfaces are aligned as much as possible.

5. Reinstall the central cage cover and screw it to the structure baseplate.

Printhead cleaning module

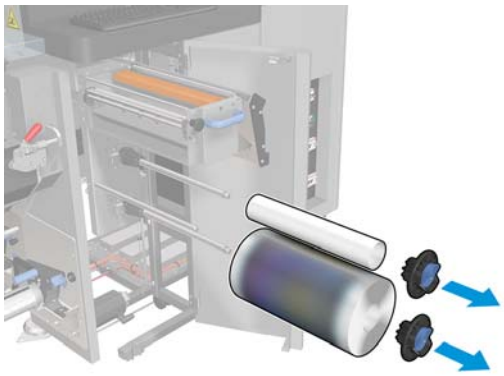
Removal

This procedure should be used only if other repair procedures have failed.

1. From the Internal Print Server, navigate to **Carriage beam position** > **Move to home position** to lower the carriage beam all the way. If you cannot start the printer in the normal way due to failure, use diagnostic mode.
2. Turn off the printer and the power-enable switch.

3. Remove the printhead cleaning roll.

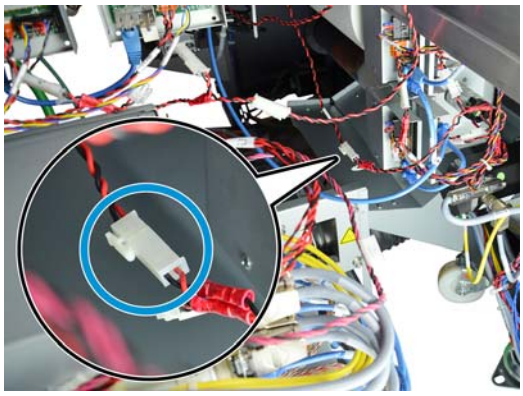
NOTE: You are recommended to unload the printhead cleaning roll to avoid damaging the assembly.

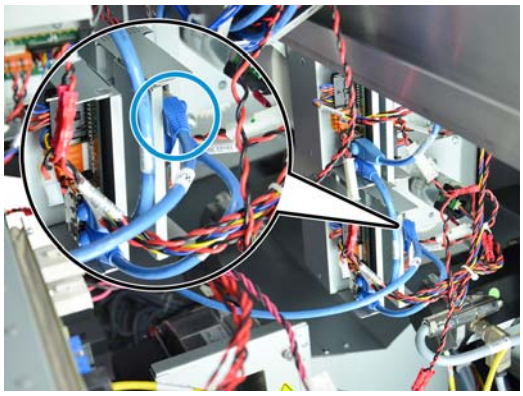


CAUTION: When working with the printhead cleaning module out of the roller, leave it on the working surface. It is important not to let the roll axis or output diverter touch the ground.

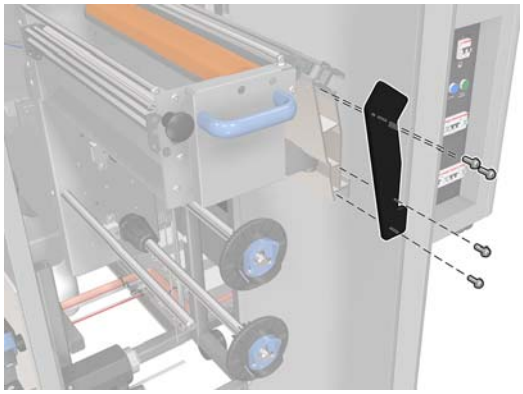
4. Disconnect all data and power cables that connect the printhead cleaning module to the rest of the printer. This means disconnecting the LAN cable connected to the PCA daisy chain and unplugging the male connector of the power cable from the air connection.

NOTE: These cables are located on the rear right of the assembly.

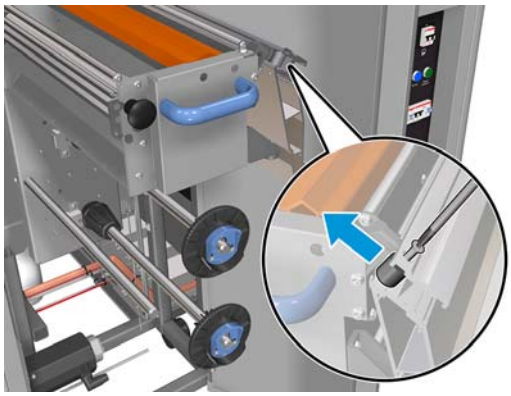




5. Remove the five T-20 screws that secure the end plate, and remove the end plate.



6. Remove the T-20 screw stop from the roller, and remove the roller.



7. Completely remove the entire printhead cleaning assembly.



Installation

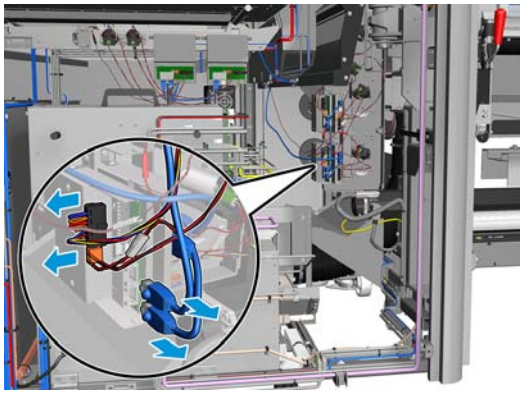
▲ After installation, perform the printhead cleaner height calibration and check.

Motor drive PCA

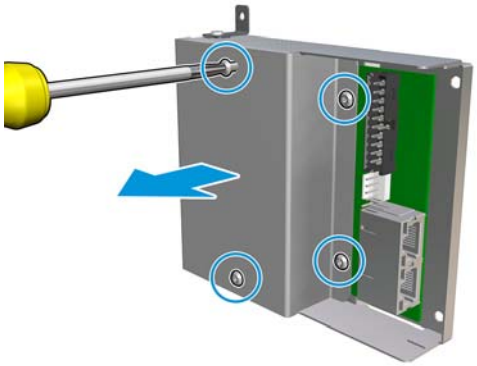
Removal

1. From the Internal Print Server, navigate to **Carriage beam position** > **Move to home position** to lower the carriage beam all the way. If you cannot start the printer in the normal way due to failure, use diagnostic mode.
2. Turn off the printer and the power-enable switch.

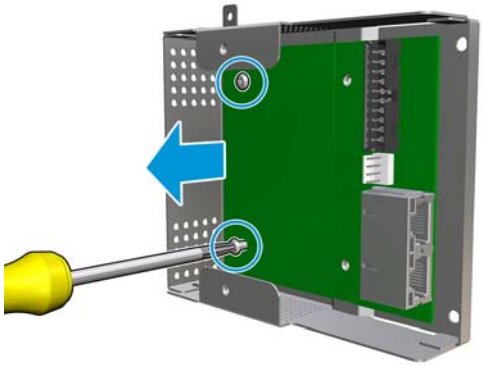
3. Open the printhead cleaning roll door.
4. Pull out the printhead cleaning roll carriage.
5. Disconnect all cables from each motor drive PCA: that is, for each PCA, the two data cables (one data cable and a RJ45 jumper at the daisy chain's end PCA chain), the encoder cable, and the power cable.



6. Remove the four T-8 screws and the motor drive PCA enclosure cover.



7. Remove the two left T-8 screws that attach the motor drive PCA to its enclosure.



8. Remove the motor drive PCA.

Installation

1. Insert the new motor drive PCA and screw in the two T-8 screws to attach it to its enclosure.
2. Screw back the PCA enclosure cover.

3. Connect all the cables to the PCA, and put back the daisy-chain end jumper if replacing the last PCA of the daisy chain. Ensure that the cables properly connected.

NOTE: The daisy chain follows the order in the illustration and table above, so that the daisy-chain ending PCA is the MO PCA (daisy-chain path from e-box to MO PCA: E-Box interconnect PCA – Z PCA – MI PCA – MA PCA – MO PCA).

The connections to the motor drive PCA are shown below.

Connector	Cable	Part number
P2	Data cable between motor drive PCAs, e-box to WW cable for Z motor drive PCA (J1, data-in connector)	Q6703-50031 or CZ056-50157
J1	Data cable, RJ45 jumper for MO motor drive PCA (J2, data-out connector)	Q6703-50031 or CZ056–50028
J4	Motor encoder cable	CZ056-50116
J3	WW power in T cable	CZ056-50161



NOTE: One of the motor drive PCAs will have only one LAN connection. Make sure to connect it to the right connector when you install the new service part.

Printhead cleaning shims calibration

NOTE: By default, the printhead cleaning system comes with one shim located on each slide mount (front and rear).

NOTE: It is important to follow the steps described in order. These are the procedures required to calibrate and shim a printhead cleaning module assembly:

- Printhead cleaner height check
- Printhead cleaner tilt check
- Printhead cleaner calibration
- Printhead cleaner shimming procedure

1. Check that the calibration and shims have been correctly set. Perform both the printhead cleaner height check and printhead cleaner tilt check (in the list above).
2. If any of the printhead cleaner check procedures do not complete correctly, perform printhead cleaner calibration and, if necessary, the printhead cleaner shimming procedure (in the list above) to correct the printhead cleaner height and tilt.
3. Repeat the printhead cleaner height and tilt check procedures.

Height and tilt check and calibration test

NOTE: The following diagnostic tests are available in Print Care only when logged in as an Engineer.

Printhead cleaner height check

This check is to find the operational height of the pressure roller of the printhead cleaning system. The check is made while wiping the printheads (either servicing or dynamic printhead wipes).

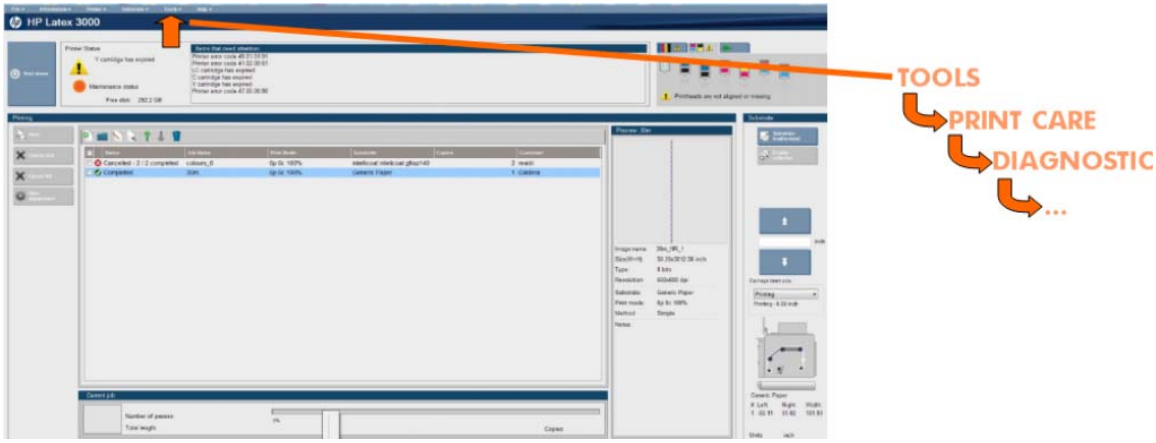
Perform this check whenever the printhead cleaning system is replaced or repaired, or if you see a very fast degradation of printhead life.

The printhead cleaner roll height check requires that you use the diagnostics tests; they are accessible through the Print Care **Diagnostics** tab.

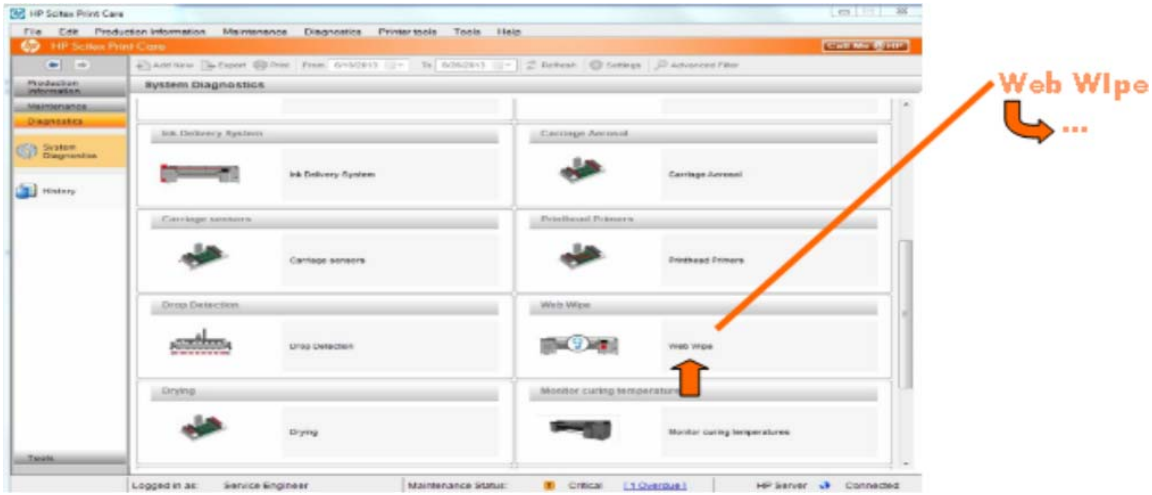
Diagnostic availability can change depending on the role logged in Print Care and printer boot mode. This of diagnostic is accessible at any user and printer boot modes login.

Printhead cleaner Z calibration check process:

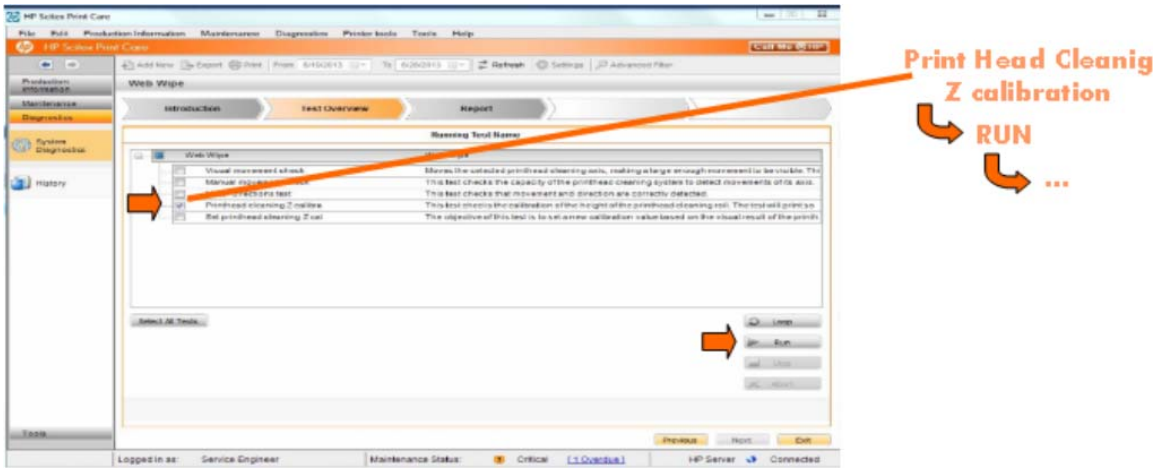
1. From the Internal Print Server's main screen, select **TOOLS** > **PRINT CARE** > **DIAGNOSTIC.**



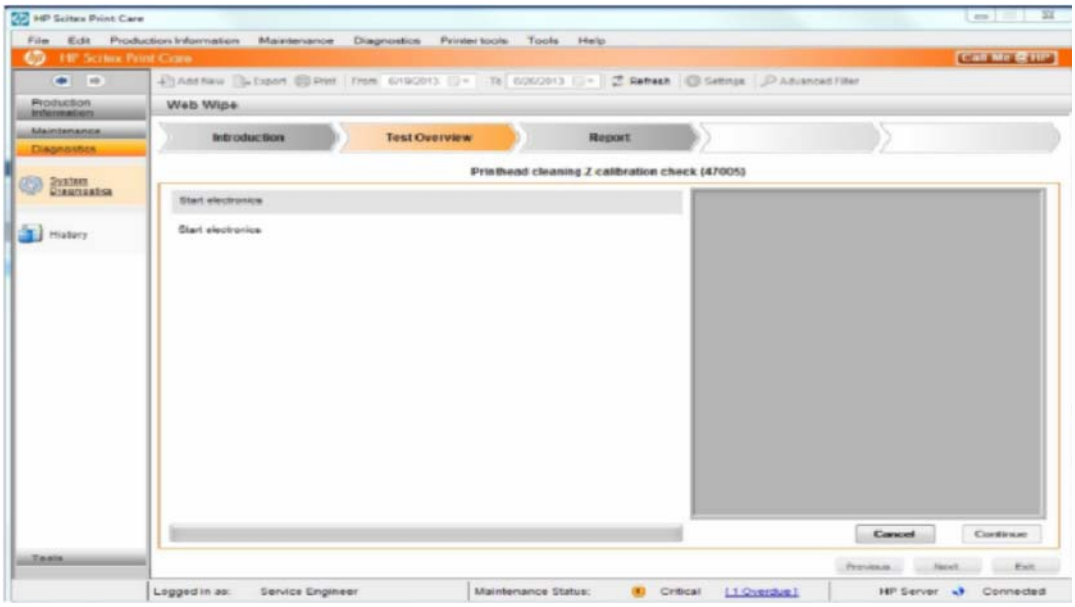
2. From the Diagnostic screen select **WEB WIPE.**



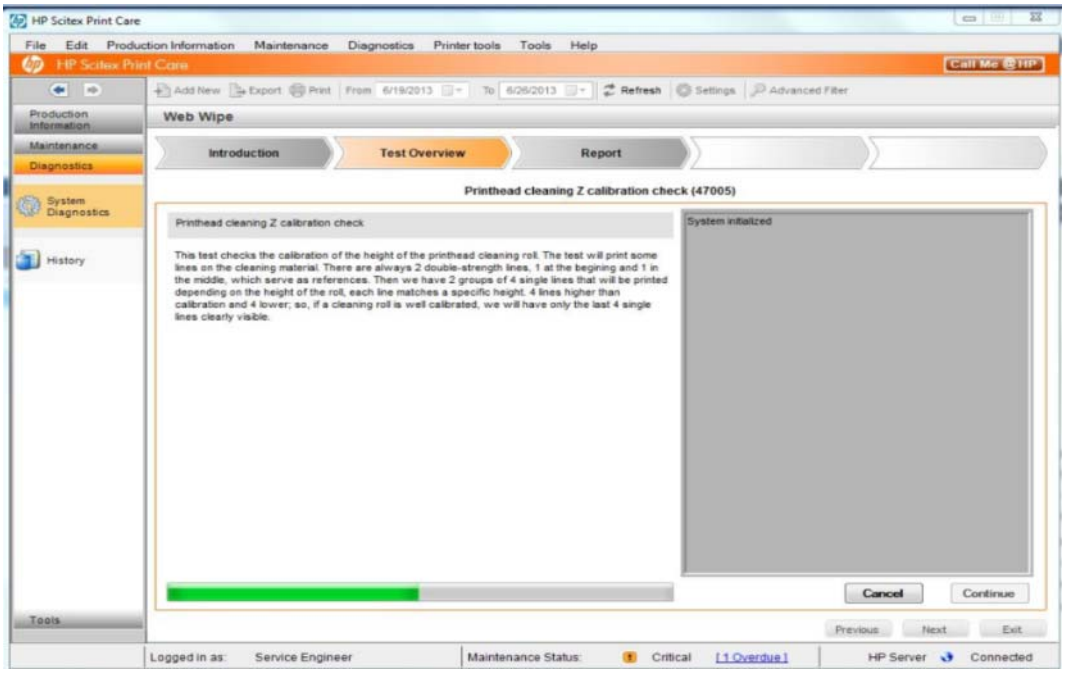
3. From the Diagnostic Web Wipe screen, select **PRINTHEAD CLEANING Z CALIBRATION** > **RUN**.



4. The printer starts up the electronics and the various subsystems involved in the calibration.



5. When all the subsystems are initialized, the IPS screen displays a message describing the process and objectives of the test:



Follow the instructions given by Print Care.

6. Perform the printhead cleaner check procedure. See Table 5-15 Printhead cleaning on page 368.

7. Then select **CONTINUE**.

   While the printhead cleaner check procedure is performed, The carriage starts doing several dynamic wipes at different heights of the rubber blade. After each dynamic wipe, the printhead cleaning subsystem makes one controlled advance.

   The different heights of the wipes are defined:

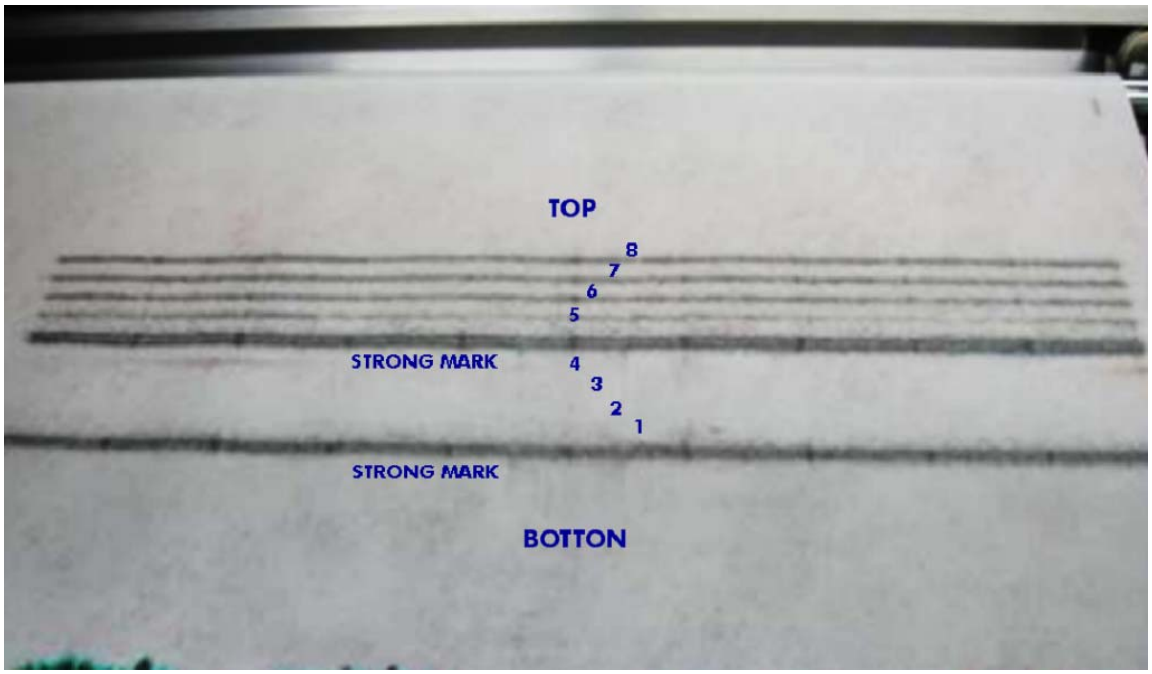
   - 0 - Two wipes at h = +4.00 mm reference
   - 1 - One wipe at h = −1.17 mm
   - 2 - One wipe at h = −0.83 mm
   - 3 - One wipe at h = −0.50 mm
   - 4 - One wipe at h = −0.17 mm
   - 5 - Two wipes at h = +4.00 mm reference
   - 6 - One wipe at h = +0.17 mm
   - 7 - One wipe at h = +0.50 mm
   - 8 - One wipe at h = +0.83 mm
   - 9 - One wipe at h = +1.17 mm

   As you can see, the delta between wipers is 0.33 mm. This distance is the minimum height that we can adjust when one module has tilt. The Δ of 0.33 mm corresponds to about 235 e.u. of the engage motor (MZ).

8. When the test is completed, pull the printhead cleaning module out of the printer and take a look at the marks left on the cloth.



The test will have generated some marks on the cloth, similar to the following:



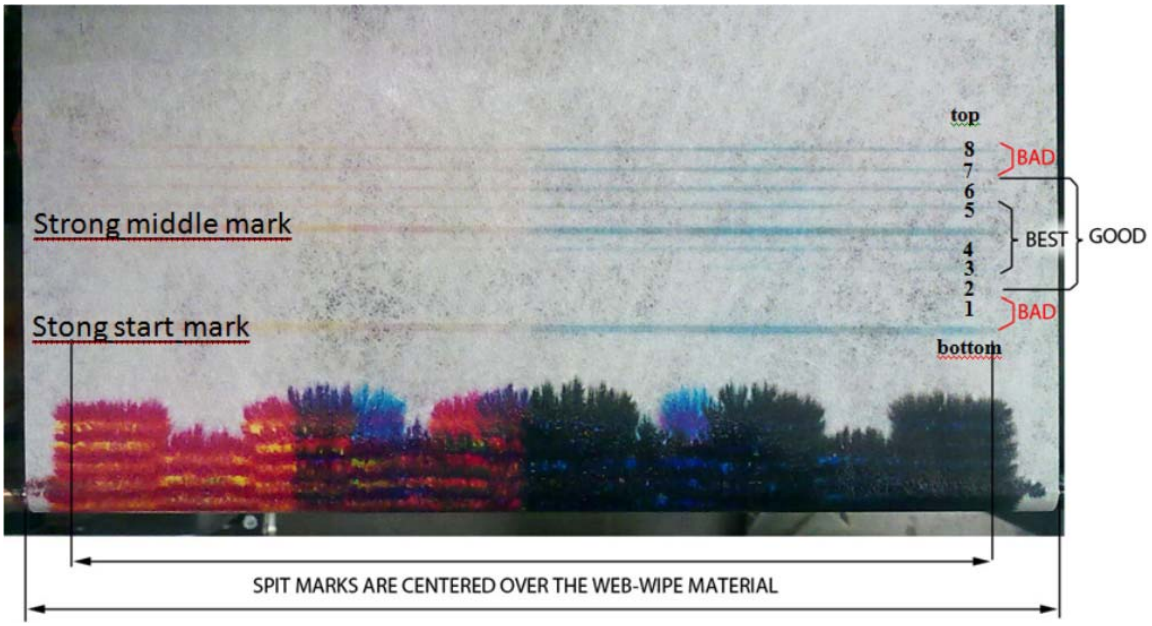
These marks are to be interpreted in the following way:

As we can see the test has 2 strong marks: one at the beginning and the other at the middle of the test. The test performs 4 wipes before the middle mark and 4 wipes after the middle mark (8 light lines in total). The printhead cleaning module is best calibrated when lines 5 to 8 are visible and lines 1 to 4 are not seen.

Height Calibration assessment:

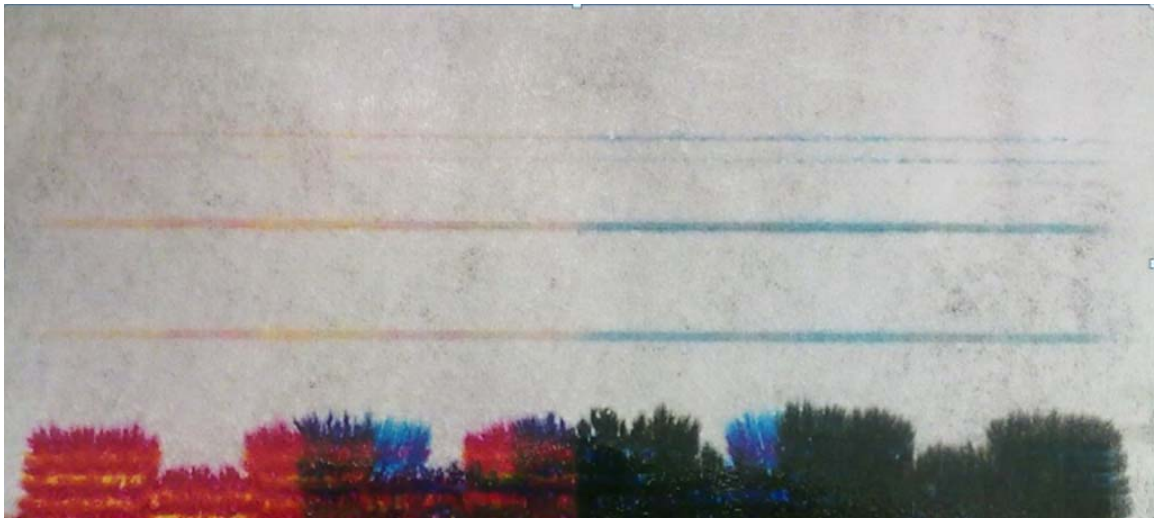
- **BAD**: line #1 not visible (other lines: 2 to 8 are visible)
- **ADMISSIBLE**: lines 1 &2 not visible and other lines (3 to 8) are visible
- **BEST**:
  - Lines 1 to 3 not visible and lines 4 to 8 are visible
  - Lines 1 to 4 not visible and lines 5 to 8 are visible
  - Lines 1 to 5 not visible and lines 6 to 8 are visible
- **ADMISSIBLE**: lines 1 to 6 not visible, lines 7 & 8 visible
- **BAD**: line 1 to7 not visible, line 8 visible
- **VERY BAD**: Lines 1 to 8 not visible at all.

Summary:



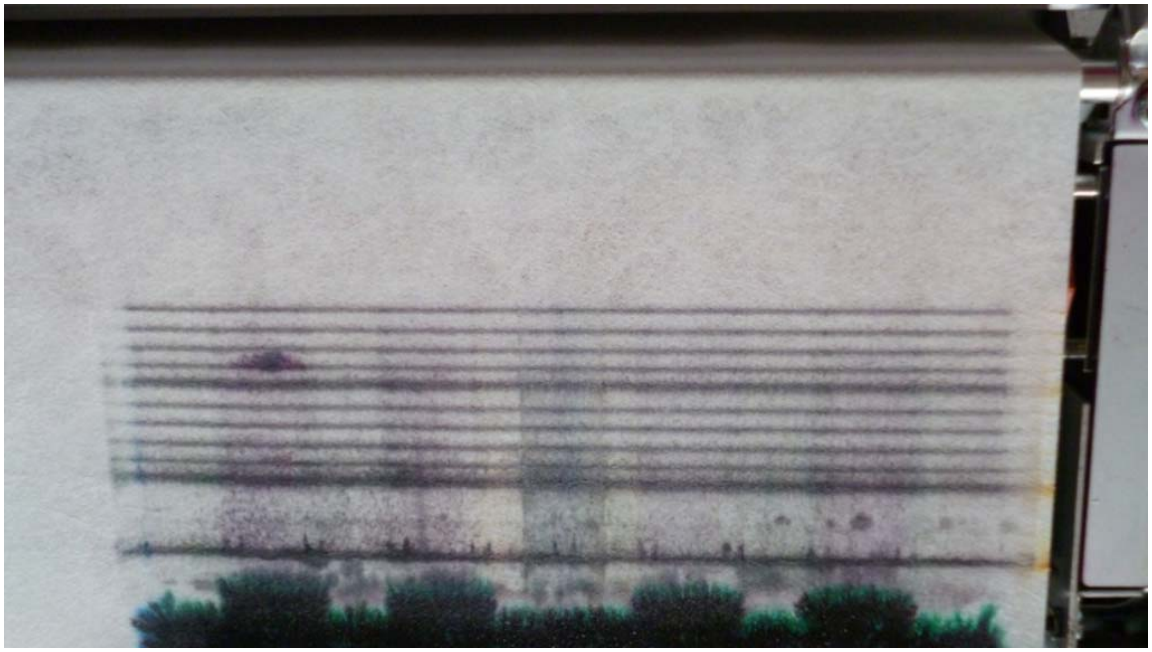
Example #1:

This next image shows a module with the two last lines that are not dark enough (lines 1 to 6 not visible at all). Note that even line 7 is still very weak. This means the module is too low and needs to be recalibrated.



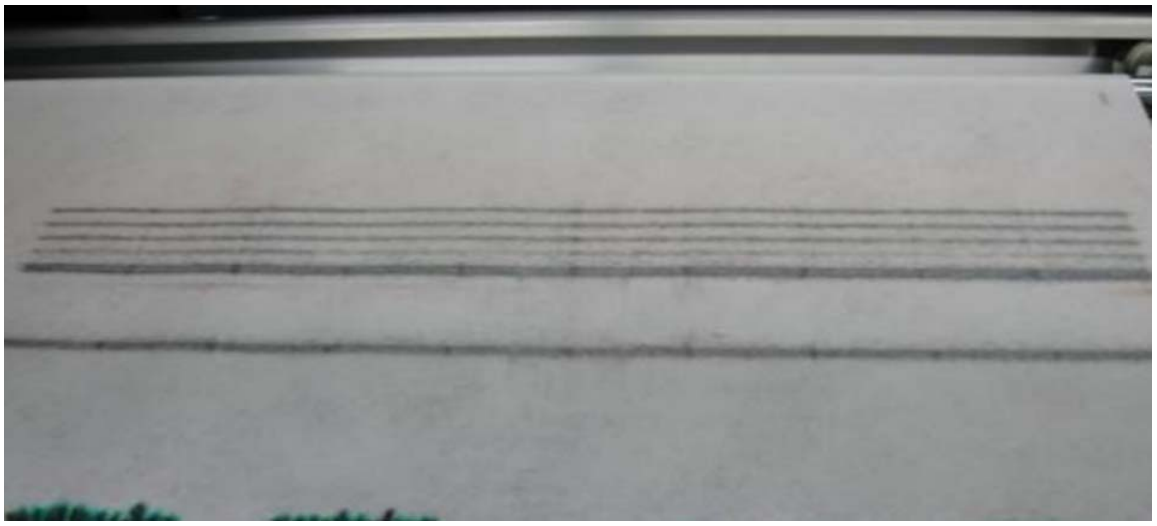
Example #2:

The following picture shows a module that we can see all the lines (line 1 to 8). This means the module is too high (excessive interference with printhead). The module needs to be recalibrated.



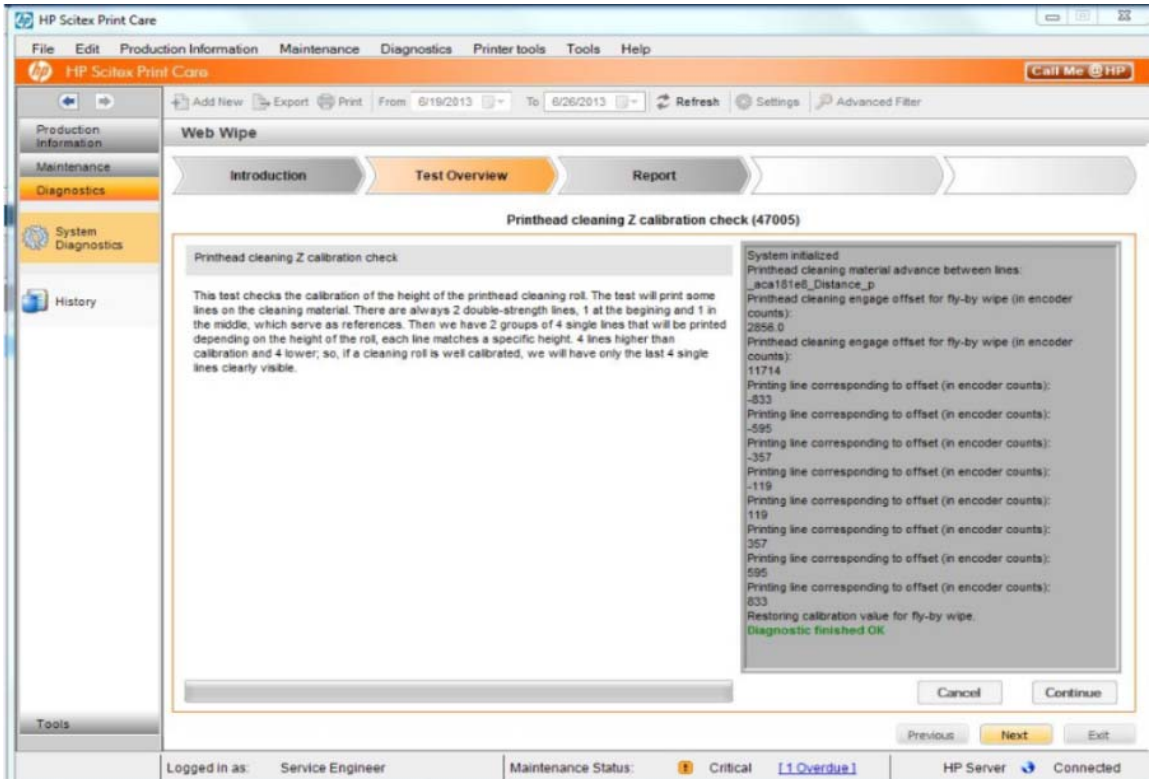
Example #3:

This picture shows a module perfectly calibrated (lines 1 to 4 not visible and lines 5 to 8 are visible).

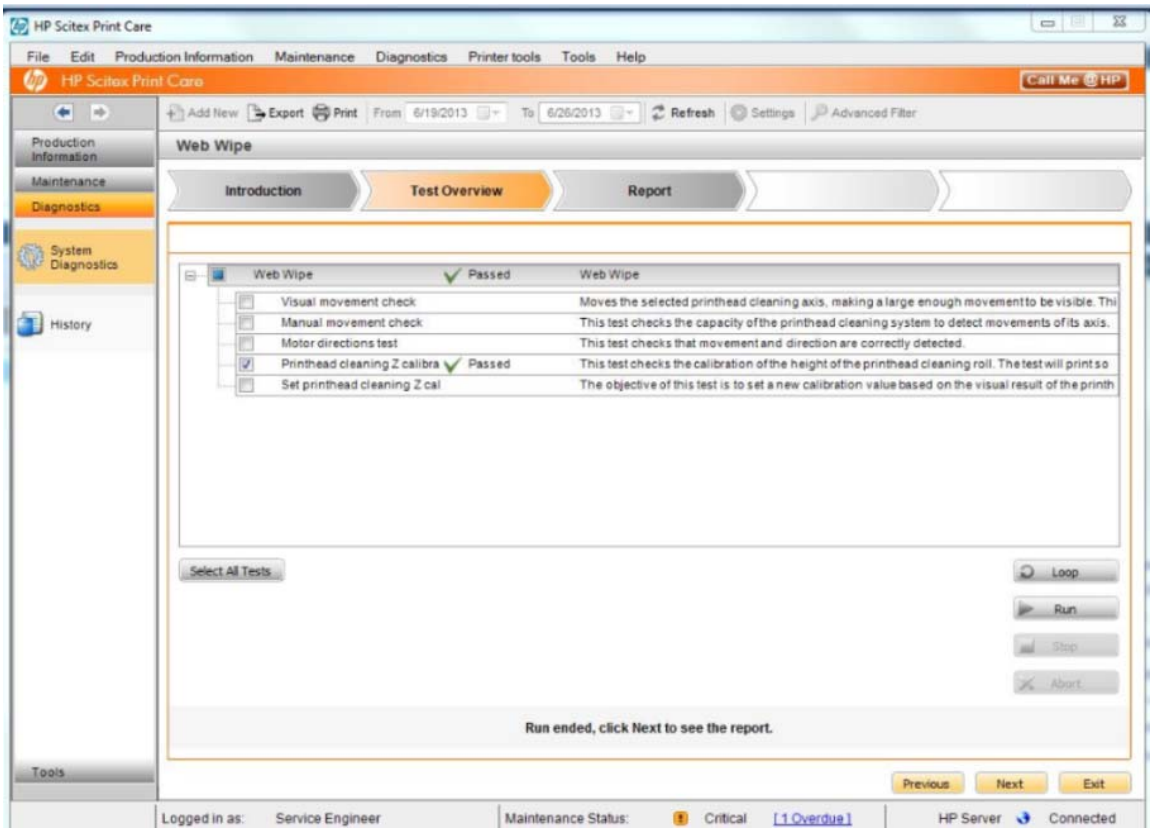


When the test is finished, the diagnostic screen shows at the right the diferential values of the e.u.of the each mark. The interference value between the roller blade and the printheads (h +4 mm) is defined from the top line, this value is in the internal memory of the printer (NVM), and the screen show it as “Printhead cleaning engage offset for fly-by wipe:”.

The normal range of this value is between 10500 & 13500 e.u. The e.u. units of each line is in the screen show it as “Printing line corresponding to offset:” This offset is 0.33 mm or 238 e.u. from the interference value.



If you select **NEXT** the test is finished. The Diagnostic tool shows the following screen:



Printhead cleaner tilt check

Besides looking at the height calibration of the module we also have to look how tilted the module is. In this case what we will see is that the line marks do not start with all printheads touching the wipe at the same position but starting with one single color. We consider that the tilt of a module is acceptable if the number of incomplete marks (the ones that don't extend the full length to cover all heads less than or equal to two. If

there are 3 non-complete lines, then we recommend to add a shim on the side where we first start to see the marks (adding a shim on one side moves the module down on that side, thus reducing wiping interference with the printhead). After which we can return to adjust the height.

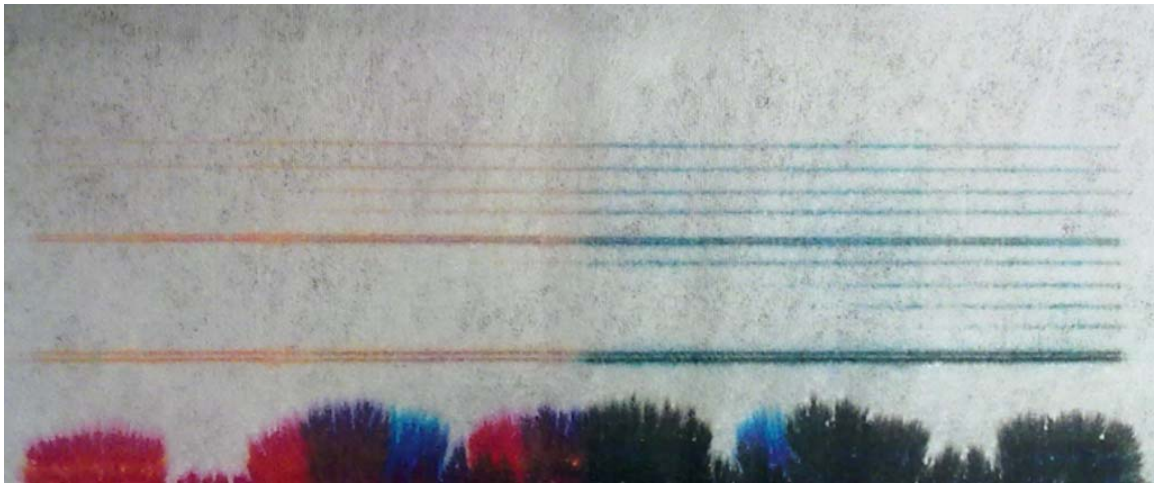
▲ Tilt assessment:

- **GOOD**: 0 or 1 incomplete lines
- **1 SHIM NEEDED**: 2, 3, or 4 incomplete lines

Δz (mm)		Action
From	To	
0	0.3	None
0.3	0.6	Add or remove one shim
0.6	+	Check printhead cleaning module and structure

NOTE: By default, the printhead cleaning system comes with one shim located on each slide mount (front and rear).

In the next image we can see a totally miscalibrated module. We count 6 incomplete marks (lines 1 to 6, is still not 100% complete either). This module requires height calibration and one more shim.

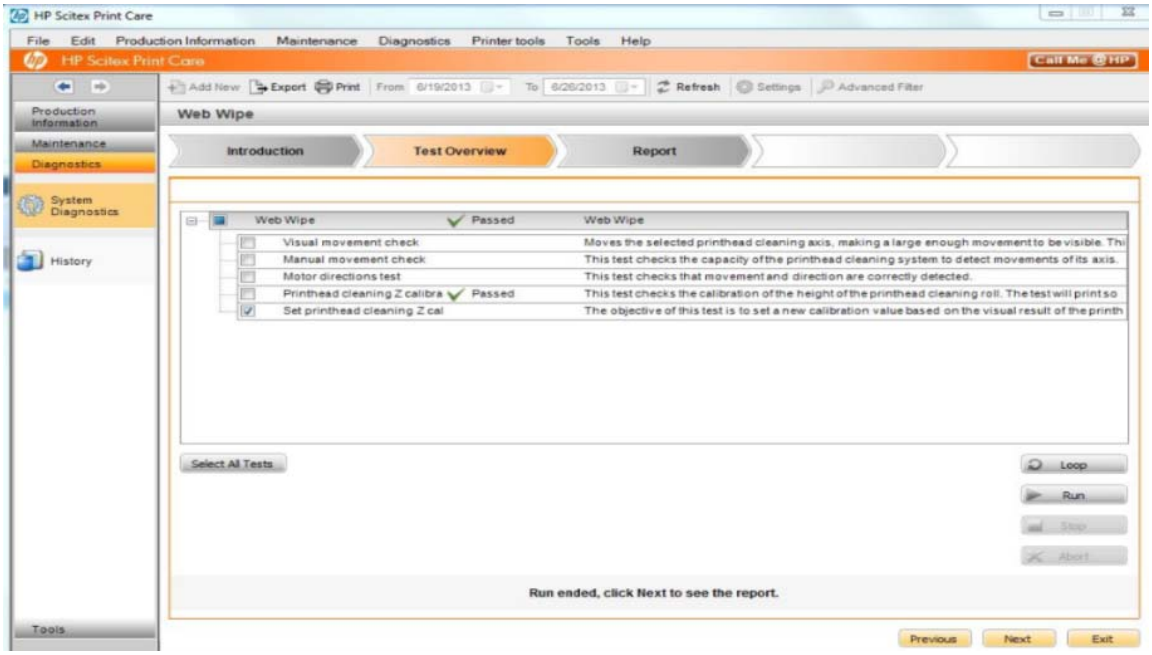


Printhead cleaner calibration

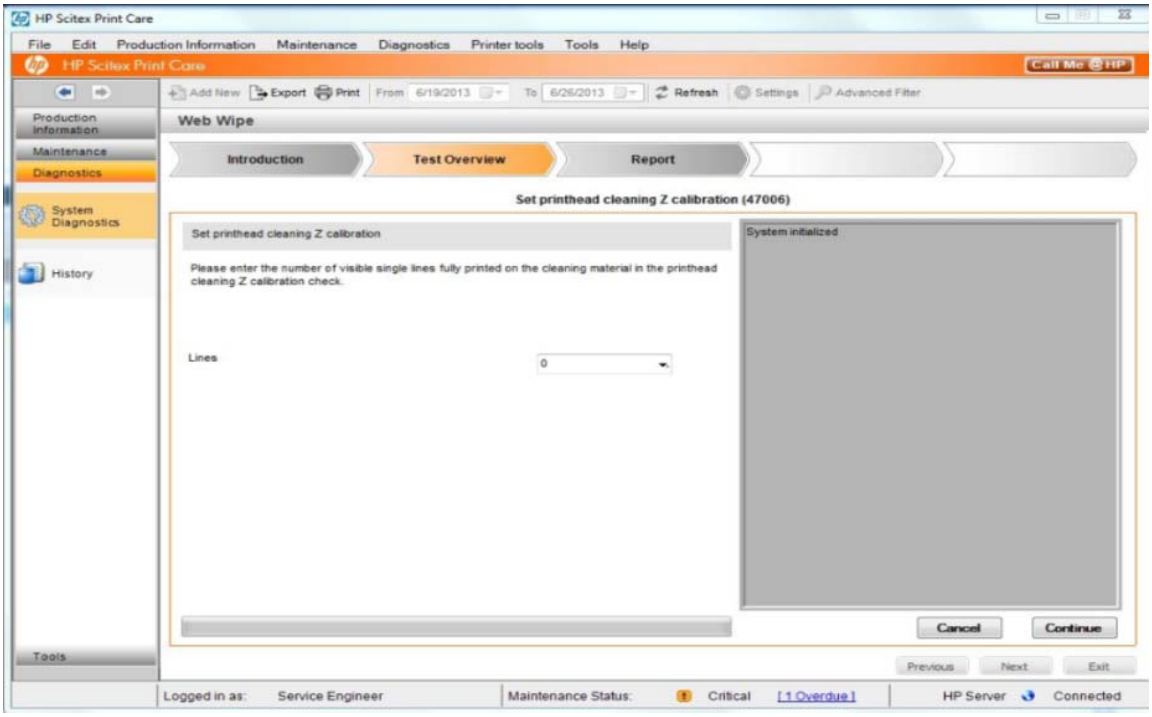
This calibration is to adjust the height of the pressure roller of the printhead cleaning system. The user must generate this calibration after having performed **Printhead cleaner check**.

The printhead cleaner roll height calibration requires that you use the Diagnostics tests that are accessible through Print Care. The process to access the printhead cleaner diagnostic screen is described under printhead cleaner check.

1. From following screen select the tab **Set printhead cleaning Z cal**:



Once you select **Next** in the Diagnostic tool, the following screen will be displayed:



This screen shows the follow message:

Enter the number of visible single lines fully printed on the cleaning material in the printhead cleaning Z calibration check

In this moment the user should introduce the number the lines that he can see on the wipe, after having performed **Printhead cleaner check**.

The maximum number of lines is eight and the minimum is zero.

Once the number the lines is selected, the tool will amend the interference value between the roller blade and the printheads (h +4 mm), and it will adjust the e.u. if necessary. The e.u. value will be defined for each increment of 0.33 mm between lines. This new value is loaded in the internal memory of the printer (NVM).

The diagnostic screen shows:

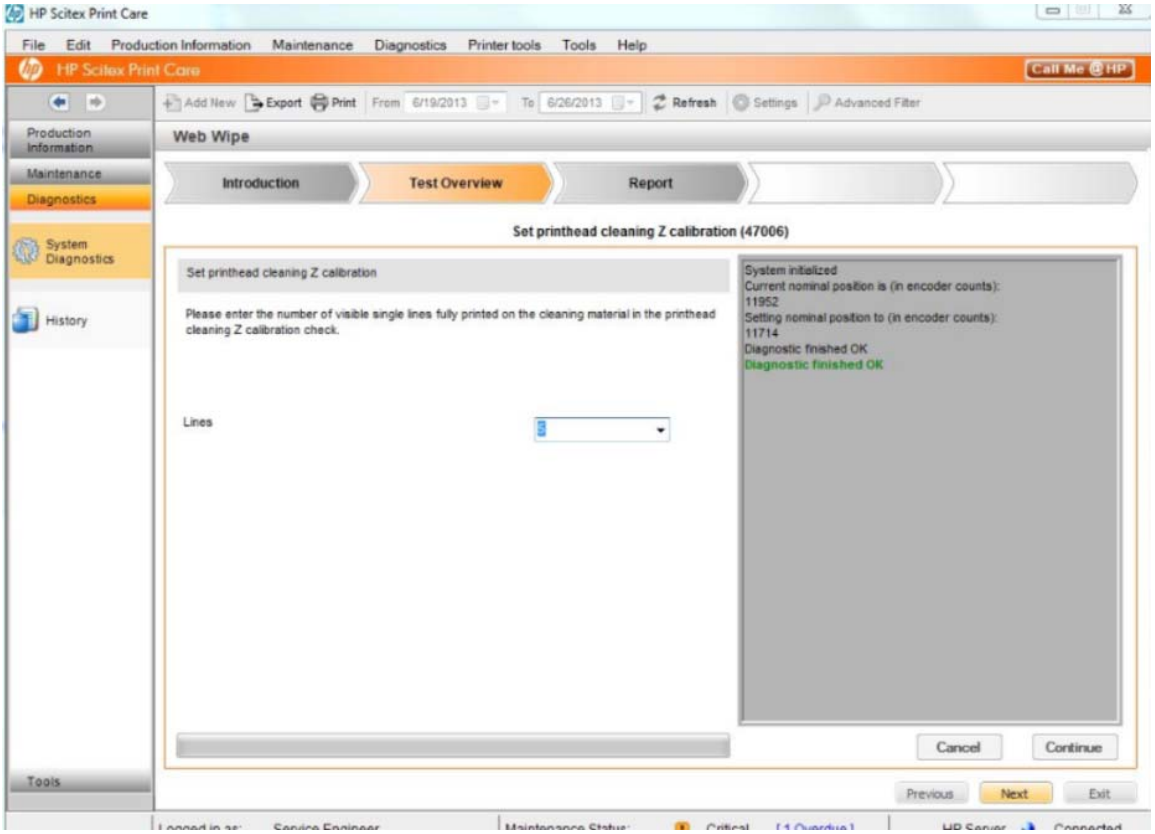
“Current nominal position is (in e.u.): XXXXX”

“Setting nominal position to (in e.u.): YYYYY”

“Diagnostic finished OK”

Once the new value is loaded in the NVM, the calibration is done.

2. Select **Next** to leave the calibration screen.

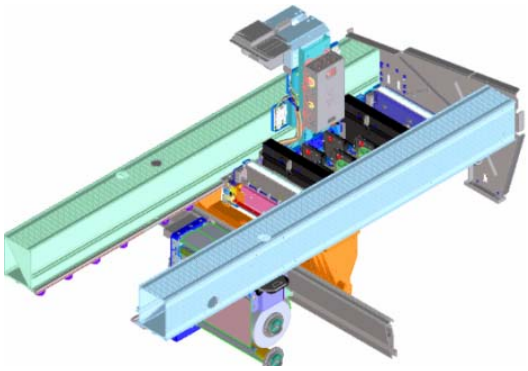


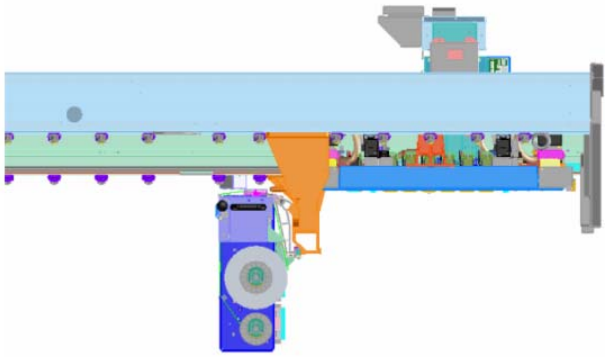
After calibration, our recommendation is to repeat the printhead cleaner check to verify that the values changed have been correctly modified.

Printhead cleaner shimming procedure

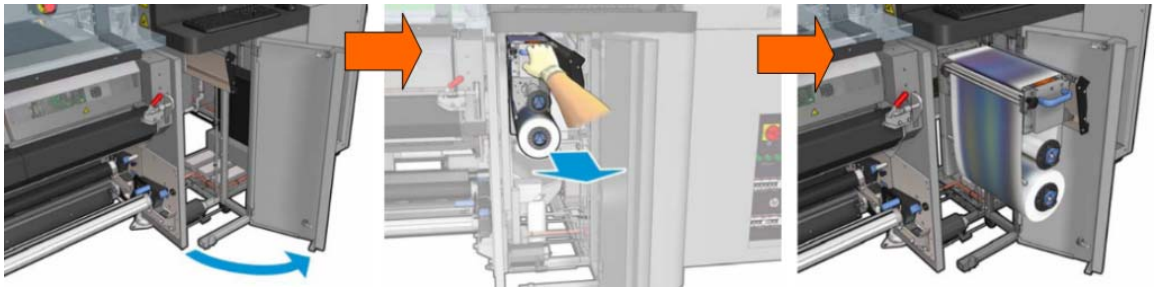
To install the shims in order to adjust the tilt on the printhead cleaner follow the following process:

1. From the Internal Print Server, navigate to **Carriage beam position** and **Move to home position** to lower the carriage beam all the way. If you cannot start the printer in the normal way due to failure, use diagnostic mode.

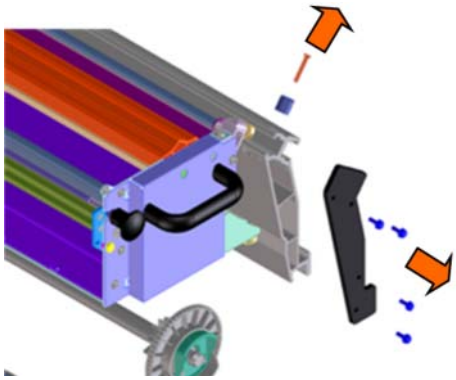




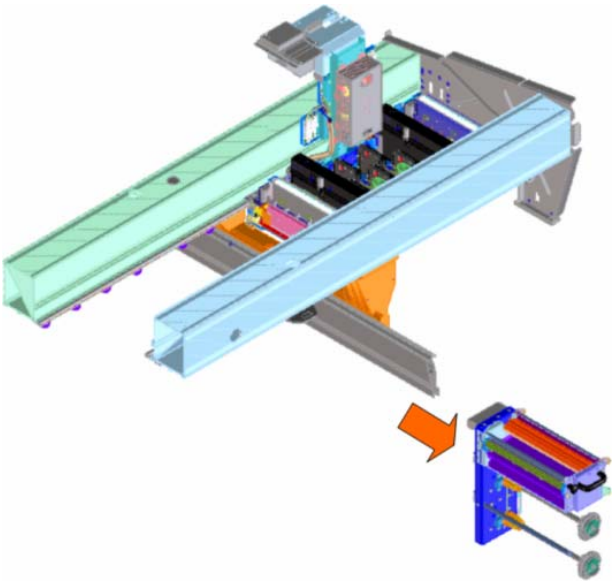
2. Turn off the printer and the power-enable switch.
3. Open the printhead cleaning roll door and remove the subsystem.



4. Pull out the printhead cleaning roll carriage, and remove the front screws of the side wipe guide assembly as shown in the following picture.



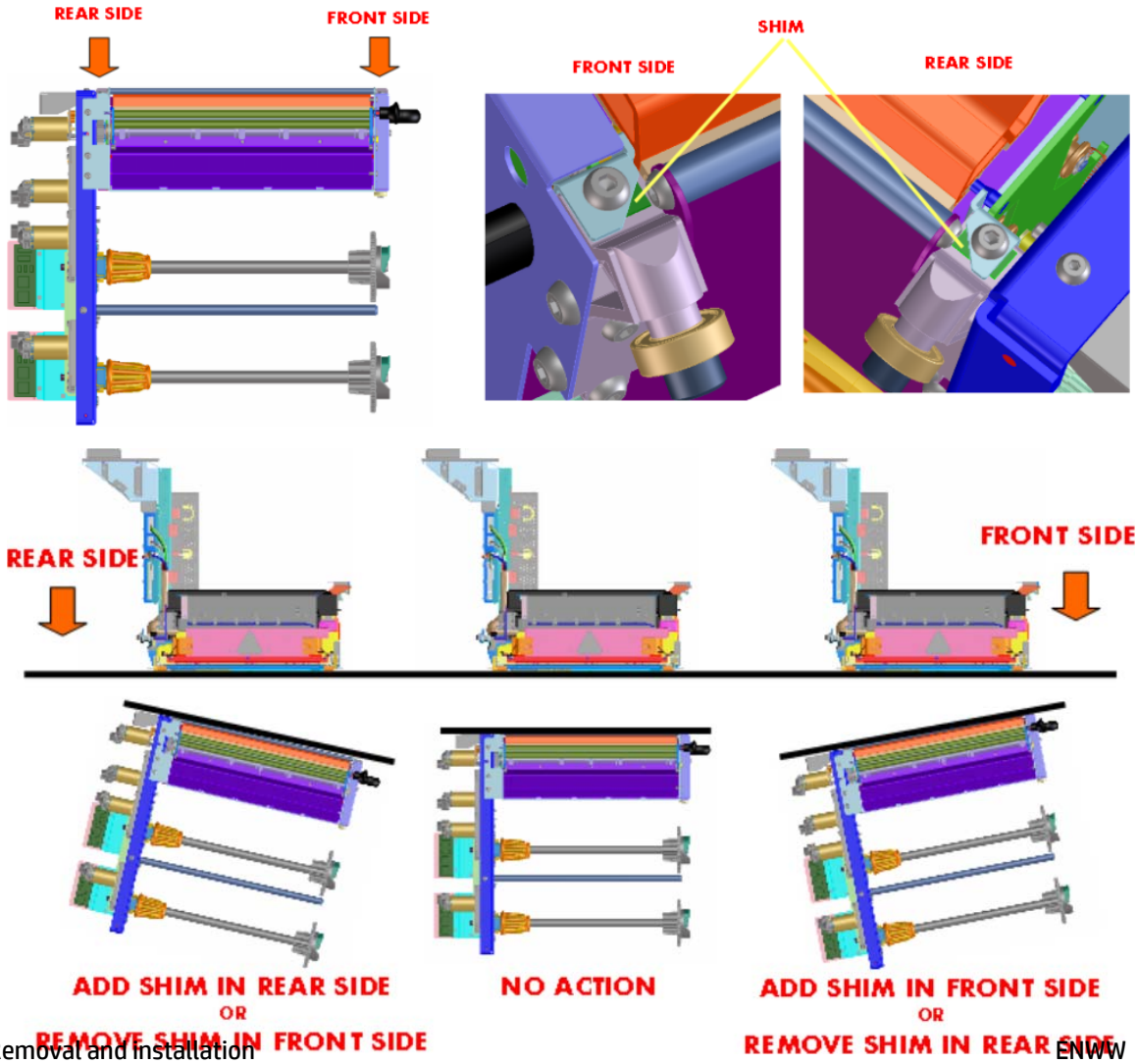
5. Remove the printhead cleaner assembly from the side wipe guide assembly.



The printhead cleaner assembly has by default a shim of 0.5 mm in both sides (front and rear), these shims have been installed in the top line. It is possible that some module has not installed any shim somewhere, this due to the top line shimming process.

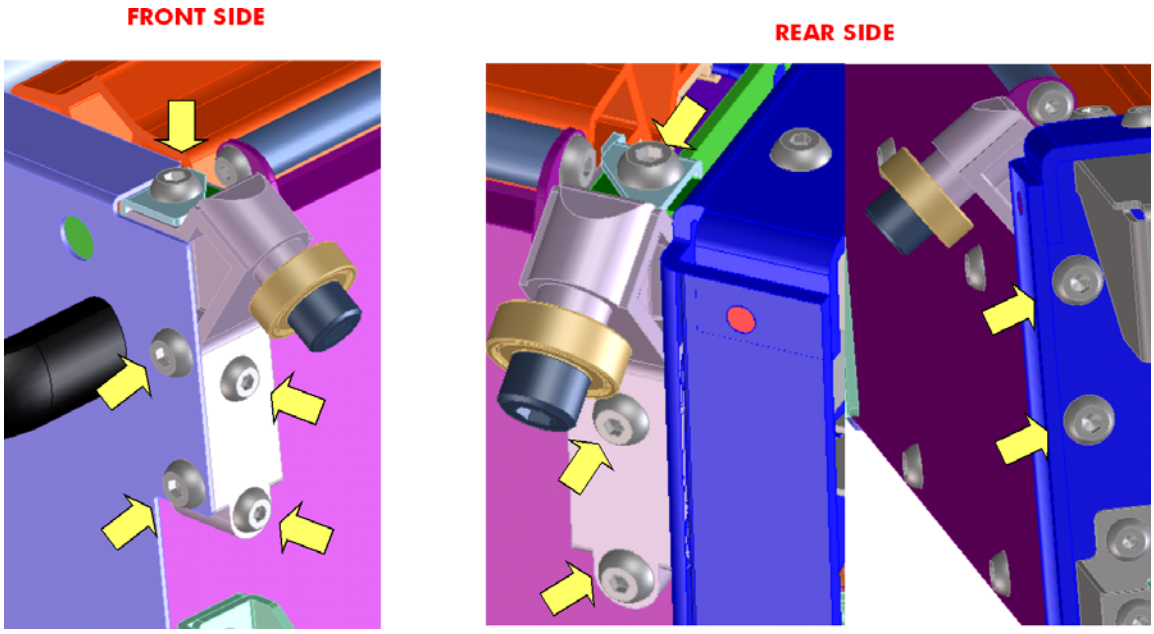
When we remove a shim from one side of the printhead cleaner assembly, the assembly goes up on this side; if we add a shim on one side, the assembly goes down on this side.

The following pictures illustrate the above topics.

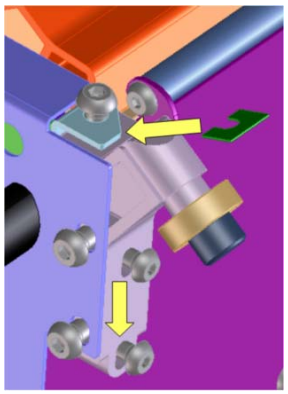


6. Loosen the 5 screws T-20, as shown below, that support the slide mount.

   The side that we must loosen depends on the results of the tilt check. Do not remove the screws.



7. Slide up the slide mount assembly. Insert or remove a shim, depending on the tilt check and calibration procedure, between the central cage and the slide mount, as indicated below.



8. Repeat the **Printhead cleaner check** to check that the shimming process and height have been correctly set.

Printhead cleaning cables kit

Removal

1. From the Internal Print Server, navigate to **Carriage beam position** > **Move to home position** to lower the carriage beam all the way. If you cannot start the printer in the normal way due to failure, use diagnostic mode.
2. Turn off the printer and the power-enable switch.
3. Pull out the printhead cleaning roll carriage.

The following cables are located on the rear right of the printhead cleaning assembly.

Capping power in T extensor cable (×4) (CZ056-50156)

NOTE: Notice that this cable is used also in other subassemblies such as the service station.

1. Disconnect the capping in T extensor power cable from the air connector, the motor drive PCA (J3 connector), and the motor drive (MA, MZ, MI, or MO motor). See Subsystem block diagrams on page 61.
2. Unroute and remove the cable. Cut the flanges if necessary.
3. Replace the cables with the new ones.
4. Push in and store back the printhead cleaning module.

IMPORTANT: When installing new cables, leave some free loops of cable to allow the printhead cleaning assembly to move along the guide without tightening the cables.

CAUTION: When installing new cables, do not stretch the flanges too much, to avoid breaking the cables.

Printhead cleaning power in T cable (CZ056-50161)

1. Disconnect the printhead cleaning power in T cable. See Subsystem block diagrams on page 61.

   TIP: You are recommended to label the cables to avoid swapping or wrongly connecting the air connectors when reconnecting them later.

2. Unroute and remove the cable. Cut the flanges if necessary.
3. Replace the cables with the new ones.
4. Push in and store back the printhead cleaning module.

IMPORTANT: When installing the new cable, leave some free loops of cable to allow the printhead cleaning assembly to move along the guide without tightening the cable.

CAUTION: When installing the new cable, do not stretch the flanges too much, to avoid breaking the cable.

Data cable between motor drive PCAs (×3) (Q6703-50031)

1. Disconnect the data cables between the motor drive PCAs.
2. Unroute and remove the cables.



NOTE: The LAN cables are connected between the motor drive PCAs from 1 to 4 in a daisy chain.

CAUTION: When installing new cables, do not stretch the flanges too much, to avoid breaking the cables.

Micci2 termination (CZ056-50028)

- Replace the Micci2 termination from the MO motor drive PCA (P2 connector).

E-box to printhead cleaning cable (CZ056-50157) —Removal

1. Remove the rear right panel. See Rear right panel assembly on page 624.
2. Disconnect and unroute the e-box to printhead cleaning cable connected to motor drive PCA 1 (J1).

E-box to printhead cleaning cable (CZ056-50157) —Installation

1. Remove the rear right panel. See Rear right panel assembly on page 624.
2. Pull out the e-box assembly.
3. Pull out the printhead cleaning module as far as it will go.
4. Route the cable to leave a free loop that is not too large.

   CAUTION: When installing the new cable, do not stretch the flanges too much, to avoid breaking the cable.

5. Push the e-box back to its vertical position and push the printhead cleaning module back into the printer.
6. Ensure that the free loop does not interfere with any other element, such as the beam. If necessary, readjust the free loop so that the cable can extend fully without tightening when pulling out the printhead cleaning module.

E-cabinet to printhead cleaning power cable (CZ056-50076): Removal

1. Remove the rear right panel. See Rear right panel assembly on page 624.
2. Disconnect and unroute the e-cabinet to printhead cleaning power cable connected to the printhead cleaning power in T cable and power in T cable connectors.

E-cabinet to printhead cleaning power cable (CZ056-50076): Installation

1. Remove the rear right panel. See Rear right panel assembly on page 624.
2. Pull out the e-box assembly.
3. Pull out the printhead cleaning module as far as it will go.
4. Route the cable to leave a free loop that is not too large.

   CAUTION: When installing the new cable, do not stretch the flanges too much, to avoid breaking the cable.

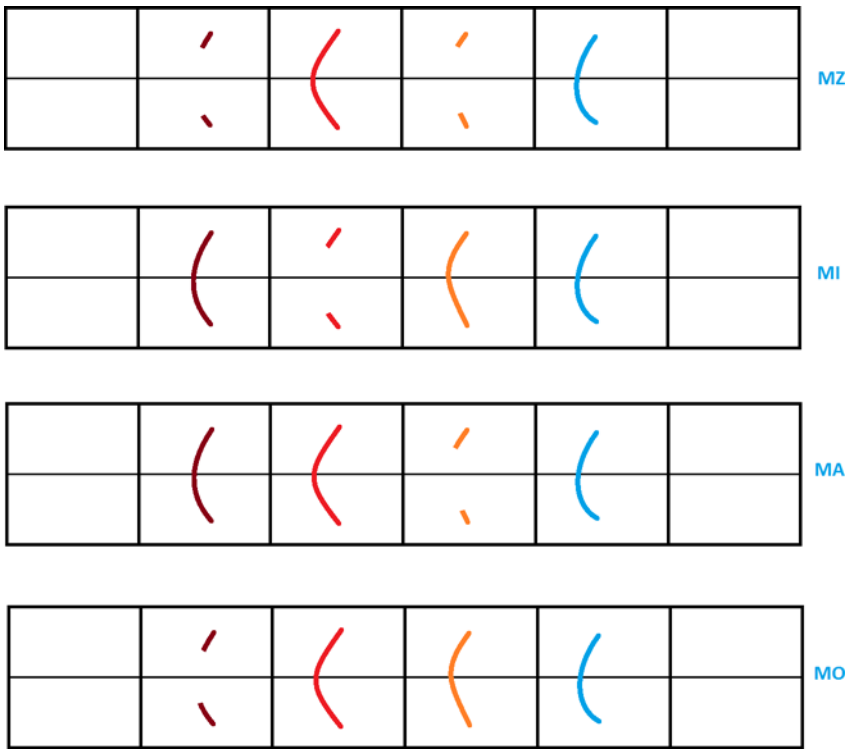
5. Push the e-box back to its vertical position and push the printhead cleaning module back into the printer.
6. Ensure that the free loop does not interfere with any other element, such as the beam. If necessary, readjust the free loop so that the cable can extend fully without tightening when pulling out the printhead cleaning module.

Motor encoder cable (×4) (CZ056-50116)

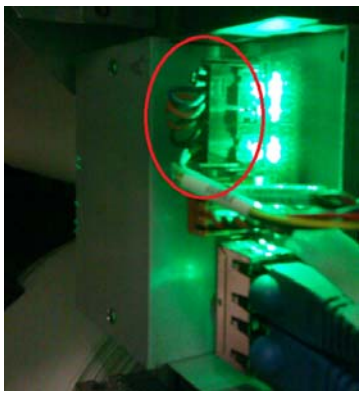
1. Access the motor drive PCA.
2. Disconnect the motor encoder cable from the motor drive PCA and the motor assembly (J4 connector).

3. Unroute and remove the motor encoder cable.

CAUTION: This cable brings within the motor drive PCA address, so it is important when connecting the cable to cut the jumper cables (see the illustration below) in order to assign the jumper addresses correctly to each motor drive PCA.



NOTE: The illustration below is an example of a motor drive PCA address assignment. The red jumper is cut, so it is a MI motor drive PCA.



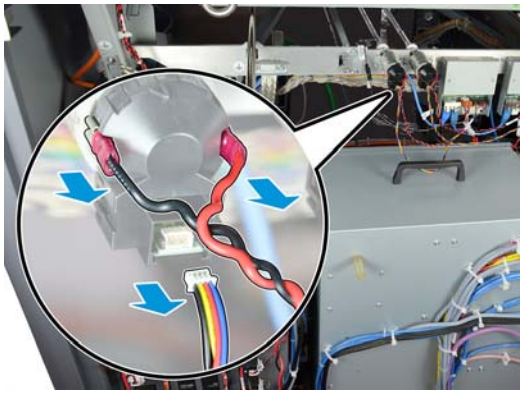
Service station: capping and drop detector

Motor kit

Removal

1. Turn off the printer and the power-enable switch.
2. Remove the rear right panel. See Rear right panel assembly on page 624.

3. Disconnect both power and encoder cables from the motor.

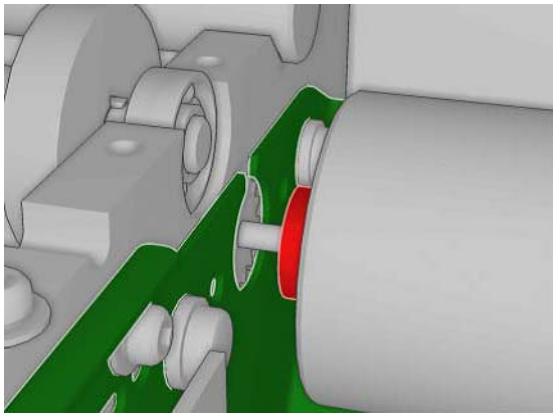


4. Remove the two T-20 screws that secure the motor to the plate.
5. Remove the motor.

TIP: If it is difficult to remove, you can loosen the transmission screws so that it will be easier to release the motor gear.

Installation

1. Take care not to confuse the T-20 screws from the plate with the T-20 screws from the motor. The screws for the motor are longer and with smaller washers.
2. The motor is referenced in the V of the hole.



CAUTION: Make sure that the V holds the motor's neck to position the motor accurately.

3. Make sure that the gears engage correctly.
4. Before securing the motor with the screws, make sure that it enters the V support perfectly. The motor should be fitted so that it is held only by the screws and not by the V support.

Switch

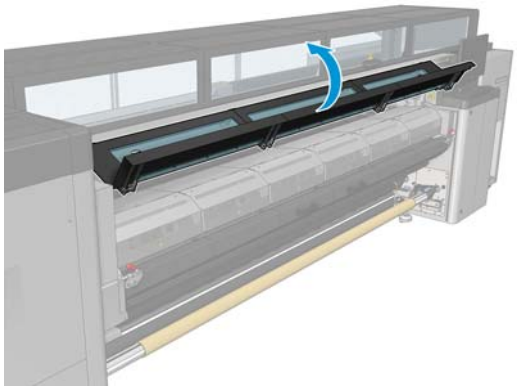
NOTE: Before starting to remove the capping module switch, it is important to send the printheads to their replacement position in order to have good access to the platform.

NOTE: If you need to remove the drop-detector module switch, you must move the drop-detector module to the center.

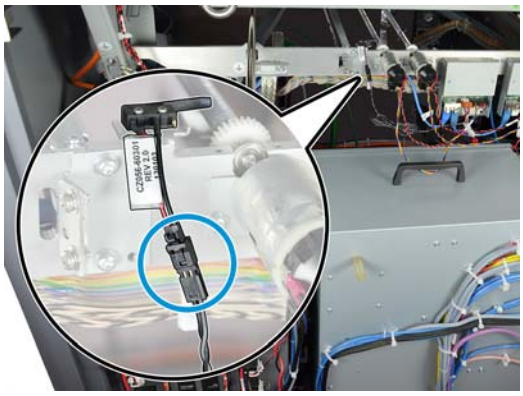
NOTE: Whenever you need to have the carriage out of the capping station while replacing parts of the service assembly, you are recommended to remove the printheads from the carriage and cap them before removing and installing the service station parts.

Removal

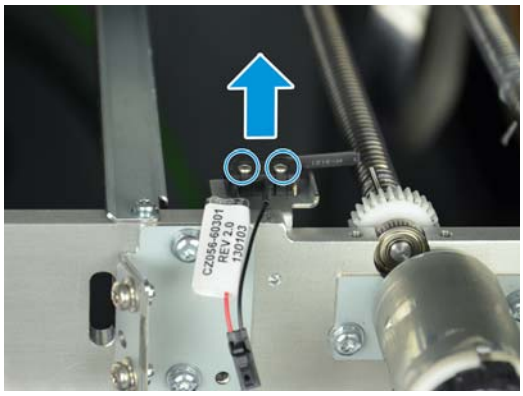
1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.
3. Open the front door.



4. Remove all printheads from carriage and store them in their caps.
5. Remove the rear right panel. See Rear right panel assembly on page 624.
6. Disconnect the switch.



7. Remove the two T-8 screws and remove the switch.



Installation

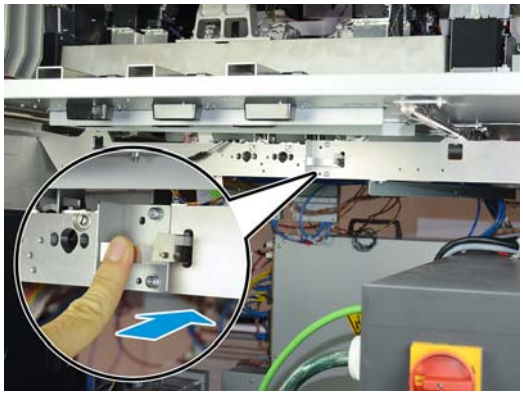
- Install the new switch on each module (either capping or drop-detector modules).

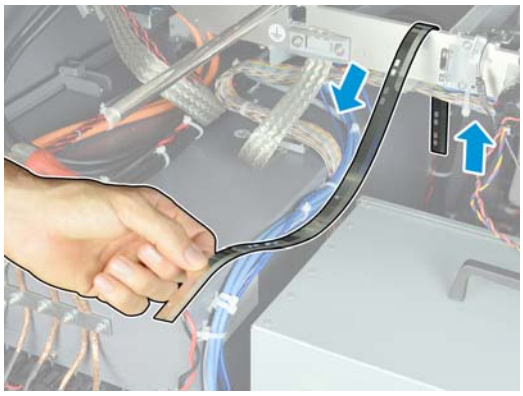
Encoder strip

Removal

1. Turn off the printer and the power-enable switch.
2. Open the front right panel. See Front right panel assembly on page 623.
3. Remove the rear right panel. See Rear right panel assembly on page 624.
4. Apply pressure to the encoder strip bracket and pull the encoder strip away and then over.

WARNING! The encoder strip is very sharp. Be careful that you do not cut yourself. If possible, wear protective gloves.





5. Remove the two T-20 screws that secure the encoder sensor, and remove the sensor.



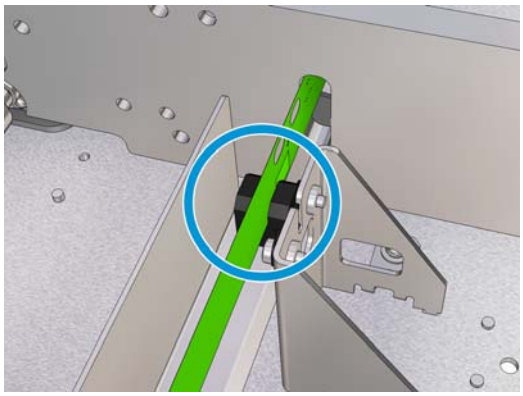
Installation

1. Place the encoder strip correctly through the pin in the encoder strip holder.

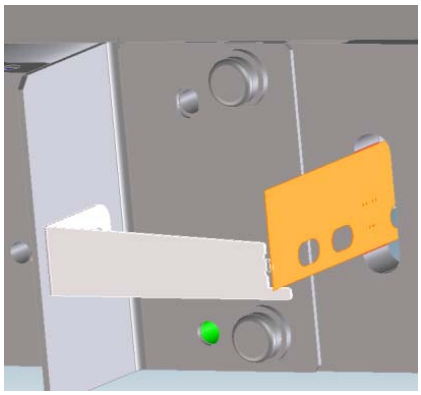
2. Once the encoder strip is correctly placed, fit the two T-20 screws.



3. Make sure that the encoder strip goes through the optical encoder reader.



4. Place the encoder strip spring in one of the encoder strip holes (only one fits).



Encoder sensor and support

Removal

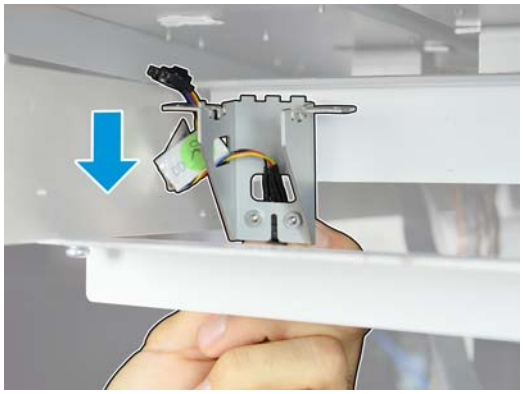
1. Turn off the printer and the power-enable switch.
2. Open the right cover door.
3. Remove the rear right panel. See Rear right panel assembly on page 624.

4. Disconnect the encoder cable.



5. Unroute the encoder cable down through the hole to free the drop-detector shuttle.
6. Remove the encoder strip from the spring and leave it loose. See Encoder strip on page 773.
7. Remove the two T-10 screws that secure the encoder sensor, and remove the sensor.

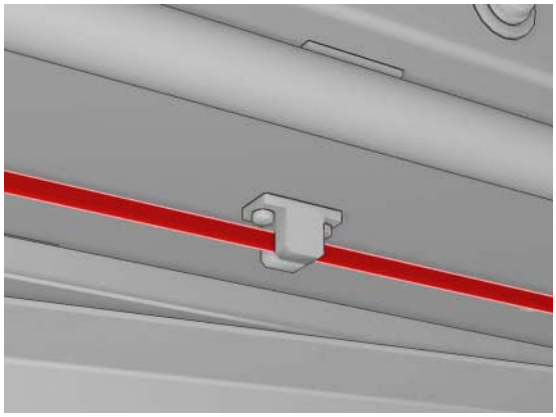




Installation

1. Assemble the new encoder holder and sensor with the two T-10 screws.
2. Route the encoder sensor cable to the top of the drop-detector shuttle and connect it to the encoder cable (CZ056-50021).

3. Fix the encoder strip to the spring.



Caps kit

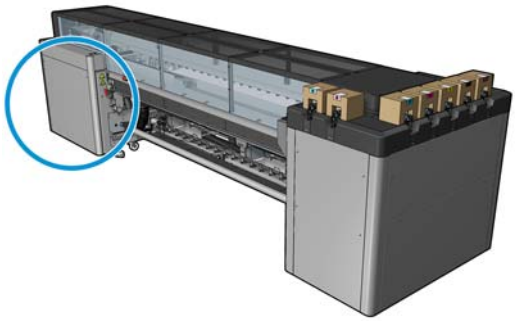
Prepare to replace a service station cap

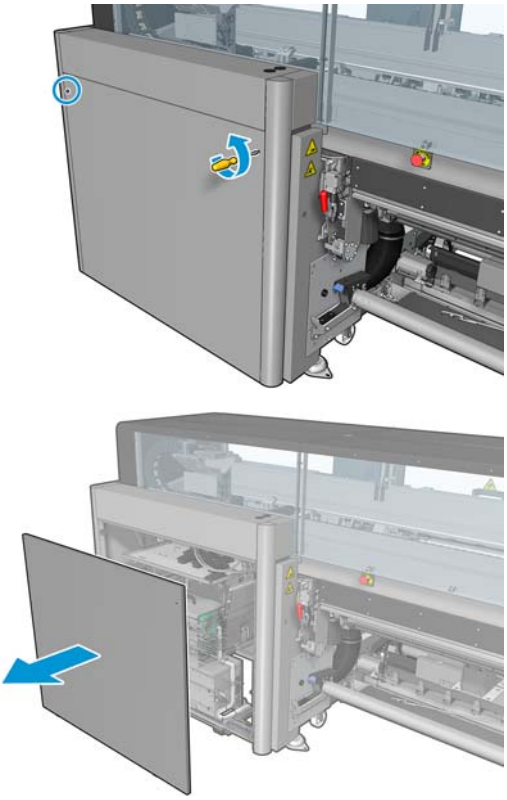
1. Ensure that you have the Service Station Caps Kit (CZ056-67036), which is included in the Standard Uptime Kit (D4J02A).
2. Ensure that the printer is not printing.
3. Ensure that all windows, covers, and doors are closed and remain in their original position.
4. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
5. Turn off the printer in the correct way for maintenance operations.



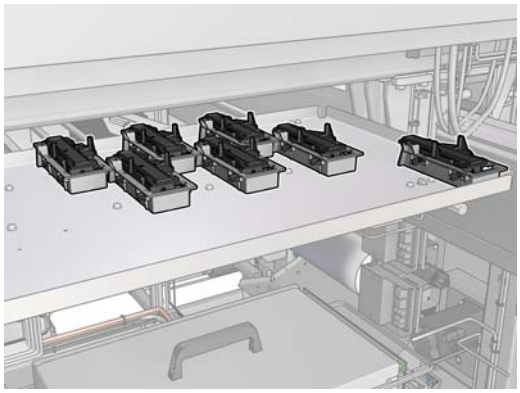
Replace a service station cap

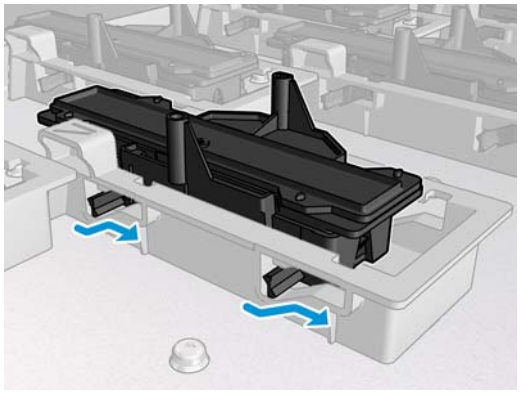
1. Unscrew and remove the cover as shown below, to access the capping station.

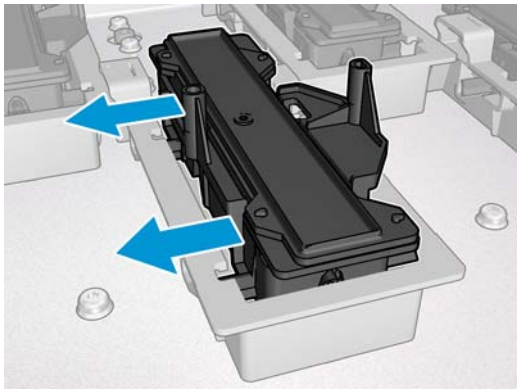


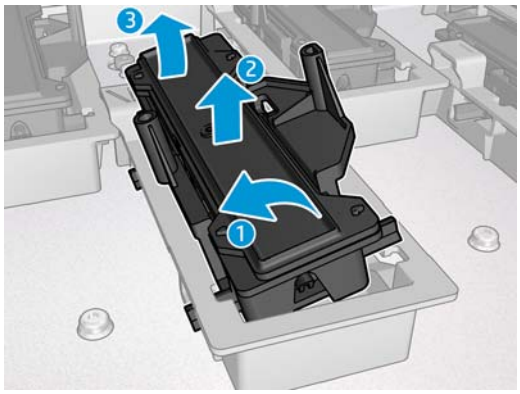


2. Remove the service station cap, using three movements as shown below.

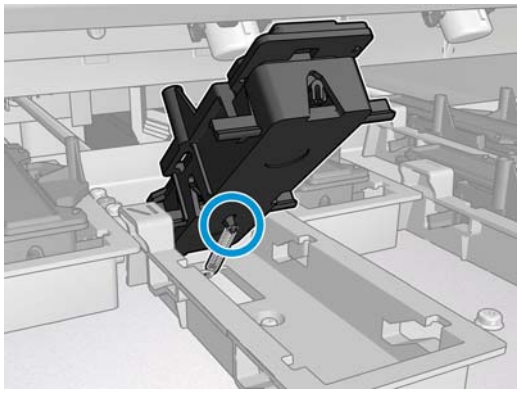








3. Remove the spring that holds the cap from below.



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.



Drop-detector kit

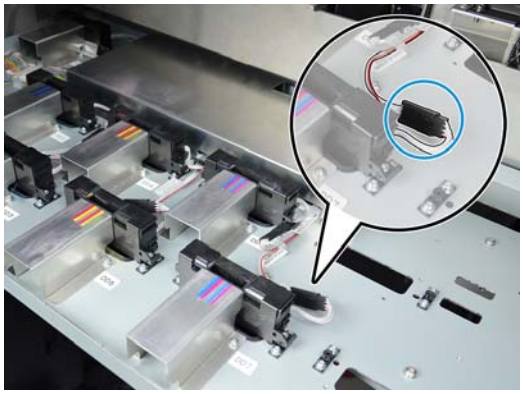
Removal

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.
3. Stand on the folding steps and open the service position window.

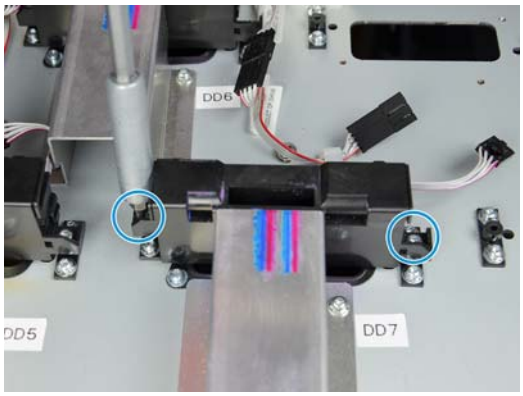


4. Remove all printheads from the carriage and store them in their caps.
5. Remove the right panel. See Right panel assembly on page 624.

6. Disconnect the drop detector.

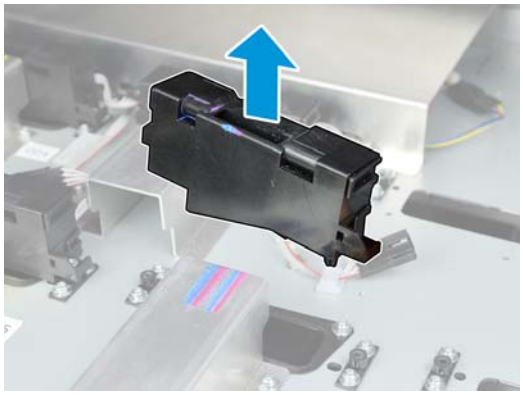


7. Remove the two T-10 screws and the vertical locator that secure the drop detector.



NOTE: Do not lose the vertical locator and screws.

8. Remove the drop detector.



Installation

1. Place the new drop detector and attach it with two T-10 screws.
2. Perform the drop-detector shuttle reset procedure. See How to run a diagnostic test on page 341.
3. Calibrate the drop detector.
4. Check that the printheads are in good condition, check the printhead alignment, and check the section that shows the health of the nozzles.

Capping transmission assembly

Removal

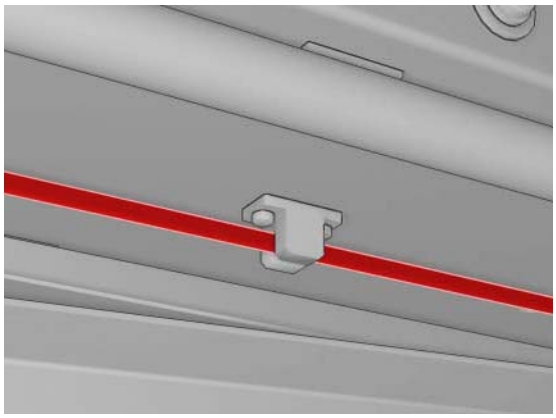
1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.
3. Stand on the folding steps and open the service position window.



4. Remove all printheads from the carriage and store them in their caps.
5. Open the right cover door.
6. Remove the rear right panel. See Rear right panel assembly on page 624.
7. Move the capping and drop-detector modules manually to a more central position, so that the rods on both ends are accessible.
8. Remove the two T-20 screws that secure the housing transmission.
9. Remove and save the four T-10 screws that hold the two service transmission retainers that secure the capping transmission assembly to both bearing plates.
10. Remove the capping transmission assembly.

Installation

1. Reinstall the transmission, being careful to seat the gear transmission and the bearing correctly into their locations.
2. Screw back the housing transmission.



Drop-detector transmission assembly

Removal

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.
3. Stand on the folding steps and open the service position window.



4. Remove all printheads from the carriage and store them in their caps.
5. Open the right cover door.
6. Remove the rear right panel. See Rear right panel assembly on page 624.
7. Move the capping and drop-detector modules manually to a more central position, so that the rods on both ends are accessible.
8. Remove the two T-20 screws that secure the housing transmission.
9. Remove and save the four T-10 screws that hold the two service transmission retainers that secure the drop-detector transmission assembly to both bearing plates.
10. Remove the drop-detector transmission assembly.

Installation

1. Reinstall the transmission, being careful to seat the gear transmission and the bearing correctly into their locations.
2. Screw both transmission retainers to secure the bearings to their plates.
3. Screw back the housing transmission.
4. Perform the following calibrations:
   - Drop-detector shuttle calibration XY.
   - Drop-detector backslack and elasticity.
   - Drop-detector calibration.

Capping module

Removal

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.

3. Stand on the folding steps and open the service position window.



4. Remove all printheads from the carriage and store them in their caps.
5. Open the right cover door.
6. Remove the rear right panel. See Rear right panel assembly on page 624.
7. Move the capping shuttle to the most external position, so that the switch is activated.
8. In order to be able to remove the capping station, remove:
   - Two T-20 screws that secure the shuttle retainer
   - The shoulder screw
9. Remove the capping station.

Installation

1. Place the shuttle on the rods.
2. Move the capping station along the rods, until you can tighten the shoulder screw to the transmission nut (this will define the shuttle position on the Y axis).
3. Place the shuttle retainer and tighten the two T-20 screws.

Drop-detector module

Removal

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.
3. Stand on the folding steps and open the service position window.



4. Remove all printheads from the carriage and store them in their caps.
5. Open the right cover door.
6. Remove the rear right panel. See Rear right panel assembly on page 624.
7. Move the capping shuttle to the most external position, so that the switch is activated.
8. In order to be able to remove the capping station, remove:
    - Two T-20 screws that secure the shuttle retainer
    - The shoulder screw
    - The drop-detector Mux covers
    - Four flat multicolored cables from the drop-detector Mux PCAs
    - The drop-detector grounding braid, lossening two T-10 screws
    - The encoder strip from the spring, which gives it the correct tension
9. Remove the drop-detector station.

Installation

1. Place the shuttle on the rods.
2. Move the drop detector along the rods, until you can tighten the shoulder screw to the transmission nut (this will define the shuttle position on the Y axis).
3. Reroute and connect the multicolored flat cables to each drop-detector Mux PCA. See Subsystem block diagrams on page 61 and the labels on the cables to find the correct connections.
4. Place the drop-detector grounding braid, tightening two T-10 screws.
5. Place the shuttle retainer and tighten the two T-20 screws.
6. Place the encoder strip on the spring.
7. Assemble the drop-detector Mux covers.
8. Tighten the two T-20 screws that secure the shuttle retainer.
9. Check that the printheads are in good condition: perform the printhead alignment check, and check the section that shows the health of the nozzles.
10. Perform the following calibrations (see Table 5-14 Drop detector/capping station on page 366):
    - Drop-detector shuttle calibration XY
    - Drop-detector backslack and elasticity
    - Drop-detector calibration

Drop-detector Mux PCA

Removal

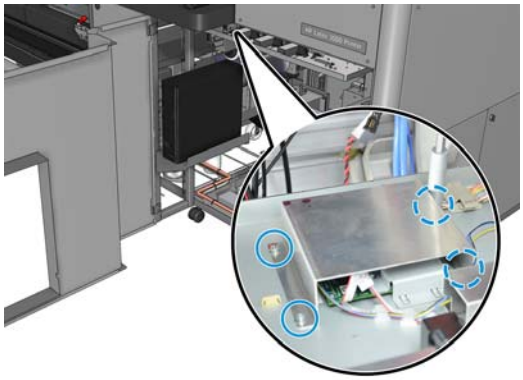
1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.

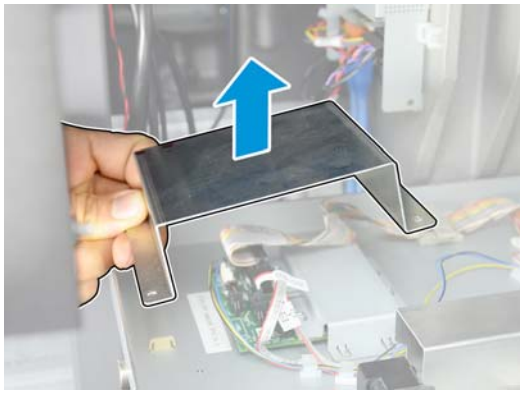
3. Stand on the folding steps and open the service position window.



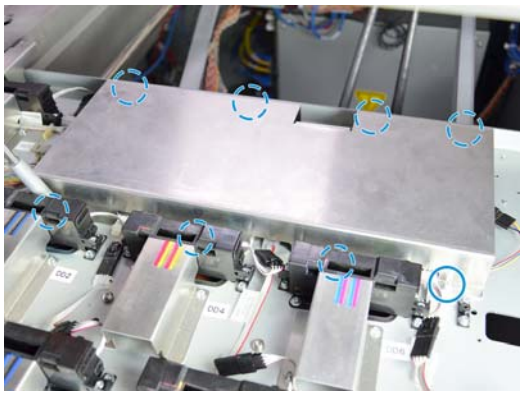
4. Remove all printheads from the carriage and store them in their caps.
5. Open the right cover door.
6. Move the drop-detector module manually outwards from the printer, so that the top end of the shuttle is more accessible.

