Service
Manual

HP Designjet
8000s Series Printers

Warranty

The information contained in this document is subject to change without notice.

Hewlett-Packard makes no warranty of any kind with regard to this material, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

Hewlett-Packard shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this material.

WARNING

The procedures described in this manual are to be performed by HP-qualified service personnel only.

Electrical Shock Hazard

Serious shock hazard leading to death or injury may result if you do not take the following precautions:

- Ensure that the ac power outlet (mains) has a protective earth (ground) terminal.

- Disconnect the Printer from the power source prior to performing any maintenance.

- Prevent water or any other liquids from running onto electrical components or circuits, or through openings in the enclosure.

Electrostatic Discharge

Refer to the beginning of Chapter 4of this manual, for precautions you should take to prevent damage to the Printer circuits from electrostatic discharge.

Safety Symbols

General definitions of safety symbols are given immediately after the table of contents.

WARNING

The Warning symbol calls attention to a procedure, practice, or the like, which, if not correctly performed or adhered to, could result in personal injury. Do not proceed beyond a Warning symbol until the indicated conditions are fully understood and met.

CAUTION

The Caution symbol calls attention to an operating procedure, practice, or the like, which, if not correctly performed or adhered to, could result in damage to or destruction of part or all of the product. Do not proceed beyond a Caution symbol until the indicated conditions are fully understood and met.

Service
Manual

**HP Designjet
8000s Series Printers**

Using this Manual

Purpose

This Service Manual contains information necessary to test, calibrate and service:

■ HP Designjet 8000s Series Printer (Models Q6670A/Q6686A).

For information about using these printers, refer to the corresponding User Guide.

Readership

The procedures described in this Service Manual are to be performed by HP Certified service personnel only.

Part Numbers

Part Numbers for Printer options, accessories and service parts are located in Chapter 7.

Conventions

A small arrow $\Rightarrow$ is used to indicate other parts of the Service Manual where you can find information related to the topic you are consulting.

Safety Precautions

The following Warnings and Cautions are presented in this Service Manual and must be observed.

Follow the instructions marked with these symbols.

⚠ WARNING	Failure to follow the guidelines marked with this symbol could result in severe personal injury or death.
⚠ CAUTION	Failure to follow the guidelines marked with this symbol could result in minor personal injury or product and/or peripheral damage.

⚠ WARNING

🔴❗	Inks used in the printer and liquids in the HP Cleaning and Maintenance kits contain an organic solvent (ethylene glycol monobutyl ether acetate, CAS No. 112-07-2). Observe all local, state, and federal regulations related to the handling, use, storage, and disposal of organic solvents.
🔴❗	Avoid contact between ink and skin, eyes, and clothing. ■ Immediately wash skin with soapy water. ■ Remove clothing soaked with ink from contact with skin. ■ Use an approved eye wash station if ink is splashed into eyes and consult a doctor if necessary. ■ If an approved eye wash station is unavailable, flush eyes with cold water and consult a doctor if necessary.
⏚	Be sure the printer is well-grounded. Failure to ground the printer may result in electrical shock, fire, and susceptibility to electromagnetic interference.
🔴❗	Ink and fluids used in the Cleaning and Maintenance Kits are combustible. Do not use or store within 8 meters (25 feet) of open flames, sparks, or other sources of ignition.
⏚	Switch power OFF, remove the power cords from the electric outlets and allow the printer to cool before attempting to remove any panels or covers. The printer contains high voltage and hot components. Removal of panels or covers may result in exposure to electric shock and burns.
🔴❗	Do not allow metal or liquids (except those used in HP Cleaning and Maintenance Kits) to touch the internal parts of the printer. Doing so may cause fire, electric shock, or other serious hazards.
🔴❗	When shutting down the entire system, always turn OFF the printer switch as well as the heater switch (breaker).
🔴❗	Use only an HP Waste Ink Bottle. The bottle must be installed according to instructions or waste ink may overflow.
🔴❗	An HP Waste Ink Bottle must always be installed before turning the printer ON. Automatic and manual service cycles produce waste ink that must be contained in an HP Waste Ink Bottle.
🔴❗	Always use both hands to remove and carry an HP Waste Ink Bottle.
🔴❗	Keep the HP Waste Ink Bottle upright. Do not place on tables or shelves where it could fall.

❗	Waste ink is combustible. Keep an HP Waste Ink Bottle containing waste ink away from open flames, sparks, or other sources of ignition.
❗	Never store waste ink in a glass container.
❗	Never pour waste ink into a container filled with other chemicals.
❗	The HP Waste Ink Bottle contains organic solvents and must be disposed of in compliance with all local, state, and federal regulations.
❗	Always securely replace the cap on a full or partially-full HP Waste Ink Bottle after removing it from the printer to prevent ink spills.

⚠ CAUTION

❗	Treat any media, paper, used cleaning and maintenance supplies, and wipes soaked with ink as combustible materials. Handle and dispose of properly.
❗	Do not clean the printer with benzene or paint thinner. This may damage the paint.
❗	Wipe the printer clean with a soft cloth. A cloth moistened with a neutral detergent may be used. Do not allow liquid to enter the printer. This may create risk of fire and electrical shock and cause a malfunction.
❗	Never touch the printhead nozzles. They can be easily damaged or clogged.
❗	Do not touch heater surfaces in the paper path. This may cause burns. Take care when touching printer components near the heaters.
❗	HP Ink Cartridges must be installed before the "Install By" printed on the cartridge. Use of the Ink Cartridge 3 months beyond the "Install By" date may cause deterioration in print quality or a printer malfunction.
❗	Do not separate the cap from a new HP Waste Ink Bottle. The cap is needed to properly seal the HP Waste Ink Bottle for disposal.
❗	The level in the HP Waste Ink Bottle should be checked by visual inspection to prevent overflow. If the waste ink level is above the indication line, the bottle must be replaced with an empty HP Waste Ink Bottle.
❗	The use of safety glasses and gloves is recommended when performing cleaning and maintenance operations.

Table of Contents

Troubleshooting

1

Guide to Troubleshooting the Printer

Introduction

This chapter will guide you through the relevant steps to take when troubleshooting the Printer.

Troubleshooting System Error Codes

Chapter 2 - *System Error Codes* contains a list of system error codes and their respective descriptions and recommended corrective actions. Only try one recommended action at a time and check if the error code has disappeared.

If you have an error code which is not documented in this Service Manual or you have an error which you cannot resolve, then report the error to the HP Response Center or the nearest HP Support Office. When reporting the error, have the following information ready:

- Model and Serial Number of the printer.
- Which firmware revision the printer is using.
- The complete error number.
- The System and History Prints.
- Which software application the customer is using (name, version, etc.).

Whenever an Error Message is displayed, you should try to switch the Printer Off and then On again to see if the error disappears. If the error disappears, there is no need to troubleshoot the Printer any further.

Performing a Service Test on a Failed Assembly

If possible, always perform a Service Test on the component/assembly that you are about to replace, just to make sure that is the actual component/assembly that has failed.

If the test on that component/assembly passes, you should NOT replace it.

For information on the Service Tests and how to use them see Chapter 4 - *Maintenance Mode*.

Performing the Necessary Service Calibrations or Adjustments

Is the printer calibrated or adjusted correctly after replacing a component? For information on the Service Calibrations and Adjustments and how to use them, see Chapter 5 - *Adjustments and Calibrations*.

> **Remember that certain Calibrations or Adjustments are required even if an Assembly has been disassembled to gain access to another Assembly or Component.**

Solving Print Quality Problems

Whenever a Print Quality problem appears, it is advisable to print the Test Print to help diagnose the problem. The Test Print will help you differentiate between possible Printhead errors or mechanical problems. For information on solving Print Quality problems see Chapter 6 - *Print Quality*.

The Printer does not Power ON

1   Check that the power cord is connected correctly to the Printer and to the Power Socket.

2   Check that the Power Switch on the BACK of the Printer is in the ON position.

3   Replace the Power Supply Unit $\Rightarrow$ Page *8-32*.

Cover Sensors are not Working

1   Perform the Sensors Test $\Rightarrow$ Page *4-29*.

2   Check if the cable for the faulty sensor is not damaged and is connected correctly.

3   Replace the faulty Sensor.

The File Sent is Not Processed Immediately

1   Check that the USB Cable is connected correctly to the Computer and the Printer and that it is NOT damaged.

2   Check that the Data LED on the Front Panel is flashing. If it is flashing and nothing is printed, then maybe the file sent is corrupted or too big.

3   Make sure that the Printer is in the Online state when the file is sent. The file will be rejected if the file is sent when the Printer is in the Offline state.

Paper Jams Occur Frequently

1 Make sure that the paper type setting matches the type of paper loaded into the Printer.

2 Open the Window and check for any visible obstacles in the paper path. If there is a wrinkled mass of paper inside the paper path, lift the Pinchwheels (using the Media Lever) and clear the obstruction.

3 Make sure that the Vacuum Fans are working correctly.

Print Speed is Very Slow

1 Make sure that the Printer is being used at temperatures of 20°C or higher.

No Ink Message when there is Enough Ink

1 Make sure that the Ink Cartridge is installed correctly.

2 Check that the connector in the Ink Cartridge is NOT damaged.

3 Make sure that the Ink Cartridge Sensors are working correctly. Perform the Ink Sensor Test ⇒ Page *4-30*.

Abnormal Sound Coming from the Printer

1 One of the Motors in the Printer might be defective. Check that the Motors are working correctly ⇒ Page *4-35*.

2 Check that there are no foreign or loose objects inside the Printer.

Front Panel is Not Working

1 Make sure that the Front Panel Cable is connected correctly to the Front Panel and to the Main PCA.

2 Make sure that the Front Panel Cable is NOT damaged.

3 Replace the Front Panel ⇒ Page *8-21*.

Solving Heater Problems

Heater Does NOT become Hot

1 Make sure that the Cable between the Heater Panel and the Heater Relay Board is connected correctly and NOT damaged.

2 Make sure that the Heaters are connected correctly to the power voltage alternation switch.

3 Replace the Heater Relay Board ⇒ Page *8-40*.

4 Replace the Heater that is experiencing the problem.

5 Replace the Main PCA ⇒ Page *8-25*.

Abnormal Temperature is Displayed

1 Make sure that the Heater that is experiencing the abnormal temperature is installed correctly. Check that the Heater Cable is connected correctly.

2 Replace the Heater that is experiencing the abnormal temperature.

The Heater Temperature Becomes Extremely High

1 Make sure that the Heater that is experiencing the high temperature is installed correctly. Check that the Heater Cable is connected correctly.

2 Replace the Heater Relay Board ⇒ Page *8-40*.

The Heater Heats Very Slowly

1 Check the ambient temperature and raise it if necessary.

2 Check the power voltage alternation switch to make sure that it is set to the correct voltage.

The Heater Temperature does not reach the Specified Range

1 Check the power voltage alternation switch to make sure that it is set to the correct voltage.

Only the Front (or Rear) Heater is not Heated Normally

1 Make sure that there is no cold air (e.g. from an air conditioning unit) blowing on the Heaters.

2 Check that the Temperature Sensor cables are correctly connected and not damaged.

3 Replace the Heater Relay Board ⇒ Page *8-40*.

4 Replace the Main PCA ⇒ Page *8-25*.

Special Power On Procedures

When turning On the Printer, the Printer will follow the internal initialization process, turning on the different systems and making the necessary system checks. In order to troubleshoot the Printer, the following Power On options are available:

1   Press the **Shift** key and Power On button - This will allow you to enter directly into the Language Setting Mode.

2   Press the **OK** key and Power On button - This will allow you to skip the Installation startup sequence, which occurs if none of the Printheads are installed in the Printer.

3   Press the **Cancel** key and Power On button - This will allow you to skip the system check of the Printer.

4   Press the **Cancel** and **Shift** keys and Power On button - This will allow you to skip the error recovery check of the Printer. You will be given the option to enter the Maintenance Mode in order to troubleshoot the Printer by entering a password: ◄, ►, **Shift** and **OK**.

■ This option is useful if you want to perform the following:
  – Reset the long-time storage error.
  – Initialize Parameters.
  – Perform certain diagnostics using the Maintenance Mode.
  – Perform Firmware Update.
  – Check the Firmware Version.

Both EEPROM and Main PCA are Replaced Together

When both the EEPROM and the Main PCA are replaced at the same time, mechanical correction value parameters, counters, calibrations, etc… are lost. Whenever possible, this most be prevented by just replacing either the EEPROM or the Main PCA. If for whatever reason, both the EEPROM and the Main PCA are replaced together, you need to perform the following:

1 Make sure that the EEPROM and the Main PCA have been installed correctly.

2 Press the **Cancel** key and Power On button in order to skip the system check.

3 Enter into the Maintenance Mode ⇒ Page *4-6*.

4 Press the **Shift** key twice and then the ▼ key to enter in to the Setup menu.

5 In the Setup submenu, scroll to "Init EEPROM" and press the **OK** key.

```
# INIT EEPROM
>
```

6 You will need to confirm that you want to initialize the EEPROM by pressing the **OK** key.

```
# INIT EEPROM
∗ OK?
```

7 In the Setup submenu, perform the following:
- System Date ⇒ Page *4-19*.
- System Time ⇒ Page *4-20*.
- HP Serial Number ⇒ Page *4-20*.
- Ink Charge Done ⇒ Page *4-10*.

8 Power Off the Printer, wait a few seconds and power On the Printer again.

9 You will need to check, and if necessary perform the following:
- Wiping Position Calibration ⇒ Page *5-16*.
- Capping Position Calibration ⇒ Page *5-18*.
- Vertical Capping Position Calibration ⇒ Page *5-15*
- Nozzle Position Correction ⇒ User's Guide.
- Printhead Position Correction ⇒ User's Guide.
- Bidirection Print Position Correction ⇒ User's Guide.
- Media Advance Correction ⇒ User's Guide.
- Side Margin Position Calibration ⇒ Page *5-20*.
- Top Margin Position Calibration ⇒ Page *5-22*.

10 Enter into the Maintenance Mode ⇒ Page *4-6*.

11 Press the **Shift** key twice and then the ▼ key to enter in to the Setup menu.

12 In the Setup submenu, scroll to "Save Calibs" and press the **OK** key.

```
# SAVE CALIBS
>
```

13 You will need to confirm that you want to save the EEPROM Calibrations by pressing the **OK** key.

```
# SAVE CALIBS
∗ OK?
```

14 In the Setup submenu, scroll to "Save EEPROM" and press the **OK** key.

```
# SAVE EEPROM
>
```

**15** You will need to confirm that you want to save the EEPROM contents by pressing the **OK** key.

```
# SAVE EEPROM
∗ OK?
```

16 Power Off the Printer, wait a few seconds and power On the Printer again.

Firmware Upgrade Instructions

The Printer firmware is upgraded using a Compact Flash Card that contains the latest firmware version.

Upgrading the Printer Firmware Version

1 Insert an empty Compact Flash Card into a Computer that has a CF Card Reader connected to it.

2 Create a directory path in the Compact Flash. If for instant the CF Card appears as disk K, then create the following directories:
   - K:\CPL\
   - K:\CPL\SYS\

3 Copy the "System.img" firmware file from the computer into the K:\CPL\SYS\ directory.

4 Switch the Printer Off.

5 Loosen two screws and remove the Firmware Access Cover.

Firmware Access Cover
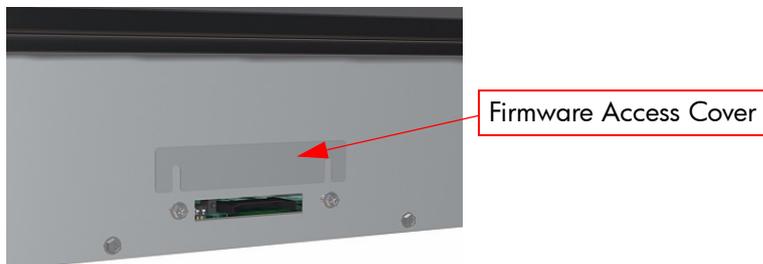
6 On the Main PCA (next to the CF Card slot), set bit1 of SW10 to ON (upper position) and bit2 to OFF (lower position).
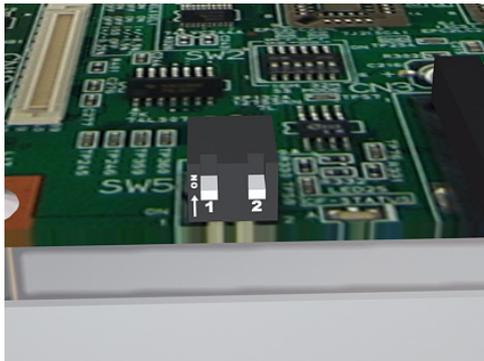
7 Insert the CF Card (with latest Firmware version) in to the CF Card slot located on the Main PCA.

CF Card Slot
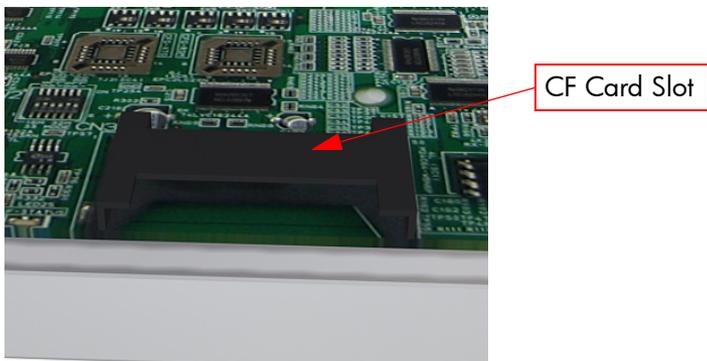
8 Switch the Printer On (from the rear and the Front Panel).

9 The Printer will start the firmware upgrade sequence and the following messages will be displayed on the Front Panel:

```
READING SYSTEM
XXX/64
```

```
READING SYSTEM
DONE
```

```
UPGRADING SYSTEM
ERASING XX/63
```

```
UPGRADING SYSTEM
VERIFYING XX/63
```

```
UPGRADING SYSTEM
WRITING XX/63
```

```
UPGRADING SYSTEM
VERIFYING XX/63
```

```
UPGRADING BOOT
ERASING XX/08
```

```
UPGRADING BOOT
ERASING XX/08
```

```
UPGRADING BOOT
VERIFYING XX/08
```

```
UPGRADING BOOT
WRITING XX/08
```

```
UPGRADING BOOT
VERIFYING XX/08
```

```
SYSTEM IS VALID
POWER OFF/ON
```

10 Once the Front Panel display "System is Valid", switch the Printer Off (Push the Power Switch on the Front Panel for 5 seconds and then release it).

11 Remove the CF Card from the Main PCA.

12 On the Main PCA, set both bits (bit1 and bit2) to OFF (lower position).

13 Install the Firmware Access Cover.

14 Switch the Printer On and check the Firmware version once the Printer has initialized.

If any type of Error appears on the Front Panel, this means that the Firmware Upgrade has failed. In this case, you should try again using a different CF Card. If the upgrade fails again, then replace the Main PCA.

System Error Codes

2

System Error Codes

Introduction

The following pages contain a list of error codes and their respective descriptions and recommended corrective actions. Only try one recommended action at a time and check if the error code has disappeared.

If you have an error code which is not documented in this Service Manual or you have an error which you cannot resolve, then report the error to the HP Response Center or the nearest HP Support Office. When reporting the error, have the following information ready:

- Model and Serial Number of the printer.
- Which firmware revision the printer is using.
- The complete error number.
- The Service Configuration Print.
- The Current configuration sheet.
- Which software application the customer is using (name, version, etc.).

Whenever an Error Message is displayed, you should try to switch the Printer Off and then On again to see if the error disappears. If the error disappears, there is no need to troubleshoot the Printer any further.

System Error Codes

A System Error Code appears on the Front Panel when a component of the Printer has failed during normal usage. Each System Error Code and it's appropriate corrective actions are explained on the following pages.

System Error: System Error 1010: ATG/RSM Loading Error

Problem Description: The program load from the Flash ROM on the Main PCA to the ASIC on the Main PCA or sum-check was not performed correctly and an error occurred.

Corrective Action: Try the following:
- Reinstall the Firmware.
- Replace the Main PCA ⇒ Page *8-25*.

System Error: System Error 1011: PTC/PDD Loading Error

Problem Description: The program load from the Flash ROM on the Main PCA to the ASIC on the Carriage PCA or sum-check was not performed correctly and an error occurred.

Corrective Action: Try the following:
- Reinstall the Firmware.
- Make sure that the Carriage Cable is NOT damaged and is correctly connected to the Carriage PCA and the Main PCA.
- Replace the Carriage PCA ⇒ Page *8-74*.
- Replace the Main PCA ⇒ Page *8-25*.
- If the error continues, replace the Trailing Cable ⇒ Page *8-101*.

System Error: System Error 1100: Flash ROM Error

Problem Description: The program area in the Flash ROM is sum-checked, and it could not be read, causing an error.

Corrective Action: Try the following:
- Reinstall the Firmware.
- Replace the Main PCA ⇒ Page *8-25*.

System Error: System Error 1101: ATG/RSM Error

Problem Description: The read/write of the ATG/RSM registers and RSM Mask Memory Data on the Main PCA was diagnosed and an error was detected.

Corrective Action: Try the following:
- Replace the Main PCA ⇒ Page *8-25*.

System Error:	System Error 1102: Trailing Cable Error
Problem Description:	The Trailing Cable between the Main PCA and the Carriage PCA is not connected.
Corrective Action:	Try the following:

- Reconnect the Trailing Cable to the Carriage PCA and the Main PCA.
- Make sure that the Trailing Cable is not damaged.
- Replace the Carriage PCA ⇒ Page *8-74*.
- If the error continues, replace the Main PCA ⇒ Page *8-25*.
- If the error continues after replacing the Main PCA and the Carriage PCA, replace the Trailing Cable ⇒ Page *8-101*.

System Error:	System Error 1103: Heater Relay Board Connection Error
Problem Description:	The Cable between the Main PCA and the Heater Relay Board is not connected.
Corrective Action:	Try the following:

- Reconnect the Cable to the Heater Relay Board and the Main PCA.
- Make sure that the Cable is not damaged.
- Replace the Heater Relay Board ⇒ Page *8-40*.
- If the error continues, replace the Main PCA ⇒ Page *8-25*.

System Error:	System Error 1104: ISS PCA Connection Error
Problem Description:	The Cable between the Main PCA and the ISS PCA is not connected.
Corrective Action:	Try the following:

- Reconnect the Cable to the ISS PCA and the Main PCA.
- Make sure that the Cable is not damaged.
- Replace the ISS PCA ⇒ Page *8-139*.
- If the error continues, replace the Main PCA ⇒ Page *8-25*.

System Error:	System Error 1105: PTC/PDD Error
Problem Description:	The PTC/PDD registers cannot be read or written correctly.
Corrective Action:	Try the following:

- Make sure that the Carriage Cable is NOT damaged and is correctly connected to the Carriage PCA and the Main PCA.
- Replace the Carriage PCA ⇒ Page *8-74*.
- Replace the Main PCA ⇒ Page *8-25*.
- If the error continues, replace the Trailing Cable ⇒ Page *8-101*.

System Error:	System Error 1106: Power Error
Problem Description:	The power supplies of +36, +24 and +12 V were diagnosed and could not be detected. This error is checked when the Printer is booted up.
Corrective Action:	Try the following:

- Check the Window Sensors to make sure they are installed/connected correctly. Make sure that the Window lips (that activate the Window Sensors) are not bent and that the Window is closed correctly.
- Check that the sensor cables are correctly connected to connector CN4 on the Main PCA and connector CN3 on the Heater Relay Board.
- Check the lighting status of LED 35 (12V), LED 36 (36V), LED 37 (VDD2), and LED 38 (12V) on the Main PCA. If any LED is OFF, it mean the power is not generated properly. In that case, perform general troubleshooting according to the table below, and check whether there is a short-circuit in any of the parts or cables.

Power Output (LED On)				Possible faulty Part
12V	**24V**	**VDD2**	**36V**	
No	No	No	No	Fuse 2, Cooling Fan, Carriage PCA
Yes	No	No	No	Window Sensors, Fuse 1
Yes	No	-	-	Pump/Wipe Motor, Take-up-reel Motor, Vacuum Fan, Motor Cooling Fan
Yes	-	No	-	Carriage PCA
Yes	-	-	No	Paper-Axis or Scan-Axis Motor

- If the error continues, replace the Main PCA ⇒ Page *8-25*.

System Error:	System Error 1107: Carriage Interface Error
Problem Description:	The Carriage Interface is not connect correctly.
Corrective Action:	Try the following:

- Reconnect the Trailing Cable to the Carriage PCA and the Main PCA.
- Make sure that the Trailing Cable is not damaged.
- Replace the Carriage PCA ⇒ Page *8-74*.
- If the error continues, replace the Main PCA ⇒ Page *8-25*.
- If the error continues after replacing the Main PCA and the Carriage PCA, replace the Trailing Cable ⇒ Page *8-101*.

System Error:	System Error 1108: USB Error
Problem Description:	USB communication is not performed correctly.
Corrective Action:	Try the following:
	■ Replace the Main PCA ⇒ Page *8-25*.

System Error:	System Error 1109: EEPROM Error
Problem Description:	The parameters saved in the EEPROM on the Main PCA cannot be read correctly.
Corrective Action:	Try the following:
	■ Replace the EEPROM ⇒ Page *8-29*.
	■ Replace the Main PCA ⇒ Page *8-25*.

System Error:	System Error 110A: Band Memory Error
Problem Description:	The read/write of the SDRAM (band memory) on the Main PCA was diagnosed and an error was detected.
Corrective Action:	Try the following:
	■ Replace the Main PCA ⇒ Page *8-25*.

System Error:	System Error 110B: Cap Horizontal Position Error
Problem Description:	The Cap horizontal position is defined as 0.0 mm.
Corrective Action:	Try the following:
	■ Power On the Printer in the POC skip mode (Cancel key and Power On button together).
	■ Enter into the Maintenance Mode.
	■ Enter into the "Cap Position" option (inside the Adjust menu) and define a correction value other than 0.0 mm.

System Error:	System Error 1110: Data Path Time-out Error
Problem Description:	The data transfer via USB from the host does not finish even when a specified time period has passed.
Corrective Action:	Try the following:
	■ Replace the Main PCA ⇒ Page *8-25*.

System Error:	System Error 112x: Vacuum Fan Error
Problem Description:	▪ x = 0: The Vacuum Fan 1 (extreme right of the printer) has failed.
	▪ x = 1: The Vacuum Fan 2 (center right of the printer) has failed.
	▪ x = 2: The Vacuum Fan 3 (center left of the printer) has failed.
	▪ x = 3: The Vacuum Fan 4 (extreme left of the printer) has failed.
Corrective Action:	Try the following:
	▪ Check that the failing Vacuum Fan is correctly connected.
	▪ Replace the failing Vacuum Fan ⇒ Page *8-51*.
	▪ If the error continues, replace the Main PCA ⇒ Page *8-25*.

System Error:	System Error 1130: DMA Controller Error.
Problem Description:	An error occurs when the DMA of the printing data cannot be completed.
Corrective Action:	Try the following:
	▪ Replace the Main PCA ⇒ Page *8-25*.

System Error:	System Error 1140: Flash ROM Write Error
Problem Description:	A time-out error occurs when the flash ROM contents are being saved and erasing does not end.
Corrective Action:	Try the following:
	▪ Replace the Main PCA ⇒ Page *8-25*.

System Error:	System Error 1150: Home Position Sensor Error
Problem Description:	The Carriage cannot be moved to it's home position.
Corrective Action:	Try the following:
	▪ Enter the Sensors Menu (in Maintenance Mode) and select "Printer Sensors". Then execute the "Home Position" option, which will display the state of the home position sensor. If the home position is detected, "1" will be displayed on the Front Panel. If the home position is not detected, manually move the Carriage and check the Front Panel to see if the "1" is displayed.
	▪ Make sure the Home Position Sensor Cable is connected correctly and is not damaged.
	▪ Replace the Home Position Sensor ⇒ Page *8-59*.
	▪ Replace the ISS PCA ⇒ Page *8-139*.
	▪ Replace the Main PCA ⇒ Page *8-25*.

System Error:	System Error 1160: Wiping Error
Problem Description:	When the Wiping Motor has been running for a while, the sensor fails to detect that the Motor has made one turn.
Corrective Action:	Check whether the Wiper Blade turns once and the Wiper Blade Position Sensor detects the turn when the Printer is initializing when it is powered On.

- If the Wiper **does not** turn once:
  - Check manually by turning the Wiper Gears to see if the Wiper Blade turns. If it does not turn then replace the Wiping Station ⇒ Page *8-134*.
  - Check whether +24 V (LED 38) is supplied to the Main PCA by checking that LED 38 is lit on the Main PCA. If the Wiper Motor does **not** turn even though the +24 V is supplied, there is a possibility of a failure in the Wiper Motor. Replace the Wiping Station ⇒ Page *8-134*.
  - Make sure the Wiper Blade Position Sensor Cable is connected correctly and is not damaged.
  - If the error continues, replace the Main PCA ⇒ Page *8-25*.

- If the Wiper **does** turn once:
  - Check whether the Wiper Blade Position Sensor can be switched ON and OFF by manually rotating the Wiper Blade. Check whether the lever type switch is not loose.
  - Make sure the Wiper Blade Position Sensor is connected correctly and is not damaged.
  - Make sure that the Wiper Blade Position Sensor is clean.
  - Replace the ISS PCA ⇒ Page *8-139*.
  - If the error continues, replace the Main PCA ⇒ Page *8-25*.

System Error:	System Error 1170: Temperature Sensor Error
Problem Description:	The Temperature Sensor detects abnormal temperatures (-10°C or lower or 85°C or higher).
Corrective Action:	Try the following:

- Make sure that the Printer is in an environment where the temperature is between -10°C and 85°C.
- Make sure the Ambient Temperature Sensor Cable is connected correctly and is not damaged.
- Replace the ISS PCA ⇒ Page *8-139*.
- Replace the Main PCA ⇒ Page *8-25*.

System Error:	System Error 1180: Pump/Wipe Motor Error
Problem Description:	Over current is detected in the pump/wipe motor drive circuit.
Corrective Action:	Try the following:

- When the ambient temperature is very low, the Pump Motor Tube becomes hard and the load on the Capping Motor is increased. Make sure that the Printer is in an environment where the temperature is not below -10ºC or higher than +85ºC.
- Enter the Motors Menu (in Maintenance Mode) and select "Forwards" to activate the Pump/Wipe Motor. Access the Pump Motor and check whether the Motor Drive Circuit and Motor work correctly.
- Make sure that the Capping Station cables are connected correctly and are not damaged
- If the Capping Motor cannot be rotated, replace the Capping Station Motor ⇒ Page *8-123*.
- Make sure the Cap Sensor Cable is connected correctly and is not damaged.
- Replace the Main PCA ⇒ Page *8-25*.

System Error:	System Error 119x: Printhead Drive Voltage Error
Problem Description:	The Printhead drive voltages generated on the Carriage PCA do not reach the expected values.
Corrective Action:	Try the following:

- Check whether VDD2 power is generated on the Main PCA. If not, then:
  - Make sure that the Window is closed.
  - Replace the Power Supply Unit ⇒ Page *8-32*.
- If the power is supplied, it means that the voltage check circuit is defective. Replace the Main PCA ⇒ Page *8-25*.
- Make sure the Trailing Cable is connected correctly and is not damaged.
- If the error continues, replace the Trailing Cable ⇒ Page *8-101*.

System Error:	System Error 11A0: EEPROM I/O Error
Problem Description:	The read/write of the EEPROM on the Main PCA was diagnosed and an error was detected.
Corrective Action:	Try the following:

- Replace the Main PCA ⇒ Page *8-25*.

System Error:	System Error 11D0: Printhead Cooling Fan Error
Problem Description:	The Printhead temperature does not drop even after the printhead Cooling Fan rotates for more than a specified time.
Corrective Action:	Try the following:

- Make sure the Printhead Cooling Fan Cable is connected correctly and is not damaged
- Make sure that the Printhead Cooling Fan is working correctly. If the Printhead Cooling Fan is not working correctly, replace it ⇒ Page *8-95*.
- Replace the Carriage PCA ⇒ Page *8-74*.
- Replace the Trailing Cable ⇒ Page *8-101*.
- If the error continues, replace the Main PCA ⇒ Page *8-25*.

System Error:	System Error 11E0: Long Term Storage Error
Problem Description:	This error is displayed when the Printer has been left switched OFF for more than 31 days.
Corrective Action:	Try the following:

- This error can be avoided if the "Store Ink System" procedure is performed before turning the Printer OFF for long periods.
- To clear this error:
  - Turn the Printer ON in error skip mode by holding down the **Cancel** and **Shift** keys and pressing the ON button.
  - Enter the Password to clear the internal error flag: ◀, ▶, **Shift** and **OK**.
  - Switch the Printer OFF and then ON again.

System Error:	System Error 120x: Printhead Drive IC Error
Problem Description:	The Piezo Drive IC on a Printhead is either too hot (85°C or higher) or too low (-10°C or lower).
Corrective Action:	Try the following:

- Check whether the temperature of the Printhead voltage circuit on the Carriage PCA is extremely hot. If it is extremely high, check the short-circuit of the Printhead and the Printhead Cable using a tester. The Short-circuit may have been caused by the incorrect insertion of the Printhead Cable, internal failure of the Printhead or by a foreign object attached to the Carriage PCA.
- Replace the Carriage PCA ⇒ Page *8-74*.

System Error: System Error 1220: Line Sensor Error

Problem Description: The Printer has problems detecting the edge of the Media.

Corrective Action: Try the following:

- Enter the Sensors Menu (in Maintenance Mode) and select "Printer Sensors". Then execute the "Line Sensor" option, and check if the Line Sensor is functioning correctly by inserting a white piece of paper underneath it. If the Line Sensor responds, then it is functioning correctly.
- If the Line Sensor does **not** respond to the white piece of paper, then replace the Line Sensor ⇒ Page *8-84*.
- Replace the Carriage PCA ⇒ Page *8-74*.
- Replace the Main PCA ⇒ Page *8-25*.

System Error: System Error 126x: Trailing Cable Connection Error

Problem Description: The Trailing Cable connected to the one of the following connectors on the Carriage PCA is faulty.

- x = 0: Connector 9.
- x = 1: Connector 10.
- x = 2: Connector 11.
- x = 3: Connector 12.

Corrective Action: Try the following:

- Reconnect the Trailing Cable to the Carriage PCA and the Main PCA.
- Make sure that the Trailing Cable is not damaged.
- Replace the Carriage PCA ⇒ Page *8-74*.
- If the error continues, replace the Main PCA ⇒ Page *8-25*.
- If the error continues after replacing the Main PCA and the Carriage PCA, replace the Trailing Cable ⇒ Page *8-101*.

System Error: System Error 1290: End of Life of Part Reached

Problem Description: The end of life of the Prime Assembly has been reached since it has been working for more than 43 hours.

Corrective Action: Try the following:

- Replace the Prime Assembly ⇒ Page *8-128*.

System Error: System Error 1310: Cap Sensor Error

Problem Description: The cap home position cannot be found.

Corrective Action: Try the following:

- Make sure that the Cap Home Position Sensor is correctly connected.
- Replace the ISS PCA ⇒ Page *8-139*.
- Replace the Capping Station ⇒ Page *8-119*.
- Replace the Main PCA ⇒ Page *8-25*

System Error:	System Error 1320: Scan-Axis Motor Heating Error
Problem Description:	The Scan-Axis Motor Temperature Sensor has detected a temperature over 100°C.
Corrective Action:	Try the following:

- Make sure that the Scan-Axis Motor Cooling Fan, Scan-Axis Motor Temperature Sensor and the Scan-Axis Motor are connected correctly.
- Replace the Scan-Axis Motor Cooling Fan ⇒ Page *8-69*.
- Replace the Scan-Axis Motor ⇒ Page *8-71*.
- Replace the Main PCA ⇒ Page *8-25*.

System Error:	System Error 1330: Scan-Axis Motor Temperature Sensor Error
Problem Description:	The Scan-Axis Motor Temperature Sensor has detected abnormal temperatures (-22.5°C or lower or 150°C or higher).
Corrective Action:	Try the following:

- Make sure that the Scan-Axis Motor Temperature Sensor is connected correctly and the cable is not damaged.
- Replace the Scan-Axis Motor Cooling Fan ⇒ Page *8-69*.
- Replace the Main PCA ⇒ Page *8-25*.

System Error:	System Error 140x: Heater Temperature Error
Problem Description:	Temperature read by the Heater Temperature Sensor is abnormal (lower than -20°C or higher than 200°C).

- x = 1: Front heater.
- x = 2: Center Platen.
- x = 3: Rear Heater.

Corrective Action:	Try the following:

- Make sure that the failing Heater is connected correctly to the Main PCA. Make sure that the cables are not damaged.
- Replace the failing Heater.
- Replace the Main PCA ⇒ Page *8-25*.

System Error:	System Error 141x: Heater Error (High Temperature)
Problem Description:	Temperature read by the Heater Temperature Sensor is above 65°C). ■ x = 1: Front heater. ■ x = 2: Center Platen. ■ x = 3: Rear Heater.
Corrective Action:	Try the following: ■ If the Printer is installed in a high temperature environment, move the Printer to an area where the operating temperature is much lower. ■ Make sure that the failing Heater is connected correctly to the Main PCA. Make sure that the cables are not damaged. ■ Replace the failing Heater. ■ Replace the Main PCA ⇒ Page *8-25*.

System Error:	System Error 143x: Heater Error (Insufficient Heating)
Problem Description:	The Heater is not heated to a specified temperature even after 30 minutes have passed. ■ x = 1: Front heater. ■ x = 2: Center Platen. ■ x = 3: Rear Heater.
Corrective Action:	Try the following: ■ If the Printer is installed in a low temperature environment, move the Printer to an area where the operating temperature is much higher. ■ Check that the AC Voltage being used is the one selected on the Heater Voltage Setting Switch. ■ Make sure that the failing Heater is connected correctly to the Main PCA. Make sure that the cables are not damaged. ■ Replace the Heater Relay Board ⇒ Page *8-40*. ■ Replace the failing Heater. ■ Replace the Main PCA ⇒ Page *8-25*.

System Error:	System Error 144x: Heater Error (No Interrupt)
Problem Description:	No heater sequence interrupt.
Corrective Action:	Try the following: ■ Make sure that all the cables are correctly connected to the Heater Relay Board. Make sure that the cables are not damaged. ■ Replace the Heater Relay Board ⇒ Page *8-40*. ■ Replace the Main PCA ⇒ Page *8-25*.

System Error: System Error 2000 to 6000: Firmware Logic Error

Problem Description: A logic error has occurred in the Firmware program.

Corrective Action: Try the following:

- Reinstall the Firmware or upgrade to the latest version (if available).
- Replace the Main PCA $\Rightarrow$ Page *8-25*.

Printhead Calibration

3

Printhead Calibration

To ensure that the Printheads print correctly without any Print Quality defects, the Printheads must first be calibrated. The calibration sequence includes:

1 Printhead Nozzle Position Adjustment.

2 Printhead to Printhead Calibration.

Printhead Nozzle Position Adjustment

Perform the Printhead Nozzle Position Adjustment as follows:

1 When the "Printer Ready" message appears on the Front Panel, press the **Online** key to take the printer offline.

```
PRINTER READY
ROLL: 64/PAPER
```

2 When the following screen is displayed on the Front Panel, press the **Shift** key twice.

```
▲INK            MEDIA REG▼
◄MEDIA             M.ADV▶
```

3 When the following screen is displayed on the Front Panel, Press the ◄ key to enter into the Adjust menu.

```
▲PRINTER           SETUP▼
◄ADJUST           HEATER▶
```

4 In the Adjust menu, scroll to "Test Prints" and press the **OK** key.

```
# TEST PRINTS
> NOZZLE PRINT
```
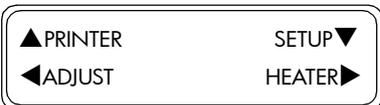
5 In the Test Prints submenu, scroll to "Nozzle Pos Adj" and press the **OK** key.

```
# TEST PRINTS
* NOZZLE POS ADJ
```

6 Press the **OK** key to confirm that you want to print the Printhead Nozzle Position pattern.

```
# TEST PRINTS
∗ OK?
```

7   The Printhead Nozzle Position pattern will begin to print.

- ■ Use section 1 to identify the printhead nozzle to be used as the reference.
- ■ Use section 2 to determine the correction value for the other printheads.

8   Identify the line of the printhead nozzle closest to the print platen (indicated as A in the image). In this example, the printhead nozzle (that is closest to the print Platen) to be used as the reference is indicated as B in the image.
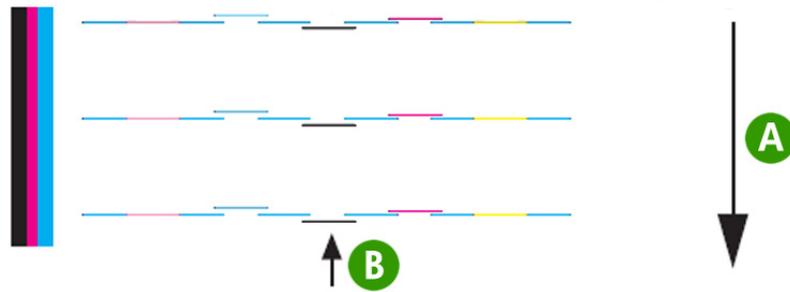
9   For each printhead line, identify the value where the reference printhead is aligned. In this example image, for the Magenta line the correction value is 1 (indicated as A in the image).
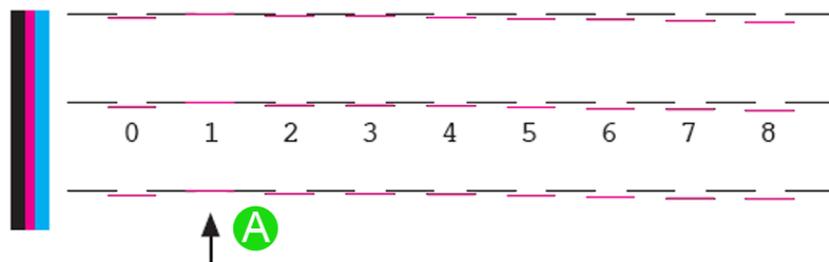
10   In the Adjustment submenu, scroll to "Nozzle Pos Val" and press the ▶ key.

```
# NOZZLE POS VAL
# Y  >0
```

11 In the Nozzle Pos Val submenu, select the color of the Printhead that you would like to adjust and press the **OK** key. If you would like to exit the Nozzle Pos Val submenu, press the ◀ key.

```
# NOZZLE POS VAL
# M   >0
```

The different colors of the Printheads are as follows:

- K - Black.
- Lm - Light Magenta.
- Lc - Light Cyan.
- M - Magenta.
- Y - Yellow.
- C - Cyan.

12 Use the ▲ and ▼ keys to change the digits and use the ◀ and ▶ keys to select the digits. The numerical value can be changed in a range of 0 to 8 (1 unit = 1 dot).

```
# NOZZLE POS VAL
# M   *1
```

13 Press the **OK** key once you have entered the new value.

Printhead to Printhead Calibration

Perform the Printhead to Printhead Calibration as follows:

1 When the "Printer Ready" message appears on the Front Panel, press the **Online** key to take the printer offline.

```
PRINTER READY
ROLL: 64/PAPER
```

2 When the following screen is displayed on the Front Panel, press the **Shift** key twice.

```
▲INK              MEDIA REG▼
◀MEDIA                M.ADV▶
```

3 When the following screen is displayed on the Front Panel, Press the ◀ key to enter into the Adjust menu.

```
▲PRINTER            SETUP▼
◀ADJUST            HEATER▶
```

4 In the Adjust menu, scroll to "Test Prints" and press the **Ok** key.

```
# TEST PRINTS
> NOZZLE PRINT
```
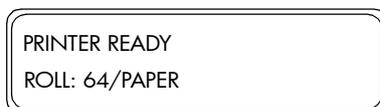
5 In the Test Prints submenu, scroll to "PH To PH" and press the **Ok** key.

```
# TEST PRINTS
* PH TO PH
```

6 Press the **OK** key to confirm that you want to print the Printhead to Printhead pattern.

```
# TEST PRINTS
* OK?
```

7 The Printhead to Printhead pattern will begin to print.
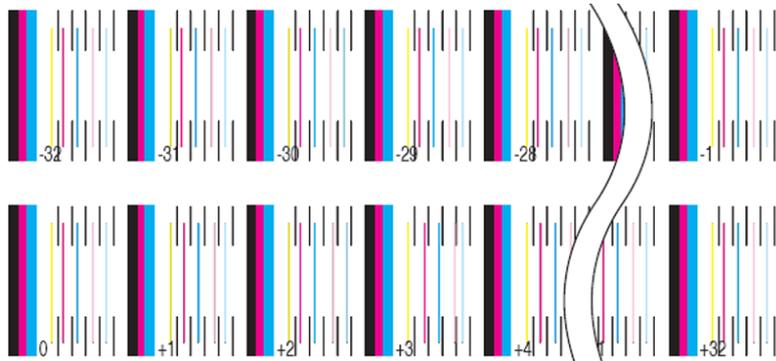
8 In the Adjust menu, scroll to "PH to PH Val" and press the ▶ key.

```
# PH TO PH VAL
# Y  >+00
```

9 In the PH to PH Val submenu, select the color of the Printhead that you would like to adjust and press the **OK** key. If you would like to exit the PH to PH Val submenu, press the ◀ key.

```
# PH TO PH VAL
# Lc  >+00
```

The different colors of the Printheads are as follows:

- Lm - Light Magenta.
- Lc - Light Cyan.
- M - Magenta.
- Y - Yellow.
- C - Cyan.

10 In the Printhead to Printhead pattern, identify the value where the vertical black line and the color printhead lines are perfectly aligned. In the image below, the correct value for Lc is +2.
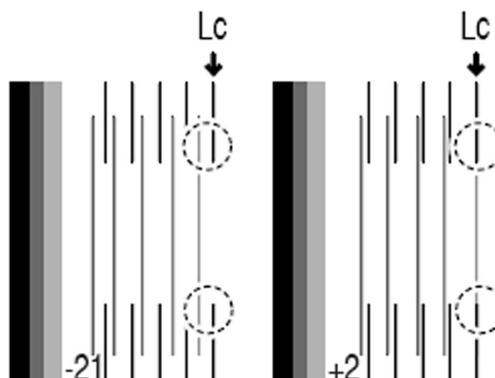
11 Use the ▲ and ▼ keys to change the digits and use the ◀ and ▶ keys to select the digits. The numerical value can be changed in a range of -32 to +31 (1 unit = 1 dot).

```
# PH TO PH VAL
# Lc  *+02
```

12 Press the **OK** key once you have entered the new value.

Maintenance Mode

4

Maintenance Mode

Introduction

This chapter explains how to use the built-in Maintenance Mode which is designed to assist Service Personnel to make any necessary factory adjustments or to perform Service Tests to verify if certain components of the Printer are functioning correctly.

If possible, always perform a Service Test on the component that you are about to replace, just to make sure that is the component that has failed. If the test on that component passes, there is no need to replace it.

Diagnostics - Self Test

Initialization Sequences

Whenever the Printer is switched ON, it automatically performs a series of internal self tests and mechanical initialization sequences. If any of the parts fail, a system error will appear and you should consult Chapter 2 - *System Error Codes*.

Phone Support

In certain circumstances, a Call Agent can try and troubleshoot the Printer by requesting the Customer to perform a Service Test via the phone. Using this process, it can be determined whether the Printer requires any on-site maintenance.

Maintenance Mode Menus

The following is a list of all internal Maintenance Mode Menus available in the Printer. Instructions for entering the Maintenance Mode are explained on Page *4-6*.

Part of the Maintenance Menu is a duplication of the User Menu, therefore this chapter will only explain the menu options that are unique to the Maintenance Menu.

For the full Maintenance Mode menu structure, please refer to Page *4-52*.

1 INK ⇒ Refer to the User's Guide.

2 MEDIA REG. (Media registration) ⇒ Refer to the User's Guide.

3 MEDIA ⇒ Refer to the User's Guide.

4 M. ADV. (Media Advance) ⇒ Refer to the User's Guide.

5 REWIND ⇒ Refer to the User's Guide.

6 FORM FEED ⇒ Refer to the User's Guide.

7 PH. REC. (Printhead Recovery) ⇒ Refer to the User's Guide.

8 PH. MAIN. (Printhead Maintenance) ⇒ Page *4-9*

This menu contains the necessary options related to the actual Printheads contained in the Carriage Assembly, like cleaning or servicing. This menu contains the same options as in the User Menu except for the following:

- Purge Ink System.
- Ink Charge Done.
- Uncap Carriage.
- Cap Carriage.

9 PRINTER ⇒ Page *4-12*

This menu can be used to print various information pages. The different options available in this menu are as follows:

- Config Print.
- Error Log Print.
- History Print.

10 SETUP ⇒ Page *4-19*

This menu contains the necessary option to set the different system parameters, like language or system time. This menu contains the same options as in the User Menu except for the following:

- System Date.
- System Time.
- OEM Serial Number.
- HP Serial Number.
- Save Calibrations.
- Restore Calibrations.
- Initialize EEPROM.

■ Save EEPROM.
■ Restore EEPROM.

11 ADJUST. (Adjustment) ⇒ Page *4-23*

This menu contains the necessary options to set the adjustment parameters of the Printer so that it functions correctly. This menu contains the same options as in the User Menu except for the following:

■ Test Prints.
■ Line Sensor (Top) Adjustment.
■ Line Sensor (Side) Adjustment.
■ Set Bidir Media.
■ PH Offset Voltage.
■ Cap Position.
■ Wipe Position.
■ Cap Up/Down Pos.
■ Move Carriage.

12 HEATER ⇒ Refer to the User's Guide.

13 MNFG-PRN ⇒ Page *4-28*

This menu contains the test patterns which are used during the manufacturing process.

14 SENSORS ⇒ Page *4-29*

This menu can be used to check the status of the various sensors and thermistors in the Printer in real time. The different options available in this menu are as follows:

■ Printer Sensors.
■ Ink Sensor.
■ Bottle Sensor.
■ TUR Sensors.
■ Temperature Sensors.

15 VOLT (Voltage Check) ⇒ Page *4-34*

This menu can be used to turn the Voltage check to high or low. The different options available in this menu are as follows:

■ Voltage Check.

16 MOTORS ⇒ Page *4-35*

This menu contains the necessary diagnostics that can be used to test the various Motors in the Printer. The different options available in this menu are as follows:

■ Media Advance Motor.
■ Capping Station Motor.
■ Pump/Wipe Motor.
■ Vacuum Fans.
■ Printhead Cooling Fan.

- TUR Motor.
- Scan-Axis Motor Cooling Fan.

17 COUNTER ⇒ Page *4-40*

This menu can be used to view and set the different usage counters in the Printer. The different options available in this menu are as follows:

- Media Used.
- Ink Used.
- Prime Assembly.
- Capping Unit.
- Scan-Axis belt.
- Reset ALL Counters.
- Non-HP Ink Used.
- Expired Ink Used.

18 PH. INF. (Printhead Information) ⇒ Page *4-45*

This menu can be used to view information related to the Printheads. The different options available in this menu are as follows:

- Select Printhead Color.
- Manufacture Date.
- Serial Number.
- Rank.
- Used Date
- Dot Counter.
- Jam Count.
- Used Color.
- Non-HP Ink Used.
- Expired Ink Used.

19 ELECT (Electronics) ⇒ Page *4-48*

This menu contains the necessary diagnostics that can be used to test the various electronic components in the Printer. The different options available in this menu are as follows:

- Main PCA.
- Carriage PCA.
- Ink EEPROM.
- VDD.

Entering the Maintenance Mode

Enter in to the Maintenance Mode as follows:

1 When the "Printer Ready" message appears on the Front Panel, press the **Online** key to take the Printer offline.

```
PRINTER READY
ROLL: 64/PAPER
```
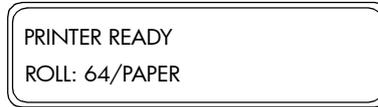
2 When the following screen is displayed on the Front Panel, press the following keys in this order: **Cancel**, **Shift**, **Cancel**, **Cancel**.

```
▲INK              MEDIA REG▼
◀MEDIA                M.ADV▶
```

3 When the following screen is displayed on the Front Panel, you will be requested to enter a password. Press the following keys in this order: ◀, ▶, **Shift** and **OK**.

```
MAINTENANCE MODE
PASSWORD?
```

4 Once the password has been entered correctly, you will enter in to the Maintenance Mode.

```
▲INK              MEDIA REG▼
◀MEDIA                M.ADV▶
```

Basic Menu Operation

Menu Group Selection

You can select a menu group directly with the ▲, ▼, ◀ and ▶ keys.

In order to switch between the different Maintenance Mode menus, the **Shift** key has to be used. The order of the different menus is as follows:

```
┌──────────────────────────┐
│ ▲INK          MEDIA REG▼ │
│ ◀MEDIA           M. ADV▶ │
└──────────────────────────┘

        [ 📋 ]

┌──────────────────────────┐
│ ▲REWIND       FORM FEED▼ │
│ ◀PH. REC       PH. MAIN▶ │
└──────────────────────────┘

        [ 📋 ]

┌──────────────────────────┐
│ ▲PRINTER          SETUP▼ │
│ ◀ADJUST          HEATER▶ │
└──────────────────────────┘

        [ 📋 ]

┌──────────────────────────┐
│ ▲MNFG-PRN       SENSORS▼ │
│ ◀VOLT            MOTORS▶ │
└──────────────────────────┘

        [ 📋 ]

┌──────────────────────────┐
│ ▲COUNTER        PH. INF▼ │
│ ◀ELECT                ▶ │
└──────────────────────────┘
```
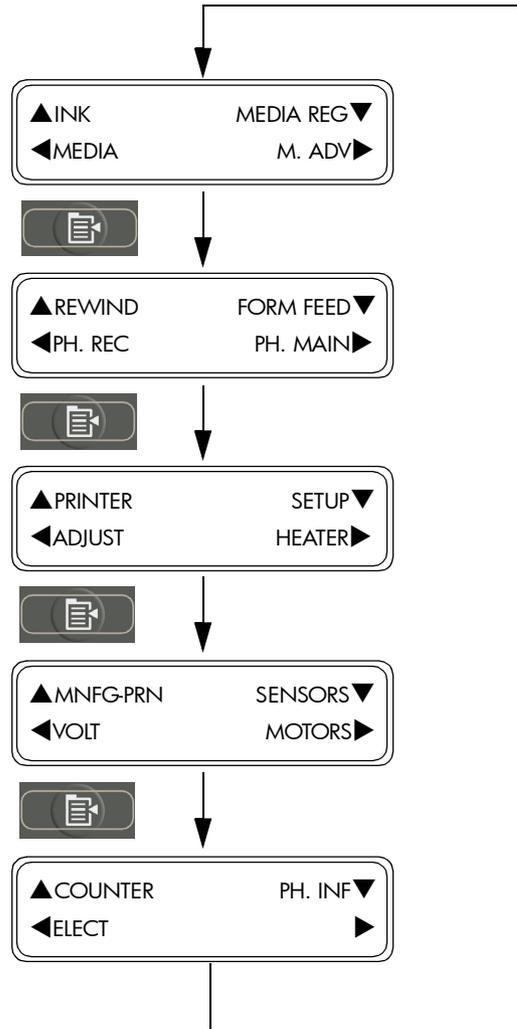
Menu Selection

Use the ▲ and ▼ keys to change between the menus at the same level.

Use the ◄ key to move to a higher level menu and use the ► key to move to a lower level menu.

Use the **OK** key to select a menu.

Parameter Setting

Use the ▲ and ▼ keys to switch between the parameters and to change the value of the digits.

Use the ◄ and ► keys to move between the digits when entering a parameter.

Use the **OK** key to confirm the parameter.

Use the **Cancel** key to cancel the parameter (without changing it) and return to the menu selection level.

Exiting Maintenance Mode

Use the **Online** key at anytime to immediately exit the Maintenance Mode.

PH. MAIN. (Printhead Maintenance)

This menu contains the necessary options related to the actual Printheads contained in the Carriage Assembly, like cleaning or servicing. This menu contains the same options as in the User Menu except for the following:

- Purge Ink System ⇒ Page *4-9*.
- Ink Charge Done ⇒ Page *4-10*.
- Uncap Carriage ⇒ Page *4-10*.
- Cap Carriage ⇒ Page *4-11*.

To enter in to the Printhead Maintenance menu, enter in to the Maintenance Mode and press the **Shift** key once and then the ▶ key.

```
▲REWIND          FORM FEED▼
◀PH. REC           PH. MAIN▶
```

Press the Right Arrow Key to select
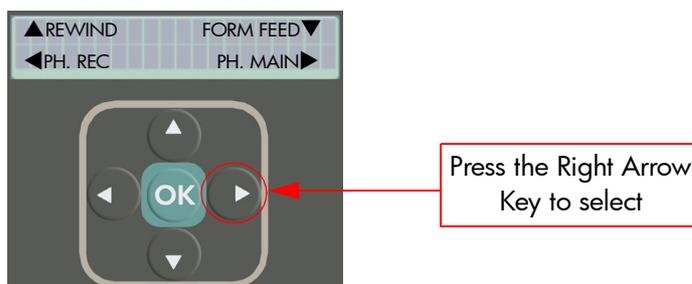
Purge Ink System

This option allows you to remove the ink from the complete system so that any relevant repair can be done to the Printer:

1 In the Printhead Maintenance submenu, scroll to "Ink System Opt" and press the **OK** key.

```
# INK SYSTEM OPT
> STORE INK SYS
```

2 In the Ink System Opt submenu, scroll to the "Purge Ink Sys" option and press the **OK** key.

```
# INK SYSTEM OPT
* PURGE INK SYS
```

3 When the following message appears on the Front Panel, check whether the Waste Ink Bottle is present and is NOT full. Press the **OK** key once the Waste Ink Bottle has been checked.

```
# INK SYSTEM OPT
* BOTTLE OK?
```

4 When the following message is displayed on the Front Panel, remove ALL the Ink Cartridges.

```
REMOVE CARTRIDGES
```

5 The Ink Purging process will start and you will need to recheck whether the Waste Ink Bottle is present and is NOT full. Press the **OK** key once the Waste Ink Bottle has been checked.

```
START PURGING
* BOTTLE OK?
```

6 The Printer will extract the ink (which could take at least 10 minutes) and the following message will be displayed on the Front Panel:

```
PURGING
            xxx
```

7 Once the ink has been extracted from the system, the Front Panel will return to the menu option screen.

```
# INK SYSTEM OPT
> PURGE INK SYS
```

Ink Charge Done

This option allows you to check or indicate whether ink charge has been completed:

1 In the Printhead Maintenance submenu, scroll to "Ink Charge Done" and press the **OK** key.

```
# INK CHARGE DONE
> NO
```

2 In the Ink Charge Done submenu, select "Yes" if ink charge has been completed or "No" if ink charge has not been completed yet and then press the **OK** key.

```
# INK CHARGE DONE
* YES
```

Uncap Carriage

This option allows you to uncap the Carriage from the Capping Station:

Never try to move the Carriage out of the Capping Station without first uncapping the Carriage.

1 In the Printhead Maintenance submenu, scroll to "Uncap Carriage" and press the **OK** key. The Capping Station will move downwards, uncapping the Carriage.

```
# UNCAP CARRIAGE
>
```

Cap Carriage

This option allows you to cap the Carriage in the Capping Station:

Never leave the Carriage uncapped for long periods of time since this can seriously damage the Printheads.

1 In the Printhead Maintenance submenu, scroll to "Cap Carriage" and press the **OK** key. The Capping Station will move upwards, capping the Carriage.

```
# CAP CARRIAGE
>
```

PRINTER

This menu can be used to print various information pages. The different options available in this menu are as follows:

- Config Print ⇒ Page *4-12*.
- Error Log Print ⇒ Page *4-13*.
- History Print ⇒ Page *4-17*.

To enter in to the Printer menu, enter in to the Maintenance Mode and press the **Shift** key three times and then the ▲ key.

Press the Up Arrow Key to select
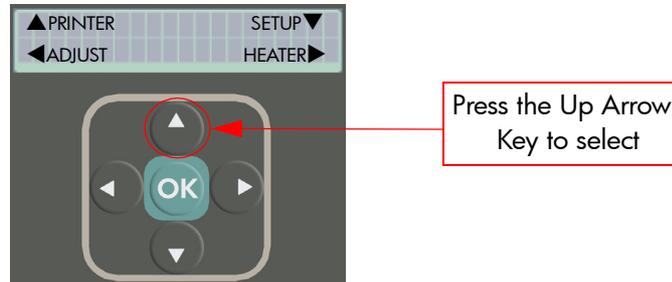
Config Print

The Config Print contains all the information related to how the Printer is currently configured. This information includes:

- System Information - this includes System Time and Serial Number (OEM and HP).
- Ink Level and date of Ink Cartridge insertion.
- Media Registration settings - all values and settings related to each of the Media Types that have been profiled in the Printer.
- Media size currently loaded in the Printer and the remaining length.
- Media Advance and Back Adjust values for the media currently loaded.
- Confirmation on whether Ink Charge has been performed.
- Information on how the Printer is currently setup - this includes Language, Time Zone, Length and Temperature Units, Printer FW and Boot versions, Main PCA and Carriage PCA versions.
- Printer Adjustment Values - this includes information on adjustment values for PH to PH, Bidir Def, Nozzle Position, LS Adjustment (Top and Side), Printhead Offset Voltage, Cap Position, Wipe Position and Cap Up/Down Position.
- Heater settings - this includes Heater Delay Time, Heater Standby Time and Heater Standby Temperature.
- Counter Information - this includes counter information on Media Used, Total Ink Used (per color), Prime Assembly usage, Capping Unit usage, Scan-Axis Belt usage, Non-HP Ink Used (and the date used) and Expired Ink Used (and the date used).
- Information related to the Printheads - this includes Manufacture Date, Serial Number, Voltage Rank, Used Date, Dot Count, Jam Count and whether expired or Non-HP ink has been used.

Print the Config Print as follows:

1 In the Printer submenu, scroll to "Config Print" and press the **OK** key.

```
# CONFIG PRINT
>
```

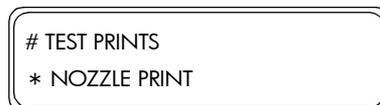**2** You will need to confirm that you want to print the Config Print by pressing the **OK** key.

```
# CONFIG PRINT
∗ OK?
```

3 While the Config Print is being printed, the following message will be displayed on the Front Panel.

```
# CONFIG PRINT
∗ EXECUTING
```

4 To cancel the print, press the **Cancel** key.

Error Log Print

This option allows you to print the error log information (300 logs in total) stored in the Printer. An engine error log is created when one of the following occurs:

■ System Error Code.

■ Warning occurs.

■ The Printer is shutdown.

Print the Error Log Print as follows:

1 In the Printer submenu, scroll to "Error Log Print" and press the **OK** key.

```
# ERROR LOG PRINT
>
```

2 You will need to confirm that you want to print the Error Log Print by pressing the **OK** key.

```
# ERROR LOG PRINT
∗ OK?
```

3 While the Error Log Print is being printed, the following message will be displayed on the Front Panel.

```
# ERROR LOG PRINT
∗ EXECUTING
```

4 To cancel the print, press the **Cancel** key.

Example of the Error Log Print:

The following information will explain how to interpret the Error Log Print.

Status Information (Error Log Print)

Status	Description
0100	Initializing
0201	Idle State
0202	Printing
0203	Printhead Cleaning
0204	Charging or purging ink
0205	Media path cleaning
0300	Occurrence of an Error
0400	Recovering
0800	Firmware program updating
0900	Shutting Down

Error Type (Error Log Print)

Error	Description
FATAL	Unrecoverable Errors
COR1	Errors that **do not** allow you to print
COR2	Errors that **do** allow you to print
EXEC	Executing operation guidance (service clean, etc...)

Error Code (Error Log Print)

For error codes between 1000 and 6000, please refer to Chapter 2 for the relevant information.

X = Printhead Color
1 = Yellow
2 = Magenta
3 = Cyan
4 = Black
5 = Light Magenta
6 = Light Cyan

Error Code	Description
7010	Cover open
7020	Lever open
7100	Media end
7110	Media size error
7120	Media Skew
7130	Media jam (media feed)
7140	Media jam (Carriage)
7150	Media jam (media set)
7210	No Printhead installed
721X	X Printhead not installed
7220	Printhead data error
722X	X Printhead data error
7230	Printhead temperature error
723X	X Printhead temperature error
7390	Ink not charged
8120	Media skew 2
8200	Out of ambient temperature range
8230	Out of Printhead temperature range
823X	Out of X Printhead temperature range
8330	No Ink Cartridge
833X	X Ink Cartridge not installed

Error Code	Description
8340	Ink Cartridge expired
834X	X Ink Cartridge expired
8410	No Waste Ink Bottle installed
8430	Waste Ink Bottle full
9010	Ink Charging
9020	Ink Purging
9030	Ink Recharging
9040	Printhead recovery
9050	Printhead Wash
9060	Printhead installed
9070	Printhead replaced
9080	Printhead checked
9110	Wiper Blade replaced
9120	Wiper Sponge replaced
9130	Wiping Liquid Bottle replaced

Warning Information (Error Log Print)

Bit Position	Description
0001	Take-up-reel Unit
0002	Ink near end
0004	Daily Maintenance failed
0008	Printhead uncapped
0010	Ink expiration is near
0020	Prime Assembly must be replaced
0040	Wiper Blade must be replaced
0080	Wiper Sponge must be replaced
0100	Wiping Liquid Bottle must be replaced
0200	Capping Unit must be replaced
0400	Scan-Axis belt must be replaced

History Print

This option allows you to print information relating to the daily maintenance history that the customer has performed. There are some important operations the Printer tracks in order to reinforce the warranty inclusions:

- Daily Maintenance - whether cap cleaning has been performed.
- Information on any Printhead crashes that have occurred.
- Information on whether the Printer has been switched off for long period and whether the Ink System Storage Kit has been used.
- Information on Printhead Recoveries performed (Operator triggered and Automatically triggered).

The following information will explain how to interpret the Maintenance Log contained within the History Print:

System	Message	Description
Ink System Management	Store Ink Sys	Store Ink System triggered
	Clean Ink Sys	Clean Ink System triggered
	Charge Ink Sys	Charge Ink System triggered
Maintenance	Cap Clean	Cap Cleaning procedure triggered
	Replace Liquid	Wiper Liquid replacement triggered
	Replace Blade	Replace Wiper Sponge procedure triggered
	Replace Sponge	Replace Wiper Blade procedure triggered
Printhead Recovery	OP_Normal	Normal PH Recovery triggered
	OP_Strong	Strong PH Recovery triggered
	OP_Wash PH	Wash PH procedure triggered
	PR_Normal	Automatic Normal PH Recovery triggered
	PR_Special	Automatic Special PH Recovery triggered
	AT_Wash PH	Automatic Wash PH procedure triggered
Printhead Height	Adjheight	PH Height Adjustment
Printhead Crash	Printhead Jam	Scan-Axis Shutdown
Printhead Status	Replace PH	Printhead replacement
	Install PH	Printhead installation
	Reseat PH	Printhead check
Printer Status	Booting Up	Printer powered On
	Shutting Down	Printer powered Off

Print the History Print as follows:

1   In the Printer submenu, scroll to "History Print" and press the **OK** key.

```
# HISTORY PRINT

>
```

2   You will need to confirm that you want to print the History Print by pressing the **OK** key.

```
# HISTORY PRINT

* OK?
```

3   While the History Print is being printed, the following message will be displayed on the Front Panel.

```
# HISTORY PRINT

* EXECUTING
```

4   To cancel the print, press the **Cancel** key.

Example of the History Print (only certain parts of the print are shown):

```
*****      HISTORY PRINT      *****       01/02                      2006/10/17 15:04:54

*****      Y  INK CARTRIDGE LOG      *****
No    START_DATE    SERIAL                 INK_LEVEL(ul)    INK_MARK    EXPIRE
01    2006/10/06    AD245E02103010E0                   0         -          -
02    2006/08/25    ADFA5B011030106D              355200         -          -
03    2006/08/24    AD418801103301082             362400         -          -
04    2006/08/25    AD228D01103010CA              355200         -          -
05    2006/09/04    ADFF99001030010A8                  0         -          -
06    2006/09/03    AD4F120010301014                   0         -          -
07    2006/09/01    AD507E011030010D4             177600         -          -
08    2006/02/01    AD9A2E001030109E              183108         -          -

*****      M  INK CARTRIDGE LOG      *****
No    START_DATE    SERIAL                 INK_LEVEL(ul)    INK_MARK    EXPIRE
01    2006/10/06    ADD5320210301095                   0         -          -
02    2006/08/25    ADB58F0110301070D             177600         -          -
03    2006/08/28    AD7A480110301085              177600         -          -
04    2006/09/04    ADC79D00103010F4                   0         -          -
05    2006/09/01    ADA75E001030101067                 0         -          -
06    2006/02/23    AD361200103010A              205339         -          -

*****      Y  PRINTHEAD REPLACE LOG      *****
No    REPLACE_DATE    DATE       SERIAL            COLOR
01    2006/10/06      2006/08    AE4G000378           Y

*****      M  PRINTHEAD REPLACE LOG      *****
No    REPLACE_DATE    DATE       SERIAL            COLOR
01    2006/10/06      2006/08    AE4G000377           M


*****      HISTORY PRINT      *****       02/02                      2006/10/17 15:04:54

No     DATE          TIME     TYPE                No     DATE          TIME     TYPE
0001   2006/10/17    07:16    OP_NORMAL           0002   2006/10/17    07:06    CAP_CLEAN
0003   2006/10/16    23:43    AT_SPITTING         0004   2006/10/16    07:11    OP_NORMAL
0005   2006/10/16    09:43    CAP_CLEAN           0006   2006/10/16    06:44    AT_SPITTING
0007   2006/10/15    14:42    AT_SPITTING         0008   2006/10/14    22:40    AT_SPITTING
0009   2006/10/14    06:38    AT_SPITTING         0010   2006/10/13    14:24    PR_NORMAL
0011   2006/10/13    07:23    OP_NORMAL           0012   2006/10/13    07:14    CAP_CLEAN
0013   2006/10/13    06:51    BOOTING_UP          0014   2006/10/11    10:40    OP_STRONG
0015   2006/10/11    10:33    CAP_CLEAN           0016   2006/10/11    09:33    OP_NORMAL
0017   2006/10/11    08:20    OP_NORMAL           0018   2006/10/11    07:51    BOOTING_UP
0019   2006/10/11    07:21    OP_NORMAL           0020   2006/10/11    07:17    CAP_CLEAN
```

SETUP

This menu contains the necessary option to set the different system parameters, like language or system time. This menu contains the same options as in the User Menu except for the following:

- System Date ⇒ Page *4-19*.
- System Time ⇒ Page *4-20*.
- OEM Serial Number ⇒ Page *4-20*.
- HP Serial Number ⇒ Page *4-20*.
- Save Calibrations ⇒ Page *4-20*.
- Restore Calibrations ⇒ Page *4-21*.
- Initialize EEPROM ⇒ Page *4-21*.
- Save EEPROM ⇒ Page *4-21*.
- Restore EEPROM ⇒ Page *4-22*.