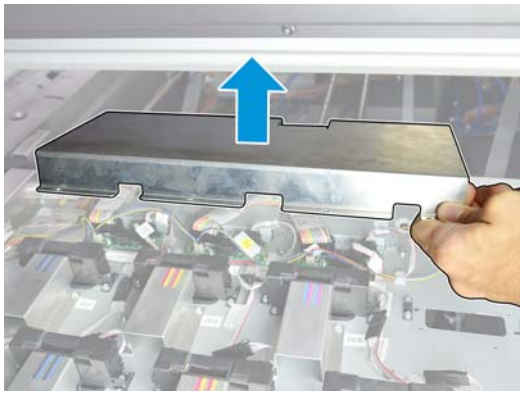
7. For drop-detector Mux PCA 1, remove the four T-10 screws and the drop-detector Mux cover.



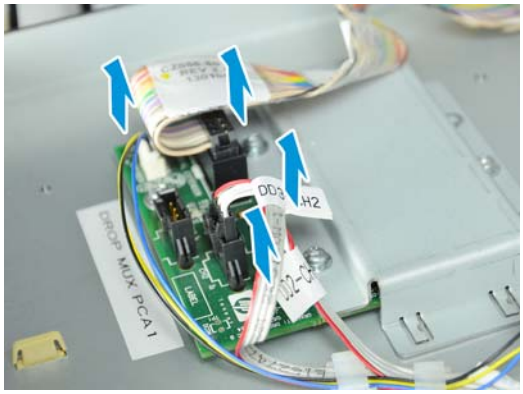


For the other drop-detector Mux PCAs (2, 3 and 4), remove the eight T-10 screws and DropMux large protector cover. Use an L-shaped key to reach the top screws if necessary.





8. Disconnect the four cables connected to the drop-detector Mux PCA that needs to be replaced. The following picture shows the connections to the drop-detector Mux PCA.



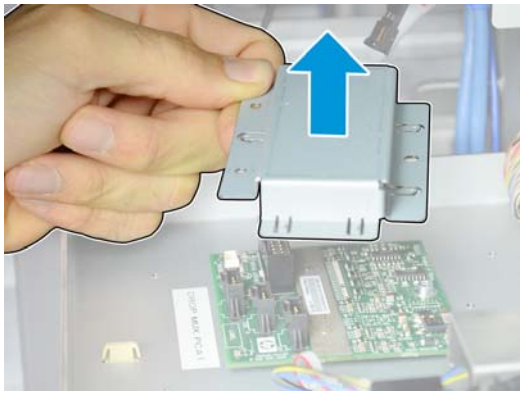
Ref.	Drop-detector Mux PCA connector	Cable	Part number
A	Serial extender	Drop-detector Mux PCA cable	CZ056-50112
B	Encoder	Drop-detector daisy-chain cable	CZ056-50021
C	CH1	Drop-detector short extensor, extensor, and long extensor	CZ056-50175, CZ056-50069, CZ056-50176
D	CH2		

CAUTION: Avoid mismatching the drop-detector cables. Keep track of which cable is connected in which position, and make labels if necessary. Labels are added to each cable for this purpose.

9. Remove the three T-10 screws that secure the drop-detector Mux PCA enclosure.



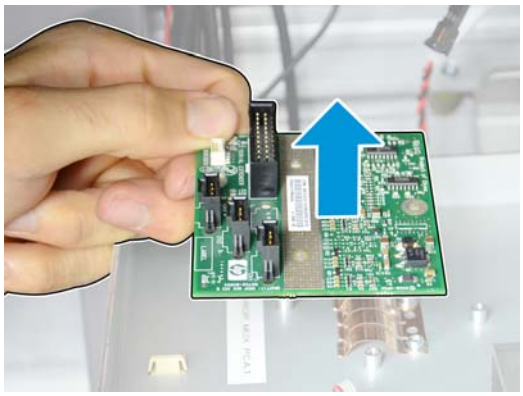
10. Remove the enclosure.



11. Remove the two T-10 screws that secure the drop-detector Mux PCA.



12. Remove the drop-detector Mux PCA.



Motor drive PCA

Removal

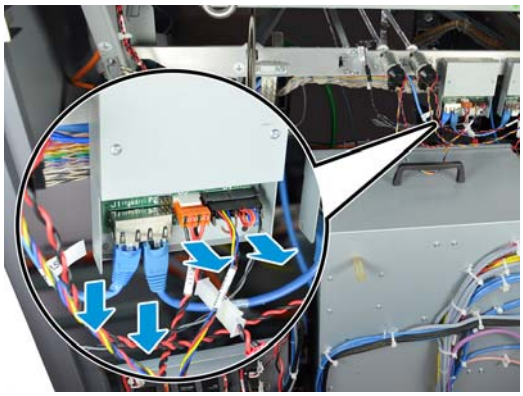
1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.
3. Stand on the folding steps and open the service position window.



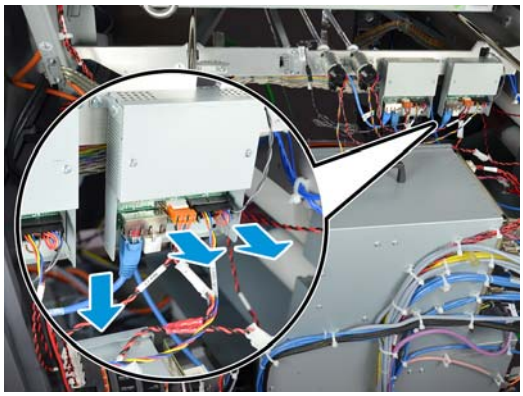
4. Remove all printheads from the carriage and store them in their caps.
5. Remove the rear right panel. See Rear right panel assembly on page 624.
6. Move the capping module manually to a more central position, so that the motor drive PCAs are accessible.

7. Disconnect the four motor drive PCA cables. The connections are shown below:

Connector	Cable	Part number
P2	Data cable, RJ45 jumper for drop-detector motor drive PCA	Q6703-50031 or CZ056-50028
J1	Data cable between CAP motor drive PCA and either e-box interconnect PCA or drop-detector motor drive PCA	Q6703-50054 or CZ056-50028
J4	Motor encoder cable	CZ056-50116
J3	WW power in T cable	CZ056-50161



NOTE: One of the motor drive PCAs has only one LAN connection. Make sure to connect it to the right connector when you install the new PCA.



8. Remove either the two T-10 screws that hold the motor drive PCA supports to the console or the two T-8 screws that hold the PCA enclosure to its supports, and remove the motor drive assembly.



Drop-detector cable kit

Removal

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.
3. Stand on the folding steps and open the service position window.

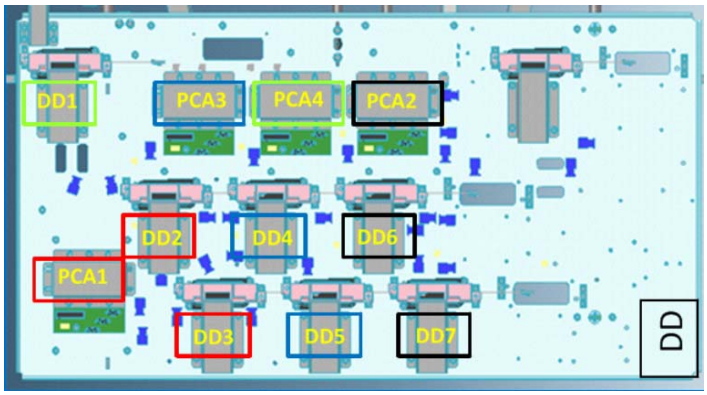


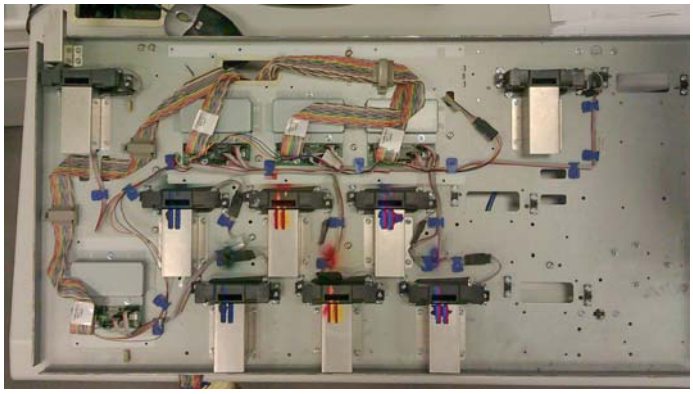
4. Remove all printheads from the carriage and store them in their caps.
5. Open the right cover door.
6. Remove the rear right panel. See Rear right panel assembly on page 624.
7. Move the drop-detector module manually outwards from the printer, so that the top end of the shuttle is more accessible.

NOTE: Before continuing with the following steps, look at the EE schemes to see what routing you need to follow in order to remove the drop-detector cables that connect to it, and hence which drop-detector Mux PCA cover must be removed. See Subsystem block diagrams on page 61.

The connections between drop-detector assemblies and drop-detector PCAs are shown below:

	PCA 1	PCA 2	PCA 3	PCA 4
Drop-detector assembly	2 and 3	6 and 7	4 and 5	1

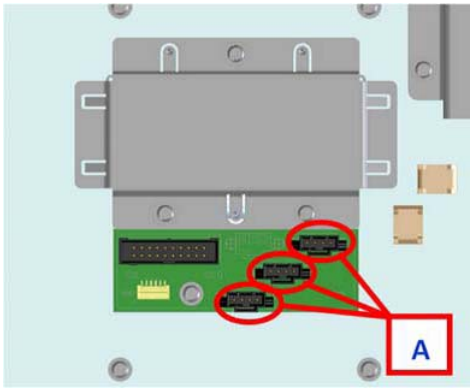




8. For DD1, DD4, DD5, DD6, and DD7, remove the eight T-10 screws and remove the large drop-detector Mux PCA cover to reach drop-detector Mux PCAs 2, 3, and 4.

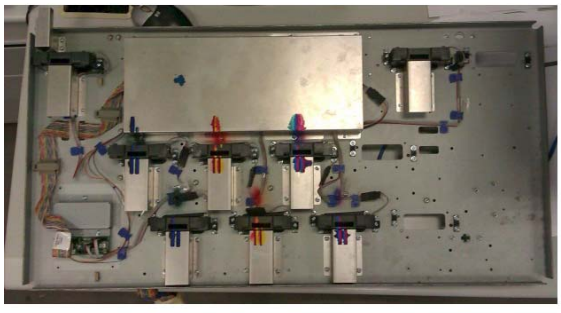
9. For DD2 and DD3, remove the four T-10 screws, and remove the drop-detector Mux PCA cover to reach drop-detector Mux PCA 1.

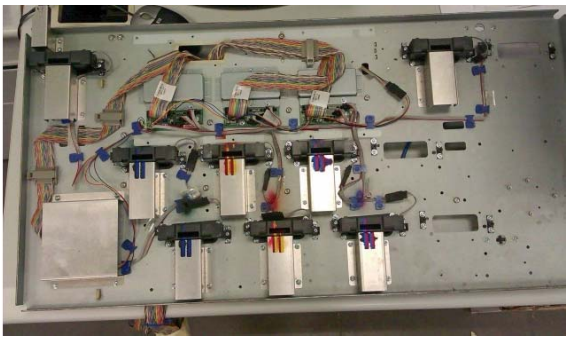
10. Disconnect the cable from the drop-detector Mux PCA, and unroute the cable all the way to the drop detector, carefully freeing each cable from any routing clips.



⚠ **CAUTION:** Avoid mismatching the drop-detector cables. Keep track of which cable is connected in which position, and make labels if necessary.

11. For drop-detector Mux PCA 1, remove the four T-10 screws and the cover. For the other PCAs (2, 3, and 4), remove the eight T-10 screws and cover. Use an L-shaped key to reach the top screws if needed.





12. Disconnect the cables connected to the drop-detector Mux PCA with the following steps.

Drop-detector short extensor cable (CZ056-50175)

1. Disconnect the short extensor cable from the DD3 drop detector and the drop-detector Mux PCA (CH1 connector).

2. Unroute the cable along the path of the drop-detector shuttle (unclip the cable carefully).

When routing the new cable, follow exactly the same route, otherwise there could be signal errors; and be careful not to pinch the cable with the clips.

Drop-detector extensor cable (CZ056-50069)

1. Disconnect the long extensor cable from the drop detector and the corresponding drop-detector Mux PCA (CH1 or CH2 connector).
2. Unroute the cable along the path of the drop-detector shuttle (unclip the cable carefully).

When routing the new cable, follow exactly the same route, otherwise there could be signal errors; and be careful not to pinch the cable with the clips.

Drop-detector long extensor cable (CZ056-50176)

1. Disconnect the long extensor cable from the DD7 drop detector and the drop-detector Mux PCA (CH1 connector).
2. Unroute the cable along the path of the drop-detector shuttle (unclip the cable carefully).

When routing the new cable, follow exactly the same route, otherwise there could be signal errors; and be careful not to pinch the cable with the clips.

Drop-detector Mux PCA cable (CZ056-50112)

1. Disconnect the cable from the e-box interconnect PCA (ODD (J_X31) connector, where X = 1, 2, 3, or 4) to the drop-detector Mux PCA (serial extender connector).
2. Unroute the cable along the path of the drop-detector shuttle (unclip the cable carefully), the L profiles (cut the flanges if necessary), and the freely looped route to the e-box interconnect PCA.

When routing the new cable, follow exactly the same route along the drop-detector shuttle path, otherwise there could be signal errors; and be careful not to pinch the cable with the clips.

Drop-detector daisy chain cable (CZ056-50021)

1. Disconnect the cable from the drop-detector Mux PCAs (encoder connector).
2. Unroute the cable along the path of the drop-detector shuttle (unclip the cable carefully).

When routing the new cable, follow exactly the same route along the drop-detector shuttle path, otherwise there could be signal errors; and be careful not to pinch the cable with the clips.

Cable kit

Removal

1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.

3. Stand on the folding steps and open the service position window.



4. Remove all printheads from the carriage and store them in their caps.
5. Remove the rear right panel. See Rear right panel assembly on page 624.
6. Move the capping module manually to a more central position, so that the motor drive PCAs are accessible.
7. Disconnect the cables connected to the motor drive PCA with the following steps.

Capping power in T extensor cable (×2) (CZ056-50156)

1. Disconnect the capping power in T extensor cable from its air connector, from the motor, and from the motor drive PCA (J3 connector).
2. Unroute the cable (cut the flanges if necessary).

Capping power in T cable (CZ056-50160)

1. Disconnect the capping power in T cable from its air connector and from the service station power cable air connectors.
2. Unroute the cable (cut the flanges if necessary).

After routing the new cable, there will be an air connector that is not connected to anything. Ensure that this connector is isolated, or tape it.

Data cable between motor drive PCAs (Q6703-50031)

1. Disconnect the cable from the motor drive PCAs (P2 connector for PCA 1 and J1 connector for PCA 2).
2. Unroute the cable (cut the flanges if necessary).

Micci2 termination (CZ056-50028)

- Disconnect the Micci2 termination from the motor drive PCA 2 (P2 connector).

Printer capping station motor drive PCA cable (CZ056-50054)

1. Disconnect the cable from the e-box interconnect PCA (J_152 MICCI2 connector) and the motor drive PCA 1 (J1 connector).
2. Unroute the cable (cut the flanges if necessary).

Service station power cable (CZ056-50077)

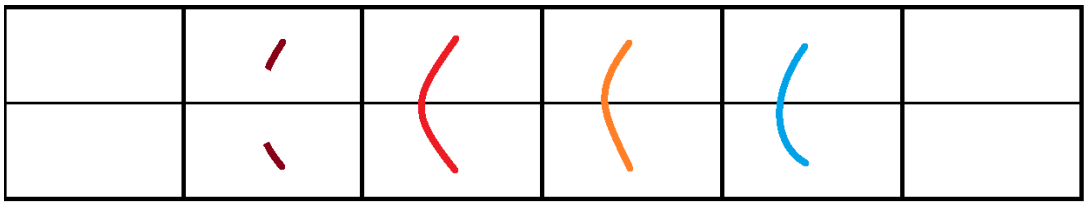
1. Disconnect the cable from the capping power in T cable air connector and the e-cabinet PCA (SVS connector).
2. Unroute the cable (cut the flanges if necessary).

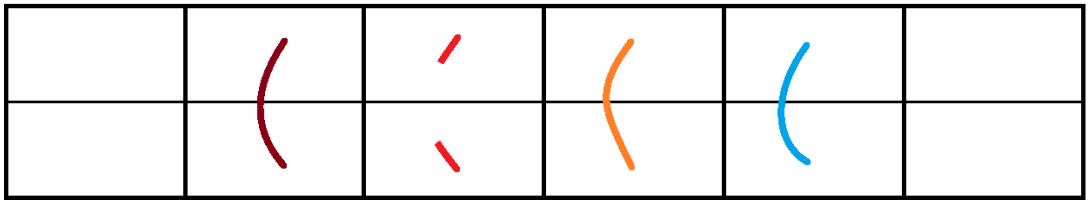
Motor encoder cable (CZ056-50116)

1. Disconnect the cable from the motor assembly and the motor drv PCA (J4 connector).
2. Unroute the cable (cut the flanges if necessary).

Motor encoder cable installation

1. Route and connect the new cable.
2. When connecting the cable, it is important to cut the jumper cables (see the picture below) in order to assign the correct jumper addresses to each motor drive PCA.





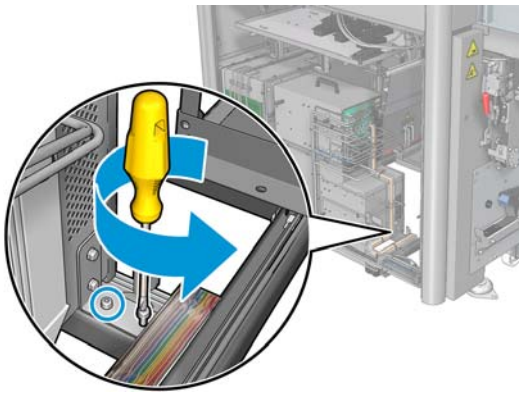
The following illustration gives an example of a drop-detector motor drive PCA address assignment (the red jumper is cut).

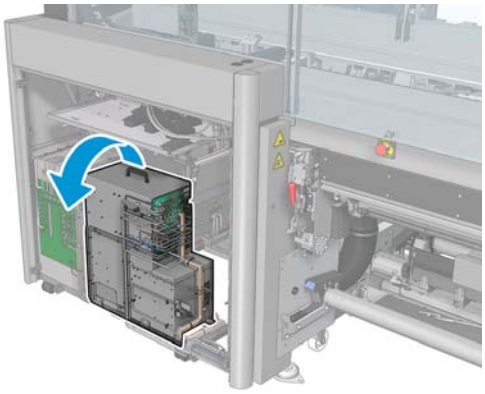
Substrate path

Vacuum pump

Removal

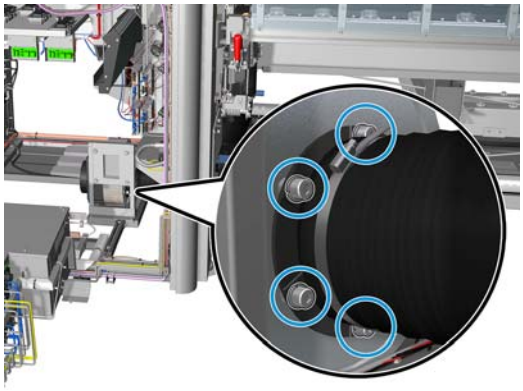
1. Turn off the printer and the power-enable switch.
2. Open the front right panel door.
3. Remove the rear right panel. See Rear right panel assembly on page 624.
4. Remove the two T-20 screws from the e-box support and pull it out carefully.





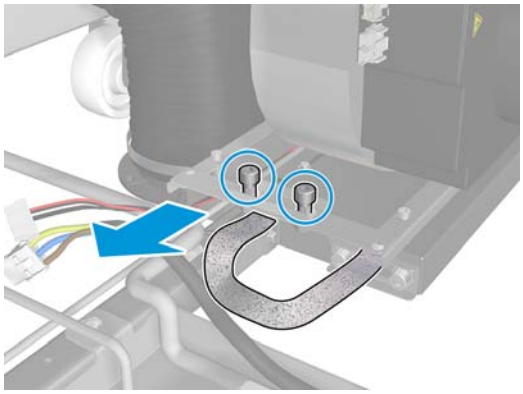
5. Disconnect the vacuum-pump cables.

6. Remove the six A5 screws and remove the blower inlet connector from the pump.

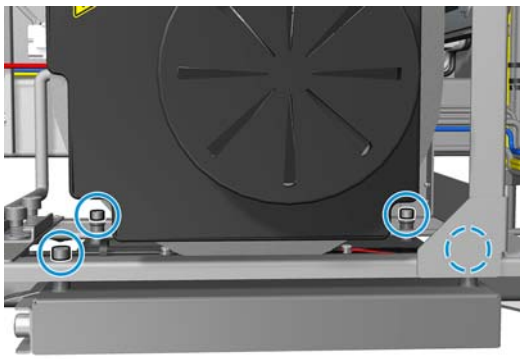




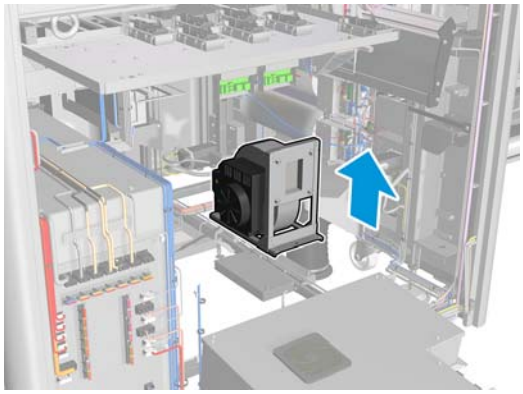
7. Loosen the two A5 screws and remove the grounding strip from the vacuum-pump support.



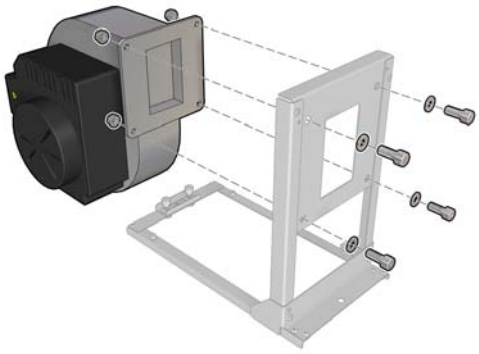
8. Remove the four T-25 screws that hold the vacuum-pump support to the structure through the four silent blocks.



9. Remove the vacuum pump with its support from the printer structure. Keep the silent blocks in a safe place.



10. Remove the four A5 screws that hold the vacuum pump to its support, and remove the pump.

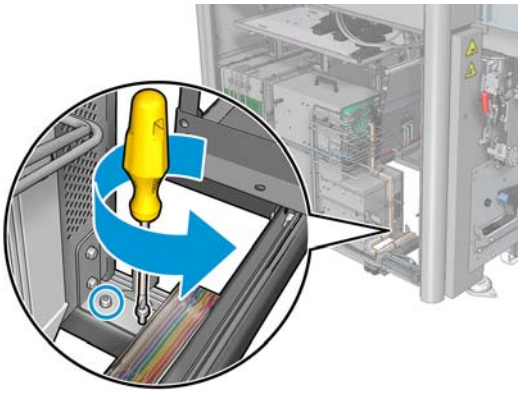


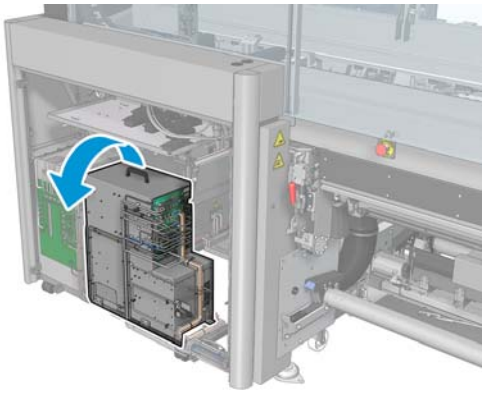
Vacuum pipe

Removal

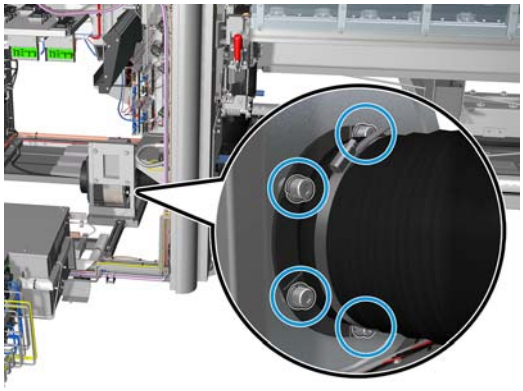
1. Turn off the printer and the power-enable switch.
2. Open the front right panel door.
3. Remove the rear right panel. See Rear right panel assembly on page 624.

4. Remove the two T-20 screws from the e-box support and pull it out carefully.



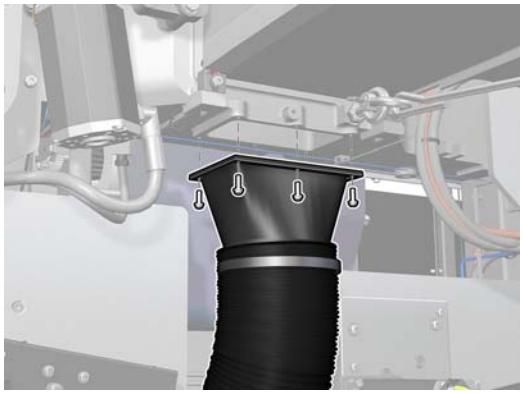


5. Remove the six A5 screws and remove the blower inlet connector from the pump.





6. Remove the six T-20 screws that hold the vacuum pipe to the beam, and remove the vacuum pipe from the printer.



Installation

1. Install the new vacuum pipe.
2. Secure the blower inlet connector to the blower and the sidewall output to the beam.

Vacuum pump cable kit

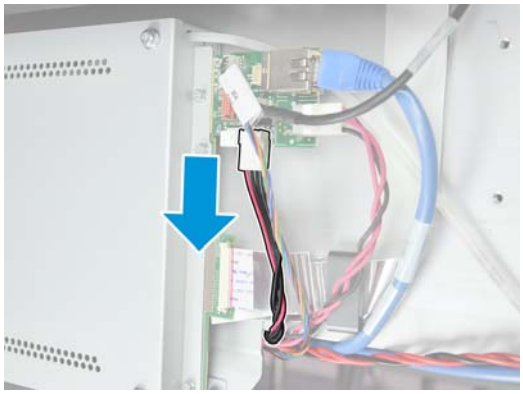
Removal

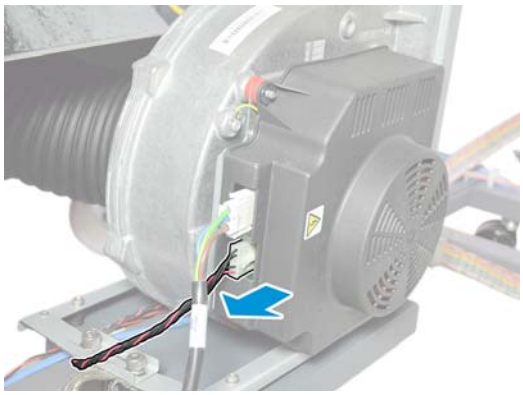
1. Unload the substrate so that it is easy to reach the vacuum control PCA and the OMAS controller PCA.
2. Turn off the printer and the power-enable switch.
3. Open the front right panel door.
4. Remove the rear right panel. See Rear right panel assembly on page 624.
5. Remove the two T-20 screws from the e-box support and pull it out carefully.
6. Disconnect the cables connected to the vacuum pump, as described below.

Vacuum control PCA to vacuum pump cable (CZ056-50037)

1. Remove the OMAS cable cover.

2. Disconnect the vacuum control PCA to vacuum pump cable from both the vacuum pump and the vacuum control PCA: the VAC PUMP (P5) connector.



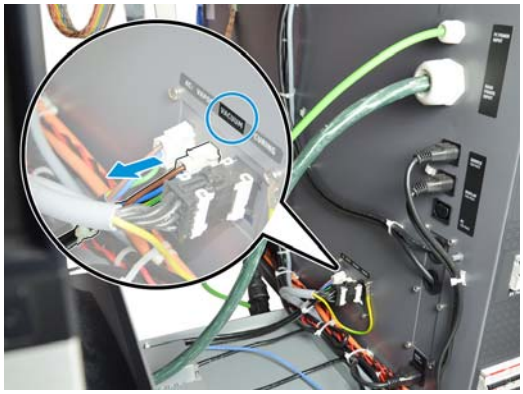


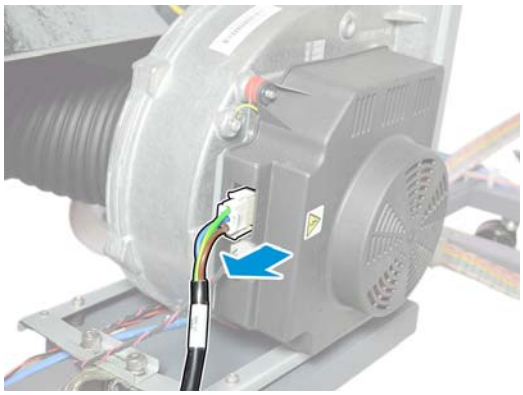
3. Unroute the cable (cut the flanges if necessary).

Vacuum pump power cable (CZ056-50114)

1. Remove the OMAS cable cover.

2. Disconnect the vacuum pump power cable from the e-cabinet (VAC Platen connector) and the vacuum pump.





3. Unroute the cable (cut the flanges if necessary).

OMAS and vacuum cables kit

1. Unload the substrate so that it is easy to reach the vacuum control PCA and the OMAS controller PCA.
2. Turn off the printer and the power-enable switch.
3. Disconnect the cables as described below.

Vacuum supply PCA cable (CZ056-50057)

1. Remove the rear right panel. See Rear right panel assembly on page 624.
2. Remove the two T-20 screws from the e-box support and pull it out carefully.
3. Remove the OMAS cable cover.
4. Disconnect the vacuum supply PCA cable from both the vacuum control PCA (P4 connector) and the e-box interconnect PCA (J_371 PWR connector).
5. Unroute the cable (cut the flanges if necessary).

Vacuum pump control cable (CZ056-50050)

1. Remove the rear right panel. See Rear right panel assembly on page 624.
2. Remove the two T-20 screws from the e-box support and pull it out carefully.
3. Remove the OMAS cable cover.

4. Disconnect the vacuum pump control cable from the vacuum control PCA (J2 connector) and the e-box interconnect PCA (J_381 CAN* connector).
5. Unroute the cable (cut the flanges if necessary).

Vacuum control to OMAS encoder cable (CZ056-50038)

1. Remove the OMAS and vacuum PCA lid.
2. Disconnect the vacuum control to OMAS encoder cable from the vacuum control PCA (ENCODER (J3) connector) and the OMAS controller PCA (ENCODER (P4) connector).

> ⚠ **CAUTION:** Do not disconnect an encoder cable by pulling the cable because it will break the connector. Hold the connector of the encoder cable when removing it.

3. Unroute the cable (cut the flanges if necessary).

Vacuum control to OMAS CAN cable (CZ056-50039)

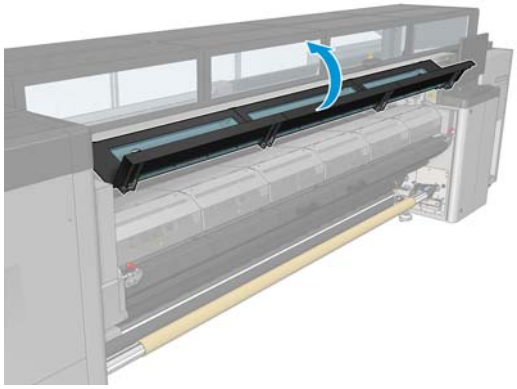
1. Remove the OMAS and vacuum PCA lid.
2. Disconnect the vacuum control to OMAS CAN cable from the vacuum control PCA (CAN (P3) connector) and the OMAS controller PCA (CAN (P2) connector).
3. Unroute the cable (cut the flanges if necessary).

Vacuum control to OMAS power cable (CZ056-50040)

1. Remove the OMAS and vacuum PCA lid.
2. Disconnect the vacuum control to OMAS power cable from the vacuum control PCA (P1 connector) and the OMAS controller PCA (POWER (P7) connector).
3. Unroute the cable (cut the flanges if necessary).

OMAS controller to sensor cable (CZ056-50202)

1. Remove the OMAS cable cover.
2. Disconnect the OMAS temperature sensor cable from the vacuum control PCA (<NAME> connector), and the OMAS controller to sensor cable from the OMAS controller PCA (nameless connector).
3. Open the front door.



4. Remove the twenty-four T-10 screws from the OMAS platen.
5. Open the pinch so that you can reach the OMAS sensor under the platen.

6. Pull out the platen, being careful with the OMAS temperature sensor cable and the OMAS controller to sensor cable, and turn it in order to leave the platen upside down.
7. Unroute the OMAS controller to sensor cable, passing it through the beam structure hole.

OMAS controller PCA and vacuum control PCA

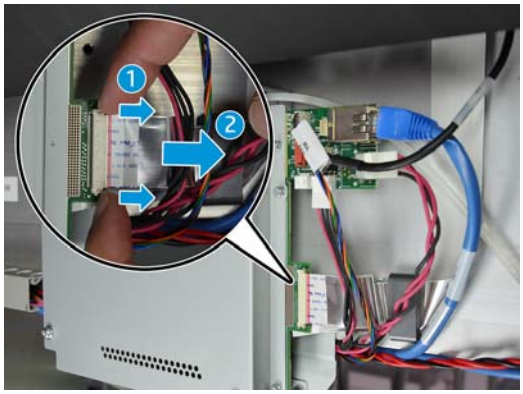
Removal

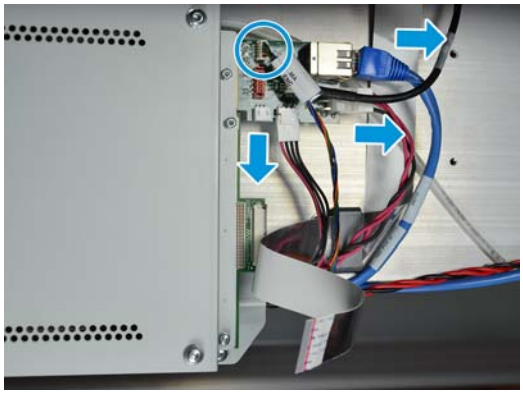
1. Unload the substrate so that it is easy to reach the vacuum control PCA and the OMAS controller PCA.
2. Turn off the printer and the power-enable switch.
3. Remove the three T-10 and the four T-20 screws and remove the OMAS cable cover and the OMAS and vacuum PCA lid.





4. Disconnect the cables from the vacuum control PCA.



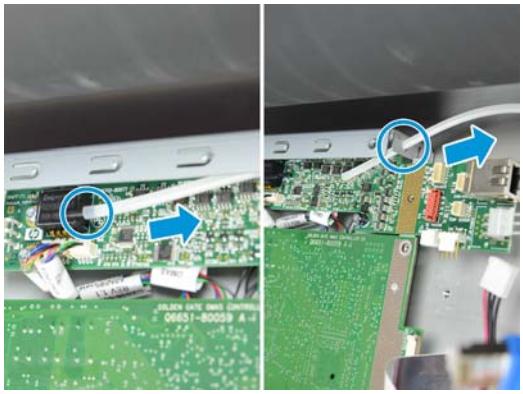


5. Remove the screws that attach the OMAS and vacuum PCA box and remove the box.

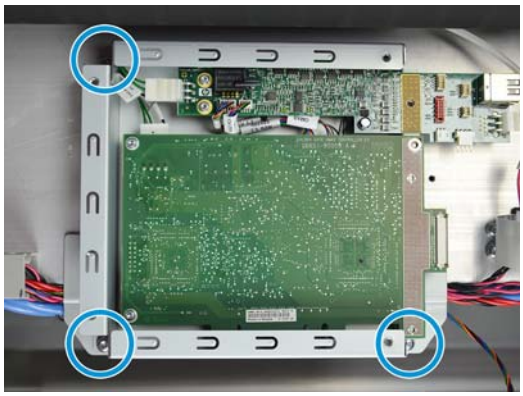




6. Disconnect the cable.



7. Unscrew and remove the PCA support with the PCAs.





Installation

1. Install the new OMAS and vacuum PCA box.
2. Remove the OMAS and vacuum PCA lid.
3. Reconnect the cables to the vacuum control PCA.
4. Re-attach the OMAS and vacuum PCA lid.

OMAS platen assembly

Removal

1. Move the scan axis to the substrate load position to raise the carriage beam all the way.

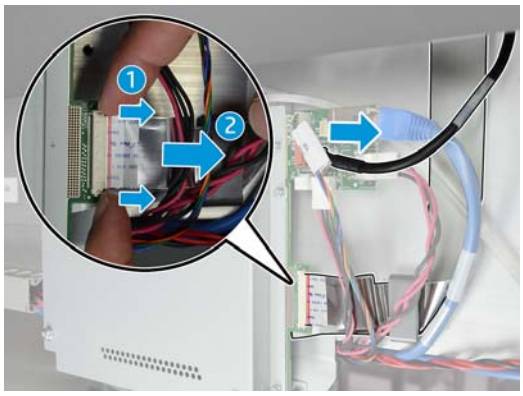
   If you cannot start the printer in the normal way due to some failure, use diagnostic mode.

2. Unload the substrate so that you can reach the OMAS platen assembly.
3. Turn off the printer and the power-enable switch.
4. Unscrew and remove the OMAS cable cover.

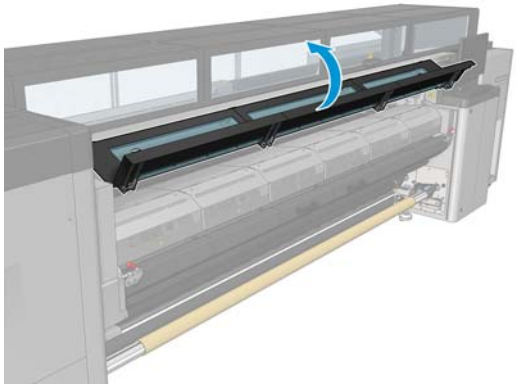




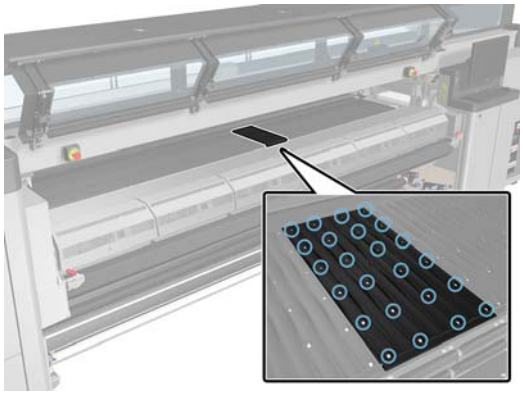
5. Disconnect the OMAS controller to sensor cable from the OMAS controller PCA (nameless connector).



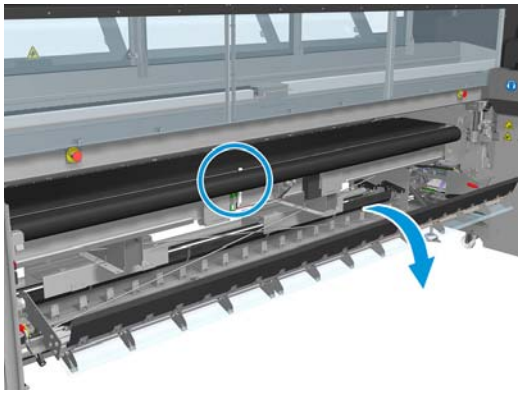
6. Open the front door.



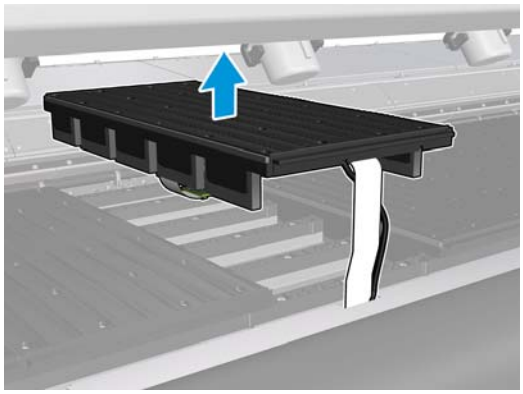
7. Remove the twenty-four T-10 screws from the OMAS platen.



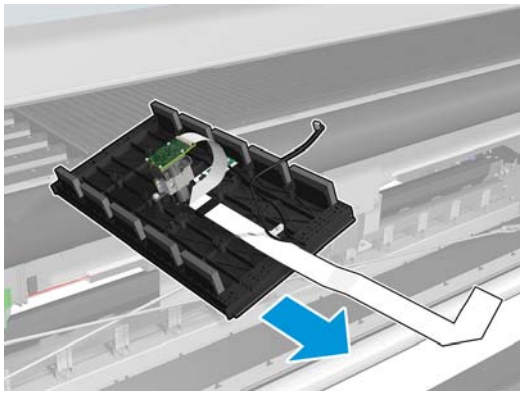
8. Open the pinch so that you can reach the OMAS sensor under the platen.



9. Pull out the platen, being careful with the OMAS controller to sensor cable, and turn it in order to leave the platen upside down.



10. Unroute the OMAS controller to sensor cable, passing it through the beam structure hole.



11. Remove the OMAS platen assembly.

Installation

1. Install the new OMAS platen assembly.
2. Route and reconnect the OMAS controller to sensor cable.
3. Screw back the OMAS platen assembly.
4. Perform OMAS manual calibration.
5. Perform drive roller calibration.
6. Perform the drive roller check.

Platen assembly

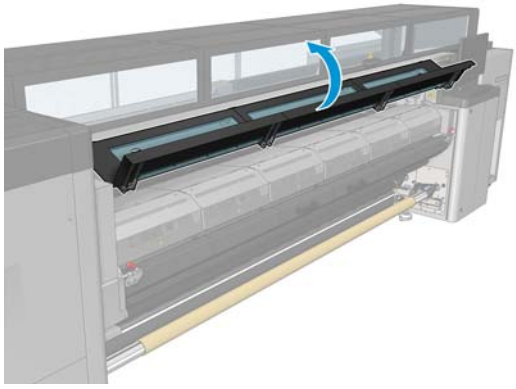
Removal

1. Move the scan axis to the substrate load position to raise the carriage beam all the way.

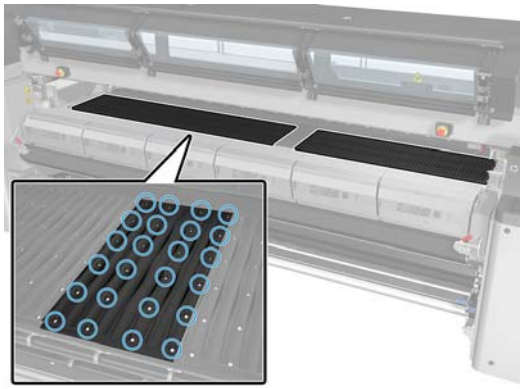
   If you cannot start the printer in the normal way due to some failure, use diagnostic mode.

2. Turn off the printer and the power-enable switch.

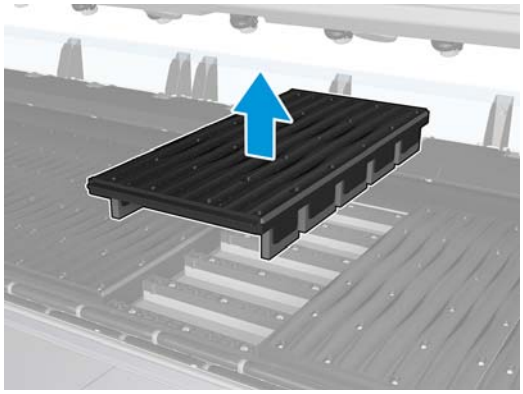
3. Open the front door.



4. Open the pinch.
5. Remove the substrate edge holders and unload the substrate.
6. Remove the twenty-four T-10 screws from the platen assembly to be removed.



7. Remove the platen assembly.



Installation

1. Install the new platen assembly.
2. Screw back the platen assembly.
3. Close the front door.
4. Close the pinch.

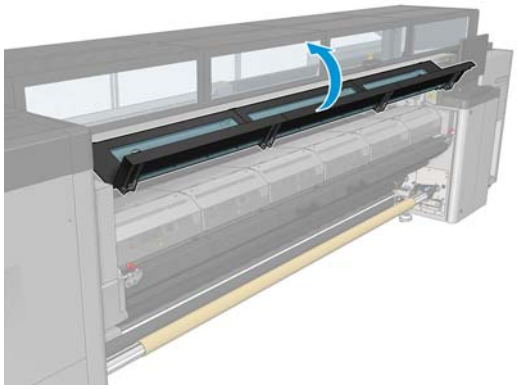
Platen extra assembly

Removal

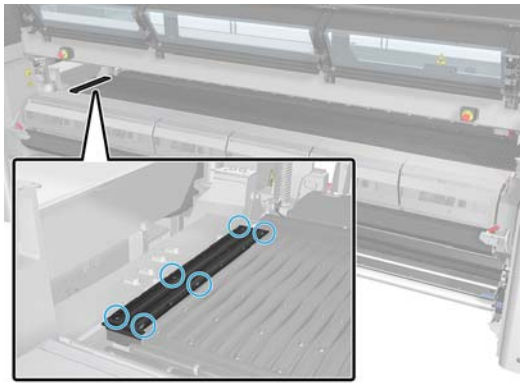
1. Move the scan axis to the substrate load position to raise the carriage beam all the way.

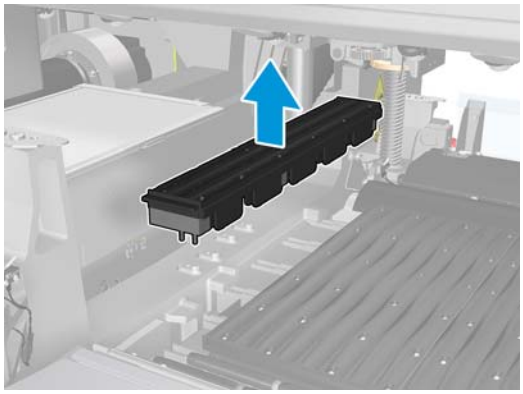
   If you cannot start the printer in the normal way due to some failure, use diagnostic mode.

2. Turn off the printer and the power-enable switch.
3. Open the front door.



4. Open the pinch.
5. Remove the substrate edge holders and unload the substrate.
6. Remove the six pointed screws from the platen extra assembly to be removed.





7. Pull out the platen extra assembly.

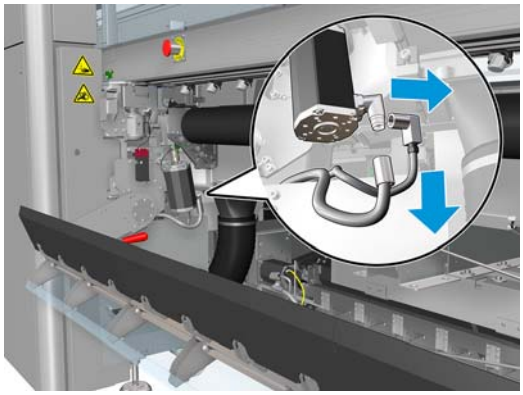
Installation

1. Install the new platen extra assembly.
2. Screw back the platen extra assembly.
3. Close the front door.
4. Close the pinch.

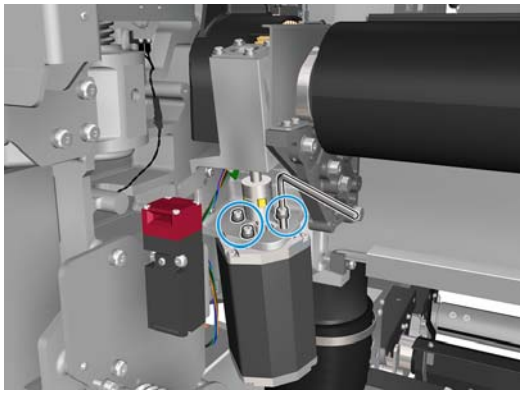
MA motor

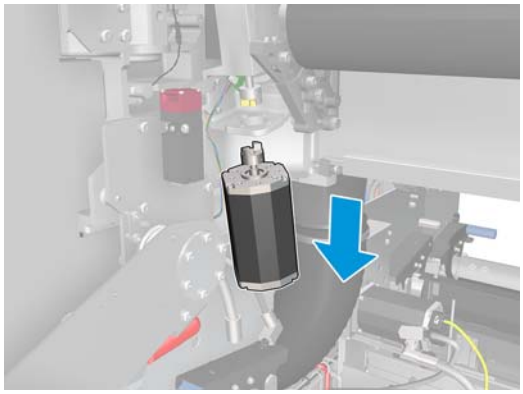
Removal

1. Unload the substrate so that it is easy to reach the MA motor.
2. Turn off the printer and the power-enable switch.
3. Open the pinch.
4. Disconnect the MA motor cables.



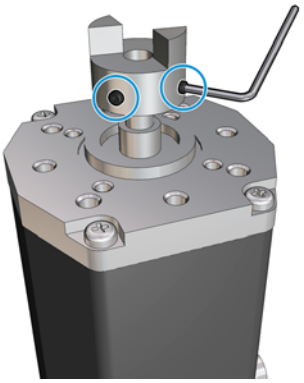
5. Remove the screws that hold the MA motor and remove the motor.





NOTE: If the motor coupling spider comes away with the MA motor, remove the coupling spider from the MA motor coupling and save it.

6. Loosen the screws that fix the motor coupling to the MA motor and remove the coupling.





Installation

1. Install the motor coupling to the new MA motor and screw it back to the shaft. Ensure that one of the coupling screws is screwed against the flat surface of the shaft.
2. Reinstall the MA motor, ensuring that the coupling matches the transmission, and screw it to its support. Ensure that the coupling spider is correctly located between the motor and the transmission couplings.
3. Connect the MA motor cables.
4. Perform analog encoder calibration.

MA data cable (CZ056-50236)

Removal

1. Turn off the printer and the power-enable switch.
2. Open the front right panel door.
3. Remove the rear right panel. See Rear right panel assembly on page 624.
4. Open the pinch.
5. Disconnect the MA data cable from the MA motor and the e-box interconnect PCA (J_301 connector).
6. Unroute the cable (cut the flanges if necessary).

Installation

▲ Route and reconnect the new cable, carefully. Place it orthogonally, ensuring that the pins will match correctly, and then screw it to connect the cable to the motor.

MA power cable (CZ056-50118)

Removal

1. Turn off the printer and the power-enable switch.
2. Open the front right panel door.
3. Remove the rear right panel. See Rear right panel assembly on page 624.
4. Open the pinch.
5. Disconnect the MA power cable from the MA motor and the e-cabinet (MA connector).
6. Unroute the cable (cut the flanges if necessary).

MA motor encoder cable (CZ056-50036)

Although the function of this cable is related to the MA motor, it does not connect directly to the MA motor. Instead, it connects the vacuum control PCA to the drive roller encoder PCA. Therefore, if you look for it in the block diagrams, you will find it in the OMAS controller PCA and vacuum control PCA diagram.

Removal

1. Move the scan axis to the substrate load position to raise the carriage beam all the way.

   If you cannot start the printer in the normal way due to some failure, use diagnostic mode.
2. Unload the substrate so that you can easily reach the vacuum control PCA.

3. Ensure that the carriage beam is in the substrate load position—that is, raised all the way—because of the free loop left for the encoder sensor cable.
4. Turn off the printer and the power-enable switch.
5. Open the pinch.
6. Disconnect the MA motor encoder cable from the drive roller encoder sensor PCA and the vacuum control PCA (ENCODER (J1) connector).

⚠ **CAUTION:** Do not disconnect an encoder cable by pulling the cable, because it will break the connector. Hold the connector of the encoder cable when removing it.

7. Unroute the cable (cut the flanges if necessary).
8. Remove the two T-20 screws that hold the encoder sensor support.
9. Remove the encoder sensor support by pulling the pins outwards and sliding it carefully down the encoder sensor until it gets past the encoder disc.

Installation

▲ Route and connect the new cable. Be careful when routing the cable to leave enough free (looped) that the carriage beam can reach the substrate load position.

Drive roller encoder disc and PCA

Removal

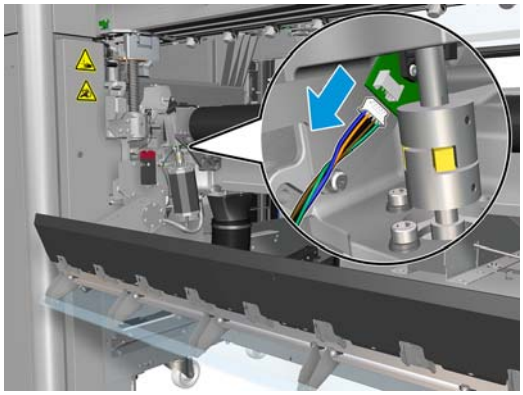
1. Move the scan axis to the substrate load position to raise the carriage beam all the way.

   If you cannot start the printer in the normal way due to some failure, use diagnostic mode.
2. Turn off the printer and the power-enable switch.
3. Open the pinch.
4. Unload the substrate.

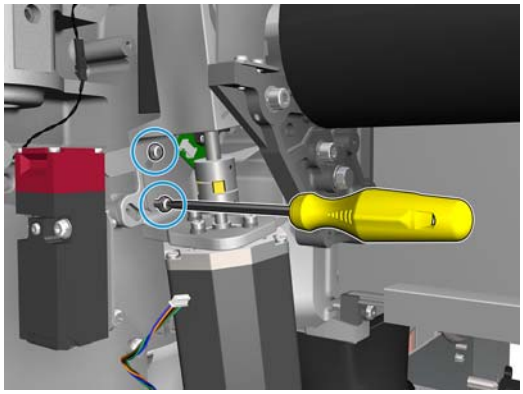
Removing the drive roller encoder sensor PCA

1. Disconnect the MA motor encoder cable from the drive roller encoder sensor PCA.

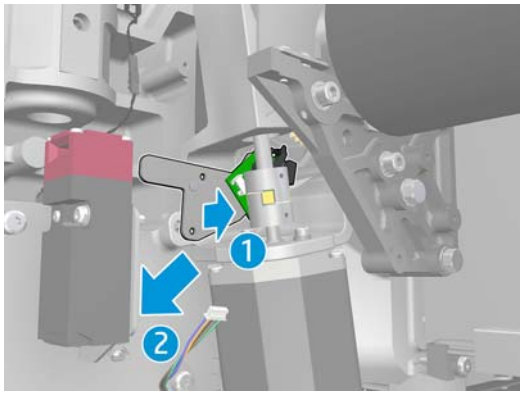
⚠ **CAUTION:** Do not disconnect an encoder cable by pulling the cable, because it will break the connector. Hold the connector of the encoder cable when removing it.



2. Remove the two T-20 screws that hold the drive roller encoder sensor PCA support.



3. Remove the drive roller encoder sensor PCA support by pulling out the pins and carefully sliding the encoder sensor straight down until it gets past the encoder disc.



4. Remove the drive roller encoder sensor PCA.

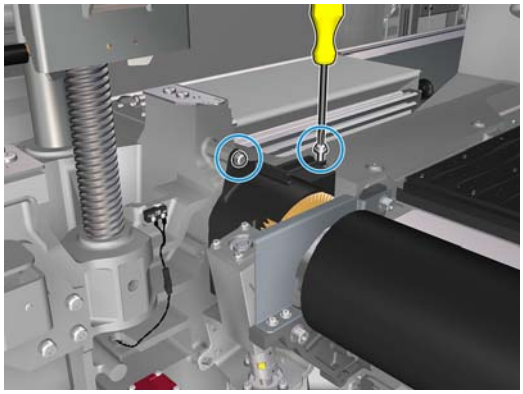
Installing the drive roller encoder sensor PCA

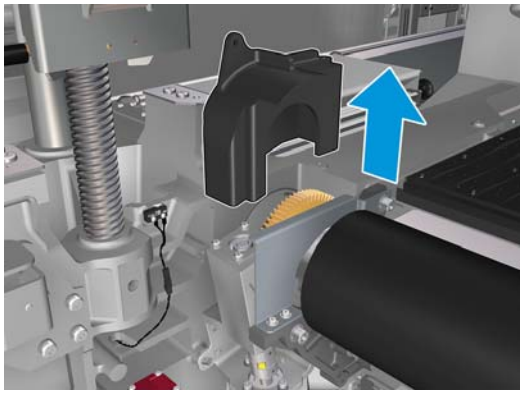
1. Reinstall the drive roller encoder sensor PCA.
2. Perform analog encoder calibration.

Removing the drive roller encoder disc

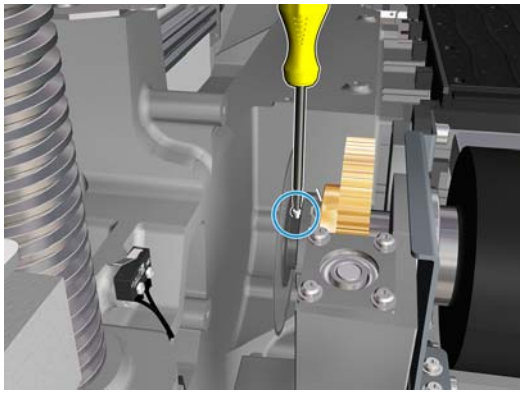
1. Remove the drive roller encoder sensor PCA.

2. Remove the two screws that hold the codewheel cover, and remove the cover.

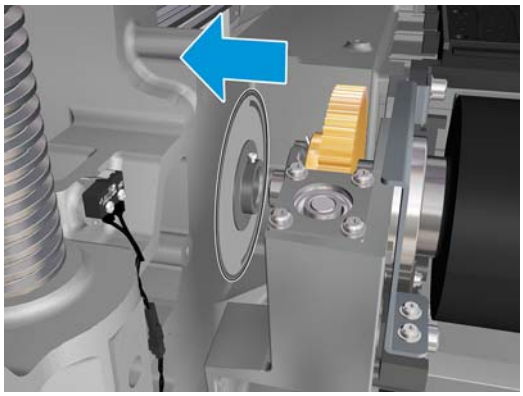




3. Loosen the T-8 screw that fixes the encoder hub to the drive roller.



4. Remove the encoder disc with its hub from the drive roller.



Installing the drive roller encoder disc

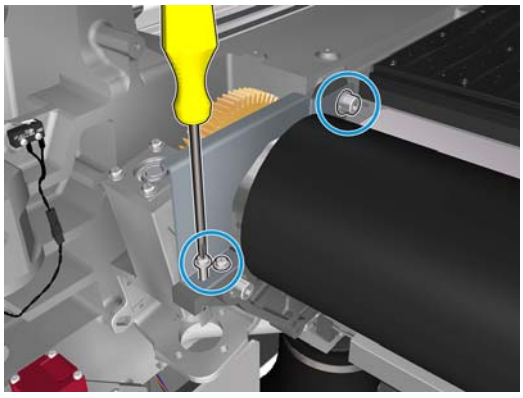
1. Install the new encoder disc with its hub onto the drive roller.
2. Tighten the T-8 screw to fix the encoder disc hub to the drive roller.
3. Carefully reinstall the drive roller encoder sensor PCA.
4. Screw back the codewheel cover.
5. Perform analog encoder calibration.

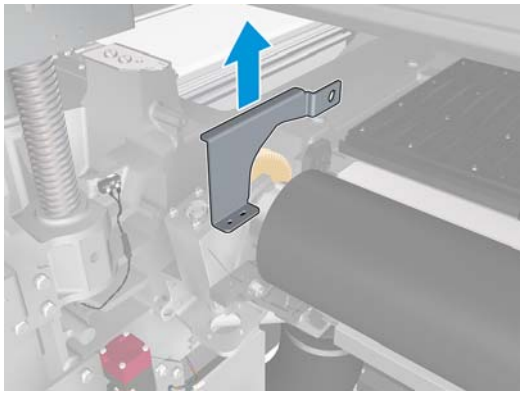
Substrate drive roller transmission assembly

Removal

1. Move the scan axis to the substrate load position to raise the carriage beam all the way.

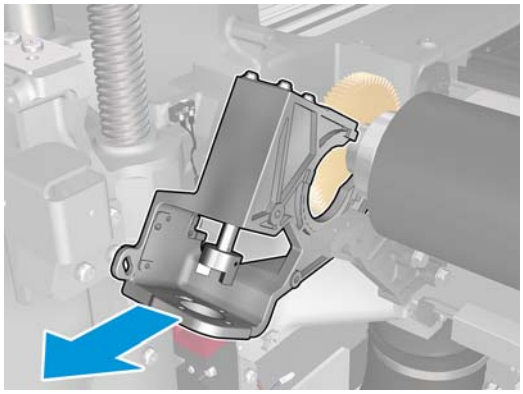
   If you cannot start the printer in the normal way due to some failure, use diagnostic mode.
2. Turn off the printer and the power-enable switch.
3. Open the pinch.
4. Unload the substrate.
5. Remove the MA motor.
6. Remove the drive roller encoder disc and PCA.
7. Remove the three pointed screws that attach the right bearing L-shaped metal sheet support, and remove the support.





8. Remove the pointed screws that hold the transmission mount, and remove the transmission mount.





Installation

1. Install the new transmission mount.
2. Screw back the right bearing L-shaped metal sheet support.
3. Install the substrate drive encoder disc and the substrate drive encoder PCA.
4. Install the MA motor.
5. Perform analog encoder calibration.

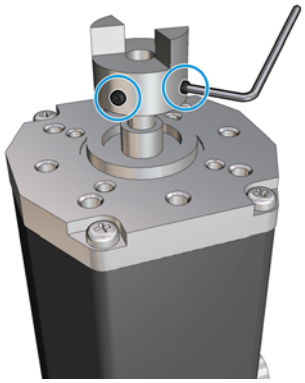
Drive roller motor coupling

Removal

1. Remove the MA motor.
2. Remove the motor coupling spider.



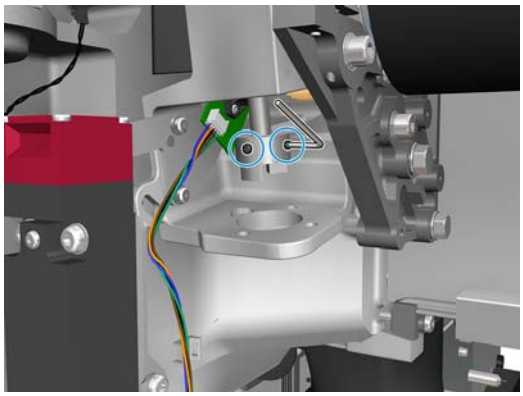
3. Loosen the screws that attach the motor coupling to the MA motor.



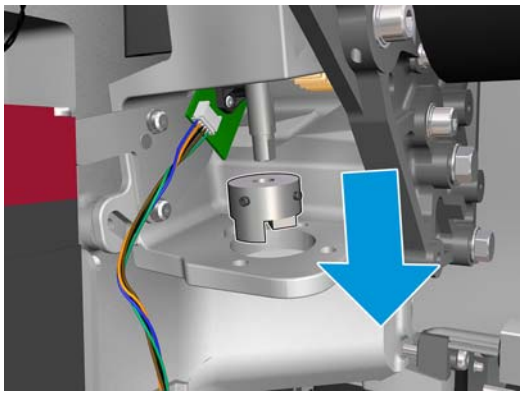
4. Remove the MA motor coupling from the MA motor.



5. Loosen the screws that attach the drive roller transmission coupling to the drive roller transmission.



6. Remove the drive roller transmission coupling from the drive roller transmission.



Installation

1. Attach the new MA motor coupling to the MA motor. Ensure that one of the coupling screws is screwed against the flat surface of the shaft.
2. Attach the new drive roller transmission coupling to the drive roller transmission. Ensure that one of the coupling screws is screwed against the flat surface of the shaft.
3. Reinstall the MA motor, ensuring the three coupling parts match correctly, and screw the MA motor to its support. Ensure that the coupling spider is correctly placed between the MA motor and the driver roller transmission couplings.
4. Connect the MA motor cables.
5. Perform analog encoder calibration.

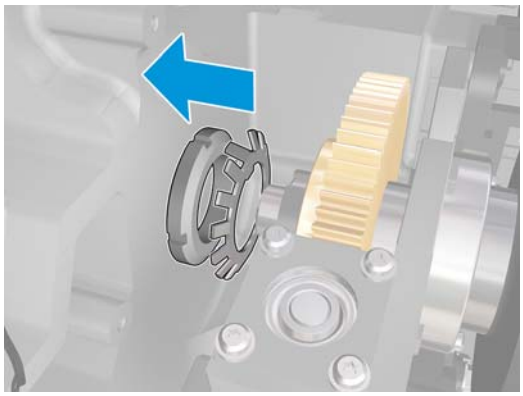
Drive roller support bearings

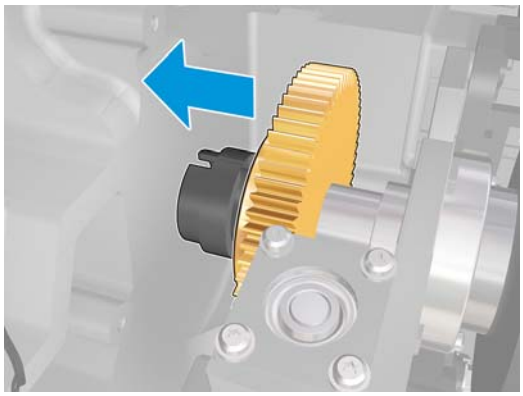
This service part includes both the end and the central drive roller support bearings.

Removal

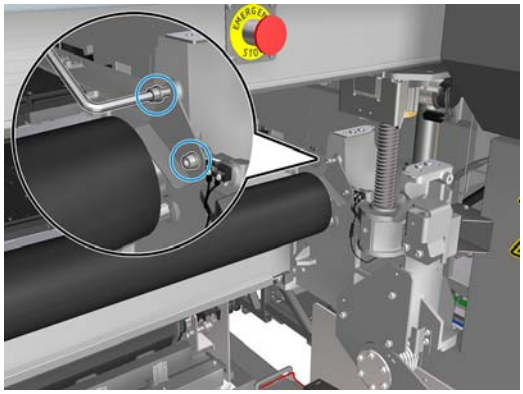
1. Move the scan axis to the substrate load position to raise the carriage beam all the way.

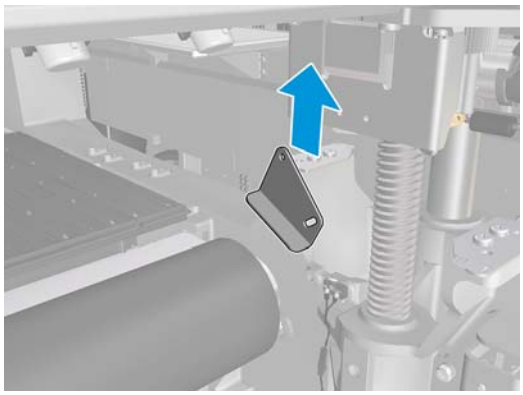
   If you cannot start the printer in the normal way due to some failure, use diagnostic mode.
2. Turn off the printer and the power-enable switch.
3. Open the pinch.
4. Unload the substrate.
5. Remove the substrate drive roller transmission assembly.
6. Remove the KM-nut and the drive roller worm gear. Save them both in a secure place.





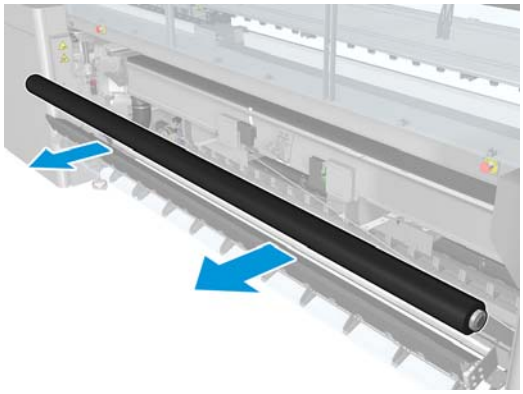
7. Remove the two pointed screws that attach the left bearing L-shaped metal sheet support, and remove the support.



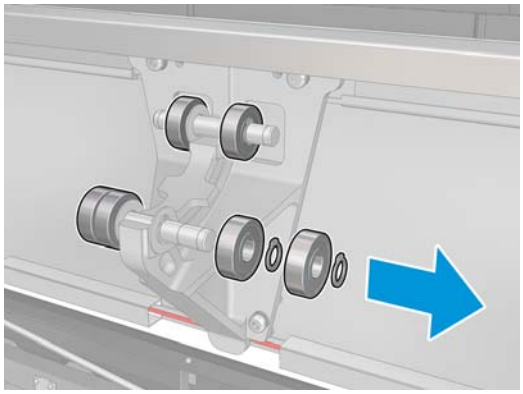


8. Remove the substrate drive roller assembly from the printer and save it in a secure place.

CAUTION: This part is very heavy, so you are strongly recommended to perform this operation with at least two people.



9. Remove the drive roller assembly so that you can reach the six central support bearings (four at the front, two at the rear).



10. For each bearing, remove the circlip carefully and remove the bearing.

Installation

1. At each end of the substrate drive roller, remove the retaining ring and replace the bearing with the new one.
2. Install the six new central bearings.
3. Reinstall the rear drive roller assembly and screw in its left end support bearing.
4. Reinstall the substrate drive transmission assembly.

   Ensure that the worm screw, the worm gear, and the encoder assembly are correctly assembled.
5. Screw in the right end support bearing.
6. Reinstall the encoder disc and its cover.
7. Reinstall the encoder PCA.
8. Perform analog encoder calibration.

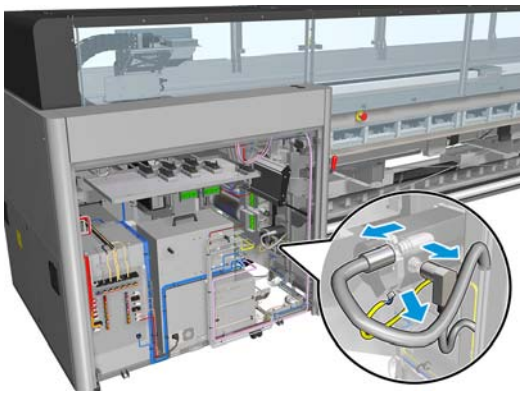
MI motor

Removal

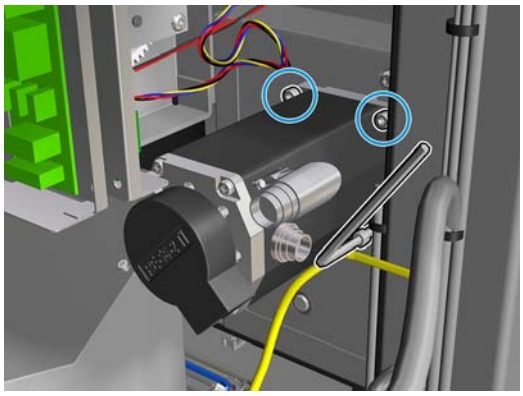
1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Remove the rear right panel. See Rear right panel assembly on page 624.

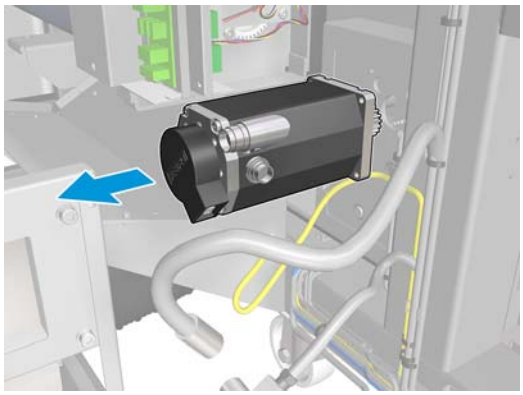
4. Disconnect the MI motor power, data, and encoder cables.

CAUTION: Do not disconnect an encoder cable by pulling the cable, because it will break the connector. Hold the connector of the encoder cable when removing it.



5. Remove the screws that hold the MI motor and remove the motor.





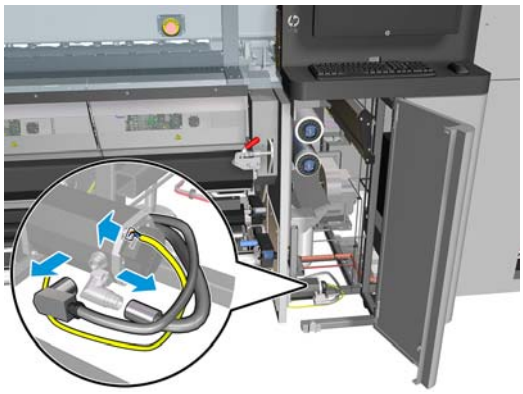
Installation

1. Install the new MI motor and attach it with the screws.
2. Connect the MI motor power, data, and encoder cables.
3. Remove the MI spindle.
4. Perform MI-MO-MF calibration.

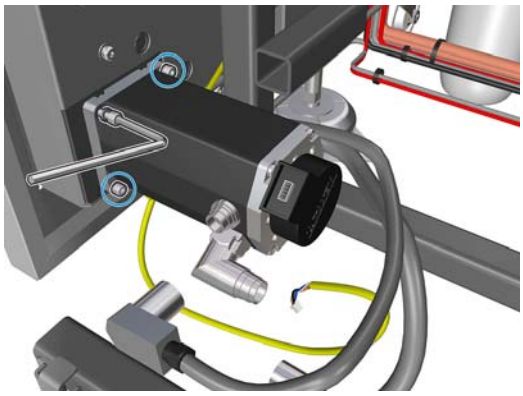
MO motor

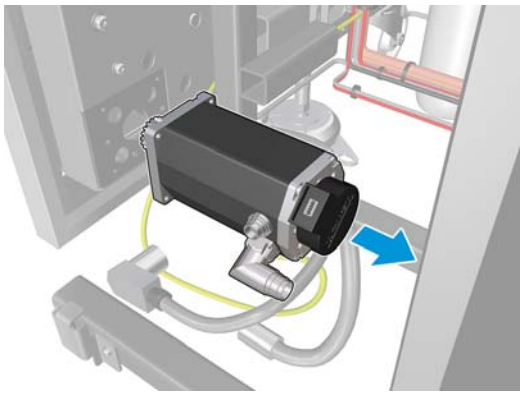
Removal

1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Open the printhead cleaning roll door.
4. Disconnect the MO motor power, data, and encoder cables.



5. Remove the screws that hold the MO motor, and remove the motor.





Installation

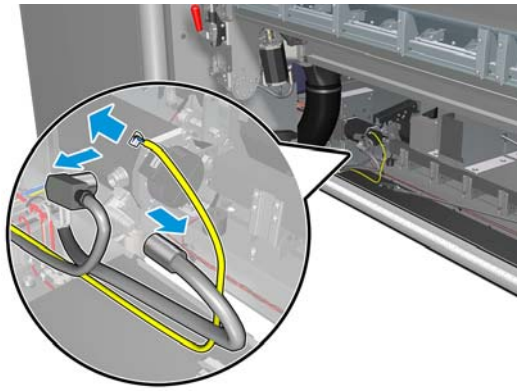
1. Install the new MO motor and attach it with the screws.
2. Connect the MO motor power, data, and encoder cables.

3. Remove the MO spindle.
4. Perform MI-MO-MF calibration.

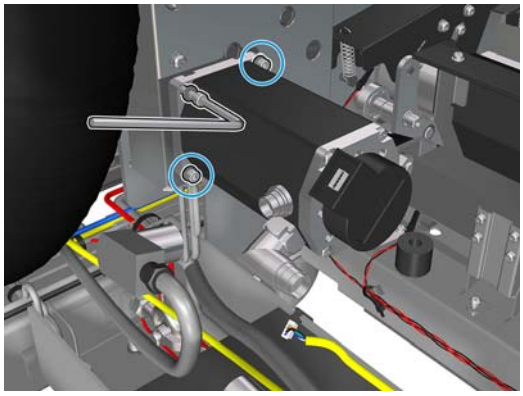
MF motor

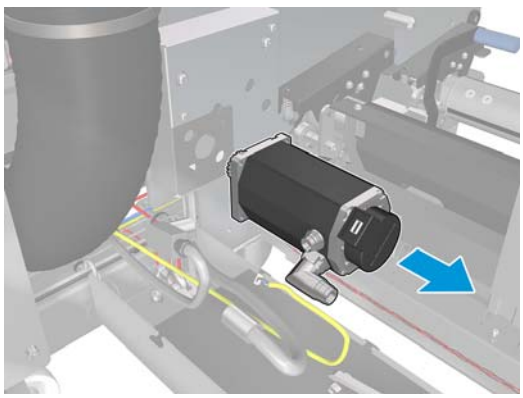
Removal

1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Disconnect the MF motor power, data, and encoder cables.



4. Remove the screws that hold the MF motor and remove the motor.





Installation

1. Remove the R2FF spindle.
2. Perform MI-MO-MF calibration.

MI power cable kit (CZ056-50225, CZ056-50130, CZ056-50226)

Removal

1. Turn off the printer and the power-enable switch.
2. Open the front right panel door.
3. Remove the rear right panel. See Rear right panel assembly on page 624.
4. Disconnect the MI power cables from both the MI motor and the e-cabinet (MI connector).
5. Remove the ten T-20 screws and the braking resistor enclosure.
6. Disconnect the MI resistor at both ends.
7. Remove the four screws that hold the MI resistor to the resistors plate, and remove the MI resistor.
8. Unroute both MI power cables from the MI resistor to the MI motor and the e-cabinet (cut the flanges if necessary).

Installation

1. Connect the new MI resistor to the resistors plate with the four screws.
2. Route the new MI power cables from the MI resistor to the MI motor and the e-cabinet, and reconnect them.

MI data cable (CZ056-50046)

Removal

1. Turn off the printer and the power-enable switch.
2. Open the front right panel door.
3. Remove the rear right panel. See Rear right panel assembly on page 624.
4. Disconnect the MI data cable from the MI motor and the e-box interconnect PCA (J_302 connector).
5. Unroute the cable (cut the flanges if necessary).

Installation

- Route and carefully connect the new cable. Place it orthogonally, ensuring that the pins will match correctly, and then screw it to connect the cable to the motor.

MI encoder cable (CZ056-50058)

Removal

1. Turn off the printer and the power-enable switch.
2. Open the front right panel door.
3. Remove the rear right panel. See Rear right panel assembly on page 624.

4. Disconnect the MI encoder cable from the MI motor and the e-box interconnect PCA (ENC J2_321 connector).

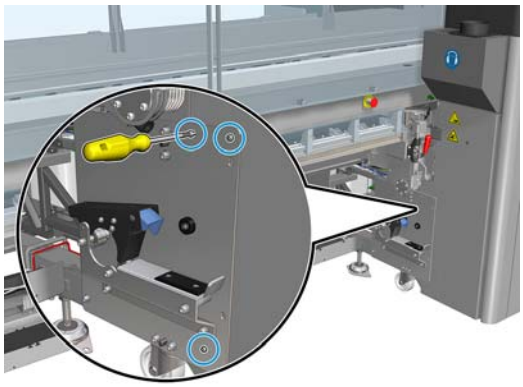
CAUTION: Do not disconnect an encoder cable by pulling the cable, because it will break the connector. Hold the connector of the encoder cable when removing it.

5. Unroute the cable (cut the flanges if necessary).

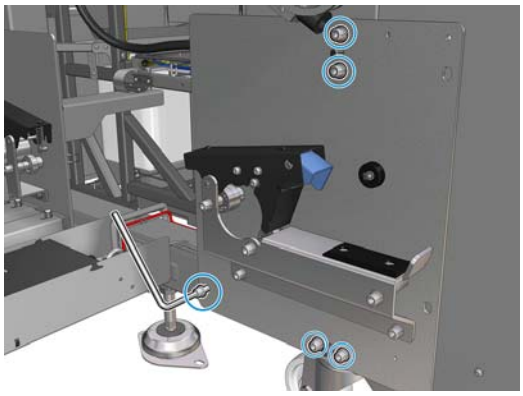
MI left support spindle plate

Removal

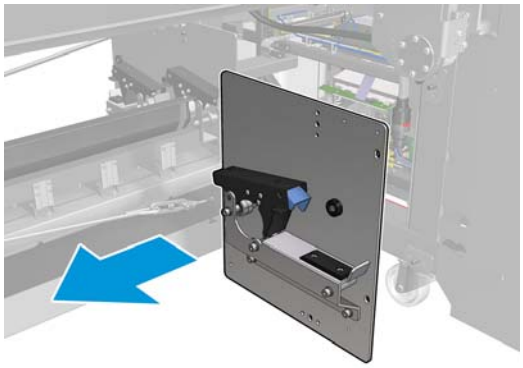
1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Remove the MI spindle.
4. Remove the three pointed screws that hold the MI left support spindle plate to the rear left pillar.



5. Remove the five pointed screws that hold the MI left support spindle plate to the structure.



6. Remove the MI left support spindle plate.



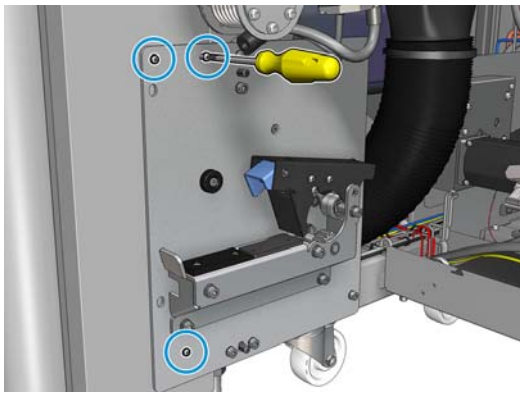
Installation

1. Install the new MI left support spindle plate.
2. Screw back the five pointed screws that hold the support MI left support spindle plate to the structure.
3. Screw back the three pointed screws that hold the MI left support spindle plate to the rear left pillar.

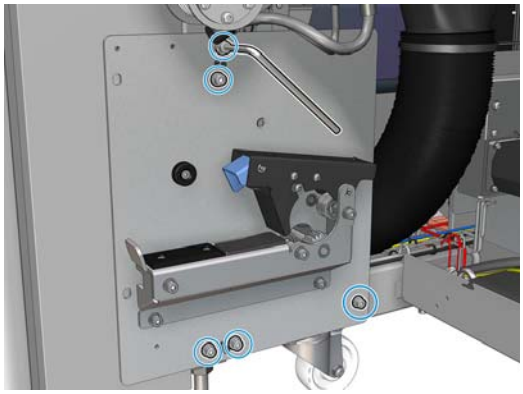
MI right support spindle plate

Removal

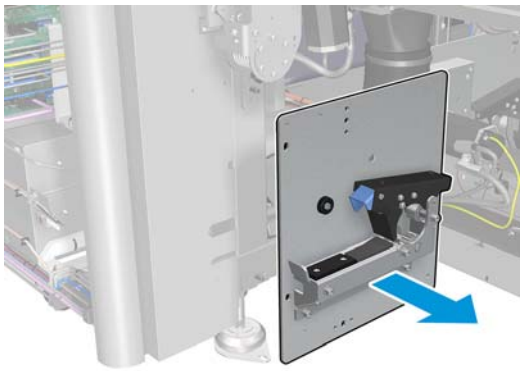
1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Remove the MI spindle.
4. Remove the rear right panel. See Rear right panel assembly on page 624.
5. Remove the MI motor from the support spindle.
6. Remove the three pointed screws that hold the MI right support spindle plate to the rear right pillar.



7. Remove the five pointed screws that hold the MI right support spindle plate to the structure.



8. Remove the MI right support spindle plate.



Installation

1. Install the new MI right support spindle plate.
2. Screw back the five pointed screws that hold the support MI right support spindle plate to the structure.
3. Screw back the three pointed screws that hold the MI right support spindle plate to the rear right pillar.

Spindle latch type A

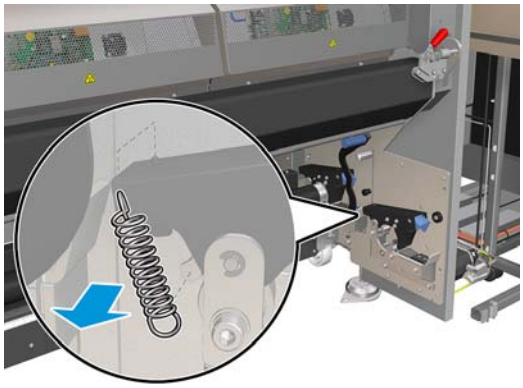
Removal

1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Remove either the MO spindle or the R2FF roller.
4. Follow the steps below for either the MO left spindle latch or the MO right spindle latch.

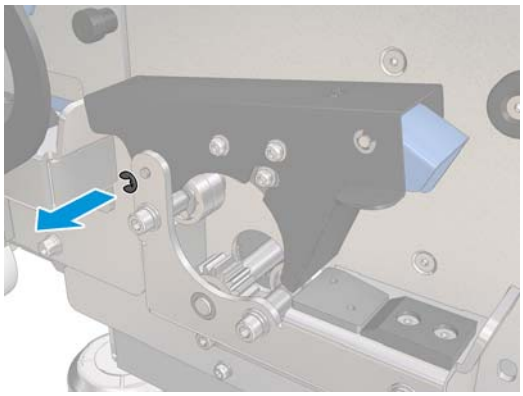
Removing the MO right spindle latch

1. Open the printhead cleaning roll door.

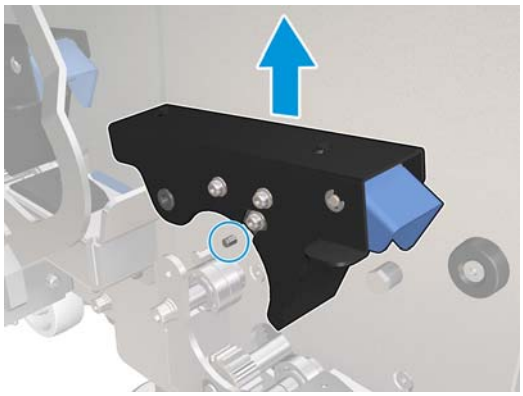
2. Remove the spring from the latch lever tab.



3. Remove the latch circlips from both lever pivot ends.



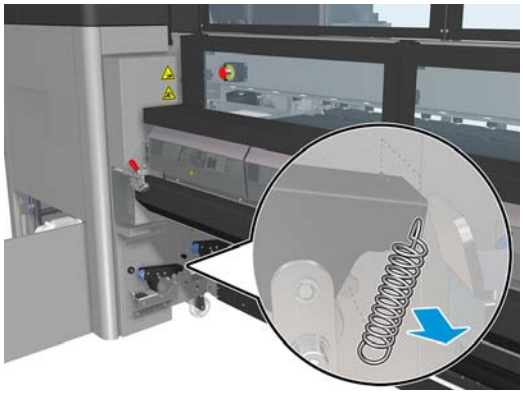
4. Remove the latch lever pivot sufficiently that the latch lever can be removed.



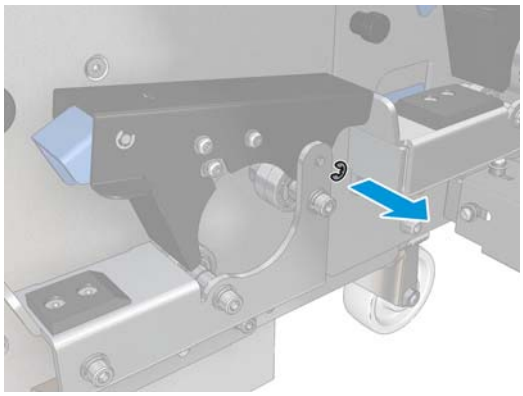
Removing the MO left spindle latch

1. Open the front left panel door.

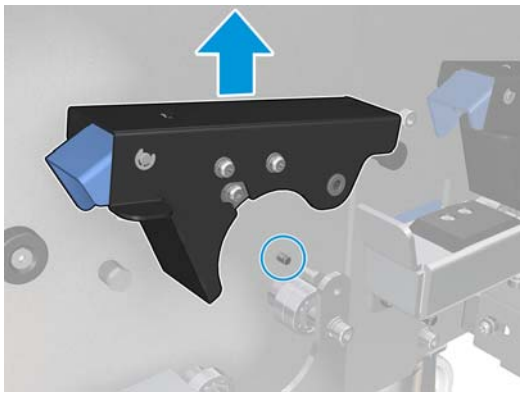
2. Remove the spring from the latch lever tab.



3. Remove the latch circlips from both lever pivot ends.



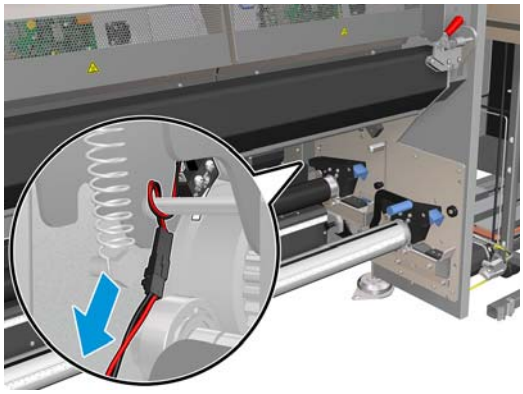
4. Remove the latch lever pivot sufficiently that the latch lever can be replaced with the new one.

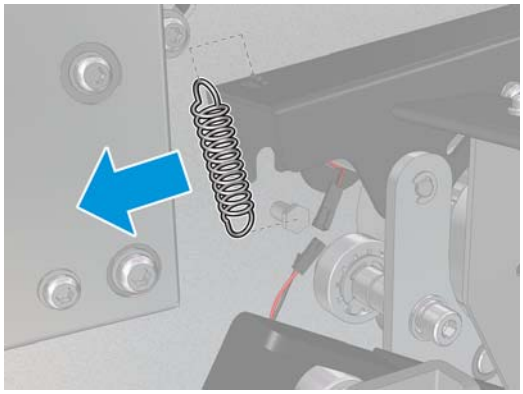


Removing the R2FF right roller latch

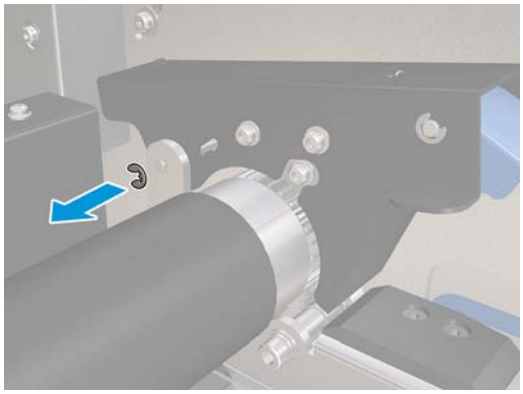
1. Open the printhead cleaning roll door.
2. Remove the rear right panel. See Rear right panel assembly on page 624.

3. Remove the spring from the latch lever tab.

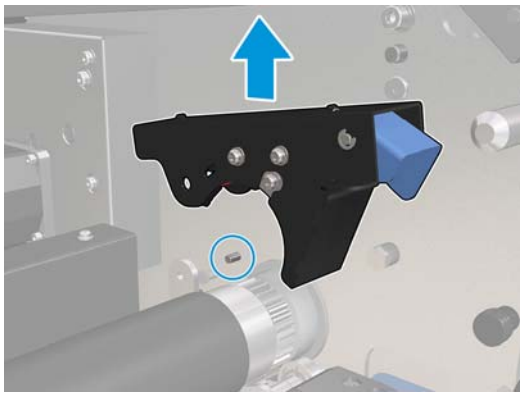




4. Remove the latch circlips from both lever pivot ends.

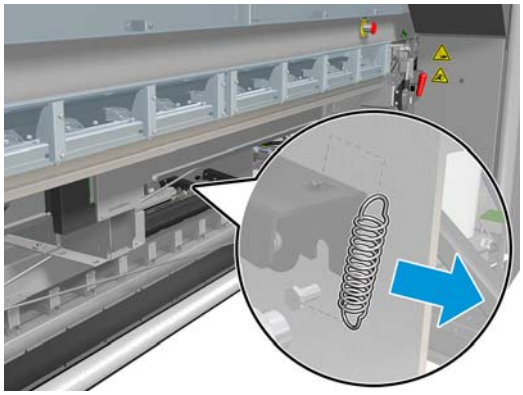


5. Remove the latch lever pivot sufficiently that the latch lever can be replaced with the new one.

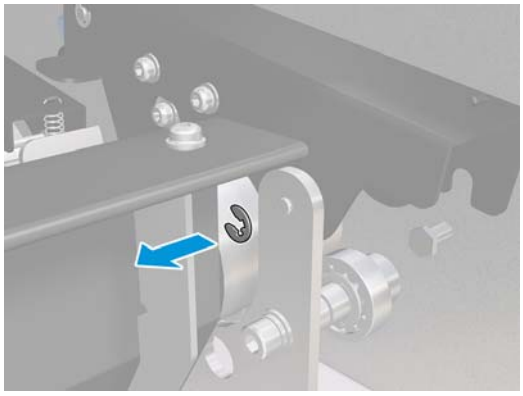


Removing the R2FF left roller latch

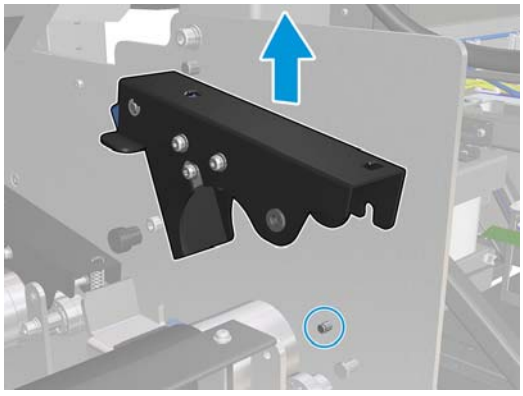
1. Open the front left panel door.
2. Remove the spring from the latch lever tab.



3. Remove the latch circlips from both lever pivot ends.



4. Remove the latch lever pivot sufficiently that the latch lever can be replaced with the new one.



Installation

1. Reinsert the lever pivot through the support spindle plate, the latch lever, and the bearing plate, and fix its ends with the circlips.
2. Put back the spring on the latch lever tab.

TIP: You are recommended to use a flange through the latch lever tab hole to help to tighten the spring, so that it is easier to place the spring end at the latch lever tab.

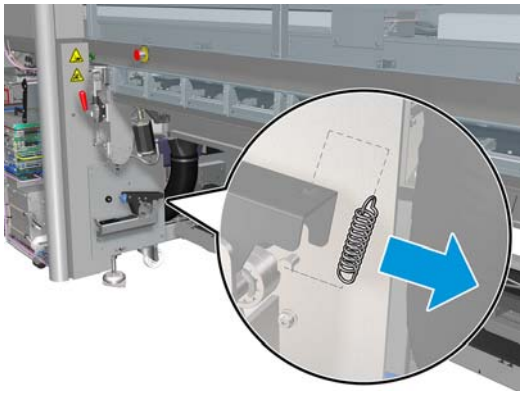
Spindle latch type B

Removal

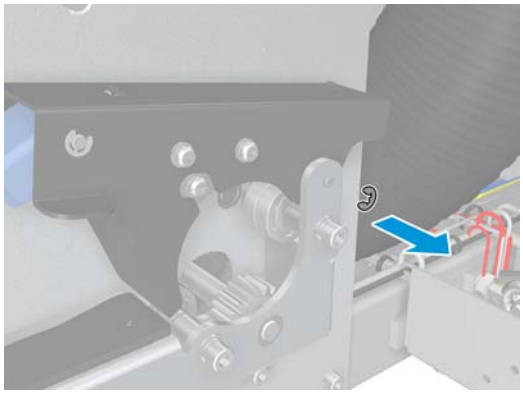
1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Remove the MI spindle.
4. Follow the steps below for either the MI left spindle latch or the MI right spindle latch.

Removing the MI right spindle latch

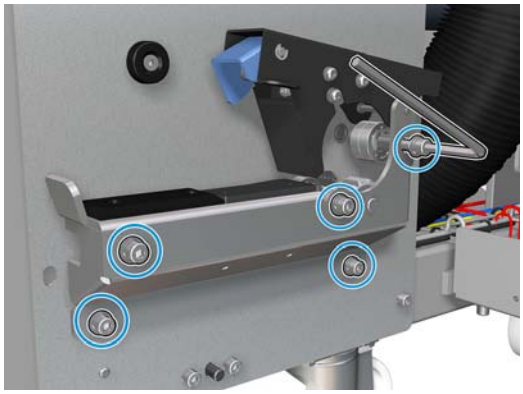
1. Remove the rear right panel. See Rear right panel assembly on page 624.
2. Remove the spring from the latch lever tab.

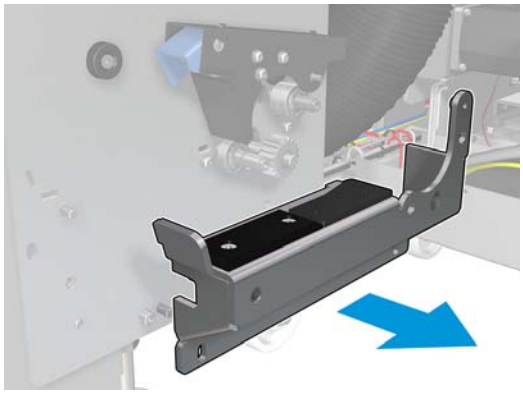


3. Remove the latch circlips from the bearing plate end.

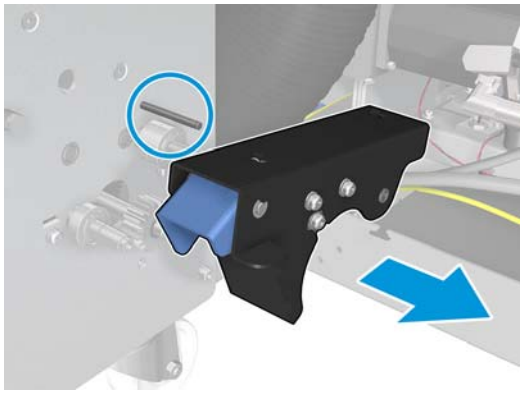


4. Remove the pointed screws and the bearing plate.





5. Remove the latch from the pivot.



Installing the MI right spindle latch

1. Install the new latch.

TIP: When installing the new latch through the pivot, you are recommended to remove the three T-25 screws and the MI transmission cover, so that the pivot can be pushed from the transmission side while installing the latch.

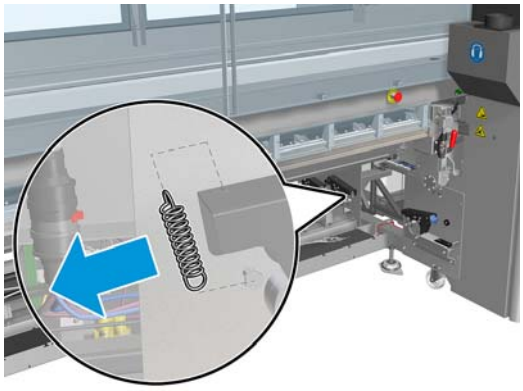
2. Reinsert the lever pivot through the support spindle plate, the latch lever, and the bearing plate, and fix its end with the circlip.

3. Put back the spring on the latch lever tab.

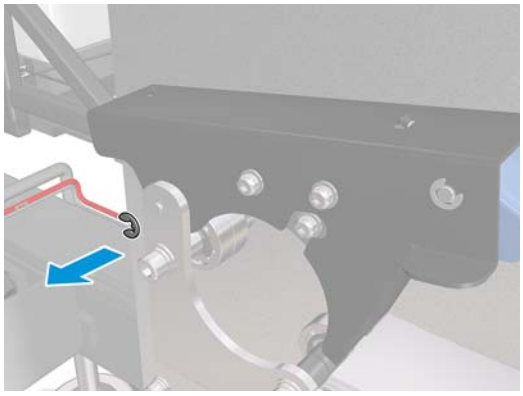
TIP: You are recommended to use a flange through the latch lever tab hole to help to tighten the spring, so that it is easier to place the spring end at the latch lever tab.

Removing the MI left spindle latch

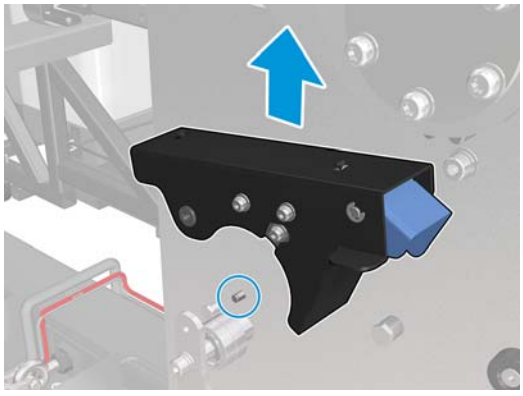
1. Remove the rear left panel. See Rear left panel assembly on page 636.
2. Remove the spring from the latch lever tab.



3. Remove the latch circlips from both lever pivot ends.



4. Remove the latch lever pivot sufficiently that the latch lever can be replaced with the new one.



Installing the MI left spindle latch

1. Install the new latch.
2. Reinsert the lever pivot through the support spindle plate, the latch lever, and the bearing plate, and fix its ends with the circlips.
3. Put back the spring on the latch lever tab.

TIP: You are recommended to use a flange through the latch lever tab hole to help to tighten the spring, so that it is easier to place the spring end at the latch lever tab.

MO power cable kit (CZ056-50227, CZ056-50130, CZ056-50228)

Removal

1. Turn off the printer and the power-enable switch.
2. Open the front right panel door.
3. Remove the rear right panel. See Rear right panel assembly on page 624.
4. Open the printhead cleaning roll door.
5. Disconnect the MO power cables from both the MO motor and the e-cabinet (MO connector).
6. Remove the ten T-20 screws and the braking resistor enclosure.
7. Disconnect the MO resistor at both ends.
8. Remove the four screws that hold the MO resistor to the resistors plate, and remove the resistor.
9. Unroute the MO power cables from the MO resistor to the MO motor and the e-cabinet (cut the flanges if necessary).

Installation

1. Attach the new MO resistor to the resistors plate with the four screws.
2. Route and reconnect the new cables.

MO data cable (CZ056-50237)

Removal

1. Turn off the printer and the power-enable switch.
2. Open the front right panel door.
3. Remove the rear right panel. See Rear right panel assembly on page 624.
4. Open the printhead cleaning roll door.
5. Disconnect the MO data cable from the MO motor and the e-box interconnect PCA (J_303 connector).
6. Unroute and remove the cable (cut the flanges if necessary).

Installation

- Route and carefully reconnect the new cable. Place it orthogonally, ensuring that the pins will match correctly, and then screw it to connect the cable to the motor.

MO encoder cable (CZ056-50059)

Removal

1. Turn off the printer and the power-enable switch.
2. Open the front right panel door.
3. Remove the rear right panel. See Rear right panel assembly on page 624.
4. Open the printhead cleaning roll door.

5. Disconnect the MO encoder cable from the MO motor and the e-box interconnect PCA (ENC J2_322 connector).

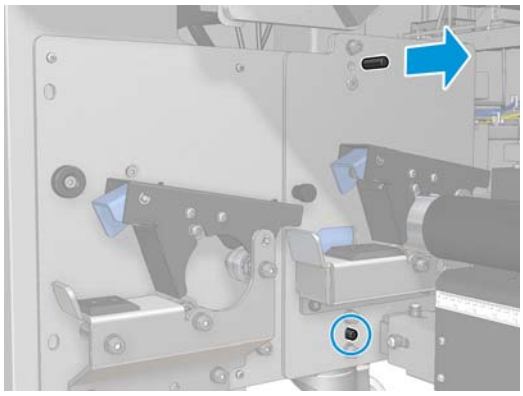
⚠ **CAUTION:** Do not disconnect an encoder cable by pulling the cable, because it will break the connector. Hold the connector of the encoder cable when removing it.

6. Unroute and remove the cable (cut the flanges if necessary).

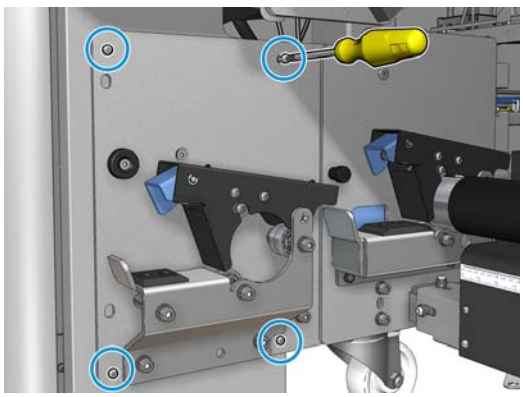
MO left support spindle plate

Removal

1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Remove the MO spindle from the MO spindle plates.
4. Open the front left panel door.
5. Remove both pins by hitting them from the rear (use pliers if necessary).

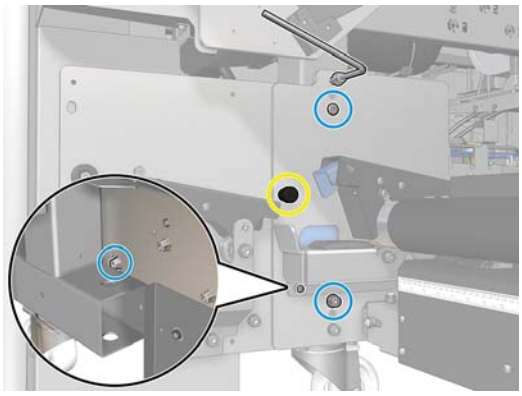


6. Remove the four pointed screws from the cover.

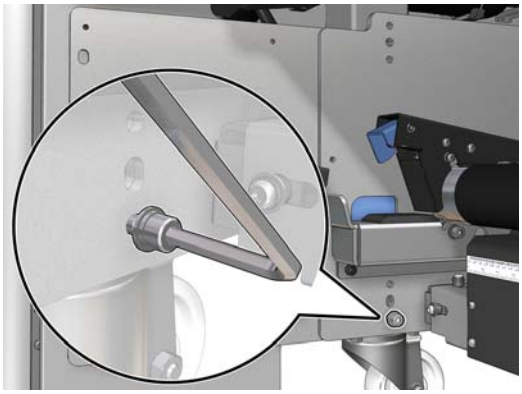


7. Remove the pointed screws.

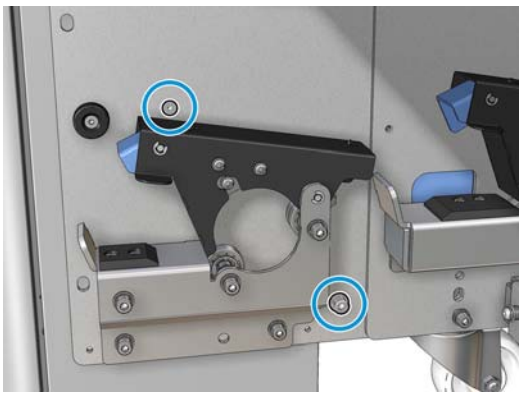
NOTE: The indicated screw is screwed on the reverse side. The screw circled in yellow can be removed by hand.



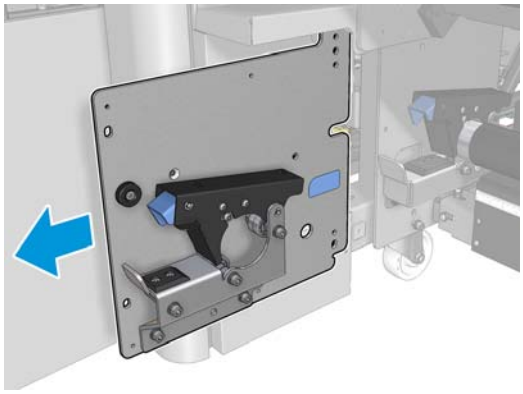
8. If necessary, loosen the pointed screw, so that the MO left support spindle plate is not strongly attached to the R2FF side plate.



9. Remove the screws that attach the MO left support spindle plate to the bracket.

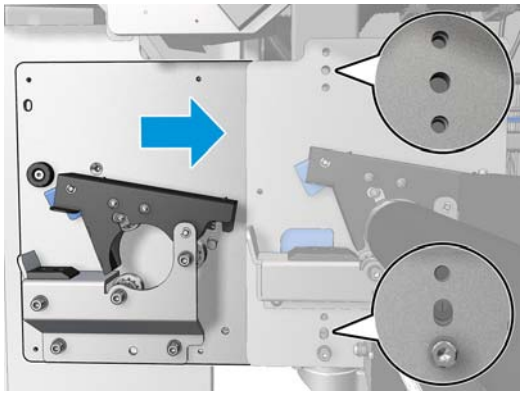


10. Remove the MO left support spindle plate.

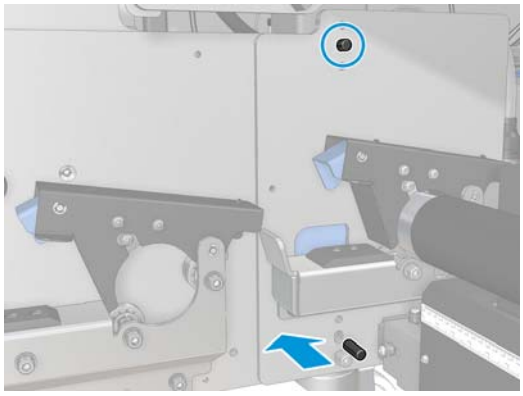


Installation

1. Slide the MO left support spindle plate horizontally until it matches its screw holes with the R2FF side plate ones.

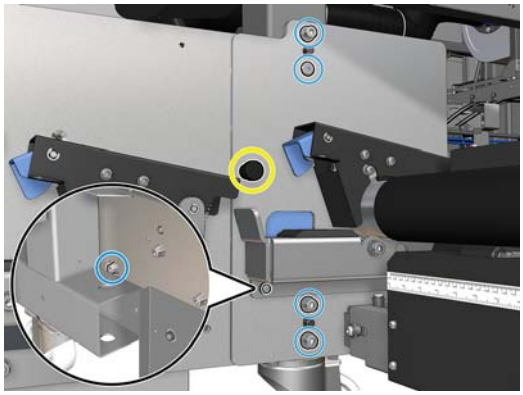


2. Put back the two pins (use pliers if necessary).



3. While holding the MO left support spindle plate in this position, screw back the pointed screws, and also screw back the loosened screws into the R2FF side plate.

NOTE: The indicated screw is screwed on the reverse side. The screw circled in yellow can be screwed by hand.

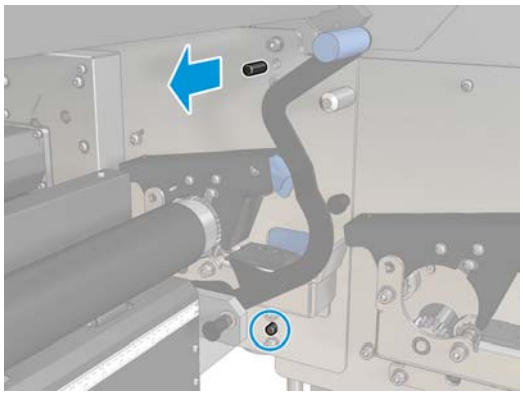


4. Connect the MO motor power, data, and encoder cables.
5. If necessary, tighten the pointed screw, so the MO left support spindle plate is strongly attached to the R2FF side plate.
6. Screw back the cover onto the MO left support spindle plate.

MO right support spindle plate

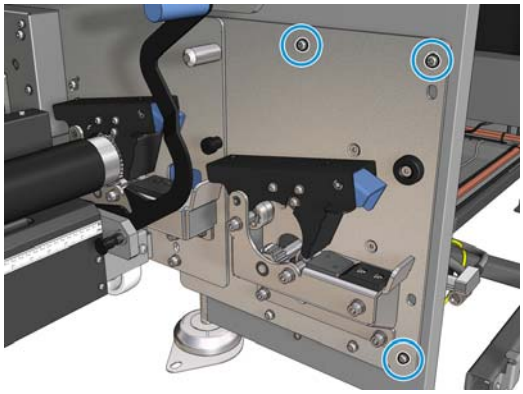
Removal

1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Remove the MO spindle from the MO spindle plates.
4. Open the printhead cleaning roll door.
5. Remove both pins (use pliers if necessary).



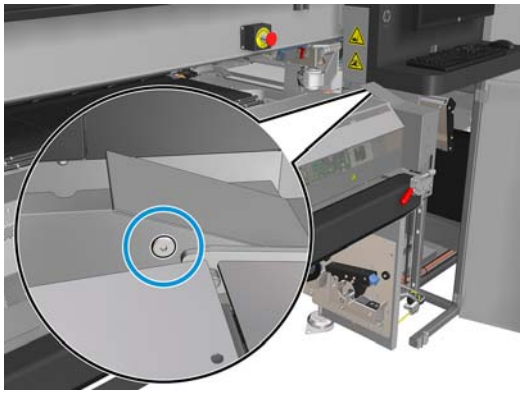
6. Disconnect the MO motor power, data, and encoder cables, and remove the motor.

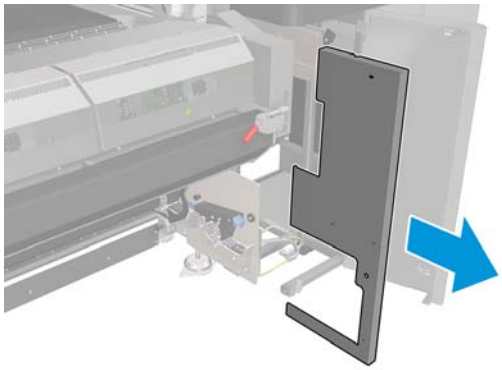
7. Remove the three pointed screws from the cover.



8. Remove the pointed screw from the top of the cover, and remove the cover from the MO right support spindle plate.

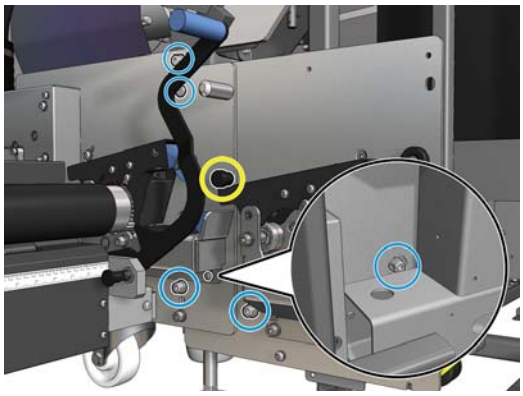
TIP: You are recommended to use an L-shaped key in order to have enough space to unscrew and remove the pointed screw.



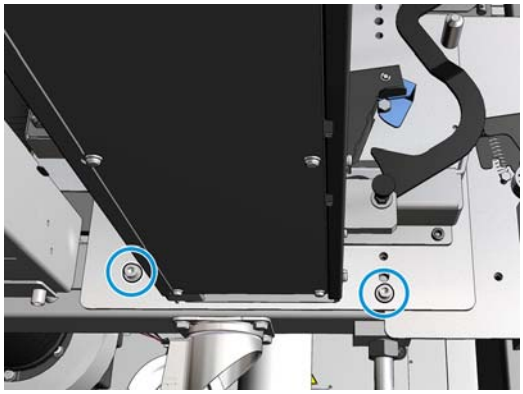


9. Remove the pointed screws.

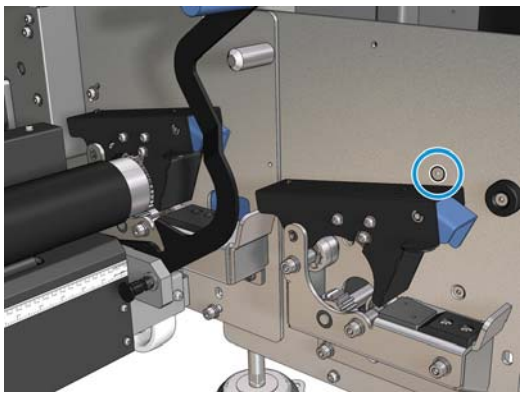
NOTE: The indicated screw is screwed on the reverse side. The screw circled in yellow can be removed by hand.



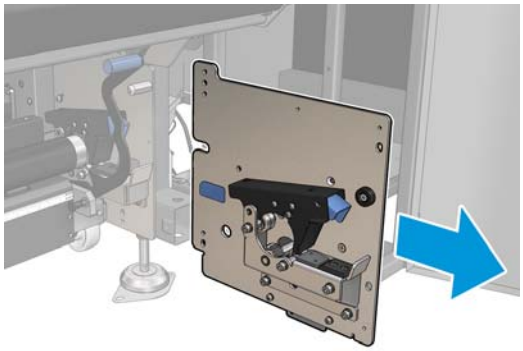
10. If necessary, loosen the pointed screws, so that the MO right support spindle plate is not strongly attached to the R2FF side plate.



11. Remove the screw that holds the MO right support spindle plate to the bracket.

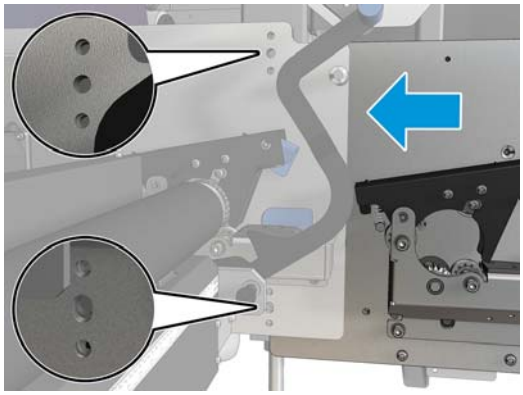


12. Remove the MO right support spindle plate.

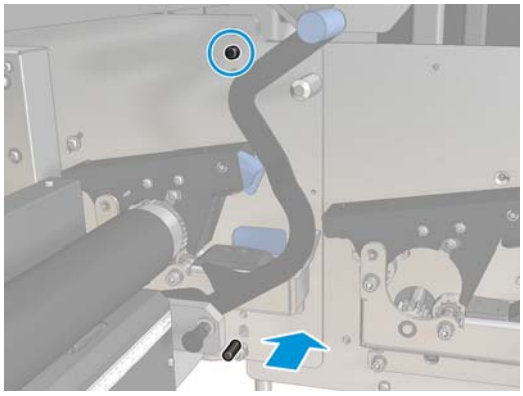


Installation

1. Slide the MO right support spindle plate horizontally until it matches its screw holes with the R2FF side plate ones.

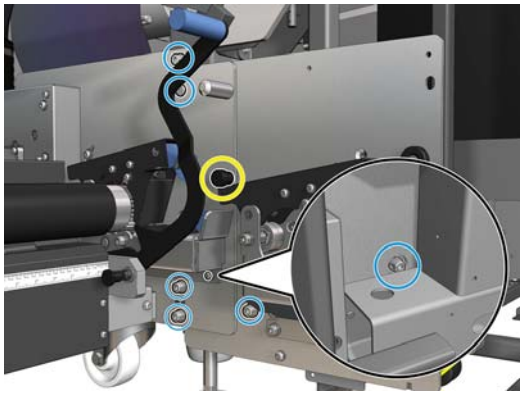


2. Put back the two pins (use pliers if necessary).



3. While holding the MO right support spindle plate in this position, screw back the pointed screws, and also screw back the loosened screws into the R2FF side plate.

NOTE: The indicated screw is screwed on the reverse side. The screw circled in yellow can be screwed by hand.



4. Connect the MO motor power, data, and encoder cables.
5. Screw the MO motor back to the MO right support spindle plate.

NOTE: The motor position must be as shown in the illustration.

6. Screw back the cover onto the MO right support spindle plate.
7. Screw back the upper cover hole.

MF power cable kit (CZ056-50229, CZ056-50130, CZ056-50230)

Removal

1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Open the front right panel door.
4. Remove the rear right panel. See Rear right panel assembly on page 624.
5. Disconnect the MF power cables from the MF motor and the e-cabinet (MF connector).
6. Remove the ten T-20 screws and the braking resistor enclosure.
7. Disconnect the MF resistor at both ends.
8. Remove the four screws that hold the MF resistor to the resistors plate, and remove the resistor.
9. Unroute the MF power cables from the MF resistor to the MF motor and the e-cabinet (cut the flanges if necessary).

Installation

1. Attach the new MF resistor to the resistors plate with the four screws.
2. Route and reconnect the new cables.

MF data cable (CZ056-50048)

Removal

1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Open the front right panel door.
4. Remove the rear right panel. See Rear right panel assembly on page 624.
5. Disconnect the MF data cable from the MF motor and the e-box interconnect PCA (J_304 connector).
6. Unroute and remove the cable (cut the flanges if necessary).

Installation

▲ Route and carefully reconnect the new cable. Place it orthogonally, ensuring that the pins will match correctly, and then screw it to connect the cable to the motor.

MF encoder cable (CZ056-50060)

Removal

1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Open the front right panel door.
4. Remove the rear right panel. See Rear right panel assembly on page 624.
5. Disconnect the MF encoder cable from the MF motor and the e-box interconnect PCA (ENC J2_323 connector).

   ⚠ **CAUTION:** Do not disconnect an encoder cable by pulling the cable, because it will break the connector. Hold the connector of the encoder cable when removing it.
6. Unroute and remove the cable (cut the flanges if necessary).

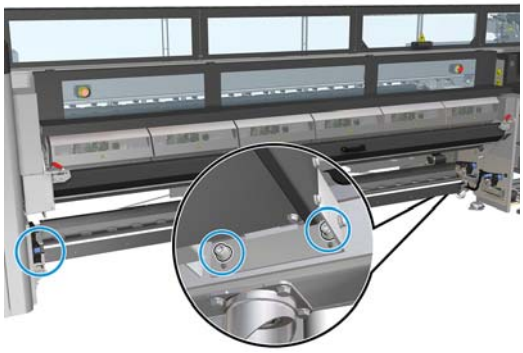
R2FF pinch mechanical assembly

Removal

1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Remove the MO spindle.
4. Remove the R2FF roller.
5. Open the front right panel door.
6. Remove the rear right panel. See Rear right panel assembly on page 624.
7. Disconnect and unroute from the R2FF pinch beam all the cables routed along it, from the take-up-reel sensor to the R2FF side plate, so that the R2FF pinch beam is free of cables routed to any other printer parts.

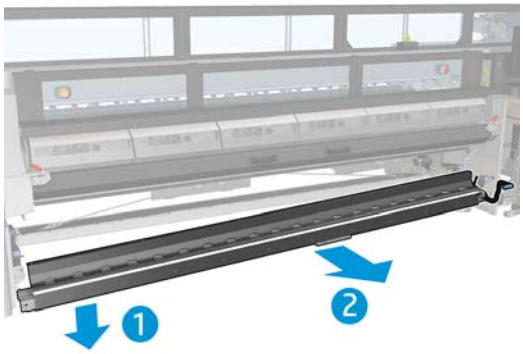
8. Remove the four pointed Allen 6 screws that hold the R2FF pinch mech assembly supports to the corresponding R2FF side plate on both sides (two screws on each side).

CAUTION: Before removing the screws and the pins, use a jack to keep the pinch mech assembly raised, so that it will not fall down when you remove the support screws and pins.



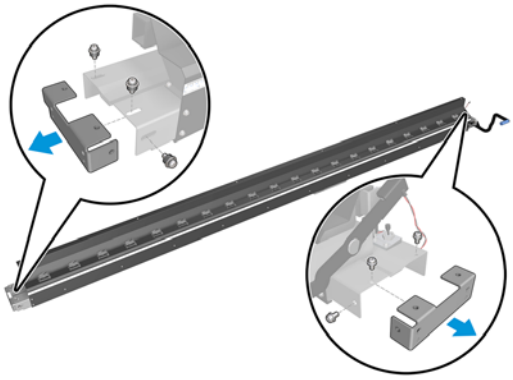
9. Remove the R2FF pinch mech assembly by pulling down the left part until you can pull out the entire assembly.

CAUTION: When moving the R2FF pinch mech assembly, be careful not to break the take-up-reel assembly, which is located at the bottom, below the assembly.and pins.



Installation

1. Remove the pinch mech assembly supports from each end of the R2FF pinch mech assembly and screw them to the new part. Tighten the screws that hold the supports to both ends.



NOTE: It is necessary to tighten the screws before installing the R2FF pinch assembly into the printer. Otherwise there is not enough space between the R2FF pinch mech assembly and the R2FF latches.

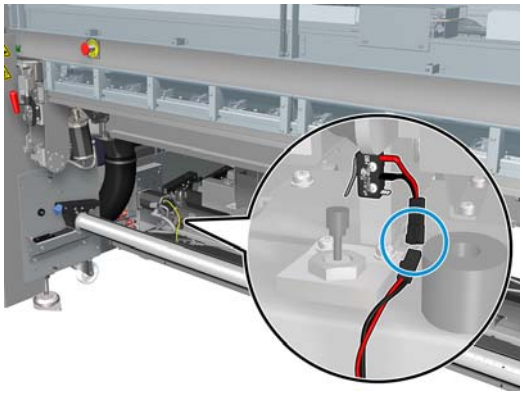
2. Install the new pinch mech assembly and screw both supports to their corresponding R2FF side plates.

3. Reinstall the R2FF roller and the MO spindle.
4. Route back through the R2FF pinch beam all the cables routed along it and reconnect them.

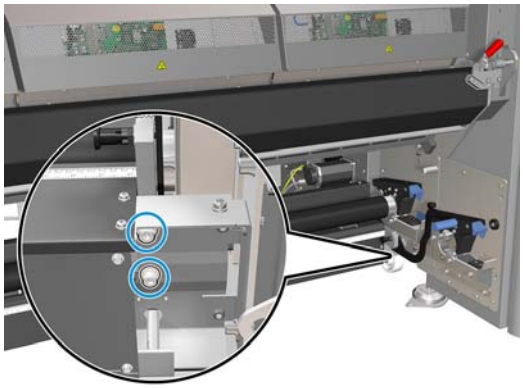
R2FF pinch lever kit

Removal

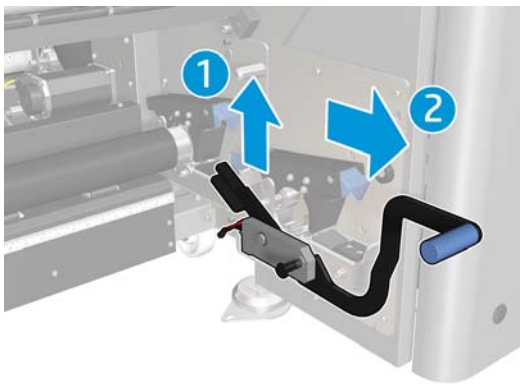
1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Disconnect the pinch lever assembly.



4. Remove the two pointed screws from under the pinch lever assembly.



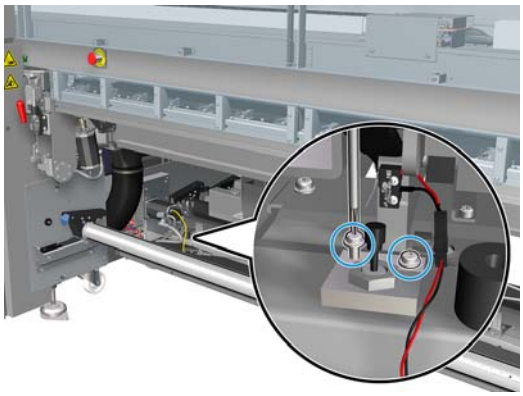
5. Lift up the pinch lever assembly and remove it.



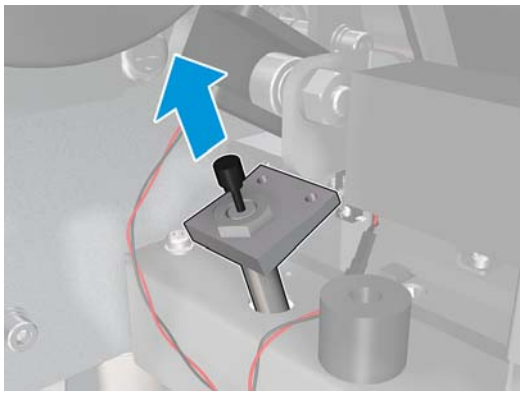
R2FF damper

Removal

1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Remove the two T-20 screws from the damper support.



4. Remove the R2FF damper.



R2FF switch cable

Removal

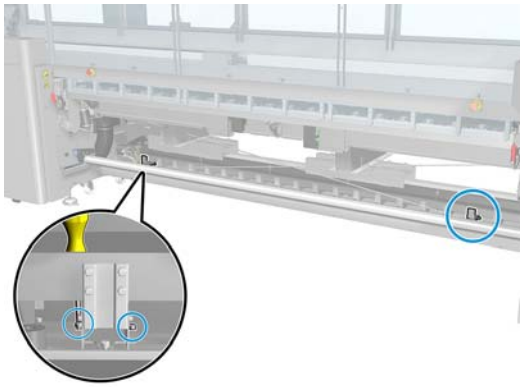
1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Disconnect the switch cable from the motor drive PCA (J4 connector), and unroute it.
4. Remove the two T-8 screws that hold the switch, and remove the switch.

R2FF pinch hinge outer

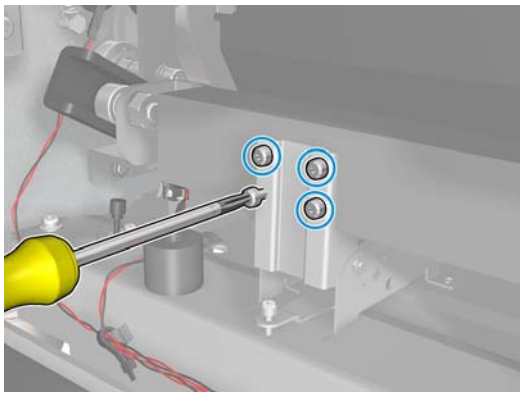
Removal

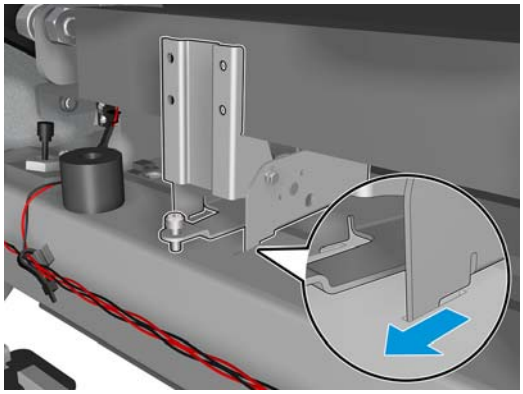
1. Unload the substrate.
2. Turn off the printer and the power-enable switch.

3. Remove two T-20 screws from the sides of the pinch assembly.

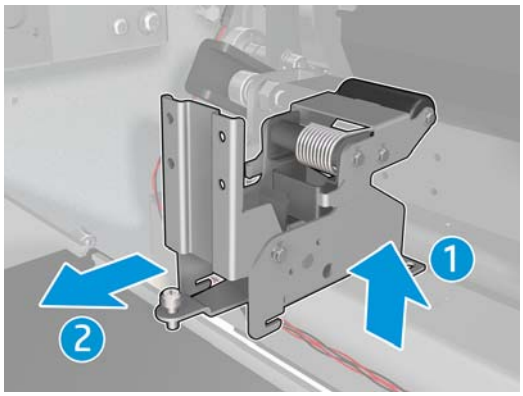


4. Remove four T-20 screws from the front of the pinch assembly, and pull the assembly forwards.





5. Lift up and remove the pinch assembly.



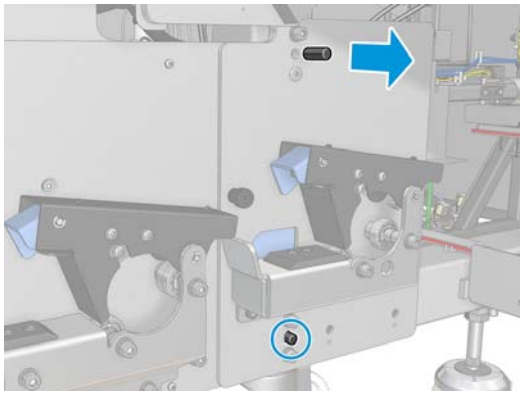
R2FF side plates

Removal

1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Remove the MO spindle.
4. Remove the R2FF roller.
5. Remove the R2FF pinch mech assembly.
6. Perform the steps described below to remove each R2FF side plate.

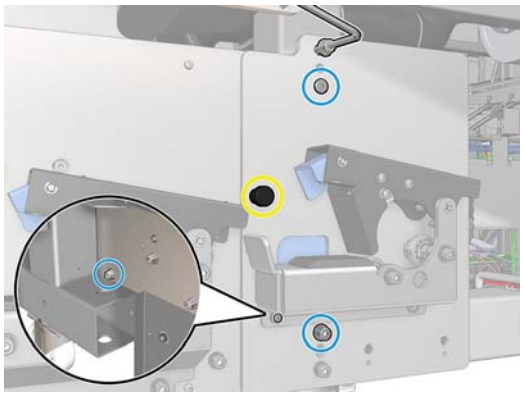
Removing the R2FF left side plate

1. Remove the two pointed pins that fix the MO side plate position (use pliers if necessary).

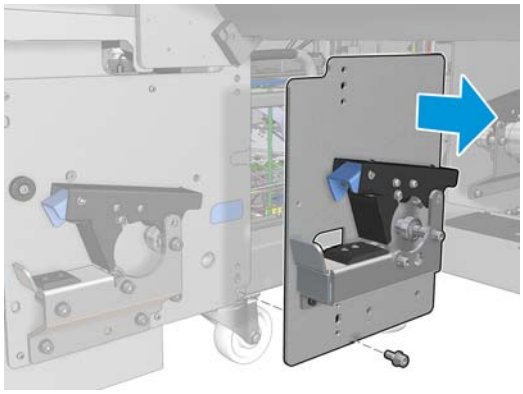


2. Remove the pointed screws.

NOTE: The indicated screw is screwed on the reverse side. The screw circled in yellow can be removed by hand.



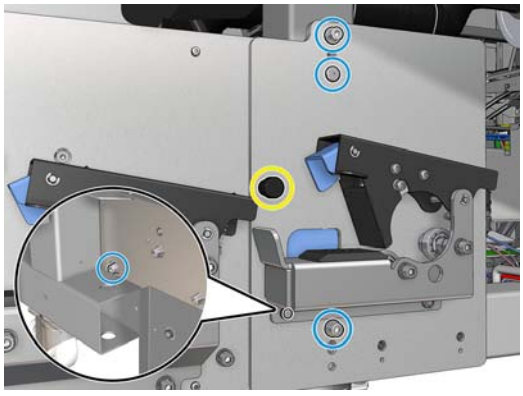
3. Remove the pointed screws and the R2FF left side plate.



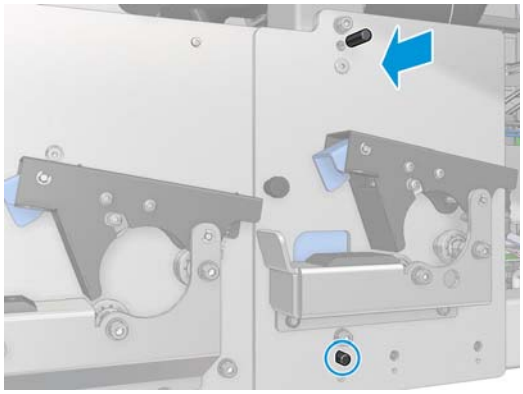
Installing the R2FF left side plate

1. Screw back the new R2FF left side plate to the MO side plate.

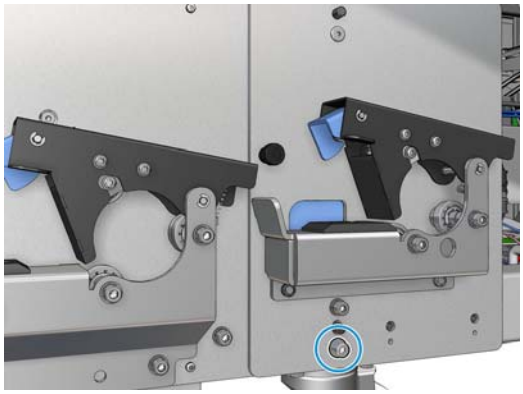
NOTE: The indicated screw is screwed on the reverse side. The screw circled in yellow can be screwed by hand.



2. Install the two pointed pins that fix the MO side plate position (use pliers if necessary).



3. Screw back the pointed screws.

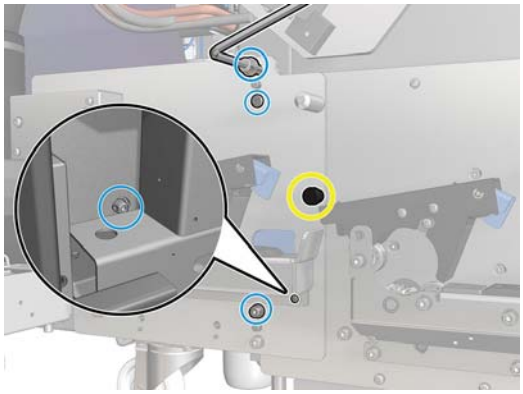


4. Reinstall the R2FF pinch mech assembly.

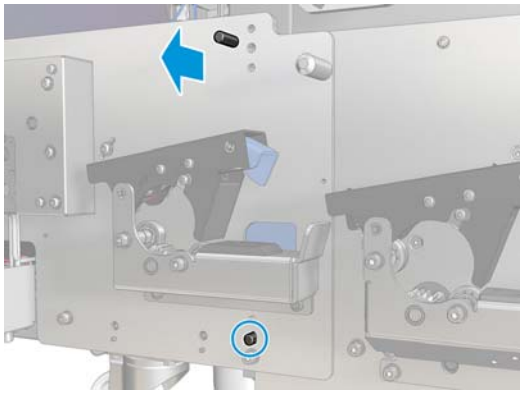
Removing the R2FF right side plate

1. Remove the MF motor.
2. Remove the pointed screws.

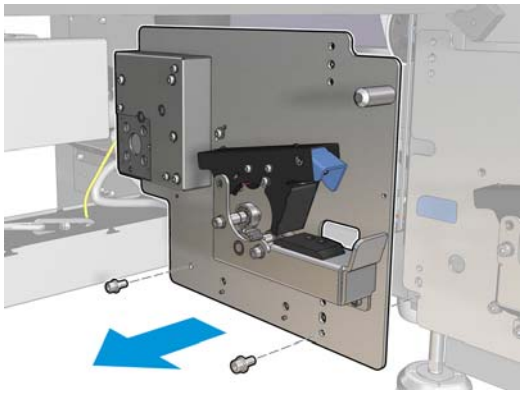
NOTE: The indicated screw is screwed on the reverse side. The screw circled in yellow can be removed by hand.



3. Remove the two pointed pins that fix the MO side plate position (use pliers if necessary).



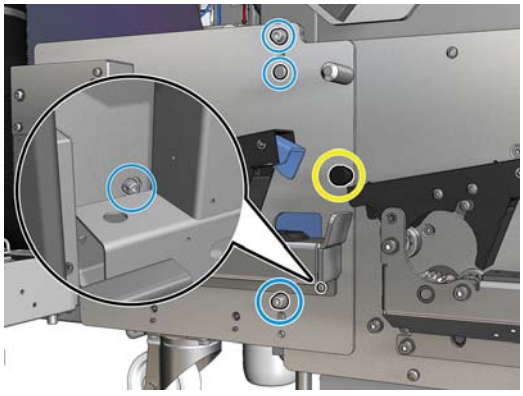
4. Remove the pointed screws and the R2FF right side plate.



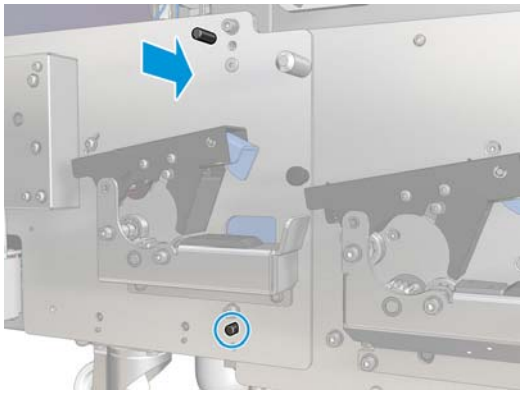
Installing the R2FF right side plate

1. Screw back the new R2FF right side plate to the MO side plate.

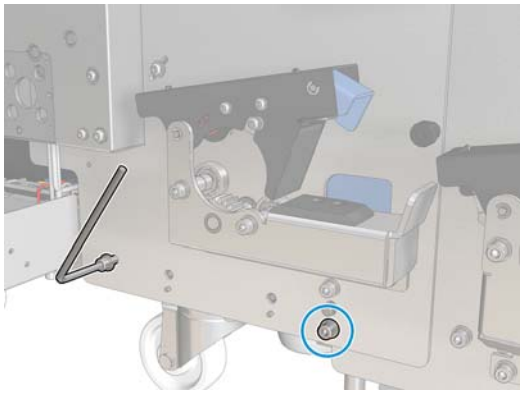
NOTE: The indicated screw is screwed on the reverse side. The screw circled in yellow can be screwed by hand.



2. Install the two pointed pins that fix the MO side plate position (use pliers if necessary).



3. Screw back the pointed screws.

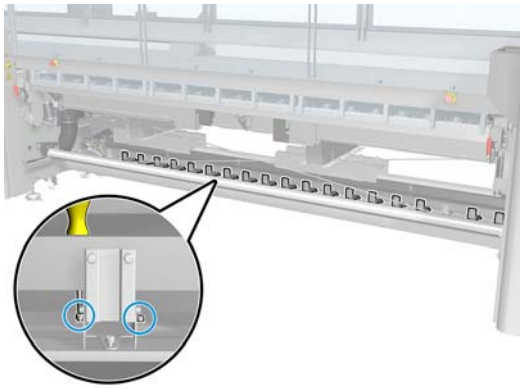


4. Reinstall the R2FF pinch mech assembly.

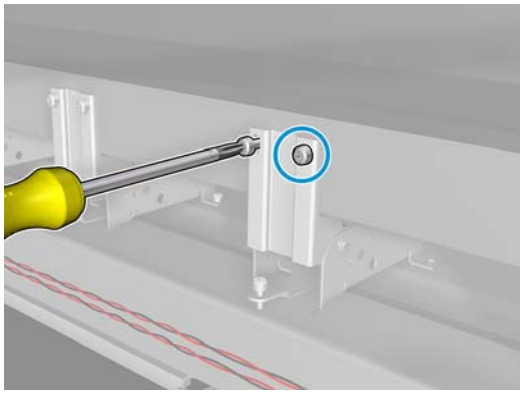
R2FF pinch hinge inner

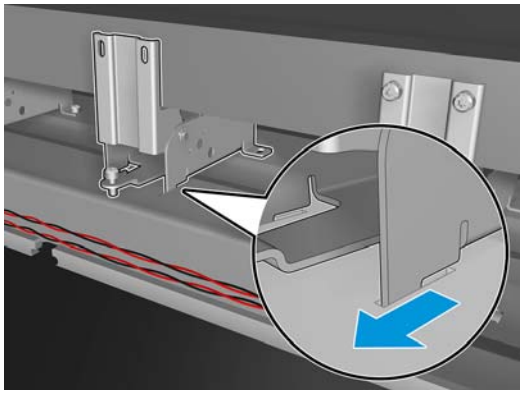
Removal

1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Remove the MO spindle, the R2FF roller, and the MI spindle.
4. Remove two T-20 screws from the sides of the pinch aAssembly.

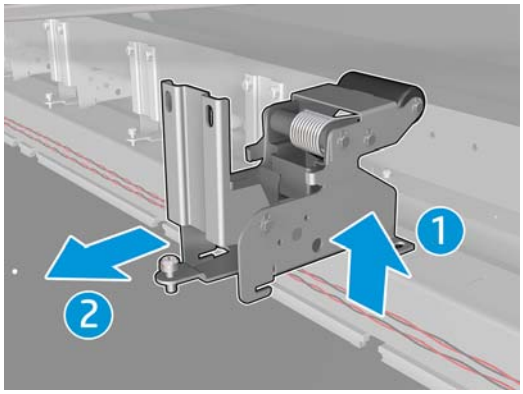


5. Remove two T-20 screws from the front of the pinch assembly, and pull the assembly forwards.





6. Lift up and remove the pinch assembly.

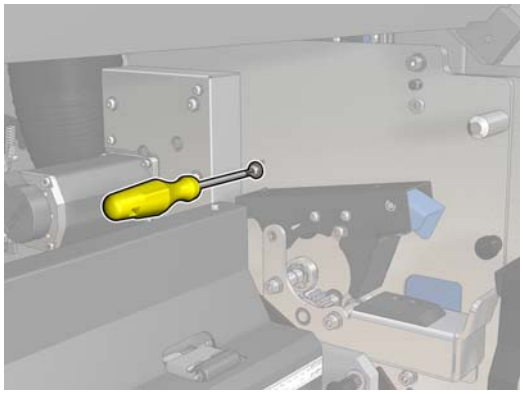


Roll-to-floor timing belt

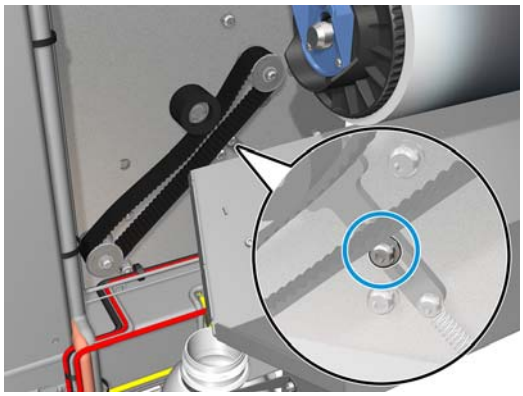
Removal

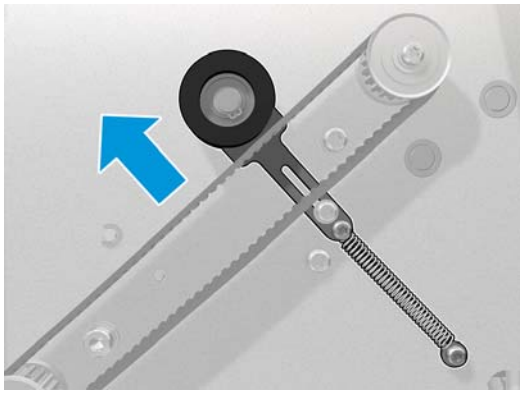
1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Remove the MO spindle.
4. Remove the R2FF roller.
5. Remove the rear right panel. See Rear right panel assembly on page 624.

6. Loosen the pointed T-30 screw.

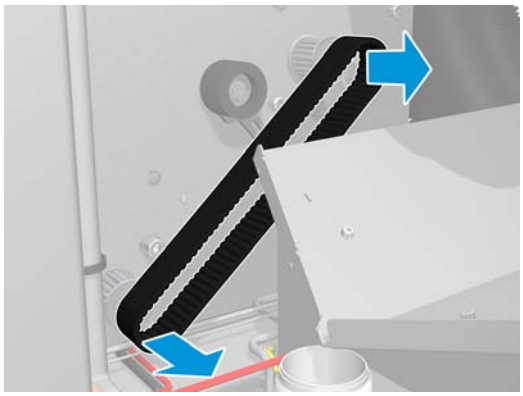


7. Loosen the roll-to-floor timing belt by pulling out the R2FF tensioner assembly.





8. Remove the roll-to-floor timing belt.



Installation

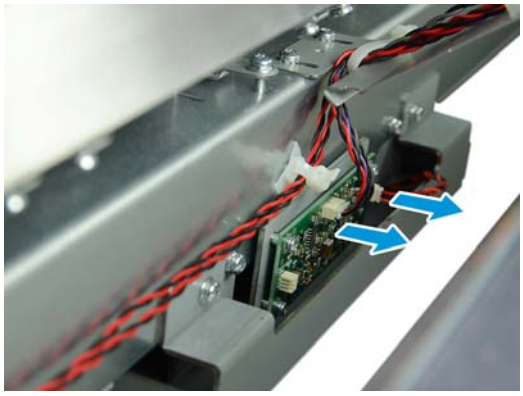
1. Install the new roll-to-floor timing belt.
2. Tighten the belt and screw back the T-30 screw to fix the R2FF tensioner assembly.
3. Reinstall the R2FF roller and the MO spindle.

R2FF take-up-reel assembly

This service part includes one each of the following: take-up-reel assembly with its support, RJ45 jumper (CZ056-50028), e-box to take-up-reel PCA cable (CZ056-50163), take-up-reel power cable (CZ056-50180), take-up reel sensor in T cable (CZ056-50170), take-up reel sensor single cable (CZ056-50203), and take-up reel sensor long cable (CZ056-50210).

Removal

1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Disconnect the take-up-reel assembly cables from the motor drive PCA. See Subsystem block diagrams on page 61.



The connections to the motor drive PCA are shown below.

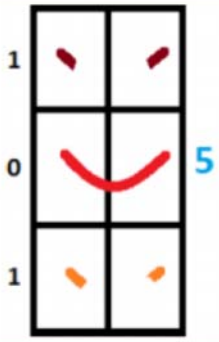
Connector	Cable	Part number
P2	RJ45 jumper (P2, data-out connector)	CZ056-50028
J1	E-box interconnect PCA to take-up-reel PCA cable (J1, data-in connector)	CZ056-50163
J4	Take-up-reel sensor in T cable	CZ056-50170
J3	Take-up-reel power cable	CZ056-50180

4. Remove the two T-20 screws and remove the take-up-reel cover.
5. Ensure that all the free air connectors from the power cables that do not connect to the PCA are isolated; if not, use insulating tape to secure them. See Subsystem block diagrams on page 61.
6. Unroute the take-up-reel cables.
7. Remove the four T-20 screws and the take-up-reel assembly.
8. Remove the four T-20 screws and the take-up-reel-cable support.

Installation

1. Install the new take-up-reel assembly and attach it with the four screws.
2. Install the new take-up-reel-cable support and attach it with the four screws.
3. Route and reconnect the take-up-reel cables to the motor drive PCA. See Subsystem block diagrams on page 61.
4. Ensure that the take-up-reel PCA has the RJ45 jumper connected (J2 connector).
5. Ensure that the take-up-reel PCA has the address jumper cable correctly set on its cable connector (J4 connector).

   The following table shows the scheme for its address: how the jumper cables should be cut off the take-up reel sensor in T cable (CZ056-50170) in order to get the corresponding motor drive PCA address.

Motor drive PCA ID	Address	Jumper cables
5	(1,0,1)	

Motor drive PCA

Removal

1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Remove the take-up-reel motor drive PCA plastic cover, so that you can reach it.
4. Disconnect the take-up-reel assembly cables from the motor drive PCA. See Subsystem block diagrams on page 61.

   The connections to the motor drive PCA are shown below.

Connector	Cable	Part number
P2	RJ45 jumper (P2, data-out connector)	CZ056-50028
J1	E-box interconnect PCA to take-up-reel PCA cable (J1, data-in connector)	CZ056-50163
J4	Take-up-reel sensor in T cable	CZ056-50170
J3	Take-up-reel power cable	CZ056-50180

5. Remove the take-up-reel motor drive PCA.

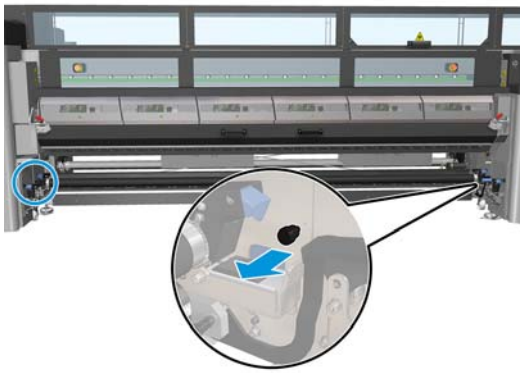
Installation

1. Install the new take-up-reel motor drive PCA.
2. Connect the take-up-reel assembly cables to the motor drive PCA.
3. Close the motor drive PCA's plastic cover.

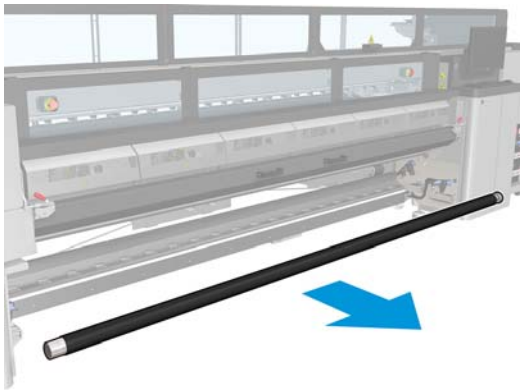
R2FF roller

Removal

1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Ensure that both MO spindle latches are closed.
4. Pull down the R2FF pinch lever.
5. Remove the hand-removable screw from each R2FF side plate.



6. Open the R2FF right and left roller latches.
7. Remove the R2FF roller.



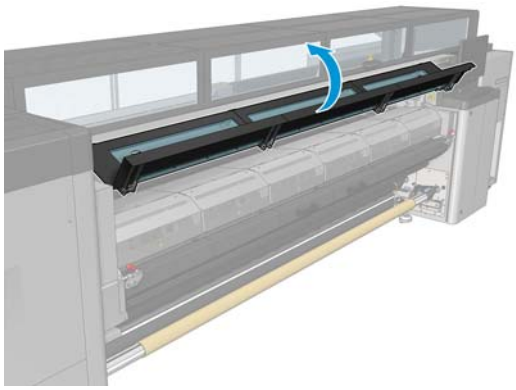
Installation

1. Install the new R2FF roller.
2. Close the R2FF right and left roller latches.
3. Reinstall the hand-removable screw on each R2FFside plate.
4. Pull up the R2FF pinch lever.

Diverter top module

Removal

1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Open the front door.



4. Open both curing-module assembly latches.
5. Pull the curing module to the service position.
6. Locate the diverter module that needs to be replaced.
7. Perform the following steps, depending on the diverter module design. There are two different designs for the diverter module (supports & wheels):

   - Design 1, used in printers manufactured before November 2013

   NOTE: Due to the necessary removal of both the entire bottom diverter structure and the bottom plate assembly, the top diverter design 1 does not include its corresponding service part. Therefore, it is necessary to follow the upgrade instructions for both the diverter and the bottom module assemblies. If you have an affected top diverter module that belongs to design 1, see the diverter and bottom plate upgrade kit.

   - Design 2, used in printers manufactured after November 2013 (the exact manufacturing date and the serial number of the first printer using design 2 will be included in a service newsletter, around November 2013)

Removal (design 2)

1. Remove all the diverter module wheels.
2. Remove the two T-10 screws that hold the diverter module plastic base.

TIP: If you cannot free the diverter module plastic base because there is not enough clearance, you can remove the wheels and the two T-10 screws that hold the following diverter module.

3. Unclip and remove the diverter module plastic base from the diverter metal sheet base.

IMPORTANT: Do not remove or unfix the diverter metal sheet base, as it is an structural part of the printer, which determines the position of the diverter module plastic base. If you move or remove it, the diverter may not work properly.

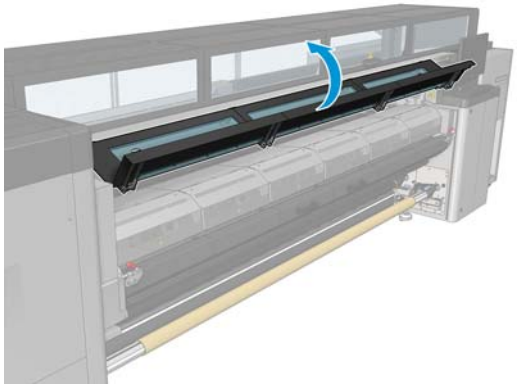
Installation (design 2)

1. Clip the diverter module plastic base to the diverter metal sheet base.
2. Install the diverter wheels back onto the diverter module plastic base.
3. Screw the diverter module plastic base to the diverter metal sheet base.

Diverter bottom module

Removal

1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Open the front door.



4. Open both curing-module assembly latches.
5. Pull the curing module to the service position.
6. Locate the diverter module that needs to be replaced.
7. Perform the following steps, depending on the diverter module design. There are two different designs for the diverter module (supports & wheels):
   - Design 1, used in printers manufactured before November 2013
   - Design 2, used in printers manufactured after November 2013 (the exact manufacturing date and the serial number of the first printer using design 2 will be included in a service newsletter, around November 2013)

Removal (design 1)

1. Remove the interwheels and all the diverter module wheels.
2. Remove the four T-10 screws that hold the diverter module base.

NOTE: If you are removing an end diverter bottom module, you will also have to disconnect a grounding cable.

TIP: If you cannot free the diverter module base because there is not enough clearance, you can remove the wheels and the four T-10 screws that hold the following diverter module.

Installation (design 1)

1. Place the diverter module base in a centered position, so that the distance to its neighbors, one on each side, looks the same.

NOTE: This helps to ensure that there will be no problem when installing the interwheels after installling the diverter module.

2. Screw the diverter module to the plastic isolators.

IMPORTANT: Ensure beforehand that both plane surfaces match correctly. Otherwise you could cause some marks or irregularities on the plastic isolator surface.

3. If you are installing an end diverter bottom module, do not forget to reconnect the grounding cable.

Removal (design 2)

1. Remove all the diverter module wheels.
2. Remove the four T-10 screws that hold the diverter module plastic base.

TIP: If you cannot free the diverter module plastic base because there is not enough clearance, you can remove the wheels and the four T-10 screws that hold the following diverter module.

3. Unclip and remove the diverter module plastic base from the diverter metal sheet base.

IMPORTANT: Do not remove or unfix the diverter metal sheet base, as it is an structural part of the printer, which determines the position of the diverter module plastic base. If you move or remove it, the diverter may not work properly.

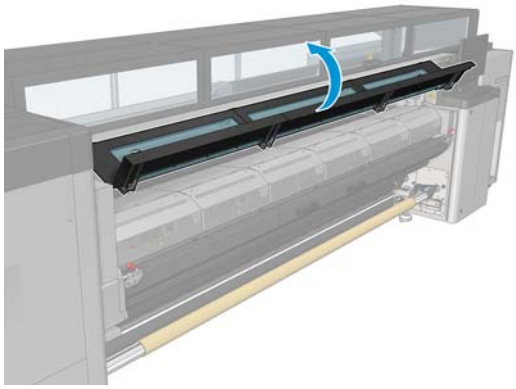
Installation (design 2)

1. Clip the diverter module plastic base to the diverter metal sheet base.
2. Install the diverter wheels back onto the diverter module plastic base.
3. Screw the diverter module plastic base to the diverter metal sheet base.

Diverter wheel

Removal

1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Open the front door.



4. Open both curing-module assembly latches.

5. Pull the curing module to the service position.
6. Locate the diverter wheel that needs to be replaced.
7. Remove the interwheels from both ends of the diverter wheel.

Installation

1. Install the new diverter wheel.
2. If you have diffficulty in replacing the diverter wheel, try the following suggestions, depending on the diverter module design. There are two different designs for the diverter module (supports & wheels):
   - Design 1, used in printers manufactured before November 2013
   - Design 2, used in printers manufactured after November 2013 (the exact manufacturing date and the serial number of the first printer using design 2 will be included in a service newsletter, around November 2013)

   TIP: Design 2 does not need the plastic interwheels parts that may include this service part (they are needed only for design 1).

Installation (design 1)

▲ To give yourself more room in which to operate, you can remove all the interwheels and the screws that attach the diverter module. If you still have difficulty, you can also remove the interwheels and screws from the neighboring diverter module.

Installation (design 2)

▲ To give yourself more room in which to operate, you can remove the screws that attach the diverter module. If you still have difficulty, you can also remove the screws from the neighboring diverter module.

NOTE: Interwheels are used only in design 1.

Pinch assembly

Removal

1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Remove the pinch cover of the affected pinch assembly.

   TIP: Before removing the screws that attach the pinch cover, you are strongly recommended to use a marker to indicate the positions of the screws for when you will need to reinstall the cover, or to measure and record the distances between the screws. Notice that the slot blocks can slide along the pinch beam.
4. Remove the screws that attach the pinchwheel submodule.
5. Remove the submodule.

Installation

1. Install the new submodule and attach it with the screws.
2. Put back the cover and attach it with the screws.
3. Close the loading table.

Pinch switch assembly

This service part includes one pinch sensor cable (CZ056-50127) and one mechanical switch - short cable (CZ056-50169).

Removal

1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Locate the pinch switch sensor, inside the pinch clamp retainer.
4. Open the pinch clamps and pull out the pinch assembly.
5. Disconnect and unroute the pinch sensor cable.
6. Remove the two pointed screws and remove the switch assembly with its metal sheet support.
7. Remove the pinch switch.

Installation

1. Install the new pinch switch.
2. Screw back the pinch switch assembly to the clamp retainer.
3. Route the switch cable, ensuring that it will not get pinched by the pinch assembly, but leaving enough free (looped) to open the pinch assembly without interference.
4. Connect the switch cable and the pinch switch assembly.
5. Perform the check interlocks procedure.
6. Perform the safety interlock procedure.

Pinch clamp

Removal

1. Turn off the printer and the power-enable switch.
2. Locate the pinch clamp to be replaced and open it.
3. 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 check interlocks procedure.
3. Perform the safety interlock procedure.

Interlock

Removal

1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Open the loading table.

4. Locate the interlock to be replaced.
5. Remove the crossed screw and the interlock connector cover.
6. Disconnect the interlock from its cables.
7. Remove the screws that attach each part of the interlock.
8. Remove the interlock.

Installation

1. Install the new interlock.
2. Add the interlock connector and screw it to the pinch side plate support.
3. Remove the crossed screw and the interlock connector cover.
4. Connect the Interlock connector to its cables.
5. Screw the interlock jumper to the pinch mechanical bracket support.
6. Carefully move the pinch to the closed position, without closing it, and ensure that the interlock connector perfectly matches the interlock jumper, so that it cannot bend or break the interlock pins. If necessary, adjust the interlock connector position to match the interlock jumper perfectly.

   CAUTION: Be careful to follow the correct procedure when installing the interlocks, to avoid breaking or bending the interlock pins when closing the pinch assembly.

   The following illustration shows the clearance that allows you to place the interlock connector in the best position to match the jumper.
7. Open the pinch assembly and tighten the interlock connector screws.
8. Perform the check interlocks procedure.
9. Perform the safety interlock procedure.

Pinch front cover

Removal

1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Open the loading table.
4. Locate the pinchwheel submodule to be replaced.
5. Remove the six screws shown below.

   TIP: Before removing the screws that attach the pinch cover, you are strongly recommended to use a marker to indicate the positions of the screws for when you will need to reinstall the cover, or to measure and record the distances between the screws. Notice that the slot blocks can slide along the pinch beam.
6. Remove the pinchwheel cover.

Pinch front cover right

Removal

1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Open the loading table.
4. Locate the pinchwheel submodule to be replaced.
5. Remove the five screws shown below.

   TIP: Before removing the screws that attach the pinch cover, you are strongly recommended to use a marker to indicate the positions of the screws for when you will need to reinstall the cover, or to measure and record the distances between the screws. Notice that the slot blocks can slide along the pinch beam.

6. Remove the pinchwheel cover.

Pinch front cover left

Removal

1. Unload the substrate.
2. Turn off the printer and the power-enable switch.
3. Open the loading table.
4. Locate the pinchwheel submodule to be replaced.
5. Remove the five screws shown below.

   TIP: Before removing the screws that attach the pinch cover, you are strongly recommended to use a marker to indicate the positions of the screws for when you will need to reinstall the cover, or to measure and record the distances between the screws. Notice that the slot blocks can slide along the pinch beam.

6. Remove the pinchwheel cover.

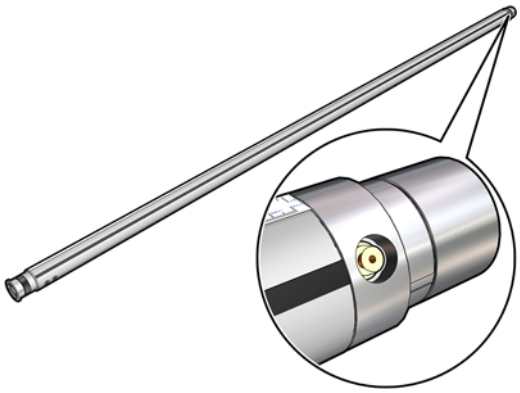
Spindle air valve

Prepare to replace a spindle valve

1. Ensure that you have the Spindle Air Valve (Q6702-67025), which is included in the 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.

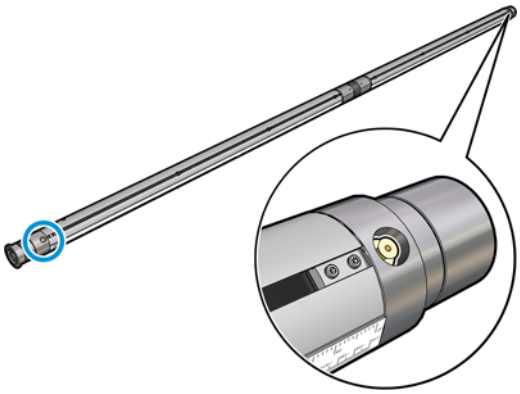
Replace a spindle valve

1. Remove the spindle valve with the tube wrench key.





NOTE: Remember that the dual-roll spindle has two valves; identify the one that needs replacement.



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.

Tube Routing System (TRS)

TRS FI tower assembly

Removal before purging

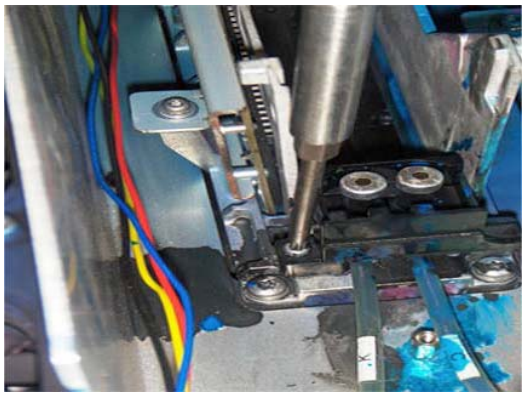
1. Move the carriage to the repair position. See How to run a diagnostic test on page 341.
2. Turn off the printer and the power-enable switch.
3. Stand on the folding steps and open the service position window.



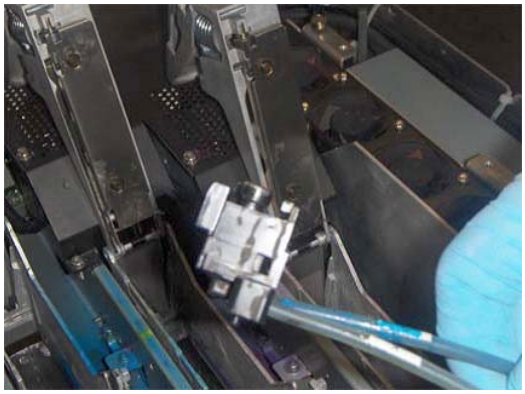
4. Remove all printheads from the carriage and store them in their caps.
5. Remove the five pointed screws and the carriage-tower cover.

NOTE: Before replacing the PT FI tower assembly, you are recommended to remove the printhead interconnect PCA assembly, to give free access to the FI tower assembly screws.

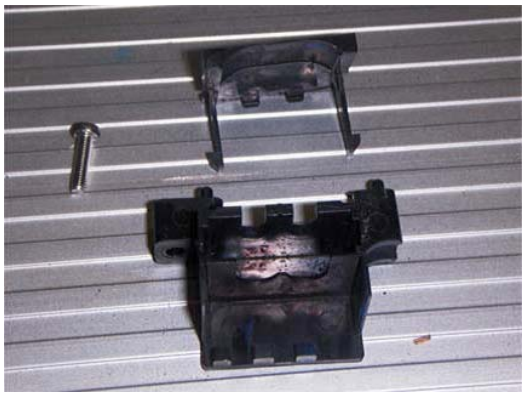
6. Remove one T-10 screw from the FI holder.



7. Carefully disassemble the FI cover.



8. The FI cover has two snap-fit parts.



Removal after purging

The FI tower should be removed before purging the ink whenever possible. However, you can also remove the FI tower after purging the tube, as follows:

1. Turn off the printer and the power-enable switch in order to ensure that there is no ink pressure within the ink system. If in doubt, before opening the support of the FI tower, you can insert a syringe (with piston in place) within the FI tower to ensure that there is really no ink pressure: the piston does not move when there is no ink pressure.
2. Use a cloth to absorb any drops of ink.

After remounting the FI tower, you do not need to remove the small bubble of air: the air bubble that can be accepted by the printhead without any problem is up to 20 cm (8 in) in the tube.

Installation

1. Disassemble the new FI tower.

CAUTION: Do not remove the ink tube from the bottom of the FI tower.





2. Replace the FI tower with the new ones provided. The elbow with the fitting attached must remain attached to the tubes.

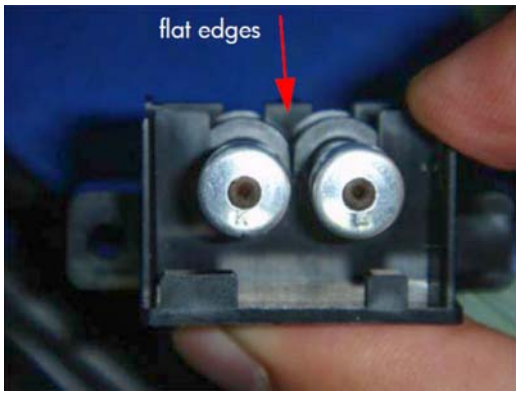




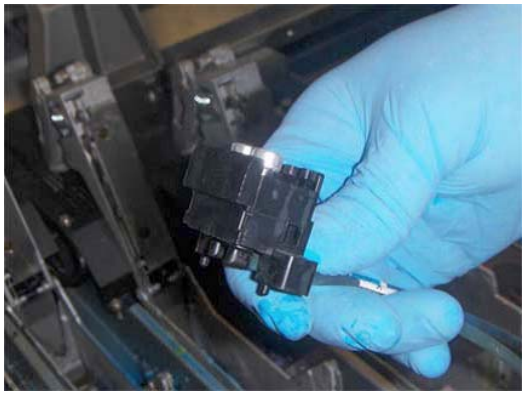
3. Install the FI towers inside the FI holder. At this point it is important to remember the position of the colors.



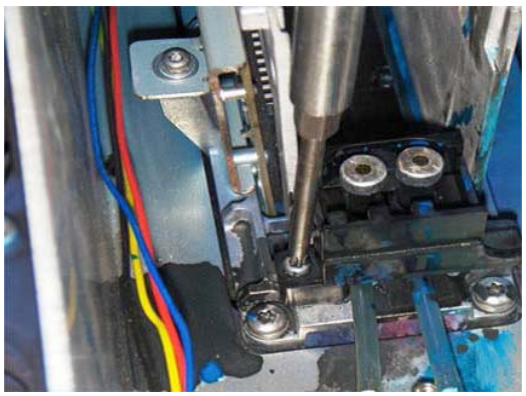
The orientation of the FI tower is very important. The flat edges must go together.



4. Assemble the FI cover by snapping it together.



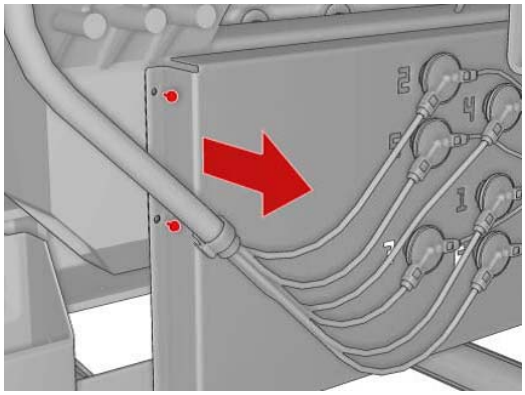
5. Install the FI holder into the carriage assembly and secure it with a T-10 screw.



TRS barnacle kit

Removal

1. Turn off the printer and the power-enable switch.
2. Remove the ink system module.
3. Remove the rear left panel. See Rear left panel assembly on page 636.
4. Remove the four rear central panels in order to reach the entire ink-chain tubes routing.
5. Use the flush kit to empty the ink tube of the specific color that you want.
6. After flushing, cut the tube at the input and at the output of the valve.
7. Unclip the valve by rotating it counterclockwise.



Installation

1. Clip the new valve.
2. Use the tube repair kit to connect the new barnacle ink tubes to the ink tubes that come from the Igus chain side and the ISM side.
3. Install the air purgers provided and refill the tubes using the procedure in diagnostics.

IMPORTANT: Purge from the trailing chain tubes to the TRS barnacle quick connector, so there will be no air bubble left along the ink tube circuit.

Vapor removal

Vapor removal pipes

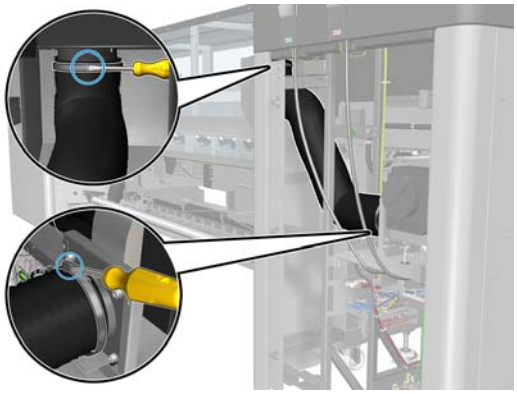
NOTE: Use the cleaning kit and use gloves, coat, clothes, and other materials in order not to wet yourself and the printer or the floor when replacing any vapor removal part.

CAUTION: All vapor removal parts can contain liquid, so it is important before removing any vapor removal part to cover all the surfaces or remove all the delicate parts that can be damaged by liquid (such as the electronic and electrical parts).

Vapor removal air-to-blower pipe

Removal

1. Turn off the printer and the power-enable switch.
2. Remove the rear left panel. See Rear left panel assembly on page 636.
3. Remove the flanges that attach the pipe.

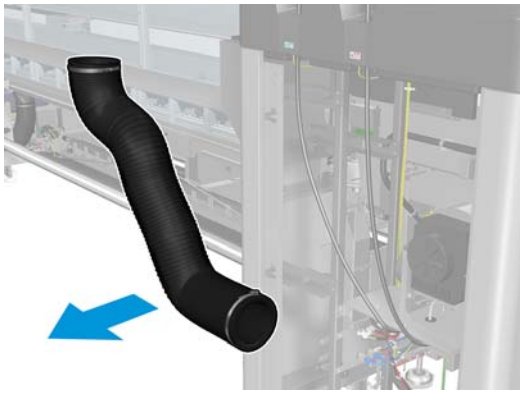


4. Prepare to remove the pipe.

CAUTION: All vapor removal parts can contain liquid, so it is important before removing any vapor removal part to cover all the surfaces or remove all the delicate parts that can be damaged by liquid (such as the electronic and electrical parts).

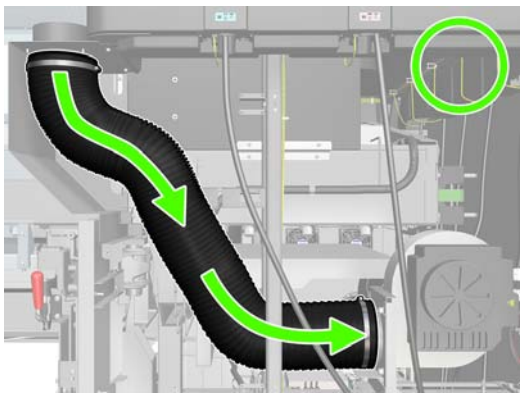
NOTE: Once the pipe is free, you are recommended to lift the pipe slightly at its higher end before starting to remove it, so that most of the liquid it contains can drain into the condensation collector bottle.

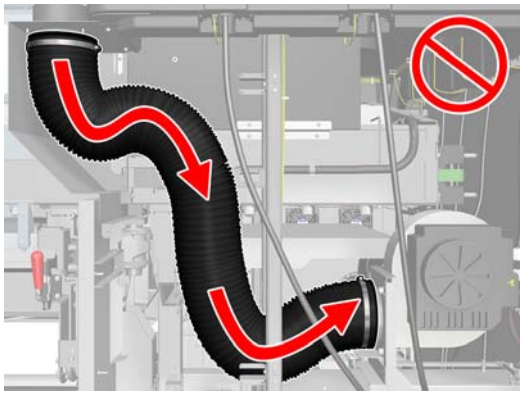
5. Loosen the metal flanges from both pipe ends and remove the vapor removal air to blower pipe from both the vapor removal exhaust and the blower fixer.



Installation

1. Route the vapor removal air to blower pipe along the ink system module and attach it with flanges to the ink system module, ensuring that from the air exhaust to the blower the pipe always descends, so that all liquid drains into the condensation collector bottle and none remains in the pipe.



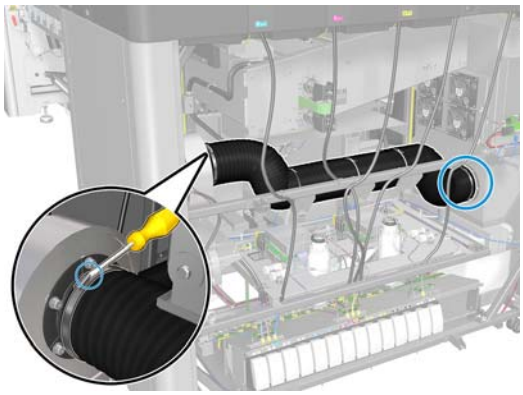


2. Tighten the metal flanges at both ends of the pipe and ensure that it is airtight, otherwise the vapor removal will not work correctly.

Vapor removal blower to exchanger-box pipe

Removal

1. Turn off the printer and the power-enable switch.
2. Remove the top left panel. See Top left panel assembly on page 637.
3. Remove the bottom left panel. See Bottom left panel assembly on page 636.
4. Remove the flanges that attach the pipe.

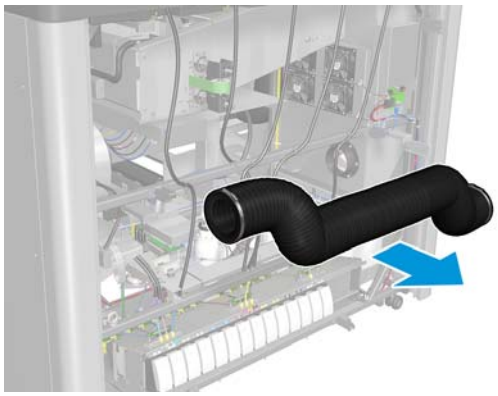


5. Prepare to remove the pipe.

CAUTION: All vapor removal parts can contain liquid, so it is important before removing any vapor removal part to cover all the surfaces or remove all the delicate parts that can be damaged by liquid (such as the electronic and electrical parts).

NOTE: Once the pipe is free, you are recommended to lift the pipe slightly at its higher end before starting to remove it, so that most of the liquid it contains can drain into the condensation collector bottle.

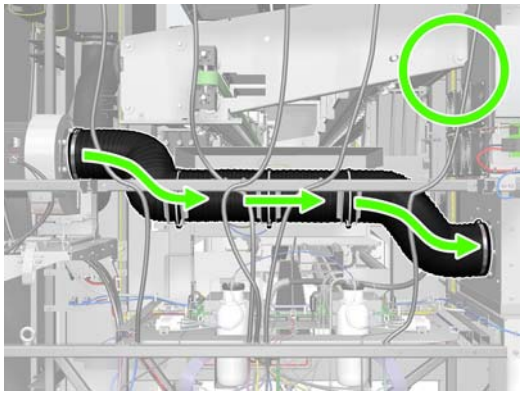
6. Loosen the metal flanges from both ends of the pipe and remove the vapor removal blower to exchanger box pipe from both the vapor removal blower and the vapor removal exchanger box.

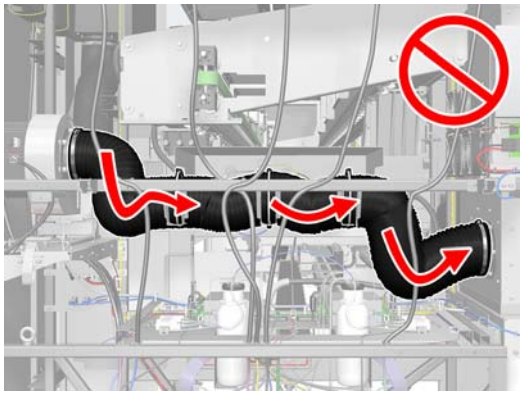


Installation

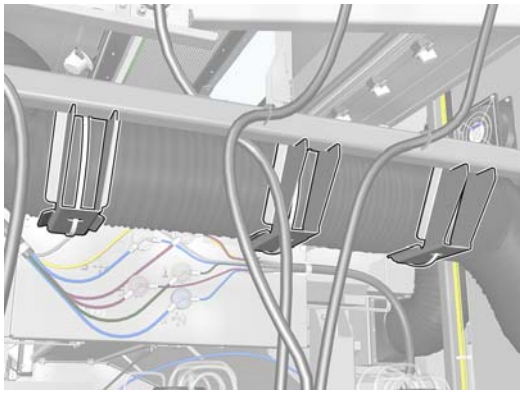
1. Route the vapor removal blower to exchanger box pipe along the ink system module and attach it with flanges to the ink system module, ensuring that from the blower to the exchanger box the pipe always descends, so that all liquid drains into the condensation collector bottle and none remains in the pipe.

CAUTION: Be careful with the metal sheet supports, as the metal sheet is very sharp and can rip the pipe.





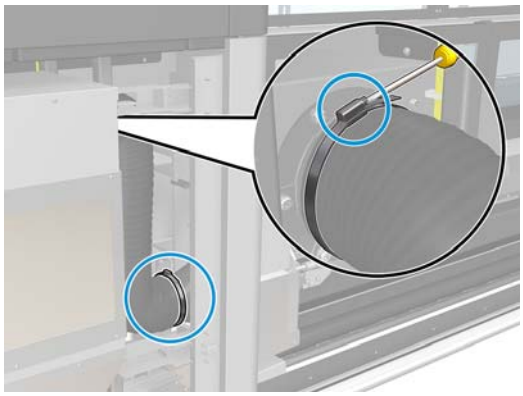
2. Tighten the metal flanges around the pipe and ensure that it is airtight, otherwise the vapor removal will not work correctly.



Vapor removal exchanger box to curing pipe

Removal

1. Turn off the printer and the power-enable switch.
2. Remove the front left panel. See Front left panel assembly on page 635.
3. Remove the flanges that attach the pipe.



4. Prepare to remove the pipe.

CAUTION: All vapor removal parts can contain liquid, so it is important before removing any vapor removal part to cover all the surfaces or remove all the delicate parts that can be damaged by liquid (such as the electronic and electrical parts).

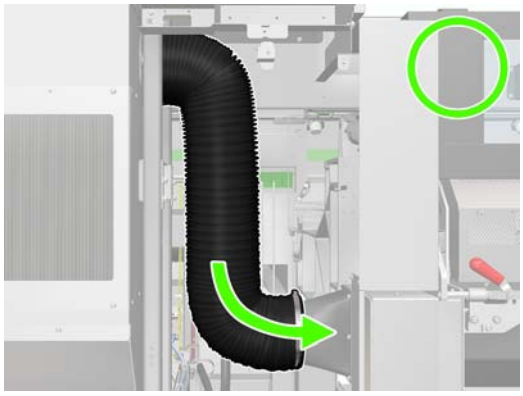
NOTE: Once the pipe is free, you are recommended to lift the pipe slightly at its higher end before starting to remove it, so that most of the liquid it contains can drain into the condensation collector bottle.

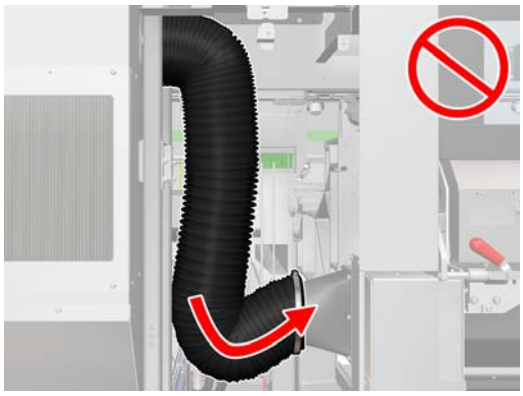
5. Loosen the metal flanges at both ends of the pipe and remove the vapor removal exchanger box to curing pipe from both the vapor removal exchanger box and the sidewall output.



Installation

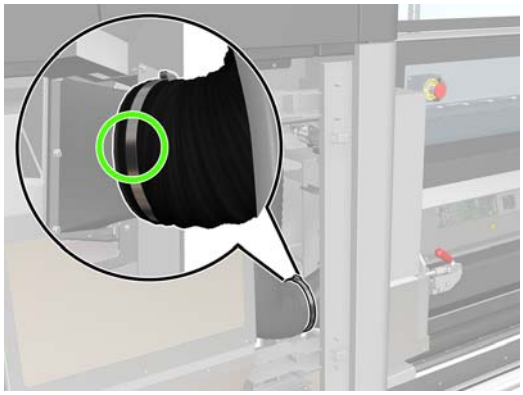
1. Route the vapor removal exchanger box to curing pipe along the ink system module and attach it with flanges to the ink system module, ensuring that from the exchanger box to the sidewall output the pipe always descends, so that all liquid drains into the condensation collector bottle and none remains in the pipe.





2. Tighten the metal flanges at both ends of the pipe and ensure that it is airtight, otherwise the vapor removal will not work correctly.

CAUTION: Be careful with the sidewall output pipe connection, as it is hard to be sure that the inner side is airtight.



Vapor removal blower to drainage pipe

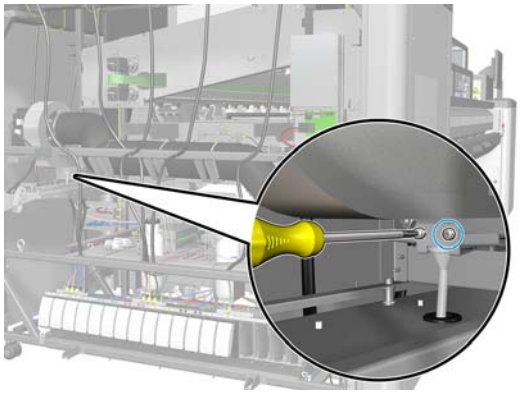
Removal

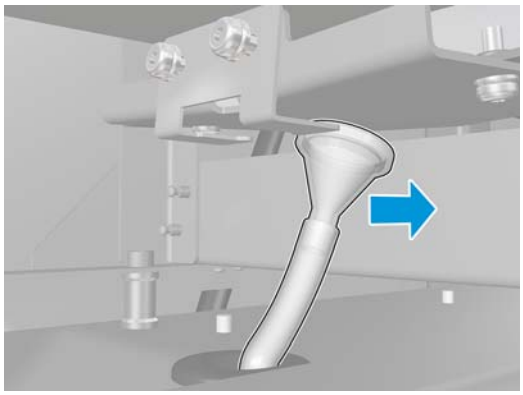
1. Turn off the printer and the power-enable switch.
2. Remove the rear left panel. See Rear left panel assembly on page 636.
3. Remove the bottom left panel. See Bottom left panel assembly on page 636.
4. Remove the flanges that attach the pipe.
5. Prepare to remove the pipe.

CAUTION: All vapor removal parts can contain liquid, so it is important before removing any vapor removal part to cover all the surfaces or remove all the delicate parts that can be damaged by liquid (such as the electronic and electrical parts).

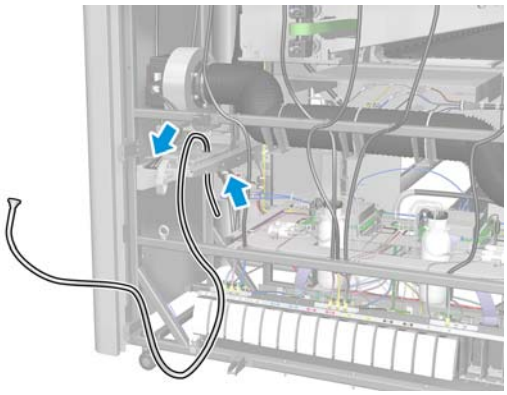
NOTE: Once the pipe is free, you are recommended to lift the pipe slightly at its higher end before starting to remove it, so that most of the liquid it contains can drain into the condensation collector bottle.

6. Loosen the two T-20 screws that attach the vapor removal fitting bracket support and remove the end of the vapor removal blower to drainage pipe's tapered fitting from the fitting bracket support.





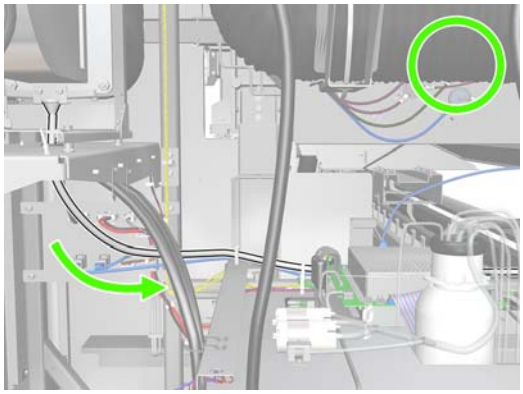
7. Unroute the pipe carefully, so as not to lower too much the pipe's tapered fitting.

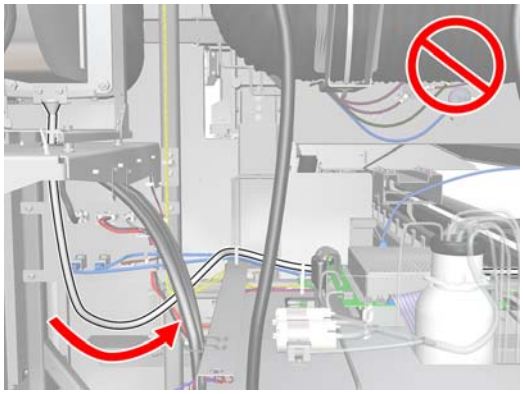


8. Remove the pipe by pulling the pipe's drainage end slightly upwards.

Installation

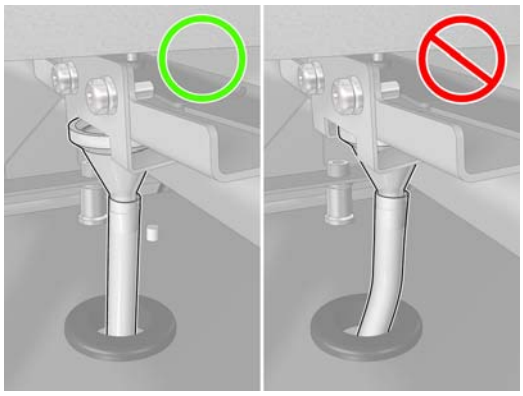
1. Route the vapor removal blower to drainage pipe along the ink system module and attach it to the ink system module, ensuring that from the exchanger box to the sidewall output the pipe gradually descends, so that all liquid drains into the condensation collector bottle and none remains in the pipe.





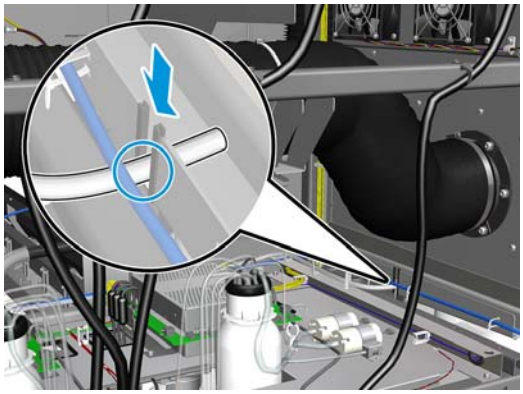
2. Install the pipe's tapered fitting to the vapor removal fitting bracket support and tighten the two T-20 screws that attach the fitting bracket support.

3. Pull the pipe fitting outwards as far as possible, so that the pipe is centered within the support's bracket, so that no liquid will fall out of the pipe.



If there is any drainage out of the pipe, you are strongly recommended to remove the vapor removal blower to drainage pipe, remove the vapor removal fitting bracket and clean all liquid out of it, so that the fitting will not slide along the fitting bracket support.

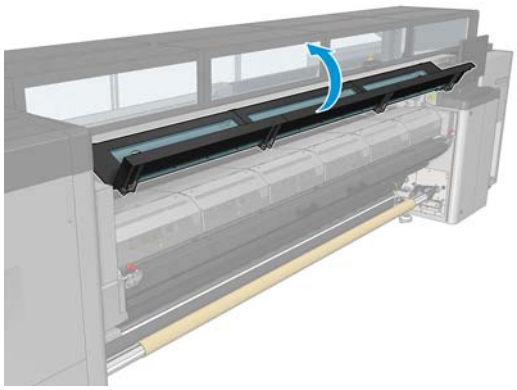
4. Reinstall the end of the drainage pipe into the vapor removal end collector hole and place it as low as you can into its bracket.



Vapor removal drainage

Removal

1. Turn off the printer and the power-enable switch.
2. Open the front door



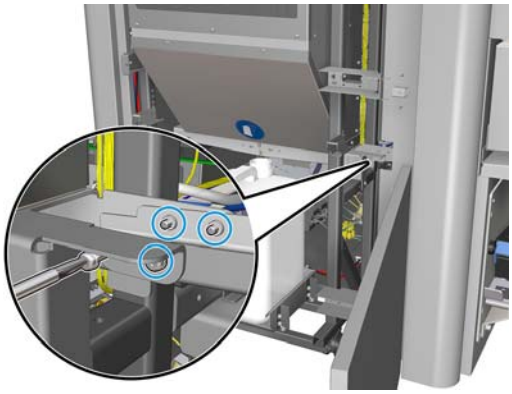
3. Pull the curing module to the service position.
4. Open the front left panel door.
5. Perform the described steps to replace the following vapor removal drainage parts.