To enter in to the Setup menu, enter in to the Maintenance Mode and press the **Shift** key twice and then the ▼ key.
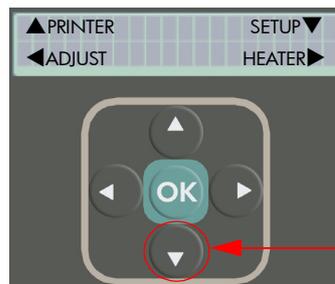
Press the Down Arrow Key to select

System Date

This option allows you to set the current date:

1 In the Setup submenu, scroll to "Date" and press the **OK** key.

```
# DATE (YY/MM/DD)
> 05/05/08
```

2 Use the ▲ and ▼ keys to change the digits and use the ◄ and ► keys to select the digits.

```
# DATE (YY/MM/DD)
> 05/10/01
```

3 Press the **OK** key once you have entered the new date.

System Time

This option allows you to set the current time:

1 In the Setup submenu, scroll to "System Time" and press the **OK** key.

```
# SYSTEM TIME
> 01:01
```

2 Use the ▲ and ▼ keys to change the digits and use the ◄ and ► keys to select the digits.

```
# SYSTEM TIME
> 09:30
```

Format: Hour:Minute

3 Press the **OK** key once you have entered the new time.

OEM or HP Serial Number

This option allows you to set the Serial Number of the Printer:

1 In the Setup submenu, scroll to "HP Serial No." or "OEM Serial No." and press the **OK** key.

```
# HP SERIAL No.
> 0000000000
```

2 Use the ▲ and ▼ keys to change the digits and use the ◄ and ► keys to select the digits.

```
# HP SERIAL No.
> 012345678A
```

HP: 10 Digits
OEM: 8 Digits

3 Press the **OK** key once you have entered the new serial number.

Save Calibrations

This option allows you to save the Calibrations stored in the EEPROM into the Factory Defaults area in the flash memory:

1 In the Setup submenu, scroll to "Save Calibs" and press the **OK** key.

```
# SAVE CALIBS
>
```

2 You will need to confirm that you want to save the EEPROM Calibrations by pressing the **OK** key.

```
# SAVE CALIBS
* OK?
```

Restore Calibrations

This option allows you to restore the Calibrations stored in the Factory Defaults area to the EEPROM:

1 In the Setup submenu, scroll to "Restore Calibs" and press the **OK** key.

```
# RESTORE CALIBS
>
```

2 You will need to confirm that you want to restore the contents to the EEPROM by pressing the **OK** key.

```
# RESTORE CALIBS
* OK?
```

Initialize EEPROM

This option allows you to initialize the EEPROM with the default values. The Printer correction values are returned to the values before adjustment:

1 In the Setup submenu, scroll to "Init EEPROM" and press the **OK** key.

```
# INIT EEPROM
>
```

2 You will need to confirm that you want to initialize the EEPROM by pressing the **OK** key.

```
# INIT EEPROM
* OK?
```

Save EEPROM

This option allows you to save the contents stored in the EEPROM into the EEPROM backup area in the flash memory:

1 In the Setup submenu, scroll to "Save EEPROM" and press the **OK** key.

```
# SAVE EEPROM
>
```

2 You will need to confirm that you want to save the EEPROM contents by pressing the **OK** key.

```
# SAVE EEPROM
* OK?
```

Restore EEPROM

This option allows you to restore the contents stored in the EEPROM backup area to the EEPROM:

1 In the Setup submenu, scroll to "Restore EEPROM" and press the **OK** key.

```
# RESTORE EEPROM

>
```

2 You will need to confirm that you want to restore the EEPROM contents by pressing the **OK** key.

```
# RESTORE EEPROM
∗ OK?
```

ADJUST (Adjustment)

This menu contains the necessary options to set the adjustment parameters of the Printer so that it functions correctly. This menu contains the same options as in the User Menu except for the following:

■ Test Prints ⇒ Page *4-23*.
■ Line Sensor (Top) Adjustment ⇒ Page *4-24*.
■ Line Sensor (Side) Adjustment ⇒ Page *4-24*.
■ Set Bidir Media ⇒ Page *4-25*.
■ PH Offset Voltage ⇒ Page *4-25*.
■ Cap Position ⇒ Page *4-26*.
■ Wipe Position ⇒ Page *4-26*.
■ Cap Up/Down Pos ⇒ Page *4-27*.
■ Move Carriage ⇒ Page *4-27*.

To enter in to the Adjustment menu, enter in to the Maintenance Mode and press the **Shift** key twice and then the ◄ key.
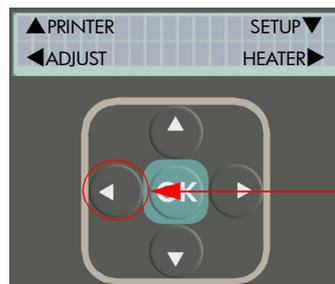
Press the Left Arrow
Key to select

Test Prints

This option allows you to print the different adjustment patterns that need to be used to adjust the Printer:

1   In the Adjustment submenu, scroll to "Test Prints" and press the **OK** key.

```
# TEST PRINTS
> NOZZLE PRINT
```
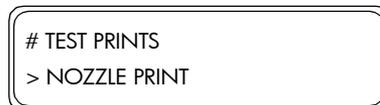
2   In the Test Prints submenu, scroll to the pattern that you would like to print and press the **OK** key.

```
# TEST PRINTS
∗ NOZZLE PRINT
```

The Test Prints menu contains the same options as in the User Menu except for the following:

■ Check Bidir Def - Prints a Bi-directional check pattern.
■ Check Bidir Fine - Prints a Bi-directional check pattern for the Fine print mode.
■ Check Slant - Prints a Printhead slant check pattern.
■ Check Nozzle - Prints a Nozzle Check pattern that can be used to determine which nozzles are missing (if any).

3 You will need to confirm that you want to print the selected Test Print by pressing the **OK** key.

```
# TEST PRINTS
∗ OK?
```

4 The Printer will start printing the selected Test Print and the following message will appear on the Front Panel.

```
# TEST PRINTS
∗ EXECUTING
```

Line Sensor Adjust Top Value

This option allows you to correct the value for the Line Sensor (top margin position), according to the print results of the Adjust Print:

Please refer to the instructions on Page *5-22* for the full instructions on how to calibrate the Line Sensor Top Margin.

1 In the Adjustment submenu, scroll to "LS Adj Top Val" and press the **OK** key.

```
# LS ADJ TOP VAL
> +0.0 mm
```

2 Use the ▲ and ▼ keys to change the digits and use the ◄ and ► keys to select the digits. The value can be changed in a range of -5.0 to +5.0 mm.

```
# LS ADJ TOP VAL
∗ +0.8 mm
```

3 Press the **OK** key once you have entered the new value.

Line Sensor Adjust Side Value

This option allows you to correct the value for the Line Sensor (side margin position), according to the print results of the Adjust Print:

Please refer to the instructions on Page *5-20* for the full instructions on how to calibrate the Line Sensor Side Margin.

1 In the Adjustment submenu, scroll to "LS Adj Side Val" and press the **OK** key.

```
# LS ADJ SIDE VAL
> +0.0 mm
```

2 Use the ▲ and ▼ keys to change the digits and use the ◄ and ► keys to select the digits. The value can be changed in a range of -5.0 to +5.0 mm.

```
# LS ADJ SIDE VAL
∗ +1.1 mm
```

3 Press the **OK** key once you have entered the new value.

Set Bidirection Media

This option allows you to select the target media that will be used to adjust the Bidirectional values (media selected here will be used in the Bidirection Definition):

1 In the Adjustment submenu, scroll to "Set Bidir Media" and press the **OK** key.

```
# SET BIDIR MEDIA
> MNFG
```

2 In the Set Bidir Media submenu, scroll to the media that you would like to use for Bidirection adjustment and press the **OK** key.

```
# SET BIDIR MEDIA
* PAPER
```

Printhead Offset Voltage

This option allows you to enter a drive voltage correction value for each Printhead:

1 In the Adjustment submenu, scroll to "PH Offset Voltage" and press the ▶ key.

```
# PH OFFSET VOLTAGE
# Y
```

2 In the PH Offset Voltage submenu, select the color of the Printhead for which you would like to set the Printhead Offset Voltage and press the **OK** key. If you would like to exit the PH Offset Voltage submenu, press the ◀ key.

```
# PH OFFSET VOLTAGE
> Lm   >+3.0 V
```

The different colors of the Printheads are as follows:

- ■ Y - Yellow.
- ■ M - Magenta.
- ■ C - Cyan.
- ■ K - Black.
- ■ Lm - Light Magenta.
- ■ Lc - Light Cyan.

3 Use the ▲ and ▼ keys to change the digits and use the ◀ and ▶ keys to select the digits. The value can be changed in a range of -3.0 to +3.0 V (in increments of 0.1 V).

```
# PH OFFSET VOLTAGE
> Lm   >+1.6 V
```

4 Press the **OK** key once you have entered the new value.

Cap Position

This option allows you to correct the value of the capping position:

Please refer to the instructions on Page *5-18* for the full instructions on how to calibrate the capping position.

1 In the Adjustment submenu, scroll to "Cap Position" and press the **OK** key.

```
# CAP POSITION
> +0.0 mm
```

2 Use the ▲ and ▼ keys to change the digits and use the ◄ and ► keys to select the digits. The value can be changed in a range of -5.0 to +5.0 mm.

```
# CAP POSITION
* +0.3 mm
```

3 Press the **OK** key once you have entered the new value.

Wipe Position

This option allows you to correct the value of the wiping position:

Please refer to the instructions on Page *5-16* for the full instructions on how to calibrate the wiping position.

1 In the Adjustment submenu, scroll to "Wipe Position" and press the **OK** key.

```
# WIPE POSITION
> +0.0 mm
```

2 Use the ▲ and ▼ keys to change the digits and use the ◄ and ► keys to select the digits. The value can be changed in a range of -5.0 to +5.0 mm.

```
# WIPE POSITION
* -0.5 mm
```

3 Press the **OK** key once you have entered the new value.

Cap Up/Down Position

This option allows you to correct the value of the vertical capping position:

Please refer to the instructions on Page *5-15* for the full instructions on how to calibrate the vertical capping position.

1 In the Adjustment submenu, scroll to "Cap Up/Down Pos" and press the **OK** key.

```
# CAP UP/DOWN POS
> +0
```

2 Use the ▲ and ▼ keys to change the digits and use the ◀ and ▶ keys to select the digits. The value can be changed in a range of -1.0 to +1.0.

```
# CAP POSITION
* +1.0
```

3 Press the **OK** key once you have entered the new value.

Move Carriage

This option allows you to move the Carriage when adjusting the Printer:

1 In the Adjustment submenu, scroll to "Move Carriage" and press the **OK** key.

```
# MOVE CARRIAGE
> HOME
```

2 In the Move Carriage submenu, scroll to the position that you would like the Carriage to move to and press the **OK** key.

```
# MOVE CARRIAGE
* HOME
```

The positions that the Carriage can move to are as follows:

- Home - Moves the Carriage to the home position.
- Wipe - Moves the Carriage to the wiping position.
- Maintenance - Moves the Carriage to the Maintenance area (left hand side of the Printer)

3 You will need to confirm that you want to move the Carriage to the selected position by pressing the **OK** key.

```
# MOVE CARRIAGE
* WIPE   OK?
```

MNFG-PRN (Manufacturing Patterns)

This menu contains the necessary test patterns to check that the Printer is functioning correctly.

To enter in to the Manufacturing Pattern menu, enter in to the Maintenance Mode and press the **Shift** key three times and then the ▲ key.
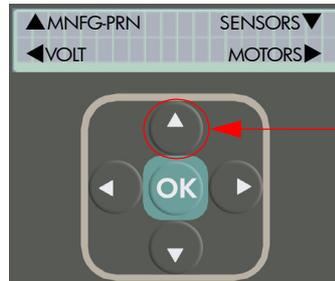
Press the Up Arrow Key to select

The MNFG Patterns in this menu are for Manufacturing purposes ONLY and should not be used for troubleshooting purposes.

SENSORS

This menu can be used to check the status of the various sensors and thermistors in the Printer in real time. The different options available in this menu are as follows:

- Printer Sensors ⇒ Page *4-29*.
- Ink Sensor ⇒ Page *4-30*.
- Bottle Sensor ⇒ Page *4-31*.
- TUR Sensors ⇒ Page *4-32*.
- Temperature Sensors ⇒ Page *4-33*.

To enter in to the Sensors menu, enter in to the Maintenance Mode and press the **Shift** key three times and then the ▼ key.

```
▲MNFG-PRN          SENSORS▼
◄VOLT              MOTORS►
```
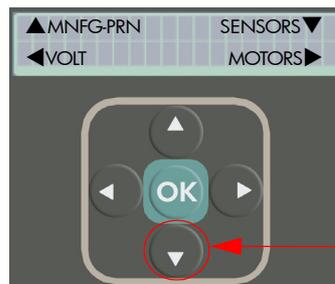
Press the Down Arrow Key to select

Printer Sensors

This option allows you to check the status of the Printers sensors in real time so that faulty sensors can be replaced as necessary:

1 In the Sensors submenu, scroll to "Printer Sensors" and press the ► key.

```
# PRINTER SENSORS
> LINE SENSOR
```

2 In the Printer Sensors submenu, select the Sensor that you would like to test and press the **OK** key. If you would like to exit the Printer Sensors submenu, press the ◄ key.

```
# PRINTER SENSORS
# LINE SENSOR   >
```

3 The Front Panel will show the status of the selected Sensor. By activating and deactivating the selected Sensor, the status will change and a buzzer will make a sound.

```
# PRINTER SENSORS
# LINE SENSOR  *0
```
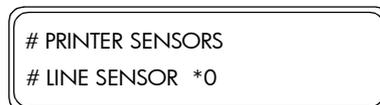
The Sensors that can be tested in this menu are as follows:

- Line Sensor - Displays the status of the Line Sensor located in the Carriage Assembly (0 = No paper, 1 = Paper present).
- Front Media - Displays the status of the Front Media Sensor located under the Front Heater (0 = Not blocked, 1 = blocked).
- Rear Media - Displays the status of the Rear Media Sensor located under the Rear Heater (0 = Not blocked, 1 = blocked).
- Home Position - Displays the status of the Home Position Sensor (0 = Home position not detected, 1 = Home position detected).
- Cap - Displays the status of the Cap Sensor (0 = Not blocked, 1 = blocked).
- Wiper Blade - Displays the status of the Wiper Blade Sensor (0 = Not blocked, 1 = blocked).
- Media Lever - Displays the status of the Media Lever Sensor (0 = Raised, 1 = Lowered).
- Rear Cover-L - Displays the status of the Left Door Sensor (0 = Closed, 1 = Open).
- Rear Cover-R - Displays the status of the Right Door Sensor (0 = Closed, 1 = Open).
- ME Sensor - Displays the status of the Media End Sensor (0 = Media Present, 1 = No Media present).

4   If you would like to exit the Printer Sensors submenu, first press the **Cancel** key and then press the ◀ key.

Ink Sensor

This option allows you to check the status of the sensors related to the Ink Cartridges in real time so that faulty sensors can be replaced as necessary:

1   In the Sensors submenu, scroll to "Ink Sensor" and press the ▶ key.

```
# INK SENSOR
> Y INK CART
```

2   In the Ink Sensor submenu, select the Sensor that you would like to test and press the **OK** key. If you would like to exit the Ink Sensor submenu, press the ◀ key.

```
# INK SENSOR
# Y INK CART   >
```

3   The Front Panel will show the status of the selected Sensor. By activating and deactivating the selected Sensor, the status will change and a buzzer will make a sound.

```
# INK SENSOR
# Y INK CART  *0
```

The Sensors that can be tested in this menu are as follows:

- Y Ink Cart - Displays the status of the Yellow Ink Cartridge Sensor (0 = Ink Cartridge not installed, 1 = Ink Cartridge installed).
- M Ink Cart - Displays the status of the Magenta Ink Cartridge Sensor (0 = Ink Cartridge not installed, 1 = Ink Cartridge installed).
- C Ink Cart - Displays the status of the Cyan Ink Cartridge Sensor (0 = Ink Cartridge not installed, 1 = Ink Cartridge installed).
- K Ink Cart - Displays the status of the Black Ink Cartridge Sensor (0 = Ink Cartridge not installed, 1 = Ink Cartridge installed).
- Lm Ink Cart - Displays the status of the Light Magenta Ink Cartridge Sensor (0 = Ink Cartridge not installed, 1 = Ink Cartridge installed).
- Lc Ink Cart - Displays the status of the Light Cyan Ink Cartridge Sensor (0 = Ink Cartridge not installed, 1 = Ink Cartridge installed).
- Y Ink End - Displays the status of the Yellow End-of-Ink Sensor (0 = Ink present, 1 = Ink not present).
- M Ink End - Displays the status of the Magenta End-of-Ink Sensor (0 = Ink present, 1 = Ink not present).
- C Ink End - Displays the status of the Cyan End-of-Ink Sensor (0 = Ink present, 1 = Ink not present).
- K Ink End - Displays the status of the Black End-of-Ink Sensor (0 = Ink present, 1 = Ink not present).
- Lm Ink End - Displays the status of the Light Magenta End-of-Ink Sensor (0 = Ink present, 1 = Ink not present).
- Lc Ink End - Displays the status of the Light Cyan End-of-Ink Sensor (0 = Ink present, 1 = Ink not present).

In order to test the End-of-Ink Sensors, you can remove the Ink Cartridge and the status should change from 0 to 1 (if the sensor is working).

4 If you would like to exit the Ink Sensor submenu, first press the **Cancel** key and then press the ◀ key.

Bottle Sensor

This option allows you to check the status of the Waste Bottle Sensor in real time so that if it is faulty, it can be replaced as necessary:

1 In the Sensors submenu, scroll to "Bottle" and press the ▶ key.

```
# BOTTLE
> PRESENT
```
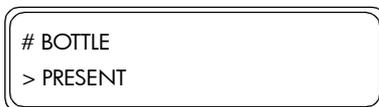
2 In the Bottle submenu, press the **OK** key. If you would like to exit the Bottle submenu, press the ◀ key.

```
# BOTTLE
# PRESENT   >
```

3 The Front Panel will show the status of the Waste Bottle Sensor. By activating and deactivating the Waste Bottle Sensor, the status will change and a buzzer will make a sound.

```
# BOTTLE
# PRESENT  *1
```

4 If you would like to exit the Bottle Sensor submenu, first press the **Cancel** key and then press the ◀ key.

TUR Sensors

This option allows you to check the status of the sensors related to the Take-Up-Reel in real time so that faulty sensors can be replaced as necessary:

1 In the Sensors submenu, scroll to "TUR Sensors" and press the ▶ key.

```
# TUR SENSORS
> TUR SENSOR
```

2 In the TUR Sensors submenu, select the Sensor that you would like to test and press the **OK** key. If you would like to exit the TUR Sensors submenu, press the ◀ key.

```
# TUR SENSORS
# TUR SENSOR  >
```

3 The Front Panel will show the status of the selected Sensor. By activating and deactivating the selected Sensor, the status will change and a buzzer will make a sound.

```
# TUR SENSORS
# TUR SENSOR  *0
```

The Sensors that can be tested in this menu are as follows:

- TUR Sensor - Displays the status of the TUR Optical Sensor (1 = Sensor blocked, 0 = Sensor not blocked).
- Backwards - Displays the status of the Backwards Direction Switch.
- Forwards - Displays the status of Forwards Direction Switch.

4 If you would like to exit the TUR Sensors submenu, first press the **Cancel** key and then press the ◀ key.

Temperature Sensors

This option allows you to check the status of the temperature sensors located in the Printer in real time so that faulty sensors can be replaced as necessary:

1 In the Sensors submenu, scroll to "Temp Sensors" and press the ▶ key.

```
# TEMP SENSORS
> AMBIENT
```

2 In the Temp Sensors submenu, select the Sensor that you would like to test and press the **OK** key. If you would like to exit the Temp Sensors submenu, press the ◀ key.

```
# TEMP SENSORS
# AMBIENT   >
```

3 The Front Panel will show the temperature read by the selected Sensor.

```
# TEMP SENSORS
# AMBIENT  *24.2
```

The Temperature Sensors that can be tested in this menu are as follows:

- Ambient - Displays the environment temperature.
- Y PH - Displays the temperature of the Yellow Printhead.
- M PH - Displays the temperature of the Magenta Printhead.
- C PH - Displays the temperature of the Cyan Printhead.
- K PH - Displays the temperature of the Black Printhead.
- Lm PH - Displays the temperature of the Light Magenta Printhead.
- Lc PH - Displays the temperature of the Light Cyan Printhead.
- Y PH IC - Displays the temperature of the Yellow Printhead integrated circuit on the Carriage PCA.
- M PH IC - Displays the temperature of the Magenta Printhead integrated circuit on the Carriage PCA.
- C PH IC - Displays the temperature of the Cyan Printhead integrated circuit on the Carriage PCA.
- K PH IC - Displays the temperature of the Black Printhead integrated circuit on the Carriage PCA.
- Lm PH IC - Displays the temperature of the Light Magenta Printhead integrated circuit on the Carriage PCA.
- Lc PH IC - Displays the temperature of the Light Cyan Printhead integrated circuit on the Carriage PCA.
- Motor Temp - Indicated whether the temperature of the Scan-Axis Motor is High, Medium or Low.

4 If you would like to exit the Temp Sensors submenu, first press the **Cancel** key and then press the ◀ key.

VOLT (Voltage Check)

This menu can be used to turn the Voltage check to high or low.

1 To enter in to the Volt menu, enter in to the Maintenance Mode and press the **Shift** key three times and then the ◀ key.

```
▲MNFG-PRN          SENSORS▼
◀VOLT              MOTORS▶
```
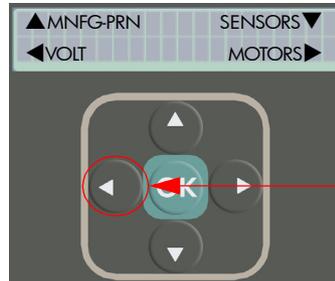
Press the Left Arrow
Key to select

2 Once in the Voltage Check submenu, press the **OK** key.

```
# VOLTAGE CHECK
> HIGH
```

3 In the Voltage Check submenu, select either "high" or "Low" and then press the **OK** key.

```
# VOLTAGE CHECK
* LOW
```

MOTORS

This menu contains the necessary diagnostics that can be used to test the various Motors in the Printer. The different options available in this menu are as follows:

- Media Advance Motor ⇒ Page *4-35*.
- Capping Station Motor ⇒ Page *4-36*.
- Pump/Wipe Motor ⇒ Page *4-37*.
- Vacuum Fans ⇒ Page *4-37*.
- Printhead Cooling Fan ⇒ Page *4-38*.
- TUR Motor ⇒ Page *4-39*.
- Scan-Axis Motor Cooling Fan ⇒ Page *4-39*.

To enter in to the Motors menu, enter in to the Maintenance Mode and press the **Shift** key three times and then the ▶ key.

Press the Right Arrow Key to select
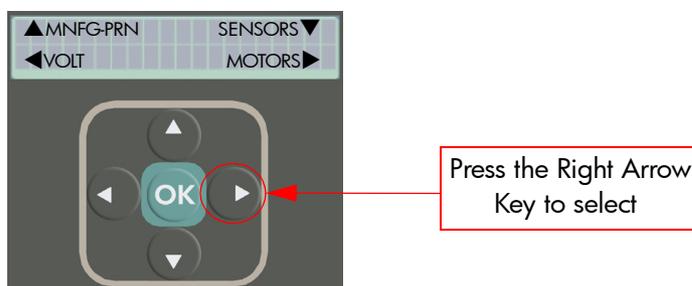
Media Advance Motor

Make sure you unload Media from the Printer before attempting to turn the *Media Advance Motor*.

This option allows you to turn the Media Advance Motor:

1 In the Motors submenu, scroll to "Media Adv Motor" and press the **OK** key.

```
# MEDIA ADV MOTOR
> OFF
```

2 In the Media Adv Motor submenu, select the direction that you would like the Media Advance Motor to turn and then press the **OK** key.

```
# MEDIA ADV MOTOR
* FORWARD
```
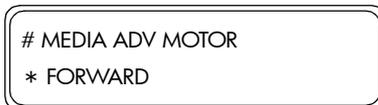
The different directions that you can turn the Media Advance Motor are as follows:

- Off - Stops the Motor turning.
- Forwards - Turns the Motor in the paper feeding direction.
- Backwards - Turns the Motor in the reverse direction.

3 You will need to confirm that you want to turn the Media Advance Motor in the selected direction by pressing the **OK** key.

```
# MEDIA ADV MOTOR
∗ FORWARDS OK?
```

4 To stop the motor turning, select "Off" in the Media Adv Motor submenu and then press the **OK** key.

```
# MEDIA ADV MOTOR
∗ OFF
```

Capping Station Motor

This option allows you to control the Capping Station Motor:

1 In the Motors submenu, scroll to "Cap Stat Motor" and press the **OK** key.

```
# CAP STAT MOTOR
> CLOSE
```

2 In the Cap Stat Motor submenu, select the position that you would like to move the Capping Station Motor and then press the **OK** key.

```
# CAP STAT MOTOR
∗ OPEN
```

The different positions that you can move the Capping Station Motor are as follows:

■ Close - Closes the Cap.
■ Half - Releases the air.
■ Open - Opens the Cap.

3 You will need to confirm that you want to move the Capping Station Motor to the selected position by pressing the **OK** key.

```
# CAP STAT MOTOR
∗ OPEN OK?
```

Pump/Wipe Motor

This option allows you to control the Pump/Wipe Motors:

1 In the Motors submenu, scroll to "Pump/Wipe Motor" and press the **OK** key.

```
# PUMP/WIPE MOTOR
> OFF
```

2 In the Pump/Wipe Motor submenu, select the direction that you would like the Pump/Wipe Motor to run and then press the **OK** key.

```
# PUMP/WIPE MOTOR
∗ FORWARDS
```

The different directions that you can run the Pump/Wipe Motor are as follows:

- Off - Stops the Motor running.
- Forwards - Runs the Motor in the forwards direction.
- Backwards - Turns the Motor in the backwards direction.

3 You will need to confirm that you want to run the Pump/Wipe Motor in the selected direction by pressing the **OK** key.

```
# PUMP/WIPE MOTOR
∗ FORWARDS OK?
```

4 To stop the Wiping Station Motor turning, select "OFF" in the Pump/Wipe Motor submenu and then press the **OK** key.

```
# PUMP/WIPE MOTOR
∗ OFF
```

Vacuum Fans

This option allows you to control the four Vacuum Fans in the Printer.

1 In the Motors submenu, scroll to "Vacuum Fan L", "Vacuum Fan L-C", "Vacuum Fan R-C" or "Vacuum Fan R" and press the **OK** key.

```
# VACUUM FAN L
> OFF
```

2 In the Vacuum Fan submenu, select "On" to start the selected Vacuum Fan and then press the **OK** key.

```
# VACUUM FAN L
∗ ON
```

3 You will need to confirm that you want to start the selected Vacuum Fan by pressing the **OK** key.

```
# VACUUM FAN L
* ON OK?
```

4 To stop the Vacuum Fan, select "Off" in the Vacuum Fan submenu and then press the **OK** key.

```
# VACUUM FAN L
* OFF
```

PH Cooling Fan

This option allows you to control the Printhead Cooling Fan, located in the Carriage Assembly:

1 In the Motors submenu, scroll to "PH Cooling Fan" and press the **OK** key.

```
# PH COOLING FAN
> OFF
```

2 In the PH Cooling Fan submenu, select "On" to start the PH Cooling Fan and then press the **OK** key.

```
# PH COOLING FAN
* ON
```

3 You will need to confirm that you want to start the PH Cooling Fan by pressing the **OK** key.

```
# PH COOLING FAN
* ON OK?
```

4 To stop the Printhead Cooling Fan, select "Off" in the PH Cooling Fan submenu and then press the **OK** key.

```
# PH COOLING FAN
* OFF
```

TUR Motor

This option allows you to control the Take-up-reel Motor:

1   In the Motors submenu, scroll to "TUR Motor" and press the **OK** key.

> # TUR MOTOR
> > OFF

2   In the TUR Motor submenu, select "On" to start the TUR Motor and then press the **OK** key.

> # TUR MOTOR
> * ON

3   You will need to confirm that you want to start the TUR Motor by pressing the **OK** key.

> # TUR MOTOR
> * ON OK?

4   To stop the TUR Motor, select "Off" in the TUR Motor submenu and then press the **OK** key.

> # TUR MOTOR
> * OFF

Scan-Axis Motor Cooling Fan

This option allows you to control the Scan-Axis Motor Cooling Fan:

1   In the Motors submenu, scroll to "Y Motor Cooling Fan" and press the **OK** key.

> # Y MOTOR COOLING FAN
> > OFF

2   In the Y Motor Cooling Fan submenu, select "On" to start the Scan-Axis Motor Cooling Fan and then press the **OK** key.

> # Y MOTOR COOLING FAN
> * ON

3   You will need to confirm that you want to start the Scan-Axis Motor Cooling Fan by pressing the **OK** key.

> # Y MOTOR COOLING FAN
> * ON OK?

4   To stop the Scan-Axis Motor Cooling Fan, select "Off" in the Y Motor Cooling Fan submenu and then press the **OK** key.

> # Y MOTOR COOLING FAN
> * OFF

COUNTER

This menu can be used to view and set the different usage counters in the Printer. The different options available in this menu are as follows:

- Media Used ⇒ Page *4-40*.
- Ink Used ⇒ Page *4-41*.
- Prime Assembly ⇒ Page *4-41*.
- Capping Unit ⇒ Page *4-42*.
- Scan-Axis belt ⇒ Page *4-43*.
- Reset ALL Counters ⇒ Page *4-43*.
- Non-HP Ink Used ⇒ Page *4-44*.
- Expired Ink Used ⇒ Page *4-44*.

To enter in to the Counter menu, enter in to the Maintenance Mode and press the **Shift** key four times and then the ▲ key.

```
▲COUNTER            PH.INF▼
◀ELECT                    ▶
```

Press the Up Arrow Key to select
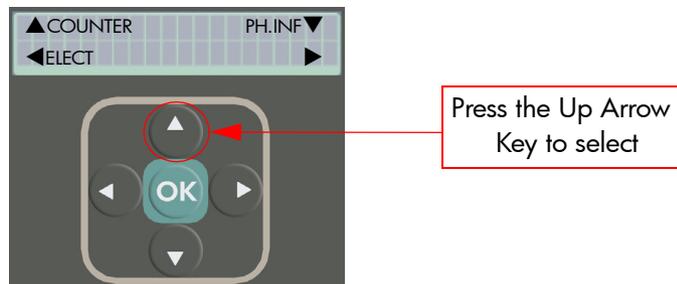
Media Used

This option allows you to view and change the amount of media used in the Printer:

1 In the Counter submenu, scroll to "Media Used" and press the **OK** key to view the media used since the last reset.

```
# MEDIA USED
> 0000350m
```

2 Use the ▲ and ▼ keys to change the digits and use the ◀ and ▶ keys to select the digits.

```
# MEDIA USED
> 0000200m
```

3 Press the **OK** key once you have entered the new usage length.

4 If the Media Used counter needs to be reset, return to the Counter submenu, scroll to "Reset Media Used" and press the **OK** key.

```
# RESET MEDIA USED
>
```

5 You will need to confirm that you want to reset the counter by pressing the **OK** key.

```
# RESET MEDIA USED
* OK?
```

Ink Used

This option allows you to view and change the amount of total ink used in the Printer:

1 In the Counter submenu, scroll to "Total Ink Used (ml)" and press the **OK** key to view the media used since the last reset.

```
# TOTAL INK USED (ml)
> 000035000
```

2 Use the ▲ and ▼ keys to change the digits and use the ◄ and ► keys to select the digits.

```
# TOTAL INK USED (ml)
> 000020000
```

3 Press the **OK** key once you have entered the new usage amount.

4 If the Ink Used counter needs to be reset, return to the Counter submenu, scroll to "Reset Total Ink" and press the **OK** key.

```
# RESET TOTAL INK
>
```

5 You will need to confirm that you want to reset the counter by pressing the **OK** key.

```
# RESET TOTAL INK
* OK?
```

Prime Assembly

This option allows you to view and change the usage counter related to the Prime Assemblies:

Once the counter has reached 41 Hours (147,600 seconds) a message will appear advising you to replace the Prime Assemblies. After replacing the Prime Assemblies, make sure you reset the usage counter related to the Prime Assemblies.

1 In the Counter submenu, scroll to "Prime Assy" and press the **OK** key to view the usage counter related to the Prime Assemblies.

```
# PRIME ASSY
> 000045000sec
```

2 Use the ▲ and ▼ keys to change the digits and use the ◄ and ► keys to select the digits.

```
# PRIME ASSY
> 000053000sec
```

3 Press the **OK** key once you have entered the new usage amount.

4 If the Prime Assembly counter needs to be reset, return to the Counter submenu, scroll to "Reset Prime Assy" and press the **OK** key.

```
# RESET PRIME ASSY
>
```

5 You will need to confirm that you want to reset the counter by pressing the **OK** key.

```
# RESET PRIME ASSY
* OK?
```

Capping Unit

This option allows you to view and change the usage counter related to the Capping Units:

Once the counter has reached 10,000 (up/down count) a message will appear advising you to replace the Capping Units. After replacing the Capping Units, make sure you reset the usage counter related to the Capping Units.

1 In the Counter submenu, scroll to "Capping Unit" and press the **OK** key to view the usage counter related to the Capping Units.

```
# CAPPING UNIT
> 0007800
```

2 Use the ▲ and ▼ keys to change the digits and use the ◄ and ► keys to select the digits.

```
# CAPPING UNIT
> 0005400
```

3 Press the **OK** key once you have entered the new usage amount.

4 If the Capping Unit counter needs to be reset, return to the Counter submenu, scroll to "Reset Cap Unit" and press the **OK** key.

```
# RESET CAP UNIT
>
```

5   You will need to confirm that you want to reset the counter by pressing the **OK** key.

```
# RESET CAP UNIT
* OK?
```

Scan-Axis Belt

This option allows you to view and change the usage counter related to the Scan-Axis Belt:

Once the counter has reached 1,700,000 (scans) a message will appear advising you to replace the Scan-Axis Belt. After replacing the Scan-Axis Belt, make sure you reset the usage counter related to the Scan-Axis Belt.

1   In the Counter submenu, scroll to "Scan Axis Belt" and press the **OK** key to view the usage counter related to the Scan-Axis Belt.

```
# SCAN AXIS BELT
> 00057800
```

2   Use the ▲ and ▼ keys to change the digits and use the ◄ and ► keys to select the digits.

```
# SCAN AXIS BELT
> 00045400
```

3   Press the **OK** key once you have entered the new usage amount.

4   If the Scan-Axis Belt counter needs to be reset, return to the Counter submenu, scroll to "Reset Scan Belt" and press the **OK** key.

```
# RESET SCAN BELT
>
```

5   You will need to confirm that you want to reset the counter by pressing the **OK** key.

```
# RESET SCAN BELT
* OK?
```

Reset ALL Counters

This option allows you to reset the Prime Counter, Capping Unit Counter and the Scan-Axis Belt Counter all at once:

1   In the Counter submenu, scroll to "Reset ALL Count" and press the **OK** key.

```
# RESET ALL COUNT
>
```

2 You will need to confirm that you want to reset ALL the counters by pressing the **OK** key.

```
# RESET ALL COUNT
* OK?
```

Non-HP Ink Used

This option allows you to view whether Non-HP Ink has been used in the Printer:

1 In the Counter submenu, scroll to "Non-HP Ink Used" and press the **OK** key to view whether Non-HP ink has been used in the Printer.

```
# NON-HP INK USED
# XX > YES
```
XX: Ink Color

2 If Non-HP ink has been used in some or all of the colors, then you can check which date the Non-HP ink was used. Return to the Counter submenu, scroll to "Non-HP Ink Date" and press the **OK** key.

```
# NON-HP INK DATE
# XX > 06/12/22
```
Format: Year/Month/Day

Expired Ink Used

This option allows you to view whether expired ink has been used in the Printer:

1 In the Counter submenu, scroll to "Expire Ink Used" and press the **OK** key to view whether expired ink has been used in the Printer.

```
# EXPIRE INK USED
# XX > YES
```
XX: Ink Color

2 If expired ink has been used in some or all of the colors, then you can check which date the expired ink was used. Return to the Counter submenu, scroll to "Expire Ink Date" and press the **OK** key.

```
# EXPIRE INK DATE
# XX > 06/12/22
```
Format: Year/Month/Day

PH. INF. (Printhead Information)

This menu can be used to view information related to the Printheads. The different options available in this menu are as follows:

- Select Printhead Color ⇒ Page *4-45*.
- Manufacture Date ⇒ Page *4-46*.
- Serial Number ⇒ Page *4-46*.
- Rank ⇒ Page *4-46*.
- Used Date ⇒ Page *4-46*.
- Dot Counter ⇒ Page *4-46*.
- Jam Count ⇒ Page *4-47*.
- Used Color ⇒ Page *4-47*.
- Non-HP Ink Used ⇒ Page *4-47*.
- Expired Ink Used ⇒ Page *4-47*.

To enter in to the Printhead Information menu, enter in to the Maintenance Mode and press the **Shift** key four times and then the ▼ key.
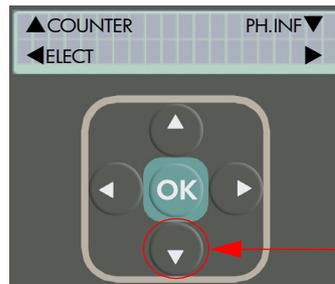
Press the Down Arrow Key to select

Select Printhead Color

This option allows you to set a Printhead, so that information related to it can be viewed:

1 In the Printhead Information submenu, scroll to "Select PH Color" and press the **OK** key.

SELECT PH COLOR
> Y

2 In the Select Printhead Color submenu, select the color of the Printhead that you want to set to and press the **OK** key.

SELECT PH COLOR
∗ Lc

Manufacture Date

This option allows you to view the Manufacture Date of the selected Printhead:

1 In the Printhead Information submenu, scroll to "Manufacture Date" and press the **OK** key.

```
# MANUFACTURE DATE     Lc
* YY/MM
```

Serial Number

This option allows you to view the Serial Number of the selected Printhead:

1 In the Printhead Information submenu, scroll to "Serial Number" and press the **OK** key.

```
# SERIAL NUMBER        Lc
* 01234
```

Rank

This option allows you to view the Rank of the selected Printhead:

1 In the Printhead Information submenu, scroll to "Rank" and press the **OK** key.

```
# RANK                 Lc
* XX.X V
```

Range = 0.0 V to 99.9 V

Used Date

This option allows you to view the Used Date of the selected Printhead:

1 In the Printhead Information submenu, scroll to "Used Date" and press the **OK** key.

```
# USED DATE            Lc
* YY/MM/DD
```

Dot Counter

This option allows you to view the number of dots fired by the selected Printhead:

1 In the Printhead Information submenu, scroll to "Dot Counter" and press the **OK** key.

```
# DOT COUNTER          Lc
* XXXXXX M
```

XXXXXX = Units of Million

Jam Count

This option allows you to view the number of times the selected Printhead has jammed:

1 In the Printhead Information submenu, scroll to "Jam Count" and press the **OK** key.

```
# JAM COUNT          Lc
∗ 01234
```

Used Color

This option allows you to view whether the selected Printhead has been used with different colors:

1 In the Printhead Information submenu, scroll to "Used Color" and press the **OK** key.

```
# USED COLOR         Lc
∗ Y M C K Lm Lc
```

Example: A Printhead that has been used with several different colors may display this:

```
# USED COLOR         Lc
∗ Y       Lc
```

Non-HP Ink Used

This option allows you to view whether the selected Printhead has been used with Non-HP Ink:

1 In the Printhead Information submenu, scroll to "Non-HP Ink Used" and press the **OK** key.

```
# NON-HP INK USED      Lc
∗ NO
```

Expired Ink Used

This option allows you to view whether the selected Printhead has been used with Expired Ink:

1 In the Printhead Information submenu, scroll to "Expired Ink Used" and press the **OK** key.

```
# EXPIRED INK USED     Lc
∗ YES
```

ELECT (Electronics)

This menu contains the necessary diagnostics that can be used to test the various electronic components in the Printer. The different options available in this menu are as follows:

- Main PCA ⇒ Page *4-48*.
- Carriage PCA ⇒ Page *4-49*.
- Ink EEPROM ⇒ Page *4-50*.
- VDD ⇒ Page *4-51*.

To enter in to the Electronics menu, enter in to the Maintenance Mode and press the **Shift** key four times and then the ◀ key.

```
▲COUNTER          PH.INF▼
◀ELECT                 ▶
```

Press the Left Arrow Key to select
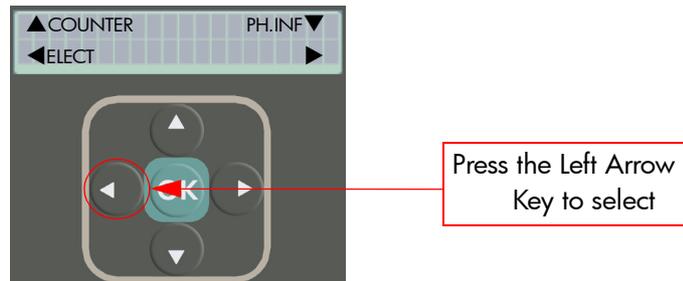
Main PCA

This option allows you to test the components of the Main PCA:

1 In the Elect submenu, scroll to "Main PCA" and press the **OK** key.

```
# MAIN PCA
>
```

2 You will need to confirm that you want to test the Main PCA by pressing the **OK** key.

```
# MAIN PCA
∗ OK?
```

3 While the Main PCA is being tested, the following message will be displayed on the Front Panel.

```
# MAIN PCA
∗ EXECUTING
```

4 If the Main PCA test **passes**, the Front Panel will display the following message:

```
# MAIN PCA
∗ PASS
```

5   If the Main PCA test **fails**, the Front Panel will display the following message:

```
# MAIN PCA
∗ FAIL                    XX
```

If the Main PCA test fails, try the following:

■ Replace the Main PCA ⇒ Page *8-25*.

Carriage PCA

This option allows you to test the components of the Carriage PCA:

1   In the Elect submenu, scroll to "Carriage PCA" and press the **OK** key.

```
# CARRIAGE PCA
>
```

2   You will need to confirm that you want to test the Carriage PCA by pressing the **OK** key.

```
# CARRIAGE PCA
∗ OK?
```

3   While the Carriage PCA is being tested, the following message will be displayed on the Front Panel.

```
# CARRIAGE PCA
∗ EXECUTING
```

4   If the Carriage PCA test **passes**, the Front Panel will display the following message:

```
# CARRIAGE PCA
∗ PASS
```

5   If the Carriage PCA test **fails**, the Front Panel will display the following message:

```
# CARRIAGE PCA
∗ FAIL                    XX
```

If the Carriage PCA test fails, try the following:

■ Replace the Carriage PCA ⇒ Page *8-74*.
■ Replace the Trailing Cable ⇒ Page *8-101*.
■ Replace the Main PCA ⇒ Page *8-25*.

Ink EEPROM

This option allows you to test the Ink EEPROM contained in the Ink Cartridge:

1   In the Elect submenu, scroll to "Ink EEPROM" and press the **OK** key.

```
# INK EEPROM
>
```

2   You will need to confirm that you want to test the Ink EEPROM by pressing the **OK** key.

```
# INK EEPROM
∗ OK?
```

3   While the Ink EEPROM is being tested, the following message will be displayed on the Front Panel.

```
# INK EEPROM
∗ EXECUTING
```

4   If the Ink EEPROM test **passes**, the Front Panel will display the following message:

```
# INK EEPROM
∗ PASS
```

5   If the Ink EEPROM test **fails**, the Front Panel will display the following message:

```
# INK EEPROM
∗ FAIL          XX
```

XX = Error Location
01 = Yellow Ink Error
02 = Magenta Ink Error
04 = Cyan Ink Error
08 = Black Ink Error
10 = Light Magenta Ink Error
20 = Light Cyan Ink Error

If the Ink EEPROM test fails, try the following:

- Replace the Ink Cartridge(s) of the failing color.
- Replace the Ink Supply Station PCA ⇒ Page *8-139*.
- Replace the Ink Supply Station PCA ⇒ Page *8-149*.
- Replace the Main PCA ⇒ Page *8-25*.

VDD

This option allows you to test the VDD voltage (either 24V, 17V or 6V) of the Carriage PCA:

1   In the Elect submenu, scroll to "VDD" and press the **OK** key.
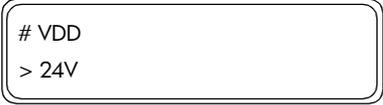
```
# VDD
> 24V
```

2   Select the Voltage of the Carriage PCA that you want to test and press the **OK** key.

```
# VDD
* 17V
```

3   Measure the voltage (using a tester) of the different points on the Carriage PCA to verify that the voltage settings are correct.

If the VDD test fails, try the following:

■ Replace the Carriage PCA ⇒ Page *8-74*.

Maintenance Mode Menu Map

	User and Maintenance Mode
	Maintenance Mode ONLY

▲INK   MEDIA REG▼
◄MEDIA   M.ADV►

▲INK → X INK LEVELYYY%
DATE: YY/MM/DD

X = K, Y, M, X, Lm, Lc (alternates)
DATE = Expiration date

MEDIA REG▼ → SELECT MEDIA

- PAPER
- Glossy
- Matte
- Ubaner
- BLT_B
- PHOTOR
- Pbaner
- VINYL
- TYPE 9
- .....
- TYPE 20

RENAME MEDIA

MEDIA ADV VALUE

DRY TIME VALUE

PRINT MODE

- NORMAL
- H-QUALITY
- H-DENSITY
- 3 TIMES
- DRAFT
- FAST
- F-H-QUALITY
- F-H-DENSITY
- F-3 TIMES
- FINE DRAFT
- FINE
- F–FINE

```
┌┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┐   ┌┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┐
┊ ▲INK      MEDIA REG▼  ┊   ┊ MEDIA REG (continued)  ┊
┊ ◄MEDIA        M.ADV►  ┊   └┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┘
└┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┄┘
```

Menu	Option	Values
	PRINT DIRECTION	UNIDIR
		BIDIR
	FLATTEN TIME	NONE
		30min
		1hour
		2hours
		4hours
	USE EDGE GUARD	YES
		NO
	MEDIA ADV MODE	FWD ONLY
		BACK & FWD
	TUR MODE	LOOSE
		TENSION
	LEADING EDGE	NORMAL
		REDUCED
	VACUUM LEVEL	NORMAL
		LOW
	FRONT HEATER T	
	PRINT HEATER T	
	REAR HEATER T	

▲INK   MEDIA REG▼
◄MEDIA   M.ADV▶

MEDIA REG (continued)

| COLOR STRIPE | ON |
| | OFF |

| IMAGE GRADIENT | NORMAL |
| | HIGHLIGHT |

| PH HEIGHT VAL | NORMAL |
| | HIGH |

x BIDIR DEF VALUE

x BIDIR FINE VALUE

Press ▼ to select Y, M, C, K, Lm or Lc

Press ◄ to return

PH CLEANING	START & END
	DURING PRNT
	DURING PRNT2

BACK ADJUST VAL
>04: ±XXXXPULSE

| ADVANCE PREF | SOFTWARE |
| | FRONT PANEL |

| PRINT MODE PREF | SOFTWARE |
| | FRONT PANEL |

| HEATER PREF | SOFTWARE |
| | HEAT PANEL |

```
┌─────────────────────────┐   ┌·····························┐
: ▲INK      MEDIA REG▼    :   : MEDIA REG (continued)     :
: ◀MEDIA       M.ADV▶     :   └·····························┘
└─────────────────────────┘              │
                                          │
                               ┌──────────────────────┐
                               │ PH REST PERIOD        │
                               │ >04: XXXXCYCLES       │
                               └──────────────────────┘
                               ┌──────────────────────┐
                               │ PH REST TIME          │
                               └──────────────────────┘
                               ┌──────────────────────┐        ┌──────────────────┐
                               │ PH TEMP REST          │────────│ OFF              │
                               └──────────────────────┘        └──────────────────┘
                                                                ┌──────────────────┐
                                                                │ ON               │
                                                                └──────────────────┘
                               ┌──────────────────────┐
                               │ SET REMAINING MEDIA   │
                               └──────────────────────┘
                                                                ┌──────────────────┐
                                                                │ 01: PAPER        │
                                                                └──────────────────┘
                                                                ┌──────────────────┐
                                                                │ 02: Glossy       │
                                                                └──────────────────┘
                                                                ┌──────────────────┐
                                                                │ 03: Matte        │
                                                                └──────────────────┘
                               ┌──────────────────────┐        ┌──────────────────┐
                               │ DELETE MEDIA          │────────│ 04: Ubaner       │
                               └──────────────────────┘        └──────────────────┘
                                                                ┌──────────────────┐
                                                                │ 05: BLT_B        │
                                                                └──────────────────┘
                                                                ┌──────────────────┐
                                                                │ 06: PHOTOR       │
                                                                └──────────────────┘
                                                                ┌──────────────────┐
                                                                │ 07:Pbaner        │
                                                                └──────────────────┘
                                                                ┌──────────────────┐
                                                                │ 08:VINYL         │
                                                                └──────────────────┘
                                                                     · · · · ·
                                                                ┌──────────────────┐
                                                                │ 20: TYPE 20      │
                                                                └──────────────────┘
                               ┌──────────────────────┐
                               │ COPY MEDIA            │
                               └──────────────────────┘
                               ┌──────────────────────┐
                               │ PASTE MEDIA           │
                               └──────────────────────┘
```

```
┌─────────────────────────┐
│ ▲INK      MEDIA REG▼     │
│ ◀MEDIA        M.ADV▶     │
└─────────────────────────┘
```

◀MEDIA ── Roll (XXXXXX) YYY   Alternates with   REMAINING MEDIA YYYYft

                                                          Or YYYm

M.ADV▶ ── MEDIA ADV PRINT ── ROUGH(NORMAL)

                                 ROUGH(H-QUAL)

                                 ROUGH(H-DENS)

                                 ROUGH(3 TIMES)

                                 ROUGH(DRAFT)

                                 ROUGH(FINE DRAFT)

                                 DETAIL(NORMAL)

                                 DETAIL(H-QUAL)

                                 DETAIL(H-DENS)

                                 DETAIL(3 TIMES)

                                 DETAIL(DRAFT)

                                 DETAIL(FINE DRAFT)

         MEDIA ADV VALUE   Select a media type

         BACK ADJ PRINT ──── NORMAL

                             H-QUALITY

                             H-DENSITY

                             DRAFT

                             3 TIMES

                             FINE DRAFT

         BACK ADJUST VAL   Select a media type

```
┌─────────────────────┐
│ ▲REWIND   FORM FEED▼ │
│ ◄PH.REC      PH.MAIN►│
└─────────────────────┘
        │
        ├──── ▲REWIND ──────── REWINDING MEDIA
        │
        ├──── ◄PH.REC ──────── PH RECOVERY ───┬── NORMAL ALL
        │                                      │
        │                                      └── STRONG ALL
        │
        ├──── ▼FORM FEED ───── FEEDING MEDIA
        │
        └──── ►PH.MAIN ───┬─── CAP CLEANING
                          │
                          ├─── INK SYSTEM OPT ──┬── STORE INK SYS
                          │                     │
                          │                     ├── CLEAN INK SYS
                          │                     │
                          │                     ├── CHARGE INK SYS
                          │                     │
                          │                     ├── CHARGE NEW PH
                          │                     │
                          │                     └── PURGE INK SYS
                          │
                          ├─── REPLACE WIPER BLADE
                          │
                          ├─── REPLACE WIPE LIQUID
                          │
                          ├─── REPLACE WIPE SPONGE
                          │
                          ├─── WASH PRINTHEADS
                          │
                          ├─── PH HEIGHT ADJ
                          │
                          ├─── REPLACE PRINTHEAD
                          │
                          ├─── RESEAT PRINTHEAD
                          │
                          ├─── INK CHARGE DONE ──┬── YES
                          │                      │
                          ├─── UNCAP CARRIAGE    └── NO
                          │
                          └─── CAP CARRIAGE
```

```
┌──────────────────────┐
│ ▲PRINTER    SETUP▼    │
│ ◀ADJUST    HEATER▶    │
└──────────────────────┘
```

```
▲PRINTER ──────┬──── CONFIG PRINT
               │
               ├──── ERROR LOG PRINT
               │
               └──── HISTORY PRINT
```

```
◀ADJUST ──────┬──── TEST PRINTS ──────┬──── NOZZLE PRINT
              │                       │
              │                       ├──── NOZZLE PRNT-RECOVER
              │                       │
              │                       ├──── PH TO PH
              │                       │
              │                       ├──── BIDIRECTION DEF
              │                       │
              │                       ├──── BIDIRECTION FINE
              │                       │
              │                       ├──── NOZZLE POS ADJ
              │                       │
              │                       ├──── LS ADJ PRINT
              │                       │
              │                       ├──── TUR ADJ PRINT
              │                       │
              │                       ├──── CHECK PH POS
              │                       │
              │                       ├──── CHECK BIDIR DEF
              │                       │
              │                       ├──── CHECK BIDIR FINE
              │                       │
              │                       ├──── CHECK SLANT
              │                       │
              │                       ├──── CHECK NOZZLE
              │                       │
              │                       └──── MNFG PRINT 2
```

```
PH TO PH VAL
 #Y          > –07

BIDIR DEF XXXXXX
 #Y          > –07

BIDIR FINE XXXXXX
 #Y          > –07

NOZZLE POS VAL
 #Y          > 1

LS ADJ TOP VAL
 >+0.0mm
```

Press ▶ then ▼ to select Y,
M, C, K, Lm or Lc

Press ◀ to return

XXXXXX = media type

```
┌─────────────────────────┐
│ ▲PRINTER      SETUP▼     │      ┌─────────────────────┐
│ ◄ADJUST       HEATER►    │      │ ◄ADJUST (continued) │
└─────────────────────────┘      └─────────────────────┘
```

LS ADJ SIDE VAL >+0.0mm

SET BIDIR MEDIA

PH OFFSET VOLTAGE #X >+0.0V

CAP POSITION

WIPE POSITION

CAP UP/DOWN POS

MOVE CARRIAGE

Glossy
Matte
Ubaner
BLT_B
PHOTOR
Pbaner
VINYL
PAPER

HOME
WIPE
MAINTENANCE

SETUP▼

LANGUAGE
- ENGLISH
- FRENCH
- ITALIAN
- GERMAN
- SPANISH
- PORTUGUESE
- JAPANESE

TIME ZONE (GMT+) YY/MM/DD HH:MM+00

LENGTH UNITS
- MILLIMETERS
- INCH

TEMPERATURE UNITS
- CENTIGRADE
- FAHRENHEIT

BEEP
- ON
- OFF

▲PRINTER   SETUP▼
◄ADJUST   HEATER►

SETUP▼ (continued)

BOOT VERSION

PRINTER FW VER

MAIN PCA VER

CARRIAGE PCA

USB ADDRESS

USB SPEED ──────── * HIGH-SPEED   (USB 2.0)

              * FULL-SPEED   (USB 1.0)

FACTORY DEFAULT

PRINTER FW UPGRADE

DOWNLOAD

DATE (YY/MM/DD)

SYSTEM TIME

OEM SERIAL No.

HP SERIAL No.

INIT EEPROM

SAVE CALIBS

RESTORE CALIBS

SAVE EEPROM

RESTORE EEPROM

HEATER ►

HEATER DELAY TIME

HEATER STANDBY TIME

HEATER STANDBY TEMP

30min

60min

90min

120min

CONTINUOUS

NONE

```
┌─────────────────────────┐
│ ▲MNFG-PRN  SENSORS▼      │
│ ◄VOLT        MOTORS►     │
└─────────────────────────┘
```

▲MNFG-PRN

MNFG PATTERN 0
MNFG PATTERN 1
•
•
•
MNFG PATTERN 12

Press ► then ▼ to select Y,
M, C, K, Lm or Lc

Press ◄ to return

EXECUTE → EXECUTE*OK?

DIRECTION → DIRECTION>UNI
DIRECTION>BI

Y
M
C
K
Lm
Lc

These all have the same two options

ON
OFF

MODE
MODE   >070810
MODE   >071610
MODE   >071611
MODE   >072412
MODE   >030410
MODE   >030810
MODE   >031610
MODE   >031611
MODE   >032412
MODE   >050610
MODE   >070800
MODE   >030800

LENGTH >00400mm
COUNT >01

▲MNFG-PRN SENSORS▼
◄VOLT   MOTORS▶

SENSORS▼

PRINTER SENSORS

LINE SENSOR

FRONT MEDIA

REAR MEDIA

HOME POSITION

CAP

WIPER BLADE

MEDIA LEVER

REAR COVER–L

REAR COVER–R

ME SENSOR

INK SENSOR

x INK CART

Press ▶ then ▼ to select Y,
M, C, K, Lm or Lc

Press ◄ to return

BOTTLE

x INK END

TUR SENSORS

TUR SENSOR

BACKWARDS

FORWARDS

TEMP SENSORS

AMBIENT

x   PH

Press ▶ then ▼ to select Y,
M, C, K, Lm or Lc

Press ◄ to return

CARRIAGE1

....

CARRIAGE6

MOTOR TEMP

```
┌─────────────────────────┐
│ ▲MNFG-PRN   SENSORS▼     │
│ ◄VOLT        MOTORS▶     │
└─────────────────────────┘
```

VOLT▼ ── VOLTAGE CHECK ── HIGH
                          LOW

MOTORS ▶

MEDIA ADV MOTOR ── OFF / FORWARDS / BACKWARDS

CAP STAT MOTOR ── CLOSE / HALF / OPEN

PUMP/WIPE MOTOR ── OFF / FORWARDS / BACKWARDS

VACUUM FAN R
VACUUM FAN R–C
VACUUM FAN L–C
VACUUM FAN L
PH COOLING FAN
TUR MOTOR
Y MOTOR COOLING FAN

OFF
ON

```
┌─────────────────────┐
│ ▲COUNER     PH.INF▼  │
│ ◀ELECT           ▶   │
└─────────────────────┘
```

▲COUNTER

MEDIA USED

RESET MEDIA USED

TOTAL INK USED   } Select an ink color

RESET TOTAL INK

PRIME ASSY

RESET PRIME ASSY

CAPPING UNIT

RESET CAPPING UNIT

SCAN AXIS BELT

RESET SCAN BELT

NON–UP INK USED

NON–HP INK DATE   } Select an ink color

EXPIRE INK USED

EXPIRE INK DATE

▲COUNER   PH.INF▼
◄ELECT   ►

◄ELECT

MAIN PCA

CARRIAGE PCA

INK EEPROM

VDD

24V

17V

6V

PH.INF▼

SELECT PH COLOR

MANUFACTURE DATE X

SERIAL NUMBER X

RANK X

USED DATE X

DOT COUNTER X

JAM COUNTER X

USED COLOR X

NON–HP INK USED X

EXPIRE INK USED X

The following options
modify the selected color

HP Designjet 8000s Series Printer Service Manual

Adjustments and Calibrations

5

Adjustments and Calibrations

The Printer requires certain adjustments and calibration procedures that must be performed under certain conditions.

REMEMBER THAT CERTAIN ADJUSTMENTS AND CALIBRATIONS ARE REQUIRED EVEN IF AN ASSEMBLY HAS BEEN DISASSEMBLED TO GAIN ACCESS TO ANOTHER ASSEMBLY OR COMPONENT.

Adjustments refer to procedures that require physical mechanical fine tuning of the different components in the Printer.

Calibrations refer to procedures that require entering values through the Front Panel in order to fine tune the components in the Printer.

All calibration procedures that need to be done after replacing a Printhead are contained in Chapter 3.

Adjustments

Calibrations

Belt Tension Adjustment

This adjustment must be performed whenever:
- Carriage Assembly is disassembled or replaced.
- Carriage Belt is disassembled or replaced.

Be very careful when handling the Carriage Belt because you could easily cut yourself.

Perform the Belt Tension Adjustment as follows:

1 Make sure that the Carriage Belt is correctly installed.

Make sure that the Carriage is Uncapped before performing the following steps. Trying to move the Carriage out of the Capping Station while it is still capped will cause damage to the Printheads.

2 Move the Carriage to the left and right side of the Printer several times to make sure that the Carriage Belt does not move vertically on the Tension Pulley. If necessary, adjust the slant of the Tension Pulley by tightening or loosening the screws.
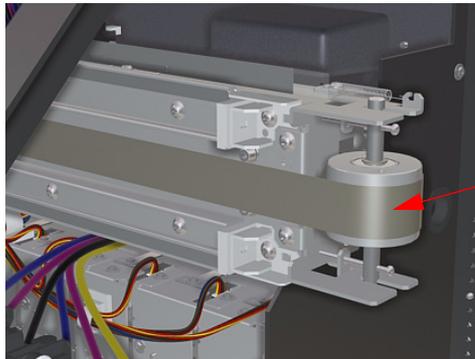
Make sure the Belt stays in the center of the Tension Pulley

3 Move the Carriage to the Capping Station.

4 Using the Push/Pull Gauge, measure the tension in the middle of the Carriage Belt. The tension measured should be between **175 and 200 g**.

Protection Block

Carriage Belt
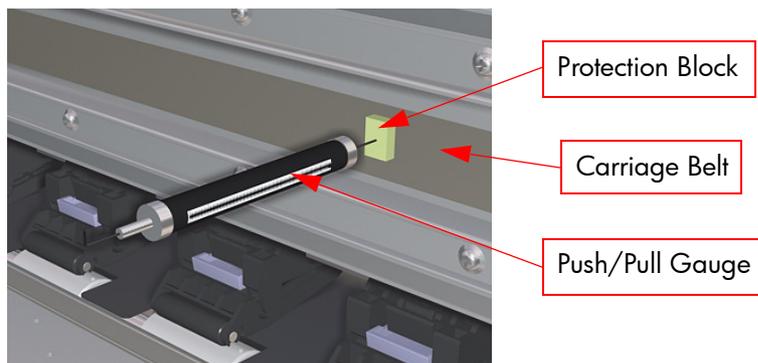
Push/Pull Gauge

In order not to damage the Carriage Belt, please use a protection block between the Push/Pull gauge and the Belt.

5 If the tension is below 175 g, then you must tighten the Tension Pulley screws. If the tension is above 200 g, then you must loosen the Tension Pulley screws.

Tension Pulley Screws
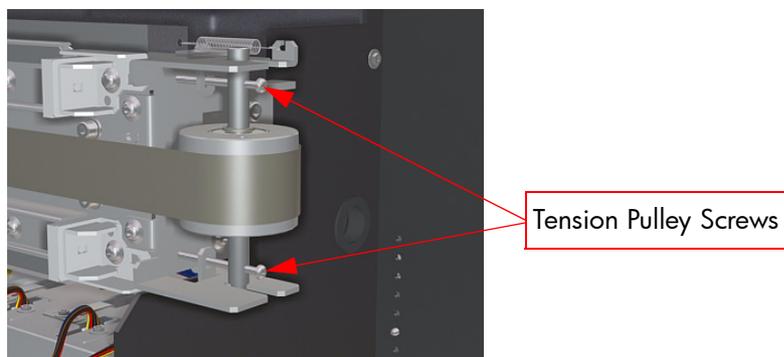
Carriage Height Adjustment

This adjustment must be performed whenever:

■ Carriage Assembly is disassembled or replaced.

■ Center Platen is disassembled or replaced.

For this adjustment, you will need the Carriage Height Adjustment Tools.

Perform the Carriage Height Adjustment as follows:

Make sure that the Carriage is Uncapped before performing the following steps. Trying to move the Carriage out of the Capping Station while it is still capped will cause damage to the Printheads.

Before starting the adjustment, make sure that the Media Lever is set to the lower (normal) position.

1 Before starting, make sure that the Printhead Height Levers are in the upper position (so that the Printhead height is actually in the **lower** position).

2 Manually switch On the Heater and set the temperature to 40°C.

3 Move the Carriage Assembly to the middle of the Center Platen.

4 Identify the different steps of the Carriage Height Adjustment Tools.

NO GO

GO   GO   GO   GO

Target height is 8.1 mm
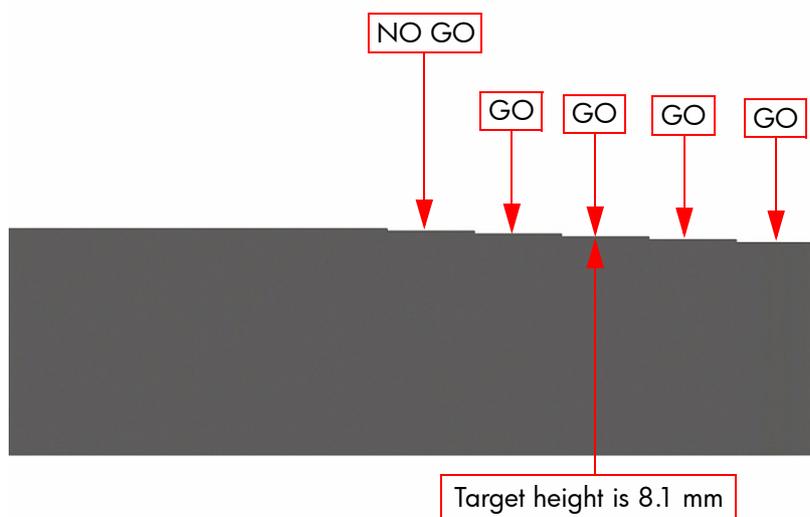
5 Insert the Carriage Height Adjustment Tools under the Carriage (on both sides). Check that the GO steps of the tool can be inserted under the Carriage Assembly.

Slots in the Carriage indicate where the tools should be inserted
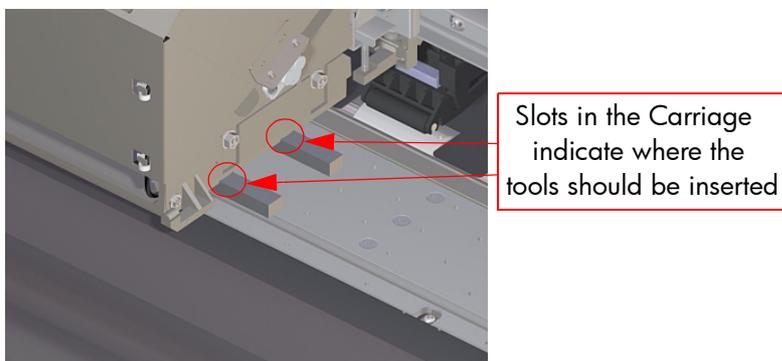
6 If the Go steps cannot be inserted or the NO GO step is inserted under the Carriage, the you will need to adjust the Carriage as explained in the following steps.

7 Open the Printhead Cover.
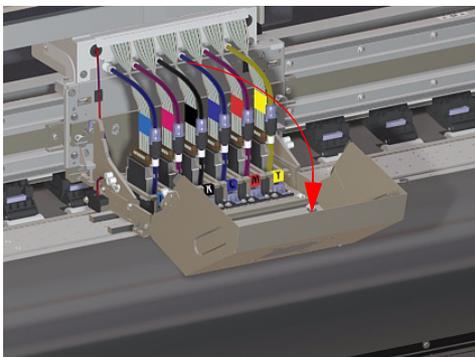
8 Loosen the four screws that secure the Carriage base to the main Carriage Assembly.
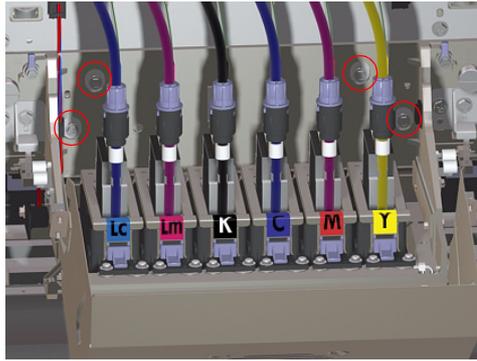
9 Place the Carriage Height Adjustment Tools under the Carriage so that the edge of the Carriage is resting on one of the GO steps (ideally on the 3rd step from the front).
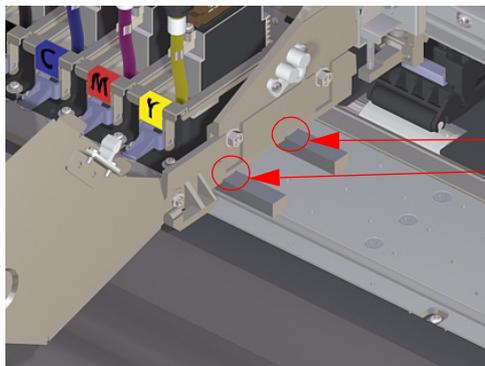
Slots in the Carriage indicate where the tools should be inserted

10 With the Carriage Height Tools still in position, tighten the four screws that secure the Carriage base to the main Carriage Assembly.
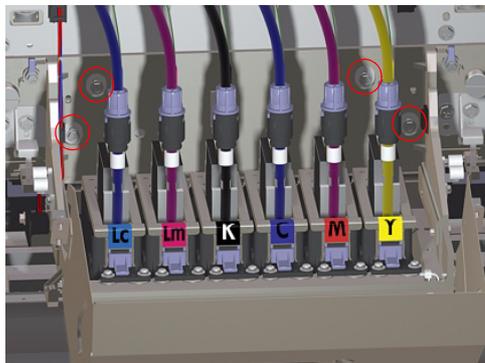
11 Remove the Carriage Height Tools from the Carriage base.

12 Insert the Carriage Height Tools again to check that the GO steps of the tool can be inserted under the Carriage.

Scan-Axis Belt Tension Adjustment

This adjustment must be performed whenever:
- Scan-Axis Motor is disassembled or replaced.
- Scan-Axis Belt is disassembled or replaced.

Perform the Scan-Axis Belt Tension Adjustment as follows:

1 Make sure that the Scan-Axis Motor and Belt are correctly installed.
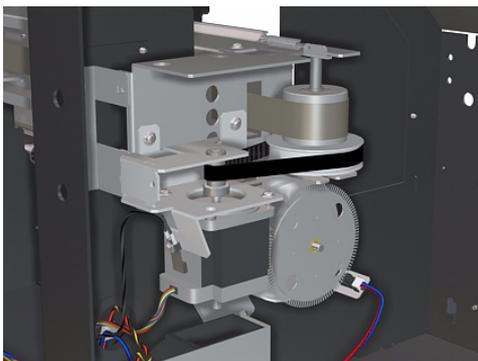
2 Loosen four screws that secure the Scan-Axis Motor Bracket to the Printer.
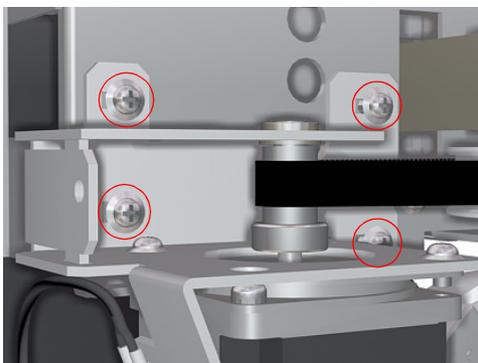
3 Hook the Push/Pull Gauge onto the Scan-Axis Motor Bracket and tension the Scan-Axis Belt to a force of 41.0 N ±2.0 N (4.18 kgf ±0.2 kgf).
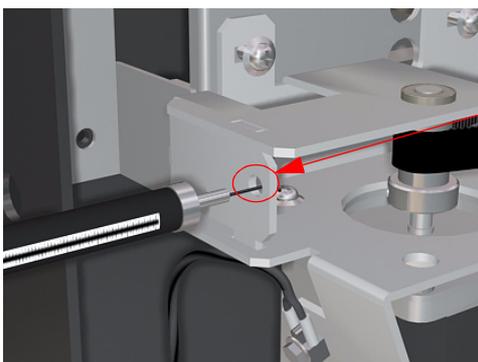
Hook the Push/Pull Gauge onto this hole

4 While tensioning the Scan-Axis Belt, tighten the four screws that you loosened in step 2.
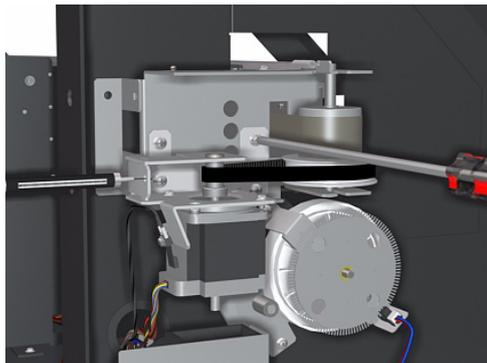
Paper-Axis Motor Tension Adjustment

This adjustment must be performed whenever:

- Paper-Axis Motor is disassembled or replaced.
- Paper-Axis Gear is disassembled or replaced.

Perform the Scan-Axis Belt Tension Adjustment as follows:

1 Make sure that the Paper-Axis Motor and Gear are correctly installed.
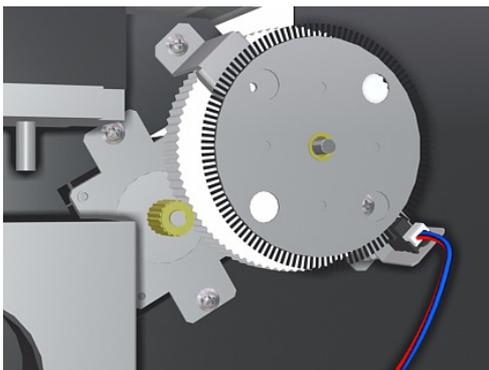
2 Loosen slightly the two screws that secure the Paper-Axis Motor to the Printer.
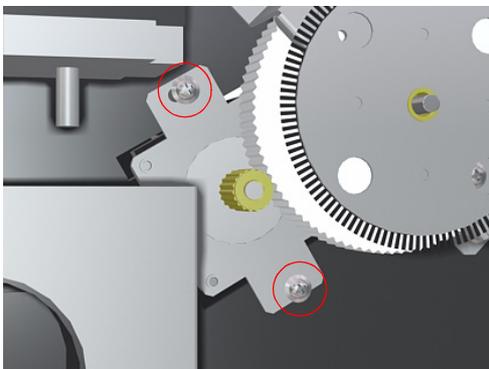
3 Hook the Push/Pull Gauge onto the Paper-Axis Motor Bracket and tension the Motor to a force of 5.0 N (0.51 kgf) in the direction shown by red arrow.

Hook the Push/Pull Gauge onto this slot
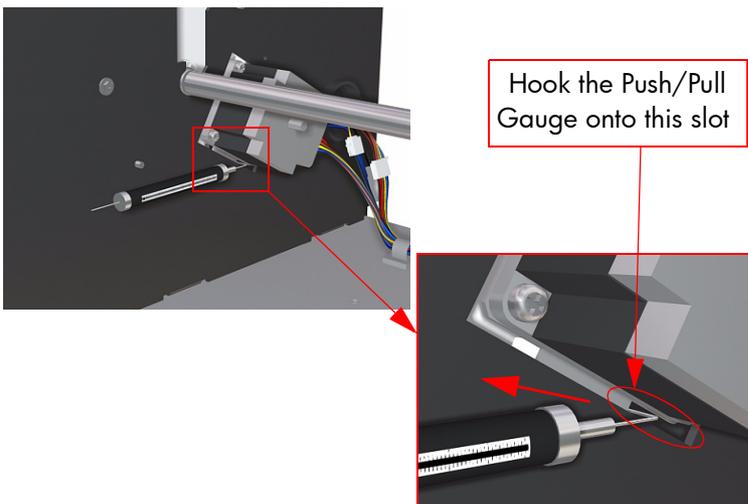
4 While tensioning the Paper-Axis Motor, tighten the two screws that you loosened in step 2.
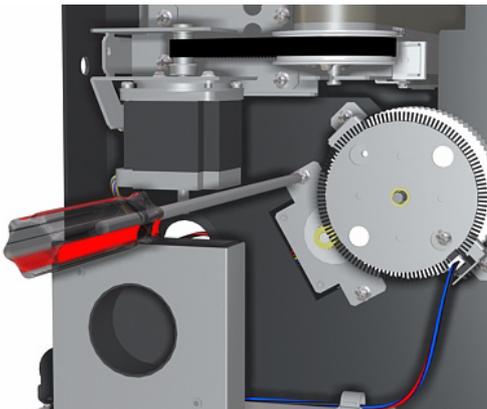
5 Confirm that the Paper-Axis Motor and the Gear are engaged securely by manually rotating the Gear.
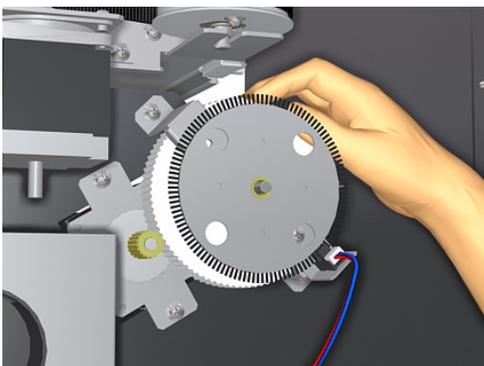
Printhead Inclination Adjustment

In order to check the slant of the Printhead, you can print the Check Slant pattern in the Maintenance Menu. If the printhead is slanted, you will need to perform the Printhead Inclination Adjustment as follows:
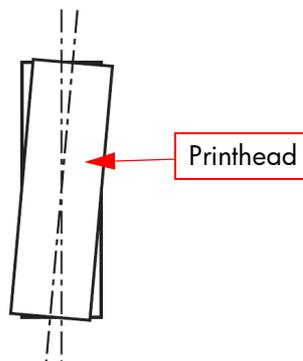
Printhead

1 Disconnect the Printhead Connector from the Printhead that requires the adjustment.

2 Loosen three screws that secure the Printhead Slot Assembly to the Carriage.
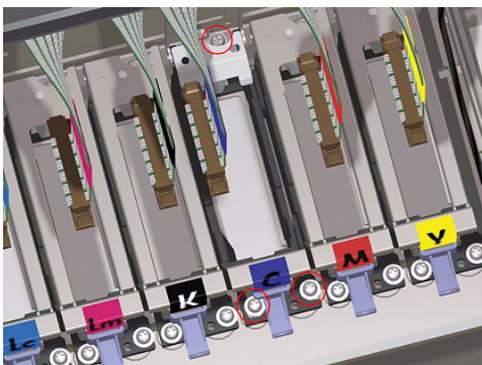
3 Insert the Head Position Adjustment Tool into the positioning hole and tighten the three screws loosened in step 2.

Head Position Adjustment Tool
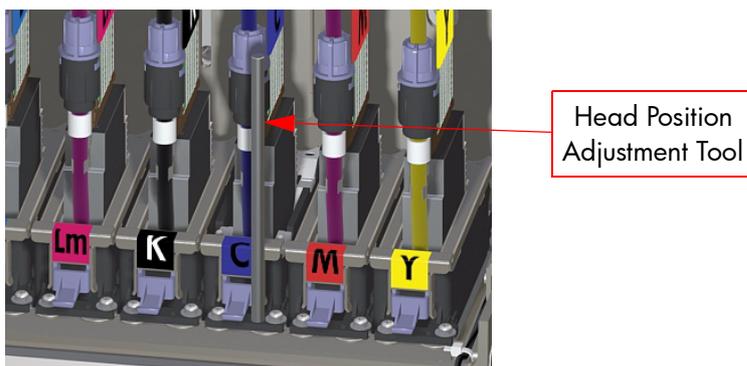
4 Remove the Head Position Adjustment Tool and reconnect the Printhead Connector.

5 Enter into the Maintenance Mode ⇒ Page 4-6.

6 Print the "Check Slant" pattern and check the slant of the Printhead.

Overlapping Sections

Error Margin

Overlapping Sections

Error Margin

Correct   **Incorrect**

7 If the Check Slant pattern still shows slant, then loosen very slightly the three screws that secure the Printhead Slot Assembly, and manually adjust the slant.

Printhead Capping Limit Adjustment

This adjustment is necessary in order to stop the Capping Units from pushing against the Printheads too much. This adjustment must be performed whenever:

■ Capping Station is disassembled or replaced.

Perform the Printhead Capping Limit Adjustment as follows:

1 Make sure that the Capping Station is correctly installed.

2 Uncap the Carriage Assembly ⇒ Page *4-10*.

3 Make sure that the Printhead Height Levers is in the lower position (so that Printhead height is actually in the **upper** position).

4 Loosen the screw which secures each Capping Limit Plate to the Capping Station.
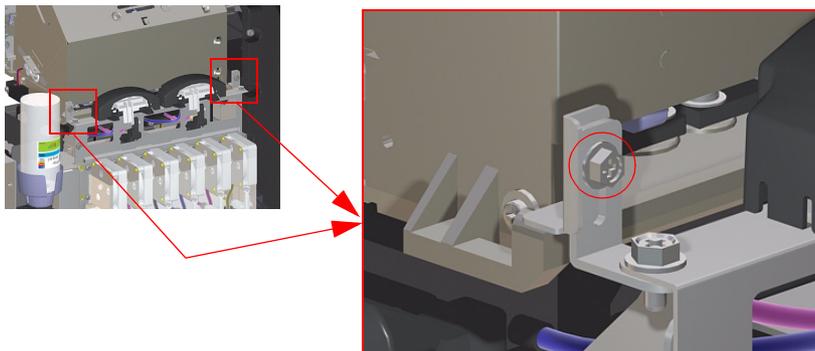
5 Lower each Limit Plate until it is **0.2 mm** above the Ledge on the Carriage.
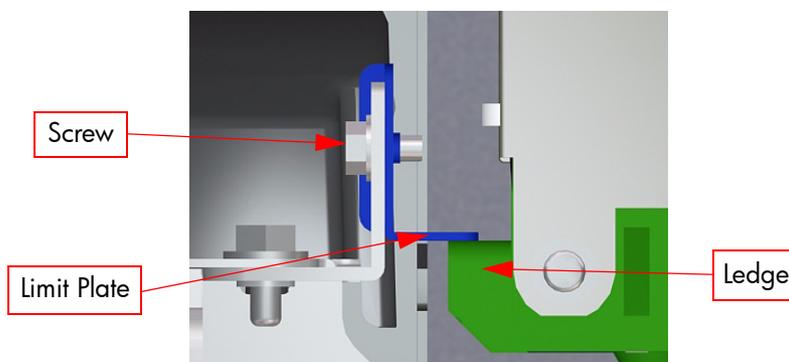
6 Tighten the screws that secure the Plates.

Vertical Capping Position Calibration

This adjustment must be performed whenever:
- Capping Station is disassembled or replaced
- Capping Station Lever is disassembled or replaced.

Perform the Vertical Capping Position Adjustment as follows:

1 Enter into the Maintenance Mode ⇒ Page 4-6.

2 Enter into the Adjust menu and select "Cap Up/Down Pos" in order to move the capping reference line between the limits shown below.

Reference Line

Limits
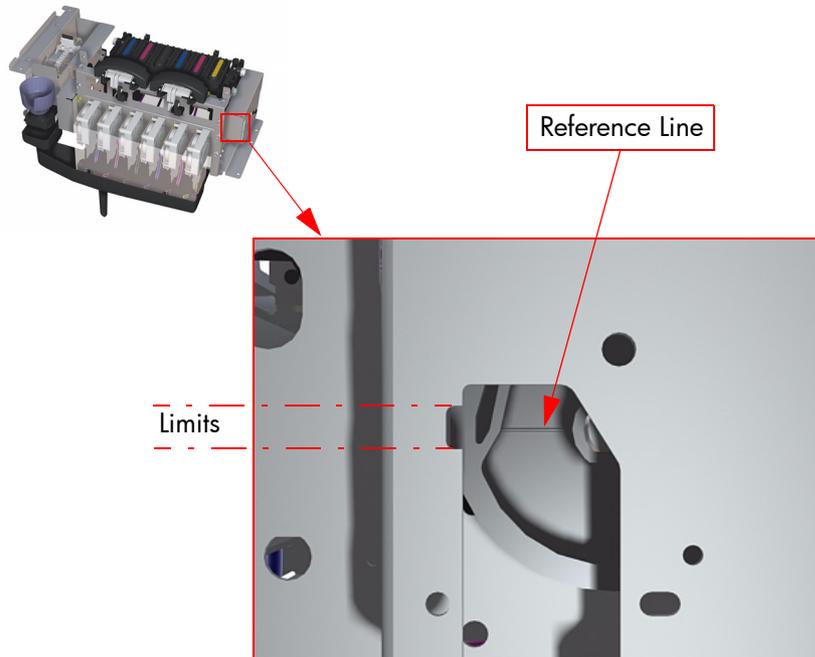
Wiping Position Calibration

This calibration must be performed whenever:

■ Wiping Station is disassembled or replaced.

Perform the Wiping Position Calibration as follows:

1 Enter into the Maintenance Mode ⇒ Page *4-6*.

2 Move the Carriage Assembly to the Wiping Position ⇒ Page *4-27*.

3 Enter into the "Wipe Position" Menu ⇒ Page *4-26*.

```
# WIPE POSITION
> +0.0 mm
```

This adjustment must be performed when the Carriage is in the Wiping Position. Do NOT move the Carriage when the Wiper Blade is raised as this could damage the Printheads.

4 Check that the center of the first Printhead (starting from the right) is aligned with the Adjustment Hole in the Wiping Station.

Printhead
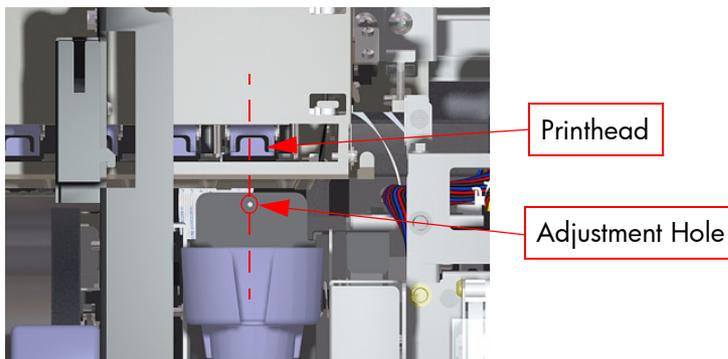
Adjustment Hole

5 If the center of the Printhead is **not** aligned with the Adjustment Hole in the Wiping Station, you will need to visually estimate the deviation between the two points.
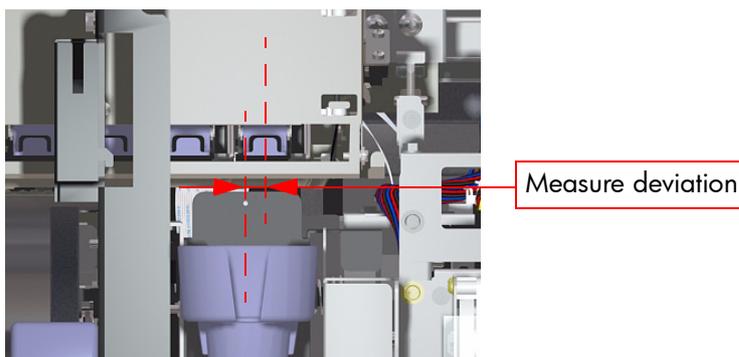
Measure deviation

6 Enter the deviation measured using the ▲ and ▼ keys to change the digits and the ◀ and ▶ keys to select the digits. If the Printhead is on the right side of the Adjustment Hole, then enter a + value, and if the Printhead is on

the left side of the Adjustment Hole, then enter a - value.

WIPE POSITION

∗ -0.5 mm

+ Value   - Value
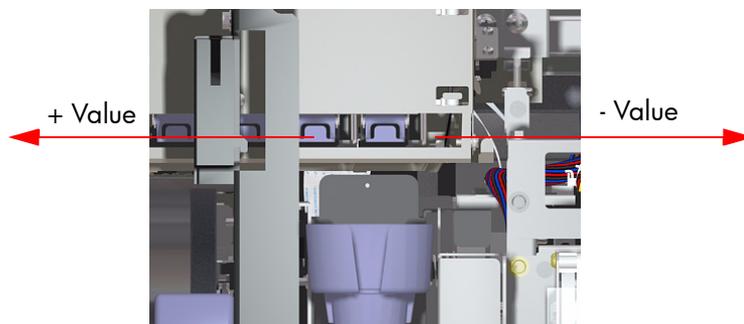
7   Press the **OK** key once you have entered the deviation value.

8   Check again that the center of the Printhead is aligned with the Adjustment Hole. If they are still not aligned, then repeat the procedure from step 5.

Capping Position Calibration

This calibration must be performed whenever:
- Capping Station is disassembled or replaced.
- Capping Unit is disassembled or replaced.

Perform the Capping Position Calibration as follows:

1 Enter into the Maintenance Mode ⇒ Page *4-6*.

2 Move the Carriage Assembly to the Capping Station (if not already at the Capping Station) ⇒ Page *4-27*.

3 If the Printheads are capped, uncap them ⇒ Page *4-10*.

4 Enter into the "Cap Position" Menu ⇒ Page *4-26*.

```
# CAP POSITION
> +0.0 mm
```

This adjustment must be performed when the Printheads have been uncapped. Do NOT move the Carriage when the Printheads are capped as this could damage the Printheads.

5 Visually check that the center of the Capping Units are aligned with the center of the Printheads.

Printhead
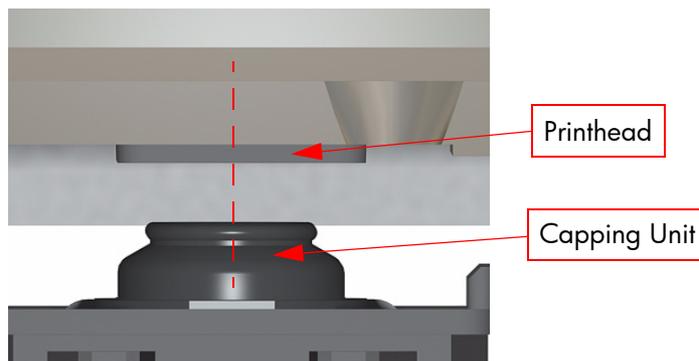
Capping Unit

6 If the center of the Capping Units are **not** aligned with the center of the Printheads, you will need to visually estimate the deviation between the Capping Units and the Printheads.
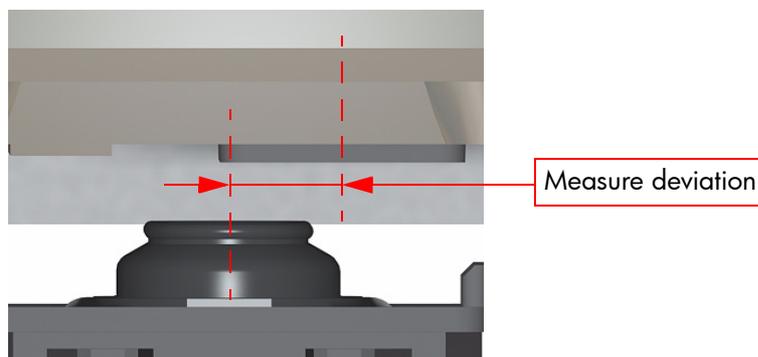
Measure deviation

7 Enter the deviation measured using the ▲ and ▼ keys to change the digits and the ◄ and ► keys to select the digits. If the Printheads are on the right side of the Capping Units, then enter a + value, and if the Printheads are on the left side of the Capping, then enter a - value.

```
# CAP POSITION
∗ +0.3 mm
```


+ Value   - Value
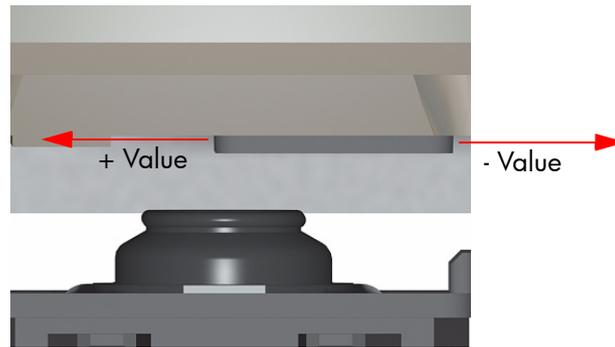
8 Press the **OK** key once you have entered the deviation value.

9 Open the Window and close it again so that the Carriage adjusts itself in relation to the Capping Station.

10 Check again that the center of the Capping Units are aligned with the center of the Printheads. If they are still not aligned, then repeat the procedure from step 6.

11 Once the Capping position is aligned, move the Carriage Assembly to the Home Position ⇒ Page *4-27* or power Off and On the Printer.

Line Sensor Calibration (Side Margin)

This calibration is used to ensure the correct position of the Line Sensor versus the Black Printhead in the Scan-Axis.

This calibration must be performed whenever:
- Line Sensor is disassembled or replaced.
- Black Printhead is removed or replaced.

Perform the Side Margin Position Calibration as follows:

1 When the "Printer Ready" message appears on the Front Panel, press the **Online** key to take the printer offline.

```
PRINTER READY
ROLL: 64/PAPER
```

2 When the following screen is displayed on the Front Panel, press the **Shift** key twice.

```
▲INK              MEDIA REG▼
◄MEDIA                M.ADV►
```

3 When the following screen is displayed on the Front Panel, Press the ◄ key to enter into the Adjust menu.

```
▲PRINTER            SETUP▼
◄ADJUST            HEATER►
```

4 In the Adjust menu, scroll to "Test Prints" and press the **OK** key.

```
# TEST PRINTS
> NOZZLE PRINT
```

5 In the Test Prints submenu, scroll to "LS Adj Print" and press the **OK** key.

```
# TEST PRINTS
* LS ADJ PRINT
```

6 Press the **OK** key to confirm that you want to print the LS Adjust Print.

```
# TEST PRINTS
∗ OK?
```

7 Measure the side margin using a ruler. If the distance measured is more or less than 15 mm, then the side margin value will need to be changed.

Printing
Direction

Media

Printed Area

Measure this distance
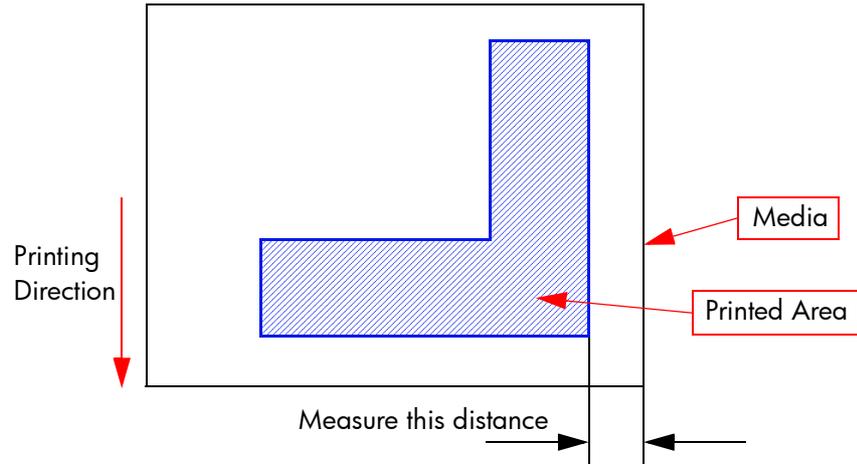
8 In the Adjustment submenu, scroll to "LS Adj Side Val" and press the ▶ key.

```
# LS ADJ SIDE VAL
> +0.0 mm
```

9 Determine the side margin value to be entered by subtracting the distance measured from the specified side margin value of 15 mm. For example, if the distance measured was 17 mm, then you subtract 17 mm from 15 mm and you get a result of +2 mm. If the distance measured was 12 mm, then you subtract 12 mm from 15 mm and you get a result of -3 mm.

10 Enter the side margin value using the ▲ and ▼ keys to change the digits and the ◀ and ▶ keys to select the digits.

```
# LS ADJ SIDE VAL
∗ +2.0 mm
```

11 Press the **OK** key once you have entered the side margin value.

Line Sensor Calibration (Top Margin)

This calibration is used to ensure the correct position of the Line Sensor versus the Black Printhead in the Media-Axis.

This calibration must be performed whenever:
- Line Sensor is disassembled or replaced.
- Black Printhead is removed or replaced.

Perform the Top Margin Position Calibration as follows:

1 When the "Printer Ready" message appears on the Front Panel, press the **Online** key to take the printer offline.

```
PRINTER READY
ROLL: 64/PAPER
```

2 When the following screen is displayed on the Front Panel, press the **Shift** key twice.

```
▲INK              MEDIA REG▼
◀MEDIA                M.ADV▶
```

3 When the following screen is displayed on the Front Panel, Press the ◀ key to enter into the Adjust menu.

```
▲PRINTER            SETUP▼
◀ADJUST             HEATER▶
```

4 In the Adjust menu, scroll to "Test Prints" and press the **OK** key.

```
# TEST PRINTS
> NOZZLE PRINT
```

5 In the Test Prints submenu, scroll to "LS Adj Print" and press the **OK** key.

```
# TEST PRINTS
* LS ADJ PRINT
```

6 Press the **OK** key to confirm that you want to print the LS Adjust Print.

```
# TEST PRINTS
∗ OK?
```
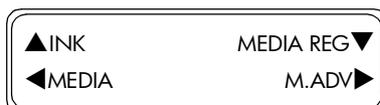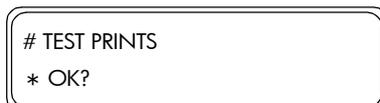
7 Measure the top margin using a ruler. If the distance measured is more or less than 15 mm, then the top margin value will need to be changed.

Media

Printing Direction

Printed Area   Measure this distance
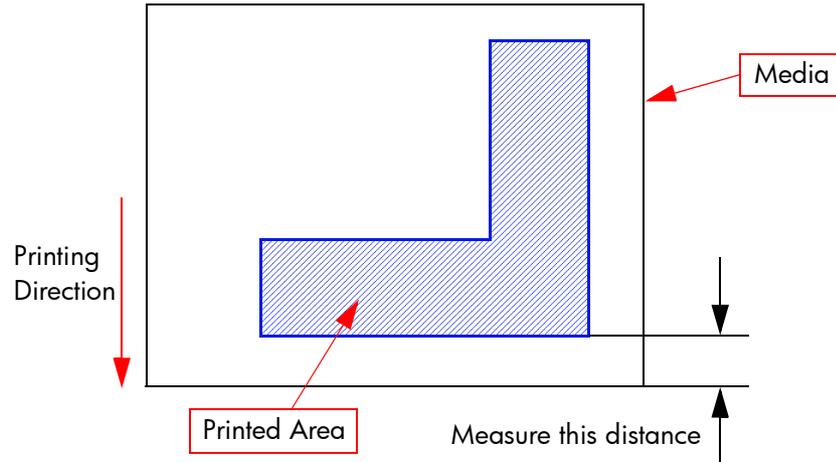
8 In the Adjustment submenu, scroll to "LS Adj Top Val" and press the ▶ key.

```
# LS ADJ TOP VAL
> +0.0 mm
```

9 Determine the top margin value to be entered by subtracting the distance measured from the specified side margin value of 15 mm. For example, if the distance measured was 18 mm, then you subtract 18 mm from 15 mm and you get a result of +3 mm. If the distance measured was 13 mm, then you subtract 13 mm from 15 mm and you get a result of -2 mm.

10 Enter the top margin value using the ▲ and ▼ keys to change the digits and the ◀ and ▶ keys to select the digits.

```
# LS ADJ TOP VAL
* -2.0 mm
```

11 Press the **OK** key once you have entered the top margin value.

Print Quality

6

Print Quality

Print Quality Troubleshooting Actions

For some Print Quality problems, a Call Agent can try and troubleshoot the Printer by requesting the Customer to perform certain actions. Using this process, most problems can be resolved without the need of an on-site visit.

When faced with a Print Quality problem, perform the following actions in order to resolve the problem:

1 Printer Configuration:
- Check that the **media type** selected in the Front Panel is the same as the media type loaded into the Printer.
- Make sure that the correct adjustments have been made for each media.

2 Check for any Printhead nozzles out and if necessary perform the Printhead Recovery procedure.

3 Media:
- Select the correct media type through the front panel when loading it.
- Make sure that HP or HP-approved media is being used.

4 Check if the latest version of the firmware is installed. If not, install the latest firmware revision.

5 For further information, refer directly to the Troubleshooting section that covers the different Print Quality problems.

Print Quality General Advice

1 Performing the Daily Maintenance ensures that the Printheads stay in a good condition and the nozzles don't get blocked.

2 Make sure that the **media type** selected in the Front Panel is the same as the media type loaded into the Printer.

3 Roll media usually gives better Print Quality than a single sheet of the same type of media.

4 The most appropriate print quality settings must be used for the current purpose.

5 Check that the environmental conditions (temperature, humidity) are within the temperature/humidity range as specified for the Printer (refer to the User's Guide for further information).

6 Remember that certain print quality problems can be solved by:
- Performing the Printhead Recovery procedure.
- Adjusting the Media Advance.

Troubleshooting Print Quality Problems

Horizontal Lines Across the Image (Banding)

Description of problem

When you look at the image you have printed, there are horizontal lines across the image. Shown below is an example of what you might see if you have this problem:

Corrective Action

1 Check that the appropriate print quality settings are being used and reprint the image.

2 Check for any Printhead nozzles out and if necessary perform the Normal Printhead Recovery procedure.

3 Change the setting of the Media Pressure Lever.

4 Perform the Media Advance adjustment on the media that is currently being used ⇒ Refer to the User's Guide.

5 Check the temperature of the Heaters to make sure that they are not set too high. If necessary, lower the temperature of the Heaters and reprint the image.

6 Print the Nozzle Check Pattern (⇒ Page *4-23*) to verify if any Printhead Nozzle are missing. If any missing nozzles cannot be recovered, the failing Printhead may need to be replaced.

Images are Blurred

Description of problem

This problem is often caused by incorrect adjustment of the Bi-directional print position causing the image or text to look blurred.

Corrective Action

1   Use the Printer in an environment that is less humid.

2   Make sure that the **media type** selected in the Front Panel is the same as the media type loaded into the Printer.

3   Make sure that the Carriage Height is appropriate for the media loaded (lower the carriage if necessary).

4   Perform the daily Maintenance tasks.

5   Perform the Printhead Recovery procedure.

6   Check that the environmental conditions (temperature, humidity) are within the temperature/humidity range as specified for the Printer.

7   Check that the temperature of the Heaters are not set too low or too high.

8   Perform the Bi-Directional Print Position Correction.

Bleeding, Repelling or Mottling Problems

Description of problem

The problems can be described as follows:

- Ink Bleeding can spoil the sharpness of the image and cause the text to be blurred.
- Ink Repelling can cause the lines to be dotty or uneven.
- Ink Mottling can cause dark lines in high density prints.

Corrective Action

1   Try printing using a higher quality print mode.

2   Check the temperature of the Heaters to make sure that they are not set too high. If necessary, lower the temperature of the Heaters and reprint the image.

Image is Completely Blank or Faded

Corrective Action

1   There might be a problem between the Printer and Computer. Check the cable between the computer and the Printer to make sure it is not damaged and is connected correctly.

2   Check the date file that was sent to print.

3   Make sure that the **media type** selected in the Front Panel is the same as the media type loaded into the Printer.

4   Check that the room temperature is higher than 15°C and make sure that you leave the Printer to warm up sufficiently.

Output Only Contains a Partial Print

Corrective Action

1 There might be a problem between the Printer and Computer. Check the cable between the computer and the Printer to make sure it is not damaged and is connected correctly.

2 There might be foreign objects attached to the Printhead. Perform the Printhead Recovery procedure and reprint the image.

3 If cleaning the Printheads does NOT solve the problem, then the nozzles might be blocked. Perform the Wash Printheads procedure (refer to the User's Guide) and reprint image.

The Printer Area is Stained

Corrective Action

1 Check if the leading edge of the media is curled. If it is curled, cut off the leading edge before printing.

2 Check if the media is wrinkled. If it is wrinkled, advance the media and cut off the part of the media that is wrinkled.

3 Make sure that the **media type** selected in the Front Panel is the same as the media type loaded into the Printer.

4 Make sure that the Center Platen is not stained with ink since this could be transferred to the printed image.

Part of Image is Missing at the Start of the Print

Corrective Action

1 There might be a problem between the Printer and Computer. Check the cable between the computer and the Printer to make sure it is not damaged and is connected correctly.

2 Make sure that the environmental conditions (temperature, humidity) are within the temperature/humidity range as specified for the Printer (refer to the User's Guide for further information).

Print Quality is not Improved After Printhead Recovery

Corrective Action

1 Perform the Daily Maintenance procedure (⇒ Page *9-3*).

2 Repeat the Printhead Recovery procedure (⇒ Page *9-12*) and reprint the image.

3 Print the Nozzle Check pattern and check if there any nozzles missing. If there are several nozzles missing and the Printhead Recovery procedure has not improved the print quality, then it might be necessary to replace the failing Printhead (for more information, refer to Page *6-1*).

How to Check for Permanent Nozzles Out in a Printhead

If a Printhead has more than one permanently out nozzle, the Printhead must be replaced.

Nozzles Out

Nozzles can become blocked, causing nozzles to fail and not fire ink. When this happens we say that the nozzle(s) are 'out'. There is a procedure we can use to unblock the nozzles that are out which involves firing more ink than usual to clear the blockage and therefor 'recover' the printhead. You can choose between a 'Normal' or a 'Strong' recovery. For further information on performing the Printhead Recovery procedure, refer to Page *9-12*.

Printhead Nozzles Check

The 'Printhead Nozzle Check' can determine whether the nozzles are out. Part of the printhead nozzle check is shown below, (the other part of the printout can be ignored for this particular issue). The diagonal lines show the status of each nozzle. If a line is out of sequence it means the nozzle is misdirected; if the line is missing it means a particular nozzle is out, or is substantially misdirected. For further information on performing the Printhead Recovery procedure, refer to Page *9-11*.

One nozzle out won't impact the image quality because the technology is in place to hide small imperfections like that. The Printhead Nozzle Check shown here is of a healthy printhead, all lines are present and they are all in sequence.

However if when you perform the 'Printhead Nozzle Check' and you get results similar to the one shown below (the nozzles that are out are shown in the circles), it could mean that they are **out** or **permanently out**.

Nozzles out
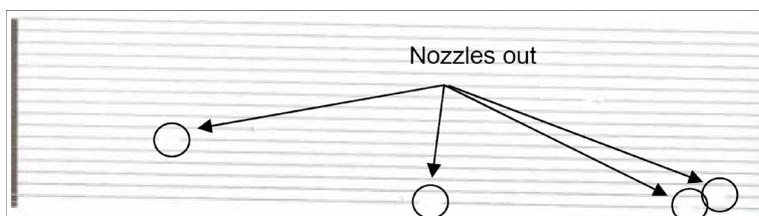
If a printhead has more than one permanently out nozzle it must be replaced, but only after you've made sure that the nozzles cannot be recovered. **Follow the procedure on the next page to find out if the printhead you have has permanently out nozzles.**

Banding detected
(ensure correct media advance and heater temp)

INITIAL TROBLESHOOT

Print **Nozzle Check Pattern** and look for nozzle(s) out. Note the **position** of the **nozzle(s) out**

Did you detect **more than ONE nozzle out**? — **No** → **PRINTHEAD IN SPECS** Do NOT replace printhead. Banding coming from other sources

Yes

FIRST RECOVERY (NORMAL)

Perform a **NORMAL PRINTHEAD RECOVERY**

Print **Nozzle Check Pattern** and look for nozzle(s) out. Note the **position** of the **nozzle(s) out**

Do you still see **more than one nozzle out**? — **No** →

Yes

Are the nozzle(s) out in the SAME position? — **No** → If the nozzles out change in position, they are most probably not permanent nozzles out

Yes

FIRST RECOVERY (STRONG)

Perform a **STRONG PRINTHEAD RECOVERY**

Print **Nozzle Check Pattern** (Next page: A) and look for nozzle(s) out. Note the **position** of the **nozzle(s) out**

Do you still see **more than one nozzle out**? — **No** →

Yes

Are the nozzle(s) out in the SAME position? — **No** → If the nozzles out change in position, they are most probably not permanent nozzles out

Yes

THIRD RECOVERY (STRONG)

Perform **THREE STRONG RECOVERIES PRINTHEAD RECOVERY in a row**

Print **Nozzle Check Pattern** (Next page: A) and look for nozzle(s) out. Note the **position** of the **nozzle(s) out**

Do you still see **more than one nozzle out**? — **No** →

Yes

You have PERMANENT NOZZLES OUT. Replace only the affected printhead

Parts and Diagrams

7

Front Covers

Front Covers			
Reference on Drawing	**HP Part Number**	**Quantity**	**Description/Comments**
1	Q6670-60003	1	Left Trim
2	Q6670-60004	1	Maintenance Kit Drawer and Cover
3	Q6670-60005	1	Left Door
4	Q6670-60006	1	Right Door
5	Q6670-60007	1	Right Trim
6	Q6670-60008	1	Window
-	Q6670-60009	1	Window Hinges
7	Q6670-60026	1	Front Panel
8	Q6670-60027	2	Window Sensor
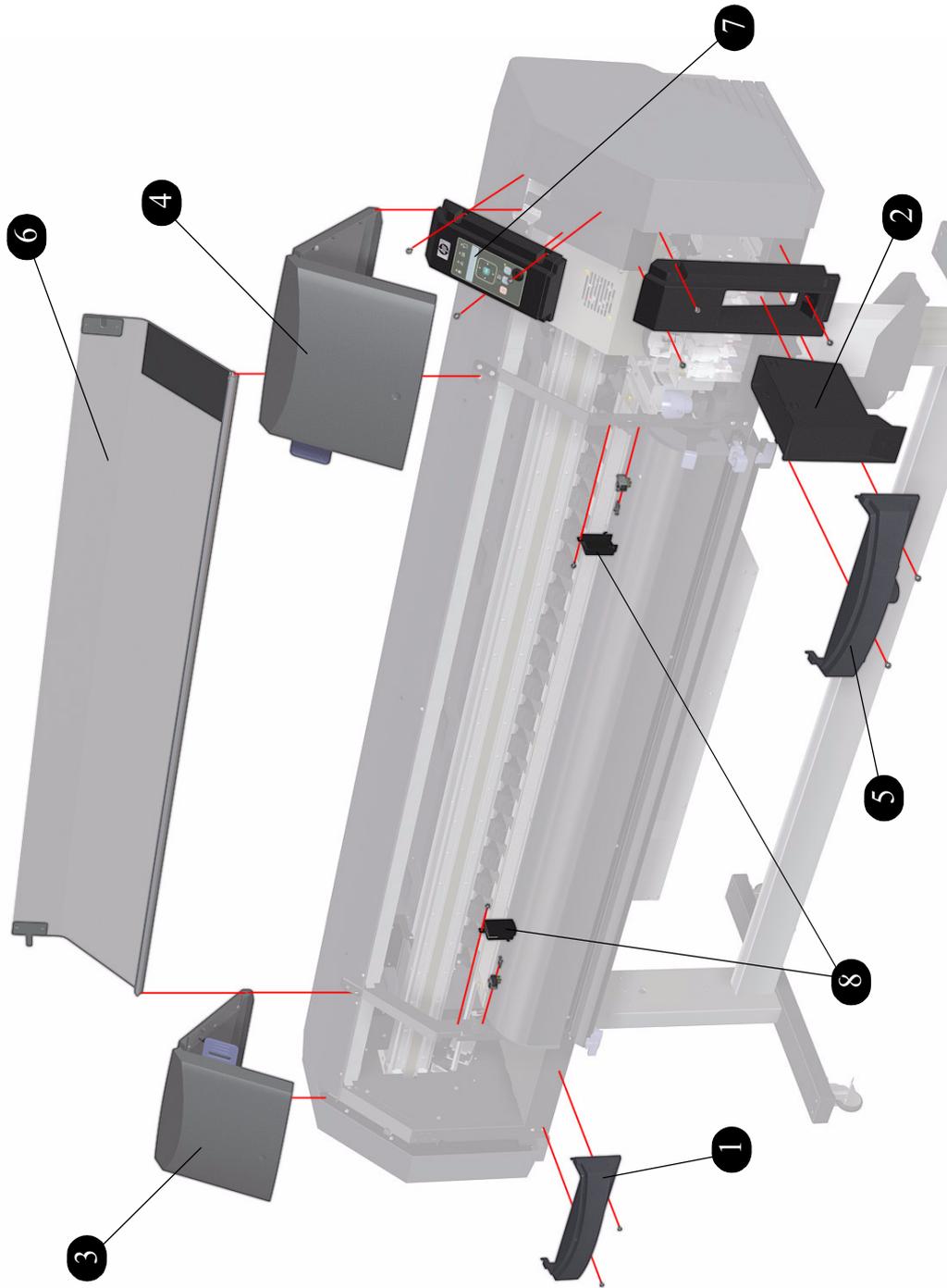
Figure 1: Front Covers

Back and Side Covers

Back and Side Covers			
Reference on Drawing	**HP Part Number**	**Quantity**	**Description/Comments**
1	Q6670-60010	1	Top Cover
2	Q6670-60011	1	Documentation Holder
3	Q6670-60012	1	Right Top Cover
4	Q6670-60013	1	Handle
5	Q6670-60014	1	Ink Cartridge Bay Cover
6	Q6670-60015	1	Right Side Cover
7	Q6670-60016	1	Left Top Cover
8	Q6670-60017	1	Left Back Cover
9	Q6670-60018	1	Left Side Cover
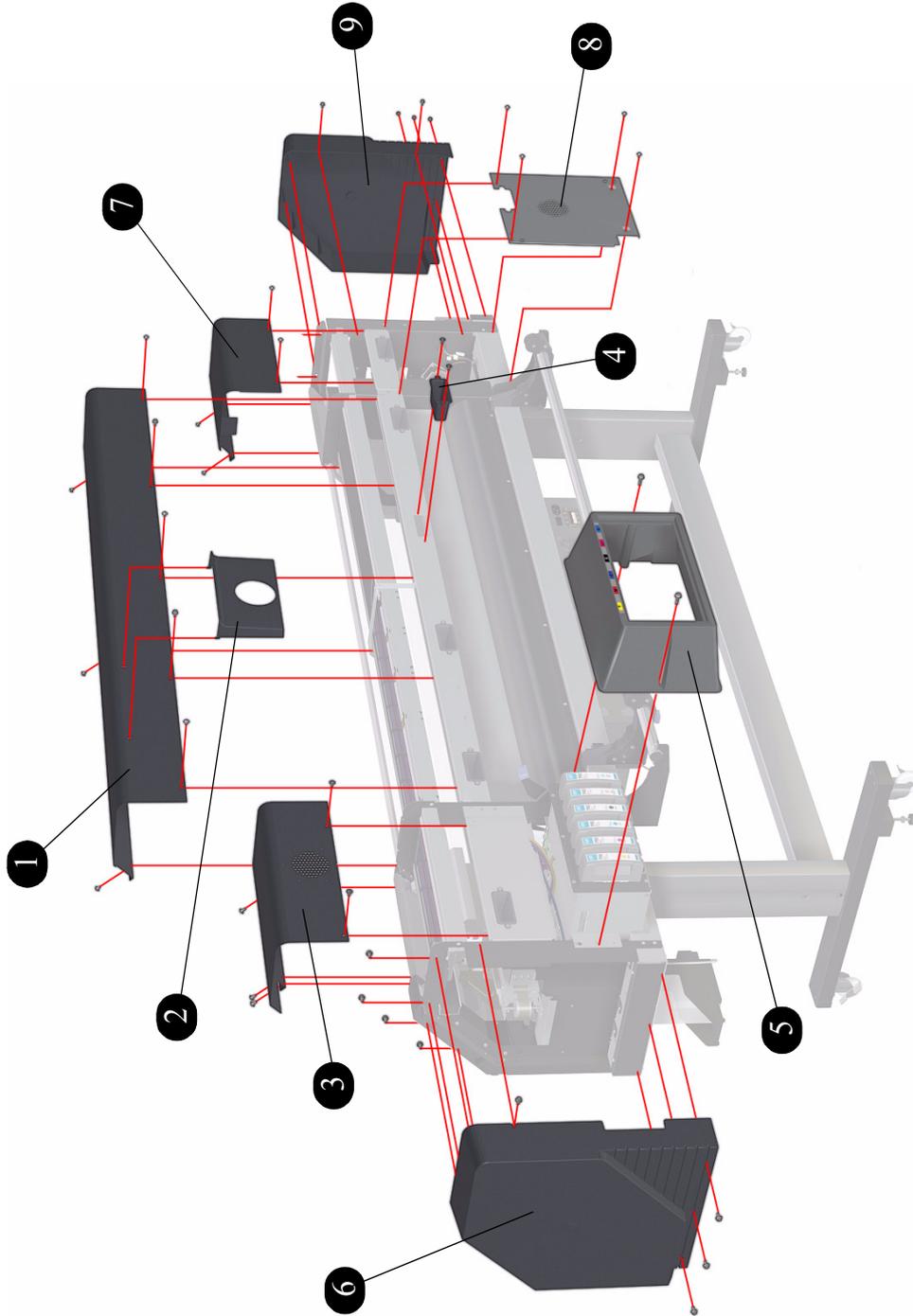
Figure 2: Back and Side Covers

Electronics Module

Electronics Module			
Reference on Drawing	**HP Part Number**	**Quantity**	**Description/Comments**
1	Q6670-60019	1	Power Socket
2	Q6670-60020	1	Main PCA
3	Q6670-60021	1	Power Switch
4	Q6670-60022	1	Heater Relay Board
5	Q6670-60023	1	Cooling Fan (Electronics)
6	Q6670-60024	1	Power Supply Unit
7	Q6670-60025	1	Voltage Alternation Switch
8	Q6670-60078	1	EEPROM
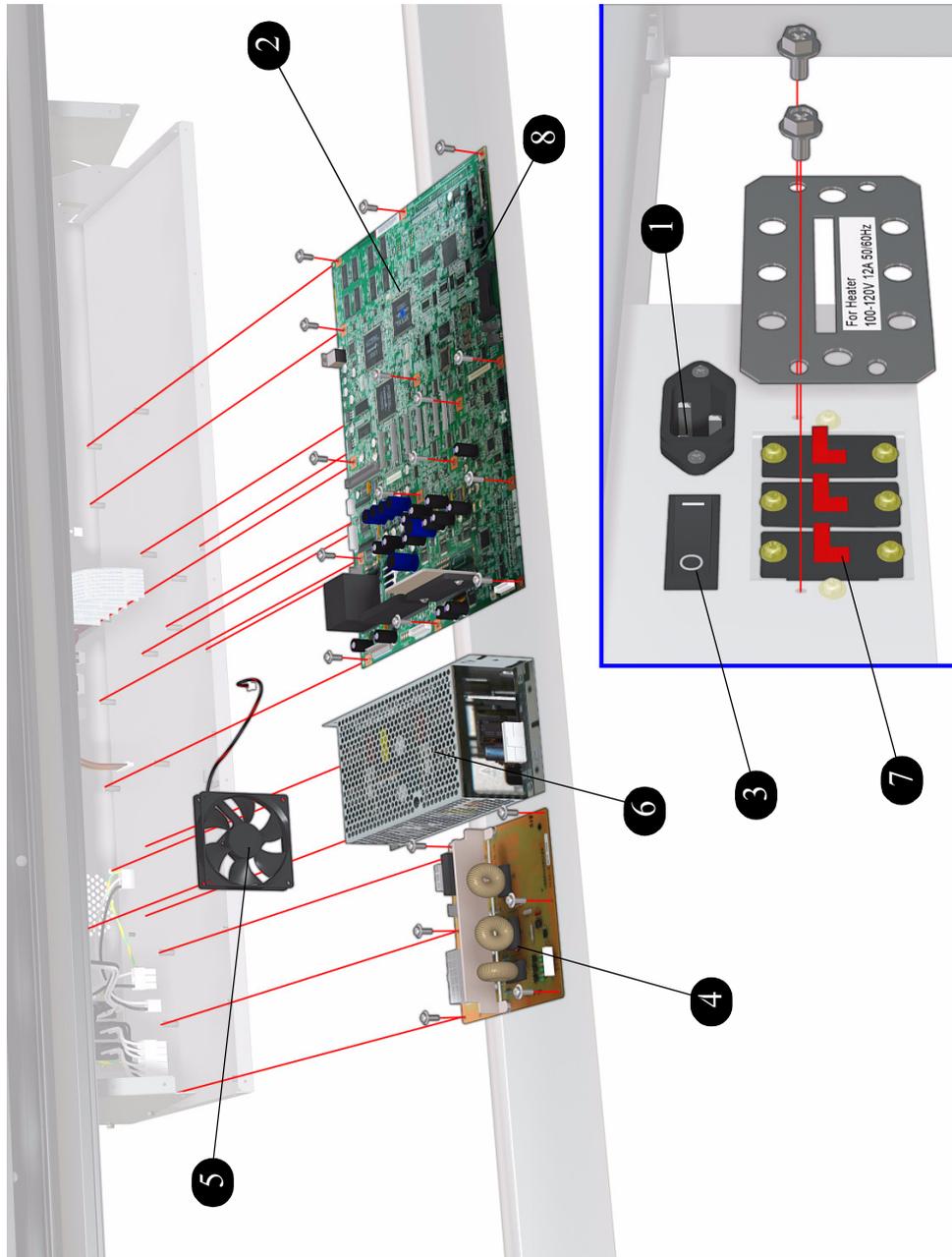
Figure 3: Electronics Module

Carriage Assembly

Carriage Assembly			
Reference on Drawing	**HP Part Number**	**Quantity**	**Description/Comments**
1	Q6670-60054	1	Carriage PCA
2	Q6670-60001	6	Printhead
3	Q6670-60055	1	Encoder Sensor
4	Q6670-60030	1	Line Sensor
5	Q6670-60057	6	Printhead Slot Assembly
6	Q6670-60023	1	Cooling Fan (Printhead)
7	Q6670-60058	1	Trailing Cable
8	Q6670-60080	1	Ink Tubes Assembly
9	Q6670-60084	1	Printhead Cable Connectors
10	Q6670-60085	1	Air Damper
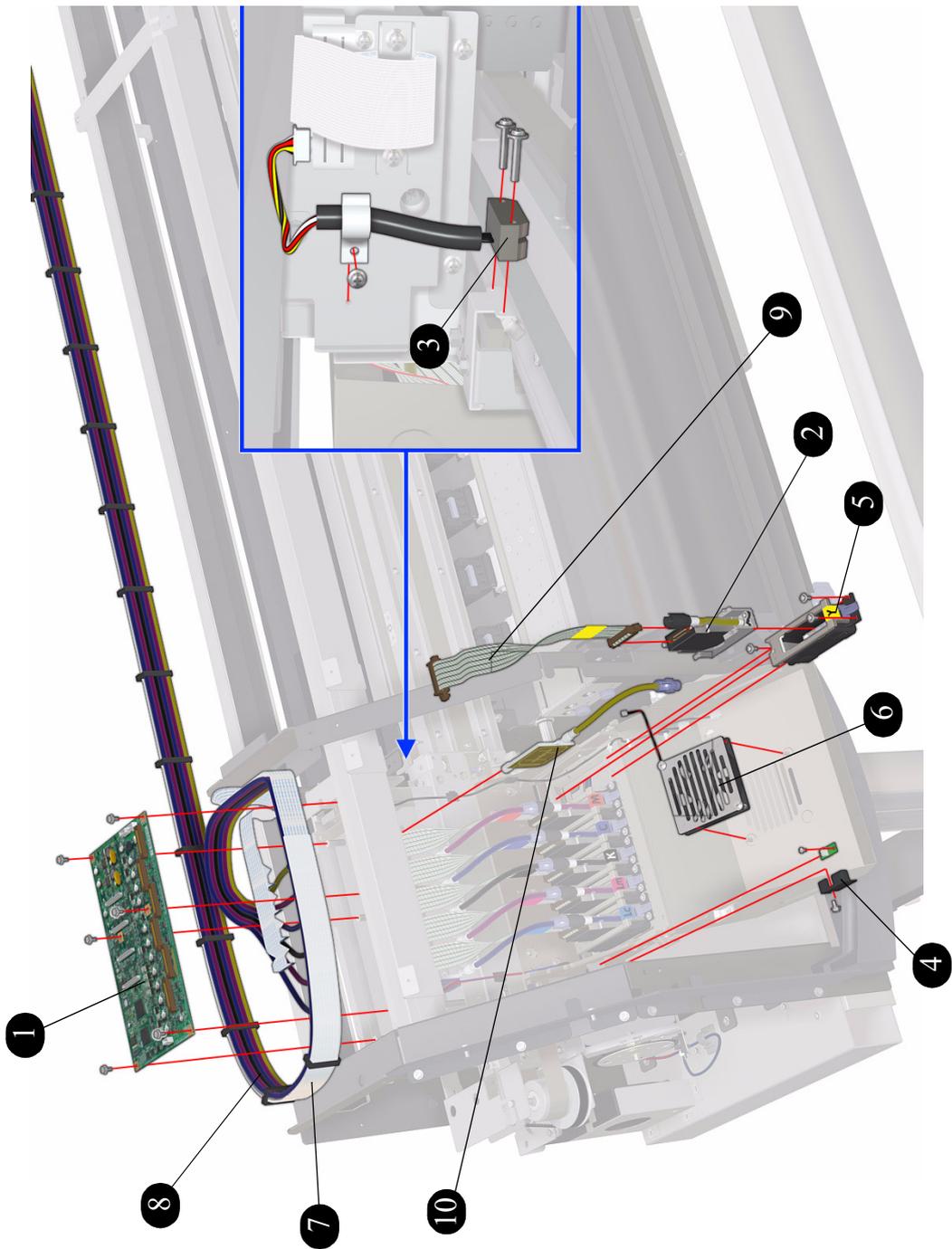
Figure 4: Carriage Assembly

Scan-Axis Assemblies

	Scan-Axis Assemblies		
Reference on Drawing	**HP Part Number**	**Quantity**	**Description/Comments**
1	Q6670-60037	1	Drive Pulley
2	Q6670-60038	1	Encoder Strip
3	Q6670-60039	1	Tension Pulley
4	Q6670-60040	1	Home Position Sensor
5	Q6670-60041	1	Belt
6	Q6670-60042	1	Pinch Roller
7	Q6670-60092	1	Pinch Roller Holder
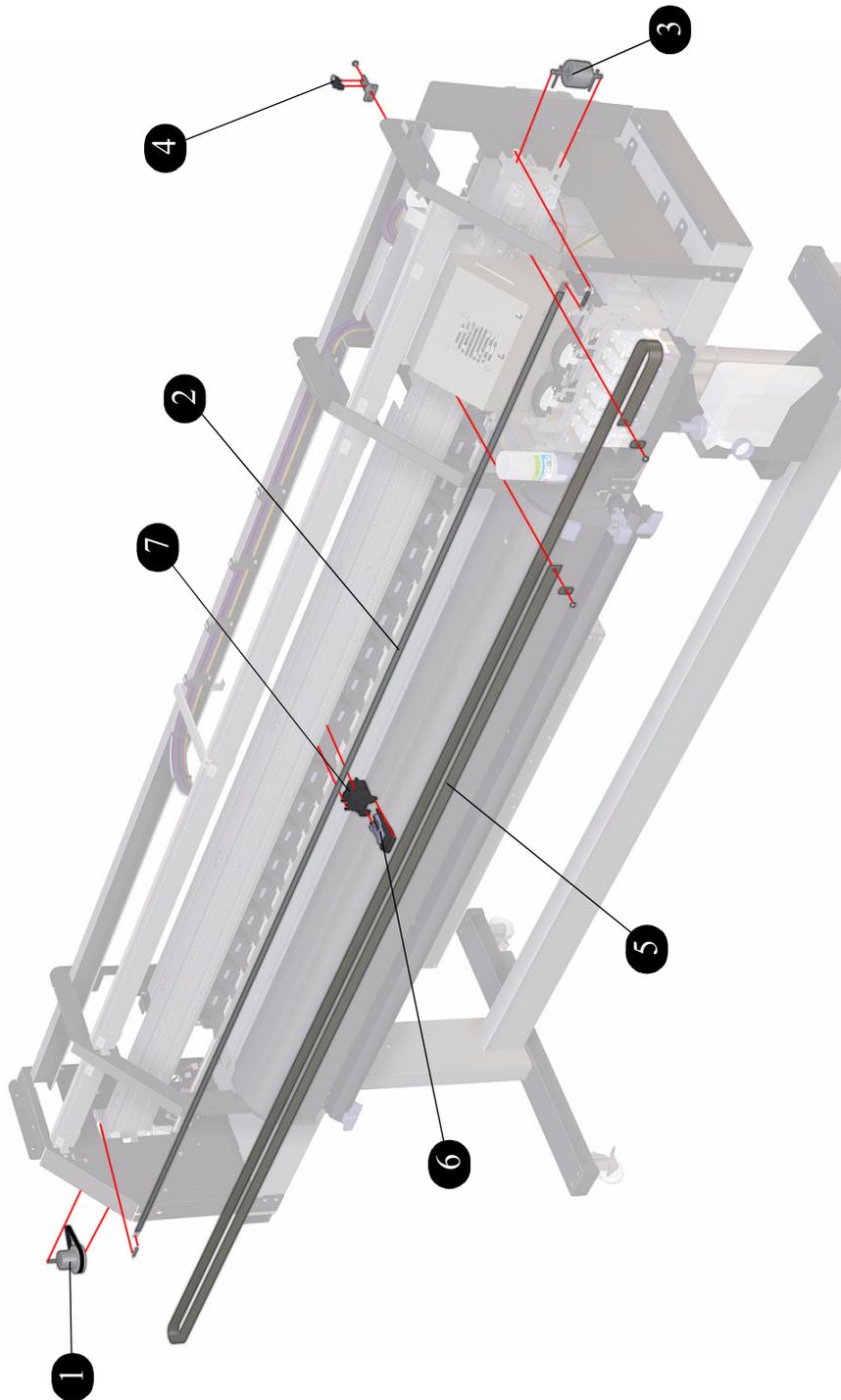
Figure 5: Scan-Axis Assemblies

Paper Path Assemblies

Paper Path Assemblies			
Reference on Drawing	**HP Part Number**	**Quantity**	**Description/Comments**
1	Q6670-60033	1	Front Heater
2	Q6670-60029	1	Center Platen
3	Q6670-60032	1	Rear Heater
4	Q6670-60031	4	Vacuum Fan
5	Q6670-60028	2	Media Edge Guard
6	Q6670-60030	1	Media Lever Sensor
7	Q6670-60043	1	Cutter Assembly
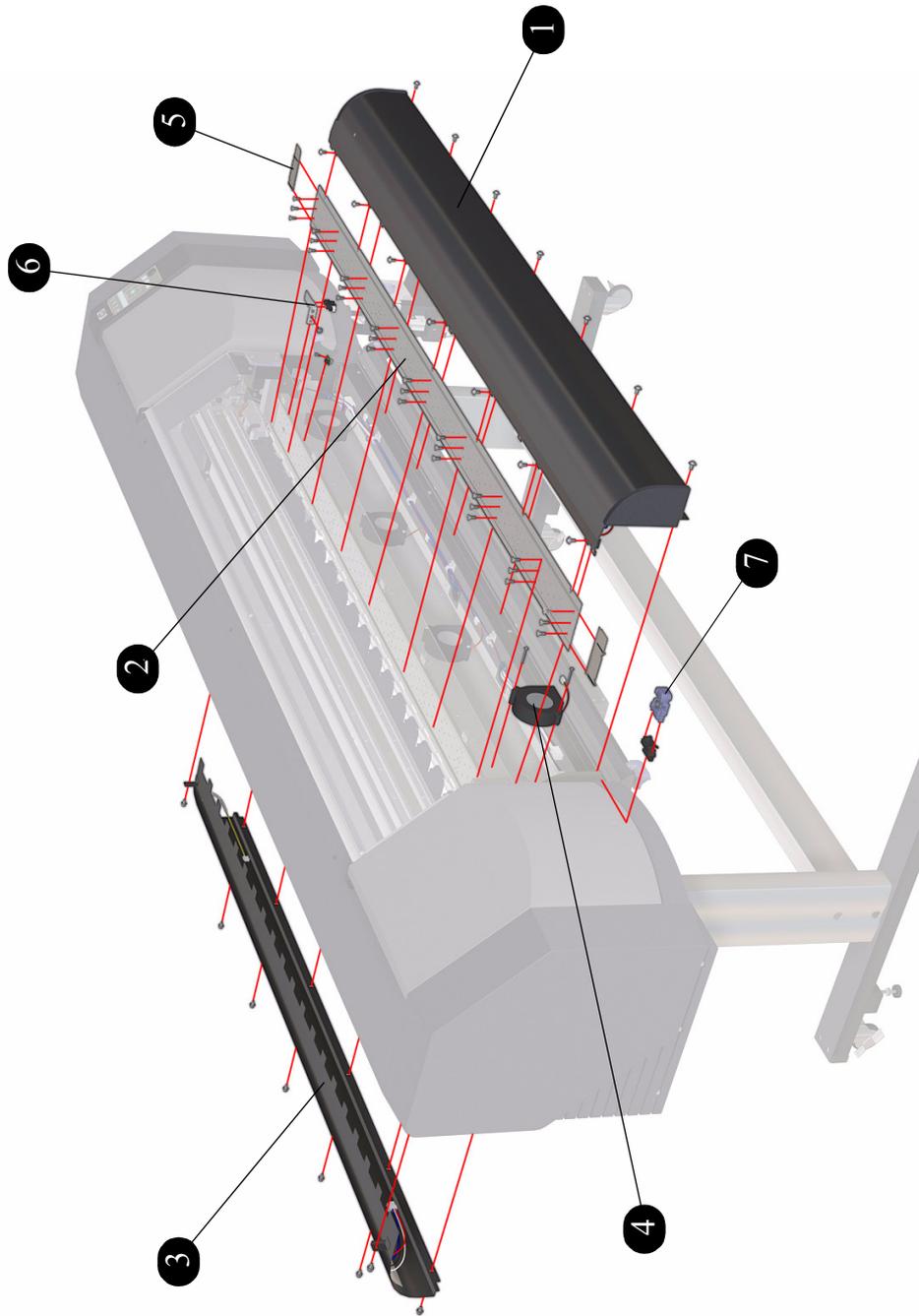
Figure 6: Paper Path Assemblies

Paper-Axis and Scan-Axis Motor Assemblies

Paper-Axis and Scan-Axis Motor Assemblies			
Reference on Drawing	HP Part Number	Quantity	Description/Comments
1	Q6670-60034	1	Paper-Axis Motor
2	Q6670-60035	1	Paper-Axis Gear
3	Q6670-60036	1	Encoder Disc and Sensor
4	Q6670-60045	1	Scan-Axis Motor
5	Q6670-60044	1	Motor Cooling Fan
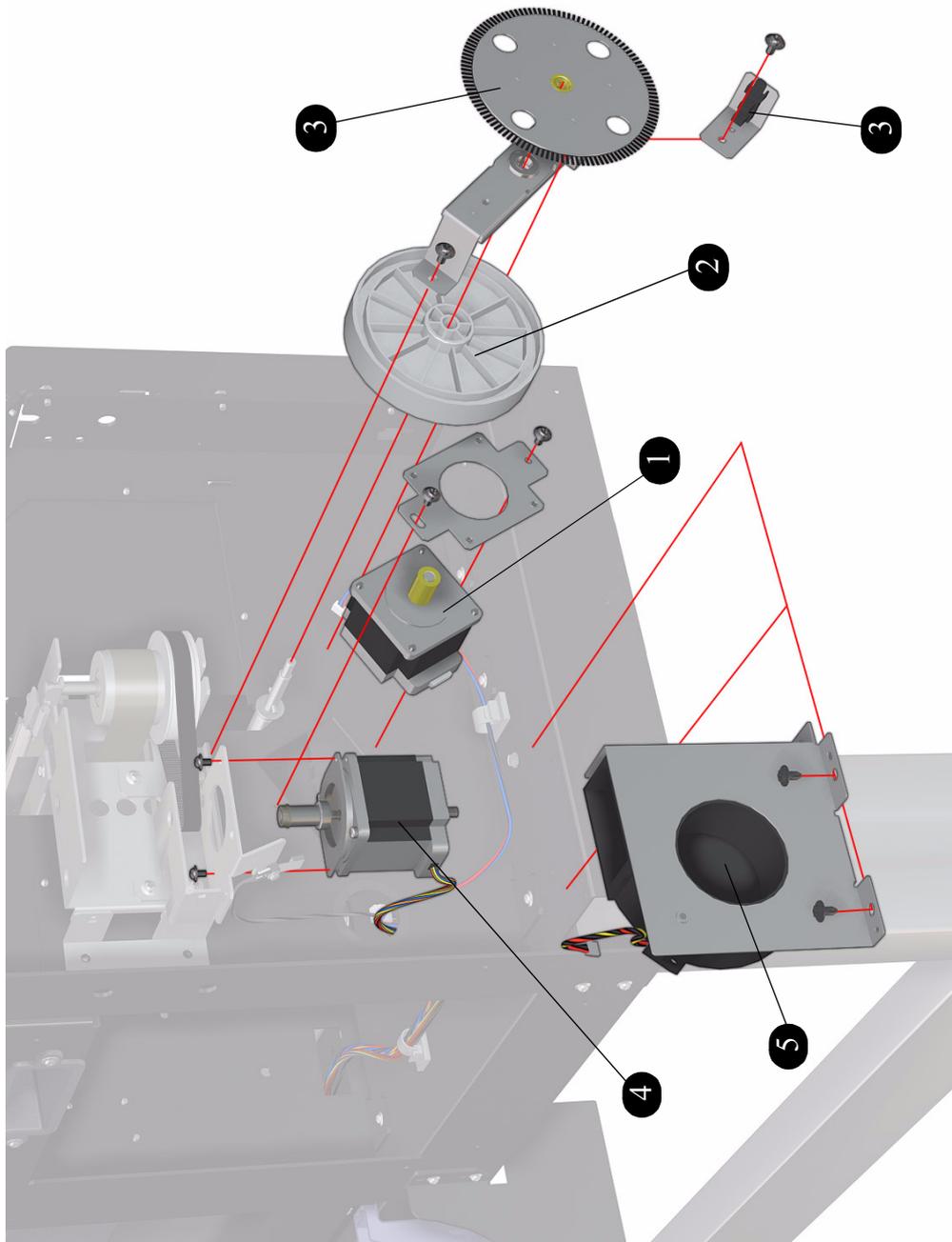
Figure 7: Paper-Axis and Scan-Axis Motor Assemblies

Media Feed Assemblies

Media Feed Assemblies			
Reference on Drawing	HP Part Number	Quantity	Description/Comments
1	Q6670-60046	2	Media Feed Flange
2	Q6670-60047	2	Media Support Bracket
-	Q6670-60079	1	2" Media feed Flange
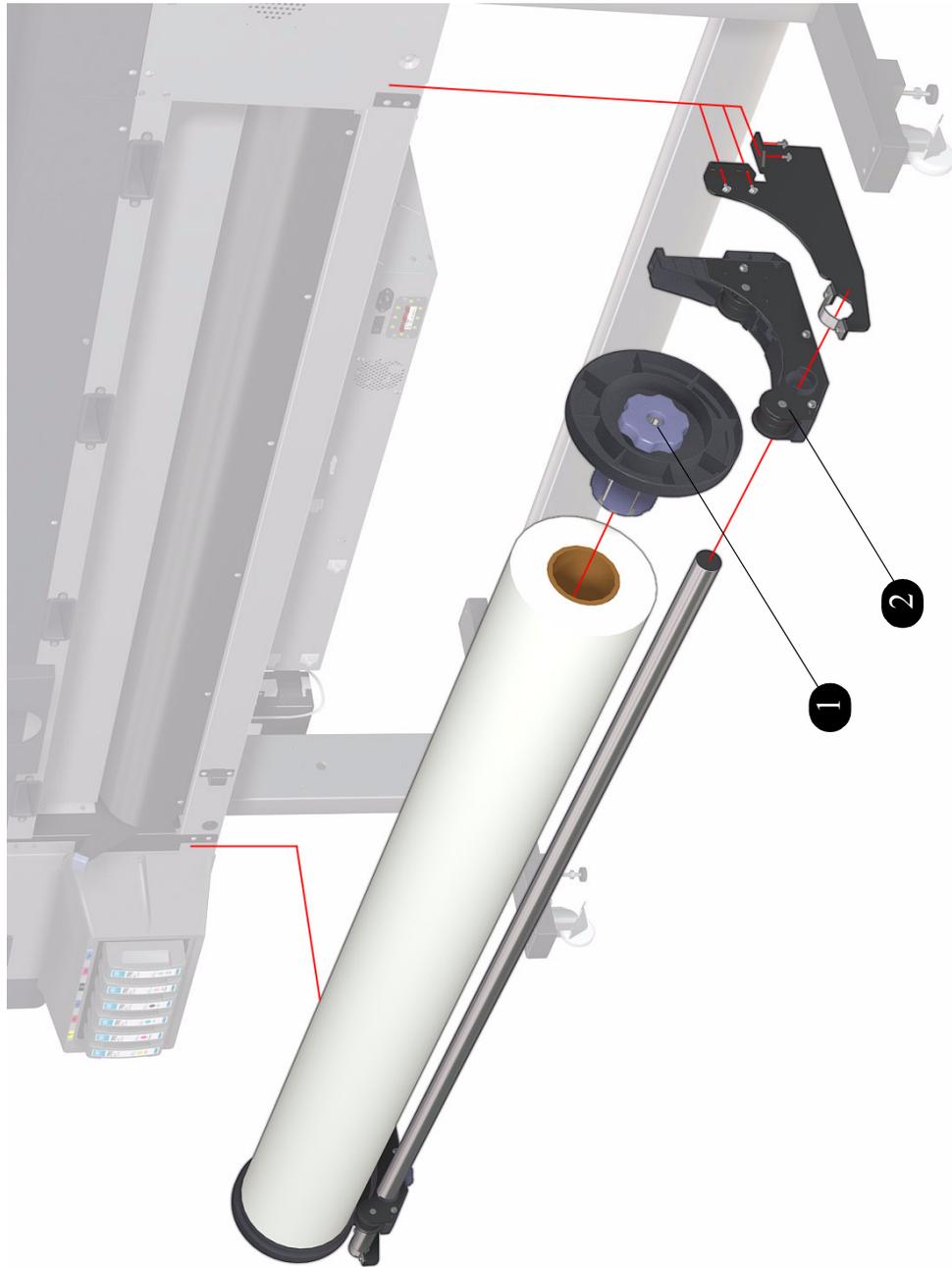
Figure 8: Media Feed Assemblies

Take-Up-Reel Assemblies

Take-Up-Reel Assemblies			
Reference on Drawing	HP Part Number	Quantity	Description/Comments
1	Q6670-60048	1	Take-Up-Reel Sensor
2	Q6670-60049	1	Right Take-Up-Reel Plate
3	Q6670-60050	1	Take-Up-Reel Tension Roller
4	Q6670-60051	1	Left Take-Up-Reel Plate
5	Q6670-60052	1	Take-Up-Reel Motor
6	Q6670-60053	1	Take-Up-Reel Media Feed Flange
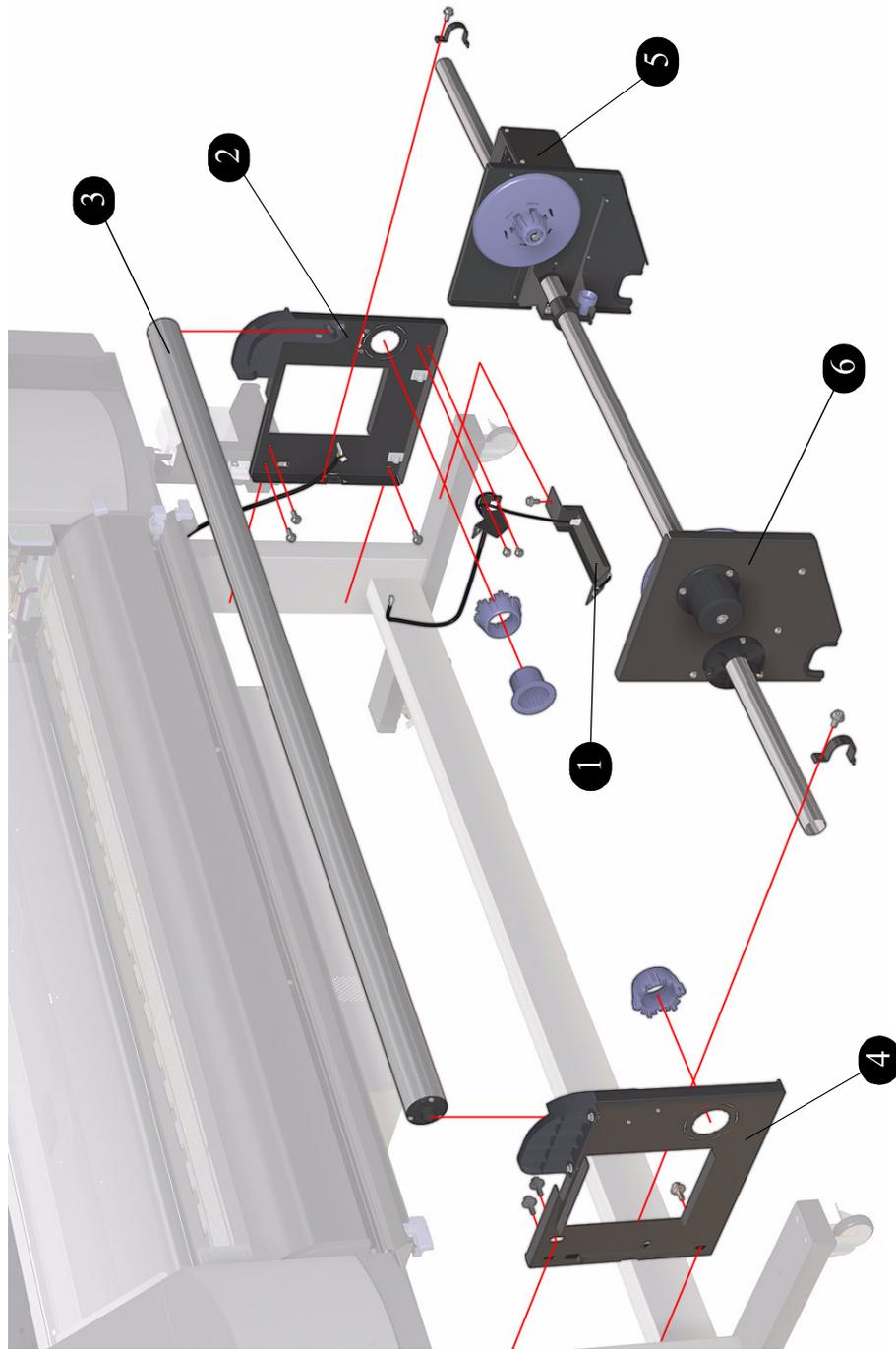
Figure 9: Take-Up-Reel Assemblies