Vapor removal intermediate drainage collectors

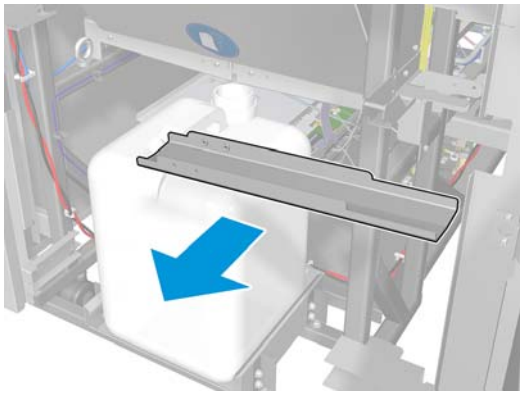
TIP: You can reach the components more easily if you remove the front left panel. See Front left panel assembly on page 635.

Removal

1. Remove the four T-20 screws that attach the large intermediate drainage collector, and remove it.



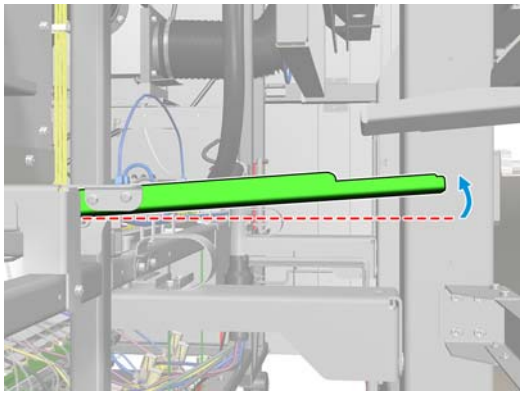
2. Remove the four T-20 screws that attach the intermediate drainage collector to the collector box, and remove it.



Installation

1. Screw back the intermediate collector to the collector box.
2. Screw back the large intermediate drainage collector.

   Ensure that the large intermediate drainage collector slopes downwards, so that it will drain properly.



Vapor removal drainage end collector

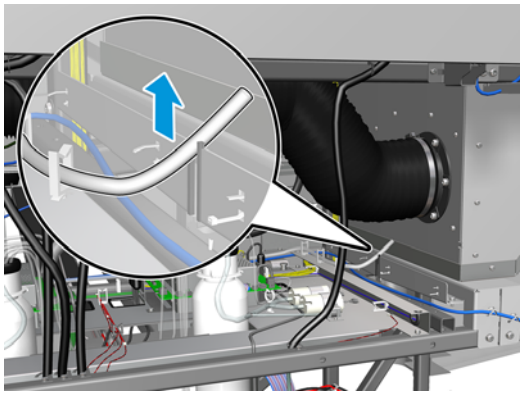
TIP: You can reach the components more easily if you remove the front left panel. See Front left panel assembly on page 635.

Removal

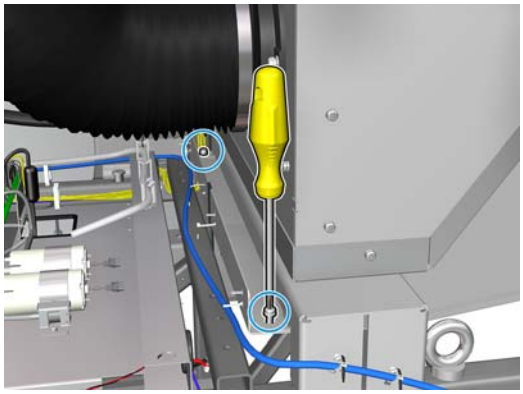
1. Remove the bottom left panel. See Bottom left panel assembly on page 636.
2. Cut all the flanges attached to the drainage end collector.

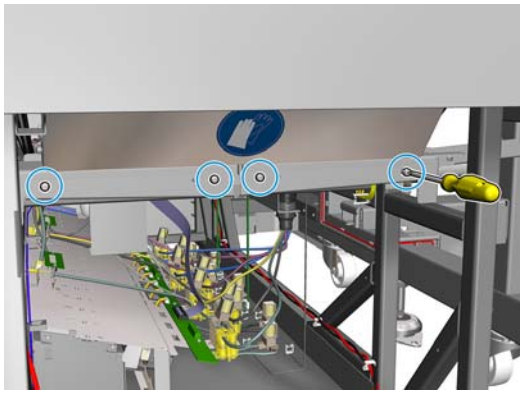
3. Remove the drainage pipe end of the vapor removal blower to drainage pipe from the drainage end collector.

CAUTION: Be careful, because the pipe contains liquid. See the vapor removal blower to drainage pipe removal procedure and follow its recommendations before removing the drainage end from the drainage end collector.

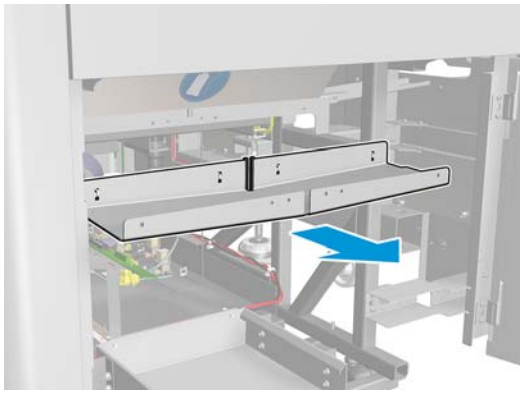


4. Remove the six T-20 screws that hold the drainage end collector and remove it.





TIP: When removing the drainage end collector from the printer, slope it so that all the liquid will fall through its bracket into the condensation collector bottle.



Installation

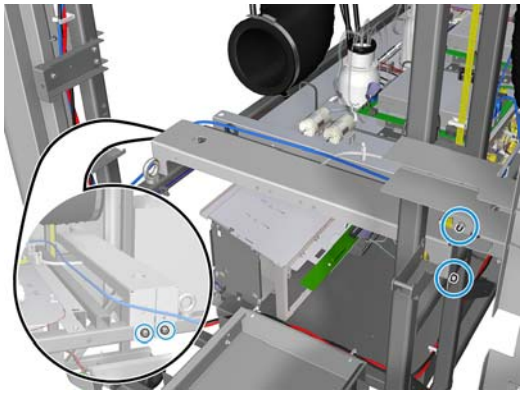
1. Screw back the drainage end collector.
2. Connect the drainage pipe end of the vapor removal blower to drainage pipe to the drainage end collector.
3. Attach all the parts attached to the drainage end collector with flanges.

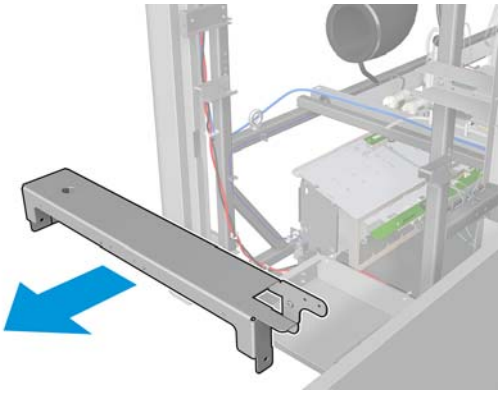
Vapor removal drainage main holder

Removal

1. Remove the front left panel. See Front left panel assembly on page 635.
2. Remove the large intermediate drainage collector.

3. Remove the drainage end collector.
4. Remove the vapor removal exchanger box.
5. Remove the three T-20 screws that hold the vapor removal drainage main holder, and remove it.





Installation

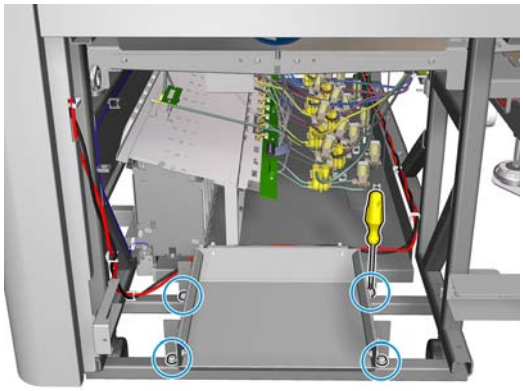
1. Screw back the vapor removal drainage main holder to the ink system module structure.
2. Install the vapor removal exchanger box.
3. Install the drainage end collector.
4. Install the large intermediate drainage collector.

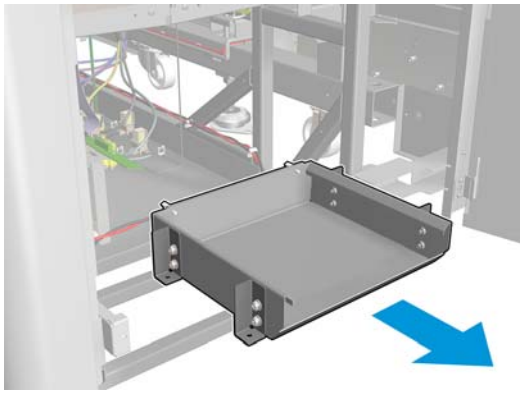
Vapor removal drainage condensation collector bottle container

Removal

1. Remove the vapor removal condensation collector bottle.

2. Remove the screws that attach the condensation collector bottle container and remove the container.





NOTE: You are recommended to clean the surface before reinstalling the condensation collector bottle.

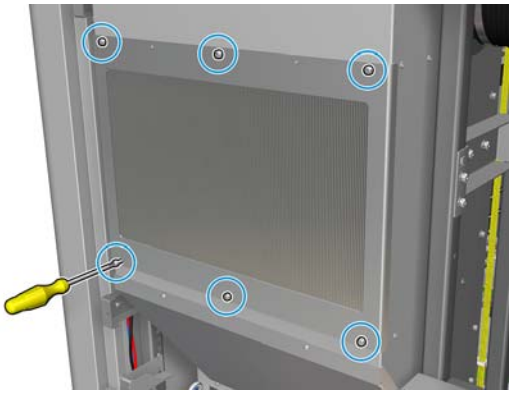
Vapor removal crossflow exchanger

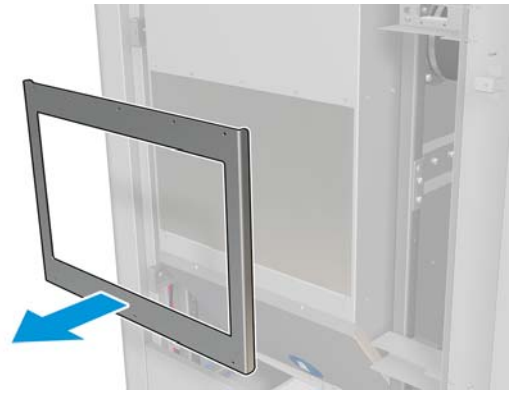
Removal

1. Turn off the printer and the power-enable switch.
2. Remove the top left panel. See Top left panel assembly on page 637.
3. Prepare to remove the vapor removal crossflow exchanger.

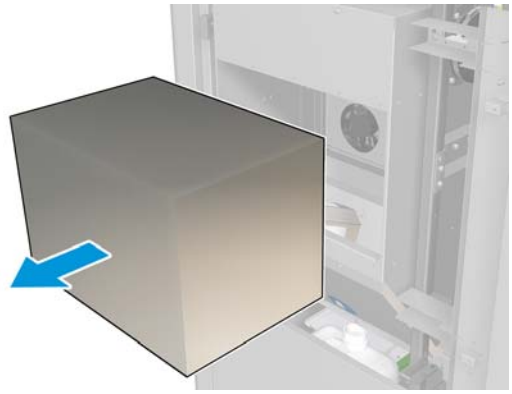
CAUTION: All vapor removal parts can contain liquid, so it is important before removing any vapor removal part to cover all the surfaces or remove all the delicate parts that can be damaged by liquid (such as the electronic and electrical parts).

4. Remove the vapor removal crossflow exchanger.





TIP: Use a flat screwdriver to pull the crossflow exchanger on both sides enough that you can remove the part from the vapor removal exchanger by pulling it by hand.



CAUTION: Do not try to clean the crossflow exchanger with compressed air, since it will break its sheets.

NOTE: Do not try to turn around the crossflow exchanger to reuse the part. If you do this, the electronics will receive the dust.

Installation

▲ Carefully insert the new crossflow exchanger by sliding it into the vapor removal exchanger box.

CAUTION: The vapor removal crossflow exchanger is a delicate part and can easily be deformed, which prevents it from working properly.

Vapor removal fan

Removal

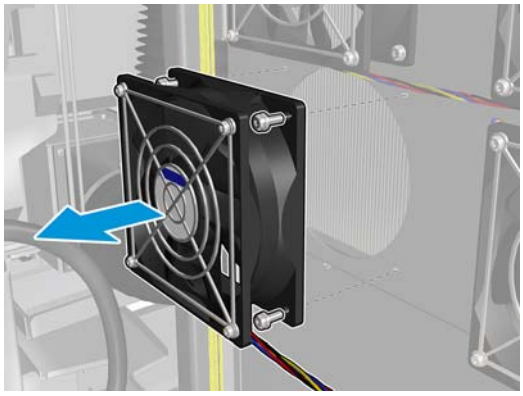
1. Perform the vapor fans array test.

   NOTE: This procedure will not be available until November 2013. The exact date will be provided in a service newsletter, around November 2013.

2. Remove the top left panel. See Top left panel assembly on page 637.
3. Locate the broken fan.
4. Turn off the printer and the power-enable switch.
5. Disconnect the vapor removal fan from its air connector. Unroute the cable until you reach the fan.



6. Remove the four T-20 screws that hold the vapor removal fan, and remove the fan.



Installation

1. Screw the vapor removal fan back to the vapor removal exchanger box.

2. Route the fan cable as shown, and reconnect the fan.

NOTE: The four fans are connected in two arrays, as the following picture shows. It is important to follow the cable routing shown below, so that there will no problems with the fan cable lengths.



3. Perform the following procedures:
   - Vapor fan arrays test
   - Vapor fans PCA connectivity
   - Vapor fan PCA voltages

NOTE: These procedures will not be available until November 2013. The exact date will be provided in a service newsletter, around November 2013.

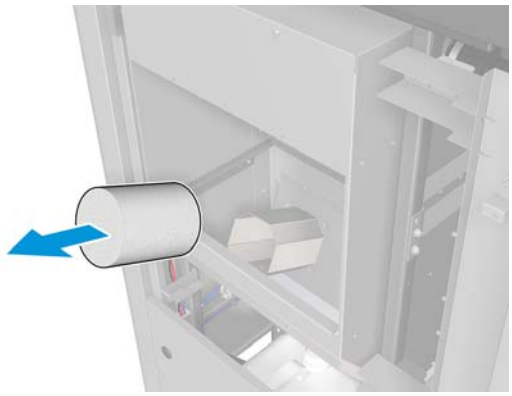
Vapor removal impactor

Removal

1. Turn off the printer and the power-enable switch.

CAUTION: All vapor removal parts can contain liquid, so it is important before removing any vapor removal part to cover all the surfaces or remove all the delicate parts that can be damaged by liquid (such as the electronic and electrical parts).

2. Remove the vapor removal crossflow exchanger.
3. Remove the vapor removal impactor from the vapor removal exchanger box.



Installation

1. Clean all the vapor removal crossflow exchanger inside surface from condensated liquids.

TIP: Ensuring that all the points are sealed, except for the draining one (on the image it is circled), either with aluminium tape or silicone will avoid possible draining problems.

2. Install the new vapor removal impactor to its housing.
3. Install back the vapor removal crossflow exchanger.

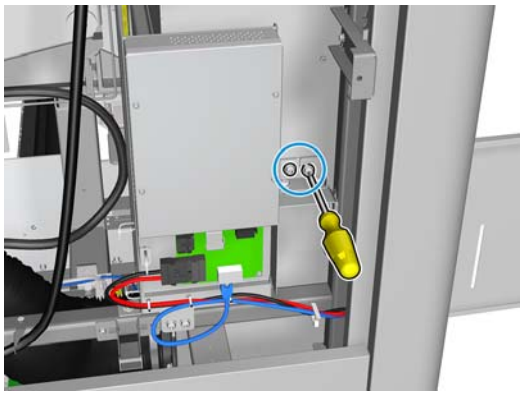
Vapor removal exchanger box

Removal

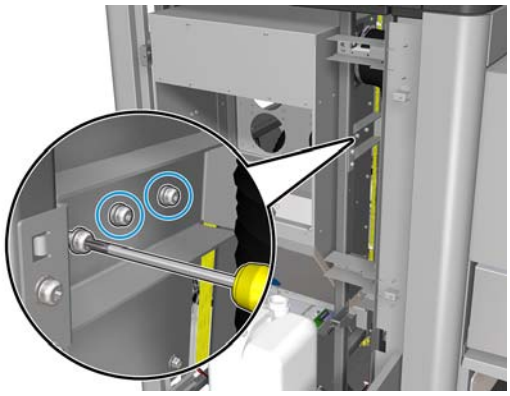
1. Turn off the printer and the power-enable switch.
2. Remove the top left panel. See Top left panel assembly on page 637.
3. Remove the front left panel. See Front left panel assembly on page 635.
4. Open the front left panel door.
5. Remove the vapor removal fans.

CAUTION: All vapor removal parts can contain liquid, so it is important before removing any vapor removal part to cover all the surfaces or remove all the delicate parts that can be damaged by liquid (such as the electronic and electrical parts).

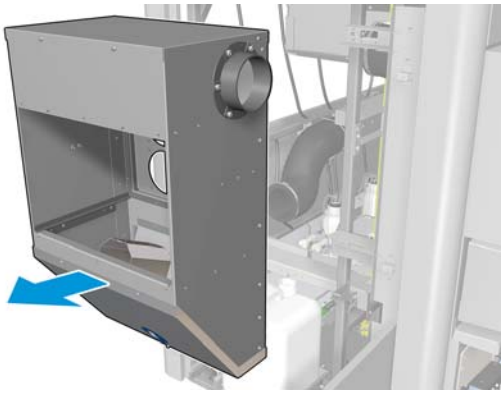
6. Remove the two T-30 screws from the left side support.



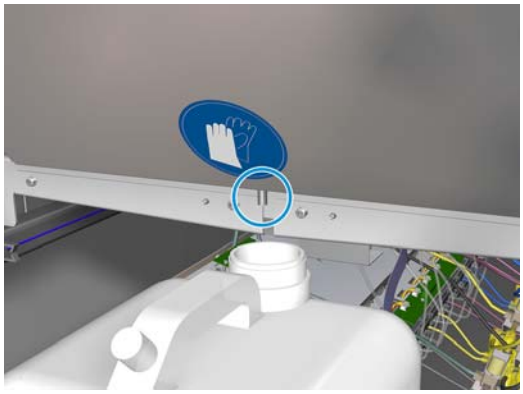
7. Remove the three T-30 screws from the right side support.



8. Carefully remove the vapor removal exchanger box.



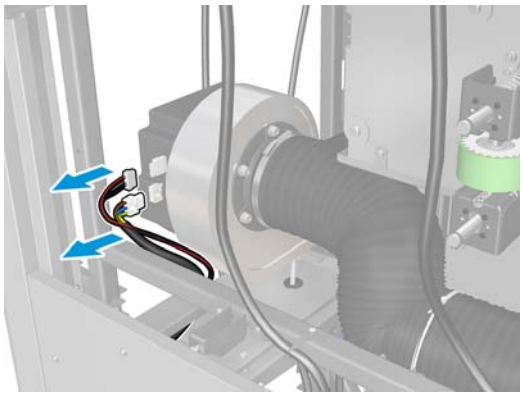
NOTE: The vapor removal exchanger box has on its base a drainage tube which is very fragile. Be careful when removing or installing it, and also when placing the vapor removal exchanger box in a safe place.



Vacuum pump

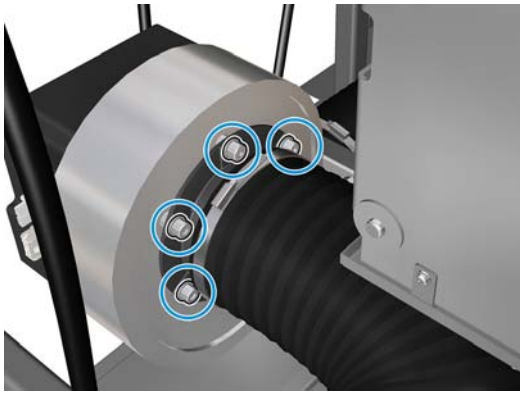
Removal

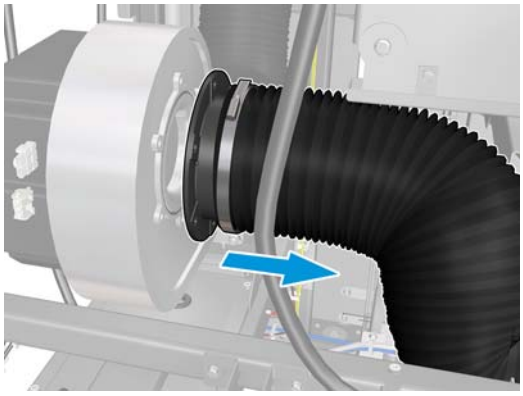
1. Turn off the printer and the power-enable switch.
2. Remove the rear left panel. See Rear left panel assembly on page 636.
3. Disconnect the pump cables. See Vapor removal pump cable kit on page 897.



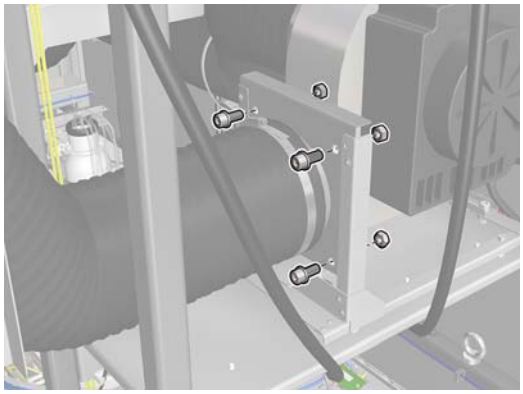
4. Remove the six A5 screws and remove the blower inlet connector from the pump.

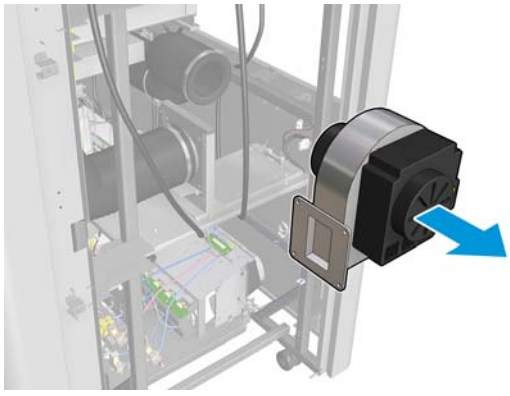
CAUTION: All vapor removal parts can contain liquid, so it is important before removing any vapor removal part to cover all the surfaces or remove all the delicate parts that can be damaged by liquid (such as the electronic and electrical parts).





5. Remove the four A5 screws that hold the vacuum pump to its support and remove the pump.





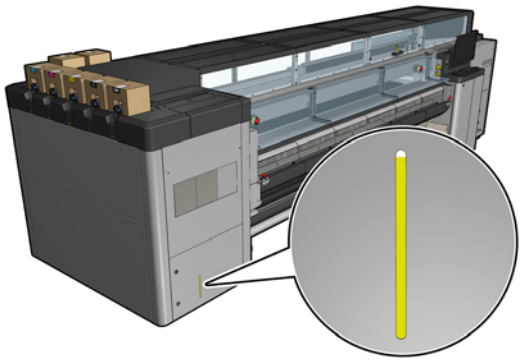
Installation

1. Insert the new vacuum pump.
2. Screw back the six A5 screws and connect the blower inlet connector to the pump, ensuring that it is airtight.
3. Reconnect all the pump cables. See Vapor removal pump cable kit on page 897.
4. Perform the following procedures:
   - Vapor blower pump test
   - Vapor blower PCA connectivity

NOTE: These procedures will not be available until November 2013. The exact date will be provided in a service newsletter, around November 2013.

Vapor removal condensation collector bottle

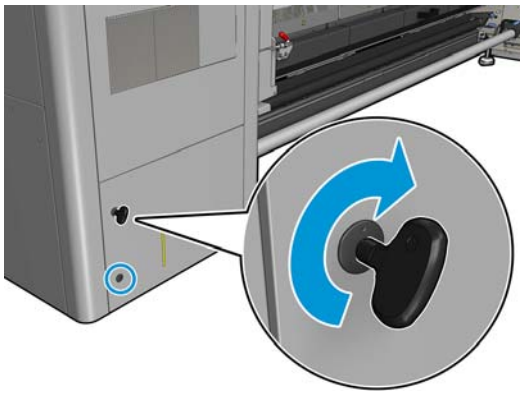
TIP: You are recommended to wear gloves for this operation. The condensation collector bottle is stored behind the left cover at the front of the printer. You can see the level of liquid in the bottle through a narrow window at the bottom of the cover.

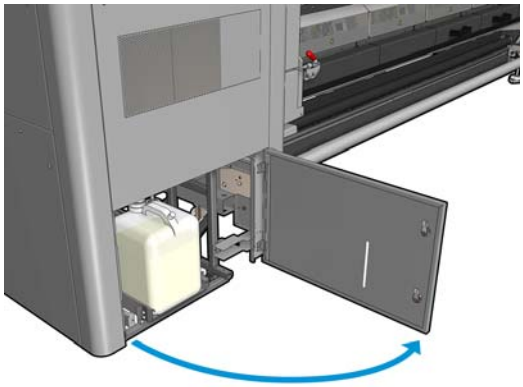


The bottle should be emptied before it is full, which will typically be after about 60–70 liters of ink have been used. You should check the bottle periodically, depending on your usage of the printer.

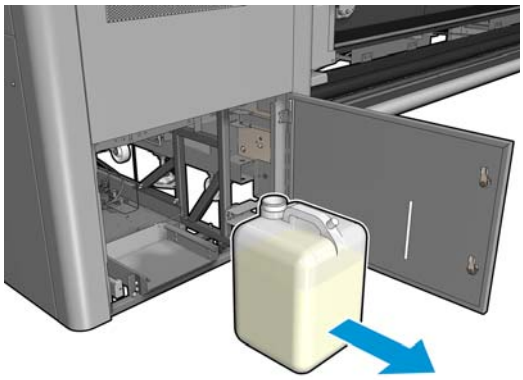
Empty the bottle

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.



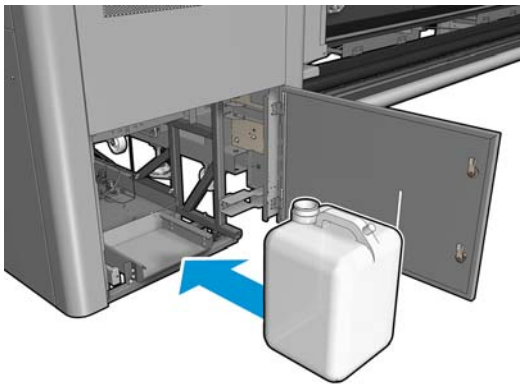
3. Empty the bottle.



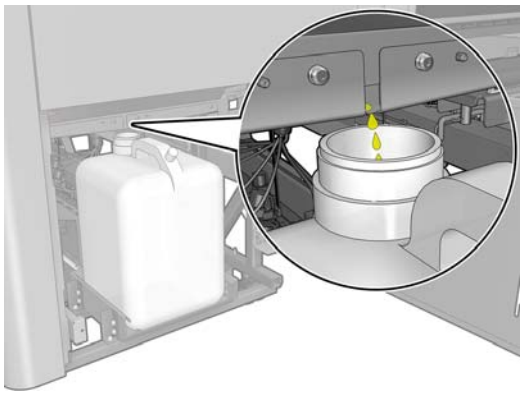
NOTE: The condensates are a mix of ink additives and water. Dispose of the condensates according to local regulations. Find the Material Safety Data Sheets (MSDS) of the ink in .

4. Put back the empty bottle.

NOTE: You are recommended to clean the condensation collector bottle container before reinstalling the condensation collector bottle.



5. Take care that the mouth of the bottle is well positioned to receive the liquid falling from above.

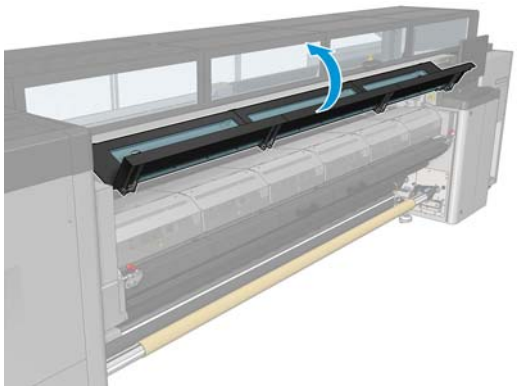


6. Close the door.

Vapor removal curing box

Removal

1. Turn off the printer and the power-enable switch.
2. Open the front door.



3. Pull the curing module to the service position.
4. Remove the front left panel. See Front left panel assembly on page 635.

5. Prepare to remove the vapor removal curing box.

CAUTION: All vapor removal parts can contain liquid, so it is important before removing any vapor removal part to cover all the surfaces or remove all the delicate parts that can be damaged by liquid (such as the electronic and electrical parts).

6. Remove the four pointed T-20 screws and the vapor removal mobile collector.
7. Remove the six pointed screws and remove the vapor removal motion curing box.

Installation

NOTE: Before installing the vapor removal curing box, ensure that all the sheet points are sealed with silicone.

1. Locate with the two pins and screw back the vapor removal motion curing box to the curing assembly.

NOTE: Ensure that the curing box foams make the assembly airtight, except for the draining point. If it is not airtight, replace the curing foams.

2. Install the vapor removal mobile collector.

Vapor removal pump cable kit

1. Turn off the printer and the power-enable switch.
2. Follow the described steps to replace the cables listed below:

Vapor removal cable data split to blower (CZ056-50260)

1. Remove the rear left panel. See Rear left panel assembly on page 636.
2. Disconnect the vapor removal cable data split to blower from both the vacuum pump and the ISM quick connector (VR PUMP CONTROL connectors).
3. Unroute the cable (cut the flanges if necessary).
4. Replace the cable with the new one, route it, and reconnect it.

Vapor removal cable power 230V split to blower (CZ056-50261)

1. Remove the rear left panel. See Rear left panel assembly on page 636.
2. Disconnect the vapor removal cable data split to blower from both the vacuum pump and the ISM quick connector (VR PUMP CONTROL connectors).
3. Unroute the cable (cut the flanges if necessary).
4. Replace the cable with the new one, route it, and reconnect it.

Vapor removal pump control cable (CZ056-50247)

1. Unload the substrate so that it is easy to reach the vapor removal's vacuum control PCA.
2. Remove the rear left panel. See Rear left panel assembly on page 636.
3. Remove the vapor removal's vacuum control PCA cable cover.
4. Disconnect the vapor removal pump control cable from both the ISM quick connector and the vacuum control PCA (VAC PUMP (P5) connector).
5. Unroute the cable (cut the flanges if necessary).
6. Replace the cable with the new one, route it, and reconnect it.

E-box interconnect PCA to vapor removal vacuum power cable (CZ056-50239)

1. Remove the rear right panel. See Rear right panel assembly on page 624.
2. Remove the vapor removal's vacuum control PCA cable cover.
3. Disconnect the e-box interconnect PCA to vapor removal vacuum power cable from the e-box interconnect PCA (J_471 PWR connector), the vapor removal vacuum control PCA (P4 connector), and the buzzer's air connector.

NOTE: Notice that this routing is dispersed to different parts of the printer, so it is illustrated in more than one block diagram (see Subsystem block diagrams on page 61), including e-box, vapor removal, and take-up reel diagrams

TIP: Locate all the T-cable ends and follow the routing accurately before starting to replace the T-cable.

4. Unroute the cable (cut the flanges if necessary).
5. Replace the cable with the new one, route it, and reconnect it.

E-box interconnect PCA to vapor removal vacuum LAN cable (CZ056-50238)

1. Remove the rear right panel. See Rear right panel assembly on page 624.
2. Remove the vapor removal's vacuum control PCA cable cover.
3. Disconnect the e-box interconnect PCA to vapor removal vacuum LAN cable from the e-box interconnect PCA (J481 CAN* connector) and the vacuum control PCA (J2 connector).
4. Unroute the cable (cut the flanges if necessary).
5. Replace the cable with the new one, route it, and reconnect it.

Vapor removal fans power cable (CZ056-50248)

1. Unload the substrate so that it is easier to unroute the cable along the printer structure.
2. Remove the rear left panel. See Rear left panel assembly on page 636.
3. Remove the rear right panel. See Rear right panel assembly on page 624.
4. Disconnect the vapor removal fans power cable from the ISM quick connector and the e-cabinet PCA (VAC VR connector).
5. Unroute the cable (cut the flanges if necessary).
6. Replace the cable with the new one, route it, and reconnect it.

Vapor removal fans power cable kit

1. Turn off the printer and the power-enable switch.
2. Follow the steps below to replace the each cable.

Vapor removal fans cable (CZ056-50242)

1. Remove the top left panel. See Top left panel assembly on page 637.
2. Disconnect the vapor removal fans cable from the vapor removal fans and the curing PCA (J13 24V_FAN_CURING connector).
3. Unroute the cable (cut the flanges if necessary).

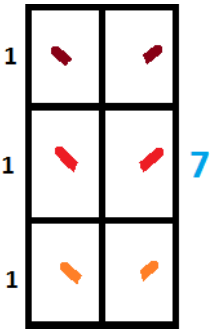
4. Replace the cable with the new one.
5. Cut the jumpers following the corresponding address. See Subsystem block diagrams on page 61.

   When cutting the cable jumpers to give the address, follow these criteria on the connector:

1	2	3
ADDR2	ADDR1	ADDR0 LSB

   where cable = 0, no cable = 1

   The following table shows the scheme for the vapor removal PCA address: how the jumper cables should be cut in order to get the address.

ADDR	Jumper cable scheme
(1,1,1)	

6. Connect the fan cable to the curing PCA connector.

Vapor removal pump power cable (CZ056-50246)

1. Unload the substrate, so that it is easier to unroute the cable along the printer structure.
2. Remove the rear left panel. See Rear left panel assembly on page 636.
3. Remove the rear right panel. See Rear right panel assembly on page 624.
4. Disconnect the vapor removal pump power cable from both the ISM quick connector and the e-cabinet PCA (VPCA VR connector).
5. Unroute the cable (cut the flanges if necessary).
6. Replace the cable with the new one, route it, and reconnect it.

Vapor removal fans PCA data cable (CZ056-50249)

1. Unload the substrate so that it is easier to unroute the cable along the printer structure.
2. Remove the rear left panel. See Rear left panel assembly on page 636.
3. Remove the rear right panel. See Rear right panel assembly on page 624.
4. Disconnect the vapor removal fans PCA data cable from both the ISM quick connector and the e-box interconnect PCA (J_262 CAN connector).
5. Unroute the cable (cut the flanges if necessary).
6. Replace the cable with the new one, route it, and reconnect it.

Vapor removal cable power 24V split to curing PCA (CZ056-50258)

1. Remove the rear left panel. See Rear left panel assembly on page 636.
2. Remove the left top panel.
3. Disconnect the vapor removal cable power 24V split to curing PCA from both the ISM quick connector (VR SPLIT connector) and the curing PCA (24V_IN J11 connector).
4. Unroute the cable (cut the flanges if necessary).
5. Replace the cable with the new one, route it, and reconnect it.

Vapor removal cable LAN split to curing PCA (CZ056-50259)

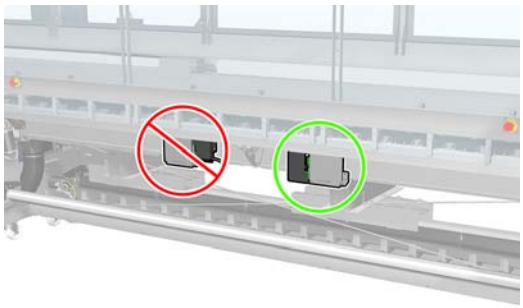
1. Remove the rear left panel. See Rear left panel assembly on page 636.
2. Remove the left top panel.
3. Disconnect the vapor removal cable LAN split to curing PCA from both the ISM quick connector (VR LAN connector) and the curing PCA (J12 connector).
4. Unroute the cable (cut the flanges if necessary).
5. Replace the cable with the new one, route it, and reconnect it.

OMAS controller PCA and vacuum control PCA

NOTE: The printer has two vacuum control PCAs. The first one is related to the vacuum and OMAS systems, while the second one controls some aspects of the vapor removal system. In both cases the service part used is the same, although in the second case the OMAS controller PCA is not needed, since it is not related to the vapor removal system. Because of that, the original vapor removal vacuum control PCA's enclosure comes without the OMAS controller PCA, and its enclosure may be slightly different. The service part enclosure should not be opened nor modified, and the removal and installation should be done with the service part as it comes (that is, with the OMAS controller PCA and vacuum control PCA).

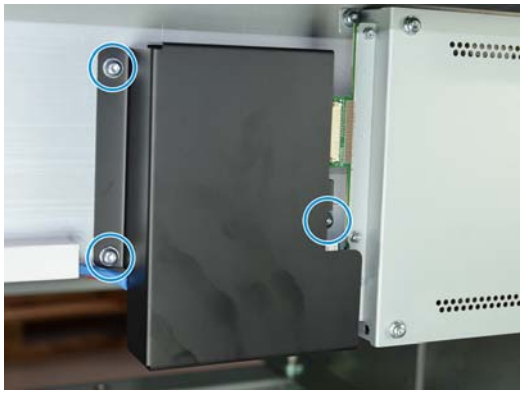
Vapor removal vacuum control PCA: Removal

1. Unload the substrate so that it is easy to reach the vapor removal's vacuum control PCA.
2. Locate the vapor removal's vacuum control PCA on the right, looking from the rear of the printer.



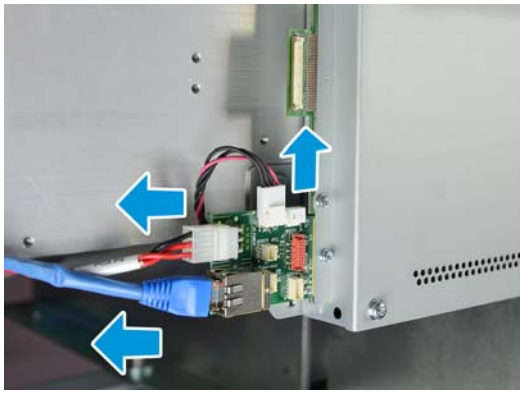
3. Turn off the printer and the power-enable switch.

4. Remove the three T-20 screws and the vacuum control PCA cable cover.





5. Disconnect all cables from the vapor removal's vacuum control PCA.



6. Remove the four T-20 screws that hold the vapor removal's vacuum control PCA, and remove the PCA.





Vapor removal vacuum control PCA: Installation

1. Use the four T-20 screws to attach the new vapor removal's vacuum control PCA.
2. Connect all cables to the vapor removal's vacuum control PCA.
3. Screw back the vacuum control PCA cable cover.

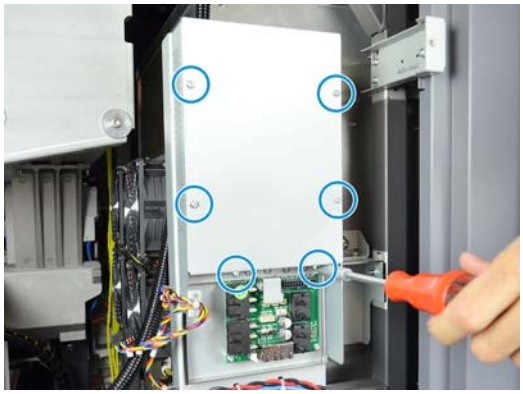
Curing and vapor removal PCA

Removal

1. Turn off the printer and the power-enable switch.
2. Remove the top left panel. See Top left panel assembly on page 637.
3. Disconnect all the vapor removal PCA cables.



4. Remove the six T-10 screws and remove the vapor removal PCA cover.





5. Remove the eight T-10 screws and remove the vapor removal PCA.





Installation

1. Install the new vapor removal PCA and secure it with screws.
2. Screw the vapor removal PCA cover.
3. Reconnect the vapor removal PCA cables.

NOTE: Ensure that the fan cable connector has the corresponding jumper address.

NOTE: When replacing the vapor removal PCA, ensure that there is a jumper at the CAN TERM connection (if there is no jumper, take it from the old PCA).

8 Call Me @HP

Call Me @HP is a remote troubleshooting tool embedded in the Print Care software, which enables customers to obtain support remotely without the need of a service visit.

Using Call Me @HP

Call Me @HP can be used in two different scenarios:

- The customer opens a case at the HP Call Center (available only if the customer is supported by HP).
- The customer calls for support and is asked by a remote agent to open a Call Me @HP session in order to resolve the problem more quickly.

NOTE: If the customer is supported by an HP-authorized partner, the reseller engineer needs to be on site and logged in as 'Engineer' in Print Care to open a Call Me @HP session.

Once the Call Me @HP session is started, remote agents can use the following tools:

- Chat from printer
- Send/receive files to/from the built-in computer
- Videostreaming
- Remote desktop view and control

Call Me @HP can be used for remote troubleshooting in many different ways. Here are some examples:

- Check and extract the service plot.
- Check the substrate presets.
- Check the maintenance status.
- Upgrade the firmware remotely.
- View diagnostic test results while they are being executed.

IMPORTANT: For safety reasons, diagnostic tests cannot be printed or launched remotely. The front door must be open to take full control of the built-in computer remotely.

Troubleshooting Call Me @HP

The Call Me @HP button is not available in Print Care

Remember that the Call Me @HP button is available only to customers supported directly by HP. If the customer is supported directly by HP and the button is not available, check the following:

1. Is Call Me @HP configured correctly?

   Call Me @HP must be configured during printer installation. The default configuration done at the factory is for customers supported by a channel partner. This mode allows the creation of a Call Me@HP session, but only if the HP-authorized representative is at the customer site and logged in as 'Engineer' in Print Care.

   If the customer is supported by HP directly, a specific configuration must be done during printer installation, by running a software application provided with the service documentation at the end of the printer's technical training course.

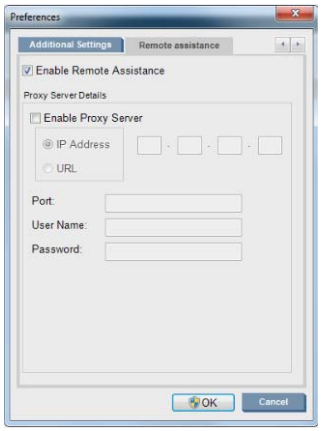
NOTE: For the changes to take effect, the Internal Print Server must be restarted after running the Call Me @HP configuration tool.

NOTE: If the HP-authorized partner can prove remote capabilities and is interested in providing remote support with Call Me @HP, this can be done only on request, and special approval, training, and setup from HP is needed. Contact your HP partner manager if you would like to have further information about this option.

NOTE: Remember that a Call Me @HP functionality test is mandatory during printer installation.

2. Is the remote assistance option enabled?

   Go to the Internal Print Server, select **Tools** > **Preferences**, and check that the remote assistance option is enabled.



NOTE: To enable remote assistance, the customer must accept a Data Transfer Agreement with HP.

A Call Me @HP session cannot be started

If the session cannot be started, or remote control or videostreaming is not working, check the following:

1. Are the network settings correct?

   Specific network settings are needed for Print Care and Call Me @HP. If a Call Me @HP session cannot be started, the most likely reason is that the network settings are not correct. The requirements are as follows:

- Print Care networking (including Call Me @HP) requires an outbound connection to all the following addresses without a proxy. This means that an open Internet connection allowing traffic through ports 80, 443, and 21 is needed.

URL	HTTPS 443	HTTP 80	FTP 21	Purpose
hp.com		X	X	Print Care / Production Analyzer Content and data connectivity
https://spcastweb01p.saas.hp.com	X	X		
http://spcw01.saas.hp.com		X		
http://h50203.www5.hp.com	X	X		Call Me @HP chat
G5w2114g.atlanta.hp.com		X		Call Me @HP video streaming
http://15.192.17.253	X			Call Me @HP remote control
http://15.192.17.254	X			
http://15.192.17.255	X			
http://15.193.0.102	X			
http://15.193.0.103	X			
http://15.193.0.104	X			
http://15.193.0.169	X			
http://15.193.0.170	X			
http://15.193.0.171	X			

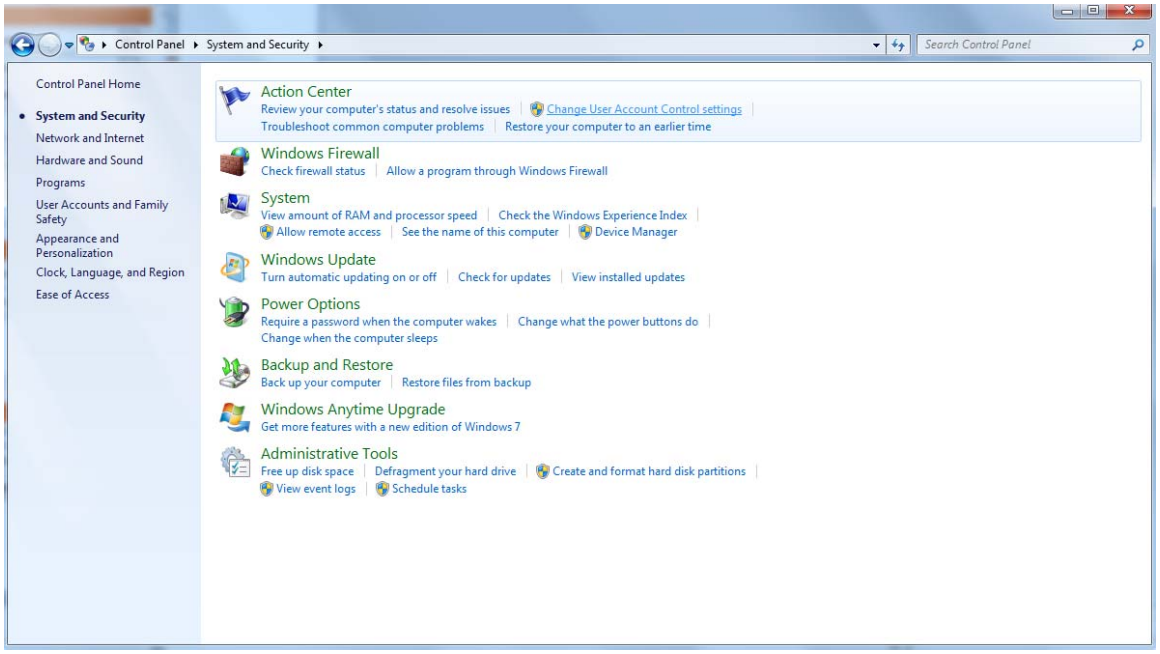
NOTE: If necessary, advise the customer to create routing rules that route around the proxy for these addresses.

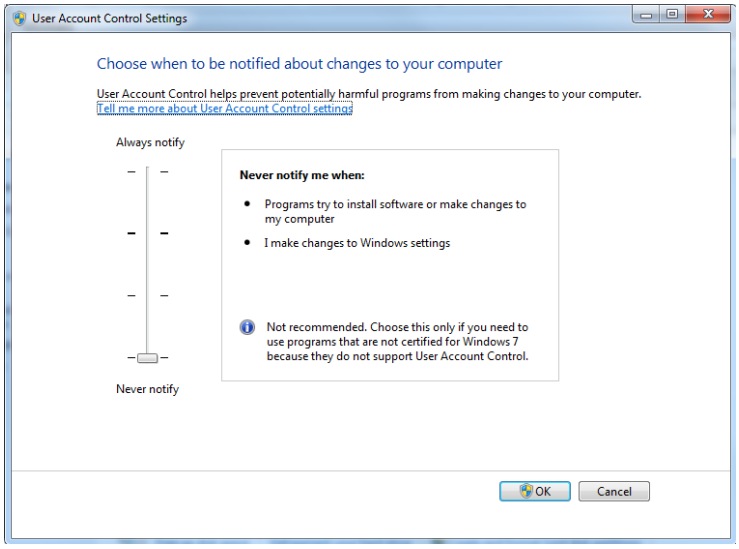
- ActiveX must be installed on the computer. Install ActiveX if requested to do so.
- Antivirus software must be configured not to block ActiveX controls.
- ActiveX must be enabled in Internet Explorer: select **Tools** > **Internet Options** > **Security** tab. Then select the Internet zone and click **Custom Level**. Under ActiveX controls and plug-ins:
  - Allow previously unused ActiveX controls to run without prompting.
  - Enable automatic prompting for ActiveX controls.
- A minimum upload speed of 256 bps is required.

Check that you have access to the addresses in the above table.

2. Is the User Account Control setting correct?

   Ensure that User Account Control is set to low or disabled. In the Control Panel, select **System and Security** > **Change User Account Control settings** and set UAC to **Never notify**.





9 Moving the printer

- Introduction
- Manpower required
- Tools required for repacking
- A: Move the printer to a new site (transport temperature below 5°C/41°F)
- B. Move the printer to a new site (transport temperature above 5°C/41°F)
- C. Move the printer to the same site (with ramps or steps)
- D. Move the printer to the same site (no ramps, no steps)

Introduction

Before moving, make sure the new site is ready. To prepare the new installation site, see the site preparation guide. To mount and reinstall the printer, see the installation guide.

There are four possible scenarios for moving the printer:

- A: Move the printer to a new site (transport temperature below 5°C/41°F) on page 911 In this case, before switching off the printer, the ink must be removed from the tubes. You need the ink system cleaning tubes and 5 liters of distilled water.
- B. Move the printer to a new site (transport temperature above 5°C/41°F) on page 935 If you need to move the printer to a new site, the printer must be fixed to a pallet. If the temperature will not drop below 5°C/41°F, follow these instructions. Failure to follow these instructions could cause the ink to freeze, which would damage the ink system and require heavy repair.
- C. Move the printer to the same site (with ramps or steps) on page 936 If you need to move the printer within the same site but there are ramps or steps on the route, you will need to lift the printer with a forklift or a crane.
- D. Move the printer to the same site (no ramps, no steps) on page 937 If you wish to move the printer a short distance on the same site, across a horizontal floor with no steps and no slopes, read the instructions.

In any case, some preparations must be made before the printer can be moved, and failure to follow these steps could cause irreversible damage to the printer.

This repacking guide provides you with step-by-step procedures for the repacking process. This guide is organized in chronological order and should be followed from beginning to end.

NOTE: 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 HP Internal Print Server computer, and from the RIP computer. See the installation guide for more details.

NOTE: If the printer is moved to a different customer, the Print Care software must be reinstalled to generate a new customer ID. Then, a service call must be made to HP so that the printer's serial number is associated with the new customer ID.

Manpower required

Repacking of your printer requires the following manpower:

- HP specialist
- Customer
- Certified electrician
- Moving specialist

IMPORTANT: The printer must be moved by trained and qualified personnel only.

Tools required for repacking

TIP: Without a heavy-duty electric screwdriver, it could take up to two hours just to reassemble the crate.

Repacking of your printer requires the following tools:

- Step ladder
- Cable Ties
- Heavy-duty adhesive tape
- Heavy-duty electric screwdriver with two batteries
- Phillips screwdrivers
- T-8, T-10, T-15, T-20, T-25, and T-30 Torx screwdrivers
- Long Torx extension pins that have a diameter of approximately 2–3 mm and are more than 15 cm in length to be able to access all screws
- Two flat head screwdrivers (two sizes)
- 30 mm socket wrench, extension, and 17 mm socket
- 7 mm, 15 mm, and two 30 mm open-ended wrenches

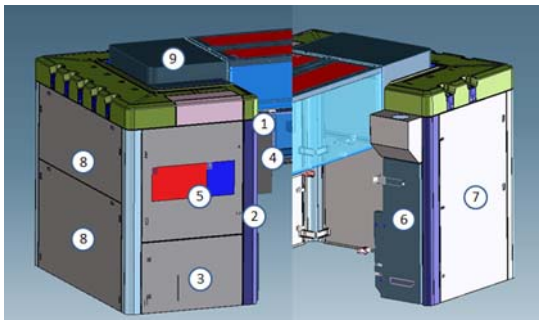
A: Move the printer to a new site (transport temperature below 5°C/41°F)

1. Remove the covers

Manpower	Tools	Time
1 person	T15, T20, T25, and T30 screwdrivers	30 minutes

NOTE: You are recommended to wear gloves when removing the covers.

On the left-hand side

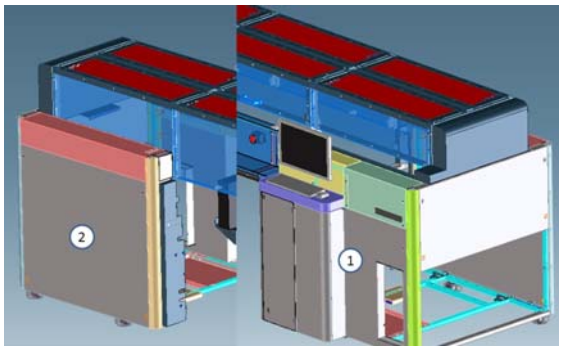


1. Center left cover on page 641 (eleven T-20 black screws) (9)

   TIP: It may be easier to remove covers 4, 6, and 9 once the ISM is moved aside.

2. Top left panel assembly on page 637 (four T-20 screws) and Bottom left panel assembly on page 636 (four T-20 screws) (8)
3. Rear left panel assembly on page 636 (four T-20 screws) (7)
4. Rear left pillar on page 629 (five T-15 screws and one T-30 screw) (6): move the ISM a few millimeters first
5. Front left panel assembly on page 635 (two T-20 screws) (5)
6. Front left internal cover on page 631 (three T-20 screws: two M5 and one M4) (4)
7. Front left panel door on page 653 (no screws) (3)
8. Front internal corner and supportsFront left internal corner assembly on page 638 (nine T-20 screws) (2)
9. Front top left pillar on page 630 (four T-15 screws and one T-25) (1)

On the right-hand side



1. Rear right panel assembly on page 624 (two T-20 screws) (2)
2. Front right door and hinges (six T-20 screws) (1)



Wrap all the covers and keep the screws.

2. Prepare the printer

Remove the printheads, intermediate tanks, ink cartridges, printhead cleaning roll, and aerosol filters.

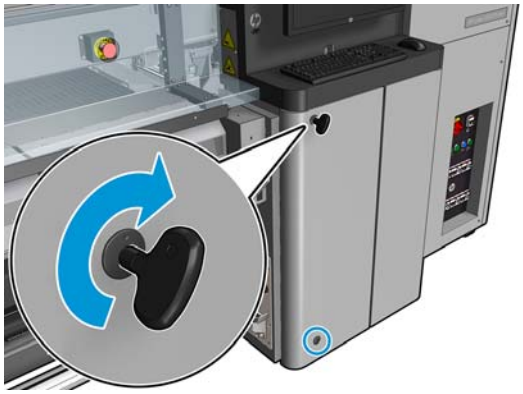
Initial steps

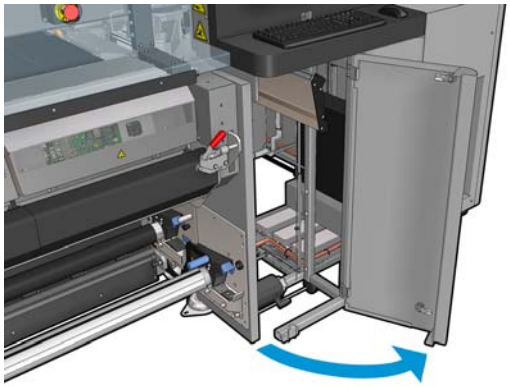
1. Remove the printheads and store them in their caps. See the user's guide.
2. Remove the bottom left panel. See Bottom left panel assembly on page 636.
3. Remove the ink cartridge. See the user's guide.
4. Restart the printer in diagnostic boot mode and force-fill the intermediate ink tanks to prevent broken bags.
5. Carefully remove the intermediate tanks. See ISM intermediate tank set on page 672.

NOTE: Store the intermediate ink tanks vertically. Failure to store them vertically can cause a broken bag.

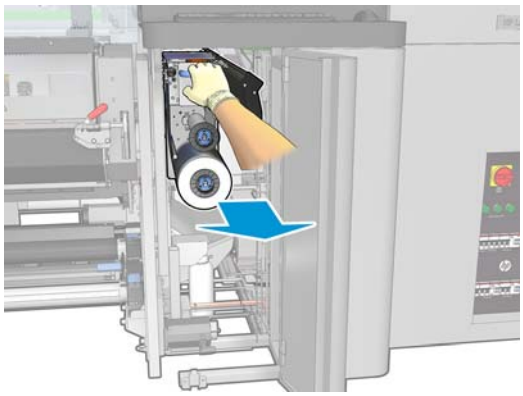
Remove the printhead cleaning roll

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





2. Grip the handle and pull the whole printhead cleaning roll assembly out through the door.





3. You can cut the material, removing the used material of the lower core. Dispose of the roll with the used cleaning material according to the instructions provided with the new roll.

TIP: Keep the empty core to use as a take-up core.

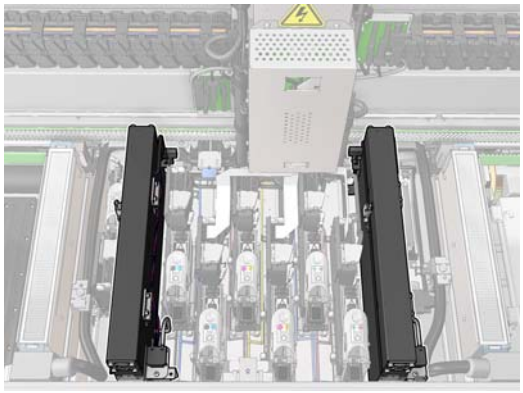
4. Grip the handle and push the whole printhead cleaning roll assembly back into the printer.
5. Close the door with the key.

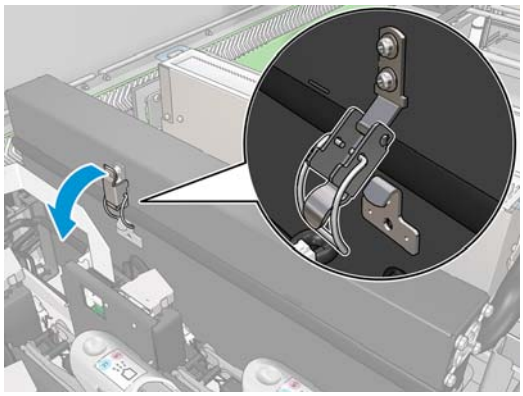
Remove the aerosol filters

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.

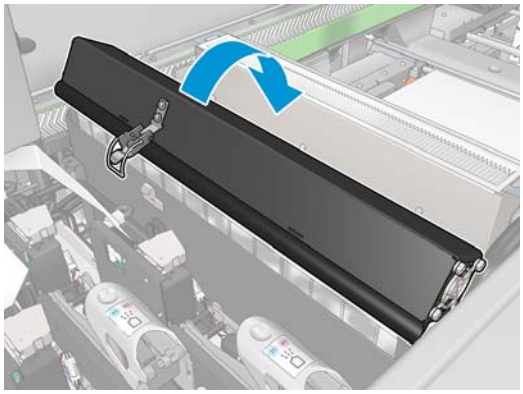


4. Open one latch on the left side of each aerosol filter module.

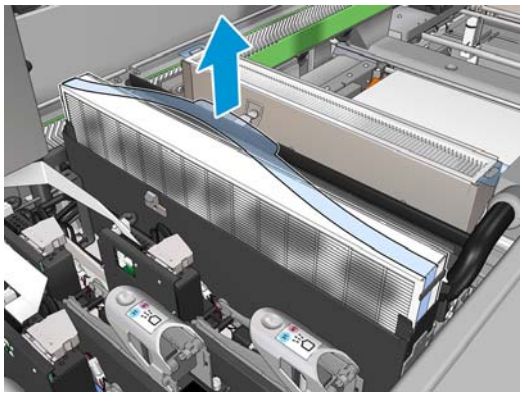




5. Open the lid of each filter.



6. Remove the two aerosol filters, using their handles.

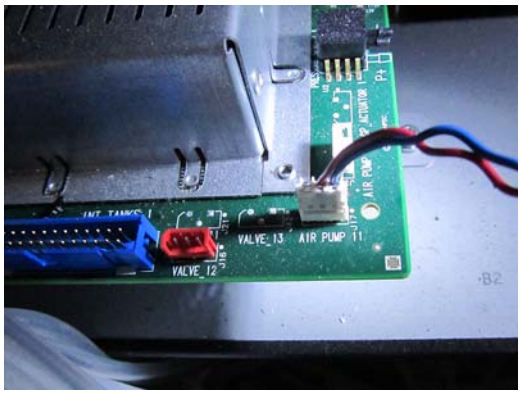


7. Close the lids.
8. Close the latches.

3. ISM flush and clean a single ink system line

Flushing the ink lines with distilled water and then with air removes the ink from the tubes, which enables you to remove and replace parts of the ink system. The flushing procedure is done one ink line at a time.

1. Place the flushing tool in the space left when the ink cartridge was removed, and connect the ink connector to the connection port of the tool.
2. Connect the cable from the flushing tool to J17 (AIR PUMP 11) on the left side (close to the substrate input).



3. Go to the Diagnostic menu and select Ink System menu 4.0 > **Flushing procedure**> **Activate flushing tool pump**.

4. Open the entry electrovalve of the color you are flushing Ink System menu 4.0 > **Flushing procedure**> **Operate entry electrovalve**>**Color to flush**.
5. Unscrew the top of the cleaning tool and fill the bottle with 0.5 l of distilled water.
6. Insert a needle into the tube coming from a waste bottle.
7. Insert the needle into both (if possible) printhead ink connectors of the carriage assembly. Ensure that you insert it into the correct color.
8. Ensure that the path switch is in the horizontal position.
9. Turn on the flushing tool with the switch located on top. The cleaning tool slowly pumps the distilled water into the tubes and ink system of the color you are cleaning. The pumping action cleans ink out of the tubes and into the draining bottle.
10. When the level of distilled water is half finished:
    a. Install the new empty intermediate flushing tank (that came with the flushing kit) into the left intermediate slot, wait 10 seconds for the ink to be cleaned from this area, then remove the tank.
    b. Install the intermediate flushing tank into the right intermediate slot, wait 10 seconds for the ink to be cleaned from this area, then remove the tank.
11. When the ink system has been cleaned of ink and the flushing tool is empty of water, the pump of the cleaning tool then pushes air into the ink system tubes, which pushes the water out into the draining bottle of the quick connector flushing tool. This process lasts for approximately 5 minutes.
12. When 5 minutes have passed:
    a. Install the intermediate flushing tank (that came with the flushing kit) into the left intermediate slot, wait 10 seconds for the water to be removed from this area, then remove the tank.
    b. Install the intermediate flushing tank into the right intermediate slot, wait 10 seconds for the water to be removed from this area, then remove the tank.
13. When the ink system has been cleaned of ink and the flushing tool is empty of water, the pump of the cleaning tool then pushes air into the ink system tubes, which pushes the water out into the draining bottle of the quick connector flushing tool. This process lasts for approximately 5 minutes.

NOTE: If the distilled water in the cleaning tool bottle becomes low before the ink system has been cleaned of ink, you must refill the bottle with more water. You must stop the flushing tool to add more water.

4. Unplug the electrical system

Requirements

An electrician is required for unplugging the electrical system used to power the printer. Make sure that your electrician is appropriately certified according to local regulations and supplied with all the information regarding the electrical configuration.

Remember that you are required to follow the local laws, regulations, and standards that pertain to the electrical installation of your printer.

Unplug power cables

Turn off the printer, using both Branch Circuit Breakers located in the building's Power Distribution Unit (PDU).

Unplug both power cords (including the PE terminal) and un-route them

Disconnecting the main power cord:

1. Disconnect first the PE conductor to the PE M8 pillar terminal (it is close to the Protective Earth (PE) terminal mark, which is located to the left in the cabinet as shown below)





Protective Earth (PE) terminal mark:

2. Disconnect the lines (and neutral if used) conductors from the installation terminal block TB-1 (L1, L2, L3 and N contacts).

3. Loosen the cable gland and pull the cable to un-route it.



Disconnecting the computer's power cord (if installed)

1. Disconnect first the PE conductor to the PE M4 pillar terminal.

   Protective Earth (PE) terminal mark:

2. Disconnect the line and neutral conductors to the installation terminal block TB-1 (L0, N0 contacts)

3. Loosen the cable gland and pull the cable to un-route it.

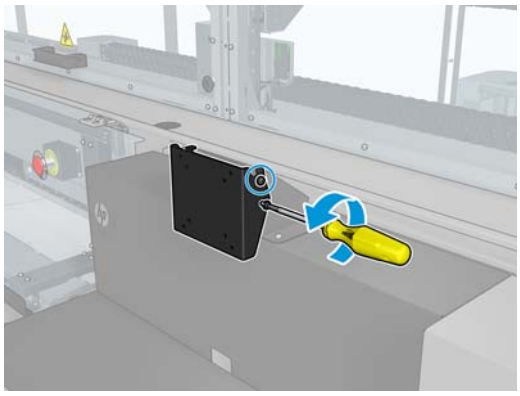


5. Remove the computer, monitor, keyboard, and mouse

Manpower	Tools	Time
1 person	T-20, T-30 Phillips screwdriver	30 minutes

Monitor removal

1. Unplug and unroute the monitor, keyboard, and mouse cables through the hole in the front cover.
2. Use a T-20 screwdriver to remove the monitor holder from the printer.



3. Remove the holder from the monitor by unscrewing the 4 Phillips screws. Keep them and store the monitor properly.



4. Re-attach the holder to the printer with the four T-20 screws.

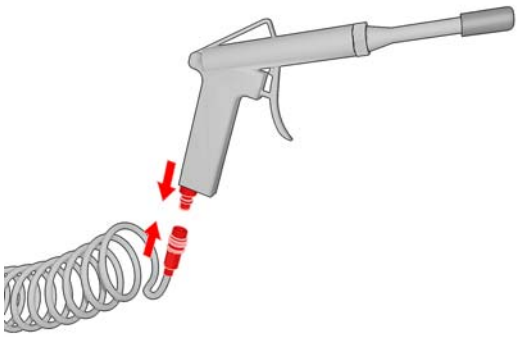
5. Unplug the computer cables (including the LAN).
6. Remove the computer from the electrical compartment and store it properly.
7. Un-route the customer LAN cable

Webcam removal

- ▲ Disconnect the webcam from the printer's built-in computer and store it properly

Remove the air supply

- ▲ Disconnect the airgun from the customer's air supply and store it properly

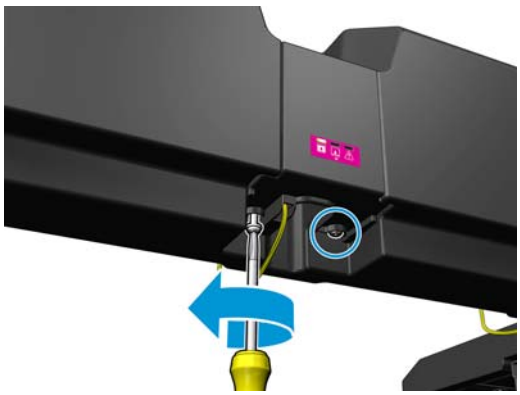


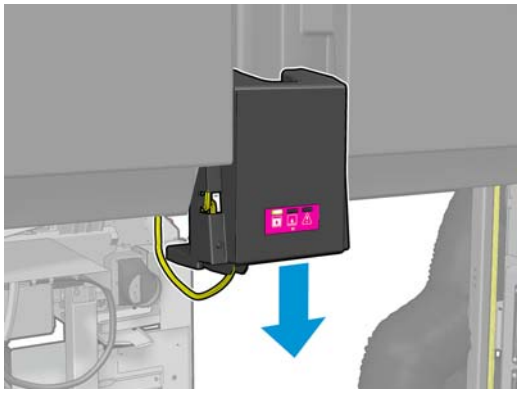
6. Set up the printer

Manpower	Tools	Time
1 person	Cutting pliers, Allen keys, T-20 and T-25 screwdrivers	35 minutes

Remove ink supplies clamps with two screws

1. Remove the five ink-supply clamps on the side of the printer with two screws securing the connectors.



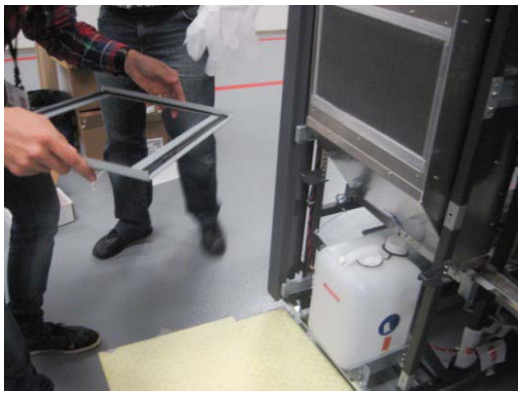


2. Remove the ink-supply connectors and fix them on the ISM frame.
3. Replace the five ink-supply clamps on the side of the printer with two screws securing the connectors.

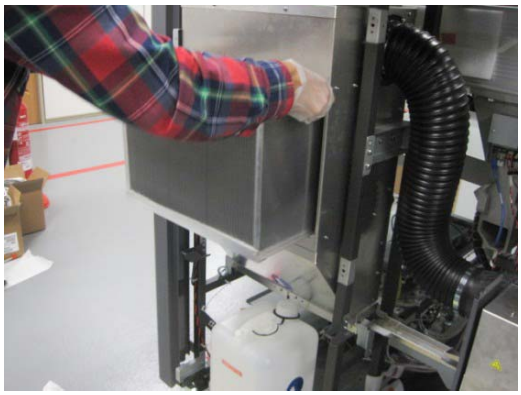
NOTE: Be careful not to flatten or pull hard on the cables.

Clean the condensation collector box

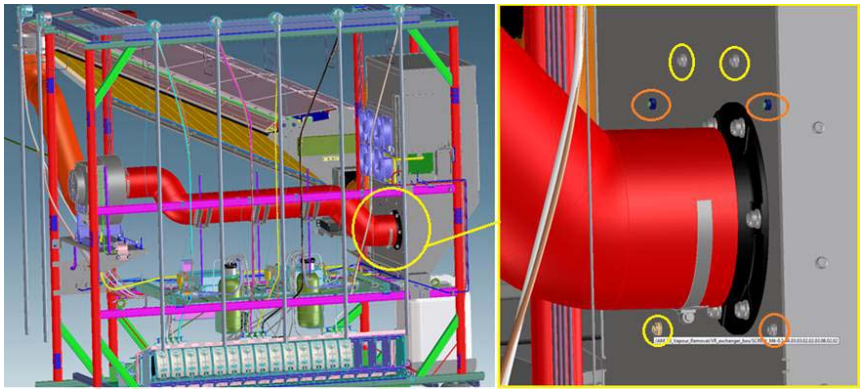
1. Wear gloves, and cover the area to protect the floor.
2. Remove the front left panel. See Front left panel assembly on page 635.
3. Remove the front left panel door. See Front left panel door on page 653.
4. Open the front left cover.
5. Remove the frame by unscrewing six M4 screws.



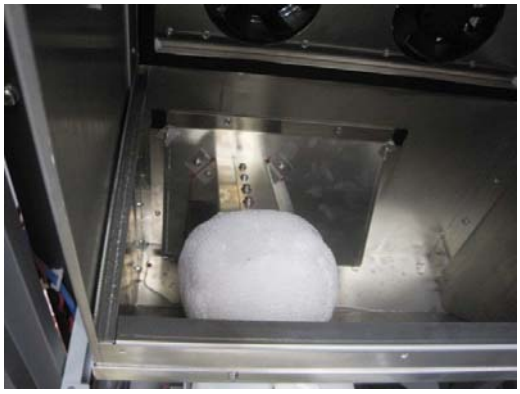
6. Remove the heat exchanger. Use a flat screwdriver as a lever, then you will be able to slide it out.



7. From the side, remove the screws (four M4) and nuts (four M4) shown below.



8. Free the condensation collector box, but leave it inside for a moment to drain inside the case.



9. Clean the condensation collector box, the case, and any ink leaks in the area.



10. Put back the condensation collector box (with its screws and nuts), the heat exchanger, and the covers.

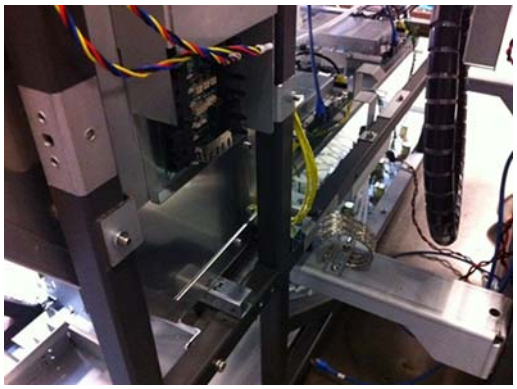


Collapse the ISM module (left side)

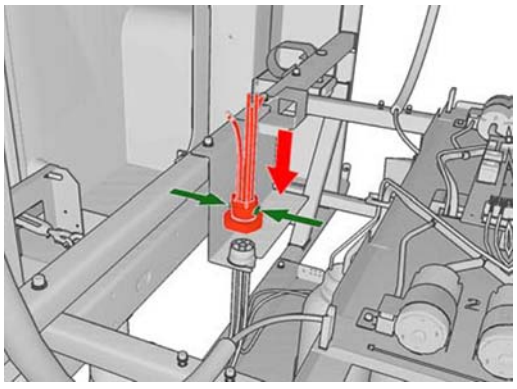
1. Remove the condensation collector bottle for easy access. See Vapor removal condensation collector bottle on page 894.
2. Remove the metal sheet shown in the picture (four screws).
3. Disconnect the tube (with the clamps). Be careful: there could be some condensation inside.



4. There are two sets of three cables each. Unplug and un-route the upper set. Unplug and un-route the lower set; two of them are LAN plugs, but marked as VR and ISS.
5. Unscrew the grounding strip and store the screws and plate properly.



6. Disconnect the quick connector by pressing the button.



7. Remove two pins and clips (one at the front and the other at the rear).
8. Collapse the module about 250 mm.
9. Place two clips and pins in transport position.

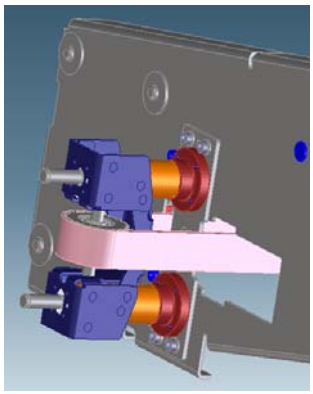
Remove the tensioner

TIP: The ISM can be moved aside for easier access.

1. Take the nut from the parking lot and place it on the tensioner screw.



2. Remove the four screws from the frame.



3. Turn the frame horizontally so it can be passed through the hole.
4. Place the belt over the platen and fix it with heavy-duty adhesive tape.



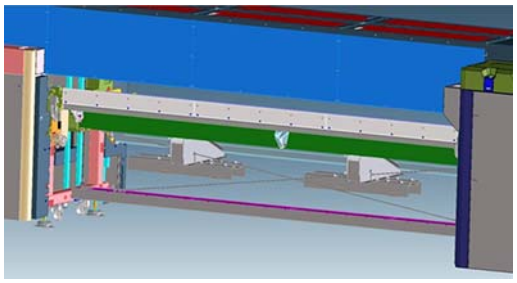
7. Insert additional packaging

Manpower	Tools	Time
1 person	Cutting pliers, Allen keys, T-20 and T-25 screwdrivers	10 minutes

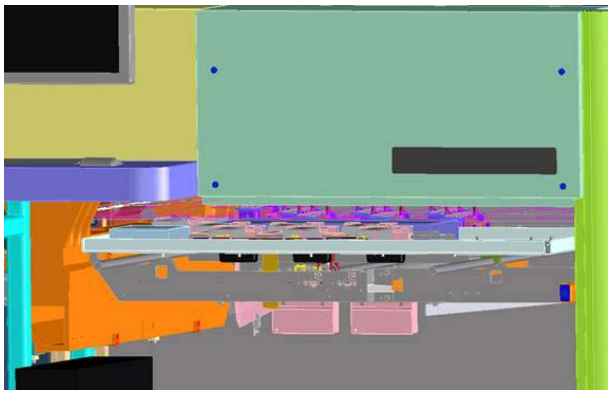
1. Open the printer's window and secure the carriage in the travel position with the T-25 screw.
2. Secure the scan axis to the printer chassis with the eight T-20 screws.
3. Secure the printhead cleaning assembly with two T-20 screws.
4. Add straps, protective foams, cable ties, and orange tapes to fix windows, doors, the curing module, the loading table, and the service station.
5. Add the foams in between the ISM and the Scan axis.
6. Add the strap holding the e-cabinet.

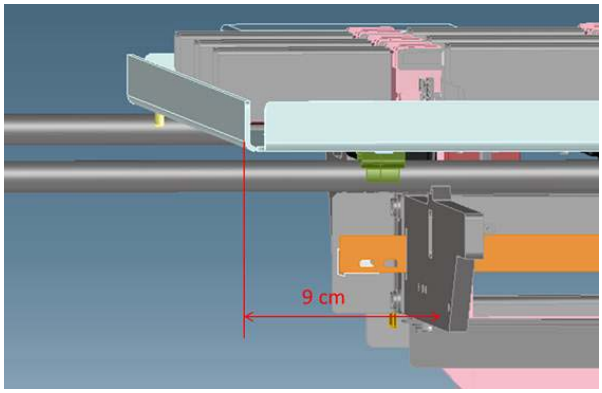
NOTE: The strap should be loose or have very little tension during transportation.

7. Place the forklift in transport position. Remove 10 screws, rotate them 90º, and replace the screws in the same place.



8. With a flat screwdriver rotate the drop-detector platform screw to leave it in the transport position (9 cm from the console, as shown below). The screw can be accessed from the front of the service station.





9. Move the capping station platform to leave it 2 mm from the drop detector. Attach the two platforms with a cable tie.

8. Raise the feet

1. Use a 30 mm wrench to unlock the nut at the top of the foot.



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



3. Use a 15 mm wrench to rotate the foot upwards. Use the flat faces at the bottom of the bolt to fit the wrench.
4. Raise the foot as far as the bolt allows.
5. Use the 30 mm wrench to tighten 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.

9. Set up the printer in the final position

At this point, normally you would push the printer to the final location. However, if you need to remove the printer from a second floor, a crane will be needed to lift the printer.

Lift the printer from a second floor using a crane

1. If possible, the printer can be lifted by the crane without removing the crate. If the loading area for the crate has enough space to reassemble the crate safely, this situation is ideal.

   If it is not possible to move with the crate, the same guides used to lift the printer with a forklift should be used to lift the printer with a crane. To do so, lifting bars must be inserted into the forklift guides. The lifting cables can either be attached to a spreader beam or directly to the crane.

NOTE: The lifting bars, spreader beam and any other crane attachment must be supplied by the customer. For the exact specifications of the crane attachments, see the Site Preparation Guide.

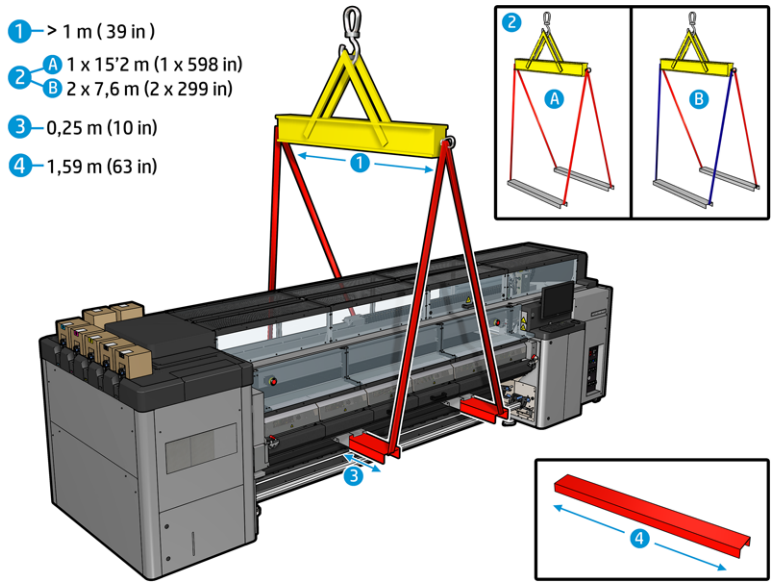
WARNING! When lifting the printer with a crane, extra caution should be taken to ensure that the cables do not apply pressure to the center covers or carriage beam.

CAUTION: The printer weight is not evenly distributed, and it may tilt to the right side.

NOTE: The printer will bend as you lift it.

2. The following graphic illustrates how to lift the printer using lifting bars.

   If you use a spreader beam to lift the printer, make sure that the spreader beam and lifting bars are wide enough so the lifting cables do not touch the center covers or carriage beam. The following graphic illustrates how to lift the printer with a spreader beam.

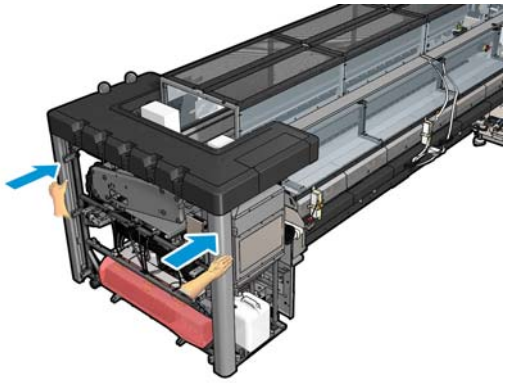


10. How to push the printer

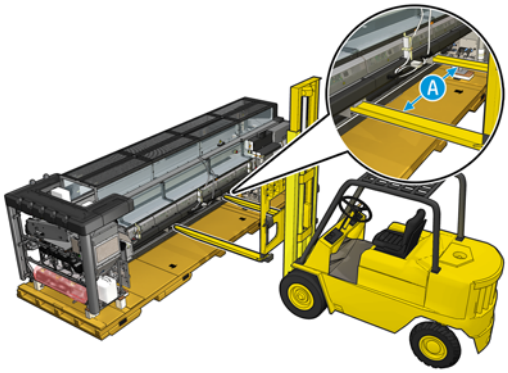
Manpower	Time
2 people	Varies



NOTE: When you set the printer on the floor, the printer wheels allow you to roll the printer easily. Push the printer only from the outside corners of the top covers on either side.



1. Locate the forklift guides underneath the printer and make sure that the forks on the forklift are spaced 1.3 m apart (A).



2. Move the forklift into position to engage with the printer. You can approach the printer from either side, whichever is more convenient for you.
3. Carefully lift the printer with the forklift.

11. Replace the printer on the pallet

Manpower	Tools	Time
1 person	Two M30 sockets, M17 socket wrench, cutter, forklift	40 minutes



1. Remove the four bolts that secure the foot blocks to the pallet (16 total) and remove them.
2. To attach the foot block to the printer foot, remove the 30 mm bolt.
3. Lift the printer 30 cm from the floor with the forklift.

4. Position the block and replace the 30 mm bolt so that it is attached to the printer foot.
5. Fix the two e-cabinet cushion holders onto the right side of the shipping pallet.
6. Install ISM supports and trays onto the right side of the shipping pallet.
7. Place the printer on the pallet. Leave the four foot blocks as close as possible to the original position.
8. Tighten the two 30 mm bolts attaching the left side of the printer to the foot blocks. A socket wrench is recommended for this step.



9. Tighten the two 30 mm bolts attaching the right side of the printer to the foot blocks. The front one is hidden behind the printhead cleaning roll door. You may need the key to open the door for accessing that bolt
10. Secure each foot block to the pallet with the four bolts removed earlier. New holes in the pallet may be required to secure them.
11. Add flanges on the ISM structure to attach it to the cushion blocks

⚠ **CAUTION:** Ensure that the e-cabinet is secure, and ISM foams are in place and not broken.



12. Install the boxes and covers that were inside the crate.



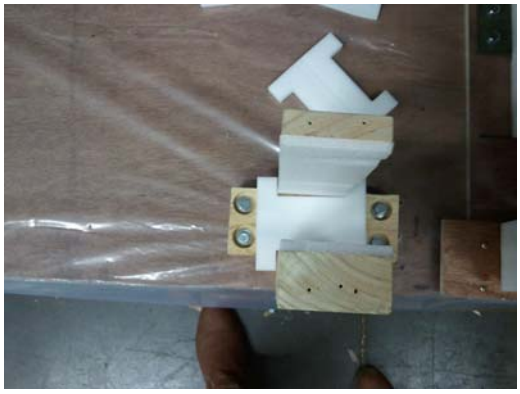
13. Secure the box onto the pallet. The shipment should include the following items:

- Introductory information document
- Documentation CD including the legal information, limited warranty, site preparation guide, installation guide, and user's guide
- Pneumatic gun
- 2 spindles supports
- 4 substrate edge holders
- 1 HP Internal Print Server computer (includes keyboard, mouse, and power cord)
- 1 flat-screen monitor (includes power cord)
- Electrical configuration kit, including cabinet keys
- 1 key for the e-cabinet
- Dual-roll intermediate support
- Printer cleaning kit
- 1 cleaning roll and 2 aerosol filters
- 14 intermediate tanks
- 1 cleaning roll core
- 1 webcam with a 5 m USB cable extension
- Printheads:
  - Yellow/Magenta Printhead 2
  - Cyan/Black Scitex Printhead 2
  - Lt Magenta/Lt Cyan Scitex Printhead 2
  - Latex Optimizer Printhead 1

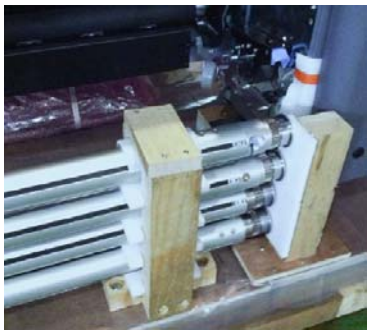
⚠ **CAUTION:** Ensure that the box containing the computer is in an upright position and secured with straps.

14. Place the ID covers on to the pallet.
15. Use strapping to secure the covers, but not too tight.

16. Install the spindle supporter with four bolts each.



17. Secure the substrate drive input, substrate drive output, and dual-roll spindles to the pallet using the spindle supports.



18. Attach the lid and the screws from the spindle supporter.



19. Tape the key for the lockable covers onto the front scan beam with heavy-duty adhesive tape.



20. Wrap the complete printer with 3D VCI bag as shown below. Make sure the printer is fully covered, and sealed using packing tape.



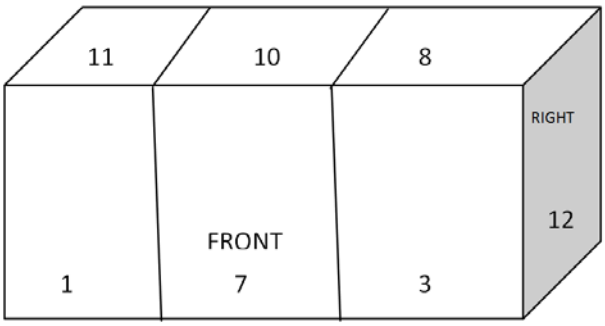
12. Replace the crate packaging

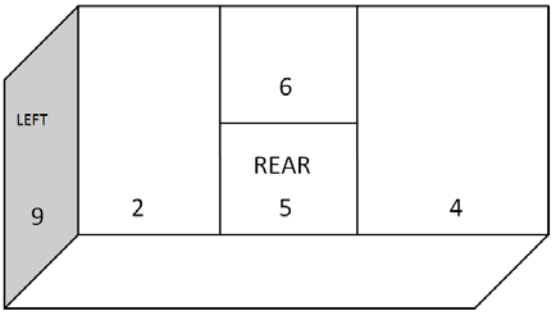
Manpower	Tools	Time
2 people	M17 socket wrench, Phillips screwdriver, pliers, ladder	20 minutes

In some cases, it may be necessary to leave the printer inside the crate packaging to go up ramps or make second-story deliveries. Plan accordingly. You will need at least 3 m (10ft) of space on each side of the crate.

The crate is attached together by 16 lag bolts and 128 wood screws.

The panel numbers are shown below.





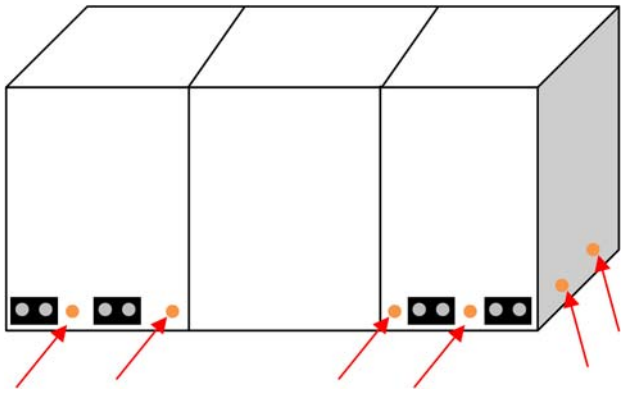
1. Lift one end of the crate slightly and pull it in to the printer. You will need space of 3 m (10 ft) in order to attach the crate to the printer.



2. Install the other end of the crate in the same way.

TIP: Alternatively, you can mount the crate; first side panels and then the top panel.

3. Insert the bolts shown below from panels 1, 3, 12, 4, 2, and 9.



4. Insert panels 5, 6, and 7; and, while someone holds them to prevent them from falling, attach their bolts.



5. Insert eight Phillips screws from panel 6 and 4 screws from panel 5, the central rear panels.
6. Remove sixteen screws from panel 7, the central front panel.
7. Add the two top cross-pieces.
8. Insert panel 10.



9. Using a ladder to reach the top of the crate, insert 16 top screws from panel 10, the central top panel.



WARNING! Do not stand on top of the crate.

10. Wrap the complete package with a plastic sheet.
11. Cover the package in heavy-duty wrapping and shrink-wrap.

13. Move the crate

Manpower	Tools	Time
2 people	Forklift, skates	15 minutes

⚠ **WARNING!** The crate must be lifted with a forklift from the front side of the crate. The front side of the crate is marked Front. This is important because of the weight distribution inside the crate.

⚠ **WARNING!** Do not stand on top of the crate.

	Weight	Fork Length	Inner distance between forks
Forklift	6000 kg (13228 lb)	2 m (79 in)	1.3 m (51 in)

1. To move the crate with a forklift, insert the forks in the designated slots in the crate. Always lift the crate from the front and center.



2. You can also use skates to maneuver the crate around tight corners or to move the crate laterally.



Move the printer over ramps

⚠ **WARNING!** Do not exceed the maximum incline if you must move the printer up or down a ramp. Failure to respect the maximum incline could damage the printer.

⚠ **WARNING!** Slopes steeper than 5% may cause serious damage to the printer.

B. Move the printer to a new site (transport temperature above 5°C/41°F)

1. Remove the covers: see 1. Remove the covers on page 911.
2. Prepare the printer by removing the printheads, intermediate tanks, ink cartridges, printhead cleaning roll, and aerosol filters: see 2. Prepare the printer on page 912.
3. Unplug the electrical system: see 4. Unplug the electrical system on page 916.
4. Remove the computer, monitor, keyboard, and mouse: see 5. Remove the computer, monitor, keyboard, and mouse on page 918.
5. Set up the printer: see 6. Set up the printer on page 919.
6. Insert additional packaging: see 7. Insert additional packaging on page 923.
7. Raise the feet: see 8. Raise the feet on page 925.
8. Set up the printer in the final position: see 9. Set up the printer in the final position on page 925.
9. Replace the printer on the pallet: see 11. Replace the printer on the pallet on page 927.
10. Replace the crate packaging: see 12. Replace the crate packaging on page 931.
11. Move the crate: see 13. Move the crate on page 934.

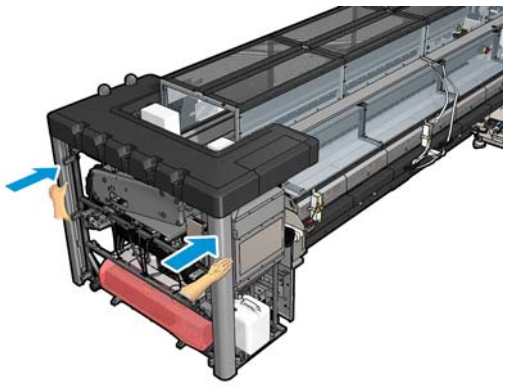
C. Move the printer to the same site (with ramps or steps)

1. Remove covers on the left-hand side.
   - Rear left panel assembly on page 636 (four T-20 screws)
   - Bottom left panel assembly on page 636 (four T-20 screws)
2. Remove covers on the right-hand side.
   - Rear right panel assembly on page 624 (two T-20 screws)
   - Front right door + hinges (six T-20 screws)
3. Prepare the printer by removing the printheads, intermediate tanks, ink cartridges, printhead cleaning roll, and aerosol filters: see 2. Prepare the printer on page 912.
4. Unplug the electrical system: see 4. Unplug the electrical system on page 916.
5. Remove the computer, monitor, keyboard, and mouse: see 5. Remove the computer, monitor, keyboard, and mouse on page 918.
6. Clean the condensation collector bottle: see Clean the condensation collector box on page 920.
7. Unplug the ink quick connector and the cables from the printer side and unroute them, so that they are not attached to the ISM structure.
8. Remove the condensation collector tube with clamps. Be careful: it may have condensation in it.
9. Remove the ISM.
10. Insert additional packaging: see 7. Insert additional packaging on page 923.
11. Set up the printer in the final position: see 9. Set up the printer in the final position on page 925.

D. Move the printer to the same site (no ramps, no steps)

ISM flush and clean a single ink system line

1. On the right-hand side, open the Front right panel assembly on page 623 (two T-20 screws).
2. Unplug the electrical system: see 4. Unplug the electrical system on page 916.
3. Close the right front panel (two T-20 screws).
4. Raise the feet: see 8. Raise the feet on page 925.
5. Push the printer from the outside corners of the top covers.



A Cables

This appendix contains a chapter from another manual, describing the printer cables in detail. See the table of contents on the next page.

8 Cables

CZ056-50001 – Engine PCA 1 to Engine Adaptor PCA 1. 5
CZ056-50002 - Engine PCA 2 to Engine Adaptor PCA 2. 6
CZ056-50133 - Engine PCA 3 to Engine Adaptor PCA 3. 7
CZ056-50134 - Engine PCA 4 to Engine Adaptor PCA 4. 8
CZ056-50003- Engine Adaptor PCA Power Cable. PSU to Engine Adaptor PCA. 9
CZ056-50004 -Am80 CS Data Cable. Carriage Sensor PCA to PH Interconnect 2. 10
CZ056-50005 -Am80 Carriage Encoder Cable. PH Interconnect 2 to Carriage Encoder. 11
CZ056-50006 - Am80 CS_P Power Cable. Carriage Sensor PCA to PH Interconnect 2. 12
CZ056-50186 - Am80 CS_P Power Cable Short. Carriage Sensor PCA to PH interconnect 2. 13
CZ056-50187 - Am80 CS_P Power Cable Long. Carriage Sensor PCA to PH interconnect 1. 14
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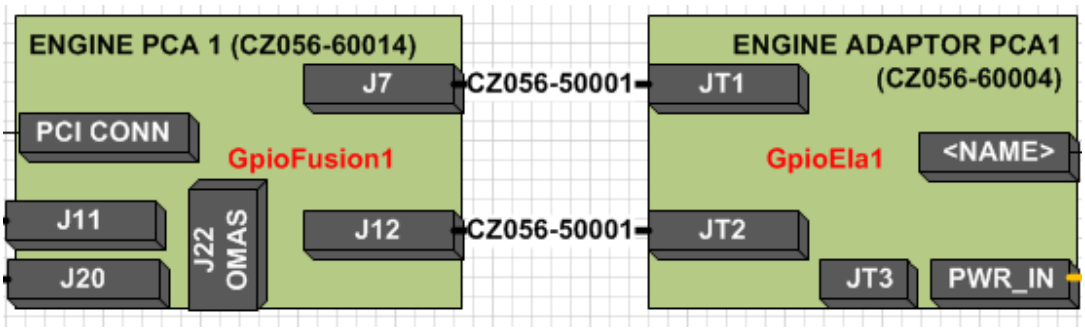
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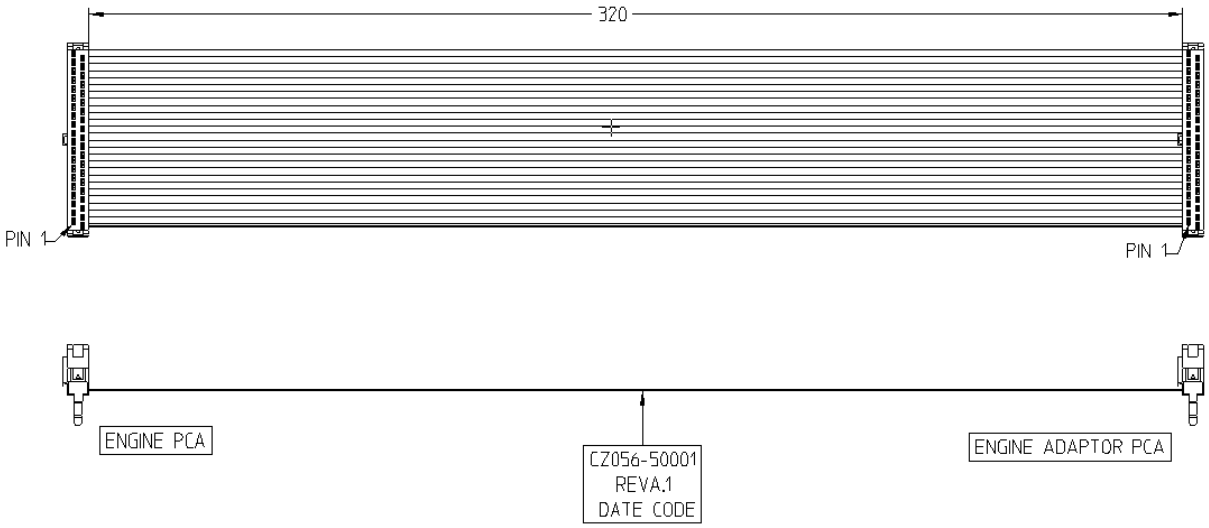
CZ056-50001 – Engine PCA 1 to Engine Adaptor PCA 1.