Capping Assemblies

Capping Assemblies			
Reference on Drawing	**HP Part Number**	**Quantity**	**Description/Comments**
1	Q6670-60059	1	Capping Station Motor
2	Q6670-60060	1	Cap Motor Assembly
3	Q6670-60061	1	Capping Station Lever
4	Q6670-60062	6	Prime Assembly
5	Q6670-60063	1	Capping Station Assembly
6	Q6670-60064	1	Valve Assembly
7	Q6670-60065	6	Capping Unit
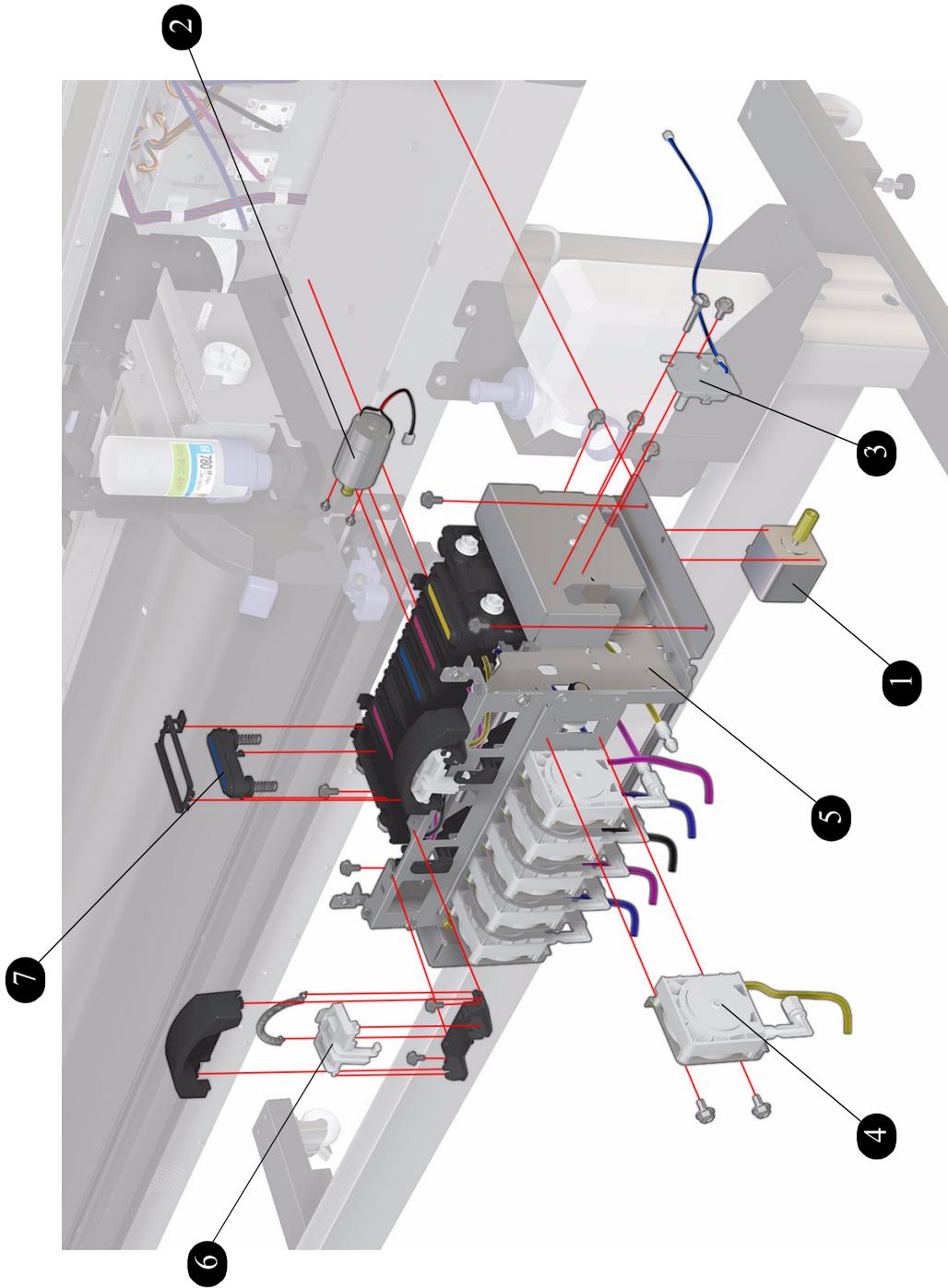
Figure 10: Capping Assemblies

Wiping Assemblies

Wiping Assemblies			
Reference on Drawing	**HP Part Number**	**Quantity**	**Description/Comments**
1	Q6670-60066	1	Wiping Station
2	Q6670-60067	1	Wiper Case
3	Q6670-60077	1	Wiper Blade
4	Q6670-60068	1	Wiper Cleaning Assembly
5	Q6670-60069	1	Wiper Blade Position Sensor
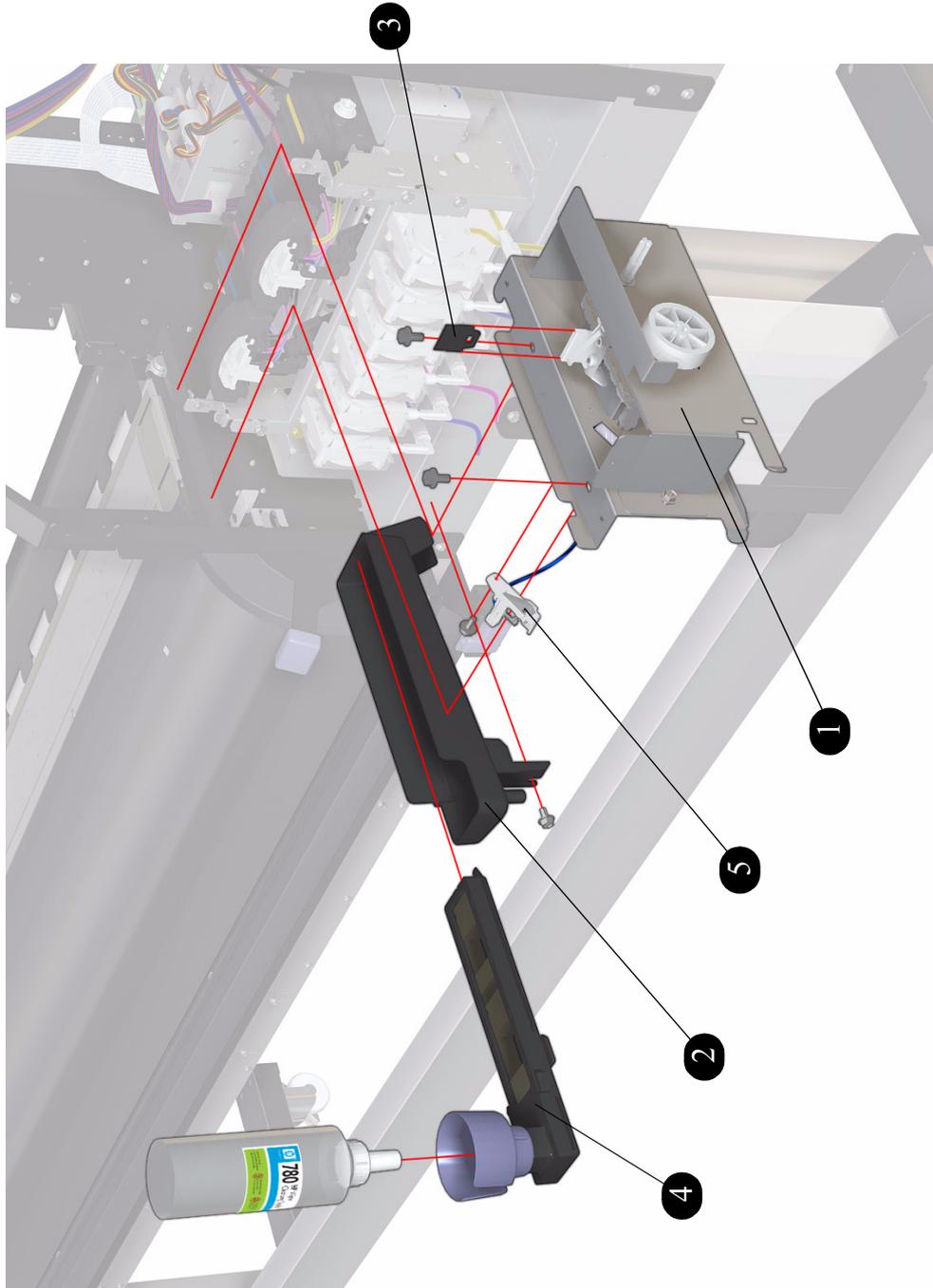
Figure 11: Wiping Assemblies

Ink Supply Assemblies

Ink Supply Assemblies			
Reference on Drawing	HP Part Number	Quantity	Description/Comments
1	Q6670-60070	1	Ink Supply Station PCA
2	Q6670-60071	1	Ink Supply Station
3	Q6670-60072	6	Ink Filter Assembly
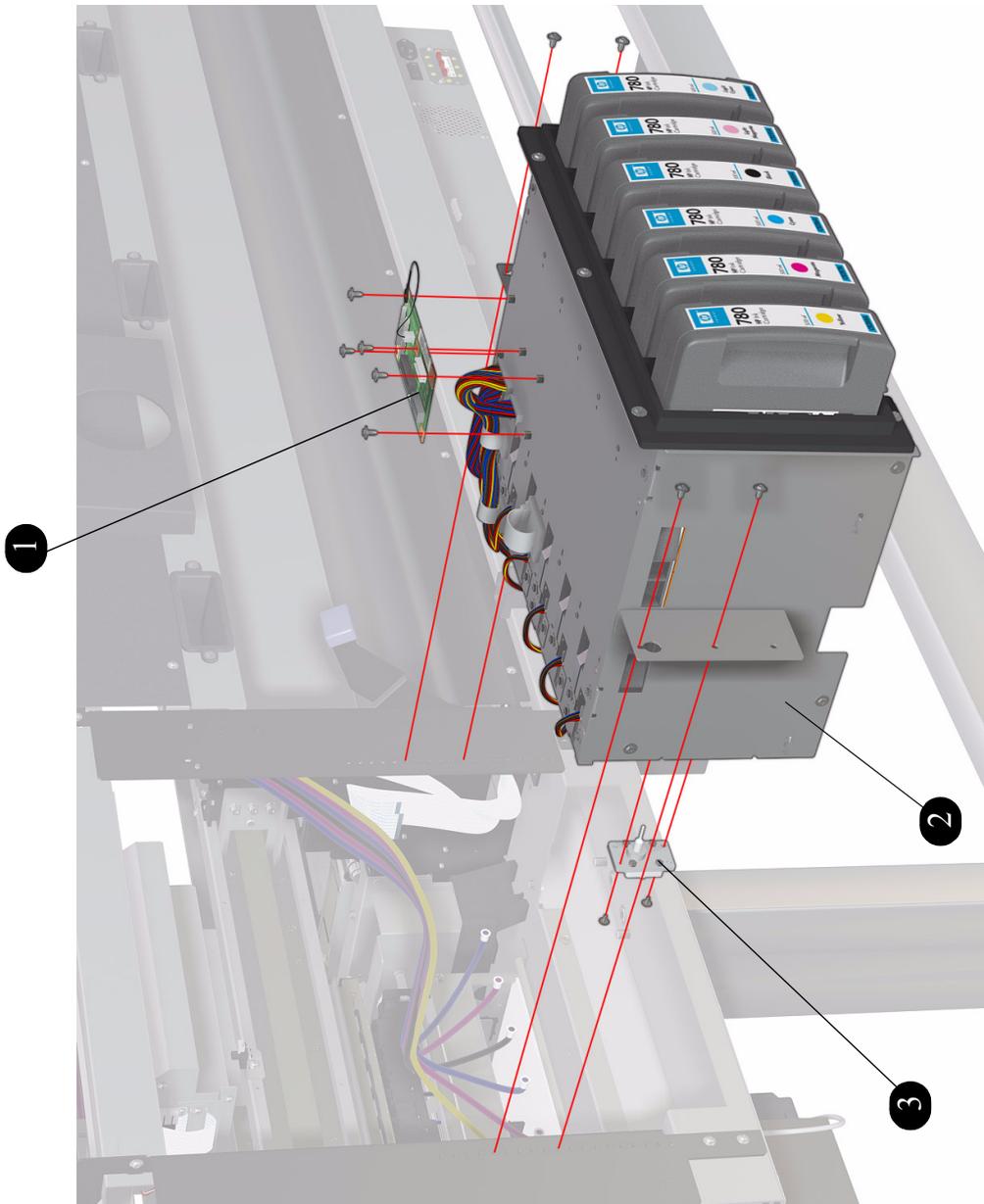
Figure 12: Ink Supply Assemblies

Printer Stand and Waste Bottle

Printer Stand and Waste Bottle			
Reference on Drawing	HP Part Number	Quantity	Description/Comments
1	Q6670-60086	1	Leg Assembly
2	Q6670-60087	1	X-Brace Assembly
-	Q6670-60088	1	Hardware Kit
3	Q6670-60089	1	Foot Assembly
4	Q6670-60074	1	Waste Bottle
5	Q6670-60075	1	Waste Bottle Holder and Sensor
6	Q6670-60076	1	Waste Drainage Assembly
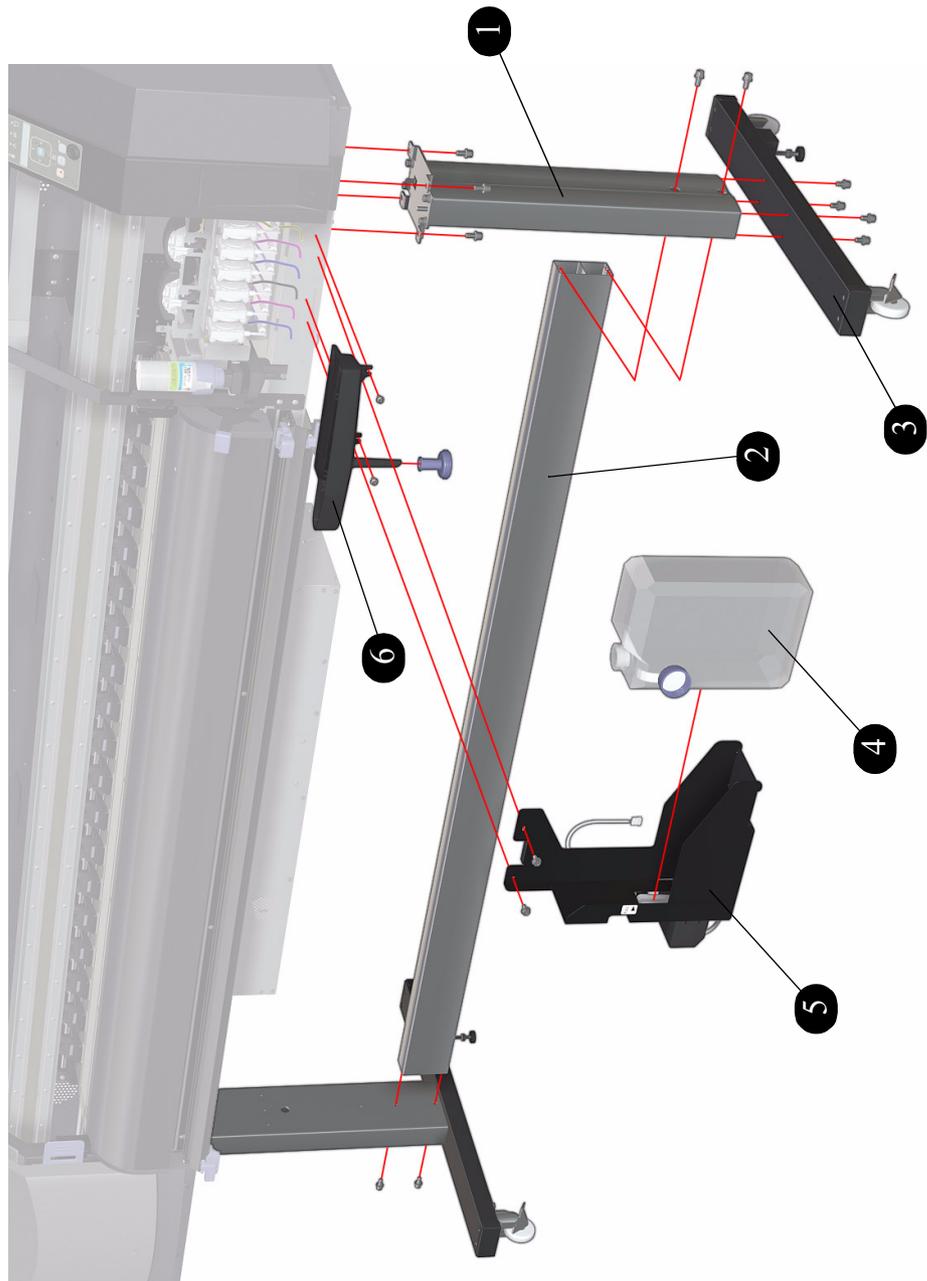
Figure 13: Printer Stand and Waste Bottle

Parts and Diagrams

Service Tools and Miscellaneous Items

Service Tools			
Reference on Drawing	**HP Part Number**	**Quantity**	**Description/Comments**
1	Q6670-60082	4	Carriage Height Adjustment Tool
2	Q6670-60081	1	Head Position Adjustment Tool
-	Q6670-60083	1	Transportation Kit
-	Q6670-60090	1	Service Preventive Maintenance Kit
-	Q6670-60091	1	CAR Kit
-	-	1	Push/Pull Gauge

7-28   HP Designjet 8000s Series Printer Service Manual
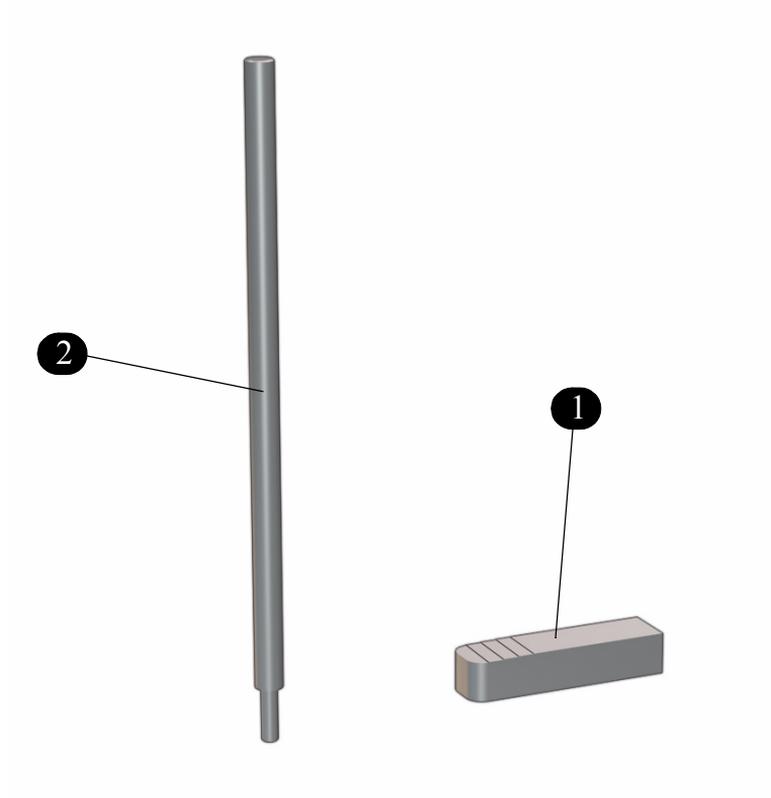
Figure 14: Service Tools

Removal and Installation

8

Introduction

This chapter is a step by step guide to the removal and installation of the key components in the printer. You may find it useful to tick off the steps as they are performed. Use the illustration at each procedure to identify the parts referred to in the text.

The procedures appear in order of removal. So the whole machine can be stripped down by starting at the beginning of this chapter and working through the subsequent procedures.

> **Before using this chapter to remove and install a new component, always make sure that you have performed the relevant service test from Chapter 4. If the test passes you will not need to replace the component.**

Safety Precautions

Review WARNING and CAUTION symbols and instructions before you service the printer. Follow these warnings and cautions for your protection and to avoid damaging the printer.

> **Serious shock hazard leading to death or injury may result if you do not take the following precautions:**
>
> **Ensure that the ac power outlet (mains) has a protective earth (ground) terminal.**
>
> **Switch the Printer Off, and disconnect it from the power source prior to performing any maintenance.**
>
> **Prevent water or other liquids from running onto electrical components or circuits, or through openings in the module.**

Electrostatic Discharge (ESD) Precautions

To prevent damage to the Printer circuits from high-voltage electrostatic discharge (ESD):

1. Do not wear clothing that is subject to static build-up.

2. Do not handle integrated circuits (ICs) in carpeted areas.

3. Do not remove an IC or a printed circuit assembly (PCA) from its conductive foam pad or conductive packaging until you are ready to install it.

4. Ground (earth) your body while disassembling and working on the Printer.

5. After removing a cover from the Printer, attach an earthing (ground) lead between the PCA common and earth ground. Touch all tools to earth ground to remove static charges before using them on the Printer.

6. After removing any PCA from the Printer, place it on a conductive foam pad or into its conductive packaging to prevent ESD damage to any ICs on the PCA.

Window

Removal

Switch off the product and remove the power cable.

1. Open the Window.

2. Loosen the screw that secures the Right Hinge Pin.
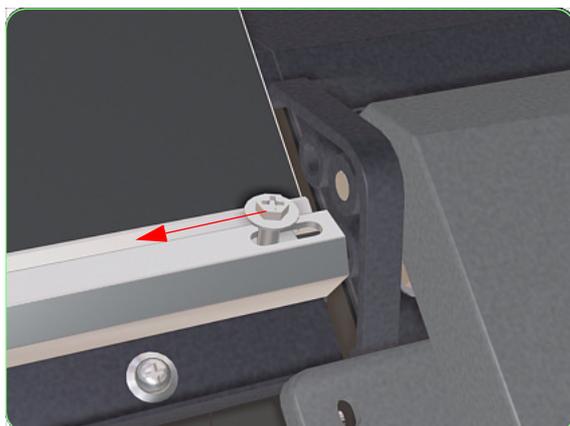
3. Retract the Right Hinge Pin by moving it to the left (using the screw).
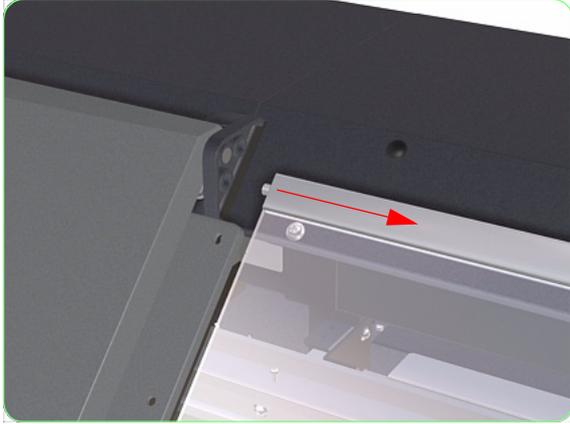
4. Release the Window from the left hand side.
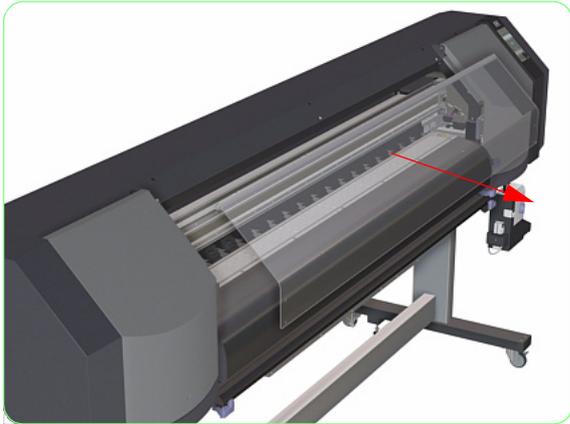

5. Remove the Window from the Printer.

Left and Right Door

Removal

Switch off the product and remove the power cable.

1. Remove the Window ⇒ Page *8-3*.
2. Open the Left or Right Door.

3. Remove one screw that secures the Hinge from the bottom.

4. Close the Left or Right Door.
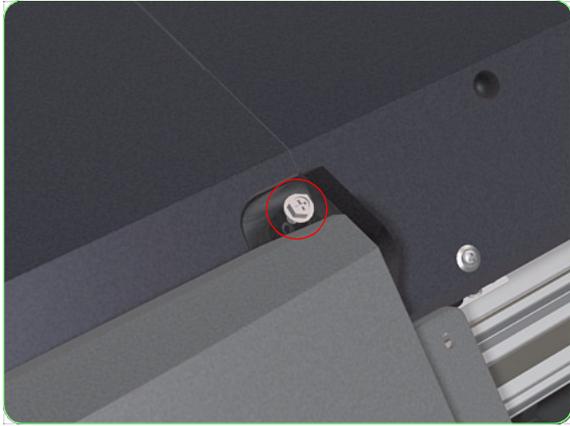
5. Remove one screw that secures the Hinge from the top.
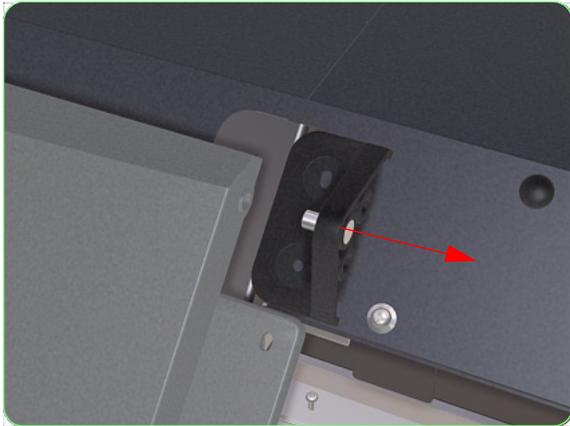
6. Remove the Hinge from the printer.
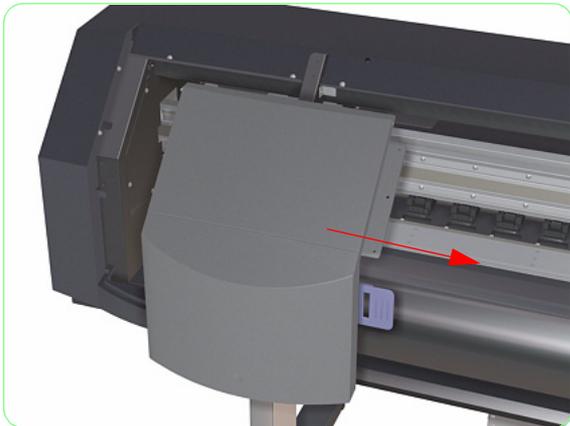
7. Remove the Left or Right Door from the printer.

Left and Right Trim

Removal

1. Open the Window.

2. Open the Left or Right Door.

3. Remove two screws that secure the Left or Right Trim to the printer.
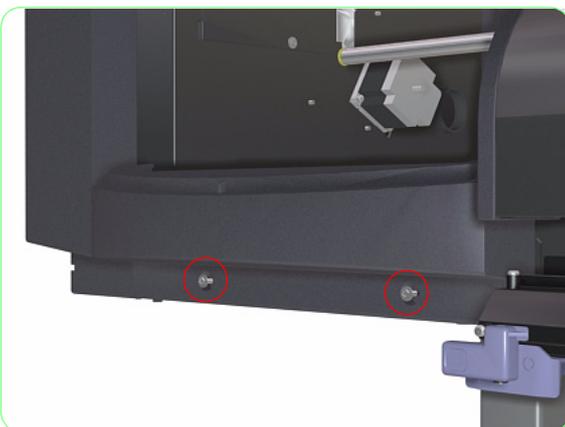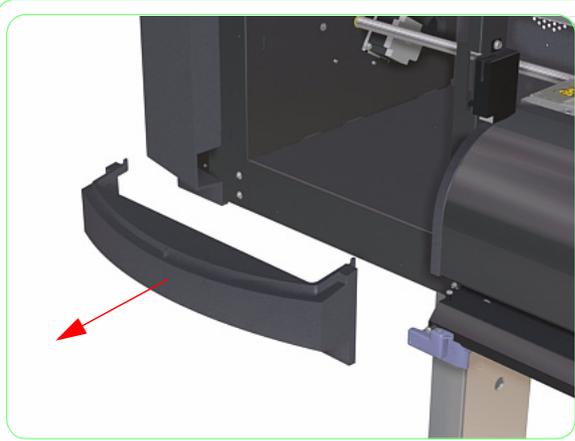
4. Remove the Left or Right Trim from the Printer.

Left Top Cover

Removal

1. Remove the Window ⇒ Page *8-3*.

2. Remove the Left Door ⇒ Page *8-5*.

3. Remove two screws that secure the Left Top Cover to the front of the Printer.
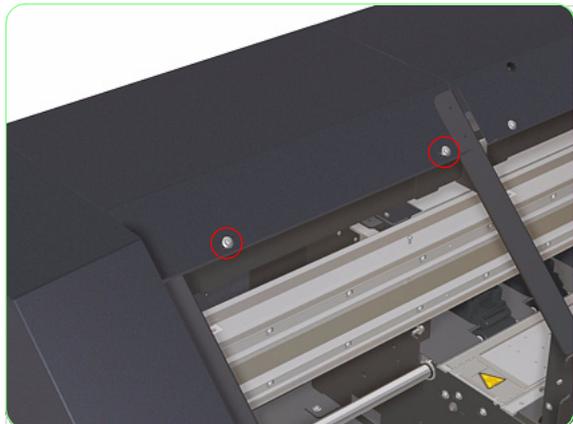
4. Remove two screws that secure the Left Top Cover to the rear of the Printer.
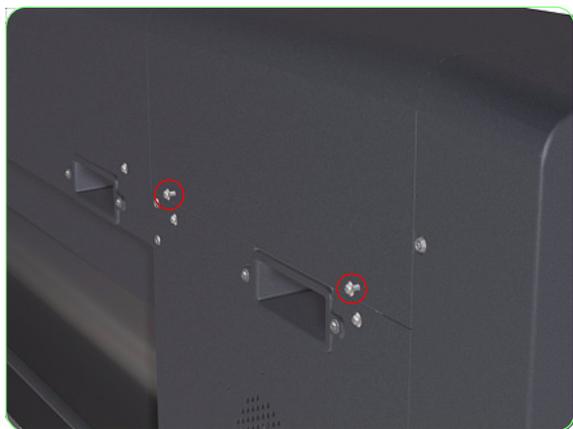
5. Remove the Left Top Cover from the Printer.

Right Top Cover

Removal

Switch off the product and remove the power cable.

1. Remove the Window ⇒ Page *8-3*.

2. Remove the Right Door ⇒ Page *8-5*.

3. Remove three screws that secure the Right Top Cover to the front of the Printer.

4. Remove two screws that secure the Right Top Cover to the rear of the Printer.
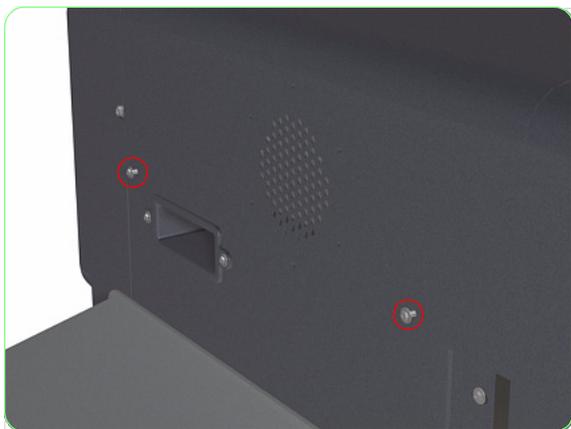
5. Remove the Right Top Cover from the Printer.

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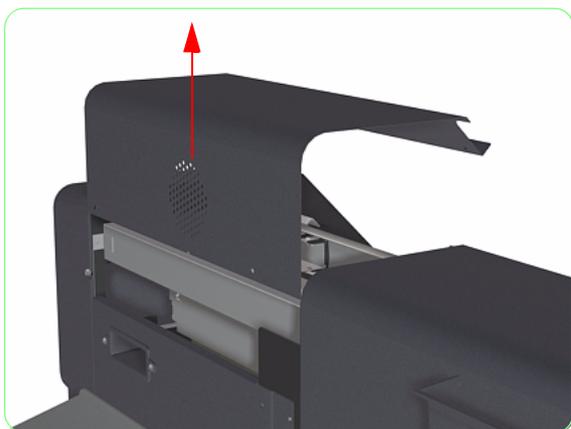
Left Side Cover

Removal

Switch off the product and remove the power cable.

1. Remove the Window ⇒ Page *8-3*.

2. Remove the Left Door ⇒ Page *8-5*.

3. Remove the Left Top Cover ⇒ Page *8-9*.

4. Remove four screws that secure the Left Side Cover to the Printer.
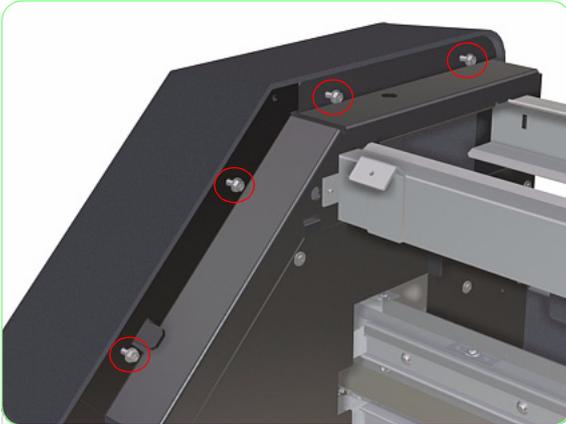
5. Remove five screws that secure the Left Side Cover to the Printer.
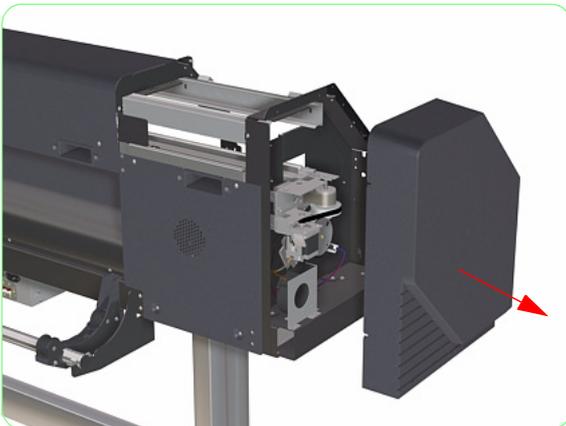
6. Remove the Left Side Cover from the Printer.

Right Side Cover

Removal

Switch off the product and remove the power cable.

1. Remove the Window ⇒ Page *8-3*.
2. Remove the Right Door ⇒ Page *8-5*.
3. Remove the Right Top Cover ⇒ Page *8-10*.
4. Remove three screws that secure the Right Side Cover to the Printer.

5. Remove two screws (located underneath the Front Panel) that secure the Right Side Cover to the Printer.
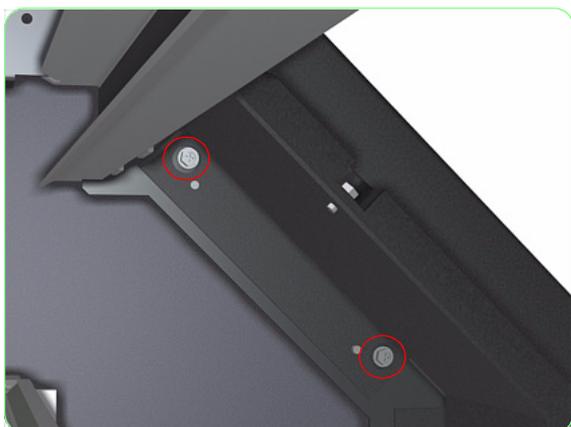
6. Remove three screws that secure the Right Side Cover to the Printer.
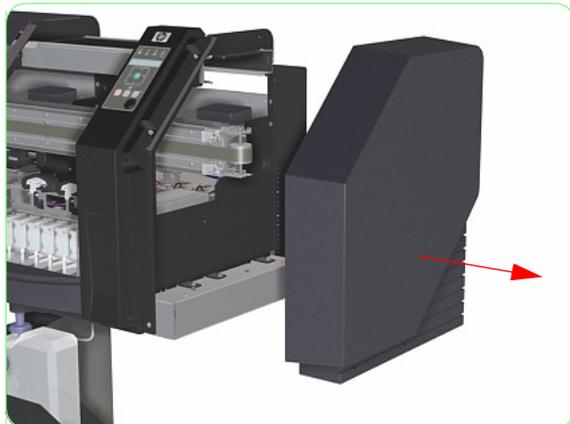
7. Remove the Right Side Cover from the Printer.

Left Back Cover

Removal

Switch off the product and remove the power cable.
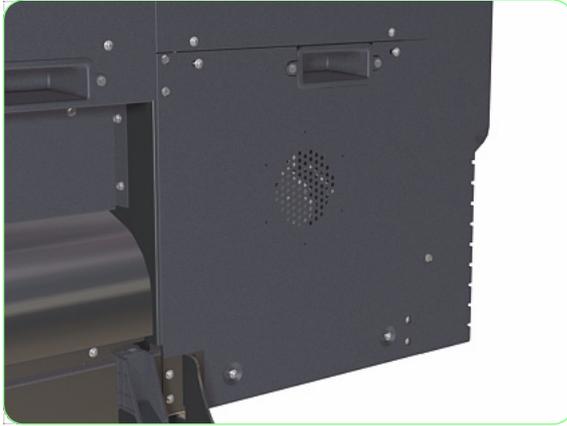
1. Remove four screws that secure the Left Back Cover to the Printer.

   If the Exhaust Attachments are installed, make sure you remove them before installing a new Left Back Cover.
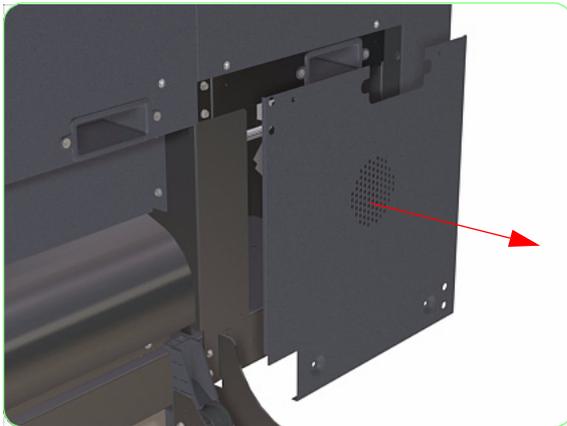
2. Remove the Left Back Cover from the Printer.

Top Cover

Removal

Switch off the product and remove the power cable.

1. Remove the Window ⇒ Page *8-3*.

2. Remove the Documentation Holder from the Printer.

3. Remove five screws that secure the Top Cover to the rear of the Printer.

4. Remove three screws that secure the Top Cover to the front of the Printer.
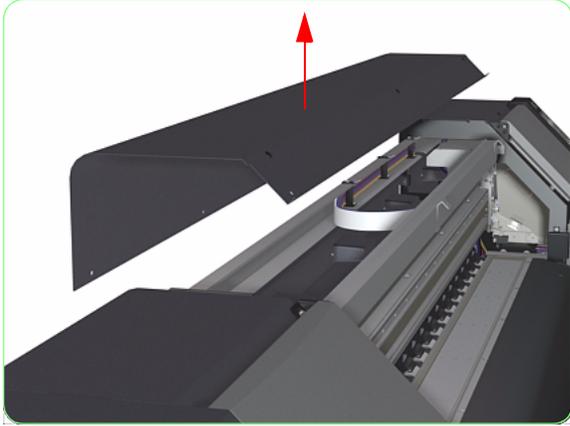
5. Remove the Top Cover from the Printer.

Back Cover

Removal

Switch off the product and remove the power cable.

1. Remove nine screws that secure the Back Cover to the Printer.
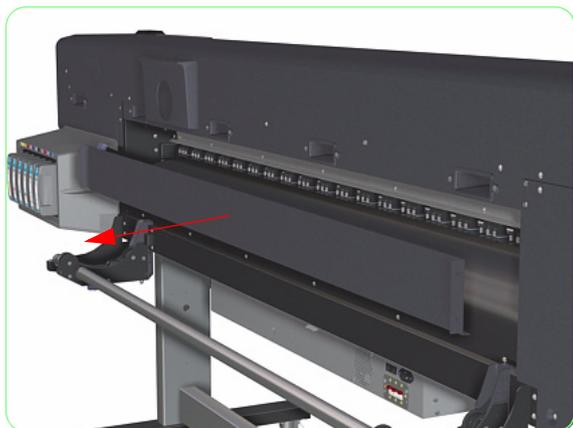
2. Remove the Back Cover from the Printer.

Maintenance Kit Drawer and Cover

Removal

Switch off the product and remove the power cable.

1. Remove the Window ⇒ Page *8-3*.
2. Remove the Right Door ⇒ Page *8-5*.
3. Remove the Right Top Cover ⇒ Page *8-10*.
4. Remove the Right Side Cover ⇒ Page *8-12*.
5. Open the Maintenance Kit Drawer.
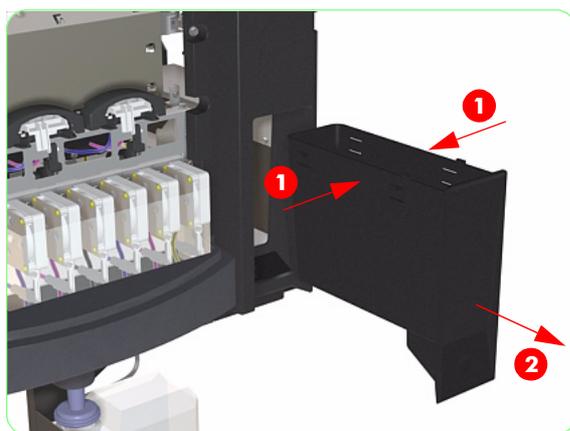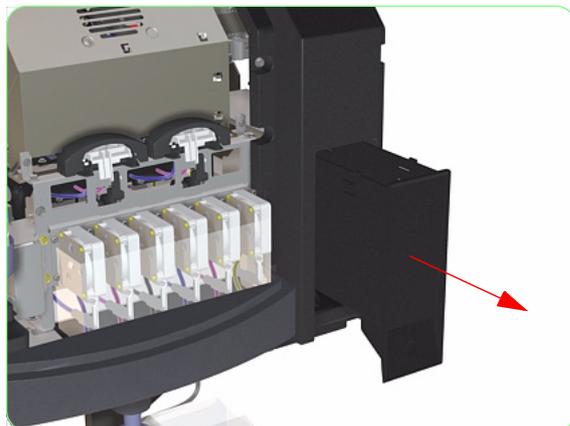
6. Squeeze both sides of the Maintenance Kit Drawer to release the clips and remove from the Printer.

7. Remove three screws that secure the Maintenance Kit Drawer Cover to the Printer.
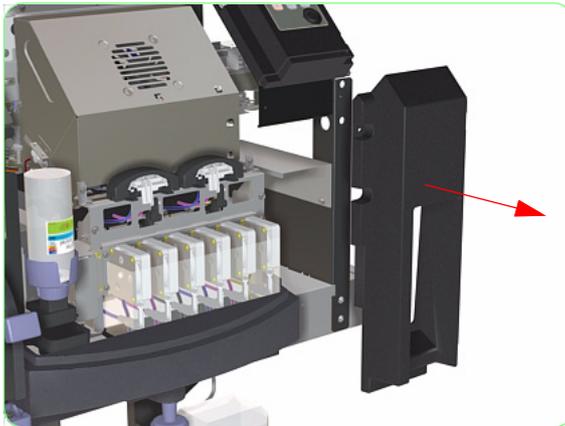
8. Remove the Maintenance Kit Drawer Cover from the Printer.

Ink Cartridge Bay Cover

Removal

Switch off the product and remove the power cable.

1. Remove two screws (one from each side) that secure the Ink Cartridge Bay Cover to the Printer.
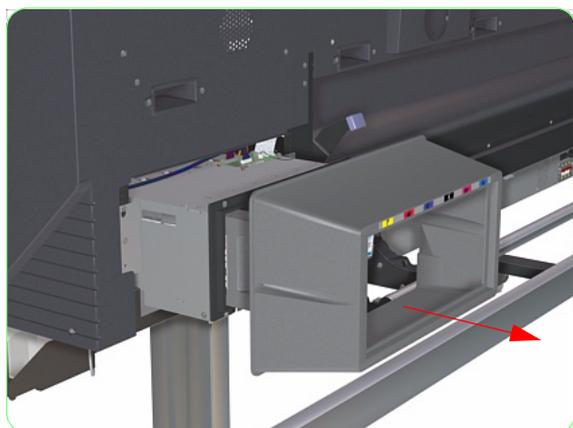
2. Remove the Ink Cartridge Bay Cover from the Printer.

Front Panel

Removal

Switch off the product and remove the power cable.

1. Remove the Window ⇒ Page *8-3*.

2. Remove the Right Door ⇒ Page *8-5*.

3. Remove the Right Top Cover ⇒ Page *8-10*.

4. Remove the Right Side Cover ⇒ Page *8-12*.

5. Remove three screws that secure the Front Panel to the Printer.

6. Remove the Front Panel from the Printer.

7. Disconnect the Cable from the Front Panel.

Window Sensors (Left or Right)

Removal

1. Open the Window and the Left or Right Door.
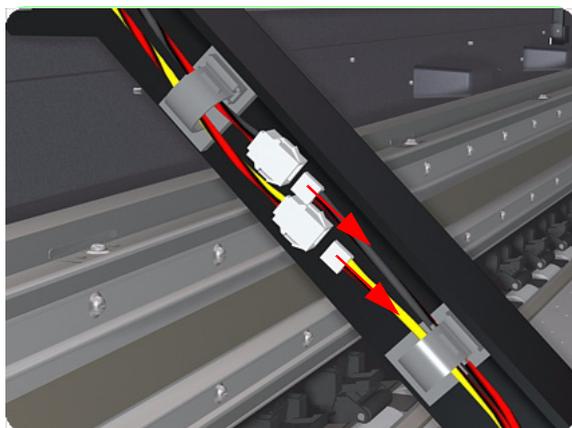
2. Disconnect the Window Sensor Cables.

3. Remove one screw that secures the Window Sensor Cover to the Printer.
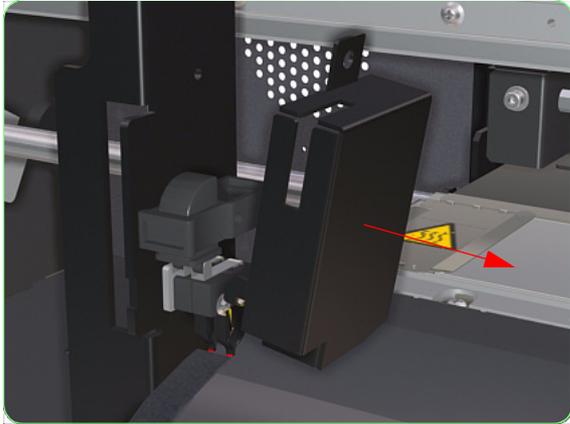
4. Remove the Window Sensor Cover from the Printer.
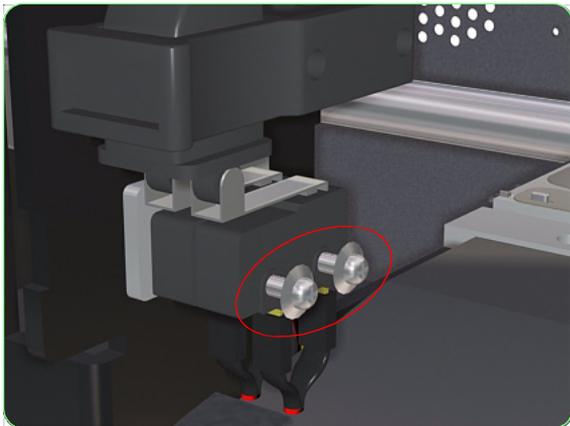
5. Remove two screws that secure the Window Sensors to the Printer.
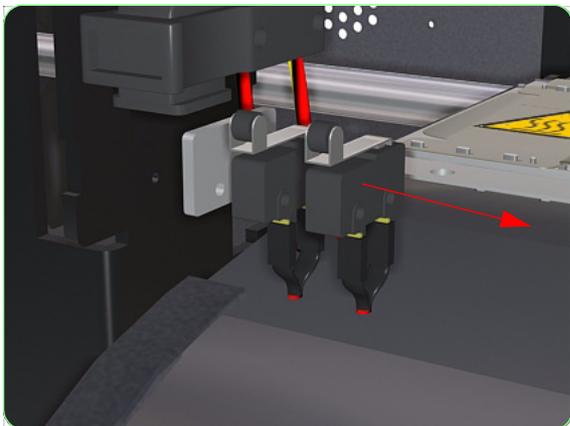
6. Remove the Window Sensors from the Printer.

Main PCA

Removal

Switch off the product and remove the power cable.
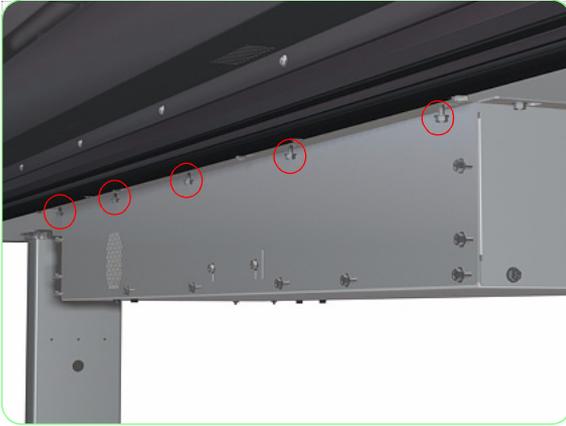
1. Loosen five screws that secure the top of the Front Electronics Module Cover.

2. Remove ten screws that secure the Front Electronics Module Cover.
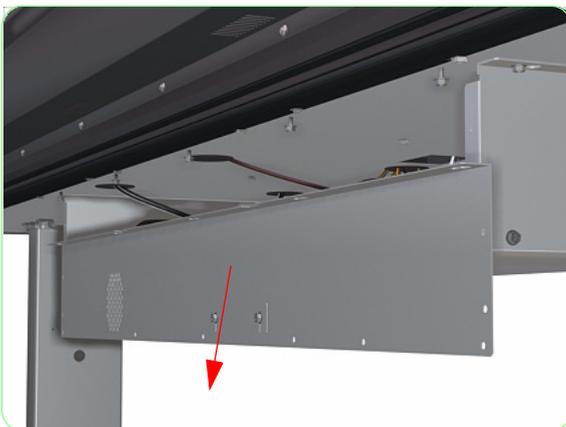
3. Remove the Front Electronics Module Cover.
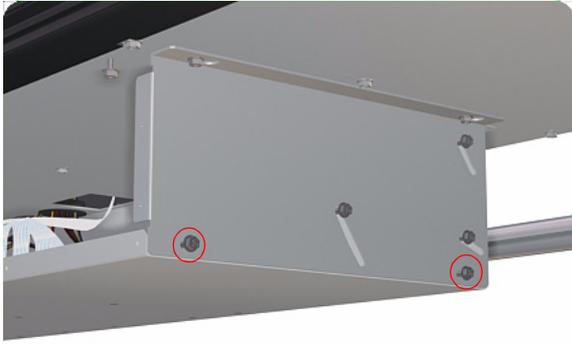
4. Remove two screws from the left and right side of the Electronics Module.

5. Loosen three screws on the left and right side of the Electronics Module

6. Loosen five screws that secure the rear of the Electronics Module.
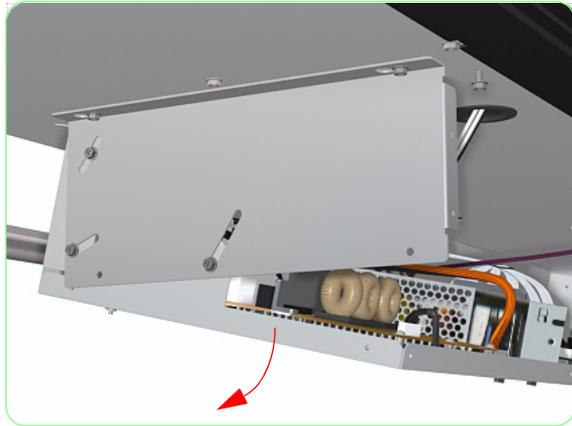
7. Open the Electronics Module.

8. Remove one screw from the rear of the Electronics Module.

9. Disconnect ALL cables from the Main PCA.
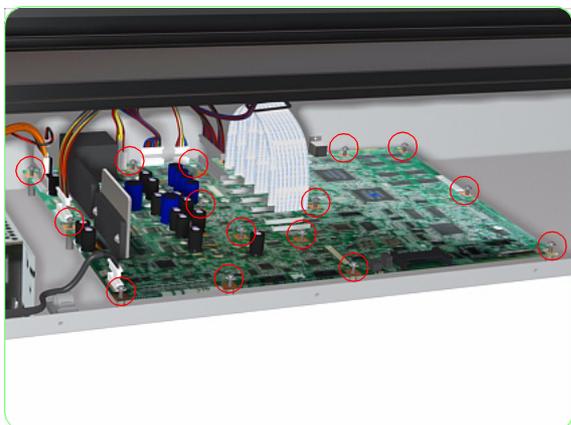
10. Remove 15 screws that secure the Main PCA to the Electronics Module.
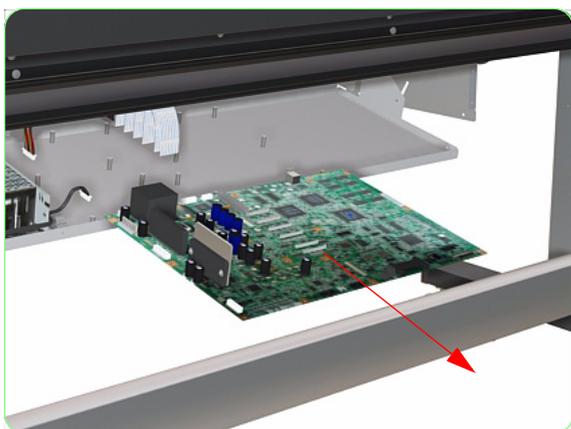
11. Remove the Main PCA from the Electronics Module.

> **Make sure that you remove the EEPROM from the OLD Main PCA and install it on the NEW Main PCA.**

Once the NEW Main PCA is installed, power ON the Printer and do the following:

1. Enter into the Maintenance Mode ⇒ Page *4-6*.

2. Press the **Shift** key once and then the ◄ key to enter in to the Setup menu.

3. In the Setup submenu, scroll to "Save Calibs" and press the **OK** key.

```
# SAVE CALIBS
>
```

4. You will need to confirm that you want to save the EEPROM Calibrations by pressing the **OK** key.

```
# SAVE CALIBS
* OK?
```

5. In the Setup submenu, scroll to "Save EEPROM" and press the **OK** key.

```
# SAVE EEPROM
>
```

6. You will need to confirm that you want to save the EEPROM contents by pressing the **OK** key.

> **If both the EEPROM and the Main PCA are replaced at the same time, please refer to Chapter 1 for further information.**

EEPROM

Removal

Switch off the product and remove the power cable.

1. Loosen five screws that secure the top of the Front Electronics Module Cover.

2. Remove ten screws that secure the Front Electronics Module Cover.

3. Remove the Front Electronics Module Cover.

4. Remove two screws from the left and right side of the Electronics Module.

5. Loosen three screws on the left and right side of the Electronics Module

6. Loosen five screws that secure the rear of the Electronics Module.
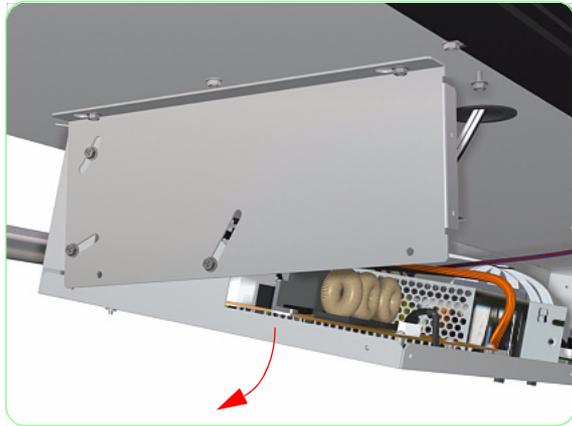
7. Open the Electronics Module.
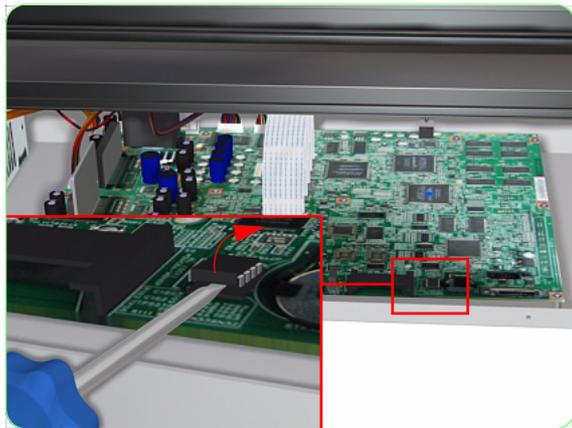
8. Using a small flat-head Screwdriver, remove the EEPROM from the Main PCA.

Once the NEW EEPROM is installed, power ON the Printer and do the following:

1. The printer will automatically restore the EEPROM data from the system backup data stored in the Main PCA.

2. If the EEPROM is not initialized, the printer will start up with an EEPROM error (error code 1109). In this case, switch Off the printer and then ON again.

3. If the EEPROM error (error code 1109) remains, it could mean that the backup data is damaged. Switch Off the Printer and then press the **Cancel** key and Power On button - This will allow you to skip the system check of the Printer.

4. Enter into the Maintenance Mode ($\Rightarrow$ Page *4-6*) and press the **Shift** key once and then the ◄ key to enter in to the Setup menu.

5. In the Setup submenu, scroll to "Restore Calibs" and press the **OK** key.

```
# RESTORE CALIBS
>
```
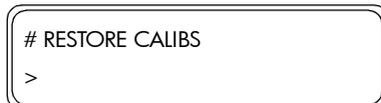
6. You will need to confirm that you want to restore the contents by pressing the **OK** key.

7. Power Off the Printer, wait a few seconds and then power the Printer On again.

> **If both the EEPROM and the Main PCA are replaced at the same time, please refer to Chapter 1 for further information.**

Power Supply Unit

Removal

Switch off the product and remove the power cable.

1. Loosen five screws that secure the top of the Front Electronics Module Cover.

2. Remove ten screws that secure the Front Electronics Module Cover.

3. Remove the Front Electronics Module Cover.
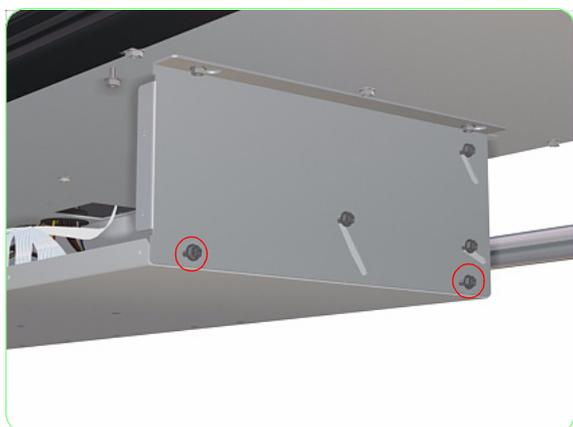
4. Remove two screws from the left and right side of the Electronics Module.

5. Loosen three screws on the left and right side of the Electronics Module

6. Loosen five screws that secure the rear of the Electronics Module.
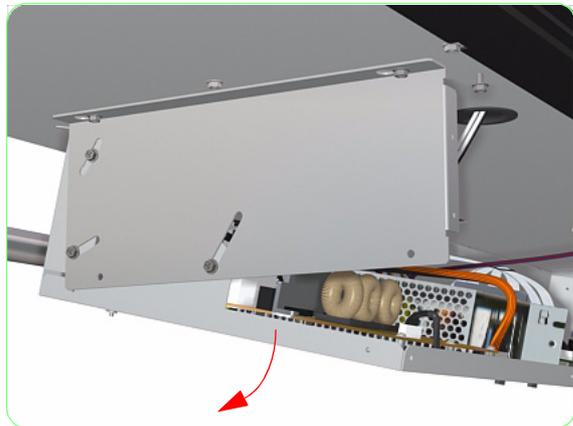
7. Open the Electronics Module.
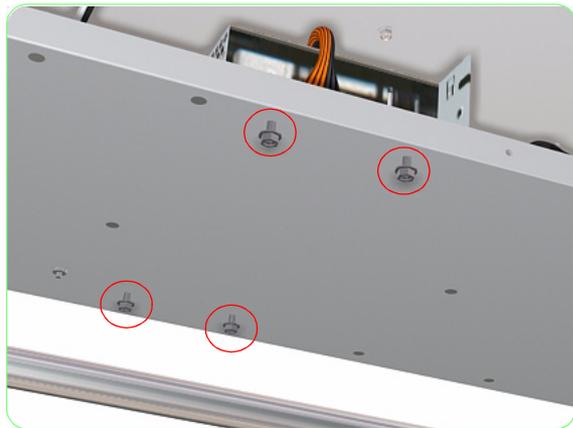
8. Remove four screws that secure the Power Supply Unit to the Electronics Module.
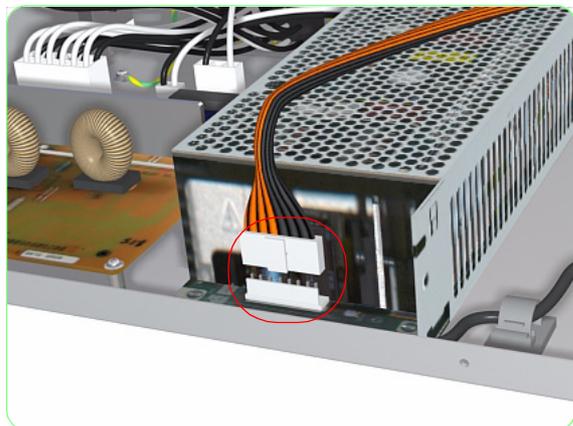
9. Disconnect the cable in front of the Power Supply Unit.
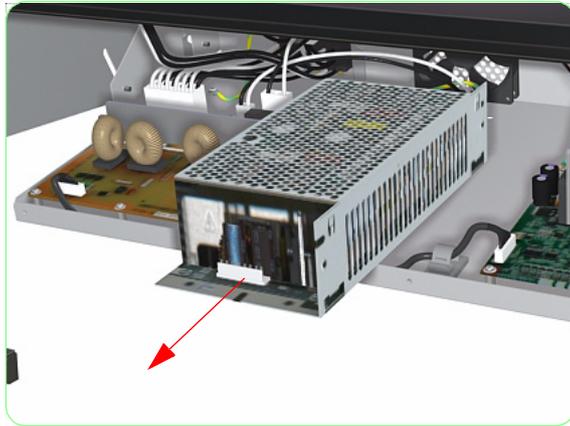
10. Pull the Power Supply Unit towards you slightly.
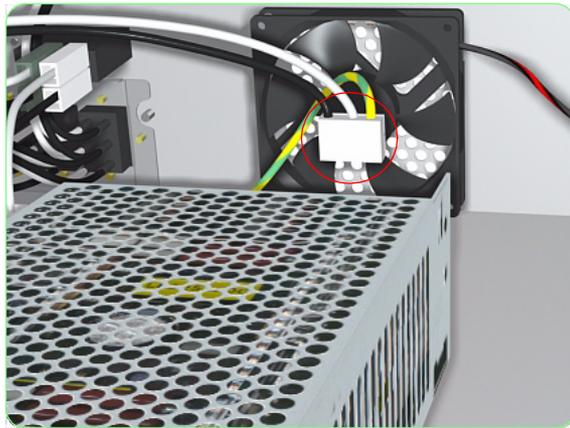
11. Disconnect the cable at the rear of the Power Supply Cable.
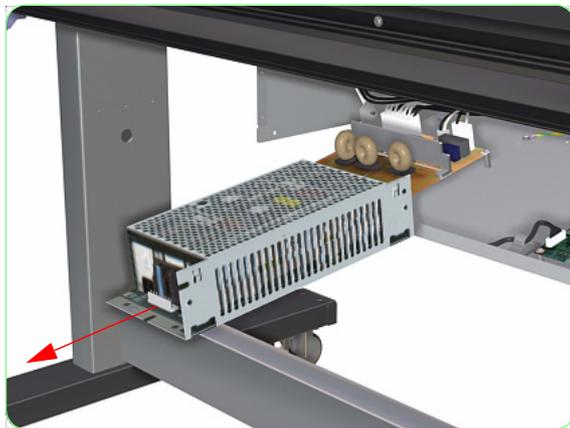
12. Remove the Power Supply Unit from the Electronics Module.

Electronics Cooling Fan

Removal

Switch off the product and remove the power cable.

1. Loosen five screws that secure the top of the Front Electronics Module Cover.

2. Remove ten screws that secure the Front Electronics Module Cover.

3. Remove the Front Electronics Module Cover.

4. Remove two screws from the left and right side of the Electronics Module.

5. Loosen three screws on the left and right side of the Electronics Module

6. Loosen five screws that secure the rear of the Electronics Module.
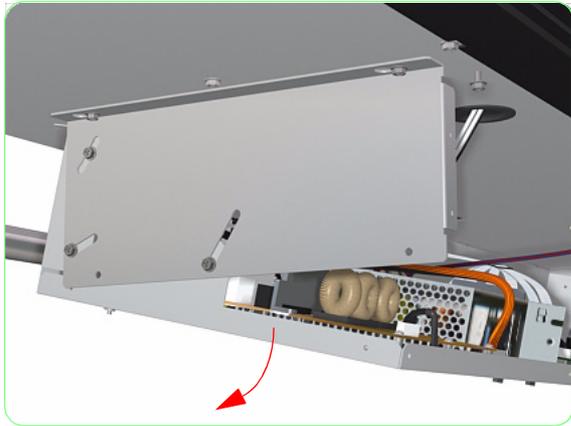
7. Open the Electronics Module.

8. Remove two screws that secure the Electronics Cooling Fan from the rear of the Electronics Module.
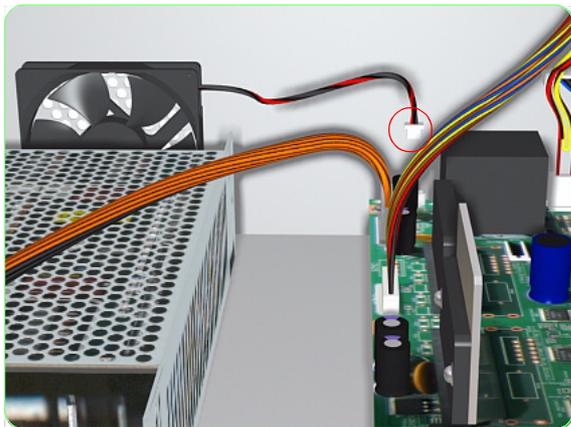
9. Disconnect the Electronics Cooling Fan Cable from the Main PCA.
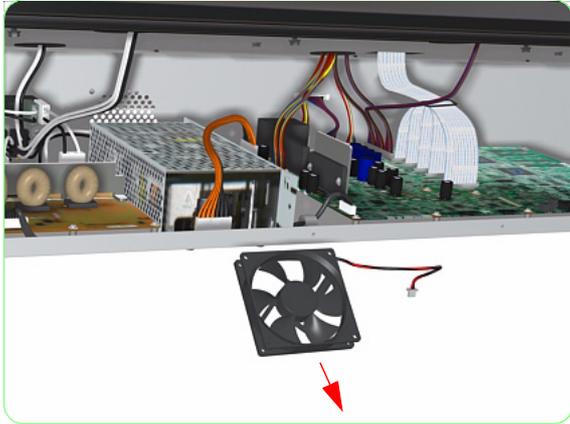
10. Remove the Electronics Cooling Fan from the Electronics Module.

Heater Relay Board

Removal

Switch off the product and remove the power cable.

1. Loosen five screws that secure the top of the Front Electronics Module Cover.

2. Remove ten screws that secure the Front Electronics Module Cover.
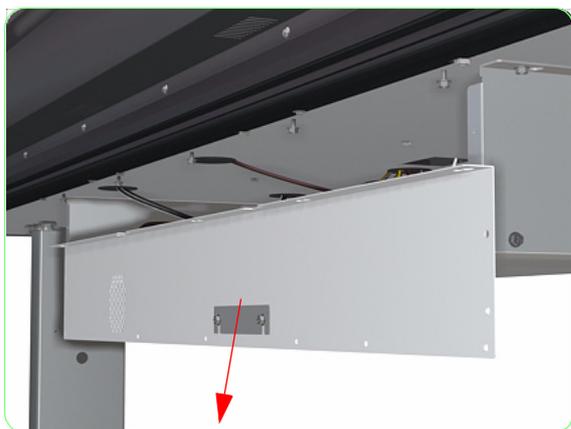
3. Remove the Front Electronics Module Cover.

4. Remove two screws from the left and right side of the Electronics Module.

5. Loosen three screws on the left and right side of the Electronics Module

6. Loosen five screws that secure the rear of the Electronics Module.
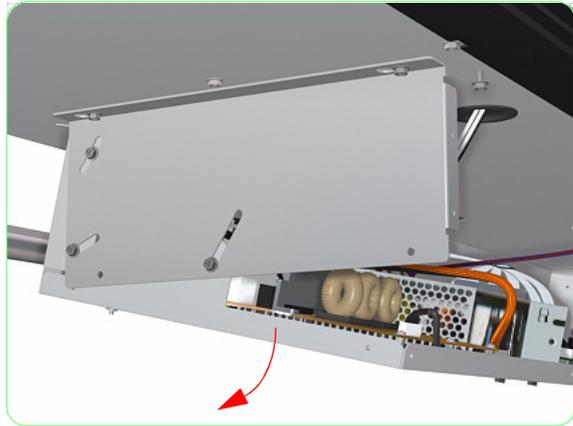
7. Open the Electronics Module.
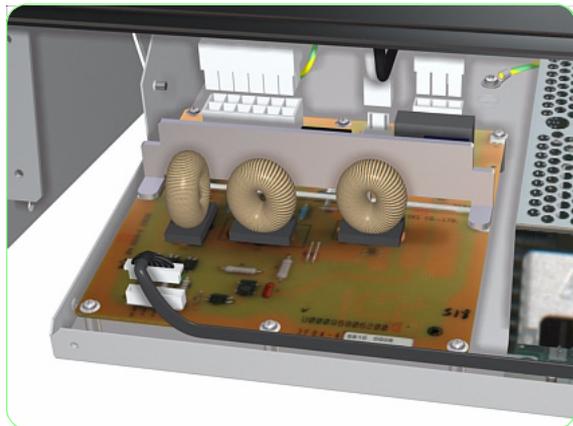
8. Disconnect ALL cables from the Heater Relay Board.
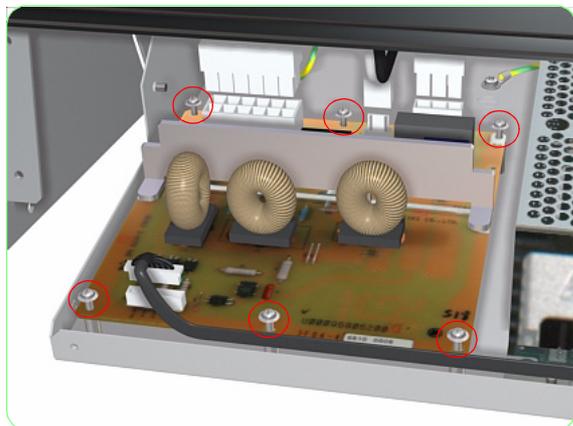
9. Remove six screws that secure the Heater Relay Board to the Electronics Module.
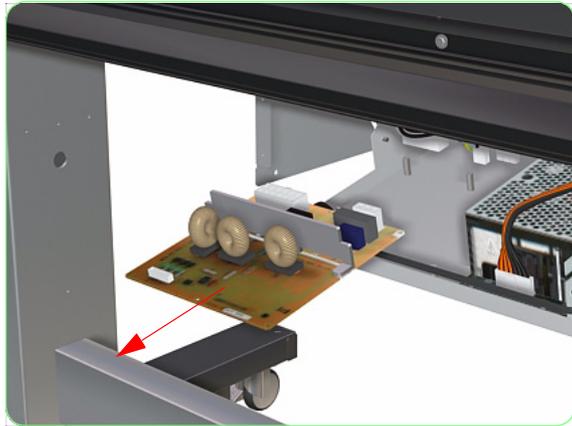
10. Remove the Heater Relay Board from the Electronics Module.

Front Heater

Removal
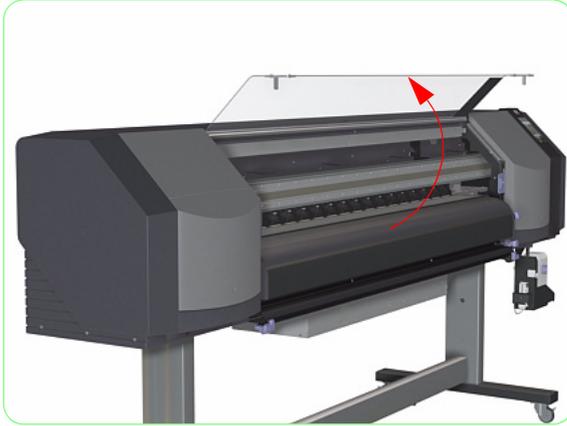
1. Open the Window.

2. Remove seven screws from the bottom that secure the Front Heater to the Printer.

3. Remove seven screws from the top that secure the Front Heater to the Printer.

4. Pull out the Front Heater slightly.
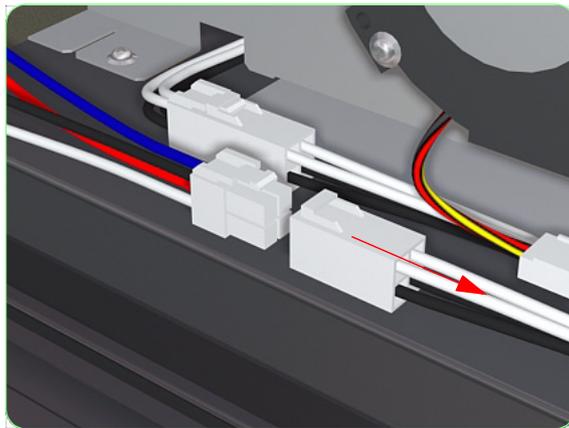
5. Disconnect the Front Heater Cable from the left hand side of the Printer.
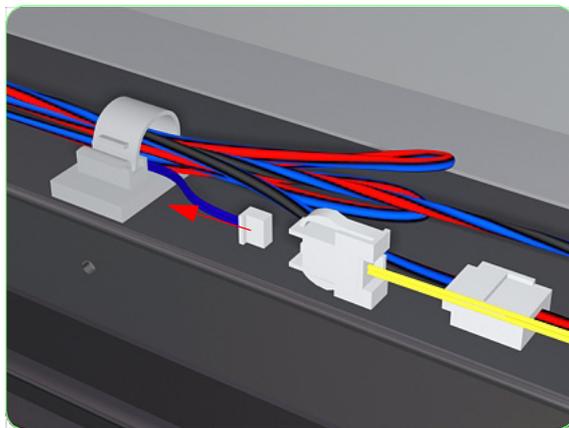
6. Disconnect the Front Heater Cable from the center of the Printer.
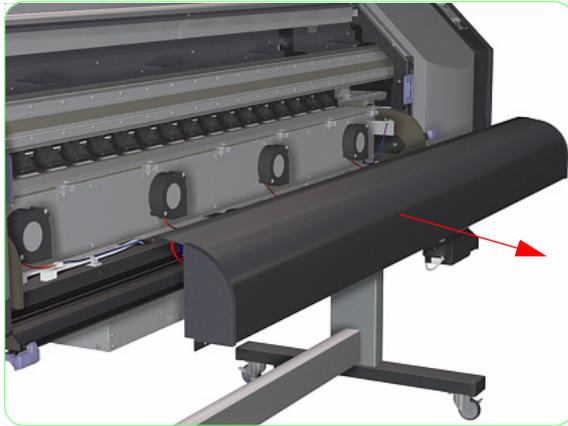
7. Remove the Front Heater from the Printer.

Rear Heater

Removal

Switch off the product and remove the power cable.

1. Remove the Back Cover ⇒ Page *8-17*.

2. Remove two screws (one from each side) from the top that secure the Rear Heater to the Printer.
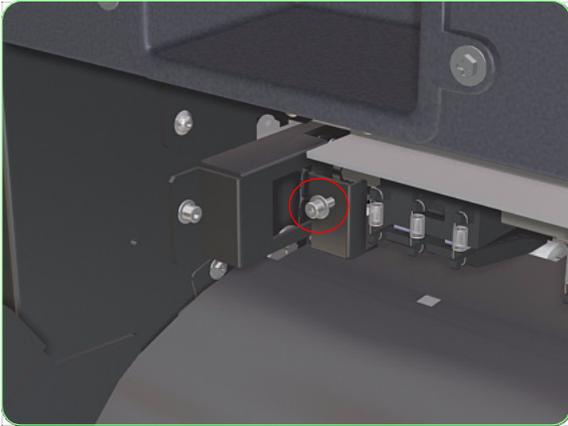
3. Remove six screws from the bottom that secure the Rear Heater to the Printer.

4. Pull out the Rear Heater slightly.
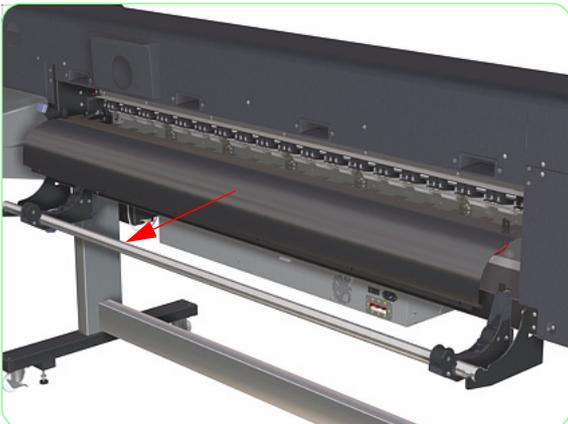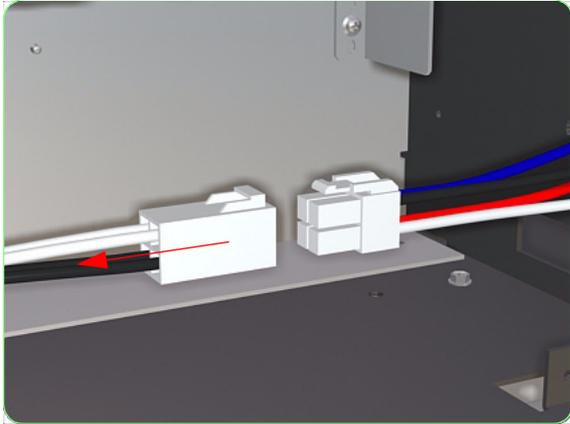
5. Disconnect the Rear Heater Cable from the right hand side of the Printer.
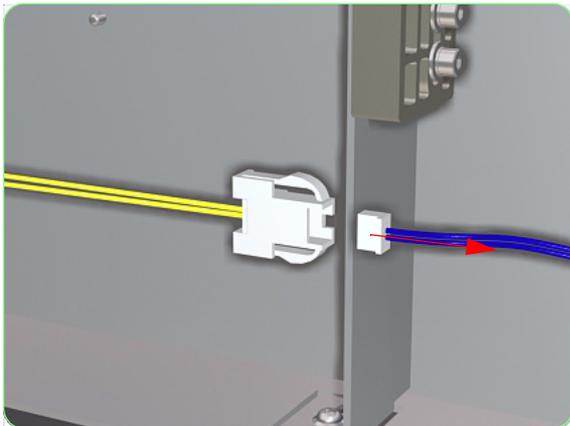
6. Disconnect the Rear Heater Cable from the left hand side of the Printer.
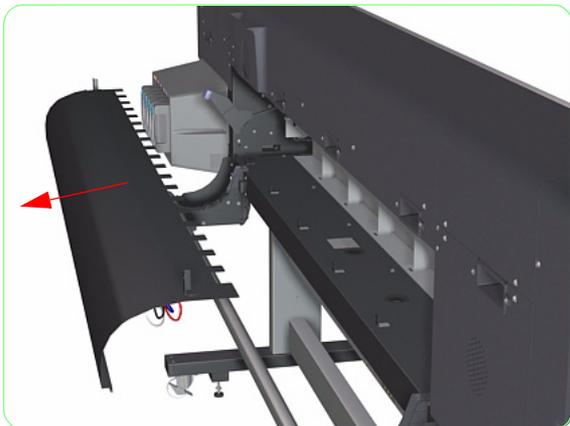

7. Remove the Rear Heater from the Printer.

Center Platen

Removal

Switch off the product and remove the power cable.

1. Remove the Front Heater ⇒ Page *8-44*.
2. Disconnect the Heater Cable.
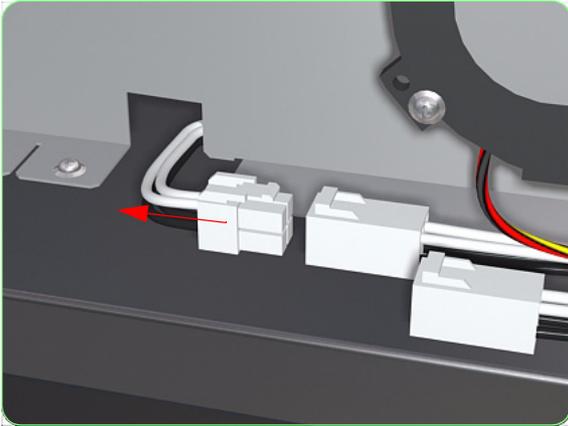
3. Remove screw that secures the Grounding Strip to the Center Platen.

4. Remove 27 screws that secure the Center Platen to the Printer.
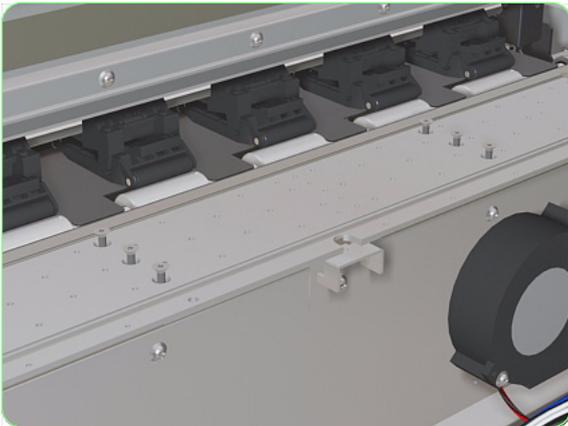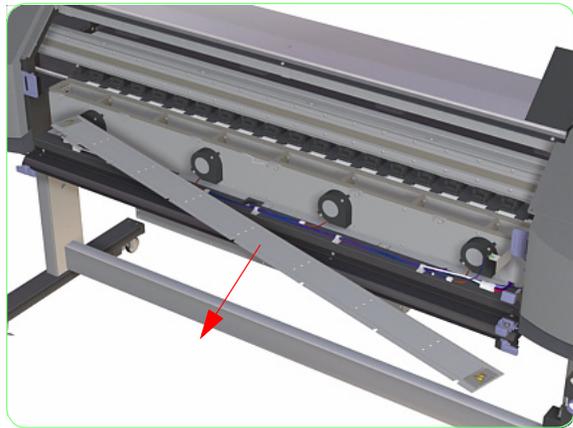
5. Remove the Center Platen from the Printer.

Once the Center Platen has been installed correctly, you must perform the Carriage Height Adjustment (refer to Page *5-5*).

Vacuum Fan

Removal

Switch off the product and remove the power cable.

1. Remove the Front Heater ⇒ Page *8-44*.
2. Disconnect the Vacuum Fan Cable.
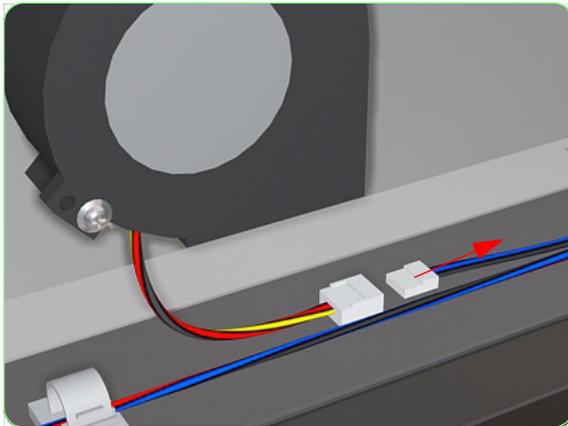
3. Remove two screws that secure the Vacuum Fan to the Printer.
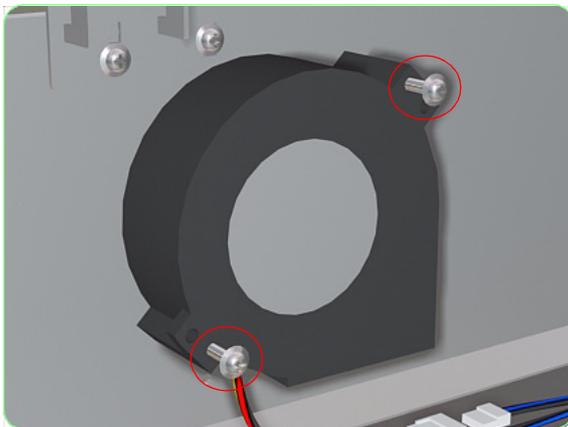
4. Remove the Vacuum Fan from the Printer.
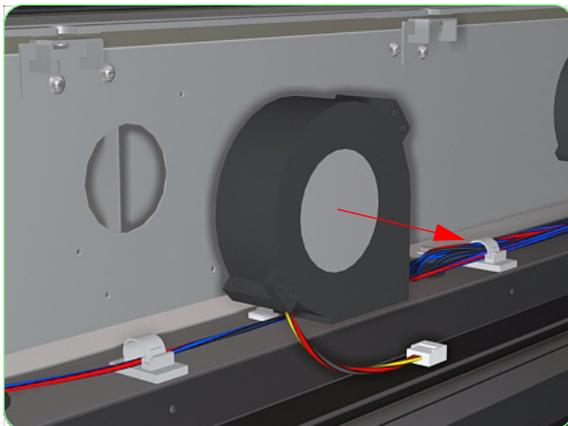
Media Sensor

Removal

Switch off the product and remove the power cable.

1. Remove the Front Heater ⇒ Page *8-44*.

2. Disconnect the Media Sensor Cable.
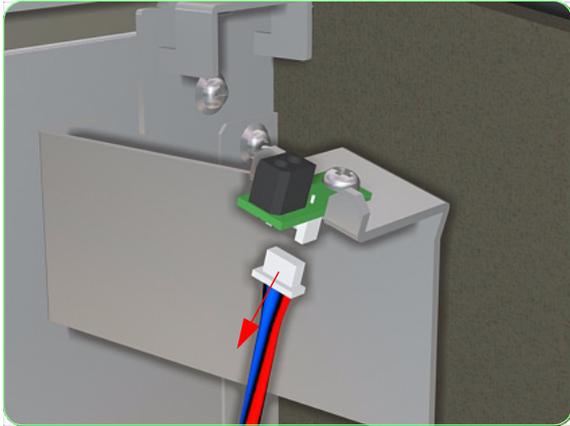
3. Remove one screw that secures the Media Sensor to the Printer.
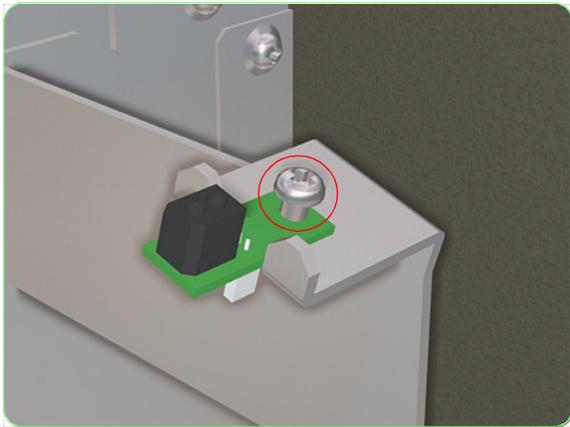
4. Remove the Media Sensor from the Printer.

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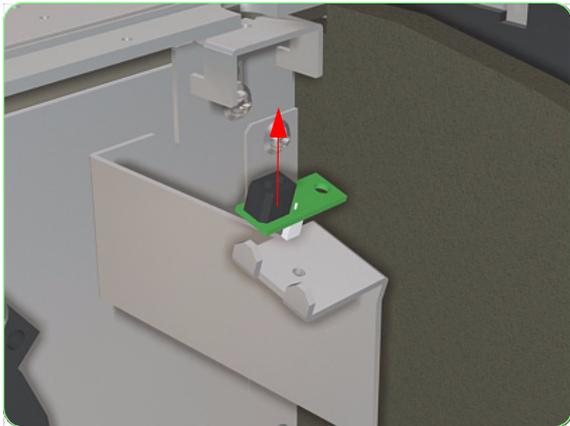
Media Lever Sensor

Removal

Switch off the product and remove the power cable.

1. Remove the Front Heater ⇒ Page *8-44*.
2. Disconnect the Media Lever Sensor Cable.
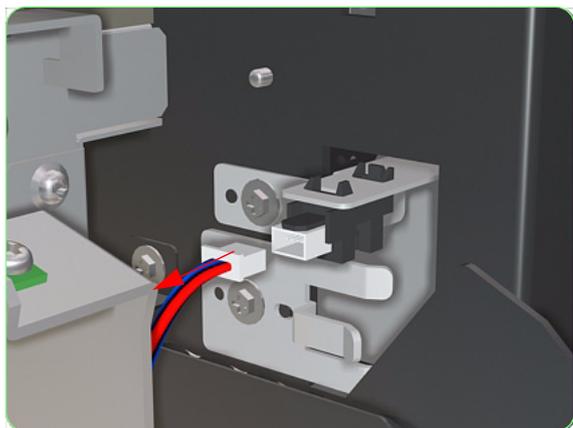
3. Remove one screw that secures the Media Lever Sensor to the Printer.
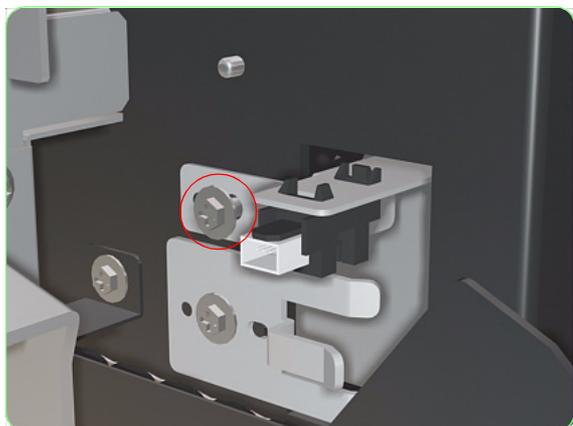
4. Remove the Media Lever Sensor from the Printer.
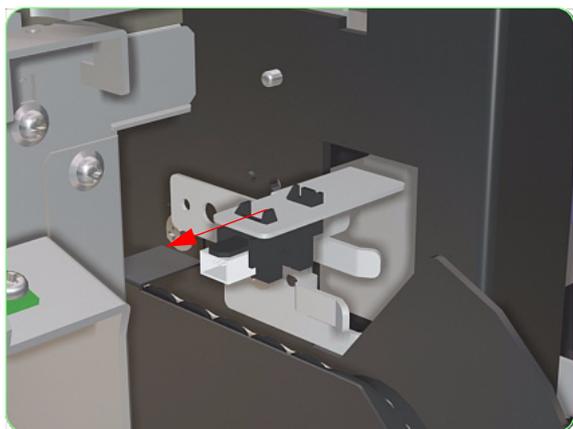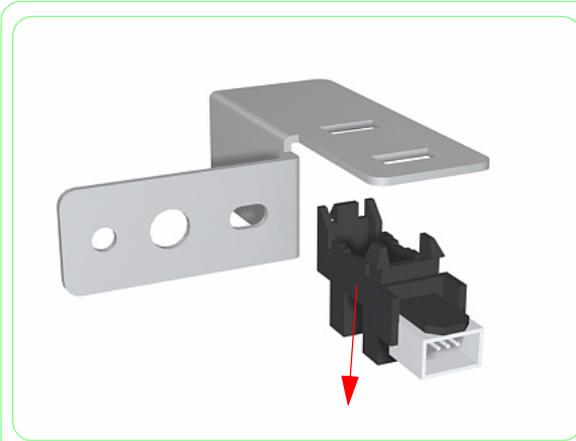
5. Unclip the Media Lever Sensor from the Bracket.

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Paper-Axis Motor

Removal

1. Remove the Window ⇒ Page *8-3*.

2. Remove the Left Door ⇒ Page *8-5*.

3. Remove the Left Top Cover ⇒ Page *8-9*.

4. Remove the Left Side Cover ⇒ Page *8-11*.

5. Remove the Encoder Disc and Sensor ⇒ Page *8-57*.

6. Remove the Paper-Axis Gear ⇒ Page *8-60*.

7. Disconnect the cable from the Paper-Axis Motor.
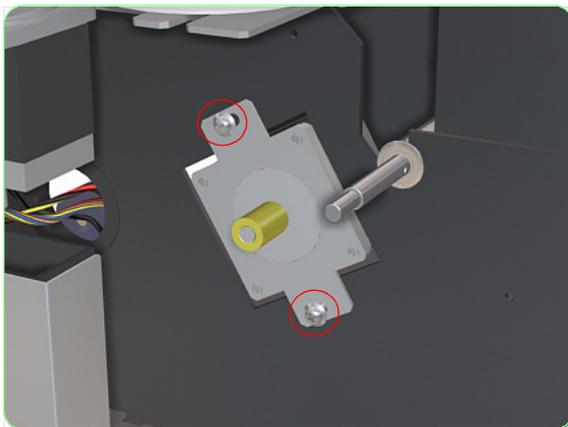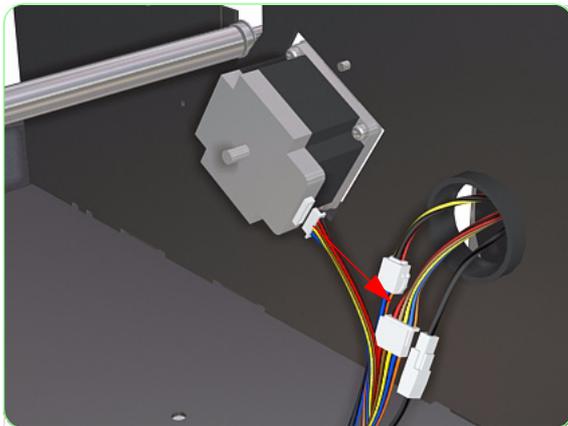
8. Remove two screws that secure the Paper-Axis Motor to the Printer.
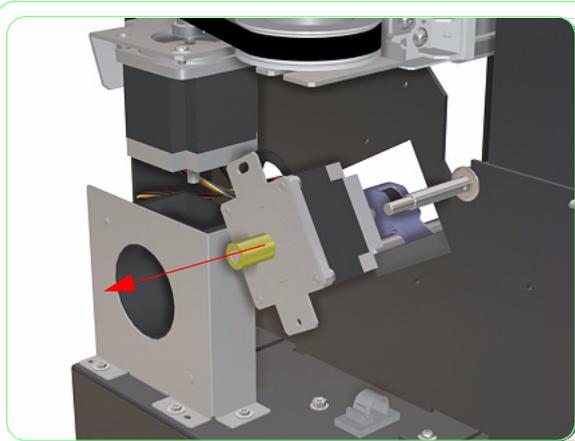
9. Remove the Paper-Axis Motor from the Printer.

Once the Paper-Axis Motor has been installed correctly, you must perform the Paper-Axis Motor Tension Adjustment (refer to Page *5-10*).

Encoder Disc and Sensor

Removal

Switch off the product and remove the power cable.

1. Remove the Window ⇒ Page *8-3*.
2. Remove the Left Door ⇒ Page *8-5*.
3. Remove the Left Top Cover ⇒ Page *8-9*.
4. Remove the Left Side Cover ⇒ Page *8-11*.
5. Disconnect the Encoder Sensor Cable.
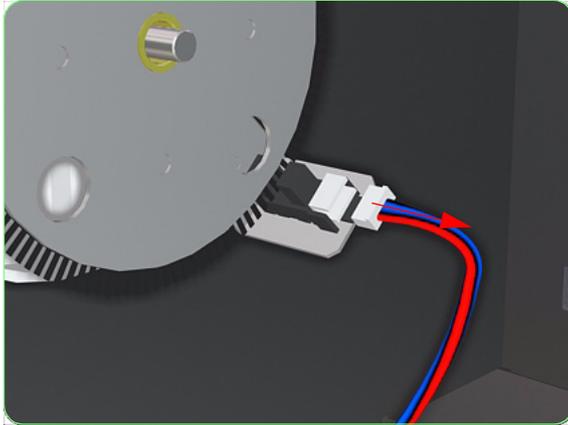
6. Remove one screw that secures the Encoder Sensor to the Printer. You may need to rotate the Encoder Disc in order to access the screw.
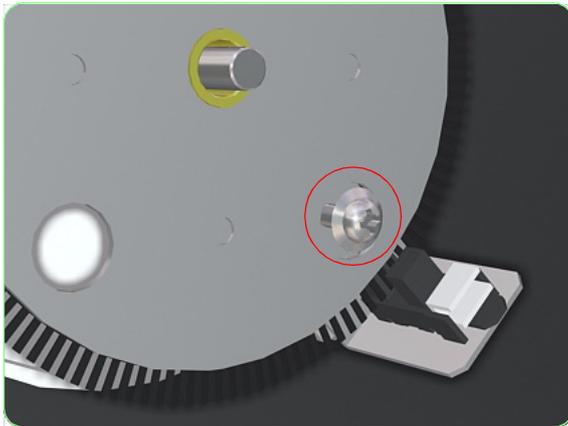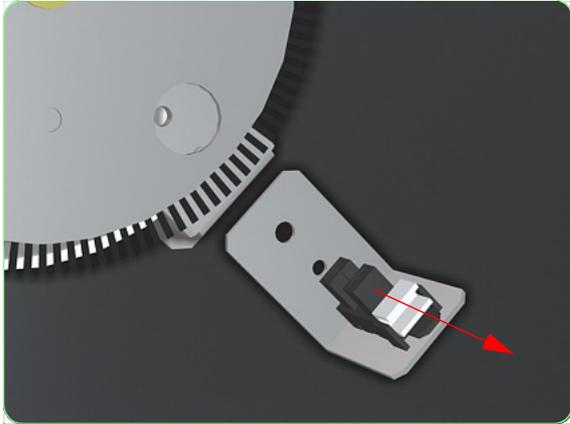
7. Remove the Encoder Sensor from the Printer.

8. Loosen the screw that secures the Encoder Disc to the Shaft.
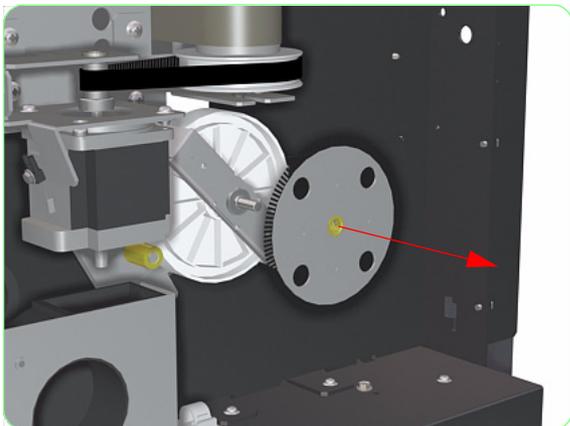
9. Remove the Encoder Disc from the Printer.

Home Position Sensor

Removal

Switch off the product and remove the power cable.

1. Open the Window and the Right Door.

2. Uncap the carriage Assembly and move it out of the Capping Station.

3. Disconnect the cable from the Home Position Sensor.
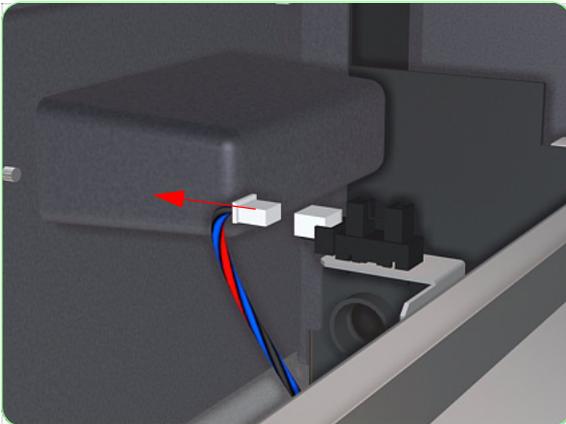
4. Unclip the Home Position Sensor and remove from the Printer.
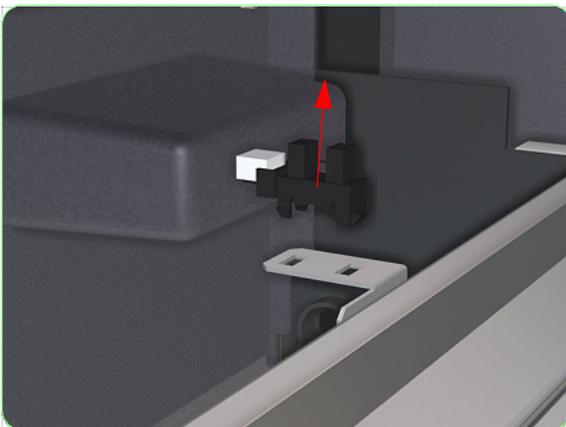
Paper-Axis Gear

Removal

Switch off the product and remove the power cable.

1. Remove the Window ⇒ Page *8-3*.

2. Remove the Left Door ⇒ Page *8-5*.

3. Remove the Left Top Cover ⇒ Page *8-9*.

4. Remove the Left Side Cover ⇒ Page *8-11*.

5. Remove the Encoder Disc and Sensor ⇒ Page *8-57*.

6. Loosen the two screws that secure the Paper-Axis Motor to the Printer.
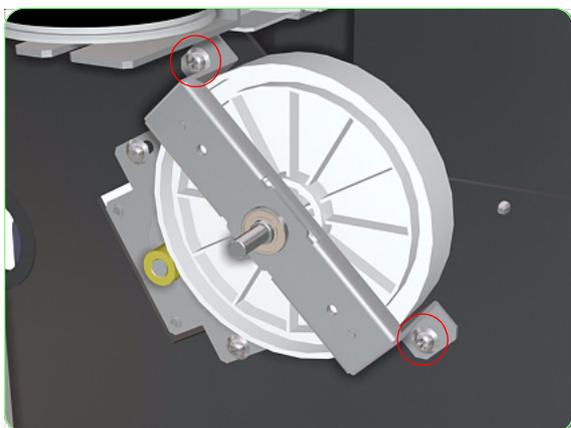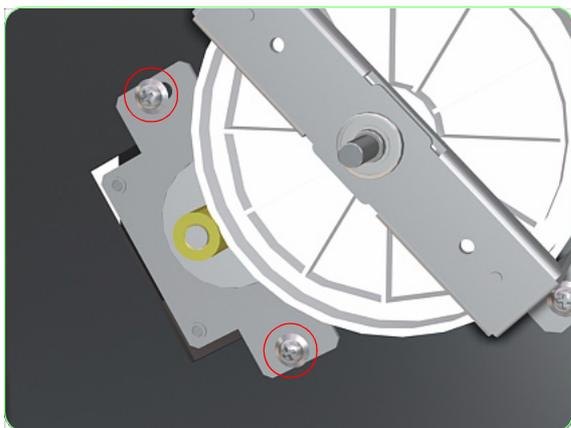
7. Remove two screws that secure the Locking Plate to the Printer.
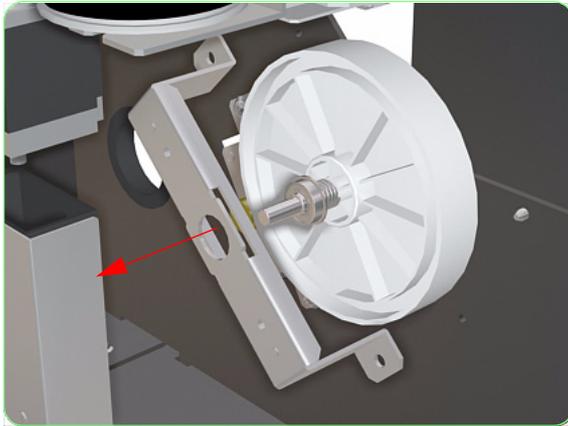
8. Remove the Locking Plate from the Printer.
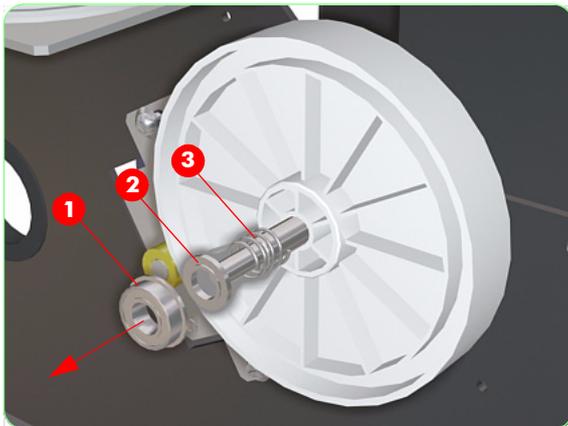
9. Remove the Bearing (1), Spacer (2) and the Spring (3) from the Shaft.

> **Please note the position of the Bearing, Spacer and the Spring when removing them since you will need to make sure that you reinstall them in the same order.**
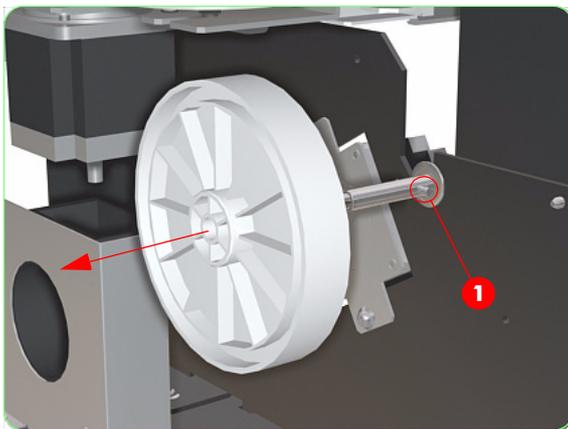
10. Remove the Paper-Axis Gear from the Printer.

> **Please note the position of the Locking Pin (1) as it will need to fit into the slot in the Paper-Axis Gear when re-installing it.**

> **Once the Paper-Axis Gear has been installed correctly, you must perform the Paper-Axis Motor Tension Adjustment (refer to Page _5-10_).**

Carriage Drive Assembly (Includes Carriage Belt)

Removal

Switch off the product and remove the power cable.

1. Remove the Window ⇒ Page *8-3*.
2. Remove the Left and Right Door ⇒ Page *8-5*.
3. Remove the Left Top Cover ⇒ Page *8-9*.
4. Remove the Right Top Cover ⇒ Page *8-10*.
5. Remove the Left Side Cover ⇒ Page *8-11*.
6. Remove the Right Side Cover ⇒ Page *8-12*.
7. Remove the Scan-Axis Motor ⇒ Page *8-71*.
8. Loosen two screws that secure the Tension Pulley in order to release the tension on the Carriage Belt.
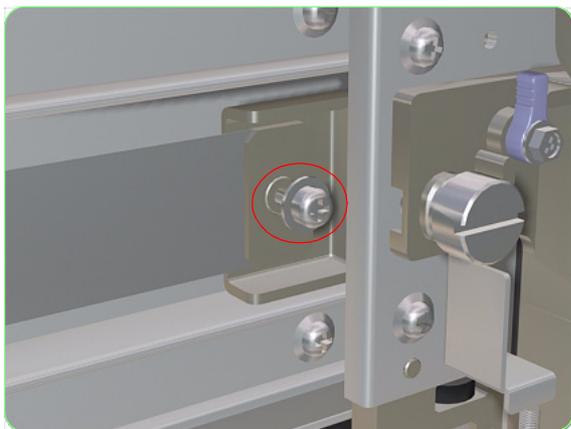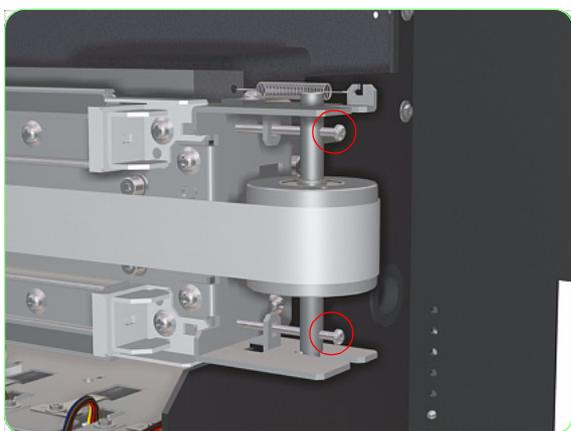
9. Remove one screw that secures the Belt to the left side of the Carriage Assembly.

Be very careful when handling the Belt, since it is sharp and could cause injury.
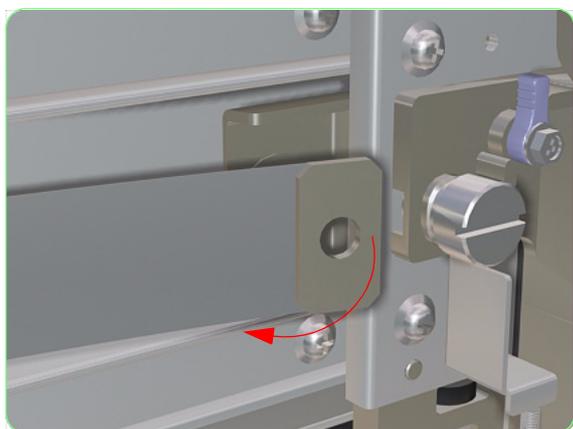
10. Release the Belt from the Carriage Assembly.
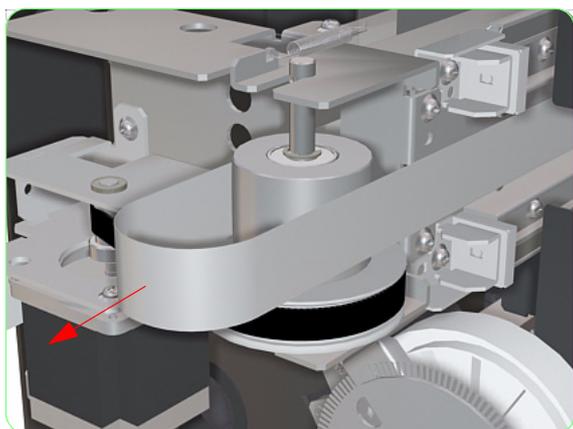
11. Pull the Belt away from the Drive Pulley.
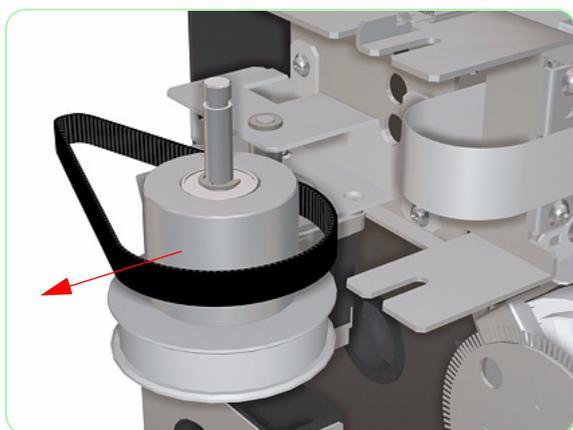
12. Remove the Drive Pulley from the Printer.

13. Remove one screw that secures the Belt to the right side of the Carriage Assembly.
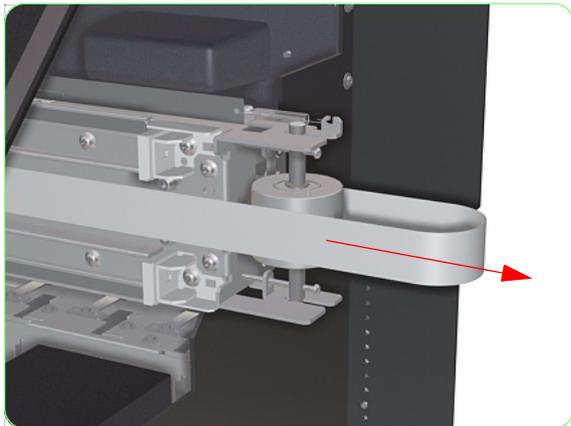
14. Carefully slide the Belt out of the Carriage Assembly and remove from the Printer.
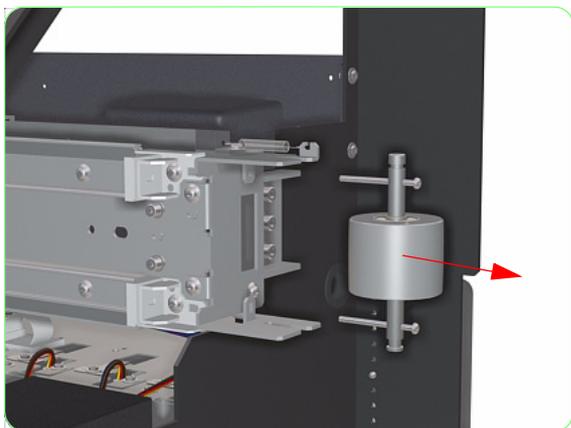
15. Remove the Tension Pulley from the Printer.

Once the Carriage Drive Assembly has been installed correctly, you must perform the Scan-Axis Belt Tension Adjustment (refer to Page *5-8*) and the Belt Tension Adjustment (refer to Page *5-3*).

Encoder Strip

Removal

Switch off the product and remove the power cable.

1. Remove the Window ⇒ Page *8-3*.
2. Remove the Right and Left Door ⇒ Page *8-5*.
3. Remove the Left Top Cover ⇒ Page *8-9*.
4. Remove the Right Top Cover ⇒ Page *8-10*.
5. Remove the Left Side Cover ⇒ Page *8-11*.
6. Remove the Right Side Cover ⇒ Page *8-12*.
7. Remove the Top Cover ⇒ Page *8-15*.
8. Release the encoder strip from the spring on both sides of the Encoder Strip.
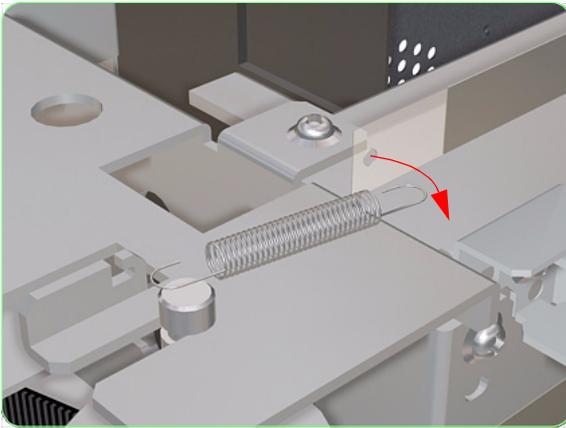
9. Remove the Encoder Strip from the holder.
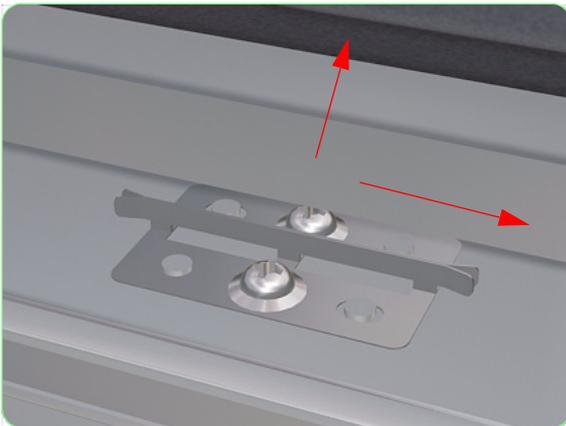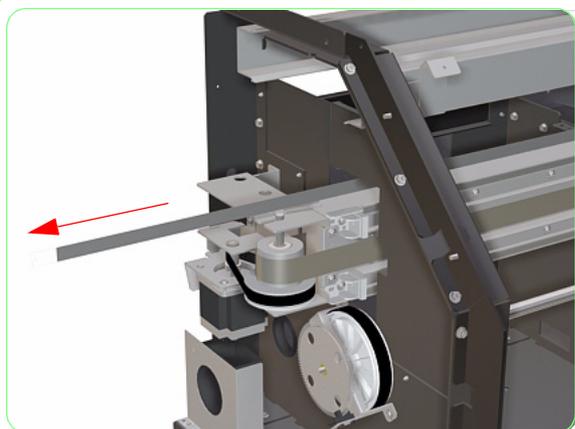
10. Remove the Encoder Strip from the Printer.

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Pinch Roller

Removal

Switch off the product and remove the power cable.

1. Remove the Rear Cover ⇒ Page *8-17*.

2. Move the Rear Pinch Wheel Lever to the up position.
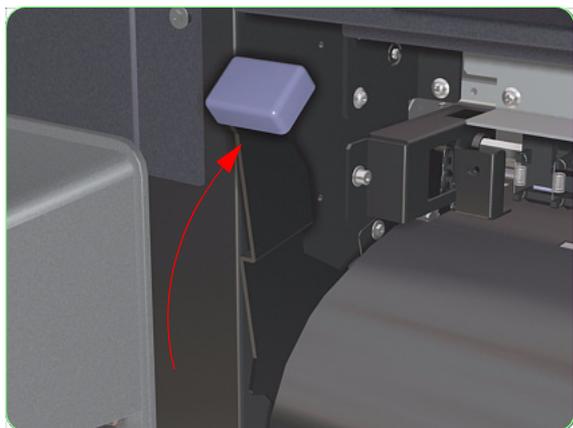
3. Remove three springs from the rear of the Pinch Wheel.

   The center spring is smaller (and stronger) than the other two springs.
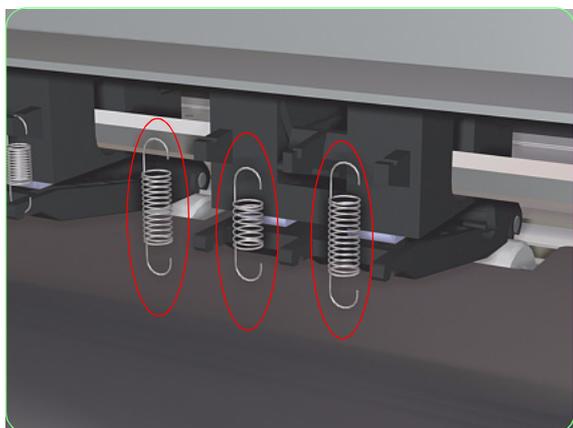
4. Open the Window.
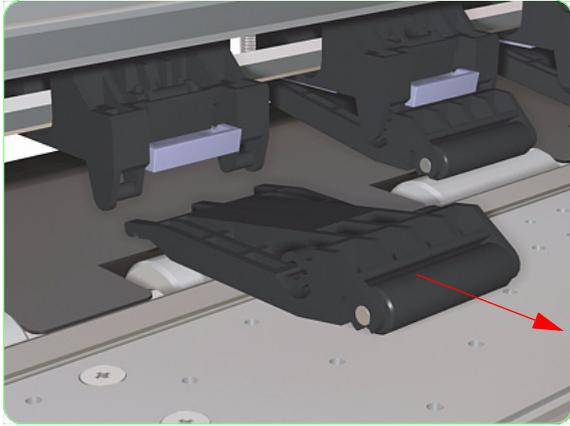
5. Remove the Pinch Wheel from the Printer.

Motor Cooling Fan

Removal

Switch off the product and remove the power cable.

1. Remove the Window ⇒ Page *8-3*.
2. Remove the Left Cover ⇒ Page *8-5*.
3. Remove the Left Top Cover ⇒ Page *8-9*
4. Remove the Left Side Cover ⇒ Page *8-11*.
5. Remove the Left Back Cover ⇒ Page *8-14*.
6. Disconnect the Motor Cooling Fan Cable.
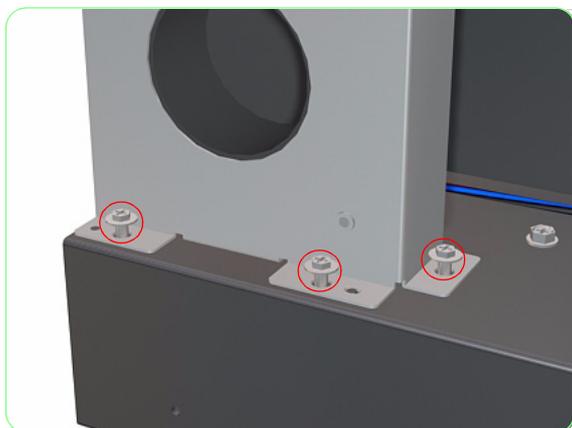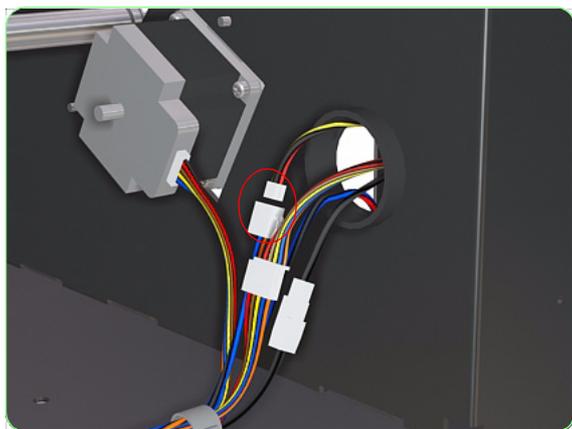
7. Remove three screws that secure the Motor Cooling Fan to the left side of the printer.
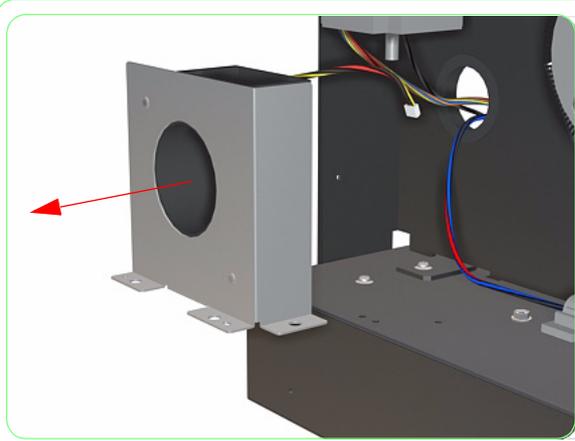
8. Remove the Motor Cooling Fan from the Printer.

Scan-Axis Motor

Removal

Switch off the product and remove the power cable.

1. Remove the Window ⟹ Page *8-3*.
2. Remove the Left Door ⟹ Page *8-5*.
3. Remove the Left Top Cover ⟹ Page *8-9*.
4. Remove the Left Side Cover ⟹ Page *8-11*.
5. Remove the Left Back Cover ⟹ Page *8-14*.
6. Disconnect the Scan-Axis Motor Cable.
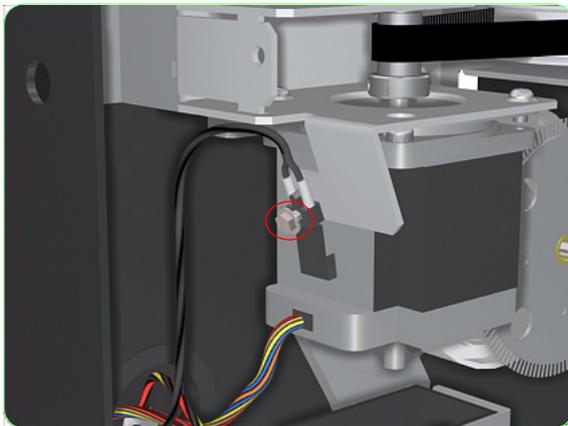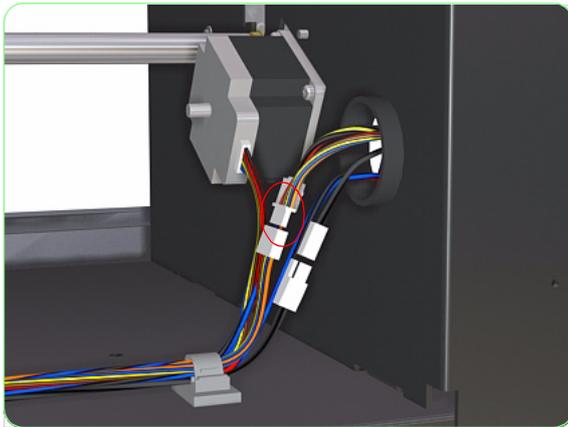
7. Remove the screw that secures the Thermistor to the side of the Scan-Axis Motor.
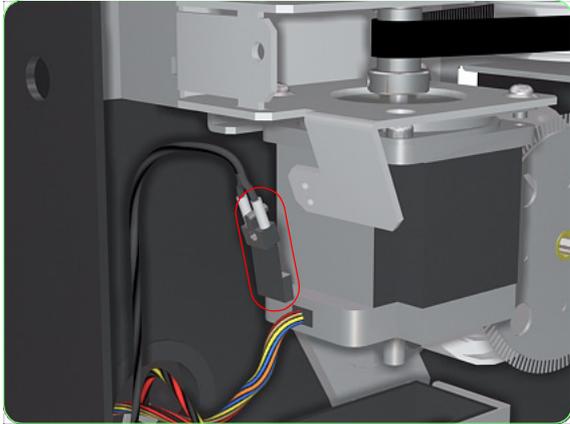
8. Remove the Thermistor from the side of the Scan-Axis Motor.
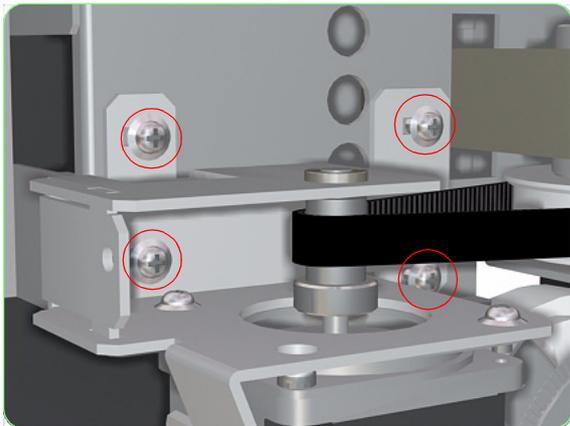
9. Loosen four screws securing the Scan-Axis Bracket to the left side of the printer.
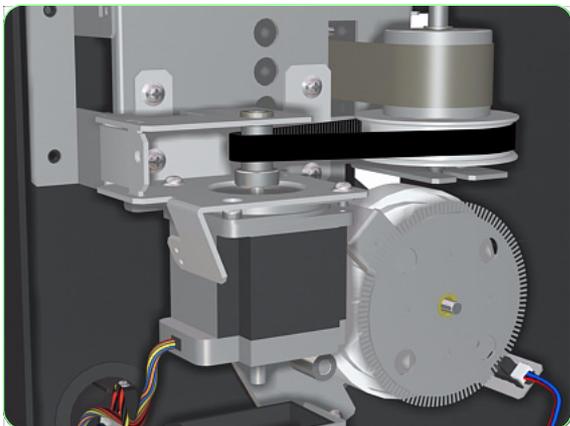
10. Release the belt from tension.
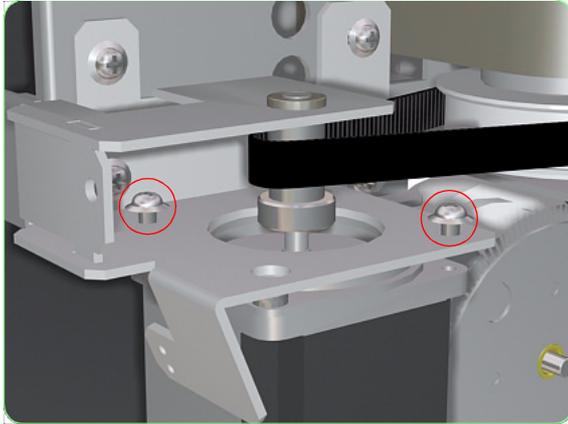
11. Remove two screws that secure the Scan-Axis Motor to the Scan-Axis Bracket.
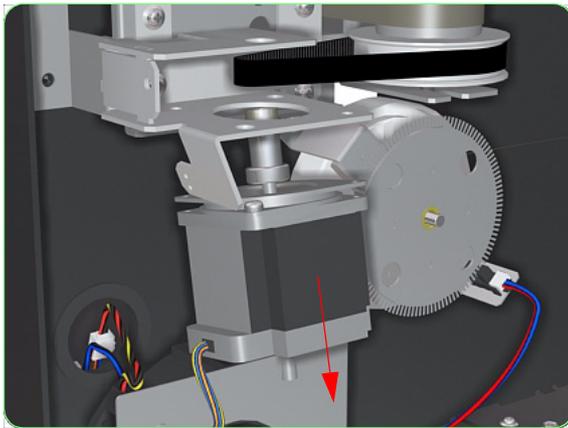
12. Remove the Scan-Axis Motor from the Printer.

Once the Scan-Axis Motor has been installed correctly, you must perform the Scan-Axis Belt Tension Adjustment (refer to Page *5-8*).

Also, if you have replaced the Scan-Axis Belt, make sure you reset the Scan-Axis Belt Counter (for more information, refer to Page *4-43*).

Carriage PCA

Removal

Switch off the product and remove the power cable.

1. Remove the Window ⇒ Page *8-3*.
2. Remove the Left Door ⇒ Page *8-5*.
3. Remove the Left Top Cover ⇒ Page *8-9*.
4. Open the Maintenance Kit Drawer.
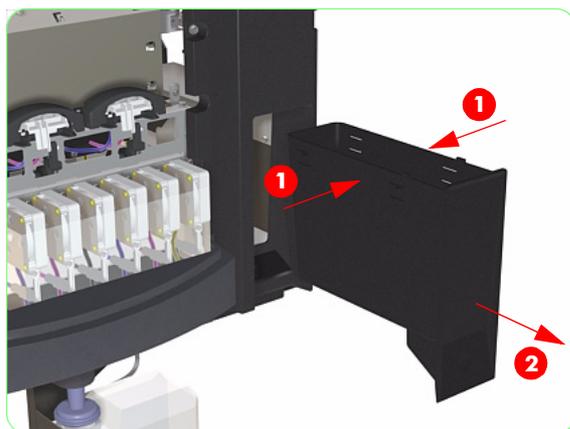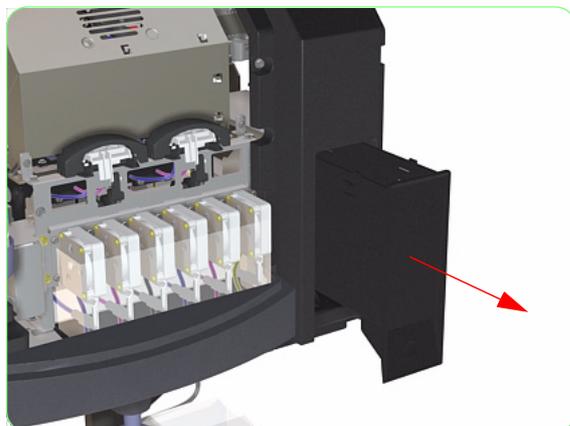
5. Squeeze both sides of the Maintenance Kit Drawer to release the clips and remove from the Printer.
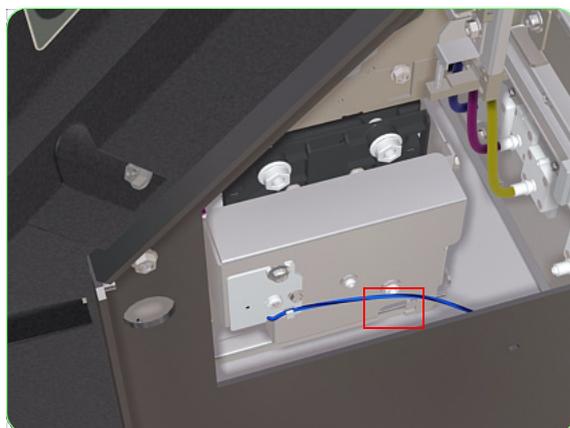
6. Put your hand through the hole (where the Maintenance Kit Drawer is normally installed) and locate the Motor Pinion that controls the Capping Units.
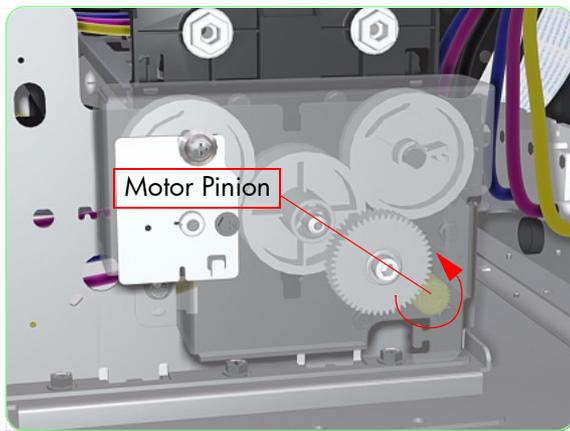
Motor Pinion

7. Rotate the Motor Pinion in a counter-clockwise direction in order to uncap the Carriage Assembly.

8. Once uncapped, manually move the Carriage Assembly to the left side of the printer.

9. Open the Printhead Cover.
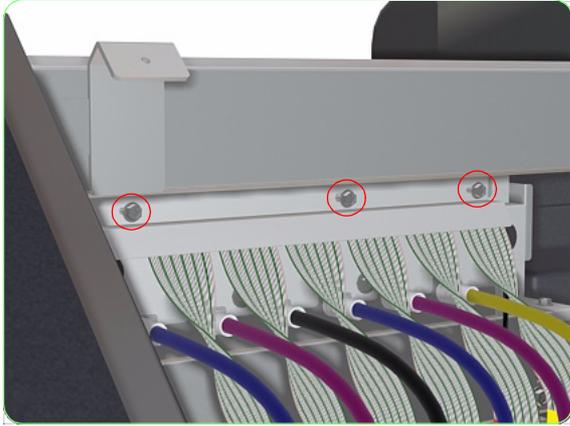
10. Remove three screws that secure the Top Carriage Bracket to the top of the Carriage Assembly.

11. Remove the Top Carriage Bracket.
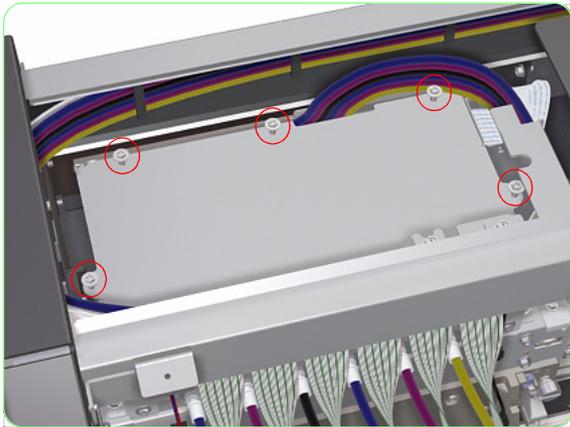
12. Remove five screws that secure the Top Carriage Cover.
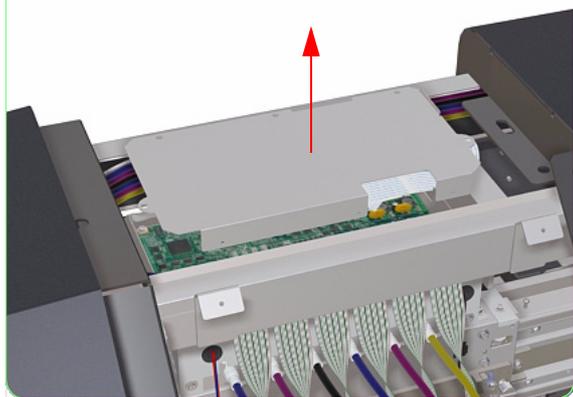
13. Remove the Top Carriage Cover.
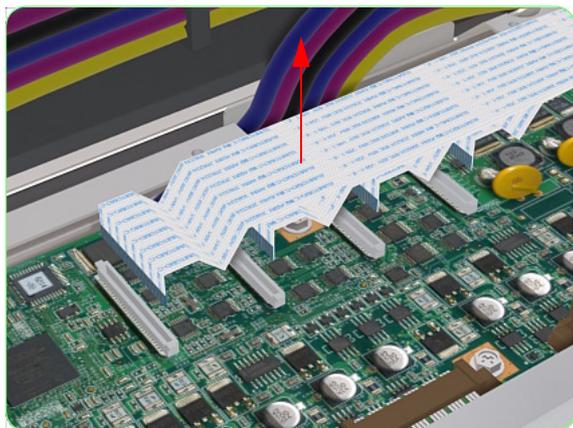
14. Disconnect the Trailing Cable from the Carriage PCA.
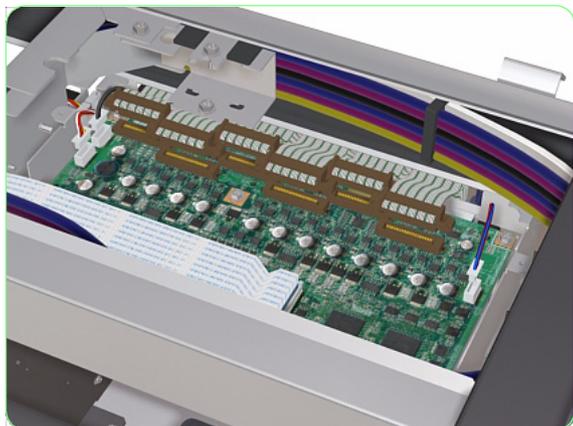
15. Disconnect ALL the Printhead Cables from the Carriage PCA.
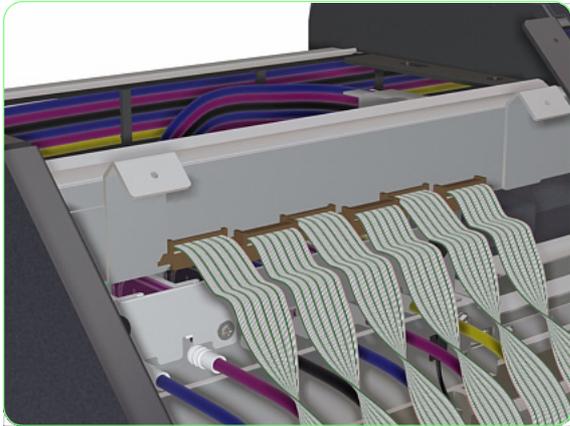
16. Pull out the Printhead Cables from under the Metal Cover.
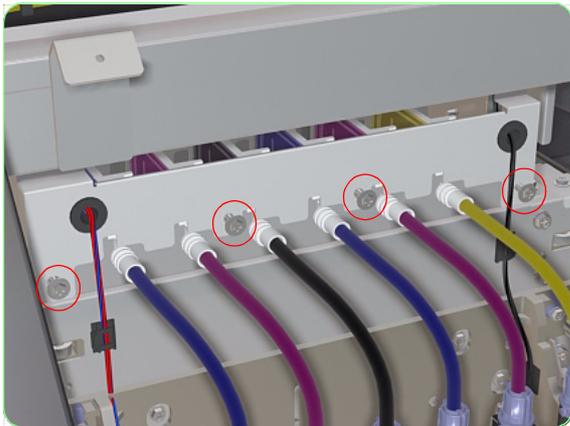
17. Remove four screws that secure the Tubes Cover.
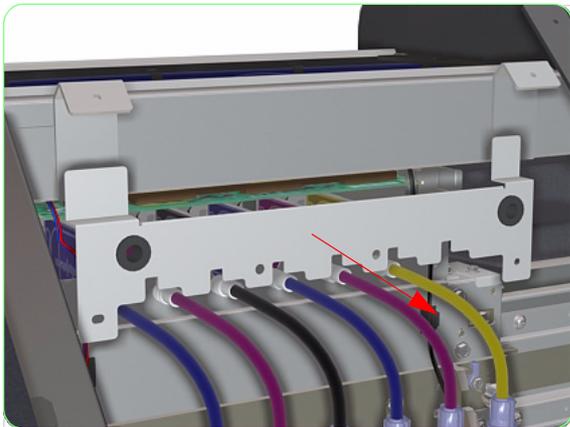
18. Remove the Tubes Cover.
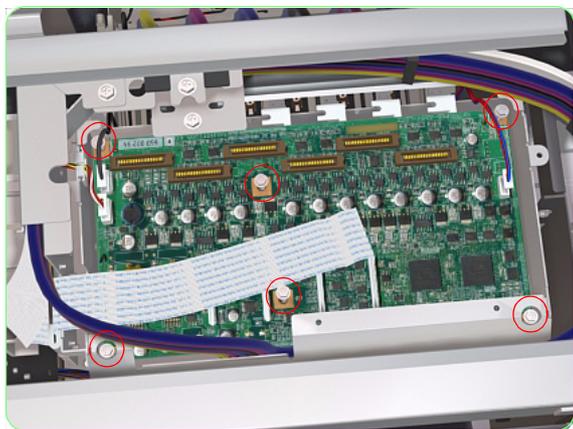
19. Remove six screws that secure the Carriage PCA.
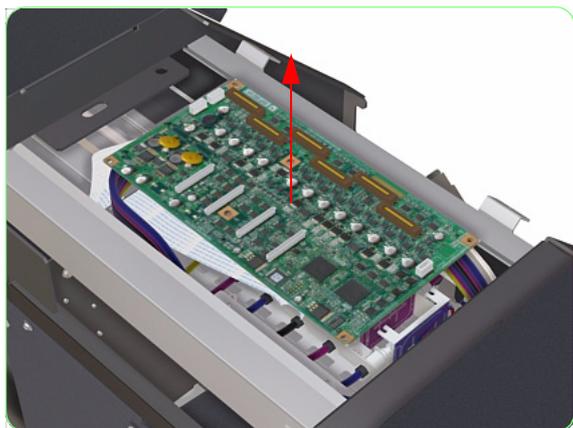
20. Remove the Carriage PCA from the Carriage Assembly.

Encoder Sensor

Removal

Switch off the product and remove the power cable.

1. Remove the Window ⇒ Page *8-3*.

2. Remove the Left Door ⇒ Page *8-5*.

3. Remove the Left Top Cover ⇒ Page *8-9*.

4. Uncap the Carriage Assembly and manually move it to the left side of the printer.
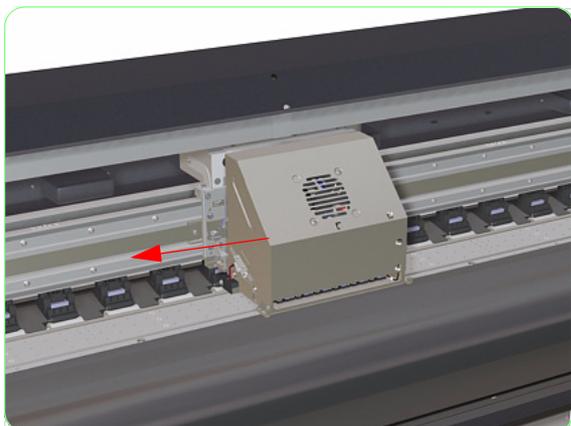
5. Open the Printhead Cover.
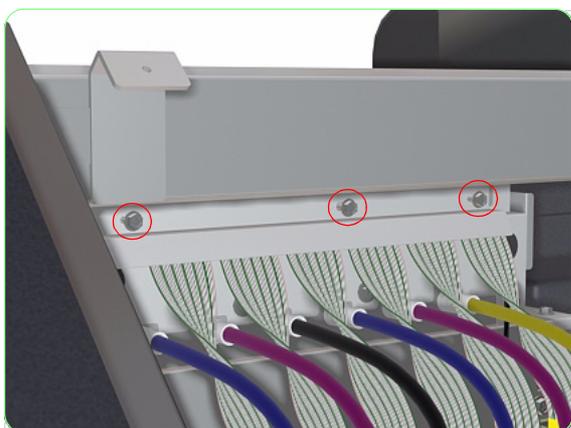
6. Remove three screws that secure the Top Carriage Bracket to the top of the Carriage Assembly.

7. Remove the Top Carriage Bracket.
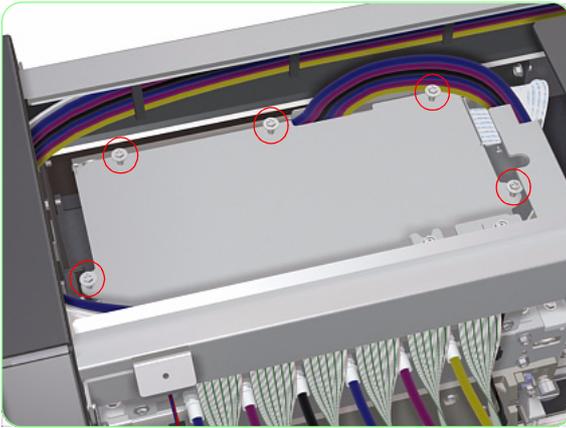
8. Remove five screws that secure the Top Carriage Cover.
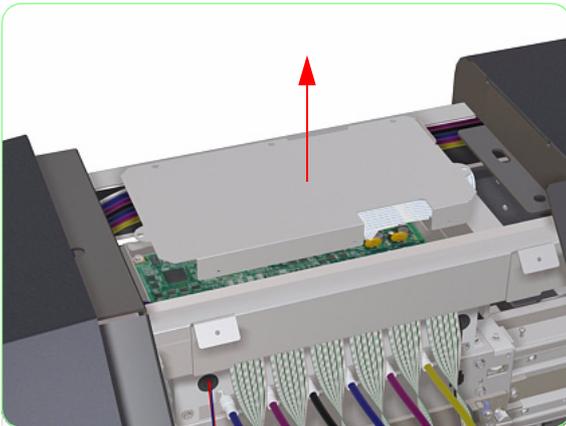
9. Remove the Top Carriage Cover.
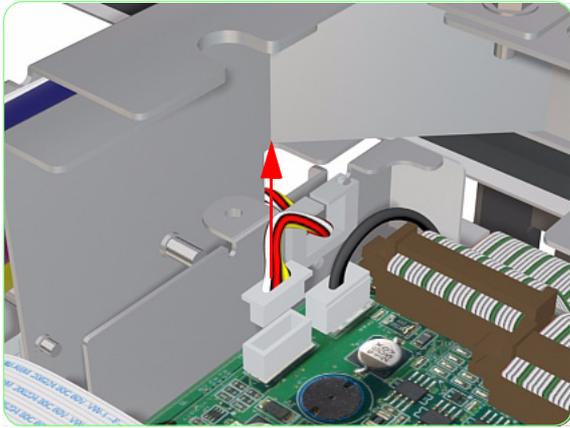
10. Disconnect the Encoder Sensor Cable from the Carriage PCA.
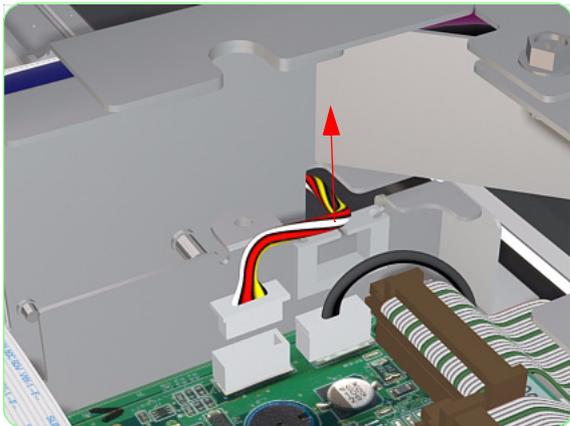
11. Release the Encoder Sensor Cable from the Cable Clip.