Subsystem: E-BOX ASSEMBLY. Quantity: 2x printer.

Included in the following service parts:

- CZ056-67083 (Ebox cables kit serv).

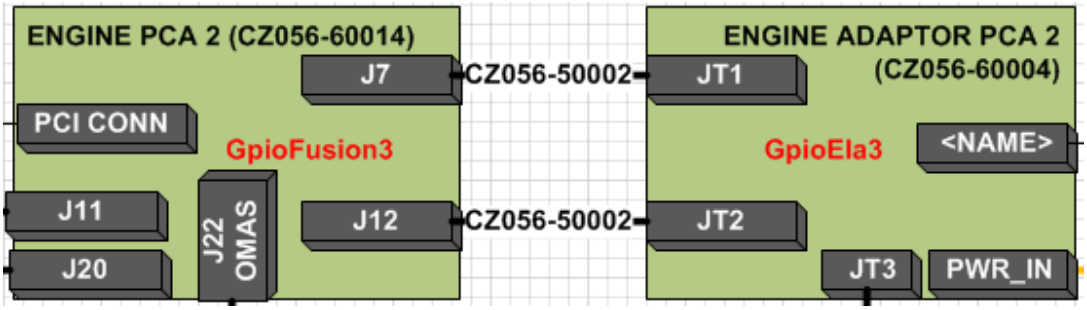


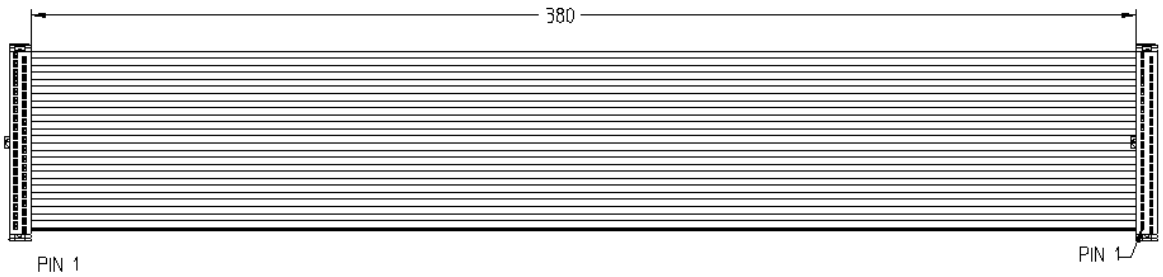


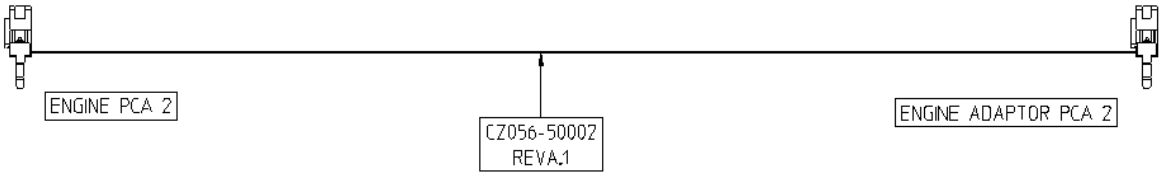
CZ056-50002 - Engine PCA 2 to Engine Adaptor PCA 2.
Subsystem: E-BOX ASSEMBLY. Quantity: 2x printer.

Included in the following service parts:

- CZ056-67083 (Ebox cables kit serv).



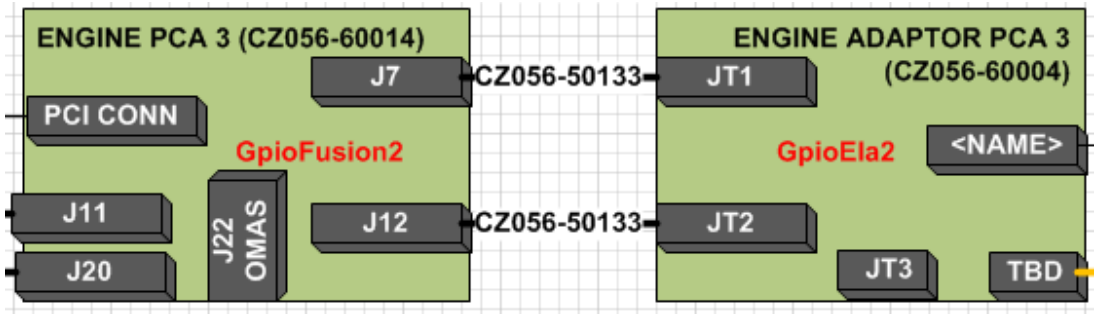


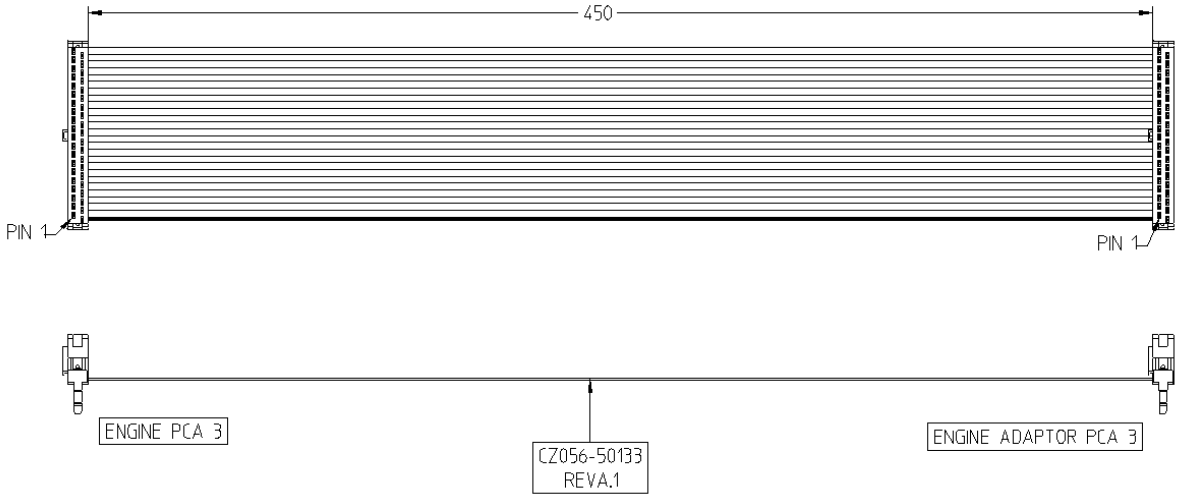


CZ056-50133 - Engine PCA 3 to Engine Adaptor PCA 3.
Subsystem: E-BOX ASSEMBLY. Quantity: 2x printer.

Included in the following service parts:

- CZ056-67083(EBOX cables KIT SERV) .

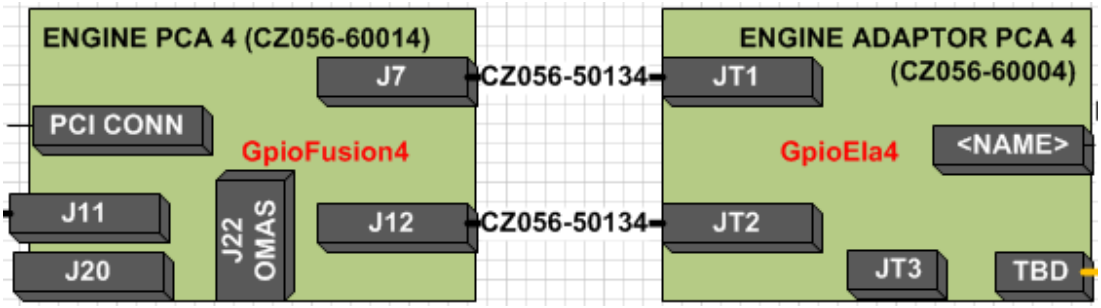


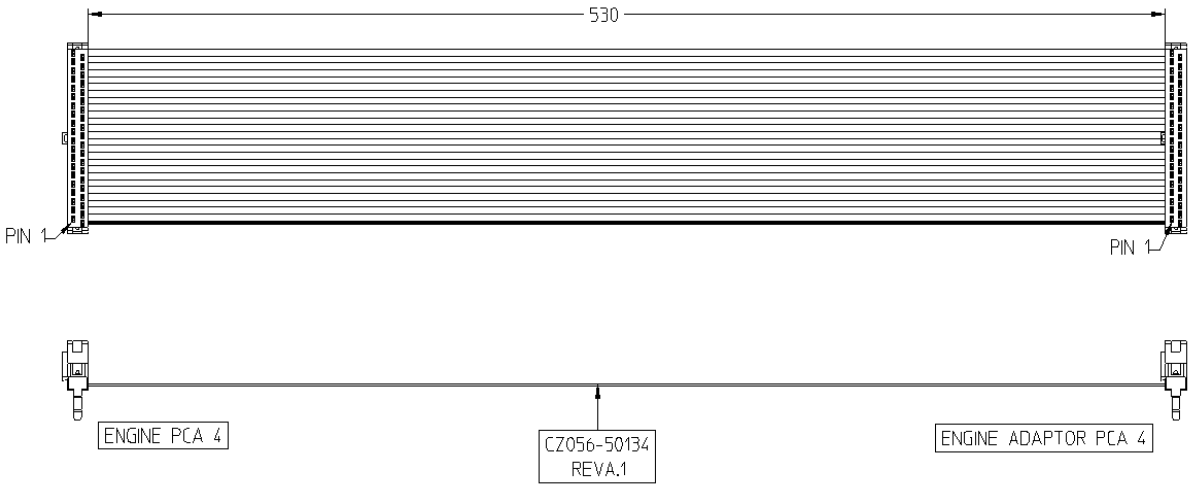


CZ056-50134 - Engine PCA 4 to Engine Adaptor PCA 4.
Subsystem: E-BOX ASSEMBLY. Quantity: 2x printer.

Included in the following service parts:

- CZ056-67083 (EBOX cables KIT SERV).



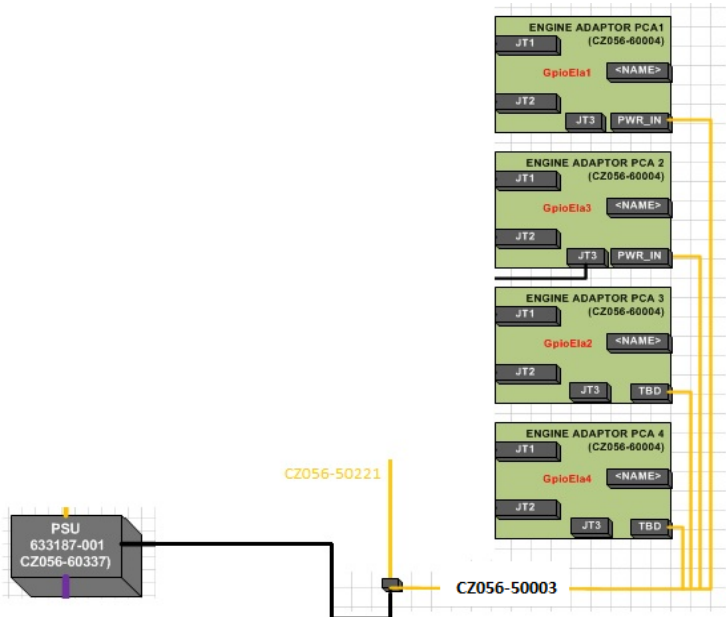


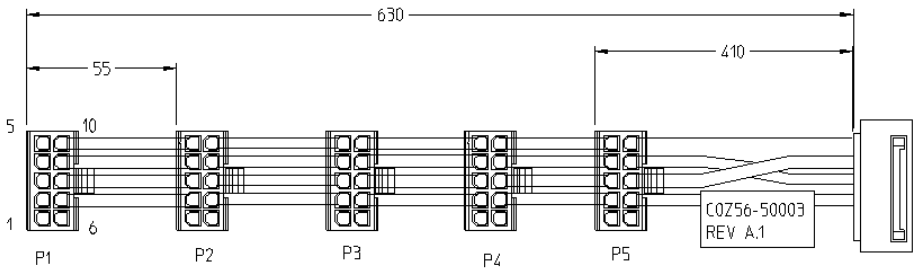
CZ056-50003- Engine Adaptor PCA Power Cable. PSU to Engine Adaptor PCA.

Subsystem: E-BOX ASSEMBLY. Quantity: 1x printer.

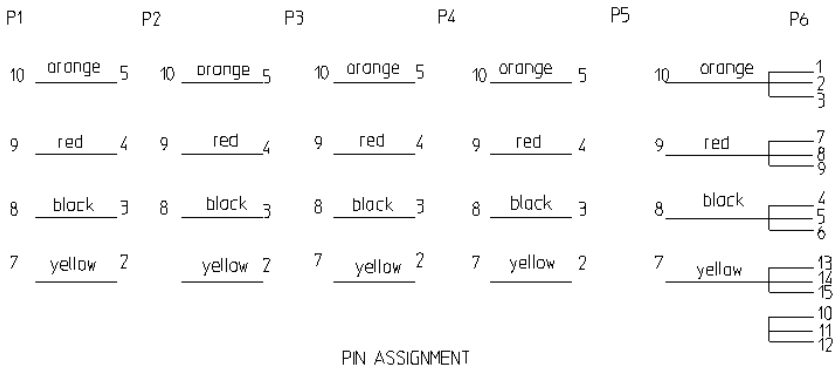
Included in the following service parts:

- CZ056-67083 (EBOX cables KIT SERV).







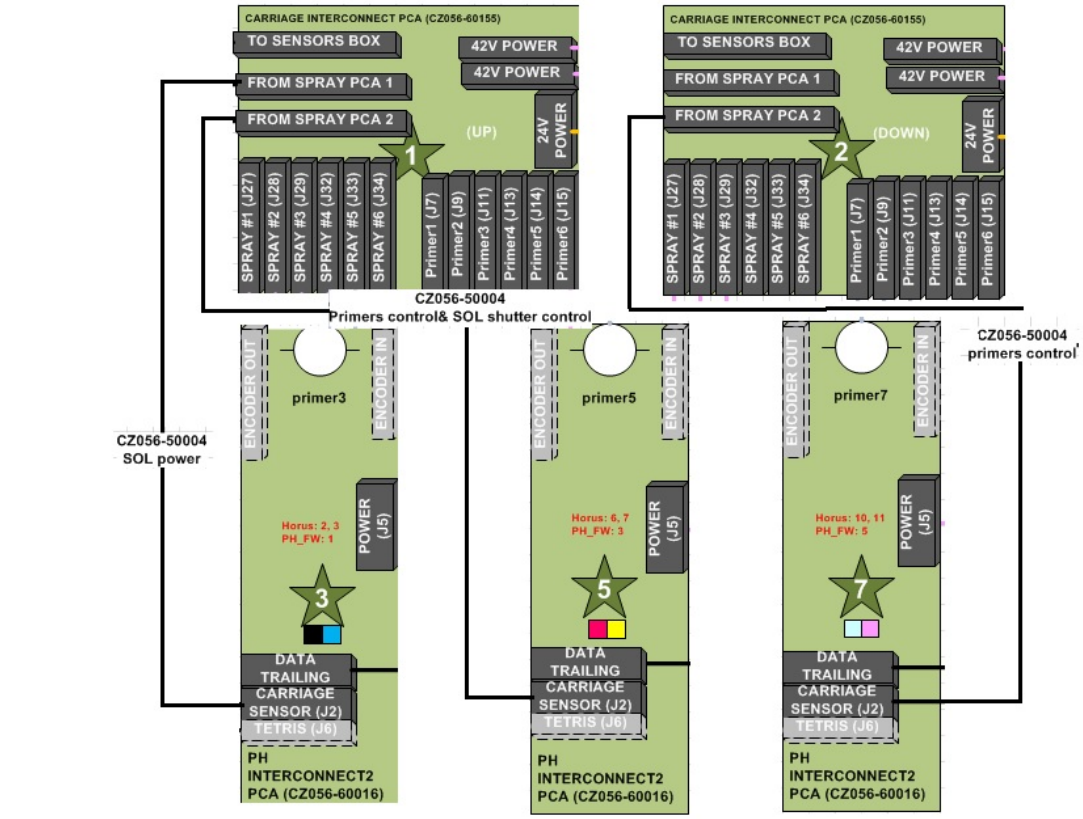


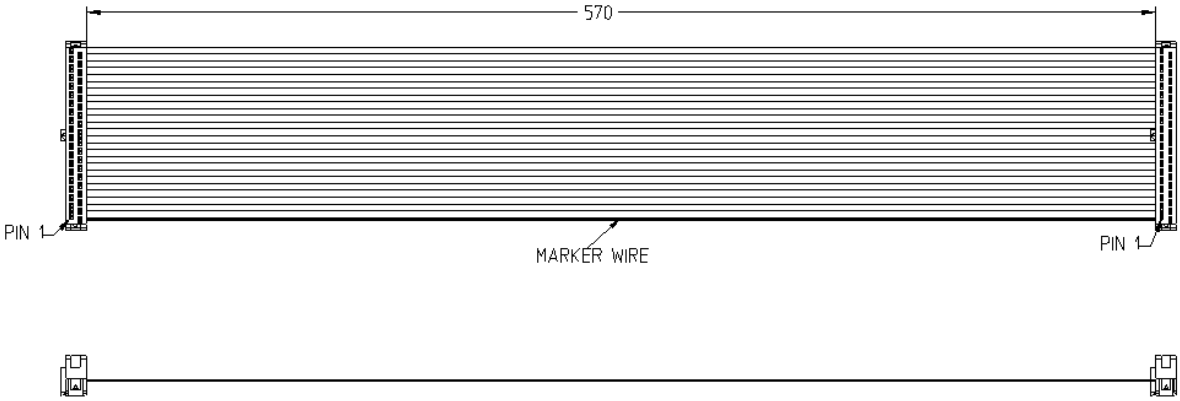
CZ056-50004 -Am80 CS Data Cable. Carriage Sensor PCA to PH Interconnect 2.

Subsystem: CARRIAGE. Quantity: 3x printer.

Included in the following service parts:

- CZ056-67015 (Carriage cables KIT SERV).
- CZ056-67020 (Carriage assy SERV) .



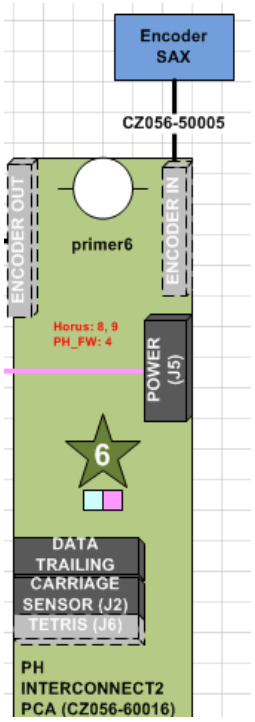


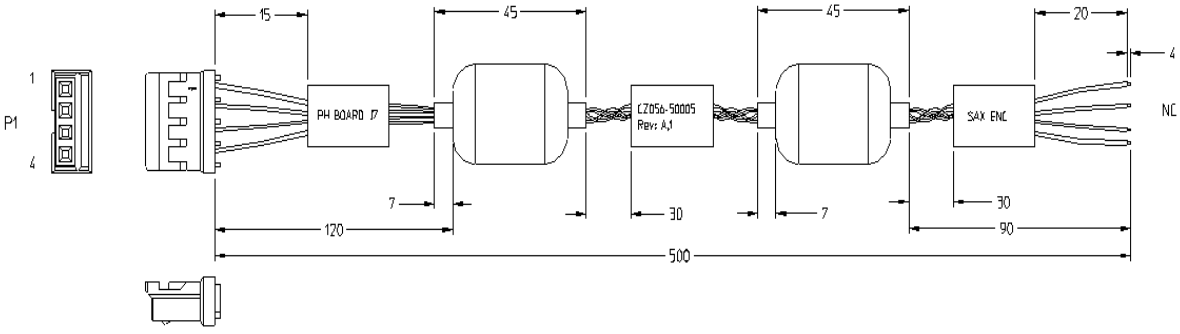
CZ056-50005 -Am80 Carriage Encoder Cable. PH Interconnect 2 to Carriage Encoder.

Subsystem: CARRIAGE. Quantity: 1x printer.

Included in the following service parts:

- CZ056-67010 (Carriage encoder assy SERV).
- CZ056-67015 (Carriage cables KIT SERV).
- CZ056-67020 (Carriage assy SERV).
- CZ056-67392 (Extended Uptime kit for HP Latex).





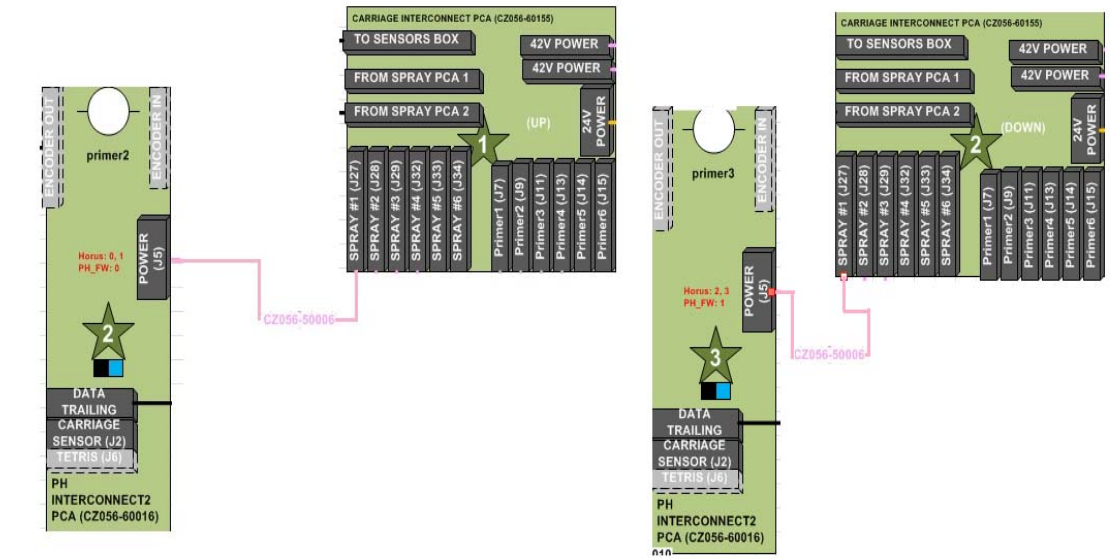
WIRING DIAGRAM			
FROM	WIRE COLOR		TO
P1-1	TWISTED 5	YELLO	NC
P1-3		BLUE	NC
P1-2		RED	NC
P1-4		BLACK	NC

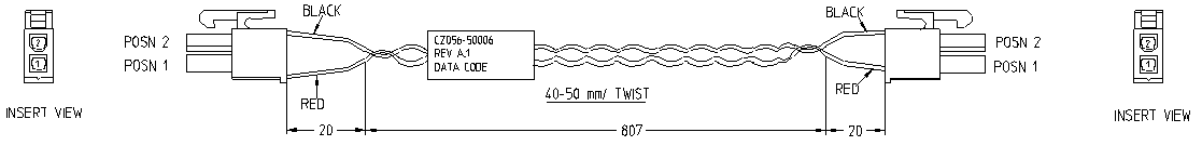
CZ056-50006 - Am80 CS_P Power Cable. Carriage Sensor PCA to PH Interconnect 2.

Subsystem: CARRIAGE. Quantity: 2 x printer.

Included in the following service parts:

- CZ056-67015(Carriage cables KIT SERV).
- CZ056-67020 (Carriage assy SERV).



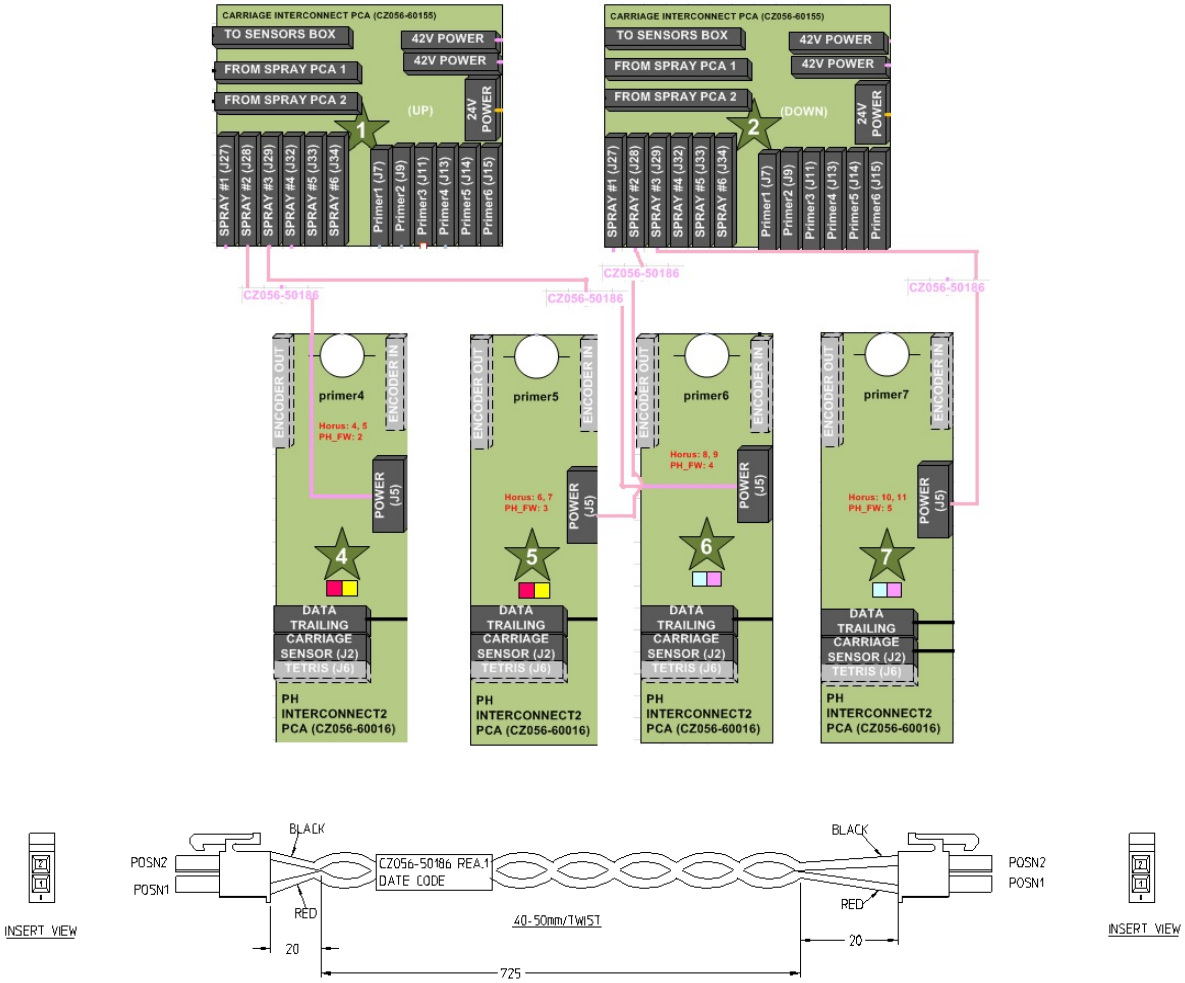


CZ056-50186 - Am80 CS_P Power Cable Short. Carriage Sensor PCA to PH interconnect 2.

Subsystem: CARRIAGE. Quantity: 4 x printer.

Included in the following service parts:

- CZ056-67015 (Carriage cables KIT SERV).
- CZ056-67020 (Carriage assy SERV).

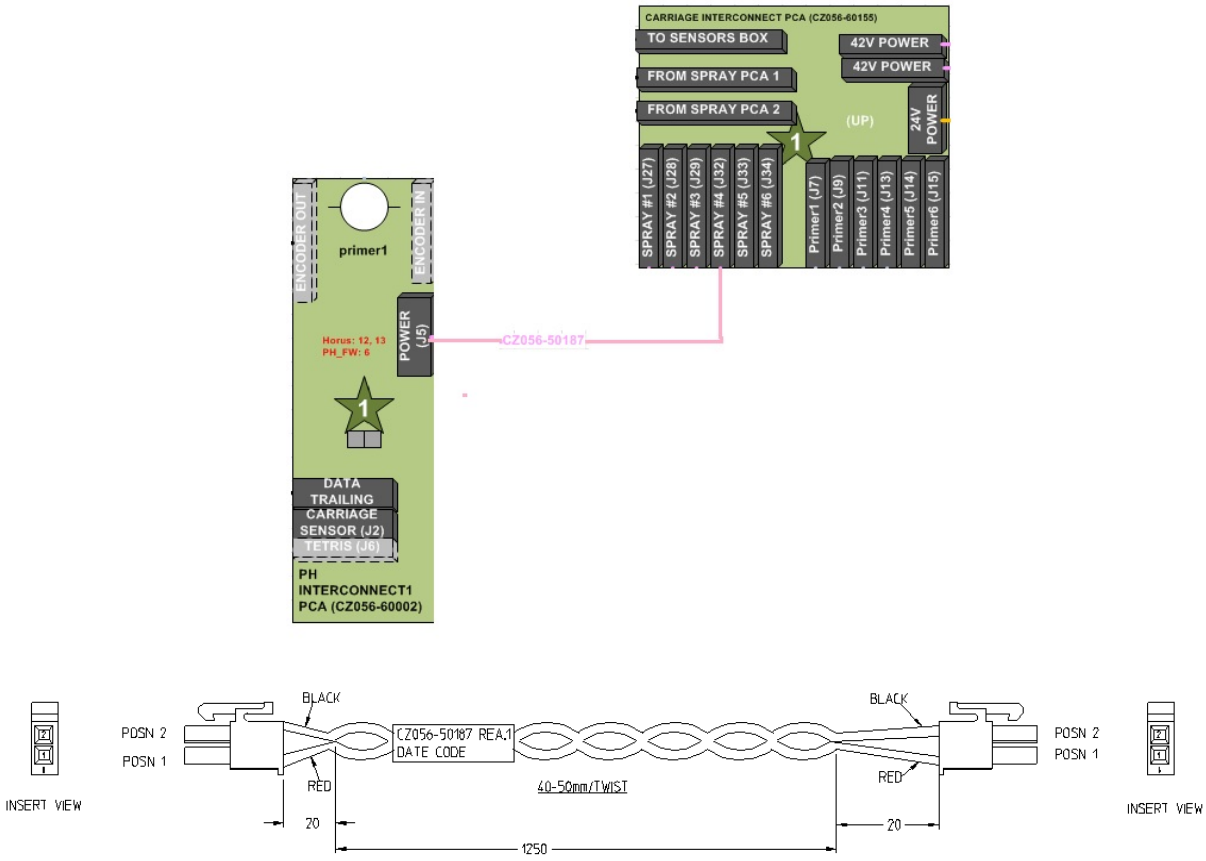


CZ056-50187 - Am80 CS_P Power Cable Long. Carriage Sensor PCA to PH interconnect 1.

Subsystem: CARRIAGE. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67015 (Carriage cables KIT SERV).
- CZ056-67020 (Carriage assy SERV).

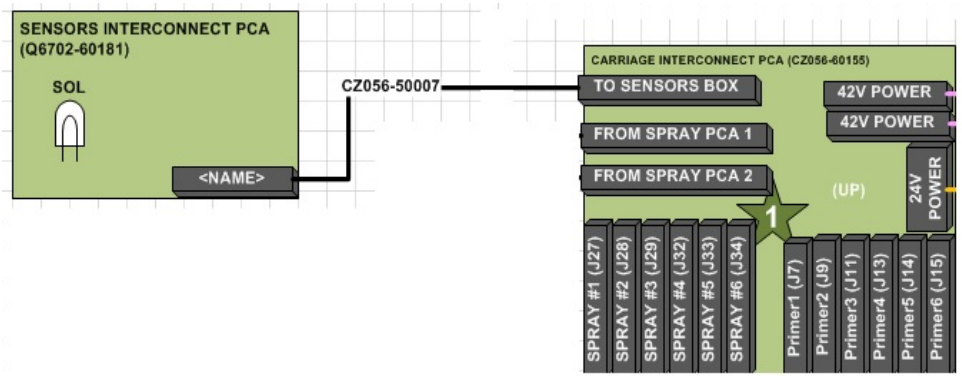


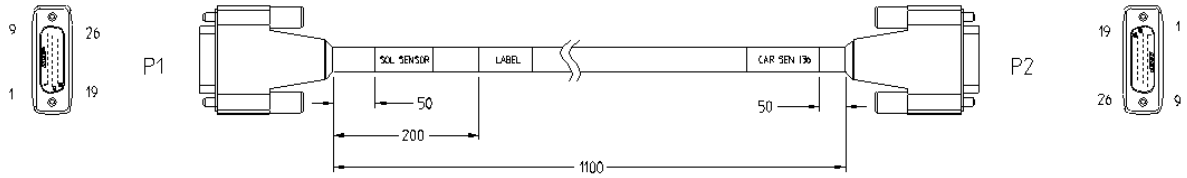
CZ056-50007 - Am80 Sensor Box Cable. Sensors Interconnect PCA to Carriage Sensors PCA.

Subsystem: CARRIAGE. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67015 (Carriage cables KIT SERV).
- CZ056-67007 (SOL mechanism SERV).
- CZ056-67020 (Carriage assy SERV).





WIRING DIAGRAM

FROM P1		TO P2
1	WHITE	1
10	WHITE/BLACK	10
2	RED	2
11	RED/BLACK	11
3	YELLOW	3
12	YELLOW/BLACK	12
4	GREEN	4
13	GREEN/BLACK	13
5	BLUE	5
14	BLUE/WHITE	14
6	BROWN	6
15	BROWN/WHITE	15
7	ORANGE	7
16	ORANGE/BLACK	16

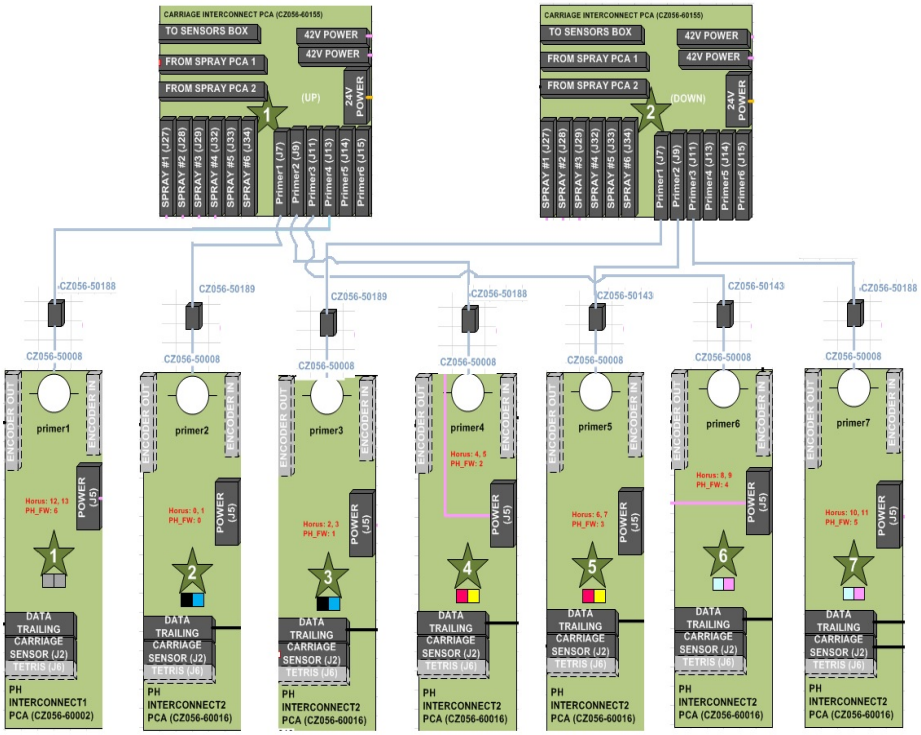
FROM P1		TO P2
8	GREY	8
17	GREY/BLACK	17
9	PURPLE	9
18	PURPLE/WHITE	18
19	PINK	19
20	PINK/BLACK	20
21	WHITE/RED	21
22	WHITE/BLUE	22
23	WHITE/YELLOW	23
24	WHITE/BROWN	24
25	WHITE/GREEN	25
26	WHITE/GREY	26
SHELL	BRAID	SHELL

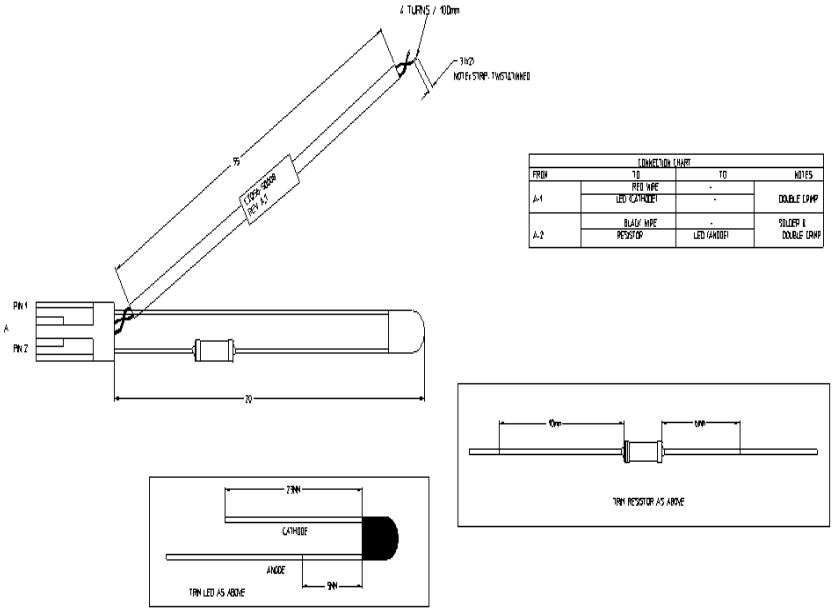
CZ056-50008 - Am80 Pens Prime Cable. Carriage Sensors PCA to Pens Primer.

Subsystem: PRIMER. Quantity: 7 x printer.

Included in the following service parts:

- CZ056-67396 (Primer and latch SERV).
- CZ056-67310 (Service Maintenance Kit).
- CZ056-67020 (Carriage assy SERV).



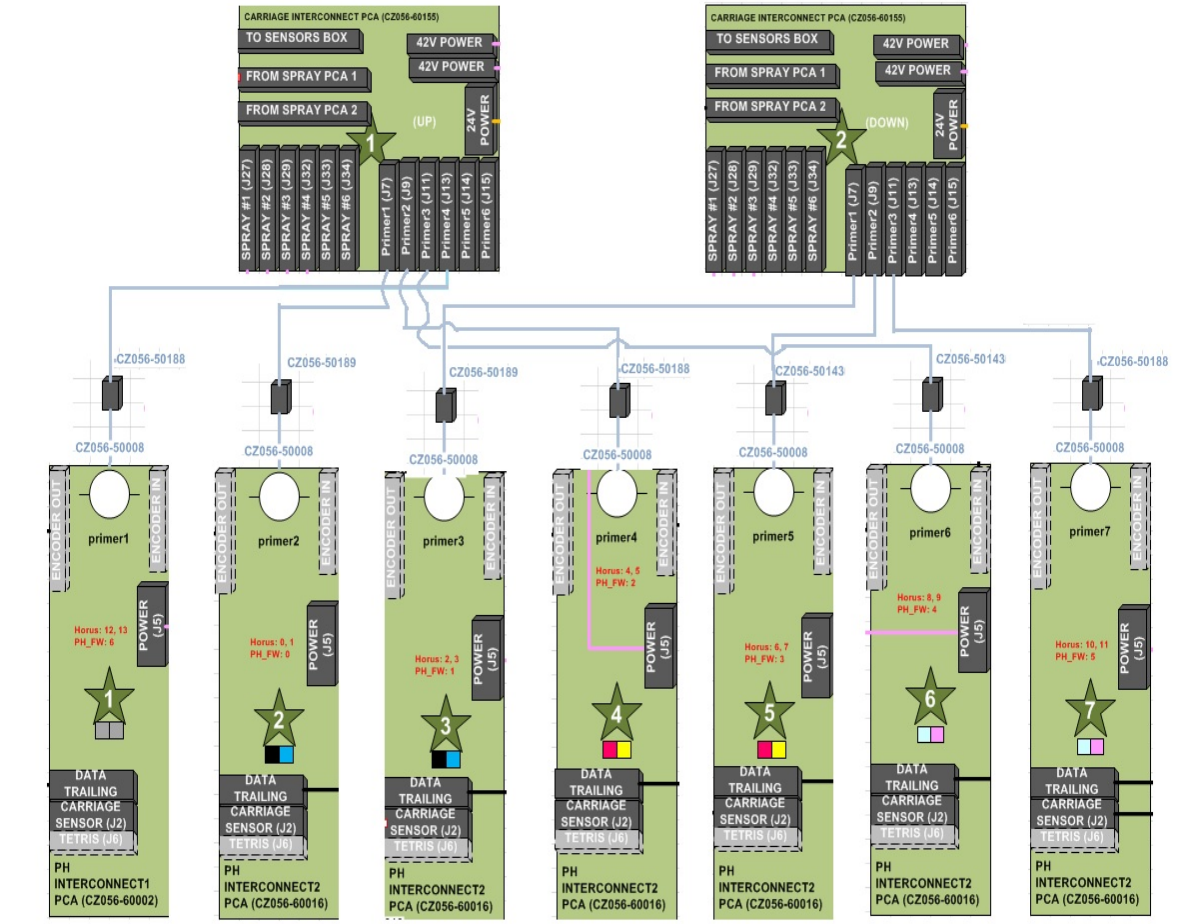


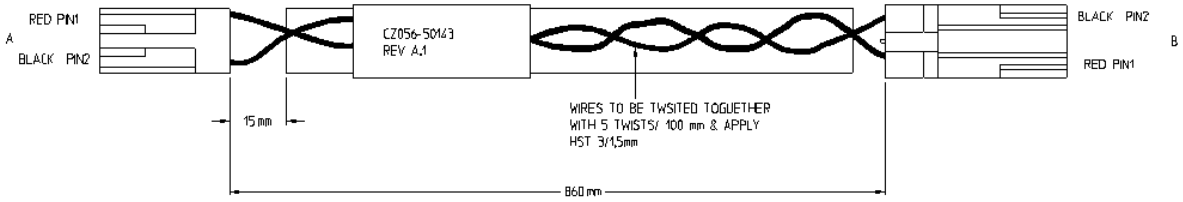
CZ056-50143 – Pen Primer Extension Cable. Pens Primer Cable to Carriage Sensors PCA.

Subsystem: CARRIAGE. Quantity: 2 x printer.

Included in the following service parts:

- CZ056-67020 (Carriage assy SERV).
- CZ056-67310 (Service Maintenance Kit).
- CZ056-67396 (Primer and latch SERV).





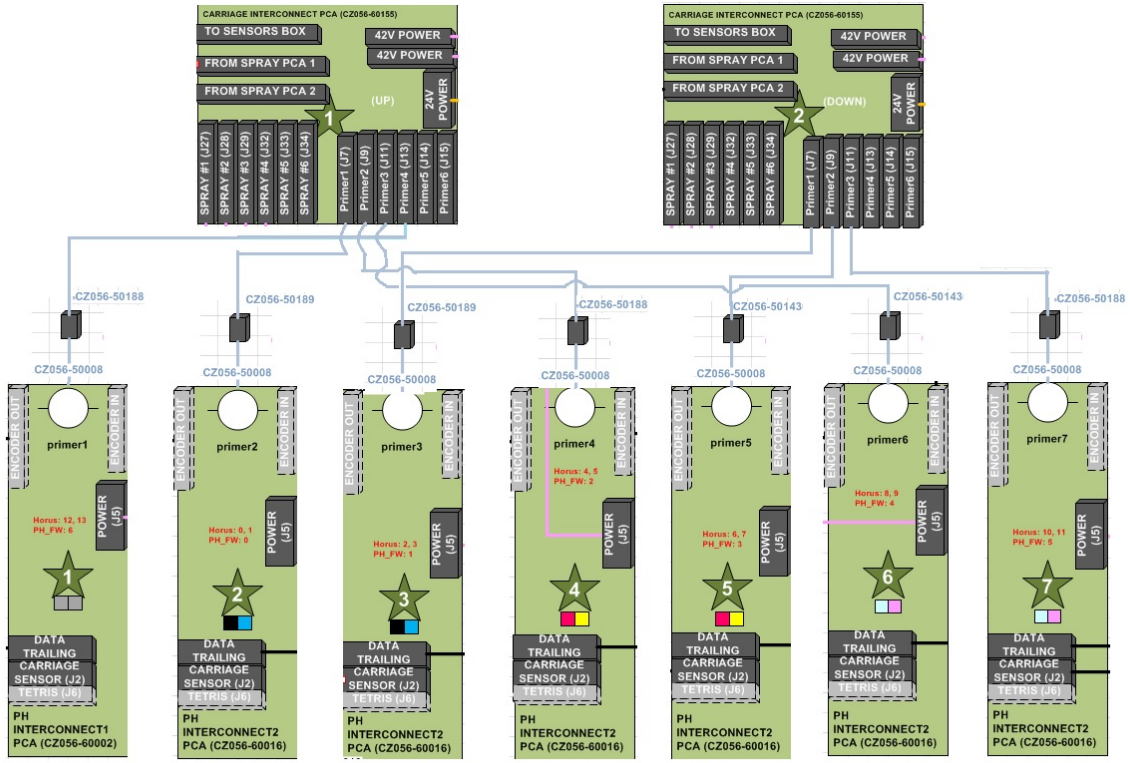
CONNECTION PART		
FROM	TO	WIRE COLOR
A-1	B-1	RED
A-2	B-2	BLACK

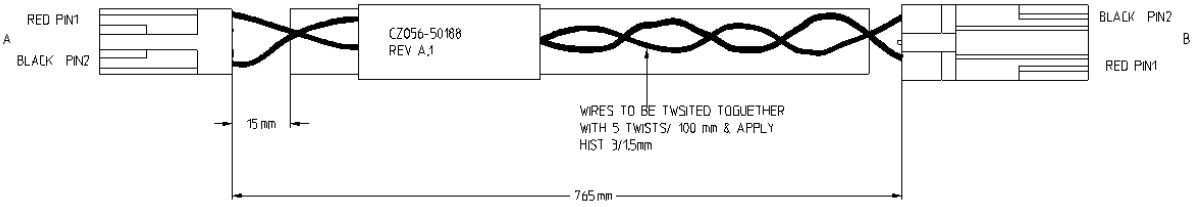
CZ056-50188 –Primer Extension Cable Long. Pens Primer Cable to Carriage Sensors PCA.

Subsystem: CARRIAGE. Quantity: 3 x printer.

Included in the following service parts:

CZ056-67020 (Carriage assy SERV).
CZ056-67310 (Service Maintenance Kit).
CZ056-67396 (Primer and latch SERV).





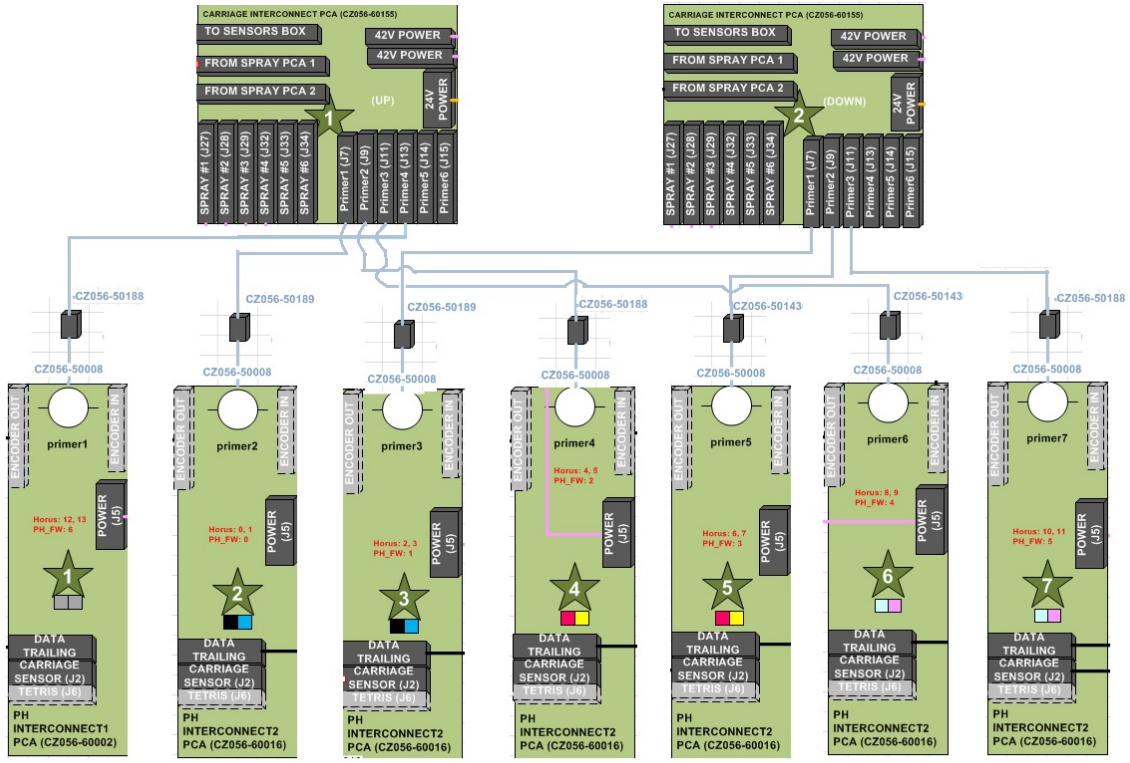
CONNECTION PART		
FROM	TO	WIRE COLOR
A-1	B-1	RED
A-2	B-2	BLACK

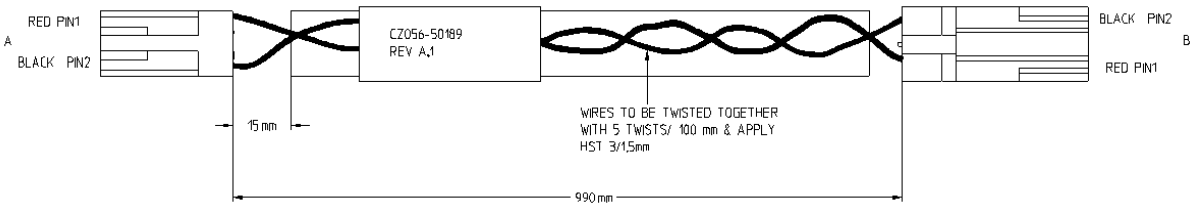
CZ056-50189 –Primer extension cable short. Pens primer cable to Carriage Sensors PCA.

Subsystem: Carriage. Quantity: 2 x printer.

Included in the following service parts:

- CZ056-67020 (Carriage assy SERV).
- CZ056-67310 (Service Maintenance Kit).
- CZ056-67396 (Primer and latch SERV).



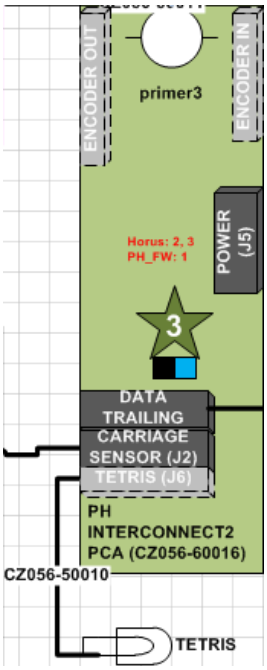


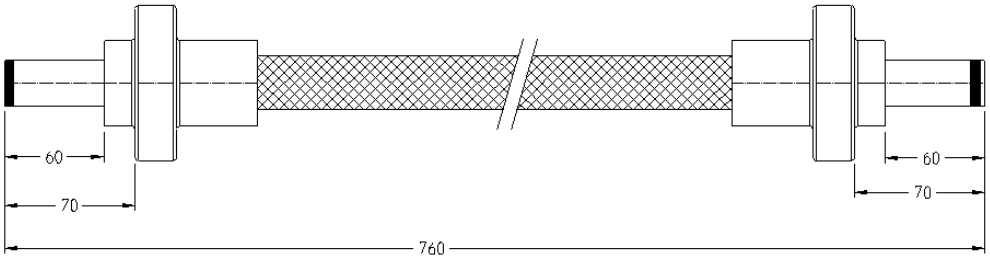
CONNECTION PART		
FROM	TO	WIRE COLOR
A-1	B-1	RED
A-2	B-2	BLACK

CZ056-50010 –Am80 Tetris Cable. Tetris to Carriage Sensors PCA.
Subsystem: CARRIAGE. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67006 (Line sensor SERV).
- CZ056-67015 (Carriage cables KIT SERV).
- CZ056-67020 (Carriage assy SERV).
- CZ056-67392 (Extended Uptime kit for HP Latex).



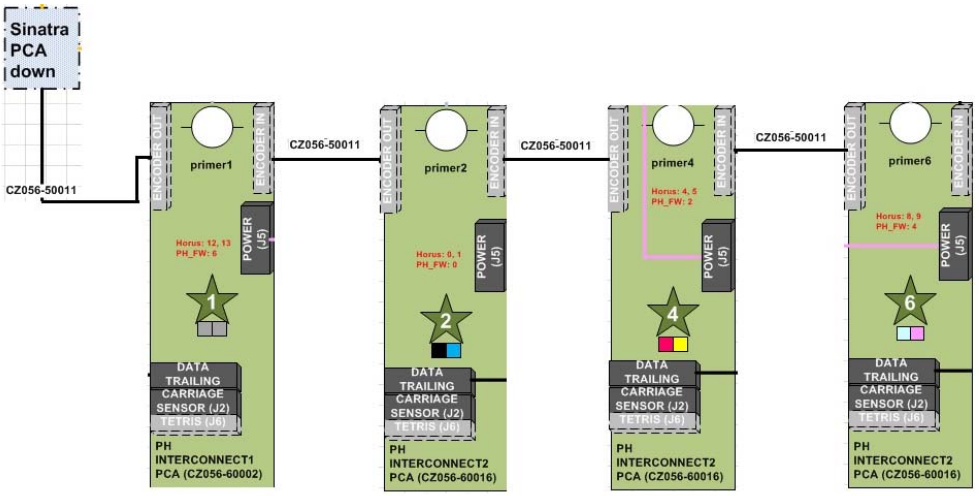


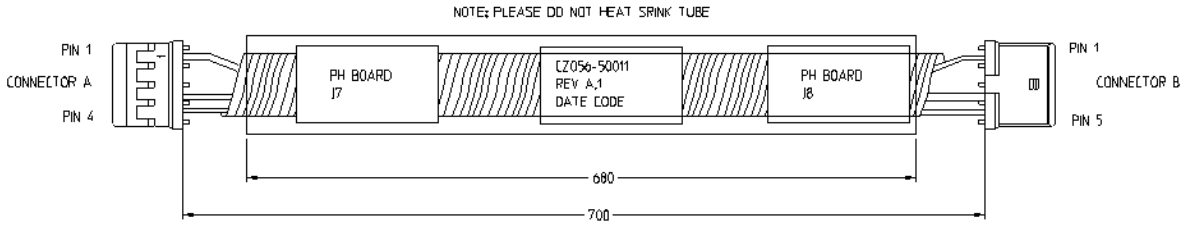
CZ056-50011 –Am80 Spray to Spray Cable. PH interconnect 1 to PH interconnect 1.

Subsystem: CARRIAGE. Quantity: 4 x printer.

Included in the following service parts:

- CZ056-67015 (Carriage cables KIT SERV).
- CZ056-67020 (Carriage assy SERV).





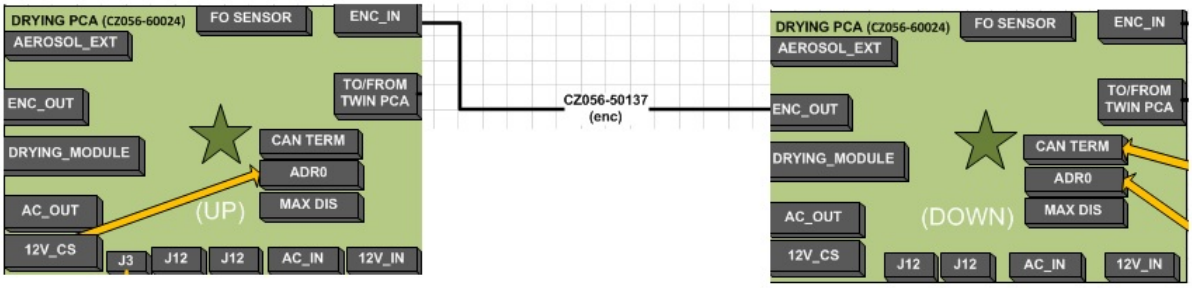
CONN'A	WIRE COLOUR	CONN'B	REMARKS
A - 1	YELLOW ④	B - 1	
A - 2	NO CONNECTION	B - 2	
A - 3	BLUE ⑤	B - 3	WIRES TO BE TWISTED 1 TURN / 25mm
A - 4	BLACK ⑥	B - 4	
	NO CONNECTION	B - 5	

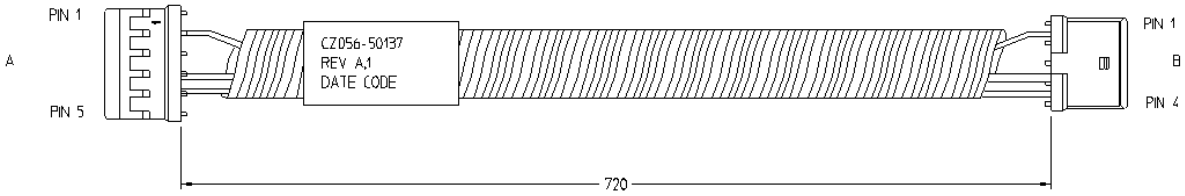
CZ056-50137 – Curing Encoder Daisy Chain Cab.

Subsystem: MEDIA DRYING. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67015 (Carriage cables KIT SERV).
- CZ056-67020 (Carriage assy SERV).





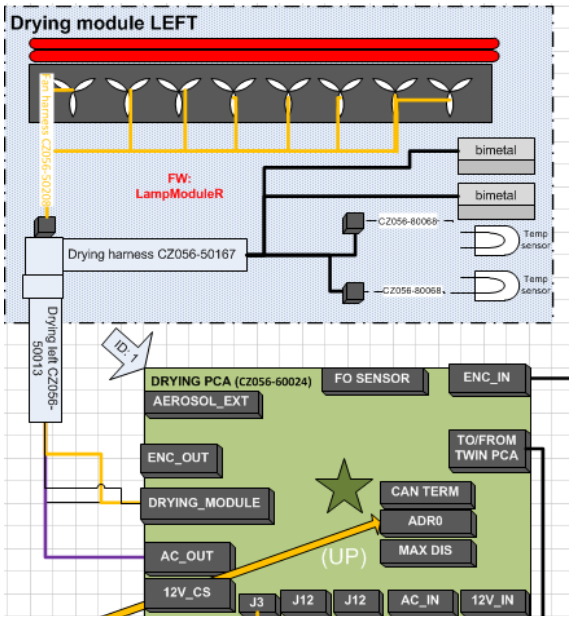
CONNECTION CHART			
FROM	TO	WIRE COLOUR	REMARKS
A-1	B-1	YELLOW (4)	ALL WIRES TO BE TWISTED TOGETHER WITH 1 TURN/25mm
A-3	B-3	BLUE (5)	
A-4	B-4	BLACK (6)	
A-2	NO CONNECTED		
A-5			
B-2			

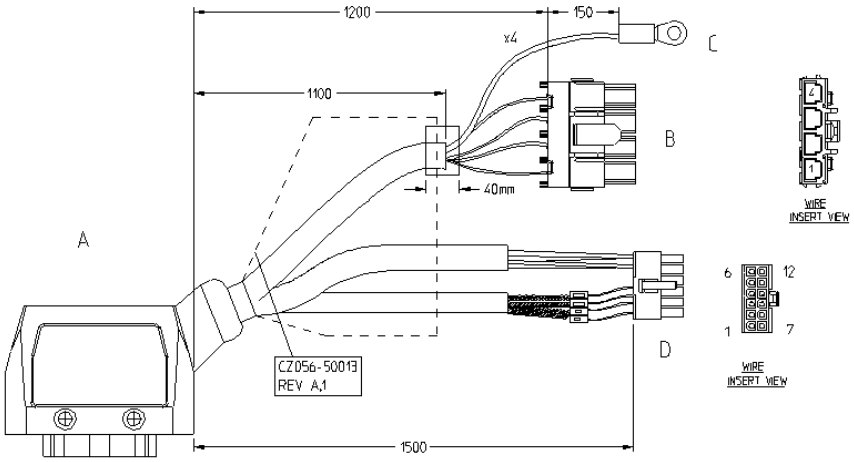
CZ056-50013 – Drying Left Module Cable. Drying Module Left to Drying PCA.

Subsystem: MEDIA DRYING. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67020 (Carriage assy SERV).
- CZ056-67027 (Drying cable left SERV).





CONNECTION CHART

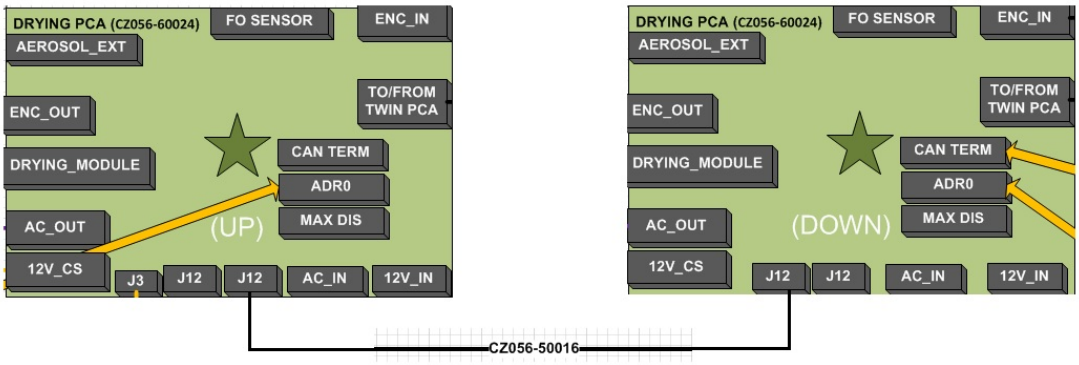
FROM	WIRE COLOR	TO	REMARK
A-1	WHITE 26AWG	D-7	PAIR WITH D-1
A-2	GREEN 18AWG	D-12	-
A-3	GREY 26AWG	D-9	PAIR WITH D-3
A-4	PINK 26AWG	D-3	PAIR WITH D-9
A-5	BLACK 1, 12AWG	B-1	-
A-6	BROWN 26AWG	D-1	PAIR WITH D-7
A-7	BLACK 18AWG	D-5	-
A-8	N/C	-	-
A-9	BLACK 2, 12AWG	B-2	-
A-10	YELLOW 26AWG	D-2	PAIR WITH D-8
A-11	WHITE 18AWG	D-6	-
A-12	N/C	-	-
A-13	BLACK 3, 12AWG	B-3	-
A-14	GRREN 26AWG	D-8	PAIR WITH D-2
A-15	RED 18AWG	D-11	-
A-16	BLUE 26AWG	D-10	PAIR WITH D-4
A-17	RED 26AWG	D-4	PAIR WITH D-10
A-18	BLACK 4, 12AWG	B-4	-
CHASIS	GREEN/YELLOW 12AWG	C	RING TERMINAL

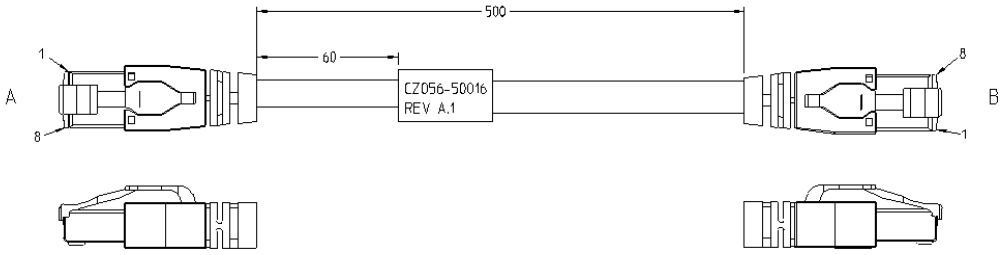
CZ056-50016 – LAN Drying PCA to Drying PCA. Drying PCA to Drying PCA.

Subsystem: MEDIA DRYING. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67015 (Carriage cables KIT SERV).
- CZ056-67020 (Carriage assy SERV).





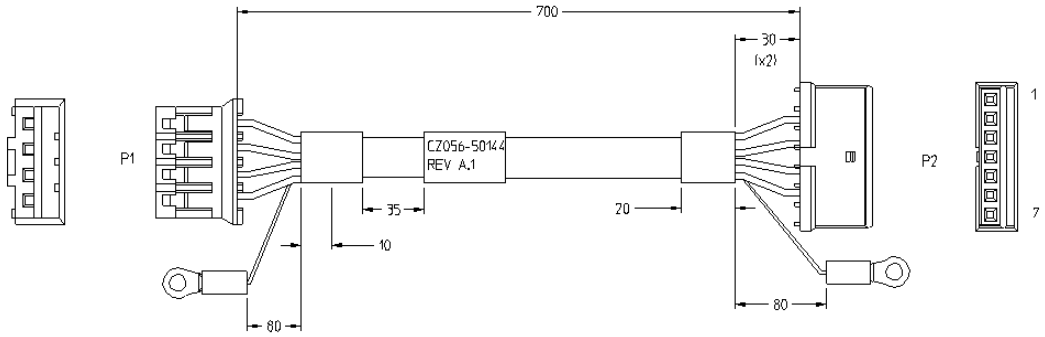
CONNECTION TABLE		
A	B	COLOR
1	1	WHITE/ORANGE
2	2	ORANGE
3	3	WHITE/GREEN
4	4	BLUE
5	5	WHITE/BLUE
6	6	GREEN
7	7	WHITE/BROWN
8	8	BROWN

CZ056-50144 – Smear Sensor Cable. Smear Sensor to Drying PCA.

Subsystem: CARRIAGE. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67020 (Carriage assy SERV).



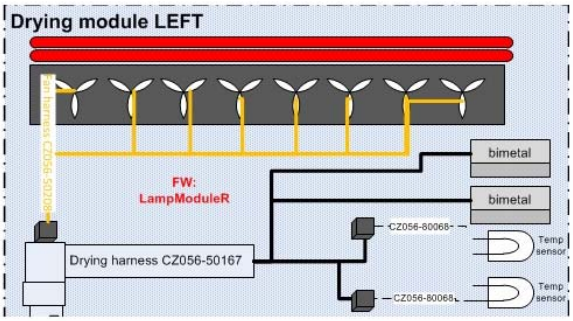
WIRING DIAGRAM			
FROM	WIRE COLOR		TO
P1-1	TWIST PAIR 1	BLACK	P2-1
P1-3		YELLOW	P2-2
P1-2	TWIST PAIR 2	RED	P2-5
P1-4		BLUE	P2-7
P3	DRAIN		P4

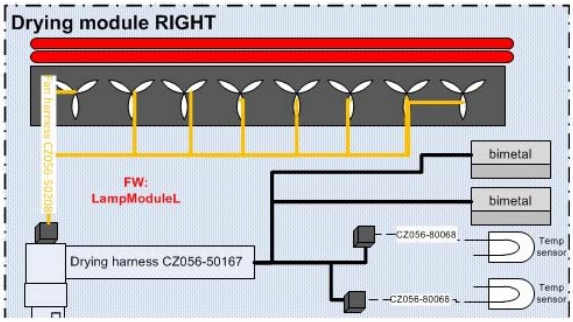
CZ056-50167 – Drying Harness.

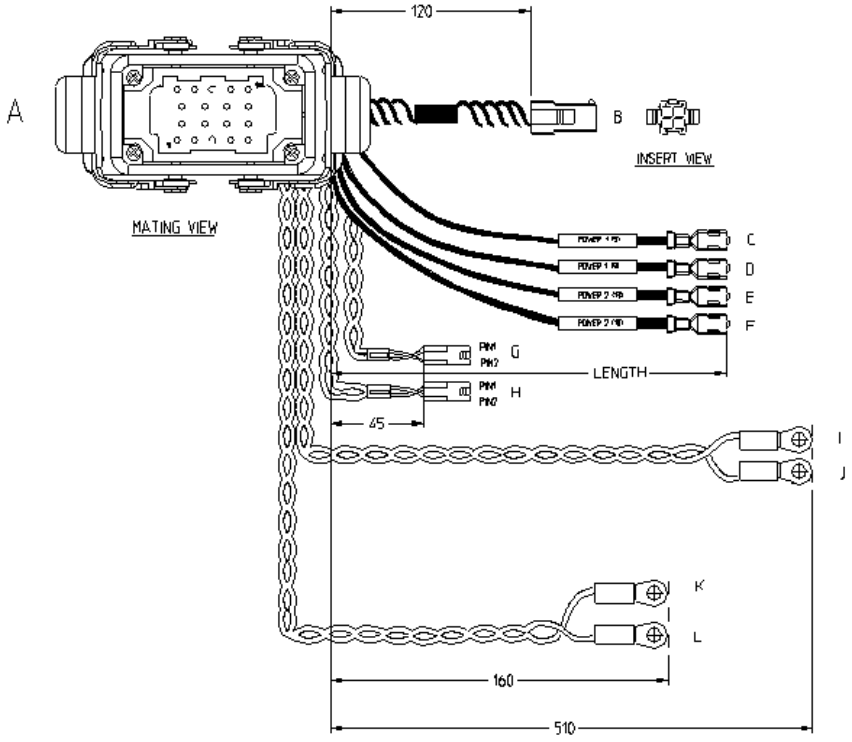
Subsystem: MEDIA DRYING. Quantity: 2 x printer.

Included in the following service parts:

- CZ056-67020 (Carriage assy SERV).
- CZ056-67028 (Drying module right SERV).
- CZ056-67029 (Drying module left SERV).







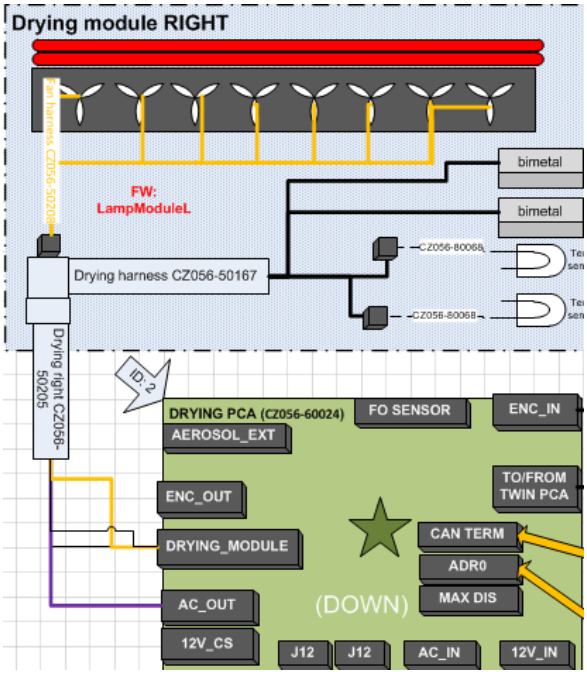
CZ056-50205 – Drying Right Module Cable. Drying Module Right to Drying PCA.

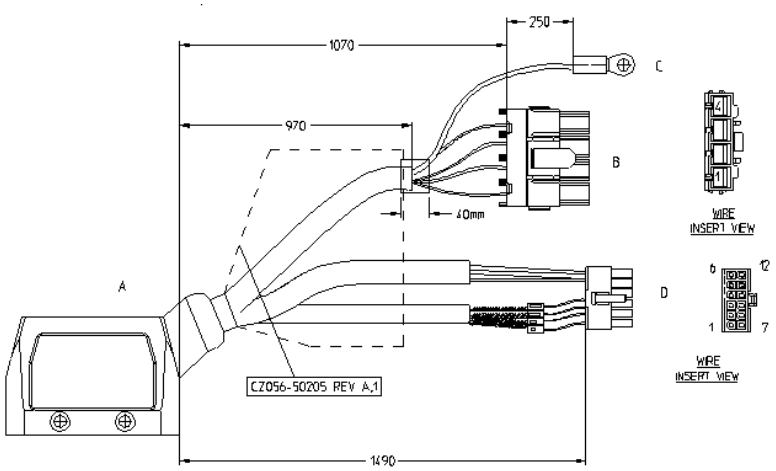
Subsystem: MEDIA DRYING. Quantity: 1 x printer.

Included in the following service parts:

CZ056-67020 (Carriage assy SERV).

CZ056-67026 (Drying cable right SERV).





CONNECTION CHART

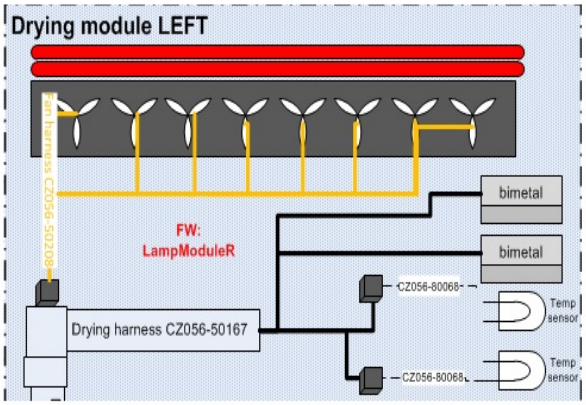
FROM	WIRE COLOR	TO	REMARK
A-1	WHITE 26AWG	D-7	PAIR WITH D-1
A-2	GREEN 18AWG	D-12	-
A-3	GREY 26AWG	D-9	PAIR WITH D-3
A-4	PINK 26AWG	D-3	PAIR WITH D-9
A-5	BLACK 1, 12AWG	B-1	-
A-6	BROWN 26AWG	D-1	PAIR WITH D-7
A-7	BLACK 18AWG	D-5	-
A-8	N/C	-	-
A-9	BLACK 2, 12AWG	B-2	-
A-10	YELLOW 26AWG	D-2	PAIR WITH D-8
A-11	WHITE 18AWG	D-6	-
A-12	N/C	-	-
A-13	BLACK 3, 12AWG	B-3	-
A-14	GRREN 26AWG	D-8	PAIR WITH D-2
A-15	RED 18AWG	D-11	-
A-16	BLUE 26AWG	D-10	PAIR WITH D-4
A-17	RED 26AWG	D-4	PAIR WITH D-10
A-18	BLACK 4, 12AWG	B-4	-
CHASIS	GREEN/YELLOW 12AWG	C	RING TERMINAL

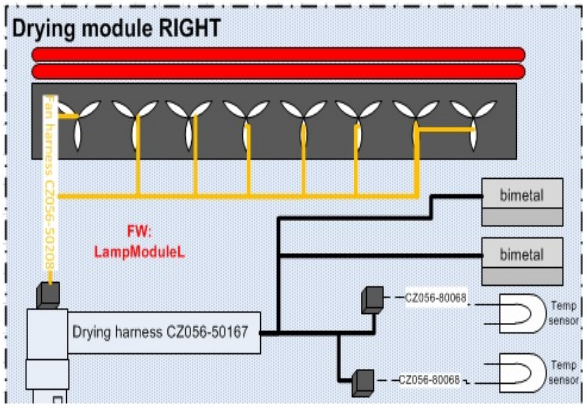
CZ056-50208 – Drying Fan Harness. Drying Harness to Drying Fans.

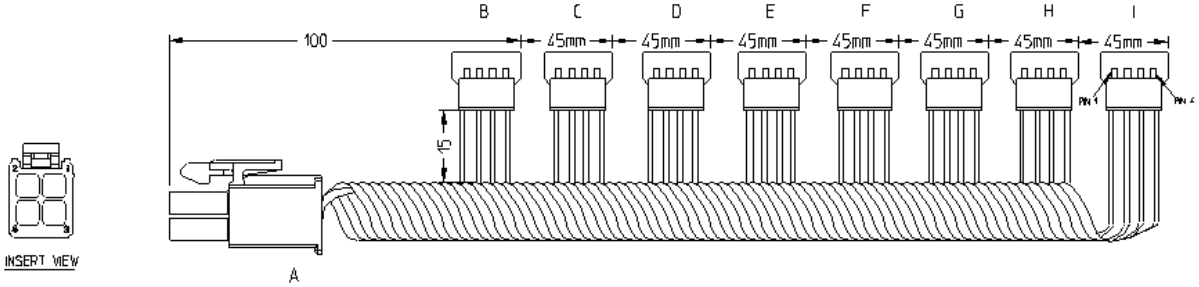
Subsystem: MEDIA DRYING. Quantity: 2 x printer.

Included in the following service parts:

- CZ056-67020 (Carriage assy SERV).
- CZ056-67023 (Drying fan case right SERV).
- CZ056-67024 (Drying fan case left SERV).
- CZ056-67028 (Drying module right SERV).
- CZ056-67029 (Drying module left SERV).
- CZ056-67310 (Service Maintenance Kit).







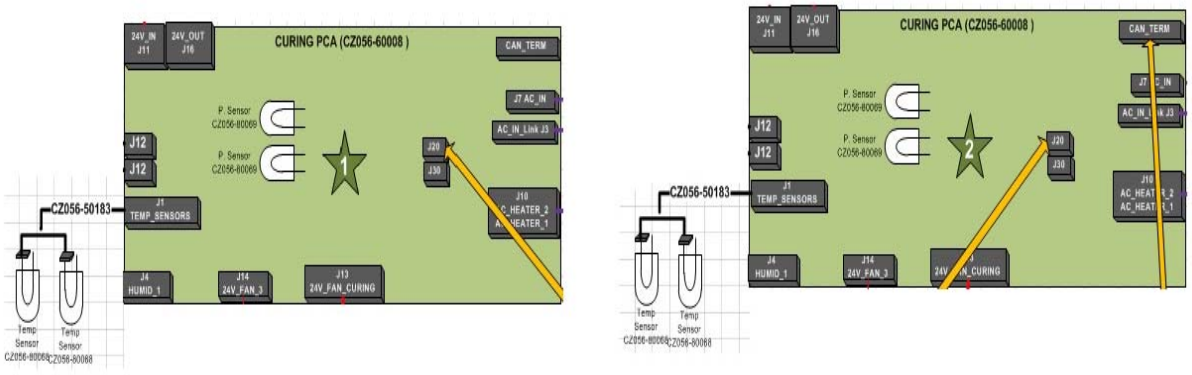
SPLICE CONNECTION CHART									
A	WIRE COLOR	B	C	D	E	F	G	H	I
PIN-1	BLACK 28AWG	PIN-1	PIN-1	PIN-1	PIN-1	PIN-1	PIN-1	PIN-1	PIN-1
PIN-2	RED 28AWG	PIN-2	PIN-2	PIN-2	PIN-2	PIN-2	PIN-2	PIN-2	PIN-2
PIN-3	BLUE 28AWG	PIN-3	PIN-3	PIN-3	PIN-3	PIN-3	PIN-3	PIN-3	PIN-3
PIN-4	YELLOW 28AWG	PIN-4	PIN-4	PIN-4	PIN-4	PIN-4	PIN-4	PIN-4	PIN-4

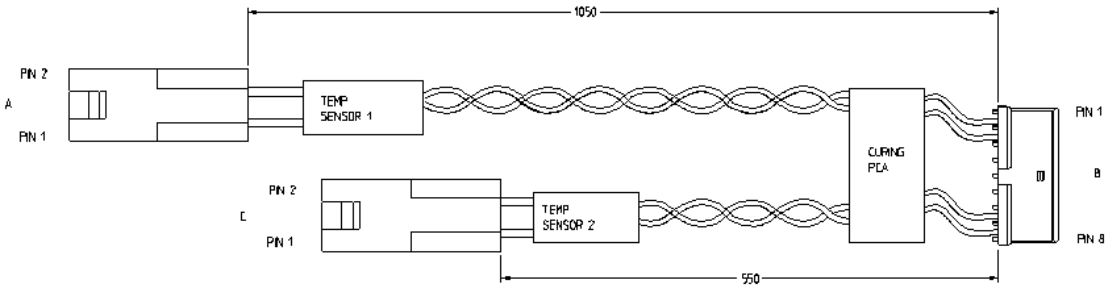
CZ056-50183 – Temp Extension Curing.

Subsystem: CURING. Quantity: 2 x printer.

Included in the following service parts:

- CZ056-67055 (Curing temperature sensor kit).
- CZ056-67056 (Curing left module SERV).
- CZ056-67057 (Curing right module SERV).
- CZ056-67058 (Curing general module SERV).
- CZ056-67223 (Curing assy SERV).
- CZ056-67392 (Extended Uptime kit for HP Latex).



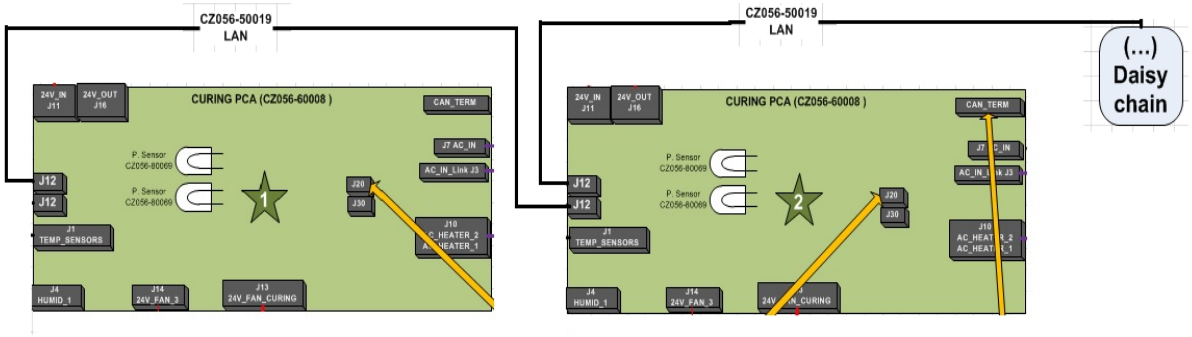


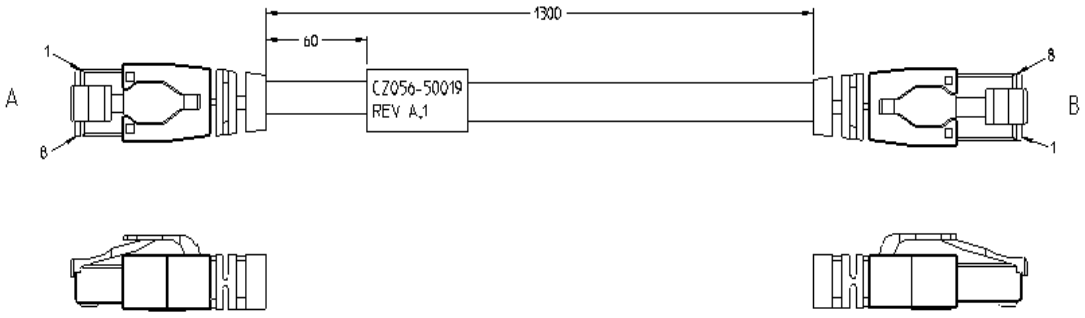
CZ056-50019 – Am80 LAN Curing PCA to Curing. Curing PCA to Curing PCA.

Subsystem: CURING. Quantity: 2 x printer.

Included in the following service parts:

- CZ056-67223 (Curing assy SERV).
- CZ056-67314 (Curing cables KIT SERV).





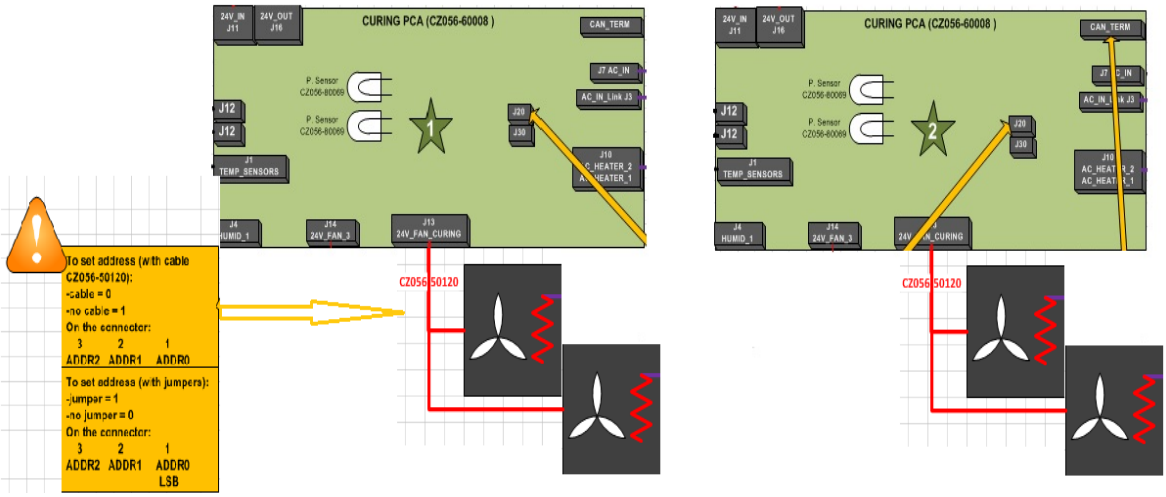
CONNECTION TABLE		
A	B	COLOR
1	1	WHITE/ORANGE
2	2	ORANGE
3	3	WHITE/GREEN
4	4	BLUE
5	5	WHITE/BLUE
6	6	GREEEN
7	7	WHITE/BROWN
8	8	BROWN

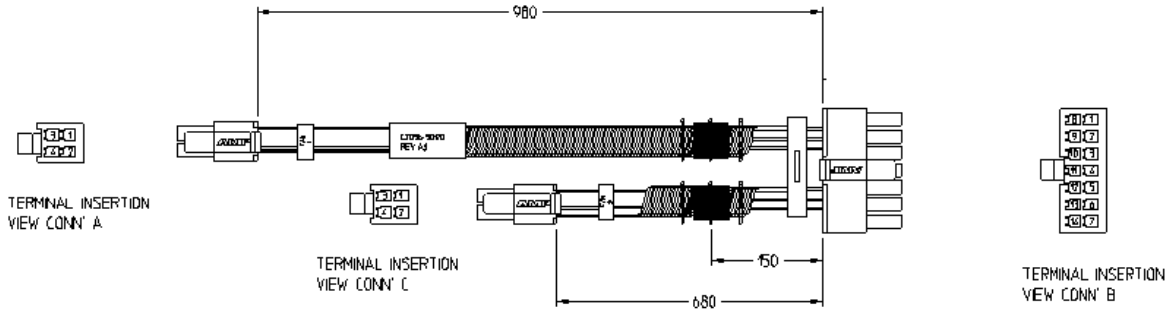
CZ056-50120 –Fan Cable. Curing PCA to Fan Assy.

Subsystem: CURING. Quantity: 2 x printer.

Included in the following service parts:

- CZ056-67056 (Curing left mdule SERV).
- CZ056-67057 (Curing right module SERV).
- CZ056-67058 (Curing general module SERV).
- CZ056-67223 (Curing assy SERV).
- CZ056-67314 (Curing cables KIT SERV).



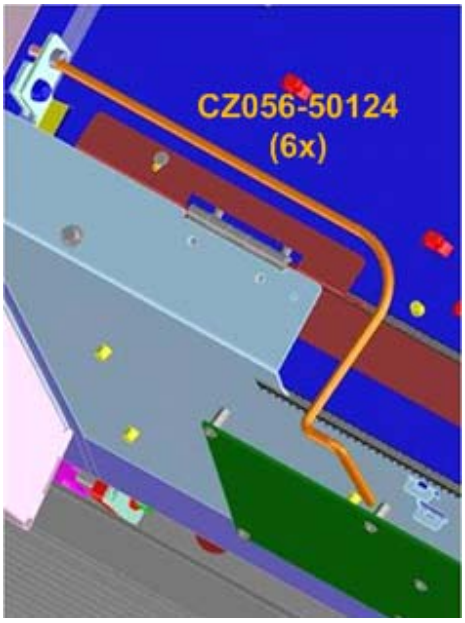


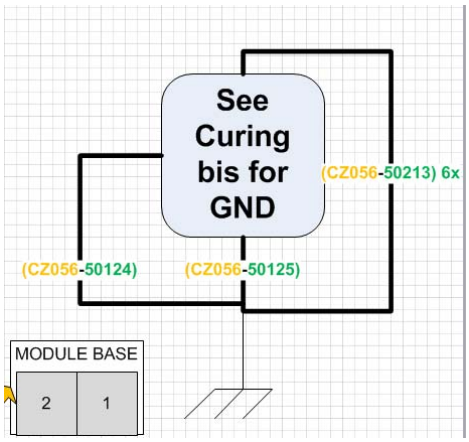
FROM	COLOR	TO	REMARKS
A-1	BLACK (3)	B-4	TWIST WIRE WITH 1 TURNS/25mm
A-2	RED (4)	B-5	
A-3	BLUE (5)	B-11	
A-4	YELLOW(6)	B-12	
C-1	BLACK (3)	B-6	TWIST WIRE WITH 1 TURNS/25mm
C-2	RED (4)	B-7	
C-3	BLUE (5)	B-13	
C-4	YELLOW(6)	B-14	
B-1	BROWN (7)	B-8	JUMPER
B-2	RED (4)	B-9	JUMPER
B-3	ORANGE(8)	B-10	JUMPER

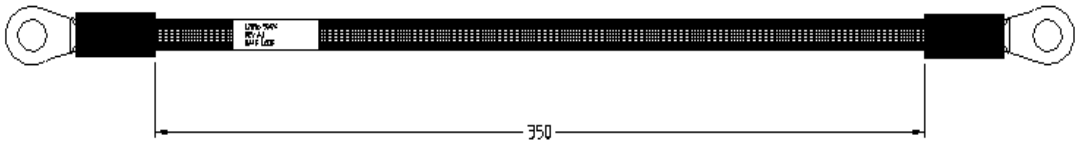
CZ056-50124 – Ground Strip. Curing PCA to Scan Beam.
Subsystem: CURING. Quantity: 6 x printer.

Included in the following service parts:

- CZ056-67056 (Curing left module SERV).
- CZ056-67057 (Curing right module SERV).
- CZ056-67058 (Curing general module SERV).
- CZ056-67223 (Curing assy SERV).
- CZ056-67314 (Curing cables KIT SERV).





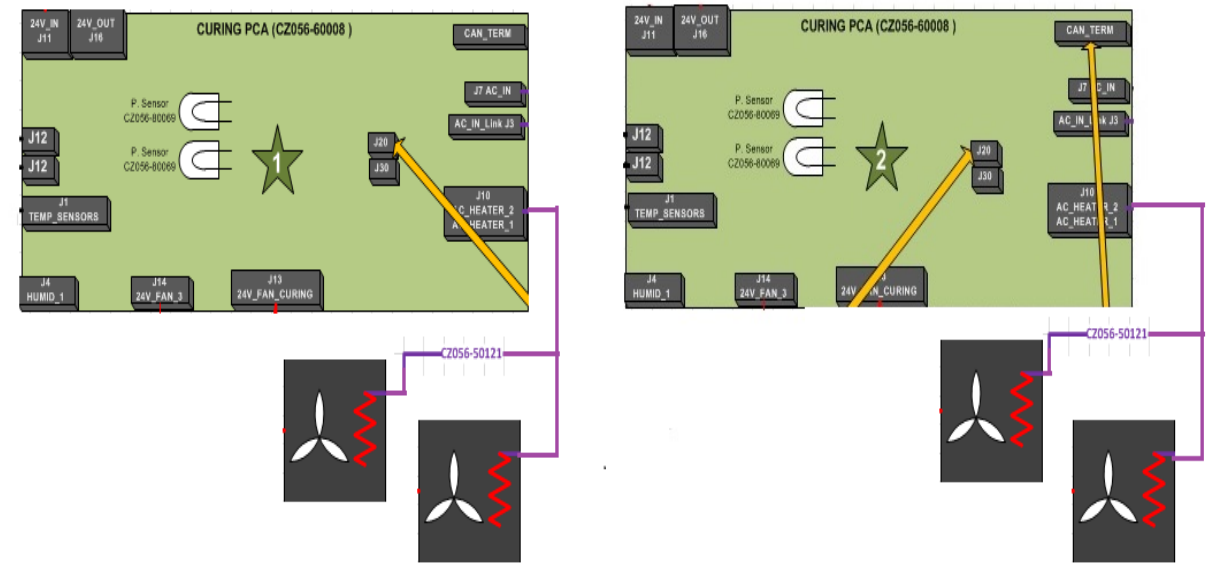


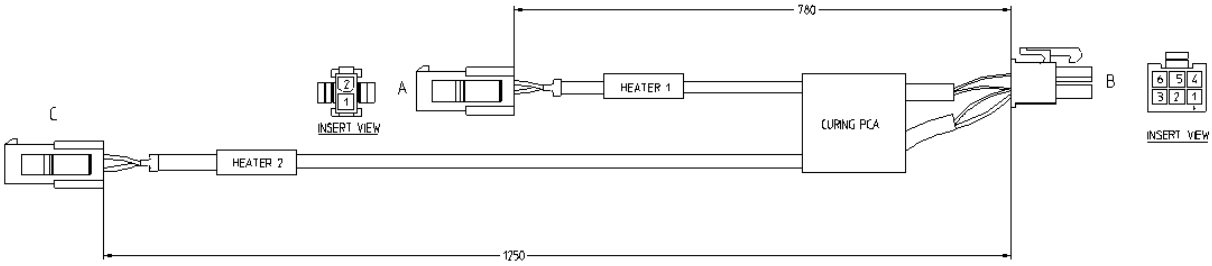
CZ056-50121 – Heater Cable. Curing PCA to Heater Assy.

Subsystem: CURING. Quantity: 2 x printer.

Included in the following service parts:

- CZ056-67056 (Curing left module SERV).
- CZ056-67057 (Curing right module SERV).
- CZ056-67058 (Curing general module SERV).
- CZ056-67223 (Curing assy SERV).
- CZ056-67314 (Curing cables KIT SERV).





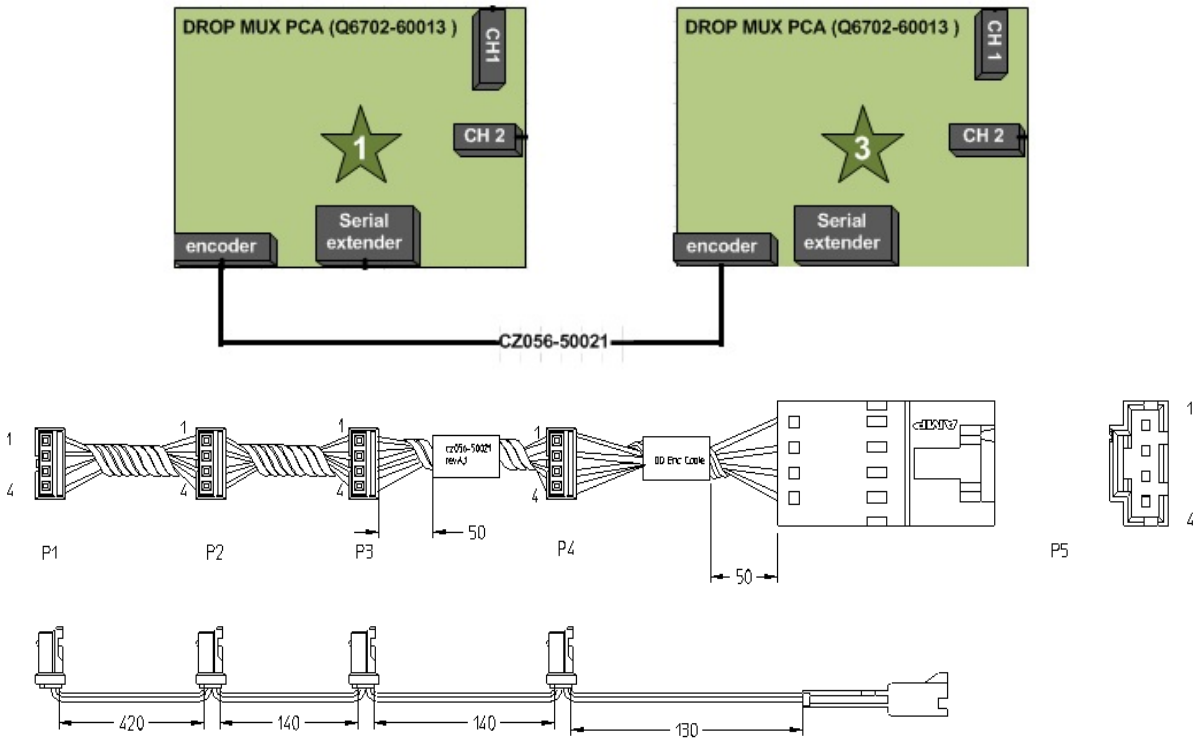
FROM	COLOR	TO
A-1	BROWN	B-3
A-2	BLUE	B-6
C-1	BROWN	B-1
C-2	BLUE	B-4
-	N/C	B-2
-	N/C	B-5

CZ056-50021 – DD Daisy Chain Cable. DD Encoder Cable to DD Mux PCA.