12. Remove one screw that secure the Cable Clamp to the Carriage Assembly
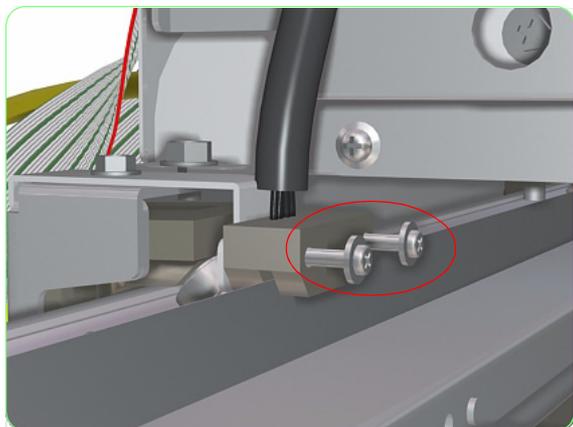
13. Remove two screws that secure the Encoder Sensor to the Carriage Assembly.
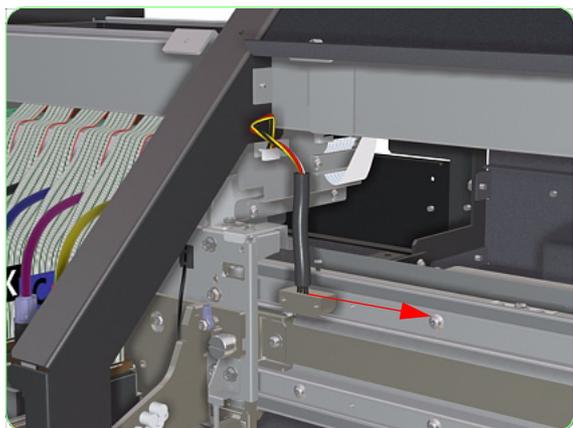
14. Remove the Encoder Sensor from the Carriage Assembly.

Line Sensor

Removal

Switch off the product and remove the power cable.
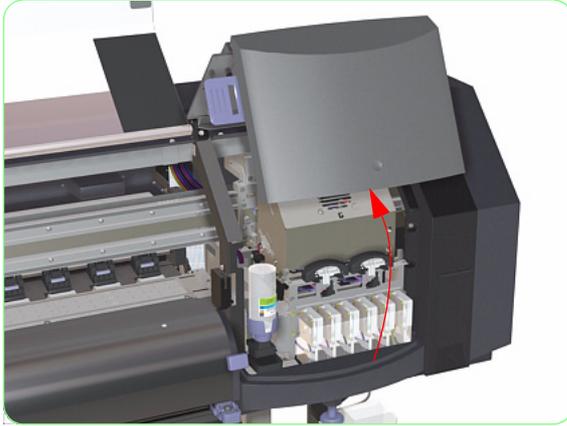
1. Open the Right Door.
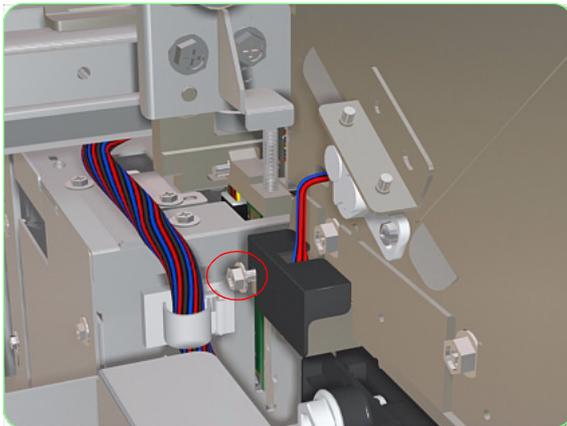
2. Loosen one screw that secures the Line Sensor Cover.
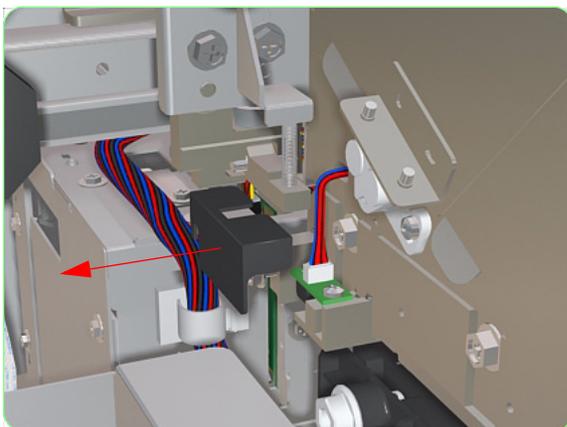
3. Remove the Line Sensor Cover.
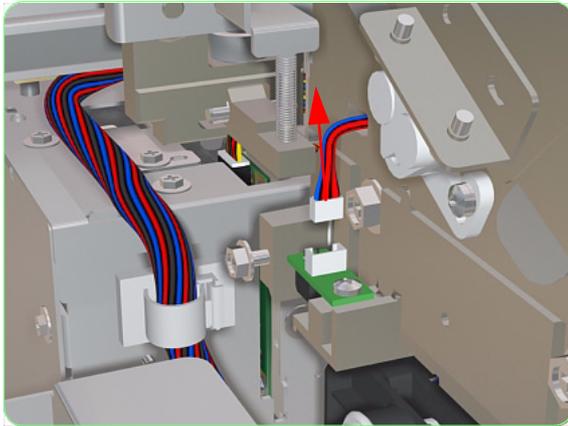
4. Disconnect the cable from the Line Sensor.
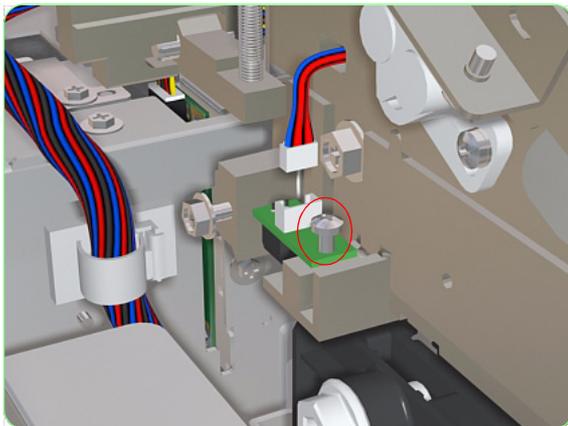
5. Remove the screw that secures the Line Sensor to the Printer.
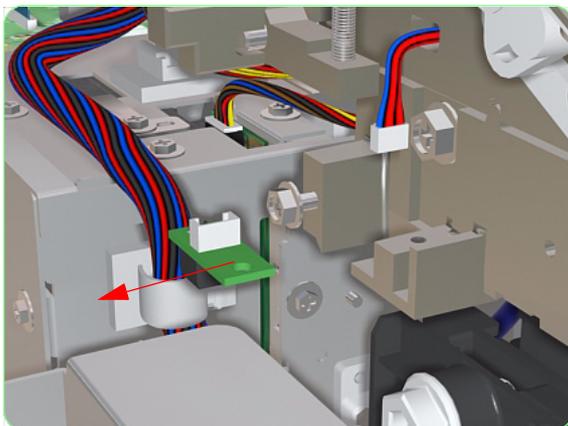
6. Remove the Line Sensor from the Printer.

Once the Line Sensor has been installed correctly, you must perform the following calibrations:

- **Line Sensor Calibration (Side Margin)** ⇒ **Page _5-20_.**
- **Line Sensor Calibration (Top Margin)** ⇒ **Page _5-22_.**

Printhead

Replacement

```
PRINTER READY
ROLL: 64/PAPER
```

```
▲INK              MEDIA REG▼
◄MEDIA               M.ADV►
```

```
▲REWIND        FORM FEED▼
◄PH. REC         PH. MAIN►
```

```
# REPLACE PRINTHEAD
>
```

```
# REPLACE PRINTHEAD
* OK?
```

```
REMOVE INK CARTRIDGE
```


1. When the "Printer Ready" message appears on the Front Panel, press the **Online** key to take the Printer offline.

2. When this screen is displayed on the Front Panel, press the **Shift** key once.

3. When this screen is displayed on the Front Panel, press the ► key to enter into the PH Main Menu.

4. In the PH Main submenu, scroll to "Replace Printhead" and press the **OK** key.

5. You will need to confirm that you want to replace the failing Printhead by pressing the **OK** key.

6. When this message is displayed on the Front Panel, remove the Ink Cartridge of the same color as the Printhead that needs replacing.

INSTALL PRINTHEAD

REPLACEMENT CART

7. When this message is displayed on the Front Panel, insert the Printhead Replacement Cartridge.

\# REPLACE XX PRINTHEAD

* OK?

CARRIAGE MOVING

PLEASE WAIT

OPEN COVER

REPLACE XX PRINTHEAD

8. You will need to confirm that you want to replace the failing Printhead by pressing the **OK** key.

9. The Carriage will automatically move to the left side of the Printer, during which this message will be displayed on the Front Panel.

10. When this message is displayed on the Front Panel, open the Window and the Left Door to access the Carriage.

11. Open the Printhead Cover.
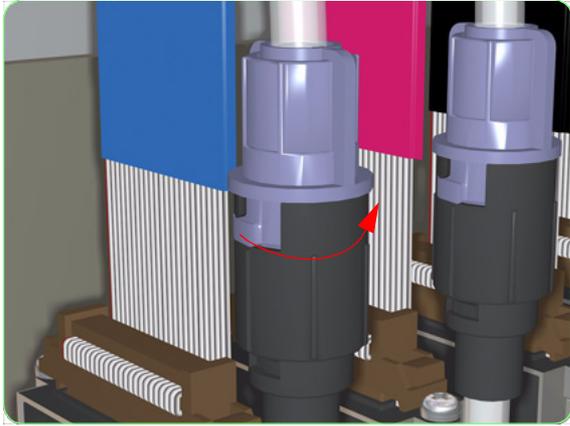
12. Twist the Blue Ink Tube Connector to unlock it.
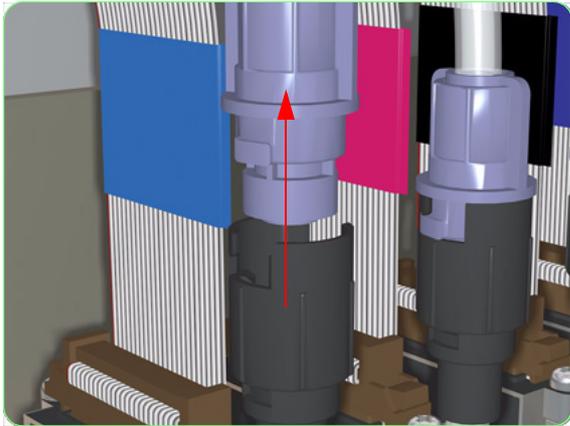
13. Disconnect the Blue Ink Tube Connector from the Printhead Tube Connector.
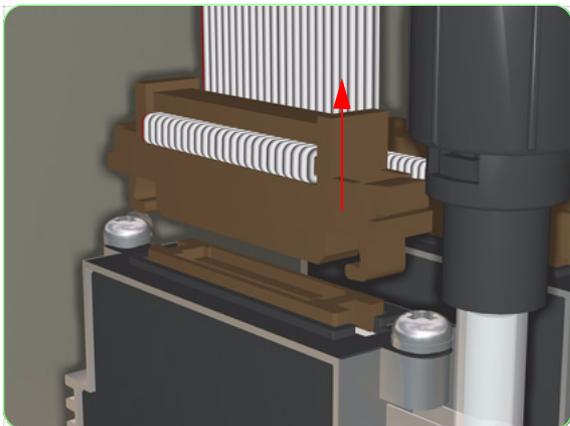
14. Disconnect the Printhead Connector from the Printhead.
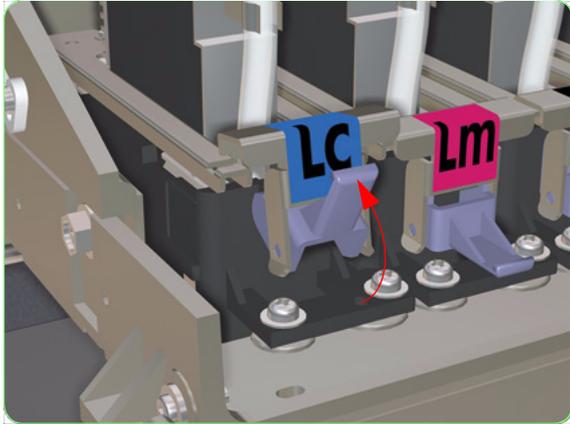
15. Lift up the Front Blue Latch to release the Top Printhead Latch.
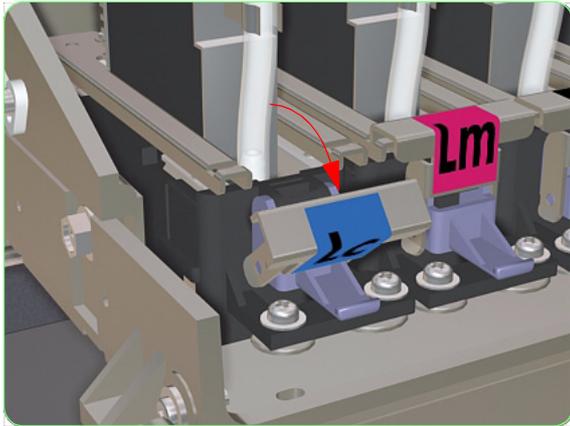
16. Pull back the Front Printhead Latch.
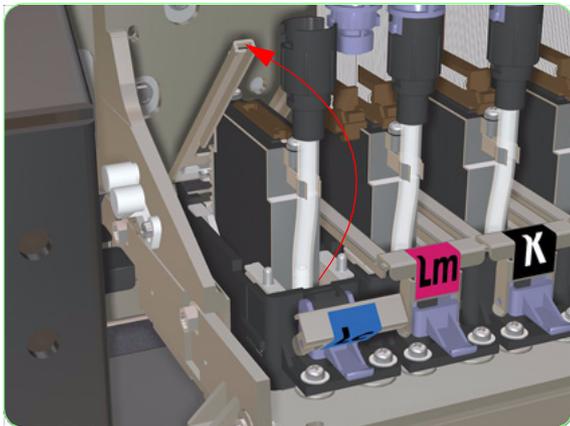
17. Lift up the Top Printhead Latch.
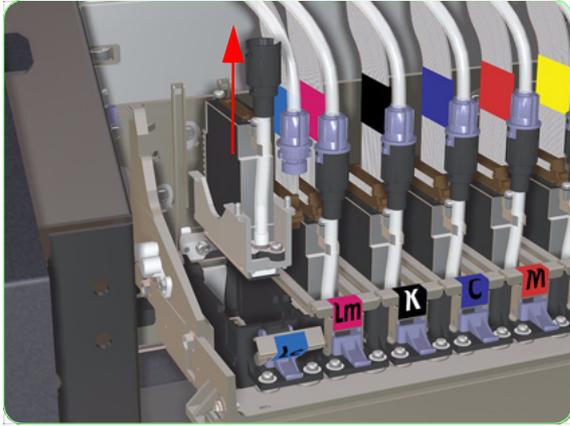
18. Pull up the Printhead and remove from the Carriage.
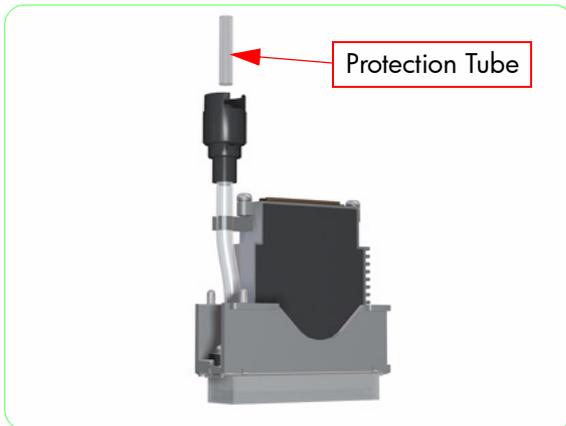
Protection Tube

19. Remove the new Printhead from the box. Make sure you remove the Protection Tube from the Printhead before installing the Printhead into the Carriage.

Do not remove the Printhead Nozzle Protection Cap at this point.
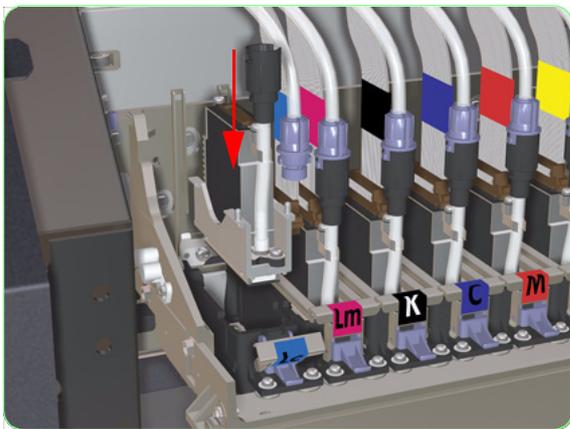
20. Insert the new Printhead into the Carriage.
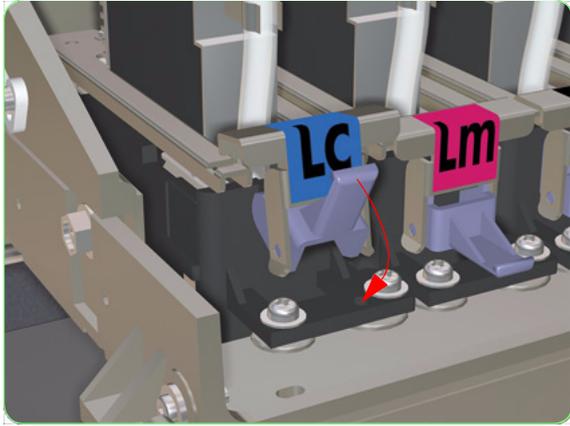
21. Lower the latches and lock the blue Latch into place.
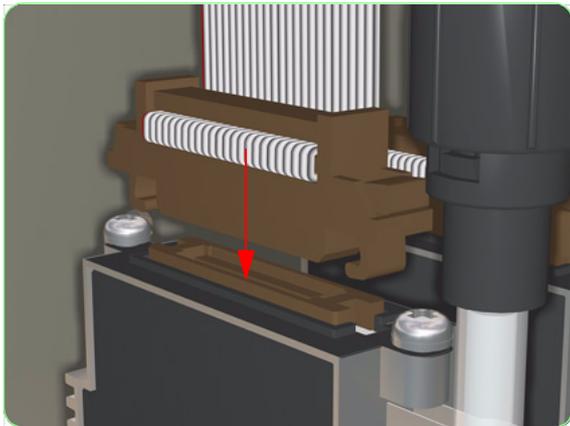
22. Connect the Printhead Cable Connector to the Printhead.
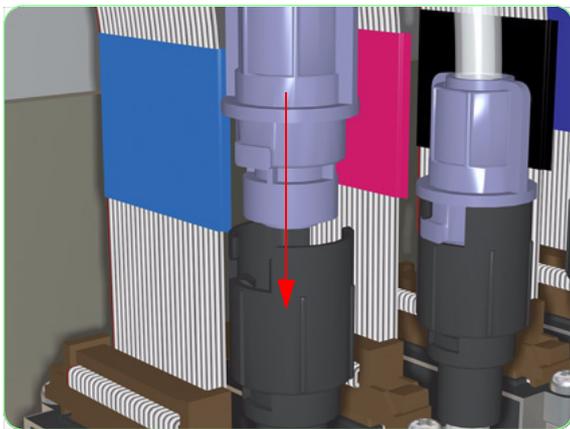
23. Connect the Blue Ink Tube Connector from the Printhead Tube Connector.
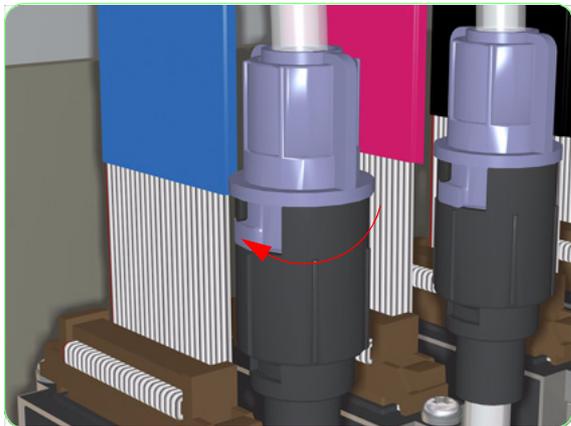
24. Twist the Blue Ink Tube Connector to unlock it into position.
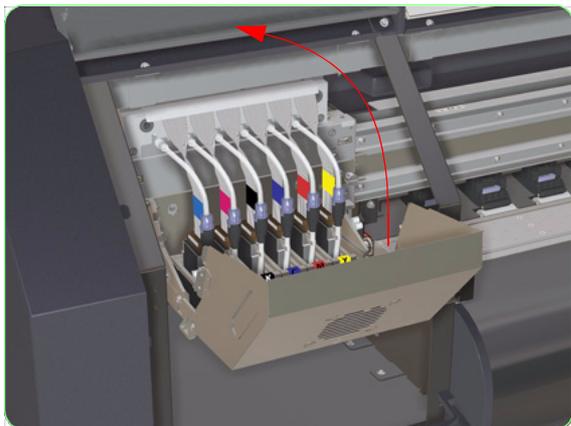
25. Close the Printhead Cover, making sure it is fully closed.
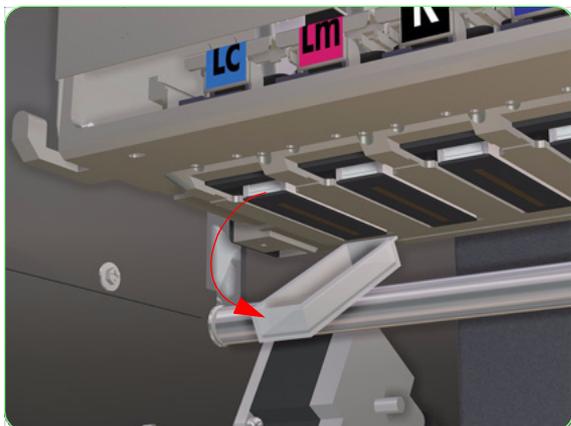
26. From under the Carriage, remove the Printhead Nozzle Protection Cap from the Printhead.

27. Close the Left Door and the Window.

28. When this message is displayed, press the OK key to confirm that you have removed the protection cap from the Printhead.

```
# CHECK PROTECT CAP
* OK?
```

```
CARRIAGE MOVING
PLEASE WAIT
```

29. The Carriage will automatically move to the left side of the Printer, during which this message will be displayed on the Front Panel.

REMOVE PRINTHEAD
REPLACEMENT CART

30. When this message is displayed on the Front Panel, remove the Printhead Replacement Cartridge.

RE-INSTALL CARTRIDGE

31. When this message is displayed on the Front Panel, re-install the Ink Cartridge that you removed earlier.

CHARGE NEW-PH
＊ BOTTLE OK?

32. When this message is displayed, check whether the Waste Ink Bottle is present and is **not** full. Press the OK key to confirm that you want to charge the new Printhead with ink.

INK REFILLING
            XXX

33. The Printer will charge the ink and this message will be displayed on the Front Panel.

REPLACE PRINTHEAD
>

34. Once the ink charge sequence is completed, the Front Panel will return to this screen.

After the Printhead has been replaced, you MUST carefully follow the instructions in Chapter 3 in order to calibrate the NEW Printhead correctly.

Printhead Slot Assembly

Removal

Switch off the product and remove the power cable.
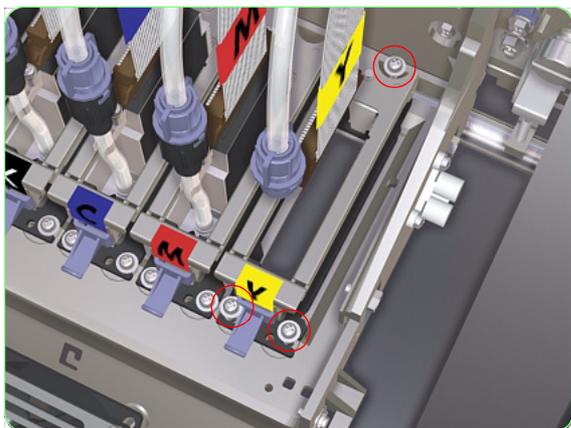
1. Remove the Printhead ⇒ Page *8-86*.

2. Remove three screws that secure the Printhead Slot to the Carriage.
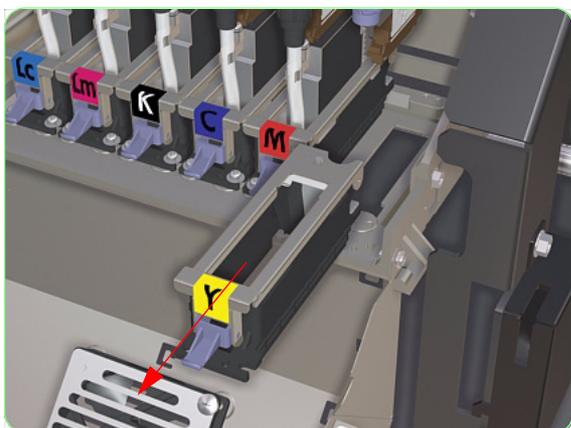
3. Remove the Printhead Slot from the Carriage Assembly.

Once the Printhead Slot has been installed correctly, you must perform the Printhead Inclination Adjustment (refer to Page *5-12*).

Printhead Cooling Fan

Removal

Switch off the product and remove the power cable.

1. Using the Front Panel menu, move the Carriage to the Maintenance Area (on the left hand side of the Printer).

2. Open the Window.

3. Open the Left or Right Door.

4. Open the Printhead Cover.
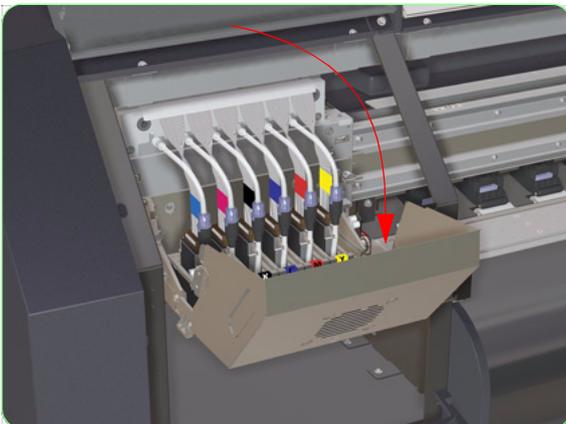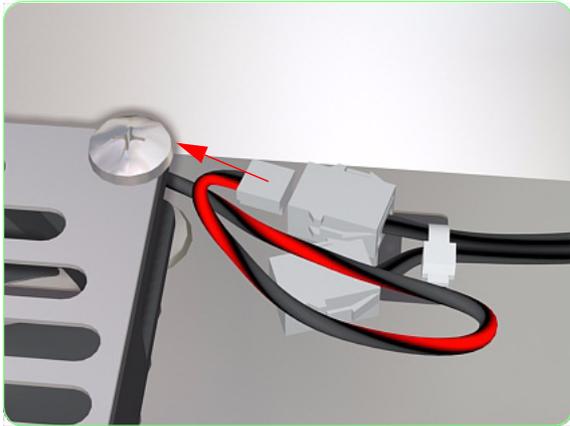
5. Disconnect the Cooling Fan Cable.
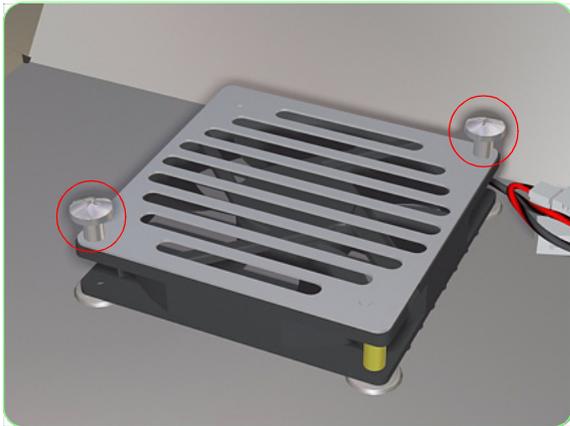
6. Remove two screws that secure the Cover Plate to the Cooling Fan.
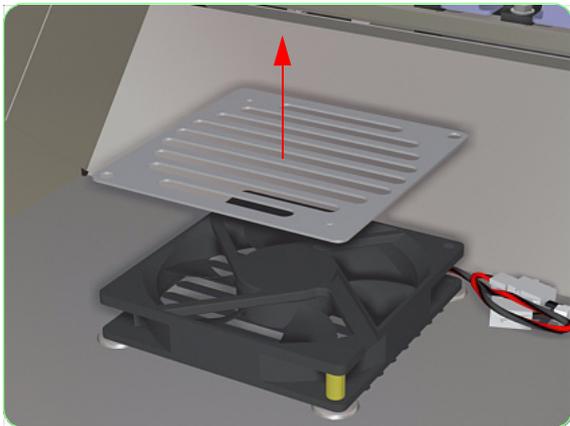
7. Remove the Cover Plate from the Cooling Fan.
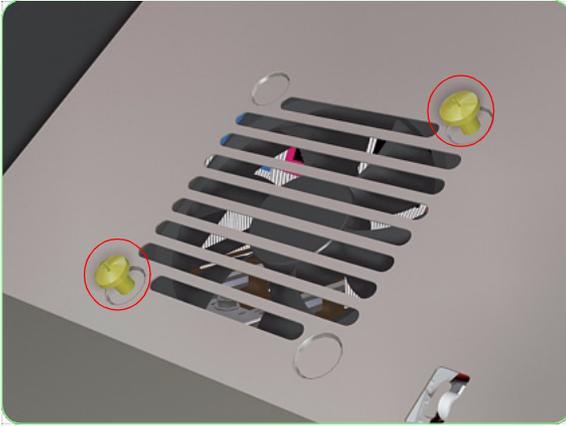
8. Remove two screws from the outside that secure the Cooling Fan to the Printhead Cover.
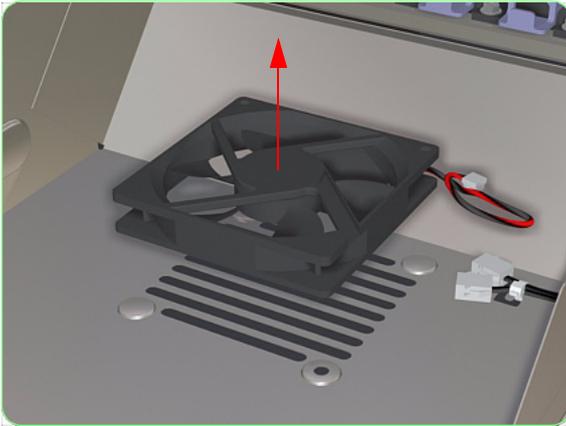
9. Remove the Cooling Fan from the Printer.

Air Damper

Removal

Switch off the product and remove the power cable.

1. Remove the Window ⇒ Page *8-3*.
2. Remove the Left Door ⇒ Page *8-5*.
3. Remove the Left Top Cover ⇒ Page *8-9*.
4. Remove the Carriage PCA ⇒ Page *8-74*.
5. Remove three screws that secure the Air Damper Plate.
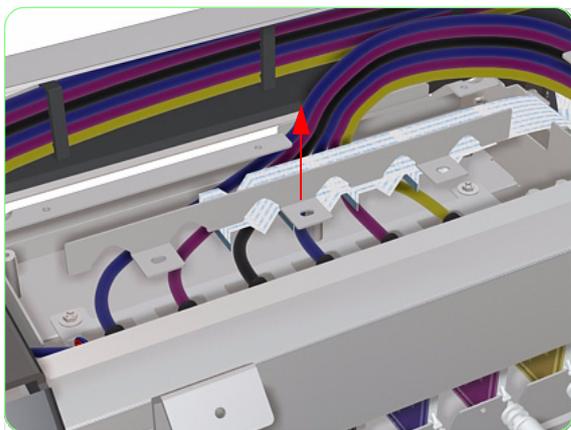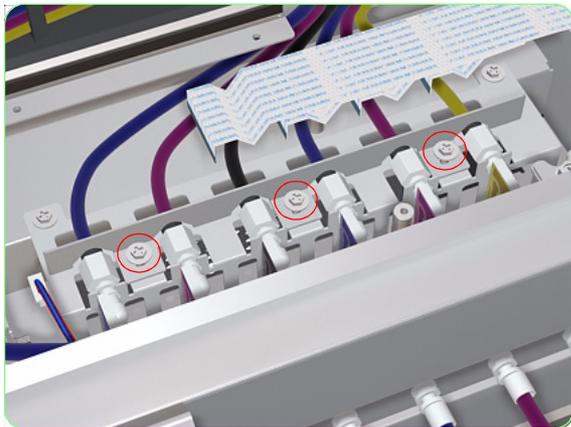
6. Remove the Air Damper Plate from the Carriage Assembly.
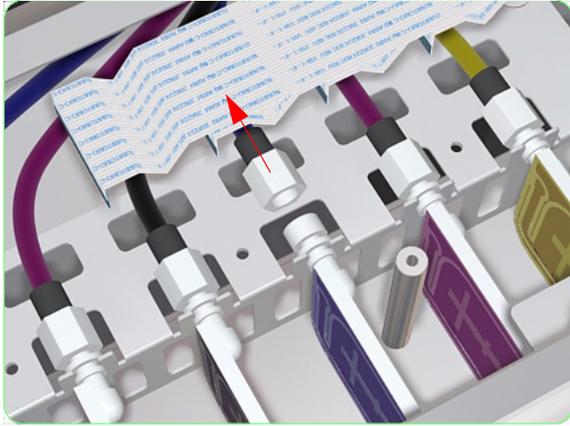
7. Disconnect the Ink Tube from the Air Damper.
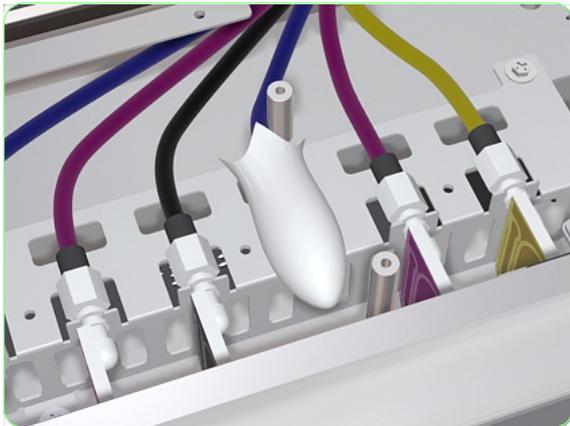
8. Use a lint-free cloth or a polyethylene bag to cover the end of the Ink Tube so that ink does not drip into the Printer.
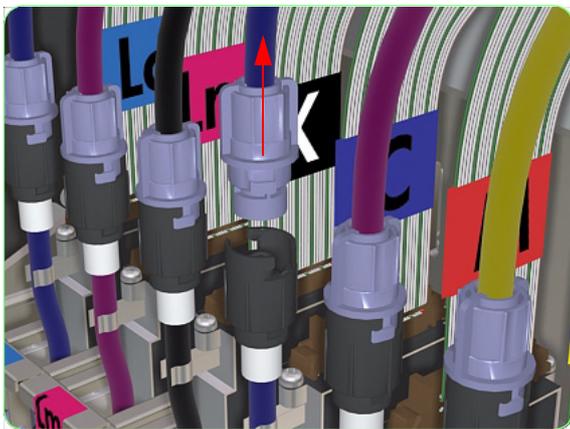
9. Disconnect the Blue Ink Tube Connector from the Printhead Tube Connector.
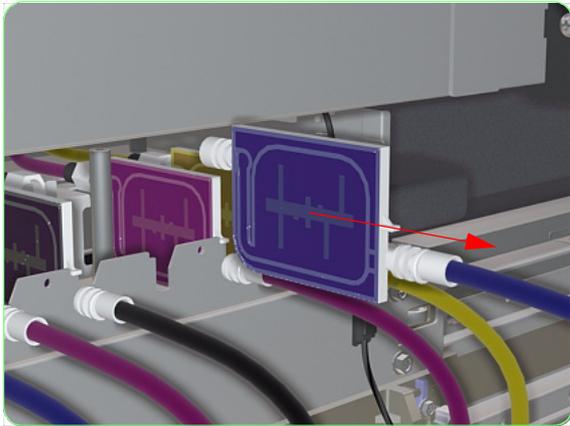
10. Remove the Air Damper from the Printer.

Installation

Take care of the following when installing a **new** Air Damper.
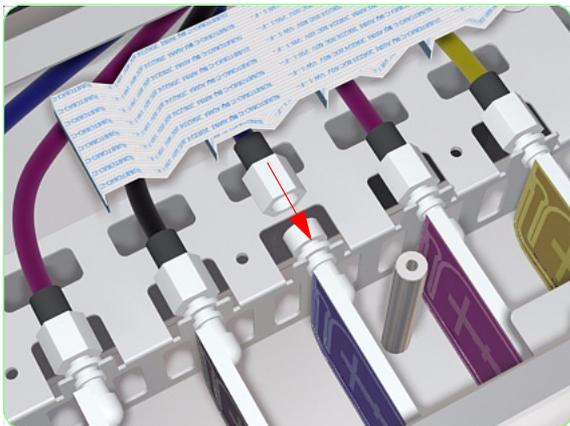
1. When connecting the Ink Tube to the Air Damper, make sure you tighten it firmly. If possible, the torque applied to the Ink Tube Nut should not exceed 2 kg/cm.

Trailing Cable/Ink Supply Tubes

Removal

Switch off the product and remove the power cable.

1. Remove the Window ⇒ Page *8-3*.

2. Remove the Left and Right Door ⇒ Page *8-5*.

3. Remove the Left Top Cover ⇒ Page *8-9*.

4. Remove the Right Top Cover ⇒ Page *8-10*.

5. Remove the Right Side Cover ⇒ Page *8-12*.

6. Remove the Top Cover ⇒ Page *8-15*.

7. Remove the Ink Cartridge Bay Cover ⇒ Page *8-20*.

8. Remove the Rear Heater ⇒ Page *8-47*.

9. Remove the Carriage PCA ⇒ Page *8-74*.

10. Loosen five screws that secure the top of the Front Electronics Module Cover.
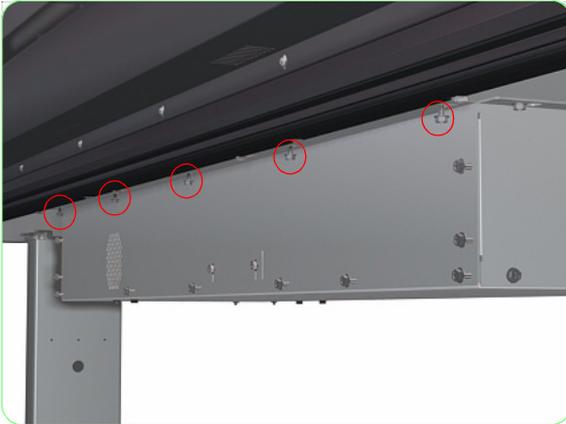
11. Remove ten screws that secure the Front Electronics Module Cover.
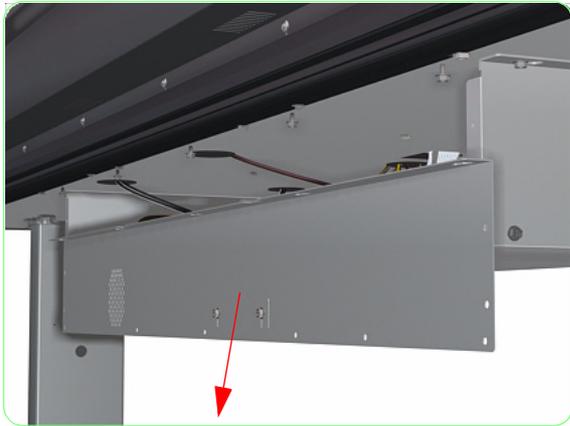
12. Remove the Front Electronics Module Cover.

13. Remove two screws from the left and right side of the Electronics Module.

14. Loosen three screws on the left and right side of the Electronics Module

15. Loosen five screws that secure the rear of the Electronics Module.
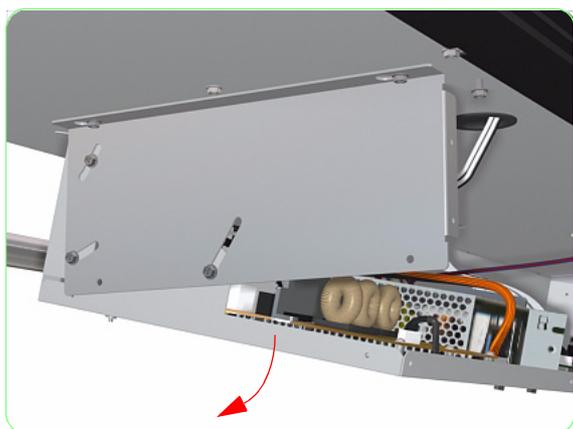
16. Open the Electronics Module.
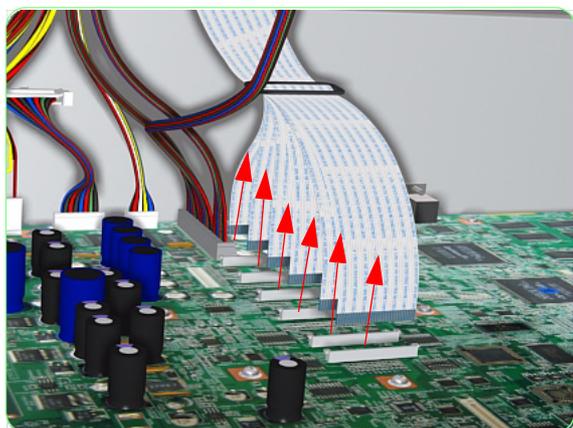
17. Disconnect the Trailing Cable from the Main PCA.
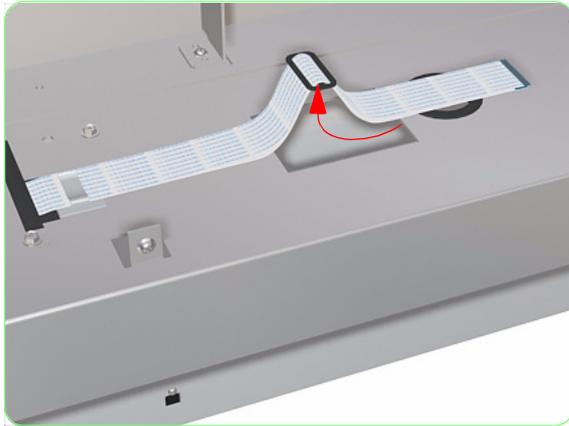
18. Pass the Trailing Cable through the square hole.

19. Remove the Black Cable Clip from the Trailing Cable.
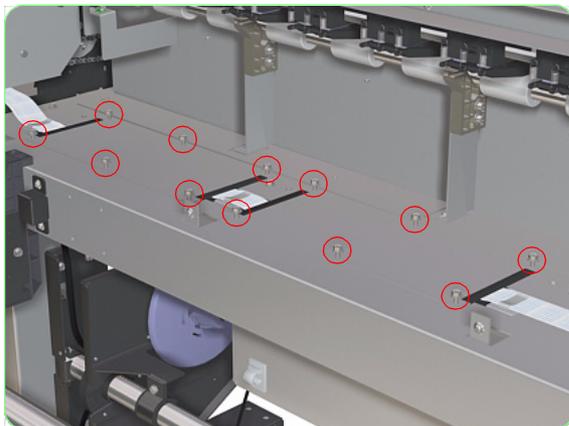
20. Remove 12 screws that secure the two Panels to the Printer.
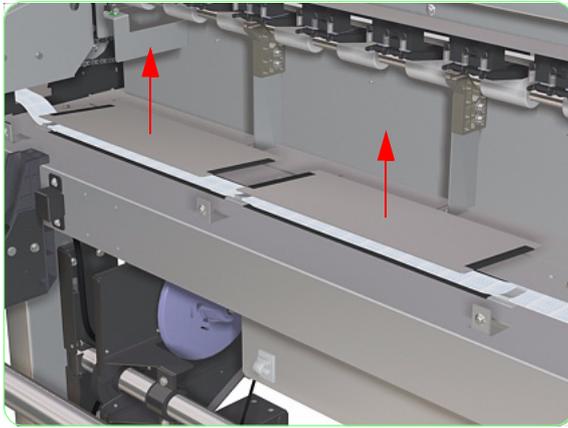
21. Remove the two Panels from the Printer.
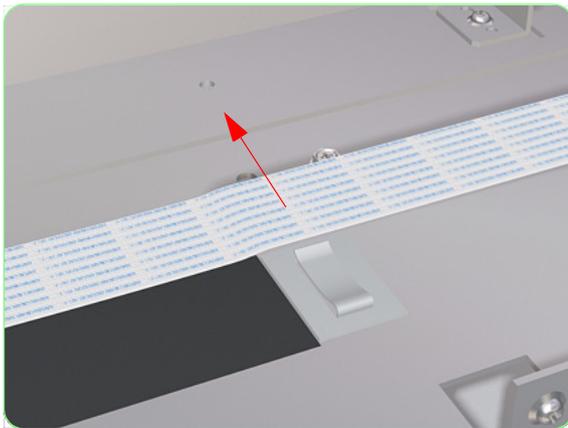
22. Release the Trailing Cable from the three plastic clips.
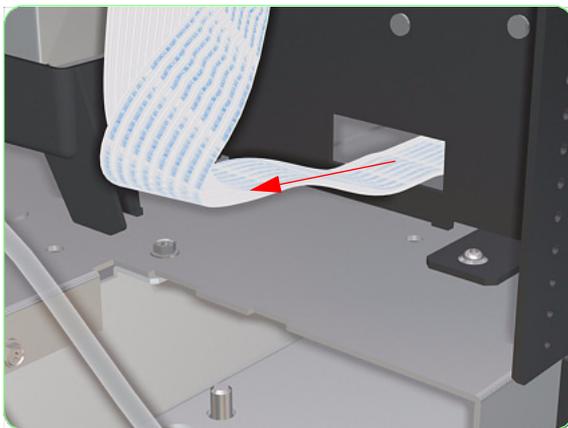
23. Pass the Trailing Cable through the hole in the Printer Chassis.

24. Roll up the four strips of the Trailing Cable and secure them with tape.

> **The two strips of the Trailing Cable that go from the Main PCA to the ISS PCA should be kept separately.**

25. Disconnect the Ink Tubes from the Air Dampers.

26. Wait a few minutes while the ink in the Ink Tubes flows back to the Ink Cartridges. Visually inspect the Ink Tubes to make sure the ink is flowing back to the Ink Cartridges.

27. Reconnect the Ink Tubes to the Air Dampers.

28. Remove the Ink Supply Station ⇒ Page *8-149*.

29. Disconnect the Ink Tubes from the Air Dampers.
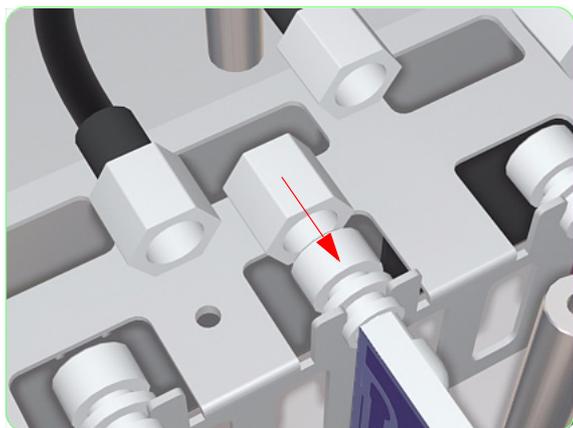
30. Use Tube Caps to seal the Air Dampers so that ink does not come out.

31. Use a lint-free cloth or a polyethylene bag to cover the ends of the Ink Tubes so that ink does not drip into the Printer.
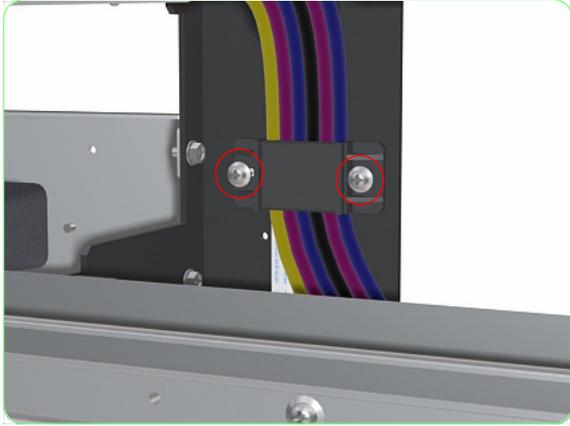
32. Remove two screws that secure the bracket to the Printer.
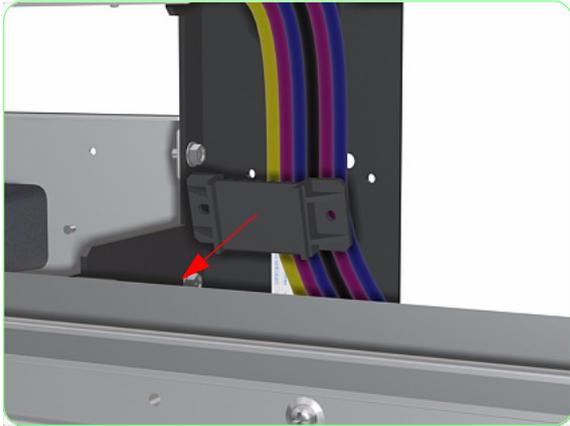
33. Remove the Bracket from the Printer.
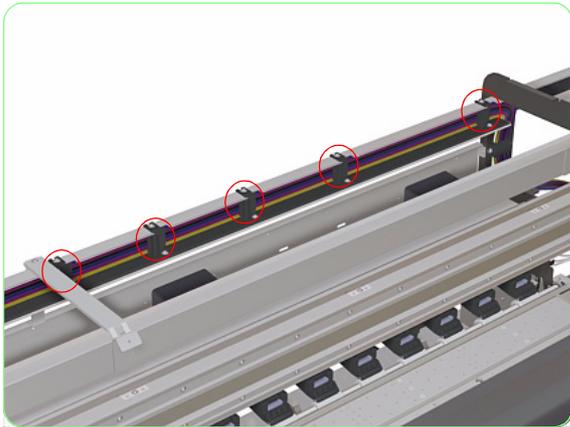
34. Locate and remove the five Tube Clamps that secure the Ink Tubes as shown in the following steps.
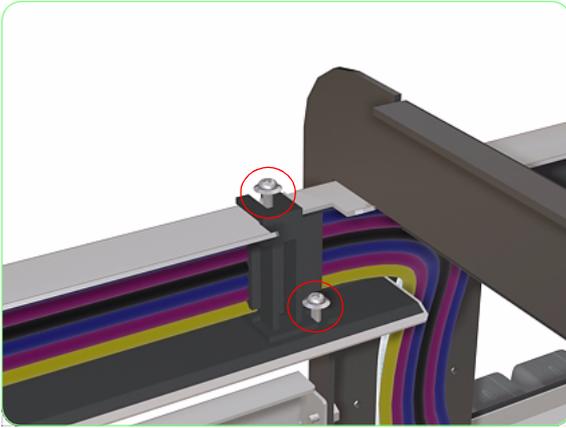
35. Remove two screws from each Tube Clamp.
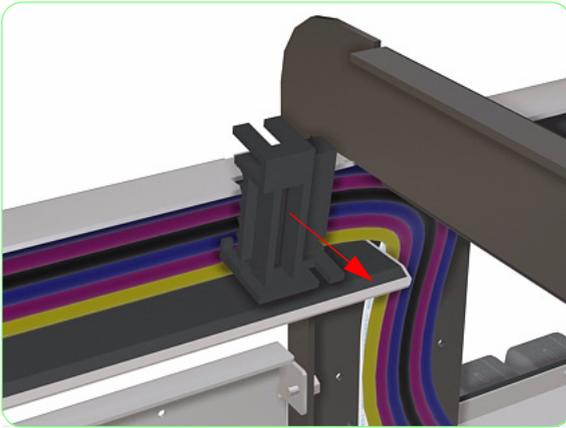
36. Remove the five Tube Clamps from the Ink Tubes.
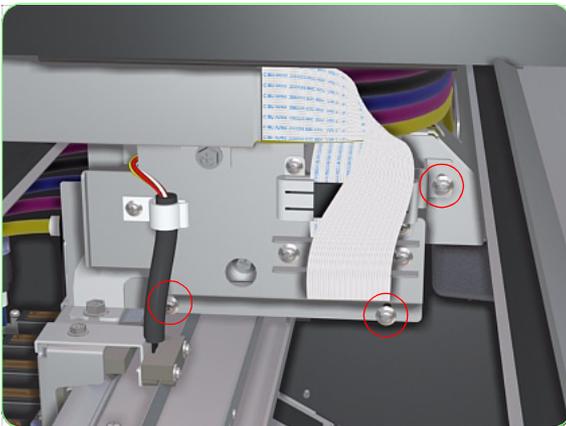
37. Remove three screws that secure the Inside Tube Support to the Carriage Assembly.
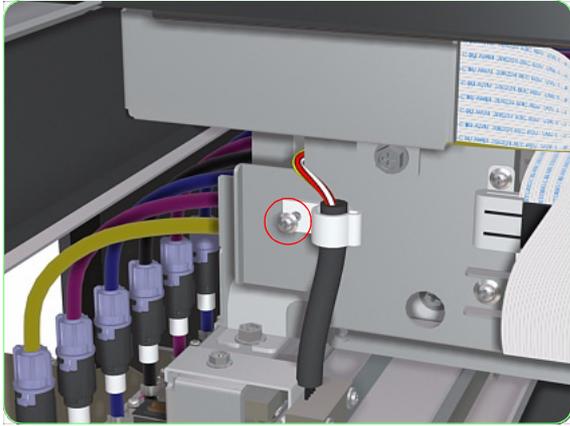
38. Remove one screw that secures the cable clamp for the Encoder Sensor.
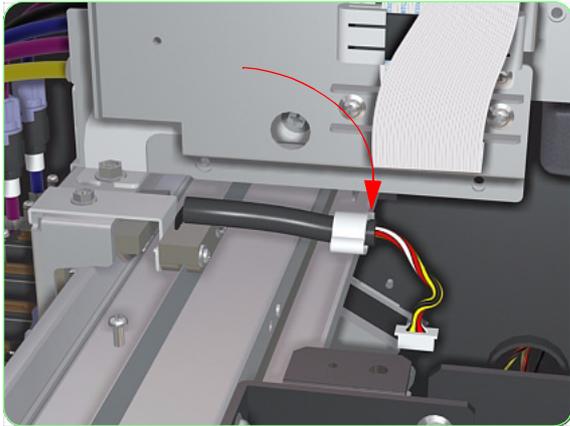
39. Lower the Encoder Sensor Cable.
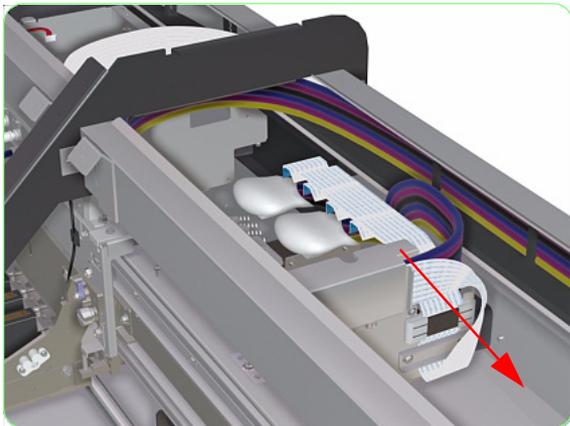
40. Release the Inside Tube Support from the Carriage Assembly and remove the Ink Tubes and Trailing Cable from the Printer.
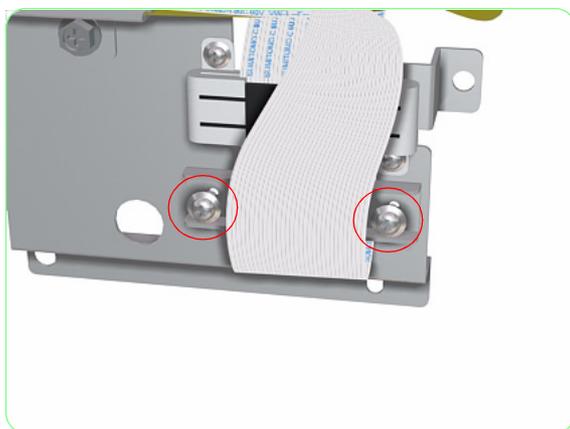
41. Remove two screws that secure the Trailing Cable Clamp.
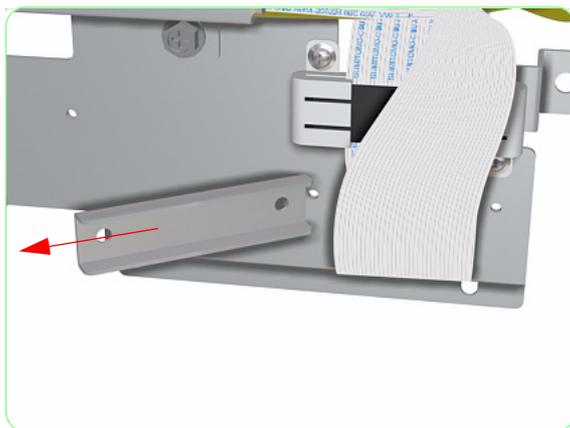
42. Remove the Trailing Cable Clamp.
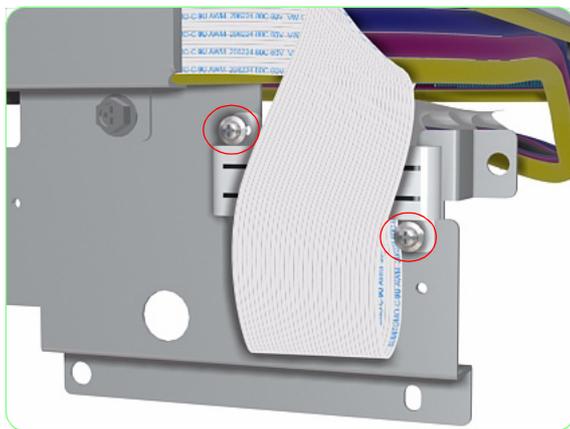
43. Remove the two screws that secure the ferrite clamps.
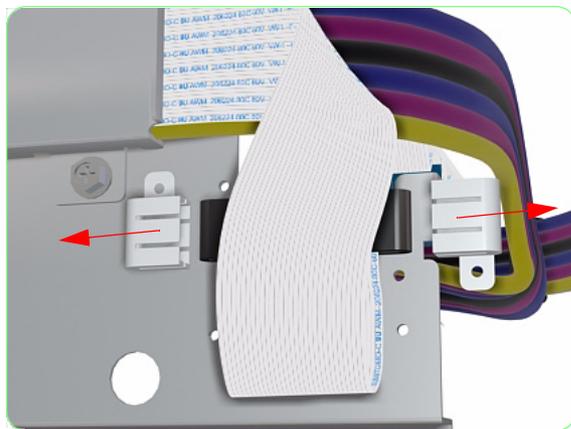
44. Remove the ferrite clamps.
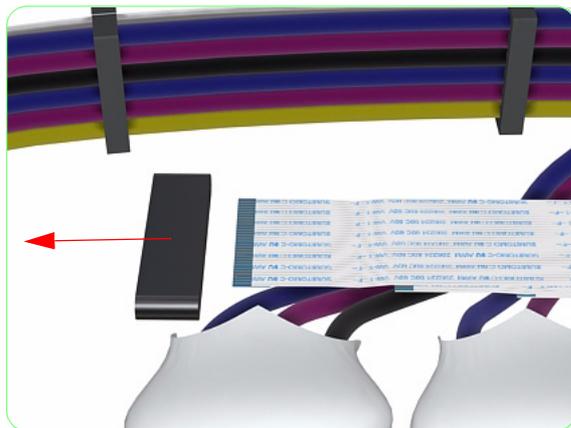
45. Remove the ferrite from the Trailing Cable.
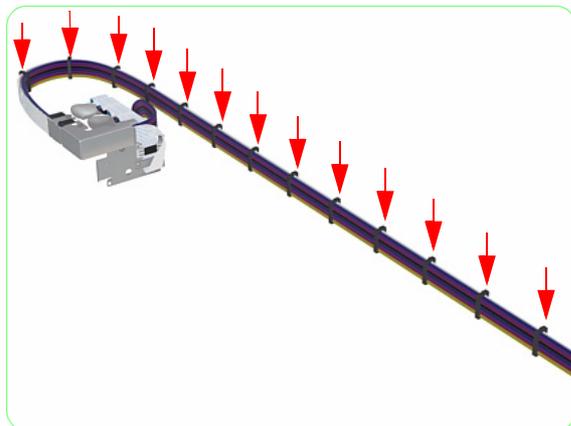
46. Locate and remove ALL the Clamps that secure the Ink Tubes and Trailing Cable together as shown in the following steps.
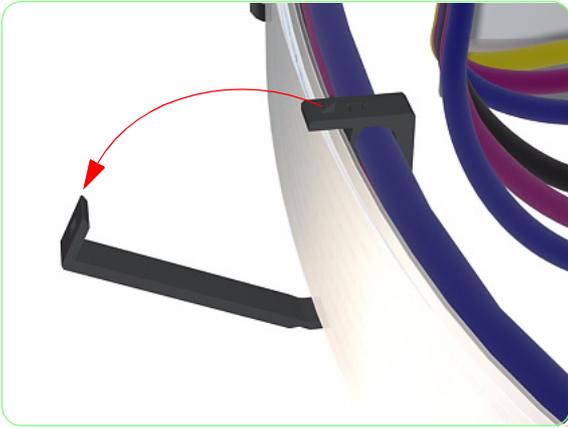
47. Unclip the Clamp from the Ink Tubes and Trailing Cable.
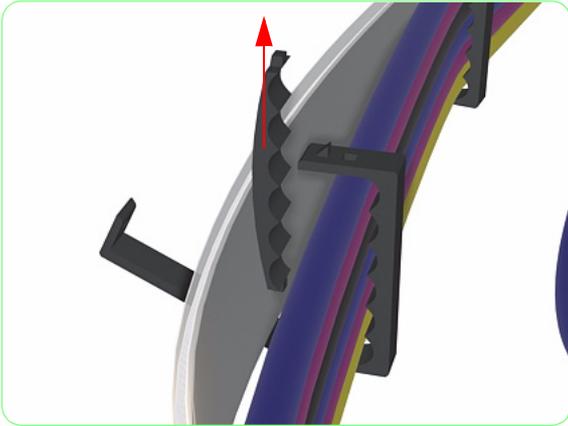
48. Remove the center strip from the clamp.
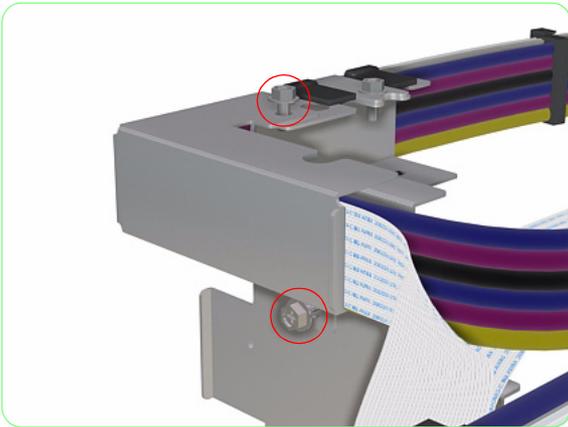
49. Remove two screws that secure the Outside Tube Support.
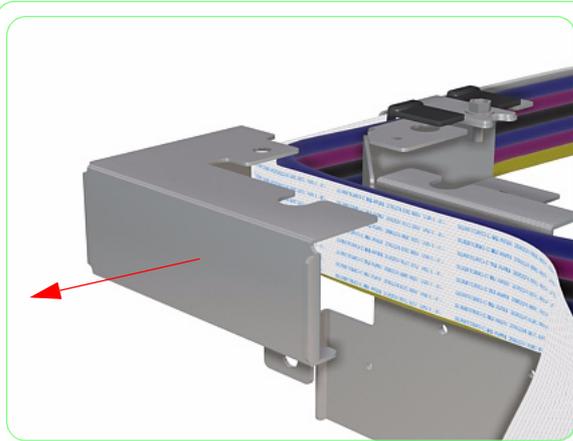
50. Remove the Outside Tube Support.
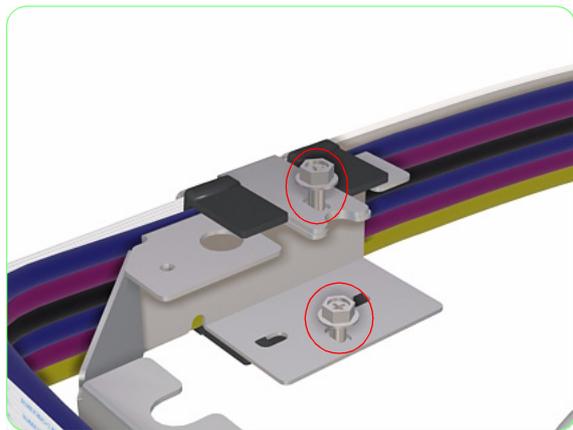
51. Remove two screws that secure the metal bracket.
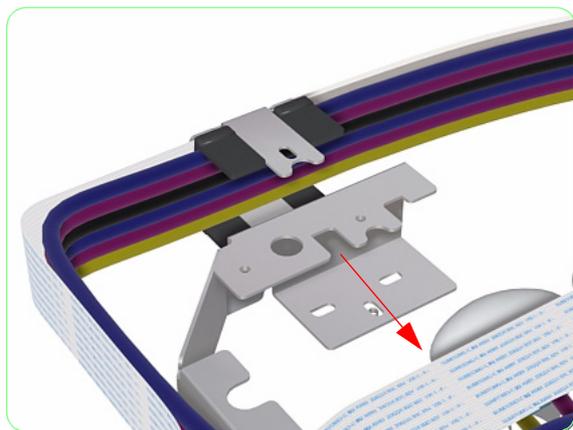
52. Remove the metal bracket.
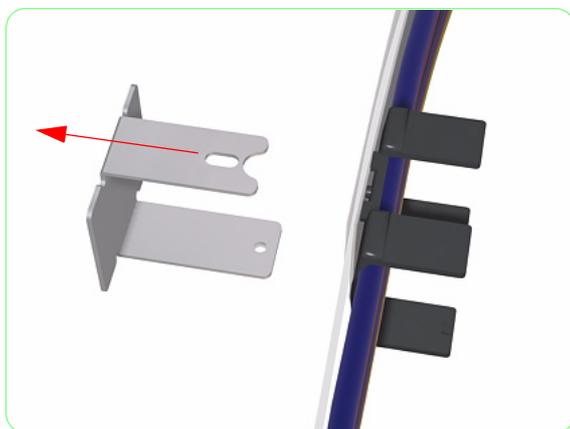
53. Release the metal bracket and separate the Trailing Cable from the Ink Tubes.

Installation

To install a **new** Trailing Cable or Ink Supply Station, follow the previous steps in the reverse order. Only in certain steps will you need to take care of the following when installing a **new** Trailing Cable or Ink Supply Tubes.

To Main PCA
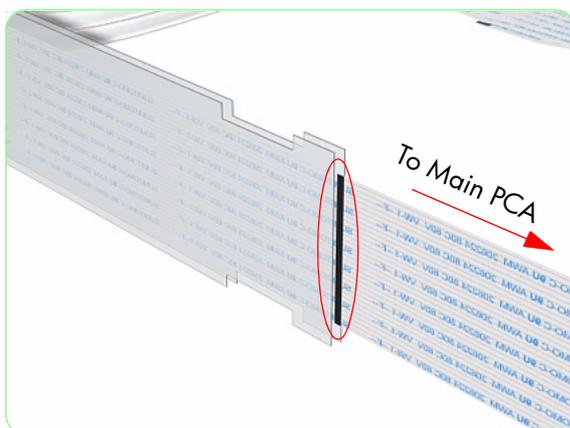
1. Align ALL the cables together using the line marked on each one. Also, align one plastic strip on either side of the Trailing Cable.

Align the notches
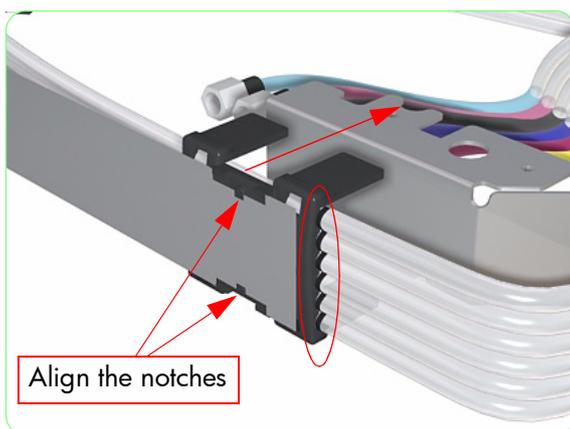
2. Align the line on the Ink Supply Tubes with the Black Plastic Clamp and the Metal Strip. Place the Ink Supply Tubes against the Metal Bracket.
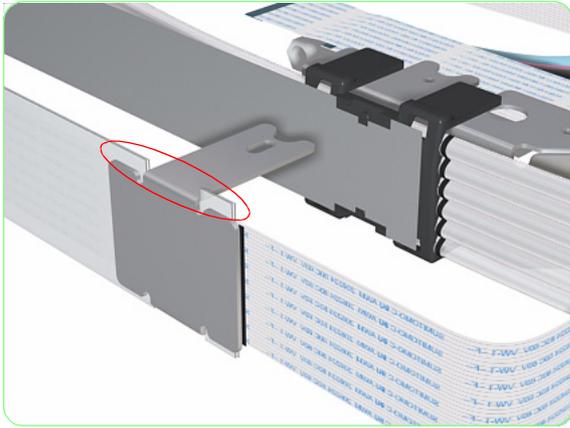
3. Place the Metal Bracket onto the Trailing Cable, making sure it slots into the cutout in the plastic strips.
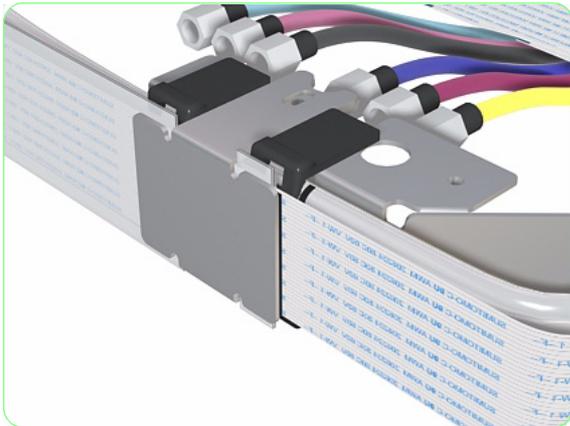
4. Place the Trailing Cable over the Ink Supply Tubes (as shown).

5. Secure the Metal Bracket with two screws.
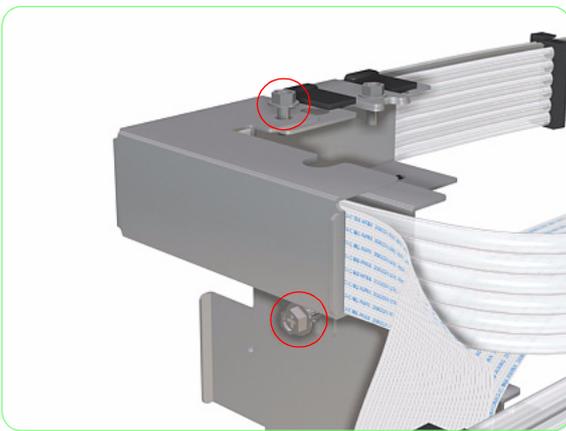
6. Install the Outside Tube Support and secure with two screws.

7. Insert the center strip and install the clamps along the length of the Trailing Cable and Ink Supply Tubes (should be installed where there is a cutout in the plastic strip that sandwiches the Trailing Cable).
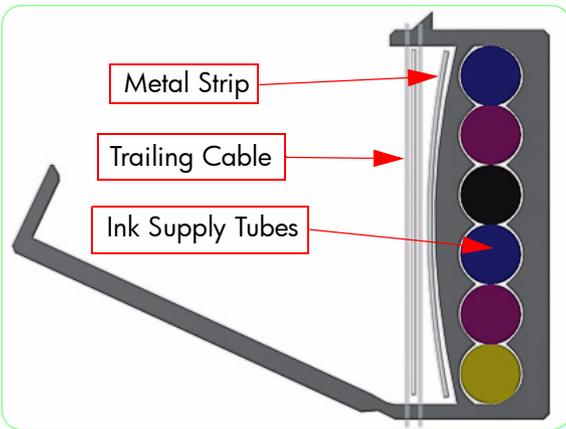
8. Make sure the Trailing Cable and the Ink Supply Tubes are correctly clamped (as shown in this cross-section).

Metal Strip

Trailing Cable
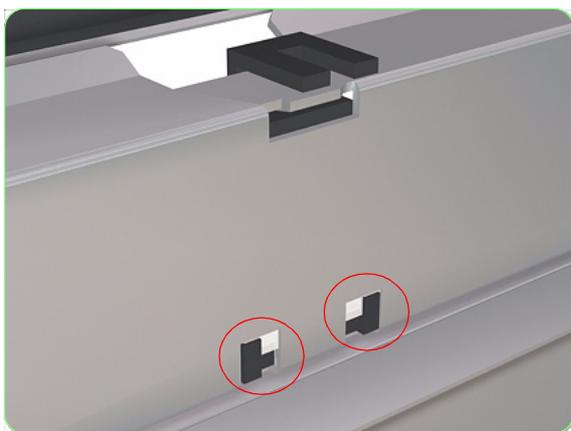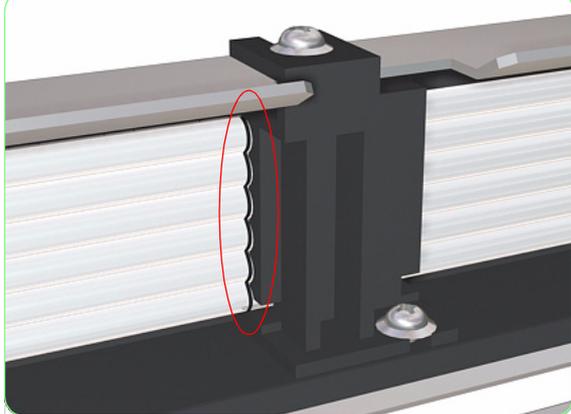
Ink Supply Tubes

9. When installing the Trailing cable and Ink Supply Tubes back into the Printer, use the line on the Ink Supply Tubes as a reference to align it with the **second** Tube Clamp.

10. When installing the Tube Clamps, make sure that they are clipped correctly from the rear and do not pinch the Trailing Cable.

11. The rest of the procedure for the installation of the Trailing Cable and Ink Supply Tubes should be in the reverse order of the removal procedure.

12. Once the Trailing Cable and Ink Supply Tubes have been correctly installed you should manually move the Carriage along the width of the Printer several times and make sure that it moves smoothly with no obstructions.

13. Power On the Printer.

14. Charge the Ink Supply Tubes with ink (P*H Main \ Ink System Opt \ Charge Ink Sys*).

Capping Station

Removal

Switch off the product and remove the power cable.

1. Remove the Window ⇒ Page *8-3*.

2. Remove the Right Door ⇒ Page *8-5*.

3. Remove the Right Trim ⇒ Page *8-7*.

4. Remove the Right Side Cover ⇒ Page *8-12*.

5. Remove the Maintenance Kit Drawer and Cover ⇒ Page *8-18*.

6. Remove two screws that secure the Capping Station Cover.
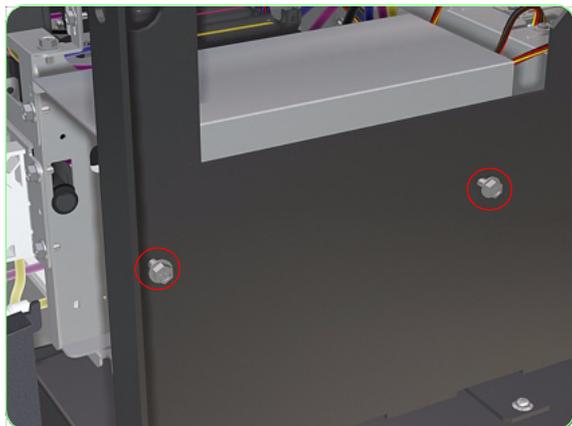
7. Remove the Capping Station Cover.
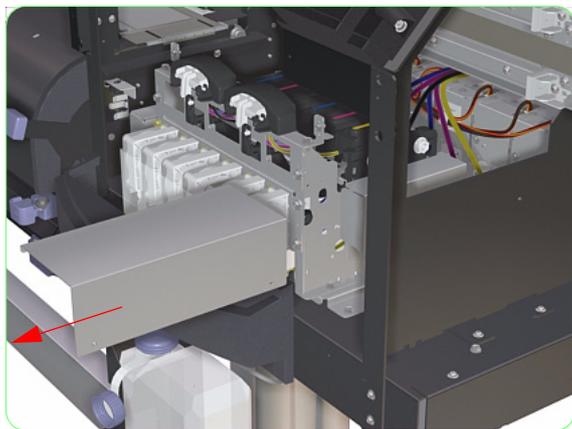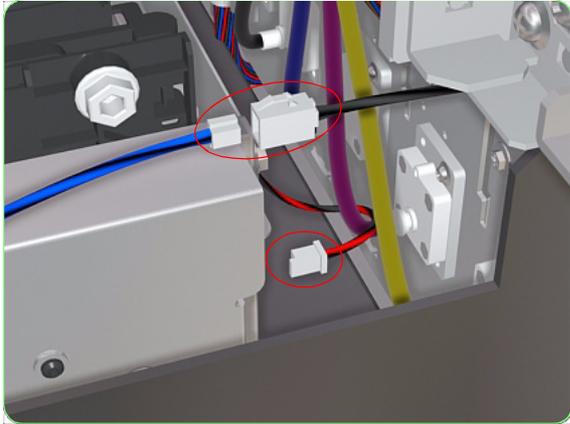
8. Disconnect the Capping Switch Cable and the Capping Station Lever Cable.
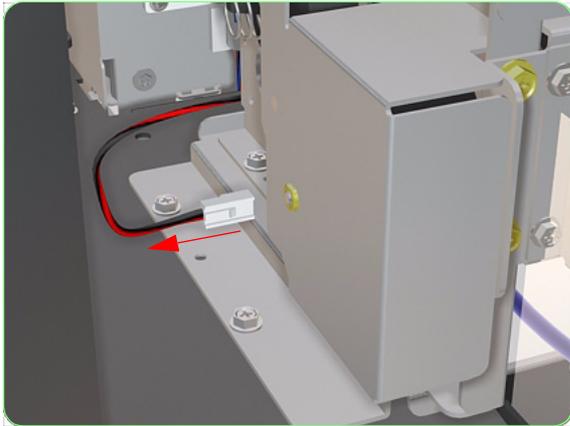
9. Disconnect the Capping Motor Cable.
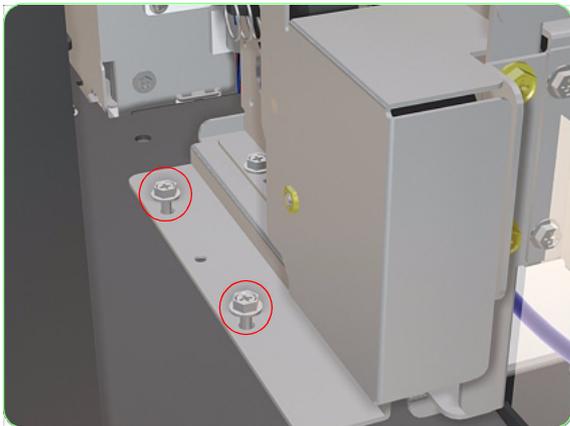
10. Remove two screws that secure the left side of the Capping Station to the Printer.
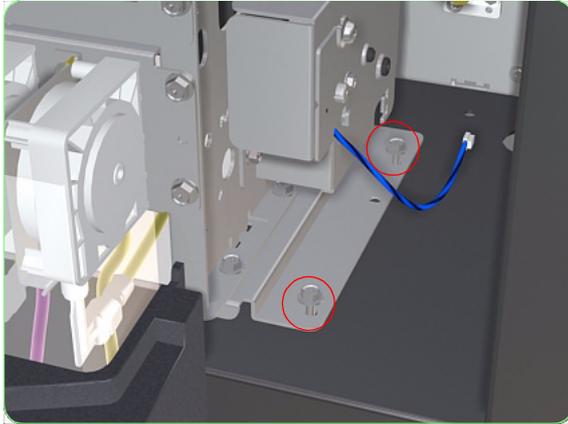
11. Remove two screws that secure the right side of the Capping Station to the Printer.
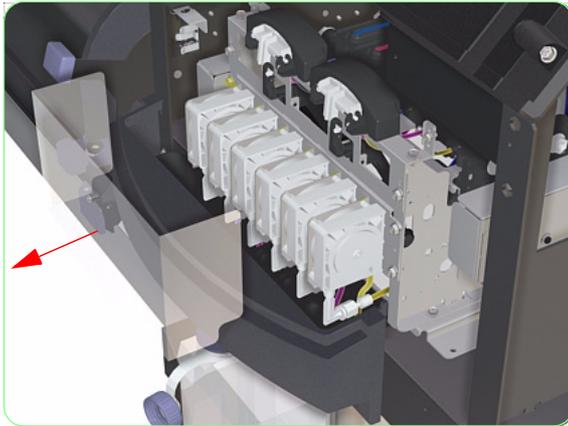
12. Remove the Capping Station Protective Cover.
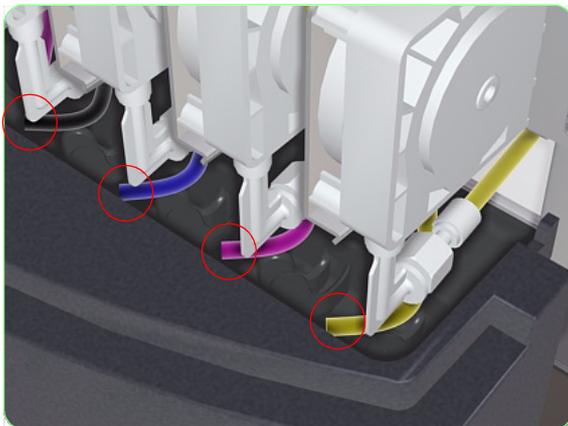
13. Disconnect all the Waste Ink Tubes from the Waste Ink Drainage Assembly.
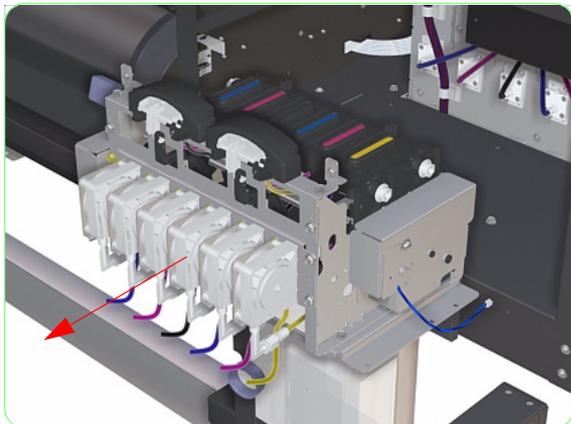
14. Remove the Capping Station from the front of the Printer.
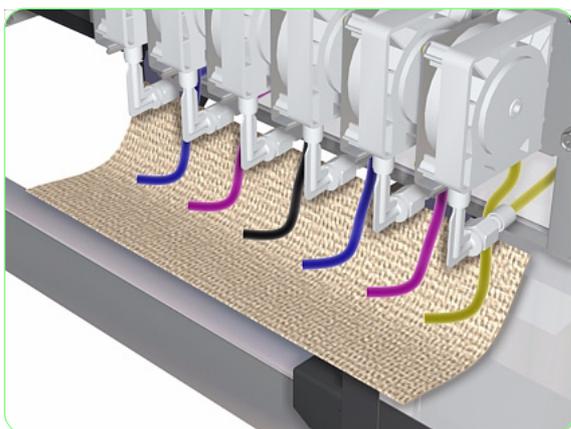
15. Place some paper underneath the disconnected ink tubes to catch any residual ink spillage.

Once the Capping Station Assembly has been installed correctly, you must perform the following calibrations/adjustment:

- **Capping Position Calibration** ⇒ **Page 5-18.**
- **Vertical Capping Position Calibration** ⇒ **Page 5-15.**
- **Printhead Capping Limit Adjustment** ⇒ **Page 5-14.**

Capping Station Motor
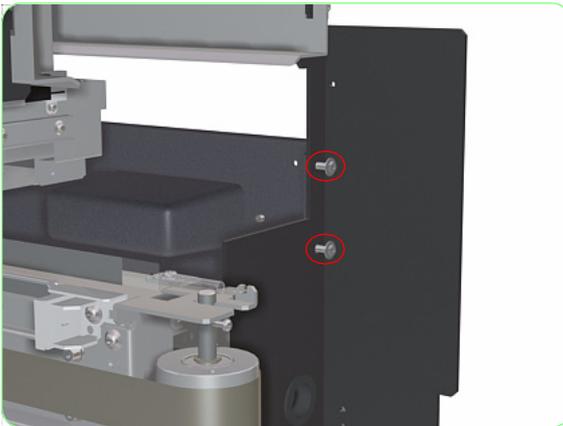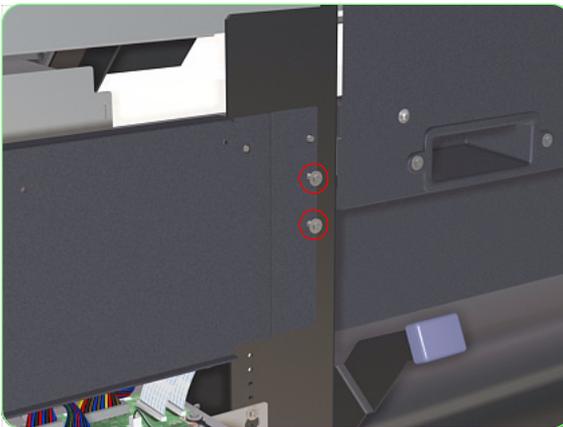
Removal

Switch off the product and remove the power cable.

1. Remove the Window ⇒ Page *8-3*.
2. Remove the Right Door ⇒ Page *8-5*.
3. Remove the Right Trim ⇒ Page *8-7*.
4. Remove the Right Side Cover ⇒ Page *8-12*.
5. Remove the Maintenance Kit Drawer and Cover ⇒ Page *8-18*.
6. Remove the Capping Station ⇒ Page *8-119*.
7. Remove two screws that secure the Capping Station Plate from the rear of the Capping Station.
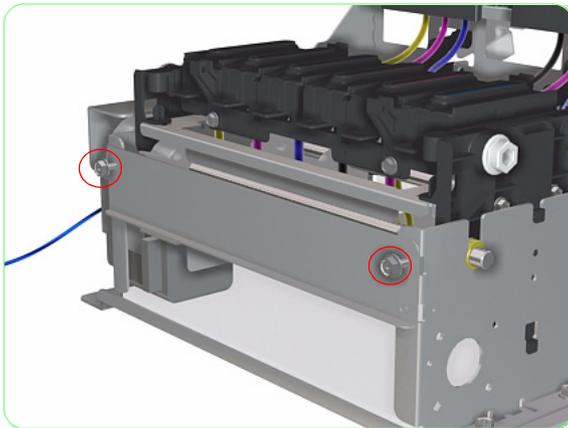
8. Remove the Capping Station Plate.
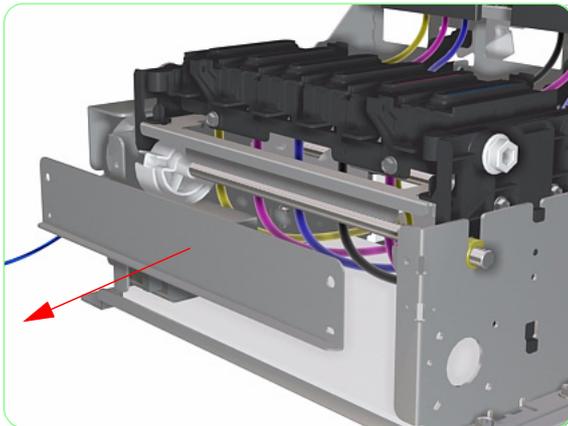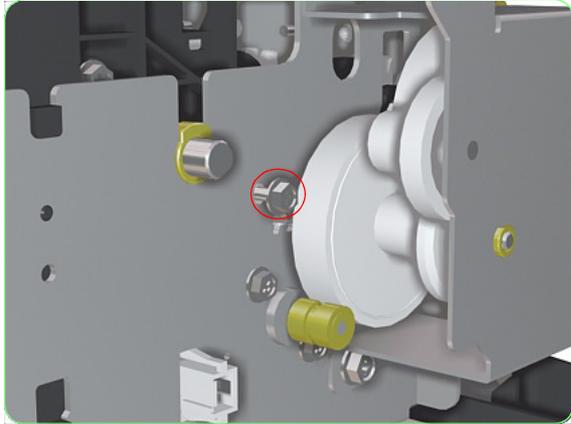
9. Remove one screw from the left side of the Capping Station.
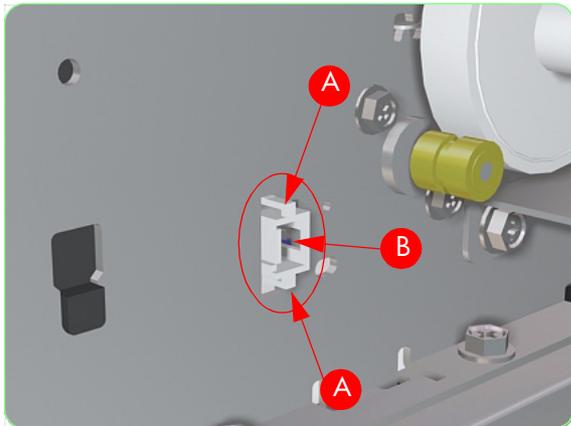
10. Push on both sides of the Capping station Motor Connector (A) and push through the hole in the side of the Capping Station (B).
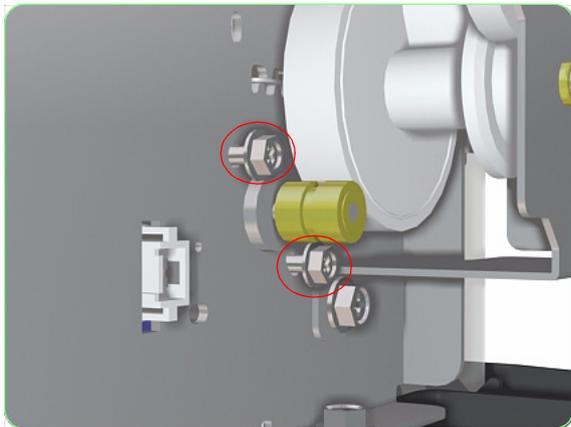
11. Remove two screws that secure the left side of the Capping Station Motor Cover.
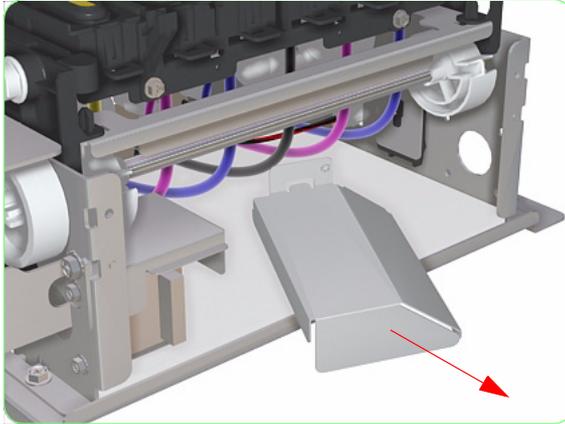
12. Remove the Capping Station Motor Cover.
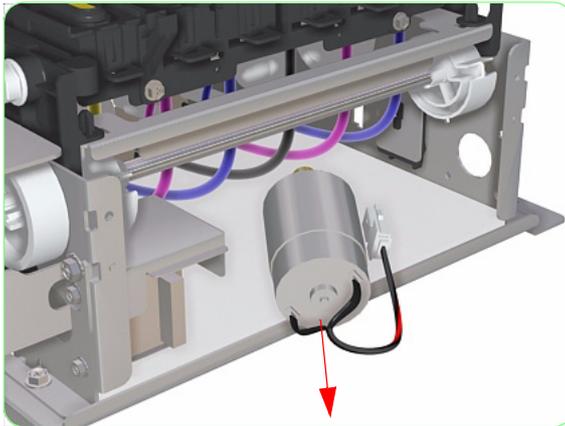
13. Remove the Capping Station Motor from the Printer.

Once the Capping Station Motor has been installed correctly, you must perform the following calibrations/adjustment:

- **Capping Position Calibration** ⇒ **Page *5-18*.**
- **Vertical Capping Position Calibration** ⇒ **Page *5-15*.**
- **Printhead Capping Limit Adjustment** ⇒ **Page *5-14*.**

Cap Motor Assembly

Removal

Switch off the product and remove the power cable.

1. Remove the Window ⇒ Page *8-3*.

2. Remove the Right Door ⇒ Page *8-5*.

3. Remove the Right Trim ⇒ Page *8-7*.

4. Remove the Right Side Cover ⇒ Page *8-12*.

5. Remove the Maintenance Kit Drawer and Cover ⇒ Page *8-18*.

6. Remove the Capping Station ⇒ Page *8-119*.

7. Remove three screws that secure the Cap Motor Assembly.
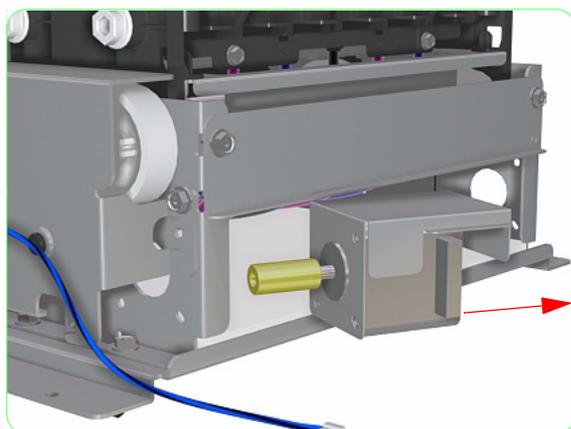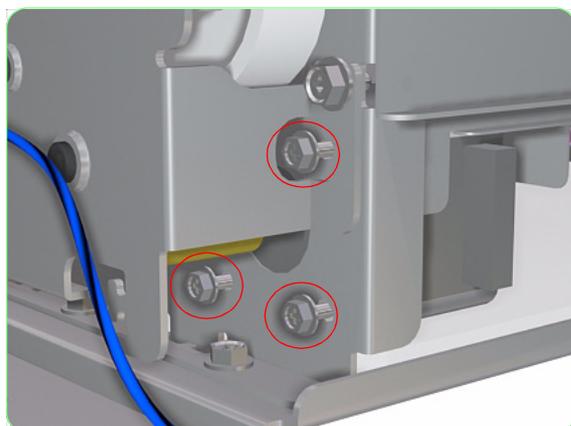
8. Remove the Cap Motor Assembly.

Once the Cap Motor Assembly has been installed correctly, you must perform the following calibrations/adjustment:

■ **Capping Position Calibration** ⇒ Page *5-18*.
■ **Vertical Capping Position Calibration** ⇒ Page *5-15*.
■ **Printhead Capping Limit Adjustment** ⇒ Page *5-14*.
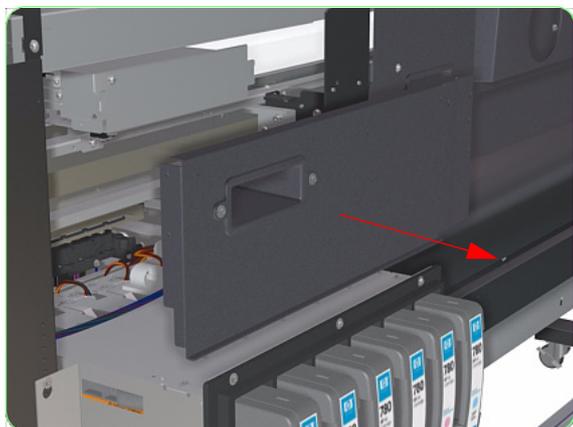
Capping Station Lever

Removal

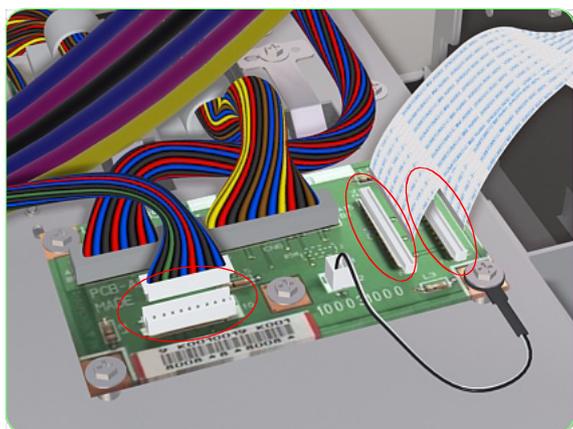**Switch off the product and remove the power cable.**

1. Remove the Window ⇒ Page *8-3*.
2. Remove the Right Door ⇒ Page *8-5*.
3. Remove the Right Trim ⇒ Page *8-7*.
4. Remove the Right Side Cover ⇒ Page *8-12*.
5. Remove the Maintenance Kit Drawer and Cover ⇒ Page *8-18*.
6. Remove the Capping Station ⇒ Page *8-119*.
7. Remove two screws that secure the Capping Station Lever.
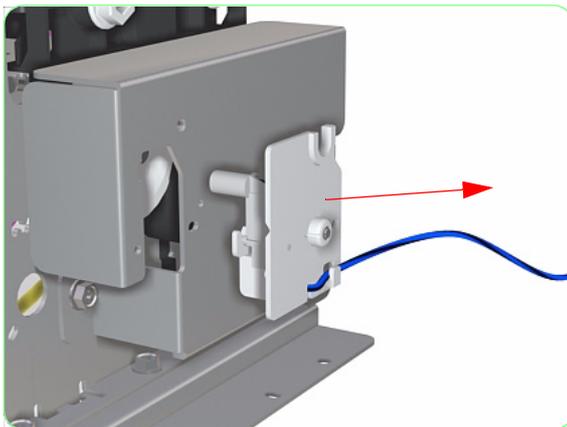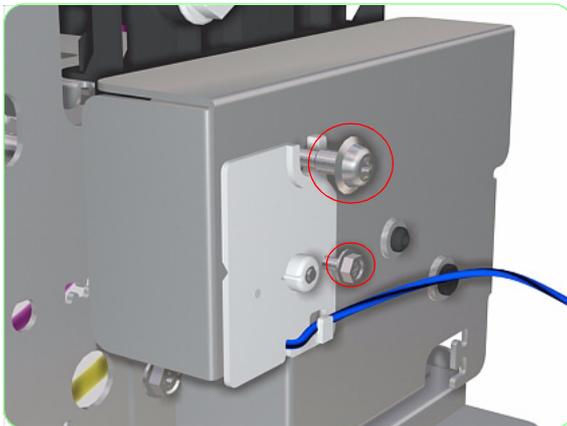
8. Remove the Capping Station Lever.

Before you re-install the Capping Station Lever, make sure that the Capping Units are raised (in the upper position). If you try to install the Capping Station Lever when the Capping Units are lowered, it could cause damage to the Lever.

Once the Capping Station Lever has been installed correctly, you must perform the following calibrations/adjustment:

- ■ **Capping Position Calibration ⇒ Page *5-18*.**
- ■ **Vertical Capping Position Calibration ⇒ Page *5-15*.**
- ■ **Printhead Capping Limit Adjustment ⇒ Page *5-14*.**

Prime Assembly

Removal

Switch off the product and remove the power cable.
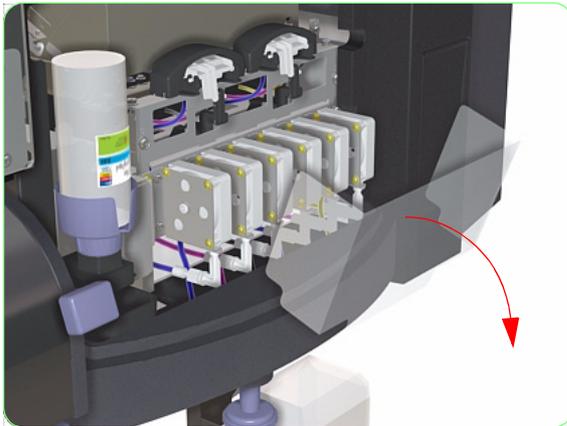
1. Open the Window and the Right Door.

2. Remove the Capping Station Protective Cover.
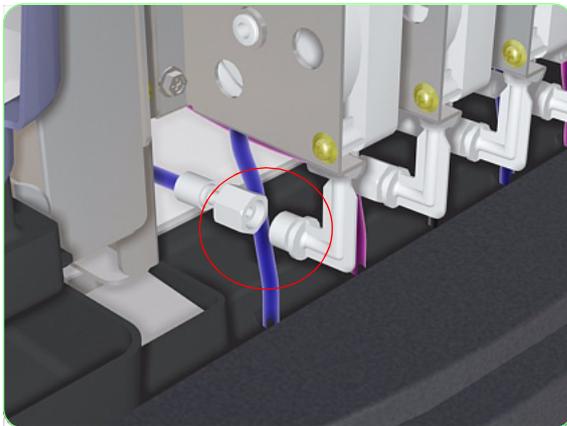
3. Disconnect the Ink Tube of the Prime Assembly that you need to remove.
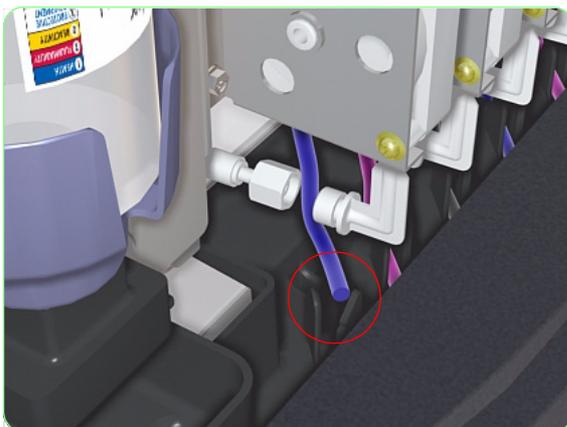
4. Disconnect the Waste Ink Tube from the Waste Ink Collection Tray.
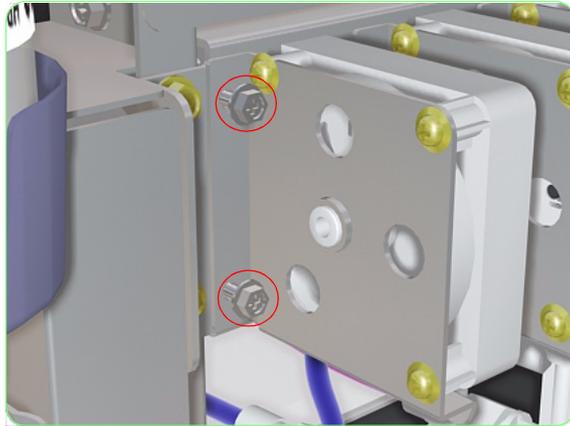
5. Remove two screws that secure the Prime Assembly to the Capping Station.
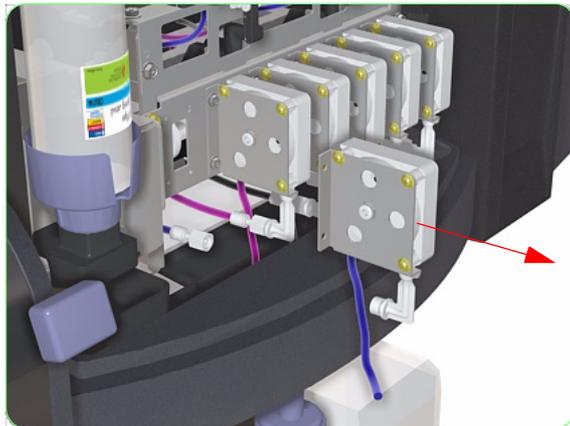
6. Remove the Prime Assembly from the Capping Station.

Once you have replaced the Prime Assembly, make sure you reset the Prime Assembly Counter (for more information, refer to Page *4-41*).

Capping Unit

Removal

Switch off the product and remove the power cable.
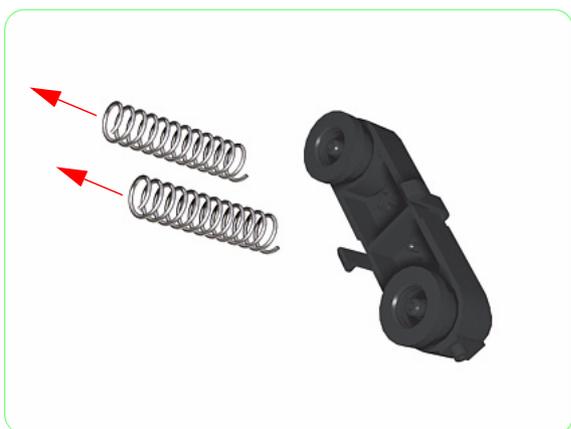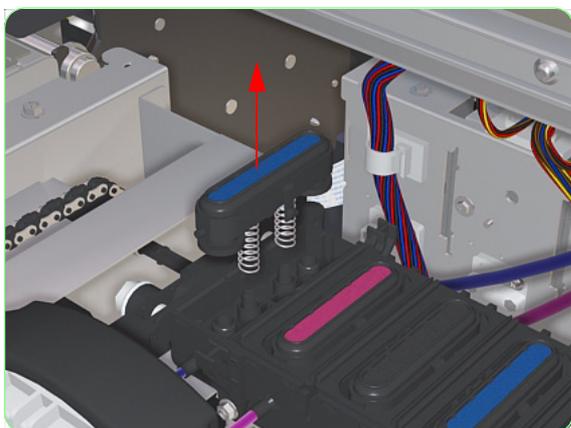
1. Open the Window and the Right Door.

2. Lift up the Cap Cover by releasing a catch at the rear.

3. Remove the Capping Unit.

4. Remove two springs from the Capping Unit.

Once the Capping Unit has been installed correctly, you must perform the Capping Position Calibration (for more information, refer to Page *5-18*).

Also, once you have replaced the Capping Unit, make sure you reset the Capping Unit Counter (for more information, refer to Page *4-42*).

HP Designjet 8000s Series Printer Service Manual

Valve Assembly

Removal

Switch off the product and remove the power cable.

1. Open the Window and the Right Door.
2. Release a catch on left side of the Valve Cover and remove the cover.
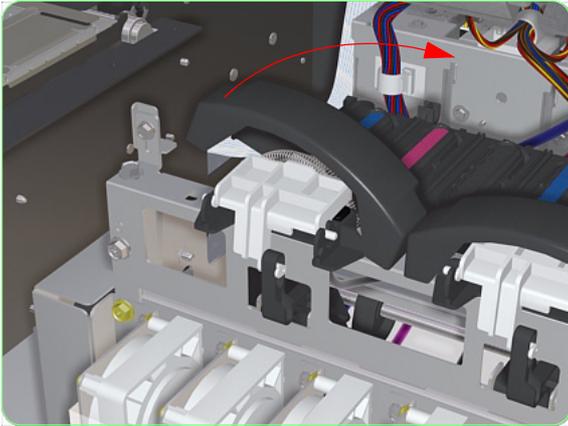
3. Remove the Valve Spring.
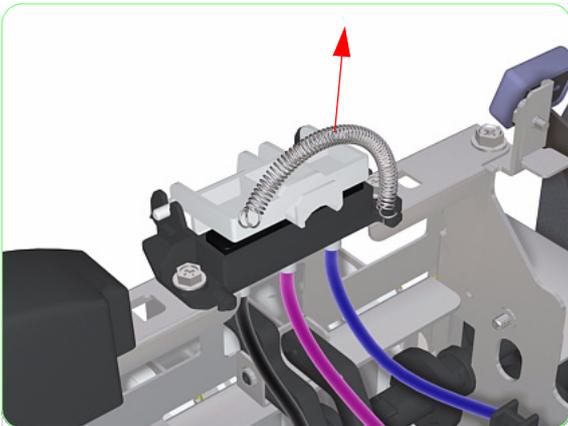
4. Open the Valve Plate.
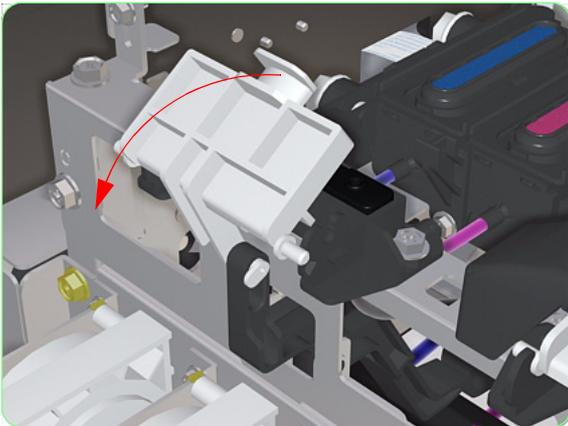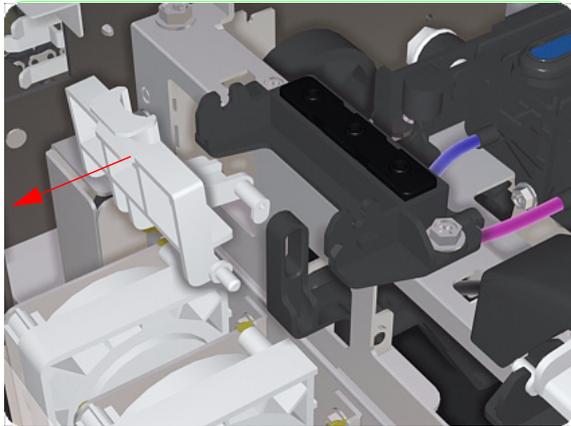
5. Remove the Valve Plate from the Valve Assembly.
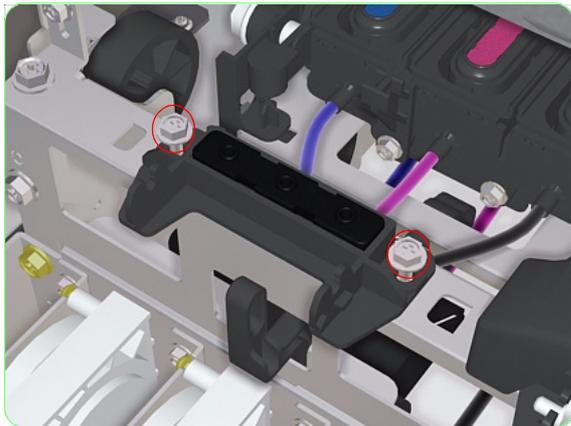
6. Remove two screws that secure the Valve Assembly.
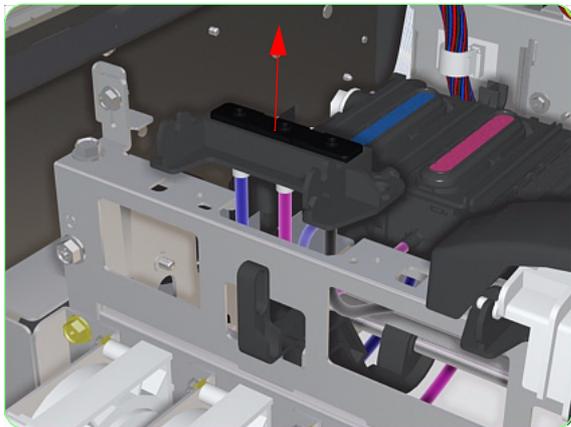
7. Lift up the Valve Assembly.
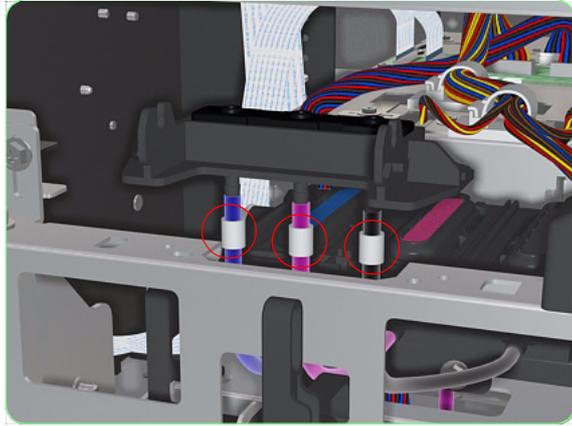
8. Pull down the three plastic collars that secure the tubes to the Valve Assembly.

9. Remove the Valve Assembly from the Printer.

Wiping Station

Removal

Switch off the product and remove the power cable.

1. Using the Front Panel menu, move the Carriage to the Maintenance Area (on the left hand side of the Printer).

2. Open the Window and the Right Door.

3. Remove the Wiper Case ⇒ Page *8-136*.

4. Remove two screws that secure the Wiping Station.
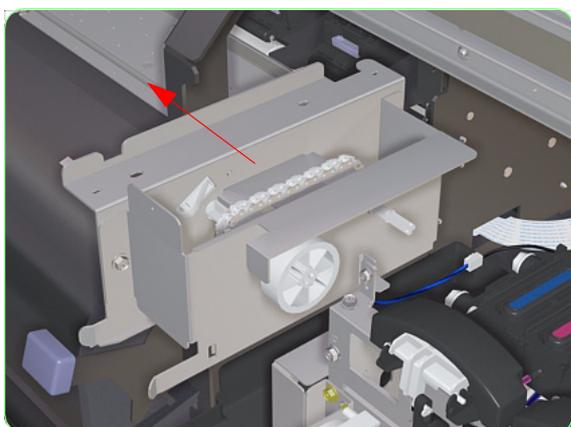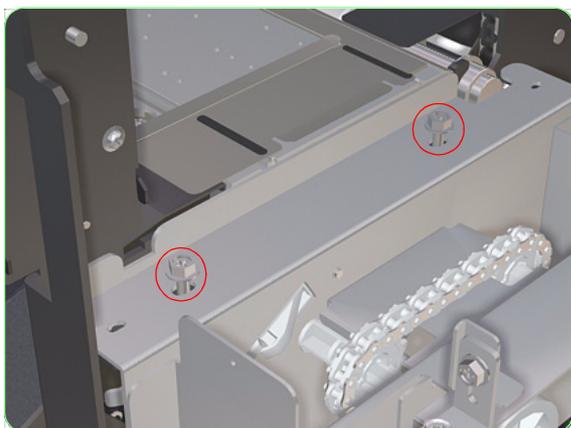
5. Lift the Wiping Station slightly out of the Printer.
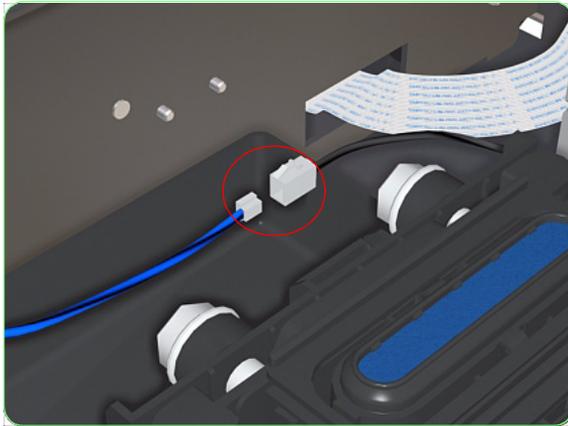
6. Disconnect the Wiping Station Cable.
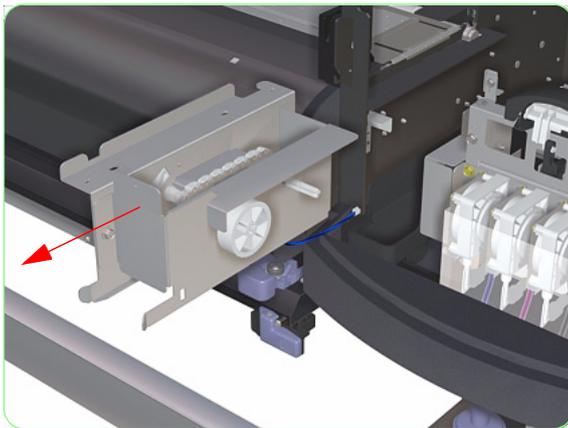
7. Remove the Wiping Station from the Printer.

Once the Wiping Station Assembly has been installed correctly, you must perform the Wiping Station Height Adjustment. For further information, refer to Page *5-16*.

Wiper Case

Removal

Switch off the product and remove the power cable.

1. Using the Front Panel menu, move the Carriage to the Maintenance Area (on the left hand side of the Printer).

2. Open the Window and the Right Door.

3. Remove the Wiper Cleaning Assembly ⇒ Page *8-137*.

4. Remove the Waste Drainage Assembly ⇒ Page *8-157*.

5. Remove one screw that secures the Wiper Case to the Printer.
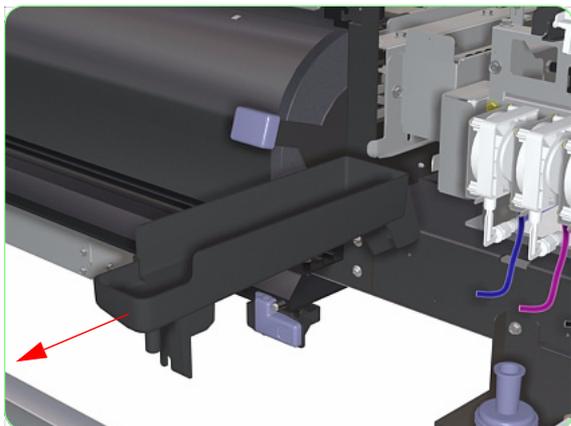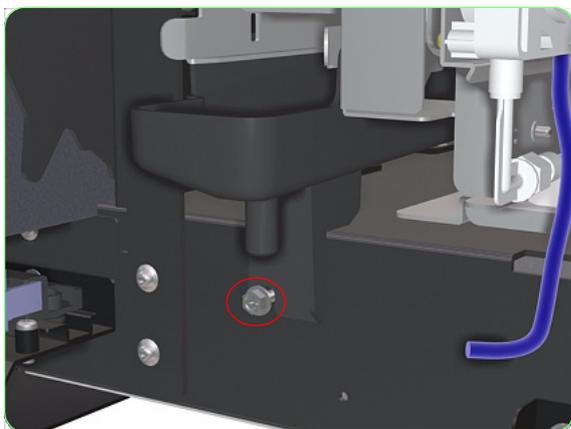
6. Remove the Wiper Case from the Printer.

Wiper Cleaning Assembly

Removal

Switch off the product and remove the power cable.

1. Open the Window and the Right Door.

2. Remove the Wiping Liquid Bottle from the Wiping Liquid Holder.
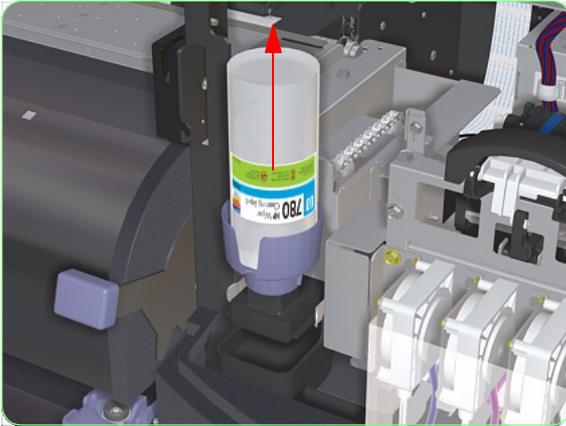
3. Pull out the Wiper Cleaning Assembly but do **not** remove completely.
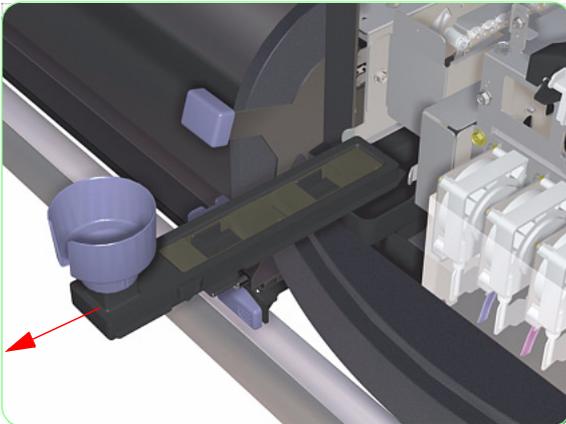
4. Tilt the Wiper Cleaning Assembly to empty any excess liquid into the drainage tray.
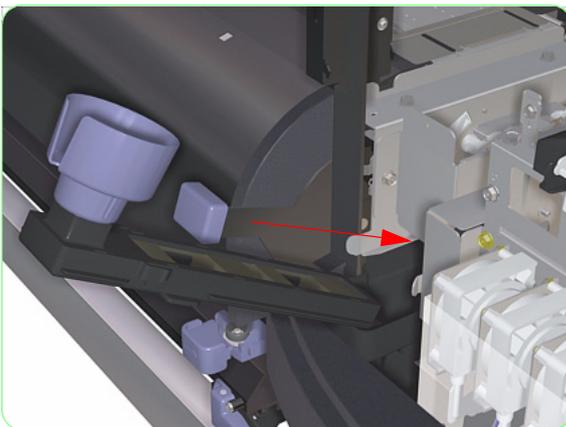
Wiper Blade Position Sensor

Removal

Switch off the product and remove the power cable.

1. Remove the Wiping Station ⇒ Page *8-134*

2. Remove one screw that secures the Wiper Blade Position Sensor.
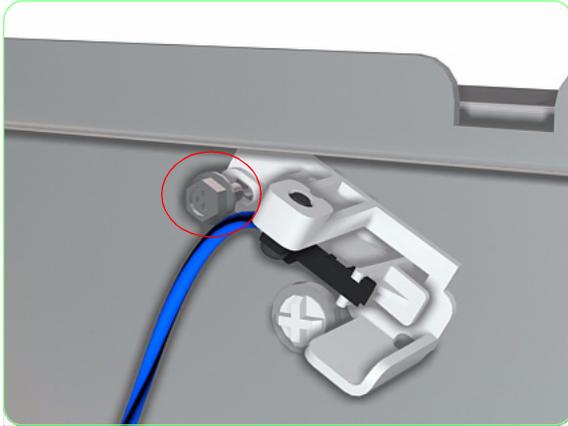
3. Remove the Wiper Blade Position Sensor.
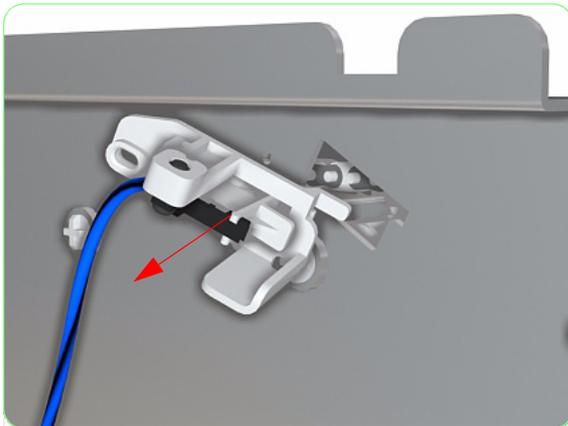
Ink Supply Station PCA

Removal

Switch off the product and remove the power cable.

1. Remove the Window ⇒ Page *8-3*.

2. Remove the Right Door ⇒ Page *8-5*.

3. Remove the Right Top Cover ⇒ Page *8-9*.

4. Remove the Right Side Cover ⇒ Page *8-11*.

5. Remove the Ink Cartridge Bay Cover ⇒ Page *8-20*.

6. Remove two screws from the side that secure the Right Back Cover to the Printer.

7. Remove two screws from the rear that secure the Right Back Cover to the Printer.
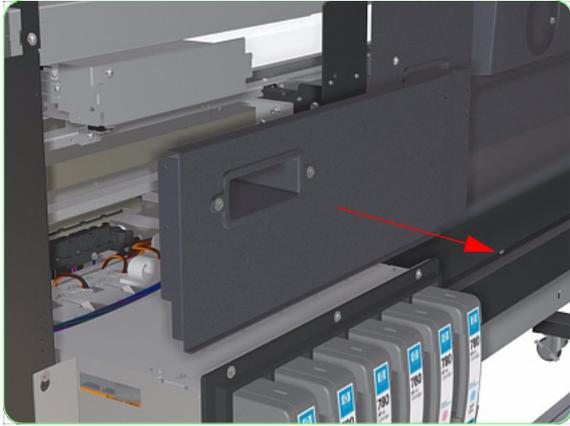
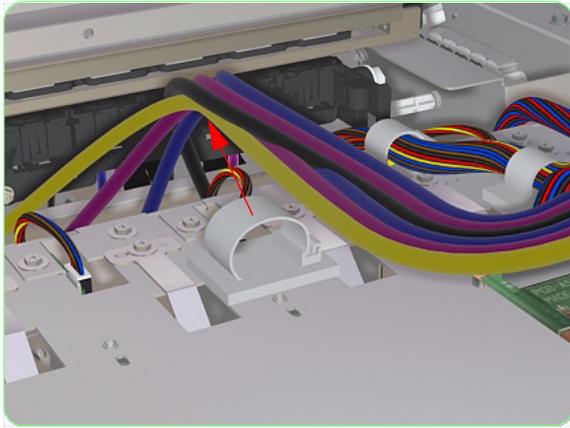**8.** Remove the Right Back Cover from the Printer.
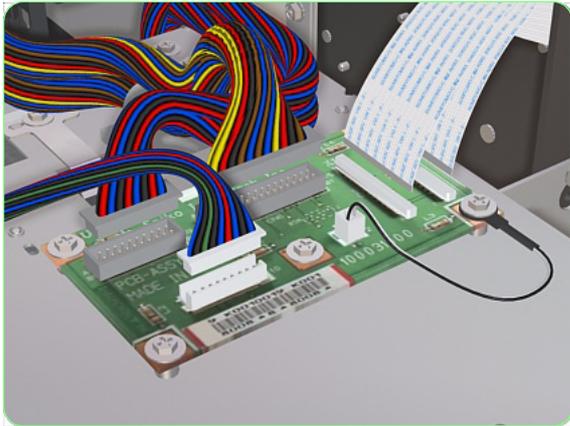

9. Disconnect ALL the cables from the ISS PCA.
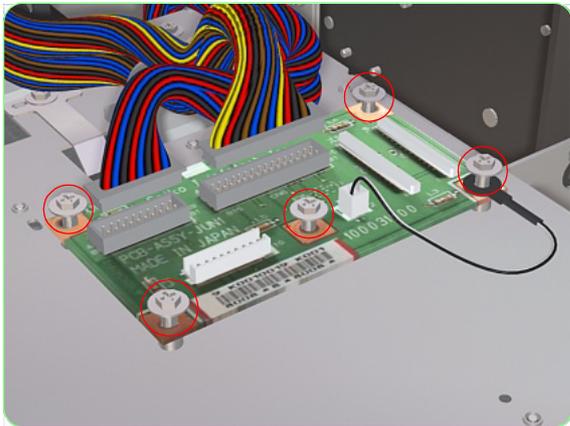
10. Remove five screws that secure the ISS PCA to the Printer.

11. Remove the ISS PCA from the Printer.

Cartridge Sensor

Removal

Switch off the product and remove the power cable.

1. Remove the Window ⇒ Page *8-3*.

2. Remove the Right Door ⇒ Page *8-5*.

3. Remove the Right Top Cover ⇒ Page *8-9*.

4. Remove the Right Side Cover ⇒ Page *8-11*.

5. Remove the Ink Cartridge Bay Cover ⇒ Page *8-20*.

6. Remove two screws from the side that secure the Right Back Cover to the Printer.

7. Remove two screws from the rear that secure the Right Back Cover to the Printer.

8. Remove the Right Back Cover from the Printer.

9. Disconnect three cables from the ISS PCA.

**10.** Remove the Ink Tubes from the Tube Clamp from the top of the ISS.

11. Loosen one screw (A) and remove one screw (B) that secure the Right Side of the ISS to the printer.


12. Loosen one screw (A) and remove one screw (B) that secure the Left Side of the ISS to the printer.

13. Lift the ISS away from the printer.

14. Remove the Ink Cartridge of the sensor you need to replace.
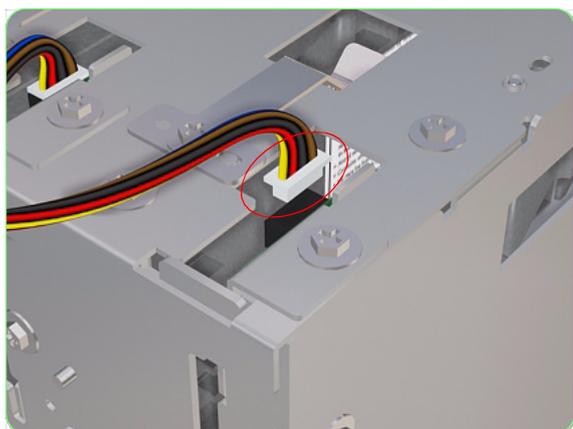
15. Disconnect the Ink Cartridge Sensor Cable.
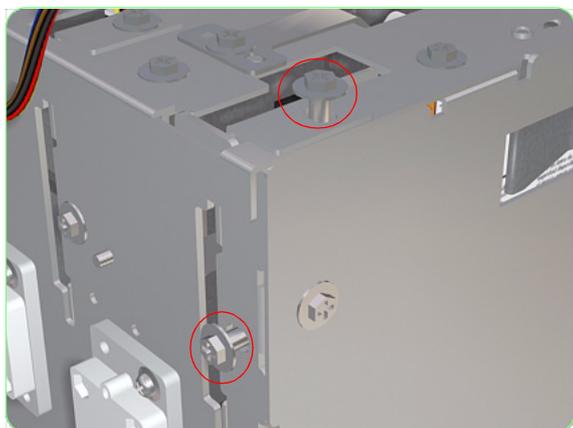
16. Remove two screws that secure the Ink Cartridge Sensor Bracket to the ISS.
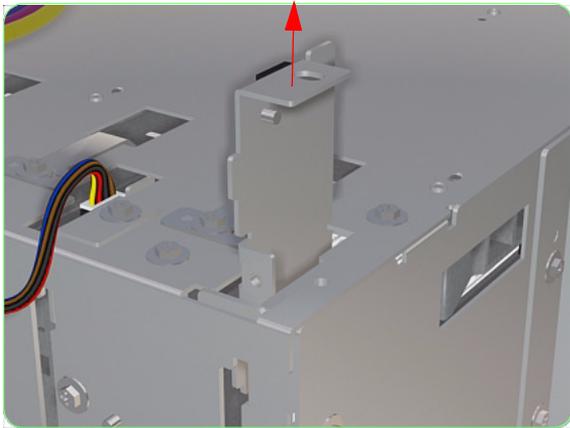
17. Remove the Ink Cartridge Sensor Bracket.
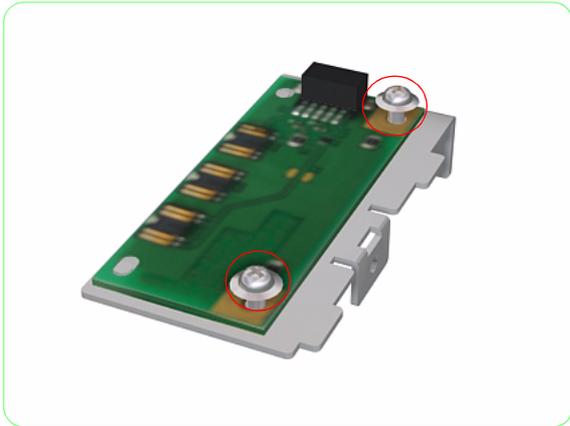
18. Remove two screws that secure the Ink Cartridge Sensor from the bracket.

19. Remove the Ink Cartridge Sensor.

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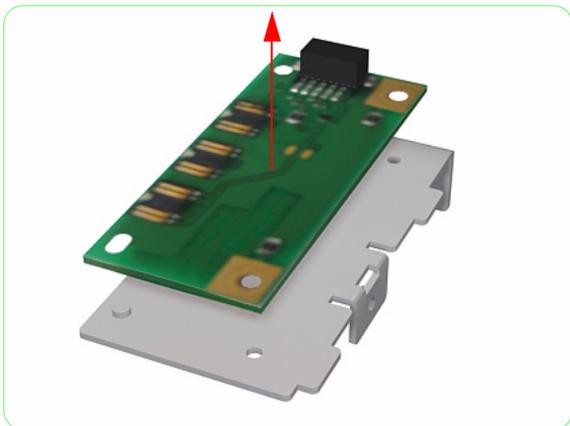
Ink Sensor

Removal

Switch off the product and remove the power cable.

1. Remove the Ink Cartridge Bay Cover ⟹ Page *8-20*.

2. Remove one screw that secures the Ink Sensor Bracket from the ISS.
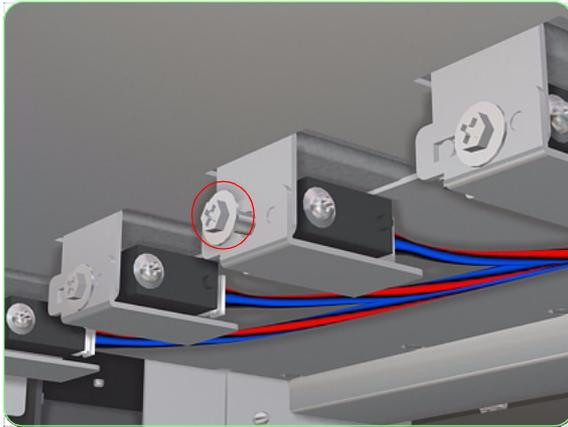
3. Remove the Ink Sensor Bracket from the ISS.
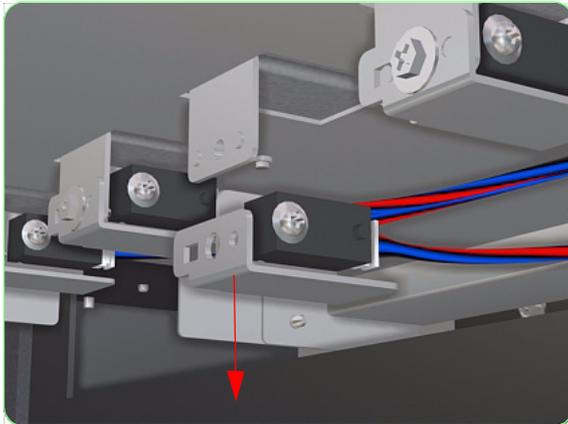
4. Disconnect the Ink Sensor Cable and remove the Ink Sensor from the Printer.
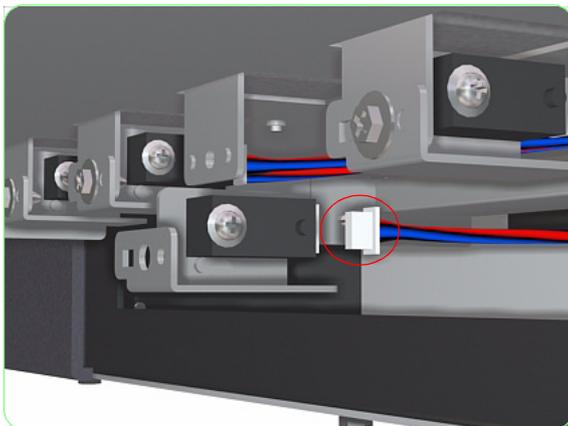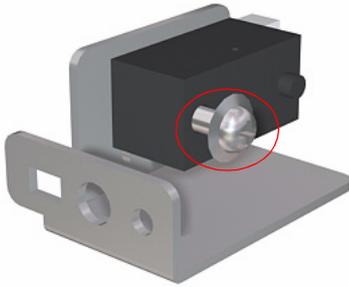
5. Remove one screw that secures the Ink Sensor from the bracket.
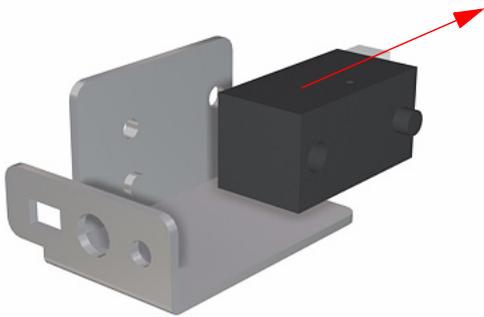
6. Remove the Ink Sensor.

Ink Supply Station

Removal

Switch off the product and remove the power cable.

1. Remove the Window ⇒ Page *8-3*.
2. Remove the Right Door ⇒ Page *8-5*.
3. Remove the Right Top Cover ⇒ Page *8-9*.
4. Remove the Right Side Cover ⇒ Page *8-11*.
5. Remove the Ink Cartridge Bay Cover ⇒ Page *8-20*.
6. Remove two screws from the side that secure the Right Back Cover to the Printer.
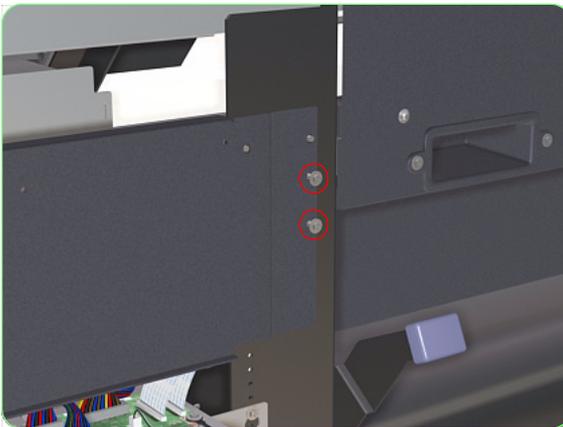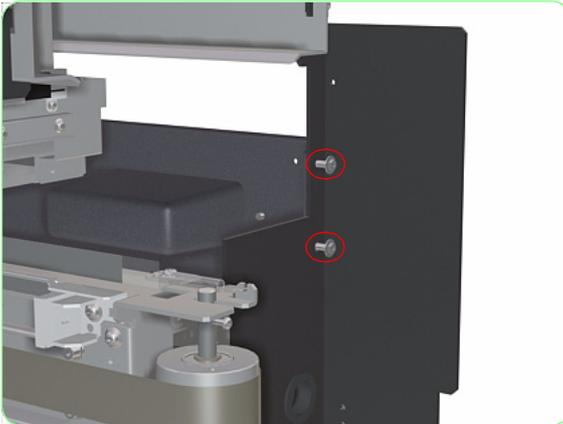
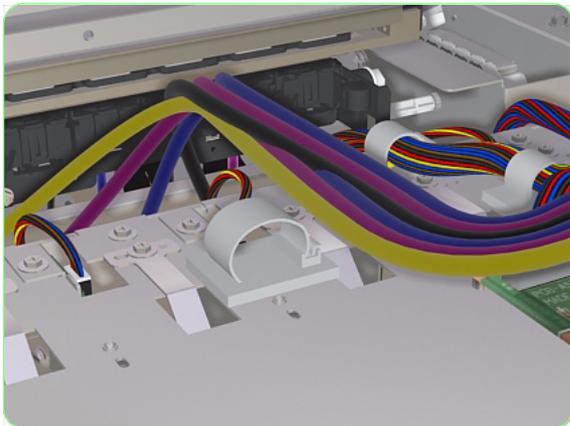7. Remove two screws from the rear that secure the Right Back Cover to the Printer.
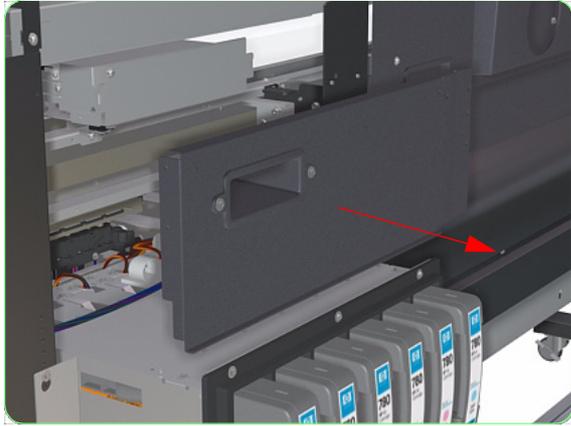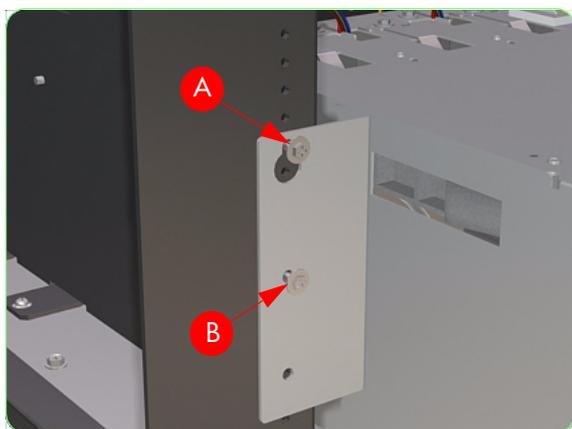
8. Remove the Right Back Cover from the Printer.
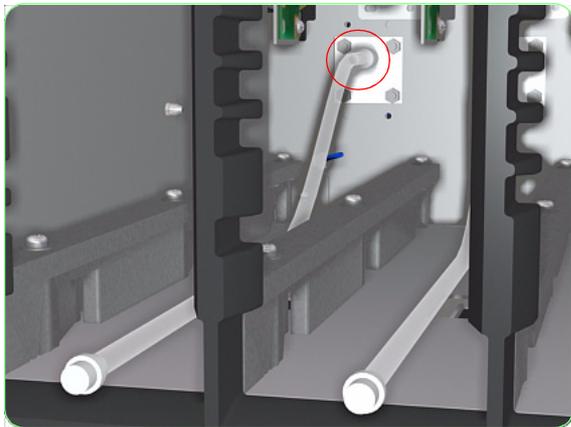
9. Remove ALL the Ink Cartridges from the Printer.

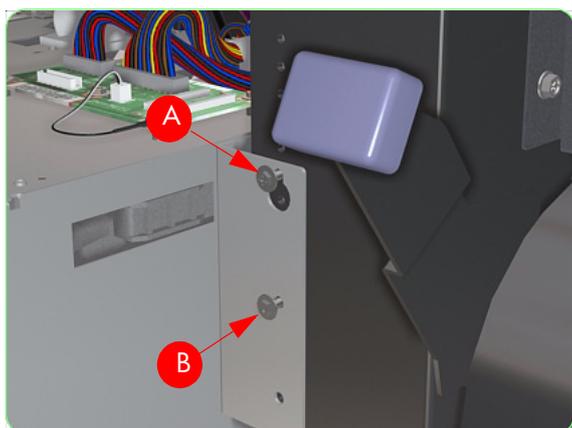**10.** Connect the protection tubes to the Ink Cartridge Connectors.
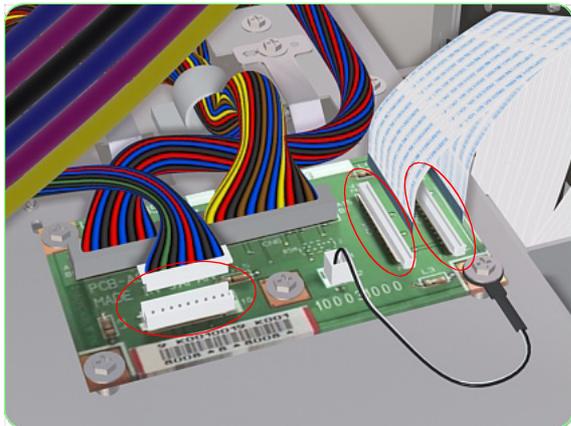
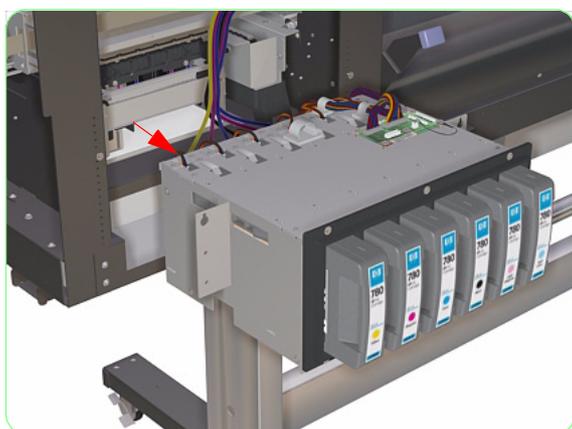**11.** Disconnect three cables from the ISS PCA.