Subsystem: SERVICE STATION. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67041 (SVS drop detector module SERV).
- CZ056-67042 (SVS assy SERV).
- CZ056-67043 (SVS DD cable KIT SERV).



WIRING DIAGRAM

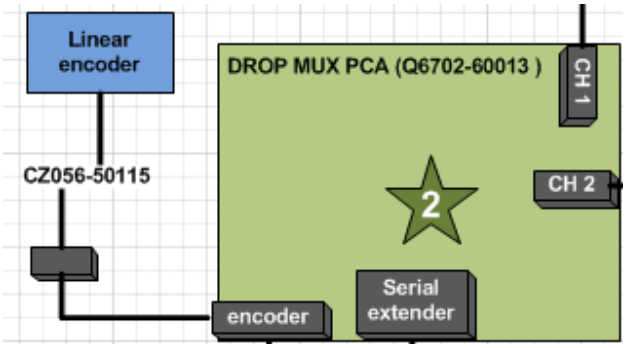
P1	WIRE COLOR	P2	WIRE COLOR	P3	WIRE COLOR	P4	WIRE COLOR	P5
1	BLACK	1	BLACK	1	BLACK	1	BLACK	1
2	BLUE	2	BLUE	2	BLUE	2	BLUE	2
N/C	---	NC	NC	NC	NC	3	RED	3
4	YELLOW	4	YELLOW	4	YELLOW	4	YELLOW	4

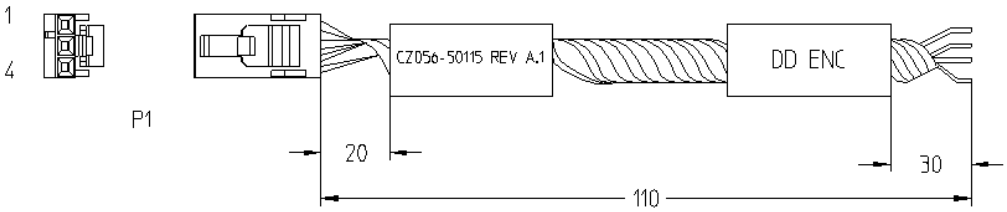
CZ056-50115 – DD Encoder Cable. DD Encoder to DD Daisy Chain Cable.

Subsystem: SERVICE STATION. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67034 (SVS encoder sensor and support).
- CZ056-67041 (SVS drop detector module SERV).
- CZ056-67042 (SVS assy SERV).





WIRING DIAGRAM

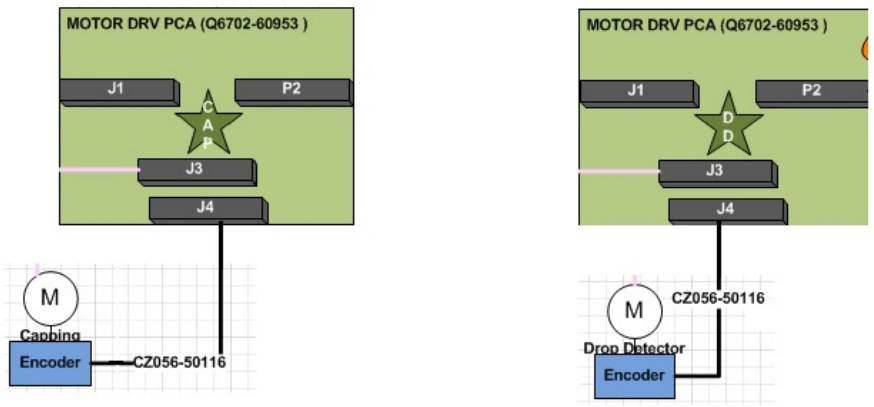
P1	WIRE COLOR	TO
1	BLACK	N/C
2	BLUE	N/C
3	RED	N/C
4	YELLOW	N/C

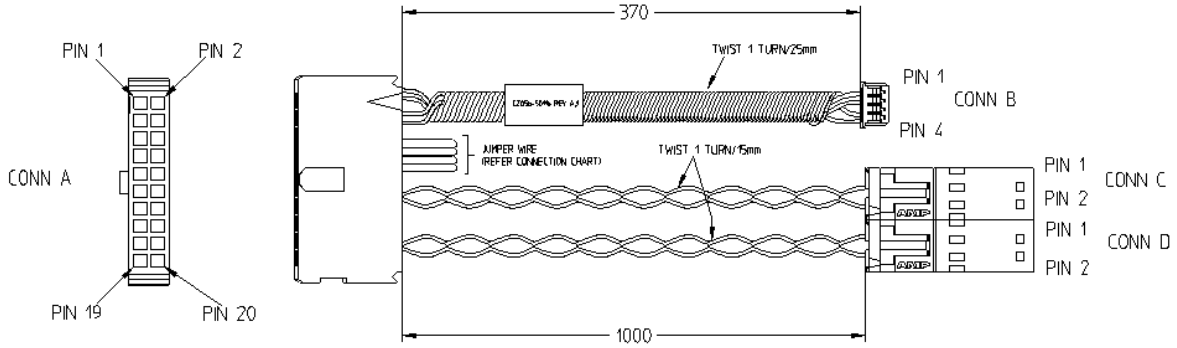
CZ056-50116 – Capping Motor Encoder Cable. PCA_Motor drv.J4 to Motor 17W.Encoder.

Subsystem: SERVICE STATION. Quantity: 2 x printer.

Included in the following service parts:

- CZ056-67042 (SVS assy SERV).
- CZ056-67312 (SVS cables KIT SERV).
- CZ056-67313 (Web Wipe cables KIT SERV).





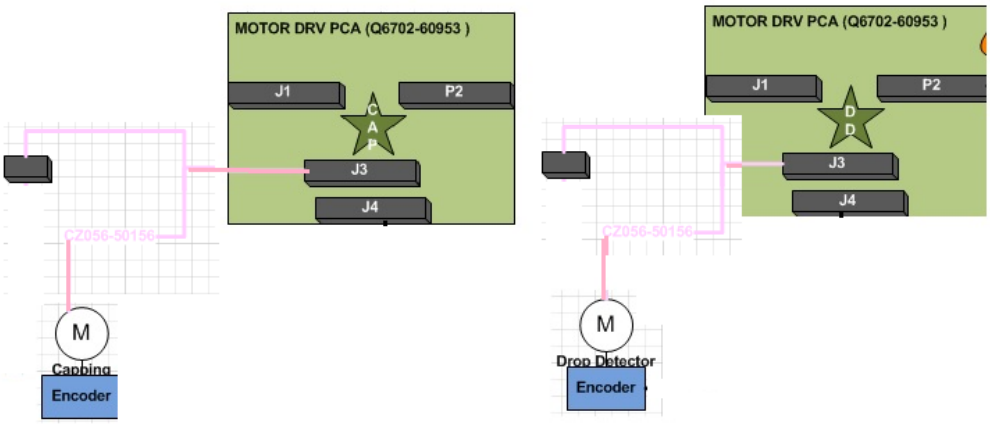
CONNECTION CHART

FROM	COLOR	TO	
A-1	BLACK 26AWG	B-1	
A-2	RED 26 AWG	B-3	TWISTED
A-4	YELLOW 26 AWG	B-2	TOGETHER
A-6	BLUE 26 AWG	B-4	(1 TURN = 25mm)
A-3	NO CONNECTED		
A-5	NO CONNECTED		
A-7	NO CONNECTED		
A-8	NO CONNECTED		
A-9	BROWN 24 AWG	A-10	
A-11	RED 24 AWG	A-12	
A-13	ORANGE 24 AWG	A-14	
A-15	BLUE 24 AWG	A-16	
A-17	BLACK 24 AWG	C-1	TWISTED
A-18	VIOLET 24 AWG	C-2	PAIR
A-19	BLACK 24 AWG	D-1	TWISTED
A-20	GREY 24 AWG	D-2	PAIR
E-1	BLACK 24 AWG	F-C	
E-2	VIOLET 24 AWG	F-NO	

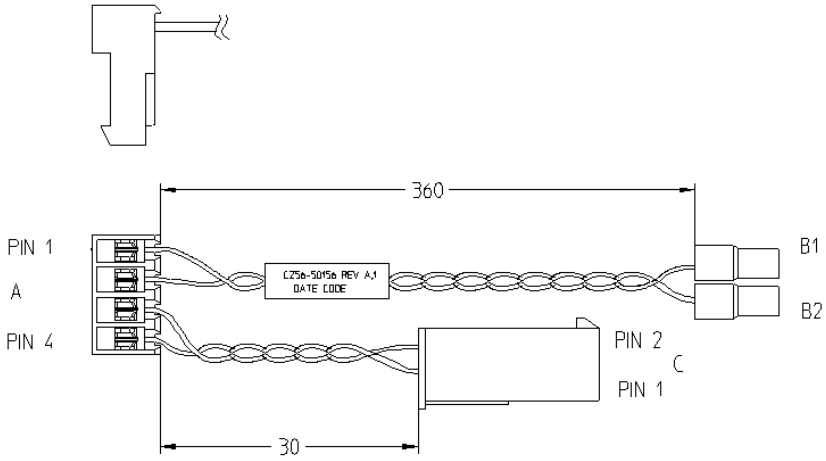
CZ056-50156 – Capping Power in T Cable to DC Rail-PCA_Motor drv.J3.
Subsystem: SERVICE STATION. Quantity: 2 x printer.

Included in the following service parts:

- CZ056-67042 (SVS assy SERV).
- CZ056-67312 (SVS cables KIT SERV).
- CZ056-67313 (Web Wipe cables KIT SERV).



SIDE VIEW



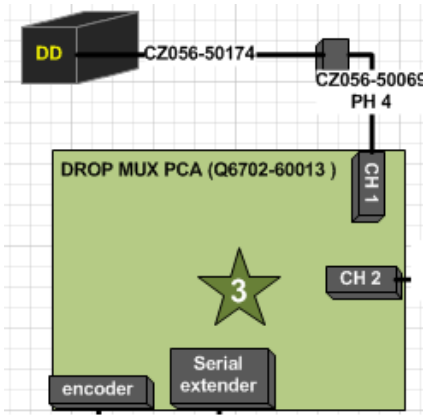
FROM	COLOR	TO	REMARKS
A-1	RED	B-1	TWIST WIRE
A-2	BLACK	B-2	1 TURN/15MM
A-3	RED	C-1	TWIST WIRE
A-4	BLACK	C-2	1 TURN/15MM

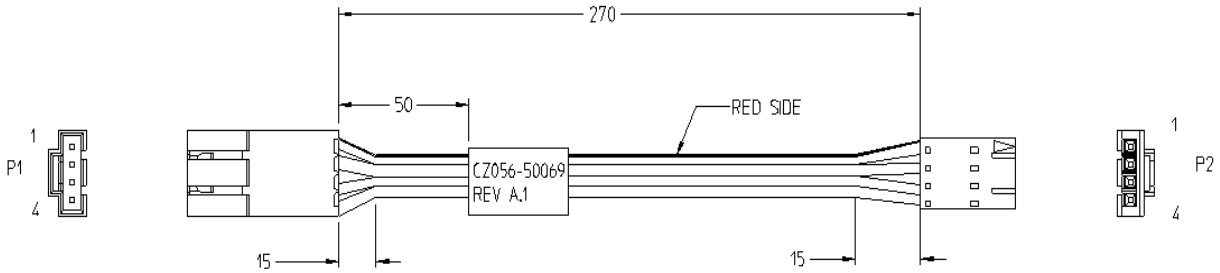
CZ056-50069 – DD Extensor. (DD Connector) DD Cable Assy to DD Mux PCA.

Subsystem: SERVICE STATION. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67041 (SVS drop detector module SERV).
- CZ056-67042 (SVS assy SERV).
- CZ056-67043 (SVS DD cable KIT SERV).





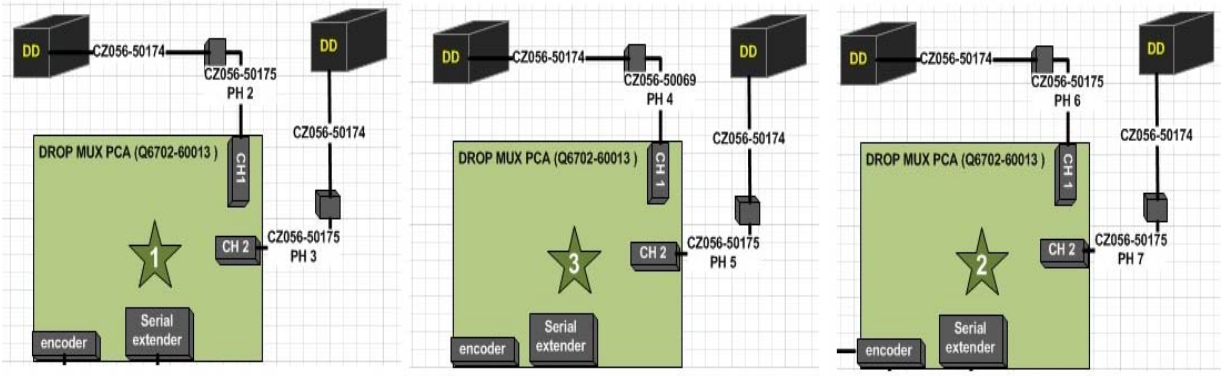
FROM	TO
P1-1	P2-1
P1-2	P2-2
P1-3	P2-3
P1-4	P2-4

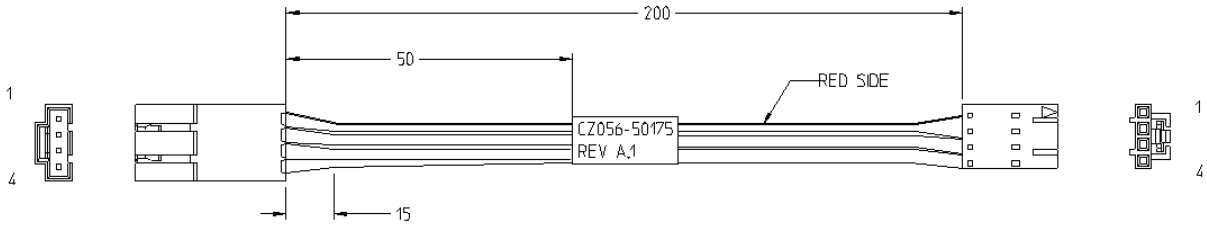
CZ056-50175 – DD Extensor Short. (DD Connector) DD Cable Assy to DD Mux PCA.

Subsystem: SERVICE STATION. Quantity: 5 x printer.

Included in the following service parts:

- CZ056-67041 (SVS drop detector module SERV).
- CZ056-67042 (SVS assy SERV).
- CZ056-67043 (SVS DD cable KIT SERV).





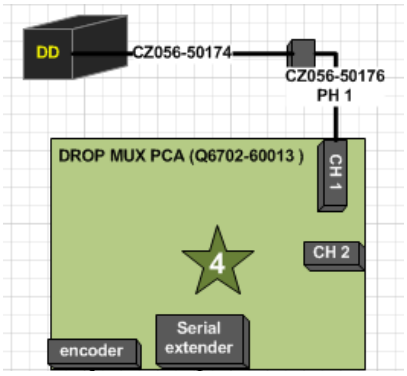
FROM	TO
P1-1	P2-1
P1-2	P2-2
P1-3	P2-3
P1-4	P2-4

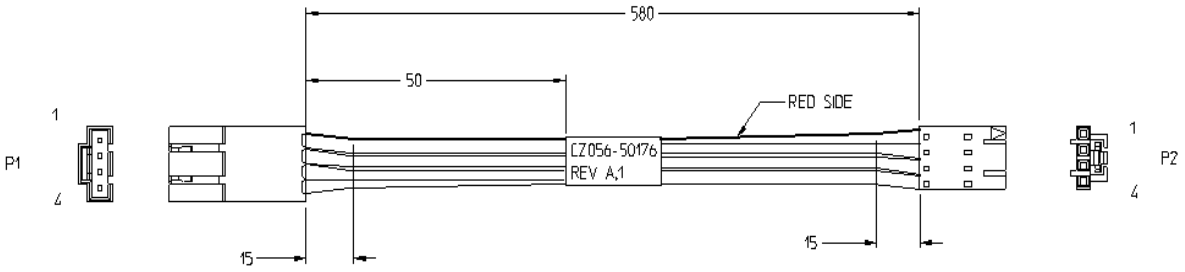
CZ056-50176 – DD Extensor Long. (DD Connector) DD Cable Assy to DD Mux PCA.

Subsystem: SERVICE STATION. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67041 (SVS drop detector module SERV).
- CZ056-67042 (SVS assy SERV).
- CZ056-67043 (SVS DD cable KIT SERV).



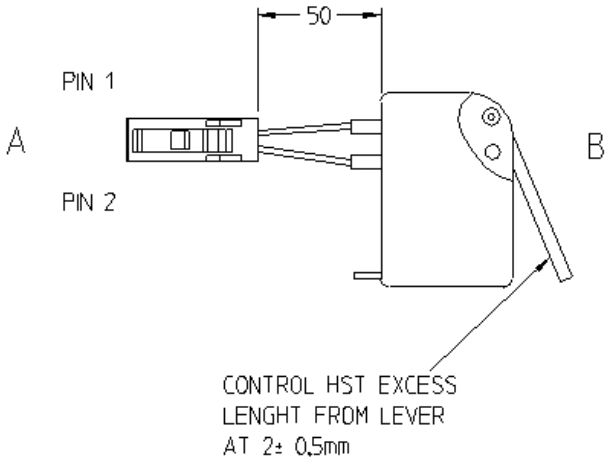


FROM	TO
P1-1	P2-1
P1-2	P2-2
P1-3	P2-3
P1-4	P2-4

CZ056-60301 – Bump Sensor Assy.
Subsystem: SERVICE STATION. Quantity: 2 x printer.

Included in the following service parts:

- CZ056-67033 (SVS switch SERV).
- CZ056-67042 (SVS assy SERV).
- CZ056-67392 (Extended Uptime kit for HP Lat).



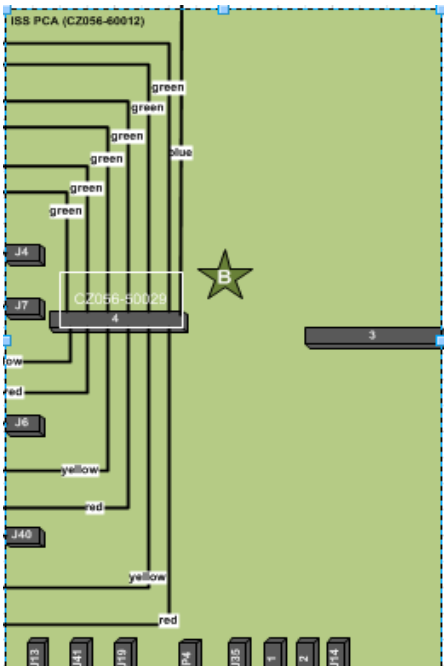
CONNECTION CHART		
FROM	TO	WIRE
A-1	B-C	WIRE UL1061 24AWG RED ⑥
A-2	B-NO	WIRE UL1061 24AWG BLACK ⑦

CZ056-50029 – Ism Actuators Cable. ISS PCA n to Ink Valves & UI PCA n.

Subsystem: INK DELIVERY SYSTEM. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67075 (ISM cables KIT SERV).

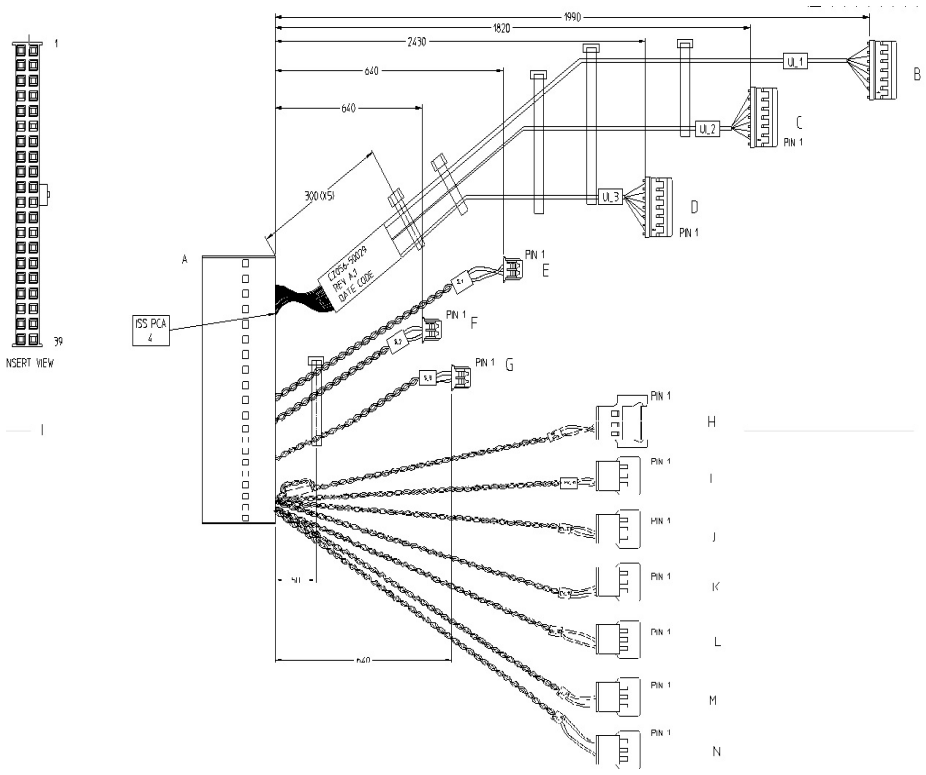


CONNECTION CHART

FROM	WIRE COLOUR	TO	REMARKS
A-39	26AWG YELLOW	B-1	
A-40	26AWG YELLOW	B-2	
A-37	26AWG YELLOW	B-3	TWISTED TOGETHER
A-38	26AWG YELLOW	B-4	
A-35	26AWG YELLOW	B-5	
A-36	26AWG YELLOW	B-6	
A-33	26AWG YELLOW	C-1	
A-34	26AWG YELLOW	C-2	
A-31	26AWG YELLOW	C-3	TWISTED TOGETHER
A-32	26AWG YELLOW	C-4	
A-29	26AWG YELLOW	C-5	
A-30	26AWG YELLOW	C-6	
A-27	26AWG YELLOW	D-1	
A-28	26AWG YELLOW	D-2	
A-25	26AWG YELLOW	D-3	TWISTED TOGETHER
A-26	26AWG YELLOW	D-4	
A-23	26AWG YELLOW	D-5	
A-24	26AWG YELLOW	D-6	
A-22	26AWG RED	E-1	TWISTED PAIR
A-21	26AWG RED	E-2	
A-20	26AWG RED	F-1	TWISTED PAIR
A-19	26AWG RED	F-2	
A-18	26AWG RED	G-1	TWISTED PAIR
A-17	26AWG RED	G-2	
A-16	26AWG BLUE	H-1	TWISTED PAIR & 1
A-15	26AWG BLUE	H-3	LOOP THROUGH FERRITE
A-12	26AWG GREEN	I-1	TWISTED PAIR
A-11	26AWG GREEN	I-2	
A-10	26AWG GREEN	J-1	TWISTED PAIR
A-9	26AWG GREEN	J-2	
A-8	26AWG GREEN	K-1	TWISTED PAIR
A-7	26AWG GREEN	K-2	
A-6	26AWG GREEN	L-1	TWISTED PAIR
A-5	26AWG GREEN	L-2	
A-4	26AWG GREEN	M-1	TWISTED PAIR
A-3	26AWG GREEN	M-2	
A-2	26AWG GREEN	N-1	TWISTED PAIR
A-1	26AWG GREEN	N-2	

LENGTH CHART

CONNECTOR	LENGHT
H	1520
I	570
J	570
K	860
L	565
M	560
N	570

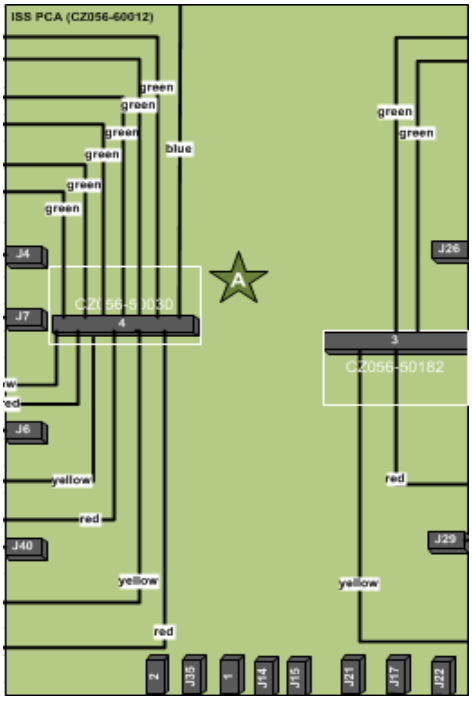


CZ056-50030 – Ism Actuators Cable Lite. ISS PCA n to Ink Valves & UI PCA n.

Subsystem: INK DELIVERY SYSTEM. Quantity: 1 x printer.

Included in the following service parts:

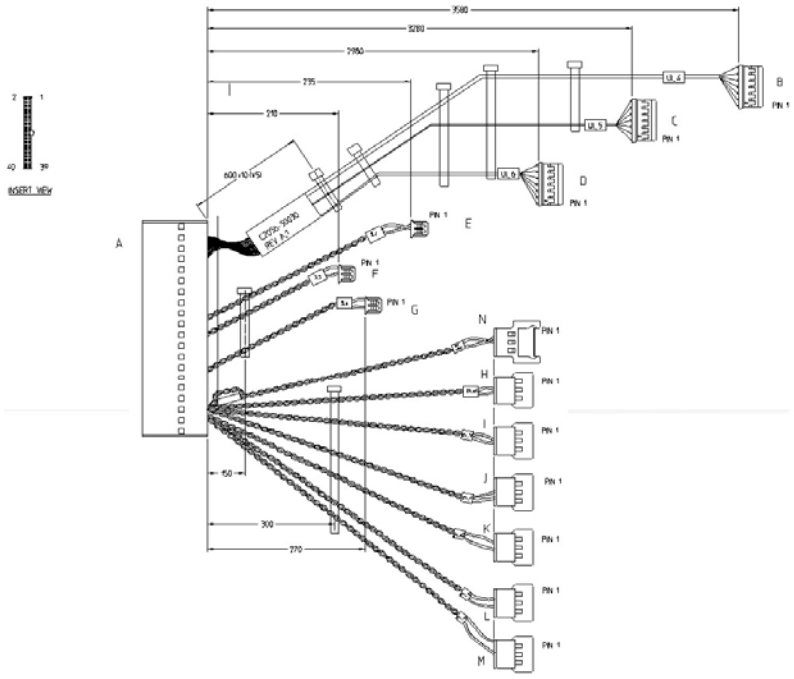
- CZ056-67075 (ISM cables KIT SERV).



FROM	WIRE COLOUR	TO	REMARKS
A-39	26AWG YELLOW	B-1	
A-40	26AWG YELLOW	B-2	
A-37	26AWG YELLOW	B-3	TWISTED TOGETHER
A-38	26AWG YELLOW	B-4	
A-35	26AWG YELLOW	B-5	
A-36	26AWG YELLOW	B-6	
A-33	26AWG YELLOW	C-1	
A-34	26AWG YELLOW	C-2	
A-31	26AWG YELLOW	C-3	TWISTED TOGETHER
A-32	26AWG YELLOW	C-4	
A-29	26AWG YELLOW	C-5	
A-30	26AWG YELLOW	C-6	
A-27	26AWG YELLOW	D-1	
A-28	26AWG YELLOW	D-2	
A-25	26AWG YELLOW	D-3	TWISTED TOGETHER
A-26	26AWG YELLOW	D-4	
A-23	26AWG YELLOW	D-5	
A-24	26AWG YELLOW	D-6	
A-22	26AWG RED	E-1	TWISTED PAIR
A-21	26AWG RED	E-2	
A-20	26AWG RED	F-1	TWISTED PAIR
A-19	26AWG RED	F-2	
A-18	26AWG RED	G-1	TWISTED PAIR
A-17	26AWG RED	G-2	
A-16	26AWG BLUE	N-1	TWISTED PAIR & 1 LOOP FERRITE
A-15	26AWG BLUE	N-3	
A-12	26AWG GREEN	H-1	TWISTED PAIR
A-11	26AWG GREEN	H-2	
A-10	26AWG GREEN	I-1	TWISTED PAIR
A-9	26AWG GREEN	I-2	
A-8	26AWG GREEN	J-1	TWISTED PAIR
A-7	26AWG GREEN	J-2	
A-6	26AWG GREEN	K-1	TWISTED PAIR
A-5	26AWG GREEN	K-2	
A-4	26AWG GREEN	L-1	TWISTED PAIR
A-3	26AWG GREEN	L-2	
A-2	26AWG GREEN	M-1	TWISTED PAIR
A-1	26AWG GREEN	M-2	

LENGTH CHART

CONNECTOR	LENGHT
H	615
I	610
J	615
K	610
L	600
M	605
N	1770

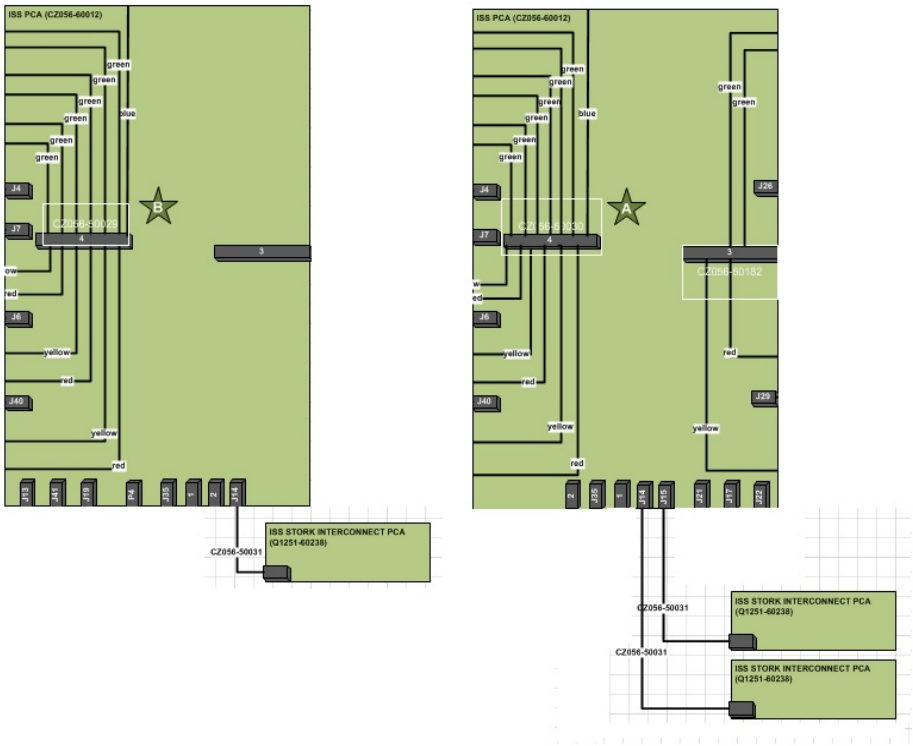


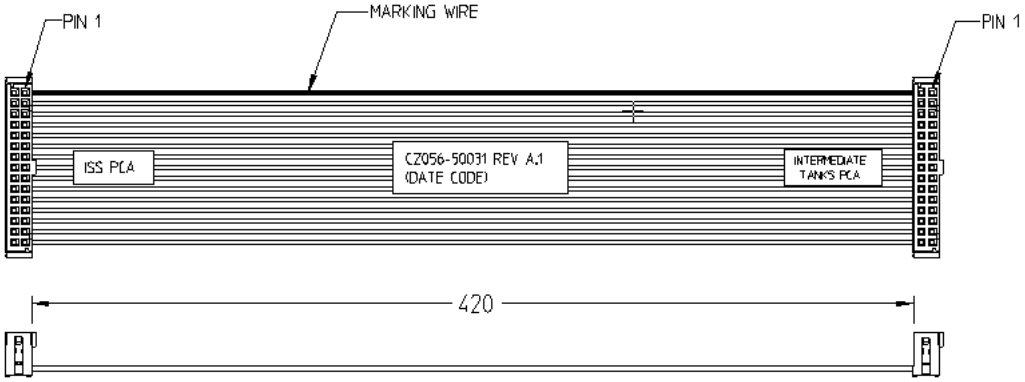
CZ056-50031 – Intermediate Tanks Cable. ISS PCA to ISS PCA.

Subsystem: INK DELIVERY SYSTEM. Quantity: 3 x printer.

Included in the following service parts:

- CZ056-67075 (ISM cables KIT SERV).
- CZ056-67078 (ISM ink circuit module SERV).



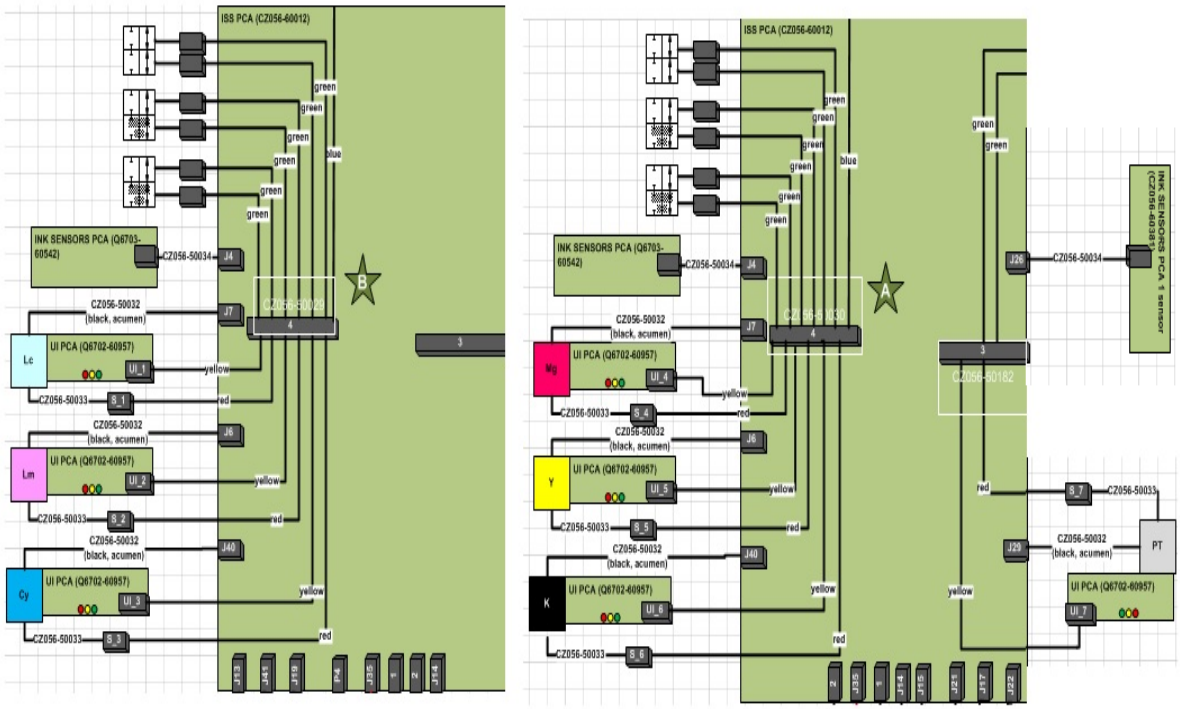


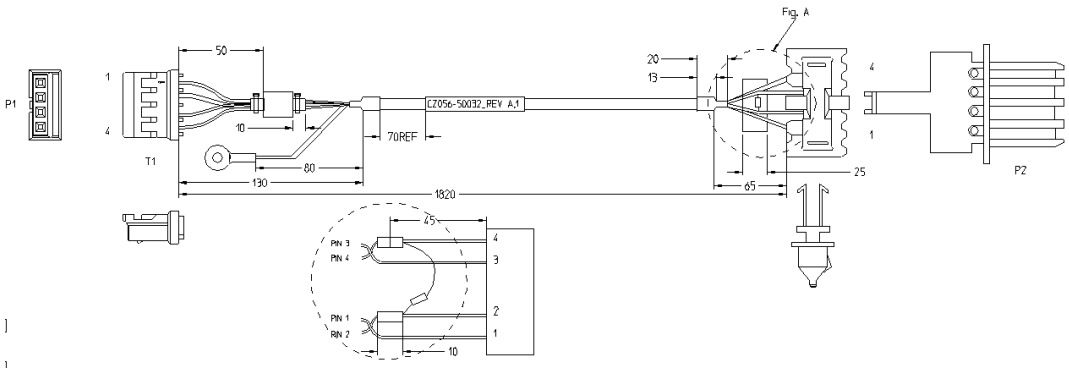
CZ056-50032 – Ink Cartridge Cable. UI PCA to ISS PCA.

Subsystem: INK DELIVERY SYSTEM. Quantity: 7 x printer.

Included in the following service parts:

- CZ056-67299 (ISM K cartridge connector w tu).
- CZ056-67300 (ISM Y cartridge connector w tu).
- CZ056-67301 (ISM C cartridge connector w tu).
- CZ056-67302 (ISM M cartridge connector w tu).
- CZ056-67303 (ISM LC cartridge connector w t).
- CZ056-67304 (ISM LM cartridge connector w t).
- CZ056-67305 (ISM PT cartridge connector w t).





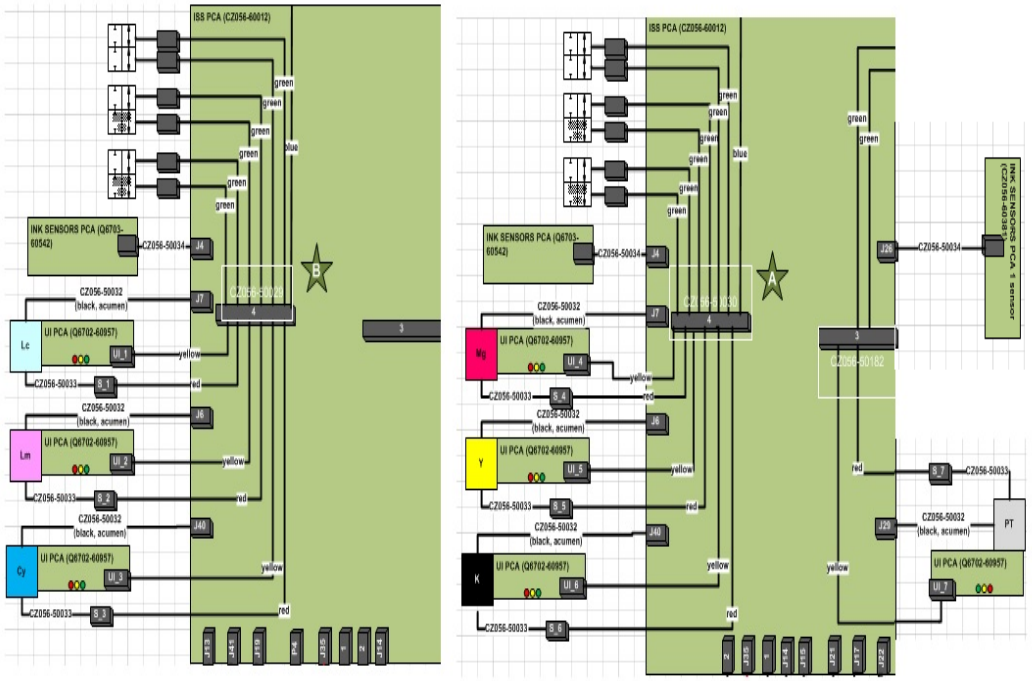
WIRING DIAGRAM			
FROM	WIRE COLOR		TO
P1-1	TWIST PAIR 1	BROWN	P2-1
P1-2		BROWN/WHITE	P2-2
P1-3	TWIST PAIR 2	BLACK	P2-3
P1-4		BLACK/WHITE	P2-4
T1	DRAIN+BRAID		NC

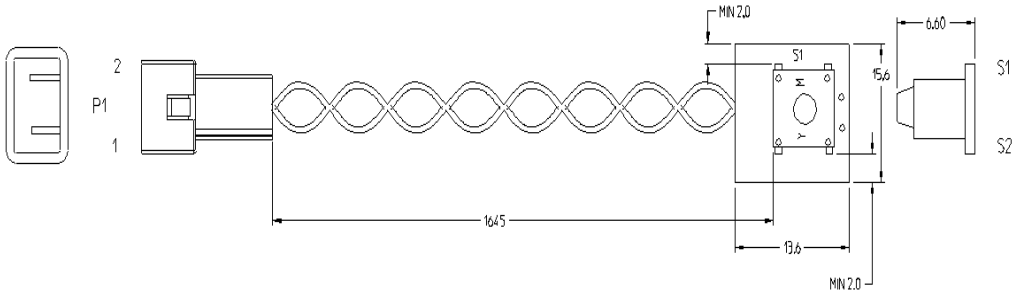
CZ056-50033 – Supply Engagement Cable. ISS PCA to Ink Supply Connector.

Subsystem: INK DELIVERY SYSTEM. Quantity: 7 x printer.

Included in the following service parts:

- CZ056-67299 (ISM K cartridge connector w tu).
- CZ056-67300 (ISM Y cartridge connector w tu).
- CZ056-67301 (ISM C cartridge connector w tu).
- CZ056-67302 (ISM M cartridge connector w tu).
- CZ056-67303 (ISM LC cartridge connector w t).
- CZ056-67304 (ISM LM cartridge connector w t).
- CZ056-67305 (ISM PT cartridge connector w t) .





WIRING DIAGRAM		
FROM	WIRE DESCRIPTION	TO
P1-1	RED	S1
P1-2	BLACK	S2

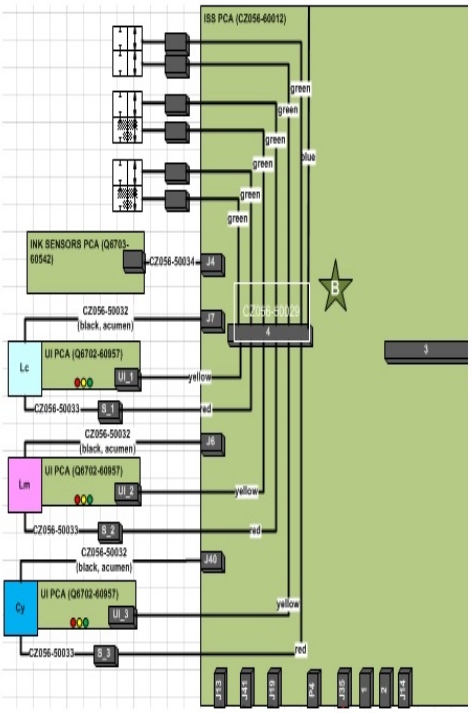


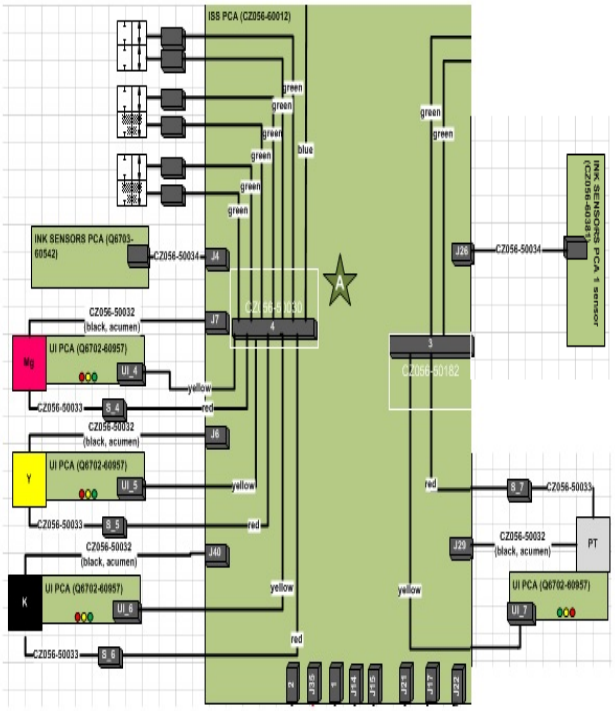
CZ056-50034 – Ink Sensors Cable. Ink Sensors PCA to ISS PCA.

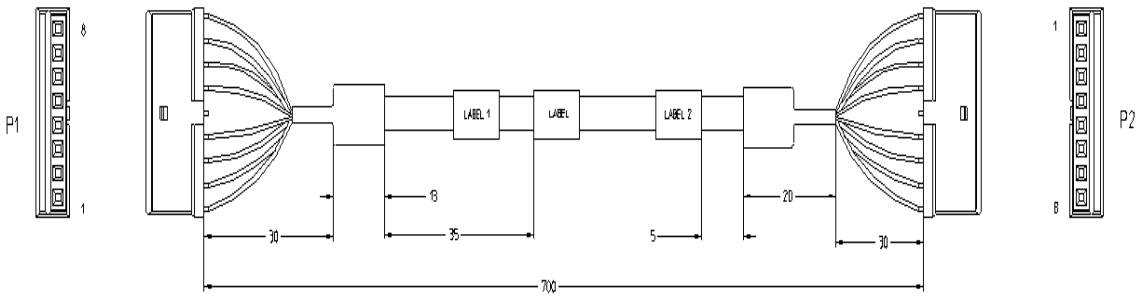
Subsystem: INK DELIVERY SYSTEM. Quantity: 3 x printer.

Included in the following service parts:

- CZ056-67070 (ISM pressure sensor assy SERV).
- CZ056-67392 (Extended Uptime kit for HP Latex).







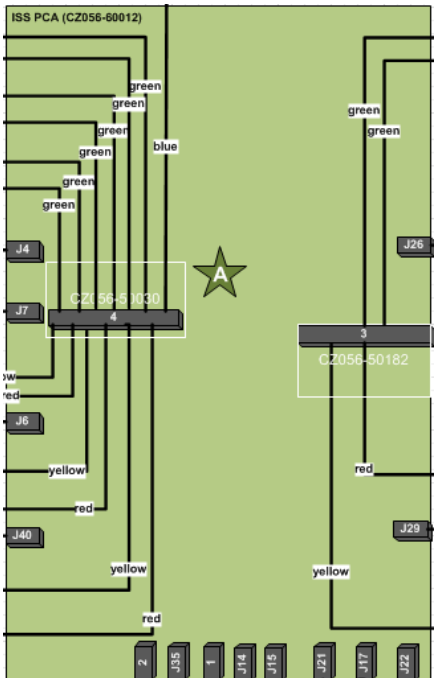
WIRING DIAGRAM			
FROM	WIRE COLOR		TO
P1-1	TWIST PAIR 1	BLACK	P2-1
P1-2		YELLOW	P2-2
P1-3	TWIST PAIR 1	BROWN	P2-3
P1-4		WHITE	P2-4
P1-5	TWIST PAIR 1	RED	P2-5
P1-6		GREEN	P2-6
P1-7	TWIST PAIR 1	ORANGE	P2-7
P1-8		BLUE	P2-8
P1-1	DRAIN+SHIELD		P2-1

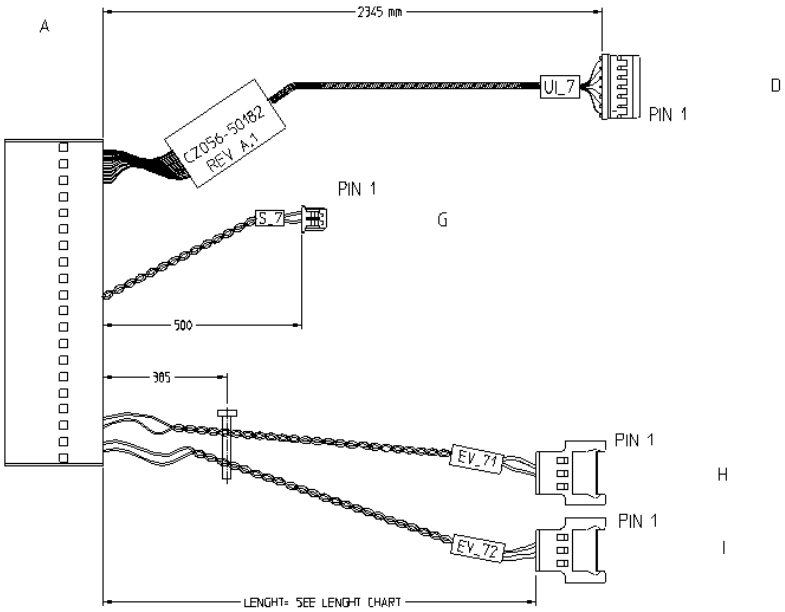
CZ056-50182 – Ism Actuators Cable 3. ISS PCA n to Ink Valves & UI PCA n.

Subsystem: INK DELIVERY SYSTEM. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67075 (ISM cables KIT SERV).





CONNECTION CHART			
FROM	WIRE COLOUR	TO	REMARKS
A-39	26AWG YELLOW	D-1	TWISTED TOGETHER
A-40	26AWG YELLOW	D-2	
A-37	26AWG YELLOW	D-3	
A-38	26AWG YELLOW	D-4	
A-35	26AWG YELLOW	D-5	
A-36	26AWG YELLOW	D-6	
A-22	26AWG RED	G-1	TWISTED PAIR
A-21	26AWG RED	G-2	
A-8	26AWG GREEN	H-1	TWISTED PAIR
A-7	26AWG GREEN	H-2	
A-2	26AWG GREEN	I-1	TWISTED PAIR
A-1	26AWG GREEN	I-2	

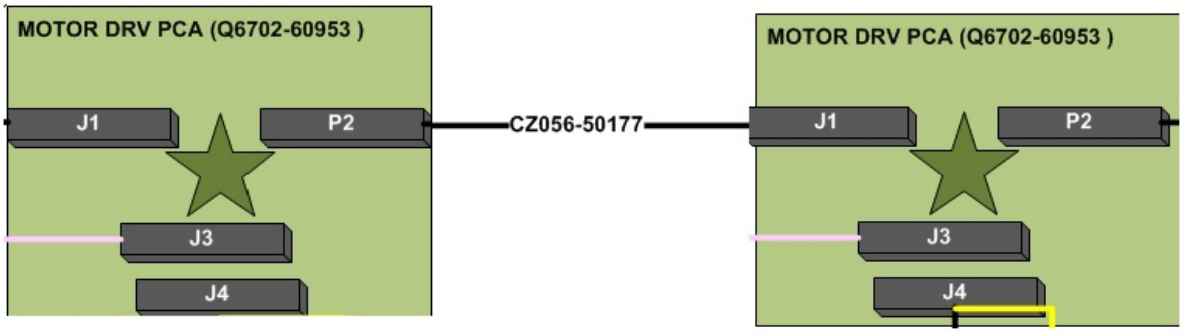
LENGTH CHART	
CONNECTOR	LENGHT
H	570 mm
I	565 mm

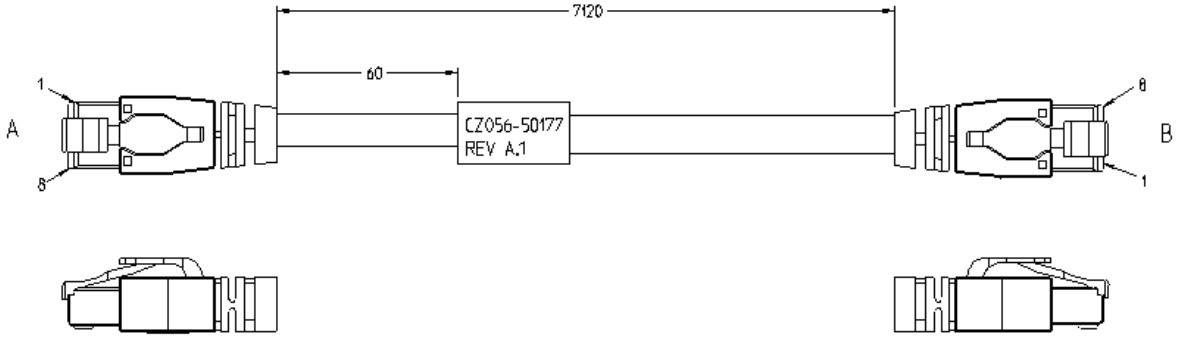
CZ056-50177 – Long PPS Data Bridge Cable. PCA_Motor drv.J1 to PCA_Motor drv.J1.

Subsystem: PPS. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67068 (PPS power cables set SERV).





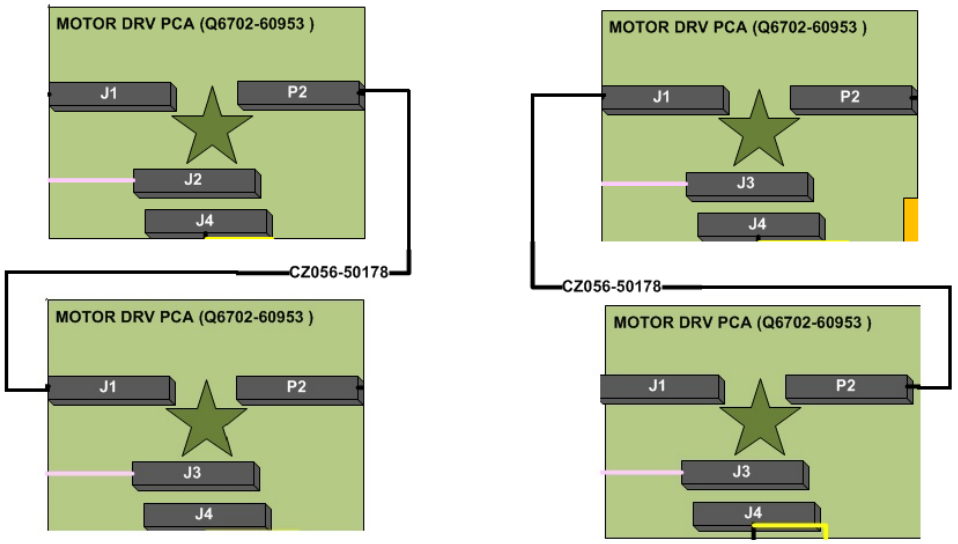
CONNECTION TABLE		
A	B	COLOR
1	1	WHITE/ORANGE
2	2	ORANGE
3	3	WHITE/GREEN
4	4	BLUE
5	5	WHITE/BLUE
6	6	GREEEN
7	7	WHITE/BROWN
8	8	BROWN

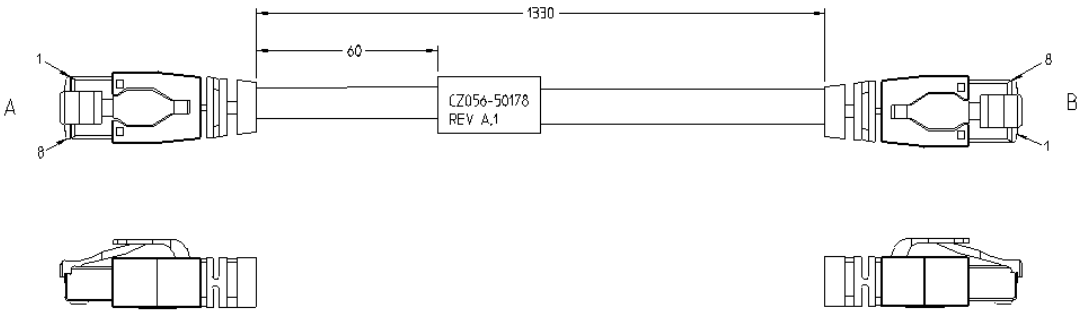
CZ056-50178 – Short PPS Data Bridge Cable. PCA_Motor drv.J1 to PCA_Motor drv.J1.

Subsystem: PPS. Quantity: 2 x printer.

Included in the following service parts:

- CZ056-67068 (PPS power cables set SERV).





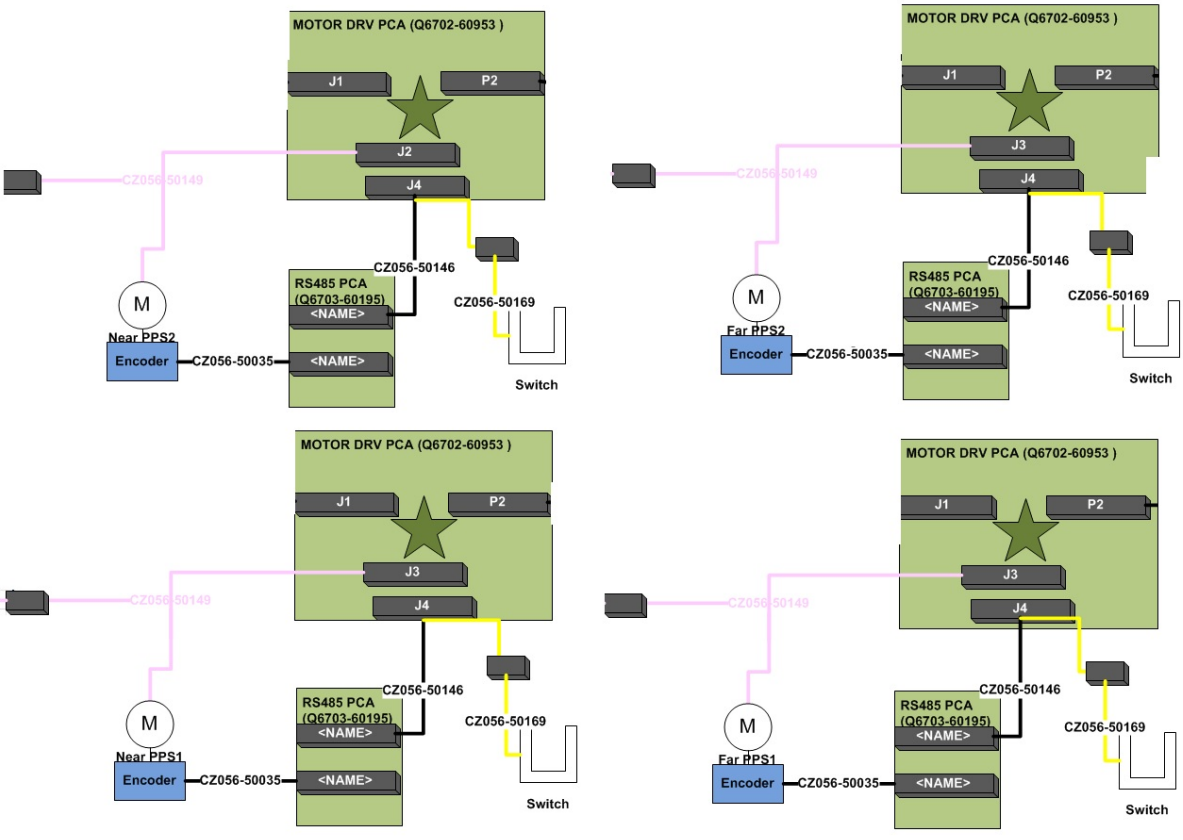
CONNECTION TABLE		
A	B	COLOR
1	1	WHITE/ORANGE
2	2	ORANGE
3	3	WHITE/GREEN
4	4	BLUE
5	5	WHITE/BLUE
6	6	GREEEN
7	7	WHITE/BROWN
8	8	BROWN

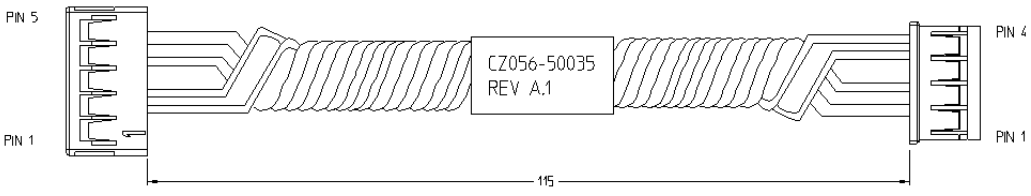
CZ056-50035 – Am80_Motor drv PPS Motor Cable. RS485 PCA to 55 W PPS Motor.

Subsystem: PPS. Quantity: 4 x printer.

Included in the following service parts:

- CZ056-67069 (PPS encoder cables set SERV).





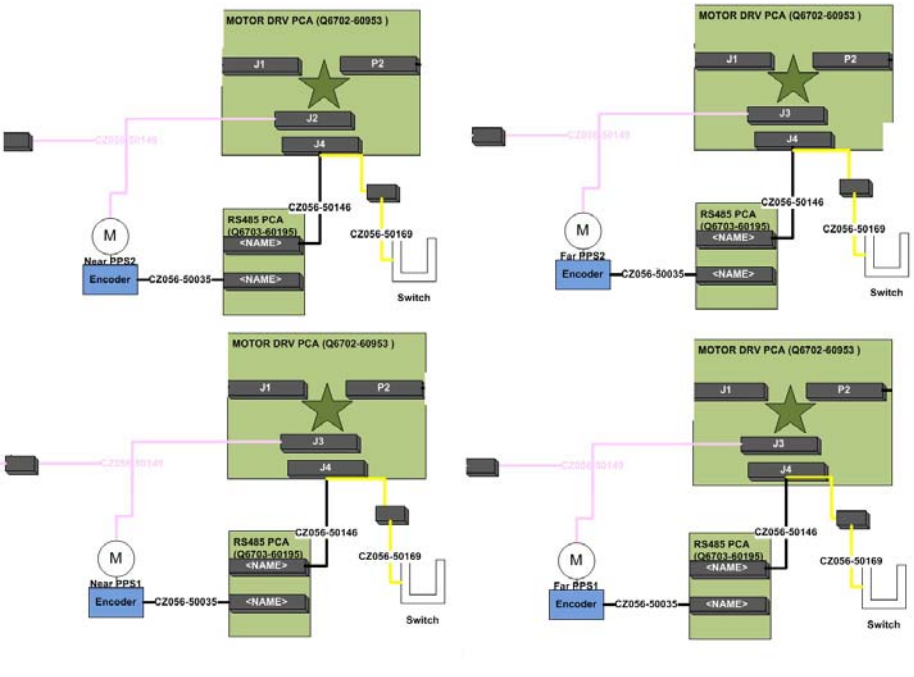
CONN'A	COLOUR	CONN'B
A-1	BLACK	B-1
A-2	YELLOW	B-2
A-3	RED	B-3
A-4	BLUE	B-4
A-5	NC	-

CZ056-50146 –Motor drv.J4 to RS485 PCA. Motor DRV to RS485 PCA.

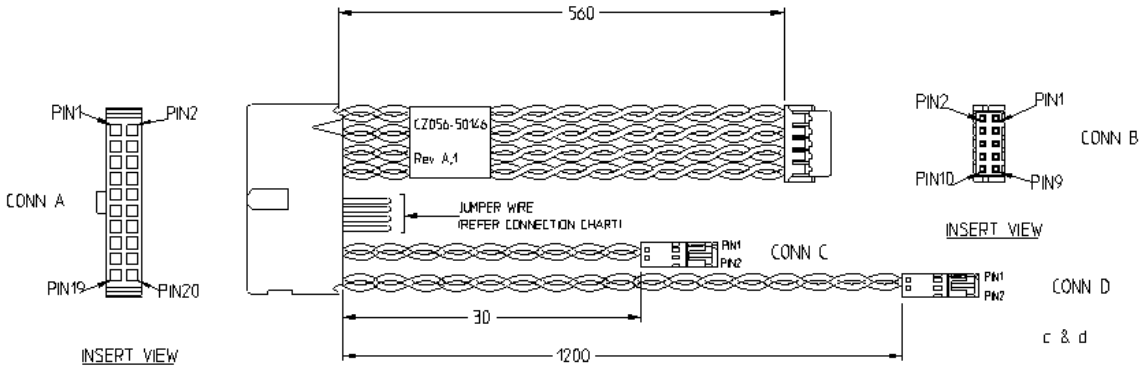
Subsystem: PPS. Quantity: 4 x printer.

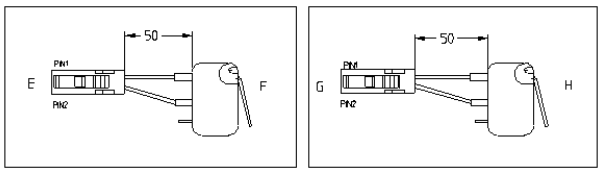
Included in the following service parts:

- CZ056-67069 (PPS encoder cables KIT SERV).



CONNECTION CHAT			
FROM	COLOR	TO	
A-1	BLACK 26AWG	B-3	TWISTED
A-2	RED 26AWG	B-2	PAIR
A-3	ORANGE 26AWG	B-5	TWISTED
A-4	YELLOW 26AWG	B-6	PAIR
A-5	GREEN 26AWG	B-7	TWISTED
A-6	BLUE 26AWG	B-8	PAIR
A-7	VIOLET 24AWG	B-9	TWISTED
A-8	GREY 24AWG	B-10	PAIR
A-9	BROWM 24AWG	A-10	
A-11	RED 24AWG	A-12	
A-13	ORANGE 24AWG	A-14	
A-15	BLUE 24AWG	A-16	
A-17	BLACK 24AWG	C-1	TWISTED
A-18	VIOLET 24AWG	C-2	PAIR
A-19	BLACK 24AWG	D-1	TWISTED
A-20	GREY 24 AWG	D-2	PAIR
E-1	BLACK 24AWG	F-C	
E-2	VIOLET 24AWG	F-NO	
G-1	BLACK 24AWG	H-C	
G-2	GREY 24AWG	H-NO	
-	N.C	B-1	
-	N.C	B-4	



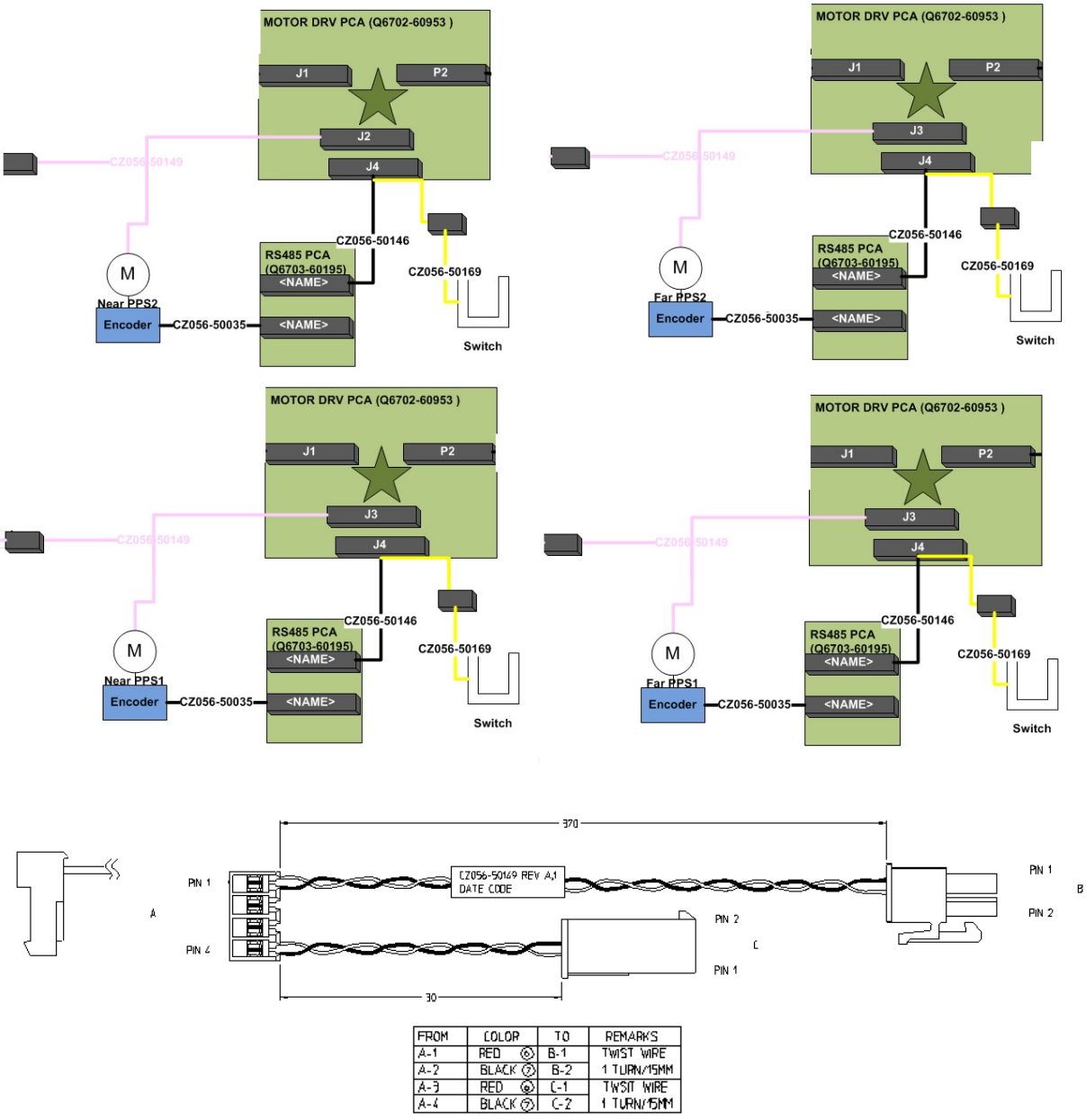


CZ056-50149 –PPS Power in T Extensor Cable. PPS Power in T Cable to DC ral-PCA Motor drv.J3.

Subsystem: PPS. Quantity: 4 x printer.

Included in the following service parts:

- CZ056-67069 (PPS encoder cables KIT SERV).



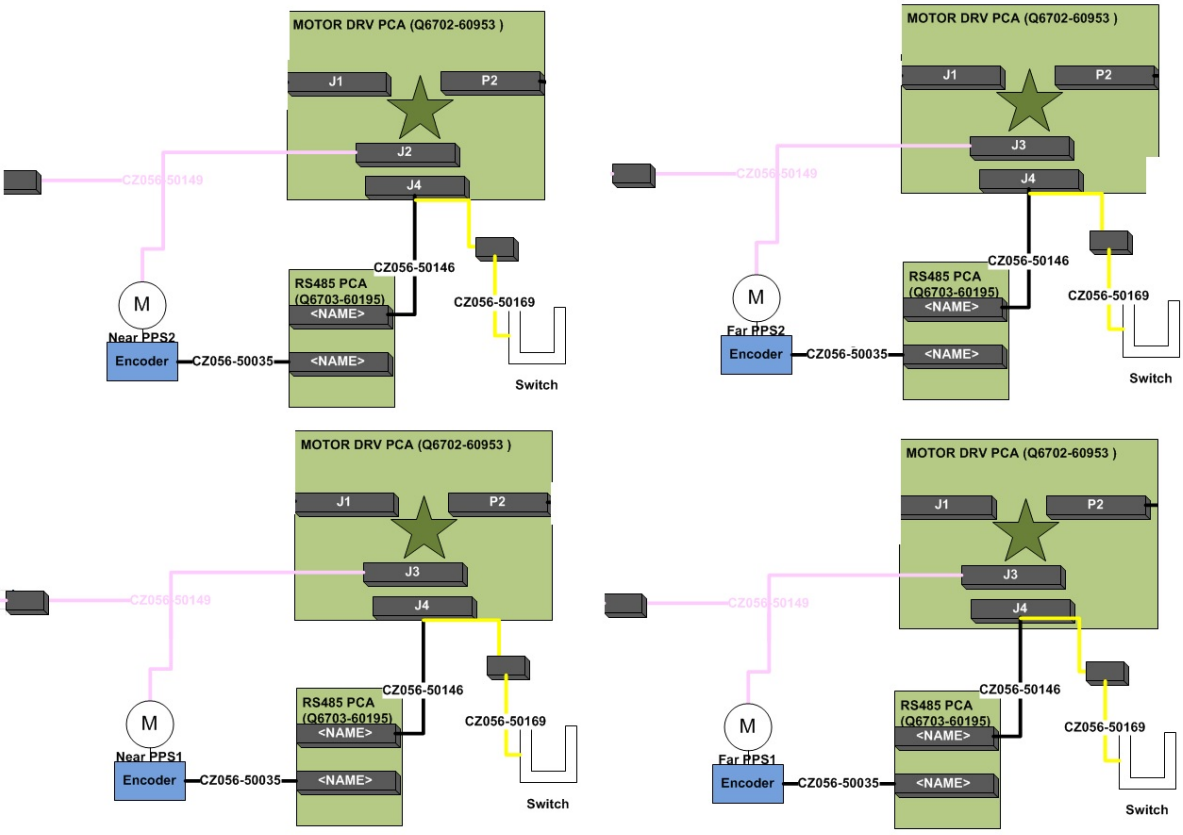
FROM	COLOR	TO	REMARKS
A-1	RED ⑥	B-1	TWIST WIRE
A-2	BLACK ⑦	B-2	1 TURN/15MM
A-3	RED ⑥	C-1	TWSIT WIRE
A-4	BLACK ⑦	C-2	1 TURN/15MM

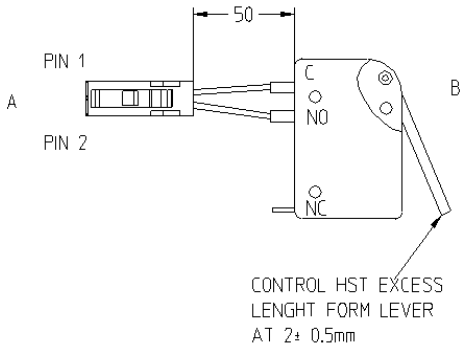
CZ056-50169 –Mechanical Switch-Short Cable. Motor drv.J4 to RS485 PCA.

Subsystem: PPS. Quantity: 4 x printer.

Included in the following service parts:

- CZ056-67065 (Mechanical switch SERV).
- CZ056-67069 (PPS encoder cables KIT SERV).
- CZ056-67318 (Pinch switch assy SERV).
- CZ056-67392 (Extended Uptime kit for HP Lat).





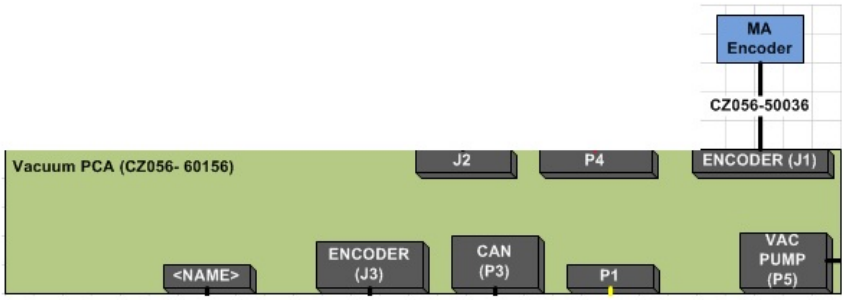
CONNECTION CHART		
FROM	TO	WIRE
A-1	B-C	WIRE UL1061 24AWG RED ⑥
A-2	B-NO	WIRE UL1061 24AWG BLACK ⑥

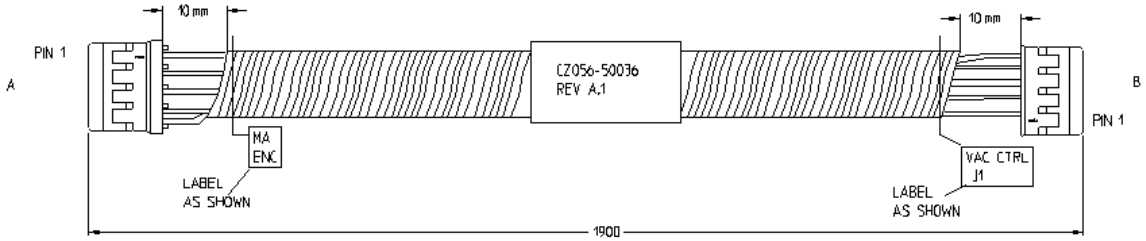
CZ056-50036 – Am80_MA Encoder Cable. Ma Encoder to OMAS PCA.

Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67094 (MA motor encoder cable SERV).





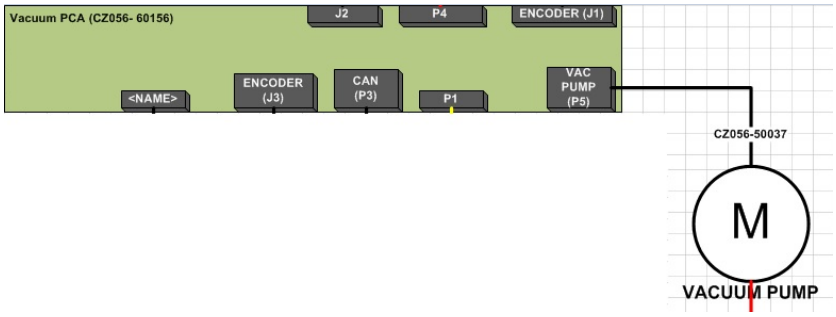
CONNECTION CHART			
FROM	TO	WIRE COLOUR	REMARKS
A-1	B-4	BROWN (5)	ALL WIRES TO BE TWISTED TOGETHER AT ABOUT 5 TWIST /100mm
A-2	B-5	GREEN (6)	
A-3	B-1	BLUE (7)	
A-4	B-2	ORANGE (8)	
A-5	B-3	BLACK (9)	

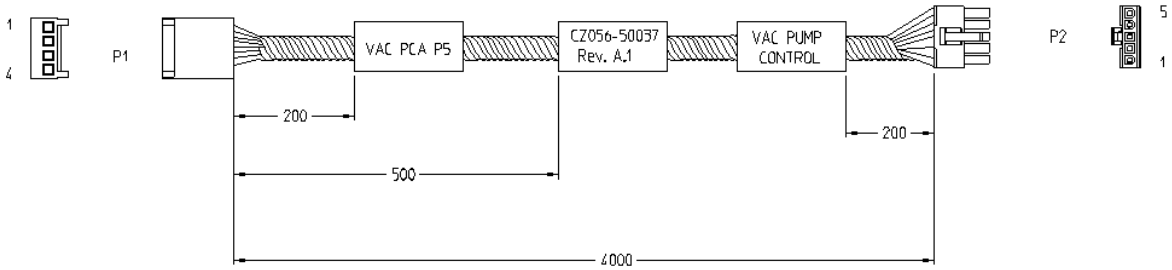
CZ056-50037 – Am80 Vacuum PCA to Vacuum Pump. Vacuum PCA to Vacuum Pump.

Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67109 (Vacuum pump cable KIT SERV).





WIRING DIAGRAM

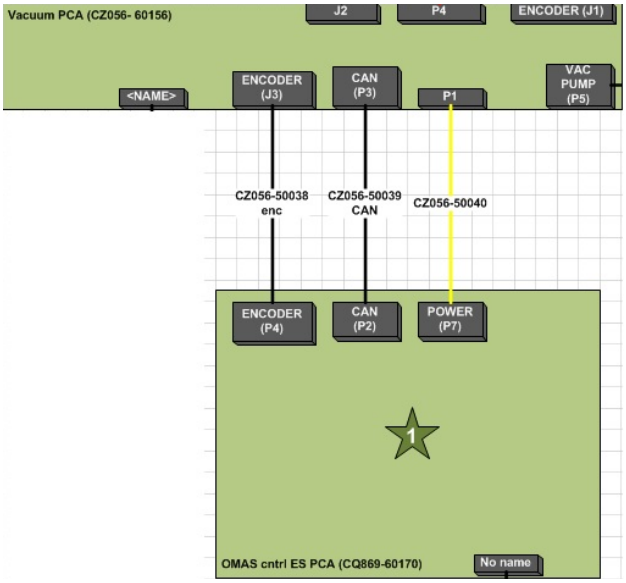
P1	WIRE COLOR	P2
PIN1	BLACK	PIN5
PIN2	BLACK	PIN4
PIN3	BLACK	PIN2
PIN4	RED	PIN1

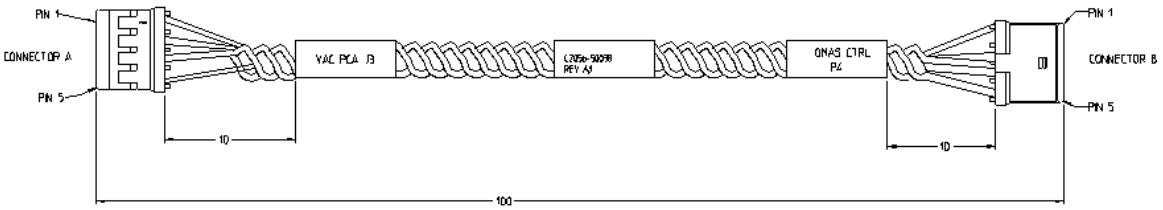
CZ056-50038 – Am80 Vacuum ctrl to OMAS Encoder. OMAS Controller PCA to Vacuum PCA.

Subsystem: OMAS EE. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67316 (OMAS and Vacuum cables KIT SER).
- CZ056-67321 (OMAS and Vacuum PCA SERV).
- CZ056-67392 (Extended Uptime kit for HP Lat).





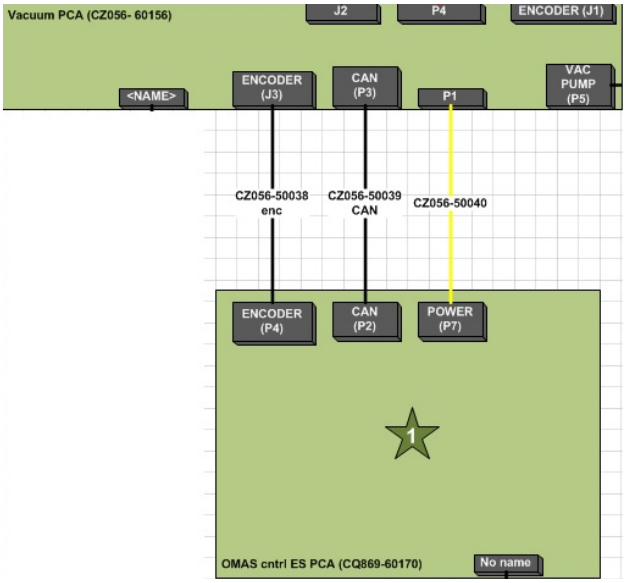
CONN'A	COLOR	CONN'B	REMARKS
A-1	BROWN	B-1	ALL WIRES TO BE TWISTED TOGETHER 5 TWISTS/DOMM
A-2	GREEN	B-2	
A-3	BLUE	B-3	
A-4	ORANGE	B-4	
A-5	BLACK	B-5	

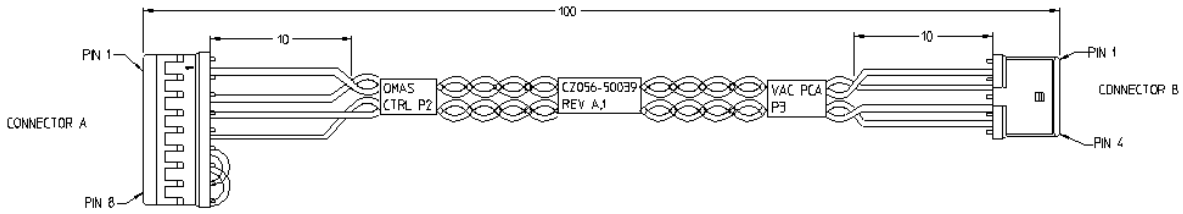
CZ056-50039 – Am80 Vacuum ctrl -- OMAS ctrl. OMAS Controller PCA to Vacuum PCA.

Subsystem: OMAS EE. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67316 (OMAS and Vacuum cables KIT SER).
- CZ056-67321 (OMAS and Vacuum PCA SERV).
- CZ056-67392 (Extended Uptime kit for HP Lat).





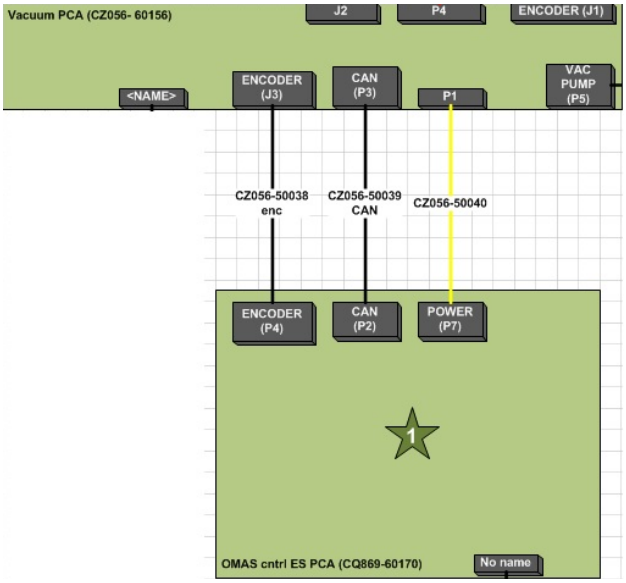
CONN'A	COLOR	CONN'B	REMARKS
A-1	BLUE	B-1	TWIST TOGETHER
A-2	RED	B-2	(SEE NOTE 2)
A-3	GREEN	B-3	TWIST TOGETHER
A-5	BLACK	B-4	(SEE NOTE 2)
A-5	BLACK	A-7	JUMPER WIRE
A-8	BLACK	A-7	JUMPER WIRE

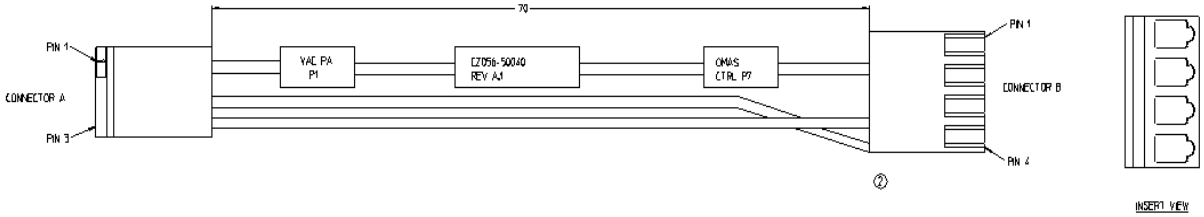
CZ056-50040 – Am80 Vacuum Control to OMAS PO. OMAS Controller PCA to Vacuum PCA.

Subsystem: OMAS EE. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67316 (OMAS and Vacuum cables KIT SER).
- CZ056-67321 (OMAS and Vacuum PCA SERV).
- CZ056-67392 (Extended Uptime kit for HP Lat).





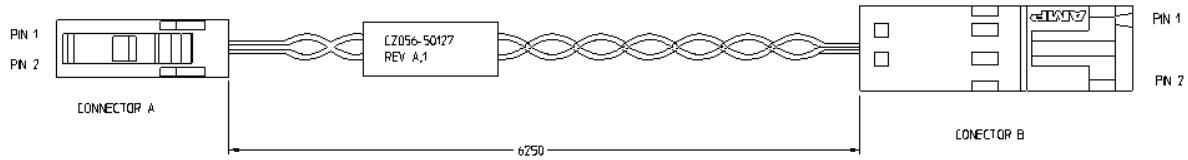
CONN'A	COLOR	CONN'B
A-1	BLACK	B-1
A-2	GREEN	B-4
A-3	GREEN	B-3

CZ056-50127 – Pinch Sensor Cable.

Subsystem: PINCH MECH. Quantity: 3 x printer.

Included in the following service parts:

- CZ056-67198 (ISS PCA SERV).
- CZ056-67318 (Pinch switch assy SERV).
- CZ056-67392 (Extende uptime kit for HP Lat).



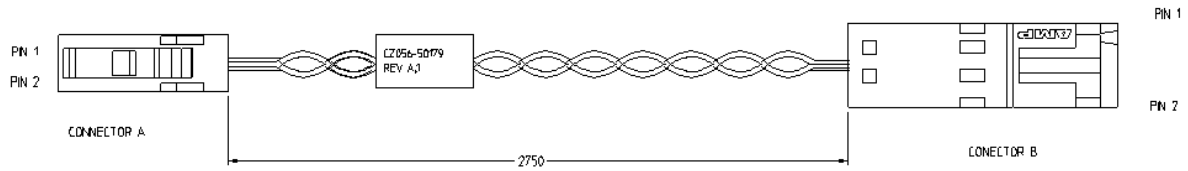
FROM	COLOR	TO	REMARKS
A-1	BLACK ⑥	B-1	TWIST WIRE
A-2	RED ⑤	B-2	1 TURN/15MM

CZ056-50179 – Short Pinch Sensor Cable.

Subsystem: PINCH MECH. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67318 (Pinch switch assy SERV).



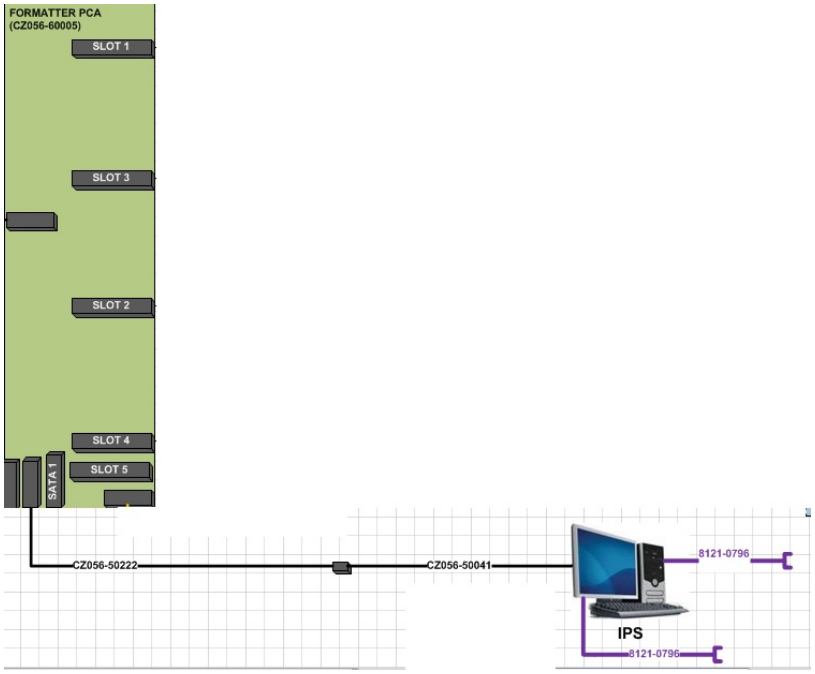
FROM	COLOR	TO	REMARKS
A-1	BLACK ⑥	B-1	TWIST WIRE
A-2	RED ⑤	B-2	1 TURN/15MM

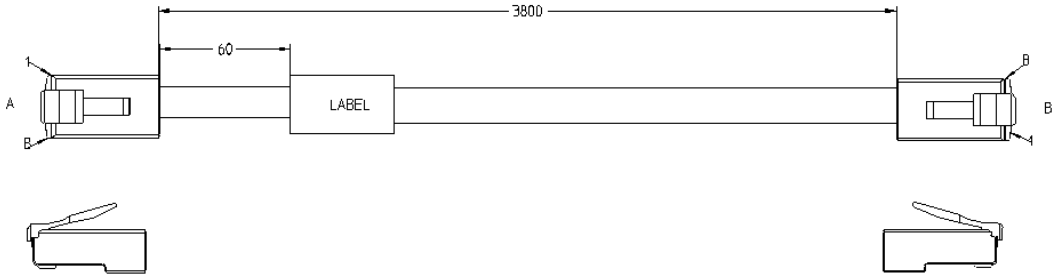
CZ056-50041 – IPS to e-Box LAN Cable. IPS to e-Box.

Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67266 (eBox LAN cable to IPS SERV).





LABEL
HPBCZ056-50041 AL-PP*RH
DDMMYY

REMARK:
1.APPLY LABEL AS SHOWN IN DRAWING
2. ORIENTATION 1 TO 1

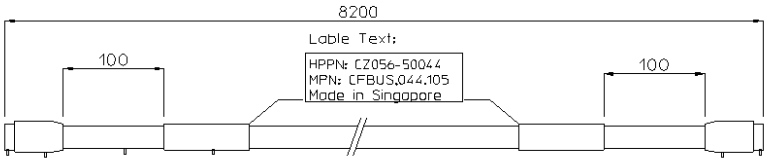
CZ056-50044 – Am80 Drying Data Cable. Ebox Interconnect PCA to Drying PCA.

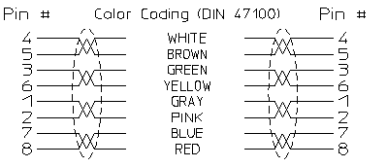
Subsystem: IMPELLING SYSTEM. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67150 (Impelling drying data cable SE).
- CZ056-67310 (Service Maintenance Kit).
- CZ056-67319 (Complete chain and tubes SERV).





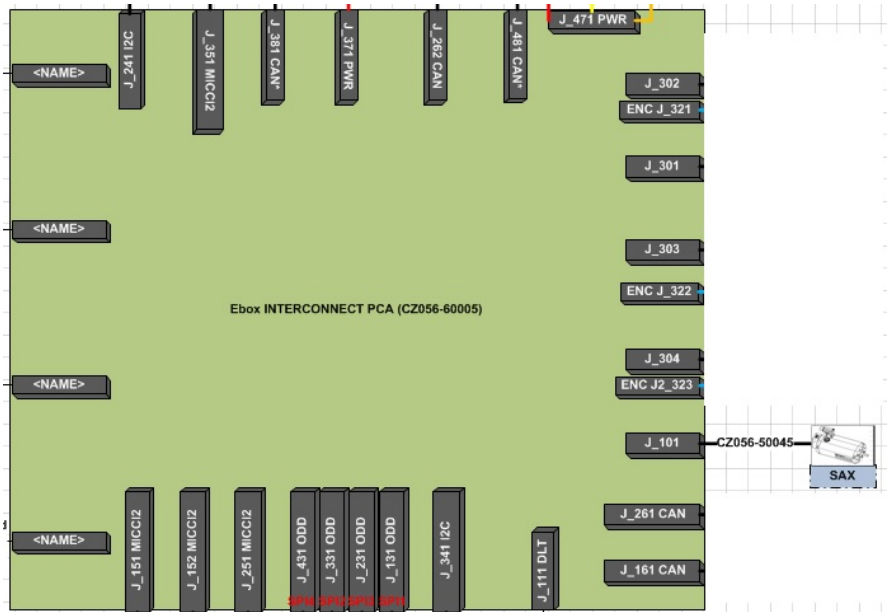


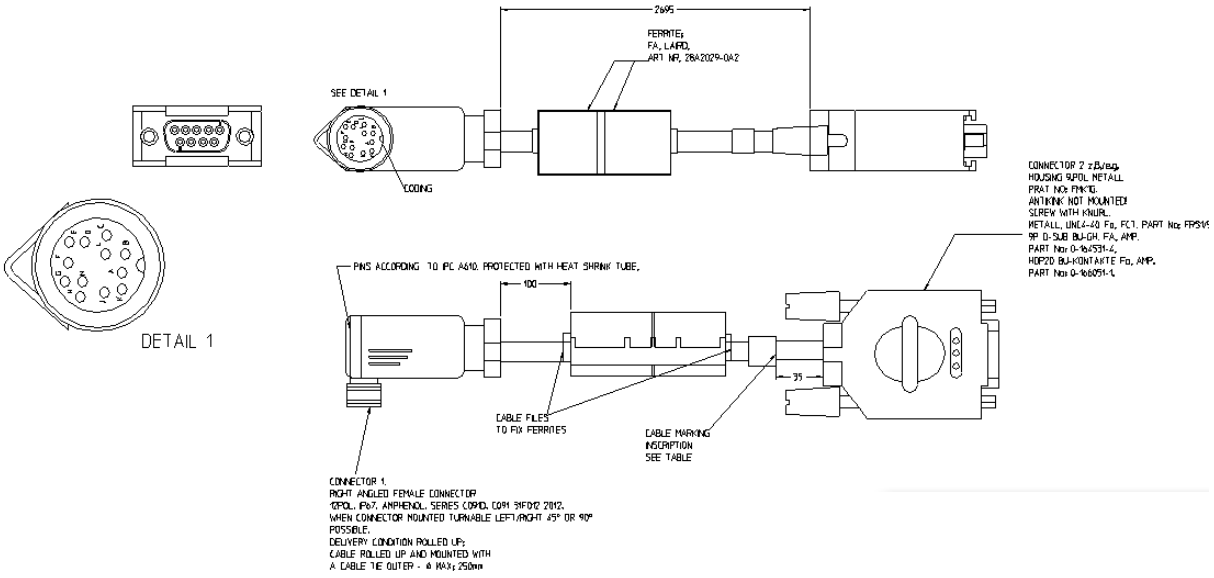
CZ056-50045 – Am80 Scan Axis Motor Data. Ebox Interconnect PCA to Scan Axis Brushless Motor.

Subsystem: IMPELLING SYSTEM. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67368 (SAX motor data cable SERV).





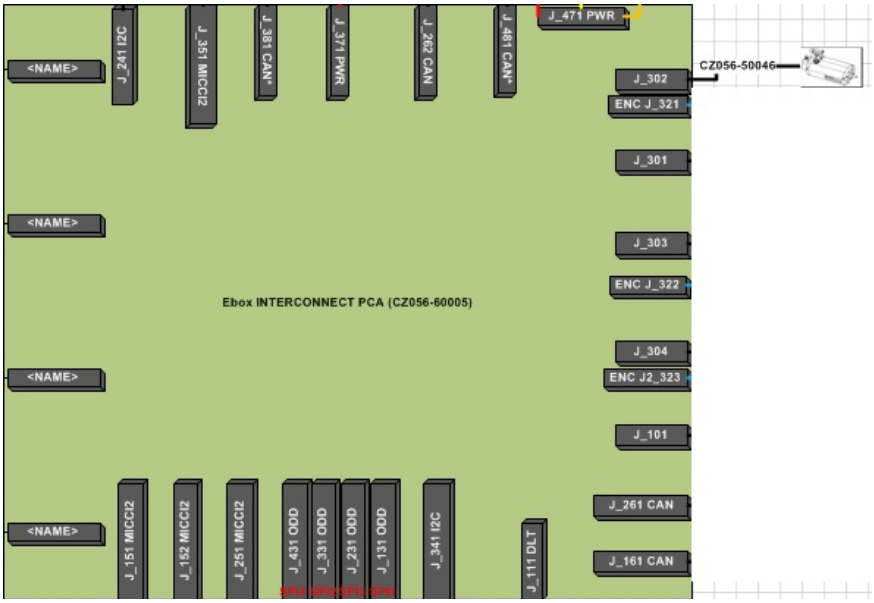
COLOUR	WIRE	CONN 1	CONN 2
		PIN	PIN
YELLOW	AWG24	A	1
BLUE	AWG24	B	2
-	-	C	-
-	-	D	-
GREY	AWG24	E	3
GREY/PINK	AWG24	F	4
PINK	AWG24	G	9
VIOLETTE	AWG24	H	5
RED	AWG24	J	6
BLACK	AWG24	K	7
-	-	L	-
-	-	M	-
-	-	-	B

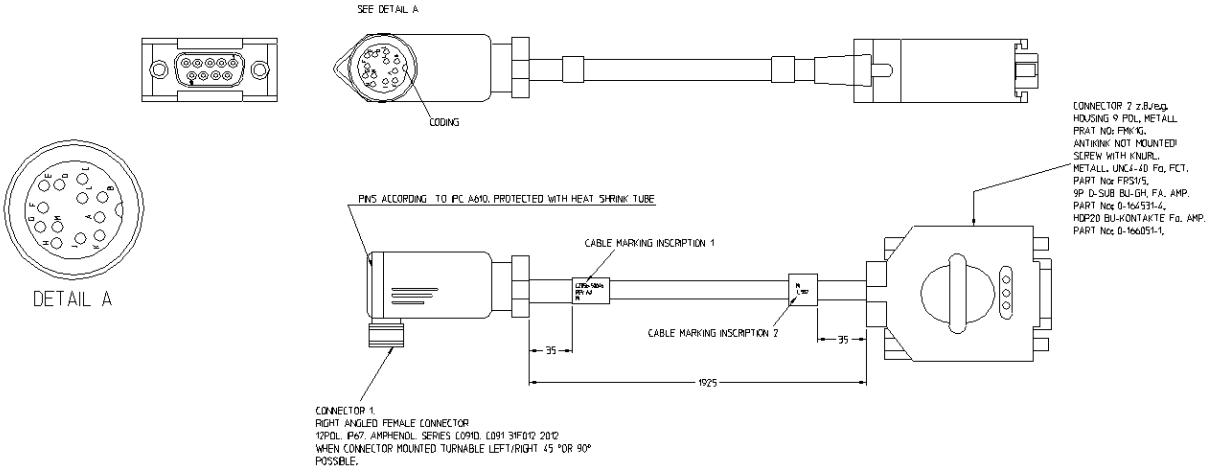
CZ056-50046 – Am80 MI Motor Data. Ebox Interconnect PCA to MI Motor.

Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67274 (MI data cable SERV).





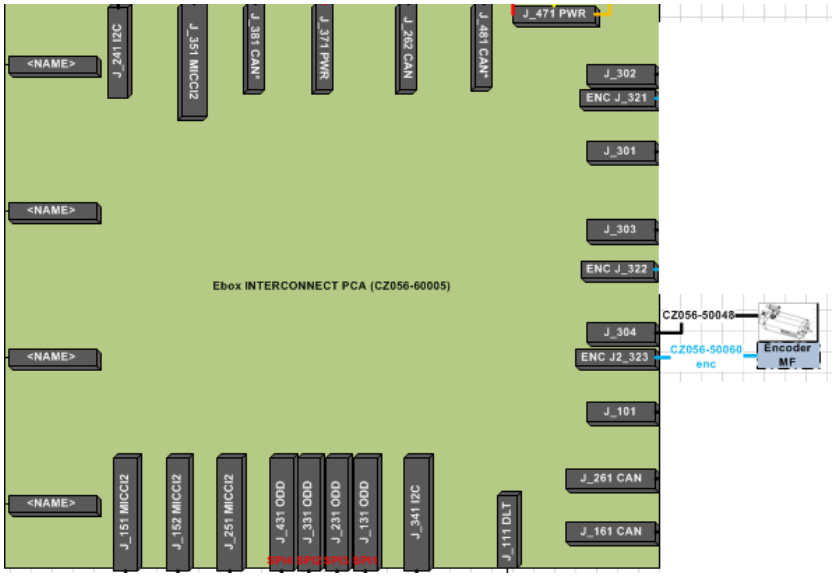
COLOUR	WIRE	CONN 1	CONN 2
		PIN	PIN
YELLOW	AWG24	A	1
BLUE	AWG24	B	2
-	-	C	-
-	-	D	-
GREY	AWG24	E	3
GREY/PINK	AWG24	F	4
PINK	AWG24	G	9
VIOLETTE	AWG24	H	5
RED	AWG24	J	6
BLACK	AWG24	K	7
-	-	L	-
-	-	M	-
-	-	_	B

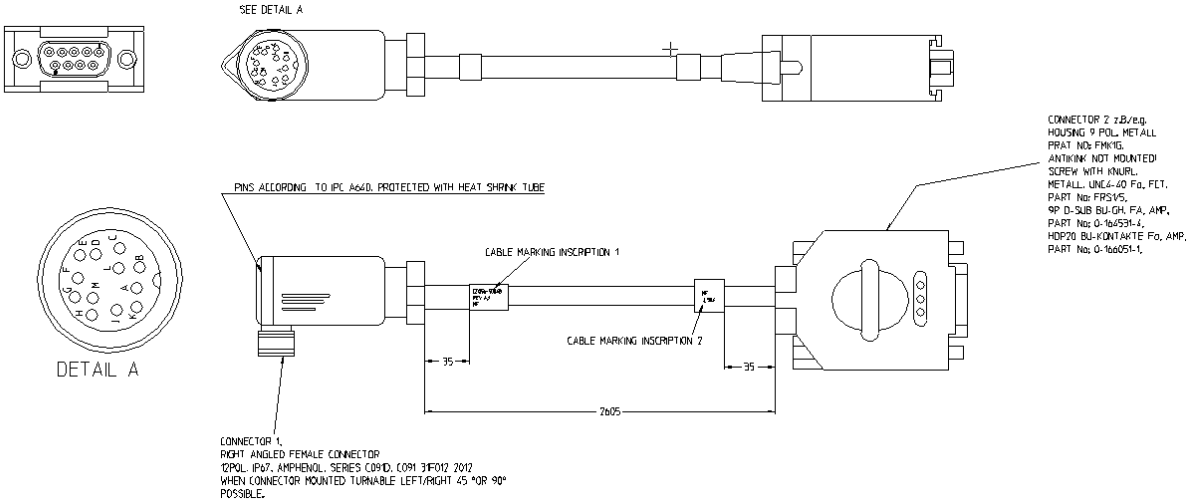
CZ056-50048 – Am80 MA Motor Data. Ebox Interconnect PCA to MAMOMF Motor.

Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67280 (MF data cable SERV).





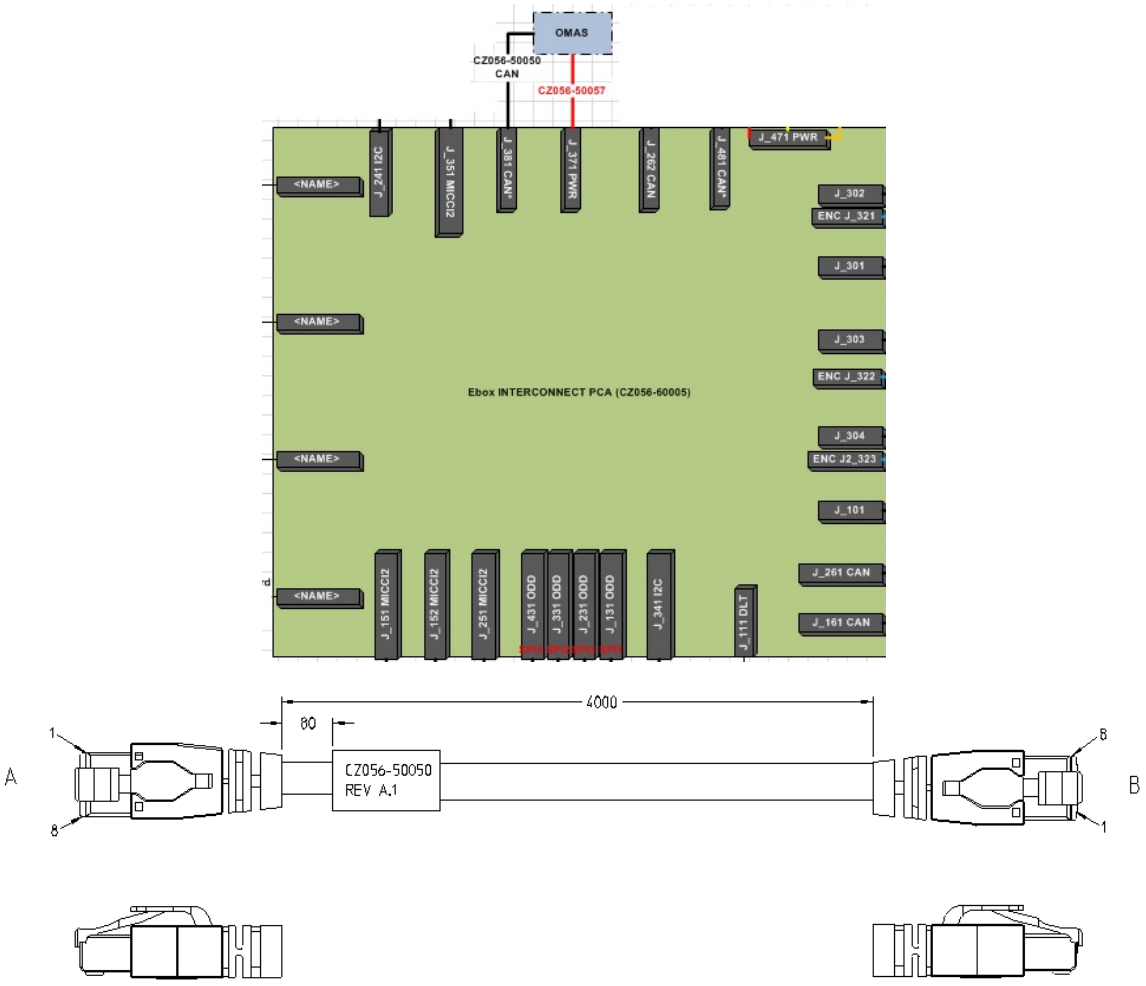
COLOUR	WIRE	CONN 1	CONN 2
		PIN	PIN
YELLOW	AWG24	A	1
BLUE	AWG24	B	2
-	-	C	-
-	-	D	-
GREY	AWG24	E	3
GREY/PINK	AWG24	F	4
PINK	AWG24	G	9
VIOLETTE	AWG24	H	5
RED	AWG24	J	6
BLACK	AWG24	K	7
-	-	L	-
-	-	M	-
-	-	_	8

CZ056-50050 – Am80 Vacuum Pump Control. Ebox Interconnect PCA to Vacuum PCA.

Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67316 (OMAS and Vacuum cables KIT SER).



CONNECTION TABLE

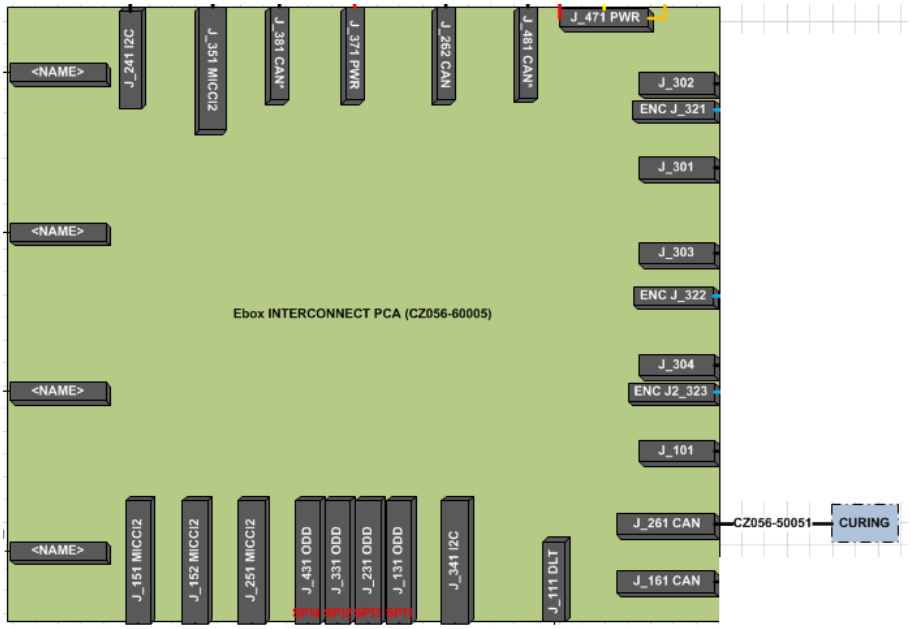
A	B	COLOUR
1	1	WHITE/ORANGE
2	2	ORANGE
3	3	WHITE/GREEN
4	4	BLUE
5	5	WHITE/BLUE
6	6	GREEN
7	7	WHITE/BROWN
8	8	BROWN

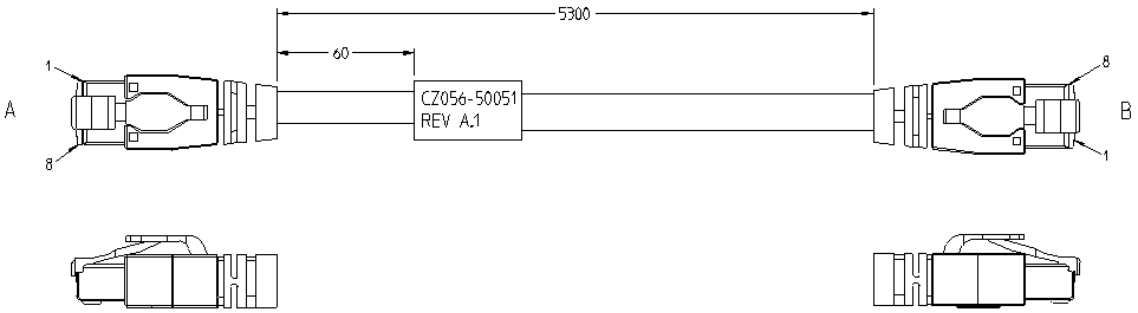
CZ056-50051 – Am80 Curing Data Cable. Ebox Interconnect PCA to Curing PCA.

Subsystem: CURING. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67314 (Curing cables KIT SERV).



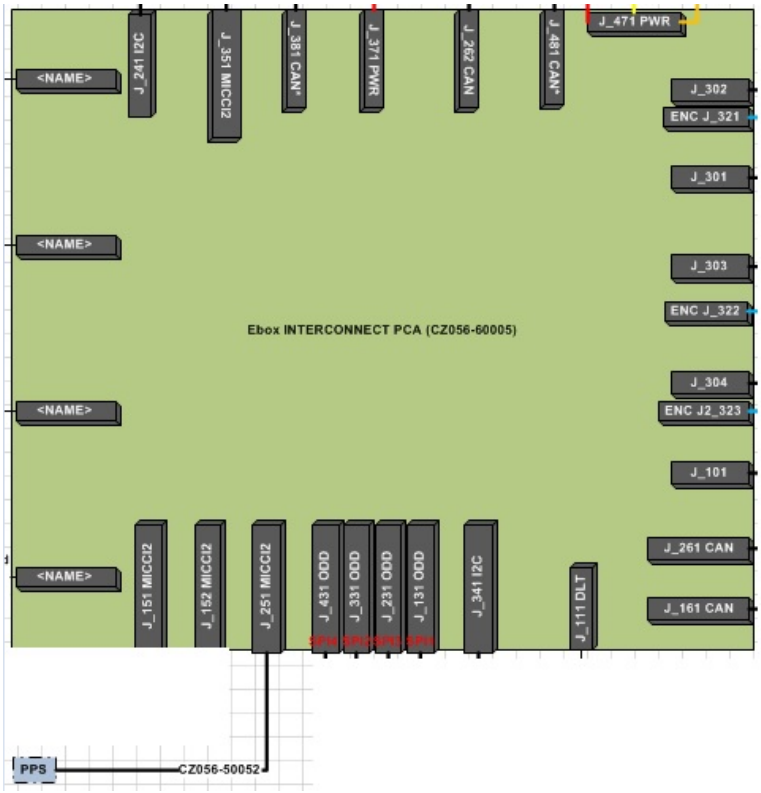


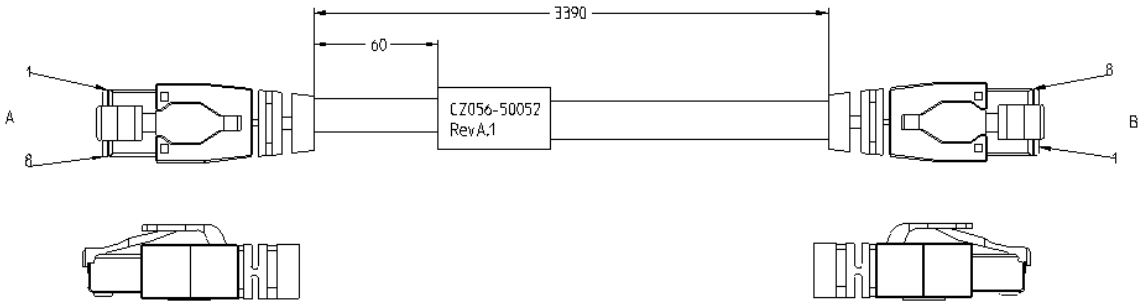
CONNECTION TABLE		
A	B	COLOUR
1	1	WHITE/ORANGE
2	2	ORANGE
3	3	WHITE/GREEN
4	4	BLUE
5	5	WHITE/BLUE
6	6	GREEN
7	7	WHITE/BROWN
8	8	BROWN

CZ056-50052 – TUR Motor drv to PP Cable. Ebox to PPS Motor drv. J1.
Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67068 (PPS power cables set SERV).





CONNECTION TABLE

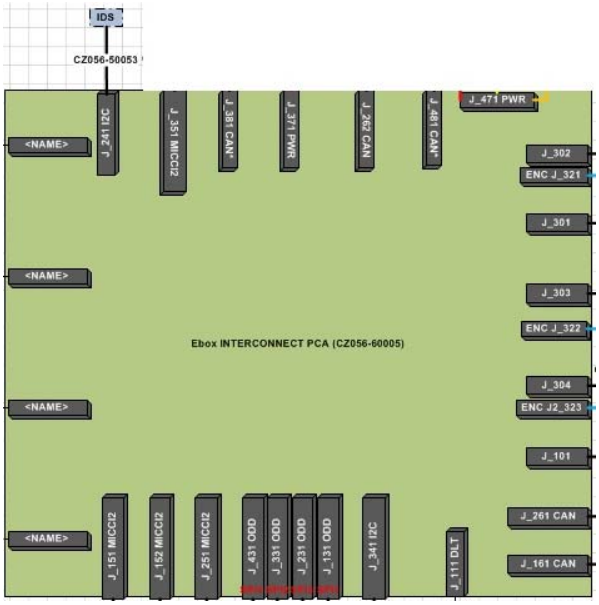
A	B	COLOUR
1	1	WHITE/ORANGE
2	2	ORANGE
3	3	WHITE/GREEN
4	4	BLUE
5	5	WHITE/BLUE
6	6	GRREN
7	7	WHITE/BROWN
8	8	BROWN

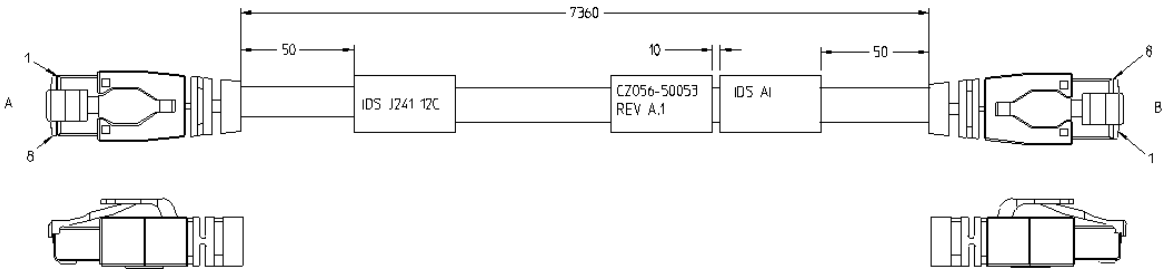
CZ056-50053 – Ids i2c Data. Ebox Interconnect PCA to ISS PCA.

Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67075 (ISM cables KIT SERV).



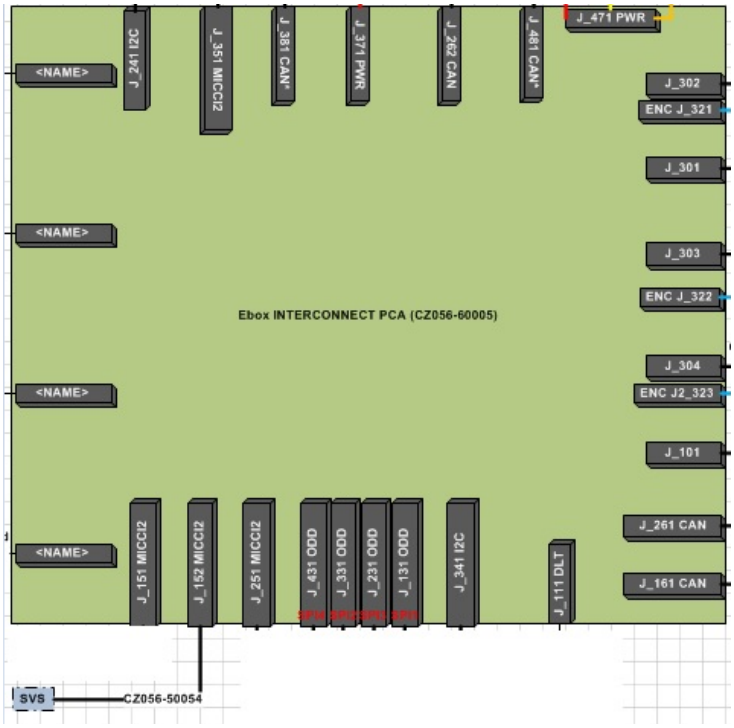


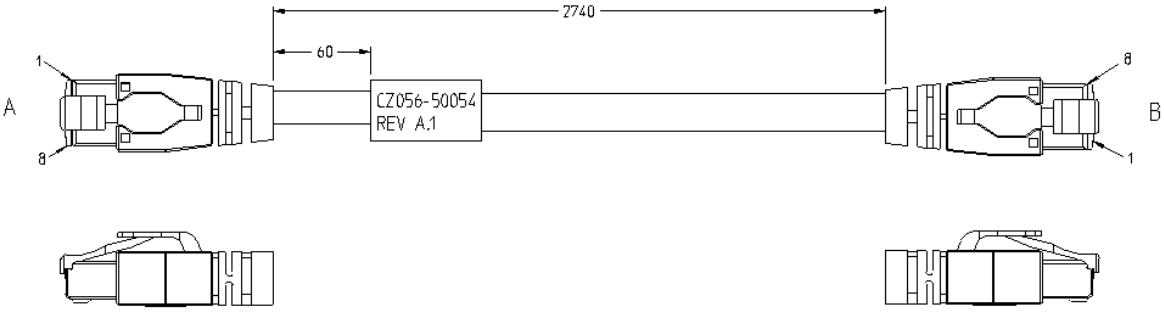
CONNECTION TABLE		
A	B	COLOUR
1	1	WHITE/ORANGE
2	2	ORANGE
3	3	WHITE/GREEN
4	4	BLUE
5	5	WHITE/BLUE
6	6	GRREN
7	7	WHITE/BROWN
8	8	BROWN

CZ056-50054 – Am80 Capping Station Motor drv PCA. Ebox Interconnect PCA to SVS.Capping.
Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67312 (SVS cables KIT SERV).





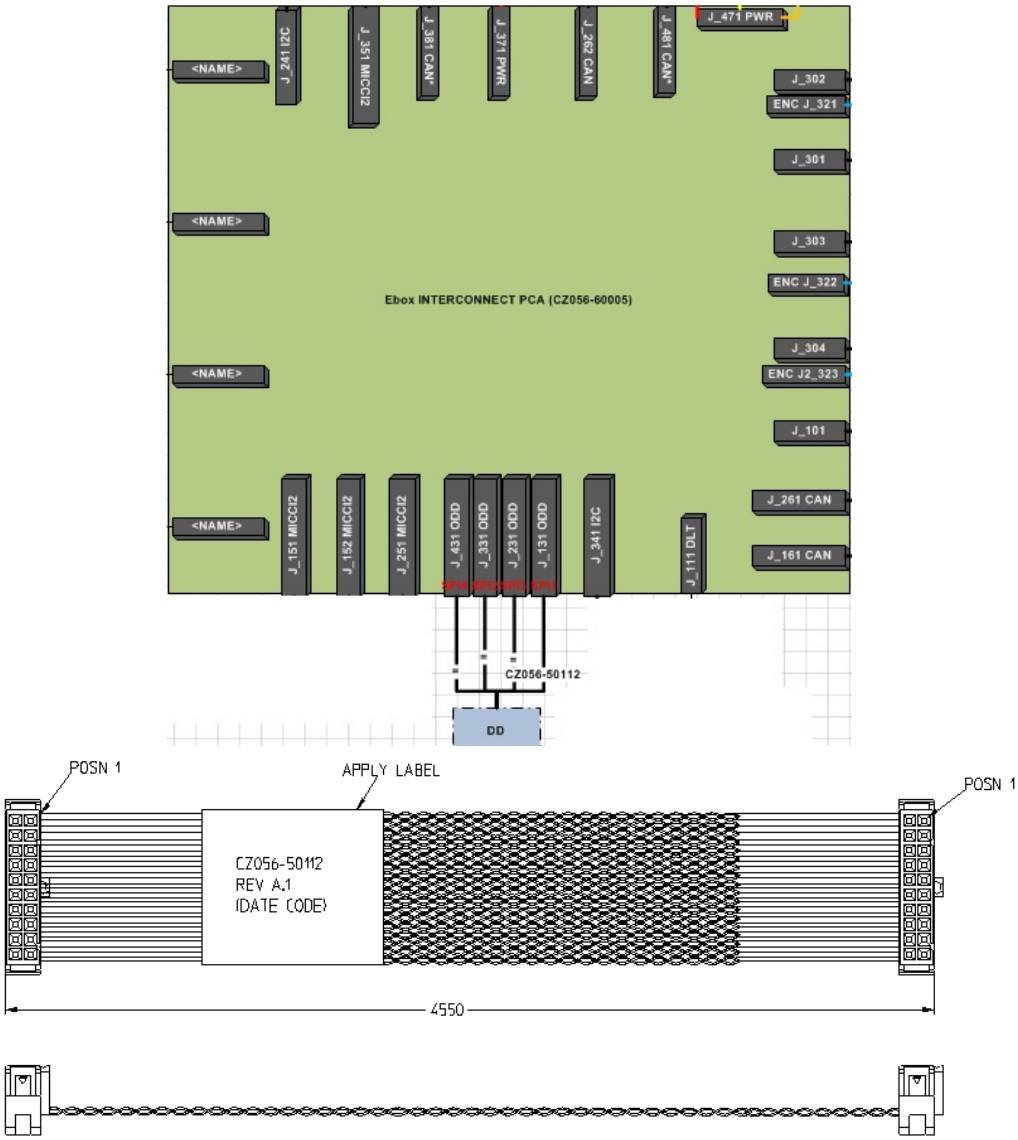
CONNECTION TABLE		
A	B	COLOR
1	1	WHITE/ORANGE
2	2	ORANGE
3	3	WHITE/GREEN
4	4	BLUE

CZ056-50112 – Cable Drop Mux PPA. Ebox Interconnect PCA to DDU MUX PCA.

Subsystem: SERVICE STATION. Quantity: 4 x printer.

Included in the following service parts:

- CZ056-67043 (SVS DD cable KIT SERV).

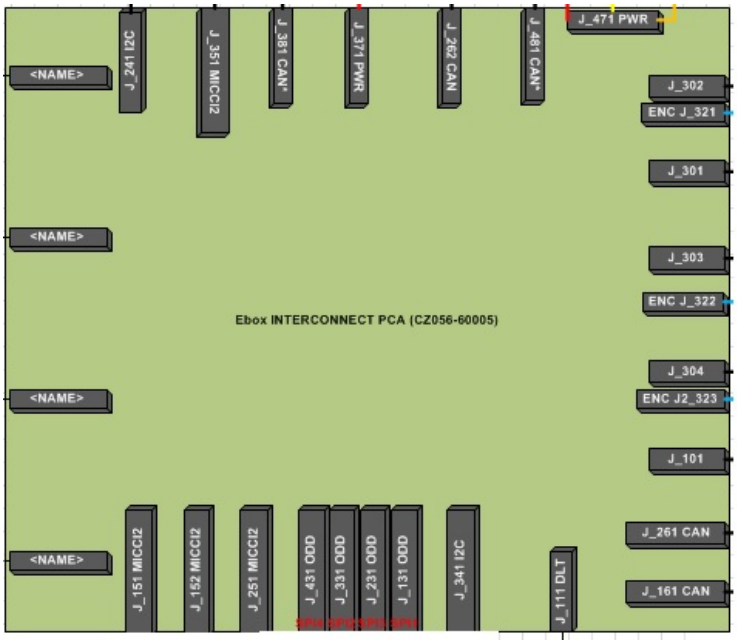


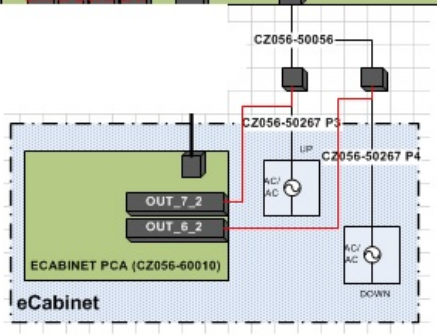
CZ056-50056 – Am80 Delta Drying Control. Ebox Interconnect PCA to Delta PWM ctrl.

Subsystem: MEDIA DRYING. Quantity: 1 x printer.

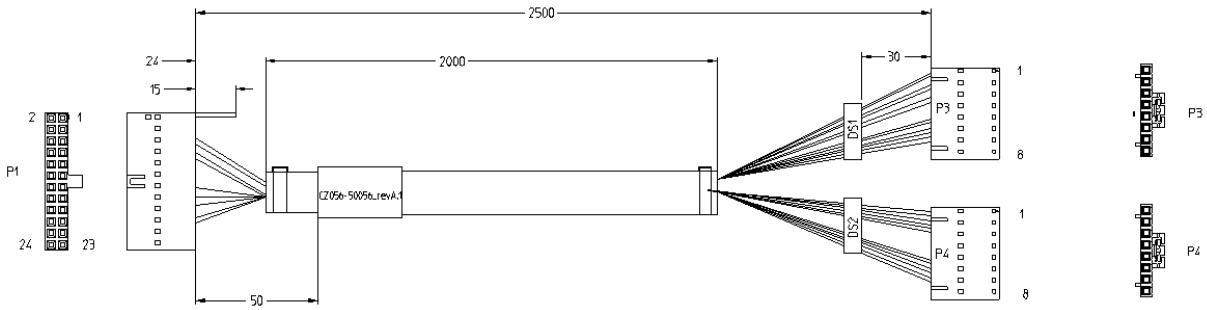
Included in the following service parts:

- CZ056-67030 (Drying AC/AC converter control).





FROM	COLOR	TO	FROM	COLOR	TO
P1-1	-	NC	P1-13	RED	P4-3
P1-2	BLACK	P1-3	P1-14	ORANGE	P4-7
P1-3	BLACK	P1-2	P1-15	YELLOW	P4-5
P1-4	BLACK	P3-1	P1-16	GREEN	P4-6
P1-5	BROWN	P3-2	P1-17	BLUE	P4-8
P1-6	RED	P3-3	P1-18	-	NC
P1-7	ORANGE	P3-7	P1-19	-	NC
P1-8	YELLOW	P3-5	P1-20	-	NC
P1-9	GREEN	P3-6	P1-21	-	NC
P1-10	BLUE	P3-8	P1-22	-	NC
P1-11	BLACK	P4-1	P1-23	-	NC
P1-12	BROWN	P4-2	P1-24	-	NC

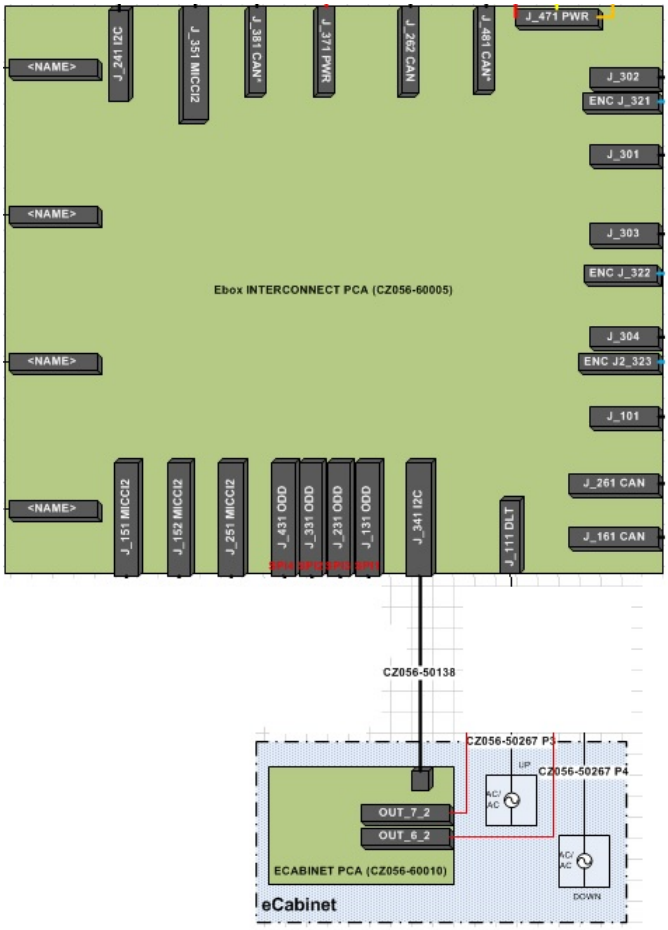


CZ056-50138 – E-box to E-Cabinet PCA Cable. Ebox Interconnect PCA to e-Cab PCA.

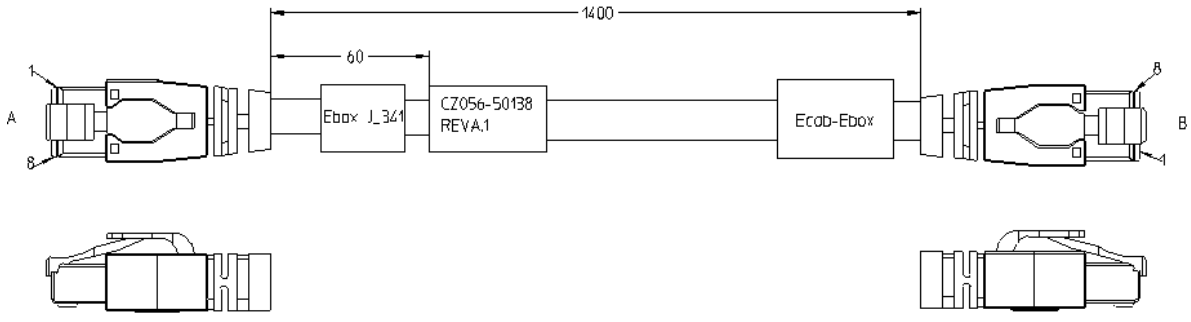
Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67083 (EBOX cables KIT SERV).



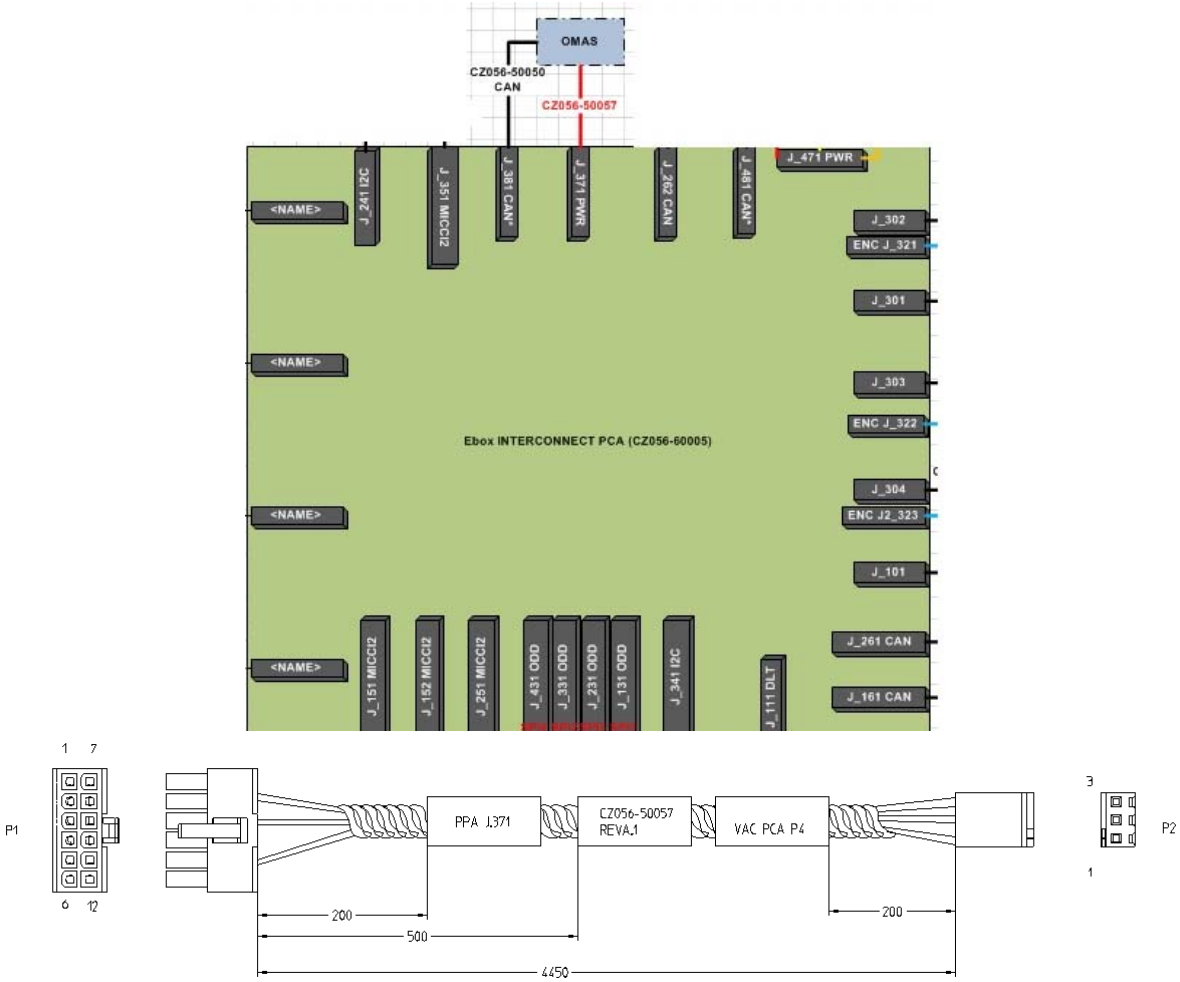
CONNECTION TABLE		
A	B	COLOR
1	1	WHITE/ORANGE
2	2	ORANGE
3	3	WHITE/GREEN
4	4	BLUE
5	5	WHITE/BLUE
6	6	GREEEN
7	7	WHITE/BROWN
8	8	BROWN



CZ056-50057 – Am80 Vacuum Supply PCA. Ebox Interconnect PCA to Vacuum PCA.
Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67316 (OMAS and Vacuum cables KIT SER).



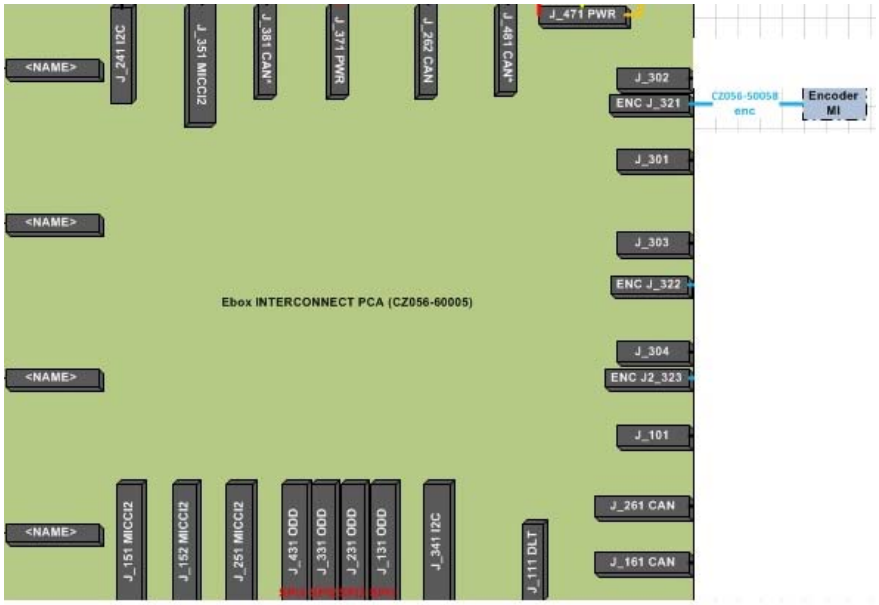
WIRING DIAGRAM		
P1	WIRE COLOR	P2
3	RED	1
6	RED	2
9	BLACK	3

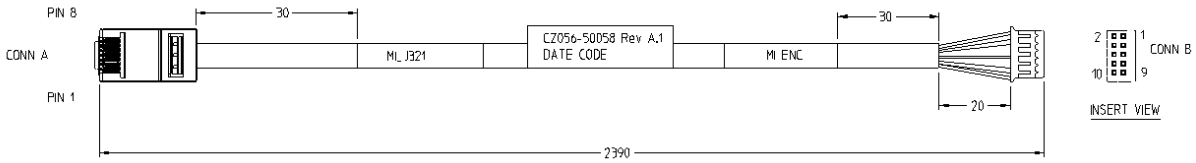
CZ056-50058 – Mi Encoder Cable. Ebox Interconnect PCA to Mi Motor.

Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67275 (MI Encoder cable SERV).





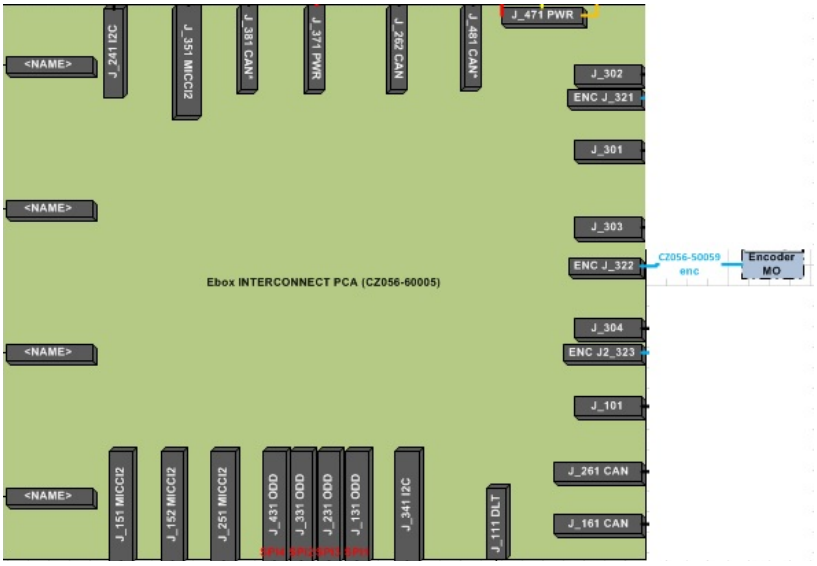
CONNECTION CHART		
CONN'A	COLOR	CONN'B
A-1	ORANGE/WHITE	B-6
A-2	ORANGE	B-5
A-3	GREEN/WHITE	B-10
A-4	BLUE	B-8
A-5	BLUE/WHITE	B-7
A-6	GREEN	B-9
A-7	BROWN/WHITE	B-2
A-8	BROWN	B-3
-	NC	B-1
-	NC	B-4

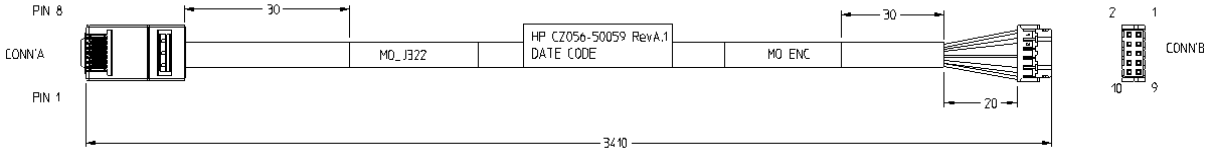
CZ056-50059 – Mo Encoder Cable. Ebox Interconnect PCA to Mo Motor.

Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67278 (MO Encoder cable SERV).





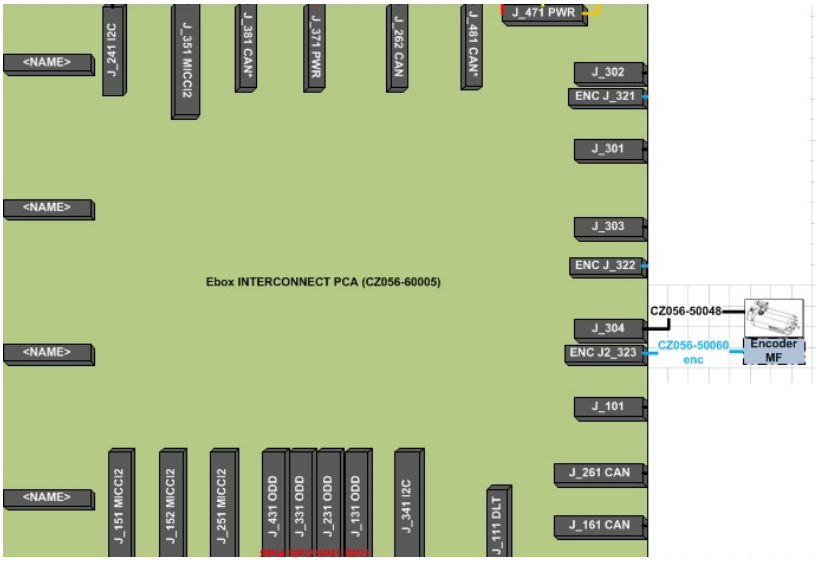
CONN'A	COLOR	CONN'B
A-1	ORANGE/WHITE	B-6
A-2	ORANGE	B-5
A-3	GREEN/WHITE	B-10
A-4	BLUE	B-8
A-5	BLUE/WHITE	B-7
A-6	GREEN	B-9
A-7	BROWN/WHITE	B-2
A-8	BROWN	B-3
-	NC	B-1
-	NC	B-4

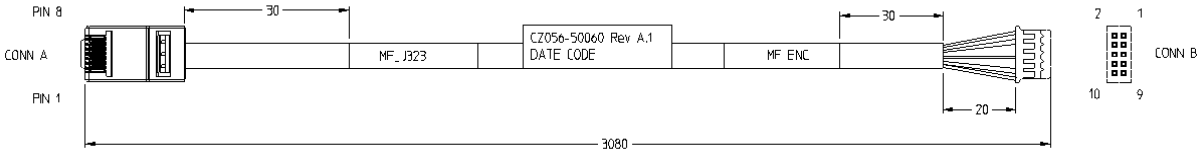
CZ056-50060 – R2ff Encoder Cable. Ebox Interconnect PCA to MF Motor.

Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67281 (MF encoder cable SERV).



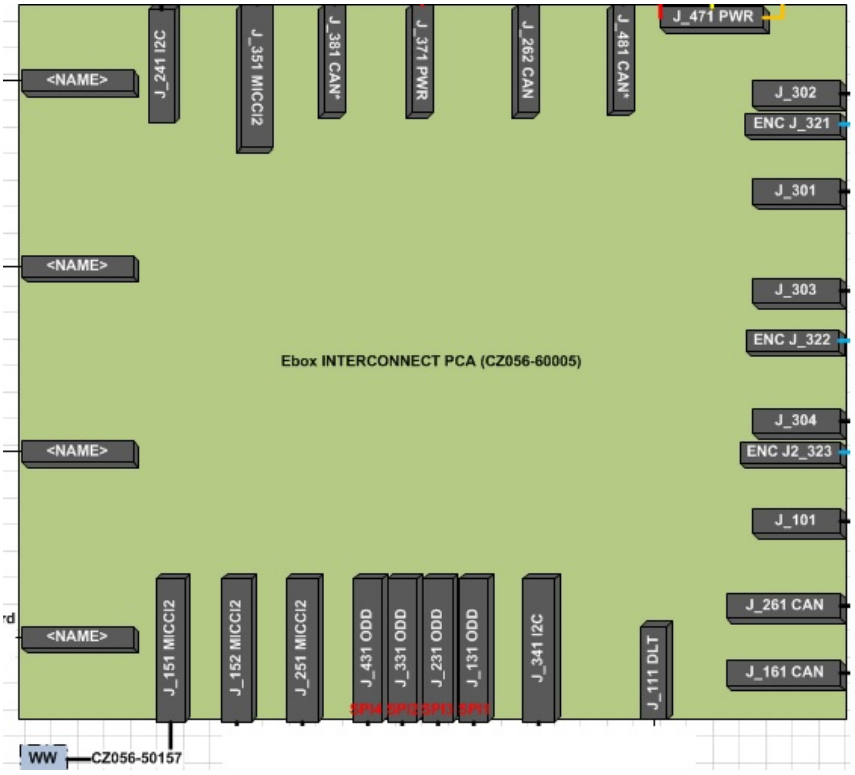


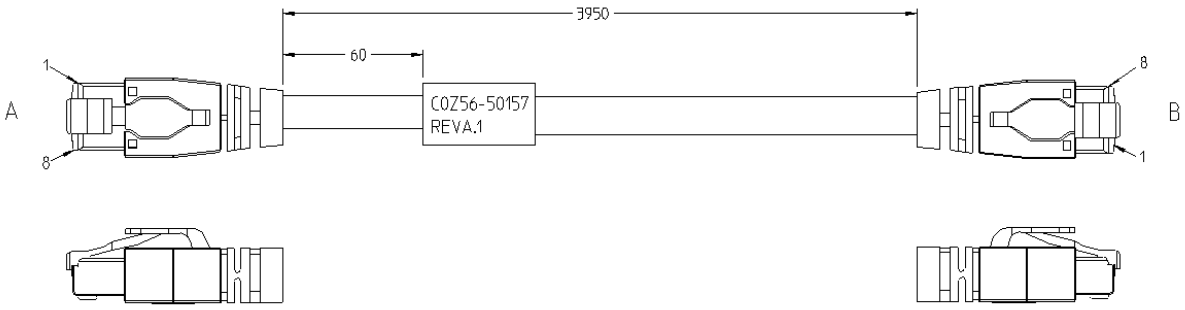
CONNECTION CHART		
CONN'A	COLOR	CONN'B
A-1	ORANGE/WHITE	B-6
A-2	ORANGE	B-5
A-3	GREEN/WHITE	B-10
A-4	BLUE	B-8
A-5	BLUE/WHITE	B-7
A-6	GREEN	B-9
A-7	BROWN/WHITE	B-2
A-8	BROWN	B-3
-	NC	B-1
-	NC	B-4

CZ056-50157 – E-box to WW Cable. Ebox Interconnect PCA to SVS.WW.
Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67313 (Web Wipe cables KIT SERV).





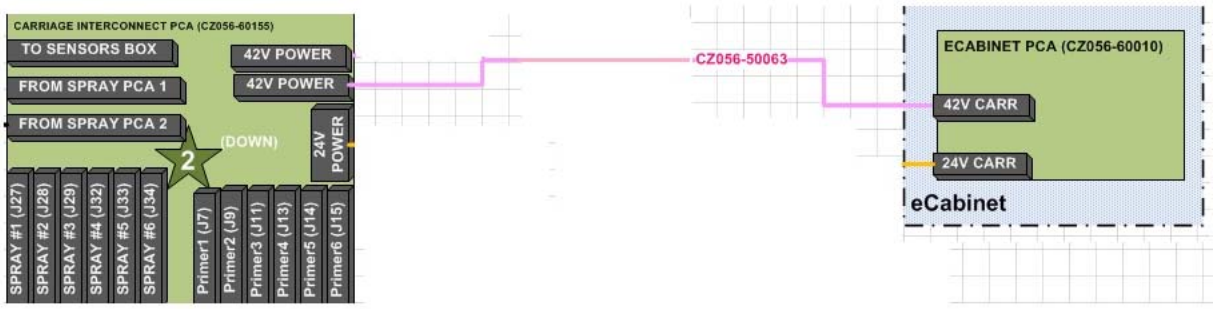
CONNECTION TABLE		
A	B	COLOR
1	1	WHITE/ORANGE
2	2	ORANGE
3	3	WHITE/GREEN
4	4	BLUE
5	5	WHITE/BLUE
6	6	GREEEN
7	7	WHITE/BROWN
8	8	BROWN

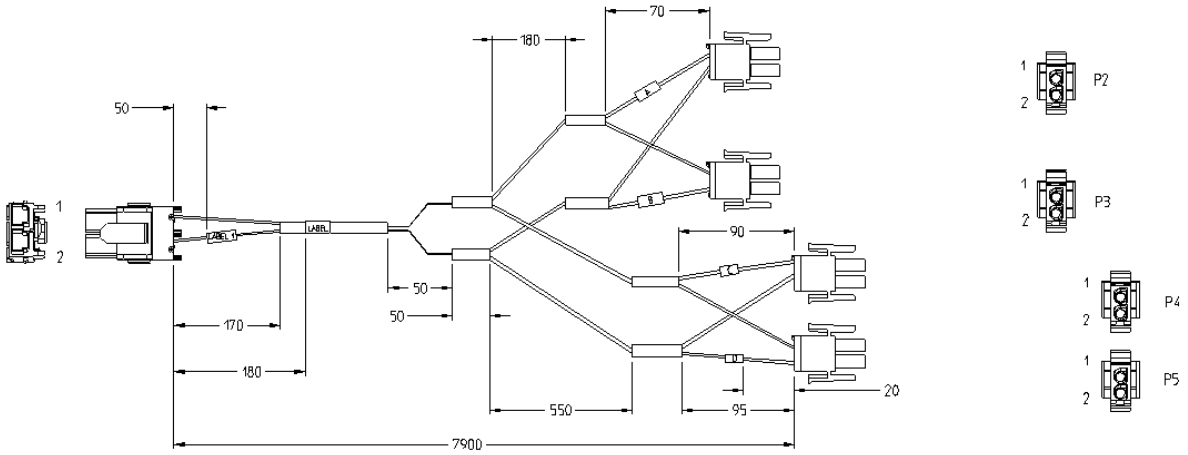
CZ056-50063 – Am80 42 V Trailing Cable. 42V PSU#1 to Carriage Sensors PCA.

Subsystem: IMPELLING SYSTEM. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67146 (Impelling 42V power cable SERV).





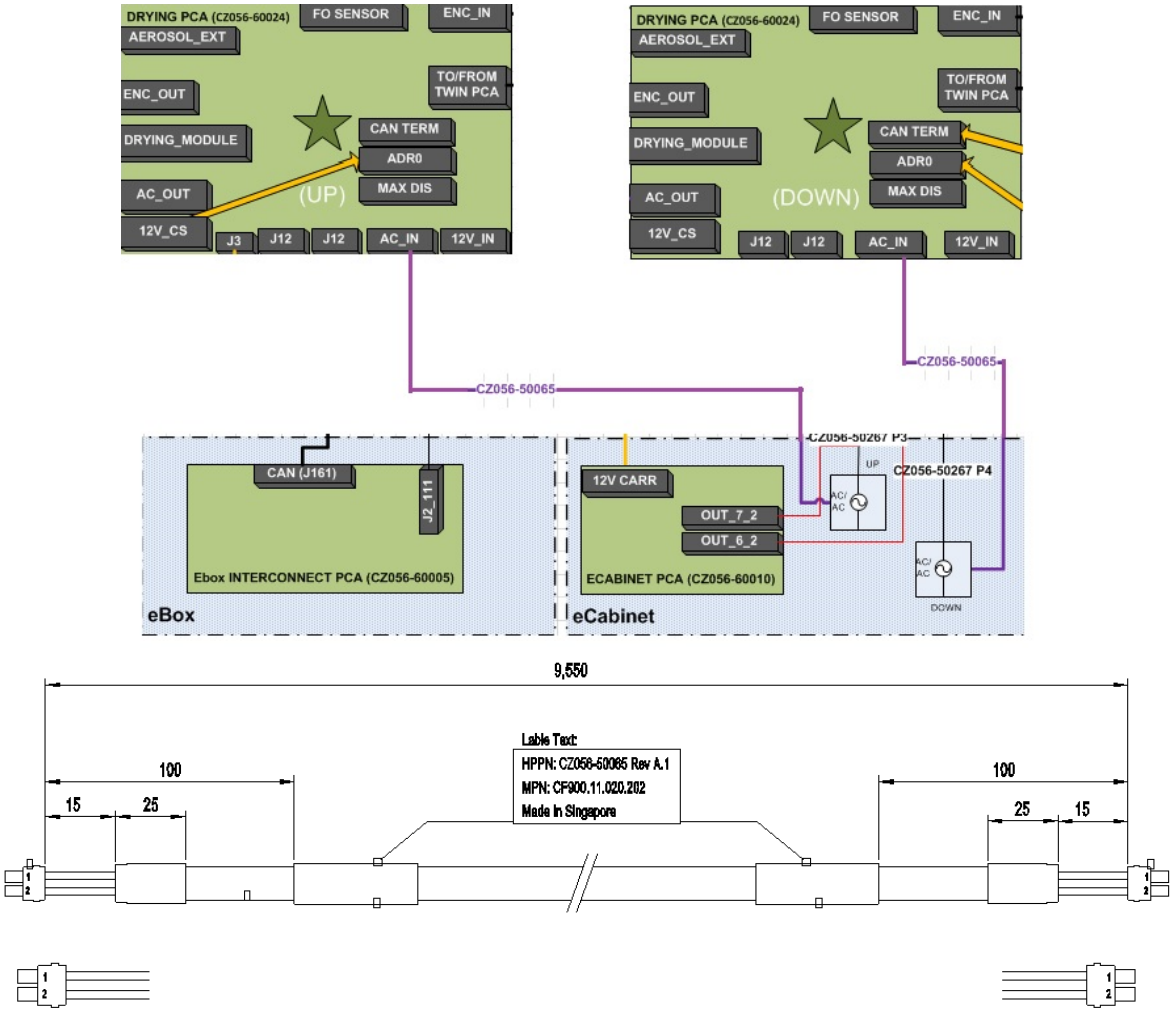
WIRING DIAGRAM		
FROM	WIRE COLOR	TO
P1-PIN 1	RED	P2-PIN 1
	RED	P3-PIN 1
	RED	P4-PIN 1
	RED	P5-PIN 1
P1-PIN 2	BLACK	P2-PIN 2
	BLACK	P3-PIN 2
	BLACK	P4-PIN 2
	BLACK	P5-PIN 2

CZ056-50065 – Am80 Power Trailing Cable. Delta to Drying Module.

Subsystem: IMPELLING SYSTEM. Quantity: 2 x printer.

Included in the following service parts:

- CZ056-67145 (Impelling drying AC cable SERV).

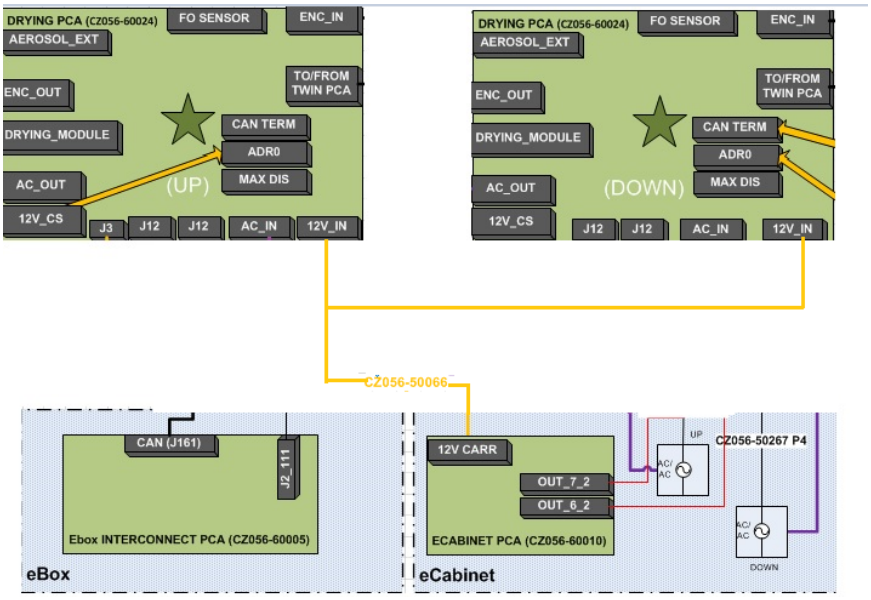


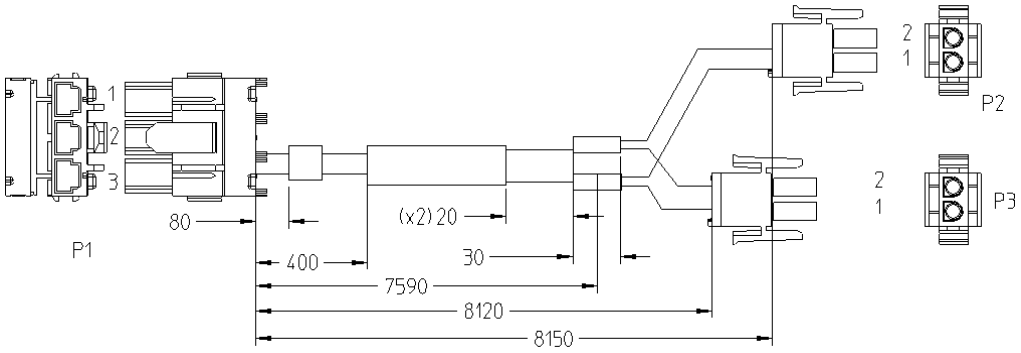
CZ056-50066 – Am80 24V Drying Carriage. 24V PSU#1 to Drying PCA.

Subsystem: IMPELLING SYSTEM. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67148 (Impelling 12V power cable SERV).





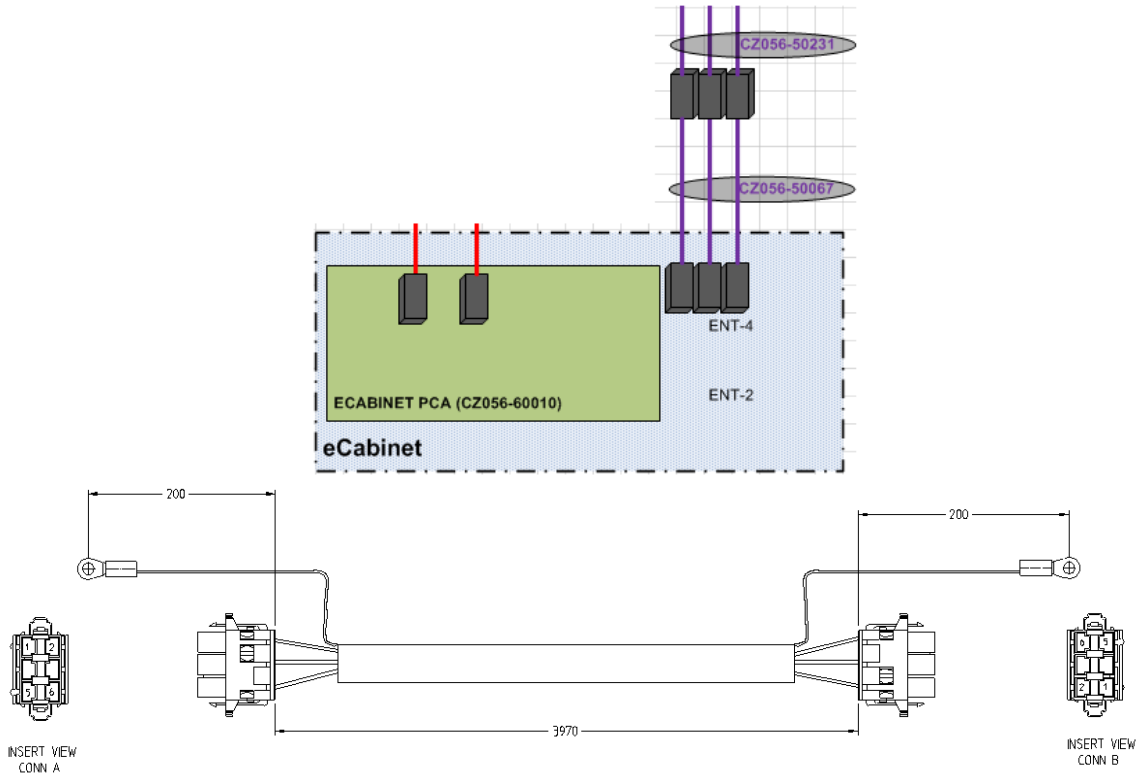
FROM	WIRE COLOR		TO	REMARK
P1-PIN3	RED	RED RED	P2-PIN1 P3-PIN1	+12V
P1-PIN2	BLACK	BLACK BLACK	P2-PIN2 P3-PIN2	GND

CZ056-50067 – Am80 Curing Power. Delta to Curing Module.

Subsystem: CURING. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67259 (Curing power input AC cables K).



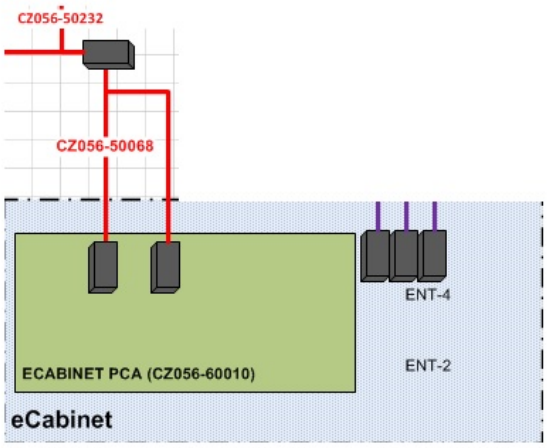
CONNECTION CHART		
FROM	COLOR	TO
A-1	BLACK 1	B-1
A-2	BLACK 2	B-2
A-3	BLACK 3	B-3
A-4	BLACK 4	B-4
A-5	BLACK 5	B-5
A-6	BLACK 6	B-6
M4 RING	GREEN/YELLOW	M4 RING

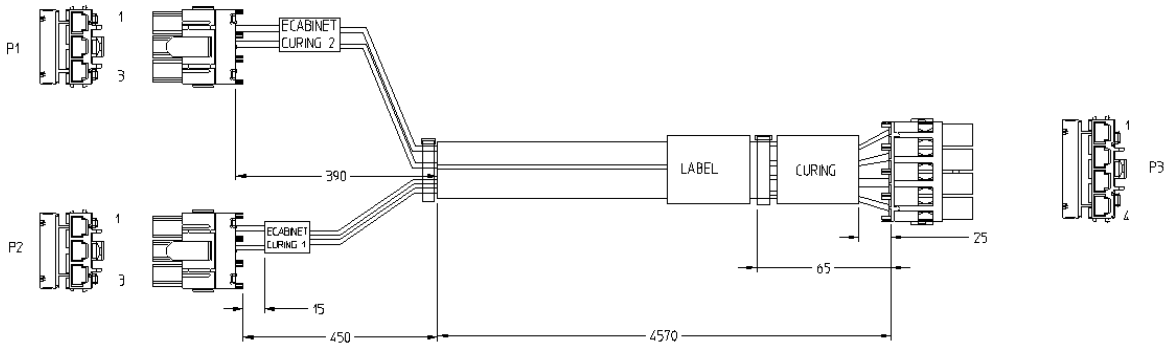
CZ056-50068 – Am80 24V Curing PCA. 24V PSU#1 to Curing PCA.

Subsystem: CURING. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67256 (Curing power input DC cables K).





WIRING DIAGRAM

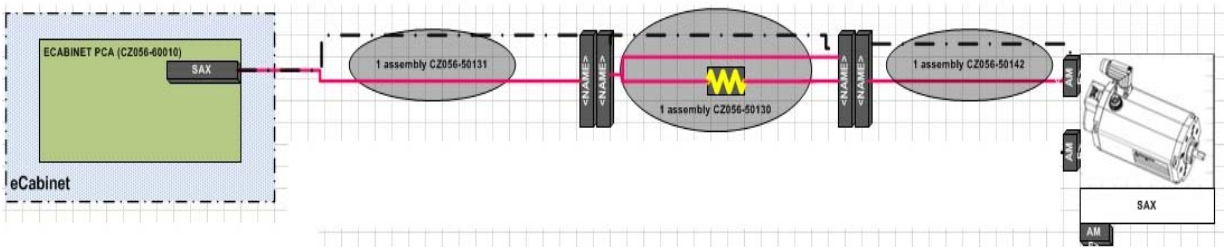
FROM	WIRE COLOR	TO
P1-1	RED	P3-1
P1-2	BLACK	P3-2
P2-1	RED	P3-3
P2-2	BLACK	P3-4

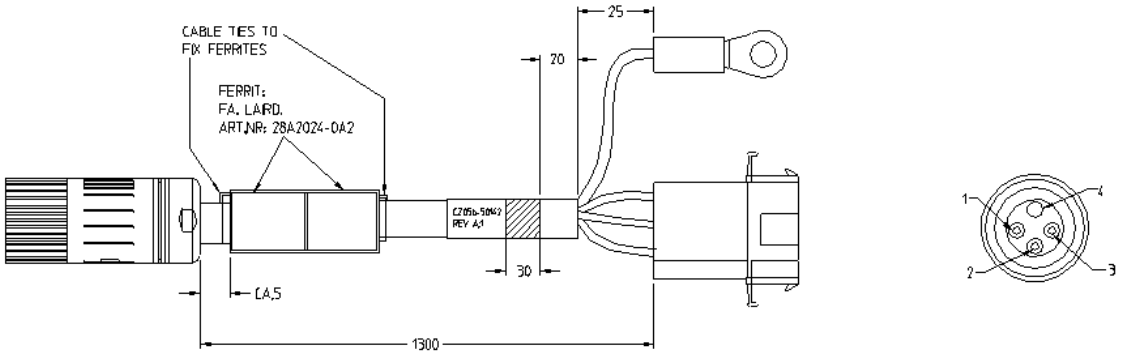
CZ056-50142 – Sax Power Cable. Braking Resistor Enclosure to Scan Axis Motor.

Subsystem: IMPELLING SYSTEM. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67367 (SAX motor power cables KIT SER).





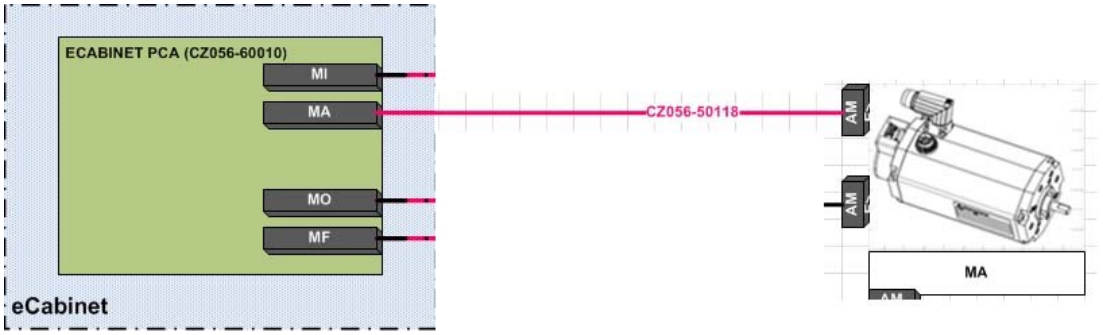
CONNECTOR 1 PIN	WIRE	CONNECTOR 2 PIN	COMMNENT
1	BLACK-1 / AWG14	1	+42V
2	BLACK-2 / AWG14	3	BRANKING RESITOR
3	BLACK-3 / AWG14	2	GND
4	YELLOW/GRREN/AWG14	-	PE WITH RING TONGUE TERMINAL

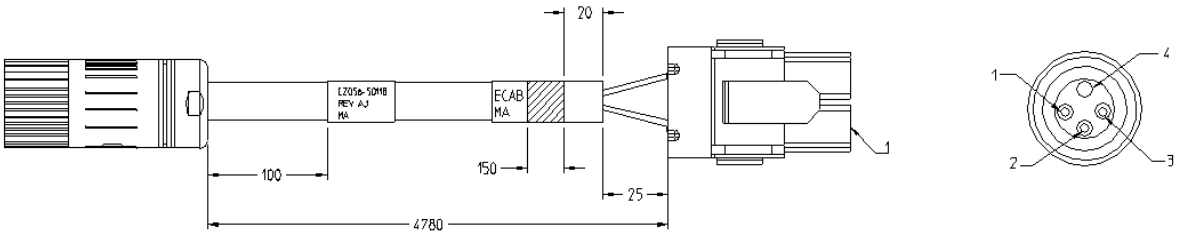
CZ056-50118 – Ma Motor Power Cable. 42V PSU#2 to MIMAMF Motor.

Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67271 (MA power cable SERV).





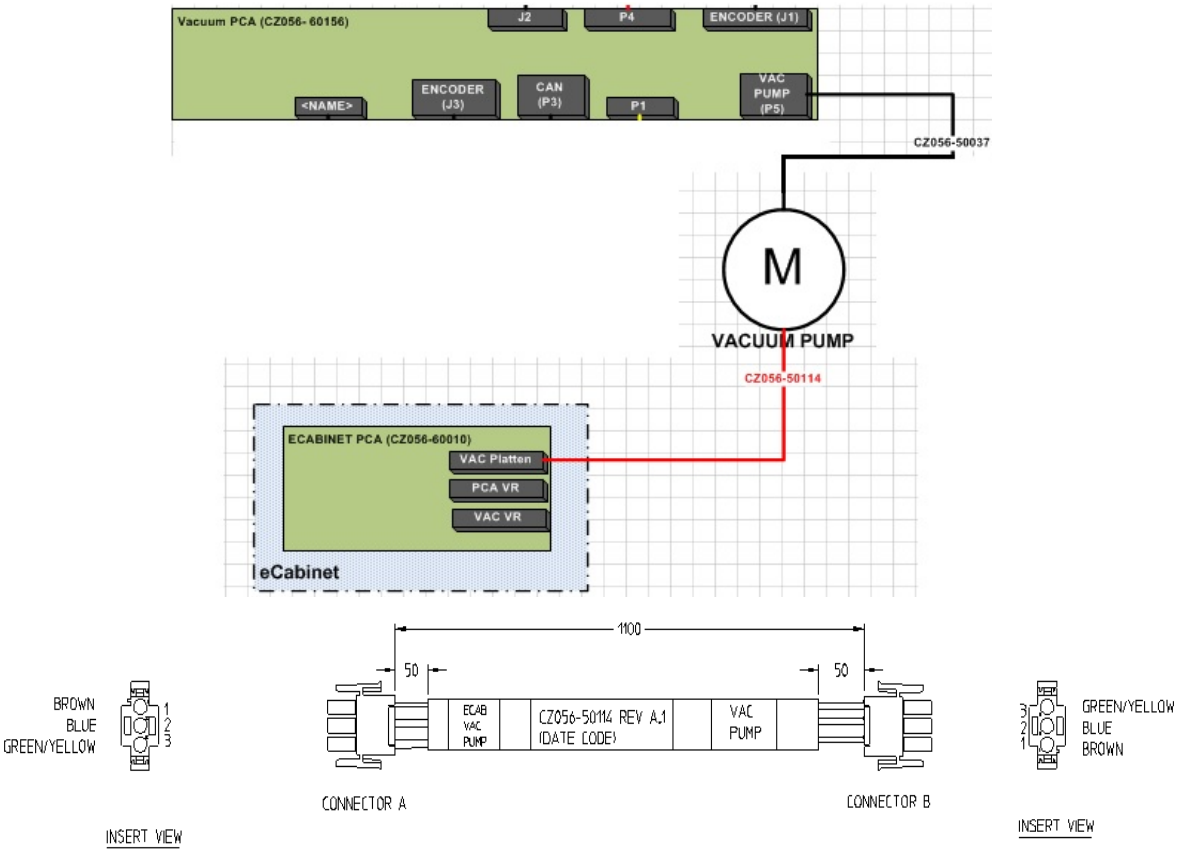
CONNECTOR 1	WIRE	CONNECTOR 2	COMMNENT
PIN		PIN	
1	BLACK-1 / AWG14	1	+42V
N.C.	-	-	-
3	BLACK-3 / AWG14	2	GND
N.C.	-	-	-

CZ056-50114 – Vacuum Pump Power. Power Transformer to Vacuum Pump.

Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67109 (Vacuum pump cable KIT SERV).

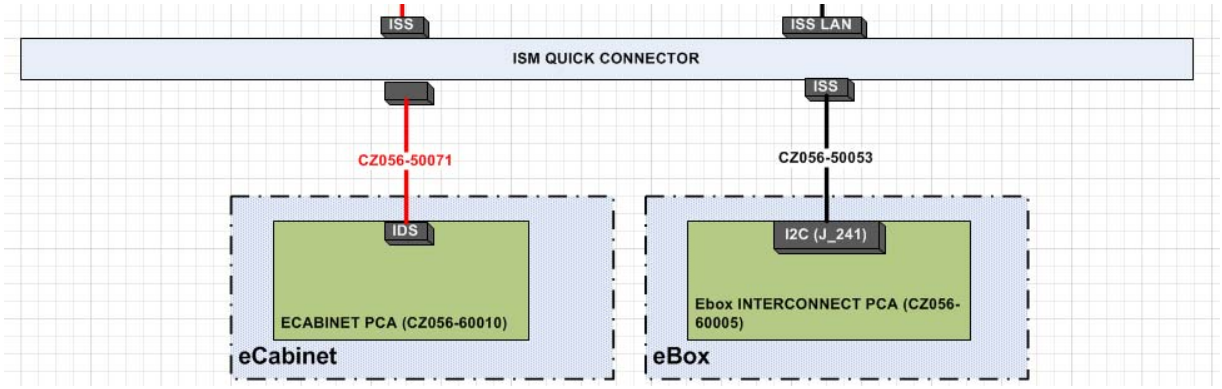


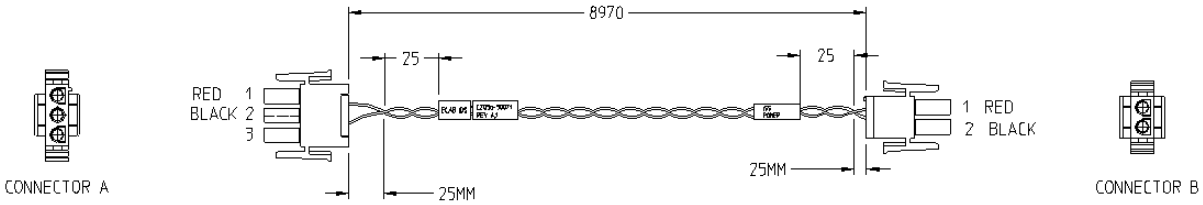
CZ056-50071 – 24V IDS e-Cabinet. E-Cabinet to ISS PCA.

Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67075 (ISM cables KIT SERV).



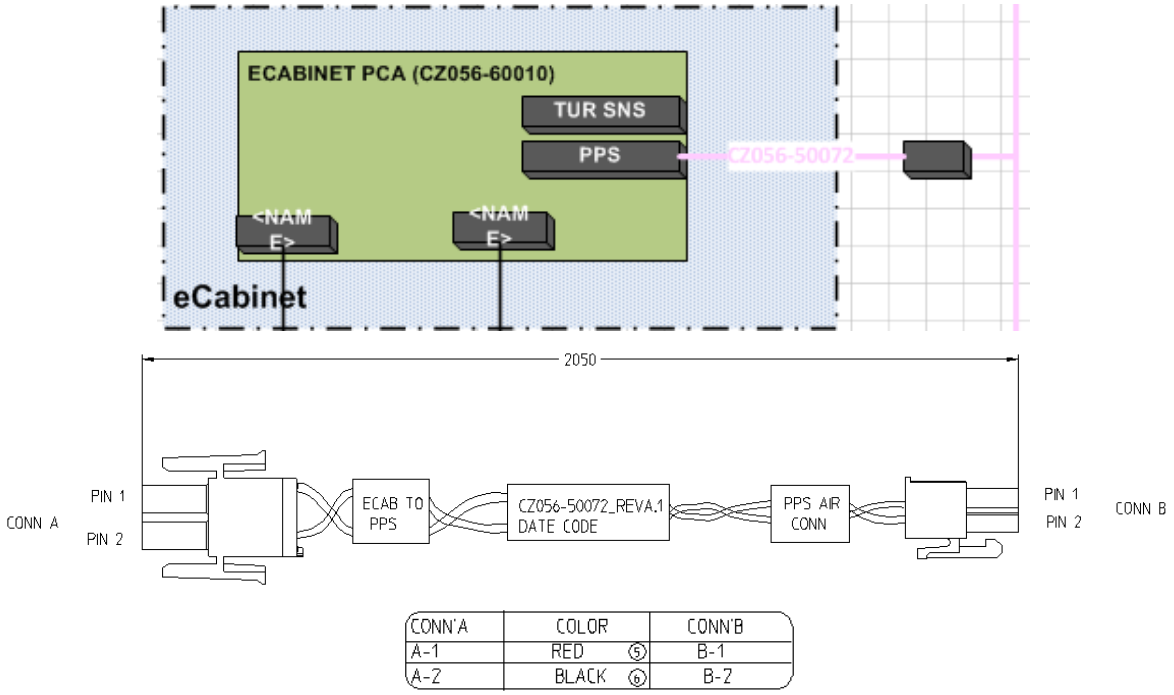


FROM	COLOR	TO
A-1	RED	B-1
A-2	BLACK	B-2
A-3	N/C	

CZ056-50072 – E-Cabinet to PPS Power Cable. E-Cabinet to PPS.
Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67068 (PPS power cables set SERV).



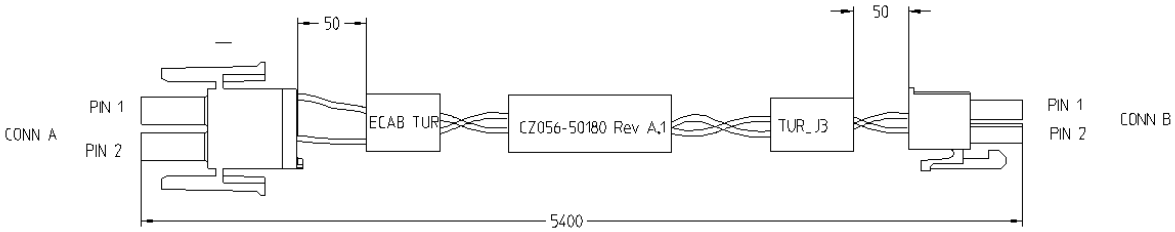
CONN'A	COLOR	CONN'B
A-1	RED ⑤	B-1
A-2	BLACK ⑥	B-2

CZ056-50180 – TUR Power Cable. E-Cabinet to Media Floor Motor drv.

Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67224 (R2FF TUR assy SERV).



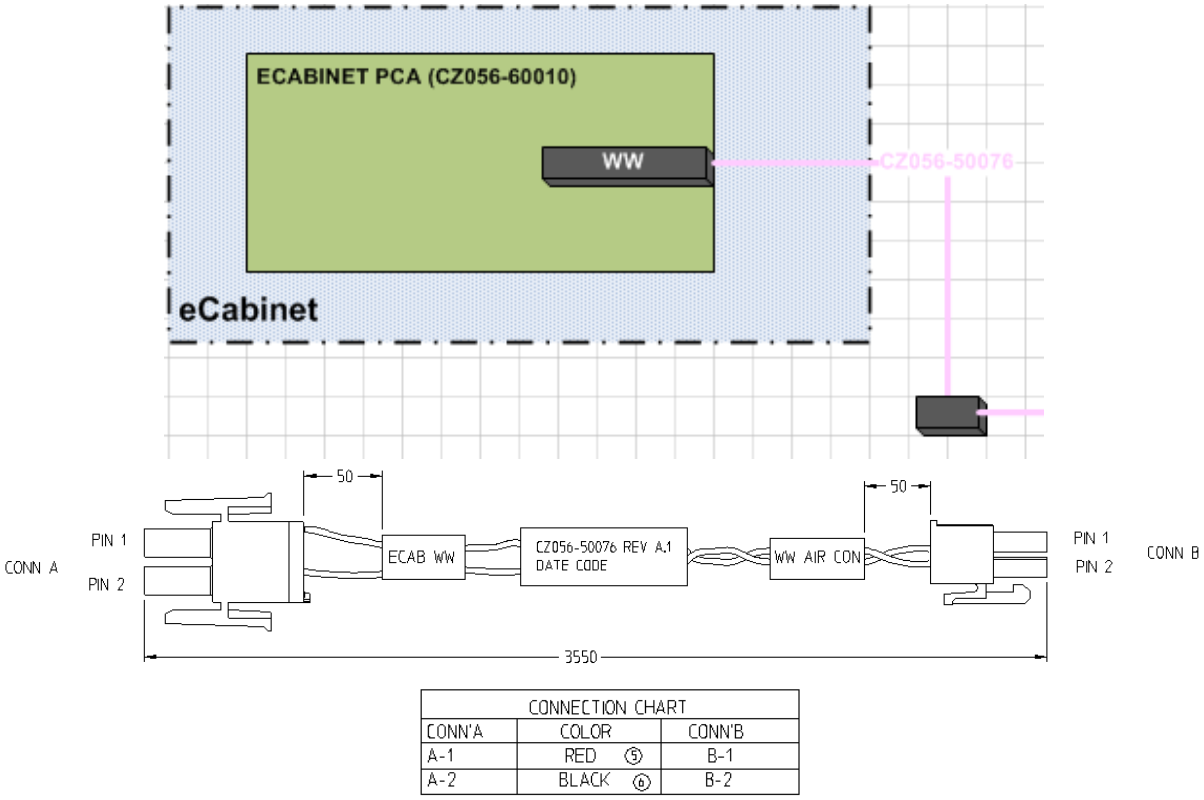
CONN'A	COLOR	CONN'B
A-1	RED (5)	B-1
A-2	BLACK (6)	B-2

CZ056-50076 – E-Cabinet to WW Power Cable. E-Cabinet to SVS.WW.

Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67313 (Web Wipe cables KIT SERV).



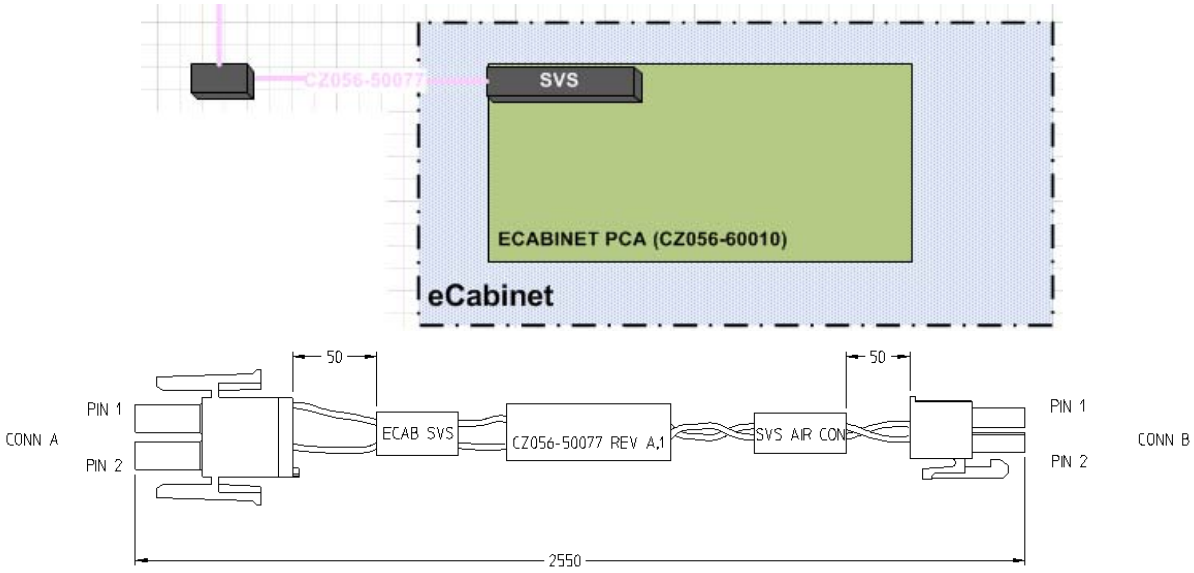
CONNECTION CHART		
CONN'A	COLOR	CONN'B
A-1	RED ⑤	B-1
A-2	BLACK ⑥	B-2

CZ056-50077 – Service Station Power Cable. E-Cabinet to SVS.Capping.

Subsystem: SERVICE STATION. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67312 (SVS cables KIT SERV).

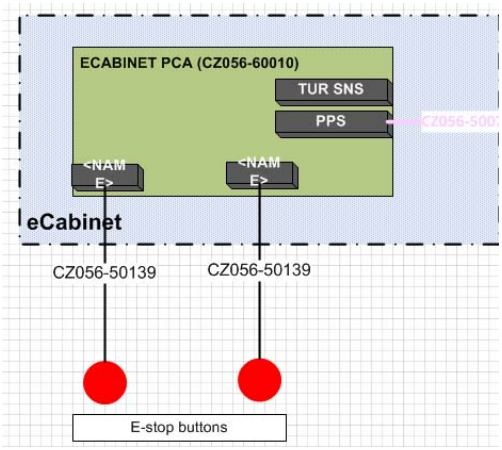


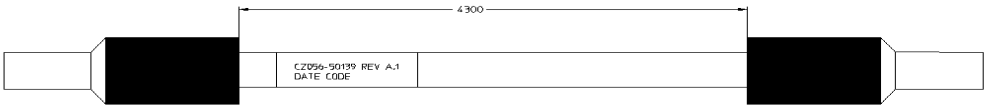
CONNECTION CHART		
CONN'A	COLOR	CONN'B
A-1	RED ⑤	B-1
A-2	BLACK ⑥	B-2

CZ056-50139 – Emergency Stop Buttons to SR c. Stop Buttons to SR Assembly.

Subsystem: CABLES KIT. Quantity: 2 x printer.

Included in the following service parts:



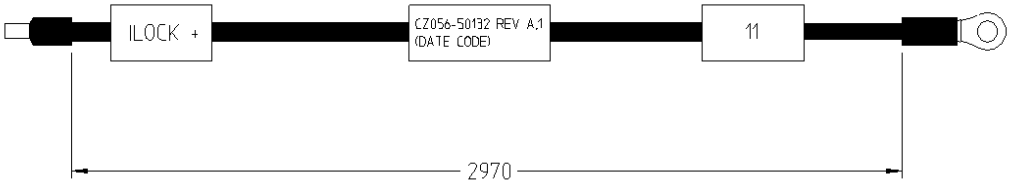


CZ056-50132 – Interlock to SR Cable. SR Assembly to Interlocks.

Subsystem: CABLES KIT. Quantity: 2 x printer.

Included in the following service parts:

- CZ056-67405 (Safety interlock SERV).
- CZ056-67392 (Extended Uptime Kit for HP Lat).

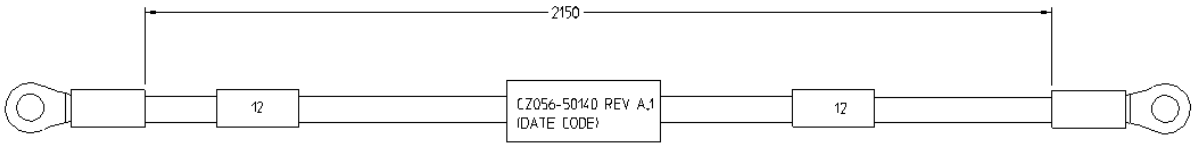


CZ056-50140 – Interlock to Interlock Cable. Interlocks to Interlocks.

Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67405 (Safety interlock SERV).
- CZ056-67392 (Extended Uptime Kit for HP Lat).

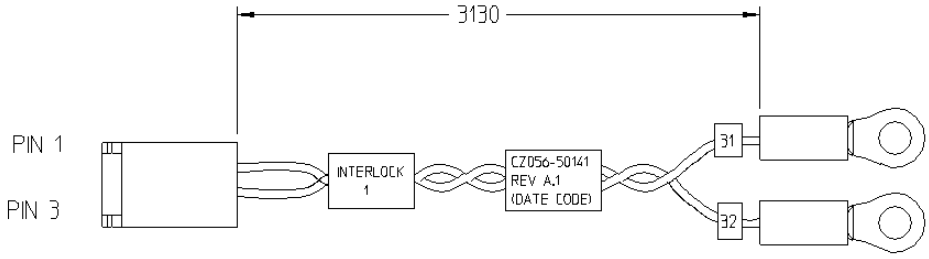


CZ056-50141 – Interlock to e-Cabinet PCA Cable. Interlocks to e-Cabinet PCA.

Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67405 (Safety interlock SERV).
- CZ056-67392 (Extended Uptime Kit for HP Lat).