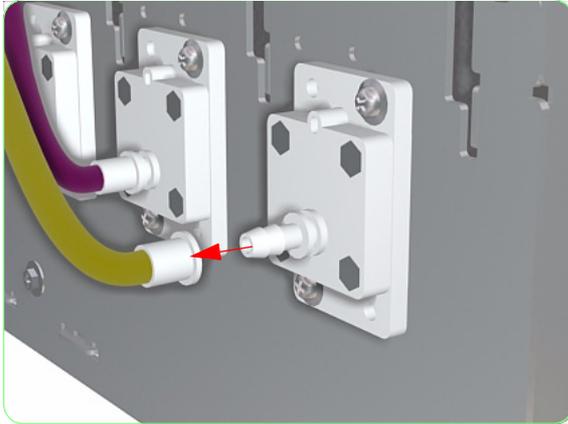**12.** Remove the Ink Tubes from the Tube Clamp from the top of the ISS.
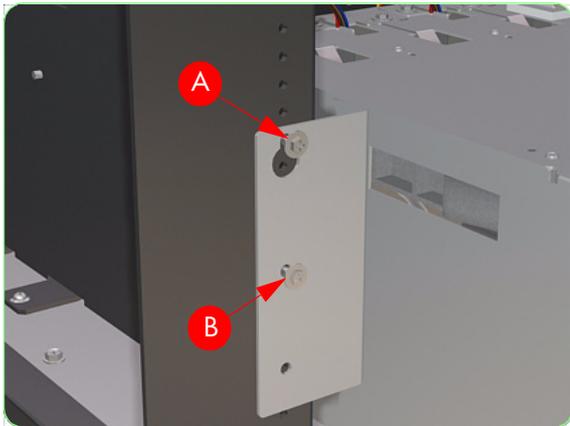
13. Loosen one screw (A) and remove one screw (B) that secure the Right Side of the ISS to the printer.
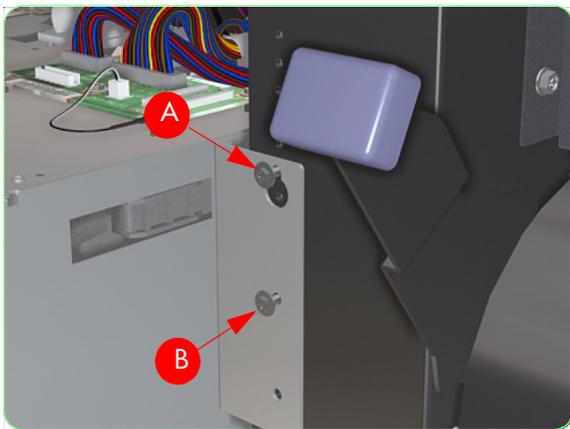

14. Loosen one screw (A) and remove one screw (B) that secure the Left Side of the ISS to the printer.
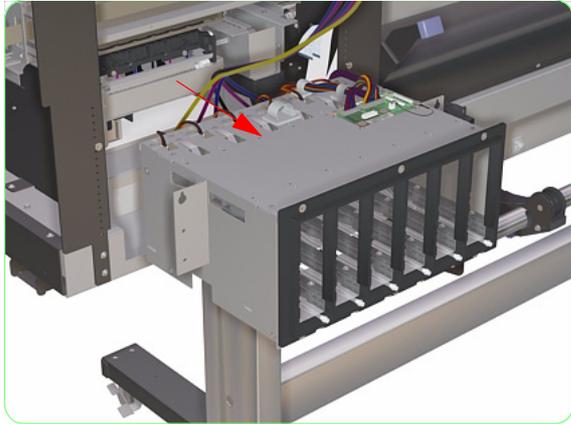
15. Lift the ISS away from the printer.
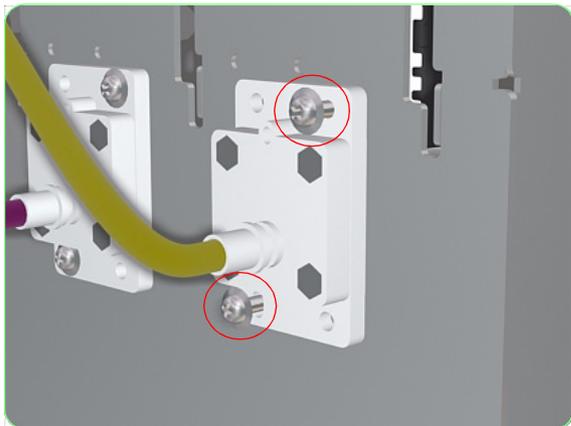
16. Remove two screws from each of the Ink Filter Assemblies.
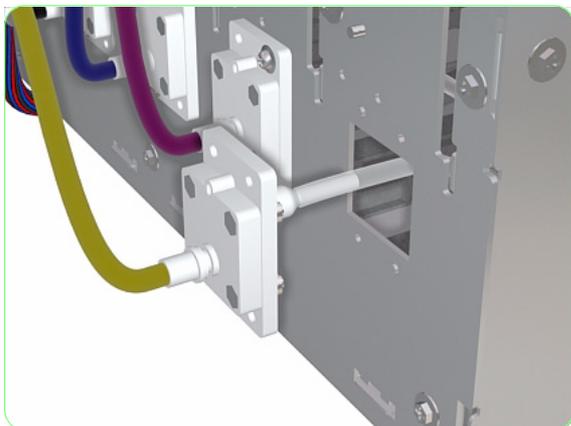
17. Remove ALL the Ink Filters from the rear of the ISS.

Ink Filter Assembly

Removal

1. Remove the Window ⇒ Page *8-3*.
2. Remove the Right Door ⇒ Page *8-5*.
3. Remove the Right Top Cover ⇒ Page *8-9*.
4. Remove the Right Side Cover ⇒ Page *8-11*.
5. Remove the Ink Cartridge Bay Cover ⇒ Page *8-20*.
6. Remove two screws from the side that secure the Right Back Cover to the Printer.

7. Remove two screws from the rear that secure the Right Back Cover to the Printer.

8. Remove the Right Back Cover from the Printer.

9. Disconnect three cables from the ISS PCA.

10. Remove the Ink Tubes from the Tube Clamp from the top of the ISS.

11. Loosen one screw (A) and remove one screw (B) that secure the Right Side of the ISS to the printer.

12. Loosen one screw (A) and remove one screw (B) that secure the Left Side of the ISS to the printer.

13. Lift the ISS away from the printer.

14. Pull the Ink Tube from the Ink Filter Assembly.
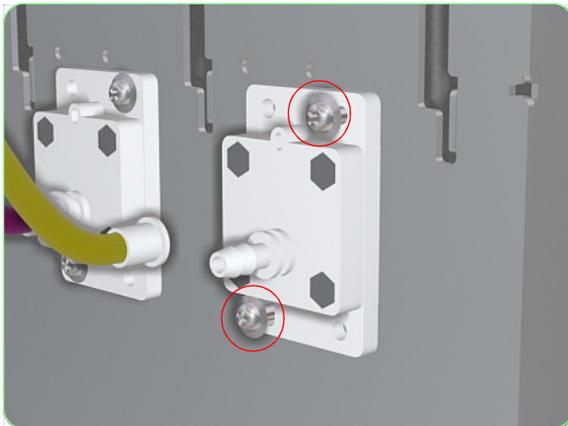
15. Remove two screws from the Ink Filter Assembly.
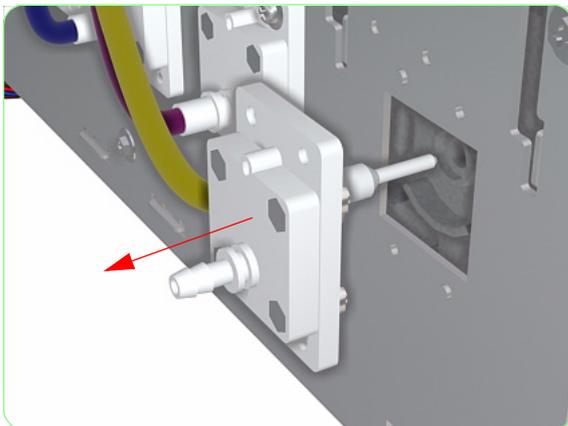
16. Remove the Ink Filter Assembly from the ISS.
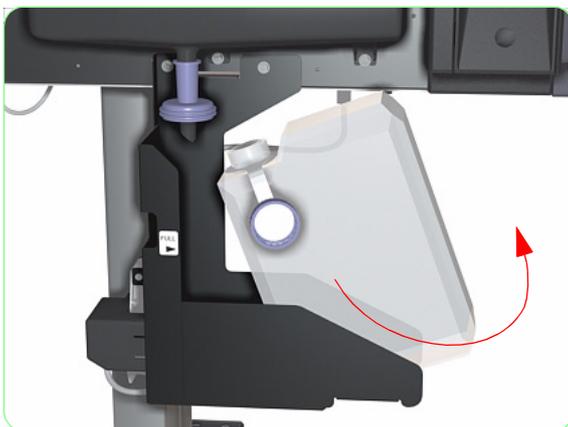
Waste Drainage Assembly

Removal
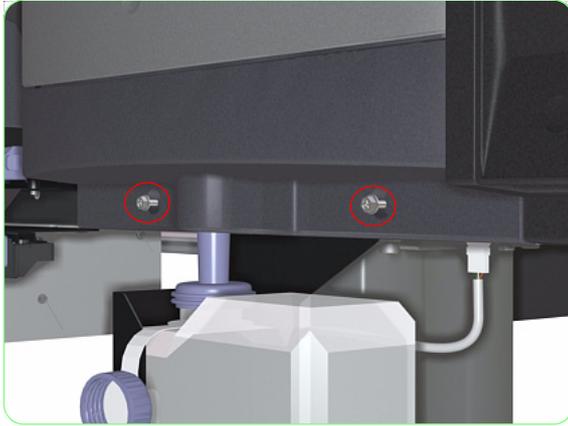
Switch off the product and remove the power cable.
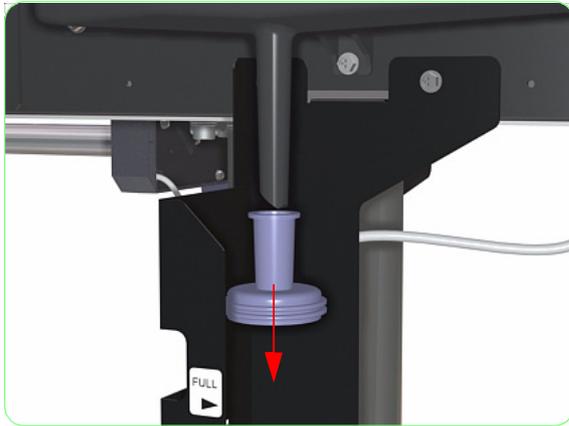
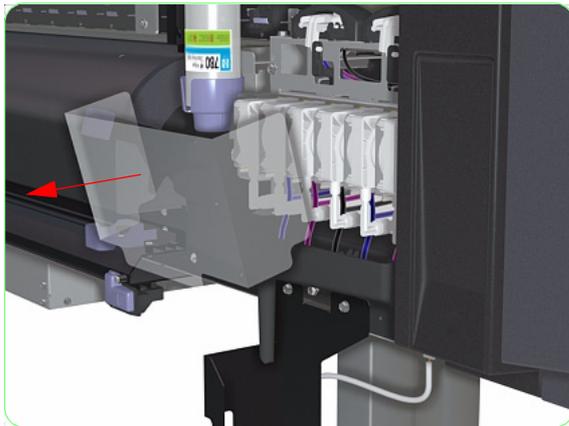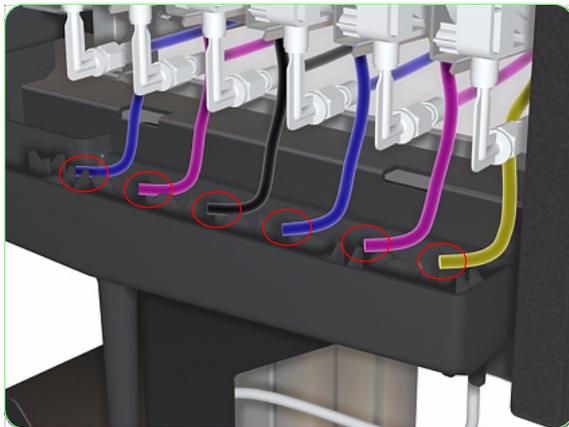1. Remove two screws that secure the Right Trim to the printer.
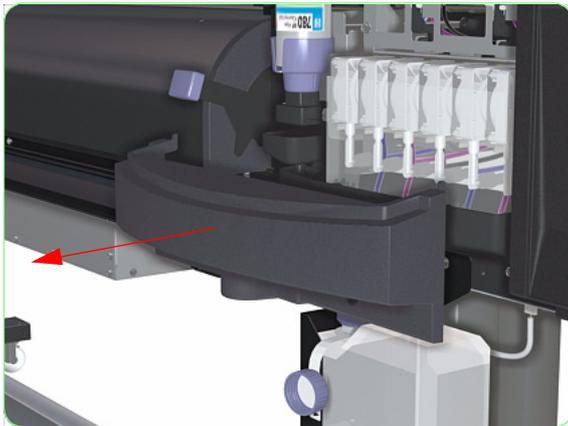
2. Remove the Right Trim.

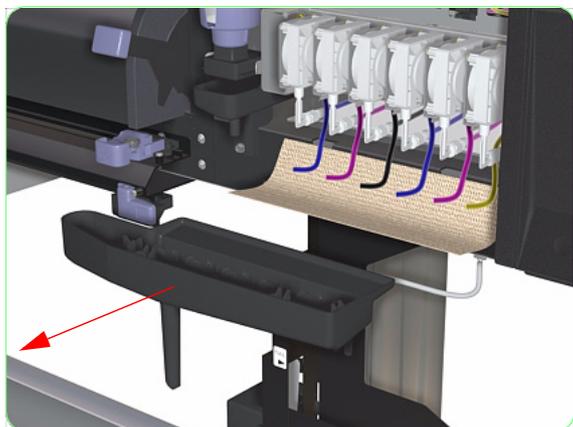3. Remove the Waste Ink Bottle.

4. Remove the Waste Ink Odor Cover from the Drainage Tube.

5. Remove the Capping Station Protective Cover.

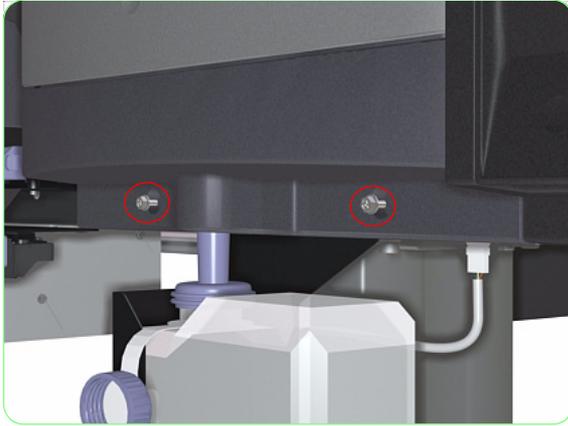**6.** Disconnect the Waste Ink Tubes from the Waste Ink Drainage Assembly.

7. Remove the Waste Ink Drainage Assembly and place some paper under the Waste Ink Tubes to catch any residual ink spillage.
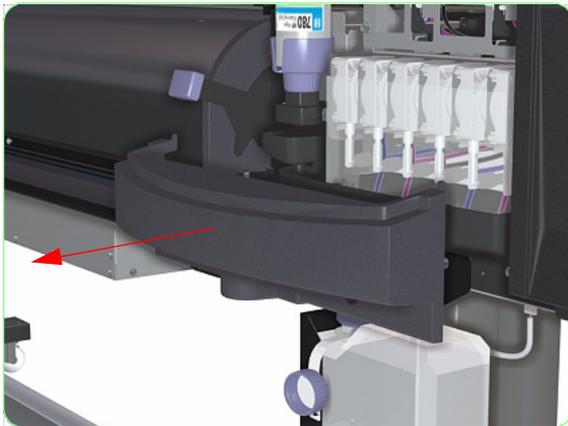
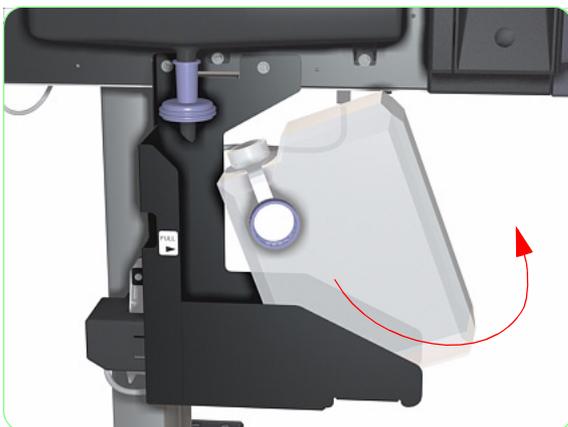## Waste Bottle Sensor and Holder

Removal

Switch off the product and remove the power cable.
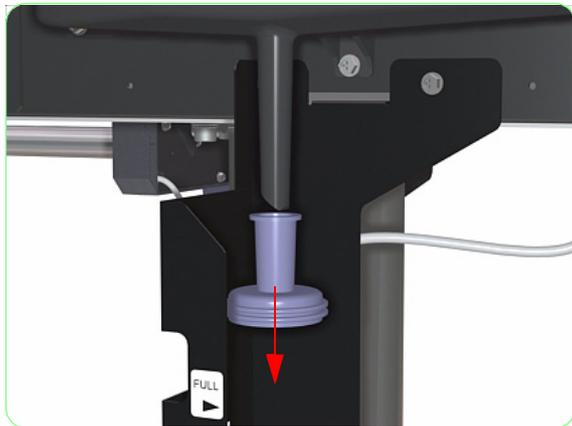
1. Remove two screws that secure the Right Trim to the printer.
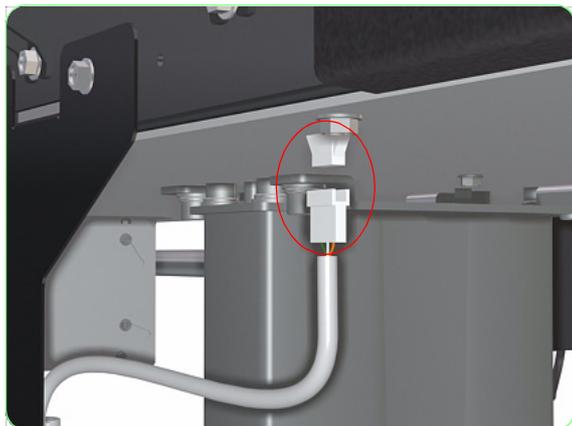
2. Remove the Right Trim.

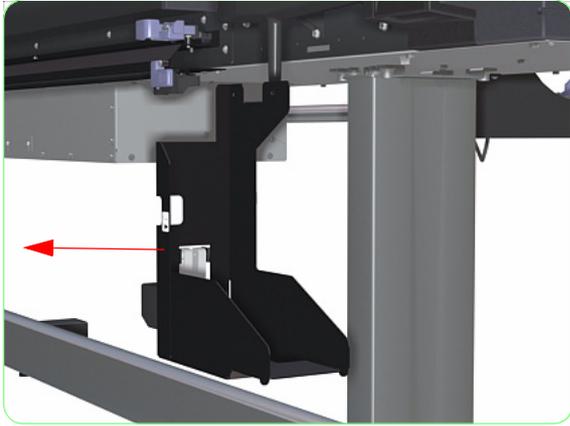3. Remove the Waste Ink Bottle.

4. Remove the Waste Ink Odor Cover from the Drainage Tube.

5. Disconnect the Waste Switch Cable.

6. Remove two screws that secure the Waste Bottle Holder to the printer.

7. Remove the Waste Bottle Holder from the Printer.

Preventive Maintenance

9

Preventive Maintenance

In order to keep the Printer in an optimal condition, it is recommended to perform routine maintenance. This Chapter explains the necessary procedures to be performed on a daily, weekly or monthly basis.

A Printer Maintenance Guide is supplied with the Printer which the customer must follow. The information in this Chapter is to be used as a reference for the Service Engineers in the case that the Printer Maintenance Guide is not available.

Printheads Maintenance

In order to ensure Image Quality, the Printheads in the Printer must be maintained on a frequent basis. If the Printheads are not looked after correctly, it is possible to get clogged or misdirected nozzles due to dried ink which can cause banding. If the Printhead cannot be recovered, it means the replacement of the Printhead which can be very expensive.

In order to prevent the Printhead from malfunctioning, the customer has the responsibility to:

1   Perform daily maintenance of the Printheads.

The daily maintenance is necessary to:

- Clean any dried ink that remains on the Capping Units.
- Keep the Wiping system wet so that it can efficiently clean the Printhead's nozzle plate.

2   Don't switch Off the Printer.

The Printer has an internal clock which allows to automatically perform a fill cap operation, flushing some ink through the Printhead, which keeps the Printheads in good condition. The Printer automatically washes the Printheads regularly after the last printing process. If the Printer is switched Off for a long period, this process does not happen. If the ink does not flow through the Printheads from time to time, the ink will dry inside the nozzles, reaching a point where it is impossible to recover them and the Printhead will fail. This will mean an expensive Printhead replacement.

Automatic maintenance and cleaning will ONLY be performed when the printer is switched on and powered up with media loaded. If the Printer is switched off from the front panel or with the power switch at the rear of the printer, this maintenance will NOT be performed.

If the Printer must be switched Off for a long period of time, the customer must use either an Ink System Storage Kit to store (and protect) the Printheads or an Ink System Cleaning kit to recover the Printheads.

Tips and Tricks

- If the Printer will not be maintained for a couple of days (i.e. weekends), make sure that the customer performs the daily maintenance before switching Off the Printer.
- If a customer has not been able to perform the daily maintenance for more than one week, advise the customer to perform a Printhead Recovery, using a "Strong" level.
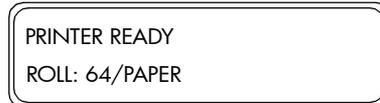
Daily Inspection and Maintenance

The following procedures should be performed on a daily basis in order to ensure acceptable print quality:

- Cleaning the Capping Units.
- Checking the Wiper Liquid level.
- Waste Ink Bottle Disposal.
- Nozzle Test Print.
- Normal Printhead Recovery (Only if Printheads require cleaning).

Cleaning the Capping Units

1 When the "Printer Ready" message appears on the Front Panel, press the **Online** key to take the Printer offline.

```
PRINTER READY
ROLL: 64/PAPER
```

2 When the following screen is displayed on the Front Panel, press the **Shift** key once.

```
▲INK            MEDIA REG▼
◄MEDIA            M.ADV►
```

3 When the following screen is displayed on the Front Panel, press the ► key to enter into the PH Main Menu.

```
▲REWIND         FORM FEED▼
◄PH. REC         PH. MAIN►
```

4 In the PH Main submenu, scroll to "Cap Cleaning" and press the **OK** key.

```
# CAP CLEANING
>
```

5 You will need to confirm that you want to perform the Cap Cleaning procedure by pressing the **OK** key.

```
# CAP CLEANING
∗ OK?
```

6 The Carriage will automatically move to the left side of the Printer so that the Capping Unit can easily be accessed, during which the following message will be displayed on the Front Panel.

```
CARRIAGE MOVING
PLEASE WAIT
```

Once the Carriage is out of the Capping Station, the cleaning procedure should be done as quickly as possible so as not to permanently damage the Printheads. The Printer will emit an acoustic warning (beeps) while the Carriage is out of the Capping Station.

7   When the following message is displayed on the Front Panel, open the Window and the Right Door.

> OPEN COVER
>
> CAP CLEANING

8   Clip a new Cap Cleaning Roller on the Cap Cleaning Handle.

9   Dip the Cap Cleaning Roller into the Cap Cleaning Liquid.

Make sure that you use the Cap Cleaning Liquid and NOT the Wiper Cleaning Liquid to clean the Capping Unit, otherwise you could cause damage to the Printheads.

10 Clean the top surface of ALL six Capping Units as follows:

a Moisten each Capping Unit by rolling the Cap Cleaning Roller over the Capping Unit once backwards and forwards.

b Clean each Capping Unit by rolling the Cap Cleaning Roller over the Capping Unit ten times each.
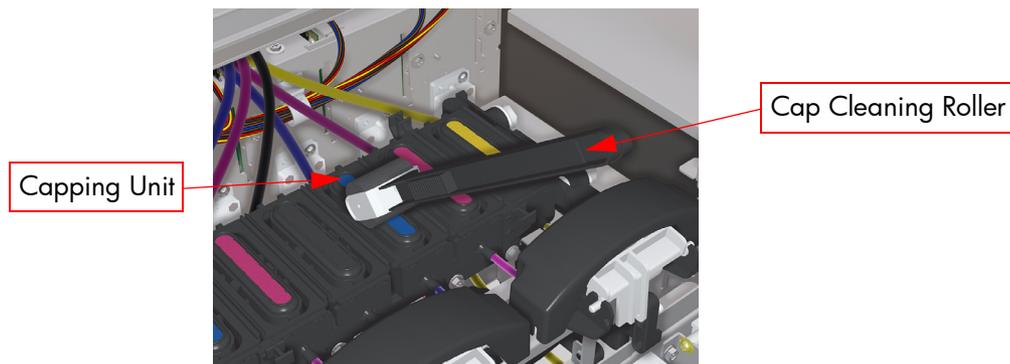
Make sure that the Cap Cleaning Liquid does not drip on to other parts of the Printer. If the Cap Cleaning Liquid drips on to the Belt or any nearby Sensors, this could cause serious damage to the Printer.

11 If the Capping Units are still not clean or there are particles or dry ink around the edges, then clean as follows:

a Dip a **new** cleaning swab into the Cap Cleaning Liquid.

> **Make sure that you use the Cap Cleaning Liquid and NOT the Wiper Cleaning Liquid to clean the Capping Unit, otherwise you could cause damage to the Printheads.**

12 Use the cleaning swab to clean the edges and the upper surfaces of ALL six Capping Units.
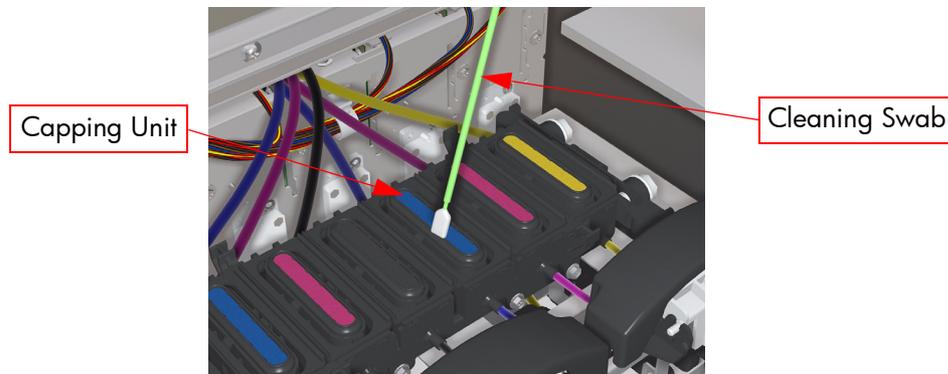

Capping Unit

Cleaning Swab

> **Make sure that the Cap Cleaning Liquid does not drip on to other parts of the Printer. If the Cap Cleaning Liquid drips on to the Belt or any nearby Sensors, this could cause serious damage to the Printer.**

13 After the Capping Unit has been thoroughly cleaned, close the Right Door and the Window to automatically return the Carriage to it's home position.

Checking the Wiper Liquid level

The Wiper Sponge has to always be moist so that the Wiper Blade can correctly clean the Printheads. The following should be done on a regular basis to make sure that there is enough liquid inside the Wiper Liquid Bottle:

> **In general, a NEW Wiping Liquid Bottle should last for at least 1 Month. Even though a message will appear on the Front Panel requesting you to change the Wiping Liquid Bottle, the Wiping Liquid Level should still be checked as a precaution on a daily basis.**

1   Open the Window and the Right Door.

2   Check that the Wiping Liquid Bottle has enough liquid inside.
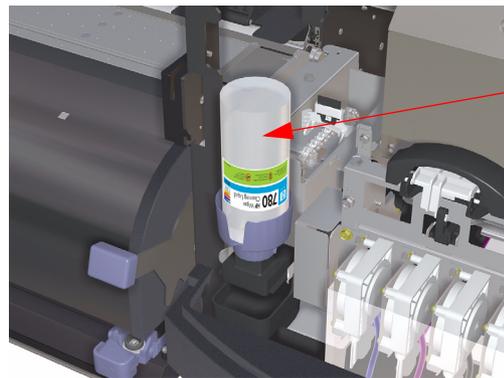
Wiping Liquid Bottle

3   If there is enough liquid inside the Wiping Liquid Bottle, then close the Window and the Right Door.

4   If there is not enough liquid inside the Wiping Liquid Bottle, then you will need to replace it. Close the Window and the Right Door and press the **Online** key to take the Printer offline.

```
PRINTER READY
ROLL: 64/PAPER
```

5   When the following screen is displayed on the Front Panel, press the **Shift** key once.

```
▲INK              MEDIA REG▼
◄MEDIA               M.ADV►
```

6   When the following screen is displayed on the Front Panel, press the ► key to enter into the PH Main Menu.

```
▲REWIND          FORM FEED▼
◄PH. REC          PH. MAIN►
```

7 In the PH Main submenu, scroll to "Replace W-Clean-Lqd" and press the **OK** key.
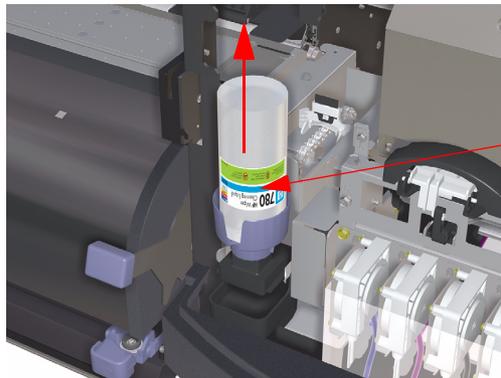
```
# REPLACE W-CLEAN-LQD

>
```

8 You will need to confirm that you want to replace the Wiping Liquid Bottle by pressing the **OK** key.

```
# REPLACE W-CLEAN-LQD

* OK?
```
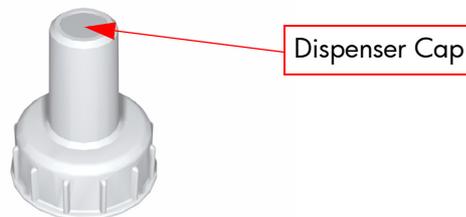
9 Open the Window and the Right Door.

10 Remove the empty Wiping Liquid Bottle from the holder.

Wiping Liquid Bottle

11 Remove the cap from a **new** Wiping Liquid Bottle.
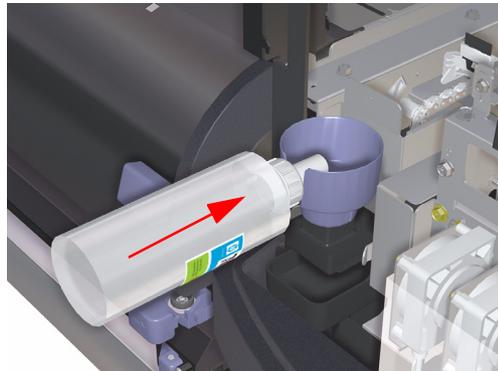

Wiping Liquid Bottle

12 Make sure that the plastic seal is well positioned in the hole of the dispenser cap.
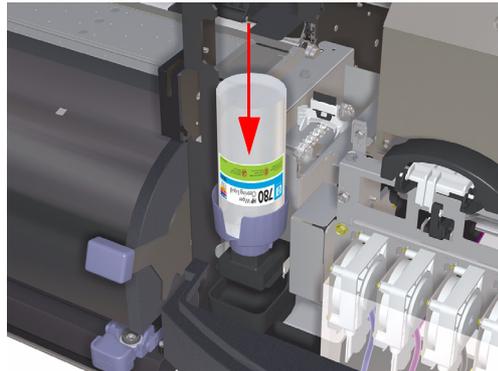

Dispenser Cap

13 Insert and tighten the dispenser cap on to the Wiping Liquid Bottle.

Dispenser Cap

14 Carefully tilt the wiping liquid bottle so that the dispenser cap is inserted into the slot on the side of the wiping liquid holder.

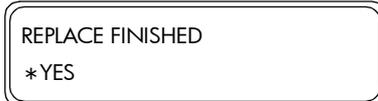**15** With the dispenser cap inserted into the slot, slowly turn the bottle over and place the bottle in the wiping liquid holder.

Make sure that the Wiper Cleaning Liquid does not drip on to other parts of the Printer. If the Wiper Cleaning Liquid drips on to the Belt or any nearby Sensors, this could cause serious damage to the Printer.

16 Close the Right Door and the Window.

17 When the following message is displayed on the Front Panel, scroll to "Yes" and press the **OK** key.

```
REPLACE FINISHED
∗YES
```
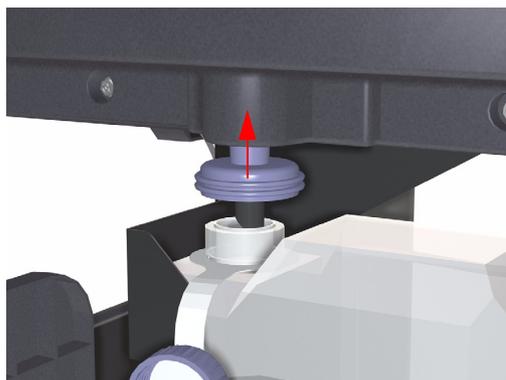
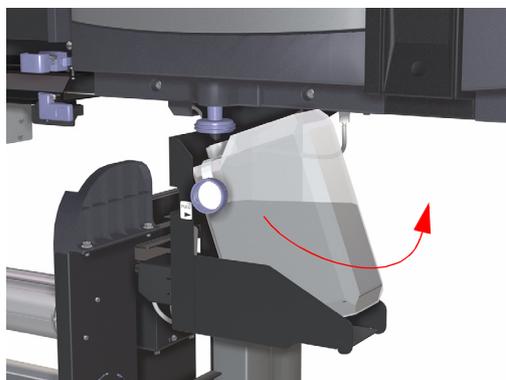### Waste Ink Bottle Disposal

The Waste Ink Bottle should be checked on a daily basis to make sure that it is not full. The Waste Ink Bottle should be emptied as follows:

It is the customer that has the responsibility to dispose of the Waste Ink whenever necessary. The ink should be disposed as industrial waste. Please refer to the Printer User's Guide for complete information (including safety notes) on waste handling and disposal instructions.

**1** Lift the Waste Ink Odor Cover sufficiently to remove the Waste Ink Bottle.

2 Carefully pull out the Waste Ink Bottle, taking care not to spill any on the Printer or on the floor.

3 Securely screw on the cap on the full Waste Ink Bottle and store in a safe place until it can be taken for disposal.

4 Take a **new** Waste Ink Bottle and undo the cap.

5 Install the **new** Waste Ink Bottle into position making sure that the Waste Ink Bottle is securely in position and that the drainage tube is fully inserted into the bottle. Make sure that the Waste Ink Odor Cover is lowered and securely in place.
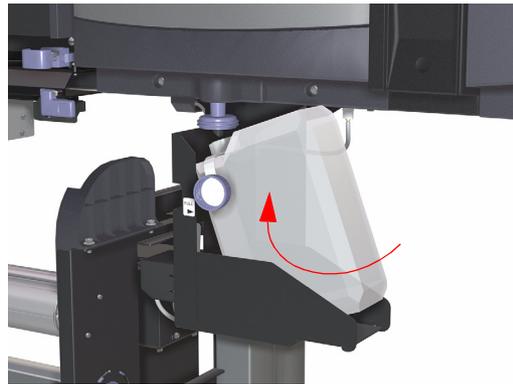
6 Once the Waste Ink Bottle is correctly installed, the Front Panel will request you to reset the Waste Counter.
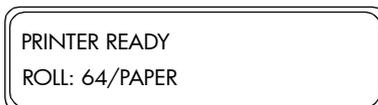
```
# BOTTLE EMPTY
 * NO
```

7 Select "Yes" and press the **OK** key to reset the Waste Counter by indicating that the Waste Bottle is empty.
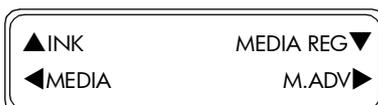
```
# BOTTLE EMPTY
 * YES
```

Nozzle Test Print

The Nozzle Test Print can be used to check that all the Printhead nozzles are working correctly. This should be printed on a daily basis so any blocked nozzle can be detected and unblocked as soon as possible.

1 When the "Printer Ready" message appears on the Front Panel, press the **Online** key to take the Printer offline.

```
PRINTER READY
ROLL: 64/PAPER
```

2 When the following screen is displayed on the Front Panel, press the **Shift** key twice.

```
▲INK              MEDIA REG▼
◄MEDIA                M.ADV►
```

3 When the following screen is displayed on the Front Panel, press the ◄ key to enter into the Adjust Menu.

```
▲PRINTER            SETUP▼
◄ADJUST            HEATER►
```

4 In the Adjust submenu, scroll to "Test Prints" and press the **OK** key.

```
# TEST PRINTS
> NOZZLE PRINT
```

5 In the Test Prints submenu, scroll to "Nozzle Print" and press the **OK** key.

```
# TEST PRINTS
∗ NOZZLE PRINT
```
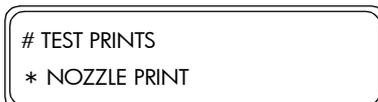
6 You will need to confirm that you want to print the Nozzle Print by pressing the **OK** key.

```
# TEST PRINTS
∗ NOZZLE PRINT   OK?
```

7 The Printer will start to print the Nozzle Print and the following message will appear on the Front Panel.

```
# TEST PRINTS
∗ EXECUTING
```

8 The Nozzle Print can be cancelled at any time by pressing the **Cancel** key.
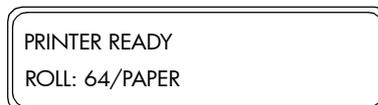
```
# TEST PRINTS
∗ CANCELING
```

9 Once the Nozzle Print has finished, verify that it does not contain any missing nozzles. If problems are found in the Nozzle Print, then perform the Printhead recovery option to unblock the missing nozzles.
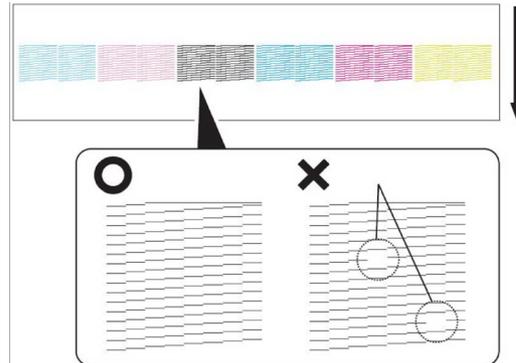

Normal Printhead Recovery

Printhead Recovery should be performed only if Nozzle Print has shown that there any nozzles missing. Otherwise, Printhead Recovery should only be performed once a month.

1 When the "Printer Ready" message appears on the Front Panel, press the **Online** key to take the Printer offline.

```
PRINTER READY
ROLL: 64/PAPER
```

2 When the following screen is displayed on the Front Panel, press the **Shift** key once.

```
▲INK              MEDIA REG▼
◄MEDIA                M.ADV►
```
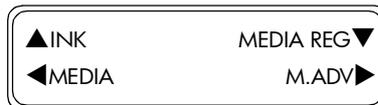
3 When the following screen is displayed on the Front Panel, press the ◄ key to enter into the PH Recovery Menu.

```
▲REWIND           FORM FEED▼
◄PH. REC            PH. MAIN►
```

4 In the PH Recovery submenu, press the **OK** key.

```
# PH RECOVERY
> NORMAL ALL
```

5 In the PH Recovery submenu, select the level of recovery you would like and then press the **OK** key.

```
# PH RECOVERY
∗ NORMAL ALL
```
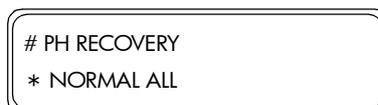
Recommended cleaning level is NORMAL

The different levels of Printhead Recovery are as follows:

■ Normal All - Activates a normal recovery for all Printheads.

■ Strong All - Activates a strong recovery for all Printheads.

6 You will need to confirm that you want to perform the selected Printhead Recovery procedure by pressing the **OK** key.

```
# PH RECOVERY
∗ OK?
```

7 When the following message appears on the Front Panel, check whether the Waste Ink Bottle is present and is NOT full. Press the **OK** key once the Waste Ink Bottle has been checked.

```
# PH RECOVERY
∗ BOTTLE OK?
```

8 The Carriage will begin to perform the recovery process by pumping ink through the Printheads and performing the wiping procedure in order to unblock any nozzles that could be blocked. During the recovery process, the following message will be displayed on the Front Panel.

```
# PH RECOVERY
∗ EXECUTING          XXX
```

9 Once the recovery process has finished, the Front Panel will return to the following screen.

```
# PH RECOVERY
> NORMAL ALL
```

Periodic Maintenance

The following procedures should be performed on a periodic basis in order to ensure acceptable print quality:

■ Replacing the Wiper Blade (done every approx. 3 months).

■ Replacing the Wiper Sponge (done every approx. 6 months).

Replacing the Wiper Blade

1 When the "Printer Ready" message appears on the Front Panel, press the **Online** key to take the Printer offline.
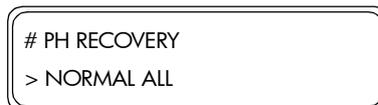
```
PRINTER READY
ROLL: 64/PAPER
```

2 When the following screen is displayed on the Front Panel, press the **Shift** key once.
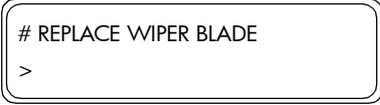
```
▲INK              MEDIA REG▼
◄MEDIA              M.ADV►
```

3 When the following screen is displayed on the Front Panel, press the ► key to enter into the PH Main Menu.

```
▲REWIND           FORM FEED▼
◄PH. REC           PH. MAIN►
```

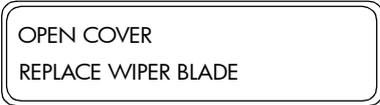**4** In the PH Main submenu, scroll to "Replace Wiper Blade" and press the **OK** key.

```
# REPLACE WIPER BLADE
>
```

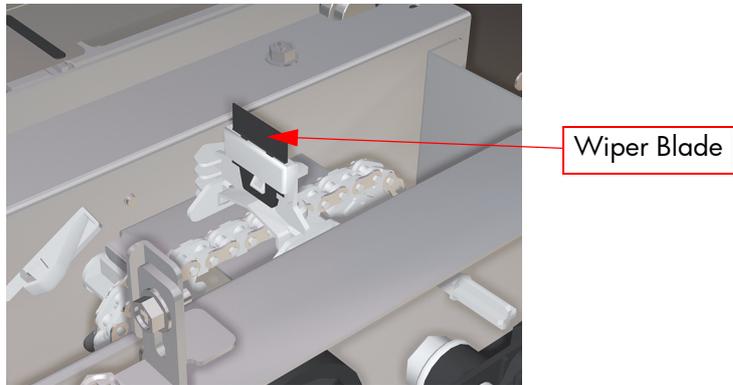**5** You will need to confirm that you want to perform the Replace Wiper Blade procedure by pressing the **OK** key.

```
# REPLACE WIPER BLADE
∗ OK?
```

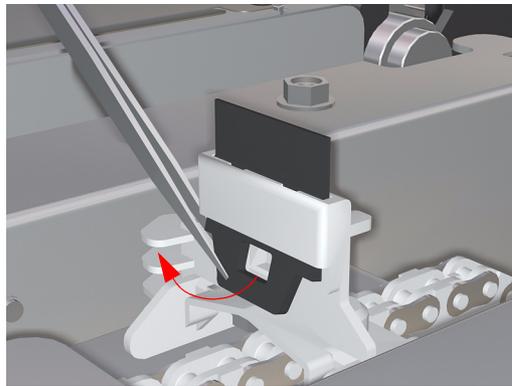**6** When the following message is displayed on the Front Panel, open the Window and the Right Door.
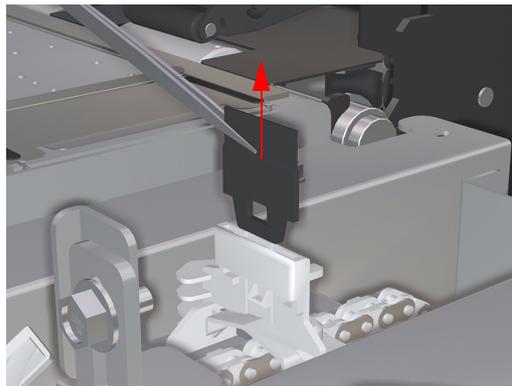
```
OPEN COVER
REPLACE WIPER BLADE
```

**7** The Wiper Blade is located on the left hand side of the Capping Station.

Wiper Blade

**8** Using the Tweezers, pull the bottom of the Wiper Blade to release it from the Blade Holder.

9 Carefully, pull the Wiper Blade out from the slot.

10 Using the Tweezers, insert the Wiper Blade into the slot, making sure that the bottom edge of the blade can be taken by the Tweezers from below the slot.
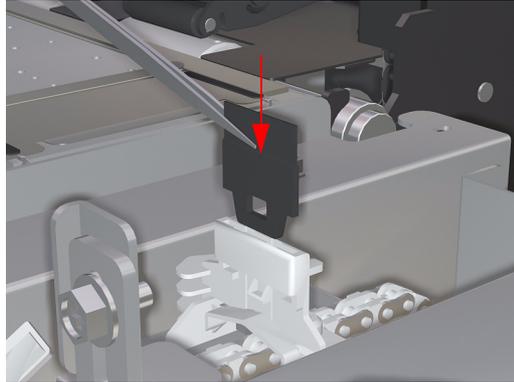
11 From below the slot, pull the Wiper Blade down so it is fully inserted into the Blade Holder.
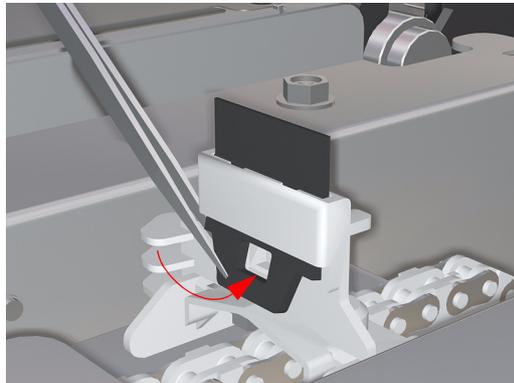
12 Close the Right Door and the Window.

13 When the following message is displayed on the Front Panel, scroll to "Yes" and press the **OK** key.

```
REPLACE FINISHED
∗YES
```
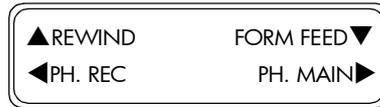
Replacing the Wiper Sponge

1 When the "Printer Ready" message appears on the Front Panel, press the **Online** key to take the Printer offline.

```
PRINTER READY
ROLL: 64/PAPER
```

2 When the following screen is displayed on the Front Panel, press the **Shift** key once.

```
▲INK          MEDIA REG▼
◄MEDIA            M.ADV►
```

3 When the following screen is displayed on the Front Panel, press the ▶ key to enter into the PH Main Menu.

```
▲REWIND          FORM FEED▼
◀PH. REC          PH. MAIN▶
```

4 In the PH Main submenu, scroll to "Replace Wipe Sponge" and press the **OK** key.
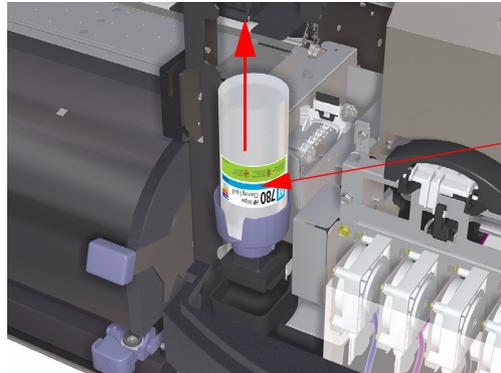
```
# REPLACE WIPE SPONGE
>
```

5 You will need to confirm that you want to perform the Replace Wiper Sponge procedure by pressing the **OK** key.

```
# REPLACE WIPE SPONGE
* OK?
```

6 When the following message is displayed on the Front Panel, open the Window and the Right Door.

```
OPEN COVER
REPLACE WIPER SPONGE
```

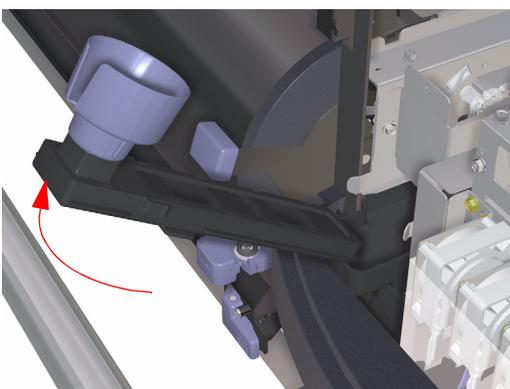**7** Remove the Wiping Liquid Bottle from the Wiping Liquid Holder.

Wiping Liquid Bottle

Make sure that the Wiper Cleaning Liquid does not drip on to other parts of the Printer. If the Wiper Cleaning Liquid drips on to the Belt or any nearby Sensors, this could cause serious damage to the Printer.

8 Pull out the Wiper Sponge Tray, but do **not** remove completely.
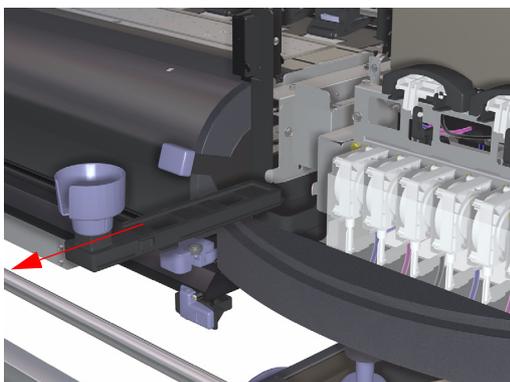
9 Tilt the Wiper Sponge Tray to empty any excess liquid into the drainage tray.

10 Insert a new Wiper Sponge Tray, making sure that it is pushed in all the way to the end.

11   Remove the cap from a **new** Wiping Liquid Bottle.

Wiping Liquid Bottle

12   Make sure that the plastic seal is well positioned in the hole of the dispenser cap.

Dispenser Cap

13   Insert and tighten the dispenser cap on to the Wiping Liquid Bottle.

Dispenser Cap

14   Carefully tilt the wiping liquid bottle so that the dispenser cap is inserted into the slot on the side of the wiping liquid holder.

15 With the dispenser cap inserted into the slot, slowly turn the bottle over and place the bottle in the wiping liquid holder.

> **Make sure that the Wiper Cleaning Liquid does not drip on to other parts of the Printer. If the Wiper Cleaning Liquid drips on to the Belt or any nearby Sensors, this could cause serious damage to the Printer.**
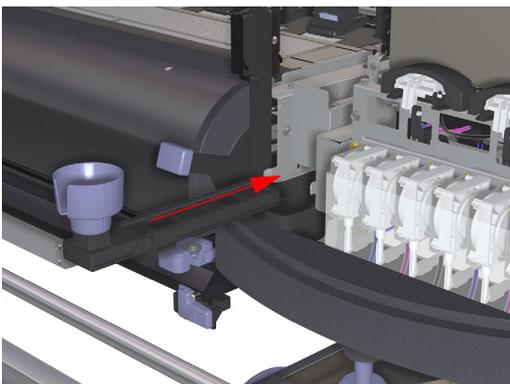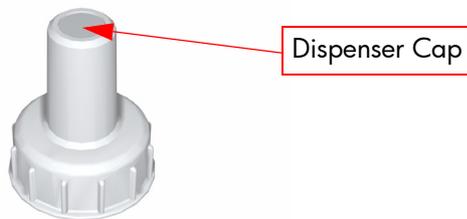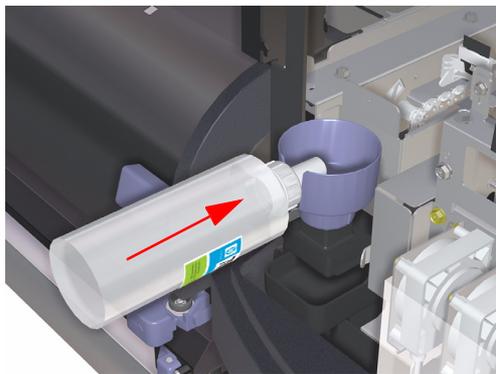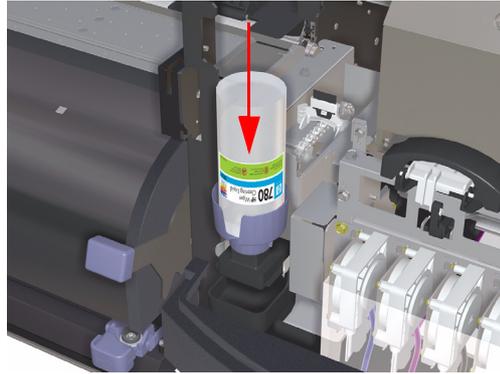
16 Close the Right Door and the Window.

17 When the following message is displayed on the Front Panel, scroll to "Yes" and press the **OK** key.

```
REPLACE FINISHED
 *YES
```

When Leaving the Printer Off for more than 2 weeks

It is important to remember that the Printer should not be switched Off so that the Printer can automatically trigger the internal Printhead maintenance procedures to prevent the Printheads from failing.

But there might be certain circumstances where the Printer needs to be switched Off for a long period of time. In order to do this, the customer must follow the storage procedure using the HP 790 Ink System Storage Kit together with the internal storage option. This procedure replaces the ink from the Ink System with a lower solvent liquid which will maintain the health of the Printheads, preventing them from failing.

Before leaving the printer switched Off for more than 2 weeks, perform the Ink System Storage procedure ⇒ Refer to the User's Guide (Chapter 6).

In order to perform the Ink System Storage procedure, you will need the HP 780 Ink System Storage Kit (part number CB308A). This kit includes:

■ Six Ink System Storage Liquid Cartridges.

If the Printer is switched On after leaving it switched Off for more than one month (31 days), Error Code 11E0 will be displayed on the Front Panel.

When Returning to the Printer after more than 2 weeks

When returning to the Printer, a Printhead recovery procedure will need to be done using the Ink System Cleaning Kit together with the Printhead Wash option to clean the Ink System from the maintenance liquid. Once the Ink System is cleaned, the Ink Charge option is used to refill the Ink System with regular ink.

After returning to the Printer after leaving it switched Off for more than 2 weeks, perform the following:

■ Daily Maintenance ⇒ Page *9-3*.
■ Clean Ink System ⇒ Refer to the User's Guide (Chapter 6).
■ Charge the Ink System ⇒ Refer to the User's Guide (Chapter 6).

In order to perform the Clean Ink System procedure, you will need the HP 780 Ink System Cleaning Kit (part number CB303A). This kit includes:

■ Six Ink System Cleaning Liquid Cartridges.

If the Printer is Switched Off for less than 2 weeks

If a customer accidently leaves the Printer switched Off for less than 2 weeks, they will be able to recover the Printheads if the nozzles have been blocked with dried ink. The success of recovering the Printheads will depend on how long the Printer has been left switched Off. If the Printer has been switched Off for longer than 2 weeks, it could mean the replacement of some or ALL of the Printheads.

After returning to the Printer after leaving it switched Off for less than 2 weeks, perform the following:

■ Daily Maintenance ⇒ Page *9-3*.
■ Clean Ink System ⇒ Refer to the User's Guide (Chapter 6).
■ Charge the Ink System ⇒ Refer to the User's Guide (Chapter 6).

In order to perform the Clean Ink System procedure, you will need the HP 780 Ink System Cleaning Kit (part number CB303A). This kit includes:

■ Six Ink System Cleaning Liquid Cartridges.

If the Printer is Switched Off for more than one Month

If the Printer is switched On after leaving it switched Off for more than one month (31 days), Error Code 11E0 will be displayed on the Front Panel. In order to clear this Error Code, perform the following:

1 Turn the Printer ON in error skip mode by holding down the **Cancel** and **Shift** keys and pressing the ON button.

2 When the following screen is displayed on the Front Panel, you will be requested to enter a password. Press the following keys in this order: ◀, ▶, **Shift** and **OK**.

```
MAINTENANCE MODE
PASSWORD?
```

3 Switch the Printer OFF and then ON again.

Scheduled Preventive Maintenance

During the life of the printer, components that are used constantly can wear out with time and use. To prevent that the Printer breaks down due to these components being excessively worn out, the printer keeps track of the life of those components.

Internal Counter	Warning Limits	Stop Limits	System Error Code
Scan-Axis Belt	1.7 M scans	-	-
Capping Units	10 K movements	-	-
Primers	41 hours	43 hours	1290

The printer uses this information to advise the customer when preventive maintenance will be needed, and displays a message like:

> SERVICE NEEDED
> CALL SERVICE

⚠ The error LED will blink until you fix the situation (except if a fatal error occurs or if a cover is open or if the printer is out of media)

This message means that the components are nearing their end-of-life. The customer can continue printing for some time, depending on the use of the printer. However it is strongly recommended that the customer calls the HP representative and arranges for an on-site preventative maintenance visit.

Level of Printer Usage

If we take into account the following average usage conditions, the Preventive Maintenance message will appear approximately every 13 months:

- 10 linear meters per day (2.4 km per year).
- Normal Printmode (8 passes, bi-directional).
- An average of three cleanings per day (including automatic and customer activated Printhead recoveries).

Once the Service Needed message is displayed, the preventive maintenance kit must be used to replace the most worn parts of the printer. Use the Removal and Installation Chapter of this Service Manual as a guide to replace the necessary parts.

Service Preventive Maintenance Kit - Part Number Q6670-60090

Once the components have been replaced, you must enter into the "Counter" menu and reset the following internal counters:
- Prime Assembly Counter.
- Capping Unit Counter.
- Scan-Axis Belt Counter.

They can ALL be reset by using the "Reset All Count" option ⇒ Page *4-43*.

Transporting the Printer

Preparing the Printer for Transportation

Once the printer is installed, if it needs to be moved to a new location, it needs to be prepared using the Transportation Kit.

This is a checklist of things to do when preparing the Printer for transportation over a long distance:

This procedure should be done with the Media loaded.

1 Remove the ink from the Ink Tubes using the Ink System Cleaning Kit (User Mode: *PH Main > Ink System Opt > Clean Ink Sys*).

2 Re-install the Ink Cartridges into the Printer.

3 Open the Window and the side covers and block the Window Sensors with a piece of cardboard (1).
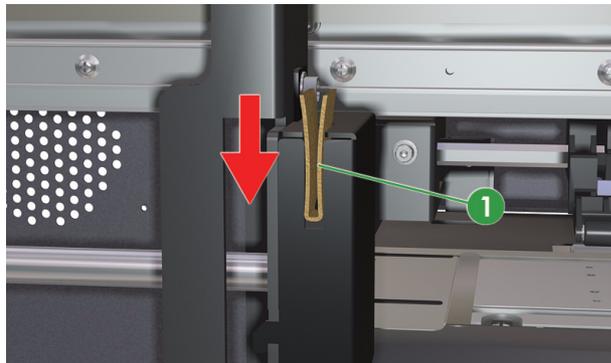
This procedure is done with the Window Sensors blocked BUT with the covers open so the Carriage will move. Therefore be very careful not to insert your hands or any object inside the Printer while the Carriage is moving.
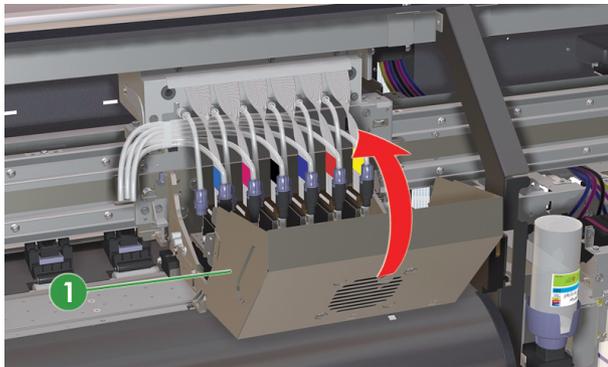
4 Refill the Printhead with Cap Cleaning Liquid.

   a Uncap the Carriage Assembly (Maintenance Mode: *Motors > Cap Stat Motor > Open*).

   b Manually move the Carriage out of the Capping Station and position it over the Print Platen where the Printhead Cover can be opened. Make sure you place some paper on the Print Platen to protect it from ink drops.

   c Open the Printhead Cover and disconnect the Ink Tubes from the Printheads.
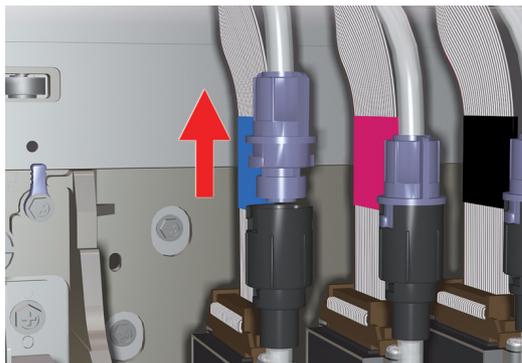
d Connect the Refill Tubes to the Printheads in a way that they are flat and sticking out of the carriage on the left hand side. Use tape (1) to secure the Refill Tubes together.

e Close the Printhead Cover (1), taking care not to pinch the Refill Tubes.

f Manually move the Carriage back to the Capping Station. Make sure that the Printheads are centered over the capping Units.

g Cap the Carriage Assembly (Maintenance Mode: *Motors > Cap Stat Motor > Close*).

Before filling the Printheads with Cap Cleaning Liquid, check that the Waste Ink Bottle is not full. If it is full (or close to full), then you should empty it and re-install it in the Printer.

h Insert the other side of the Refill Tubes (2) into the Cap Cleaning Liquid Bottle (1). If necessary, cut the Refill Tubes if they are too long.

i Refill the Printheads with Cap Cleaning Liquid for approx. 30 seconds (Maintenance Mode: *Motors > Pump/Wipe > Forwards*).

Check that the Cap Cleaning Liquid is moving through ALL the Refill Tubes.

j After 30 seconds, stop the Pump/Wipe Motor (Maintenance Mode: *Motors > Pump/Wipe > Off*).

k Lower the Capping Station slightly (Maintenance Mode: *Motors > Cap Stat Motor > Half*).

l Empty the Capping Units from any remaining solvent for approx. 10 seconds (Maintenance Mode: *Motors > Pump/Wipe > Forwards*).

m After 10 seconds, stop the Pump/Wipe Motor (Maintenance Mode: *Motors > Pump/Wipe > Off*).

n Uncap the Carriage Assembly (Maintenance Mode: *Motors > Cap Stat Motor > Open*).

5 Power Off the Printer from the Rear of the Printer.

6 Manually move the Carriage out of the Capping Station and position it over the Print Platen where the Printhead Cover can be opened. You will also need to manually move the Refill Tubes and Cap Cleaning Liquid Bottle.

**7** Open the Printhead Cover and disconnect the Refill Tubes from the Printheads.
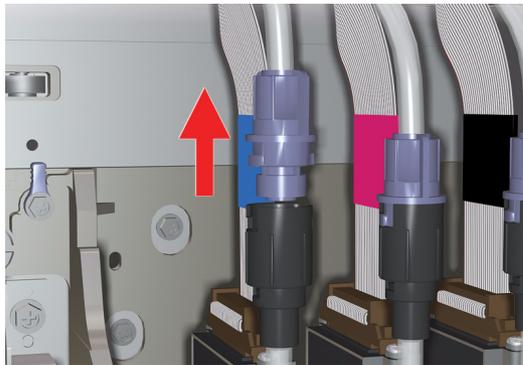
8 After disconnecting the Refill Tubes from the printheads, lift up the Refill Tubes (from the connection side) so that any remaining liquid inside the Tubes are emptied back into the Cap Cleaning Liquid Bottle.

9 Immediately insert the Protection Tube (1) into the Printhead.
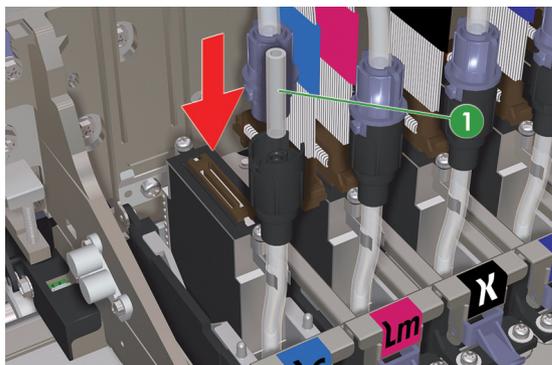
**10** Remove each Printhead (1) from the Carriage and attach the Printhead Nozzle Cap (2).
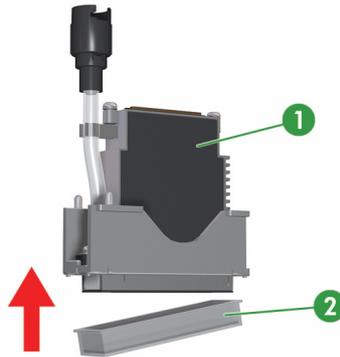
11 Store the Printheads in the original packaging (included in the Transportation Kit).

**12** Install the Dummy Printheads (1) inside the Carriage.
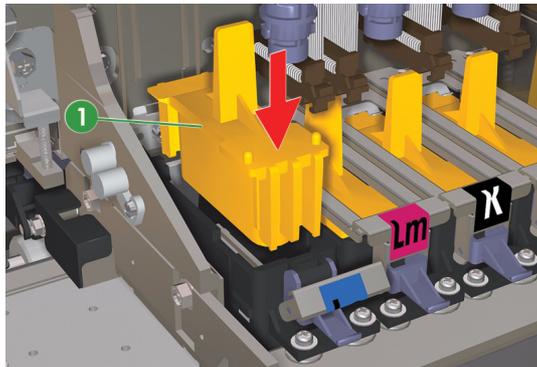
13 Unload the Media from the Printer.

**14** Disconnect and remove the Sensor Unit (1) of the Take-Up-Reel Unit (if installed) and store it separately.

15 Block the Carriage using the Carriage Locking Plate (1) and secure it with three screws (2).
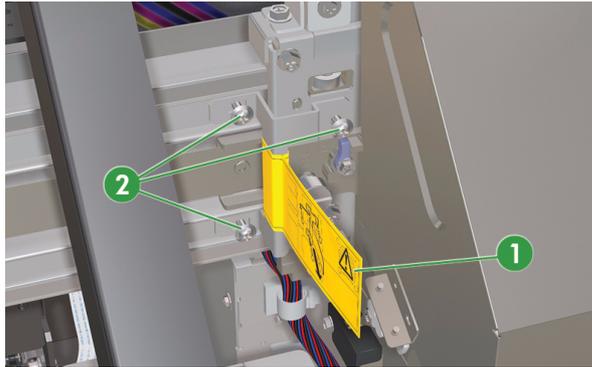
16 At the rear of the Printer, remove the Ink Cartridges and insert the Ink Leak Tubes into the Ink Cartridge Connectors.
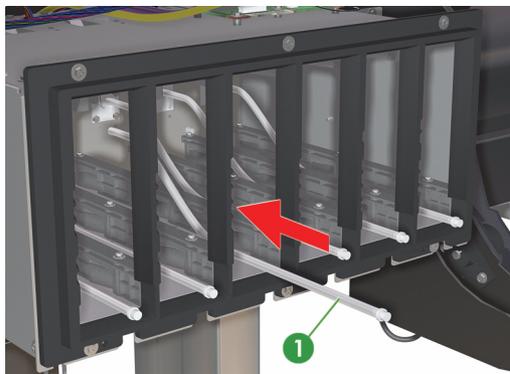

17 Move the Media Edge Guards (2) together and attach fixing tape (1) to secure them into position.
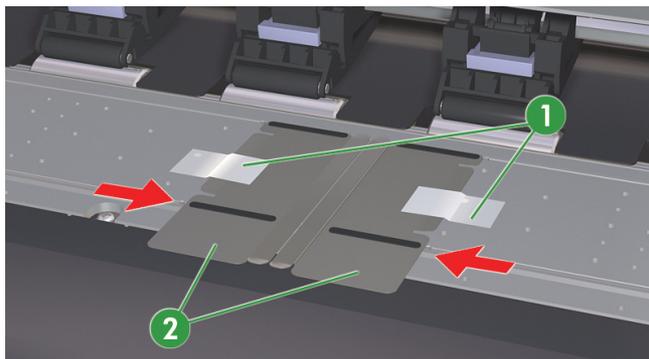
18 Install the five blue fixing screws (1) into the Center Platen. Also, attach the Yellow Label onto the center Platen.


19 Attach the beaded cable tie with the label (1) to the top beam. Also, install the cushioning strip (2) underneath the Pinchwheels (raise the Media Lever before installing).
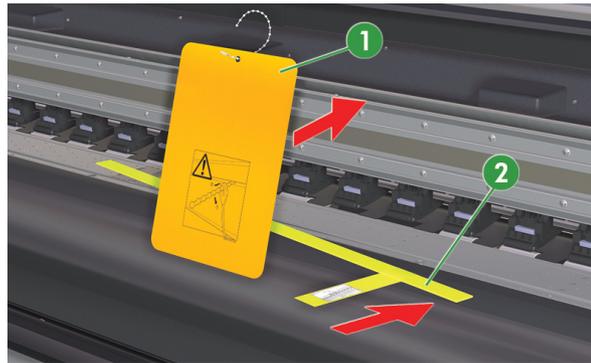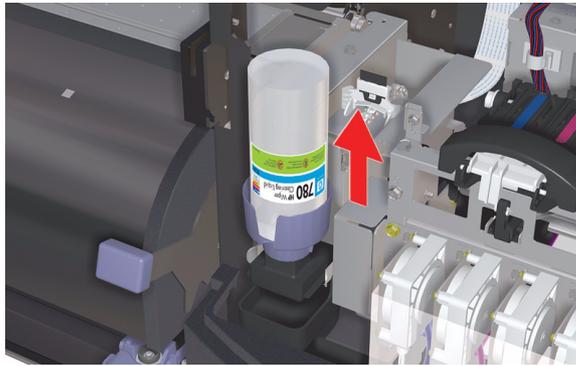

20 Dispose of the Waste Bottle correctly.

The waste ink should be disposed as industrial waste. Please refer to the Printer User's Guide for complete information (including safety notes) on waste handling and disposal instructions.
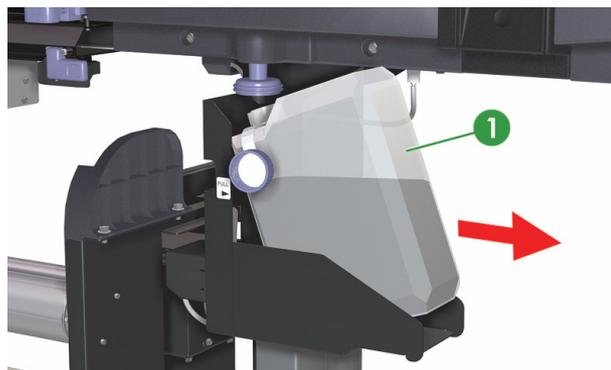
**21** Carefully remove the Wiping Liquid Bottle from the Printer.

> **Make sure that the Wiping Liquid does NOT drip onto other parts of the printer. If the Wiping Liquid drips onto any nearby sensors, this could cause serious damage to the printer.**

22 It is recommended to remove the Media Entry Assembly (1) and store it separately.

23 It is recommended to remove the Waste Bottle Holder (1) and store it separately.
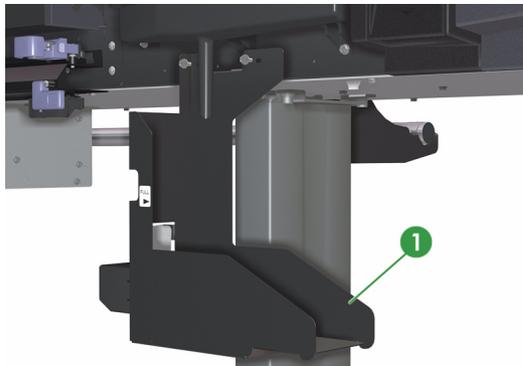
24 Secure ALL the covers with tape.

25 The Printer is now ready for transportation.

> **Once the Printer is re-installed in the new location, you will need to manually charge the Ink Supply Tubes with ink (PH Main \ Ink System Opt \ Charge Ink Sys).**

About this Edition

This is the 1st edition of this Service Manual

1st edition, titled
HP Designjet 8000s Series Printers Service Manual (Models Q6670A/Q6686A) -
November 2006

What's in this Service Manual

This manual contains information necessary to test, calibrate and service:

- HP Designjet 9000s Series Printers (Models Q6670A/ Q6686A).

For information about using these printers, refer to the corresponding User and Quick Reference Guides.

The procedures described in this manual are to be performed by HP-qualified Service Personnel only.