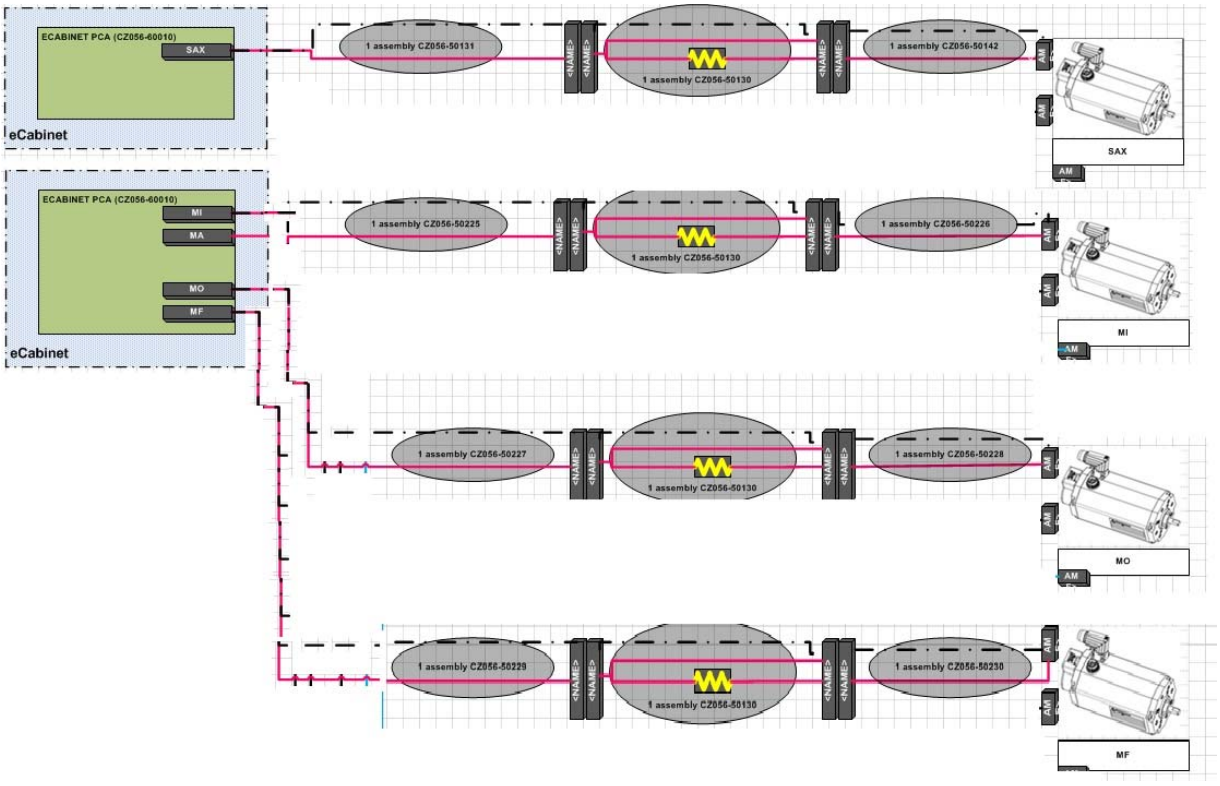


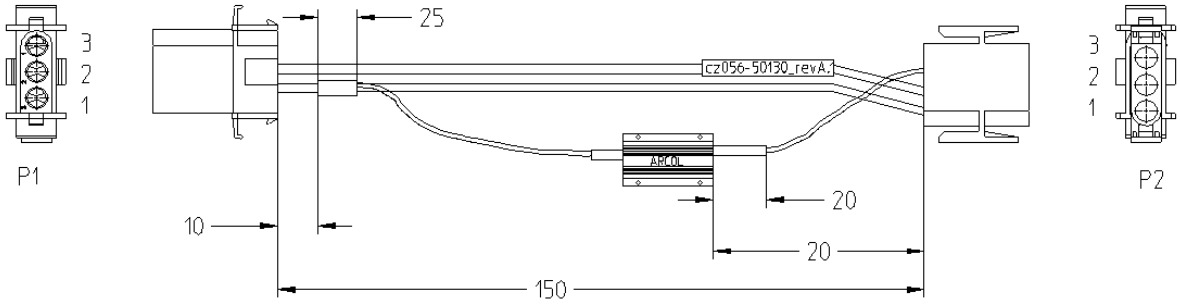
CONNECTION CHART			
CONN' A	COLOR	CONN' B	REMARKS
A-1	BLUE	31	1 TWIST / 25-30mm
A-2	N/C	-	
A-3	BLUE	32	

CZ056-50130 – Braking Resistor Enclosure Assy. Braking Resistor Enclosure Input to Output.
Subsystem: IMPELLING SYSTEM. Quantity: 4 x printer.

Included in the following service parts:

- CZ056-67273 (MI power cable KIT SERV).
- CZ056-67276 (MO power cable KIT SERV).
- CZ056-67279 (MF power cable KIT SERV).
- CZ056-67367 (SAX motor power cables KIT SERV).





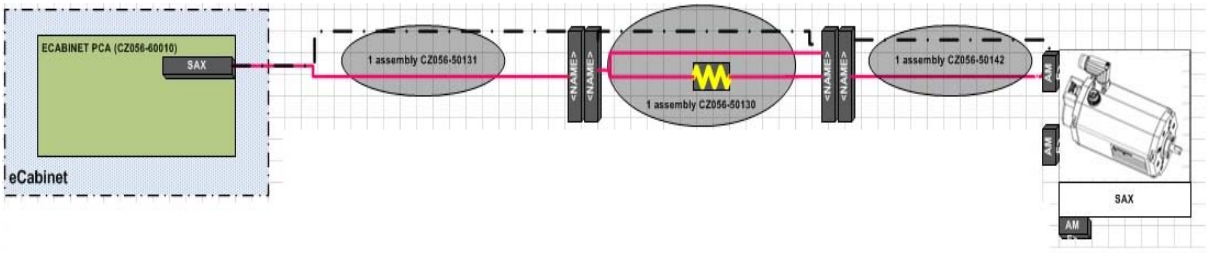
FROM	WIRE COLOR	TO
P1-1	RED	P2-1
P1-2	BLACK	P2-2
SPLICE	RED	P2-1
	RED	RESISTOR
RESISTOR	BLUE	P2-3

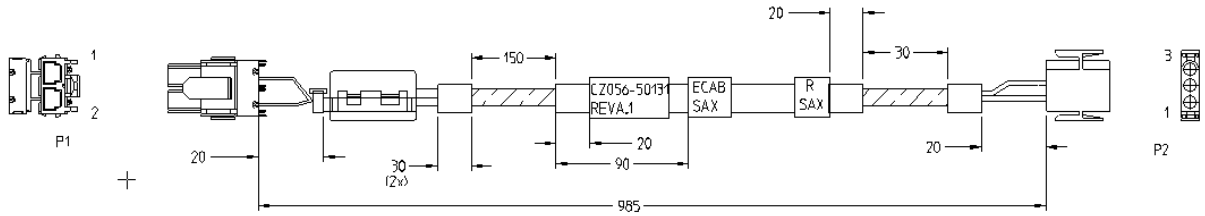
CZ056-50131 – Braking Resistor Enclosure Power. 42V PSU#1 to Braking Resistor Enclosure.

Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67367 (SAX motor power cables KIT SERV).





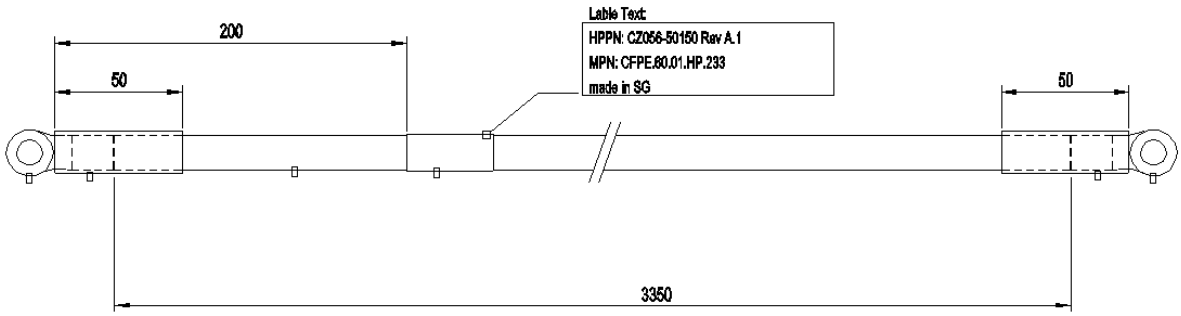
FROM	WIRE COLOR	TO
P1-1	RED	P2-1
P1-2	BLACK	P2-2

CZ056-50150 – PE Trailing Cable. Delta Sinewave to Drying PCA.

Subsystem: IMPELLING SYSTEM. Quantity: 2 x printer.

Included in the following service parts:

- CZ056-67149 (Impelling PE cable SERV).
- CZ056-67319 (Complete chain and tubes SERV).
- CZ056-67310 (Service Maintenance Kit).

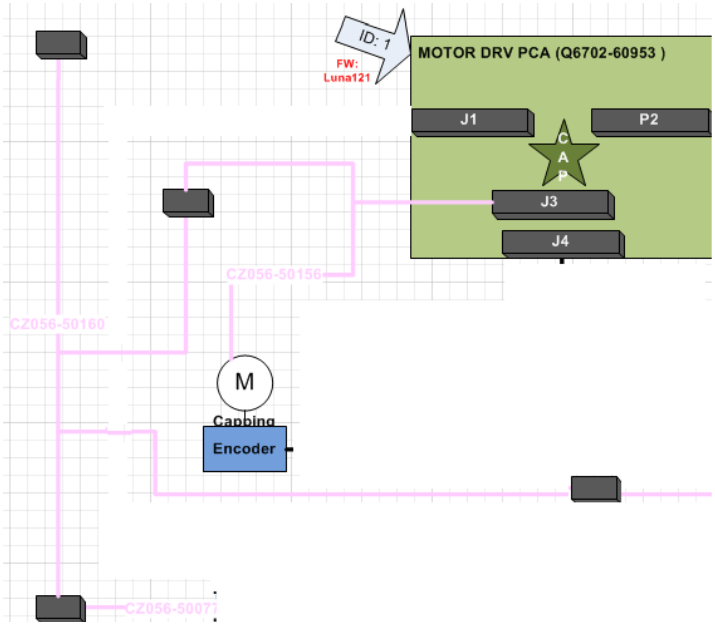


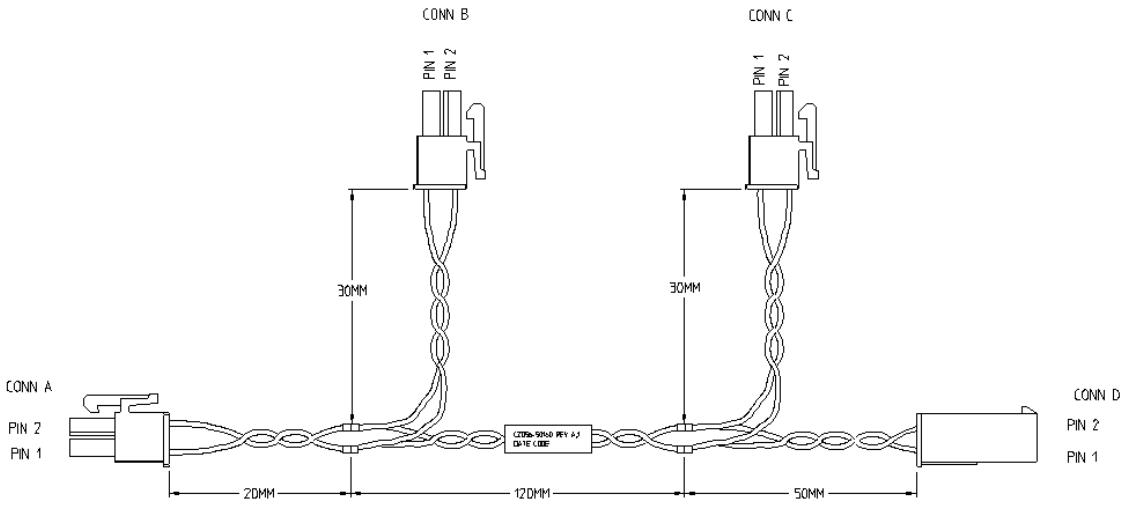
CZ056-50160 – Capping Power in T Cable. E-Cabinet to SVS.Capping.

Subsystem: SERVICE STATION. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67042 (SVS assy SERV).
- CZ056-67312 (SVS Cables KIT SERV).





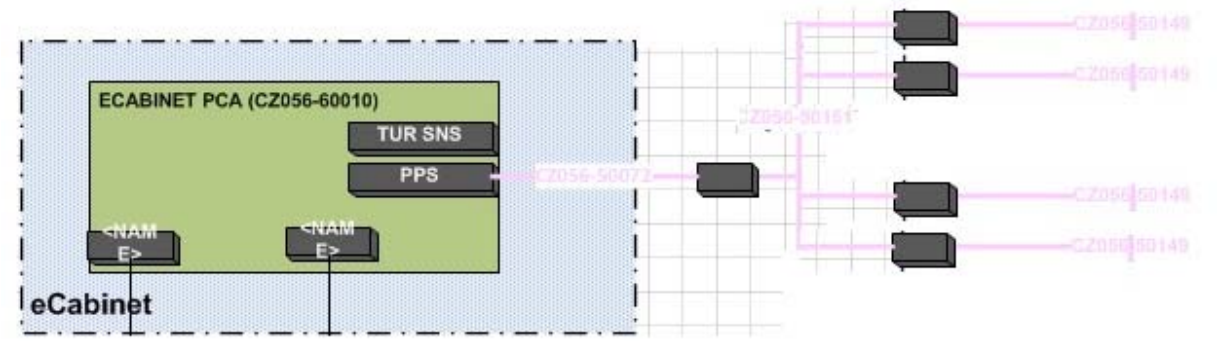
CONNECTION CHART			
FROM	COLOR	TO	REMARKS
A-1	RED ⓐ	B-1	ALL WIRES TO BE TWISTED WITH 1 TURN / 15mm
	RED ⓐ	C-1	
	RED ⓐ	D-1	
A-2	BLACK ⑦	B-2	
	BLACK ⑦	C-2	
	BLACK ⑦	D-2	

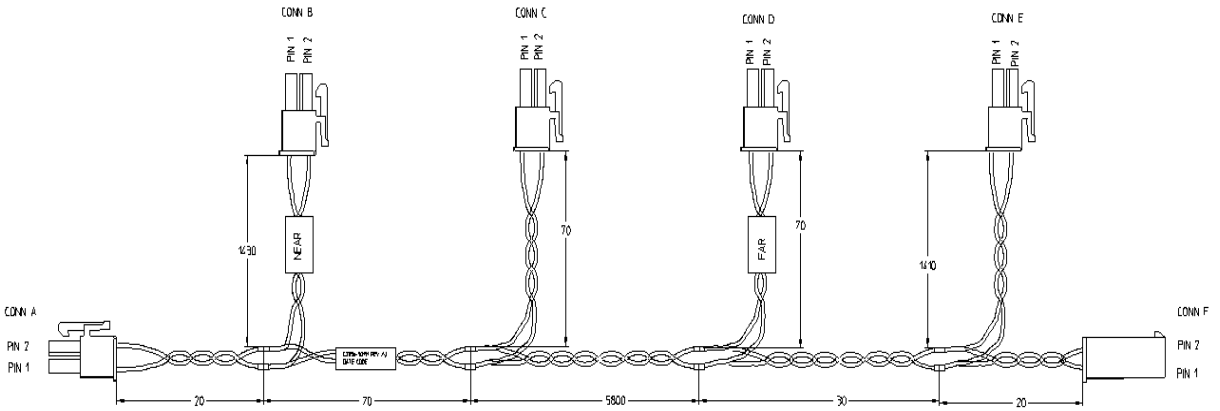
CZ056-50151 – PPS Power in T cable. PPS to PPS.

Subsystem: PPS. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67068 (PPS power cables set SERV).





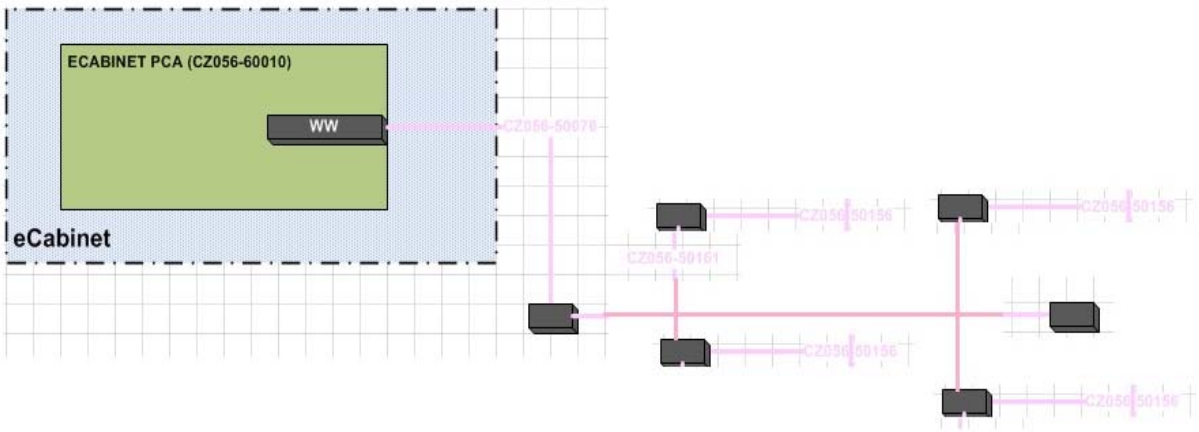
CONNECTION CHART			
FROM	COLOR	TO	REMARKS
A-1	RED ⑧	B-1	ALL WIRES TO BE TWISTED WITH 1 TURN / 15mm
	RED ⑧	C-1	
	RED ⑧	D-1	
	RED ⑧	E-1	
	RED ⑧	F-1	
A-2	BLACK ⑦	B-2	
	BLACK ⑦	C-2	
	BLACK ⑦	D-2	
	BLACK ⑦	E-2	
	BLACK ⑦	F-2	

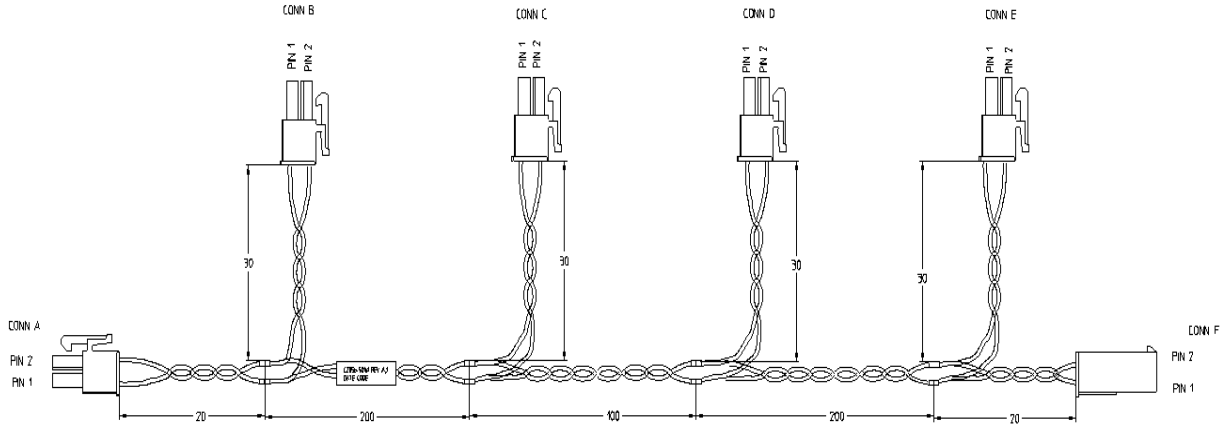
CZ056-50161 – WW Power in T Cable. E-Cabinet to SVS.WW.

Subsystem: WEB WIPE. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67313 (Web Wipe cables KIT SERV).





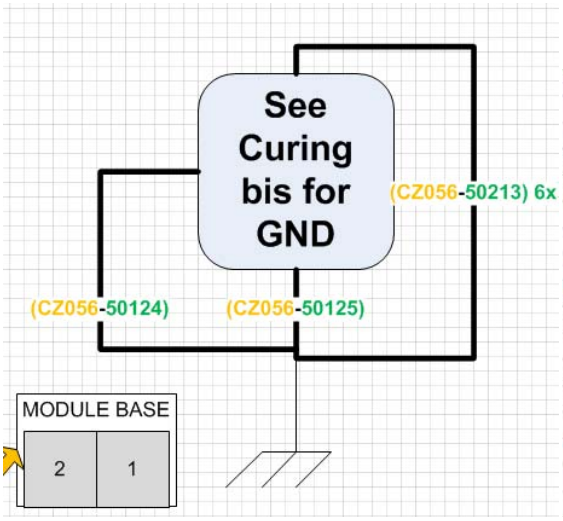
CONNECTION CHART			
FROM	COLOR	TO	REMARKS
A-1	RED ⑥	B-1	ALL WIRES TO BE TWISTED WITH 1 TURN / 15mm
	RED ⑥	C-1	
	RED ⑥	D-1	
	RED ⑥	E-1	
	RED ⑥	F-1	
A-2	BLACK ⑦	B-2	
	BLACK ⑦	C-2	
	BLACK ⑦	D-2	
	BLACK ⑦	E-2	
	BLACK ⑦	F-2	

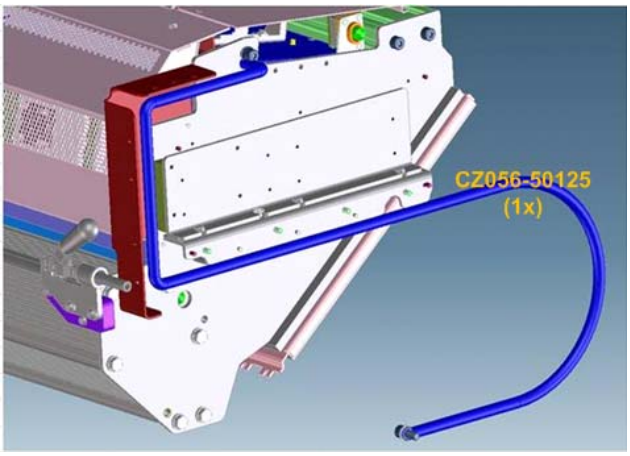
CZ056-50125 – Curing Ground. E-Cabinet to Curing.

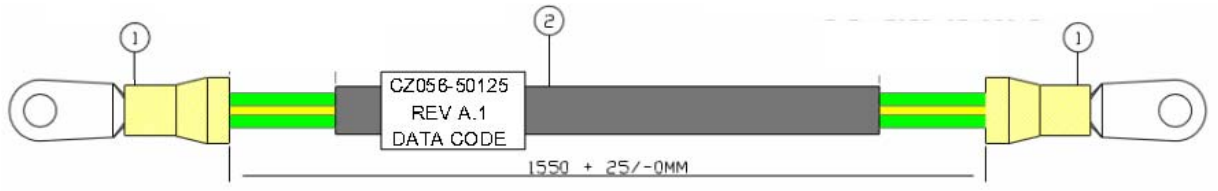
Subsystem: CURING. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67223 (Curing assy SERV).
- CZ056-67314 (Curing cables KIT SERV).





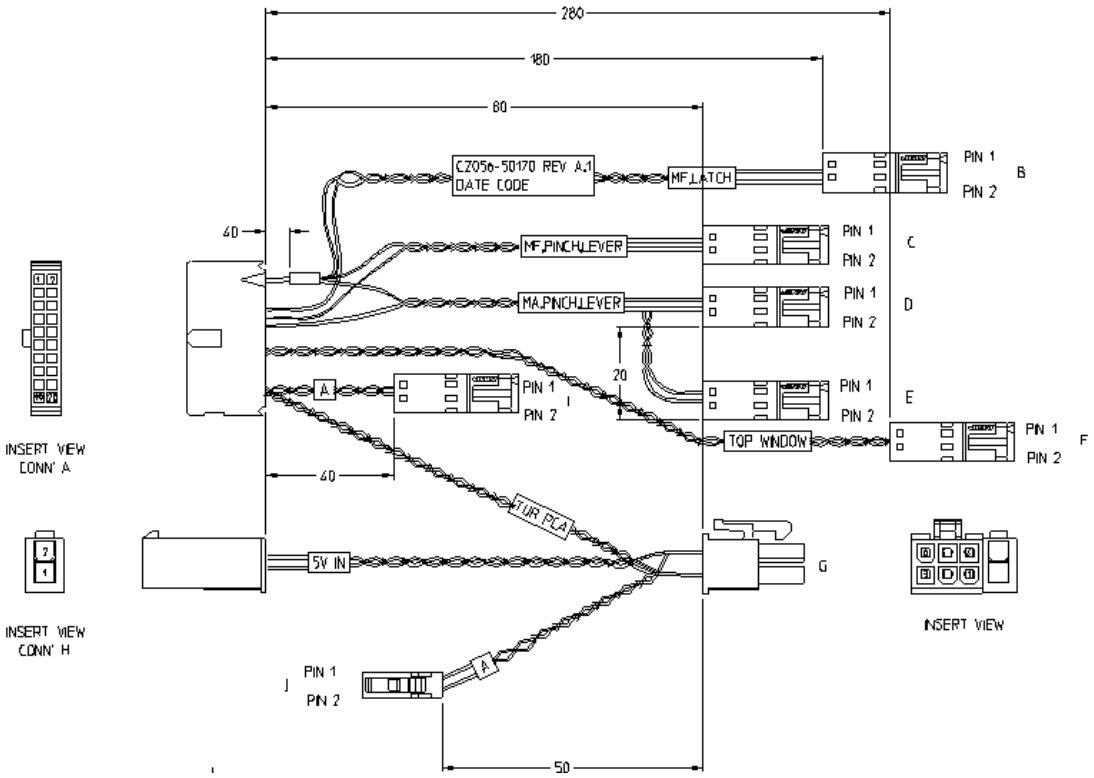


CZ056-50170 – TUR Sensor Cable. Motor DRV PCA to Optical Sensors.

Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67224 (R2FF TUR assy SERV).

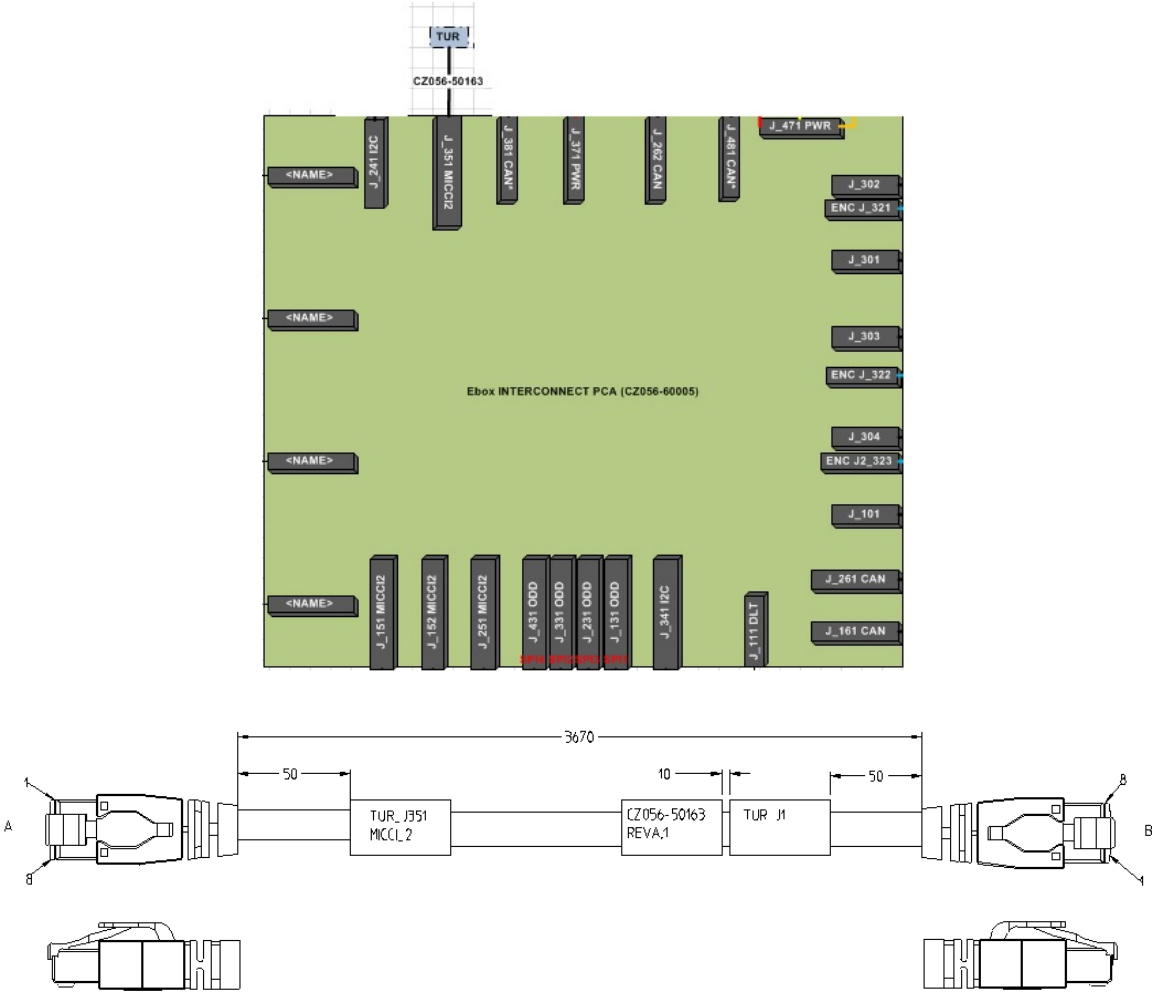


CONNECTION CHART				
FROM	COLOR		TO	REMARK
A-1	BLACK	①	ITEM 7	SPLICE
ITEM 7	BLACK	①	B-1	
A-4	YELLOW	④	B-2	TWIST
ITEM7	BLACK	①	C-1	
A-6	BLUE	⑥	C-2	TWIST
ITEM 7	BLACK	①	D-1	
A-8	GREY	⑧	E2	TWIST
D-2	YELLOW	④	E1	TWIST WITH GREY-E2
A-9	BROWN	⑨	A-10	JUMPER
A-11	RED	②	A-12	JUMPER
A-13	ORANGE	③	A-14	JUMPER
A-15	BLACK	①	F-1	
A-16	BLUE	⑥	F-2	TWIST
A-17	BLACK	①	G-5	
A-18	VIOLET	⑦	G-2	TWIST
A-19	BLACK	①	I-1	
A-20	GREY	⑧	I-2	TWIST
G-1	RED	②	H-1	
G-3	BLACK	①	H-2	TWIST
J-1	BLACK	①	G-6	
J-2	GREY	⑧	G-3	TWIST

CZ056-50163 – Ebox to Motor drv TUR Cable. Ebox Interconnect PCA to Media Floor Motor drv.J1.
Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67224 (R2FF TUR assy SERV).



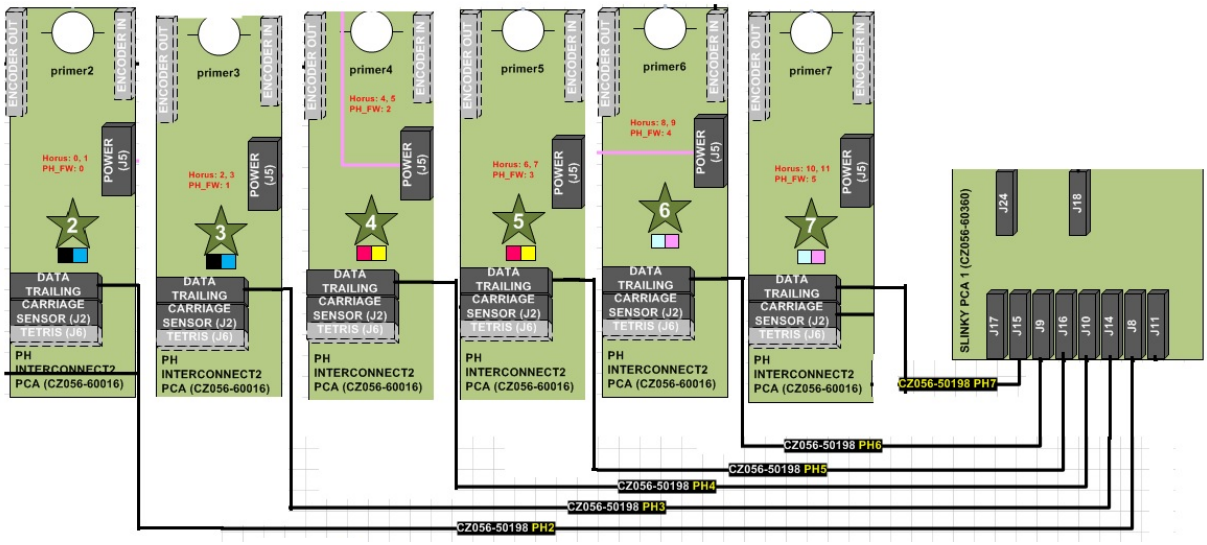
CONNECTION TABLE		
A	B	COLOR
1	1	WHITE/ORANGE
2	2	ORANGE
3	3	WHITE/GREEN
4	4	BLUE
5	5	WHITE/BLUE
6	6	GREEEN
7	7	WHITE/BROWN
8	8	BROWN

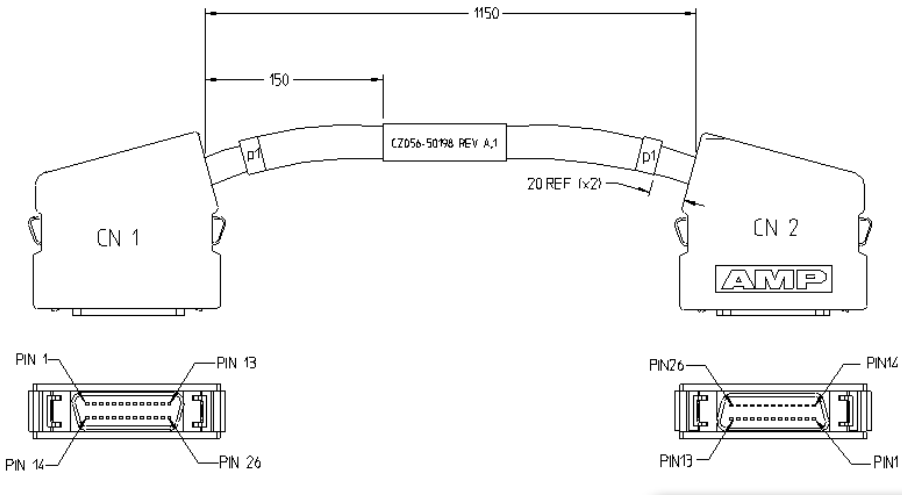
CZ056-50198 – Am80 Slinky to Color PH Board. Slinky to Color PH Board.

Subsystem: CARRIAGE. Quantity: 6 x printer.

Included in the following service parts:

- CZ056-67015 (Carriage cables KIT SERV**).**



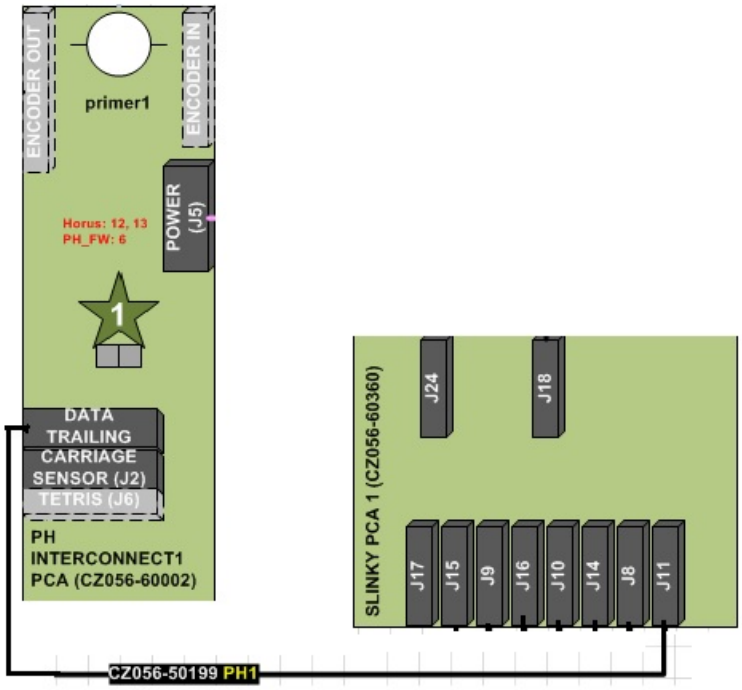


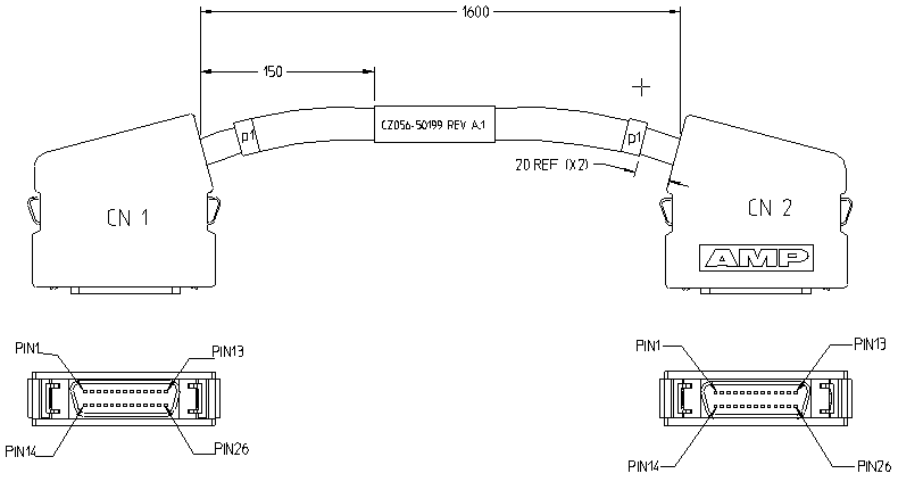
WIRE RUN LIST		
SIDE A	SIDE B	COLOR
CN1	CN2	
1	1	WHITE/YELLOW
14	14	WHITE/BROWN
2	2	WHITE/GREEN
15	15	WHITE/GRAY
3	3	WHITE/BLUE
16	16	WHITE/RED
4	4	BROWN
17	17	BROWN/WHITE
5	5	PINK
18	18	PINK/BLACK
6	6	RED
19	19	RED/BLACK
7	7	ORANGE
20	20	ORANGE/BLACK
8	8	YELLOW
21	21	YELLOW/BLACK
9	9	GREEN
22	22	GREEN/BLACK
10	10	BLUE
23	23	BLUE/WHITE
11	11	PURPLE
24	24	PURPLE/WHITE
12	12	GRAY
25	25	GRAY/BLACK
13	13	WHITE
26	26	WHITE/BLACK
SHELL	SHEL	BRAID

CZ056-50199 – Am80 Slinky to PT PH Board Data. Slinky to PT PH Board.
Subsystem: CARRIAGE. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67015 (Carriage cables KIT SERV).



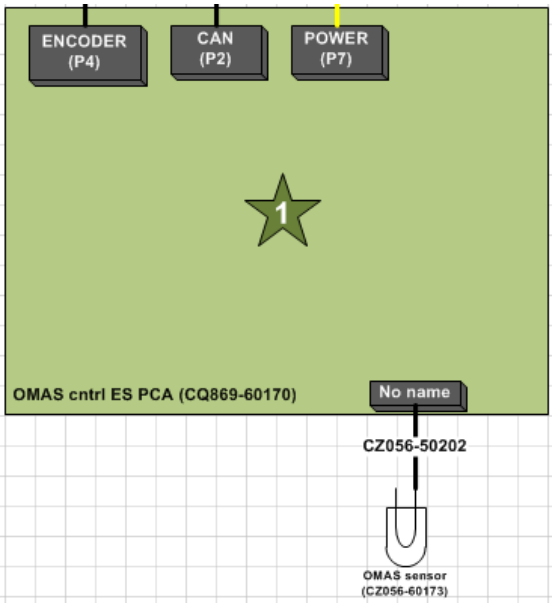


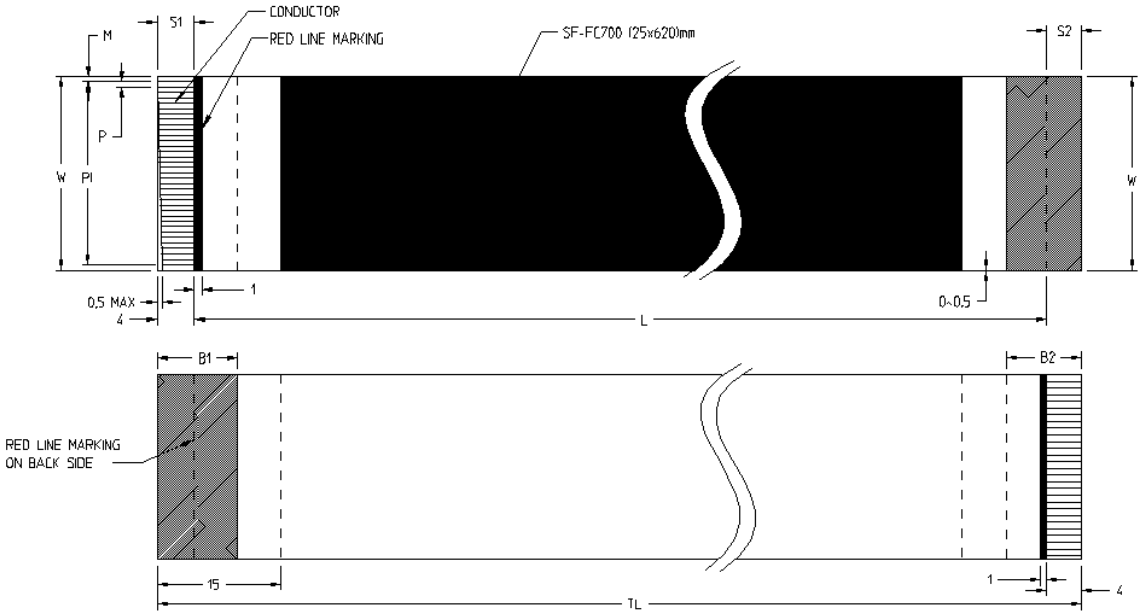
WIRE RUN LIST		
SIDE A	SIDE B	COLOR
CN1	CN2	
1	1	WHITE/YELLOW
14	14	WHITE/BROWN
2	2	WHITE/GREEN
15	15	WHITE/GRAY
3	3	WHITE/BLUE
16	16	WHITE/RED
4	4	BROWN
17	17	BROWN/WHITE
5	5	PINK
18	18	PINK/BLACK
6	6	RED
19	19	RED/BLACK
7	7	ORANGE
20	20	ORANGE/BLACK
8	8	YELLOW
21	21	YELLOW/BLACK
9	9	GREEN
22	22	GREEN/BLACK
10	10	BLUE
23	23	BLUE/WHITE
11	11	PURPLE
24	24	PURPLE/WHITE
12	12	GRAY
25	25	GRAY/BLACK
13	13	WHITE
26	26	WHITE/BLACK
SHELL	SHEL	BRAID

CZ056-50202 – OMAS Controller to Sensor Cable. OMAS Controller PCA to OMAS Sensor.
Subsystem: OMAS EE. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67316 (OMAS and Vacuum cable KIT SER).



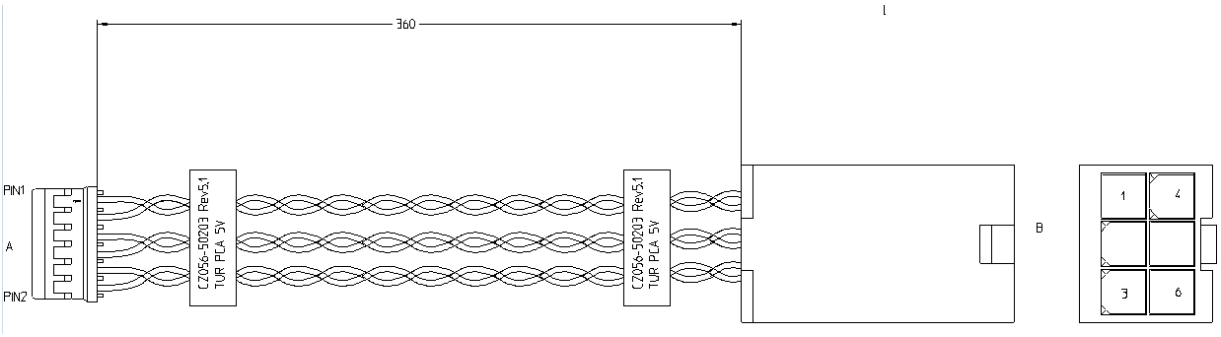


CZ056-50203 – TUR Sensor Single Cable. TUR PCA to Motor drv.

Subsystem: ROLL TO FLOOR. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67172 (R2FF Pinch Mech. Assy SERV).
- CZ056-67224 (R2FF TUR assy SERV).



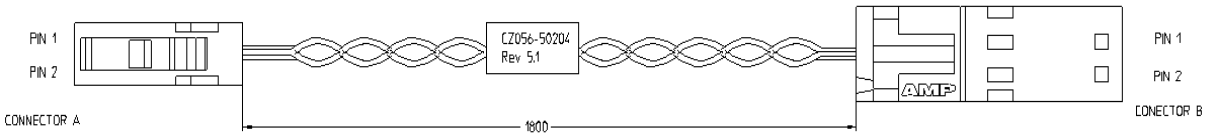
FROM	WIRE	TO	REMARK
A-1	BLACK	B-4	TWIST WITH
A-2	RED	B-1	1 TURN/15mm
A-3	BLACK	B-5	TWIST WITH
A-4	VIOLET	B-2	1 TURN/15mm
A-5	BLACK	B6	TWIST WITH
A-6	GREY	B-3	1 TURN/15mm

CZ056-50204 – R2FF Lever Switch Single Cable. Motor drv to Switches Pinch Roll to Floor.

Subsystem: ROLL TO FLOOR. Quantity: 2 x printer.

Included in the following service parts:

- CZ056-67172 (R2FF Pinch Mech. Assy SERV).



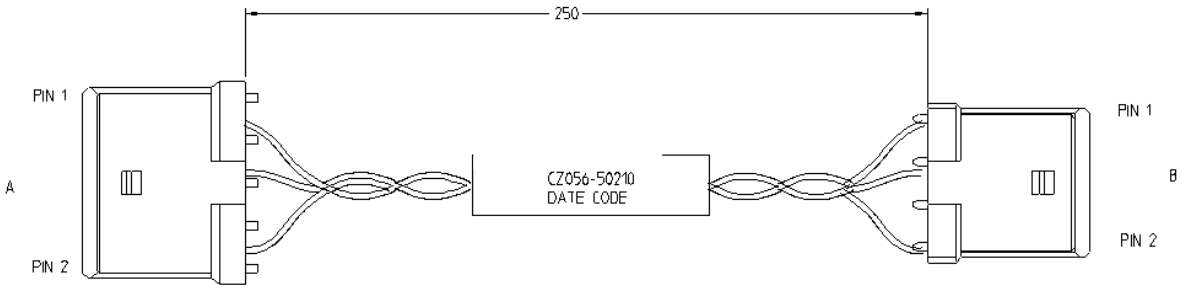
CONN'A	COLOR	CONN'B	REMARKS
A-1	BLACK (6)	B-1	TWIST WIRE
A-2	RED (5)	B-2	1 TURN/15MM

CZ056-50210 – TUR Sensor Cable Long. TUR Sensor to TUR Sensor PCA.

Subsystem: ROLL TO FLOOR. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67172 (R2FF pinch mech. assy SERV).
- CZ056-67224 (R2FF TUR assy SERV).



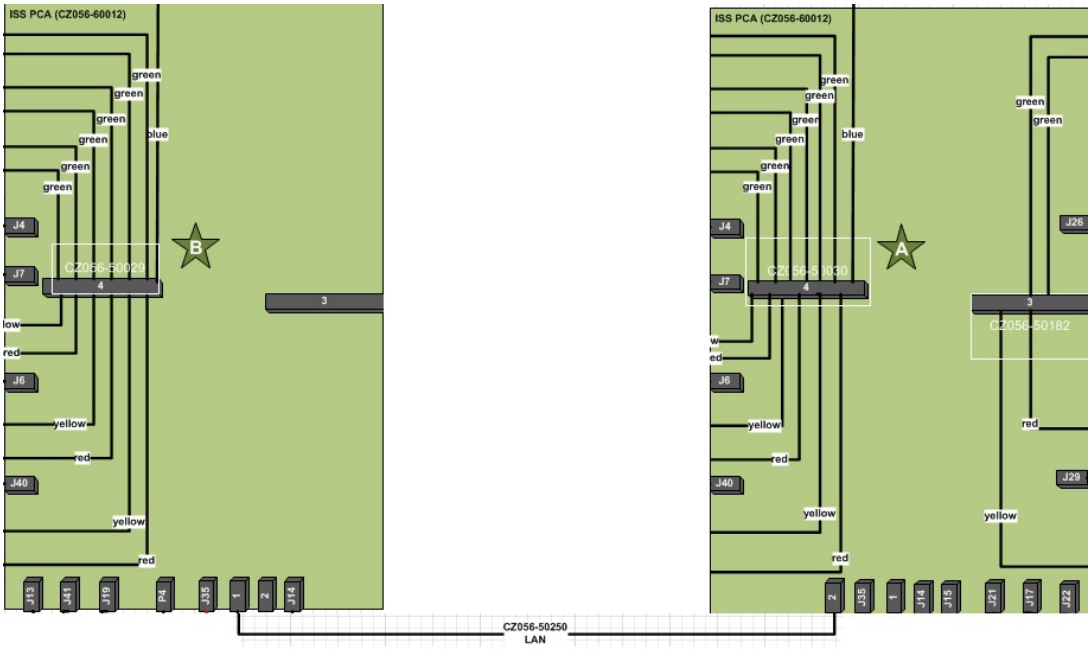
FROM	TO	WIRE	NOTE
A-1	B-1	ORANGE	
A-2	B-2	BLACK	TWSITED TOGETHER
A-3	B-3	RED	AT 1 TURN/20MM

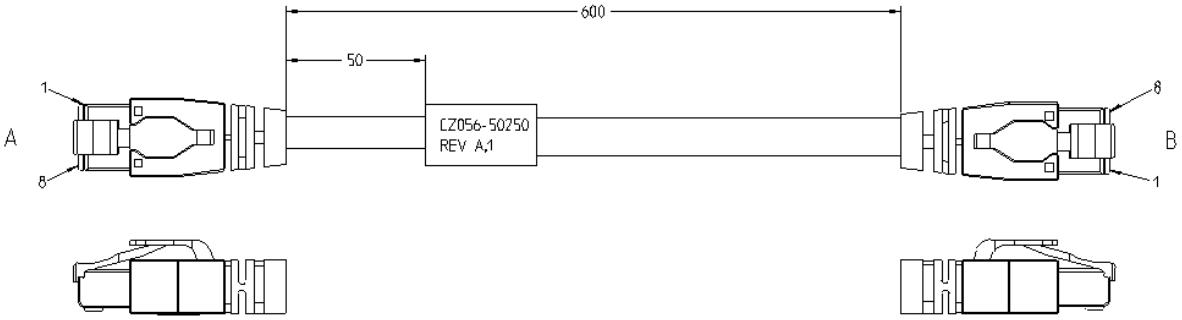
CZ056-50250 – ISS Daisy Chain Cable. IDS1 to IDS2.

Subsystem: INK DELIVERY SYSTEM. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67075 (ISM cables KIT SERV).





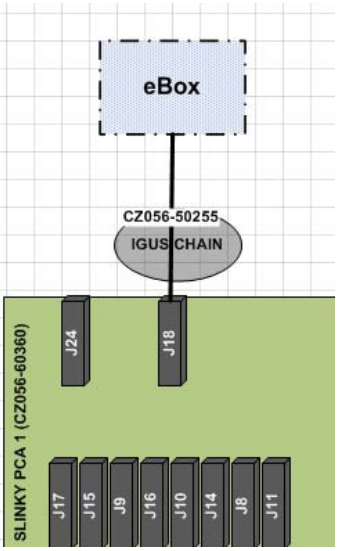
CONNECTION TABLE		
A	B	COLOR
1	1	WHITE/ORANGE
2	2	ORANGE
3	3	WHITE/GREEN
4	4	BLUE
5	5	WHITE/BLUE
6	6	GREEEN
7	7	WHITE/BROWN
8	8	BROWN

CZ056-50255 – Fiberoptics Monolayer Tube.

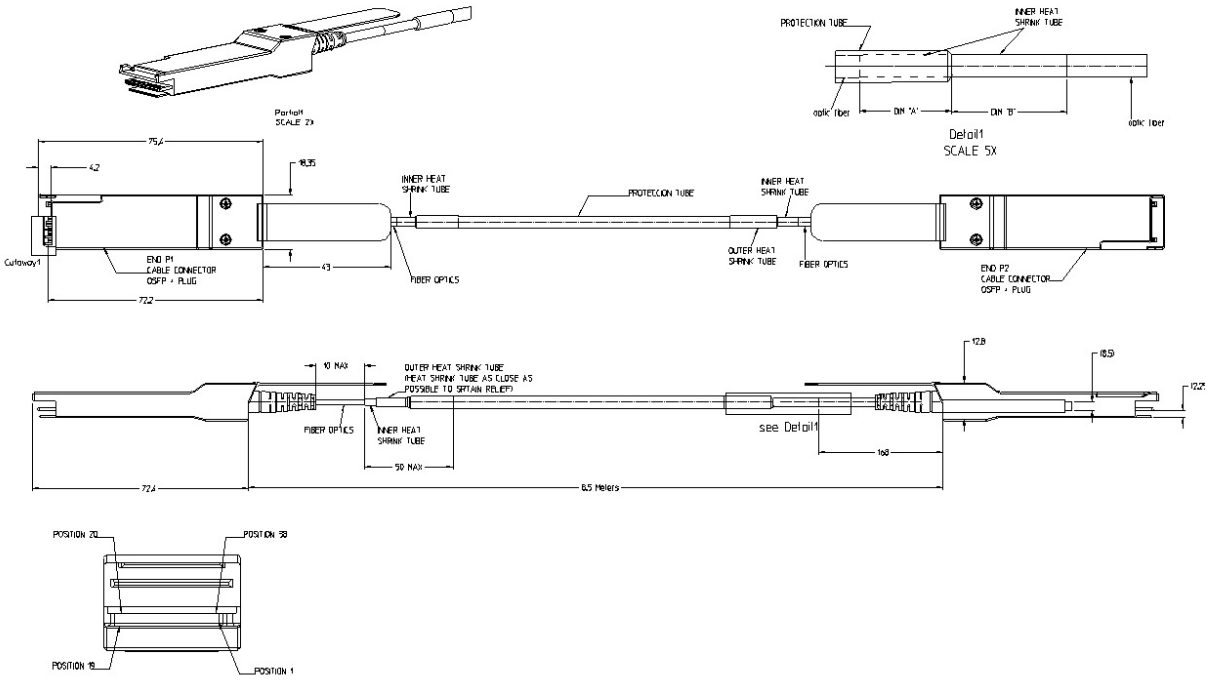
Subsystem: IMPELLING SYSTEM. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67310 (Service Maintenance Kit).
- CZ056-67319 (Complete chain and tubes SERV).
- CZ056-67366 (Fiber optics trailing cable SERV).



EDGE CONNECTOR PAD DESCRIPTION			
POSITION	SYMBOL	POSITION	SYMBOL
19	GND	20	GND
18	RX1n	21	RX2n
17	RX1p	22	RX2p
16	GND	23	GND
15	RX3n	24	RX4n
14	RX3p	25	RX4p
13	GND	26	GND
12	SDA	27	ModPrsl
11	SCL	28	IntL
10	VccRx	29	Vcc1x
9	ResetL	30	Vcc1
8	ModSelL	31	LPMode
7	GND	32	GND
6	Tx4p	33	Tx3p
5	Tx4n	34	Tx3n
4	GND	35	GND
3	Tx2p	36	Tx1p
2	Tx2n	37	Tx1n
1	GND	38	GND

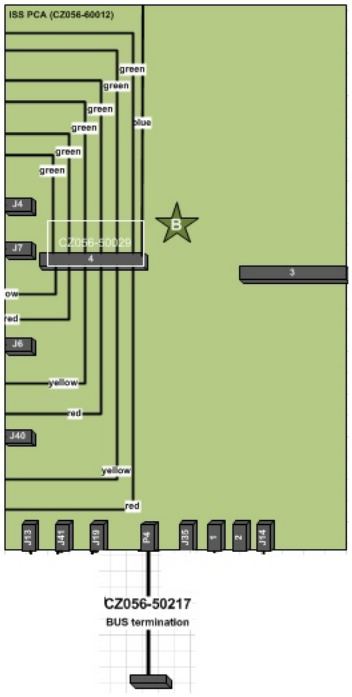


CZ056-50217 – ISS Termination Cable.

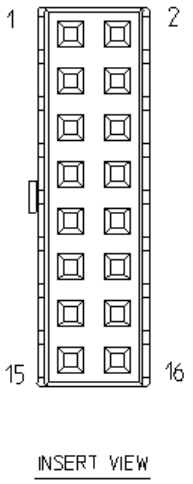
Subsystem: INK DELIVERY SYSTEM. Quantity: 1 x printer.

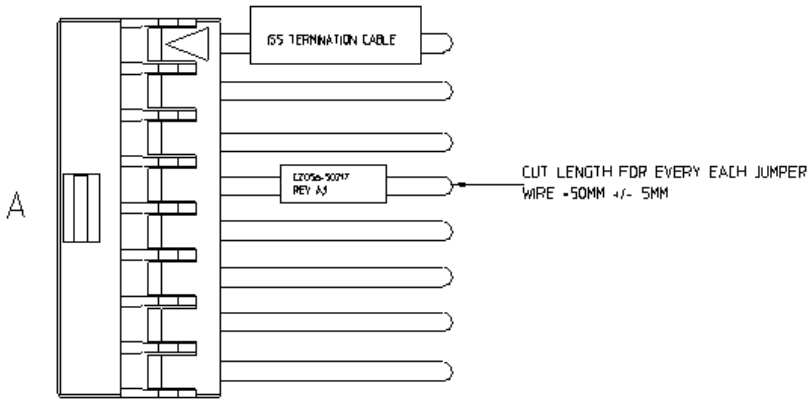
Included in the following service parts:

- CZ056-67075 (ISM cables KIT SERV).



JUMPER CONNECTION CHART	
FROM	TO
PIN-1	PIN-2
PIN-3	PIN-4
PIN-5	PIN-6
PIN-7	PIN-8
PIN-9	PIN-10
PIN-11	PIN-12
PIN-13	PIN-14
PIN-15	PIN-16

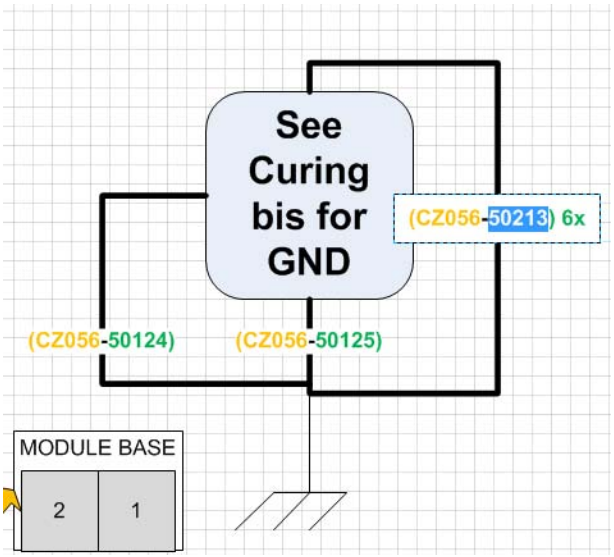


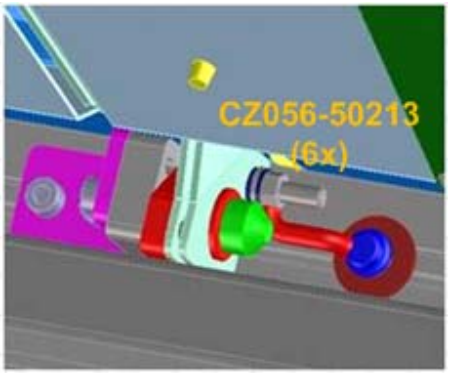


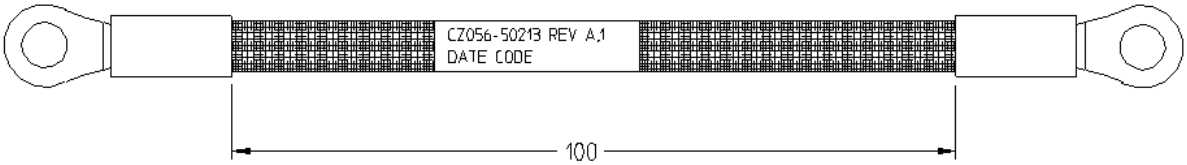
CZ056-50213 – Ground Strip Short.
Subsystem: CURING. Quantity: 6 x printer.

Included in the following service parts:

- CZ056-67056 (Curing left module SERV).
- CZ056-67057 (Curing right module SERV).
- CZ056-67058 (Curing general module SERV).
- CZ056-67223 (Curing assy SERV).
- CZ056-67314 (Curing cables KIT SERV).





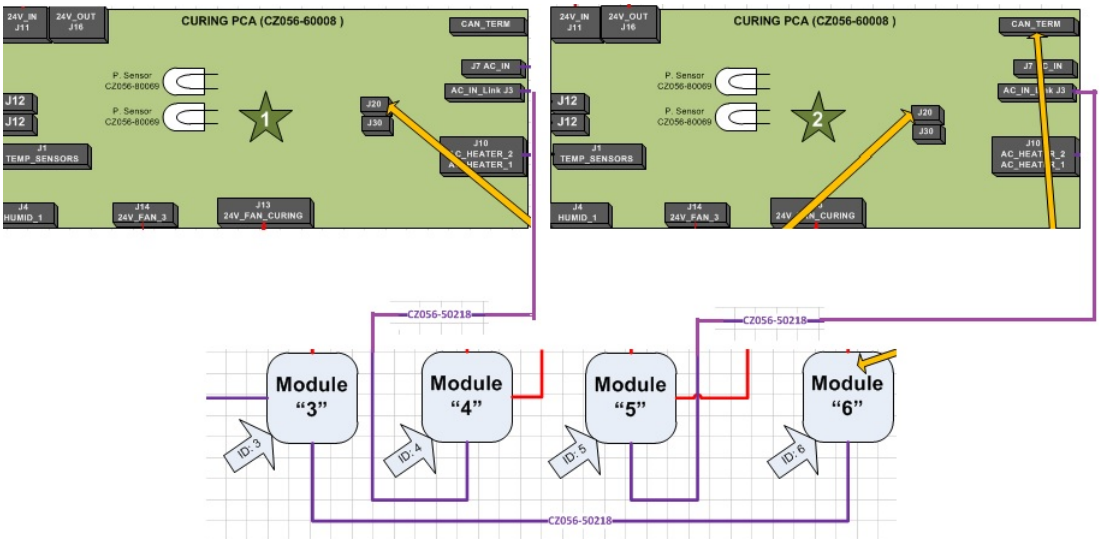


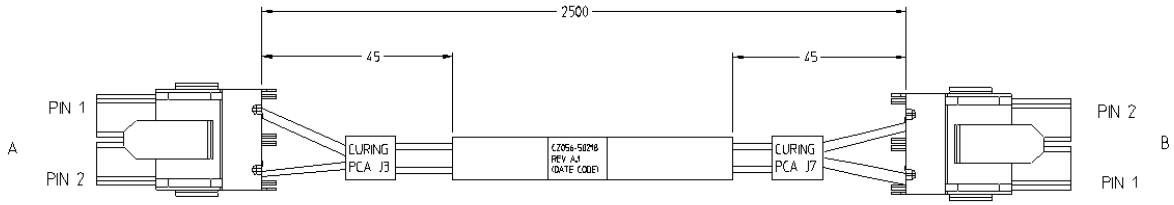
CZ056-50218 – AC Curing to Curing. Curing PCA to Curing.

Subsystem: CURING. Quantity: 3 x printer.

Included in the following service parts:

- CZ056-67223 (Curing assy SERV).
- CZ056-67314 (Curing cables KIT SERV).





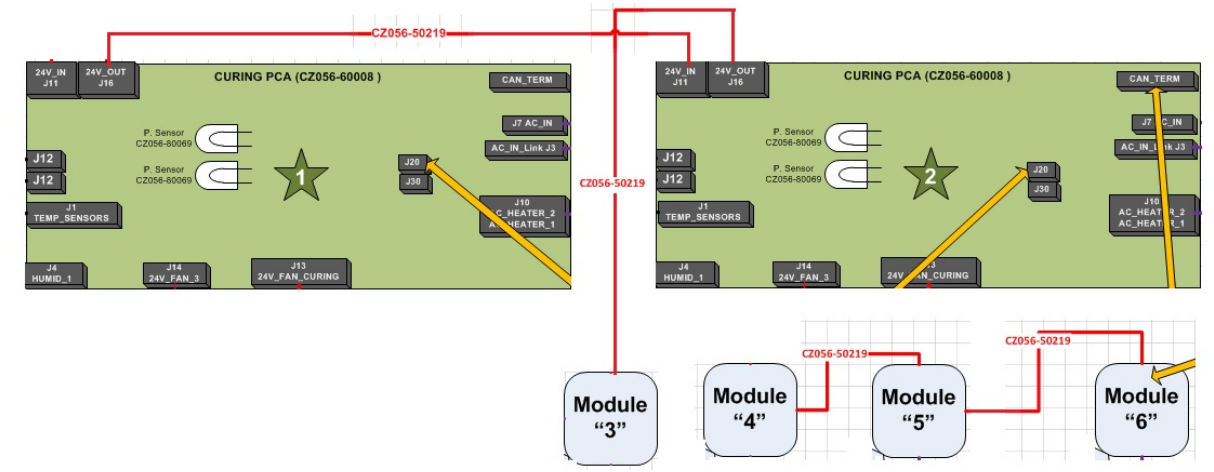
CONNECTION CHART		
FROM	TO	WIRE COLOR
A-1	B-1	BLACK
A-2	B-2	BLACK

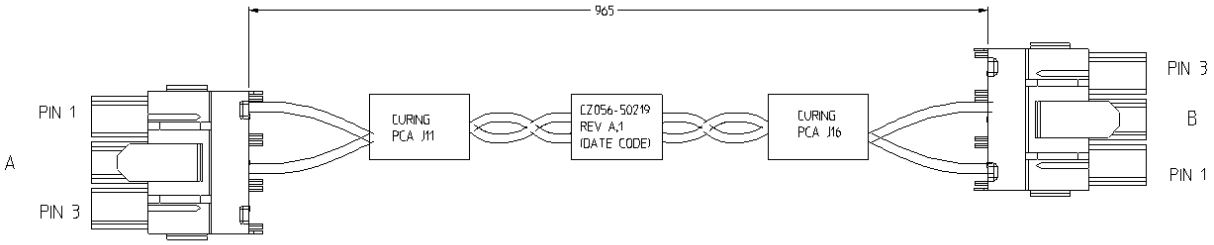
CZ056-50219 – DC Curing to Curing. Curing PCA to Curing.

Subsystem: CURING. Quantity: 4 x printer.

Included in the following service parts:

- CZ056-67223 (Curing assy SERV).
- CZ056-67314 (Curing cables KIT SERV).





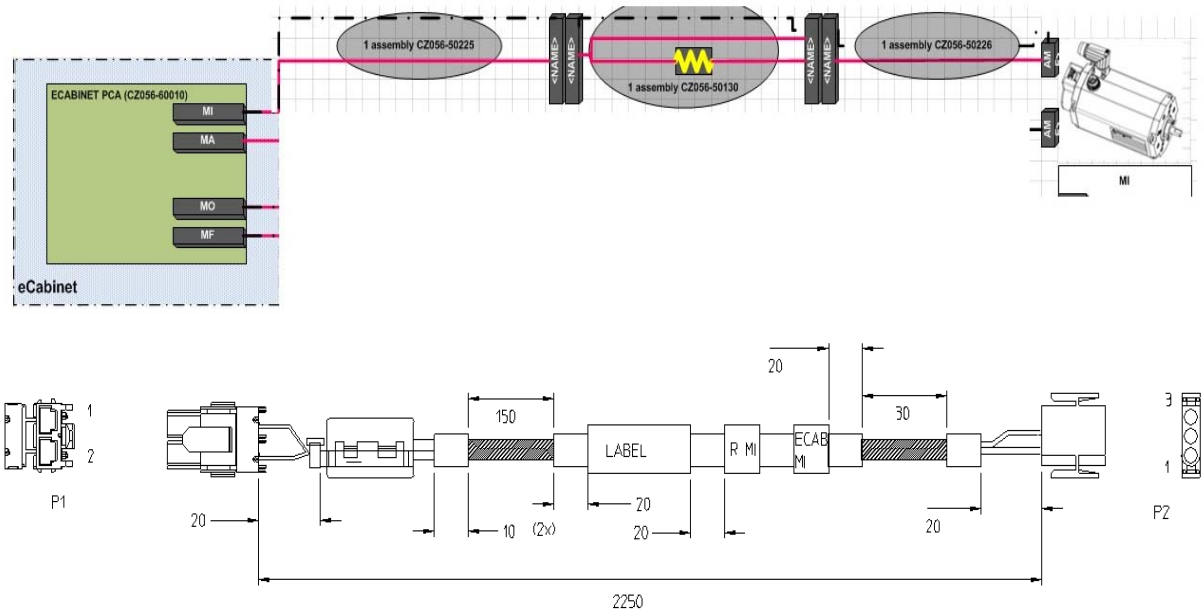
CONNECTION CHART			
FROM	TO	WIRE COLOR	REMARK
A-1	B-1	RED	THIS WITH
A-2	B-2	BLACK	50-60mm/TWIST
A-3	B-3	N/C	-

CZ056-50225 – E-Cab-Mi Resistor Power Cable. E-Cabinet to Mi Resistor.

Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67273 (MI Power cable KIT SERV).



WIRING DIAGHRAM

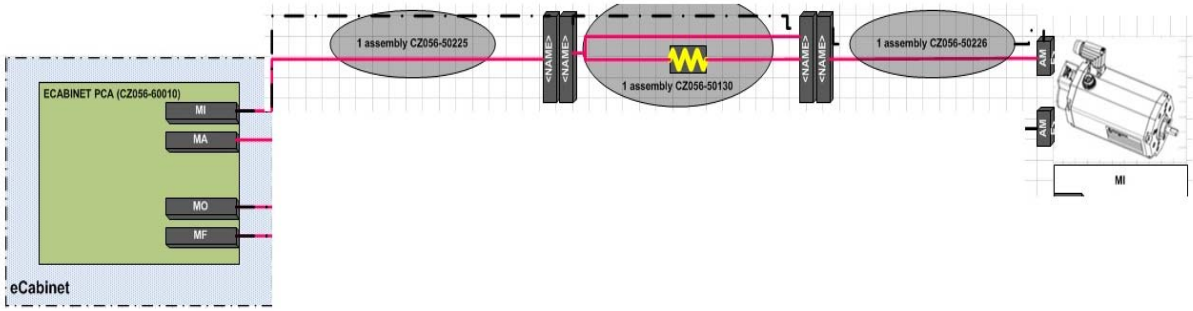
FROM	WIRE COLOR	TO
P1-1	RED	P2-1
P1-2	BLACK	P2-2

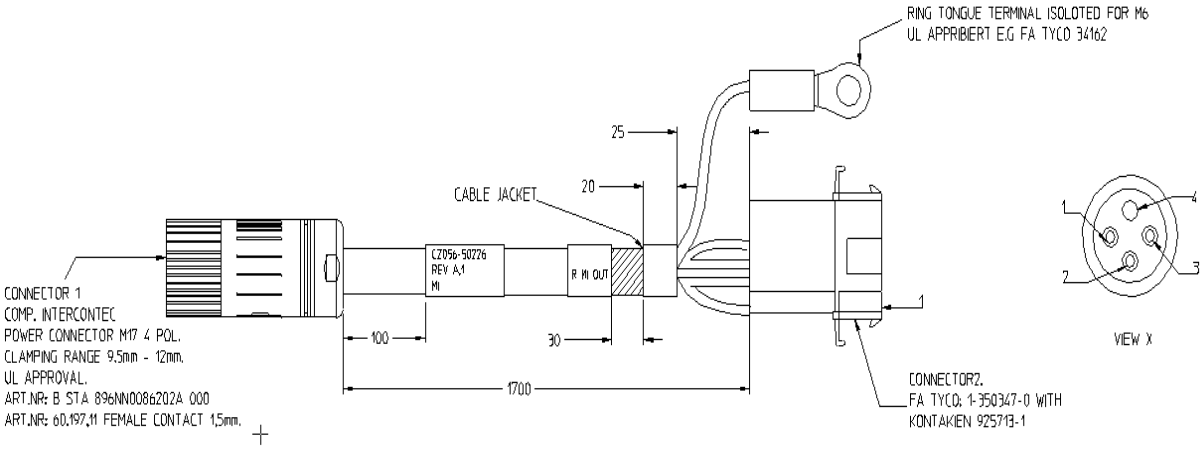
CZ056-50226 – Mi Resistor-Mi Motor Power Cable. Mi Resistor to Mi motor.

Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67273 (MI power cable KIT SERV).



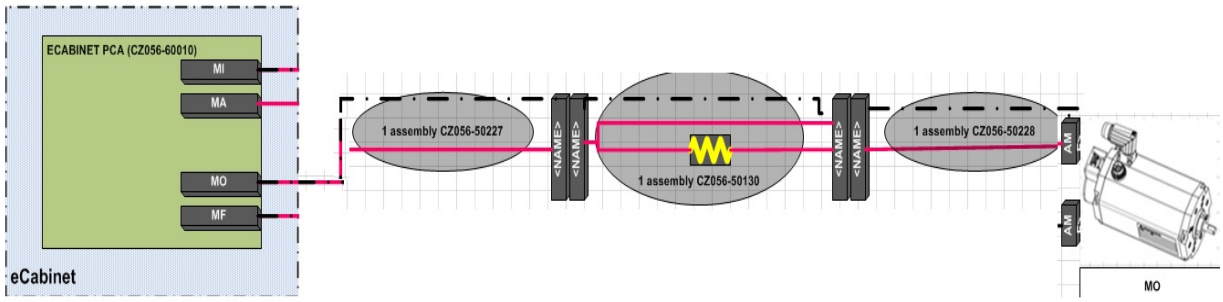


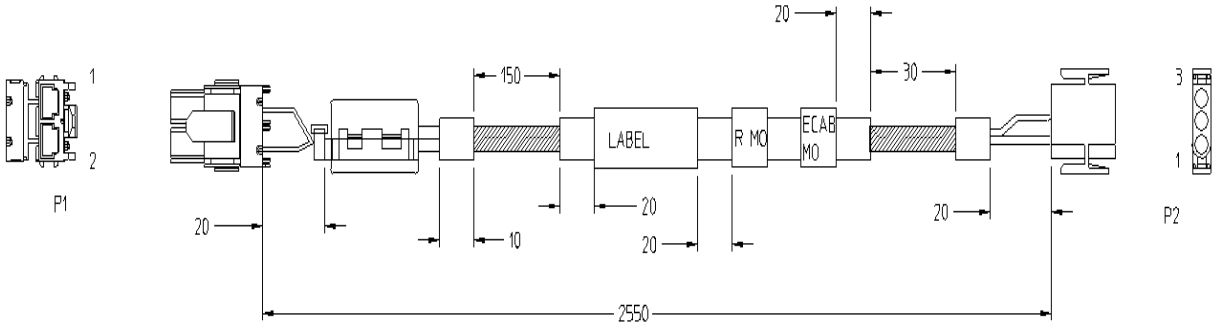
CONNECTOR 1 PIN	WIRE	CONNECTOR 2 PIN	COMMNENT
1	BLACK1 / AWG14	1	+42V
2	BLACK2 / AWG14	3	BRANKING RESITOR
3	BLACK3 / AWG14	2	GND
4	YELLOW/GRREN/AWG14	-	PE WITH RING TONGUE TERMINAL

CZ056-50227 – E-Cab-Mo Resistor Power Cable. E-Cabinet to Mo Resistor.
Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67276 (MO power cable KIT SERV).





WIRING DIAGHRAM

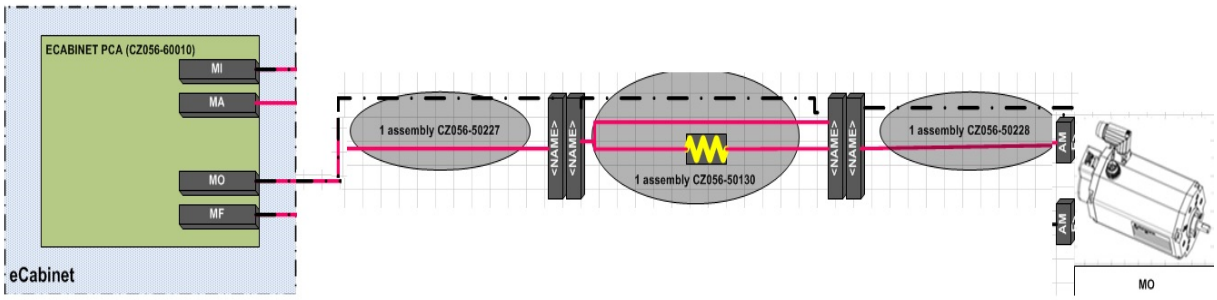
FROM	WIRE COLOR	TO
P1-1	RED	P2-1
P1-2	BLACK	P2-2

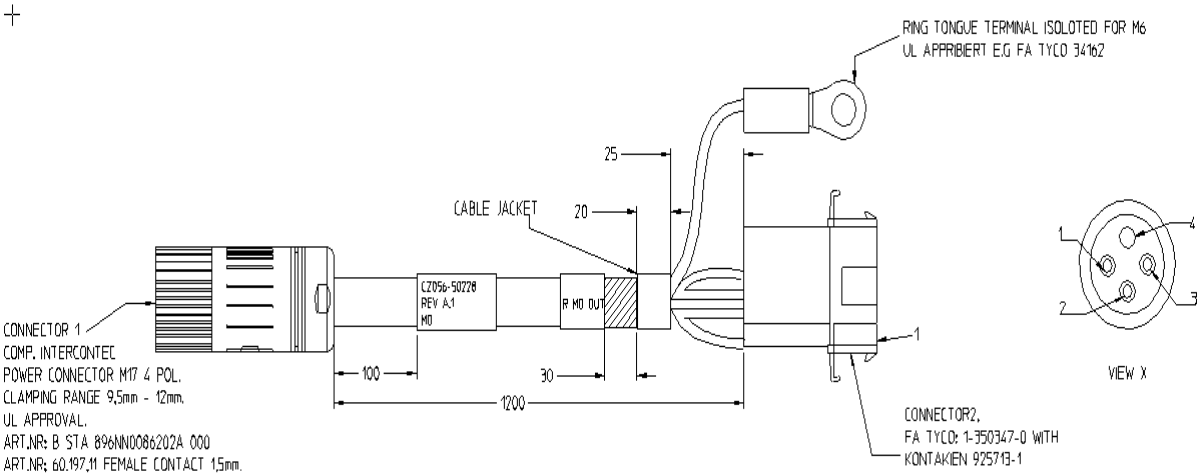
CZ056-50228 –Mo Resistor-Mo Motor Power. Mo Resistor to Mo Motor.

Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67276 (MO power cable KIT SERV).



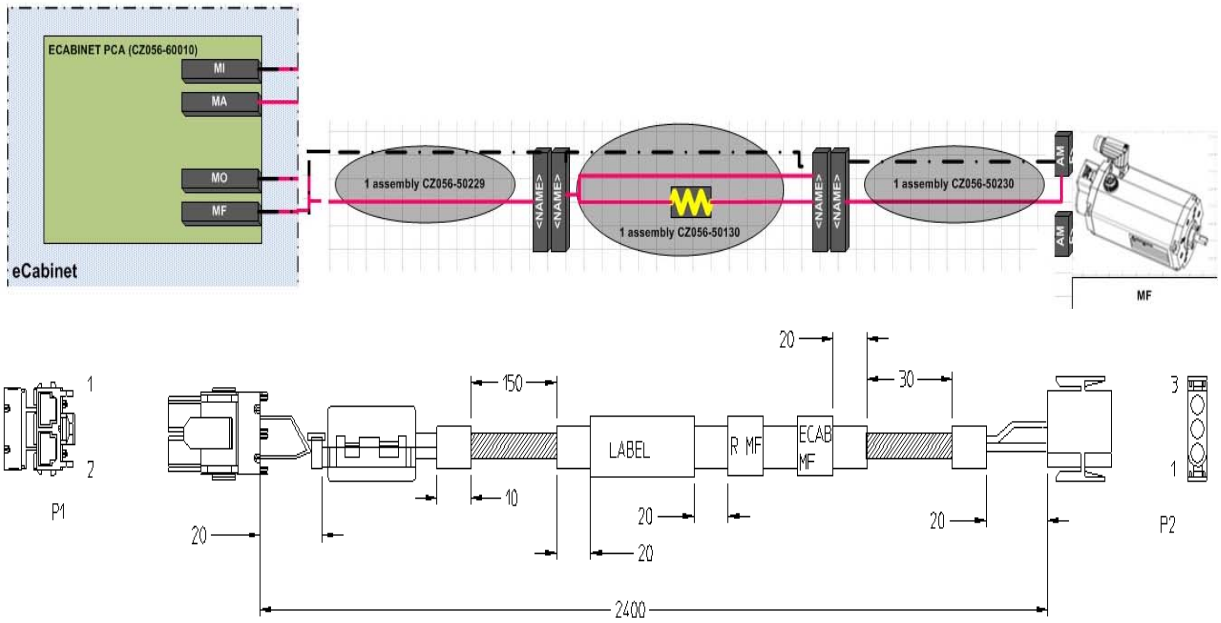


CONNECTOR 1 PIN	WIRE	CONNECTOR 2 PIN	COMMNENT
1	BLACK1 / AWG14	1	+42V
2	BLACK2 / AWG14	3	BRANKING RESITOR
3	BLACK3 / AWG14	2	GND
4	YELLOW/GRREN/AWG14	-	PE WITH RING TONGUE TERMINAL

CZ056-50229 –E-Cab-Mf Resistor Power Cable. E-Cabinet to MF resistor.
Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67279 (MF power cable KIT SERV).



WIRING DIAGHRAM

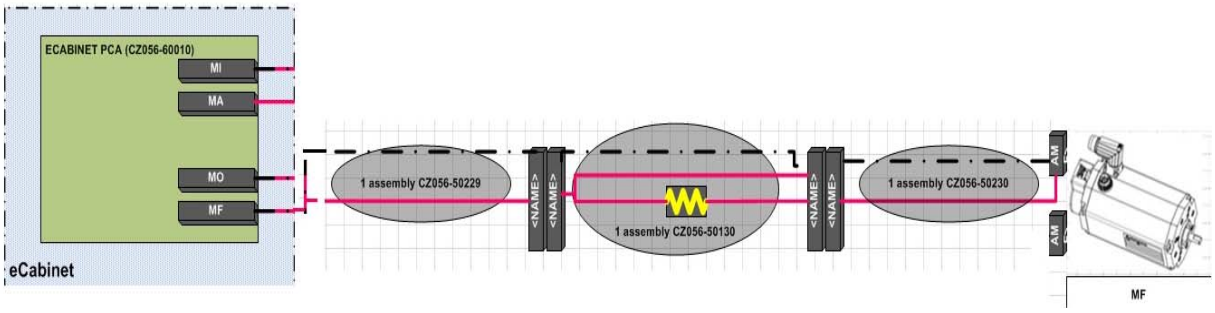
FROM	WIRE COLOR	TO
P1-1	RED	P2-1
P1-2	BLACK	P2-2

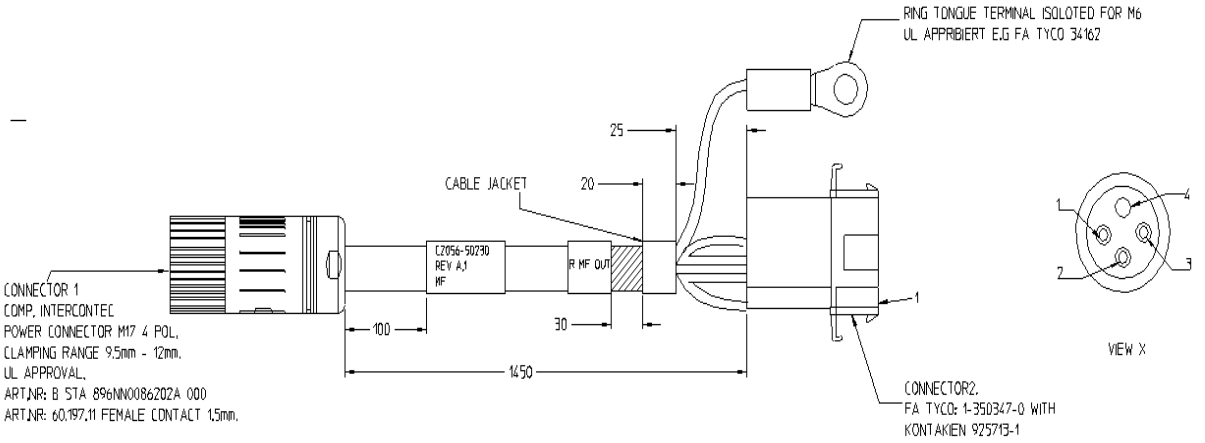
CZ056-50230 –Mf Resistor-Mf Motor Power Cable. MF Resistor to MF Motor.

Subsystem: CABLES KIT. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67279 (MF power cable KIT SERV).



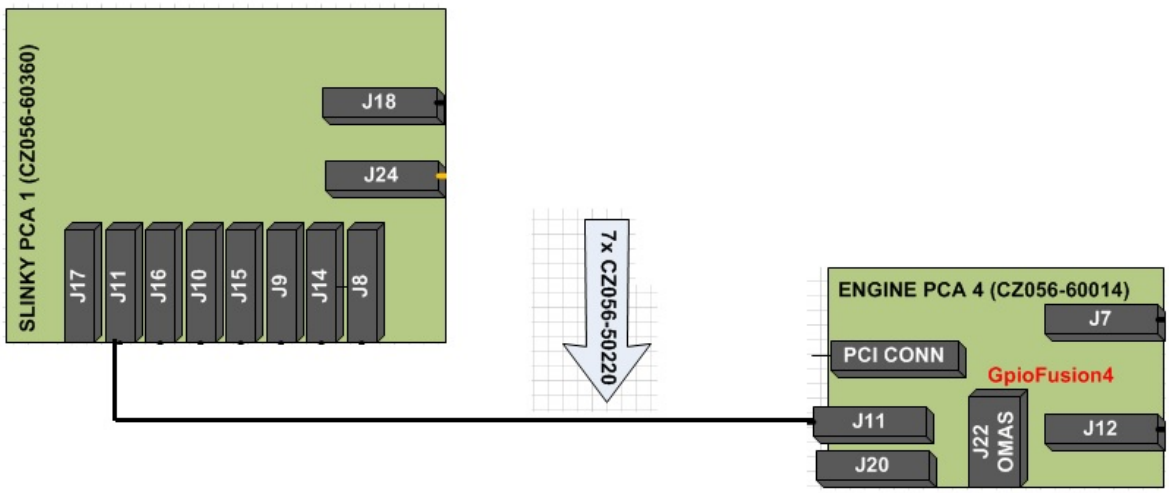


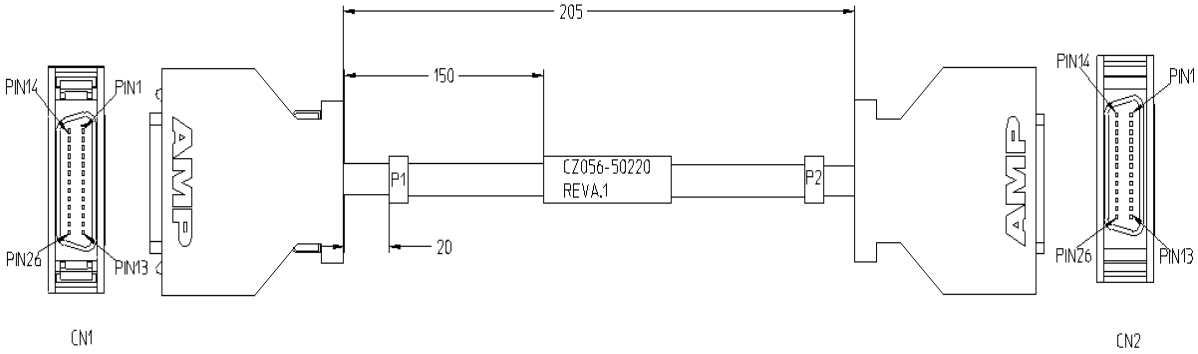
CONNECTOR 1 PIN	WIRE	CONNECTOR 2 PIN	COMMNENT
1	BLACK1 / AWG14	1	+42V
2	BLACK2 / AWG14	3	BRANKING RESITOR
3	BLACK3 / AWG14	2	GND
4	YELLOW/GRREN/AWG14	-	PE WITH RING TONGUE TERMINAL

CZ056-50220 –Engine PCA-Slinky Long. Engine PCA to Slinky.
Subsystem: E-BOX ASSEMBLY. Quantity: 7 x printer.

Included in the following service parts:

- CZ056-67083 (EBOX cables KIT SERV).





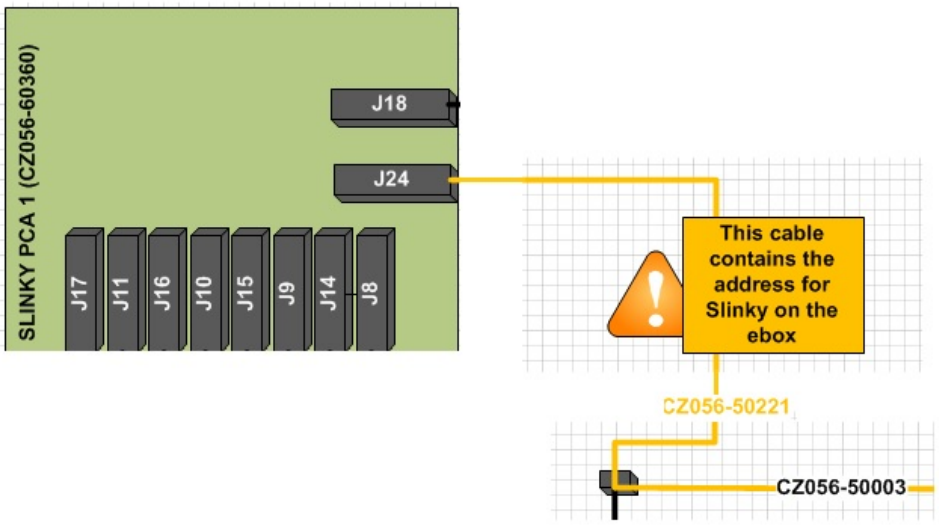
WIRE RUN LIST		
SIDE A	SIDE B	COLOR
CN1	CN2	
1	1	WHITE/YELLOW
14	14	WHITE/BROWN
2	2	WHITE/GREEN
15	15	WHITE/GRAY
3	3	WHITE/BLUE
16	16	WHITE/RED
4	4	BROWN
17	17	BROWN/WHITE
5	5	PINK
18	18	PINK/BLACK
6	6	RED
19	19	RED/BLACK
7	7	ORANGE
20	20	ORANGE/BLACK
8	8	YELLOW
21	21	YELLOW/BLACK
9	9	GREEN
22	22	GREEN/BLACK
10	10	BLUE
23	23	BLUE/WHITE
11	11	PURPLE
24	24	PURPLE/WHITE
12	12	GRAY
25	25	GRAY/BLACK
13	13	WHITE
26	26	WHITE/BLACK
SHELL	SHELL	BRAID

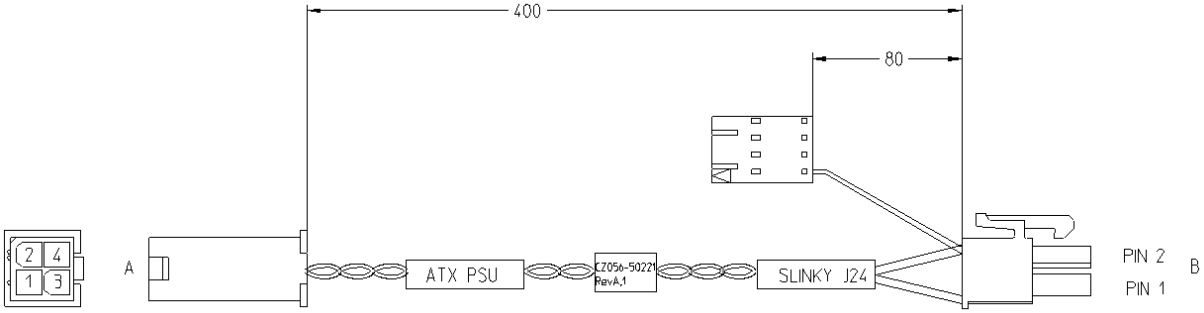
CZ056-50221 –ATX to Slinky Power Cable. ATX to Slinky.

Subsystem: E-BOX ASSEMBLY. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67083 (EBOX cables KIT SERV).





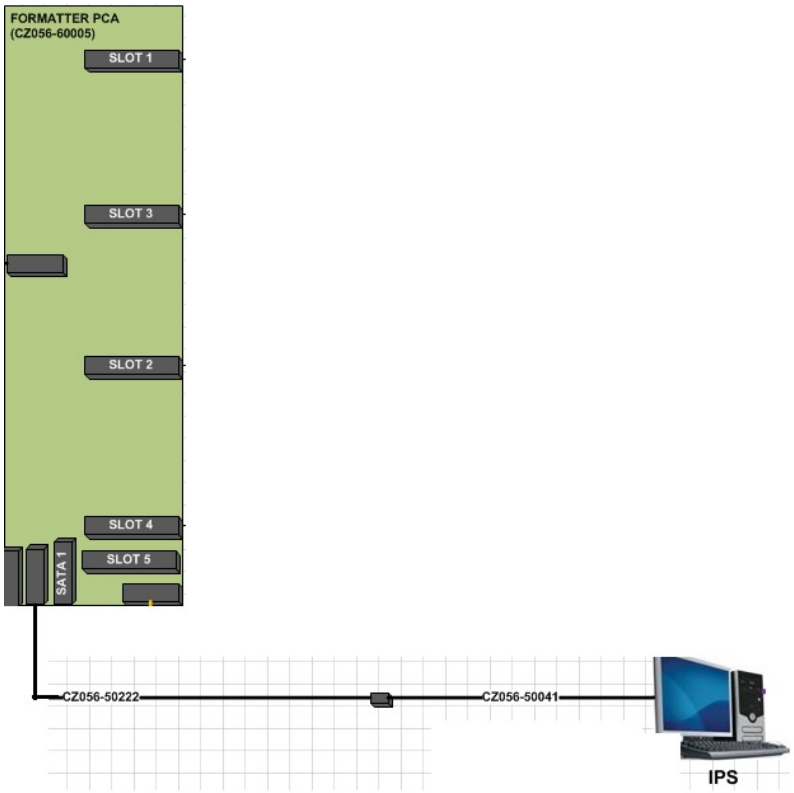
FROM	TO	WIRE_COLOR	REMARK
A-1	-	N/C	-
A-2	B-2	BLACK 18AWG	TWIST WITH 25MM/TWIST
A-4	B-1	RED 18AWG	
A-3	-	N/C	-
C-1	B-2	BLACK 24AWG	DOUBLE CRIMP AT B-2
C-2	-	N/C	-
C-3	-	N/C	-
C-4	-	N/C	-

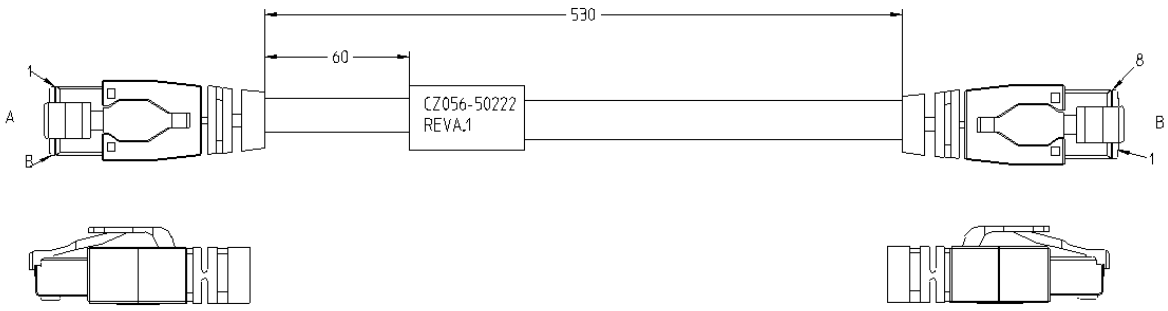
CZ056-50222 –Formatter Output Data Cable. Alba to E-box.

Subsystem: E-BOX ASSEMBLY. Quantity: 1 x printer.

Included in the following service parts:

- CZ056-67266 (e-Box LAN cable to IPS SERV).





CONNECTION TABLE		
A	B	COLOR
1	1	WHITE/ORANGE
2	2	ORANGE
3	3	WHITE/GREEN
4	4	BLUE
5	5	WHITE/BLUE
6	6	GREEEN
7	7	WHITE/BROWN
8	8	BROWN

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